

L 107 PP

CONFIDENTIAL

MSC-07633



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 17  
COMMAND MODULE  
ONBOARD VOICE  
TRANSCRIPTION  
(U)

RECORDED ON THE  
DATA STORAGE EQUIPMENT  
(DSE)

1 JANUARY 1972

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

CLASSIFIED BY UNCLASSIFIED

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

MANNED SPACECRAFT CENTER  
HOUSTON, TEXAS

CONFIDENTIAL

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they:  
(1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

## INTRODUCTION

This document is the transcription of the Apollo 17 flight crew communications as recorded on the command module (CM) data storage equipment (DSE) and subsequently transmitted (dumped) to Manned Space Flight Network stations. Magnetic tapes containing dumped voice and onboard-recorded ground elapsed time (GET) were forwarded to the NASA Manned Spacecraft Center, Houston, Texas. Transcription of these tapes was managed by J. L. Gibbons, Test Division, Apollo Spacecraft Program Office, to whom inquiries regarding this document should be referred.

The transcript is divided into three columns — time, speaker, and text. The time column consists of four two-digit pairs representing days, hours, minutes, and seconds (e.g., 04 22 34 14). The speaker column indicates the source of a transmission; the text column contains the verbatim transcript of the communications.

The time used by Mission Control Center (MCC) and indicated as GET in the flight plan may be updated to both the spacecraft and MCC computers but will not be updated to the telemetry downlink pulse-code-modulated bitstream or other time-recording devices. This GET updating will be performed only to correct significant changes in flight-plan time occurring as the result of delayed lift-off, midcourse corrections, or spacecraft burn-time differences (trajectory dispersions).

Should these updates occur, the Apollo elapsed time (the true mission-elapsed time) may not agree with flight-plan and MCC times. Users of this transcript are cautioned to apply the appropriate time-update deltas for the updated periods.

Speakers in the transcript are identified as follows:

### Spacecraft:

CDR	Commander	Eugene A. Cernan
CMP	Command module pilot	Ronald E. Evans
IMP	Lunar module pilot	Harrison P. (Jack) Schmitt
SC	Unidentifiable crewmember	
MS	Multiple speakers	

Mission Control Centers:

CC            Capsule communicator (CAP COMM)

LCC           Launch control center

In the text, a series of three dots (...) is used to designate those portions of the communications that could not be transcribed because of garbling. One dash (-) is used to indicate a speaker's pause or a self-interruption. Two dashes (- -) are used to indicate an interruption by another speaker or a point at which a recording was abruptly terminated. Words given unusual emphasis by the speaker are underlined.

The Apollo 17 mission was flown December 7 to 19, 1972; lift-off occurred at 05:33:00.60 G.m.t. (12:33:00.60 a.m., e.s.t.) on December 7. The CM was designated America and the lunar module was called Challenger.

(This page Unclassified)

**Tape** 17-03456

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER VAN DURING EARTH ORBIT**

### Time Segments (AET)

<b>From</b>	<b>To</b>
00 00 09 40	00 00 11 54
00 00 15 24	00 00 50 44

Recorded time off by approximately 1 hr 13 min 19 sec according to  
air-to-ground transcript. Time on these segments has been corrected.  
Voice fair to good; bad intermittent static.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

00 00 09 40 LMP ... a second.

CDR Well, you watch ... Let's - let's press on here.  
We got a ... to do.

LMP We're Mode IV?

CMP Yes.

CDR Okay, we're at a little less than a half a g.

CMP Less than half a g. Coming up on - -

CDR Okay, at 10 minutes, Ron, I'll be at about 40 ... - -

00 00 09 57 CC 17, the steering has converged \*\*\* great.

CDR Roger. The CMC is GO, 10 minutes, and 17 is GO  
on board.

CMP H-dot's a little bit low; not bad.

00 00 10 08 CC 17, Houston. You are GO for orbit - GO for orbit.

CDR Those are kind words, Robert. We're GO for orbit  
here.

CC \*\*\* show, Gene

CDR Okay, coming up on 30, Ron - -

CMP Okay.

CDR - - double check everything.

CMP 30, 347 degrees; 93.5 - Okay, we're a little bit  
high.

CDR Couldn't read a star if I had to.

LMP I couldn't either.

CMP Velocity's a little high.

00 00 10 32 CDR Okay, 10:30 and we're GO.

CMP H-dot's a little high. . . . - -

CC Roger, 17. You look great.

CDR Okay, to cut off the DI [?] equipment under ... control.

CMP Okay, I'll catch that.

LMP I sure don't want to hit this handle.

CMP No ... 25 - -

LMP Apogee.

CDR Mode IV right now; coming up on 11 minutes.

CMP Okay, 11 minutes and I'm 344 degrees. That's right on the money. How's the cabin, Jack?

LMP Cabin's great.

CMP Okay, velocity's a little bit high; H-dot's a little bit negative.

00 00 11 05 CDR Eleven minutes and we are GO.

00 00 11 07 CC Roger, Gene. And cut-off will be at 11 plus 47, 11 plus 47.

CMP H-dot's a little high. But that's all right.

00 00 11 13 CDR 11 plus 47. Roger.

CMP ... okay, 500 feet to go.

CMP ... 500.

LMP ... Apogee they're checking it whether ...

CMP (Laughter) Oh, yes?

LMP ... I'd like a ...

00 00 11 32 CDR Okay; 11:30 and we're GO here. And - Standing by.

CC Roger, Gene. \*\*\* time is still holding good, 11 plus 47.

LMP Okay, ... you on a ...

CDR Why?  
CMP ... There she goes!  
00 00 11 42 CDR Okay, cut-off at 42.  
CMP Don't worry. Well, that's the ... --  
CC \*\*\* Cut-off at 42. \*\*\* copy.  
CMP Okay, let's --  
CDR Okay, 25596, Ron.  
00 00 11 54 CMP 25 - 25596. Okay, KEY RELEASE it. Plus 1 --

TIME SKIP

~~CONFIDENTIAL~~

Tape 17-03456  
Page 4

[REDACTED]

00 00 15 24 CDR We got that, babe. We'll see you coming around.  
CC Good show, babe. A little late but a good show.  
CMP Outstanding ride.

00 00 15 34 LMP EMS FUNCTION, OFF.

00 00 15 35 CDR Okay, it's OFF.  
LMP TRANS CONTROL POWER, OFF.

00 00 15 38 CDR TRANS CONTROL POWER is OFF.  
LMP ROT CONTROL POWER, DIRECT, two, --  
CDR They're OFF.  
LMP -- DIRECT, two, OFF.  
CDR They're OFF.  
LMP BMAG MODE, three, RATE 2.

00 00 15 46 CDR Okay, RATE 2.  
LMP CM RCS LOGIC, OFF.

00 00 15 49 CDR CM RCS LOGIC is OFF.

00 00 15 54 LMP LAUNCH VEHICLE STAGE switch, OFF, verify.

00 00 15 54 CDR Okay. Yes, sir. It is OFF.  
LMP Okay. Rotational hand controllers 1 and 2, locked.

00 00 15 58 CDR They're locked.  
LMP CABIN PRESSURE RELIEF VALVE, two NORMAL and latched.

00 00 16 02 CDR NORMAL and latched.  
LMP REPRESS PACKAGE valve, OFF.

00 00 16 05 CDR Okay, I'm going to have to loosen up here and get at that.

[REDACTED]

LMP Okay, I'll hold that one. Circuit breaker - That's me. Okay, let me -

CMP Hoo hoo.

LMP Okay.

CMP (Laughter) Here we go. ... press - pressure ... - -

LMP Okay, that - that's that circuit breaker.

CDR Oh, okay. That's pushing that in there.

LMP Yes, I'd forgotten all about that. I should have warned you.

CDR Okay.

CMP Okay.

LMP That's something ... since the chamber, I guess.

CDR Okay.

00 00 16 29 LMP Okay. And install the COAS.

CDR Okay, I'm going to loosen up, get out of my helmet here and pick up ... - -

LMP Whoops excuse me, gang. That was me.

CMP Wow! That's a good one.

CDR Oh, man!

CMP That is a goodie!

CDR Still have to get out of my helmet.

CMP Whoo. Whoo!

LMP Okay, low.

CMP Hey, you guys care if I turn some lights on down there so I can see?

CDR Go ahead. Turn them on.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP (Chuckle)

LMP Okay, what do we do down here?

CDR Okay, Jack, you - pick up something here before the COAS.

LMP What is that?

00 00 17 02 CMP O<sub>2</sub> HIGH FLOW.

CDR O<sub>2</sub> FLOW; okay. That's because I'm going to have to pull the -

LMP Yes, you've got to change it - -

CMP You got your helmet off?

CDR Yes.

CMP You got your helmet off?

CDR Yes, I'm going to have to pull the repress or the -

LMP Yes.

CMP Oh, you cycle the SUIT CIRCUIT RETURN. Okay.

CDR Open - -

LMP Yes.

CDR Open it. Open it.

CMP I'll go - I'll go down and close the -

CDR Jack - -

CMP Purge - purge the cabin pressure.

CDR Did you give me something before the - before the COAS?

LMP No. Oh, yes, the REPRESS PACKAGE valve, OFF.

00 00 17 31 CDR Okay. Let me get REPRESS PACKAGE valve, OFF. Look at those aps - that amplifier.

~~CONFIDENTIAL~~

Tape 17-03456  
Page 7

LMP And let me know when you get COAS.

CDR Okay. Stand by.

LMP Because I checked it inadvertently here.

CDR Okay. No problem. I'm not going to get the COAS until I get my helmet out of the way.

LMP Okay.

CMP (Singing)

CDR We got the major things here. Ron can work on the optics, and I'll get the ...

CMP Couldn't we get the cabin pressure - EMERGENCY CABIN PRESSURE at BOTH?

CDR Okay.

LMP You want to - Okay, what did you want to do, Ron?

CMP Put the EMERGENCY CABIN PRESSURE at BOTH.

LMP Okay, do that.

LMP Then we'll take our helmets and gloves off.

00 00 18 06 LMP Okay, and SUIT CIRCUIT RETURN VALVE.

CMP I keep floating up to the top of the tunnel.

CDR Huh?

LMP Yes, that's because we're in ORB RATE. Don't forget.

CMP Oh, yes.

CDR Okay, the O<sub>2</sub> flow is down.

LMP What a ride that booster is.

CDR Okay.

LMP What a ride that booster is.

~~CONFIDENTIAL~~

CDR Yes, isn't that something?

CMP Man, that is a ride.

CDR And the best thing to do, Jack, while you're in the suit, is to stay in the seat, loosely buckled.

LMP Yes, sir. What's that?

CDR Okay, I don't know what that was. That was a spurious alarm.

00 00 18 42 CMP Hmm. Well, you got to -

LMP There was no caution and warning with that.

CDR Okay.

LMP Let me check my lamps. Checking lamps, gang.

CMP/CDR Okay.

LMP Good. Those are good.

CDR Whoops.

LMP That was it again.

CDR What are you seeing?

LMP Well, I see nothing. They're transients.

CDR Look at your - look at your gages.

LMP They're not triggering the caution and warning.

CMP Maybe we're getting just a caution and warning transient of some kind, huh?

00 00 19 24 LMP Three of them right in here.

CDR Jack, you don't want your helmet back yet, huh?

LMP Oh, I can take it any time, Geno - -

CDR Okay.

LMP - - and get it out of the way over here.

~~CONFIDENTIAL~~

CDR Okay, here's your helmet, Jack.

LMP Sure.

CDR And, Ron, do you want yours?

CMP Yes, I may as well get it out of the way.

CDR Get it out of the way.

CMP Get it ... here.

CDR Okay, here's yours.

CMP Okay, got it.

CDR Okay. And you're going to be - I don't know when you get into daylight, but your optics is your next -

CMP Next thing here, as soon as I get my - old helmet and gloves off.

CDR Man, I tell you that booster ride is something to behold.

CMP Gee whiz! I guess I wasn't quite prepared for the shaking and vibration until the thing lifted off.

CDR Okay, give that hatch is - -

00 00 20 12 LMP Let me know when you're ready for checklist stuff.

CDR Okay.

LMP Cabin still looks good.

CDR Let me tell you, those people down there must have had something worth waiting for. We saw that light before we left the pad. Did you guys see that? You saw it out your window, Ron? Jack's ... - -

CMP Yes.

LMP I didn't - -

CMP I saw - -

[REDACTED]

[REDACTED]

LMP I didn't see anything.

CDR I saw it out my window. Not enough to blind anything.

CMP Yes, not enough to blind anything but you could sure see it there.

00 00 20 51 CDR Boy, I tell you, I'm sure glad I didn't have to use any SPS stars out there. I never would have seen them. Look at that. Okay, here you go. Your first sight. You're looking to watch the sunrise. Jack, get out here.

CMP Oh, there it is. Wait a minute. I can't see it!

CDR Get out here, babe.

LMP Look at that.

CDR Come on out my window over here.

CDR Wait a minute - going to watch - Can you see it out Jack's window? Just - You'll see it the next time around. But it's your first view of the Earth, babe. And it's going to be your - your best - until you get a quarter million miles away.

CMP Holy mackerel.

CDR Just keep looking.

00 00 21 26 CDR There's some lightening out there. See it?

LMP Yes. Yes. I saw it. ... - -

CDR See it out there?

LMP Yes, yes. Right on the horizon.

CDR See those big thunderheads on the horizon?

LMP Yes.

CDR Look at the size of those things.

CMP Isn't that beautiful?

[REDACTED]

[REDACTED]

CDR I tell you - This is your first view of the wo - of being in orbit and that - you tell - you got the most beautiful view - -

CMP Look at the clouds down there. The clouds are sticking up above the horizon.

00 00 21 46 CDR Yes, sir. What have you got 16 54 on there for, anything?

CMP No. You can proceed auto.

CDR Okay.

LMP I was getting for the - just to make sure we're ORB RATE.

CDR That's ...

CMP Look at those clouds.

CDR Yes.

CMP Orange.

CDR Pretty spectacular. You just ... - -

CMP Blues, blacks.

CDR Now, lunar sunrise won't look like that, but -

00 00 22 09 CMP What time is it? Twenty-two. Yes, we're that much early.

CDR Here, I'll put that there temporarily.

CDR Now, you're going to see - -

CMP Oooh, boy.

CDR You see the bands come up now.

CMP Yes. There's the bands up.

CMP Must be the storms down in Africa, huh?

CDR Well, I don't know exactly where we are - -

[REDACTED]

CMP            ...  
CDR            - - but it's south.  
CMP            South - Sunrise has got to be over Africa somewhere.  
CDR            Yes. It may be out in the Atlantic by now.  
LMP            I think it's out over the water now.  
CDR            Jack, the COAS is - is in.  
LMP            Okay. You ready for some more?  
CDR            Yes. No. Watch - watch the sunrise.  
LMP            There it comes.  
CMP            I want to watch the sunrise.  
LMP            It's going to come right into my eyes - That's  
                the ... (laughter) ...  
CMP            Here it comes. Ka-boom.  
CDR            Take - take a look at it.  
CMP            Whoo-ee.  
LMP            Oh-ooh.  
CDR            Take a look at it.  
CMP            Look at that blaze!  
LMP            Pow!  
CMP            Wow!  
CDR            Take a look at it.  
LMP            Gosh darn it, yes.  
CMP            Ohh, that's bright!  
CDR            Yes, sir. Is that nice or not?

00 00 23 02 CMP Oh, it's just orange! You know. It starts out orange and then gets - becomes bright, and now it looks like a ... --

CDR Okay. Now go check your optics out because if they're no good, I'm going to throw you out the hatch.

CMP (Laughter)

LMP That's right. Geno -

CMP Okay, I got to - got to check the little optics ... --

CDR Okay, I'm ready, Jack.

LMP Okay, I want your SM RCS HEATERS, four, to PRIMARY.

00 00 23 21 CDR Okay. Four HEATERS to PRIMARY - 1, 2, 3, 4. They are PRIMARY.

LMP Okay, I want CAUTION and WARNING to NORMAL.

CDR Okay, CAUTION/WARNING --

LMP I'll get it.

CDR We haven't had that MASTER ALARM again, huh?

LMP No.

CDR Okay. And while you're talking, I'm going to get the - the ORB RATE ball out - or the -

CMP ORDEAL?

CDR ORDEAL.

CDR Go ahead, Jack; keep talking.

LMP BPC. Okay, these things ... It's already JETT.

CMP Doggone, I'd like to give them television.

CDR Okay.

~~CONFIDENTIAL~~

00 00 23 56 LMP 180 degrees. GN<sub>2</sub> valve HANDLE to VENT.  
CMP Okay.  
LMP I guess I'm going to have to do what you guys are doing to do that.  
CMP It sure gets light in here, doesn't it?  
LMP Hey, hey, Ron.  
CMP Yes.  
LMP Could - can you get the hatch stuff, or you want to check your optics first?  
CMP No, I can get the hatch stuff here if I can get my - my helmet.  
LMP A little longer ... --  
CDR -- ... get the optics first.  
CMP Let me get the optics work. Okay?  
CDR Get that cover off.  
CMP Yes, I'm going to do that. ... off.  
CMP Hot diggity dog.  
CDR Did it go?  
CMP I can't believe we've made it up here.  
CDR Did it go?  
CMP Ha ha!  
CDR Did it go?  
CMP What?  
CDR The optics?  
00 00 24 41 CMP I don't know. I haven't done it yet (laughter).

~~CONFIDENTIAL~~

CDR Okay, well, get on that one. That's one I want to know.

CMP Okay.

CMP Let me see ... (Singing) Do-do-do-doo do tum. Caution and warning. GDC align.

LMP Geno?

CDR Yes.

LMP Let me know when --

CMP Okay.

LMP Can you reach the GN<sub>2</sub> vent handle?

CDR Yes, sir.

LMP Right here?

CDR What do you want me to do?

00 00 25 09 LMP I want you to pull it to VENT.

CDR Okay, let me get around to this ... Okay. One of the things that -

CMP ... state vector here.

CDR Pulling to VENT?

LMP Pull to VENT.

CDR Ron, it should go to zero, huh? All the way?

CDR Pull to VENT? Okay?

LMP Yes.

CDR Pull to VENT?

LMP Yes.

LMP All the way.

CMP That ...

[REDACTED]

SC Okay.

CMP Yes, I can vent it all the way, now.

00 00 25 33 CDR You're over the Atlantic, guys, looking out your window.

CMP Over the Atlantic, huh?

CDR Best I can tell right now.

LMP Gosh darn. Pardon my French.

CDR Yes. Let me tell you. Just because you've been in orbit once, that don't mean you've been in orbit all the time.

LMP Hey, by the way, Ron, you and I finally qualified.

CDR (Laughter) We qualified, huh?

LMP I forgot - I was going to tell you when we went through 50 miles, but I was too busy.

CMP I forgot all about it.

00 00 25 58 CDR Okay. You want this reset?

LMP No. Just pull to VENT.

CMP (Singing) Da da-da da, do do do.

LMP Just leave it the way it is.

CDR Okay. It's going to - We're going to hit it.

LMP It doesn't say one way or the other, Geno.

CDR Let me just put it back here.

CMP (Laughter) It's black out there.

CDR There is is. Okay.

LMP ... just vent it to zero. That's all that's important.

CDR Okay. That's good.

[REDACTED]

CMP Let me see.  
CDR Okay. And the hatch is neutral?  
00 00 26 16 CMP I have the OPTICS POWER ON.  
CDR Ron, put the -  
LMP You're right.  
CDR Okay, what do you want me to do?  
LMP You never got a ... Okay, you ready?  
CDR Yes.  
CMP Let me see.  
LMP SM RCS. You got it?  
00 00 26 26 CMP G&N POWER is ON.  
LMP You got SM RCS PROPELLANT talkback's eight, gray?  
00 00 26 29 CDR They're all gray.  
CDR Yes. Okay.  
LMP Okay --  
00 00 26 30 CMP OPTICS, ZERO to OFF, and then ZERO  
LMP -- HELIUM 1 and 2, eight, gray.  
00 00 26 33 CDR They're eight gray.  
LMP SM RCS INDICATOR to HELIUM TANK TEMP, and check  
your quads.  
00 00 26 38 CMP OPTICS, ZERO -  
00 00 26 40 CDR Okay. HELIUM TANKs TEMP, and -  
00 00 26 41 CMP OPTICS MODE to MANUAL.  
LMP And then -  
00 00 26 44 CMP OPTICS COUPLING is DIRECT.

[REDACTED]

Tape 17-03456

Page 18

00 00 26 46 CDR Okay, all the quads are GO.

00 00 26 47 CMP SPEED is HIGH.

LMP You want some numbers or you - you like them?

00 00 26 51 CDR They're all nominal.

LMP Okay, check CM.

00 00 26 54 CDR Okay, COMMAND MODULE. They're both nominal.

LMP You got two gray talkbacks on the propellant; they're gray. Okay, and you like the ... - you like the numbers.

CDR Yes.

CMP Okay.

LMP Okay, lamp test, I did.

00 00 27 10 LMP Okay, you guys, MASTER ALARM. Stand by.

CDR Okay.

LMP Okay. That's good.

CDR I guess ...

LMP Reset.

00 00 27 20 CMP There it is.

CDR What?

LMP Another transient.

CDR Another one, huh?

LMP It tests - almost acts if it's something to do with the -

CMP Okay, here goes the old optics.

CDR Let me know if that cover goes.

CMP 1001, 1002, 1003, 1004 - Ohhhh! My gosh, there it went.

CDR Beautiful. That's ... over here.

CMP Ohhhhhh.

LMP Okay.

CMP Hey, it's floating off. It's a real bright thing. There's two pieces of it.

CDR Yes. That's great.

LMP Okay. Strut unlock lanyards, two, stow.

CMP Something else is flying all over the place.

CDR Okay.

CMP Yes, you can see ...

CDR Okay.

CMP Let me -

CDR Well - -

CMP Should I whip into a P52 here or - -

CDR I'll get Ron to do that in a minute.

CMP - - should I ...?

00 00 28 04 LMP DRINKING WATER SUPPLY valve, ON.

CDR Okay.

CMP Hey, that's a good idea.

CDR Check those optics out or you don't get any - -

CMP (Laughter)

CDR ...

LMP Hey, Ron. Hey, Ron, can you CLOSE the COAS TUNNEL LIGHTING MAIN B breaker down there?

[REDACTED]

CMP Yes. Just a second. Let me ...

00 00 28 17 CMP COAS TUNNEL A and B is CLOSED.

LMP Okay, thank you.

CMP Okay.

LMP And we got the helmet bags and accessory bags and tool E? Would you get tool E out of L-2, please?

CMP ... is off. Tool E out of L-2. Is that where that is?

CDR And that's one thing we'll need real quick.

LMP Okay, - -

CDR Want some ... - You can't get it - -

LMP I'll get it in a minute, Gene. I want to get squared away here and then I'll - It's just as easy this way.

CDR Okay.

LMP Let you guys be at my beck and call. If cabin pressure -

CDR We got to get to those radiators ...

LMP Is greater - -

CMP Get some radiators up.

LMP - - than 5.3, O<sub>2</sub> FLOW ... - -

CMP Oh, you kind of get stuck in these places.

CDR Got it, Ron?

CMP (Humming)

CDR Here comes Africa.

LMP Okay.

[REDACTED]

CMP (Humming) Hey, I can still see those dust covers whipping out through there.

CDR Okay, let's - let's press on and get this done. It's getting warm in here.

LMP Yes.

CMP/LMP Okay.

CMP ...?

LMP Main reg check, Ron - whenever you're ready - You want to leave that?

CDR We can get the main regs later.

LMP Okay, secondary rad leak check.

CDR Oh, we can?

LMP Ready, Geno?

CDR Yes.

00 00 29 32 LMP Okay, I'm going to SECONDARY.

CMP ... - -

CDR - - - quantity.

LMP SECONDARY GLYCOL to RAD valve, NORMAL for 30 seconds.

CDR Okay, GLYCOL to RAD, SECONDARY, NORMAL for 30 seconds, coming at you.

LMP And then it's going to be bypass.. Give me a mark.

CDR ...

LMP You got it?

CDR Not yet.

CDR Not yet. ... tool E ... off here.

LMP Oh.

[REDACTED]

[REDACTED]

CDR Okay, you want it NORMAL?

LMP NORMAL for 30 seconds.

00 00 30 04 CDR MARK it. It's NORMAL.

LMP Okay.

CMP Hey, you can see a star.

CDR Well, that's what you're supposed to, babe.

LMP It's in the daylight, too.

CDR Yes.

CDR Look at - Did you ever see a blacker sky than that, though?

LMP Yes, about 2 minutes ago.

00 00 30 24 LMP Ten more seconds, Gene.

CDR Okay. Is she looking good to you?

LMP Yes, looks good.

CDR Okay. ORB RATE, by the way, is tracking.

00 00 30 35 LMP Okay, you can go to the BYPASS.

00 00 30 38 CDR Okay, it's back to BYPASS.

LMP That's good.

CDR Okay.

LMP And - Okay, GLYCOL RESERVOIR BYPASS valve, OPEN.

00 00 30 47 CDR GLYCOL RESERVOIR BYPASS is OPEN.

LMP Okay. GLYCOL RESERVOIR OUT valve, CLOSED.

00 00 30 52 CDR OUT is CLOSED.

LMP GLYCOL RESERVOIR IN valve CLOSED.

00 00 30 55 CDR IN is CLOSED.

[REDACTED]

LMP PRIMARY ACCUMULATOR - -  
CDR Okay.  
LMP - - quantity -  
CMP Is up (chuckle).  
LMP Interesting.  
CDR You want to try - -  
LMP 40.  
CDR - - try filling it?  
LMP Yes, we're going - let's put something in it. PRIMARY ACCUM FILL valve, ON, until 50-55. I'll give you a mark.  
00 00 31 18 CDR Well, I don't know whether I meant it or not, but it looked like it was ON.  
LMP There - Whoa.  
CDR No. Which way?  
LMP Turn it OFF.  
CDR Huh?  
LMP Turn it OFF.  
CDR Whoops. ... - -  
LMP That's interesting. Do it again.  
CDR Well, it was - it looked like it was ON to me.  
LMP It - No, it - it jumps, Geno, and - I didn't - I guess I didn't give you enough time.  
CDR Okay, yes.  
LMP It's only 45 now.  
CDR Okay, try - It's ON -  
[REDACTED]

[REDACTED]

00 00 31 36 CDR MARK it.

LMP Okay.

CDR You got that. It was OFF. It was okay.

CMP Now - now turn it OFF.

CDR Oh, OFF?

LMP Yes.

00 00 31 42 CDR Okay, it's OFF.

LMP Okay, I got - 50. One more time, please.

CDR Okay.

LMP For some reason, there's a - -

CDR Okay.

LMP - - there's a 10 percent bias on it.

CDR There's a hysteresis in it.

LMP Yes. No, it just holds there when it's ON. Okay, now turn it OFF.

CDR Okay, it's OFF.

LMP Good; 55. Right in there. Okay, ES - ECS flap  
ro - FLOW CONTROL.

CDR There's a little geology for you, Jack.

LMP I hope I can look next time.

CDR Okay.

00 00 32 12 LMP Okay, FLOW CONTROL, POWER - POWER. PRIMARY GLYCOL  
TO RAD valve, NORMAL. Push. That's why I want to  
get going.

00 00 32 21 CDR PRIMARY GLYCOL TO RAD - Push. It's NORMAL.

00 00 32 25 LMP Okay, ECS RAD HEATER, PRIM 1. Okay, PRIM OUT be-  
low PRIM IN. We're already there. That's beautiful.

[REDACTED]

CDR That booster ride is just un - just absolutely incredible.

LMP Okay, ECS RAD talkback gray.

00 00 32 48 CDR It is.

00 00 32 51 LMP GLYCOL EVAP, TEMP IN, going to AUTO.

CMP I guess it's good to take a focus.

00 00 32 59 LMP Okay. POTABLE H<sub>2</sub>O HEATER going to MAIN A.

CMP ... focus ...

CDR How's it looking to you, Ron?

CMP Well, I can't get the crazy thing to focus.

LMP Let me know when you can do a main reg check.

CMP Okay.

LMP Ready, Gene.

CDR Yes.

LMP Let's see - I'm in a fuel cell EPS. Let's see - ECS monitoring, SPS - The rest of it's mine. GDC align is - You got to do.

CDR I'll take care of that.

LMP And then there's a sequence camera unstow and a mount your ORDEAL, if you haven't.

CDR Okay, ORDEAL is mounted and working, and I'll wait for Ron to finish the - -

LMP You've done the ORDEAL?

CDR - - the optics.

LMP Okay.

CDR I'll wait for him to finish the optics so we can - -

[REDACTED]

LMP I guess the rest of it is pretty much mine for a while.

CDR Yes. Why don't you do it now?

CMP I can't tell - Hey, that's not so bad. Ha ha! There we go. Where's my book?

CDR Okay. Right above you.

LMP Okay, you're going to --

CDR What's the temp - cabin temp, Jack?

LMP Huh?

CMP It's getting hot. Whatever it is. Cool it - yes.

CDR Cabin temp. Let's see if we can't cool it off.

LMP Cabin temp is low. Oh, cabin temp?

CDR Yes, sir.

CMP It's 65.

CDR It's hot in here.

LMP Well, let's see.

00 00 34 05 LMP We're in MANUAL. INCREASE must be increase temperature.

CDR Okay, did you want me to turn the DIRECT O<sub>2</sub> OFF, by the way? Did you call that out ...?

LMP No, I didn't call it out --

CMP No, no. It shouldn't be.

LMP No, I didn't call that.

CDR Okay.

CMP Okay.

00 00 34 20 LMP Okay, you're going to see some MASTER ALARMS here, gang.

[REDACTED]

CDR Okay.

LMP Any time you get one you don't like, let me know.

CDR I will. We've had four spurious ones without anything else.

LMP What a - -

CMP Okay.

LMP There seems to be some association with the - with working the switches up here on the caution warning panel, and I'll check that out later.

CDR Ron, if - I just want to lock this.

LMP Okay, MASTER ALARM.

CDR Okay. There you go.

CMP Plus 1080 - plus 080, plus ... 0.05.

LMP Okay. Fuel cell 1's good.

00 00 35 03 CDR MASTER ALARM.

CMP And plus 0018 - 018.

CMP Okay, and we'll torque those things at 35 - ... - -

00 00 35 16 LMP Two's good.

CDR Okay. You torquing now?

CMP No, not yet.

00 00 35 21 CMP 35:10.

CDR It was 35:25 up here, Ron.

CMP Oh, really? I've got 35:10 down here.

CDR 35:25 on two clocks up here.

CMP Hah!

CDR Okay, let me check the - the computer.

[REDACTED]

CMP Well, the event - -

CDR Computer is in - -

CMP Event timer's off a little bit, too.

00 00 35 40 CDR The computer is - the computer is with both of our clocks up here.

CMP Okay. What - what time did you say it was?

CDR It was 35:25 when you torqued.

CMP 35:25 then. Okay, somehow the LEB DSKY mission timer doesn't work - or it's late.

CDR I don't understand how that happened.

CMP (Laughter) ...

CDR Okay, why don't you put this up in the tunnel, if you can.

CMP Yes, I'm going to do that. Put it down here where it belongs.

CDR Okay, well, could you put mine down there, too, you suppose? Is there room down there to put it ... - -

CMP Well, you're going to ... if it - if it will stay.

CDR Well, I won't put it there then.

CMP Well, I can put it down here for the time being, but - -

CDR Well, that's all right. That's all right.

LMP Okay, that's spurious.

CDR That's spurious, nothing with it.

00 00 36 20 LMP Number 5. Check my amps once more.

CDR You weren't checking out things and -

CMP Let's see ...

[REDACTED]

LMP No.

CMP Okay.

LMP ... pressures. H<sub>2</sub>/3.

CMP How do I get some suits cooling? Aaah.

CDR Okay. You ... want to get these around, too, and I'll ... your -

CDR Put this around.

LMP Okay. Another one. Seems to be something to do - It's - maybe with switching up in here. I seem to get more of them when I'm working on the switches up here. I'll keep my eye open.

00 00 37 24 CDR Your gages all look good, huh?

LMP Yes, sir. I haven't found anything.

LMP There, you see. You did it, too.

LMP It's - -

CMP Okay.

LMP Possibly, it's this - these things being very low. What - -

CDR Just bouncing against them. Yes.

LMP What did - what did - Well, that was the SPS thing that Ron -

CDR Here you are, Ron.

CMP Okay.

LMP Hey, Ron, what was it that Gordy said about ... - -

CMP That's the SPS.

LMP That was SPS, wasn't it?

CMP Yes; switching

[REDACTED]

00 00 38 02 LMP SURGE TANK PRESSURE. The CRYO FANS; we'll leave them the way they are.

CDR Okay, Ron, you can wrap those around --

CMP Take that ... --

CDR -- and I'll get - I'll pick the -

00 00 38 15 LMP HEATERS are ON and up.

00 00 38 19 LMP RAD talkbacks are gray.

CDR Are you happy with the optics?

CMP Um-hmm.

CMP Finally got a drink of water.

CDR Congratulations.

LMP Okay, you're - you're way back there. I'm going to purge - Okay. How about a main reg check when you get a chance, Ron?

CMP Anybody want a drink?

LMP Not right now.

CMP Okay.

LMP Okay. MAIN REG B, CLOSED.

00 00 38 59 CMP MAIN REG B is going CLOSED.

CDR Okay. CABIN PRESSURE, select 1.

00 00 39 06 CMP EMERGENCY CABIN PRESSURE's - 1.

LMP Push to test.

00 00 39 11 CMP Okay, push to test.

LMP O<sub>2</sub> flow increase. Stand by; you might get a MASTER ALARM. Go ahead.

CDR Okay, it does. That's good.

[REDACTED]

CMP Whoo! That ... - -  
LMP Okay, MAIN REG B, OPEN, and A, CLOSED.  
00 00 39 19 CMP Okay. B is going OPEN.  
LMP A CLOSED?  
00 00 39 23 CMP A is CLOSED.  
CDR EMERGENCY CABIN PRESSURE, select 2.  
00 00 39 25 CMP Okay, it's going to 2.  
LMP Push to test.  
00 00 39 28 CMP Push to test.  
CDR Okay, that's good here.  
LMP MAIN REG A valve, OPEN.  
00 00 39 35 CMP MAIN REG A is OPEN.  
LMP CABIN EMERGENCY PRESS, BOTH.  
00 00 39 39 CMP Okay. EMERGENCY CABIN PRESSURE is in BOTH.  
CDR There's the coast of Africa.  
CMP I'd like to see something ...  
CDR Oh, you'll see it.  
LMP Okay - -  
CMP Get caught up, we'll ... - -  
LMP - - Get this other one over here.  
CMP (Laughter)  
LMP Get this - get this other one over here.  
CDR Oh, I got it. ... pull that.  
LMP And then you get a couple of bungees out of there,  
and I want to trade cards with you, Ron.

~~CONFIDENTIAL~~

CMP Okay.

CMP (Singing) Okay; 25 and added a 46, 71. A couple of bungees coming up. No, wait a minute, I don't know where they are. Normal ... (Chuckle)

CDR That GDC ALIGN pushbutton is really hard to push, Ron. There is a little step in it you got to ... - -

CMP Oh, it is?

CDR Yes.

CMP ...

CDR Okay.

00 00 40 49 CDR Give me a battery relay bus reading when you turn the ... on.

CMP ... 5 Bravo, do you?

LMP Yes.

CDR Are you sure of the optics ...

CMP Yes.

CDR Okay. ...

00 00 41 00 CMP Five Bravo is about 3.45.

CDR Beautiful.

CMP Yes, that's good, isn't it? Man, the Sun's shining right in those optics. Don't look in them. I won't.

LMP Okay. Let's see - and you're happy with the radiator. Looks like it's starting to flow in ... - -

CMP Think the ... - -

LMP Just ... on the ECS, Gene, okay?

CDR No, I just - -

LMP Have you done any of it?

CDR No.

CMP ... , Jack.

CDR It's all yours.

LMP What's that for?

CMP ... just stick one on a snap or something over there.

LMP Okay.

00 00 41 28 CDR Okay, Ron - Well, Jack can pick up - he can pick these things up, so we don't miss any of them. And you can start getting some cameras out.

CMP Okay.

LMP Okay, cabin DELTA-P.

CMP I going to try to keep the optics stowed, I think, unless I'm using them.

LMP Cabin pressure ...

CDR Make sure your eye pieces are on nice and tight, too.

CMP Yes, I just tightened them on. Oh, yes, that's what they call Sun shafting.

CDR Okay.

CMP Looks just like the simulator (laughter) (singing).

LMP 50 ... - -

CMP There, that's ... eyes right in the old gazoo. Well, let me adjust those later. (Clears throat)

LMP Okay, REPRESS PACKAGE.

00 00 42 38 LMP PRIMARY RAD talkback - gray.

CMP (Singing)

LMP ... Beautiful. ...

[REDACTED]

[REDACTED]

CMP Ha, hoo. SXT ...

CDR Okay, Ron, the next thing I'll need from you when you get squared away is your TLI cards. Then I'll give you the launch card.

CMP Okay. (Singing) ... T isn't getting ... cover.

CMP Hmm, huh (singing).

CDR Jack, the surge tank there may have hit partly off. It may have ... - -

LMP Yes, it - it looks a little low, Gene. I was ...

00 00 43 45 CDR Okay. It's back on.

LMP Okay.

CDR It's back on. It may have been partially off.

LMP All right. Thank you. I was assuming that was that bias we had, but that's - that did it - that's coming up.

CDR Okay, good. It was partially off. I hit it with my arm - -

LMP Okay. Thank you. ... - -

CDR - - ... checking ... - -

LMP - - ... I won't assume biases any more.

CDR Okay. You know, I must have caught it with my -

LMP Remind me to check that again, if I don't - -

CDR Okay.

LMP - - remember it.

CDR That's why I'm walking around the cockpit, to make sure we got it all.

LMP Okay.

CMP ...

[REDACTED]

CDR Is this yours, Ron?

CMP Yes. Okay, let's put a - says a nominal and a manual TLI - 0. That's the first thing that comes up.

CDR Okay.

CMP Okay, and then we will put TLI-1.

LMP Okay. I did it again. It is switching on panel 2. I'm sure of it, almost, now.

CMP ... boost?

LMP It does it in CSM normal position. Well, it did - it did it in boost, too. Did it in boost, too.

CDR Okay. We got the nominal TLI-0 up here.

00 00 44 53 CMP Okay. You want a nominal - Let's see, what do I want to do? S-IVB TLI-1?

CDR Yes. You've given me four cards. I don't know --

CMP Well, here; why don't I keep them in my pocket until we --

CDR Well, wait until we pass TLI-0 --

CMP -- ... TLI-0.

CDR I got the TLI-0s here.

CMP I'll keep those in here.

CDR We are coming out over the Indian Ocean. I can't really tell you where, guys, but -

CMP Hoo! I wonder if I could take a leak? Do I have time to take a leak?

CDR I am going to have to empty my leak when I get out of my suit.

CMP Well, I can't do that right now (laughter).

00 00 45 36 CMP Let's see here. We got to get a camera out, huh?

[REDACTED]

CDR Yes, get you cameras, that's the next thing.

LMP You need two of them - the 16 and the - You want some words on what - what to put on them?

CDR Why don't you press on --

CMP Not yet.

CDR -- and I can work with him on that.

LMP Okay. Gene, you got that and that done.

CMP Let's see, what's holding this thing in down there, Gene?

CDR Probably these - these things right here. Is that holding it? Here, let me - let me pull it. Won't it just snap out?

CMP Wait a minute. Here's the snap over there.

CDR Okay, there's a snap down here. There you go. How you guys doing? Moving slow?

LMP Yes.

CMP Yes.

LMP I feel pretty good. I noted that --

CMP I got a little bit of a - I - I know that if I move fast --

CDR Okay, well, just --

CMP -- I'd start to get a headache is all I can say.

CDR Okay. Stay where you are and move slow.

CMP I been - I been floating around too fast down here ...

CDR I think you may have, Ron. You been bouncing around. Just take it easy and go slow. We're way ahead. We're way ahead. And if you feel like you want to get back in the couch, just get back in the couch.

[REDACTED]

LMP Okay, gang, I'm going to give you a - Well, I'm going to save that - until I get unzipped here a little bit. You got your GDC aligned?

CDR GDC is aligned.

LMP We're getting the cameras.

CDR Cabin pressure looks good to you, huh?

LMP Yes, sir; it's holding at 6.

CDR You got all the hatch configurations we want?

LMP Yes, sir.

CDR Okay.

LMP Very tight. Hatch is good.

CDR Neutral - neutral and latch.

LMP Yes, sir.

00 00 47 03 CDR Okay. And I'm double checked here on normal - normal and latched.

CMP You want to give me a mark on 48 there, Gene.

CDR Yes, I guess, ... 45 seconds. I wonder how that clock got off down there.

LMP Okay. You should have Carnarvon in about 5 minutes.

CDR Thirty seconds, Ron.

CMP Okay. ...

CMP 36, 37 -

CMP/CDR 38, 39, 40.

CMP Okay, the EVENT TIMER's all right. I'll start on the ...

LMP Boy, that pressure comes up fast.

CDR On what?

~~CONFIDENTIAL~~

LMP On the secondary loop.  
00 00 48 02 CDR There it went - with that switch.  
LMP Sure seems to be it, doesn't it?  
CDR Which one - which - any of the switches.  
LMP Well, so far it's at random. I - Maybe we ought to keep a list.  
CMP Was that the - I just hit the MISSION TIMER START.  
CDR No, that was - -  
LMP No, I think it was mine, Ron; a bat swith up there.  
CMP Well, so far. I hope it's going in the bag.  
CDR You hope what?  
CMP I hope it's going in the bag.  
00 00 48 32 LMP Okay. You got all the optic stuff; right, Ron?  
CMP Um-hmm.  
LMP I'll check that one off. You getting the cameras?  
CDR He's working on it now.  
CDR Okay.  
LMP P52?  
CMP P52 is completed. Torquing angles were small.  
LMP Did you copy them?  
CMP/CDR Yes.  
LMP Okay. SCS attitude - Can you do that?  
CDR Yes, I can do the SCS attitude. That's no problem.  
LMP Okay. How about the docking probe? Is that in A - is that in AOS? They like to have that done ... - -

~~CONFIDENTIAL~~

CDR Yes, we'll wait until Ron gets back up here.

LMP Do they like that in AOS, or what'd we decide?

CMP No, they don't - -

CDR They don't need it.

CMP Well, they can't see anything anyway. They got their probe temperature whether it's extended or -

CDR It's just like ... maneuvers I was doing in the T-38.

CMP (Laughter)

CDR If your oil pressure doesn't drop.

00 00 49 33 LMP Okay, you guys. Except for - except for one check over here, which I am going to have to unzip here to do, I think -

CDR I gave you your ..., right?

LMP Yes.

CDR You happy with everything except the MASTER ALARMS?

LMP The MASTER ALARMS ... Whew!

CDR What was it?

LMP Oh, I got that change in the bias again on that H<sub>2</sub> tank. It's down to 90 percent. And surge tank's coming up, thanks to your little check. And MASTER ALARMS are the only thing that I found anomalous. Okay. ...

LMP It's like zero-g.

CMP Yes.

LMP Like man.

CDR Just - just move slow if it - Even if there's nothing bothering, you still move slow.

[REDACTED]

Tape 17-03456  
Page 40

[REDACTED]

CMP (Singing) It's a lot easier to get out (laughter).  
You just take it and float it up here.

00 00 50 44 LMP Okay, let me tell you what you want.

# # #

[REDACTED]

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03404

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MILA DURING EARTH ORBIT**

**Time Segments (AET)**

**From**

00 00 02 26

**To**

00 00 08 43

Comm fair to good

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
**Downgraded at 3-year**  
**intervals; declassified**  
**after 12 years**

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

00 00 02 26 CDR Okay; it's 19. Now it's 41 - 41. 3-1/2 g. Hold on. Okay. Five seconds. Pushing 4 g - 4 g. It's starting to hold on. Look at that son-of-a-gun! Man, this is ... (Laughter)

00 00 02 49 IMP Okay, Bob. I guess we got all five (Laughter).

CC They're looking here - looking good.

CDR Okay; stand by to tower.

IMP Sure felt like it. Stand by. Hold it. I think we saw them all from here.

CC Roger, Jack. And the thrust is GO on all five of them. They're running good.

00 00 03 02 CDR Okay; 3 minutes and we're GO.

CC Roger, 17.

IMP Say, this is smooth.

CDR Okay. I've got the tower switches on ... , baby.

CDR GO. Okay; 13. There she goes!

00 00 03 15 IMP Okay. We do have skirt sep.

00 00 03 18 CC We confirm skirt sep.

00 00 03 21 CDR 19, 16, 17, 18, 15, 13. Watch it Jack. There goes the tower!

MS There goes the tower! There she goes!

00 00 03 24 CC The tower. You're Mode II.

CDR Roger. Mode II.

IMP And the steam pressure is taken care of.

00 00 03 33 CDR Okay; MAN ATTITUDE is RATE COMMAND. Okay; I'll put the - -

00 00 03 37 CC The steering has converged. The CMC is GO. You're going right down the pike, 17.

[REDACTED]

00 00 03 39 CDR Okay, Bob. I just confirmed guidance.

IMP And the ELS SEP circuit breakers when you get a chance to, Gene.

00 00 03 45 CDR Okay, Bob. I got the ELS SEP circuit breakers, and we've seen it all: ignition, staging, and tower.

CC Roger. Got you.

CDR By the way, the cabin's sealed (laughter). You guys, we've got a long way to go.

IMP Okay; ... I'll see what in heck went wrong here. Let's see.

00 00 04 03 CDR Okay; 4 minutes and we're GO here, Bob.

00 00 04 06 CC Roger, Gene. We're going round the room. Looks GO here.

00 00 04 08 CDR Twenty-one degrees. We're Mode II, Ron.

CMP Okay; Mode II.

CC You're looking real good, Gene. Right down the line.

CDR Okay; it - it looks pretty good. Let me get a freeze here on the 04:30. I can barely see that. Let's see.

00 00 04 29 CDR Okay; 04:30, and we're still GO on board.

CC Roger, 17. You're GO.

CDR Let me tell you, this night launch is something to behold.

IMP Okay; H and H DOT are good.

CDR Okay; I don't know if you'll be able to pick up any horizon.

IMP Well, it's too dark - too light in here.

[REDACTED]

CDR Okay; let's keep on 1 g. I got some stars out the right, but I don't see --

00 00 05 04 CC Five minutes, Geno, and you're GO down here. You're looking great.

CDR What's that? Okay. Okay, Robert. We're go here at 5.

CMP Coming up on S-IVB to COI.

CDR You guys believe me about that S-I staging now?

IMP (Laughter) I can't believe how smooth! I can't believe how smooth --

CDR Okay. Let's keep this burn. We got a long way to go. We're only halfway there.

00 00 05 26 CC 17, Houston. Your times are nominal. Level sense arm at 8 plus 36. S-II shutdown at 9 plus 20. Nominal times -

CDR 8 plus 36 and 9 plus 20. Roger.

CMP Coming up on gimbal motors, Geno.

CDR Okay.

CDR I forget anything yet, Ron?

CMP No.

CDR Okay. We're still Mode II. Coming up --

00 00 06 00 CC Stand by for S-IVB to COI capability.

CC MARK. S-IVB to COI capability.

00 00 06 02 CDR Roger. S-IVB to COI. We're GO at 6. Okay; gimbal motors?

CC Roger, Geno.

[REDACTED]

[REDACTED]

CMP Go ahead.

CDR PITCH 1.

00 00 06 08 CMP Got it.

CDR And YAW 1.

00 00 06 10 CMP Got it. Go ahead.

CDR Okay. Wait a minute. I'm checking. PITCH 2.

00 00 06 17 CMP Got it.

CDR And YAW 2.

00 00 06 19 CMP Got it. Okay; you got a minus 0.58 and a plus 19.

00 00 06 22 CDR Okay, Bob. We got four good motors, and we're GO at 06:20.

CC Roger. And, 17, we --

CMP 1 g. Just like sitting on the pad, isn't it? ...

IMP Okay; our calibration on that tank changed a little bit again, apparently.

CMP Okay.

IMP Down to 90 percent.

CMP Right. Oh, on the tank 2?

IMP No, on the hydrogen.

CMP Hydrogen tank 3.

CC Stand by for S-IVB to orbit capability.

CDR Roger, Bob.

00 00 06 51 CC MARK. S-IV to orbit capability. And we'd like OMNI Delta, Jack.

[REDACTED]

LMP Roger. You've got it.

CMP Okay; 7 minutes, ... degrees.

CDR Seven ... , 6 degrees. How does that sound?

CMP Okay; that's good. That's 723. Let's see, 119 --

CDR We go to ...

CMP We're half a mile, half mile high.

00 00 07 08 CDR Seven minutes, Bob. We're looking good on board.

CDR Am I glad I took my hand off that abort handle.

CMP (Laughter) Man!

LMP So am I - I'll tell you (laughter).

CDR Okay; we got to get through this one and then through staging. Stand by for inboard. Okay.

CMP Tank pressure is --

CDR Stand by for inboard.

CMP Okay.

CDR Okay; we're g and a half. Stand by.

00 00 07 41 CDR We have inboard cut-off.

CC Roger, Gene. Inboard on time.

CDR Okay; and she pitches up just like the simulator.

CMP Yes, sure does.

LMP Uh-huh.

CMP Is that hard to reach, Jack?

LMP Yes. Why don't you take it out. I can't quite - g and a half (laughter).

[REDACTED]

[REDACTED]

CMP Yes (laughter).

00 00 08 03 CDR Eight minutes, and we are GO.

CC Roger, 17. You're looking great.

CDR Okay. Everything's okay.

SC ... are really - -

CDR Stand by for a PU shift.

CMP Is that what that was?

CDR Yes, I think it was.

CMP Yes, I think that was it.

CDR Okay, Ron. Level sense arm will be at 36.

CMP Thirty-six. Okay.

00 00 08 22 CC 17, Houston. You are GO for staging.

00 00 08 28 CDR Thank you, Bob. We are GO for staging up here.

00 00 08 43 CDR Level sense arm ...

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03409

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER <sup>BDA</sup> DURING EARTH ORBIT**

### Time Segments (AET)

**From**  
00 00 05 48

To

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide. SCG-11, Rev. 1, 1/1/66

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

00 00 05 48 CDR Are we getting anything yet, Ron?

CMP No.

CDR Okay. We're still Mode II. Coming up --

CC ... by for S-IVB to COI capability. S-IVB to COI capability.

00 00 06 00 CDR Roger. S-IVB to COI. We're GO at 6. Okay. ... gimbal motors?

CMP Go ahead.

CC ..., Geno.

CDR PITCH 1.

CMP Got it.

CDR And YAW 1.

CMP Got it. Go ahead.

CDR Okay. Wait a minute. Let me check it. PITCH 2.

CMP Got it.

CDR And YAW 2.

CMP Got it.

CDR Okay. You got a minus 0.58 and a plus 1.9.

CMP That's affirm.

00 00 06 20 CDR Okay, Bob. We got four good motors, and we're GO at 06:20.

CC \*\*\*ger. And, 17, we --

CMP One g? (Laughter) Just like sitting on the pad, isn't it? That's all there is to her.

LMP Okay. Our calibration on that tank changed a little bit again, apparently.

CDR Okay.

LMP Down to about 9 - 90 percent.

CMP 90? Oh, on the tank 2?

LMP No, on the hydrogen tank.

CDR Hydrogen tank 3, then.

CC ... by for S-IVB to orbit capability.

00 00 06 48 CMP Roger, Bob. S-IVB to orbit.

CC ... S-IVB to orbit capability. We'd like OMNI Delta, Jack.

LMP Roger --

CDR Okay; 7 minutes, 6 degrees. Yes --

00 00 06 56 LMP -- You've got it.

CDR -- 7, and I'm 6 degrees. How does that sound?

CMP Okay. That's good. 723 - let's see, 119.

CDR We got altitude. We're going to start --

CMP ... We're at half a mile, half a mile high.

00 00 07 07 CDR Seven minutes, Bob. We're looking good on board.

SC (Cough)

CC Roger.

CDR Am I glad I took my hand off that abort handle.

CMP (Laughter) Man! So am I. (Cough) I'll tell you (laughter).

CDR Okay. We got to get through this one and then through staging. Stand by for inboard.

00 00 07 29 CMP Okay. Inboard at 07:41 --

CDR Tank pressures .... good.

CMP Stand by for inboards.

CDR Okay.

CMP Okay. We're a g and 1/2. Stand by.

00 00 07 40 CDR We have inboard cut-off.

CC Roger, Gene. Inboard on time.

CDR Okay. And she pitches up just like the simulator.

CMP Yes. Sure does, doesn't she?

LMP Oh!

CMP Is that hard to reach, Jack?

LMP Yes. Watch it there. I don't know if you can quite - g and 1/2. (Laughter)

CMP (Laughter) Yes, it is.

00 00 08 00 CDR Eight minutes, and we are GO.

CC Roger, 17. You're looking great.

CDR Okay. Everything's okay.

CMP Gosh, these ... are really good.

LMP Yes.

CDR Let's stand by for a PU shift.

CMP Is that what that was?

CDR Yes, I think it was.

CMP Yes, I think that was it.

CDR Okay, Ron. Level sense arm will be at 36.

CMP 36, okay.

~~CONFIDENTIAL~~

[REDACTED]

00 00 08 20 CC 17, Houston. You are GO for staging.

CDR Thank you, Bob. We are GO for staging up here.

SC (Cough)

CMP Little over a g.

CDR Yes, there's a little chug.

CMP Yes.

CDR Okay. We got to get through this one. Coming in. We're in level sense arm now.

00 00 08 39 CC You have level sense arm this time, Gene.

CDR Roger, Bob. Level sense arm. Okay, Ron. Our next thing will be stand by for Mode IV, and we'll have staging - I'll call it out to you. And, little S-IVB; burn, baby, burn.

CMP ... on the S-II.

00 00 08 59 CDR Nine minutes, Bob, and 17 is GO.

00 00 09 03 CC ..., 17. You're GO here.

CDR Okay. Stand by; 10 seconds.

CC ... Mode IV capability -

00 00 09 16 CC MARK. Mode IV capability, and we copy cut-off.

CDR Roger. Mode IV. And we do have S-IVB ignition.

CC We see it, and the thrust is looking good on it.

CMP Jack, did you see that glow --

LMP Gee!

CMP -- go - go in past us?

CDR We saw that one, too, Bob.

[REDACTED]

CMP Did you see it go past us?  
CC Roger.  
LMP Yes. We're right in the flame.  
CDR Yes, that's what the Titan used to do, used to fly through the flame of that thing. Let's - let's press on here. We got - -  
LMP Okay. Okay.  
CDR - - a lot to do. We're Mode IV?  
LMP Yes.  
CDR Okay. We're at a little less than a 1/2 g.  
LMP Less than 1/2 g, sir.  
CMP Coming up on - -  
00 00 09 51 CDR Okay. 10 minutes, Ron, I'll be at about 40 - -  
00 00 09 54 CC 17, the steering has converged, and the CMC is GO. You're looking great.  
LMP - - ... at 13 ...  
00 00 09 58 CDR Roger. The CMC is GO; 10 minutes, and 17 is GO on board.  
CMP Okay; starts a little bit low, but not bad.  
00 00 10 06 CC 17, Houston. You are GO for orbit. GO for orbit.  
00 00 10 10 CDR Those are kind words, Robert. We're GO for orbit here.  
CC ... show, Gene.  
CDR Okay; coming up on 30, Ron. Let's - -  
CMP Okay.  
CDR - - doublecheck everything.

CMP 30, 347 degrees. 23.9; Okay. We're a little bit high.

LMP I couldn't see a star if I had to right now.

CMP I couldn't either. Velocity is a little high.

00 00 10 32 CDR Okay; 10:30, and we're GO.

CMP H-dot's a little high. Little bit low.

CC Roger, 17. You're looking great.

CDR Okay, the cut-off is VI plus 100. ... copy ... --

CMP VI plus 100. Okay, I'll cut you out.

00 00 10 49 CDR I just want to hit the ... that's all there is to it.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03407

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER TEX DURING EARTH ORBIT

Time Segments (AET)

From	To
00 00 00 03	00 00 04 54
00 00 59 51	00 01 17 34
00 01 22 38	00 01 27 49

Voice good; Time for first segment extrapolated from air-to-ground.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

00 00 00 03 CDR Roger. The clock has started. We have you.  
(Laughter) Clear the tower. Roger; tower. Yaw's complete. We're into roll, Bob.

00 00 00 17 CC ...., Geno. Looking great. Thrust good on all five engines.

00 00 00 20 CDR Okay, babe. It's looking good here; roll is complete. We are pitching.

SC Wow woozle!

CMP Okay, babe. Let's check the angles.

CMP Thirty seconds. We're going up. Man, oh, man!

00 00 00 36 CDR Thirty seconds, and 17 is GO.

00 00 00 38 CC ..., 17, you're GO.

00 00 00 45 CMP Okay, 1 minute, 68 degrees.

CDR Okay.

LMP Everything looks great over here, Gene.

CDR Okay. Okay, stand by for ... we're coming through for ... We'll be up ...

CMP ... looking for.

CDR Okay.

CC 17, stand by for Mode I Bravo -

00 00 01 01 CC MARK. Mode I Bravo.

00 00 01 04 CDR Roger. I Bravo; we're GO at 1 minute.

CC 17, you're looking great. Right on the line.

CDR Okay, we've got the RCS command.

00 00 01 11 CC Gene, you are feet wet - feet wet.

00 00 01 13 CDR Roger. Feet wet.

[REDACTED]

CMP Hey, this thing shakes like a ...

CDR Yes, that's max q, wait until we get out of max q; stay down there, q ...

CMP Okay.

CMP 01:30, about 50 degrees.

CDR 50 degrees. Okay, right on.

00 00 01 34 CDR 01:30, and we are GO, Bob.

CC Roger, Gene. You're looking great.

CDR ... 2 g, 2-1/2 g. See, it quiets down after max q.

CMP Yes, quiets down.

CDR Pushing 3 gs.

CMP Okay, I can't hold my hand up there any more (laughter).

CDR Yes. Okay, we're out of max q.

CMP Okay.

LMP Cabin's still looking good. ... PC.

CDR Okay, stand by for - -

CC Stand by for Mode I Charlie, 17.

CDR - - I Charlie - -

CC Mode I Charlie.

00 00 02 00 CDR Roger. I Charlie; 2 minutes and EDS is OFF and we are GO.

00 00 02 06 CC 17, you're GO.

CMP ... does pull a couple of g's.

CDR Three g's; 3-1/2. Stand by for inboard.

[REDACTED]

00 00 02 11 CC 17, you are GO for staging.  
CDR Roger. We are GO here. Did you get your VERB 82?  
CMP No.  
CDR Stand by for inboard.  
CMP Okay, that's VERB 82.  
LMP Yes.  
00 00 02 22 CDR Inboard cutoff.  
CC Stand by.  
CDR Okay, now hold on to that staging.  
LMP Stand by, gang.  
CDR Okay.  
CMP Here's 20, where's the ...?  
CDR Okay, it's 19.  
CDR Now at 41.  
CMP 41, okay.  
CDR 3-1/2 g's. Hold on.  
CMP Okay.  
CDR Five seconds. Pushing 4 g's.  
CMP 4 g's.  
CDR Told you to hold on. Look at that son of a gun.  
CMP Man. ... criminly (laughter).  
00 00 02 49 CDR Okay, Bob. I guess we got all five.  
CC Looking good here - looking good.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP Okay, stand by to ...  
CDR Sure felt like it. Stand by; hold it.  
LMP I think we saw them all from here.  
CC Jack, the thrust is GO on all five of them. They're running good.  
  
00 00 03 02 CDR Okay; 3 minutes and we're GO.  
CC Roger, 17.  
CMP Hey, this is smooth.  
LMP Okay. I got the tower switches ...  
CDR Come on, baby. Go.  
CMP Okay, 15. There she goes.  
CDR Okay. We do have skirt sep.  
LMP 19, 16, 17, 18 --  
  
00 00 03 18 CC We confirm skirt sep.  
CDR Watch it, Jack.  
  
00 00 03 24 CC ... tower; you're in Mode II.  
CDR Roger. Mode II.  
CDR Okay, ATTITUDE ... RATE COMMAND.  
CMP Okay, ...  
CC ... has converged. The CMC is GO. You're going right down the pike, 17.  
CDR Okay, Bob, I do confirm guidance.  
CMP And ELS sep circuit breakers, when you get a chance there, Gene.

~~CONFIDENTIAL~~

CDR Okay, Bob. I got the ELS sep circuit breaker.  
And we've seen it all: ignition, staging, and  
tower.

CC Got you.

LMP By the way, the cabin sealed.

CDR/LMP (Laughter)

CDR Okay, guys. We got a long way to go.

LMP Okay. I'll see where we're ... here.

00 00 04 03 CDR Okay; 4 minutes and we're GO here, Bob.

CC Roger, Gene. We're going around the room. Looks  
GO here.

CDR 21 degrees; we're Mode II, Ron.

CMP Okay.

CC ... right down the line.

CDR Okay. It's a - it looks pretty good.

CMP We get a freeze here on the 04:30.

CMP I can't - barely see that, let's see.

00 00 04 29 CDR Okay; 04:30 and we're still GO on board.

CC Okay, 17. You're GO.

CDR Let me tell you, this night launch is something to  
behold.

LMP Okay. H and H-dot are good.

00 00 04 54 CDR ... Pick up ...

TIME SKIP

~~CONFIDENTIAL~~

00 00 59 51 SC Well, I'll tell you ...  
00 01 00 05 CDR Okay, 11, 6 ...  
                CMP (Laughter)  
CDR ... pretty stingy with the tape there ... piece  
about a foot long.  
CMP A foot long?  
CDR Oh, this'll do for now. I'm just going to put  
this here, if you've got any other things ...  
CMP Man, are we moving. Holy mackerel.  
00 01 00 33 CDR Don't let it out, Ron.  
                CMP I haven't had a chance to look out the window yet.  
CDR That's all right, get back to work.  
                CMP (Laughter)  
CDR Here it is.  
LMP That was as hard as ...  
CMP Oh, it didn't hit it.  
SC No.  
CDR I hope that doesn't mean anything, but it sure  
could be a pain in the neck, even if it doesn't.  
CMP ... he was doing isn't very loud, is it?  
CDR No. (Humming)  
LMP It's just a big lake region.  
CDR ... what's that with trees and grass?  
SC ...  
LMP ... map out and ... look at it.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03407  
Page 7

CDR You got ...?

LMP Got the weather map.

CDR Okay, we got the SPS ref check to do yet?

LMP Sure.

CMP Yes, I ... it. (Laughter)

CDR No, we're not - we're not doing a darn thing up here ... spacecraft.

CMP Oh, really?

CDR We're way up here ...

CMP There it is.

CDR And we're moving north there.

CMP Oh, look at the coral reef there, Geno.

CDR Yes.

CMP Look at it; that's coral.

CMP Too bad the Bahamas - well, you'll see the Bahamas in daylight, as far away as the Moon, but they really get bright.

LMP ... over in ...

CMP Fantastic! Coral atolls.

LMP I wonder what that ... looks like from the ground.

CMP Oh, boy, I wish I'd put my - -

CDR Okay, troops, let me get you back and squared away here, I mean checklistwise.

CMP ... reference setting ... computer.

CDR I will, I will.

LMP Yes, I'll get that.

~~CONFIDENTIAL~~

00 01 03 20 CMP VERB 16, NOUN 20.

CDR I got it.

CMP Select number 1, FDAI.

LMP Okay, got it.

CMP FDAI SOURCE to ATTITUDE SET.

LMP Yes.

CMP ATTITUDE SET, GDC.

LMP Yo.

CMP Attitude set dials, null number 1 error ...

LMP Okay.

CMP Then key your verb when they're nulled.

CDR Okay. Do we call up ...?

CMP Oh-ho-ho.

LMP One, we've about 15 minutes of sunset, Gene. Okay, 8 minutes earlier, no - got less than that - 8 minutes earlier - -

CDR Okay, here's the numbers, Ron, if you want to write it down.

CMP Okay. Wait just a second. Un poquito.

CMP Okay.

CDR What do you want, NOUN 20 first?

CMP ... yes, NOUN 20.

CDR 179.77.

CMP 179.77.

CDR 118.95.

CMP 118.95.

CDR 359.59.

CMP 359.59.

CDR Okay, next will be 180.3.

CMP 180.3.

CDR 119.75.

CMP Okay. Okay.

CDR Then 359 ... .0.

CMP Degree of pitch, got that?

CDR Okay, that'll be 114-1/2 and 115 - about - about a degree.

CMP ...

LMP Got 8 minutes to Hawaii AOS.

00 01 05 42 CDR Would you believe the GDC drifts just like it does --

CMP Like it does in the simulator?

CDR Can't believe it does that.

CMP (Laughter) It's not supposed to do that.

CDR Well, I discovered one thing, I'm ... looking at the time on the checklist that the tape ...

CMP ...

LMP ... I will have a drink of water, though.

CMP That's good water now - good water now.

LMP Aren't we supposed to use our little thing?

CMP I don't know. We're not - not keeping track of it now, so I figure we'll start tomorrow.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CDR You don't have one of those ...

CMP ... yet. I don't know, are those going to be big enough? Got some other kind somewhere, but I ... find ...

CDR Well - -

CMP ... will. ... floating up to the top of the tunnel ...

CDR ... great, huh?

SC ... feel ...?

SC Yes.

00 01 07 25 LMP Okay, sports fans. You want to extend the docking probe or do you want to wait?

CMP Whoo, I think I might as well do that.

CDR Try to extend the docking probe. (Humming)

CDR Are you - are you passing out our stowage ET bags?

LMP No, not yet. I better get some, hadn't I?

CMP You need some for TLI?

LMP No, I just thought you'd need some to ...

CMP Oh, okay.

CMP I got to figure out where to put them.

CDR You want - you want me to read you the checklist?

LMP Let's see. You guys finished your redundant performance check, didn't you?

CDR Except for the ... with the clouds, with the Sun putting shadows on the surface out there.

CMP Hey, we're pretty close down there, you know.

~~CONFIDENTIAL~~

CDR Yes, we're getting close to sunset --

CMP Oh, there comes the sunset. Whoo!

CDR Man, that's - what did I say? Did you ever see the shadow up on those clouds?

CMP Yes.

CDR Good grief.

CMP What is the - what are those bright spots in the clouds there? What are those?

LMP Oh, that's your spot - that is the --

CDR That's the cloud in the shadow, see, the shadow's gone a long way.

LMP That's at high cg [?]. That's 6 cg --

CMP Oh, that's 6 cg.

LMP In fact, it's a little low-pressure area, see it?

CMP Yes.

CDR Looking at everything upside down.

LMP Why don't you get our retro orbit chart out when you go into the data file, Ron.

CMP Okay.

CDR ... might take the Flight Plan out.

00 01 08 56 LMP There are some pretty lively looking clouds down there.

CMP Yes. Yes, yes.

LMP Better than ...

CMP Are we going right around the equator, must be.

CDR Yes, we're - we're northwest of Samoa.

[REDACTED]

CMP ... we went on a 91 degree ...

LMP There's a good-looking cloud for you; look at that one.

CMP Yes.

LMP Boy, you could snap a picture of that. (Chuckle) I forgot I got the darn camera.

LMP ... be underexposed.

CDR I can get that, Jack; give me that.

LMP I got it.

CDR ..., Okay.

LMP There's some big clouds --

CDR That little round one, you mean?

LMP Yes.

CDR Yes, there's another one - yes.

LMP ... up in here.

CDR And there's another one over here on my side, if you'll give me the camera.

LMP Okay, it's at 5.6; might want to open it up more.

CDR I don't know - I don't know if I can get it now, it's going to be hit and miss.

LMP That's the ...

CDR Well, I guess it is.

LMP How about out your window, Ron?

CMP I can see it, but --

CDR No, it's too late --

[REDACTED]  
CONFIDENTIAL

CMP Too late now; I'm in the dark.

LMP Okay, it looks like - something ... pad.

CMP Okay, how about the old docking probe - -

LMP Hand me the camera and I'll put the ...

CMP - - docking probe circuit breakers.

CDR Okay, you got - circuit breakers are IN.

LMP Okay, let's go by this checklist and make sure ...

00 01 10 20 CMP DOCKING PROBE circuit breakers, two, CLOSED.

LMP They're CLOSED.

CMP Okay.

CMP DOCKING PROBE, EXTEND/RELEASE; EXTEND/RELEASE until probe extension. Okay, I'm going to hit it real lightly. ... barber pole and gray. I hear a - I thought it went bump, didn't it?

LMP I couldn't tell.

CDR That was me with the camera.

00 01 10 40 CMP ... go to EXTEND. It's out. Okay. Do that. Go to RETRACT. Go gray?

LMP They both popped in a hurry, didn't they?

CMP Yes, that really goes great. Okay, probe return.

LMP How did it go again?

CMP RETURN and RETRACT is gray. Okay, DOCKING PROBE EXTEND/RELEASE. I don't know whether - okay, RETRACT. Okay, we'll keep it in RETRACT until TLI. Copy TLI abort pads.

CDR We got everything on the checklist?

CMP CEX at the moment ... , I mean, 1/250.

CMP (Humming)

LMP Better keep trying to hold things up, so ... won't ... one.g ...

CMP Okay, we got - we got everything on that checklist, ... ?

LMP Okay, I'm going to go back through it, then.

CMP I think we're in good shape.

CDR And Hawaii is what, 01:17?

LMP Yes.

LMP You got the docking probe set?

CMP Yes, that's ...

LMP Hawaii is at - 01:17:24, and we leave it at 22:49 ... 54.

00 01 12 42 LMP Let's see - yes, better get back.

CMP (Humming)

LMP Okay, Geno. Let me go back for you.

CMP Oh, that's great ...

LMP What is this stuff, commander's splashdown speech?  
(Laughter)

CDR What's that? What?

CMP (Laughter)

LMP Commander's splashdown --

CMP Commander's splashdown speech ... What's it say?  
(Laughter)

LMP It says, "Commander's splashdown speech" ... decal put on - on the door there with the ...

CDR Okay, going backwards, you guys got the SCS attitude reference component check - P52, the optics dust cover, the camera, just about finished the secondary ECS ... Okay, there's the Entry Checklist.

LMP The ORDEAL mounted and initialized.

CMP Update book - you want to update book ...

CDR ... want the Flight Plan ...

LMP Well, I don't need it right now. All right, I've got everything I need in here. I want to give you ... cards, so tell me when you want them.

CMP I just don't know where to put them yet.

LMP ...

CMP ... survival kit.

LMP Unstow ... camera, got that; GDC is aligned. SPS is checked except for couple of items, which I'll do. ... EPS, fuel cell purging, and the heaters are on.

00 01 14 57 CMP Maps are hard to get out. Hey, you want a map?

CDR Yes. ...

CMP Rescue book, don't need that. ... it on 13, you want it on 13?

LMP Might as well get it, I guess, while ... here.

CDR You got the EPS configuration, main ...? You guys went through that?

LMP Yes, ...

CDR Okay, ...

LMP Got a map ... somewhere.

CMP Hey, see what's in there, Gene. I don't know what's in there.

[REDACTED]

CDR I hope the - well, it's Systems Data - -  
LMP That's what I hope it is - -  
CDR - - and Flight Plan volume 1 - -  
CMP Okay, that's what it was - -  
MS And malfunctions.  
CMP Good, that's good. Okay.  
LMP Let's see, this looks like a LM thing here.  
CDR What's that? Oh. We don't need that yet.  
LMP SEG ...  
CMP LM transfer.  
CDR Yes. Sure.  
LMP ...; look at that.  
CDR Is it in there? ...?  
CMP Is that in the Flight Plan?  
CDR Oh, those son of a guns.  
SC (Laughter)  
CDR ... those finks!  
CMP (Laughter)  
CDR Look at those finks!  
LMP What did they do?  
CDR ... Everywhere. Look it.  
CMP (Laughter)  
CDR Those finks.

~~CONFIDENTIAL~~

CDR Oh, my gosh. That is almost a crime; how can I peel that off?

CMP We (laughter) got to peel that off to get to it.

CMP Thanks a lot, Gene, stand by.

CDR Okay. How could anybody do that? Over Hawaii?

00 01 17 12 LMP Yes, we're there.

CMP Go ahead.

LMP ..., Gene, never saw that one before it was in there.

CDR Journey's lift-off receipt [?]. (Laughter)

00 01 17 25 LMP Hello, earthlings, we are back with you.

CC Roger, Jack. Read you loud and clear; how us?

00 01 17 34 LMP You're loud and clear, and - ... comm ... change in AOS/LOS stuff.

TIME SKIP

00 01 22 38 CC Negative on that right now. We'll see you at 01:28:59 through Goldstone.

CDR Okay, 01:28:59, Bob. We'll be there.

00 01 22 48 CC Roger, Gene.

CDR Five minutes, we'll be over the states, guys. Let's turn the lights on a little bit.

CMP You start to see a glow; there is a glow. See the horizon.

LMP You got pretty good eyes.

CMP Huh?

~~CONFIDENTIAL~~

LMP Oh, yes, there it is.

LMP Guess what I've lost?

CDR What?

LMP Camera.

CMP (Laughter)

LMP You see a camera floating around anywhere? I got it.

CMP (Laughter)

CDR Ron, - while you're down there, kick my suit up. I want it bagged up.

CMP Here it is.

CDR ...

CMP ...

CDR I thought I had that on.

CMP Here we go.

CDR Okay. ...

CMP Yes, ...

CMP See that glow out there, Gene?

CDR Yes, I see it.

CMP Is that the sunrise?

CDR No, I'm looking out the north horizon ...

LMP That's what they call a - ...

CDR Yes.

LMP Boy, did you see us go through that darn S-IVB fire ...?

CDR Yes, let me --

LMP What was it?

CDR That was the S-II staging, went through the S-II fireball, because it takes awhile for the S-IVB to light up.

LMP Yes, that's what it was.

CDR -- on that - on that Titan, between the S-I and the S-II --

CMP Is the tape going? Say, is the tape going, Jack?

LMP Yes, sir. How's that?

CDR You - you get that because there was a pause and a fireball would overlap you. And you could fly right through the flash smoke and flame wall.

LMP Well, that - we sure enough did it, I tell you. It wasn't awfully bright.

00 01 25 19 CDR We saw - we saw all three stagings, now, or all three ignitions.

CMP Yes, yes.

CDR I even had the up ... ignition on ... and that power was --

CMP There's the old dipper!

LMP That tower was spectacular.

CDR Yes, it was ...

CMP ... (laughter). That tower really - really went.

CDR Look at those stars. Gee, Jack, this is right, you get north - you're always on my north --

LMP ... stars.

CDR -- command module and in the LM. Okay. ...

LMP We're looking ...

CMP Ought to look at these optics at nighttime, I guess.

CDR You got to do another P52, by the way ...

CMP I do it now?

CDR Well --

CMP ...

CDR I can't believe that guy - did that to me. Not to ... but to me. ...

CMP (Laughter) Okay, AOS.

CDR Next P52, Ron, comes about 28. We should be just about 45 --

CMP Hey, there's Orion.

CDR -- about 45.

CMP ... very well, though.

CDR ... And - the ... are what, Jack?

LMP Well, AOS Goldstone - Goldstone are 28.

CDR 28. We ought to be able to see California in the dark. There's Baja.

LMP I don't have a good feeling for where our Flight Plan is right now, does anybody?

00 01 27 06 CDR Yes, 90-degree launch azimuth means we're on our next latitude. We're coming up on our next latitude, which is Cape ... latitude - the next latitude will be for the Cape.

LMP But we're going across here --

CDR A little bit more than the Cape, because it actually was 91-1/2.

LMP ... we're going across Arizona and that's Baja California, probably.

CDR Yes, we're coming up over San Diego; we should be  
...

00 01 27 47 LMP Turn on your lights, San Diego. Boy, it's pretty near over my home, I guess.

00 01 27 49 CDR Yes.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03412

APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER HSK TRANSLUNAR COAST  
Time Segments (AET)

From	To
01 21 30 19	01 21 33 18
01 21 33 36	01 21 39 39
01 21 40 24	01 21 40 31
01 21 47 48	01 21 49 21
01 21 51 15	01 21 52 45
01 21 54 56	01 22 00 12
01 22 00 22	01 22 03 27
01 22 04 09	01 22 09 27
01 22 09 29	01 22 14 18
01 22 14 31	01 22 19 46
01 22 20 21	01 22 24 36
01 22 24 52	01 22 24 52

Voice good; time very poor.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

01 21 30 19 CMP Okay. DAC is ON.

CMP Okay. Stand by for a zero. 3, 2, 1 -

01 21 30 34 CMP MARK it. That's RESET. Start the stopwatch.

CMP The camera's looking okay?

CMP Okay. Will do.

CMP Okay. You don't want to watch me fill that pan again, huh? You don't want to watch me fill the pan again.

CMP Okay. I'm with you. Actually, I've already cleaned out the - the little area there. Oh, okay.

CMP Well, we'll start at 2 minutes.

01 21 33 18 CMP Well, now all of the little metal chips in there are parallel to the YY axis.

TIME SKIP

01 21 33 36 CMP They're still on the front face of the lineal cell.

01 21 34 25 CMP Thank you ...

SC Is something bothering you there?

SC (Sneeze) ...

CDR How many of those do you have, Jack? Three all together?

CDR Now, wait a minute. You wore one. You putting on a clean one now? And you got another one in here? Four clean ones altogether? Is that right? Okay.

CDR What's happening, Ron.

01 21 39 39 CMP Well, the cells are changing.

TIME SKIP

01 21 40 24 CDR Where have you been?  
01 21 40 31 CDR ... back together.

TIME SKIP

01 21 47 48 CMP Okay, Houston. The DAC is OFF now.  
CMP ... Go ahead, Houston.  
CMP Okay. No problem. Good idea.  
01 21 48 58 CMP Affirmative; okay.  
01 21 49 21 CMP Okay. I opened the flow about four turns, a little bit is running out - there's one big bubble in it. And I still had a little bit left over, even though I wiped it out pretty good awhile ago. The meniscus is up to the bottom ring and I think if we put in eight things in there where it's going to try to get the meniscus up to the top baffle. Is that correct?

TIME SKIP

01 21 51 15 CMP Well, there must have been a few more bubbles down in there again. That was two turns now, and I've got it about half full all the way across. But maybe there's just about eight or 10 bubbles in it.  
CMP Okay. I guess we're recording on the DSE here. In case we don't have you, we're still recording on the DSE. That's three turns. The fluid is essentially about two-thirds of the way across it. What?  
CMP It's running, isn't it? The DSE is running, isn't it?  
CDR It should be.

01 21 52 45 CMP

It should be, and if you slow it down a little bit. Now it's filled all the way across. Looks like we got about nine bubbles in there, so far. We're still going on the first - fourth turn now and it still develops a meniscus around the lower baffle - the smaller baffle.

TIME SKIP

01 21 54 56 CMP

Okay. Looks like about six of the bubbles developed into three, for some reason.

CMP

Oh - oh. It was doing real well there. Then on the seventh turn, a bunch of bubbles came in again.

CMP

Okay. You want the DAC on when it starts heating up. That's what you're saying, right?

CMP

Okay. You know - I may have lost track of the turns here, but I think we've got 7-1/2 or 6-1/2 turns in here. And it still hasn't overflowed that first lower baffle. I've got a tremendous concave - convex surface on the fluid, but it still hasn't broken the meniscus on the first base - baffle.

01 21 58 53 CMP

Okay. We're going ahead and take it another turn, because it's my understanding we wanted to try to get it into the second baffle, anyhow. So, we'll take another turn of Krytox and put some more in there.

CMP

(Laughter) Okay. I'm afraid it will be all over the place if I do that, but I'll try it.

CMP

(Laughter) Right.

01 22 00 12 CDR

Okay.

TIME SKIP

01 22 00 22 CMP

... try ...

CDR

Had one somewhere.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP That was mine.  
SC Nobody ever ...  
SC Huh?  
SC ...  
CMP Ah-ha. Once you get it started around there it really goes all the way around. Okay. We got her in the second baffle. That takes some of the concaveness out of the - convexness out of the film, so I'll go ahead and turn the camera off and then start it again when the time comes.

CMP Okay. 3, 2, 1 -  
01 22 01 46 CMP MARK it. That starts.  
CMP There you go, Jack. If you get the chance, you might want to use the Nikon there and get a picture ...  
SC Want to hand me the ...  
SC Want the attitude ...  
CMP Yes, so kind of get the ...  
SC ...  
CMP Yes. Switch the background.  
01 22 02 57 CMP This one is going to be interesting. There are about a dozen, nine to a dozen - small bubbles right next to the inject board and then about the same number right in the center of the convex portion of it.  
01 22 03 27 CMP No, I didn't get to your question on that. In the lineal unit there are no bubbles whatsoever. And there might have been very slight movement. Matter of fact, I can see just a very slight movement, even now. The particles in there; they're still lined up in the YY direction essentially though,

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03412  
Page 5

although it looks like some of them may have deviated from the front of the lineal unit back toward the center or toward the back of the lineal unit, as you call it.

TIME SKIP

01 22 04 09 CMP Well, I missed the 2-minute start time, but I can keep track of it here. So, we'll start the DAC, and then I'll turn this to LOW at 02:45.

CMP Whoops.

CMP Okay.

CDR Squat down a little bit and I'll get you -

CMP And you still get this thing.

CDR Well, when you do you really shake it up.

CMP Yes.

CMP Okay. You know, just for future references here if we like to do things in zero g and without jarring or jiggling, we want to make sure that the switch actuates with a minimum of pressure.

LMP (Laughter) The camera, too, you might mention. I think the camera is jiggling a little ... shutter ...

CMP Yes.

LMP You want to leave it on?

CMP Yes.

01 22 05 36 CMP You have enough light to get that thing?

SC ...

CMP Should be. I hope.

SC ...

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

- CMP      What frame was that?
- LMP      ... frame.
- CMP      Okay. That's just now starting to develop. Looks like circular cells, great big ones. And then some of the big ones are subdividing now.
- CMP      The bigger ones are even - some of them are even getting bigger. One of them is - oh, about three-quarters of an inch in diameter, and it hasn't divided yet, at all.
- CMP      What frame was that?
- LMP      26 and 27.
- CMP      Okay. Frame 26 on the - -
- CC      ...
- CMP      Okay.
- CMP      26.
- LMP      26 and 27 ...
- CMP      Okay. Frame 27 was taken in elapsed time of about 4 minutes.
- LMP      I just took one of your nose.
- CMP      (Laughter)
- 01 22 07 40 LMP      Stu, this is Jack. I was taking the pictures. I took four pictures about 20 seconds apart - of the sequence just after he started it. And that ended with - or started with frame 26.
- CMP      Okay. That one cell I spoke of that was about three-quarters of an inch in diameter now is about an inch long and maybe three-quarters of an inch wide. Each - All of the cells seem to be bigger, in general. They're bigger this time, so two small ones about an eighth of an inch and - along one side. The other one is a half-inch, a half-inch - oh, a quarter of an inch, half-inch, and then a

[REDACTED]

circular when you get around the out s - out - annulus of the cup. Then you start getting circular sides instead of straight sides. All of the flow comes from a little center spot and flows outward from the center toward the outside of the cells. No, in this case all of the bubbles have disappeared, except two.

CDR Jack, ... over there where you were.

SC Right.

01 22 09 27 CMP The longest cell we see is a four-sided one --

TIME SKIP

01 22 09 29 CMP ... diamond. And it's an eighth of an inch on one side, an eighth of an inch on the other side, and maybe 3/16 on the other two sides.

CMP (Laughter)

CMP ... up here.

SC ...

CMP Yes, we're moving something close.

SC Okay.

LMP Houston, 17.

LMP At any rate, frame number 31 - frame number 31 and frames 24 and 25 show orientation of the experiment.

01 22 11 36 CMP And for information the first half of the experiment, we - orientation was 90 degrees from this one. (Laughter) The lineal cell was on the right, and the lineal cell was aligned with the XX axis.

CMP Okay. Something is a little different on this one here. Right at the top of the flow circle, it looks just like a finger. It's a curved surface that goes out and almost touches the - the circumference of the dish. And it looks just like

[REDACTED]

~~CONFIDENTIAL~~

your - if holding up your finger and looking at it. It's that type of a shape to it. It comes back down, and it's about a half inch wide. The flow again emanates from a source that is almost on the fingertip, you might say.

01 22 13 09 CMP Okay. Somehow, that fingertip finally touched the complete circumference, and the tip of the finger disappeared.

CMP Okay. My - my small a - one-eighth inch - one-eighth of an inch sided diamond joined with another one, now, and one side of the diamond is gone. I still have three sides of the diamond and the fourth side of the diamond, or the upper right-hand corner of the diamond, you might say, has disappeared and goes on with another little square - or rectangle. One - one end of the rectangle is about 3/16 of an inch long; the other two sides are about three-eighths of an inch long.

LMP ...

01 22 14 18 CMP There are almost - no, it's almost in the center. Towards the center. Almost in the center. On the left edge, as you look at the piece of equipment, as you're looking at it, there are absolutely no - -

TIME SKIP

01 22 14 31 CMP -- patterns at all. There is a flow. You can see a stream of flow. Whoops. When I get up there and start looking at it, and I blew on it when I was talking. You can see a stream flow from the circumference toward the outer group of cells. The outer group of cells is at least - half an inch from the circumference, though, at that point.

LMP Do you get the impression that there's a general migration of cells to the right or down? Like those two that are touching there in the upper part seem to stretch.

~~CONFIDENTIAL~~

[REDACTED]

CMP Stretch down in there?

LMP ...

CMP Yes. I think there's a general migration of - of the cells. Kind of toward the bottom of the circle, if you want to look at it that way. They seem to be stretching kind of in that direction, too.

CMP The first thing - -

CC ...

LMP No.

CMP No, toward the plus Y, as you're looking at it. Now, I'm trying to make all directions, with respect to the right-side-up of the equipment, you know.

LMP Are the chips going the same way?

CMP And, the first finger I talked about was at 12 o'clock. It has joined the edge now and almost disappeared. The second finger was - still essentially the way it was - is getting slightly closer to the edge. There's maybe - oh, less than 1/32 of an inch between the tip of the finger and the edge, and it goes out at - at 2 o'clock. Okay. From 3 o'clock on around to about 7 o'clock, the cells - It's in a shadow, and I can't see for sure if they're touching the edge or not, but it looks like they're probably essentially touching - sk - the edge.

CMP In a little bit. That's all right.

01 22 16 54 CMP And then from 7 o'clock on around to 12 o'clock again, none of the cells are touching the edge at all. And they're - oh, on the average of three-eighths of an inch from the outside circumference.

SC ...

CMP That's verified. It's up to the second baffle.

[REDACTED]

CMP All I had to do was start it in one position, and as soon as I started it - started it in one position, it whipped all the way around it. From the point I started it, it went all the way around in both directions.

CC Okay. That sounds beautiful. ...

CMP Yes. Right. I think in the low flow here, evidently, things even a little bit slower than they were in the high rate - in the high - in the high heat rate. But a little diamond, now, is almost joined with the rectangle. And I think given half a chance, it's tending to go into another five-sided figure.

01 22 19 26 CMP 17 - just about enough time. Let's see. ...

LMP We have those stream lines coming from the left of - of the ...

01 22 19 46 CMP Yes. You'd better go too. Let's see, it's 17, 18 -

TIME SKIP

01 22 20 21 CMP We started to move your switch without jiggling things. (Laughter)

CDR We what?

CMP And we started the cooldown at 18:40 on the watch.

CMP Okay. As we we're cooling down, the flow patterns tend to join together, so far. The ones on the outer periphery dissolve into straight lines. Straight lines em - emanating in a radial direction from the center of the circle.

SC ...

CMP Okay. I got a little bit of film left here with ... high.

SC (Laughter) Yes.

SC Digital timer.

SC What?

CMP I don't know if he found that or not. I guess I can't sleep with it.

SC ...

CMP My back is sore from sleeping underneath.

CDR Back?

CMP And, Houston, if you're listening; or DSE, if you're listening. Had a little bit of film - oop, there's the end of film right now. May as well stop it. Hey, I went to HIGH for a little ways.

01 22 24 36 CMP Well, I still had a little bit of film when the cooldown - the 2-minute cooldown period was left, so I went back to HIGH on the FLOW PATTERN just to see what would happen. And it looked like they were starting out with --

TIME SKIP

01 22 24 52 CMP -- larger-sized cells developing into smaller ones. And, initially, all of the cells were about a half an inch in diameter, and they were closer to the periphery of the dish than they were in the LOW FLOW position.

# # #

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~  
**(This page Unclassified)**

Tape 17-03403

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSLUNAR COAST**  
**Time Segments (AET)**

**From**

02 17 27 26

**To**

02 18 46 57

Comm fair to good; time good

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

02 17 27 26 CDR Okay, Bob. For the ALFMED, CDR will be in the left seat. CMP will be in the center seat with the ALFMED. For our reporting, when we get the VOX, we'll just call out our first names to shorten it and the comments following. And Jack will be recording.

CDR You might want to take a look at this, Jack. Wonder if this thing will work if I don't put a lightweight on. Yes this will work for me.

LMP No, it won't. It won't reach around him.

CDR What ALFMED experiment was it?

CDR Yes, I can wear it this way.

CDR Supposed to leave your eyes open? Huh? Either way, you say? Doesn't say in here - it doesn't tell you whether to leave your eyes open or not. See it anywhere, Jack?

LMP Not yet.

02 17 30 11 LMP Okay; the first flash is fairly important. ... Delta-T starts at then. Any subtle glows, clouds, or halos alone or with other events? Any apparent propagation? They want you to think, if you can, how long was its fraction of visual field? How sharp or diffuse?

CMP Okay.

LMP Any time you guys say "MARK it" at the same time, they're interested.

02 17 31 00 CMP Okay. Houston. How do you read on VOX with the lightweight headset?

CMP Okay.

LMP Okay. That's all that is pertinent here.

CDR Do I start the same time he does when I'm getting ready to go?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP Yes. Wait a minute. Let me get this old VOX set to go here, first.

LMP Okay. You got to do some things to it. You got to get - you going to put the lightweight on? Or are you - -

CDR Yes, I can put this on over - -

LMP You got to plug it in and everything.

CMP Yes.

LMP Okay. Remove cover plate and leave in A-8. Unstow vacuum cleaner cable. Panel 201, AC UTILITY POWER, OFF. Verify.

02 17 32 09 CMP Okay. UTILITY POWER is OFF.

LMP ALFMED POWER switch, OFF. Verify. POWER switch, OFF?

02 17 32 19 CMP Yes, POWER switch is OFF.

LMP Okay. You're connecting it?

02 17 32 26 CMP Okay. It's connected now.

LMP Okay. Panel 201, AC UTILITY POWER, ON (up).

02 17 32 33 CMP Okay. UTILITY POWER is ON.

LMP Okay; and get in the couch.

CMP Okay.

LMP Once you're settled down, you should - yes, settled down - have ALFMED CLUTCH to OPERATE.

CMP Let me get strapped in here somehow, or I'll float all over.

LMP You should don your blindfolds simultaneously. Don't anybody go to sleep. Stand by.

LMP Okay. Bottom and side it says to photograph.

~~CONFIDENTIAL~~

LMP This - this side and then I want to get down in front of you, I guess.

CMP Yes.

LMP Well, apparently they don't care whether you do it simultaneously or not, Gene.

CDR Okay. You want - you want ... put this on.

LMP Yes, they don't - they don't say that.

02 17 35 02 CMP Okay. My blindfold's going on now.

SC ...

CMP Okay. Sounds like they clipped. Okay. Someone will have to help me put this thing on now. Yes, just kind of like so. Yes. It goes around the old head. And then across the top.

LMP How's it feel?

CMP A little bit snug.

LMP Okay. Okay. You can't move around too much. That's not very good Velcro. Just barely on ...

CMP How's that?

LMP Pretty good.

CDR Okay. Let me get my pictures.

CMP I don't know --

CMP Yes, but you ought to ... maintain your head in the same position, if you can.

CDR Yes, I'm going to wait until I get ... The contrast is so great that I don't think I can get a picture.

LMP Is the switch on? Switch is to OPERATE.

[REDACTED]

[REDACTED]

02 17 37 32 CMP Switch to OPERATE now?

LMP Yes.

LMP You're going to have to turn that tape recorder off, or I'll never hear you.

CMP Why don't you turn it down a little bit?

CDR Okay, Ron. Can you let me get down here? And put your legs down, and I'll get a bottom shot.

CDR Picture of you lying there . . . I don't know what time - What time is it, Jack? I got Ron. I got his - Okay; you on? How long you had it on?

LMP Just put it on.

CDR 68:18:20. Look at that.

CMP Go to OPERATE while you're taking the pictures there.

LMP Well, but I'm not ready to record.

CDR I don't know what the VOX switch is. This must be the VOX switch right here.

LMP Want me to get it? Is this it right here?

CDR Right.

02 17 38 58 CDR Hello, Houston. CDR put his blindfold on at 68:18. I think I'm going to VOX.

CDR And how do you read me in VOX, Bob? This is Gene.

LMP Okay, Ron. I got --

CDR Okay. I'm conducting the experiment. And the - frame Sierra Sierra is now at 45. I got two shots. One - two from the side and two from the bottom.

CMP Hey, looks like a countdown for ready to go, Jack?

LMP No. You're on. Let me get that time. 68: --

[REDACTED]

CDR Hey, Bob, does it make any difference if your eyes are opened or closed?

LMP Okay. Where are my tables?

CDR Okay. Thank you.

LMP Okay. Ron, give them a MARK when you start, and I'll record it.

CMP Okay. We'll count down to start. 3, 2, 1 -

02 17 40 27 CMP MARK it. It's buzzing.

CDR Yes.

SC ...

02 17 45 35 CDR Change it. The other side is not very good.

CMP Two.

02 17 46 07 CDR MARK. Gene, I've got a series of random lines, which do not appear to be the width of my field of view, that are moving like a flashing horizon with thunder storms on the horizon. They're dimly flashing, and they're moving across the eye from left to right and from top to bottom, individually.

IMP Both eyes?

CDR Both eyes. It's stopped now.

02 17 47 02 CDR MARK. This is Gene again. Going from the upper left to the bottom right. Lines of the same sort of thing. Dimly lit flashing horizon-type flashes. But they're linear. They're linear, and they tend to come from the - either the upper left or the upper right and work their way downward. Now they've stopped.

IMP Both eyes?

CDR Both eyes.

02 17 48 50 CDR

[REDACTED]

MARK. Gene again. Both eyes. This time the same flashes in the horizon, but they don't seem to be moving out of both eyes. Tend to be up at the tops of both eyes. Just rapid, sequential, lightning-like flashes. They've stopped.

02 17 50 00 CDR

MARK. Gene again. Similar type of flashes. They don't seem to be moving, but they're coming from the right of the right eye and from the upper left of the right eye. And I can actually see an outline of a - of a curved horizon, and the flashes are coming out from behind it. They've stopped.

02 17 50 46 CDR

MARK. Gene again. I see - peripherally out of my right eye - I cannot see these flashes - but I can see peripherally the right-hand and the upper right-hand side of my right eye being lit up.

LMP Just flashes or clouds?

CDR Pardon?

LMP Are they flashes or clouds?

CDR This last one?

LMP Yes.

CDR They were peripherally. I couldn't see them. All I know is that there was some light out - peripherally - out - -

LMP A glow?

CDR Yes, but a flashing glow.

02 17 52 08 CDR

Oh, man, there's a good one. The left eye, right in the middle. It's almost a purple flash. It's still going. Right in the middle of my eye, and it's coming out behind a - a horizon that is almost - It starts out as a semicircle and then folds into a point like on a pencil. And then it disappears. That's the horizon, and the light is flashing from behind it. It's gone.

[REDACTED]

[REDACTED]

CDR Go ahead.

02 17 55 20 CDR Stu, we lost all that last conversation. You better repeat it.

02 17 55 49 CMP MARK. Ron. I got one. In the right eye coming from - back - going towards - Very narrow streaks.

CDR Okay.

02 17 59 25 CMP MARK. Ron. One about 12 o'clock in the right eye. Looked like it was just a spot.

02 18 02 43 CMP About 15 seconds ago. It's so dim I hardly noticed what it was, but kind of starting in my left eye and then - just a flash in the left eye and then a flash in the right eye. Very dim. Going left - from left to right.

02 18 04 38 CMP MARK. Can't tell if it's right or left eye. Looks like it's almost between the two eyes. There's a --

02 18 04 47 CMP MARK. One in the left eye just about right in the center spot; no streak or anything. Just a spot. First spot seemed to be right between the two eyes, upper half of the field of view.

02 18 08 42 CDR MARK. Gene. Streak from the upper right of the right eye, down to about the middle.

02 18 10 23 CMP MARK. Ron. About 8 o'clock, center of a diameter out; just a bright flash. It's the brightest flash I've seen yet.

LMP What eye?

CMP Left eye.

02 18 10 43 CDR Just about a second or two after Ron said, "MARK," I saw a vertical bright line on the left side of the left eye; just flashed.

02 18 11 35 CMP It was the greatest intensity - the intensity on that last one I had - but - the brightness was there, but it was kind of a dull glow to it. It wasn't a - a spot you could really focus on.

[REDACTED]

(1)

[REDACTED]

02 18 13 21 CMP MARK. Ron. Left eye, about 9:30, halfway - -

02 18 13 28 CDR MARK - -

CMP - - to the left.

CDR -- Gene. Left eye. Very bright spot. Left eye, left side, about halfway in towards the middle. Well, it's the brightest one I've seen, and it's just a spot.

CMP Ron. The intensity of the last one I had was - oh, a fourth of the bright one I had just before that.

LMP The last one, Ron? Spot?

CMP Spot. Yes, the left eye.

02 18 15 07 CMP MARK. About 5 seconds ago, about 6 o'clock in the right eye.

02 18 15 15 CMP MARK. Right between the two eyes, seemed like. Both spots.

02 18 15 26 CDR MARK. Gene. A sharp line from the center of the left eye to upper left-hand - upper left-hand side.

02 18 16 41 CDR MARK. Gene. It's a very short - very short line, upper left hand of left eye going towards the right.

02 18 17 31 CDR MARK. Gene. Upper right eye; tangential to my eye. Just a very short line. Moving a - -

02 18 17 44 CMP MARK. Ron. Oh, a fourth a diameter out of the right eye. Bright spot. Seemed like it was coming in. I could see the spot and the streak. It went from that point kind of in - or up, I guess.

02 18 19 52 CDR MARK. Gene. A dull flash in the bottom inside corner of the right eye.

02 18 20 01 CMP MARK. Ron. Go ahead, Gene.

[REDACTED]

CDR Correction, Gene, was that - That was on the left eye, that last one.

02 18 20 10 CMP Okay. The last one for Ron was at 10 o'clock. Three-fourths of the diameter out. Just a - was only - about an eighth of an inch in diameter.

LMP What eye?

CMP Right eye.

02 18 23 03 CDR MARK. Gene.

02 18 23 05 CDR MARK again. A flash - first flash was in the left eye on the left side. It went vertical - vertically up and away. And following that was the flash in the identically same spot. It was line flash, up and away.

LMP Say again.

CDR On the left side of each eye; and it went up in both cases, but they were split by about 2 seconds.

02 18 28 40 CMP MARK. Ron. A fourth of the diameter out at 3 o'clock in the right eye. I mean a half a diameter - half a radius; put it that way.

02 18 28 51 CDR MARK. Gene. A flash across the bottom of the right eye coming inward from left to right.

CMP The last one, it looked like it was a --

02 18 29 14 CDR MARK. Gene. A - just a spot flash in the bottom of the left eye.

CMP This is Ron. On my last one, it was just a spot flash. No direction to it at all.

02 18 29 57 CMP Ron. MARK. MARK. This is Ron. When I first said the word - it kind of looks like a - almost a sine wave transition from the corner upper at 10 o'clock in the right eye to about 2 o'clock in the left eye, right between the two of them. The sine wave was - maybe two wiggles in it, and it was about a fourth of an inch long.

LMP Was it going to the left?

CMP Going from right to left. Yes.

LMP Where to the left?

CMP It was going into the left at about 2 o'clock.

CDR Turn that music higher.

CMP Yes.

LMP Want to wake you guys up. Started to get a partial there when - when I wore ...

02 18 31 20 CMP MARK. Ron. Seemed like I looked up, and as I looked up, there was one in the left eye about 12 o'clock. Just a flash - on the outer periphery.

02 18 38 00 CMP MARK. Ron. Peripherally - down about 06:30. Just a flash.

LMP Which eye?

CMP Right eye.

02 18 38 42 CMP MARK. Ron. Left eye about 03:30, three-quarters of the radius out. A very dim flash.

LMP What time on the clock was it?

CMP About 03:30.

02 18 39 43 CMP MARK. Ron. Left eye. Starting at 5 o'clock on a circumference going to 3 o'clock at about three-quarter diameter - three-quarter radius, I mean. It was just a straight line.

CMP Did I say left eye? I guess I did.

LMP Okay. You're coming up on - MARK at 60 seconds.

CMP Okay. Let's - -

LMP Let's do five more before we quit, Ron. Don't move it until I photograph.

CMP The motor's still going, so let's let it go until the MARK.

02 18 41 11 CMP Okay; the motor quit.

LMP Okay. That was at 21:10.

CDR Okay. Is that it?

CMP Yes. I'll get that, Gene.

02 18 41 38 LMP Okay. Conclude experiment. Doff blindfolds. ALFMED POWER switch OFF.

CMP Okay. Do you want to take a picture of it first?

LMP Yes. You can take the POWER switch OFF.

CMP Okay.

LMP And give a MARK when you turn the POWER switch OFF ... stop.

CMP Okay. Stand by. 3, 2, 1 -

02 18 41 58 CMP MARK it. POWER switch OFF.

LMP Okay.

LMP Okay. Let me get a couple more pictures on the bottom and side.

CDR Okay, Bob or Stu.

02 18 42 36 CDR Okay. Add - We'll add to today. Not last night, but - I guess the first night I was in bed - I definitely saw some of these, because I had a hard time going to bed to start with. I saw some of the same peripheral horizon-type things you said were not the type of data you were looking for, but I also saw a - some sets of the streaks. And probably the one most imposing thing I remember is - and the last one I remember before falling to sleep - was the fact that there was a very bright

[REDACTED]

spot that flashed right between my eyes like a very bright headlight - like a train coming at you, only with a flash. It's difficult, probably, to estimate the frequency of any of those, because I was in a - sort of a sleep-hazy mode. (Cough) But, then, as today, I saw some that flashed and lit up the horizon and some that lit up peripherally. And, I guess, as you say, that's a different kind of data, but I did see them there and they impressed me.

LMP ... Move your hands, Ron. Ron, you want to move your hands?

CMP Okay.

CDR And it might be interesting to know that I've never seen it before today.

LMP ... order, do you? That's what you call duplicate.

CMP Yes.

LMP When you're told to see spots, you're told to see spots (laughter).

CDR Okay. I just wanted you to - just told them like we saw them. That's all.

02 18 44 50 CDR I will say one thing though. No question in my mind but that they're there. Last trip I took, guess I just wasn't looking for them or paying any attention to them. Maybe they were there and I ignored them because of other things, but - but they're there.

LMP Okay. All you flash bugs down there - or flash bulbs I guess is the word - frame 50. I just took four pictures to show - two on the side and two on the bottom - to show the position of the ALFMED. And one of them of each set was focused on the ALFMED. The others were focused on the - the other two of the set were focused on the strut. And when you don't have anything else to do, why don't you have somebody predict where the S-IVB is.

[REDACTED]

I think I've got her spotted - behind us and above us with respect to the Earth and our travel from it. Oh, don't worry about it. Shoot, I thought you guys might have an idea off-the-cuff there.

CMP I hope they've got an idea where it is. My - -

LMP I'll tell you, I'll bet you Ron could give you a star sighting on it (laughter). I looked at it through the monocular, and it sure looks like the S-IVB.

CDR Where was it, Jack?

LMP Next time the Earth comes by, look up and - not, not, not North Pole but just up from from our - up and a little bit off towards the left.

CDR Okay. Is the Earth coming your way?

LMP Right; it's flashing.

CDR There it is. Give it to me.

LMP It's flashing.

CMP What's that, Bob?

CDR Hey!

02 18 46 57 CMP Yes, I've got to get it to - get the plate moved back down there yet. Take the blindfold off first so I can see what I'm doing.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03419

**APOLLO <sup>17</sup> MISSION**

**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER MAD DURING TRANSLUNAR COAST**

**Time Segments (AET)**

**From**

03 09 23 50

**To**

03 10 08 05

Time good; voice fair to poor.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

03 09 23 50 CDR Okay, PAN CAMERA going to POWER.

LMP And they put the Velcro in such a great spot.

CDR Okay, Gordo. We're in the SIM bay door jett attitude.

CMP There's another ... yet. Does it look like it's purged? Does it look like it's through purging down there?

CDR Yes.

LMP Okay, you'll need your star chart.

CDR Here, can't you -

03 09 26 15 LMP Okay, Houston. PAN CAMERA POWER is going to BOOST.

CMP Yes, it just stopped. I've got to unplug that thing down there.

CMP Yes, 1/24 - I mean, 24 frames a second - f/8 - 100 feet. Watch your footage ...

CDR f/8 at 250th, Jack. And 100 feet. They say use 5 percent of the mag.

LMP Okay.

CDR ... down there.

CMP Okay, down to 181. Circuit breaker LOGIC POWER, MAIN A - show them CLOSED. MAIN B, going CLOSED. Yes, I'm in VOX. I don't hear myself very well. Houston, do you hear me? ... you. I'm in the wrong - I put Gene on VOX. (Laughter) Okay. Would you put me on VOX, Gene? I'm in - I'm in the other panel.

CDR Okay, you're in VOX now.

03 09 30 05 CMP Okay, Houston I'm in VOX now. Do you read? Okay; on panel 181, the LOGIC POWER MAIN A, MAIN B circuit breakers are CLOSED.

LMP Okay, you want LOGIC POWER, two, to JETT.

~~CONFIDENTIAL~~

CMP Okay, LOGIC POWER number 1 is going to JETT. Number 2 to JETT.

LMP Standing by for your GO, Houston. Wait a minute. This is where it - when you go to JETT, that's where it happens, huh?

CMP That's where it happens. Soon as I --

LMP Okay; I better get ready. Stand by. Stand by.

CMP Okay, Jack. Let me know when you've got the camera ready.

LMP Are you all set, Geno?

03 09 31 59 CDR Yes. Okay, Houston. You say we are GO to JETT the SIM bay door a little early, huh?

CDR Okay. Good ... I think trajectory has something to do with it.

LMP Yes. Good ...

CDR Did you check this at 24 frames?

CMP No, I checked it at one frame. You might check it.

CDR I did. You're down to that point where the SIM --

CDR Okay, Gordo. We'll do it on - on Ron's mark down there.

LMP Just a second. ... Hey, Houston. You know, this attitude - this attitude has the Sun right into window 5. It's probably going to be on the lens of the camera. I'll - I'll try to shade it the best I can, but I don't have an awful lot of hope for these pictures.

CMP I think we're probably stuck with it, Jack, because we need - to be in this right attitude. ...

03 09 32 39 CDR Okay, Ron. Let her go.

CMP Okay. SIM door jett - 5, 4, 3, 2, 1 -

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03419  
Page 3

03 09 32 50 CMP JETT.

CDR Wham!

CMP Oh, got a good bang. Can you see it?

CDR There it goes.

LMP Never saw it.

CDR Houston, there it goes. I got it out the hatch window. It looks like it was a clean jett. It's rolling and pitching and yawing slightly. There's a lot of garbage that came out with it.

CMP Can you take a picture, Gene?

CDR Yes. Yes, I think I got it ... Oh, no, there it is.

CMP Let me see it. Ah-ha!

CDR ... taking a picture of the garbage.

CMP (Laughter) You take a picture. Yes. There it goes.

CDR Hello, Houston. How do you read?

CMP Clearly acoustic, isn't it?

CDR Okay, did you get the word we got a clean jett? Okay. The door's moving - the door's moving directly away from us, mostly rolling. And it looks like it was a very clean - clean separation.

LMP Will you explain something to me, Ron? How come 15 never noticed this ...? Remember? I think that's - Did it go?

CMP Boy, we got a good bang on it. You could hear that - that pyro going, I think.

LMP You could feel it.

03 09 34 24 CMP It's rotating about five - or one revolution per 5 seconds. And it's rotating - what, about the long axis? Yes, rotating about the long axis.

[REDACTED] CONFIDENTIAL

CDR Houston, the garbage that I said went with it was just a small amount of debris, I'm sure, around the sealant pyro area. There was one - oh, about a 4-foot-length piece of - oh, 1- or 2-inch tapelike material that also went out with it.

CMP Okay. What do we do with these LOGIC POWER switches? Don't they go back to OFF, down?

CDR Okay. DOOR JETT OFF, down.

03 09 35 27 CMP DOOR JETT's OFF, down.

CDR LOGIC POWER, two, to DEPLOY/RETRACT.

03 09 35 31 CMP Okay, we're going to DEPLOY/RETRACT on number 1.

03 09 35 34 CMP DEPLOY/RETRACT on number 2.

CDR And the FUEL CELL VALVES are NORMAL. FUEL CELL REACs VALVES are NORMAL. I'm sort of glad we had those in LATCH.

CMP Yes, me, too. You know, that was a pretty good bang.

LMP Okay. SM RCS PROPELLANT talkbacks; eight gray, verify.

CDR Okay. They're all gray.

SC ...

CDR Okay, SM RCS HELIUM talkbacks; eight gray, verify.

SC ...

03 09 36 17 CDR Yes, they're all gray.

LMP SM RCS SEC PROPELLANT FUEL PRESSURE, four CLOSE.

CDR ... SECONDARY. ... Okay.

LMP Pan camera's up.

CDR Well, I'm - I got 10 degrees loaded. That's what we got copied down here as a change.

[REDACTED] CONFIDENTIAL

~~CONFIDENTIAL~~

Tape 17-03419  
Page 5

CDR Okay. We got 320, 010, 324, and before I go to muver - maneuver, I'll roll right about 12 degrees.

SC ...

CDR Thank you, sir. Okay, HEATERS.

LMP Okay, and the UV SPECTROMETER - is going to go on here -

03 09 37 30 LMP MARK it. Okay, and the IR will be OFF on your cue. That's the same as ... rate command, Gene.

CDR Oh, that's right.

03 09 37 50 LMP Okay, just give us a call.

CDR Okay, what's next? I ...

SC ...

CDR ... use experiment checklist?

SC ...

CMP ... a real ...

SC ...

CDR Hey, there's a lot more dynamics here than I'd ever ...

LMP Yes. ...

LMP The 15 guys were ...

CMP Well, they were suited.

LMP They said they didn't even - Oh, that's right. They were suited.

CDR Oh, that's right.

CMP Yes.

CDR There's no question but that that's where it goes.

LMP ...

[REDACTED]

CMP Yes.

CDR Okay, circuit breaker O<sub>2</sub> TANK 100-WATT HEATERS 1 and 2, OPEN. Okay.

03 09 39 40 LMP Okay, the 100-WATT O<sub>2</sub> HEATER circuit breakers coming OPEN.

CMP Hundred - Which ones?

LMP 100s.

CMP All three of them?

CDR No. One and 2.

LMP One and 2.

CMP One and 2.

SC ... upside down I can't read.

03 09 39 58 CMP O<sub>2</sub> TANK 100-WATT HEATERS; 1, MAIN A, OPEN; 2, MAIN B, OPEN.

CDR Okay, and the O<sub>2</sub> HEATERS 1 and 2 to AUTO; and 3, OFF.

03 09 40 13 LMP Okay, O<sub>2</sub> HEATERS 1 and 2 going to AUTO, and 3, OFF.  
It was a little early right then, but I guess it's all right. ... attitude.

CDR And you know the high gain will be minus 29 and 17.

LMP Yes.

CMP How's the AUX batteries, Jack? Is it ...?

LMP You mean the O<sub>2</sub> --

CMP The O<sub>2</sub> ...

LMP We'll check it.

CDR Ron, check the CM DELTA-P ...

LMP It's gray.

[REDACTED]

CMP It's gray? Okay.

CMP 1.6.

CDR Okay, not yet. We'll wait a little while, but you'll have to go through CM/LM pressure equalization ...

CDR ... got a ...

CMP Yes.

CDR ...

CMP Yes. I got my foot stuck.

03 09 41 48 CDR Okay, Gordo. We'll wait until 50 past the hour and pick up the LM/CM DELTA-P. We're still reading 0.6. And we're in the process of maneuvering, and I guess I'll start to see if I can't get you some biomed.

CMP ... old biomed ...

LMP I don't know whether you were watching the LMP on the door jett. Did you see jett on my heartbeat?

SC (Laughter)

LMP I guess I was remembering, erroneously, 15's comment that it was very quiet. But, I - of course, Ron reminded me they were in the suits.

CMP ... about 24 percent.

LMP How stable can you get?

CMP And, Houston, 17 here. Mag Bravo Bravo is indicating 76 percent now - 76-percent full.

03 09 43 47 CDR And, Gordo, we are watching the 8-ball.

CMP One thing I guess I ought to check ...

SC ... down here.

CMP Boy, we sure need it.

LMP ... off, isn't it, Ron?  
CMP I don't know.  
SC ... DELTA-P?  
SC Yes.  
CDR We'll wait until ...  
LMP Yes, you get to dock in about an hour ...  
CMP ...  
LMP Hour and a half.  
CDR One of you guys is ... up a storm. I wish it were me. Whew!  
CMP That wasn't me that time ... Whew!  
03 09 46 18 CDR No wonder you guys don't have gas on your stomach.  
SC ...  
CMP Whew!  
LMP I might have had.  
CMP Yes.  
CDR I think it's coming out of here. I think he ... into the intake.  
CMP (Laughter) ...  
CDR You guys usually don't - Whew! Man! (Laughter) Oh, man. I know, but that one was the worst. That must have been the clam chowder last night.  
CMP Well, ... we're not that comparable ... last night. I don't know what we had, but -  
CDR I think that's the all-time winner right there.  
CMP Yes.  
LMP Better than my ... blue bag, huh?

~~CONFIDENTIAL~~

CDR Yes. ...

CMP My gosh darn scissors got to be somewhere.

CDR You stuck them in your pocket or somewhere. You put them in your suit pocket?

03 09 47 31 CMP I lost them - As soon as I got up the next morning, they weren't there.

CDR Well, I ... over to the wrong place to take pictures of that door, I'll tell you.

LMP Yes, it should have been out of window 3.

CDR I had her going.

LMP Yes, but there won't be too many more ... (Laughter)

LMP It eventually came up at window 5 there, but - -

CDR Yes. I figured I'd do it, but I wasn't sure how fast it was coming - coming by.

LMP You can't get all the objectives.

CDR We got pictures of it. But it wasn't what ...

LMP I'm about ready to take a piece of tape -

03 09 49 53 LMP Want to be sure and change that mag before we get into lunar orbit.

CDR Which one?

LMP ...

CDR ... program.

LMP The second ... pads ...

CDR ... program ...

LMP Yes.

CDR Let's see, the 35 is ... program.

LMP Yes, 35 is ...

[REDACTED]

CDR Those mags we have on there okay?

LMP ... Yes, but it's interior color.

CDR Oh, ... That mag's dead once you take it out, isn't it?

LMP Yes. There's 70 pictures on it. So we might as well use them.

CMP How many are on there?

LMP Huh?

03 09 50 45 CMP How many have we taken?

LMP I guess about 60, I think - 45. You guys got a ...

CMP The next one is ...

LMP ... this thing -

CDR What are you looking for?

LMP Look like ...

CDR What?

SC ...

CDR I think you improved it by doing that ...

LMP Now put your fingers over your mike.

CDR Yes, we're getting ...

LMP Yes, but why putting his fingers over his mike?

CMP Still getting feedback.

LMP No, but it's better - because we're getting it through here. But why when he puts his fingers over his mike, does he improve the quality?

03 09 52 11 CDR Because the quality isn't coming through here. Even though his fingers are over his mike, he's still getting feedback.

[REDACTED]

LMP You sure improve your voice by putting your fingers over your mike.

CMP I improved my voice by doing that.

LMP Yes. Got all those ...

CMP You did?

LMP Yes.

CMP Son of a gun.

LMP Talk and just ...

CMP ...

SC Getting rid of a lot ...

CMP Must be some holes other than on the eardrum.

CMP Tape recorder working?

LMP Yes.

03 09 53 59 CMP That's the old tape recorder with fingers over the end of the mike. That's the tape recorder without the fingers over the end of the mike.

LMP Okay, you've got it to AUTO, and I think we may have made a new discovery about microphones up here. Well, Gordy, it looks as if you can improve your voice quality by putting fingers over the end of the mike booms. At least, that works on the intercom.

CDR Want to hand me the med kit? Okay.

CMP When did you stick this ...?

CDR Huh?

CMP The first - second day.

03 09 54 00 CDR Yes, it went on right away.

CMP Yes, but somebody didn't - I didn't put the one side on.

~~CONFIDENTIAL~~

- CDR I did.
- CMP The first day?
- CDR Yes.
- CMP Well, there's no sense in worrying about the -
- LMP Gene? Here, why don't you let me hand you what you need?
- CDR Well, I've got it on.
- CMP Okay, you're disconnected?
- LMP You want a little bag for your used stuff, Gene? Oh, that's right, you're ... Here you go.
- LMP Ron, you should be able to see the Earth out of the optics.
- CMP Out of this optics?
- LMP ...
- CMP Okay.
- LMP Okay, IR coming OFF.
- 03 09 55 28 LMP MARK it.
- CMP Boy, those things are getting hot up in there, don't they?
- CMP What are we supposed to be doing now?
- CDR Well, we're waiting for - waiting for - Well, at ... in about 15 minutes, we'll do the LM DELTA-P stuff. And then in another hour or so, you do a P52. ... they tell you what's required.
- LMP Hey, Gordy. Who's operating the trench in front of you today?
- LMP They're a trio of musketeers if I ever heard of one. All they lack is a French accent.
- ~~CONFIDENTIAL~~

03 09 58 09 LMP I wasn't going to exercise any value judgments, Gordy.

LMP What did that midcourse finally turn out to ...?

LMP Inner tropical convergent ... (laughter).

CMP (Laughter) ...

CMP You know, the ... looking through the ... on my side now.

CDR You got the Earth?

CMP Yes, I got the Earth, but I was going to say the horizon is a lot bluer ... to see the landmarks ... I can't tell the difference.

CDR And that landmark has an orange hue to it, doesn't it?

CMP Yes.

CDR Give it an orange?

CMP Landmark line of sight does.

CDR Yes.

CMP It's ...

LMP Okay, Gordy. I was just checking to see if I could find the Moon, and I still can't see it out there. I'll be with you in 30 seconds.

03 10 02 44 LMP Okay, Gordy. Go ahead.

LMP Okay. Preliminary LOI, SPS/G&N. 66361; plus 1.21, minus 0.12; 088:54:22.71; minus 2798.8, plus 1045.7, minus 0037.3; all zeros, all zeros, all zeros; 0170.1, plus 0052.5; 2988.0 6:38, 2981.7; 45, 252.1, 13.5. Set stars are Sirius and Rigel; 122, 354, 000. No ullage. LM weight is 36312, and single-bank burn time is 06:51.

03 10 06 23 LMP Okay, 22.77.

Tape 17-03419

Page 14

CMP Okay, Houston. At 84:45, we've got about 2-1/2 to 3 minutes at 1 frame a second on mag Bravo Bravo through the celestial adapter of the Earth.

CDR Okay, guys. Here, I'll try again.

03 10 08 05 LMP Oops. It's right there. That's good.

# # #

CONFIDENTIAL

(This page Unclassified)

Tape 17-03420

APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING TRANSLUNAR COAST

Time Segments (AET)

From

03 10 08 08

To

03 10 14 32

---

---

---

---

---

---

---

---

Time, good; voice, okay.

---

---

---

---

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

[REDACTED]

[REDACTED]

(This page Unclassified)

**Tape** 17-03408

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBIT**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>03 10 07 15</u>	<u>03 10 07 15</u>
<u>03 16 42 21</u>	<u>03 16 48 21</u>

Time good, voice fair

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, ECG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year intervals; declassified after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

03 10 07 15 LMP Okay, Houston, --

TIME SKIP

03 16 42 21 LMP ... generate a lot more glass than usual. They're just higher energy impact.

CMP Okay, ... frame - 67 was Lobachevsky mag 00.

CDR Let's see, AOS is at 24.

CMP ... right there; what did they want?

CDR Did we get all this, Ron?

CMP Yes, I got that.

CDR DISABLE AC 1?

CMP Okay. I've got ... degrees out here. They may give us a call.

CMP MAPPING CAMERA, RETRACT and talkback was gray.

CDR We got everything done?

CMP We have everything done --

CDR You got all these things here?

CMP Yes, we did that.

CDR You get the T-start again?

CMP Yes.

CDR Okay.

CMP T-start at 18:07. That's close enough.

CDR Okay.

CDR You got the MAPPING CAMERA, RETRACT and every --

CMP Yes.

CONFIDENTIAL

CDR Okay. This is all done. OMNI Delta then?

CMP Okay. We're on OMNI Delta.

CDR 27:43 we want to stop the pan camera again.

LMP Boy, there's a bright one down there.

LMP Some of that dark stuff just looks like blocks.

CMP Yes, I think I can finally look at those things upside down.

LMP Well, you've got to know which way you're going and which way you're pointing. That's the big problem. I've got the feeling that someone brought a big powder puff and powdered the whole back side - -

CMP ... water.

LMP -- Here's one - here's one off to the south that is - has three albedo contrasts. Looks very much like what you described, except it has one more - one more in the ... - -

CMP Okay, Houston. We're with you on the OMNI Delta.

LMP -- that is much darker than the others.

CC Roger, Ron. We read you loud and clear.

CDR Okay, Robert. We should have gotten everything right on up through AOS here in the Flight Plan.

CDR And the pan camera should be running right, now.

03 16 45 05 CDR Okay, Jack, you can go - Ron, you can go minus 5 and plus 15.

CMP Okay; thanks. AOS plus 3.

CDR Okay.

CMP At about 27 or something.

CMP Okay, Houston. America here. We stopped the orbital photo path, frame 59. And at about the substellar point, we took 59 to 66, and frame 67 was taken of the, oh, the dark side on the corner of Lobachevsky.

03 16 45 55 CDR What have we got coming up there, Jack?

LMP We got Orientale --

CDR Not Orientale.

LMP I mean ... is off to the south, and we're coming up on Marginis and Crisium. Can you see - I guess I can't see Neper, huh? Well, no. I think it's going to be south of us.

CMP It's going to be south of us, I think. I'll be able to see it over here.

LMP Those frames that Ron mentioned - this is Jack - that he mentioned were taken of an area where there's a much lighter gray albedo. Rather than the tannish gray, it's pure gray material that generally is on the rim crest of a number of craters. It may be related to the swirls that we see elsewhere.

03 16 47 07 CDR Did you go HIGH GAIN yet? Three minutes ...

LMP Okay. Here comes Neper.

CMP Okay; 27:43 for pan camera stop. ...

CDR That's right now.

CMP Right now? ...

CDR Yes.

03 16 47 15 CMP Okay. 42, 43, PAN CAMERA, STOP.

LMP STOP or OFF or STANDBY?

CMP PAN CAMERA, STANDBY.

LMP STANDBY.

~~CONFIDENTIAL~~

[REDACTED]

CDR V/H, normal.

LMP Okay.

CDR Bob, we're - -

LMP What else?

CDR - - abeam of Al-Biruni and coming up Goddard and - -

LMP Got anything else?

CDR - - Marginis right now.

03 16 48 03 CMP PAN CAMERA, OFF, on cue.

LMP Well, we did it, didn't we?

CMP No, you went to STANDBY. You went to STANDBY.

LMP Do you need the power off? Okay.

CMP On cue, yes. Leave it like that ...

LMP Okay. Their cue, not ours.

CMP But it does oscillate quite a bit here in this REACQ.

LMP All right.

03 16 48 21 CDR Al-Biruni has got variations in the - its floor, variations in albedo. It almost looks like a pattern as if water were flowing on a beach. It's that irregular. Not in great areas, but in small areas around the southern side, and the part that looks like it's a water-washing pattern is of a much lighter albedo, although I cannot see any real source for it. The texture, however, looks about the same.

# # #

[REDACTED]  
CONFIDENTIAL

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03402

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING TRANSLUNAR COAST  
Time Segments (AET)

From	To
<u>03 15 55 39</u>	<u>03 16 44 38</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Voice fair; time good.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 773 and 774, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

03 15 55 39 CMP -- after AOS --  
LMP We're going to do a VERB ...  
03 15 55 45 CMP MANUAL and WIDE, minus 5 and YAW, 15.  
LMP Okay, Gordy. I may not have got the COMMAND RESET  
at 6 minutes --  
CMP Those are the SIM bay jets. Okay. Let's go.  
Let me go ahead and do that. Yes.  
LMP -- and ... let us know ...  
CDR Can I do that in P20?  
CMP Yes, you can do it.  
CMP You've got A/C ROLL going?  
CC ... like you to --  
CDR Which ones you want?  
CC -- go ahead and get the jet inhibits and the covers  
open as shown in the Flight Plan so we can see that  
before we lose you.  
03 15 56 48 CMP Okay. IR COVER, OPEN, and - Well, let's inhibit  
the jets.  
CDR What other jets you want on?  
CMP A-1 and C-2, ON.  
03 15 56 55 CDR Oh. Two ON. Go ahead.  
CMP A-3 and C-4.  
CDR A-3 and C-4 are ON?  
CMP Yes.  
03 15 57 05 CDR Going ON.  
CMP B-3 and D-4.  
CDR B-3?

~~CONFIDENTIAL~~

CMP Yes, and D-4. The ones with the arrows on them.

IMP Okay. UV COVER is coming OPEN -

03 15 57 18 IMP MARK it.

CDR Okay. I don't have many special things right now, but - -

CMP That's all right. Okay.

03 15 57 20 CDR Bs are OFF.

CMP Bs are OFF. That's right. They're supposed to be. It's A-1 and C-2.

IMP ... want me to stay in HIGH BIT RATE?

CDR Okay.

CMP Okay. IR, OPEN - -

CC ... you're there.

CMP - - Yes.

CC You're going to have to do it anyway, so since you're there already, stay there.

CMP HIGH BIT RATE, RECORDER going.

03 15 57 41 IMP Okay. We're there. We've got tape motion.

03 15 57 50 CDR Gordy, the dead band - or the A/C - B/D, A/C ROLL's been changed, and you should have the proper jet configuration now.

CC Okay. ...

CDR Okay.

CDR Okay. After AOS, OMNI Delta.

03 15 58 49 CMP IR and the UV. Might as well open up the MAPPING CAMERA/LASER ALTIMETER, too.

03 15 59 00 IMP Okay, ... MAPPING CAMERA/LASER ALTIMETER ...

CC Okay, Jack.

CMP Okay. Would you EXTEND the MAPPING CAMERA, and give them a mark so we can time it?

LMP ...

CMP Yes. Give them a mark, too.

LMP Okay. We're going to EXTEND the MAPPING CAMERA.

CMP Yes, I'll catch this. Yes.

03 15 59 39 LMP ... Barber pole.

CMP Yes, I don't know. Supposed to be - they say 4 minutes, but - I've got one going here. Thirty seconds.

CMP I guess all those switches and things are done, circuit breakers and things like that. SIM bay ESSENTIAL bus?

CDR How do I know when it's out? When that thing goes gray?

CMP When it goes to gray.

CDR Did we lose --

CMP I'll get all of the photos of the thing. ... Let's see now. Window 3 and 4. Yes, 3 and 4. And if - if you'll handle the mapping camera and all that stuff now, which is --

CDR Yes, I'll give you the marks on all that stuff.

CMP Yes, that'd be - Jack, Gene, could you just kind of --

CDR Hey, you got OMNI Delta?

03 16 01 27 CMP Gray? Gee, that was a minute and 30 seconds.

CDR No, it was longer than that, I bet.

CMP No, it wasn't. Minute and 45 seconds.

CDR I bet it was 2 something.

[REDACTED]

CMP No, it wasn't. I started the clock, and it -  
Either that or my - doesn't work. And I got a  
minute and 45 seconds.

CDR Yes. It was longer than a min - I'll bet it more  
than - Well, I don't know.

CMP It's still pretty good. Okay.

CDR Okay. OMNI Delta, and go minus 5 and 15 for AOS.

03 16 02 02 CMP Oh, yes. MANUAL and WIDE. 2 Minus 5, 15.

CDR And Delta. Right?

03 16 02 13 CMP Yes, OMNI Delta.

CDR And you're on HIGH BIT RATE, RECORD, FORWARD, COM-  
MAND RESET.

CMP Sunrise? Okay. Don't see anything yet. (Laughter)

CDR Okay. Okay; let's see, we want to get the - let's  
get the PAN CAMERA to STANDBY, STEREO --

CMP What time are we supposed to start here - 51, that's  
8 minutes --

CDR Are these all separate switches?

CMP Yes.

CDR STANDBY - on PAN CAMERA?

CMP Yes.

CDR STANDBY? STEREO? I can't - Put Jack's INTERCOM  
switch ON, will you, Ron?

CMP Okay.

CDR Okay. STANDBY?

03 16 03 13 CMP It's STANDBY.

CDR STEREO?

03 16 03 15 CMP It's STEREO.

[REDACTED]

[REDACTED]

CDR POWER?

03 16 03 17 CMP It's POWER now.

CDR V/H.

CMP You want it now?

CDR Yes.

03 16 03 20 CMP Okay. POWER.

CDR V/H. HIGH ALTITUDE.

03 16 03 24 CMP Okay. HIGH ALTITUDE.

CDR Okay, now. LASER ALT - You want the LASER ALTIMETER, ON, too, huh?

CMP Yes, but that's pretty much on a time thing yet.

CDR Okay. Wait a couple of minutes for that. Here's what we're going to do, Jack. We've got a couple of minutes. We want to put the LASER ALTIMETER, ON, and about - -

LMP Did you want to start the PAN?

CDR Not yet.

CMP No, we aren't ... - -

CDR No, I've got to start the - start that - -

CMP Go ahead.

CDR This thing's got STANDBY, STEREO, POWER, and - -

LMP Got it.

CDR - - HIGH ALTITUDE.

LMP Got it.

03 16 03 51 CDR Okay. Then the next things we're going to do - Don't do them yet - are LASER ALTIMETER, ON; then IMAGE MOTION, ON; then MAPPING CAMERA, ON; and PAN CAMERA - I'll give you a T-start on it. And then IMAGE MOTION, INCREASE - -

[REDACTED]

[REDACTED]

LMP Okay.

CDR What's BP plus four steps?

CMP That's barber pole plus four steps.

CDR Oh, yes. Yes. Okay. And then - -

CMP I do.

CDR - - That's right. I'll give you all those calls, and they all come one right after the other starting about 48, and it's 44 now.

LMP Okay. Four minutes, Gene?

CDR And then, Ron?

CMP Yes, okay.

CMP And then, Ron, yours is Gellee - Gell-oe, - -

CMP Galois.

CDR Galois. And you want command module 3, you want the 80-millimeter lens - intervalometer - -

03 16 04 33 CMP Oh, there ...

CDR - - at 20.

CMP Look at that! Look at that!

LMP Look at that! Isn't that pretty?

CMP See it, Gene?

CDR No.

CMP It's back here.

CDR What are you looking at?

CMP It's the sunrise, terminator.

CDR Couldn't see it. I can't see it.

[REDACTED]

[REDACTED]

CMP See it ... back over there.

CDR Can't do it. It's gone.

CMP It is?

CDR Gone.

CMP Terminator's gone?

CDR I can't even see the Moon.

CMP Well, why don't you come over here and look?

CDR Yes, ... --

CMP Try to see it. Here, put your --

CDR -- okay. Oh! (Laughter) Shoot.

CMP That's what we saw coming in, while ago.

CDR Been snowing.

SC (Cough)

03 16 05 19 CDR Okay. We're rounded out a little bit more now --

CMP Can you swing out and get - get a shot of Korolev while I go to the next one?

CDR Manischweitz! That's Korolev. That's that big ridge, Jack --

LMP That's what it is, yes.

CDR -- that we saw coming in, only we're so much closer now. We're rounding off --

LMP We came in from a lot higher - Korolev and on up and around.

CDR Well, that's that - that's that ridge of a - Look at that thing. No wonder it looked like a central - lunar central feature, Jack.

[REDACTED]

LMP Yes, it is. It's - it's part of a ring, but it -  
there's only one part of it that really sticks out.

CDR Yes. It's snowing out there.

CMP It is?

CDR Yes, how else did it get white?

LMP ... get started here.

03 16 05 53 CDR Okay. Let's see. We got another minute or so.  
Ron, yours is f/2.8 at 1/250, infinity.

CMP Okay.

CDR Fifty-eight frames?

CMP Yes, pretty long set.

LMP He's going to be clicking for years.

CDR Hey, I'll give you your changes. I'll try and give  
you your changes on this - Boy, I tell you - this  
is nothing but paperwork.

CMP Yes, this rev is going to be a good one.

CDR Okay, Jack. You can put the LASER ALTIMETER, ON.

LMP Say when. Now?

CDR Now. Yes.

03 16 06 25 LMP Okay. LASER ALTIMETER, ON.

CDR IMA - IMAGE MOTION, ON?

03 16 06 30 LMP ON.

CDR Okay. Now hold off. It says at 144, I want the -  
I want the MAPPING CAMERA out, but I don't know  
where the heck - 144, Ron, that's about - Let's  
see, Korolev is right on - -

CMP No, that's right. Just time - -

[REDACTED]

CDR I'll do it on time.

CMP Do it on time. Do it on time. Do it on time.  
Goes in there somewhere.

03 16 06 50 CDR Another 2 minutes for the MAPPING CAMERA.

CMP Okay.

CDR You want to start the center window, Ron?

CMP Yes.

CDR Okay.

CMP If I can find out which - -

CDR (Cough)

CMP - - one clicks.

CDR Which what?

CMP Okay. Let's see. That's got to be - -

03 16 07 02 CDR I'll cue you on time. Oh, that's Korolev with that big central - that ridge. It's really a - I don't think you can quite see Korolev yet.

CMP Can you?

CDR Oh, yes, I think so. That's the same one I was seeing coming in, I'm pretty sure.

CMP That's Korolev with the big ridge going down through there.

CDR Yes. Yes.

CMP Okay. Galois is supposed to have a central peak in the thing. Korolev is right on the terminator now.

CDR Okay, Jack. You can put the MAPPING CAMERA, ON.

LMP ... No, I think your Korolev - No, I think it's - it's - I don't think you can see it quite yet.

[REDACTED]

Tape 17-03402

Page 10

[REDACTED]

03 16 07 39 CMP MAPPING CAMERA, ON.

CDR Yes, let's just verify all these.

CMP Yes, sir.

CDR PAN CAMERA is STANDBY, STEREO, POWER.

03 16 07 43 CMP Yes.

CDR V/H, HIGH ALTITUDE.

03 16 07 47 CMP Yes. LASER --

CDR LASER ALTIMETER, ON.

03 16 07 49 CMP Yes.

CDR IMAGE MOTION, ON.

03 16 07 51 CMP Yes.

CDR You got the MAPPING CAMERA, ON?

03 16 07 54 CMP Okay, it's ON now.

CDR Okay. And that's at - that's at 47.50. Okay.  
And PAN CAMERA, on 1 in 1 minute - no, about  
2-1/2 minutes.

CMP Okay.

CDR Gosh darn. Son of a gun. Pardon my French.

CDR Actually, I'm looking south now, aren't I?

CMP Yes.

CMP ... next one here.

CDR Yes, okay. South. I've got it. Mare B, or  
something.

CMP Yes. Okay. That's Crookes right down there at the  
bottom.

[REDACTED]

CDR What do I have written in the margin that's for this time here?

LMP Korolev and Apollo, and then the highlands.

CDR Okay.

03 16 09 21 CDR Okay. We've got about a minute to go for the PAN CAMERA.

CMP Okay.

CDR About a minute to go.

CMP Standing by.

CDR And then after that, you want to INCREASE the IMAGE MOTION, barber pole plus four steps, and then ON.

CMP Okay. Will do. IMAGE MOTION, ON, you mean?

CDR No, you've already got the IMAGE MOTION, ON.

CMP Okay, but the camera.

03 16 09 42 CDR I'll give you a PAN CAMERA start here. I don't know --

CMP Okay. What was that last ON on?

CDR And then after that, it'll be the IMAGE MOTION, INCREASE, barber pole plus four steps/ON.

CMP Okay. Okay. I got it. ... spring loaded. ... No, Korolev is way on up there yet.

CDR Yes, I think so.

CMP Yes, okay. ... That's Galois then, right down here. Three little craters right -

CDR Watch your clock, Ron. Okay, Jack; 10 seconds for the PAN CAMERA.

LMP Okay.

[REDACTED]

CDR 2, 1 - MARK. OPERATE.

03 16 10 33 LMP OPERATE.

CDR Okay. IMAGE MOTION, INCREASE, barber pole --

LMP Okay.

CDR -- plus four steps, and then ON.

03 16 10 47 LMP Okay. Barber pole. 1, 2, 3, 4.

CDR Okay, Ron. You're still in f/2.8. Right?

CMP f/2.8. Yes, and I'm --

CDR Okay. I'll try and give you a mark on time when you should be hitting - coming up on Doppler.

CMP Yes, we all got a window now. Figure out where I am. Let's see, I don't know which one - which is easier.

03 16 11 22 CDR This is Doppler right here in front of you.

CMP Doppler, right there, huh? Right here in front of me.

CDR Yes, I'm looking right at it. That's Doppler. Yes, sir. Before you - you understand f/2.8 - when you come up on it, you want to go to f/4. That should be about another minutes and a half. Yes, this is Dopp - you looking at the same thing I am?

CMP ... That's Doppler right there?

CDR Yes, it's at the - the - the two craters on the right-hand side over there.

CMP Yes. Okay.

03 16 11 55 CDR Okay, just before you get to it, there's a little crater. See this little crater at the left of it here at - as you look at it, at 7 o'clock?

CMP Yes.

[REDACTED]

CDR Well, that's the crater he's got marked to come up on f-point - f/4.

CMP f/4. Okay.

LMP What am I --

CDR Pardon?

LMP Can you give me a fix on what's south?

CDR What is south? Okay. Maybe it's on this. Here, I'll use this. Not a heck of a lot, Jack. Looking up to the left, you ought to have --

LMP No, I just need a --

CDR -- Sniadeck; and Mohorovicic - vici - Mohoro-vicic. They ought to be coming up, Ra - De Vries - McKellar, De Vries, and Racah.

03 16 12 37 CDR Okay, Ron. You ought to be about f/4, I'd say.

CMP Okay.

CDR And the time looks good.

CMP Time looks good. Okay.

CDR And about a couple of minutes - Is that thing clicking for you?

CMP Yes, okay. Yes.

CDR Look at that rille running right up towards Crookes, I guess, huh?

CMP Yes, it's going right up towards Crookes.

CDR Yes. Crookes has got that little breached side. See it right over here?

CMP Yes.

CDR Look at the steepness of the sides of that crater! From here, they - on the far side, the shadowed side, they look like 60 or 70 degrees.

CMP Oh, that son of a gun.

CDR Just yell when you need to get over here, Ron.

CMP Okay.

CDR Okay. It still calls for you to be at this window, Ron. Jack, at about 90 - at about 58, we want to put V/H to LOW.

LMP 58.

CDR Yes.

03 16 13 3<sup>4</sup> LMP Okay, 5 minutes.

CMP What? Do we change at Crookes?

CDR Keep going until you pass Crookes.

CMP Past Crookes and then 560.

CDR Yes, you're looking at Crookes, aren't you?

CMP Yes.

CDR The one with the breached crater on this side?

CMP Yes. It's got a breached crater on the side of it?

CDR Yes.

CMP Looks like somebody's walked up to it. An alligator.

CDR Yes. Right over all those other craters?

CMP Yes, walked right over all those other craters, and - -

LMP Boy, I'll tell you, they - some slopes on that thing really look steep.

03 16 14 01 CDR Jack, on your side, you ought to have McKellar coming up there in the foreground a ways. It's - it's pretty subtle on that side, isn't it?

LMP Yes, but I tell you, there's fill in these craters.  
They're so smooth, I can't believe it.

CDR It really is smooth.

LMP And then there's some that - slight wavy and rough,  
too. Got some of these (cough) have the - -

CDR Okay, Ron - -

LMP - - whorls - -

CDR - - at about - What time is it?

LMP - - over here, window 5, that - -

CMP Oh, it's 54.

LMP - - ... indications of craters - -

03 16 14 43 CDR - - Okay, just as you go past Crookes, you can go  
to 5.6.

LMP - - no indications of relief. And they cross - -

CMP Okay.

LMP - - crater borders, although generally the ones I -  
well, not - generally they're in the plains - -

CMP Excuse me. I ... here.

LMP - - material. Smooth plains.

CDR Looks like there've been a lot of one-legged  
chickens running around, all in the same direction.

LMP Locally, some of the depressions are extremely  
smooth - -

03 16 15 11 CDR Ron, you want to hold 5 - 5.6 now - -

LMP - - light plains material.

CMP Yes.

CDR - - and you want to go to number 4, window number 4.

~~CONFIDENTIAL~~

CMP Window number 4?

CDR Yes.

LMP Okay, here's one that looks like that hummocky material that's spilled over into another crater - -

CDR Window number 4, and you want to be on 5.6 but - until you get past Icarus.

CMP Icarus? I don't know which one Icarus is.

CDR Well, how about that big one out there, in - with the - Is that a - a very symmetrical pyramid mountain out there? Isn't that Icarus? Huh?

IMP I would guess that that is Icarus.

CDR I would guess.

IMP That is Icarus.

CDR I don't know whether you can see it out your window or not. You see that very pyramidlike central peak? Over here, Ron.

CMP I got one. I've got everything - -

CDR This way. Look at that. That's Icarus because here's - -

CMP Darn it. Everything went hopping back the other way. (Laughter)

CDR Oh, you want to stay - are you - -

CMP I'm still at window - -

03 16 16 33 CDR Okay. And f/8 is about - you want to stay - stay at 5.6. Right?

CMP Yes.

CDR Okay. Stay at 5.6, and you should be in window 4.

LMP Okay. Here's one of those cone-shaped craters with what looks very much like fill in the bottom. Doesn't look like slump at all. It just looks like the thing's filled up from the bottom up to oh, about a sixth of its depth. Little - few low hummocks but generally very smooth material on the bottom.

03 16 17 16 CDR Ron, I'd say that's Daedalus over there.

LMP Could be debris flow off the - -

CMP Is it? Daedalus?

CDR Yes. Right out here? That's Daedalus. Okay. You can - let's see - you can start thinking about, in the next minute, going to f/8.

CMP Okay.

CDR Yes, that's Daedalus over there.

CMP That's Daedalus we're coming up on?

CDR Right out over there - that big one with the very - Looks like it's draped over with - -

LMP Hey, you ready for me on LOW ALT - LOW ALTITUDE at - -

CDR Yes, any time.

LMP Okay.

03 16 17 52 LMP MARK it. LOW ALTITUDE. What's my next one, Gene? You got anything?

CDR Okay. Let me turn the page. Okay. Noth - nothing for about 10 or 12 minutes. We'll stop the PAN CAMERA.

LMP Okay. What's - -

CDR Don't let me forget that.

LMP - - What large crater is due south of us, Gene? Do you have that on your map?

[REDACTED] CONFIDENTIAL

CDR Well, how about De Vries? Will you buy that?

LMP Very large basin, yes.

CDR Or Racah?

LMP Yes, well - -

CDR Or Ingenii - Ingen - -

LMP Out on the horizon?

CMP Way out on the horizon is Ingenii.

CDR Well, let's see - I don't have that on here.  
It's blocked out, I guess, by overprint. Ron,  
you can go to f/8 - -

03 16 18 43 CMP f/8. Okay.

CDR - - And then come back to the center window.

LMP Yes, that's Daedalus right there, Ron. I know  
that. The one I'm looking at here.

CDR Can't tell which one's - -

LMP That's - that's Daedalus over here. See - -

CDR But you know, when we look out different windows,  
it's hard to tell whether - -

CMP Yes, it's hard to tell. Right.

CDR - - you're seeing the same thing. Okay. Well,  
we went right by Icarus and Daedalus, and the  
next big thing - -

LMP Here's Gagarin, I think. No.

CDR - - that I've got coming up, we go - We're darn  
near Heaviside and Keeler.

CMP Heaviside and Keeler up there. I can see those,  
now.

CDR Can you see those coming? Okay. Well they're - -

CMP Yes, we're already past them.

CDR And Jack should have Aitken on his side, darn near below us, though.

CMP Well, there's a good scarp, soft scarp that's south of Keeler - Heavisiide, I mean.

CDR Okay, now. See, I'm looking the wrong way to see Heavisiide and Keeler. Where are you looking?

CMP It's right over that way. See those big things other there?

03 16 19 57 LMP Okay, this is Aitken. Got Aitken.

CMP You got Aitken?

LMP Tallyho on Aitken.

CMP Okay.

LMP And it's got those crazy little double-rimmed craters with the dom - domical floors in it.

CDR Oh, Ron. Heavisiide's coming up right over here.

CMP Gosh, Heavisiide --

LMP It's got --

CMP -- ... What the heck is that way?

LMP -- massive rings --

CDR That's - that's Heavisiide, right there --

LMP -- massive bench would be a better term --

CDR -- to the left. See it?

LMP -- on the crater --

CMP ... that's Gagarin.

LMP -- near the south rim --

CDR Gagarin.

LMP -- ... be coming up pretty soon.

CMP That'll be Gagarin right underneath us.

CDR Well, I don't even have it on this thing. It's not even listed on your chart. Let's see, at 91 hours - Where did the Flight Plan go?

LMP I got it.

CMP Okay; f/8's still good?

LMP Do you need it?

CDR Well, I just want to see what - well, here.

CMP f/8's still good?

03 16 20 48 CDR Yes, f/8 is still good.

LMP Okay. Aitken has some of the swirl structure in it. It looks like it had - wait a minute - Yes, this is Aitken. It - Again, there is just no clear evidence of relief. Now, in the floor, there's a central peak but there's also looks like a hint of --

CDR These two craters right here --

LMP -- an inner rim.

CDR -- are Heaviside and Keeler. These two big, big basins, back to back.

CMP Oh, okay.

LMP ... ring and --

CMP Those two things up there are Heaviside and --

CDR Yes, sir.

LMP -- Some of the linear trends of that --

CDR Right here. See this little --

LMP -- swirl coloration --  
CMP ... to the north of that.  
CDR ... north of these --  
LMP -- associated with --  
CMP Yes. ... these other two things that I just took a picture of. That must have been Ic - no, it was back this way.  
CDR Well, Icarus --  
CMP That was Daedalus.  
CDR -- and Daedalus - Yes, that was - Yes, I could see it before you could.  
CMP Okay.

03 16 21 43 CDR So I might be a little bit ahead of you, because I can see these things before you could, but you're coming up on - on Heaviside and - and Keeler now.

CMP Keeler. Right here.

03 16 21 53 LMP Here's a good example of a crater hitting the wall, guys, where the material apparently slumped down into it, and it's now a - has a linear bottom rather than a cone bottom. You get the impression that this part back here has been powdered almost everywhere except --

CDR Yes.

LMP -- the new, fresh, ... white craters. You know, every crater has somewhat a different kind of textured floor. A lot - There are lot of different textures. Here's one where it's sort of a wiggly hummock texture that has a - a depression around the edge of it - around the edge of the floor next to the wall. Then the one right down there is - is so extremely smooth, there's no texture to it at all.

CDR Well, except for all those that are obviously new which get - Some of them get quite big.

CMP I'm still - -

CDR They all look like they're powdered over.

CMP - - f/8, huh?

CDR Yes, still f/8. You know, Jack, looking at that one, you get a - you're looking at a whole different world than I am, ... so - -

03 16 22 56 LMP Oh, okay. There's Gagarin.

CDR - - you got Gagarin now. We're coming right over the top of Heaviside - -

LMP No, wait a minute. That's not ... - -

CDR - - Heaviside and Keeler - -

LMP - - ... over ...

CDR - - Right now - right now, we're right over the top of Heaviside, right smack over the top. And right here - -

CMP I don't see it.

CDR - - with the central peak and with the crater - -

CMP What's - -

CDR - - on the eastern - -

CMP - - What's north of Heaviside?

CDR What's what?

CMP North of Heaviside.

CDR North?

CMP It should be just - -

CDR Stratton and Dewar up here.

CMP Stratton and Dewar?

CDR That's what you're looking at right there.

CMP Yes, that's what I'm looking at.

03 16 23 22 LMP That crater in Keeler there is the one that Jim Lovell used as the landmark track, down on the north rim.

CDR Okay, Ron. You're looking at Stratton and Dewar, and we're right over Heavyside. We're coming to - right over Keeler, right over that eastern crater in Keeler, and then right over the central peak. And what time is it?

CMP ...

CDR 03? Okay. About another minute or so, we'll try and get you to f/ll if I can find out - -

CMP Get to f/ll when I pass Kee - -

CDR Pass Keeler.

CMP - - pass Keeler, we'll go to f - f/ll. Okay.

CMP Now, that's kind of messed up because, heck, it took me a half a pass to figure out which way we're going.

CDR Well, that's right and you're looking - -

CMP And - -

CDR - - you're looking in one direction, and I'm looking - -

CMP - - at everything in another.

CDR So what I see coming, you see - not here yet.

CMP Yes.

03 16 24 17 CDR In the - in the central peak in Keeler, you can see some ridges right across the top of the mountainous ridge that are running in a - lineations running in a east-west trend. See that, Jack?

LMP Yes. They look a little darker.

[REDACTED]

CDR Yes, they got --

LMP ... variety would be an overhang there.

CDR -- light and dark and then a shallow --

LMP It looks like the western side of that - of that central peak just cracks right off.

CDR Okay, Ron. You're looking up - let's see, Keeler - you're looking - I'm looking up ahead towards - I don't know whether that's Champlin or not. Is it? No.

CMP Chaplygin. Chaplygin.

CDR Chaplygin. No, I'm not --

CMP It's got to be somewhere.

CDR Yes, but I'm not looking - Oh, it's up there. I see it. It's down there farther.

03 16 25 07 LMP There's a population of elongate craters - looks something like the highland version of your SEA [?]. Every once in a while, you see those kind of craters.

CMP Yes.

LMP You know that --

CMP What does - what does Chaplygin look like?

LMP Chaplygin --

CMP Is that one down inside of it?

CDR Yes, there's a couple down on the south side, and there's a central peak, and there's some - some linear breaching on the north side, Ron. And then, don't forget the star Chaplygin. You know, Jack, that --

CMP I can't see them.

[REDACTED]

[REDACTED]

CDR -- those lineations in the central peak of Keeler look like what they might have been looking for at Copernicus.

LMP Yes.

03 16 25 43 CDR Oh, there's the star Chaplygin, Ron. See it? Out here?

CMP I - I don't see it yet, but - -

CDR Yes. Oh, it's beautiful! Right on the - right on the - on the northern - Ron, let me get my ... - -

CMP Oh, yes.

CDR See it?

CMP Okay, I see it coming up there.

CDR Oh, man, beautiful.

CMP That's Chaplygin?

CDR Yes, that's Chaplygin.

CMP Oh, okay. The star Chaplygin, okay, is on the north - -

CDR Yes, it's on the north of whatever it is.

CMP - - Yes, northeast corner. Whatever.

CDR We're on the back side looking the other way on that - -

CMP Oh, shoot. I don't see the ... yet.

03 16 26 16 CDR Man, the star looks - is just a very dense white halo within about a - looks like a half a crater diameter. And inside, you can see very dark masses streaked by very light masses in a - in a radial downward direction.

CMP Yes.

[REDACTED]

[REDACTED]

CDR It looks like the majority of that - of that ejecta may have gotten diluted as it rolled down the slopes of Chaplygin. I didn't give you f/ll yet, did I? You can go there if you're not.

CMP No. We aren't missing anything . . . - -

CDR Are you f/ll?

CMP - - SIM bay, are we?

CDR PAN CAMERA, STOP. Yes, wait - Oh, wait a minute. Let me get the time here. We're not there yet.

CMP About what time? When does it stop?

CDR At 10:57.

CMP 10 - Oh, 07:17?

CDR Yes, 10:57.

LMP Should be seeing Gagarin here off to the - south pretty soon.

CMP Yes, there's Gagarin. And -

CDR Well, you can see to the south. See, I can't. I can't see to the south.

03 16 27 38 LMP Okay. I can't see Gagarin, no. What's this, Chap - Chaplygin here - with the - -

CMP Star Chaplygin.

LMP - - looking out - -

CDR Yes, right here. We're coming right over here with the small central peak and star on the north - upper right-hand corner. Look at the in - innards of that crater, Jack, of the star.

LMP Yes.

CDR Sort of - -

LMP I can't - I can't - -

[REDACTED]

CDR - - . . . center ray.

LMP - - see it yet.

CDR Huh?

03 16 28 05 LMP I just lost it.

CDR Did you?

LMP I didn't get a real good view of it.

CDR The inside - -

CMP Here, you can see it right out through here.

CDR - - looks like it's very dark - -

CMP See it ...

CDR - - . . . at the bottom, dominated by - by white up until about the upper 10 percent. And then on the interior of that upper 10 percent is black again. And as you come out over the top, the ejecta is all very light colored.

LMP Okay. We're right over Chaplygin.

CDR Okay. At - what did I say - 10:57, you got 2 more minutes, Jack, on the PAN CAMERA.

LMP Okay.

CMP Don't I stop there at the lovelet? Doesn't look like the lovelet to me.

CDR Star Chaplygin - I don't know what you're talking about. What lovelet?

CMP The next thing up there, there's a - there's a stop at - -

CDR Oh, right here?

CMP Yes.

CDR It looks like a kidney?

CMP Yes .

CDR Well, let me see if I can see it. Yes, that's where you stop - Oh, there it is.

CMP I don't see it yet, but - -

CDR Well, I do. It doesn't look like what you're thinking of. Looks like - -

CMP Doesn't look like a lovelet to me, does it?

CDR What's a lovelet?

03 16 29 10 CMP Well, I thought it had some stuff on the crater floors, but I sure don't see it. Oh, there it is! Yes, I got it right here.

CDR Yes, okay.

CMP See it?

CDR There's some very old subtle depressions that were craters that have got turtleback fill - -

CMP Yes, turtleback fills on it.

CDR - - which is very much; texturewise, except for the cracking, like the rest of the hummocky area. Okay. You got the lovelet?

CMP Yes .

CDR Man, my neck is going to break.

CMP Mine, too. That's (laughter) - -

CDR I think that's where you stop, isn't it?

CMP That's where I stop, I think, isn't it?

03 16 29 45 CDR Jack, you got another minute on the PAN CAMERA.

LMP Okay. I got a clock going there. Yes. Yes, there seem to be - at least two crater-filling episodes, one of a very smooth material that seems to be older and more cratered. And then there's this

[REDACTED] turtleback and varieties of that that you see in isolated craters around the - along the track.

CDR Jack, you want to get ready on that PAN CAMERA?  
Ron, are you done?

CMP Yes, I ... - -

CDR You want to record the frame number.

CMP Okay - -

LMP PAN CAMERA.

CDR Stand by. I'll give you a mark.

LMP Yes, to what? To - -

CDR You - you'll want it to standby.

LMP Okay.

CDR Thirty seconds.

LMP All right.

CDR Let's see, what am I - What's this huge basin I'm looking at right here to the north?

CMP That should be Becvar.

CDR That's this basin here. What the heck is that?

LMP That it, Gene?

CDR Mendeleev, isn't it?

LMP Gene?

CDR Stand by -

03 16 30 58 CDR MARK it.

LMP Okay.

CDR Right on time. Okay. V/H to HIGH ALTITUDE.

03 16 31 05 LMP Okay. It's going to HIGH.

[REDACTED]

CDR Next thing, in 5 minutes is the laser altimeter.

LMP What are we going to do with it?

CDR We're going to turn it off, and then we're going to - turn - retrack the mapping camera and close some covers.

LMP Okay.

CDR That was the PAN CAMERA you went to STANDBY on?

LMP Yes, sir.

CDR Okay. What is this? Mendeleev, isn't it?

LMP I believe ... - You should recognize it by having that long linear - -

CDR Yes, but I can't see it now.

LMP - - crater chain.

CDR Oh, there it comes across. Yes, I'll - -

LMP Yes. That's it.

CDR - - be able to see it when I get - -

LMP Yes.

CDR - - in line with it. That's it. It's got the - sort of an off-center, traveling central peak.

CDR Yes, that crater chain - what - goes almost north and south.

LMP Yes, very linear.

CDR And, boy, is that - -

LMP Extremely linear.

CDR - - is that pronounced.

CDR I wonder if the Rover would get up those walls? I doubt it. There's some breaches, though, in those walls that the Rover could get through.

[REDACTED]

**IMP** Yes.

CDR But I'll bet they look much bigger when you get down there.

LMP They're not nearly as smooth a floor as Korolev seemed to have in detail. Seems to have not only more craters but more hummocks.

03 16 32 36 CDR We're right here, Ron.

CMP Yes, I know. Right here.

CDR ... through there.

CMP Okay. The next thing is - -

LMP I got a clock going on that altimeter.

CMP Okay. LASER ALTIMETER goes OFF at 16.

LMP And there was a possibility of an east-west ridge --

## CMP Where is Mendeleev?

LMP Mendeleev - -

CDR Right here, Ron.

CMP I don't see it.

CDR Right here.

CMP Not at this Sun angle. I don't see it yet. Okay.

CDR Right here. It's this way.

CMP There?

CDR Yes. This way.

03 16 33 10 CMP We're supposed to have those big - Oh, there it goes. Yes, out over here. Yes. Okay. There it goes. Boy, I tell you, it sure helps to have --

[REDACTED]

CDR And the next two craters we're coming over are Hartmann and Green. Green has got that nice symmetrical central peak with the sloped sides, and Hartmann has got a sort of hummocky turtle-back. You don't see the cracks - -

CMP Yes.

CDR -- but you see the blisters in its - -

CMP That's Hartmann, okay.

CDR -- that's Hartmann, and you see the blisters in it's floor, and you really don't see the sloping either.

03 16 33 38 CMP Yes, what's that one that has the slumping down there south of - of Green?

CDR Green? South? Right here?

CMP Yes.

CDR Look - looks like the bottom has been boiled up?

CMP Yes, looks like - -

CDR Like the whole side - freshly slumped - -

CMP Yes.

CDR -- and the bottom is boiling molasses or something?

CMP Right.

CDR That's nothing. I can't - I don't have it on this chart.

CMP That's ... up there, huh?

CDR But it's right under the number 13 where it says rev 13.

CMP Yes.

03 16 34 04 CDR This is where you get your back sore.

CMP Yes, yes, it is!

[REDACTED]

LMP Man, you're right (laughter).

CMP It's like - like Anders said, this is a heck of a --

LMP Okay, this - I --

CMP -- proposition, by the way.

LMP -- don't know which one it is, but one of those to the right - Oh, we're just about over it right not - maybe just a little north of our track - is generally bright walled, although the southwest wall not only has an arcuate slump cut apparently, but it's darker, and it's darker not only in the inner wall but it's also in the ejecta blanket outward. You see that, Ron?

CMP Yes, it is. It's darker on the ejecta and the blanket going back toward - to the east.

LMP Yes. Yes. Is that east --

CMP Yes.

LMP -- or west? Is it?

CMP Well, we're going east. We're --

LMP We're going west.

CMP Okay.

LMP Okay; yes, east. I'm sorry; southeast.

CDR Hey, do you see that one where you see very steep fresh walls way out there, almost on the horizon? Oh, we're going over a big long -

CMP Yes, we --

03 16 35 04 CDR What is that? Do you have any idea? Big long chain?

LMP Yes, we're going over --

CDR -- crater chain. Not that one. And in this case it is --

[REDACTED]

LMP Look at that.

CDR -- made up of cone-shaped --

LMP I would say it might be --

CDR -- craters that are --

LMP -- en eschelon with apparent right laterals.

CDR -- ... I thought at ... you were supposed to go to the horizon.

LMP It's trending north-south --

CDR Ron?

CMP What?

CDR Thought you were supposed to go to the horizon.

LMP -- at the northwest-southeast --

CMP No, ... doesn't.

LMP -- and the spoon is consistently to the south.

CDR Here's King coming up.

CMP Where? I'd like to take a look at that.

CDR I got a good view of what's in front of us right by the LM. Here, you can - you - Take a look at King from this angle, Ron. Get back here to the --

CMP I can see the --

CDR -- Look right along the LM - LM tanks. See it?

CMP Oh, okay. It's just now coming up. Okay.

CDR Yes.

CMP With the Y central peak on it.

CDR Yes.

CMP Okay, okay. Okay, I don't --

[REDACTED]

CDR I'll give you a hack when you ought to be able to pick that out. It's got - Yes, it's got a - a varied central peak --

03 16 36 12 CMP Yes, it's a Y-shaped central peak is the ... --

CDR Okay. It is. And the Y is pointing up to the - What? Northwest.

CMP Okay. There's 16. That's LASER ALTIMETER, OFF. and MAPPING CAMERA to RETRACT.

03 16 36 27 LMP Okay. LASER ALTIMETER is OFF and going just to RETRACT --

CMP RETRACT on the MAPPING --

03 16 36 32 LMP Okay. Barber pole.

CMP Okay. Let me --

LMP Couple minutes and we'll look at it.

CMP Okay, and then IR COVER to CLOSE.

03 16 36 41 LMP IR to CLOSE.

CMP UV to - UV COVER, CLOSED?

03 16 36 49 LMP IR is CLOSED --

CDR The ray --

03 16 36 52 LMP -- UV is CLOSED.

CDR The ray's from Giordano Bruno --

CMP Okay, and I got ...

CDR -- that seem to breach King --

LMP What else, Ron?

03 16 37 00 CMP PAN CAMERA to OPERATE at 18:05. It's 17:05 now. Coming down.

[REDACTED]

CDR I can't really see where the ray emanates from, but it's very obvious to me that there's not only an albedo change as you approach King in the direction of that ray - or from the direction of that ray, which, by the way, is into the opening of the Y in the central peak, but that as you hit the rim, there is a definite --

CMP Okay. There's going to be a ... --

CDR -- wide area of albedo change to a lighter color. And in the center --

CMP -- I mean I was looking at the ... --

CDR -- of this light color down the slump slopes --

CMP Have you retracted yet?

CDR -- of King, you have a very - well, not a ... but a darker - much darker area.

LMP No.

CDR What do you want, Ron.

CMP ... 15, when the mapping camera retracts.

LMP What shall I do? Turn it off?

03 16 37 42 CMP No, no, just leave it there, but I'd just like to know when it is.

CDR And on the ray from Giordano Bruno --

CMP How long it takes.

CDR -- you have sort of a smooth-type surface --

CMP ... before.

CDR -- Looks like it's much dustier, if you will, in that direction as it approaches King than the --

CMP Okay; 5 - 5 seconds to PAN CAMERA --

CDR -- area outside the ray.

[REDACTED]

[REDACTED]

CMP -- OPERATE. Okay. PAN CAMERA to OPERATE now.

03 16 38 09 LMP MARK. It's operating.

CMP It started at 09. That's at ... --

CDR And as you look up the horizon from King out that ray, you get a --

CMP It's a minute and 45 right about now.

CDR -- ... hint of a - this continuous, darker --

CMP ... set it over ... --

CDR -- surface within the ray geometry.

LMP Now what?

CMP Okay. PAN CAMERA to STANDBY at 27 is the next thing for you. 27:43.

LMP Okay.

CDR It seems to go --

LMP Nine minutes.

CMP Okay. You can enable JETs A-4.

LMP Okay.

CDR Oh, man, you got to look at that - at that - that - that albedo change, almost like a flow coming down the walls of - What is it? Guyot?

CMP Guyot. Yes.

CDR Guyot? Right at us. Do you see it?

CMP And they're - straight down here, is it?

CDR Yes, you see Guyot?

CMP Yes.

CDR But you see that albedo change?

[REDACTED]

[REDACTED]

CMP Oh, that's - that's - okay. That's Lobachevsky on over there.

CDR No. No.

CMP Yes, it is.

CDR Not what I'm looking at.

CMP The one looking straight ahead there.

CDR No, I'm looking over here. I'm looking right over here.

LMP Okay. Here's our sandy, light gray rims.

CDR Okay. What do you want on these - on the - -

CMP Okay. Enable A-4.

03 16 39 29 CDR I can't find A-4. My eyeballs are shot. A-4, enabled.

CMP C-3.

LMP Can I use that camera at all?

CDR C-3?

CMP And B-4.

CDR B-4?

CMP Yes, you can use it.

CDR And what?

CMP And D-3.

CDR Okay. What do you want disabled?

CMP Disable jets A-1 and C-2.

06 06 39 45 CDR A-1 and C-2, okay. A/C ROLL is OFF.

CMP And enable jet C-1. Enable C-1.

[REDACTED]

CDR C-1.

CMP Okay.

CDR Okay. You got all your roll jets off except C-1.

CMP Yes, I know. I know.

CDR This is a ... --

CMP Which is a minus roll. Okay. Enable B-2 and D-2.

CDR Enable B-2?

CMP Yes, Bravo 2 and Delta 2.

CDR Okay.

CMP And that's in case we get off attitude.

CDR Okay.

CMP Now, get me a VERB 6 - 62 on --

CDR Are we subsolar yet?

CMP -- ... to ... pretty clever.

LMP Did you pick up the rest of this stuff in the Flight Plan?

CMP Yes, we got everything. Yes, substellar - subsolar's about now.

CDR Okay.

03 16 40 31 CDR Okay, Ron. Now we're coming over Lobachevsky, right now. Right here.

CMP Yes.

CDR I - I was looking at Guyot.

CMP That's mag 00, frame something or other - whenever you get through there.

CDR Guyot.

CMP Acquire MSFN in OMNI D. Okay. We'll ... Let me know when you're through taking pictures there.

LMP Okay.

CMP What frame?

03 16 41 08 LMP Frame 66. That's a really strange - those are very light gray areas that are around the rims of craters. Looks like it might be related to that swirl.

CDR Boy, that looks - You know, where you see some of these slumped areas where it looks like there's an albedo change over the rim of the crater, so many places you see a - what appears to be a small but massive - looking black area like right here on - on Lobachevsky.

LMP There's just - just black fill rolling over the slope of the - -

CMP Did you get that ... of Lobachevsky?

LMP - - wall of the crater. Yes. I wouldn't be surprised if that's all glass, Geno.

CDR Might very well be.

LMP Because craters that have big ray patterns - they also generate a lot more glass than usual. These higher energy impacts.

CDR Okay, are we about - -

LMP Frame 67 was Lobachevsky on mag 00.

CDR Oh, let's see. AOS is at 24. ... What do they want? Did we get all this, Ron?

CMP Yes, I got that.

CDR Disable A/C - -

CMP Okay. I got - got 10 degrees out here. Let me give us a call.

03 16 42 37 CMP MAPPING CAMERA, RETRACT. The talkback was gray.

[REDACTED]

CDR Have we got everything done?

CMP Got everything done as far as --

CDR You get all these things here?

CMP Yes, we did that.

CDR You get the T-start again?

CMP Yes.

CDR Okay.

CMP T-start is 18:07 or so. That's good.

CDR Okay. Did you get the MAPPING CAMERA, RETRACT, and everything?

CMP Yes, I did.

CDR Okay. This is all done. OMNI Delta then?

03 16 43 09 CMP Okay. We're in OMNI Delta.

CDR 27:43, we want to stop the pan camera again.

CDR There's a ... one down there.

LMP Some of that dark stuff just looks like blocks.

CMP Yes. Think I can finally - Look it, this thing's upside down (laughter).

CDR Well, you got to know which way you're going and which way you're pointing. That's the big problem.

SC (Cough)

CDR I got the feeling that someone's brought a big powder puff and powdered the whole back side, because --

CMP ... water.

[REDACTED]

LMP Here's one - here's one off to the south that has -  
has three albedo contrasts. Looks very much like  
what you just described except it has one more -  
one more in there --

03 16 44 33 CMP Okay, Houston. We're with you in OMNI Delta.

03 16 44 38 LMP -- that is much darker than the others -

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03405

APOLLO <sup>17</sup> MISSION

APOLLO DSE CM VOICE DUMP TRANSCRIPTION

DUMPED OVER GDS DURING LUNAR ORBIT 1

Time Segments (AET)

From	To
<u>03 18 10 49</u>	<u>03 18 25 17</u>
<u>03 18 25 28</u>	<u>03 18 33 44</u>
<u>03 18 33 48</u>	<u>03 18 54 58</u>
_____	_____
_____	_____
_____	_____

Voice good; time good

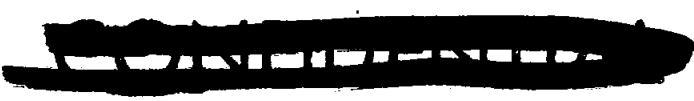
SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCC-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.



03 18 10 49 CDR

... the burn. (yawn) Well, there comes the Sun up already? Probably. That'll be on our ... - -

LMP No. ... That's - Besides, it's out the other way.

CDR Yes. ... Right on the side of the LM. Look at it.

LMP Yes. Sun's behind it. ...

CMP Okay. The burn time is 22.1, bank A open. ...  
... overburn it 2 seconds. That's a ...

CMP ... sextant star check. Okay. P40 to 50 18, and bring that beauty behind.

CDR Okay. Check your breakers on panel 8 and your SPS breakers.

CMP DIRECT ULLAGE. ... right here.

CMP Okay, DIRECT ULLAGE -

LMP Oh, you've got that. Okay. I can put it in here.

CDR ...

CMP PILOT VALVES; okay, they're all set.

CDR ... you can pull a ..., but it feels like it.

LMP ...

CDR Yes.

03 18 12 51 LMP ... like it?

CDR Yes. No, it's - it's not so bad. It just feels like I pulled a ... or something. EPS is doing nothing.

LMP ... clear. ... the handle.

CDR Yes. Make sure that it's down good.

LMP ...

~~CONFIDENTIAL~~

[REDACTED]

CDR Okay. You got all your breakers - STAB CONTROL, panel 8? (Yawn) SPS, 12 CLOSED?

03 18 13 20 CMP Okay. STAB CONTROL; they're all CLOSED. ...

CDR Okay. SPS, 12 CLOSED?

03 18 13 23 CMP SPS are CLOSED.

CDR Okay. MANUAL ATT, three, RATE COMMAND?

03 18 13 26 CMP Okay, we're RATE COMMAND.

CDR ATTITUDE DEAD BAND, MIN; RATE, LOW.

03 18 13 31 CMP DEAD BAND, MIN; RATE to LOW.

CDR SCS TVC, two to RATE COMMAND.

03 18 13 35 CMP TVCs in RATE COMMAND.

CDR CG switch, LM/CSM.

03 18 13 39 CMP Okay. We're in LM/CSM.

CDR Okay. TVC GIMBAL DRIVE PITCH and YAW, AUTO.

03 18 13 45 CMP PITCH and YAW's in AUTO.

CDR Okay. We'll stand by for about 6 or 7 minutes.

CMP Okay. Should be in good shape.

CDR Okay. If overburn is greater than 2.2 feet per second and less than 10. Well, first of all, if it's less than 2.2, we'll take it out - to 1 foot per second. See then we - If it's between 2.2 and 10, we'll pitch 180 and take it out with the plus-X thrusters.

CMP Okay.

CDR If it's greater than 10, we'll use the SPS.

03 18 14 18 CMP Okay. 25, NOUN ... and the --

CDR What are you doing?

[REDACTED]

03 18 14 26 CMP Plus, ENTER, plus 228 - -  
CDR Oh, NOUN ...  
CMP -- from 180 is - 180 from that is what?  
CDR 48.  
CMP From 228 is - 048.0, right?  
CDR What attitude did you put in there?  
CMP 180 degrees.  
CDR Oh.  
CMP See, that's okay. Then call VERB ... and ...  
around. Could have loaded NOUN 22, I guess.  
CMP What are we supposed to be in to acquire ground?  
CDR See, you were supposed to be in an omni when you  
left it , so that has to be high gain, so how about  
OMNI Charlie?  
CMP Okay. ... it in OMNI Charlie. No. Wait a minute.  
This says AOS.  
CDR Yes, but that's where they - We didn't go to OMNI  
Charlie. We stayed in HIGH GAIN.  
CMP Well, but AOS - We ... for the call ... change that.  
CDR Yes.  
CMP I'll change it. ... LOS to AOS.  
CDR HIGH GAIN, plus 9 and 338.  
CMP Okay. ... - -  
CDR -- ... lock up in the high gain, go to OMNI  
Charlie.  
03 18 16 24 CMP Okay. Plus 9?

[REDACTED]

CDR Plus 9 and 338.

CMP That'll be MANUAL WIDE or -

LMP ...

CMP ...

CDR ... Here it is, right here. Okay. VERB 49 to landmark observation attitude - or bailout attitude. Okay, set HIGH GAIN for plus 9 and plus 338, REACQ and NARROW for AOS.

CMP For AOS.

CDR Yes. NARROW for AOS.

03 18 17 08 CMP REACQ and NARROW. Okay. ...

CDR We want to make sure we get things cleaned up tonight so we can go to bed on time, because tomorrow is one heck of a long day.

CMP Yes, it sure is.

CDR We want to get done eating, and get any other cleaning up we want to do or whatever else we want to do and get it out of the way because --

CMP I think you guys may want to put your sensors on tonight, too.

CDR -- because sleeping time - Well, I'm going to leave mine on - sleeping time, we want to be ready to go to bed, either by then or before then ... at this point ... --

LMP Is that - what's your - , ... go around in a strange attitude ... ?

CMP Jack, have you got VHBW on that camera?

LMP No. You want VHB - -

CMP If you had one quick one, I'd start it at - what, f/4 at 1/250? Right at the terminator?

LMP Well, stand by 1.

[REDACTED]

CMP I'm sure. It's - pretty much black mare - in -  
in - Korolev there. I think that's Korolev.

LMP How am I doing here? Have I still got time?

03 18 19 03 CDR You've got 12 minutes.

LMP No, I mean for Ron.

CMP Twelve minutes, Jack?

LMP No. Time for your picture.

CMP Yes. ...

LMP Okay, VHBW. You want - and the - What - what lens?

CDR That one won't be any good.

LMP Huh?

CDR Get the other.

LMP ... Lit it?

CDR It won't be any good to get what you want, though.

CMP Yes, the 80, if you've got one. Otherwise, ...

LMP Well, I'll put it on.

LMP Here you go.

CMP Okay.

LMP The slide's pulled.

CDR You got it set with the slides pulled?

LMP No.

CMP Okay. ...

LMP Just a little beyond the terminator, I think.

CDR Well, let's see what ... here. ...

[REDACTED]

CMP No manual start; no restart.

CDR No.

03 18 21 08 CMP Okay, G&N, do your stuff.

CDR ...

CMP Four jets, 15 seconds, isn't it?

LMP Huh?

CDR Ullage. Ullage is four jets ...

CMP Four jets, 15 seconds. I think I'm going to have to ... these crazy things to make them work.

CDR Have you got DSE?

03 18 22 02 CMP There's a couple of places of floating urine on the window.

03 18 22 33 CMP That one right over there.

LMP What one? ... - -

CDR That's Galois, isn't it? That one right down there?

LMP ...

CDR Korolev is - off to your left a little way. There.

03 18 22 55 CMP Okay; 8-1/2 minutes.

03 18 23 26 CDR Okay. Tight limits, ... over at 10 degrees a second, ... 10 degrees. That's the attitude deviation, plus or minus 10. Shutdown is burn time; that's the most critical thing. Trim X to within 1 foot per second. No manual start; no restart.

CMP Okay. We'll go 5, 4, 3, 2, 1, shutdown. Right?

CDR That's the ... burn time.

LMP Okay.

[REDACTED]  
CONFIDENTIAL

CDR Starting at 18?

CMP Yes.

LMP 2 ... right?

CDR Starting it at 18.

CMP Right. 5, 4, 3, 2, 1.

CDR 18, 19, 20, 21, 22. I'm going to start at 18. 5, 4, 3, 2, 1; that's 18, 19, 20, 21, 22. Because I don't want it to shut it down early; start on 18 to get your 5.

LMP Gene, it will be late.

CMP Late to give you ... shutdown. Start on 17: 5, 4, 3, 2, 1, shutdown.

CDR Oh, you're going to yell shutdown, I'm sorry.

CMP Yes.

CDR I'm sorry. Okay. You're right.

LMP I'm going to shut it - shut it down on ... --

CDR Okay.

LMP -- ...

CDR Okay. MAIN BUS TIES, ON.

03 18 25 03 LMP Okay. They're going on. A/C's ON, and it's good; B/C's ON, and it's good.

CDR Okay. TAPE RECORDER; HIGH BIT RATE, RECORD, FORWARD, COMMAND RESET.

03 18 25 17 LMP Okay. HIGH BIT RATE, RECORD, FORWARD, COMMAND --

TIME SKIP

[REDACTED] CONFIDENTIAL

03 18 25 28 CMP ... Check; it's good.

CDR Okay. SERVO POWER; AC 1/MAIN A?

03 18 25 31 CMP Okay. AC 1 --

CDR And AC 2/MAIN B.

03 18 25 33 CMP -- 2. There they are.

CDR Okay. Let me get my ... ROT CONTROL POWER, two, to AC.

03 18 25 41 CMP AC.

CDR DIRECTs OFF?

03 18 25 42 CMP DIRECTs are OFF.

CDR Okay. EMAGs, 1/2.

03 18 25 46 CMP EMAGs are uncaged.

CDR SPACECRAFT CONTROL, SCS.

03 18 25 50 CMP Going over; says SCS.

CDR Okay. ROT CONTROL; two are ARMED.

03 18 25 55 CMP Okay; ARMED.

CDR PITCH 1 and YAW 1.

CMP Okay, PITCH 1.

03 18 25 57 CMP MARK it.

CDR Got it.

CMP YAW 1.

03 18 26 00 CMP MARK it.

CDR Got it.

CDR Verify trim and set.

[REDACTED]

03 18 26 04 CMP Okay, 1.9. And right there at a minus 0.6 ... 4.  
CDR Minus 0.64, Ron.  
CMP Minus 0.64? Thank you. Minus 0.64 --  
CDR Okay. Verify MTVC.  
03 18 26 22 CMP MTVC; MTVC. Okay.  
CDR Okay. SPACECRAFT CONTROL, CMC.  
03 18 26 27 CMP CMC.  
CDR Clockwise?  
03 18 26 29 CMP Returns to zero, Clockwise.  
CDR No MTVC?  
03 18 26 31 CMP No MTVC.  
CDR Okay, PITCH 2 --  
CMP PITCH 2.  
CDR -- and YAW 2.  
03 18 26 34 CMP MARK it.  
CDR Got it.  
CMP YAW 2.  
03 18 26 36 CMP MARK it.  
CDR Got it.  
CDR Set GPI trim.  
03 18 26 39 CMP Okay. 1.9 --  
CDR 1.9 plus.  
03 18 26 42 CDR/CMP And minus 0.64.  
CMP Okay; it's ...

Tape 17-03405

[REDACTED]

Page 10

CDR Verify MTVC.

03 18 26 48 CMP Minus, plus, plus, minus ... Okay. Try yours.

CDR Okay; mine's good.

CMP Okay.

CDR HAND CONTROLLER, NEUTRAL?

03 18 27 00 CMP NEUTRAL; returns to - -

CDR Verify - -

CMP - - zero.

CDR - - no MTVC?

03 18 27 03 CMP No MTVC.

CDR Okay. Verify returns to zero; it did.

CMP It did.

CDR ROT CONTROL POWER, two, AC to [sic] DC.

03 18 27 09 CMP AC/DC.

CDR Okay. DIRECTs, MAIN A/MAIN B.

03 18 27 12 CMP DIRECTs are MAIN A and MAIN B.

CDR Okay. BMAGs, RATE 2.

03 18 27 16 CMP BMAGs are caged.

CMP ...

CDR Okay. That's ...

CMP Okay. It looks like we're there.

LMP Looks like it liked you, didn't it?

CMP Yes. Try it one more time and see if you ...

CDR Yes.

[REDACTED]

CMP Okay. ... for ... control.  
CDR Okay. You've got a half?  
03 18 27 40 CMP MAGs, 1/2.  
CDR Okay. Ready for a gimbal drive?  
CMP Okay.  
03 18 27 48 CDR Okay. PRO.  
03 18 27 49 CMP Plus, 2, minus 2, 0, plus 2, minus 2, 0. Ta - ta-tum-tum.  
03 18 28 06 CMP There's the trim.  
CDR Saw it all over here. Plus 1.9 and minus 0.6.  
03 18 28 12 CMP Okay; 3 minutes to go.  
CDR Okay. SCALE 5/l?  
03 18 28 16 CMP SCALE 5/l.  
CDR RATE, HIGH.  
03 18 28 20 CMP RATE to HIGH.  
CDR Okay. At 59, we go EMS, NORMAL.  
03 18 28 25 CMP Okay. Let's go EMS NORMAL in 30 seconds or so.  
CDR Okay.  
CMP TRANS CONTROL POWER - We go NORMAL, TRANS CONTROL POWER, and DELTA-V THRUST all at the same time in 30 seconds.  
CDR Okay; and you want four-jet ullage at 15 seconds. You've got a four jet there, don't you?  
CMP Ah - I think so. Yes. ... four - 946 - four jets.  
Okay.

CDR Think we'll be in in a 14 ...? Fourteen and a half miles; we is really going to be coming down among them; whoo.

LMP Fourteen and a half, huh?

CDR From 170 to 14-1/2.

LMP My gosh! Look at that hill there.

CMP (Chuckle) Looks ... again. Everything's backwards. There's a big chunk of stuff out there, rolling around. See it?

CDR Rolling around?

CMP Out the left window over here.

03 18 29 31 CDR Two minutes.

CMP Two minutes.

LMP I really like this ...

CMP ...

CMP ... armed. All the switches. Good.

03 18 30 11 CDR 01:30.

CMP 01:30.

CDR Okay. You'll shut down on Jack's burn time, regardless.

CMP Yes.

CDR Make sure you listen, so we - so you get the right lead.

CMP I will.

CMP Did you start your watch ...?

CDR Yes.

03 18 30 38 CDR Okay; 1 minute.

CMP Okay.

SC (Whistling)

CDR Okay, ... 17 feet per second ... 2 seconds. Yes, should have ... seconds.

CDR Okay. DSKY blanks.

03 18 31 04 CMP ... EMS to NORMAL; TRANS CONTROL POWER, ON; DELTA-V THRUST A is ON.

CDR Okay, at 15 seconds, you can start thrusting.

CMP Okay.

CDR I'll get the PRO.

CMP You'll get the PRO.

03 18 31 22 CDR 16, 15 - Okay, there's ullage.

CMP Got the ullage coming?

CDR See it on EMS.

CMP Yes.

CDR See it on the DSKY.

CMP On the DSKY.

CDR 7, 6, - 99 -

CMP Okay.

CDR 3, 2 - -

CMP/CDR 1 -

03 18 31 37 CDR MARK it.

LMP Got it.

CMP Okay.

Tape 17-03405  
Page 14

[REDACTED]

03 18 31 38 CDR IGNITION.

CMP -- ... the thrusters? Pitch ... Looks good over here.

CDR Okay.

CMP Looks good. Okay, it's coming up --

LMP Fifteen seconds to burn. Computer looks good, like it's going to be on. It says 10 to burn. I think computer's going to shut you down on time.

LMP Stand by.

03 18 31 59 LMP Fa - SHUTDOWN. I'm sorry.

CMP Okay.

CDR That's all right. Computer shut you down. That's all right.

CMP Computer shut it down; that's all right.

CDR It was on time.

LMP I did this same darn thing in the simulator the other day.

CMP Okay.

CDR Okay.

CMP/CDR That's all right --

CMP We had ... one time.

CDR 22 seconds --

CMP 198.2.

CDR Let me - let me get them. It was right on time.

CMP Right on time.

CDR Good over here.

[REDACTED]

CMP Okay. PITCH 2, Jack?

LMP Go ahead.

03 18 32 20 CMP MARK it.

LMP Got it.

CMP YAW 2.

03 18 32 22 CMP MARK it.

LMP Got it.

CMP Okay, once.

03 18 32 25 CMP MARK it.

LMP There's a zip. That was beautiful.

CMP ... once.

03 18 32 28 CMP MARK it.

LMP Got it; 0.1.

CMP Okay, let's see. It's just - picking up attitude again. All right.

03 18 32 42 CMP Okay. DELTA-V THRUST - are OFF; GIMBAL MOTORS, OFF; SERVO POWER 1 and 2 is OFF. Okay, residuals - you got those? Okay, TRANS CONTROL, LOCKED; LOCKED. And let's see, DIRECTs are OFF. DIRECT ULLAGE circuit breakers, two are OPEN; PITCH 1; that one is OPEN; record the DELTA-V counter and the residuals.

LMP What was it? Plus or minus?

CMP Plus 0.1. And I - it went on at 30 seconds ...

03 18 33 27 CMP Okay. EMS FUNCTION, OFF; ATTITUDE DEAD BAND to MAX; BMAGs caged. Okay, BUS TIES?

LMP Okay. Coming off.

CMP Okay.

Tape 17-03405  
Page 16

[REDACTED]

03 18 33 40 LMP There's one, OFF; two went OFF.  
03 18 33 44 CMP Okay; BIT RATE to LOW?

TIME SKIP

[REDACTED]

03 18 33 48 CMP Gene?

CDR No, no. You delay that until --

CMP Oh, that's --

CDR -- 94:10.

CMP Oh. Okay. Delay that until 94:10.

CMP ... look ...

CDR Okay.

CMP Okay. Let's see. You got a VERB 66?

CDR Yes. ... anyhow, it looks like. Okay. VERB 49. Go to 020.

03 18 34 13 CDR Okay. Plus 20.00.

LMP Okay. And 293 and zero.

CDR ...

CMP Okay. And then you got the ... DAP. 50 18 ... chamber pressure got up to 95 that time.

CDR Still got a bias there.

CMP Still got the bias, but --

CDR It may have been a ...

CMP Yes. It's --

LMP ... bias.

CMP Yes.

03 18 34 42 LMP Yes. It could have been ... Okay. Oxidizer is 30.5; fuel is 31.1. And I'm now 150 decrease.

CDR ...

LMP That's right. ... Ox ...?

~~CONFIDENTIAL~~

[REDACTED]

CDR Yes.

LMP ... wondered - Okay, good. I was just wondering if we were in there.

CDR Yes. You know, it used to be - -

LMP - - -

CDR It used to be the other way. It used to be the opposite of what he gave you.

LMP What he gave you. Yes.

CDR Somebody changed it ...

CMP That somebody is your CMP.

LMP Could be confusing.

CMP (Laughing) Yes, I guess it is.

LMP Okay. Let's see.

CDR I want to find out what kind of - -

LMP Get your landmark tracking.

CDR - - - is.

LMP Set HIGH GAIN. Okay.

03 18 35 36 CDR Okay. HIGH GAIN is plus 9 and plus 338, I guess.

LMP Okay.

CMP Okay.

CDR Okay, we'll pick up that SIM prep ... in about an hour, Jack, postburn SIM prep.

LMP Okay.

CDR Well, that should be about a couple of minutes.

~~CONFIDENTIAL~~

CMP Gosh dang it, I wish those craters would turn around the other way.

LMP Okay. What else?

CDR Ron, go to - Well, when we pick it up, we've got our - the big thing is NOUN 89.

CMP Look at that big scarp going ... over there -

CDR P24. Hey, Ron.

CMP Huh?

CDR Put your switches in ACCEL. I want to call up VERB 82 in a minute. And then I'll switch you back over.

CMP Okay.

CMP 59.1 by 14.9. That'll be pretty close to what we figured, huh?

CDR Yes.

CMP Okay.

CDR Ready?

CMP ... 10 degrees ... I wish I could look out there and recognize a crater right off the bat, but I can't do that yet.

LMP Well, you're right over Chaplygin, I believe.

03 18 37 04 CMP Right over Chaplygin?

LMP Yes.

CDR Just passed it.

CMP We must be past it. I don't see it.

LMP No. It's down over there.

CMP Oh, there it is over there.

~~CONFIDENTIAL~~

CDR There's those - turtle -  
LMP Yes.  
CMP Okay. There's the lovelets.  
CDR -- ... Yes.  
CMP There's the lovelets. Okay, so that's south of  
that - What's that big one south of the - the  
lovelets?  
LMP That's got to be -  
CMP Marconi. This is Marconi over here.  
CDR I can't see too much from down under this -  
LMP Marconi.  
CMP What time do I have to do that landmark tracking?  
LMP ...  
CDR Yes, you -  
LMP ...  
CDR Load NOUN 89. What are the numbers for loading  
NOUN 89?  
LMP Hand me your orbital chart --  
CMP It's ...  
CDR ... NOUN 89 ...  
CMP J-3.  
CDR I have the numbers for J-3. ...  
CDR Plus 9 - plus 19.948, plus 20.051, plus all balls.  
CMP Okay.  
CDR Okay.

~~CONFIDENTIAL~~

CMP Maybe I'd better get some ... on ..., just in case.

CDR Oh heck, we've got - What'd I say? Nine - We're at 93:18. We've got a long time before AOS.

CMP Oh, yes, before AOS gets here.

LMP Yes. Marconi was the one ... - -

CMP Marconi is the one south of it.

CDR Yes?

CMP That's the one I ought to recognize because that's -

03 18 38 53 CMP Okay. ... is norm, 1 frame per second, f/60. Let's see, it's pretty high Sun in here.

03 18 39 04 CDR Pannekoek or something like that, isn't it?

LMP ...

CDR And there's old Mendeleev.

CMP ... screwed up the focus.

CMP Yes, there she is.

CDR The albedo changed on the inside of that crater right there, Jack. It's probably the same thing that gives the albedo change on - on the - this little one right here. The white albedo; it's probably the same albedo - type albedo change you get on the - on the - slide.

03 18 40 06 LMP Yes. I don't know what produces it. You get this - -

CDR Well, even on the inside of all these walls - -

LMP - - this particular exposure, it just never darkens.

CDR See, you can - see it on all those walls. Any time there's movement, there's a darkening effect that has to do with - the sitting [?] - you know, the marnishing [?] or whatever you want to call it.

CMP Boy - have we got - a picture right there.

CDR/LMP Oh, yes.

CMP Get that.

CDR We are coming down, friend.

LMP ... high. What the heck is that?

CDR The right attitude.

LMP The right attitude? What are we, about subsolar on there?

CDR Subsolar at - 27.

LMP About 5 minutes?

CMP Sure gets bright through this telescope.

CDR Did you hit ENTER?

LMP Yes, I hit ENTER.

CDR Okay, next thing around is - is, after AOS, burn report, and then NOUN 89. Let me doublecheck those.

03 18 41 34 CMP 19.948 and 20.051. Boy, it's going to be bright.  
Whew.

CDR Okay, and then - P24.

CMP Okay.

CDR Well, you're going to have - have to tell me how I can help you with that one.

CMP I just hope I can recognize Macrobius A and B. I think I can.

CDR Oh, yes.

CMP I had a good look - -

CDR I think you had a good look at it before --

CMP I had a good look at it the last time. Then I've got to know -

CDR Your - your land - J-3 is right between them. Closer to --

03 18 42 13 CMP Yes, but there's a whole bunch of them right between there, and I want - Let me take one more look at that now.

LMP Yes, we got a mapping camera pass of that, too.

CMP We do?

LMP Don't we? Didn't we pass - didn't we take a mapping camera - -

CMP Oh, yes.

LMP ... When you ...

CDR Yes, we - we -

CMP Oh, with the pan?

LMP Yes.

CMP No, those - those only - See, I've got a strip across here, too. Right now, we should be going across Arabia aren't we?

LMP You want that picture, Ron?

03 18 42 44 CMP Yes. I've got the whole back side, essentially.

LMP Have you got that ... somewhere?

CDR There it is - -

LMP Which way?

CDR - - There with the ...

LMP Okay.

[REDACTED]

CMP Take a look at J-3 again. It says Farouk Crater.

CDR ...

CMP What is it?

LMP Well, it's - I guess it's --

CDR They got this listed wrong. I guess it's Arabia.

CMP ... J-3 --

LMP They've got ... listed up with - I guess it's ..., but look at that perspective as we get lower.

CDR What? Yes (chuckle). We're getting down.

CMP Man, I've got to have something to ... brightness.

CDR We're getting down.

CDR Man, are we getting down.

LMP Is that King? Is that what you --

CDR Yes, that's King, because that's where that - gray from - whatever the heck that one is over there - up through there, on the north there.

CMP Giordano Bruno.

CDR Yes. Giordano Bruno. Let me see, I've got a couple of buddies that are named Giordano and Bruno.

LMP They're Grecian, aren't they?

03 18 44 00 CDR These guys are Italian. How high are those mountains in that central peak?

CMP I don't know.

CDR Ten thousand feet, maybe?

LMP Oh, they're probably - Well, we're still --

[REDACTED]

CDR No, I don't think they're that high.

LMP Let's see, we're still - we're still close to 100,000 miles - 100,000 feet.

CMP Hey, Jack, do you have that circle thing on here? Does it have anything for landmark tracking?

LMP Circle?

CMP Yes, you know, that - photography thing? Versus latitude? Is there a scale on there for landmark tracking?

LMP ... photography shutter rate.

CMP Yes. For J-3, which is going to be about - the other side of Crisium.

LMP Looks like you want 1/60.

CMP 1/60?

LMP Do you buy that?

CMP J-3; it's about 40 degrees longitude?

LMP Yes.

CMP Yes. 1/60 sounds good then.

CDR Look at that. Isn't that impressive?

03 18 45 14 CMP Okay. There's a dark halo, and then there's a bright one.

LMP It looks like something just rolled over - rolled over that scarp or the - -

CDR There's a collection of blocks out there on the peak.

LMP Hey.

CMP There's a black flow.

[REDACTED]

CDR Boy, does it ever - -

LMP Now, here's that - here's some more of that - maybe some of those light albedo scarps. See it coming up in here? The gray - the gray and the dark mixed. The gray's sort of ...

03 18 47 15 CMP Okay, Gene, as soon as I finish this P-24, you can give me those - those new NOUN 89s to load up.

CDR Okay.

CMP Optics; SPEED to HIGH, RESOLVE, SLAVE to SEXTANT.

CDR The view is north. ...

CDR That black stuff farther up - It looks like there's a crater that hit the side over here - but that black stuff - it may be glass, but it sure flowed down that hill.

LMP Just ahead?

LMP Big crater out here to the -

CDR One right under you?

LMP Whatever direction I'm looking now.

LMP Who took the Flight Plan from me?

03 18 48 57 CMP I've got it right here. You want it? No, this is not the Flight Plan; this is -

LMP Just want to make sure no mention - Let's see, we don't have anything until AOS.

CDR I don't know, Jack. I don't - I don't remember. Remember we're looking at - that's the one that - -

LMP I'm looking.

CDR I was just talking about now where that - it looks like a - something hit the side, and glass flowed over the -

[REDACTED]

LMP Yes.

CDR It looks like a crater on an angle, a crater on an angle - or in the wall of the big crater.

LMP Looks like it's a flow out of the side of the crater - -

CDR Yes.

LMP - - at that.

CDR Well, yes, but it looks - there's such a big hole there, it looks like something must have hit it, and - and then caused something to flow out.

LMP Boy, there's a lot of that swirl out in here when you start looking for it.

03 18 50 36 CDR Whereabouts are we, Jack? I don't have a map.

LMP Okay, about where we - Let's try to figure that one out.

CDR Okay.

CDR It's about AOS time. We're coming up on AOS.

LMP Okay.

03 18 51 10 LMP We're 107 degrees west now - east, 107 east. And AOS is like - ... - like in 1 minute. I'm sorry, like in 3 minutes - 3 minutes.

CMP Okay, Gene, you ought to be looking at Moiseev. That one, that one, and right under us is Moiseev. ... got ... there.

CDR Hey, you know, we're lower. We're not going to have the same perspective we had.

CMP What's that big thing we're going over now - coming up?

CDR I don't know, Ron, we're already past it.

CMP We've past it?

[REDACTED]

03 18 52 05 CDR Well, we are - our field of view is.

CMP Why that - should be going that way.

CDR Yes, but we've got to look over the LM. We're looking - . . . - -

CMP Oh, you're looking over the LM? Oh, okay.

CDR Looking way out in front right now.

CMP Oh, that's right, you can't look down.

LMP Well, Dreyer ought to be off to the - left over here.

CMP ... 250 on ...

LMP ... to get in there, but ...

CDR Okay, there's Marginis coming up.

LMP Yes.

CDR Okay, well, this one right here is - I think - Yes. I'm looking right here. I'm looking at Mor - Macrobius right here.

LMP ...?

CDR No, I'm sorry, I'm not. I'm not. I can't - -

CMP What - -

LMP ... Macrobius is right over here.

03 18 53 26 CMP What - NOUN 89, Gene?

CDR For what?

CMP For that J-3.

CDR J-3, 19 - You want a new one?

CMP Yes. Darned thing changed, didn't it?

[REDACTED]

CDR Yes. Okay, better load it. 19.948. You ready?

CMP Okay.

CDR 19.948, 20.051, 0. That looks good.

CMP Okay.

03 18 54 12 CDR There's Al-Biruni, isn't it?

CDR Yes, there's Al-Biruni, Jack, right out there.

CDR Okay, here comes AOS. ... have them.

CMP Yes, it is.

CDR Hello, Houston; America.

03 18 54 58 CDR Okay. The burn was good on all counts.

# # #

[REDACTED] CONFIDENTIAL

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03401

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBIT 2**

**Time Segments (AET)**

**From**

03 19 59 39

**To**

03 20 48 44

Voice and time fair.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, BCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 773 and 774, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

03 19 59 39 CMP There he goes. Which way is he going to go?

CDR Down.

LMP He got to go down that way.

CDR Down that way?

CMP Depends on how you orient it.

LMP The tape recorder.

03 20 00 21 CDR Thank you. We are going to watch your signal get cut off here.

CMP ...

CDR Oh, on the top ...

CMP No.

CDR Unbelievable. Just like the big-old-hand-of-God signal. Look at that.

CMP Yes. See the relief on the surface?

CDR Yes.

LMP Oh, yes.

CMP Look at that ...

CDR Watch where North America ought to be now.

LMP Ping, there!

CDR Yes? A little grazing. It didn't drop off right in the ...

CMP ...

CDR Shove it.

LMP When was I supposed to do ...? Didn't they - Weren't they supposed to - Oh, REACQ, okay.

[REDACTED]

03 20 01 12 CDR At - Okay, Ron, you can go - after Jack does that TELCOM GROUP 2, AC2.

CMP Okay.

03 20 01 20 LMP Tape motion's verified.

CMP Okay. Is the door open on all that stuff on the lunar grav --

CDR No. You go to GROUP 2 first.

03 20 01 26 CMP TELCOM GROUP 2, AC2. Okay.

CDR When in UV grazing attitude, UV COVER, OPEN. And it's 42, so we can do it now.

03 20 01 40 CMP What's that? Is that HIGH GAIN, MANUAL?

03 20 01 43 CDR MANUAL; plus 23 and plus 260 - plus 23 and plus 260.

CMP Okay. Now what?

CDR And then nothing. AUTO and NARROW for AOS.

CMP Okay.

03 20 02 07 CDR And UV COVER, OPEN.

03 20 02 12 CDR And we got the IR COVER, OPEN, here in about 15 minutes.

CMP Okay. Just UV COVER, OPEN? Nothing else, huh?

CDR That's all. Is that experiment on - with UV COVER, OPEN?

CMP I hope it is. I haven't even touched the SIM bay today. Jack's been doing it all.

CDR I tell you, that first two revs is a bear, you know.

CMP Yes.

CDR Because, first you got all --

CMP I'll tell you.

[REDACTED]

CDR - - you know, you need a guy to fly, a guy to take pictures, a guy to handle SIM bay, and all three guys trying to observe. It's - it's a four-man job.

LMP That's right. But I think we got through it better than anybody else ever did.

CDR Oh, I'm ... - -

CMP Oh, I think we did, too.

CDR - - ... be. We got - -

LMP The only thing is on the ... SIM Bay Flight Plan.

CMP I blew there.

LMP And the high bit rate probably, but -

CDR Well, that's all right.

LMP They got it on the - on the short burn, I'm sure.

CMP Yes.

03 20 03 03 CDR UV is ON.

03 20 03 12 CDR You know, you're going to get - tape's not in ...

CDR You're going to get blamed. When you were talking in VOX there in landmark tracking, I didn't know Jack was in VOX.

CMP Yes (laughter).

CDR And - and then I - I yelled over his shoulder, "Perfect!"

CMP (Laughter)

CDR (Laughter) And I also said, "Look at those hills."

LMP The trouble is, it sounded just like the way you'd say, "Perfect."

CMP (Laughter) That's right.

[REDACTED]

[REDACTED]

CDR Then Bob says, "Ron, are you in VOX?"  
MS (Laughter)

03 20 03 44 CDR Oh, well, Gene. I shouldn't have gotten into that yet. Ron, would you -  
CMP What have you got going there, hot or cold?  
CDR Hot now.  
CMP Oh.

03 20 04 12 CDR Where are the pills? Not the ones I eat - the ones I put in the food.  
CMP Somebody put them all away, I guess. I don't know where'd you put them.  
LMP There's some up there.  
CMP We got some over here.  
LMP If we'd get this eating out of the way, we'd get all that other stuff out of the way and -  
CDR I don't know. Where did you put them all?  
CMP Here.  
LMP No. This is my pack that had disappeared.  
CDR Huh?  
LMP My - I had my pack, too ... - -  
CMP Watch it. They'll all come out at once.  
LMP - - I don't know.  
CDR Well, this is a new one. I haven't seen it.  
LMP No. Well, that's the one I've been using and I thought it'd disappeared.  
CMP Here's another one.

[REDACTED]

LMP Okay. I'm not going to touch it.

CDR Yes. All you do is verify tape motion. That means they put you in this - right?

CMP Right.

LMP Okay. I'll ...

03 20 08 16 CDR Hey. How did you sleep up here - when you slept up here? If you didn't sleep well, let's have Ron sleep up here again tonight, and you and I go down on a sleeping bag, because we really need a good night's sleep.

LMP Oh, moderately well. Not as well as down below, I don't think.

CDR Ron, how does that sound to you?

LMP But, I just - -

CMP ...

CDR They obviously didn't.

CMP Yes. Just fill it.

CDR I'm not saying you don't have a long day tomorrow, but -

LMP You got hot water in there - while you're cooking?

CMP Wonder where it is.

03 20 10 06 CMP Nine minutes to IR coming open.

LMP Huh?

CMP Nine minutes to IR coming open.

CDR Look at that. I almost got all air.

CMP What you - what you -

CDR Where are our urine ...?

[REDACTED]

CMP Over there. ...

LMP Huh? They over in the ... here? No, they ...

CMP Why don't we dump them when we dump that waste water?

CMP ... hours up ... take them off. ... dump ...

LMP Well, we don't have a urine dump here?

03 20 13 25 CMP It is, huh. It's not a bad view. The old grazing attitude. Are you sure it's the right attitude? Huh?

SC ...

CMP No, I just looked. I thought they told me there wasn't - You couldn't --

SC ...

CDR Even in the camera, I can see some bright, white stuff down there.

SC (Humming)

LMP ... going to be a ...

CDR Maybe we ought to turn the -

03 20 15 42 CMP ... 4 minutes.

CDR Huh?

CMP Four minutes.

CDR You got it? IR?

CMP Yes.

CDR Oh, man. That gas really does accumulate.

LMP Have you looked down ...

03 20 18 41 LMP ... whole floors of some of these new craters are just - You can't see where anything - where anything flowed in, but it's just molten - you know the dark floors ...

[REDACTED]

CMP Yes, I know what you mean.

CDR You just - You look at them and you can just see it - it's just boiled right there.

CMP It doesn't look like debris from the sides or anything. Yes.

CDR No, it's a lake - right there at the bottom of the crater. It's a dark lake, and you can just see right into them.

LMP ... collapse ...

CMP Yes, yes. In fact, this is characteristic of the ... craters of all sizes back here, but particularly that size and - and some - say three or four, five times that is that they're filled with something. They're flooded. Some with - -

CDR Like ...?

CMP - - very smooth, some with a turtleback, and then some with this. If I had to put an age sequence on it, I'd say it was the very smooth, the turtleback, and then this stuff would be the ...

03 20 20 10 CMP IR COVER, right?

03 20 20 12 CDR It's IR COVER, OPEN.

03 20 20 13 CMP Yes. It's OPEN. Shoot! Watch it. Danger, you run in an orbit.

CDR ..., Ron.

LMP 10 into B, and B [sic] in B6.

SC (Sneeze) Excuse me. (Sneeze)

03 20 22 07 CMP Aitken has those dome [?] holes filled ... in the crater.

CDR ..., Ron, ...

CMP Yes, that's Aitken.

[REDACTED]

LMP On all the pictures ... taken ... that floor comes out black.

SC (Sneezing)

CMP Simon and Garfunkel.

03 20 25 30 LMP Well, it's my time to don a biomed harness.

CDR Maybe I'll going to try to take that ... - after you guys are through eating.

CDR Stuffed, absolutely stuffed.

03 20 27 27 CMP Well, I had some chocolate around, you know, but I don't know what happened to it.

03 20 27 59 CDR Ron, before we go, you're going to have to brief us on - what you're going to decide to jettison - what you need to jettison - so we don't lose anything we want to keep or not jettison something.

CMP ...

CDR The unused ...

03 20 29 42 CDR What's that? Cocoa?

CDR Yes, I had that with the corn chowder (laughter).

03 20 30 12 CDR No, Gagar - No, that's - that's that one that Lovell tracked. No, that's that one that Lovell tracked - whatever it was.

CDR Oh, it was a part of the Apollo 8 task of landmark tracking.

CDR Did a lot of landmark tracking tasks in that flight.

CMP ... there. ... coming up, coming up or couldn't see what the heck it was ... ... my time before I saw the other one come up.

LMP What do you want to - Ron, what would you use up here? Would you use the gingerbread?

CMP Yes.

[REDACTED]

LMP You ought to tell us what you want to keep. Pudding?

CMP ... that?

03 20 32 36 LMP How about some cans of pudding?

CMP That canned pudding; I like that.

LMP How about diced peaches?

LMP No diced peaches, huh?

LMP Just a minute, Ron. I'll have some puddings for you.

LMP How about sausage, cheddar cheese, tomato soup, mustard.

CMP They got about three or four meals back there in - in the other end.

03 20 34 56 LMP Okay. Don't jettison stuff that's in the small pocket. Is that okay?

CDR Huh?

LMP In case you get around to looking for stuff to jettison.

CDR Okay.

LMP Whoops, excuse me. Did I kick you?

CDR No.

CMP Okay.

03 20 35 33 LMP How about the LPG - or CWG? Used.

LMP Well, I was thinking it might be later on when we run out of tissues. There's a deal of vanilla pudding.

LMP Yes. I think - -

[REDACTED]

LMP I'll just leave that in my bag. I think my bag is cleaned out. All I have to do is make a decision on the CWG - dirty old CWG.

LMP Well, I was just thinking, you know, if you ever had a big water spill or something like that. What do you do? Vacuum cleaner?

LMP Okay. We'll throw it away. Huh?

LMP Okay.

03 20 37 23 CDR If you get a chance, would you get ...

03 20 38 42 LMP No, I'm fine. I had to ... Yours ..., Ron?

03 20 39 13 CMP No, I'm putting on my harness. The next thing is AOS.

CDR ... chocolate bar ... Want any, Jack?

03 20 41 37 LMP No, thank you. Come here, Ron. Is that a darker - is that darker inside that halo or not? Now think about it; be objective.

LMP Yes, sure does to me, too. I've seen that three times now.

CMP ... of it.

LMP Get a picture of it.

CMP ...

LMP Yes. Yes.

CMP Don't ... any directional ... - -

LMP Most of them seem - Well, I don't know if there are any directional, but they're really metrical halos, in general, rather than just a light - a light area. There are quite a few of them.

LMP Well -

[REDACTED]

CMP ...

03 20 42 55 CMP Whose ambrosia?

CDR Take my pineapple drinks up there. I don't know what I'm going to do with it now that I made it ...

03 20 43 09 LMP ... this darned canister in ...

CDR (Humming) Well, I think it is time to get organized. Let's see, we have one pass to see the landing site here. Do you want those, or shall I open them?

CMP ... won't be on this side because the edge of the shadow ... right up to ...

CDR AOS is what?

03 20 44 00 LMP ... are you putting that in B? ... the number 10?  
... Is that right?

03 20 45 04 CDR Well, it looks like - you're going to do a P52.

CDR Well, I think I'm going to be able to take a ... tonight - again.

03 20 45 54 CDR What's the best time here? We're coming up on AOS. You got the Flight Plan. Got some pads coming up. I guess as soon as it gets dark - take a ... Ron's got to do a P50 - Well, maybe that won't be required. If required, what do you think?

CMP Geno? Jack?

CDR What? No, thank you.

CDR Oh, I got to - didn't log them today. I never logged any nuts.

03 20 48 02 CMP Well, I guess - do I want to be AUTO? Okay.

03 20 48 44 CMP You're right. Very ... right.

# # #

(This page Unclassified)

Tape 17-03427

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

DUMPED OVER MAD DURING LUNAR ORBIT 10

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>04 07 21 54</u>	<u>04 08 13 04</u>
<u>04 09 26 33</u>	<u>04 09 54 54</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Voice poor on first segment; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

04 07 21 54 CDR No, unfortunately. It doesn't mean we can't have any, though.

LMP Gene, how did you sleep?

CDR Oh, about 6-1/2 hours - pretty good.

LMP Sleep - good.

LMP Sleeping all right?

CDR Yes.

LMP How much water did you have yesterday?

CDR I only had three of them.

LMP And a PRD when you get a moment.

CDR Okay. PRD is - 36 on the end.

LMP Okay.

SC (Coughing)

LMP Oh, excuse me, Ron. You want to say that again (yawn)? Gosh, you guys - my meter's going up a lot faster than yours. Maybe because I don't wear it. (Laughter) I'm asleep. Let's put this in the garbage pile. Really? Good or restless?

LMP How much water?

04 07 24 56 CDR Where are - where are the drink bags?

LMP Excuse me, I'm selling.

CDR Isn't it - isn't it temporary stowage? Can you get them both? Might just as well get the food sticks, too.

LMP Well, get them out later ... pulled around.

CDR Well, the first thing we do after eating, and we'd like to get as many things done as we can during eating.

[REDACTED]

LMP Well, I know, I mean fill the drink bags, but the food sticks - you're just going to get - are just going to disappear.

CDR Put them in the same bag.

04 07 25 53 LMP We put those - are you going to wear yours in the suit this time? What did you decide?

CDR I think we decided you could put that in for me, can't you, Jack?

LMP Yes.

LMP Okay. Postsleep (yawn). ... Okay, tone booster's coming off. Quite a vehicle. Quite a vehicle man hath designed here.

LMP What? It's not on there, but you -

CDR Would you believe, I still got gas on my stomach.

LMP Yes.

LMP Well, now, let me check again. Don't see it.

04 07 27 34 CDR I take it back. I take it all back. You do have things screwed on yours.

CDR Yes, we all did - things screwed.

LMP Yes.

CDR I hate to fool with those darned cans.

CDR The bags for the tone booster still down in A-8? Huh?

CDR Ouch.

LMP Don't know why I didn't fill this to the line. Keep the other - other part from filling up, I guess.

CDR The old city of New Orleans!

[REDACTED]

~~CONFIDENTIAL~~

Tape 17-03427  
Page 3

04 07 30 32 CDR Fill it to the line or you'll get a big old air bubble in there. I don't know. Big old air bubble. Know where you can get the air bubble to where the hose is. Wait a minute. Tone booster was in A - what - 8?

LMP A-7 or A-8?

CDR Here it is.

CDR Ron, crack that ... or that air will come out. No, no, no, no, no, crack the nozzle. The nozzle. See where the air will come out. Wait a minute until I get the air bag over there. Now, I'm going to suck that water up through the air hose.

LMP You've got a big chunk of that ...

CDR Ron, the tone booster is back in A-8. In the bag. This just doesn't look like much water.

LMP I thought we'd be carrying more water than that.

CDR Huh?

04 07 33 25 CDR Yes, I've got most of the air out of that, Jack. Just a little bubble. What's ... after CST down here?

LMP ...

CDR We ought to get a CST update.

LMP Well, these are both right. I've got two of them going. Everything - They haven't been off. They're not off a minute. They're just probably ...

CDR Do you want to take it off?

LMP How about a cup of coffee this morning, Gene?

CDR Stay away from the cereals and the cocoa? That's all that's in here.

LMP Yes, that's the bad one. They crossed off three things in here.

**CONFIDENTIAL**

CDR What else is left? Hey, I got coffee. Got coffee in here. All right, we've only got about a half hour to eat - it's going to be a tough one.

LMP Instant breakfast ...

04 07 36 26 CDR How about an extra can of mixed fruit?

LMP ... me take.

LMP Ho-hum.

CDR Got your plugs over here when you want them, too.

LMP How are you fixed for hot water?

LMP Give me about two or three squirts when you get a chance, Ron. If you get a chance.

LMP Something ...

CDR You only need one.

LMP But we ought to kind of take -

CDR Yes.

CDR You can't - water down there and take that out and leave it here.

04 07 40 35 CDR Thank you, sir.

CDR While you're here, I'm going to ask you to put another one in there. I think so.

CMP Did you take my coffee?

CDR ...

CDR Man, I just didn't realize how uncomfortable this can be. (Belch)

LMP What's that?

CDR This stomach gas.

**CONFIDENTIAL**

LMP Oh, yes.

CDR (Belch) I thought I'd override it after a few days. I don't know how others did, but I sure haven't. Came and went yesterday, but it's sure back here again today.

LMP Didn't get any juice this morning. You didn't see a coffee floating around down there, did you?

CDR Here's one.

CDR Yes - Is it open? (Singing) "Freedom's just another name for nothing left to lose -"

CDR Huh? Five.

04 07 46 50 LMP We go up to 57? There's my coffee. You going to want some, Gene?

CDR The o-o-old lunar surface.

LMP Well, I think they've been filled with something, Ron.

LMP Sure doesn't look like that to me. There's been a molten lake on some of those new ones, I guarantee you. Yes, there seems to be three - four - there are four kinds of crater fill that I see. There's a very smooth, light-colored stuff. There's old Aitken again. And then there's a variety of irregular surfaces, the track, turtle back, dome, domical fillings that seem to be pretty old, and the mare fillings that may be associated with that stuff. It may be contemporaneous like here in Aitken you see them together and it's hard to say one's early or later. And then there's that kind of stuff Gene was talking about - that's just smaller craters, things that that ... in the floors.

LMP Here's an extra coffee.

04 07 49 43 CDR Okay. Who took this stuff?

04 07 54 36 LMP Oh, man! Get some exercise today!

[REDACTED]

LMP There's star - star Chaplygin. Hurry. Hurry.

CDR Yes, you got her (chuckle). You've really got to stretch.

LMP Yes, it's gone - too late. No, it's not too late. Here ... Well, it's getting ... even better.

LMP I'm surprised you haven't charged the batteries, Ron. Since LOI, huh? Oh, it's not bad - 32 and 33-1/2.

04 07 57 14 CDR Can you read out the voltage on that other battery?

LMP Yes.

CDR Is there any way of reading the voltage out on that other battery?

LMP You mean the one in the -

CDR You can by ... fuel cell 2. But I have to connect it to the bus to read it.

LMP You have to connect it to the bus to read it?

CDR Yes.

CDR Someone's passing gas again. That's not news (laughter). You're not upside down, Ron. I keep trying to tell you that.

04 08 00 40 CDR For a while, but I hope it's not the last meal we have together.

LMP Judas. That's what Judas said.

CDR Yes.

LMP That's what Judas said, you fink. (Laughter)

CDR Not really, we might catch something, but normally we don't.

LMP 641.

CDR (Belch) I hope we can do that when we get ready to suit. It's just going to be a nuisance from here on.

~~CONFIDENTIAL~~

LMP ...

CDR Ron, we got to get those suits out and ... tunnel and hatch.

CMP The old probe is stowed.

LMP Yes, I know.

CDR We can't afford to spend too much time screwing around.

04 08 02 07 LMP I understand that, Gene. But here they've got you getting the suits out to put the drink bag in. Then, they've got you removing the probe and drogue.

CDR Yes, right. It makes sense to get the probe and drogue out. This cabin's so full of junk there's no place to put them. But there's no place to put the suits, if you do it that way. Once you get the suits out, you've got to put it on then.

04 08 02 37 CDR Okay, at -

CDR Work down there? Call P30. That's P20. Got it? And a VERB 21 NOUN 26. And all zeros. What are you - read you with the sleep report? You fool with that this morning? (Cough)

LMP Ron, we may want to save that.

CDR Got a nice bag for you. How's that? Ron? Ron?

LMP ...

CDR (Singing) "Oh, Mister Moon, Moon, bright and silvery Moon, won't you please shine down on me." (Humming) "Come from behind that tree. My life's in danger but don't you ... Here comes the man with the big yellow ..." (Humming) King the one with all the blocks - wedges in it? King Crater? Is that - is that the one with all the blocks and wedges in it?

[REDACTED]

LMP The wide central peak, doesn't it, with that ray coming down from Giordano Bruno. Okay - you got any juice handy?

CDR Yes, yes.

LMP They didn't have any juice in there for breakfast. I never heard of such a thing. At your convenience, sir.

CDR Two cabin drink bags. We can take a couple of those juices in the LM with us. ... get that air bubble out of there.

LMP Yes.

04 08 06 15 CDR In a couple of minutes, I'll take care of the SIM bay. We want all jets enabled before LOS. Do that - LOS.

LMP All jets enabled before LOS?

CDR AOS, excuse me. Is that right? Yes, that will be fine. Whatever is closest.

LMP All jets enabled before AOS, huh?

CDR Yes.

04 08 06 54 LMP Very good. It's the only way I can drink a lot of water is to drink these juices. Water is - Since I left New Mexico, I just haven't been able to drink much water. No. Well, I'm sorry. You're the only one there. Watch it, now. Somehow or another - Ron, I'll tell you - Let's see, I've got what, three fecal bags in there now? And I think I can recognize them but I - I can't remember to label those darn things. It's such an ordeal - Well, someone else - I tell you - process of elimination - you guys recognize yours and what's left is mine.

04 08 07 56 CDR Oh, no. Ten minutes - no, it's not - ... 5 minutes here pretty soon. We should be through now, we're 3 minutes behind. Yes, okay - then we got to get the couches in shape. The next big set of events is getting that tunnel clear. And right now, IR COVER's going to go CLOSE.

[REDACTED]

LMP Yes, don't you think? CLOSED, barber pole, and gray.

CDR Ron, Jack, could you - -

LMP LOGIC POWER, two - OFF down there, Ron?

CDR - - take a little bit of water out of there, and you're going to get mostly air, I hope. Oh, oh, oh, oh, wait. Okay - slowly - ... my bubble in there - mostly air. Almost, wait a minute - I get the bubble - Okay, try again. That got it. Mostly water. Yes, that was good. Let's see here - good technique.

04 08 10 05 CDR ... You're to be congratulated. Looks like you did a good job.

LMP Hope that gas of yours cleared up. Got too much - to ... one-sixth. I'm sure I speak for you also when I say that (chuckle) nothing like getting all this free sympathy. Doesn't help you one bit.

04 08 10 42 CDR Okay, you got that, Ron? LOGIC POWER? Two of them OFF? IR's coming OFF. Yes. And give me a - verify.

CMP That's verified.

CDR How come we didn't leave that on all night? Oh, the Sun, possibly. Okay. All right, gang, we'll wait for AOS and - as soon as everybody's through eating, we can go to work. Yes, you can do that. Go through the normal 20.4.

CDR There's a - there's a decal up there for ...

LMP Yes.

CDR CM/LM pressurization - You don't have to do much.

04 08 11 46 CDR Do you want to save this cup - this coffee? See what's coming up here. Okay, then we get in the helmet - then we get in the LCGs. We capped our transducers, but -

[REDACTED]

LMP He doesn't have any on? Okay. 0.5 now? Okay. Well, it's not there, but that's because he's riding low. Should be, yes.

04 08 13 04 LMP Gene, you want to - Yes. DIRECT O<sub>2</sub> is OFF.

TIME SKIP

04 09 26 33 LMP (Cough) What do you need? A helmet? Tough - tough. Well, there's a label on the outside; I haven't looked on the inside yet. Okay.

04 09 31 33 CMP What? 108 - coming up on 108:12 in 20 seconds. Set it 108:12:15 then - 30 seconds from now. Set it for 15, I missed it. Okay, 10, 11, 12, 13, 1<sup>4</sup>, 15, 16, 17, 18, 19 -

04 09 32 33 CMP I can't find any stars.

04 09 37 17 CMP Yes, we're upside down in the wrong attitude. I can't find any stars. Slow - stop.

CMP Okay?

04 09 40 10 CMP Okay. We're finally going to maneuver to the attitude.

04 09 46 59 CMP Well, we don't have our suits on yet, but we finally got in alignment. We're moving to attitude. It'll be awhile yet. If you want to, I'll go ahead. I can put my suit on at the same time.

CMP Okay, let me get my suit on real quicklike.

04 09 48 51 CMP Yes. You need to get to attitude faster?

CMP You need to get the attitude faster? Okay.

CMP What the heck is that? Noise up there!

CMP Wait a minute - I can't hear you. What? Okay, I can give you that now. Give you T<sub>ephem</sub>. Okay, go ahead. 108:31 - 3.97 - still 3.97. Okay? Okay, 108:31:27.69.

[REDACTED]

CMP What? Okay. Okay, 32:14.62; 32:25.98. Okay?  
Three balls 20, 34, 667; 72, 402. Okay? ...

CMP Hey, are you guys through with these umbilicals?  
How do I get them out?

04 09 54 54 CMP Are you with - Houston? Okay. I'm going to take  
my helmet off then, and try to get dressed.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03428

APOLLO<sup>17</sup> MISSION

APOLLO DSE CM VOICE DUMP TRANSCRIPTION

DUMPED OVER MAD DURING LUNAR ORBIT 8

Time Segments (AET)

From

04 08 09 56

To

04 08 13 05

Time, good; voice, low but mostly intelligible.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

04 08 09 56 CDR That's stuff we're going to do on the air, Jack.  
...  
LMP That's a good technique, Gene. You're to be congratulated. Looks like you did a good job. I hope that gas of yours clears up after ... to one-sixth. I'm sure I speak for you, also, when I say that (laughter).  
CDR Yes.  
LMP Nothing like having all this free sympathy. ... help you one bit. Okay. You got that, Ron? LOGIC POWER.  
CMP ...  
04 08 10 46 LMP Two of them, OFF. IR is coming OFF. Yes. And UV. OFF - verify. That's verified. How come we didn't leave that on all night? Oh, son ... there. Okay. All right, gang. We're waiting for AOS, and as soon as everybody is through eating, go to work.  
SC ...  
LMP Yes, you can do that. ... through the normal ... 44.  
CMP I bet there's a - there's a decal up there for a ...  
LMP Yes. CM/LM pressurization.  
CDR You don't have to do much.  
LMP You want to save this cup - this coffee?  
LMP ... coming out here. Okay; then we get in the helmet. Then we get in the LCGs. We've capped our transducers. Have you done that, Geno?  
LMP Okay. 0.5 now? Okay.  
SC ...  
LMP Well, it's not there, but that's because it rides low.  
SC ...

Tape 17-03428

Page 2

LMP Should be; yes.

SC ...

04 08 13 05 LMP Gene, you want to - Yes ... O<sub>2</sub> is OFF.

# # #

(This page Unclassified)

**Tape** 17-03430

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

### Time Segments (AET)

<b>From</b>	<b>To</b>
<u>04 11 13 22</u>	<u>04 11 38 15</u>
<u>04 11 41 54</u>	<u>04 11 55 40</u>

Voice and time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year intervals; declassified after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

04 11 13 22 CMP And RECEIVE ONLY to B DATA. Hey, Challenger; America. I'm going to RECEIVE ONLY, B DATA. ... goes in there. Hey, Challenger; America. Challenger, America. There you go. There is SIMPLEX. ... is FORWARD. TAPE MOTION ... report ... commander's.

04 11 14 13 CDR ... FORWARD. COMMAND RESET.

04 11 14 28 CMP SIMPLEX. Okay, Challenger; America. I need a ... I'm going to ... to you.

LMP How do you read, Ron?

CMP Okay; I got you that time, Jack.

CMP You read me okay?

LMP Yes, you're loud and clear, but turn off your VOX.

CMP Okay. I'm ... too much, huh?

LMP That's affirm.

CMP I can't read you right now. I just ... too much.

04 11 15 09 LMP Turn off your VOX.

CMP Okay; just a minute. How's that; any better?

LMP Yes, I think that's pretty good.

CMP Okay. Hatch ...

CMP Okay, Challenger; America. You verify your hatch valves in AUTO over there?

04 11 17 47 LMP It's verified, Ron.

CMP Okay. I'm going to be at the tunnel.

CDR Hey, Ron, what are you using for undocking time now?

CMP I've got to look in my book here. It's about 1 - Wait a minute. 1 - 110:27.

CDR Copy. 110:27.

~~CONFIDENTIAL~~

CDR Hello, Ron. I don't - he could use B3 if you need it.

CMP Okay. I'll turn it back on here then. Takes a lot longer to depress the tunnel - depress the tunnel - than it does the simulator.

CDR Yes.

CMP Okay. You through with the - your rendezvous transponder test?

04 11 21 06 CDR Yes. Sure am, Ron.

CMP Okay. I'm going to HEATERS then.

CMP Well, then DELTA-P is still only 2.5.

04 11 33 04 CDR Ron, is the tunnel vented yet?

CMP Okay. It's down to greater than 3.5.

CDR Well, is that vented? Yes, we're going to press on. That's a big enough DELTA-P.

CMP Yes, that - that's a big enough DELTA-P. I'm going to press on now.

CDR Okay. So are we.

04 11 33 25 CMP Oh, what the heck was that? The O<sub>2</sub> FLOW just went up for some reason. ... SUIT CIRCUIT return or open ... That did it.

CMP Good. We can maneuver back to undocking attitude.

CDR Okay, Ron.

04 11 37 59 CMP You got about 10 minutes to go.

CDR You said about 10 minutes, didn't you, Ron?

CMP Yes, that's right.

04 11 38 15 CDR Okay.

TIME SKIP

~~CONFIDENTIAL~~

[REDACTED]

04 11 41 54 CMP Okay. It's a flight trim for P41.

CDR Okay, Ron. We're at 5 minutes now and counting.  
How'd that sound?

CMP Yes, I got 6.

CDR On your time. Better check your undocking time.  
Are you using 110:20 - -

CMP I'm using 110:27:55.

CDR :55?

CMP 110:27:55.00.

CDR Five minutes then, will you?

04 11 42 59 CMP Okay. Stand by. Twenty - something seconds yet.  
5, 4, 3, 2, 1 -

CMP MARK it. Five minutes.

CDR Okay. We're counting with you, and your attitude  
looks good here.

CMP Okay.

CDR Ron, when you get all squared away - -

CMP You need a 06 20?

CDR Yes, on my mark.

CMP Okay. Go ahead.

CDR \*\*\* 1 -

04 11 44 34 CDR MARK it.

CMP Okay. 000.35, 104.67, 000.52.

CDR ... hear what you're saying.

CMP Say again?

CDR We copy it; slower.

[REDACTED]

~~CONFIDENTIAL~~

CMP Okay. R-1, 000.35; R-2, 104.67; R-3, 000.52.  
How's that?

CDR Okay, Ron. It puts us inside 2 minutes and we're ready.

CMP Okay. We're all set over here.

LMP Okay, Ron. Remember, as soon as it's convenient, you'll start your maneuver to sep attitude.

CMP Okay. Will do. DELTA-V, NORMAL, and start the old DAC. Darn thing doesn't work.

CDR Better work. Get some pictures of us.

CMP Son-of-a-gun! Sorry about that. Okay. At 59:30, I'm going to hang you on the probe. No picture. Okay. You should be hanging on the probe. You are. Okay. At 00 - at 00, we'll back off.

CDR Sure wish you'd got some pics.

CMP Yes, I don't know why in heck it doesn't work, but it sure doesn't.

CMP Okay. Here we go.

04 11 48 10 CDR You're backing off; we're free.

CMP Okay. I got some pics of you.

CDR You look beautiful, Ron.

CMP Ah-ha, so do you!

CDR Are you beautiful!

CMP That thing is pretty out there, you know that.

CDR 70-millimeters, Ron.

CMP Okay. That's what I got. I've also got some 16-millimeter at you.

04 11 51 10 CMP Okay. I'm maneuvering now.

CDR Landing gear?

~~CONFIDENTIAL~~

CMP They look great! One of them doesn't have a probe on it, but I guess it's supposed to be that way, huh? The one in the front. Beautiful! Sun's shining right in my window. That's the last picture I'm going to get of you.

CDR The ship looks clean.

CMP Very good. Okay. I lost you right in the Sun for me, so you should be getting some good pictures of me.

CDR We're working at it, partner.

CMP Okay.

CDR America, you look beautiful.

CMP Man, oh, man, I - ought to see those - All I had to do was plug in the camera and that made it work.

CMP Hey, there you are out the hatch window!

LMP Okay, Ron. You're off candid camera.

CMP Okay. Good - good show. You guys make your darn landing now, okay?

CDR Okay. Until we see you in a couple days.

CMP Okay.

LMP No TEI updates.

CDR (Laughter) Don't worry, never happen. Hey, Jack. Remember, part in 175, is that it?

CDR 109, Ron. That's what you are, babe.

04 11 55 40 CMP (Laughter)

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

17-03468  
Tape \_\_\_\_\_

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBIT 13**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>04 13 08 00</u>	<u>04 13 09 31</u>
<u>04 13 10 56</u>	<u>04 13 22 12</u>
<u>04 13 22 50</u>	<u>04 13 47 41</u>
<u>04 14 12 37</u>	<u>04 14 14 16</u>
_____	_____
_____	_____
_____	_____

Time and voice good.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

\_\_\_\_\_

04 13 08 00 CDR-LM Ron, do you still read us?  
CMP Yes, loud and clear. How me?  
CMP Challenger, America. Do you read me?  
CDR-LM \*\*\* clear.  
CMP Okay. You're still clipping a little bit. All I got was the "clear," but that's all right.  
CDR-LM Loud and clear.  
04 13 08 32 CMP I got that part. Loud and clear.  
CMP Okay. Coming up on 8 minutes.  
04 13 09 31 CMP MARK it.

TIME SKIP

~~CONFIDENTIAL~~

Tape 17-03468  
Page 2

- [REDACTED]
- 04 13 10 56 CMP Okay. BAT BUS B - AC. That's slow coming up any minute. ... good shape.
- 04 13 11 15 CMP Okay. Helium valves ... in AUTO - N<sub>2</sub>A. SERVO POWER, 1; got it; 2's going on. Okay. ... controller's at AC. DIRECTS are OFF. BMAGs are uncaged. No hardovers. Go to SCS. Okay. PITCH 1; got it. YAW 1; got it.
- LMP Okay, trim. Plus ... 4, and - plus 0.9. Okay. Try a little MTVC - MTVC - TVC. Whoo! Sure bangs it around. Okay. Okay. Let's see now. Where are we? ... MTVC. Okay, SPACECRAFT CONTROL back to CMC; return to zero; go clockwise. No MTVC. ... okay. Gimbal motors, PITCH 2, got it. YAW 2; got it. Okay. Got a little trim. Plus 0.4, plus 0.9.
- 04 13 13 00 CMP Okay. MTVC - TVC, MTVC - TVC. Looking good. Okay. Neutral, returns to zero. Okay, no MTVC. AC/DC on the old POWER. Put up the DIRECTS. Cage the old BMAGs. Okay. BMAGs are RATE 2. DSKY RELEASE. 50 18, PROCEED. ... 18. The 50 18 says we're there. Uncage the old BMAGs, and there's the 50 18.
- CDR Okay. Try the gimbal test option.
- LMP Plus 2, minus 2, zero, plus 2, minus 2, zero.
- 04 13 14 10 CMP 1, 2, 3, 4, - ah-ha! We have drift. Plus 0.4; plus 0.9; 3 minutes and 60 seconds to go.
- 04 13 14 23 CMP 59.9. The DELTA-V<sub>C</sub> burn time was 4 seconds. ... burn time plus 1. Manual ... with the DIRECTS ON. ... burn ...
- 04 13 16 36 CMP Okay. ... is NORMAL. ... CONTROL POWER is OFF. ... DELTA-V plus 8. ... before I take another ... Okay. Average g. ... is on. You guys still hear me? Challenger, America. Do you read?
- SC Yes.
- 04 13 17 21 CMP Okay. At 17 seconds. There's ullage. We have ullage. 99 PROCEED. Oh-ho! ... down! Ho - Ho! ... burn.

[REDACTED]  
CONFIDENTIAL

[REDACTED] CONFIDENTIAL [REDACTED]

04 13 17 41 SC MARK.

CMP Okay. 59. ... everything over the hill.  
Okay 59.2. 59.9. Okay. Let's PROCEED out of  
that. Turn the old GIMBAL MOTORS OFF. Okay.  
Status. 2; got it. 1; got it. 1; got it. Ah-ha!  
Okay. Hey, did you guys get the word? The burn  
is complete. I'll trim it up.

CDR Ron, do you copy Challenger? We copy your burn.

04 13 18 41 CMP Okay. Burn is complete. And all good residuals.

LMP ...

04 13 20 36 LMP Ron, we're 210 from the burn.

CMP Okay. Copy it.

04 13 21 53 LMP And we're burning right at the terminator, Ron.

CMP Ha-ha. Okay. I'm in a 70 by 54.7.

CDR Okay. The DSKY is blank.

04 13 22 12 CMP Okay.

TIME SKIP

Tape 17-03468

Page 4

04 13 22 50 SC ...

LMP-LM Beautiful.

CMP I guess the burn is complete, huh?

CDR-LM ...

CMP ... complete ...

CDR-LM Hey, Ron, ... update the state vector?

04 13 24 30 CMP Okay. We'll update the state vector.

CDR-LM Ron, we have a fuel ...

CMP That's pretty close. ...

CMP Forgot to look at the ... on that.

04 13 28 54 CDR-LM ... 21 minutes until we ...

CMP ...

04 13 33 18 CMP Okay, ... A.

CMP ... Last move.

CMP ...

SC ...

04 13 47 41 CMP Okay. ... PDI. ... unless you want to say something. ... call you.

TIME SKIP

04 14 12 37 SC ...

CDR ... coming up on 3 minutes. We're go for ...  
Okay, 3. ... number.

CDR It's getting close to 4 minutes, Jack.

LMP Okay, weight's building up, looking good. ... are  
good.

04 14 13 42 CDR Okay, at 3:30 you ought to have 79 ... We're  
still a little high - about 2500 feet. H-dot is  
still high.

CDR Okay, the tapemeter moves in spurts and jerks both  
on altitude and altitude rate.

CDR Four minutes, 89 by 37.2.

CDR BMAGs are ...

LMP Okay.

04 14 14 12 CDR Okay, Gordo. You're ... coming to 340.

04 14 14 16 CDR And the way I like --

# # #

(This page Unclassified)

Tape 17-03466

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 13**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>04 13 22 49</u>	<u>04 13 47 37</u>
<u>04 14 13 30</u>	<u>04 14 14 34</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Voice very poor; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

04 13 22 49 SC Beautiful!

SC ...

LMP Okay ...

SC Hey, Ron, ...

04 13 24 30 CMP ... take these few pictures.

SC ... zero.

CMP That's pretty close ...

SC ... we have to look at the ...

SC ...

04 13 28 54 CMP Ah ha! ...

SC ...

04 13 33 37 LMP ...

04 13 47 37 LMP Okay. I'll tell you ... our PDI ...

TIME SKIP

Tape 17-03466  
Page 2

[REDACTED]

04 14 13 30 LMP Okay; at 3:30 you ought to have 79 --

SC ...

LMP We're still a little high, about 2500 feet. H-dot is still high.

LMP Okay. The tapemeter moves in spurts and jerks, both on altitude and altitude rate.

SC Yes.

LMP ... ED BATs are 37.2. ED BATs are 3 - Oh, okay.

CDR Okay, Gordo. Yaw's coming at 340.

04 14 14 15 LMP And the radar light are out. Beautiful! You're looking at DELTA-H. Okay. You're looking at DELTA-H.

04 14 14 34 LMP Okay; VERB 57 is in. Hey, Houston, is the AGS out of plane correct?

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03418

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS LUNAR ORBIT 12**  
**DURING**

**Time Segments (AET)**

**From**  
04 15 02 34

**To**  
04 15 03 50

Comm good; little background noise

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

04 15 02 34 CMP Okay. Mighty fine. Thank you.

04 15 03 50 CMP (Laughter) Okay. Will do. Good way to keep me honest.

# # #

[REDACTED]

04 16 51 07 CMP Okay; good. And HIGH GAIN ANTENNA POWER is going OFF.

CMP Okay. Are you trying to pull that antenna back in first before we completely [?] change the Flight Plan?

CMP Oh, okay.

CMP Oh, okay.

CMP Oh! Okay.

04 16 54 00 CMP H<sub>2</sub> tank 2 FANS are ON, now (chuckle).

CMP Oh, really? (Laughter)

CMP Gee whiz! Guess I picked a good time to be gone.

CMP Hey! You know, you'll never believe it. I'm right over the edge of Orientale. I just looked down and saw a light flash myself.

CMP Right at the end of the rille. That is on the east of Orientale.

CMP Yes, you know, you don't suppose that could be - Vostog[?]

CMP I'll be durned. I got to mark that spot on the map.

04 17 00 27 CMP Just about to lose you.

04 17 05 36 CMP Spacecraft real time; PCM and real time will not be received.

04 17 12 25 CMP Okay, the old RECORDER going ON. VHF reminding myself that it's ON. RECORDER's to VHF. Sounder to OPERATE. Stand by for 1 minute. Okay. Tape recorder ... I'm sure. No, no, wait.

CMP Okay, ... to OPERATE. Stand by. Barber pole.

CMP Change your ...

04 17 15 07 CMP ... Stand by. Pull film for 1 minute. ... 11 frames.

(This page Unclassified)

Tape 17-03410

**APOLLO<sub>17</sub> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

DUMPED OVER GDS DURING LUNAR ORBIT 13

**Time Segments (AET)**

**From**

04 16 31 05

**To**

04 17 15 07

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Voice good until last segment.

Repeats in comm. Erratic times.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

04 16 31 05 CMP Okay. Stand by. 3, 2, 1 -

04 16 31 14 CMP MARK it. Barber pole; gray.

04 16 33 15 CMP Okay, she's STANDBY. Mode has gone to HF. I'll select - I'm going to need Bravo. Too bad. Do old HIGH GAIN, MANUAL, and WIDE. That's 12 and 211.

04 16 34 23 CMP Okay; minus 12 211. HIGH GAIN ANTENNA POWER is OFF. BIT RATE is LOW ... HF part of it. Okay. We'll stand by.

CMP Okay. We'll make it at 17:40.

04 16 37 43 CMP 17:40, went to OPERATE.

04 16 38 44 CMP 18:40, LUNAR SOUNDER, STANDBY. Hey, great!

CMP Hey, outstanding! That's great.

CMP Now, if the old antenna'd ever come back in, we'd be in good shape, huh?

04 16 39 56 CMP Okay; we're maneuvering to VHF test attitude.

04 16 46 26 CMP Okay, Houston. I'm about ready to press ahead, if you all are.

04 16 46 53 CMP Okay. HIGH GAIN ANTENNA POWER is ON. We got MANUAL and WIDE. Minus about 12 and YAW about 21 or something, 211. MANUAL on the HIGH GAIN. Ah-ha, AUTO. Looks like it worked pretty good. Okay, MODE to VHF. Find it - there it is. MODE to VHF.

CMP Okay. Go to OPERATE at 28.

04 16 48 05 CMP OPERATE.

CMP Boy, you talk about night flying, this is the kind of night flying you want to do, by the full Earth. Beautiful out there.

04 16 50 10 CMP Okay. It went to STANDBY at 30. MODE has gone to HF. RECORDER is OFF. Lose a little comm here, huh? Maybe. Okay, there's Bravo. Select OMNI Bravo. High gain at minus - MANUAL, WIDE. Minus 10 and 25 for AOS.

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03437

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER MAD DURING LUNAR ORBIT 24**

**Time Segments (AET)**

**From**

**To**

05 10 47 39

05 11 26 50

Time good; voice very poor.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

05 10 47 39 CMP Ah-ha. Okay. 28:03. We'll start the clock.

CMP Okay.

CMP Okay.

05 10 51 43 CMP Okay, Gordo. Thank you much.

CMP ... Eight will go into 60 ..., and 10 will go into 40 ...

05 10 55 00 CMP Hey, and we started that one after - for the record, started it at 29:09 for the 90-second one. And then - I mean at 28:09, started at 28:09 for the 90-second one. And then we set the clock and started the rest of them on time. So that the 60-one - 60-second one started right at 5 minutes. The next one will be at 8 minutes for the 60-seconder, 10 minutes for 40-second, and ... on the 20-second.

CMP Gosh-darn thing ... took a picture ... about 60 seconds ... Okay, 10 will be at 40 seconds.

CMP ... think ...

05 10 58 51 CMP Okay. Switch 11:30, we get a 20-second one; 13:00 - Okay, 11:30, we get 20 second; 13:00, we get a 10-...

CMP 13:00 -

CMP Okay ...

CMP Eleven. Need another two.

CMP ... 13:30.

05 11 02 47 CMP ... 50.

CMP ... - Wow, does the Sun come up! (Laughter)

CMP Okay. Cover ... up out there.

CMP ... 14:50 would have been a 30. Okay, that's

~~CONFIDENTIAL~~

right. Yes. That's right 14:50 would have been 1/30, so that's all right. Worked out good - worked out good. We got that one all except for the 8-minute one. Somehow I must not have had it all the way into the T. Okay. ... Let's see.

- CMP ...
- 05 11 05 34 CMP (Whistling)
- CMP Okay.
- 05 11 08 29 CMP Okay, here we go at 48, I guess it is. LASER ALTIMETER, ON. ... we got a barber pole.
- 05 11 08 46 CMP Okay, MAPPING CAMERA, ON. \*\*\* MOTION, barber pole plus 4. There's a barber pole. ... could have had that a little sooner. Oh, we got the time ... craters.
- 05 11 10 38 CMP Warm.
- 05 11 21 46 CMP Well, we'll come across Gagarin and Agassiz [sic] now. You can see the - it looks like a rille going back through - towards the south through Agassiz - cutting on across into a little crater to the south of Agassiz. You know, something that looks funny about that, even though it looks like a mare material, it looks like Agassiz is - slopes with a, maybe 10- or 15-degree slope from the west to the east, with a mare-type floor, at least a darker color - darker albedo floor. There's a lot of swirls in the floor. You - you can't see any topographic expression with those swirls at all. It almost looks like some of the - the light streaks, though, do come from - well, by gosh, they are - they're mixed up from ejecta probably from Bright Baby [?]. And Bright Baby is really right up to the - you can see the ejecta pattern on it, heading generally in a northeasterly direction.
- 05 11 26 50 CMP Okay, coming across -

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03417

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 26

Time Segments (AET)

From	To
05 13 37 29	05 13 37 29
05 19 09 10	05 19 35 28

Comm fairly good; glycol pump running

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

05 13 37 29 CMP Hello, Houston. This is America. Loud and clear.

TIME SKIP

- 05 19 09 10 CMP Okay; I just passed over - the - Crater Aitken again. That flat domical feature down there, especially, had a flow that's come out of that feature out into the flat maria trough. You can see the flow channel - going out, and then also, right in the breach right on the side of it, there is a second flow that has come out on top of the breach. And it stopped right in the breach itself.
- 05 19 10 03 CMP Okay; there's 50. PAN CAMERA to STANDBY - STEREO - and - POWER. CAMERA to OPERATE.
- 05 19 11 15 CMP Okay. For the record there, mag Oscar Oscar took three pictures, one with an 80 and two with a 250 lens, and the exposures are now 106, I guess.
- 05 19 17 54 CMP Keep losing my maps.
- 05 19 27 04 CMP (Humming)
- 05 19 31 19 CMP ... all right.
- CMP There's ... on the recorder.
- 05 19 33 14 CMP There's the old Earth. It's about a half Earth now.
- CMP Houston, America.
- CMP Okay, Robert. I guess the big thing I want to report from the back side on this one here is that I took another look at the - the Cloverleaf at Aitken, with the binocs, and that southern, domical crater of the Cloverleaf - it has a breach on the east - east side of it. It - I can't tell - There's - there's a flow - In other words, the domical structures themselves are part of a flow material that has partially filled up the breach. In other words, the breach is either

flowed into that little - domical structure before the domes were built, or else - all of that stuff that's in the mare floor has flown out of that domical structure before the domes came in. In other words, the domical structures themselves are a different time relationship to the floor itself. They are younger than the floor itself.

05 19 35 28 CMP

Yes, there - yes, there is. The dome-type material is - The colors again are very hard, you know. I'm just going to have to say that it's - it's slightly darker than the mare floor - is the way it looks to me right at this point in time. Also, the texture is a coarser texture than the floor itself. In other words, the floor, to me, is kind of a standard mare flat-floor-type stuff, and I have to compare the - the texture of the domical hills to - Oh - I guess what I would imagine some of the dacite flows that I've seen out in California. You know, the heavy viscous-type flows.

# # #

CONFIDENTIAL

(This page Unclassified)

Tape 17-03414

APOLLO <sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 26  
Time Segments (AET)

From	To
<u>05 14 46 13</u>	<u>05 15 01 34</u>
<u>05 15 02 01</u>	<u>05 15 10 30</u>
<u>05 15 10 49</u>	<u>05 15 27 03</u>
<u>05 15 30 36</u>	<u>05 15 30 36</u>
<u>05 15 35 08</u>	<u>05 15 36 42</u>

Voice fair; time good

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MBC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

05 14 46 13 CMP Oh, hey, one thing. Can you check on mag - What do I have on the Nikon now? XX, I guess? Seems to me like - we just need that for another - zodiacal light thing - which takes about 12 frames. In other words, are there two or three frames available?

CC ...

CMP Do we have two or three frames available on - on that one?

CMP Okay. I want to take a red and a blue picture of the landing site sometime.

CMP Oh, okay. Yes, don't - no - no problem. I won't use it until I get to the landing site anyhow.

05 14 47 31 CMP Oh, okay. Good.

05 14 51 09 CMP Yes, let's get ...

05 14 52 47 CMP 33:48. Okay. Here we go.

05 14 53 02 CMP 33:48. Doesn't sound like the thing's working unless I talk right into it. Good thing it's not on the ... Test 1, 2, 3 -

05 14 53 26 CMP How's that? 1, 2, 3, 4. Okay. That looks like that ought to work. 33:48, we start the clock. 07:48. That dear old clock.

05 14 53 56 CMP Okay. BIT RATE is HIGH. Checked that, yes. And tape was going. Okay. Let's see now.

05 14 54 11 CMP 04:30, CMC's in FREE. ... start drifting. Okay. Oh, the old biomed's starting to itch. Took it off here after a bit and see what it's -

05 14 54 44 CMP Okay. 04:30, we go to FREE; 05:45, take a 10-second one; and at 06, we take a 4-second one and change at 06. Change, then take - At 06:10, we take a 1-second one; 06:20, take one-half. Skip one-fourth, skip 1/15. (Humming) I can sing.

[REDACTED]

CMP (Humming) Boy, that's beautiful out there. Nothing but white sky full of stars in a black, black nothing. You can't tell it's the Moon; you can't tell it's anything. Black, round ... curves.

05 14 56 40 CMP I'll be darned; there's Regulus. Getting another one right there - out there. Planets, huh? I better get back to work. Okay. I'll bet that's Saturn. No. Can't be Saturn. Something larger or something.

05 14 57 15 03:22. The old CMC MODE switch. There it is. Go to FREE at 04:30. Hold trigger down. Okay, I got a 10. Then we start at 06 with a 4-second. Then at 06:10 is a 1-second. Okay. Coming up on 04:30. Look at that. You get a - No, let's see, we want ... still 5 minutes early. At 05:45, you get the first one. Still get the ... Find the jobberdoo. There it is. Go to FREE in 5 minutes.

05 14 58 54 CMP Okay. CMC, FREE, ... Okay. ... 05:45, we want a 10-second one. Okay. 40, 2, 43, 44 -

05 14 59 38 CMP 45. At 55, we turn her OFF - 5. Okay. At 06, we want a 4-second. 58, 59 -

05 14 59 52 CMP MARK it. 2, 3, 4. Okay. 06:10, 1. 06:10, we need a 1 -

05 15 00 05 CMP 1. One half at 06:20 -

05 15 00 14 CMP MARK. Skipping one.

05 15 00 20 CMP Okay. It's 30. Okay. Skip one.

05 15 00 51 CMP ... the Moon? There it is. ... at 7. That's 10 seconds early. Okay. The old sunrise came at 7. May have been a little bit early on that one. Yes, that's true. Light's on ... . I won't be surprised at sunset next time.

05 15 01 34 CMP Okay. PCM BIT RATE, LOW next 7 minutes.

TIME SKIP

[REDACTED]  
CONFIDENTIAL

05 15 02 01 CMP Hi, again. Fuel cell purge and the waste water dump here. Okay. Prime HEATERS. HEATERS - didn't have that ON. ... fuel cell purge is all it is. Okay. Oh, 2 - 2 minutes. Okay, 1, 50 -

05 15 02 48 CMP MARK. 2, 3.

CMP Dump the old waste water. PCM, HIGH, at 49. Okay. Oh, yes. ... old door. ...

05 15 03 39 CMP Okay. Waste water is going. Okay. ... dumped. Let's see, time to get the O<sub>2</sub> up. Yes.

05 15 04 29 CMP Okay. Just about 1 minute to - Okay. Let's see. Fuel cell purge. H<sub>2</sub>, but it works all right. Okay. Seems to be working okay. Little bit higher. I got the old waste water going. Now if I can hook up that BUSS, get rid of that one.

05 15 05 40 CMP Good one. Urine bag; here it comes. The old urine bag.

05 15 05 56 CMP Okay. Dump. If I was in real g, those bubbles wouldn't go together. One big bubble; I don't know why. Bubbles everything we've got.

05 15 07 57 CMP BIT RATE to HIGH at 49. ...

CMP (Humming) I wish I knew if that thing was working or not. I guess it is.

05 15 09 54 CMP Forty percent.

05 15 10 30 CMP Okay. Going to HIGH BIT RATE.

## TIME SKIP

05 15 10 49 CMP Thirty percent, I guess. And look at the particles. I'll bet that'll screw up the lunar sounder. It is really snowing out there. (Humming) Holy mackerel, we've already passed Aitken. I wanted to take a look at it. There sure is some kind of

[REDACTED]

a flow around there. You can see the flow marks - flow scarps up around the edges and in the south-east corner of - I mean, southwest corner, you can also see it on the south - I mean, the northwest corner. Up by the cloverleaf, itself, you can see where the flow - the material has flown up over the edge of the - crater wall. Started up the edge of the crater wall almost like that Scarp looks like around the land site. That's what it looks like to me. And let's see. How we doing on the waste water? ... percent, okay. ... the purge.

05 15 14 47 CMP Gimbal lock. Son-of-a-gun!

CMP ... my ...

05 15 17 21 CMP Dad blast it. Oh, the old waste water dump really torques you off in FREE.

CMP Son of a ... Well, shucks.

CMP (Cough)

05 15 27 03 CMP Okay. ... happen anymore. Everything's under control. ... control .... Matter of fact.

TIME SKIP

05 15 30 36 CMP Oh, ... Oh, ... It wasn't ... Yes. Where to?  
Circuit breaker.

TIME SKIP

05 15 35 08 CMP (Humming)

05 15 36 32 CMP Houston, America.

05 15 36 42 CMP Well, I think I got it back under control again.  
Oh, let's see. Let me go back through my - Well,  
I almost got into gimbal lock. (Laughter) I

[REDACTED]

~~CONFIDENTIAL~~

Tape 17-03414

Page 5

missed the last step of the - last step of the solar corona thing, which says go back to CMC AUTO, which wouldn't have been too bad, except as soon as you get a waste water dump, it really torques it around.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03415

APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 27

Time Segments (AET)

From	To
<u>05 16 53 12</u>	<u>05 17 33 28</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Time good; voice good except for last 3 minutes of tape.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 773 and 774, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

05 16 53 12 CMP (Humming) (Coughing) (Humming) (Whistling)  
(Coughing)

05 17 00 35 CMP Hey, finally got a gray. Okay. IMAGE MOTION is ON.

05 17 00 41 CMP MAPPING CAMERA, ON, - 40 - 41 at 3-minute - ... it run for 5 hours, anyhow. So, MAPPING CAMERA, ON. Barber pole, plus 3. There's one right there.  
(Coughing) (Laughing)

CMP What the heck is that? (Laughing) My tone booster floated over in front of the Sun. Kind of scares the heck out of you.

CMP Must be in the wrong window - maybe not.

CMP (Coughing)

CMP Aitken's going to be out of the other window. Out of window 5, yes.

CMP (Coughing) (Humming)

05 17 05 35 CMP Okay. I guess window 3 is the best one after all. You see it coming up.

CMP Little bit of glare out the window, but not bad. Aitken is about two crater diameters from the - from the terminator on this rev. And being close to the terminator, you can look around the general terrain - around the whole area. It's pretty well subdued. There are spots as - what I call plains-flow-type material. The reason I call it plains-fill material as opposed to a lava flow is because the crater population seems to be considerably more - considerably higher in these areas. And, the areas I'm speaking of primarily are just to the east of Aitken and also to the north in some of the low-lying valleys. Try to pick up some sort of flow lines or anything around it. Don't see any this time around on the - on the plains-flow-type material around the edges. Looking at the general edge of the crater Aitken itself, you don't see any positive elements as an ejecta blanket or ray material. There aren't any around. However, the rims, slumping within the rims, particularly on the west wall, is considerably apparent. It is

~~CONFIDENTIAL~~

somewhat subdued, so it is probably - oh, Eratosthenian somewhere in that area, late Eratosthenian as opposed to Copernican. When you look down in the floor itself, there are some light-colored swirls. I guess is the common terminology for it. From this particular angle, in here, I can't see any apparent relief or texture to the floors themselves.

05 17 08 13 CMP

In this case, all the swirls seem to be running from west to east, or east to west, as the case may be. They seem to be essentially lined up in that way, like they had blown across and maybe gone around - a low mound or something like that. Concentrating on the cloverleaf - and I'll call that cloverleaf - in the northeastern corner down there, the biggest apparent thing is there, it's quite obvious, that you have lava scarp flowing up and over the - in front of the slump material that has been slumped down inside the crater, at least some of the original base fill. So the lava flow's definitely after that, and it looks like in one area - in what I'll call the south domical structures down there, there's a graben or a flow graben where it has flown - Well, I can't tell if it is in or out of. I am just losing sight of it, now. I'll have to check that out next time around. But I can't tell if it is flowing in or out, but at least it's a breach. There has been a lava flow, either into or out of the south domical feature.

05 17 09 45 CMP

There are several, you know, there are subdued craters of some kind, completely subdued or maybe still in that type craters in the north - right south of what we call Crater A. Even there, with the shadow of - Sun angle of, oh, must be no more than 10 degrees, or something like that, or maybe a little bit more. But, you can't see down through that shadow. The western rim is very hard. You lose their shadow down there, and you can't see through the shadow at all.

~~CONFIDENTIAL~~

CMP

But, in summary, the most significant thing about the crater Aitken, is the fact you have a recent mare flow, and the fact that you can see the flow lines, or the flow scarp - least, on the eastern interior of the crater. In Champlin [sic] there's a little - little turtleback-type crater in there - what I call a turtleback-type crater floor. And there seems to be a few of these on the back side; but not too many. Oh, maybe four or five, as I can recall right now. But, in each case, there's kind of a trough, or I guess you might call it a rille - except it is a D-shaped trough is what it is - all the way around the crater between the crater wall and the interior. Just like the interior is kind of bounded up in some sort of discus form. And, you know, it was eased up and maybe subsided back a little bit on the thing to create the turtleback-type of a texture. However, I can remember some of the dacite flows out in California, you get that same type of appearance from a high altitude standpoint.

05 17 11 59 CMP

They look like a rough - well, relatively smooth - turtleback-type of texture on the thing from a high altitude then, when you get down clo - get down low, they were, of course very rough-type of a terrain. But it looks smooth from a high altitude. There is Chaplygin Chaplygin - with the Star of Chaplygin. The Star of Chaplygin, of course, is a very bright crater on the northeast rim of Chaplygin. You know, something that is very interesting to me is the fact that several craters of the - oh, 30-kilometer size - yes, about the 30-kilometer, about the size of Crater A in Aitken. And they're all relatively fresh-type craters, and they don't have any - no real apparent ejecta blanket, except the interior slopes are smooth. They have fairly sharp corners at the top of the rims. And near the bottom they have a flat floor of some kind, and some of the floors have, you know, it is a definite sharp contact - sharp-angle change from the floor to the wall. It is hard for me to visualize how you could have something sloping down the side of a crater and proceed out in a - in a horizontal floor.

~~CONFIDENTIAL~~

05 17 16 13 CMP

And then in other craters of about that size, and also that age regime, you'd almost - think that they were from mare-type floor, because the - the color of the material in the floor is essentially the same as the surrounding terrain.

CMP Okay. We're passing Marconi now.

CMP Dellinger and Pannekoek coming up.

CMP Oh, my! Mendeleev is really a big old basin up there.

05 17 20 17 CMP

... Crater Panner - Pannokek - Pannekoek, or something like that, next to Dellinger has a turtleback-small turtleback - 30-kilometer crater inside of it. And then on west of that, there's a recent type crater - I say recent again, because it has a smooth, sloping interior rim - and - but again with no ejecta blanket. And also, the northwestern slope of that particular crater, you can see - it has to be a flow slide, as the type of material has gone down into it. The ... comes strictly from the rim, all the way down to the crater floor.

CMP There's a tremendous crater chain or something going off in the northwest direction. It goes south of Rutkin [?] right next to Becvar. No, that can't be right.

CMP Negative. I said that last thing - the crater chain is there, but I can't figure out for sure where it is (chuckle). Oh, okay. Here's Love, so - it's just north of Love Crater. There's ... Gregory. Echo [?] is a big basin that is pretty obvious to see. Roosa [?] Crater is right on the rim of it. Becvar is down in the middle. And then - on the edge of Becvar - on the edge of Becvar is another relatively recent, but not as good - not as recent as Roosa [?].

05 17 23 41 CMP

Roosa [?] has all different colors of - material on the thing. Light material down in the walls itself and from the - about the upper one-eighth or something like that, you can see - it almost

looks greenish from here, at this particular Sun angle. That's a greenish-type layer, all the way around the top and presumably there's a great big monstrous block of some type. And you can see that greenish-type material - there's a slump - slump fault on the southern edge of Roosa [?], and you can see that greenish - a hint of that greenish-type material at the top of that slump mark also.

05 17 24 41 CMP

Sure funny - the way those things fall off back down there and - although in the case of Roosa [?] it's quite apparent. You can see herringbone, hummocky-type material, or ejecta blanket, all the way around it. It covers up all the way across Becvar and every place else. You can see it all over the place. But it sure seems to be a heck of a lot of the material falling back in the middle, somehow. They usually start out as a small - smaller craters and just keep caving in, or something. There has got to be some big blocks down there. There you can see the crater King. On across there - and coming across the Arabia now. Looking out across the horizon you can see that it's away. Yes, it's just a wide spot where Creek - where King is, I think, - especially to the north of King and to the south of King. It's a little bit higher than it is to the west. There's a little bit of a plateau - even a crater diameter from King off to the northeast. You can see Labachevsky clear up on the horizon now. And there's some sort of a - a greenish, - again, in this sunlight to me it looks kind of a greenish - a greenish tint to it anyhow. I don't have my sunglasses on either, by the way. The ... flow is all - There's a fresh crater - about a crater diameter south of King. That's maybe 20 kilometers in diameter. It's obviously an impact-type crater. But again, you have the dark-greenish layering around the top of the crater. And maybe it extends for about one-eighth of the crater depth. And then you can see some hint of the green - greenish or darker-type material down at the bottom of the crater floor.

05 17 27 52 CMP

I think you would have to be quite a bit lower than I am, right now, in order to really pick up - from

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

among all these craters here. This thing here, I guess you, could see a typ - topographic rise over Saenger.

CMP

I can't get over the curvature. In this attitude, it really shows up. As I come across Rayley [?] here, I keep looking for a swirl. And I can see a definite type of clusters. The only thing - It's an awful high Sun in here to really see any swirls. Now, there is something coming up over the wall of Labachevsky. Yes, it looks like a lighter swirl-type material and then - Let's see - to the west - southwest of Lobachevsky it looks like a heck of a lot of swirl-type material in that area.

05 17 32 00 CMP

And the albedo's - a light - dark - I guess what I'm trying to say is, they are almost ray-type of expression. I don't see any topographic expressions; especially the one that goes down - down in the crater and also to the south as the one between Chang Heng and Labachevsky. Rooster Tail [?] is a very bright subcrater. The ejecta blanket - it goes all over the place, scattering rays eight to 10 - eight to 10 crater diameters from it. And, it as well as some of the Eratosthenian craters around Saenger.

05 17 33 28 CMP

It seems to me like it has a little bit of a hint - at least of a layering or a definite different colored material on the top of all these craters.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03416

**APOLLO <sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

### Time Segments (AET)

<b>From</b>	<b>To</b>
<u>05 20 46 06</u>	<u>05 21 35 27</u>

Voice very poor; time very good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, BCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year intervals; declassified after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

05 20 46 06 CMP Good thing I looked. Okay. And P52. Get gyro torquing angles. Let's see, we had 7 and 14 angles, wasn't it. We're not torquing now - we torqued at 190. Okay. We went to AUTO, got to do a GDC align. Okay. We'll go MANUAL and WIDE. Ten, 25. Okay. We're configure. Okay. Lima Lima for 21 frames. Well, let's see. About to finish that one up. VERB 62 is not here though - CAGED. Good. Let's see.

CMP C - T goes in. Ten, here it is; 1.4. (Whistling)

CMP T - pull all these damned things out - get them over in the other bag. But the jett bag is full of junk already. Well, two jett bags ... but we need another one.

CMP Okay. Enough for both of them? (Whistling)

05 20 50 33 CMP ... TANK INLET to AUTO. POTABLE TANK INLET is OPEN. WASTE TANK SERVICING is CLOSED. REPRESS PACKAGE valve is OFF. Better than the simulator. ... REGULATORS are both CLOSED.

CMP The old jett bag. (Humming) (Whistle)

CMP ... good. ... find my 8-second intervalometer. ... Gatorade [?].

CMP ... stuck on, but it sure doesn't.

CMP ... no wonder ...

05 20 55 31 CMP Okay, intervalometer. Got to start counting 8 seconds here. Let me ... it pretty quick.

CMP Jett bag is full!

CMP Yes. ...

05 20 57 32 CMP Solar corona.

05 21 06 37 CMP There we go. Just passing Aitken again. It sure is interesting seeing a little bit of everything in there. I looked down in the - in crater A in a shadow, something all the way down inside there and in a box-type thing. But there is a definite glow - Hey, those swirls are almost gone. You can

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

just barely see them now at this low Sun angle. The swirls are almost gone out of the crater Aitken. You can barely even see them so that's a pretty good indication that there is no topographic relationship to the - between the swirls.

CMP Can you find ...? Yes. ... going south ...

CMP Next time I go by Aitken, I want to look to the north and take a look at that mare fill, or the plains-type mare material out there or whatever it is. And see how that compares with the floor. But, the floor of Aitken is definitely a volcanic flow. You can just - you can see the flow lines and especially - and oddly enough they look like miniature wrinkle ridges of the Serenitatis Basin. It, to me, is very obvious that there is nothing but the flow front. In other words, if you've got a flow going down there and that's the part of the flow that kind of cooled. And the rest of the flow continued to - to flow in one direction, at the edge of the flow.

CMP ...

05 21 10 15 CMP And I forgot to look at the central peak on that thing other than the fact that I can remember the - the high-water mark. If - you've really got to check that high-water mark to make sure it's a high-water mark and not a talus slag - occasional talus slope. I've got to check that for sure.

CMP ... It's just - a little ... ... No back slide. Okay; at 41 - 40 ...

05 21 14 20 CMP Okay. There's Chaplygin ... Okay. Marconi. The There's Marconi. There's Marconi. Vil'ev and - Dellinger and Panne - Something like that.

CMP Pannek - Pannek - oek - Pannekoek - Pannekoek. Man, oh man. Look at that - Look at that secondary crater chain really goes bouncing along. ... Crater down there. Marconi. It's got some kind of debris or something at the bottom of it, something - debris.

05 21 16 22 CMP There's an ejecta. Okay, Pannek - Pannekoek; Dellinger. ... wouldn't mind the Dellinger. That's a - Oh, that's a big fella. Going down to - Chauvenet.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03416  
Page 3

Lane coming up. Hey, this whole area right in through here is as ... eroded ... and interspersed are the craters that are - maybe four or three or four or five of them up in the 50-kilometer bracket, but most of them are in the 20- to 30-kilometer bracket. Of course, they are not the little bitty ones. But, they're like little beads in that they're still fairly sharp down in the rim, down inside the crater that makes the crater sharp, if you have these stri - striations.

CMP Well, let's see now here comes old Love. Let's see we'll start to the right of Love, go the right of Roosa [?], Becvar, right though the middle of Arabia. What we'll do on this pair is - ... we want to kind of get a picture out to the north to the ... leave it there and point the camera to the north. Could be one of those craters. Okay. We'll stop about - about the time we get to ... 215 ... Can't find it. Okay. This is Love. I can ... ... Love showed up at ... Okay. This is Love. Let's see, 59, supposed to be 140 or 130. That's about right. I'm starting to itch.

05 21 20 40 CMP

When we get our pan camera pictures, take a look. It's got a lot of dark material. I think it's a good - There's a real little bitty impact crater must be, oh, 100 meters maybe, if that big. One hundred meters across and just to - to the east of that triplet of Love. Can't hold it in my ... long enough to look at it, but be sure and check the pan camera film for that. Okay. We're at - about at 130 and ready to go. ... Okay. So, yes, that's about right. My ... is a little bit ... off.

CMP

Okay. There's old Becvar. Becvar is not much more than a dish. The one that apparently is eroded dish that's got a bunch of ... from Roosa that's been thrown out, I guess. And possibly from that other one that's just to the north of Roosa ... but right on the edge of Becvar - the rim of Becvar. Probably hasn't thrown out too much because Roosa has thrown up some stuff on top of it.

05 21 23 21 CMP

... Stop my camera up there. Got more pictures of King than I know what to do with. You know, down here go Abul Wafa. Abul Wáfa.

CMP ... stripe shows up ... Abul Wáfa ... 250. Check the old pan camera again. Just to the east of Abul Wáfa there's a vertical black stripe that runs at the right - at west - western interior rim of - of about a 150-meter crater, just to the east of Abul Wáfa.

CMP It shows up as a black - black stripe down there. Firsov ... Firsov's the one that's got all the swirls out there; that's what that is. Yes, Firsov has got a whole bunch of swirls to the east of that and about a crater diameter from it. Those are the swirls that are all over the place, I guess. And I mean that the dark part of those swirls looks a heck of a lot like Reiner Gamma did, except it's hard to compare because they're different - different lighting on the things. But the swirls to the west - to the east of Firsov and a crater diameter out, they seem to be somewhat radial to Firsov. Dark parts of it are a dark - let's see - Well, it's not the mare. It's not a mare tan. Darker - and it's not even as - it's darker than the - the tan of Serenitatis. I - we should have gotten these - those swirls in there. I can't see any topographic expression to them. It's hard to - and yet it - there's got to be something associated with it because - I hope we've got a picture of them. I'm sure we got a picture of them. They're light; then they're dark; and then they're light again. Kind of con - concentric type of swirl, light-dark-light-dark. Same stops to ..., Saenger, and rooster tail. Okay. There's Saenger.

05 21 28 39 CMP

The hardest part about taking pictures is that you've got to make sure you look through the view-finder, make sure the other half of the camera isn't looking into the side of the window.

CMP Get - get perspective of the - the ..., where as, the rays and depressions around Saenger and the rooster tail is higher than either side of Saenger. I guess the rooster tail is really on the western rim of Saenger - Pictures ... 53-70?

CMP Okay, ... coming in.

CMP It's a full roll. ... That's striation, vertical ... up and down the - interior rim. And it looks like there's a black - but they look green. You

[REDACTED]

know, looks sort of a green-gray in this type of light back of this ... A green-gray material from the center of the rooster tail, on the floor of the rooster tail. And the floor is about one-fourth the diameter of the rooster tail.

CMP ...

CMP Peirce, you have 250. Eight-second intervalometer. And I lost my intervalometer. I'll count 8 seconds. ... disappeared. (Laughter) Okay. Let's see, we're about 155. Let's take two more picture on this frame and finish it up on Lima Lima, huh?

CMP Stop to the north.

CMP ...

CMP There's a ... inside that, different type of relationship than the floor itself, younger than the floor itself.

05 21 35 27 CMP Yes, it - yes, there is. The dome-type material is - -

# # #

[REDACTED]

(This page Unclassified)

**Tape** 17-03463

**APOLLO 17 MISSION  
- APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING TRANSEARTH COAST**

Voice poor on first half of tape - Time OK.

## **SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

- 06 08 30 32 CMP Okay. Mighty fine, Gordo. Thank you.
- 06 08 47 03 CMP What happened to my grits? I lost my grits. There they are again. Anything you drop up here - It just disappears, flat disappears. You'd think it would stay there, but it disappears - somewhere. If it shows up again, but - -
- CMP I don't know if I have the same terminology that John Young had on Apollo 16. And I don't think it has a darn thing to do with the orange juice, but it's sure got the gas. Man, oh, man. And I'm not sure it's really the effects of the food. Gene seems to think it has, but I - I think ... will remember all this gas or what have you. ... one aptitude test down there - because I didn't eat it for this long - only ate it for four. - Well, I guess we ate for 6 days. I should have had it by then, because I sure had it all the way up here. So I think it's a function of zero-g. You may as well plan on having a bunch of it and - that's the way it goes. Back to putting a little water in the grits. I know where a lot of this gas comes from - is right out of this old water separator. I mean gas separator. Each squirt that comes in there has a few bubbles with it.
- CMP As I said before, I'll never understand it. Something about these spoon-bowl packages. All the air ends up in one bubble - one big bubble. And, in all of the beverage packages, and every thing. You couldn't get one of those bubbles to go together if you had to.
- 06 08 52 14 CMP We had quite a bit out of the old sausage patty bag, so when I squeezed it, it broke at the seam. Right at the base of that triangle that goes into the - eat port on the thing here. No problem. I'll just cut a chunk out there and eat out of that little chunk.
- CMP Pretty good sausage.
- CMP Every time one of those jets fires that you can see out the window, on the thing, it looks like a lightning flash, which kind of surprises me in a way. It seems to me like on the way - somewhere

[REDACTED] CONFIDENTIAL

along the way, we had - maybe it was the APS burn. Yes. Earth orbit. In Earth orbit, when the APS fired, it presented a kind of an orange - an orange glow whenever the APS fired. And now the RCS - whenever it fires on the thing, you get kind of a - just a white lightning flash, really.

06 08 59 09 CMP

Well, I'll be darned. Aitken's already filled up at the terminator, so that's got to be a deep crater. You can just see - a hint of light on the central peak, and you can see light on the eastern slopes. The northeastern slope looks like a massif event. The southeastern slope looks like - I'll be darned. That's a rough, very rough looking stuff almost like a - Oh, it's got furrows in it. You can see lineations going off to the southeast. Very rough - not hummocky at all. The bumps, or what have you, are too big to be hummocky. Maybe it's a - I'll be darned. I'll have to take a look at the pictures on that part of it. But it sure looks like some kind of scraping in the area, something that has scraped it away and left deep furrows down in it. And the same thing on the southern rim. On the outside of the southern rim, you got a little bit of a raised rim, and then you go down - It looks like a -- No one I can think of right now.

06 09 01 06 CMP

It's a highly eroded - almost like a water erosion - the river-bottom type of - not river bottom but the walls of the river, you know, where you - the - where you have a steep slope and you have water - not the river itself running down through there, but just the rainfall and stuff flowing down the edge. And it weathers away and washes out the cracks and gullies and the rock. And if you want to cross a hard rock, the - the hard rock stays there and it kind of washes gullies around it. And Crater Zepplin (?) while we have some cameras and some film now - the Crater Zepplin (?) has a lot of low-lying plains-type of fill in it. The plains material in some places doesn't look anything like the floor of the Crater Aitken at all. You have more of a hummocky type of appearance to it. You can see where the craters end. You can see where it's been filled up with something. But it's still a rough - very rough as compared to the floor of Aitken.

[REDACTED]

06 08 02 31 CMP

[REDACTED]

It seems to be the - the general trend of a lot of the craters here now. Especially the one in Zepplin. Zepplin is all beat up. Now the rest of these - What in the world is that monster down south? It's one big - Oh, that's Ingenii. I'll be darned. Okay. That's Ingenii. There's Van de Graaff. Van de Graaff's got to be back - Got to be Ingenii because it's the only way out - the only way it swirls out in the mare itself. I'll have to look on my map for sure. I'm supposed to be eating. I just wanted to see if we're going to be able to get a picture of Aitken at all. And it looks like there's some reflection down on the floor - There's some reflections - back reflections on the sides, and you might be able to see the floor down in there. And I'm going to open it up and try it. That way - that's for sure we'll get around to taking pictures of it.

06 09 03 53 CMP

It's going to be - it's going to be in the shadow. But it is - already is, as a matter of fact.

CMP

Okay. Check that out when I come around again.

CMP

Hey, that's the first towelet that I've had that's been wet. The rest of them all been dry. Still stink, anyhow. (Laughter)

CMP

Oh, I'll be darned if I didn't let my grits get away from me again.

CMP

There they are. Found them under the couch.

06 09 09 53 CMP

Here I am eating grits with my left-handed spoon. Gene, I'm not bad-mouthing. I love you. I just wanted to let you know that I had a left-handed spoon on board.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03421

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER GDS DURING LUNAR ORBITS 37 AND 38**

**Time Segments (AET)**

**From**

06 14 13 32

**To**

06 14 27 31

06 14 31 05

06 15 13 18

Time good, voice fair

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MBC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

06 14 13 32 CMP There it is.

CMP Yes, sure does. Even crackles up here, but I think it's a lot worse down there, isn't it?

CMP Type of stuff that you want to feed through to the LM, prior to - stuff.

CMP I'm sitting on an omni waiting for lift-off, I think.

CMP Say again, Bob?

CMP (Laughter) Okay.

CMP Very good. Yes, I hope this one works.

06 14 18 19 CMP Right.

06 14 24 25 CMP Is it starting to look pretty good on your high gain antenna scale down there - have you switched to high gain yet?

CMP Oh, okay.

CMP Right.

CMP Hey, worked like a charm.

CMP (Laughter) It does, doesn't it?

06 14 25 50 CMP Well, you are, really. It's really great.

06 14 27 31 CMP Okay.

TIME SKIP

[REDACTED]  
CONFIDENTIAL

- [REDACTED]
- 06 14 31 05 CMP I'll tell you what, I'll start that.
- CMP Yes. I'll start that as soon as I get the cl - cover closed on T-stop. That will give us a minute or so there, too.
- 06 14 31 33 CMP Okay.
- CMP (Humming and singing)
- 06 14 41 27 CMP What kind of goodies do we have in here today? Punch. Orange-pineapple drink. That's ... Got a piece of Velcro on it this time. (Singing)
- 06 14 43 40 CMP That zero-g works just like in one-g. You've got to shake these things to mix it - just shake it back and forth. Makes more little bubbles that way.
- 06 14 44 29 CMP Find my cheese spread.
- 06 14 46 55 CMP ... UV COVERS are OPEN - I mean, CLOSED. There! Just made it (laughter). Okay.
- 06 14 54 22 CMP You look beyond Jabber (cough) u-n-i-a-n, there whatever it is. Looking into the Sun, now, and it's completely pockmarked. It's a plains-type of material though. And I guess so - You'd call it a plains-type material, or it's lighter - it's a lighter albedo than - for instance, the Mare Serenitatis or Crisium, or this type thing. It's a lighter - lighter tan. Well, as a matter of fact, the whole thing looks tan here in this type of the Sun angle. And when you get up a little bit higher, the Sun angle - it kind of changes to almost a bright - a bright tan.
- CMP Oh - a Olllll. Six, seven.
- CMP Oh, get P20 going. It's time to eat. Ten - 25 - (Singing)
- CMP The serial number of the bread - a bit of irradiated ham. (Singing) Man, I've got a little urine stuff on my window over here. One or a cheese ... Something like that.
- [REDACTED]

06 15 01 10 CMP

There's Agassiz. It's a little more - little more subdued than Aitken. It means it's probably a little bit older - older crater. There's a scarp going through there. I can't tell - oh, no. It's going to be a rille. It's coming from the highlands, off toward the little crater on the south side of it. And that - well - it starts out as a rille and then looks like it turns into a wrinkle ridge. And at one point, I thought it went up the sides and into that little bitty crater. But now, I can't tell for sure if it does or not. I don't think it really does, although it continues on across to the south of that - to that small crater. And now you can see an indication of it going up the side of that crater, too. There's a small crater just to the south of Agassiz. It's on the rim of Agassiz. But it doesn't lay a mare-type flow or wrinkle ridge around the thing or maybe those are - it's a flow front going up across there.

06 15 02 31 CMP

But I think that small crater in - No, no, I've got to figure out a unit of deposition. The wrinkle ridge in the scarp goes through the crater floor. It also goes through the crater to the south of Agassiz.

CMP

Wonder where my map is?

CMP

... and I missed that one. Let me - Gosh, there's Tycho. Holy mackerel, you can really see that flow. I got to - load camera.

CMP

Okay, that's frame number 106 and 107 on magazine Oscar Oscar. And it's a flow that is definitely - it comes back to the north of Tsiolkovsky. I said Tycho while ago. I can see Tsiolkovsky because to the north of Tsiolkovsky flowing down the inner crater, and that's the same type of material that's on top of - Well, I'll be darn - It's the same type of material, looks like it's on the floor, and also it's been sloughed down in the crater, before the deposition of the flood itself. In other words, it's -

06 15 06 16 CMP

You just got to say it's a lava flow - tell by the material ... It's got flow lines in it. It has lobate flow fronts sticking out on it, and up on the top of the crater rim, in the northeast corner -

This is picture number 108, mag Oscar Oscar of the wrinkly, crackly floor of Tsiolkovsky. That's very interesting. Okay, 110 is a picture just to the north of Tsiolkovsky. I don't know the name of that crater, yet. There's some interesting stuff around here. But the reason I took that picture 110 is because it looks like a flow-type crater doublet. And it is the same type of material from the floor of the larger of the doublet, and it's drifted off to the east down into the older crater - the smaller, older crater of the doublet.

06 15 09 05 CMP

I'll be darned. Yes, that landslide - No, I'll reserve judgment on that until I can get over and take a little closer look at it. But it gives the same type of flowline as comes from the - as the lava flow. It's the same albedo, same color, as the stuff in the northeast corner. I guess I better eat here, while I'm going to see this.

CMP Find some bread and ham in here now.

CMP Lost the craters, and now I've lost my map, too.

CMP Where are these drink bags?

CMP Well, I've had those for 3 days.

06 15 13 18 CMP

Stand on my head - Yes, I did - stand on my head, and they turn into bumps instead of craters, again.

# # #

(This page Unclassified)

Tape 17-03422

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBITS 38 and 39**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>06 18 32 35</u>	<u>06 18 39 13</u>
<u>06 19 07 24</u>	<u>06 19 13 03</u>
_____	_____
_____	_____
_____	_____
_____	_____

Music for about one-third of tape; fair comm

---

---

---

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
**Downgraded at 3-year**  
**intervals; declassified**  
**after 12 years**

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

[Redacted]

06 18 32 35 (Music)

06 18 38 32 CMP Test 1, 2, 3, 4; 1, 2, 3, 4; 1, 2, 3, 4. Okay; so that's the transmitter that's not working on this staging. ... Yes. Something's happened ...

06 18 39 04 CMP Test 1, 2, 3. I'll give it another lick; I thought I could still hear something.

06 18 39 13 (Music)

TIME SKIP

06 19 07 24 CMP At about - at about 165:31 or 32 in there, I used mag Mike Mike and took frame 173 and 174 looking north from ... Last one was in the vicinity of Lara Crater.

06 19 13 03 CMP Okay; it's mag Oscar Oscar. Frame 120 is looking back at a kind of a brownish streak on the crater. Where in the world is that crater? Let's see. Brownish streak surrounded by two - gray-type things. The brown streak looks like it - crat - Okay; that's a ..., I think.

# # #

(This page Unclassified)

Tape 17-03423

APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 40

Time Segments (AET)

From

06 22 24 37

To

06 23 13 49

Time, good; voice low but understandable.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

06 22 24 37 CMP Okay. We'll see you on the other side there, Bob.  
Thank you. Okay? (Laughter) Okay.

06 23 13 49 CMP Okay, Houston. This is America. Once we get the  
antenna set right, it is easy to lock up.

# # #

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03438

**APOLLO <sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING LUNAR ORBIT 48**

**Time Segments (AET)**

**From**

07 10 52 10

**To**

07 10 57 18

Voice poor, time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

07 10 52 10 CMP Okay, coming up on 1 minute here.

CMP Next 30 seconds.

CMP Hey, here we go.

07 10 53 34 CMP Full power's ON mark to mark. Okay, 1.2 ... Z.

CMP Okay, plenty bomb time ... Past the hat [?] Hey, some real flashes out there. Minus-X test is on. Holding attitude pretty good, with slight alteration; 16 seconds 5.7. Hey, okay. We're burning, 25 seconds. Thirty seconds to get a minus 0.5 and a plus 0.5 in Z. Okay, so we pull out the minus 0.5. ... there's a 2 plus 0.5 and Z plus Z is down ... got a roll at 7 ...

CMP We'll trim that to Z, turns into a plus Y.

07 10 55 48 CMP There, we've got it. NOUN 85's at the end of the trim. R - that zero, two zero, 270, 170.

CMP Okay - DELTA-V<sub>C</sub> is minus 1.

07 10 57 18 CMP Okay, let's go back to LOW BIT RATE.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03439

APOLLO <sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING LUNAR ORBIT 48

Time Segments (AET)

From

07 11 48 28

To

07 11 56 29

Voice and time good.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

Tape 17-03439  
Page 2

~~CONFIDENTIAL~~

07 11 54 16 CMP

SHUTDOWN - that's automatic. Okay, minus 9.5 on the EMS. Okay, 366.8. Let's proceed to stop the rates here. 6.8. Okay. Man, look at those 85s. I'm a little bit off, but that's good. Okay; PITCH 2, got it. YAW 2, got it. And number 1, got it; number 1, got it. Okay, SERVO THRUST is OFF. Well, let's see. I've forgotten what it feels like. Ha, that's pretty neat. Okay - that was okay. Somehow we got a 0.3 in there. That's in X anyhow; Y is zero; that's what we want. Z is all right, so let's just leave it that way. I'll proceed with the changes again. That just changed. Okay; 00 ENTER. Okay; 'ERB 06 NOUN 20 ENTER. Okay, I presume you're reading the DSKY there, haven't you been, Houston?

CMP The time as near as I could tell was pretty good.  
 $V_{GX}$  - What did I say - 366.8, I think.  $\Delta V_C$   
is a minus 9.5. Tail-off is 11 or something. ...

07 11 56 29 CMP

Okay. Let's get some more switches off. TRANS CONTROL POWER --

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03440

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

DUMPED OVER MAD DURING LUNAR ORBIT 49

**Time Segments (AET)**

**From**

07 12 20 15

**To**

07 13 04 15

Voice fair; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

07 12 20 15 CMP Okay; Canopus, where are you? There she comes.

CMP Adapted or something (cough). Canopus is the old blue star.

07 12 24 54 CMP Okay.

07 12 36 08 CMP Okay; LASER ALTIMETER is coming on at 16:15.

07 12 36 21 CMP LASER ALTIMETER is ON. Barber pole?

07 12 36 37 CMP CAMERA's coming ON.

CMP There's got to be something. Horizon. (Cough) It's just like coming into LOI.

CMP Oh.

CMP Okay; ... should be coming on - -

07 12 41 47 CMP Man, I stink! Whew! And myself.

CMP Okay; that's looking north from - frame number 3, looking north - on the magazine Yankee Yankee - looking north from Gagarin.

CMP Okay; that's mag - that's number 4, looking right at Agassiz [sic]. That's south.

CMP Five is looking south from Gagarin along the terminator. Let me see if I can get this back across old Mar - Looks like an upside down picture. Not Marginus, I mean - Ingenii, I think.

CMP Okay; mag Oscar Oscar, 130, was taken at Agassiz.

CMP Okay; 131, looking south of Agassiz off toward Ingenii.

07 12 46 43 CMP Okay; frame number 133 is looking north - Let's see, just - I guess Marconi. Let me look for sure, though.

CMP That's Marconi. Just past Chaplygin. Yes; there's a lovelet.

[REDACTED]

- [REDACTED]
- CMP I want a piece of candy here.
- CMP I'm not even sure where this one is, or what it's close to.
- CMP Anyhow, it's got a - a scarp going down through it. And looks like it goes up - it looks like flow front is what it looks like to me. Except the flow front goes up this side, the south side of the crater. It's a domical, a very subdued, eroded, domical central peak on the thing. And the whole crater is somewhat eroded except that the center - central peak is - seems to be more rounded than the crater walls themselves. Almost like it might have been an uplifted type of feature - possibly volcanic. But anyhow, the - it looks like a flow front going around there, and I'll get a picture of that on number 134 - 133, I guess, magazine Oscar Oscar.
- CMP Darn, I missed Tsiolkovsky. Son of a gun! Well, here comes the flow.
- 07 12 52 18 CMP Sure have a lot of different albedo textures on the thing. What makes it look like a - I sure want to see that low Sun, see if that's a topographic rise over Tsiolkovsky or not, and I - looks to me like there's just a - it's just an albedo. It has dark albedo streaks in there. Maybe they are shadows, but I don't think so. Can't see - interpret. You have flow from a so-called landslide. Looks like in a spot or two there, it's rocky. It doesn't come out and roll over. It just comes out and slopes down at maybe a 45-degree angle.
- CMP Eight. Yes.
- 07 12 54 13 CMP Okay. Let's see, just south of Roosa [sic]. Not these subdued craters that Roosa is on the edge of it, but the next one on down from that. I'll look at my map later to find out for sure what it is. But that crater is - looks like it's early Eratosthenian in age, in that the slumping along the walls is fairly fresh. There's
- [REDACTED]

not a real apparent ejecta blanket around it, and there's a - a flow ridge down in the center of the crater. Most of - most of the bottom of the crater, though, is composed of very small bumps and furrows. This type of thing. The albedo is lightly - When the - when the Sun is sort of shining on the central peak on the thing, you can see striae - striations running every which direction. In other words, the horizontal - you have horizontal and vertical striations on the thing of different colors. The - the dark striations in the thing are - kind of - let's see, kind of in the tannish - tannish-gray tinge.

07 12 55 43 CMP

Anyhow, the bottom of the floor has a relatively - you can see flow lines in the mare flow or the mare fill of the thing. Now, what's the name of it? Oh, it's Langemak. Sure. Okay; it's Langemak. Yes, I ought to be able to get a good shot of Arabia out window 1 here. What time is it? Thirty-six - 4 minutes. I'll get one of essentially the horizon. Where is the clicker on this? Looking out across - first of all. Okay; ... 11. I'll take another shot thataway. Another shot to the west. And we'll take one out of window 3 here looking down across - 2, I mean, looking down that way. Okay; those are all f/11. Let me try the same thing in f/8 just to make sure I'm getting the right settings. What I'm trying to do on these are make a profile for the - I just moved the thing.

07 12 57 41 CMP

That central - central crater down here really shows up. Central crater of Arabia is what I'm talking about. Probably be too much sky on this 80-millimeter thing.

07 12 58 16 CMP

Well, let's see, I got a pan camera photo pass 38 in 2 minutes. I've got to get going on that. Crazy dark slide somewhere. Big deal. That's all I need. ... is to change my camera in a minute.

07 12 59 11 CMP

Okay; the pitch and yaw is going to be coupled.

CMP

... uncoupled.

- CMP One's D-1; B-2 and D-2. One in A-2.
- CMP ...
- 07 13 00 35 CMP Jets are enabled. That's C-1 and C-2 for ROLL, OFF. PITCH and YAW are OFF. And, Houston, ready for PAN CAMERA to STANDBY and STEREO to POWER and all those good deal things whenever you are.
- CMP Okay. CAMERA is - Hey! Good morning, Robert. How's it going?
- 07 13 01 19 CMP (Laughter) Okay. Let's see, PAN CAMERA - that's verify STANDBY. Okay; it's going up to STEREO. Turn the old POWER switch ON. The V/H is still in HIGH ALTITUDE.
- 07 13 02 59 CMP Hey, great! Okay; I ought to get my prep for transfer ready here. You know, kind of last night and also this morning as I was flying across the back side of the Moon here - been thinking a little bit, and I wonder - It seems like the - the Eratosthenian-age craters, you know, the ones that are fairly - fairly fresh; you know, they're not Copernican. They don't have rays and this type thing, but they're fairly fresh in their slumping characteristics on the inside and this type thing. But they all seem to have a mare floor; you know, a flat, mare floor - a volcanic-type floor in the thing, and I wonder if there is anybody that's kind of come up with the theory at all that maybe you had a liquid mantle during the - the Eratosthenian era of the formation of the Moon, you know? And those craters at that point in time were - were penetrating that - that liquid mantle. It's a thought.
- CMP Must not be because I don't know for sure what you mean (laughter).
- 07 13 04 15 CMP Oh, I guess the feeling that I was getting is that most of the Eratosthenian-age craters all had some sort of a mound - a domical structure down in the bottom of the crater. You know,

even the smaller ones, some - some of the - the 30 - 50-kilometer class, you know, have a - have either a flat floor or they look - they look volcanic on the floor. Some of the bigger ones, of course, they're definitely volcanic lava flows on the floor of these big craters. The slumping of the walls is not as fresh as the Copernican-age fra - crater but, you know, they - It's not all beat up either. Although the - the walls - the crater walls have the slumping coming down through there, and it's still fair - -

# # #

(This page Unclassified)

**Tape** 17-03426

APOLLO<sup>17</sup> MISSION  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

DUMPED OVER GDS DURING LUNAR ORBIT 50

### Time Segments (AET)

<b>From</b>	<b>To</b>
07 14 25 42	07 14 59 11
07 15 01 59	07 15 05 20
07 15 21 46	07 15 25 21

Voice fair; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year intervals; declassified after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

- 07 14 25 42 CMP Better change back. One, 2, zip. Okay. At 08, we want 30 - two 30-seconds. At 10, two 20-seconds. 11:30. Five, 3, skip one, skip one. Okay. At 30, change to the 20. Okay. We've got the 20. Okay. At 08:30, we'll take her OFF.
- CMP ... good. (Humming) ... bad. Got the ... to SM/AC; 20-seconder. At 11:30 is a 10.
- 07 14 27 49 CMP ... I'm going to go to B. Okay. We move on to B at 11:50; 10- and a 20-minute.
- CMP ... 20-second. ...
- CMP 18, 19, 20. Change the shutter.
- 07 14 28 50 CMP GO at 20.
- CMP ... change the shutter.
- 07 14 29 21 CMP Okay. At 11:30, that'll be 10 seconds. At 13:00, a 5; 13:30, a 3.
- CMP 48, 49 - Okay, make sure we're in B. Yes. Skips every other one going -
- 07 14 29 55 CMP COCK it. I think the thing started at 40 - 54. 3, 4 -
- 07 14 30 20 CMP COCK it. Change the jobberdoo. Five seconds at - 13:00. Okay. Five seconds. 13:30, 13:50. Skip one, skip one. Okay. 13:00:15, 5 seconds. Okay, 30 seconds to go. Okay; and you can see some kind of zodiacal light coming up there. Looking out window - bright. I think that's Sirius. Stands out, too. ... Sirius and - 2. 56, 57, 58, 59 -
- 07 14 31 25 CMP MARK it.
- 07 14 31 30 CMP Five. Cock the shutter - jobberdoo. 10, 11, 12, 13, 14, 15 -
- 07 14 31 42 CMP COCK it. Change the jobberdoo. Change it. Okay. The next frame's a 3 at 13:30. Okay.
- 07 14 32 00 CMP COCK it. Change the jobberdoo. 6, 7, 8, ... -

- [REDACTED]
- 07 14 32 06 CMP COCK it. Change the jobberdoo. Get set. ...  
This thing on? Okay, it's a 1. ... Okay. Prob-  
ably do it a little bit late. Okay, at 14:10, skip  
one stop.
- 07 14 32 37 CMP COCK it. Change the jobberdoo back. It's - 30. ...
- 07 14 32 57 CMP COCK it. Change the jobberdoo. Going -
- 07 14 33 01 CMP COCK it. Change the jobberdoo. It's 50 - 7, 48,  
49, 50 -
- 07 14 33 16 CMP ..., here comes the ... Good gosh, look at this  
ray coming up ahead of me. It's beautiful. Hey!  
(Laughter) Wow! ... Sun came up. Just a - a -  
That'll be a bright chunk sticking up there.  
Right at the 50, the 14:50. Beautiful sequence.  
Ah-ha! Wasn't that good? Oh, beautiful. Out-  
standing! Didn't know I could do it. ... 1/15  
already. Now, let's see, where are we here?  
Where did we end up?
- CMP Oh, we ended up on the 1/60. (Laughter) Now,  
better do a 1/1000. Beautiful job. Oh, that's  
good. Okay. Let's see. Cock it once. Cover  
it with a book, and take it for a check frame.  
We have a minute and 30 - 30. We ought to have  
enough of this thing to ... with. Whew! I'll be  
glad when the guys get back with the ... Not with  
the soap, because soap doesn't do any good ...  
All one time. Just need a good deodorant. Took all  
the deodorant with them to the surface. Outstand-  
ing stuff. Wow! I didn't think I could ever do  
that. Well, I'll tell you, Bob Mercer, you and ...  
Bob - I don't remember - Anyhow, you made it so  
it's a reasonable type thing to - to make. If it  
had been any more complicated than that, I'd have  
never got it. Just barely getting done. ... on  
the camera - camera.
- 07 14 36 05 CMP ... that one first, Sirius or Saturn? Whatever  
it is, it's just a little bit off to the right of  
track. And let's see now, where are we? That's  
on frame 30. (Humming) Gee. It's 31 - 31, I  
guess, once you pull it through; 30 was the last  
one I took of that one. That one was ... Okay,  
maybe I missed one of the 1-degree ones. Ha!
- [REDACTED]

[REDACTED]

CMP ... 28, 29, that's 24 frames. Okay. That's right. I got them all. Now, what am I supposed to be doing in the old Flight Plan? Lights up. Okay. Stow the camera. Notes: Notes: Everything worked good. Let's see. Started ... late. ...

CMP (Humming)

07 14 40 16 CMP Okay. Start the old AUTO PITCH rate. I guess we did that. AUTO RCS SELECT. Jets back ON. Let's see. Where are we now? ... P20, option 5, landmark track. ...

07 14 40 41 CMP ZERO ENTER. ... Two ZEROs ENTERED. ... ENTERED. ... Couple more. Okay. PROCEED to ...

07 14 41 09 CMP Plus - minus, 68.00 ENTER. Plus ENTER. Zero - minus 68.

07 14 41 20 CMP Zero.

07 14 41 22 CMP NOUN 79 ... 0.5, okay. VERB - ... ENTER. PROCEED. Seven? That's pretty close. Okay. ... The old HIGH GAIN. ...

07 14 41 50 CMP That's a minus 2. ... at 330. REACQ and NARROW for AOS. ... Okay. Landmark track. Guess we'd better do that. (Humming)

CMP That's Bravo Bravo on there. ... Okay; Bravo Bravo. Here we go. ...

CMP We're looking at the old lunar surface. Okay. ... turn the power off. Whoops! Well. ...

CMP (Humming)

07 14 44 57 CMP ... is over there. NO GO. ... well on that.

CMP Okay, good shape.

CMP ... 1/250. One frame a second. ..., 38.

CMP Plus 18, 63. Two, plus 44.

07 14 47 50 CMP Plus ENTER ZERO all the ... be below the lunar surface.

[REDACTED]

07 14 48 01 CMP Okay. That's OPTICS POWER, ON. ...  
07 14 48 47 CMP Oh, the old check valve, and that buster's kind of tight. Lots of pressure. ...  
                  CMP (Humming)  
07 14 53 27 CMP Okay. ... Okay. It turns out to be 1. - plus 1.863, plus 44 in ...  
07 14 54 13 CMP Humming. Okay. 38:00, start time. ... We're on? It ought to be ... We're on ...  
                  CMP Okay. ... Swig of water, find my ...  
07 14 55 10 CMP All right, 3 minutes.  
                  CMP Ouch.  
                  CMP (Humming) (Whistling) (Humming)  
07 14 57 14 CMP Okay, 37.  
                  CMP A little goodie.  
07 14 58 06 CMP Okay, got the old MISSION TIMER ...  
                  CMP What? Okay. T-2 is at 42. ... the DAC.  
                  (Chistling)  
07 14 59 11 CMP (Humming) ..., but I guess it worked.

TIME SKIP

07 15 01 59 CMP Oh, okay. Coming up - 42 - No, it's 41:50; I hope. I don't see it yet. Oh, okay. It's on the old DAC here. It's not seeing much. Maybe - 7 degrees. Okay. She's coming down now ...  
07 15 02 39 CMP Ah-ha, I see it. Man, it's pointing a long ways from it. It's 5 degrees up. No, not that much; 3 maybe.  
07 15 02 56 CMP Yes, DAC's running. Going to bring her down, then - Okay, I guess the best thing to do is take

[REDACTED] the center of that thing, that right - It's supposed to be 10 seconds more.

- 07 15 03 48 CMP That one was a little bit off. Discount that one.  
07 15 04 10 CMP 58. Beautiful. Right there, right in the sextant.  
07 15 04 52 CMP Oh, I'm going through zero phase. Got it. ... to lose it. Last one. Okay. The last one may not be that good. Just lost it.  
07 15 05 20 CMP Okay. DAC is OFF. ... CMC. (Cough) (Humming)

TIME SKIP

- 07 15 21 46 CMP Okay. We're passing over the Sculptured Hills. And coming in to the landing site now. Still see - I'll start the old DAC. Oh, boy, it's going to be bright down there. Long - long ways off. Whew! That's pointing up the Family Mountain.  
CMP No, through the telescope, anyhow, the whole area down there is a lot lighter than it used to be, and I'm sure this is due to the increase in the Sun angle. However, the landing site itself and the whole valley extending on out to the Serenitatis annulus is still darker - darker than the surrounding territory, but it's - it's - with the higher Sun now. It's a lighter tan than it used to be. Come on, catch up with us there.  
07 15 24 08 CMP Okay. I got three good marks right in a row there. Just because I missed a TCA, got to catch up with him.  
07 15 24 41 CMP Last one. She's gone. Okay, in this sunlight, Family Mountain looks like it's black on the top. Not black, but real dark - dark - real dark gray on top of it.  
07 15 25 05 CMP HIGH GAIN to AUTO.  
07 15 25 21 CMP Back to POO here, huh?

# # #  
[REDACTED]

(This page Unclassified)

Tape 17-03413

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 49  
Time Segments (AET)

From

07 16 44 45

To

07 16 58 02

Very poor comm

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year intervals; declassified after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

07 16 44 45 CMP Okay, now I'm ... my ...

07 16 58 02 CMP Okay. That's 41 ...

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03425

**APOLLO<sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

DUMPED OVER GDS DURING LUNAR ORBIT 52

**Time Segments (AET)**

**From**

**To**

07 18 11 18

07 18 11 46

07 19 06 08

07 19 06 34

07 19 32 12

07 19 37 22

Time good, voice fair.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

[REDACTED] Tape 17-03425  
Page 1

07 18 11 18 CDR I can't understand it. They seem to be ... Maybe they don't, when we're in AUTO.

07 18 11 46 CDR Okay, ...

TIME SKIP

[REDACTED]

Tape 17-03425  
Page 2

07 19 06 08 CMP Okay.

CDR Houston, America - -

CMP OMNI Delta?

CDR Houston, America and Challenger are ... a good  
tight navy formation.

07 19 06 34 CMP Yes, it is beautiful.

TIME SKIP

07 19 32 12 CMP Okay, she's coming back around.

CDR Take your time.

CDR We're still free, Ron.

CMP Yes, I know. Okay.

CMP Yes, when you're free ... you create a little bit of rate on the thing, too.

CDR I know it, I can see that. Just take your time. When you're satisfied, go. But don't go until you're satisfied.

CMP Okay, I'm not. (Cough)

CMP Okay, she's coming back around now.

CDR Okay, give me a call when you start to retract.

CMP Okay. Will do.

CMP Crazy thing.

CDR Say again.

CMP (Laughter) I get the rates nulled and then it goes around the other way. I think you're bouncing around up there, too, huh?

CDR I know it. I'm just swinging free.

CMP Yes.

SC Here come ...

07 19 35 38 CMP I think you're going to have to go to ATTITUDE HOLD. You're bouncing around more on the probe. See, I'm not moving at all.

CDR Okay. Stand by, Ron. Okay? Okay, I'm stable now.

CMP Okay. Now let me come up to you.

Tape 17-03425

Page 4

[REDACTED]

CDR When you're happy, I'll go FREE.

CMP Okay. Stand by.

CDR Looking good now.

CMP Looking good, yes. See, that's what I needed.

CMP Okay, she's looking good. Why don't you go to FREE, and we'll go to RETRACT 1.

CDR Okay -

07 19 36 54 CDR MARK it. I'm FREE.

CMP Okay, RETRACT. Here you come.

07 19 37 05 CMP Bang. I got all - two barber poles.

CDR You got what?

CMP Okay. (Laughter) Three grays, I mean.

CDR That's better. That's better. (Laughter)

CDR Okay. Sounded good in here.

CMP Yes. Sounded good in here.

07 19 37 20 CDR Okay, Houston. We're hard docked.

07 19 37 22 CMP Okay, safe the PYROS. ... circuit breaker.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03424

APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 53

Time Segments (AET)

From

To

07 20 10 XX

07 20 55 12

Time good, voice fair.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

07 20 10 XX CDR ... We got to get some of this other stuff out of here.

07 20 10 44 CDR Does this go up on its own or in the ISA, Jack?

LMP On its own, I think. Just a second.

LMP Okay, vacuum it.

CDR Okay.

LMP It goes on its own.

CDR ... you vacuum it? I got to get those core ... out of there and ...

LMP Oh, that's right. Hey, Ron.

CMP Yes, go ahead.

LMP Here comes the purse.

CMP Okay.

CDR Hey, I got some pretties in there. Now don't - don't let them come out. I've got the COAS - and the - some - ... stuff in there.

CMP Okay. Let's see what I do with it first.

LMP Hey, we need to take that clamp - utility light clamp back for John, don't we?

CDR Yes, you don't want to ...

LMP ... purse.

MS We'll - we'll -

CDR Well, we'll get the big stuff out of here. And then we'll get - get stuff like that.

LMP You want to try to get the APA [?] up?

CDR ... the tools here. Why don't we give it a try after we get this other stuff clean.

07 20 11 17 LMP I got the procedure.

CDR We have to vacuum this other stuff before we send it back. Hey, Ron.

CMP Yes?

CDR 5-A, that's for tissue.

LMP You want me to - -

CMP I got five - four boxes of them down there.

CDR You got - you got plenty?

CMP I got four boxes of it.

CDR I thought we were running short on something when we left.

CMP No, I've still got four boxes. ... so -

CDR Okay.

CMP I got four boxes of them left.

CDR Okay. ...?

CMP I don't think we need to.

07 20 11 46 CDR I guess that'll be enough.

LMP If we run out of tissues -

CMP (Laughter) I don't know. You guys ... a lot. Throw them back down.

CDR ... in there anyway.

LMP Okay. You want me to finish that, get the stuff out, or what?

CDR Well, let's just get some of the stuff out together, Jack, and then I'll ...

LMP Okay. Let me vacuum you so you can go back and forth.

CMP Let me put this - stuff - purse in A-8.

CDR Are you ready for LEVA bags, Ron?

07 20 12 10 CMP Yes, I can take them, and then I'll put them on top of the couch here for a while - -

LMP Hey, gosh, there's a - -

CDR They're the only clean thing we've got. Let's get the clean stuff out of here.

LMP Let's - let's - Hey, Ron. Remember that before we - we need to vacuum the gloves when we take them out of here. Okay?

CMP The gloves are not in the LEVA bag?

CDR They are.

CMP Okay.

CDR But when we open them up, we got to vacuum tomorrow.

CMP Okay.

07 20 12 39 CDR Don't you think you ought to get those bags? We ought to get those things vacuumed first. And get those put in his bag ...

LMP Well, it's going to be hard to work, two guys in here with those bags, Gene, is the only thing.

CDR Okay.

LMP And I thought I'd get you cleaned off ... like we did in that - -

CDR All right.

CDR You think you can vacuum those things?

LMP Oh, no way.

[REDACTED]

CDR This ... in the drogue here are - they got to be fit better.

CMP Yes.

SC ...

CDR My eyes, nose, and mouth are so full of dust.

LMP ...

CDR Yes, I'm not going to vacuum you until you finish with all those bags.

LMP Right. I agree. Better get these ... out of your way.

07 20 13 50 LMP Was that pocket ever opened on the surface?

CDR No, I just opened it here, though.

LMP Think there's anything in it?

CDR Yes, there is something ...

MS ...

CDR ... make it clean.

CDR What a beautiful flying machine this is. What an outstanding flight. Ron, I could have flown all around you.

CMP Yes, I know. You just sat there messing around.

LMP Hold your ...

07 20 14 46 CDR Dust, dust, dust. All I ever do is dust. Funny how having one of those ...

LMP Okay, let me clean the ... of - your other arm.

CDR You ought to put that light on me.

LMP I'd rather not. It'll show how bad a job I'm doing.

[REDACTED]

CDR ... worse.

LMP I don't know. Okay, let me do the other - Put up the other arm.

CDR I can't believe the control panel over there said I was going into gimbal lock - during that maneuver to burn attitude. That's a standard yaw, roll maneuver.

LMP I wonder who control was during that ...

CDR I can't believe - He knows that. The only thing - the only thing ... that machine ... is to terminate behind the Moon. I just ... final ... so I started maneuvering.

LMP Okay, let me - why don't you turn? Can you turn 180?

CDR If I work on it.

07 20 16 59 LMP Okay. Oh, that part of you is pretty good. I got that while you were working over there.

CDR Yes, and the PLSS is back there - -

LMP Okay, left arm out, please.

LMP Okay. Let me see the back to your right.

LMP Okay, Gene, now I need to work on your legs.

CDR Now let me get at the top.

LMP That's right.

CDR Oh, I can breathe up here.

CMP Hey, who's got the green - the green earphone - and the red earphone.

CDR ... up here. It's on the - -

LMP I think mine's green.

[REDACTED]

CDR -- port side - port side. So mine's red.  
How's that for a good Navy man?

CMP That's good.

07 20 17 18 CDR Were you taking stuff out of the purse?

CMP Yes.

CDR Well, some of those - some of those other things  
are clean. What did you do with them?

CMP I stuck them all in A-7.

CDR Huh?

CMP Stuck them all in A-7.

CDR Okay. What are you giving me this for? We need  
it?

CMP Yes, I give it back to you.

CDR Yes, you - I get it back.

LMP Okay, keep turning.

CMP ... you're going to have to put this dirty stuff  
in your temporary stowage bag - -

LMP Turn the other way.

07 20 17 55 LMP Wait, wait, wait, wait, wait, wait. Okay ...  
let me finish back here.

CMP And now I forgot. Who's - who - who's green and  
who's red?

CDR Jack's green.

CMP Okay.

LMP The vacuum cleaner's got enough torque that it's  
hard to work.

LMP Okay, now turn. Whoa.

[REDACTED]

CDR Ron?

CMP Yes?

07 20 19 59 CDR That SIM bay is - there's nothing wrong with it, nothing at all.

CMP Yes, that's what it sounded like. It's - it's ticking along, working real good. The only problem we had was that one antenna.

CDR No, it's not out. That temperature's got to either be a sensor or a heater because - I've got to have a picture of the SIM bay, but there's nothing there that's hot.

CMP Yes.

LMP Gene, you're just dirty. That's all there is to it.

CDR I know. ... that stuff ... ground in and ground in.

LMP Okay. Turn a little more, please.

CDR Ron, that rendezvous was like a charm. That LM is just absolutely incredible.

CMP Yes. Hey, just running right up the pike. Man, oh, man. Yes, that's the way it ought to run. I didn't have to do anything. I just - keep you in the middle of the TV picture, you know?

07 20 20 16 CDR And you know, they said that was the last but the best, and they're right. It is the best.

CMP Well, I'll tell you, it's been great.

LMP Well, Gene, I don't know if I can do anything more than that.

CDR Oh, I don't know if you can, either, except maybe - Let me put up my hand.

[REDACTED]

LMP Pretty good ...?

CDR Huh?

LMP Pretty good ...?

CDR Yes, not bad.

CDR My wrist connector, too.

07 20 21 25 CDR Can we turn it off down here?

LMP Yes, you can turn it off.

CMP Hey, there wasn't an EMU maintenance kit in that thing.

LMP You get - you get your MASTER ALARM every time we turn it on, though.

CDR Oh, if anybody got a MASTER ALARM, I just turned it on and off. What do you want? An EMU maintenance kit?

CMP Yes, it wasn't in that purse.

CDR I know where it is. I didn't know we were supposed to bring it back. Let me get it.

CMP Oh, yes. I guess. I didn't hear one that time.

CDR Well, you didn't spin down, Ron.

LMP Oh, okay.

CMP I didn't get any waist tether yet. Or LCG plugs.

CDR LCG plugs were ... because they don't have ... our LCGs on.

07 20 22 13 CMP Oh, okay.

CDR How many EMU maintenance kits you want?

CMP Just one, I guess. Those EMU maintenance kits.  
...

[REDACTED]

LMP Okay, necks ring, I got that.

CDR Here it is.

CMP Okay.

CDR What else you need?

CMP The monocular.

CDR I got it.

CMP The DSEA.

CDR I'll get it.

CMP All right.

CDR Stand by.

LMP I'm sending in my gloves. I'm going to keep my helmet on because this dust gives me pretty bad hay fever, Ron.

CMP Okay.

CDR This dust is terrible, Jack.

07 20 22 49 LMP I'll keep my helmet bag for a while.

CDR Is the recorder off?

CMP What, this one down here?

CDR No. Jack?

LMP Yes.

CDR ...

LMP Ron, here are my gloves.

CMP Okay.

CDR Where's the doggone tape recorder? Here it is.

[REDACTED]

LMP Okay. Will you pull the - Wait a minute. Wait,  
Gene. Did - did you take it off?

CDR Yes.

07 20 23 25 LMP Well, okay. You're supposed to PULL the TAPE  
RECORDER circuit breaker - -

CDR I did.

LMP All righty.

CDR I did already.

LMP Is your comm - You're going to - Well, I can't  
talk to you guys without taking my helmet off,  
so I might as well do that.

CDR Yes, well. Jack, if you - I'll tell you, it's  
going to bother you. My eyes and nose and mouth  
are so full of dust. I talk - I'll stay on  
comm here a minute. Can't you do that?

LMP Well, okay. Let's see how it works.

CDR Ron?

CMP Yes?

CDR Here.

CMP Hey, I'm stuck under the couch.

CDR Your suit is so white, I'm afraid to come in  
there.

CMP Just -

CDR Hey -

07 20 24 58 LMP Okay. Send that over. That was supposed to go  
in the purse, but send it over by itself.

CDR Ron, keep it up out of stuff here.

LMP Okay, Ron, I guess - I guess I need your decontami-  
nation bag.

[REDACTED]

CMP Which one? Both of them?  
LMP Well, hey, your jett bag. I need your - Yes.  
Send it all over here.  
CDR Jack, there's no sense dusting those rock bags  
off if we're going to put them in those other  
bags. Let's just put them in there.

LMP Okay.

07 20 24 38 CMP I'll tell you, these things are pretty well air-tight. Not really, though.

CDR They got those airtight zippers on them.

CMP Yes.

CDR So - Okay, how do we know which one goes with  
which?

CMP Well, that's the one that goes on - You mark it  
down there. That's A- - A-7.

CDR This is what?

CMP A-7.

CDR I said how do we know what bags go in here, though?

LMP I think it - it says. It's not easy, but it says.

CMP It does say somehow. Where does this thing go?

CDR Lunar sample container. Stow on ... A-7.

LMP Okay, now that - that's listed here. We need  
those 70-millimeter mags, Geno.

07 20 25 15 CDR Where are they?

LMP Well - inside - they're in the book compartment.  
Here come the mags now, Ron?

CMP Okay.

[REDACTED]

CDR Okay, is this what you want?

LMP Yes - No, that's not the mags. They're in that other thing, in the bottom book compartment. No these are goodies

CMP I think I'm going to have to unplug ... crawl down underneath those things.

LMP Okay, here's - Hey, Ron?

CMP Yes?

LMP Here's a - M and N [?].

CMP Yes. ... - M and N.

LMP What?

CMP Okay. Just finding where the heck it goes.

07 20 26 06 CDR Okay, Jack. Do you want this over?

LMP Yes, that mag bag.

CDR Where's the mag bag? Ron?

CMP What is that?

MS Mag bag.

LMP Wait a minute. Stand by.

CDR Wait a minute. You still have it? I got one mag to give you for that one.

LMP ..., Ron. We got a mag in our camera here.

CMP Okay. Give it to me.

CDR There's one slot.

LMP ... is it a Delta?

CDR Yes.

[REDACTED]

LMP Okay, good.

LMP Do we want to save the CDRs camera?

CDR I don't have any desire to save it.

LMP How you fixed for cameras, Ron?

CMP Oh, I just got the one.

LMP We need another camera?

CMP Wouldn't everybody get a 500-millimeter - You left that on the surface, didn't you?

LMP Yes.

CDR Yes, we don't need it, Jack.

LMP Well, it would be a nice backup camera. We got it up this far. That's the only constraint.

07 20 27 29 CDR Well, how did you get these bags in here?

LMP Put them in the rounded end first, the dark side up.

LMP Boy, I can't - I can't break this one down, though. If you got some pliers - Where are your pliers, Geno?

CDR Well, I think Ron took them. They were in the IS - in the - in the purse.

LMP Ron, are Gene's pliers handy?

CMP Pliers?

CDR Yes, push that up to me.

CMP I didn't see any pliers.

LMP They were in the purse.

CMP I got - I got some scissors, but no pliers.

[REDACTED]

CDR Oh, here.

CMP Oh.

CDR Well, imagine scissors in there, too.

CMP Speaking of scissors, you never found yours, then, huh?

07 20 28 11 CMP Huh?

CDR Hey -

CMP These are scissors.

CDR Well, I had some small pliers in there, Ron.

CMP You did? I don't remember seeing them. Let me look.

LMP Okay, let me make sure we got all these things.

CDR What do you need to break up - the camera?

LMP Yes, yes.

CMP There - some tethers there.

CDR Some what?

CMP Some - I don't know what the heck they are.

CDR Oooh! Where'd those pliers go!

CMP No, I don't think so.

CDR Well, here, take these mags and get them out of here ... - -

LMP Don't worry about it. I got it.

07 20 29 06 CDR Why don't we try to break it down up here, Jack?

[REDACTED]

LMP This is the one that was in the MESA, and I'm sure they've torqued it down. The lock washer, you know. No, we go up in the ...

LMP Okay, get the APK out, Gene.

CMP Okay, mags.

LMP Okay, you got 4, 3, and 2.

CDR Here. Your jett bag to put that in?

LMP Not yet.

CDR Here's that little piece. That's in that old jett bag. I stuffed right behind here somewhere.

LMP Where's the other piece?

CDR Any more mags.

CMP Mags, here's the three.

07 20 29 59 CDR Okay?

LMP I think you got them all.

CDR Yes. There are four 16-millimeter mags in the ISA. But we're not there yet.

CMP Okay?

CDR I'll get it right now.

LMP Well, now, wait a minute. Okay, you can send them up. You got to stow them somewhere.

LMP Get the APK too, Gene. And the flag kit.

CDR OPS? Is the OPS over there?

CMP Yes, I got the OPS.

CDR You got the -

LMP Okay, I'll get that. I got to get the core stems ready to go.

[REDACTED]

07 20 31 41 LMP Who's got some scissors?

CDR Guess who always has got them? Ron.

CMP (Laughter) Here they come. Up through the tunnel.

LMP Wait a minute. The hatch is closed.

CMP Oh, well, they already went up. Oh, so the hatch is closed?

LMP I got it. That's all right.

CMP Well, don't lose the scissors; I got them in the tunnel there.

CDR I'm coming up to get them

CMP Okay.

LMP Excuse me, Geno. I'll get - I'll get out of your way.

07 20 32 38 CDR No problem. I just want to be the middle man ... either one of your way.

CDR Who's got the scissors?

CMP I just put them in the tunnel there.

CDR Okay, take them back, Ron.

LMP Yes, we got it.

CDR Here.

CMP Yes, toss them back down there. I can't get to them, right now.

CDR Well, I got a couple of things for you. Yes, right. You can't.

CDR I got a 16-millimeter mag for you and the APK.

LMP Did you get the flag kit?

[REDACTED]

CDR Huh-uh.

LMP Oh, you didn't hear me.

CDR I heard you. What flag kit?

LMP Behind the SRC.

CDR There's no flag kit.

07 20 33 21 LMP Well, it's on the list.

CDR Well, there is no such thing as a flag kit.  
That's the OPK. Isn't there an OPK there? No.

LMP Oh, okay. I didn't remember whether they put one  
in the LM or not.

CDR No, I just stuck - no. I just stuck my hand back  
there to make sure, but I know there isn't.

CDR What a clean spacecraft.

CMP ... be.

LMP Oh, quit griping (laughter).

CDR I got silicosis (laughter).

CMP I don't know how in the heck these things fit  
in here.

CDR What are you trying to fit? The bags?

07 20 33 58 CMP I should have taken them out, I guess. These  
LM bags in R-13.

CDR Well, some of them go into A-8.

CMP Yes, I put five of them in there.

LMP Hey, Ron?

CMP Yes?

LMP Did you stow the core tube and neutron flux to-  
gether or separately?

CMP Oh, together.

LMP Okay.

CDR Okay, Ron, you want the 16s.

CMP Oh, yes.

CDR Okay, give me a chance ... Okay, let's put this ... on ...

CDR Oh, right here.

CMP This PPK?

CDR Yes.

07 20 35 29 CMP Okay, let's put it right up here in R-2, huh?

CDR Yes.

CDR What's this bag for? Don't you want this anymore?

LMP No, I don't want that.

CDR Jack?

LMP What?

CDR We got a bag you can throw this away in? It's a - it's a 70-millimeter bag.

LMP Okay, throw it down here.

CDR Hey, Ron, stick these somewhere.

CMP Yes, I had them in my suit.

CDR Okay.

CMP The ones in there a minute ago.

LMP Well, I can't snap that. ... for snaps.

CDR Here, give it to me a minute.

CDR These already vacuumed?

07 20 36 09 LMP Yes. More or less. (Laughter) Boy, let me try a little more down there.

CMP Okay. I got to get rid of that jett bag before I can handle those things.

CDR What?

CMP I got to get rid of this big monstrous jettison bag.

LMP Well, look, I'm going by the list, all right.

CMP Okay. I'll stick them back here somewhere.

CDR Well, put that back in there, Ron.

CMP Going underneath the couch.(laughter).

LMP Okay, let me - let me see what I can do.

CMP No, no. Hey, that's all right. I can stick it along beside here.

LMP I got to - tie this probe down.

CDR Oh, you mean that jettison bag full of stuff.

CMP Yes.

07 20 36 44 CDR Oh, okay.

CMP You don't think that's any good, huh, Gene?

CDR No, I - it's - no. I don't think so - I - Let me come back to it.

CMP Well, that looks pretty good to me.

CDR Well, that probe should be really on the floor, Jack ... The probe should be on the floor ... should be tilted down towards you and then up right.

LMP All right.

CDR These already vacuumed?

07 20 36 09 LMP Yes. More or less. (Laughter) Boy, let me try a little more down there.

CMP Okay. I got to get rid of that jett bag before I can handle those things.

CDR What?

CMP I got to get rid of this big monstrous jettison bag.

LMP Well, look, I'm going by the list, all right.

CMP Okay. I'll stick them back here somewhere.

CDR Well, put that back in there, Ron.

CMP Going underneath the couch.(laughter).

LMP Okay, let me - let me see what I can do.

CMP No, no. Hey, that's all right. I can stick it along beside here.

LMP I got to - tie this probe down.

CDR Oh, you mean that jettison bag full of stuff.

CMP Yes.

07 20 36 44 CDR Oh, okay.

CMP You don't think that's any good, huh, Gene?

CDR No, I - it's - no. I don't think so - I - Let me come back to it.

CMP Well, that looks pretty good to me.

CDR Well, that probe should be really on the floor, Jack ... The probe should be on the floor ... should be tilted down towards you and then up right.

LMP All right.

[REDACTED]

LMP Say, that isn't tight, either. I didn't finish it.

CDR Well, to take that jettison bag, we need to have that squared away, I guess.

CDR Hey, you don't need to give it to him yet.

CMP No, I don't need it yet.

07 20 37 23 LMP Okay.

CDR You're going to like this.

CMP That big, long ...

CDR That ... core tube was like pulling an elephant out of the ground.

LMP Okay, next. You got this SEP DSEA up there yet?

CDR No, I didn't unstow it. It's still over there -

CMP Well, get it out of the bottom boot compartment, then. And send it to him.

CMP I got some kind of a recorder. What was that?

LMP That was the LM.

CMP Oh.

LMP Okay. Send me a jett bag. A clean jett bag.

CMP A clean one, huh? An empty one?

LMP Empty.

07 20 38 15 CMP Okay.

CMP A clean jett bag.

CDR Okay, now here's the DSEA from the SEP.

CMP Okay.

CDR Now, put those - put those in the temporary stowage bag; that's just the bootleg stuff.

CMP Okay.

LMP ... Okay, that all goes in the jett bag now, except the next item.

CMP Yes, where do I put this DSEA? Maybe in that thing.

SC ...

LMP You can work on that. Stuff it in there.

CDR What you - did you take our cards off the front?

LMP Yes. I got them, okay?

CDR We - we got a checklist here to - to target the big stuff?

LMP That's in here.

CDR Okay.

07 20 39 27 LMP Man, I must - and here comes the collection bags.

CDR What else goes in here?

LMP Here's the Flight Data File right now.

CMP Okay, you never have found the waist tethers yet, right?

CDR Yes, they're there.

CMP They are?

CDR They were in the purse.

CMP Those waist tethers?

CDR I took them out of ISA and put them wherever - whoever told me to put them in there, either you or Jack.

CMP Those are not the things I used for EVA.

CDR Yes, they are. They got to be pulled apart. Well, wait -

[REDACTED]

CMP They don't have hooks on them. They don't have those big hooks on them.

07 20 40 14 CDR Oh, the waist tethers. Those are our OPS transfer tethers.

LMP No, we haven't sent you the waist tethers.

CMP Yes, okay.

CDR We don't need those OPS - OPS transfer tethers.

LMP No.

CDR Why don't you send it back?

LMP Unless you want to keep them for something?

CDR Well, you want the Yo-Yos.

CDR Yes, put them in that - in that - where - where have you got them?

CDR Put them in that ... box I just gave you. All right?

LMP Okay, send over the jett - the Data File and then - then - Hey, Ron, you probably want to put the Data File away before we start sending you the rock boxes.

CMP Yes.

07 20 40 57 LMP Or maybe - Gene, can you get that close to the -

CDR Yes, I can get that. Here's - here's something. I can take that.

LMP What is it?

CDR That's our decontamination ...

CDR I'll carry it. Put this ... away, Ron.

CMP Hey, this thing is supposed to be in the decontamination bag.

[REDACTED]

LMP What is?  
CMP This thing.  
LMP What thing?  
CMP The de - the magnetic tape thing.  
LMP Oh, okay.  
CMP It's supposed to be in that decom bag.  
LMP You're right. I don't ...  
07 20 41 25 CDR Okay, give me that bag there.  
LMP Well, I got to find the one that goes in first.  
CMP It goes on the one - the only one I passed over there.  
LMP That whole bag?  
CMP Yes, the one that goes on A-7.  
CDR Okay, here you are, Jac-, coming back.  
LMP Nothing else goes in here?  
CDR Oh, yes.  
CMP Oh, yes.  
CDR Heck, yes. The SCBs go in there.  
LMP Will you pass those back to Ron? Now wait a minute.  
CDR Pass what back?  
LMP These. Or that.  
CDR What?  
LMP Oh, I'm sorry.

[REDACTED]

07 20 42 00 CDR Well, we just got to regroup here. I got to get -  
got to get one thing done first.

LMP What is that?

CMP Hey, you got any magazines for this camera?

CDR Well, there's some - yes, there's some film left  
on the LM mag.

CDR Jack?

CMP Okay.

CDR Jack?

LMP Yes, Ron - I mean, Gene.

CDR Take - take that DSEA recorder. Okay?

LMP Yes, go ahead.

CDR And put it in that bag, if that's where it's  
supposed to go. Now what is - what are we going to  
do with this?

CMP What is it?

CDR What did you send this up for, Jack?

LMP What?

CDR This black bag - -

LMP It was in the decom bag.

07 20 42 37 CDR Oh, it was in the decom bag, Ron.

CMP Oh (laughter) okay.

CDR Now, where is the LM Flight Data File? Can you  
tell me?

CMP Should be in that jettison bag there.

CDR I know, but I wanted to stow it. Where could I  
stow it?

[REDACTED]

CMP Oh, stick it in there, yes. It's kind of an empty one to use to put stuff - We got the maps that we each pick up out of ...

CDR Yes - that's right.

CMP Was empty.

CMP This thing is really empty back in here.

CDR Where?

CMP Yes, you could get - you could push that right in that drawer. You could stick that -

LMP Hey, hey, Ron?

07 20 43 14 CMP Yes? Go ahead.

CMP This bag you sent me is - is for a sample bag, not for the DSEA.

CDR It's the big bag off of A-7.

LMP Yes.

LMP Don't you want sample bags in there?

CDR Yes. That's what it said.

CDR Does the DSEA go in there, too?

CMP "Receive magnetic tape cassette in decom bag, and stow on A-7."

LMP Okay.

CMP Yes. So the bag -

LMP I'll put them both in there, then.

CMP Yes.

LMP That doesn't ring a bell with me, but I'll do it.

CDR Both of them? There's only one.

[REDACTED]

LMP No, a sample bag.

CDR Oh, yes. Is there anything else to do, Ron?

07 20 43 55 SC No. Unless the Flight Plan does ... in there.

CDR ...

CDR You'd be ...

CMP Turn it the other way.

CDR What?

CDR Hand in the rings first.

CDR ... the other way.

CMP Yes, the other way - It doesn't make any difference  
...

LMP Hey, Ron, do you think one or two go into this  
A-7 bag - one or two sample bags?

CMP I think on that --

CDR I think you try and put two in there, Jack.

LMP Oh, I got it. The BSLSS bag goes in there.

CDR Is that what it said?

LMP Yes.

07 20 45 03 LMP I got the list.

CMP CMP "Receive two sample collection bags in decom bag,  
and stow on A-7."

LMP My list says the A-7 bag gets the BSLSS bag.

CMP The buddy SLSS? I guess - there's been a change.  
"Receive buddy SLSS bag in the decom, and stow  
on A-1."

LMP Looks like it could go either way.

[REDACTED]

CMP Yes.

LMP You have to go one way or the other.

CMP Yes.

LMP Okay. I'll put the - I'll put the buddy - Did they change it?

CMP They just changed it.

LMP Oh, okay.

CMP Just changed it.

LMP All right. That's because it's heavy. All right.

07 20 45 44 CMP Yes. "Receive two sample collection bags in the decom bag and stow on A-7." That's the one you had.

LMP Yes. Okay, I'll do that.

SC Fire me.

SC Where?

SC At the Moon.

LMP Okay, Gene, I'm going to partially close the hatch and get a bag on it.

CDR That your bag or my bag?

LMP That's mine.

SC Here's your EVA [?].

CMP I've got to get back over there now that I've ... Is there any more 16 - are there any more 16 millimeter mags?

LMP No. There should have been four of them.

07 20 46 56 CMP Okay, maybe I got them.

LMP Okay, I pulled that zipper as tight as I can pull it.

[REDACTED]

CMP Okay.

LMP Here comes the A-7 bag.

LMP I could use another decontamination bag, if you got one.

CMP Okay, I got one.

LMP Oh, should I put the DSEA - I'll put the DSEA -

CMP Yes, put the DSEA in there.

LMP Yes.

CMP Or the mag tape recorder, or whatever you call it.

LMP Yes.

CDR That's all the LM Data File stuff, except these two bags here.

SC ...

SC ...

07 20 48 14 CMP There's - there's room in R-3 there.

CDR I hope there's nothing you need out of it.

LMP Hey, Gene, you want these - There are two more clips out here. You want them?

CDR No, the clip bag is already stowed.

LMP All right.

CDR Put them in your pocket, if you want, but -

CDR No, can you stand this up here?

CDR No, I can't -

CDR Hold that until we need it now.

CMP Okay.

[REDACTED]

CDR Okay, Jack. What have you got?

LMP I got an A-7 bag with two sample collection bags and one mag tape. And I'm ready for another decontamination bag.

CMP Okay. Let me get it for you.

07 20 49 09 CMP Whoa! How many rocks you got in that thing?  
(Laughter)

CDR We figured we had (laughter) - we had over 300 pounds of weight because of the dead weight of the SRC.

CMP They weigh as much as my jettison bag.

CDR Okay, Jack. Hey, wait, there's something in there, Ron. All sorts of things in here. Let's get them one at a time.

CMP There's supposed to be a whole bag.

CDR Yes, but he can't handle them all.

CMP Oh, he can't handle them all?

LMP No. Just hand me one, and I'll figure out what goes in it.

CMP Okay. They all go in it. They all end up in it. No, they don't either.

07 20 49 43 LMP You got the A - the ISA bag - I mean the A-2 bag. I'll put the ISA in it.

CMP That's the big one that's on the - the outside there, Jack.

CDR That's right. This is it. Stow it ... and that's this one.

CMP Okay.

CDR Oh, let me see. Jack, the - Was something else in there - Oh, yes, we got ... and stuff in there, don't we?

[REDACTED]

LMP Yes.

CDR Well, I guess we ought to just leave all that in there.

CDR Well, I don't know if we did or not. We got ... and shoes. That was on my list of - crew list to bring back anyway, so just leave it in there.

CDR Ron, can you hold onto these?

CMP Yes. Toss it back here, Gene.

07 20 50 34 CDR This is that bag - magnetic tape that ... Fold back, wrap with cord, secure with ..., stow in A-7 ... This one bag.

CMP Got to get this one.

CDR This one.

CMP Oh, what is that? Oh, that's what you should have put the mags - (laughter) mag cassette in.

CDR Well, you got it up here now, don't you?

CMP Yes.

LMP Ron, I thought that was true, and you told me otherwise.

CMP Yes. That's what they said.

LMP You buy it.

CMP Okay. It's what my - my thing says.

07 20 51 06 CDR Is that an update?

CMP Huh?

LMP I put the cuff checklist in the ISA.

CDR Okay.

LMP Let's see what else ought to go in there.

[REDACTED]

CMP I need to put the tape in this bag, is what you're saying? The tape is loose in there.

CDR Yes, it's supposed to go that - in the bag.

CMP In the A-7 bag?

CDR Yes.

CDR Where in the A-7 bag is it, Jack?

LMP It's in the end of it, the zipper closure end.

CMP Okay.

LMP Stuffed in there.

CDR Okay, that's the biggie, huh?

07 20 52 12 LMP What's the biggie?

CDR Can you make that one?

LMP I think so. I hope so.

CDR Something heavy is in this bag.

CDR I'm not sure we're going to make that.

LMP I'm not either. Maybe I better take the - -

CDR Let me - let me squeeze it ...

LMP Let's take it. I think we might make it.

CDR Stuff it back into this end of the bag. There you go. Why don't you try and hold on together? Here, I'll show you. I'm going to get it.

LMP ...

LMP Watch it. Did it get you?

CDR No.

LMP Okay. Going to get it fixed first.

[REDACTED]

07 20 54 49 CDR Ron?

CMP Yes.

CDR Ready for the ISA bag?

CMP Okay.

CDR Says, "Stow on top of A-" - Where do we sleep going home?

CMP Darned if I know (laughter). I've been sleeping floating around in the tunnel.

CC ...

07 20 55 12 CMP Hey, okay, Houston.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03429

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBIT 52**  
**Time Segments (AET)**

**From**

07 22 09 21

**To**

07 22 53 18

Comm fair; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 773 and 774, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

07 22 09 21 CDR Okay. We have a latch.

CDR You get direction? Yes, all right. Okay.

CDR Yes, if they will.

CDR (Laughter) No, because - Yes, that's right. Both the same pressure; I don't see how it makes any difference.

07 22 39 51 CDR Yes, it was dead, probably. You all didn't turn it off until later.

CDR Yes, that tees me off. We're not going to get a picture one out of this darn thing. It's jutting right into the Sun.

CMP Okay; P30. I've already got that. Al, what's supposed to be done about 12. It's 20 NOUN. I've got the camera configured. I'm already at P30. No, it's at time 93:12 - 93:21. ... behind you to your left. Okay; suit integrity check. Yes, I was just going to go ahead and put mine on and do a suit integrity check now. Then we'll be ready. Now with that check. Gene, can you get up there in the back - over in the corner back over there? Jack's Roger. We're going to get all set. Yes, that's it.

CMP Okay; I've got my helmet on.

07 22 43 22 CMP Now? Can you hear me now? Now?

CDR I hear you now. What are you doing?

CMP Okay, Gene. We're just talking about the integrity check. We're not suited yet, Gene, if you read me? ...

CDR What - Ron, what's it look like on the checklist?

CMP Well, we're 23. We've got - we've got 30, really.

CDR Okay. Well, tell me when you want to - you want me to put my helmet on. I'll put it on. I'm just waiting - -

~~CONFIDENTIAL~~

- CMP We can go ahead and do that right now - get it out of the way, if you want to, while we wait for that thing to come down. Then we - then we'll be set.
- CDR Well, you shouldn't do it while we're venting the tunnel in case the tunnel is venting. That's the problem, see?
- CMP Well, that's right, too.
- CDR It's getting there.
- CDR You know that - that sort of - It eats - just eats - eats the skin off my hand.
- CMP (Laughter) Sure as heck does, doesn't it? But part of that is just from working inside the glove, isn't it?
- CDR Yes, a good part of it is. How did we end up on decrease here?
- CMP Darned if I know. The last purge was only 20 seconds long, and I think it probably didn't - didn't work in there right. But they wanted me to go to DECREASE just prior to burn. That's DECREASE, so I think it probably didn't work right.
- CDR Yes, it didn't look very good when I was ...
- CMP Yes. And ... I haven't learned that much about the ... You know, I never - I've never seen the darn thing.
- CDR O<sub>2</sub> flow's not increasing on the CSM?
- CMP No.
- CDR Okay.
- 07 22 46 45 CMP Did you - did you turn my suit flow off for a little bit?
- CDR No.

CMP Okay. I'll put my gloves on. No. Wait a minute.  
It's not time yet.

CDR I'll go put a helmet on here.

CMP Okay. Turn it on.

CDR I never turned it off. You want it on or off?

CMP I guess I got the glove on without turning it off.  
That's all right.

CDR I'm in a tunnel integrity check right now.

CMP Okay. ... T8, 1/250. I think it's T8. I'm  
looking in the darn Sun. T8.

CDR Wow! I wish I could have got that other hand  
controller.

CMP Maybe those nuts are just stuck on today, huh?

CDR They are those screws, and they - they're just so  
darn hard that all you do is tear the head of the  
- head of the screw apart --

CMP Yes.

CDR It's about a half an inch to the bulkhead - you  
know, where you try to grab the screwdriver.

CMP Yes.

CDR And it's a rounded screwdriver. It's not one of  
those - it's not one of those square - squarehead  
screwdrivers.

CMP Yes.

CDR It's a rounded blade. Okay. Tunnel integrity  
check is good.

CMP Hey, okay.

[REDACTED]

[REDACTED]

07 22 48 55 CDR That's on - Let's see, O<sub>2</sub> FLOW is still in INCREASE, right?

CMP No. Still zero. Okay. Lower limit.

CMP Hey, is that DELTA-P about 2?

CDR No, DELTA-P is already about 35.

07 22 49 16 CMP Oh, 35. Oh, okay.

CDR Well, that's all I've got to do. Tunnel that valve. I leave it on vent.

CMP Yes, just leave it on vent for 10 minutes.

CDR Just leave it there, huh?

CMP No, no, no. Not that. We'll have to get it to OFF before we jump. Otherwise, the - leak the - -

CDR Leakback, yes.

CMP How about ...?

CDR Can't.

CMP Can't. Okay. You're right. We still want it off. We still don't want it in VENT. ..., couldn't we?

CDR Okay. What's our time line look like now?

CMP Okay. We're at 30 minutes, and that should be a P30. Okay. And there's, let's see, 23 - 29 minutes from jett - 28 minutes from jett.

CDR Okay. When is AOS? How soon?

CMP AOS is in 4 minutes.

CDR What do I want for AOS?

CMP Pitch, minus 42; yaw, 349.

[REDACTED]

~~CONFIDENTIAL~~

Tape 17-03429  
Page 5

LMP I think it's about time ...

07 22 50 19 CDR Ron, you can probably do your integrity check now, if you'd like to, since the hat - hatch is GO.

CMP Okay.

CDR Wait till I get my gloves on.

CMP Okay. You guys ready down there?

CDR Any time.

LMP Yes, any time.

CMP Okay. Stand by.

07 22 50 55 CDR Okay. One's ON.

CMP Okay.

07 22 51 07 CDR And two's ON. Okay; any time.

CMP Okay. You ready to go to PRESS?

07 22 51 12 CDR Yes. Go ahead.

07 22 51 17 CMP Okay. SUIT CIRCUIT RETURN VALVE, got to close it first.

CDR Darn, it's hard to close. I forgot about that.

CMP Okay. SUIT FLOW VALVES; are those OFF?

CDR Yes.

07 22 51 31 CMP ... Okay. Suit pressure ... O<sub>2</sub> FLOW is lower limit. Okay. Let's go to PRESS. Okay. It should be going up.

CDR I don't have my dust covers on it (laughter).

~~CONFIDENTIAL~~

CMP ... Turned DIRECT O<sub>2</sub>.

CDR What?

07 22 52 12 CMP Now it's going up. Okay. I turned the DIRECT O<sub>2</sub> ON. And when I get to about 1-1/2 above, ...  
SUIT CIRCUIT RETURN.

CDR Did suit circuit come out?

07 22 52 31 CMP Yes, it's coming out now. That's 5; that's 6-1/2.  
Okay. It's out. Now she's back in. Okay.  
Circuit - The SUIT CIRCUIT RETURN is going to ...

CMP Don't look bad.

LMP Man, yes. I'm at 35.

CMP How are yours?

LMP Fine. I'm at 39. 40. Hey --

07 22 53 04 CMP Make sure your DIRECT O<sub>2</sub> is OFF. The other day  
mine went up to 45.

CDR That's because you let it go to far.

CMP No, it just goes that high. Doesn't make any  
difference what you do.

LMP I'm at 40.

CDR I am, too.

CMP So am I, right now.

07 22 53 18 CDR Okay. We --

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03431

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBIT 55**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>08 00 06 03</u>	<u>08 00 44 18</u>
<u>08 00 45 45</u>	<u>08 00 57 36</u>

Time good; voice fair for first segment, poor for second segment.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

08 00 06 03 CMP Okay. We'll give her a try. I can see the one out window 1. Window 1 is the only one I can see. And that happens to be HF number 1.

CMP Yes. Oh, here's those. The electrical covers? Oh, they're - each one of them is in your - your bag here. Yes.

CMP Yes, they're in the pocket of the PGA. Yes.

CMP Okay. We're LOS.

CMP Yes, we snap them up in the tunnel. Small pocket? Okay.

08 00 09 29 CMP No. Well, it's back down. Back down, pull the seat back towards you. ... down, yes. No. Face up. No, that's all right. Like that. Put it right in the couch and push them on in through there. Yes.

CMP Yes, we're going to have to take that rock bag out of there ... And - and then the rock bag?

CMP No, what we'll do, we'll - it'll - No, you store it between the - the PGA bag and A9 rock box. See? Stuff it right in there. And you can start dumping ... here. Yes.

CMP (Laughter) Yes.

CMP What are you doing? Here, grab ahold of the end of it. No, just grab ahold of the end of it and pull on that, if you can. (Laughter) Yes. (Laughter).

CMP No, it goes up over that thing, that hard thing down there. Take a look down there. No, it goes up over it. Yes.

08 00 13 43 CMP That was the LM Timeline book. Yes, you're at the end now. Yes. And speaking of -

- [REDACTED]
- CMP I'm sticking that LM Timeline book in there with the window shades. Oh, okay (laughter).
- CMP Everything is in R-2. Oh, the cards - Yes, they're in another one. Yes, that's in - R-5 there, isn't it? Yes, that's not - yes, R-1.
- 08 00 16 11 CMP Those pills can come out. I just stuck them in there so they wouldn't be floating around.
- CMP Here's the plan that goes in that pocket - in the end of that pocket thing the next time you get in there.
- CMP Hot dang! I'll tell you. You guys have been down to the Moon. Fantastic. I don't believe it either. Yes, I did; I'll tell you. Well, I'll tell you, I learned one thing. The landing site area that you guys landed is completely different than the rest of the annulus - the rest of the Moon, the rest of the annulus around Serenitatis, and the different color. And - I'm beginning to get the feeling that - that a liquid mantle at some time or another did cross - did cross on the back side, anyhow, at one time or another, recently, during a period of time. It's in that - in the PGA thing down there, I guess. Same place, in that little - ... It's already reached the point where - I've already shaved once, though. Yes, that's right. I really was going to shave yesterday, and I just didn't have time. Packing that darn bag full of stuff, it took me an hour last night. I sure packed that bag full. (laughter). Yes. (Laughter) Well, you know, it's all of that food, urine, and - LiOH cans out of there and my CMP's helmet shield and a bunch of stuff out of A7, all the rest of the food and stuff that was in there.
- 08 00 19 09 CMP That belongs in A8, but I just stuck it down there for the time being. No, I know they don't fit in there, but they did while something else was in there. Yes, in fact, I've got something on both sides of the page to do. What time is it? Okay. ...

[REDACTED]  
CONFIDENTIAL

[REDACTED] CONFIDENTIAL

CMP What? Tissues? Let's see, they're down in the corner over there. What the heck did I do with them? Aren't they stuck to A-5?

CMP You know, this zodiacal light is really kind of pretty. It ... one of them. Thank you. ... before I even take a bath.

08 00 23 42 CMP You guys are making a ...

CMP ...

CMP Gosh darn! (Laughter) That's the one we ought to have thrown away (laughter).

CMP Okay. The recorder's - Yes.

08 00 27 08 CMP Got to get the SM/AC POWER, OFF. ...

CMP Oh, you dumping? Do I go to the other side to get the - Has - the Nikon? Here, I forgot where I put it.

08 00 31 14 CMP I stuck it right there with mine. Yes. You might start using one of them there, probably, before tomorrow. The box is about full. Yes, I think ... You guys don't have to start using those until 195. About now, I guess. ...

CMP No, not to - not to use the spare one. You can - Look and see, ... 197? Okay. Back over there in the right corner? Back over there and down there, somewhere. Leaning up against the wall. Yes. Yes. ... Just about this period of time, see, you can always dump - with the back side of the Moon coming up. I was in FREE one time coming around, and I dumped on the back side of the Moon. Almost went into gimbal lock (laughter). It really fouls you up.

CMP Polarized and also red ...

08 00 34 00 CMP Where did I put that thing? Let's see; I wadded it up. Let's see - It's down in that one over there?

[REDACTED] CONFIDENTIAL

~~CONFIDENTIAL~~

- CMP Yes, I want to get - Well, ... this would be good  
...  
CMP It was the other plus X. ... terminator yet ...  
I got ... near-side terminator ... terminator.  
08 00 35 42 CMP No, there was another - No, there was another one  
in there. Just like those temporary storage bags.  
LMP Wasn't it down in there?  
CMP I took it off of there. What in the heck did I  
do with it? I forgot what I did with it now.  
Fine.  
CMP Oh, I got something on the outside of my window.  
How did all that happen?  
CMP We could start using that great big thing; but  
it's just easier to use that small one and then  
dump it in there, I think.  
CMP Might as well just start using that big one, I  
guess.  
08 00 37 51 CMP Yes, that's the bad part about it.  
CMP Got two pockets of towels in there, too. \*\*\* have  
two packages left, each, in - number A-1. ...  
There's a fourth temporary stowage bag if we can  
find it. You know, just stick it up there in the  
tunnel with the rest of them.  
CMP ... Kilo Kilo ... that one, I think. Oscar Oscar  
is ours, and Peter Peter is ...  
08 00 42 16 CMP Look at the holes in my camera holder.  
CMP Yes, look at that flow ... Yes, look at that flow  
... Where did it go? Yes, see that flow that's  
coming down right there now? And it happens right  
over Tsiolkovsky, coming close to it. And it  
looks to me like it's about the same darn type of  
stuff as - as the ... Yes. Yes, it's right out  
here. See it out window 3. See it down there? ...

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03431

Page 5

LMP But I can't see any flow ... at all. No, here.

...

08 00 44 18 CMP Yes ... DSE.

TIME SKIP

08 00 45 45 LMP ... down there. ... number ...

LMP Yes, ... number 16.

LMP Stand by. Must be a ...

08 00 47 21 LMP (Laughter) ... Yes. ...

CMP Hey, that's my flashlight I want. Has it got tape on it? ... and the other one just quit right now.

LMP No, not yet.

CMP Sixteen. Yes, those two off ... come out and ... come out and ...

CMP Oh, here's that jett bag. (Laughter) There he is. Ought to put it somewhere.

CMP Oh, my windows are fogging up ...

CMP Jack, ...

LMP 38, 34 -

08 00 51 41 LMP Okay. MARK.

CMP There we are at OMNI Charlie.

CMP Okay. Houston, this is America. Okay. For your planning purposes there, - I got a little tied up and started the RECEIVE ONLY, TAPE RECORDER at 195 plus 24.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP Okay, Houston. HF number 1 is sticking out where it should stick.

CMP ... Look down that way. Okay. What, - stand by. Okay. STANDBY.

08 00 54 28 CMP Okay. We're - we'll - we'll stand by on your call then. Or I'll go to VHF now, if you want. Or would you rather have HF RECEIVE? I'll stand by on your call to go to VHF.

08 00 54 57 CMP Okay. MODE's in VHF.

CMP Houston, America. What - Is somebody kind of afraid that maybe the antenna isn't all the way out? Is that what the problem is?

CMP Okay.

CMP I don't think I ever told you down there - that mag Kilo Kilo was on frame 99 at the end of the rendezvous - and the picture-taking sessions there.

CMP PITCH of plus 25; YAW, 200; and REACQ and NARROW.

08 00 57 36 CMP Pitch of plus 25. Okay. Okay.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03441

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER HSK DURING LUNAR ORBIT 56**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>08 02 39 12</u>	<u>08 02 52 14</u>
<u>08 02 57 01</u>	<u>08 02 57 26</u>
<u>08 02 58 19</u>	<u>08 03 06 25</u>
<u>08 03 42 00</u>	<u>08 03 42 32</u>
<u>08 03 43 05</u>	<u>08 03 48 15</u>

Time good, voice poor

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

08 02 39 12 CDR Pardon me?

CDR Find anything wrong with that?

SC ...

SC ...

SC ...

CDR I'll tell you what I thought.

LMP Everything - everything ...

CDR Should be an opening already because I've been getting ...

LMP ... now, right in here is ...

CDR Well, those doors are supposed to be open.

SC ... my mind ... Here comes one.

LMP Very interesting. Can't be.

CDR Yes, okay, then what - what were they afraid we wouldn't retract on it?

SC ...

CDR No, there was nothing taken out.

LMP ... after every ...

08 02 43 57 LMP Ron, that lamp was absolutely perfect for powerup.

CDR Who?

SC ... that lamp.

CMP ...

LMP (Laughter)

CDR ... at the end of our EVA, huh? Well, I don't know how it went. I hope it went all right.

[REDACTED]

~~CONFIDENTIAL~~

CDR When we - we were out on the surface and you were laughing away on your usual VOX.

CDR Could you - did you - did you ...?

CDR Yes, that's another thing that was outstanding was the comm. And I don't know how my primary PLSS would have been, but my secondary PLSS was pretty darn good. My backup PLSS. Gee, I hope we brought back the good ... bags, Jack. Gee, did you check it?

08 02 46 15 CDR Well, I just brought the one that was floating in the - in the tunnel? And I had to take the one off on the one side in order to get the - Yes, but the only reason I took - took the one off on this side over there was to get the probe and drogues out, and that was - we should have taken that other one. Oh, nuts. Oh well, you can do EVA ... can't you?

SC ...

CDR I don't think my suit can stand another pressurization. I can't believe I'm eating as much as I am. I'm starved. Whew. I'm rather glad this is the fourth day.

SC ...

CDR Well, what threw us off was that first day was about 23 hours long.

SC ...

08 02 47 41 CDR There's some in the LM.

CDR Well, that's the convenience of one-sixth g, that's what I think. I'll tell you, that's the greatest part of it.

SC ...

CDR If you like - if you like ... then when you put the ... but other than that you've got all you need ... with the added ingredient of having a

~~CONFIDENTIAL~~

bottom. I'll tell you, that Rover sure bounces you - Whew. Gosh, we were - half of our traverse was ...

SC ...

08 02 48 52 CDR My outboard foot - my toes would wrap around - around the - the floorboard over there to keep ... from leaning -

SC ...

CDR You know, it's got to be worse, Jack - it's got to be worse for you because even on level ground with the craters around, see, you don't know which line - what - what I'm thinking.

SC ...

CDR Yes.

SC Yes.

CDR It laid - it looks like it just rolled up on it.

SC ...

CDR That's exactly what it looks like.

SC ...

08 02 50 28 CDR I had hamburgers and scrambled eggs.

SC ...

CDR Yes, my hands are ... water ... put about that much water.

SC ...

CDR Yes, it didn't do much good, but it was psychologically good.

CDR Yes, and it was real interesting, too.

CDR Okay, 1 minute to LUNAR SOUNDER, OPERATE.

Tape 17-03441  
Page 4

08 02 52 00 CDR MARK. This is your friendly commander, clean and happier, back up.

08 02 52 14 CDR Well, I'm not really clean, but it's a major step in the right direction.

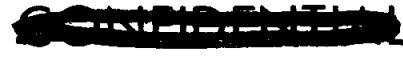
TIME SKIP

~~CONFIDENTIAL~~

08 02 57 01 CMP Okay, I think I'll put Kappa Kappa back; I've got  
Oscar Oscar on there. How about it if I use that.  
Okay?

08 02 57 26 CMP 2 and 3 are ON.

TIME SKIP



08 02 58 19 CDR

Hey, Bob. A quick summary on that rendezvous as far as LM performance was concerned. Handling characteristics were outstanding and pretty much the same as they have always been on LMs in the past. The APS burn - burn went nominal; the residuals on that one were actually quite big, about 744, that's feet per second - and we nulled those out and after that the midcourses were max of 1.3, then a max of 1.6 on the second one. But, after the TPI, we were coming up - up the pike right - over - right - all the way and the line-of-sight rates - actually both out of plane as well as in plane were - were zero - basically zero for out of plane and, as predicted, on a nominal curve for in plane. And it really ended up to be pretty much of a storybook rendezvous.

08 02 59 23 CDR

No, I didn't tell them that. And we didn't get a chance to copy them down because I wanted to get them all down on tape. It surprised me after the APS burn because they were relatively large. They were 7 feet per second in X, 4 in Y, and 4 in Z. And that was, I guess, just short of a 4-second burn, somewhere around 4 seconds.

CMP ... 5.6 on that.

CDR And one other little thing, we put, I think, two marks, three marks - two or three marks in the AGS - manual marks, after the last midcourse, as we'd been doing in the simulator - three marks, and Jack tells me that the range rate came right up to - right up to the actual radar - range rate - right up to 100 feet or so.

CDR AGS is really a pretty good system. It was right a couple of times and then it was wrong.

LMP It had the out of plane on the insertion - insertion out of plane right. Just about right at 7, and they gave you 9.

08 03 01 36 CDR

How can you get ...?

CMP Huh?

CDR ... kept trying to get you ...

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03441  
Page 7

CMP I don't like lemon personally. (Laughter)

CDR Bob, we're all just eating away here. Anything interesting in the world news that's worth commenting on?

CDR No, sir; we were busy otherwise.

CMP Yes, I did.

CDR Of course, it's 2:30 in the morning.

CMP (Laughter)

LMP Do we gradually get back on a normal schedule.

CDR No. ...

LMP Yes, no, what?

08 03 03 21 CDR Yes, we land at 2 o'clock in the afternoon, Houston time. We get up - we get up about 6 hours before reentry, as I recall, 6 or 8 hours before reentry.

CDR Wonder how our chances for ...?

CMP Yes, sounds like we're doing all right, I guess.

CDR We haven't heard much about that for 3 or 4 days.

CMP Yes, in a little bit. Okay.

CDR No one tells us anything.

CMP You guys were too busy picking up rocks, you know, getting dirty, falling down, inventing new terms.

CDR You know, ...

CMP (Laughter)

CDR ... when Jack found the orange soil, I thought he was nuts. I - My back was to him until I turned around and saw it. And then I saw this radial band of light going up.

CDR That's hard to believe.

~~CONFIDENTIAL~~

08 03 04 26 LMP You know why I was cautious, right at first, is because I had been fooled by a reflection off the Rover orange Mylar.

CDR (Chuckle) Okay, we're pretty much up on that one. Just wondering, you know, Mr. Truman's been pretty sick and so forth, wondering about some of those things, but no big deal, we can - we can wait.

08 03 06 15 CMP That's affirm. Hydrogen purge, an O<sub>2</sub> purge, and, would you believe, we forgot to turn H<sub>2</sub> purge line HEATER, OFF? We bogged down - Thank you - -

CDR - - for being so subtle. (Laughter)

CMP Pretty subtle EECOM there.

08 03 06 25 LMP It's got to be Parker. (Laughter) Parker's good.

TIME SKIP

~~CONFIDENTIAL~~

Tape 17-03441  
Page 9

08 03 42 00 LMP Okay, Bob, that's done. 1 and 2, OFF, and 3, AUTO.  
LMP Okay.  
CDR And, Bob, what time is AOS?  
LMP LOS?  
CDR LOS, I mean.  
08 03 42 32 CDR Yes, LOS.

TIME SKIP

~~CONFIDENTIAL~~

[REDACTED]

08 03 43 05 CDR Thank you, Bob.

LMP Are we going to sleep before we come around ...?

CMP We're supposed to go to sleep now, huh?

CDR I'd better take a Seconal before I go to sleep.

LMP I'd better get some ...

LMP Did you look at the back - the dark side of the ... trying to see light? Flashes or anything?

CMP I saw them.

CDR Did you? You think it was a light flash or impact?

08 03 43 48 CMP I guess - I think it was a lot more like a light flash.

CMP I took pictures of the Earth.

LMP Where do we stand on our presleep - sleep checklist?

CMP We've accomplished one thing; we've cycled the fans.  
(Laughter)

CDR What do you have to find out about ...?

SC No, sir. I'm fine.

CDR How about water, guys? I want to ... until the last.

CMP I have got to take a bath yet, but first I've got to ...

CDR You seem productive.

CDR Your bath, Ron.

CDR Roger. Two minutes to LUNAR SOUNDER, STANDBY.

CDR Roger. 28:43.

08 03 48 05 CDR No. No. STANDBY, 28:43.

[REDACTED]

[REDACTED]

Tape 17-03441  
Page 11

SC You checked?

08 03 48 15 CDR Not yet.

# # #

[REDACTED]

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03444

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING LUNAR ORBIT 62**  
**Time Segments (AET)**

**From**

08 14 11 32

**To**

08 14 50 51

Time very good; voice extremely poor.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03444  
Page 1

08 14 11 32 LMP I ought to get a new ...  
CDR Oh.  
LMP Our water's starting to leak a little bit.  
SC Yes.  
LMP Probably has lunar dust in it.  
CMP ...  
LMP Man, that was ...  
CMP ...  
CDR When I took my helmet off and ... I just started ... I started ... in my eyes.  
LMP I can't believe you took it off.  
CDR I don't like that helmet.  
SC ... your helmet ... makes any sense to you ...  
LMP Huh? Okay ... and that's ... 10 minutes late.  
SC Yes.  
SC ...  
08 14 13 54 LMP ... working down there, Ron? I think I'm going to do it, if you agree.  
CDR ... zero ... 5 on that?  
CDR Ron, ... 5?  
SC ... 180. ...  
LMP Okay ...  
LMP ... now with the ...  
CDR ... turn it right, then left.  
SC Okay ...

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

08 14 17 03 IMP You got some stuff there for Ron?  
SC That does something, doesn't it? ...  
08 14 20 45 SC All right.  
SC Okay.  
CDR POWER, ON.  
SC What? ...  
08 14 21 17 LMP It's ON ...  
CMP ... 2, 3, 4.  
08 14 22 35 CMP Ah-ha! Got some ... Thank you. (Laughter)  
CDR ... I think we got exactly ...  
LMP ... two ... that ...  
CDR Yes.  
LMP ... can't see it ...  
LMP ... you get some ...  
CDR Well ... do that ...  
08 14 25 21 CMP Ah-ha! ...  
LMP ... R ... (laughter).  
SC ... change attitude ...?  
LMP ... yes.  
08 14 28 31 CDR ... pinpoint the holes ...  
CMP Okay. Magazine ... all covered up.  
SC Clear as heck ...  
08 14 29 30 SC ... way down there ...  
IMP ... circle.

CMP Oh, I got ...

IMP ... another basin down here. Another basin coming up.

SC ... get that.

SC ... over there.

CMP Yes ... isn't it? ... Look out down that way ...

IMP Can't you do the - ... should do that I guess. We got ... coming up here ... on the ... See?

CMP Yes. ... done that ... Tsiolkovsky.

SC Yes.

08 14 32 11 IMP Yes. I think if you look down there, ... just a block of the rim has been displaced in the direction of the slide.

SC What? Where? You get it?

SC Yes.

CMP Tsiolkovsky is about 150 miles - 200 kilometers ... and ...

IMP ... There is a place where you can barely see some of those ... in the ... ridge and valley ... I guess the ...

SC ... the landing site ...

08 14 34 44 IMP Thirty - 1, 2, 3, 4.

08 14 34 47 IMP OPERATE.

CMP Okay.

IMP On time.

IMP You mean the - that's probably a so-called ...

CMP Okay, Jack ...

IMP Okay.

~~CONFIDENTIAL~~

LMP Yes, yes, yes, yes. Well, I think you do on big craters ...

LMP I think the - the ... is about the size of basin where you start to see that Fra Mauro type yellow [?] ridge and valley ... ridge and vale expression - construction ... Orientale, you know, shows a very - Yes, and that is ... might have been ...

08 14 37 59 CMP ... we only have one ...

CMP Could you guys see that crater I was talking about?

SC No.

LMP ... by George. That looks like an outer ring ...

SC (Humming)

LMP ... has an outer ring, about a third of a crater, inner crater diameter outward ...

SC (Humming)

LMP ... waiting for ...

CMP ... Why don't get ...

08 14 41 35 LMP Wish I could see the ... these other. You can't make a good solid data comparison without having ...

CMP That's right.

CMP (Humming) I've forgotten which one's which.

LMP Yes ...

CMP ... and ...

CDR There's ... Oh, fantastic. That's the first one I've seen. Out 5. Beautiful, beautiful. Look at that ... Look at that - Let's get it the next time around. ... in this attitude, Ron?

~~CONFIDENTIAL~~

CMP Yes.

CDR Yes. Let's - Yes, that's - Oh, man! Look at that.

CMP I don't know, I've looked ...

CDR Yes. ... a little late. We needed it just when it came up. Yes, let's make sure we do that. That is beautiful. It's just unbelievable.

CMP (Laughter) ...

CDR Fantastic!

08 14 44 51 SC Okay, you want Smythii, huh?

SC Yes.

SC Okay ...

CMP Okay ...

CDR ... What does that clock ...?

CMP 27 ... PAN CAMERA, ON ... 27:36.

CDR What is it now?

CMP 25:17.

SC ... at 25 ...

CDR ... Ron? ...

CMP No, not ... Okay, it's ...

CDR What is that? PAN CAMERA, ON?

CMP ... yes.

LMP 27 what?

CDR Okay, 27:36. You got another - another minute.

LMP Okay.

CDR ... by now.

[REDACTED]

08 14 46 49 CMP Okay, we got you OMNI D ... Somehow we got off attitude here ...

SC Okay, hand it - You got it?

CMP Okay. You want to get the pad? ...

CDR Okay, Bob.

CMP 27:36 - 27:36, Jack ...

CDR Go ahead, Bob, on the pad.

08 14 47 33 IMP PAN CAMERA, ON.

SC Okay, ... 36?

CDR Pan camera what?

CMP STANDBY; PAN CAMERA, STANDBY.

08 14 47 48 CDR Okay, PAN CAMERA, STANDBY.

CDR Okay, I've got T-start of 49:04 and T-stop of 51:01.

CDR I don't have much to do, anyway, Bob. Why don't you go ahead.

IMP I think Ron's got something to say ...

CMP Yes, I'm ...

CDR Okay. That's right ...

CMP Okay, we're coming across Mare Smythii. One of the first things I'm concentrating on is the - slope of the - Well, we're out of comm, it looks like.

CMP You got some high gain angles?

SC ... if I do ...

SC ... not quite the attitude.

[REDACTED]

CMP Okay.

CDR How do you read, Bob?

CMP Okay. Houston, how do you -

CDR Okay.

CMP REACQ AND NARROW, Gene.

08 14 50 51 CMP Okay, Houston - okay, Houston, on the - the craters to the north of the Wright Brothers, the slope of the walls is steep - probably 45 degrees on the inside; it's a gradual slope on the outside, slipping - -

# # #

[REDACTED]

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03433

**APOLLO<sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING LUNAR ORBITS 61, 62, AND 63**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>08 16 19 15</u>	<u>08 16 25 48</u>
<u>08 16 39 42</u>	<u>08 16 43 22</u>
_____	_____
_____	_____
_____	_____
_____	_____

Voice faint; time good.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

08 16 19 15 CDR ... in there for now is some time between now and TEI.

CMP Yes, I guess it would.

LMP Yes.

CMP VERB 83 won't work either.

CDR Yes, it will.

CMP ...

CDR Yes, you can go ahead - you can - what do I have going? Huh? I don't have anything going now. Yes, you can do it. It just takes a long time. And screws it up a little bit because it's got to calculate the state vector and bring it up on the ... --

CMP ... Okay, now how are these ... VERB 58 ...?

CDR No, just roll, I think. You've still got P21.

CMP ...

CDR No, no; 83.

CMP I can?

CDR Yes, you're done. Simple.

CMP Yes.

CDR Supposed to be. Should be the same as - should be the same as your NOUN 22. And VERB 62, I think, is over there. VERB 62 ... where it wants to go. And so long as it keeps changing, we're in good shape. (Humming)

CMP Okay. ... Okay; now get ...

CMP Turn the DSE to STOP. ...

CDR No, it's going.

CMP ...

[REDACTED]

CDR Okay.

08 16 22 09 CDR Okay, now. UV is - UV is CLOSED.

CMP Okay.

08 16 22 16 CDR It's gray.

CMP ... stop ... camera ...

CDR Stop?

CMP Yes.

CDR And (cough)

CMP Right here. Okay. May have - Ah-ha.

08 16 25 23 CDR Okay; going OPEN. Here comes the old terminator.

CMP ... once.

08 16 25 48 CDR Okay. That's done.

TIME SKIP

08 16 39 42 LMP Okay. For acquisition at 22, you want OMNI Bravo.

08 16 39 49 CDR Okay. We got it.

LMP Okay.

CDR Anything else coming up?

LMP Oh, no. ... OMNI Bravo ...

CDR Is Ron up?

CMP Yes, I'm up.

SC ... (cough)

08 16 40 20 CMP Okay. We're going to do a P20. Let's see, we're looking - be in a P20 now. What time is it - 20?

LMP ... --

[REDACTED]

CMP I'll get it set up here.

LMP - - ... over all these darn ..., just like you - -

CMP Yes?

CDR ... about the space program is the smell of the oxygen when you put on the - on the - -

CMP Suits.

CDR Yes, on the suits. But the - the carriers, the ... - -

CMP Oh, yes.

CDR - - ventilators - -

CMP Ventilators.

CDR - - The smell of ... in ... is ...

CMP (Laughter)

CMP Yes. You are. Spit your gum out, just like I do. Yes, when it gets you.

08 16 42 03 CMP 270 ... AOS, 39, pretty quick here. OMNI Bravo?

CDR Yes. ...?

CMP It's probably Pasteur or ...

LMP ...

CMP ... Is that what it is?

LMP ...

08 16 42 51 CMP Okay, Houston; America here.

CC ...

CMP Hey, Gordo, good morning - or afternoon, I guess, isn't it?

Tape 17-03433  
Page 4

CDR      ... the OPTICS.

08 16 43 22 CMP      Yes, we want to PRO on that at 26.

# # #

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03432

**APOLLO <sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER GDS DURING LUNAR ORBITS 63 AND 64**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>08 14 24 40</u>	<u>08 14 25 21</u>
<u>08 15 55 02</u>	<u>08 16 25 25</u>
<u>08 16 39 41</u>	<u>08 16 43 29</u>
<u>08 18 23 22</u>	<u>08 18 42 10</u>
<u>08 19 55 56</u>	<u>08 19 58 44</u>

Voice and time good.

---

---

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

08 14 24 40 SC (Cough)

08 14 25 21 CMP Ah-ha! Got to keep going for a little bit. Here comes the old terminator.

TIME SKIP

08 15 55 02 CMP (Laughter) Am I supposed to have it on?

LMP Better got to get ahead. I saw that ... alterations area - you know, that funny spot --

CMP Yes.

LMP -- on that pass.

CDR Farouk kept saying that was a - a - a high area. And it never looked like that on the photograph, and it still doesn't look like that. No.

CMP I don't know - which one - right here?

CDR Yes, that crazy spot that they - keeps coming up on the orbital pictures. And then they finally found ... picture. I don't know what you call it ... You call it something else ...

CMP Oh.

CDR You've got a visual ...

CMP I do?

SC ... No, it can't be in there.

CMP There's only one left, I think.

SC ... know.

CDR South of Sulpicius ...

CMP Hey, I'll take a cube something there. Am I supposed to eat? Yes.

LMP I wonder --

~~CONFIDENTIAL~~

CMP These are - these are yours, huh?  
CDR Yes, ... Could I have some of your ...?  
LMP Where are those darn bacon squares?  
08 15 56 38 CMP Should be in there somewhere.  
SC I finally found it ...  
CMP Threw it. (Laughter) minus 20, yaw 30, HIGH GAIN  
ANTENNA POWER to OFF; OMNI B. AOS. Verify the DSE.  
LMP HIGH BIT RATE verified.  
CMP ... Okay?  
LMP COMMAND RESET.  
CDR They want it RESET?  
CMP Yes. They got it. How else are you going to  
verify it?  
LMP I'm not; they don't want it.  
CMP What?  
LMP The last time I was in this spacecraft, I was told,  
don't do it.  
CDR Right, Ron. Remember how I ... All you're doing  
is just the same way it was before. Just verify  
DSE tape motion. If it does the ..., then do  
that other stuff. Right? If it barber poles --  
CMP ... you know, go HIGH BIT RATE.  
08 15 59 48 CDR Here it is. Verify DSE tape motion - that's all  
you do. Because this is the mode they put in.  
Right there.  
CMP Yes.  
CDR That's what they did. Now if it isn't; if it's  
barber pole, then you do that. We ... do that ...  
what happened to you the other day.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03432  
Page 3

CMP Right  
CDR ... you go again.  
CMP Right, you're doing it wrong.  
CDR You're the one that told me --  
CMP It doesn't make any difference if you do it now or not.  
CDR Okay, then why do it? (Laughter)  
CMP You can't verify that it's LOW BIT RATE unless you do it yourself.  
CDR ... that's a good point.  
CMP Or HIGH BIT RATE. You can't verify it's HIGH BIT RATE unless you do it.  
CDR How about the tape motion that they got there?  
LMP I thought they set that thing.  
CDR Okay, you're the - you're Captain America.  
CMP Yes.  
08 16 00 25 CDR COMMAND RESET.  
CMP See - otherwise, you don't know.  
LMP I thought you guys - boy, I was sure, Ron, you agreed with Gene that I did it wrong when I did that the first day.  
CMP You did. (Laughter) I was - I forgot --  
CDR He did it wrong the first day -  
CMP Yes ...  
LMP -- Did it wrong, now.  
CMP No --

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

LMP All I did was that. All I did was go COMMAND RESET and you guys ... --

CDR But you were in LOW BIT RATE.

CMP You were - you were in LOW BIT RATE.

CDR LOW BIT RATE though.

CMP Yes, yes.

CDR COMMAND RESET ...

LMP No, it was a different - different time - ... time in orbit. Yes, I blew it one time and ... That was before the burn. Yes, but I'm talking about a different time.

CDR I think you're right now. I think in orbit, they do it and you just verify tape motion.

CMP Yes.

LMP Well, I blew that bird thing, yes. I'll agree to that.

CMP Otherwise, how you don't know, see.

CDR Course he's been doing it for 3 days --

08 16 01 25 CMP Yes, I've been doing it for 3 days like that.  
(Cleared throat) Where you get screwed up doing something like that is if they've got - if you - ... something different than the --

CDR Yes, it would.

CMP -- what they want there. But I don't - they'd let me know if they --

SC Do you have any ...?

CMP Yes.

LMP I don't know where you get that Earth thing. Well, let's see. They say we have no target opportunity except on RR, so I --

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03432  
Page 5

CDR Okay, we're going to start pitching here at 42:19 - we start pitching --

LMP -- RR ... is the terminator.

CDR -- 0.3, 0.4 of a degree per second.

LMP What do you want?

CMP No, that's okay. It's all set. CMC, AUTO?

LMP Yes.

CMP Okay. Start pitching at 42:19. Down at the (cough).

CDR So the next thing we have to do is ...

CMP Yes, ... Okay; 12 minutes.

CDR I'll set it for 10. When you hear the ding, ... something we're supposed to do. And I'll put that other mag on there. I thought this was going to be relay now that we're out of comm.

CMP Rolling?

CMP I don't know. I was just going to - supposed to - probably roll. How's that sound to you?

08 16 03 02 CDR Okay, Oscar Oscar's ready. You set the ... and --

CMP Okay, that's right, that's roll. Okay. That's right, we roll about that axis.

SC (Cough)

LMP This is better than Apollo 8's picture. There's more structure here.

CMP You got this one here? Already got it?

LMP I got - something. I got a good Earth snap --

CMP That's what I thought. I thought you got an earthrise.

~~CONFIDENTIAL~~

LMP No. No. I've never seen that one before --  
CMP Took one the other day.  
LMP -- first one I ever saw.  
CMP Because I could have took - taken it.  
08 16 03 50 LMP Yes, earth set, is that a space first?  
CMP (Cough) Yes.  
LMP ... I don't know. It may not have been yet  
(laughter).  
CDR Well, I took some - I put my camera on Jack ...  
station 2. That was upside down - down between my  
knees. And I held it next to the Rover and I tried  
to shoot, up the ... and up the ... see if I can  
see Earth ... I don't know what I was pointing at.  
LMP Did you take one or --  
CDR Oh, I took about five or six.  
LMP Did you go --  
CDR Yes, yes.  
LMP ... probably good.  
08 16 04 44 CMP CMP don biomed harness; I guess I'd better do that.  
SC ...  
CDR I still see you got to verify the LUNAR SOUNDER,  
STANDBY, huh?  
CMP Yes, I got a clock going on that.  
CDR "Note: All crewmen sketch sunrise and sunset  
solar corona before TEI." Well, let me tell you  
about sketching a sunrise. Watch it.  
CMP (Laughter)

~~CONFIDENTIAL~~

CDR Yes. You know, you can look at it like a sunset - up until 1 mom - 1 second, you don't get any warning and you're blinded.

CMP Yes, you get warning - you get warning around here. Not much, just - -

CDR Just - it's just coming ... don't look.

CMP Now, what did I do with my spoon?

SC ...

CMP I thought we learned how to open these - open them with your teeth.

SC ... end.

CMP Yes.

CMP Something's wrong. I haven't defecated in 2 days.

LMP What rev ... are we coming up on?

CMP 63.

CDR ... your rev ... How are these numbered, Ron?

CMP There are three of them. The beginning one and --

CDR -- 57, 66, and 75, I ... Okay.

08 16 06 58 CMP The photo targets are P - something or other - You know, P72. I think it's the 72nd rev - -

CDR How are terminators located ..., or are they?

CMP Yes. There's a red line by the rev numbers. (Cough) And then if there's a photo target, it's drawn in with a blue line.

CDR How do you determine ...?

08 16 07 30 CMP Well, right here. There's some kind of a terminator. Here's one right here, see ... revs 40, 60, 72, maybe.

CDR Oh, okay.

SC ... right in the eye.

CDR ... you're not gaining ...

CMP Huh?

LMP ... a lot of work and a lot of nonsense.

SC About right.

LMP (Laughter) ... you, Ron ...

CMP (Laughter)

CMP Oh-ho, shoot. You guys been a lot of good help. Lot of good help. Between the three of us, we'll finish up this day.

CDR Yes, I'm not really sorry we took your ...

CMP No, I'm sort of glad you guys did that, really.

LMP I didn't like that last ...

CMP I don't like that last midcourse. I tell you, I had a little - a little ... - -

LMP ... simulator used to do that?

CMP Yes, you know a couple of three times in the simulator, we'd come up there - You guys wouldn't have anything on the midcourse 2. Then I'd come up and have 4 or 5 feet per second in Z. Well, let's see I guess I'll - -

LMP Probably subgeometric. Exploration.

CMP Man, it seems like I just took these things off.

CDR ... good comm ... ranging.

CMP Yes, ranging was good. I - It locked on the first time. And then I lost lock again, while you guys were tweaking for something. Did you lose ...

CDR We tweaked - we did make a tweak.

CMP Yes, but - -

CDR About 2 minutes after insertion there.

08 16 10 32 CMP Yes, I know, but I locked on - locked on just at insertion. After you guys were waiting for a tweak.

CDR Yes, we tweaked and then maneuvered.

CMP Are we wearing all five of these things, or just three, still?

CDR ... were you wearing three in here while we were gone?

CMP ... three.

CDR Those are the ones that bother me anyway.

CMP Yes.

CDR ... put it back on.

CMP You know, I finally said, heck, those guys on the surface - they didn't even take a thing with them. You know - And (laughter) finally reloaded it and - -

CDR ... somebody. Jack?

SC Oh, boy (laughter).

CDR Throw it away; I can't eat it.

08 16 11 24 CDR Hey, LUNAR SOUNDER, OPERATE, STANDBY; verify right now.

SC ...

CDR Okay, verify to STANDBY.

LMP Lunar sounder --  
CDR Verify STANDBY.  
LMP STANDBY.  
CDR RECORDER ON?  
LMP RECORDER's ON.  
CDR RADAR ON?  
LMP RADAR's ON.  
CDR RECORDER OFF?  
LMP RECORDER's OFF.  
CDR MODE HF?  
LMP MODE is HF; verified. Now what?  
CDR Oh, the OPERATE?  
CMP No. RECEIVE ONLY, isn't it? Oh, I know. Okay.  
CDR LUNAR SOUNDER, OPERATE to STANDBY. You verified that.  
LMP Yes, yes. I thought you said OPERATE ...  
CDR I said LUNAR SOUNDER, OPERATE --  
LMP Okay. ON, ON, OFF, and HF. Yes, I got that.  
CDR And verify STANDBY.  
LMP Yes.  
CMP It's RECEIVE ONLY.  
LMP Stupid clock!  
CMP It ding - dinged a little bit late, huh?

LMP Yes. Oh, ... I had had 12 minutes, and I set it for 10 and it didn't ding until 13.

CMP Okay. These darn things - I wish they would put them in ones, or something or other. About two more changes, and we're going to run out.

SC ...

CMP Yes.

CDR ... if we'd have changed as much as we were supposed to - -

LMP ... night ...

CDR - - we probably wouldn't have made it ... command module.

CMP I go back here?

LMP I can wear them for 2 days, and on the thrid day they really begin to bother me.

CMP Yes, the second day they bother me. They start itching on the second day. And when they start itching, then it starts make - eating a little hole down there. Well, I just - -

CDR I tell you, being able to take them off is great. You know, on 10 we wore them for 8 straight days.

CMP Yes. Why don't you snap that over here ...

08 16 14 05 CDR You know, the ones like that we had in the LM are so thin, I had to use two of them, Jack. I don't know whether you did or not, but those little ones. I never changed ... you did change, though? I had to use two ... three little tiny sensors ...

CDR Ron, the first time we depressurize the LM, I didn't have ... comm ...

CMP Yes.

~~CONFIDENTIAL~~

[REDACTED]

CDR ... we opened the hatch ...  
CMP (Laughter)  
CDR Yes, there was an explosion back there --  
LMP Explosion back there, ... came out and all that --  
CDR Yes, it was really funny. I'm sure that I used the wrong word over the comm loop. I'm sure the ground - I said, "Gee, we had an explosion." (Laughter) You know, - in a conversational tone of voice. (Laughter) I'm sure the ground went right through the overhead. (Laughter)  
CMP ... like that?  
LMP Where did you get that?  
CMP It was off my LCG - I cut all the stuff off of it. Especially the name and the patch.  
CDR Oh, you jettisoned it?  
08 16 15 11 CMP Yes. I got another one down here, see. Only got one more.  
CMP Yes.  
CDR ... bother to try to take one of our suits because ...  
SC (Whistling) (Humming) (Whistling) (Humming)  
CDR Well, we got P20 --  
LMP Sunrise sketch.  
CDR Right about now, Ron ... we do the P20 now.  
CMP Re - recall P20. Where - where is the thing? P20, option 5 at - 57, okay. Yes. NOUN 22, that's 5. Right. Plus 40 ... 5, 6, 7, 8. ... Should be all right. Yes. Yes, I got to get a 50 18 ... And we might be able to stay ... Okay, we're within 10 degrees then, ... attitudes, okay.

[REDACTED]

[REDACTED]

Yes, that's where - that's where you sketch your sunrise, Gene. In the - in the checklist, page - those pages. Sketch your zodiacal light and stuff. Mercer's and those guys. You know, the reason it ended up in there was because - yes, they were always asking them to sketch the sunrise after they came back, and Mattingly went, "Gosh darn," - you know, let's don't - I mean, "Don't ask me to sketch it now after it's been 2 weeks after I've seen it. If you guys want to discuss it, put it in the book so I'll sketch it when I'm up there." So they did (laughter).

- 08 16 19 08 LMP ... that's just for getting ready, I think, isn't it?
- SC ... know.
- LMP ... sunrise.
- CMP Yes, that's it exactly - all that note's in there for now, is sometime between now and TEI.
- CDR Yes I know.
- CMP Okay.
- CDR VERB 83 ...
- CMP Yes, it will. Yes, you can - you can - go ahead go on in - I don't have anything going now. Yes, you can do it. It just takes a long time. And screws it up a little bit. Because it's got to calculate the state vectors and bring it up ...
- CDR ... VERB 58 yet.
- CMP No, just roll on there.
- CDR Not yet. You still got P20 ... No, on 83.
- CMP Yes, you're done. Supposed to be. Should be the same - should be the same as your NOUN 22. You have VERB 62 enabled over there? VERB 62 ... where it wants to go. And so long as it keeps changing, we're in good shape. (Humming)
- [REDACTED]  
~~CONFIDENTIAL~~

SC ...  
CMP No, it's GO.  
SC ... Okay.  
08 16 22 09 LMP Okay, now, UV is - UV is CLOSED.  
CDR Okay.  
LMP It's gray.  
CDR ... STANDBY.  
08 16 25 25 LMP Stop. And --

TIME SKIP

08 16 39 41 LMP Okay. That's done.  
CDR Okay, Jack, ... 22, you want OMNI Bravo.  
08 16 39 50 LMP Okay, we got it. Anything else coming up?  
CDR ...  
LMP Is Ron up?  
CMP Yes, I'm up.  
CMP Okay, we want to do a P20. Let's see, we can be into P20 now. What time is it, 20? I'll get it set up here.  
CDR Why number all those things ...  
CMP Yes.  
CDR ... things about the space program. The smell of the oxygen when you put on the - on the --  
CMP Suits.  
CDR -- not the suits, but the carriers, the portable --

CMP Oh, yes.  
CDR Ventilators.  
CMP Ventilators.  
CDR ... after you've been in orbit for a few days.  
CMP Yes, you wanted it. Spit your gum out - just like I did ... get you.  
CMP 270.  
CDR I have AOS, Houston.  
CMP 39 pretty quick here. OMNI Bravo.  
LMP ... big crater?  
CMP It's probably Pasteur or Hilbert. Hilbert is the first one. Hee-bahr [sic], is that what it is?  
08 16 42 51 CMP Okay, Houston; America here. Hi, Gordo. Good morning. Or afternoon, I guess it is, isn't it?  
CDR ... got the option?  
08 16 43 29 CMP Well, we want to PRO on that at 26.

TIME SKIP

08 18 23 22 SC That it?  
LMP What would be in a higher orbit than we are to be in the Sun?  
CMP Higher orbit? Up-link.  
LMP ..., yes. Okay; operate it when I look out the window. Well, it's been there for 3 minutes.  
CMP Where?  
LMP Right here.

[REDACTED]

CDR Sure it's not a particle.

CMP ... you got to do.

LMP To be in the Sun, it's got to be in higher orbit.  
Right under. Yes.

SC ...

LMP Are we in sunrise?

CDR I don't see any Tsiolkovsky out this window yet,  
Ron. You haven't hit the terminator, but we are  
in sunrise.

LMP All I see is stars. I think you may have the ...

08 18 25 00 CDR Jack, you want to trigger your timer there for  
213:20, about 213, a little before 213. And it's  
05 now; 14-1/2 minutes will do.

CDR Let me get to that middle window, Ron, if you're  
going to be at 5.

LMP I had - I had the whole thing upside down.

CMP You are. (Laughter)

LMP I had the whole thing. I had a concave horizon.  
I had every - everything ... black here and black  
there, and then - and -

CMP Oh, I see. Yes. Yes (laughter).

LMP I had the whole thing ..., but I couldn't figure  
out which way we were moving. I mean, that's  
pretty confusing.

CMP Well, let's see.

08 18 27 42 CDR ... set that timer for Jack for the LUNAR SOUNDER,  
OPERATE.

LMP Okay. Trying to hit Pasteur ... have another  
one ...

CDR ... have a nadir ... northeast nadir.

LMP Yes. Three is going to end up nadir before long.

CDR Jack, ...

LMP Should have. Maybe. Well, Ron or I probably have it.

SC ... camera.

CMP You got the camera?

LMP Yes, it's right here.

CMP Okay.

CMP You guys both using binocs?

CDR I am right now.

CMP Okay; no sweat.

LMP Which do you want, Ron?

CMP I'll use the binocs.

LMP I haven't even tried those binoculars yet ... Do you think they're better than the binocs?

CMP Well, they are for me. I've noticed a couple of times one of them fogs up, and then I've got the other one available to use. (Laughter)

LMP Yes, there you go.

CMP ... awful big particle ... Look ... When I get in the sunlight, I can see it.

08 18 31 22 CMP Oh, there ... Think you can hear ...?

LMP Let's see. When we - well, I have - I have ...

CDR Well, you're looking almost due north, I think, and I'm looking due west.

CMP No, due east, huh? I'm really south - southeast.

CDR ... going to come up in the southeast. You might have it, Ron.

CMP I'm looking directly east.

LMP Okay; we're moving about like this ... let's see.

CDR There's that big crater; it just came up across there.

CMP Pavlov, I guess ... something like that.

CDR Yes.

CMP Pavlov, ... or something. Right on the terminator this time.

LMP Yes, right off Tsiolkovsky now.

CDR Where?

LMP Well, there's the flow.

CDR Yes, it is. Right there. Okay.

CMP Okay; we're in HIGH BIT RATE, I hope.

LMP Yes.

CMP That floor over in the northeast corner - looks like it's in a shadow, the part that goes down the hill. Okay. But before you look - looked at that part of it there just right in the shadow on the thing, it looks to me like a piece of a - the flow or whatever it was that sculptured away or is deposited on the top of the rim of the Crater Tsiolkovsky - a piece of it is slid right down the hill down there. Like a whole chunk of it. So you got a - in the shadow, and I took a picture of it the other day. The shadow that closest to the Crater Tsiolkovsky is the terminus of a - of essentially a piece of the landslide that slid on down there. That's what it looks like. And then

[REDACTED]

the other part of the shadow, as we see it now, to the northeast, is the part that broke loose and slid down in that little - little crack on the thing.

- 08 18 34 40 LMP Yes, you're right.
- CMP And - -
- LMP It's a possibility, though, that this was magma after the impact.
- CMP Yes. It's a possibility it was magma. It's - it's some kind of a fluidized-type material.
- LMP Right.
- CMP But I think it slid on down there ... If you look at the central peak of the - the crater on the western rim, you see no indications of a lava mark at all, high lava mark. On the what - north - No, it's on the south rim, I mean. On the western edge of it, on the north side of the central peak, it's either a talus accumulation that's come down there, or possibly a high lava mark. And I think it's - I would be more prone to call it a talus - talus mark. It's a lighter - lighter-type material. However, that's the same type of a mark that's on some of the other - almost like the sculpture within the landing site.
- LMP ... Ron, it's too uniform to be talus, if that's the one ...
- 08 18 35 56 CMP Yes, it's too uniform. I think it - it may have to be the high lava mark. When you - Let's take a look at Waterman back down there. I can't see that much of it from this angle. But the general texture of the material that's in Waterman generally has flow lines going to the south. The flow - flow spots tend to be arcuate from kind of a depression or a crack that runs from Waterman to Tsiolkovsky. Okay, and that particular depression or crack is in a shadow right now, so I can't see that much of it. When you look at the flow front of the facing

[REDACTED]

part of the flow to the west of Tsiolkovsky - I think Al Worden has called it a landslide - there doesn't seem to be any piling up of the material along the front itself. It just comes out to a flat area and then drops off at maybe a 45-degree, rolling 45-degree angle.

08 18 37 25 CMP

In the - what I'll call the landslide flow - I'm not really convinced it's a landslide, although it very well may be - there are several rimless craters. They are small craters - approximately, oh, in the 50 to - I mean in the 500- to 1000-meter size, there's a slight - On some of them, there's a slight hint of a raised rim. Just a very, very small raised rim. As I look around, I've got the binocs this time. I think they've all got a raised rim. I don't see any without a raised rim now.

LMP Are they circular, Ron?

CMP Yes, they're all circular. They're all circular, but I sure don't see any without raised rims now. I thought I saw something here awhile ago, but I got the - on some other ridge. But I look at it with binoculars, and everything I look at, even though it looks like ... of a rim at all. On some of the pictures, there's just a slight raised rim to it. They seem to be - The raised rim is not - is either highly subdued or either eroded impact crater. When you look down inside them, it looks like they all went down to kind of a point.

08 18 39 36 CDR

That'll be LUNAR SOUNDER to OPERATE at 20:10.

LMP Okay ... Ron, can you see ...?

CMP Tsiolkovsky way back over there. No, I'm looking the wrong way. This has got to be to the west. I can't see west.

08 18 40 14 LMP

Okay; OPERATE now on LUNAR SOUNDER. What's next, Gene? Got anything else?

CDR Okay; OMNI Bravo.

LMP Okay; verified OMNI Bravo.

CDR Okay, Jack. In 4 minutes, we'll be operating the camera.

LMP Four minutes ... I'm looking west - or east.

CMP Yes, I'm looking south - southwest at - It's going to be right behind you. Right down the X-axis (laughter). No, Y-axis.

LMP We'll get it. It's in our mind's eye, anyway, and that's the most important thing.

CMP This axis thing has always got me a little bit confused. Is the flight towards the small or 50-kilometer crater, 30- to 50-kilometer craters.

LMP ... I been - I been ... And the only thing, when you look at the very fresh - Are you talking about the cone-shaped crater except ...

CMP Yes, cone shaped.

LMP You look at the freshest ones where the black surfaces are, and the black seems to be roughly continuous or at least contiguous with the flat floor. And the floor looks fresher, the fresher the crater looks.

CMP Yes, that's right.

LMP And my guess is that the black is impact glass that's with irregular distribution. Well, I'll have to find one. But like Stark Crater, for example. Stark Crater, for example. You got to get the very fresh ones for them to be black.

CMP Yes, they're - they're very fresh ones, though. They - they don't seem to have as much ...

08 18 42 06 LMP And - and they - that floor in the very fresh ones has - is generally rough. It's smooth, in general, but it has swirl texture and - and domes in it - in them.

CMP Yes.

08 18 42 10 LMP And although it's a different color, it's a lighter color than black glass, the black seems to - to merge with the boundary of it. And my guess is that it's the impact indurated glass that's pooled at the bottom and started a flat floor, then later on, slumping and other things have ... that. ... coming around.

TIME SKIP

08 19 55 56 LMP This is going to be a 40-degree north oblique photo attitude.

CMP That'll be good ..., the oblique will put you right down there.

CDR That makes me feel good to make those guys happy.

LMP Yes, I think they all are.

CDR Yes. I often thought, I'm sure glad ...

CMP Yes. That's not oblique. That's cross-X ... Okay. That's 40 - that's 40 degrees.

CDR SIM bay and PCM data will not be recorded until 216:35. Ron, why don't you start the P20, and I'm proceeding on 79.

08 19 57 16 CMP 70. NOUN 70. Yes. Or is that - we stay in this attitude for a while? What are you doing?

CDR ... don't ...

LMP Well, what difference does it make?

CDR It doesn't make any difference.

CMP It ain't working.

CDR It doesn't make any difference. Yes, we're in RECEIVE ONLY on the VHF.

~~CONFIDENTIAL~~

08 19 57 44 CMP Oh, okay. Yes, we proceed on to that, and then you get a 50 18.

CDR Okay.

CMP That puts the SIM bay up north. That should be 180 - 180 roll, I think. Yes.

LMP Plus-X. Plus-X forward.

CMP That should put the center window right straight down.

LMP Well, that's bad ... work ... straight down.

08 19 58 44 CDR Oh, that the orb rate.

# # #

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03434

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

DUMPED OVER GDS DURING LUNAR ORBIT 66

**Time Segments (AET)**

**From**

08 21 56 31

08 22 02 30

**To**

08 21 58 33

08 22 39 09

Time good, voice very poor (loud background noise)

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

08 21 56 31 CDR Okay, MANUAL, WIDE, minus 10, and 25.

LMP Okay; minus 10 and 25. What else?

CDR Nothing until MSFN again. Leave it in MANUAL.

LMP Yes.

CDR And for acquisition, you want to go MANUAL and then WIDE. And S-band ... and a half ... on HIGH GAIN REACQ and NARROW. I'm going to ask a dumb question, Ron. Why are they changing the configuration of the high gain every - the end of every pass?

CMP ...

CDR Okay.

LMP ...

CDR A couple of ... always here yet.

LMP ... yet?

CDR Then we'll go back to REACQ.

SC ...

08 21 58 33 CDR Hey, Ron. With you on the BIOMED, you can sleep up here tomorrow and that would put you downstairs with no BIOMED or no nothing. And you can get a good rest for the EVA, and I'll sleep up here.

TIME SKIP

08 22 02 30 SC ...

SC ...

08 22 02 40 LMP Anyone want anything out of the med kit?

CDR No, thank you.

~~CONFIDENTIAL~~

CDR Where is that pad, Ron? Is that here somewhere?  
Ron? - oh, it's not in here? That ... Huh? Yes,  
this it? Yes.

LMP Where would I go about looking for it?

CDR Bacterial creme.

LMP Okay.

CDR I want some eye drops. You got any eye drops in  
here? What's the difference in all those things? -  
I just want - Here's skin cream. First aid - what  
did you say? What the heck can I hold my eye up -  
... eye drop into it?

LMP I did the same thing.

SC ... go.

CDR Ron, ... every time. Please go or something.  
One-sixth g, at least you know where it's going  
to be, eventually.

SC ...

08 22 06 21 CDR Ron, oh, you bet you we will.

SC ...

08 22 08 20 CDR I'm not sure, near side or far side?

SC ...

CDR Back side? I wrote some write ins, I think. Is  
that what I wrote them in, Ron? On that one?

CMP ...

CDR No, no. On the near side and far side. Is that  
where I wrote them in? I don't remember. Okay.  
Maybe it's somewhere else. Or maybe we went by  
that some place earlier.

CDR Yes, where are these pads supposed to be?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03434

Page 3

SC ...

LMP We don't need a helmet ... Yes, we do. Forgot we have the EVA.

CDR Why do we keep forgetting about that EVA? I don't understand.

CDR I hope that PLSS doesn't ... OPS. No, that was ...

SC ... should be cabin pressure -

CDR ... You could do EVA without it.

CMP That's very good, but look at it; it's filled with helium.

CDR Sure was hard to keep the right setting on the surface of the Moon.

LMP I didn't have any trouble doing it. I thought I went right in - I don't think I ... pan camera ... I never - I forgot almost every pan I took to take the one looking ... at the shadow.

CDR Is that right? I got all of those, but I - I kept hitting the darn thing and I ... - -

LMP Yes, I kept hitting it, so I kept looking at it all the time.

CDR I looked at it, too, but I still ...

SC ...

CDR Nowhere - never - nowhere to look up in the helmet.

SC ...

08 22 13 10 LMP Think I won another one of my bets if that heat flow data that I heard about.

CDR You what?

LMP Won another one of my bets. It sounds like it's going to be less than a 16, at best. They are

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

only to 16 degrees - 16 degrees at - 2-1/2 meters?  
Gradient floor. Think that's ...

SC ... I - 8 hours.

SC Yes, about 8-1/2 hours ...

08 22 17 49 CDR Pretty good.

SC ...

SC Is that right?

CDR ... I kind of like here. The bio ...

CDR ... I don't know.

SC ...

CDR After your EVA ...

08 22 25 17 CDR Okay. Tomorrow we get up and we do PDI, then we go to bed. Okay. We get up and do a MCC-5 before EVA. Okay. ... Then we go to bed, and we get up and we've got a whole other day. In fact, we do EVA, then we got a day, whole other day to go to bed. Then the next day we get up. See, we get up at 298 and splash down 6-1/2 hours later. All this day is - all this day is get up and we want to be all - This day, this second day, before we go to sleep, we want all our - all our stowage complete - all our stowage complete so that when we get up here, all we do is do ... where it's definitely required and - and ... That's all we want to do. Got to have all our stowage. So after you EVA today - after your EVA today, we'll go through - through all - right here.

SC ...

CDR See, we've got a press conference that day, too.  
Day after EVA.

SC ... heart beat.

SC ...

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03434  
Page 5

SC        ...

SC        Yes, ...

08 22 33 36 SC        ... point out that way?

CDR      Yes, you ought to have it this time.

CDR      Yes, it's pointing right up at the top ...

08 22 37 02 CDR      I can take it. First - don't - don't pull. No, pull them ... they pull them quick on the Earth ... maybe ... Okay.

SC        Yes. ...

CDR      ... getting ready. How about now? About 18, you got about 20 seconds.

SC        ... that ... , huh?

SC        Here comes. Got it?

SC        Got it.

CDR      Get that one. Get that one ...

08 22 39 09 SC        Oh, that ...

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03435

**APOLLO <sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER GDS DURING LUNAR ORBIT 67**

**Time Segments (AET)**

**From**

08 23 52 19

**To**

09 00 36 44

Audio very, very poor; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

08 23 52 19 SC It just depends on what ... you don't have to put that all the way up ... on the top.

CDR Put this thing in between there.

SC ... about like that. ... on top.

SC ...

SC Don't cut your head short.

LMP Yes, I'm wearing this, but it just stays here in between the buttons real free.

CMP Yes. See, it stays between those buttons.

LMP There they go.

CDR Okay, Jack. Verify no DSE tape motion.

LMP No? Verify no DSE tape. Well, there is tape motion. Now what am I supposed to do?

CDR Well, that was just above the line, where it says no - it looks like - I can't - Configure DSE, HIGH BIT RATE/RECORD/FORWARD/COMMAND RESET.

LMP Does it make any difference, huh?

LMP I can't stop it. COMMAND RESET.

CDR Okay. It's HIGH BIT RATE --

LMP HIGH BIT RATE.

CDR RECORD/FORWARD

08 23 54 38 LMP COMMAND RESET. Okay? All done. Happy with COMMAND RESET. I'll do it again. Okay?

CDR Okay. HIGH GAIN, plus 25. (Music)

LMP What again?

CDR Pitch is 25 and yaw is 195. We'll have a maneuver here shortly. NAR - REACQ - REACQ and NARROW, REACQ and NARROW on it.

LMP Okay. You want to do that? Before or after?

CDR Now.

LMP Now.

CDR ... go to REACQ.

CMP Well, we wanted REACQ, NARROW, REACQ and NARROW, all right? Okay.

LMP Okay.  $O_2$  FUEL CELL PURGE. WASTE WATER DUMP. CMC MODE - FREE. Manually roll left 40 degrees, huh?

CDR Okay. I'll manually roll up 40. Why don't I get - put it in - it's all COMMAND.

LMP Okay. You're - fuel cell 1, purge  $O_2$ .

CMP ... 11 minutes.

LMP Okay. And now it's 36, so that - 47.

CDR Going from 138 at about 98 degrees. Yes, but we'll be minus that. Did you dump the waste water?

CMP Yes.

CMP Waste water feeding up.

08 23 59 46 CMP Better go up in the tunnel again.

LMP Another tape.

CMP Another tape?

LMP Yes, they're in the tunnel.

CMP (Singing) They're good. (Whistling)

LMP Okay. Master flow is up just above the limit. Yes, - just above the limit.

CMP Boy, I can barely use it.

LMP Did you get one out? Barely tripped it ... I didn't hear it at all.

CDR I did.

CDR Ron, you're down to 40 on the waste water.

CMP Forty? Okay.

CDR Jack, sunrise is at 218:50. 28 - excuse me - 58, 58, 58.

CDR We have got another hour in which to eat.

CMP Are we eating now?

CDR Another 15 minutes.

LMP Shoot! I can't eat again. Maybe nibble a little bit, ...

09 00 04 24 LMP Takes me about the time between meals to get all the gas from my system, and then I eat again.

CDR My gas - my gas (laughter) is still - my gas is still acting up, Jack.

LMP It gradually works its way out about this time, and then it's time to eat again. Heck, I don't even need to have it on the Flight Plan. I know when it's time to eat when I start feeling good.

CMP (Laughter)

CDR I don't know whether you'll be able to see sunrise at this attitude or not, Jack. We're going minus-X, so I'd say you will not.

LMP The fact that I - yes, we're maneuvering again. Unless we don't get there before sunrise.

09 00 06 21 CMP Take your final bearings ...?

LMP Not since early this morning. 37. Right. ... Battery C's right up there, too. B's up there, A's down. Probably charge A tomorrow.

[REDACTED]

CDR What did you do with those cards I tore out the other day - they're lost someplace.

LMP I'll get them. Okay. I want to save one of those.

CDR Did we get a reference soil at Shorty?

LMP Yes, yes. Did I get away from the payload? Something's going - -

CDR I know we were thinking of it. I got the top. A little, yes; you got around a centimeter, all right, but - Did we go away from it - get a reference on it?

09 00 07 11 LMP I hope we did. I can't remember doing it.

CDR No, but I got a ...

LMP ... right in the same ...

LMP I dug that trench right in the - right at the edge of the orange stuff.

CDR All those distances with the core ... Oh, well. Close enough.

SC ...

CDR Huh?

SC ...

CDR What are you trying to do?

CMP Use one hand ...

CDR Huh?

09 00 09 13 LMP You're backwards.

CMP That's what ... backwards ... I'm normal.

LMP What are you mumbling about?

CMP Well, I was saying that - like you're sitting in sideways ... that way

[REDACTED]

LMP You got to --  
CMP Twist it the other way.  
CDR You say you're in the short state now with my maneuver? 0.1 degree per second in REACQ.  
CDR That roll was to keep us out of gimbal lock. Otherwise, we'd have gone through it.  
CMP Wait a minute. ... in FREE - you are FREE.  
09 00 10 29 CDR No, I'm not, I'm AUTO. I'm maneuvering.  
CMP Oh, you're maneuvering ...  
CDR I've been maneuvering for 10 ...  
CMP ...  
CDR I don't think you'll ever figure it out, Ron.  
CMP ... buddy, I'm right behind you.  
CDR Oh, we're going. That's the end.  
CMP We're going toward the Sun --  
CDR Yes.  
CMP And, we're about ROLL zero.  
CDR Well, we are now.  
CMP Okay, we're ROLL zero.  
CMP That means my ... points backwards. Where we came from.  
CDR Yes.  
CMP I can't see the sunrise without ...  
CDR No, because you're pointing up in the air.  
CMP No, not too much, really.

~~CONFIDENTIAL~~

09 00 12 25 CDR Oh, you can look down over the edge, I guess - You can look at the horizon, can't you?

CMP You'll be able to look at the horizon because, see - you roll - roll left at 3 degrees - ...

SC Take a picture of Earth, Ron.

CMP Yes.

CDR Did you ever get that thing running on the rendezvous? Huh?

SC Not yet.

09 00 13 35 CMP Was that rendezvous? No, it wasn't. It was separation, wasn't it?

SC No, ...

CMP ... rushing my experiment.

SC ...

CMP I want to make sure I get the pictures of the ...

CMP Heat flow.

SC ... zero.

SC Sure.

CDR Thought we had that timer set.

CMP No, we're timing purges.

CDR Okay, we're dumping.

CDR Yes, we dumped - yes, we dumped the potable water, too, Ron.

CMP We did?

09 00 15 00 CDR Yes. We dumped the potable water.

LMP I got about 20 percent.

SC That's down to a quarter.

~~CONFIDENTIAL~~

SC            ...  
CMP          What's the problem?  
SC            ...  
SC          Well, it's - it's ...  
CDR          If you get the potable to zero, then you're in ...  
CDR          Because your - verify it is off.  
LMP          See, your evaporators and everything pull off the weight, don't they?  
SC            ...  
LMP          But we're not using them.  
CMP          Not using them.  
  
09 00 15 52 LMP          Oh, me, how embarrassing.  
LMP          Well, it's my fault, I should've got that timer going after the purge.  
CMP          Yes, ...  
LMP          No, you didn't want a perfect mission, did you?  
CMP          (Laughter) What's that ...  
LMP          Got to have some award. The potable water dump award. (Laughter)  
SC            ...  
LMP          Wait.  
CMP          ... went out of control. ... (Laughter) Okay.  
LMP          What'd you do?  
  
09 00 16 45 CMP          I was dumping water in those - CMC FREE - looked up and - gimbal lock right in front of you?  
LMP          (Laughter)  
CMP          Didn't have any control - looked back and the waste water was down ...  
LMP          Little-known stories.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP (Laughter)

LMP Well, let me see here. No way to get it in there without filling up the - Oh, boy.

CMP Yes, but I don't think we need the waste water for anything, do we?

LMP No, but that's for the evaporator - Well -

CMP Yes, evaporator uses it ...

LMP No, but I'm wondering about the bladder and everything.

09 00 17 43 CMP Yes, so am I. This thing ...

LMP That means the bladder expanded to the wall - not collapsed.

SC No. ...

LMP Well, that line's open. You got that line open for potable - the waste water line's open.

SC Yes.

LMP It's potable water. And, when it's filled, that's collapsed, and - -

SC ...

LMP Well, yes, it ... I think it back fills somehow.

LMP Yes. Yes, when it fills, it comes back this way. Here you go.

09 00 19 19 CMP It'll come through the - -

LMP Here's the cross - -

SC - - potable water.

LMP - - comes this way. There.

LMP See, it won't flow that way, it goes - because of this check valve until it's full, then it'll move.

~~CONFIDENTIAL~~

CDR Well, I called you at 40. And then I looked at it again, and it was zero.

LMP Yes?

CMP I think if I move my camera ...

CDR What are we dumping right now?

CDR Well, we going to use it for anything else now? We'd like to - We use it after TEI to take the pictures with. So we want it handy.

09 00 20 55 CDR It's not really necessary ...

LMP Is this - you ordered a QD down here, or some kind of connection. Looks like the access - that must be GSE - for servicing the waste tank.

CMP Yes, ...

LMP Well, I know you dump over here.

CMP Right ...

CDR Well, something is using the waste water now, is it, Jack? Can you find out ...?

LMP No.

CDR I have potable coming up.

CMP Coming up?

CDR Better be.

CMP You know, we could really dump that waste tank, too.

LMP Checking on primary evaporator.

CDR That all?

09 00 22 07 LMP That's all that's showing here right now.

CMP It must be dry now?

LMP I could use ...

~~CONFIDENTIAL~~

[REDACTED]

CMP Oh, yes.

LMP You're dried off. Now I'm off - -

SC Yes. A long time ago.

CDR We're in daylight.

LMP Well, give the night crew something to think about. Hope it's nothing - nothing serious. Yes, it could be -

SC Wow!

09 00 25 23 LMP What's next, Geno?

CDR Eat, eat, eat, eat, eat -

LMP That's taken care of, now what? (Laughter) Maybe I'll eat my peach ambrosia. It's been hanging around all day.

SC ...

LMP Well, we're in sunlight right now. We haven't crossed the terminator yet.

SC ...

LMP Yes. You limit your field of view.

CDR Find that other one?

LMP No. No, I haven't.

LMP What's that?

09 00 27 49 LMP Oh, I think you already ...

09 00 33 07 CDR Jack, you got the ... binoculars?

LMP Binoculars?

CDR Well, whatever you're not using.

LMP No, never had any idea we'd use them.

[REDACTED]

~~CONFIDENTIAL~~

Tape 17-03435  
Page 11

CDR Well, you know -  
LMP Go - go ahead, I thought - I -  
LMP Let's have our lunch, Gene. Frankfurter?  
CDR Boy, it's awful early.  
LMP Bread?  
CDR One piece.  
LMP Catsup?  
CDR Yes.  
LMP Apricot?  
CDR No.  
LMP Orange drink?  
CDR Yeeeuch!  
LMP Anything else?  
CDR No.  
LMP We're not asking what you'd be - what you had.  
CMP You got turkey and gravy inside? You want these potatoes? Brownies? Orange juice and lemonade.  
LMP Well, I probably have lemon filling. Come on, come on. Save that ...  
CMP I'll have lemonade ...  
LMP Corn chowder?  
CMP No.  
LMP Frankfurter?  
CMP Yes.  
LMP Bread?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP One piece.

LMP Catsup?

CMP No.

LMP Chocolate pudding?

CMP No.

LMP ...

CMP Yes.

LMP Anything else?

09 00 36 35 CDR I'll have a sugar cookie. And a grape drink in there somewhere. The other one.

SC ...

09 00 36 44 SC Had two there.

SC And - -

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03436

**APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING LUNAR ORBIT 66**

**Time Segments (AET)**

**From**

09 01 46 35

**To**

09 02 20 40

Time good except at beginning of tape; voice fair.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCC-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

09 01 46 35 SC ...

09 01 46 45 LMP Bob, that's the most beautiful crescent Earth I've ever seen.

LMP That should give you a lot of ... your rendezvous with him. Whatever's easier ... closer.

LMP That bright spot. See it - how bright it is? Right in the center of the crescent? Yes, yes, but it's never been that bright. Usually you just get the zero phase. It's getting so it's glancing off now and giving you a ... It used to be - I guess that's what the term ... reflection.

LMP You do well when you look at a planet and call it home, Bob.

LMP No, I know. They dropped the uplink there briefly.

CDR Yes.

SC ...

LMP I didn't.

CDR ... quite a bit ... tomorrow.

LMP Ain't much to talk about (laughter) on the way home. We have our hands full, though - EVA and stowage.

CDR ... EVA ... really ...

09 01 49 57 LMP Oh, we got to do those too, huh? Quite a picture.

LMP ... you might be able to see the ... Earth - Earth's outline. Yes, in a full Moon ... I wonder how much lightning you can see and how far out. Have you guys ever looked at it, Gene?

CDR At what?

LMP Lightning. You probably had a - -

CDR You can't see - -

LMP You probably had a - some crescent, though, all the way back, didn't you?

CDR Yes, but a little more than that but not much ...

LMP I think we're going to ... just about dark, aren't we, Ron?

CMP Yes, ...

09 01 51 55 LMP \*\*\* seem like the curve across it has the right shape.

CMP Oh, yes.

LMP Yes, it is. Um-hm ... Oh, darn! (Laughter) There's the picture. Oh, gosh. Never even thought about it. Oh, well. Remember it, gang.

CMP Yes, remember it. Son-of-a-gun.

LMP There's still a glow. Okay. I got -

CMP 130 ... about 128 ...

CDR Okay. We got the read-out ...

09 01 54 48 CMP Yes. Yes.

09 02 02 03 CDR Does anybody need anything else in that kit?

09 02 08 05 LMP No, darn it, I didn't ...

MS (Laughter)

LMP I don't care ... I know it won't work. That's why you don't put it that way.

LMP We can ... can't get the visor ... The more I think about it, ...

LMP (Laughter)

09 02 12 14 SC (Laughter)

~~CONFIDENTIAL~~

LMP Well, my beard is looking just as scraggly -  
straggly as it did yesterday.

CDR ... the last 2 days.

LMP ... I thought ... first beard I've had in a  
decade ...

CMP (Laughter)

09 02 16 18 LMP ... Yes.

LMP I can't ... (Music)

09 02 20 40 LMP Well, - (Laughter)

# # #

[REDACTED] CONFIDENTIAL

(This page Unclassified)

**Tape** 17-03462

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

## DUMPED OVER MAD DURING LUNAR ORBIT 72

### Time Segments (AET)

<b>From</b>	<b>To</b>
<u>09 09 47 10</u>	<u>09 10 34 57</u>

Voice very poor; time good except for ending time, which was extrapolated.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

09 09 47 10 CDR ... 13 days ...  
IMP Yes.  
SC (Cough)  
IMP Don't overdo it. We've got to have some for EVA (laughter).  
CDR Now, let's see ...  
IMP Yes. Yes. Yes.  
IMP Keep the light down in there.  
SC ...  
IMP Yes.  
CDR Actually, you ...  
IMP Yes. Well, that's probably zodiacal light. I find it hard to see it, but I think what I was seeing was little - We didn't have the light ... Well, very good (laughter).  
SC (Music)  
CMP ...  
IMP ... waking up. We're ... pretty late.  
CMP First thing I want to do is ... postsleep checklist.  
CMP Did you say 11? Eleven?  
SC All right.  
SC ... reading?  
CDR ... reading. He had to take 10 - start out - from noon. We start out from --  
SC ... clock.

[REDACTED]

CDR No, it's really - Start out literally - 24-hour days from the Cape, we're still, in the tenth day - eleventh spacecraft day.

09 09 50 20 CMP Eleven crew days.

CDR That was pretty cute, you know that?

(Music: Born Free)

CMP No, you're on the wrong ... right now ...

CMP That's what it ... when you turned your thing on.

09 09 54 46 CDR ... I turned that ... VERB 48.

CMP Sure a good idea to have Christmas cake one day.

SC What?

CMP Sure a good idea ...

SC Hi, Ron.

CMP You know who that really was.

SC ...

SC (Laughter)

SC Hang on ...

CMP ... said what?

SC ...

CMP Yes, you've got a ... anyway ...

09 10 00 58 LMP I've got enough left. No, I haven't tasted it. ... that, Jim.

CDR ... my light.

CMP ... it?

CMP Okay. .... space flight up-link: This thing?

SC ...

[REDACTED]

09 10 04 43 CMP We got some more food, if you want it.  
...  
CMP Oh, let's see, Jack, if you'll give me a pen ...  
CMP Here, let me have that thing. Okay. ...  
CDR ...  
CMP ...?  
CDR No, I have that.  
CMP Brownie, brownie, orange juice, lemonade, and  
that's all, isn't it?  
CMP Okay. You know what I did? (Laughter)  
I went ... sleep. ...  
CMP ... can of peaches ...  
LMP ... turkey and gravy. ... carmel candy. Orange  
juice.  
SC No.  
SC ...  
CMP You're looking for day 11, meal 8.  
SC ...  
CMP ... can of peaches. ...  
SC ... water.  
09 10 10 21 CMP ... of 050. You two ... radiation right here ...  
LMP Not bad, huh?  
SC ...  
SC ... 9.  
CMP ...

[REDACTED]

09 10 12 26 SC It does something for me, ... know what.

CMP I don't want two of them; I've got one here.

SC ...

CMP Yes.

SC ...

CMP They went ... They went back here. ... all over here. ...

09 10 15 36 IMP About 68, Geno.

CDR That's what I thought.

IMP No, thank you.

SC ... run away ...

SC ... If I hit ... right down there.

09 10 17 10 IMP I know; well, I don't. (Laughter) ... home, I got up and read a magazine.

CDR ... this?

SC Yes.

09 10 24 24 CDR ... omni ...

CMP Two degrees, right?

CMP You guys might watch for those scissors in here.

CMP ... I guess ... guys ...

SC Yes. Yes.

09 10 26 44 CDR What rev - what rev? You're ... rev 74.

IMP Yes, but you ...

CDR Yes.

[REDACTED]

SC First, let me ask a question.

SC All right.

09 10 28 20 LMP Yes. That's the ... I was just trying to compare the modulation ...

SC Yes, it is ...

(Music)

09 10 32 24 CDR We got to the LM with about 60 percent ... ran out of descent water. We left the surface with a little over 80 percent. We did the checkout and the landing and then we had - I think - what was it, Jack, 80 and 81 - somewhere around there. I don't know what the numbers were, but they're approximate.

CMP ... descent water ...

SC ...

CDR That was three ... and five - five repress - five re - cabin and repress. Three EVAs and two jettisons.

09 10 33 14 CC America, Houston. Realize you're eating and don't want to interrupt you, but if you get your headsets on, we'll give you some news.

CMP Sounds great, Houston. We'd appreciate that.

CDR Go ahead, Bob. We're listening to you. You're not coming through. You are?

SC 1, 2, 3, 4.

CDR Oh, yes, you are.

CC Okay, ... really important news first. ... Nassau Bay, everybody's doing real fine, ... one of our bigger amusement centers around the country and going to have a great day. And everybody just looking forward to the EVA and the deorbit --

SC Deorbit?

[REDACTED]

[REDACTED]

CC -- and the splash. Out in El Lago - Everybody's fine out there, Ron. And Joan's out selling Christmas trees today, and Jaime's going to go out shopping with her aunt sometime today and - a little Christmas shopping - It's getting near that time of year. And one of your friends from Phoenix is due in today, for the rest of the mission, I guess. And out in Tucson, it was a little early this morning, Jack, but everybody's up and about and I talked to your mother, and everybody's fine. She's getting anxious to go back to Silver City and see all the celebration. I guess those people out there are really enjoying it and really getting wild about it. But everybody's fine all the way around, all the way around.

CDR Thank you, Bob. We're fine up here, and I'm sure you told them that.

CC Yes. Okay; we'd like REACQ and NARROW.

09 10 34 57 CDR Well, we send our good morning.

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03465

APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING LUNAR ORBIT 73

Time Segments (AET)

From	To
09 11 43 22	09 11 58 26
09 12 00 21	09 12 13 36
09 12 13 35	09 12 43 24
_____	_____
_____	_____
_____	_____
_____	_____

Voice fair; time good.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

Tape 17-03465  
Page 1

09 11 43 22 LMP Go ahead. What omni?  
CDR 5.7 plus 18 and HIGH GAIN POWER, OFF.  
LMP What omni? What omni, Gene?  
LMP Okay, HIGH GAIN POWER, OFF. What's the setting?  
CDR Minus 27.  
  
09 11 44 17 LMP Okay, MANUAL and WIDE.  
CDR No, Ron's got REACQ and NARROW crossed off. So, it's MANUAL and MANUAL, minus 0.7, 18, and POWER, OFF.  
  
09 11 44 33 CDR POWER, OFF.  
CDR Okay. Now that it's OFF, LUNAR SOUNDER, STAND BY, verify?  
  
09 11 44 43 LMP Verified.  
CDR RECORDER, ON?  
  
09 11 44 47 LMP Okay, RECORDER's ON.  
  
09 11 44 54 CDR That's affirm. We've got MAPPING CAMERA, OFF, Bob. Can you verify that, Jack?  
LMP Yes, verified.  
CDR We got them all now. We're coming up.  
  
09 11 45 10 LMP Okay, RECORDER's ON.  
CDR Okay, RADAR, ON?  
  
09 11 45 13 LMP RADAR's ON.  
CDR RECRODER, OFF.  
  
09 11 45 16 LMP RECORDER's OFF.  
CDR MODE, HF.  
  
09 11 45 22 LMP MODE, HF; verified.

~~CONFIDENTIAL~~

CDR What's at 231:11, Bob?

LMP LOS [sic].

CDR Okay, fine. Thank you.

LMP Okay, HF is back.

CDR Just wanted to make sure I got all of them. We've got LUNAR SOUNDER OPERATE. LUNAR SOUNDER OPERATE to STANDBY, verify.

LMP Verified, verified.

CDR RECORDER, ON; RADAR, ON; RECORDER, OFF.

LMP ...

CDR Okay, and MODE, HF.

LMP HF.

CDR Okay, now verify all your VHF is OFF.

09 11 46 02 LMP Okay, OFF, OFF, it's OFF, it's OFF. Okay. It's OFF.

CDR As soon as we ..., you can turn your ... And we can't wash out our ... No waste water dump.

CDR Now, we've got a lot of things here with the lunar sounder on the back side.

LMP Ron's out of the LEB. I'm going to go down there, and try to ... operation.

CDR All - all equal.

LMP Okay. Can I get my biomed off --

CDR Sure.

LMP -- before we come back around the corner?

CDR And, we've got a dump on this back side, too.

LMP Yes, a water - BUSS dump.

CDR ... get that dump, too, before we come around the horn.

09 11 48 29 CDR Mainly, we've got to dump this back side.

CDR What's ... 230?

09 11 53 50 CDR Well, I can change ... up on it.

SC Huh?

LMP ...

CDR ... What?

CDR Huh?

CDR That's the final - Huh?

09 11 58 26 LMP ... control ...

TIME SKIP

[REDACTED]

[REDACTED]

09 12 00 21 CDR -- and the middle of the backside pass there's stuff we got to do.

SC ...

LMP Here's the -

CDR Here's something, Jack.

09 12 02 04 CDR Okay, you got the - you got the ... 4 and 5, yes.

CDR No. I'm not. ...?

09 12 04 10 CDR Coming up on 4 5 ... No, no. This one is supposed to be the last one.

09 12 05 00 CDR Going to get the recorder?

09 12 08 02 CDR See the ground is ...

SC ...

SC ...?

SC ...

09 12 09 52 CDR The next thing is on the hour when we've got to get the ... operating and the T-start time ...

SC ...? ... now?

CDR Huh?

09 12 10 36 CDR ... on the hour now.

TIME SKIP

[REDACTED]  
CONFIDENTIAL

09 12 13 35 CDR ... do it on the hour now.

09 12 20 57 CDR What do you need?

09 12 24 27 CMP There you go.

09 12 24 32 CMP Okay, tape recorder frame numbers - oh, about - must be 13 through 16 - no, more than that - about 12 - 11 or 12 through 16 were taken of the Tsiolkovsky area and terminize - terminator sunrise. And the magazine Vic - Victor Victor --

SC ...

CMP Yes, just past sunrise. And there's a ... one out there. We'll try it.

CMP About - Okay, that was frame number 19, I guess. It's just to the west of Tsiolkovsky, just prior to - is that Neujmin?

09 12 26 30 CMP Would you move this back up? Just get your - I want to get you down ... I won't get you down ... I'm going to move this back over here. Hold this. Yes.

CMP Doesn't look like much light ... Oh, just - Oh, yes, lots of them. I'll get a good picture of your beard.

09 12 27 11 CMP Okay, little up your rear, or something (laughter).  
(Music)

09 12 27 44 CMP VHBW is on 80, and we got a 115.

CMP That's 85.

09 12 27 55 CMP 15.30 (laughter). Yes. We'll do an ad lib with that on the camera and take a - flick or two. Where's the old Hasselblad? ... Let's put this on there and finish it up.

CDR ... TEI?

LMP TEI? No.

LMP I mean, TEI prep?

CDR No, no. I don't think so.

CMP You know, there is a lot of this other stuff in there.

CDR ... we changed it once already this morning.

CMP Yes, but that was just going to minus-X, wasn't it?

CDR Yes, that was just swapping ends. Swapping ends.

CMP Okay. Plus-X.

CDR Hey, T-stop.

CMP Yes, when is T-stop?

CDR Now.

CMP Now?

CDR Now.

CMP Operate to STANDBY.

CDR OPERATE to STAND BY.

CMP Okay.

09 12 29 00 CMP Okay, acquire MSFN and OMNI Alfa. ... where we are?

CDR We got a canister to change, and we won't acquire them until 11.

CDR Next thing, you'll be going mode VHF about 22.

CMP Twenty-two? Okay. Will they - they'll give us a call.

09 12 30 37 CMP What the heck are we coming up on? You know, Pasteur doesn't show up as much of a crater.

CMP Yes, it really is. Yes, I don't even see it out there. But in our direction - let's see here. It's got to be. But it is over there, I think.

09 12 31 33 CMP Houston, this is America.

09 12 31 39 CC Hello, America. You're a little scratchy down here. We'll pick you up there shortly.

CMP Okay. We'll stand by until then.

CMP Okay, that last lunar sounder pass got an extra 40 seconds on the film - 40 seconds on the - on the last end of it.

CDR Take the ..., Jack.

09 12 32 44 CMP ... see Sklodowska. There it is, yes.

CMP Which - which recorder?

CMP ... coming up?

09 12 34 13 CMP Here, let me in here. ... back in. ...

09 12 34 18 CDR Okay, Houston, this is America.

CMP Hit your REACTANTS switch.

CDR Okay, Bob. I was over there on the right side, and I hit the FUEL CELL 1 REACTANTS switch about one - half a second and got it back on again. It looked -

CDR It looks okay here.

CMP Yes, that's ... right over there.

CDR No, no. That's way behind me. ... straight ahead.

CMP That's the Wright Brothers. They're hooked together?

CDR One's big and one's little, and ... to the right of it.

CMP Over on the right - left. I don't know. Those don't have names, they're in Smythii. See, Wright Brothers is that double one there.

CONFIDENTIAL

[REDACTED]

SC You must be talking about ...

CMP Oh, Kastner? That's clear on the other side.

CDR No, no.

CMP There's Brunner and Hirayama, and I'm just about over that now.

CDR Where are the Wright Brothers then?

CMP The Wright Brothers? They're the two mud puddles that are hooked together down there - just right down this way.

CDR They're the big ones. There's another two you can see ...

CMP Yes, but none of the big ones look like this. They're rough looking. Yes.

09 12 37 36 CDR Mode VHF will come at 23 right at ... here.

CMP Mode VHF. Yes. I've got it.

CC America, Houston. If you're reading us loud and clear, I'd like to give you a lunar sounder flight-sounder pad here at 231:21.

09 12 38 11 CMP You do it, Gene?

CDR Okay, Bob. Go ahead.

CC Okay; it's at 231:21, the lunar sounder T-start time, 231:26:18; T-stop, 50:33.

CDR Okay, I got that. Thank you. You happy with the biomed on the CDR?

09 12 38 54 CC We won't know until we get the high gain here at 21.

CDR Okay.

(Music)

[REDACTED]

09 12 41 03 CMP Houston, America.

CC ...

CMP Okay. Just looking at the Wright Brothers Crater as we were going through there again. And the outer-crater rims on that thing are kind of like the one - well, I call it above rev 62 on our pictures, but the outer rim - it slopes ... in the opposite direction from the normal crater, or something. In other words, the steep slope is on the outside of the rim, and you have a gradual slope up to the - you know, from the - from the center of the crater, you've got a gradual slope up to the rim, and then it drops off to a steep slope on the outside. And the steep slope on the outside is maybe - oh, 35 to 45 degrees. The slope on the inside is probably - well, somewhere around 20 degrees I would guess. And there at one portion of the rim - kind of on the western portion of one that I was looking at, anyhow - it's almost a delta-shaped ring.

CC Roger, Ron. ... high gain ... we can read you better.

CDR Okay, minus 27 and 18.

09 12 42 26 CMP Minus 27, 18. Okay, I got a START.

CDR Half-scale. Go to REACQ and NARROW.

SC ...

CMP Your pencil?

SC ... high gain?

CMP Yes.

CC ... America. You're sounding great now.

CMP Okay; looks like we've got you. You know, I think we're too fast for the NARROW, Gene.

~~CONFIDENTIAL~~

CMP Okay. I was just kind of reminiscing a little bit about the - my mud puddle craters there in Smythii. I guess that's a good term to call them - that's what they always kind of looked like to me. But - they slope up.

09 12 43 24 CMP But the rims of those craters and even the interior rim on ones that are multi-ringed, they slope upward from the center of the crater toward the rim at that - at a gradual slope, and then they drop off on the outside of the crater rim, sloping down from the outside crater up to a point - -

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

**Tape** 17-03457

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER MAD DURING LUNAR ORBIT 73

### Time Segments (AET)

<b>From</b>	<b>To</b>
<u>09 12 43 42</u>	<u>09 12 44 07</u>
<u>09 13 43 11</u>	<u>09 14 30 39</u>

Time and voice good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MBC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

09 12 43 42 CMP

-- the crater rim, sloping down from the outside crater up to 45 degrees. And in some points in there, it almost looks like it's a real classic Delta-shaped rim on there - where you have the same slope on the - on the inside as well as the outside of the crater.

SC ...

CDR Okay, Ron. We want --

CMP VHF --

09 12 44 07 CDR

Let's see. Houston, you ready?

TIME SKIP

~~CONFIDENTIAL~~

[REDACTED]

09 13 43 11 LMP Okay.

CDR What are you on in HIGH GAIN now? Are you in AUTO?

LMP AUTO, WIDE, probably.

CDR Okay.

LMP I mean it sits there ...

CDR You know you can set your - your needle to minus 10 - or your dial to minus 10 and 0.5. And then, on their call, you can go MANUAL and WIDE.

LMP Okay.

CDR Okay?

CMP Do I have time to work on this jett bag now, Gene?

CDR Yes. Jack will monitor that operation. ... talkback ...

CMP I'll watch it.

LMP It's all we got to do for another 8 minutes.

CDR Yes, you've - jett - jett bag - What you ought to do is just put that jett bag around you so you don't have to take the whole handle. Want some help with that?

LMP Yes. I will in a minute.

CDR Hey, Bob, what about us configuring high gain? We're getting close to T-start.

CC Roger. Go ahead.

CDR Okay. MANUAL, minus 10 and 25. And the power off.

LMP Minus 10 and 25. Okay. Power's off. And that's going to be to OPERATE, right?

[REDACTED]

CDR LUNAR SOUNDER, OPERATE, to OPERATE.

LMP Okay.

09 13 45 57 CDR And after talkback - after it starts running, after talkback goes barber pole, go LUNAR SOUNDER to STANDBY.

LMP Okay.

CDR You know where that jett bag is, Ron?

SC ...

CDR No, I just stuck it - it's between these two ... - -

LMP Give me a MARK.

CDR - - down there in the bottom.

09 13 46 14 CDR MARK.

CDR What?

LMP ... barber pole, gray.

CDR See it, Ron. It just stuck against the ... Got it?

CMP Okay.

LMP Put on a tape while I'm watching (laughter).

CDR Okay, Jack. And the T-stop is 3<sup>4</sup>:18. And let me get - get rid of this thing and ... and get a tape on and -

LMP 3<sup>4</sup>:18, about 5 minutes.

LMP ... about 8 minutes.

SC (Cough)

CDR What can I do?

CDR Oh, the jett bag?

[REDACTED]

09 13 47 32 SC Right.

LMP That gets so big, it gets far away from you.

LMP That it?

09 13 50 03 CDR No, why don't you - let's inventory those fecal bags. But leave enough to make sure there's plenty here. Want to put those in here now? Those fecal bags? While you're down there? Get them in here now. Wait a minute. Be real conservative. Make sure there's plenty left.

SC ...

CDR Okay.

CDR Yes, I may use one today. And we've got three - three? Okay. Count today. Count - you guys want to defecate again. Okay.

LMP Say one a day.

CDR Three - three for me.

LMP We need nine of them then.

CDR And that'll be plenty.

SC ...

CDR Counting today.

09 13 51 16 CDR Look - Wait - wait a minute. We - we - we land 3 days from right now - 72 hours from right now. So, here's today, EVA day --

LMP Stowage day.

CDR -- stowage day. And then we get up, and we land entry day. I don't know if you want to save one for entry day. There's - You guys have all defecated already.

CDR Three of - three's going to be plenty for me. And I may only use one today and one more.

[REDACTED]

LMP Yes, three for me. I got something - bad food or something --

CDR Throw an extra one in. Throw 10 of them in there.

09 13 52 00 LMP I think they missed that call.

CDR What?

LMP Barber pole. Remember?

CDR They said they got ...

LMP Oh.

LMP What - what time is sunrise, Gene? In the Flight Plan?

CDR Oh, about ...

LMP I'd like to get dark adapted a little bit and look at it, if fits into the Flight Plan.

LMP Start about 2 or 3 minutes beforehand. Maybe I can just close my eyes and turn out the lights about a few minutes beforehand.

CDR Okay. We got some more stuff after turning the sounder off. You got to wait 1 minute, though.

LMP Give me a MARK on it.

CDR Okay. I can - 4 seconds -

09 13 54 22 CDR MARK it.

LMP Okay. It's in STANDBY.

CDR Okay. It just went all the way. Okay. One minute, Jack, and we'll go through the rest of the stuff.

LMP Okay.

CDR Wait 1 minute ...

[REDACTED]

LMP Okay, you got - you mean you've still got more besides that?

CMP ...

LMP I've never yet seen a paper tag.

CDR I've never seen any.

LMP I put a piece of tape on my last one.

CDR There's never been any place to mark on the darned things.

LMP Is 1 minute up on the minute?

CDR Not yet.

LMP Then what - what am I going to do?

CDR About four or five things.

LMP Okay.

CDR Couple of - Another 10 seconds, Jack.

LMP Okay. Well, I don't know what to do (laughter). I'm ready.

CDR Okay. Well, it's not exact minute ... Wait a minute, after 1 minute.

LMP Oh, okay. (Chuckle)

CDR Okay. Now, you can go RECORDER, OFF.

09 13 55 27 LMP RECORDER is OFF.

CDR RADAR, OFF.

09 13 55 29 LMP OFF.

CDR Ron, get the SM/AC POWER, ON, please.

09 13 55 40 LMP It's on.

[REDACTED]

CDR Okay. DATA SYSTEM, ON.  
09 13 55 43 LMP ON.  
CDR MAPPING CAMERA to STANDBY.  
09 13 55 46 LMP STANDBY.  
CDR IMAGE MOTION, ON.  
09 13 55 50 LMP IMAGE MOTION is ON.  
CDR LASER ALTIMETER, ON.  
09 13 55 55 LMP ON.  
CDR IR, ON.  
09 13 55 58 LMP IR, ON.  
CDR PC SELF TEST, HEATERS.  
09 13 56 02 LMP HEATERS.  
CDR UV, ON.  
09 13 56 04 LMP ON.  
CDR MAPPING CAMERA, ON.  
09 13 56 08 LMP ON.  
CDR Dark out. IMAGE MOTION, INCREASE, barber pole plus four steps and then ON.  
09 13 56 17 LMP Okay. There's barber pole, 1, 2, 3, 4. Okay.  
CDR Okay. You're GO on the film terminator.  
LMP Running that camera in the dark, huh?  
CDR Is that what you got?  
LMP Where are they?  
CDR Down there.

~~CONFIDENTIAL~~

CMP            ...  
CDR            Oh, they're in there. Darn, I'm going to use one today, I know. So let me take it out. That's all right. Won't ... 10. Ya'll got all ...

09 13 56 51    CMP            Where you going to stow it?

CDR            ... I got one here, Jack. That leaves - then we ought - Supposedly we're done today, and then we got 2-1/2 days to go.

CDR            That ought to - -

LMP            I think - -

CDR            That ought to hack any emergency.

LMP            - - the matter is sufficiently well established  
                  ...

CDR            That ought to hack any emergency.

LMP            ... be no bad food that's crept in. ... corn chowder.

CMP            (Laughter) Watch out.

LMP            Do you have it in the Flight Plan tomorrow, a point to verify jettison bags - or jettison - or jettis - jettisonable items or something like that?

CDR            I don't know, but make sure - -

LMP            We also got to look at items secured and make sure items are secured in the spacecraft.

CDR            Yes. True.

LMP            Items tend to float, like loose film packages with the cameras in particular. Do you want some of those ... to hold it?

CDR            Okay.

~~CONFIDENTIAL~~

09 13 58 37 LMP That's no question that that aft end forward is a hotter attitude. Boy, I was really warm last night.

CDR Were you?

LMP Yes. Do I need a barf bag? Might as well keep that for the entry.

09 13 58 54 CDR You won't barf. You won't even get anywhere near seasick.

LMP Oh, I don't know - that kind of predicted weather. This is my Tsiolkovsky pass, isn't it?

CDR Yes.

SC (Cough)

LMP Why don't I put the 250 on it.

CDR "Configure camera, terminator photos." That's in standard Flight Plan, and then special for Jack was - -

LMP Well, shoot! The trouble with this camera is that you lose two frames every time you make that ... Four frames.

SC Oh, yes?

LMP Every time you take that mag off. And I've only got 140. So, I'll probably just keep this lens on. ... 250. Four frames, that's maybe up to - then we have probably - -

CDR Jack, he gave you a lot of ifs and ands on this ... on the ... If you tell me which ones you use for sure, I'll - -

LMP Use mag K and - yes, 250. I'd like to go to 250. I hate to lose those frames, though.

SC You really ...

~~CONFIDENTIAL~~

LMP Yes, 60 ...  
CMP ... probably ...  
09 14 00 14 LMP Yes, it says there 170, but it may mean that's 30 frames, so I'll lose --  
CDR No, you don't ...  
LMP That's true.  
CDR Here it is in the Flight Plan. "Configure camera, terminator photos," window 5 --  
LMP ... my dark slide.  
CDR -- EL, 250, very high speed black and white.  
LMP Okay. You got the 250 handy there? Got your dark slide in?  
CDR Mag RR? Let me change that then. Are you going to use that one? The 250 or the 80?  
LMP This is K. This is where - this is using this roll.  
CDR It says 250.  
LMP This is - I'm using this roll.  
CDR And, Jack, you got - And, Jack, you got your choice of 250 or --  
LMP I'm using this roll. The reason I'm going to use this camera because it has Reseau plate.  
CDR Oh. And Jack - Ron's working.  
LMP Oh, he is? Well, how come they gave it optional for me?  
09 14 01 43 CDR Well, because someone --  
LMP What are you going to take, Ron?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03457  
Page 11

CDR ... going to take terminator photo.

CMP ...

CDR This is a regular part of the Flight Plan, but, it's a special update for Jack. ... It gave Jack a choice of the 250 or 80, and it calls for you to have the 250.

LMP Well, why don't I just - Why don't I just take - Why don't I just take them all? I'll just shoot up - how many frames? Twelve frames? Ron was programmed for?

CMP ...

LMP What? Of the Tsiolkovsky blanket and terminator?

CMP ... blanket ... across the Earth. Going to take them all?

09 14 02 37 LMP Yes, what - about three - three shots per - -

CMP Yes. ...

LMP Four and a half.

CMP Twelve shots, double.

LMP Three shots per - up and down, right?

CMP ...

LMP You went up and down four times?

CMP ... three frames ...

LMP Oh, okay. Two pair.

CMP Yes, two pairs.

CDR Jack, is - is that high-speed black and white the same as very - high-speed black and white?

LMP Well, - -

~~CONFIDENTIAL~~

[REDACTED]

CDR It gives exposure for Ron.  
LMP Yes.  
CMP ...  
SC ...  
09 14 03 17 LMP Well, let's use the Reseau plate.  
CDR I think, Jack, - didn't you - did you ask for --  
CMP ...  
LMP No, I didn't. That's something somebody's cooked up. But it seems to me like a good idea to use the Reseau plates for a change. They'd be the only ones with the Reseau. And let me get that chart out. What did your exposure say?  
CDR Yes, that's right, but he's got exposure charts for that --  
LMP No, I don't. Not for this. That's just a standard exposure chart.  
CDR Okay. Calls for you --  
LMP Then go up one - one speed from it.  
09 14 03 49 CDR Okay; f ... to 500 was Ron's standard. F ... to the 500. And if you've got the 250 lens, you go from 1/125 to 1/250 or ...  
LMP I'll take it. ... HBW. Yes. ...  
CDR What's the exposure chart say for Jack? Let's see ... --  
LMP Well, there's no HBW in the spacecraft.  
CDR I know, but what's the exposure - What's that say when it just gives a change to that?  
CMP ...  
[REDACTED]

CDR Well, what is this change, 1/125 to 1/250 ...

LMP No, no. They mean this other chart. This one - this one. The printed one. What does that give for the terminator? ... apertures .. That's what they told me earlier.

CDR Okay?

LMP So it'll be f/2.8 and what? 1/250, 1/125.

CDR It uses 250 at change 1/125 ...

09 14 05 20 LMP So it looks like 5.6 and 1/250. I can start with a pass at 1 - at 5.6 at 1/125, so, I'll get that much coverage.

SC ...

LMP I'm going to start at 1/125 at 5.6 and then go to 1/250. Get the earliest stuff just past the terminator at 5.6 and 1/125.

SC Yes, but it says --

LMP Yes, but that will get me into this block, see. I can't go to four.

CMP Oh, okay. See, I can't go to four. 5.6 and 1/125th for my film is the same of f/4 at ... Okay.

09 14 05 54 CDR Now, will that cover Ron's? I guess it will.

LMP It should.

CDR That's what I mean. Will it cover Ron's?

LMP Yes, save - save that. Yes, we'll use that. Ooops, where's the ring pack?

SC ...

LMP Yes, yes; that's what we used. That's the first ring for the 500. Okay.

[REDACTED]

SC            ...

LMP        Okay, now, we may have missed some stuff. Did you figure out what we might have missed with a - with that bad mag? On November November?

CDR        Jack, what's that mag number? Mag Kilo?

LMP        Kilo. Yes, sir. And I'm starting at frame 143. And what time is it? 47, you said 52?

CDR        Yes.

09 14 07 08 LMP        Do I have anything to do over here with the SIM bay?

CDR        No.

LMP        I'm going to close my eyes. See if I can remember --

CDR        Turn the lights out.

LMP        Do that, but --

CDR        Okay. What's your frame number to start?

LMP        143.

CDR        You didn't have to take that SIM bay ...

LMP        No, I - but the lens and the - as soon as you expose - you see, the whole lens comes out and you expose the plate.

LMP        There's a glow out there. Can you turn - just turn it down ...

LMP        Okay. Okay. I already see streamers. I see big - on either side symmetrically around the ecliptic. See those, Geno? You watching?

09 14 08 45 CDR        Okay. I'm looking at ... Is Venus - is Venus --

LMP        Venus just came up.

[REDACTED]

CDR Yes, but is she on the - -

LMP That's on the ecliptic.

CDR Okay; fine.

LMP More or less.

CDR That's pretty close to our ... - -

LMP However, there seem to be two - there's sort of a - a halo out, and then these two major streamers going out, more or less on either side of the ecliptic.

LMP Yes.

CDR And that's about - I don't know. Let me see - let me start a log here.

SC ...

LMP Now, there seem to be a whole - I guess I'm getting dark adapted - but the whole glow - There's the two major streamers, but there seem to be - individual - a lot of small streamers within the glow itself. Unfortunately, I'm fogging up my window by talking about it. The whole glow seems to have a streaming texture to me.

09 14 10 59 CMP Not a whole lot of - Look! I don't see that many streamers in the thing. I see - -

LMP Well, I'm just looking at a very fine pattern compared to the two major ones.

CDR See any - see any kind of ...?

LMP And, now, the one to the - I'm disoriented - I guess that's the - the south is of the ecliptic - to my left, anyway. Spacecraft - minus Y - -

CMP Yes, that should be it.

LMP - - is the - is the dominant streamer to me. Is it to you?

[REDACTED]

CMP I don't see any streamer. All I see is a glow.  
All I see - -

LMP That's what I mean is a glow. It's - I shouldn't  
call it streamer maybe. It's a linear glow - -

CDR I don't see any streamers at all.

LMP - - a linear glow.

LMP I don't even see that. I only see a circumferential  
glow.

LMP Yes, I do - do that. But I see a linear glow that  
goes out way beyond that that's to the minus Y of  
the ecliptic, and earlier I saw - and now it seems  
to be harder to pick out - but - -

CDR No, I don't see. I don't really see any streamers  
at all except ... that runs right ... and it's just  
a very ...

09 14 11 18 CDR Did you photograph all that stuff, Ron?

CMP Yes. I got - I got those photographs red and also  
blue. And then the sunset on the Hasselblad.

LMP Okay. Mars ought to appear here pretty quick.

CMP Yes. As soon as you see a little bit of a bright -  
bright glow there on the horizon, don't look anymore.

CDR Yes, sir.

LMP Okay. The whole horizon now has a glow now to it  
to me. In fact, it has ... - -

CDR Ron, when - -

LMP - - that I can see.

CDR There's very few ... somehow ... glow ...

CMP Yes. Look at it. It's really - really aglow now.  
Looks to me like I get vertical - radial - radial  
patterns - streamers going out now.

[REDACTED]

09 14 12 09 LMP Well, yes. That's what I thought I'd said I was seeing earlier. I think I might have been a little more dark adapted at that time.

CMP Yes, maybe you were more dark adapted than I am, but I can - I could see those vertical - not vertical, but radial - -

LMP Radial lines, yes.

CMP -- the radial lines, kind of light and dark.

LMP Okay. The glow on the horizon now is sharp - to me, is much sharper, much - still a gradational thing from the streamers in. But it's a uniform glow now.

CMP Yes, it is. It's a uniform circumferential glow.

CDR It spreads out over the horizon right now.

CMP Yes. And it spreads - I don't know how you can describe that - but it spreads - spreads out along the surface of the Moon farther than it - than it sticks out above the Moon.

09 14 12 57 CDR That's affirm.

CMP I - Oh, heck, about three times as much, it looks like.

LMP Yes.

LMP I never did see Mars.

CMP Yes, Mars is just now coming up over the horizon there.

LMP Now we're starting to get bright spots on the peaks. First bright - -

CMP Oh, yes, - that's bright.

LMP -- First bright points on the peaks are starting to show - kind of pick up lights.

[REDACTED]

CDR Boy, they really get bright too. Don't they. Now, they're starting to light up along the horizon.

CMP Yes.

LMP Okay. That one streamer right along the ecliptic now is the strongest. You can see it even down now at the - at the horizon. It's fairly stronger within the glow, to me.

09 14 13 57 CDR Now you can definitely see it.

LMP Yes. Now you can start to see the individual - -

CDR ...

CMP ...

CMP Okay. That's about it.

SC (Laughter)

CDR Just before that came over, there's some really good streamers.

CMP Yes, which - which says that we probably missed the - the real streamers on the thing because I stopped the sequence about, oh, 6 - What time was it? Seven seconds from - from the Sun coming up.

CDR ... we've got to find. Just before it came up.

CMP Yes, just before it comes up is when you get the real big streamers.

09 14 14 40 CDR How about your photograph's that you missed?

CMP I don't know - yes.

LMP No, no, no. Terminator.

CMP Terminator. (Laughter)

LMP Don't panic me.

CDR What?

[REDACTED]

LMP Terminator.

CDR Oh, I don't know - I thought we were taking them here.

LMP Oh, yes, we are, but we're ...

CDR That whole sequence - sequence took from - I started my watch at 5 - to about 6 minutes.

CDR You through with that bag ...? ... both second pass.

09 14 16 29 CMP ...

CDR After the eat period, we start getting serious about - - - -

LMP Eat period? (Chuckle)

CDR Yes; start getting serious about TEI.

CMP We do?

CDR Well, we eat at 34:30 ... an hour and a half.

CDR I'm going to try and defecate before you guys eat.

CMP (Laughter)

LMP That'd be nice.

CDR Why do we want to enable all jets here? We want to go pitch and yaw axis coupled; roll axis uncoupled, huh? That's why I wanted to do that.

CMP Yes.

CDR For tracking.

CMP For tracking only. Okay. Are we using these? You change ...

CDR Not yet.

CMP Okay.

[REDACTED]

LMP Okay. 5.6, 1/125, ...

09 14 19 29 CDR Ron, I'm going to give you the Flight Plan before I get there, but they're going to give you a call. And we don't want to retract because they want to do something different here.

CMP Oh, okay. They'll call ...

CDR Not to retract.

CMP Okay.

LMP Boy, the ejecta blanket's almost all in shadow. ... shot.

CMP How do you spell predominant?

LMP P-r-e-d-o-m-i-n-a-n-t.

CMP Okay. Next time we come around, if we get a chance, I want to take a picture of that just prior to sunrise.

CDR Before I enable these jets, we want to get that UV cover closed, Ron.

09 14 22 06 CMP ... Okay. UV is CLOSED.

CDR Okay.

CMP What about IR?

CDR Okay; that's it. Doesn't say anything about IR.

LMP That's the end of the mag.

CMP It is closed.

LMP That's what they want.

LMP Now, I need to find a dark slide.

CDR "Use A/C ROLL and enable all jets except AC 1 and AC 2 - or A-1 and A-2."

[REDACTED]

CDR A-1 and A-2 -

CMP A-1 and A-2 are not. Okay. So, we're using C-1 and C-2. Okay. No, you can turn it off. Change that. Okay. We'll use ...

CDR ...

CMP Okay. ...

09 14 23 22 CDR Okay, we'll uncouple and roll.

CMP Okay. You want to sketch your thing now or ...?

CDR Here's the Flight Plan.

LMP Okay.

CDR Because I'm going to defecate here pretty soon.

CMP Let's see. We got anything operating on - is the sounder operating now?

CDR No.

CMP Okay.

CDR It's back in SIM bay configuration. ...

CMP I got some terminator photos coming up on this pass. The next one.

09 14 24 58 LMP Okay. We want to have Papa Papa, though, to try to pick up some of those -- Are we maneuvering? Are we going to maneuver now? Stay in this attitude?

CMP No, stay in this attitude.

LMP Okay. Let me find my dark slide. I'm not sure - I have one any more.

CMP I put the thing in the wrong pad.

LMP Huh?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP I just guess ... two passes, I guess. No, I need a 250 for - Well, we can change the mag at the last minute there. And then we'll put the 250 in the - I've got Papa Papa on here now.

LMP Okay.

CMP Oh, we need to pick up ...

LMP We want to - I want to get that thing or dike if you want it.

CMP Yes, thing or dike and listen, I think - I don't know. Wasn't there something else?

LMP Yes. You took a couple.

LMP I took a couple in there, but I think I - I think the thing just split on yours, you know?

09 14 26 23 LMP Gene, you want to save this camera?

CDR Yes, just put it in our - in the bag with the hand controller or --

LMP Yes, where is that bag now?

CDR Well, we don't have it yet.

LMP Well, I'll tell you, I'll put it over here to your --

CDR We're going to have to get that stuff.

LMP Yes.

CDR ... put that away, too, a minute. Okay, Ron.

LMP Hey, you can put down that mag. Kilo is finished at frame 172.

CMP All right.

CMP And those were your terminator shots of the rim and wall of Tsiolkovsky. The - most of the blanket was in shadow.

~~CONFIDENTIAL~~

CMP Frame what? 170?

LMP 172 is the last frame. And Gene had down the first one - 143. I didn't think I took that many, but ...

09 14 28 17 CMP You collaborate or corroborate [sic] or whatever it is on the mud pies in Symthii?

LMP Yes, I - They're certainly a different type of crater, and they look as if they're in response to some kind - some other kind of structural medium.

CMP Yes. (Laughter)

LMP Why they responded that way, though, I don't have any idea.

CMP Well, I guess - -

LMP One thing that impresses me is that the really - the double ring is - is more an aggregate of roughly concentric ridges rather than single ridge, in several of them.

CMP Yes. Yes.

LMP Double ridges. They're not truly concentric. Sometimes it slips out to touch the edge of the outer ring, but there are just a whole bunch of little - of ridges roughly in the same shape as the crater but smaller.

09 14 29 11 CMP Okay. This is Hilbert we're going over now?

LMP Hilbert.

CMP Hilbert, Hilbert.

LMP Hilbert.

CMP Hilbert.

LMP Hilbert.

CMP Hilbert.

~~CONFIDENTIAL~~

CMP You know, I can't even see Pasteur. It's got to be in ...

LMP I'm looking right into it ...

CMP Yes, but it - You know, from this view I'm looking at.

LMP It's big. Your - It fills most of your window.

CMP Now, wait a minute. Now, which - It's got to be up that way.

LMP Right there. No, it's right there - just north of Hilbert, Hilbert.

CMP Yes, but I don't see a ring. That's why I don't see the ...

CDR Well, check your - check Flight Plan on how we do it.

CMP Oh, okay. ... we ought to have them right now. Why don't we?

09 14 29 51 LMP Power's off.

CMP No, I just turned it on. MANUAL and WIDE. Circuit breakers all right? There we go. We were just late, I guess, for some reason.

LMP You can tell them that frames on Kilo, prior to 143 - lunar surfaces - whatever that number was, to 143 were selective shots by the LMP. I don't - I couldn't no more itemize, if I had to.

09 14 30 39 CMP Hey, America - Houston. This is America (laughter). We got you loud and clear here. A little late on picking you up that time but worked okay. Okay. On mag Q, Quebec - it's finished - -

###

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03446

APOLLO<sup>17</sup> MISSION

APOLLO DSE CM VOICE DUMP TRANSCRIPTION

DUMPED OVER GDS DURING TRANSEARTH COAST

Time Segments (AET)

From

To

09 15 55 08

09 16 32 13

Time good; voice good.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/86.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

Tape 17-03446  
Page 1

09 15 55 08 IMP Yes, we're right up there ...  
CMP Okay. What'll you have for breakfast? ... had a pen.  
CDR Coming up this time around - next rev will be -  
CMP Okay. Scrambled eggs?  
CDR Yes.  
CMP Bacon squares?  
CDR Yes.  
CMP Peaches?  
CDR No.  
CMP You forgot to eat those, didn't you? Pineapple drink?  
CDR Yes.  
CMP Cocoa?  
CDR No.  
CMP Vitamins?  
CDR Yes.  
CMP Anything else?  
CDR An orange, drink and coffee.  
CMP Okay. Let's see, you're having lobster biks - bisque, peanut butter, jelly and bread.  
CDR ... lobster bisque.  
CMP Cold water.  
CDR What have I got -  
CMP Lobster bisque? Peanut butter and jelly.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CDR I'm going to eat some tuna fish sandwiches.  
There's some tuna spread. ...

CMP Yuk. (Laughter) Is that all I got? ... lobster  
bisque ...?

CDR And a wetpack? We don't get a wetpack to eat?

CMP No, what's that?

CDR ... just packed a wetpack?

CMP ... wetpack peanut butter. Peanut butter and  
jelly, and a piece of bread. What are you going  
to have? What did you have for breakfast, Jack?  
Scrambled eggs?

LMP Scrambled eggs.

CMP Bacon squares.

LMP No, I haven't eaten those.

CMP Peaches?

LMP No.

09 15 56 59 CMP Orange drink?

LMP Yes.

CMP Cocoa?

LMP No.

CMP Let's see, you had a coffee?

LMP Coffee, with sugar and cream.

CMP Vitamin?

LMP Huh?

CMP Vitamin?

LMP Yes.

CMP Let's see, you get peanut butter and jelly, potato soup, cherry bar, and an orange drink.

LMP Okay. I'll take that.

CDR How come he get's a - a cherry bar?

CMP I don't know.

CMP Okay. I had bacon and eggs - I had six bacon squares and I lost two of them somewhere. Peaches I didn't get - cinnamon toast, bread, orange juice, coffee.

CMP Yes, had two pecans.

CDR Do we have any extra bread anywhere?

09 15 58 07 CMP I think I threw it away.

CDR Did you really?

CMP Yes.

CMP Let's see, you had two pecans.

SC ... pecans.

CMP Peanut butter, wetpack, and a jelly, wetpack, and a white bread - white bread. One white bread.

CDR Why can't I use ...

CMP Oh, you can. (Laughter)

LMP Follow the Flight Plan, Cernan.

CMP Is there any extras?

LMP Extra what?

CDR Well, I don't see any extra bread.

09 15 58 49 CMP That's what I was wondering. I don't think there is any extra bread.

LMP They have us - they have us turning on the TV.  
They don't have us unstowing it, though.

CMP Yes, I think that's the problem. Get that as soon  
as we can, here.

CDR Eat.

CMP Eat, then we'll grab it. Pick it up there.

CDR Where are the peanut butter and jelly?

CMP They are in the wetpack part of it. It says on  
here somewhere.

LMP What should our attitude - do here?

CDR P20.

LMP Post TEI, I mean.

CMP Post TEI?

CDR Did you already give someone a meal?

CMP No.

CDR There is none on here for Jack. (Laughter)

MS Maybe it just looks like - Oh well, he's not  
hungry anyway.

CDR There really isn't.

CMP (Laughter) Maybe it's just loose in there  
somewhere.

LMP Well - that's what I was thinking - looking.

09 15 59 54 CDR There really - really isn't a meal here for you,  
Jack.

CMP We just threw everything away.

LMP You got an extra wetpack somewhere?

██████████  
IMP I just stuffed potato soup and stuff up in the garbage bag there. There's some - ...  
CDR That's day 12.  
CMP ... salad.  
CDR It's got to be here somewhere.  
CMP It's got to be in here somewhere.  
CDR Well, the - What was your meal?  
LMP Peanut butter and junk.  
CMP Yes. There was a small - just potato soup, I think, --  
LMP And a drink.  
CMP Just potato soup and a drink. It should be a small one.  
CDR Well, those are all day 12 back there.  
LMP Okay. Why don't I retrieve my potato soup --  
CMP Potato soup, peanut butter, wetpack, jelly, and a bread --  
CDR The loop is here, but there's no --  
CMP -- cherry bar, and an orange GF drink.  
CDR I lost - All these are meal 12. I'm already down in the meal 12 thing, and there's nothing. The loop is here, but the ...  
  
09 16 01 07 IMP Don't sweat it. I got potato soup in the - in the garbage bag. The package is here.  
CDR This may be it. Wait a minute, Jack. No, there's a loop on that one, too. That's not it.  
IMP Yes, I got it. I got - I got a meal (laughter) out of the garbage.

██████████

[REDACTED]

CDR Well, there are all sorts of wetpacks up in here - not wetpacks but goodies. Jack, I'm not going to eat my peanut butter and jelly anyway.

IMP Okay. I got potato soup here.

CDR And there's bisque. I don't know if I'll eat it either. Where the heck could that meal be?

IMP ... grapefruit drink, isn't it. ...

CDR No.

CDR Now, where do you find the bread? Oh, wait a minute.

IMP Thank you. Oh, well. ...

09 16 02 25 CDR How about these fruitcakes?

IMP Hey, there you go. That will be good. Coffee and a grape drink. Well, changed my mind. Is that pretty good, Ron? ... chicken soup?

CMP Yes. ...

CDR I want to know where - Oh, there's the bread. No, that's not the bread. Where is the bread?

SC ... commander.

CDR No, these are goodies. There's no peanut butter in here. Part of the pantry right here. That's right.

IMP I'll look.

CDR Back here?

CDR No, those are meals - those are day 12 meals I been pulling out. See, I'm already to day 12 over here. Wetpacks. See, these are all snack items. Must be here.

09 16 04 00 CDR Here they are.

CDR Now what do you want, Ron? A piece of bread?

[REDACTED]

CMP ... a piece of bread, peanut butter and jelly.

CDR Okay. Here's your bread. Better get me some bread. Get me some bread. You want some bread?

LMP You're going to give me your peanut butter and jelly, aren't you?

CDR ...

LMP Thank you. ... I don't want to steal it from you.

CDR You got your own peanut butter here.

LMP Oh, okay. Oh, all right. Great. Thank you.

CDR ... my part of the jelly.

SC (Laughter)

SC ...

LMP Come on, jelly ... I should have my own.

CDR Well, yes, but I don't know where they are.

LMP You don't want any? ...

CDR Pull them out one at a time.

LMP Okay.

09 16 05 54 CDR Here's another jelly. Well, if I do, I'll find - I'll get it out here anyway. Okay. Here's your jelly, Jack, if you want to eat yours.

LMP (Chuckle) I don't care.

CDR And I'll put mine with my ...

LMP You think the water is hot, Ron? Or do you want to squirt a couple of squirts in here to get it hot? Why don't you squirt a few squirts of hot water in here to finish that up. And then you can squirt some more in my - pork and scalloped potatoes here.

[REDACTED]

IMP How about a bag of coffee, Gene, before you finish up here.

CDR Okay.

CDR I'm not sure that'll flow.

09 16 07 58 CDR Get in there!

CMP Wow! (Laughter) ...

LMP Thank you, sir.

CDR What?

SC ...

CDR ... made by General Mills ...

LMP The quick kick? Made for the Oilers?

CDR Well, if the Oilers drink it, I wouldn't, based upon their performance (laughter).

09 16 11 21 LMP Based on ... performance, if I were them, I wouldn't do anything (chuckle).

LMP ... Performance ... to be eating.

LMP (Cough) Where is my chocolate bar?

CDR Better find it. It was the last one that was in there.

CMP You had a chocolate bar?

SC No ...

LMP You find your scissors, and you find your bread.

09 16 13 14 LMP One of my classmates, when I was in college, always lost things. He lost everything he owned. He was a geologist. Out in the field one summer he proceeded to tie everything to one long line of fishline. He walked around in the field with his hammer and his hand lens and his

[REDACTED]

brush and his notebook and everything all tied to one line. (Laughter) It was quite a sight.

But he went through - he lost one of everything that a geologist can have that summer. And he finally ended up in that mode.

LMP ... burn goes right. It's our last big one.

CDR Like what?

CMP Find the scissors (chuckle).

LMP You should have kept your mouth shut. You didn't have to - you're the one that told the world about it.

CMP (Laughter)

LMP I couldn't believe that when you actually admitted it.

CMP (Laughter)

LMP Do you realize those scissors became more valuable than the polarizing filters because we compromised our activities on the surface for the scissors.

CMP Really?

LMP We didn't for the polarizing filters (chuckle).

SC Scissors, checklist ...

09 16 16 21 LMP Half the FAOs effort was to make sure we didn't forget the scissors each time (laughter).

SC ...

CDR ... carrying them around with us all the time. We weren't ... losing them.

LMP We did. - the first thing we did ..., the ... first EVA they fell out of the bag and they were lying there in the dirt (laughter).

[REDACTED]

CDR In the dirt and had something covering them up ...

IMP Yes.

CMP (Laughter)

IMP The first objective of that EVA was to recover the scissors.

CDR Find that piece of bread I had ... peanut butter to go with it.

CDR If you don't like tuna so much, how come I'm eating your can? No, no, they all got white around here.

CDR ...

IMP They did. Ron threw it away (laughter).

SC All right.

IMP Need some extra?

SC No ...

CDR You don't have a cracker, do you, Ron? Or a fresh tomato or something? Cracker or a fresh tomato or something?

IMP Here's old Tsiolkovsky. One more time. ... but we got to get ...

CDR Wait until 25:30. ... We start to work.

IMP Okay.

09 16 19 58 CDR I'm watching attitude, but the ...

CDR ... a beer now and then would sure go good.

CDR Man, that's a ... crater.

IMP What?

[REDACTED]

CDR ...  
LMP Oh, that's one.  
CDR Huh?  
SC ...  
CDR 4000? Entry 4000?  
LMP Yes, here we are.  
09 16 22 40 LMP Pretty high-speed film.  
LMP ... 43.  
SC ...  
LMP Oh, is that all?  
LMP Ron, you got any hot water left down there?  
LMP No, no, wait. I think -  
09 16 26 12 CDR You know that was the last Saturn V to rise.  
LMP Yes.  
CDR Starts coming up at seven and light's on at four.  
LMP ... sort of ...  
CDR Jack's totally in a blind over there. I know how  
you feel you don't have anything but your -  
your --  
SC ... gravity field ...  
CDR You're out - you can't see. You don't have any - you don't  
have any ...  
CMP ... And you're just really hanging on for the  
ride. (Laughter) Yes, at least Ron and I know  
he knows what altitudes ... You don't even have  
a feel for that. You can look at the computer  
every once in a while unless you got a feeling

[REDACTED]

you can ... No, you just don't have any physical cues, except that we're going. No more ... pressure change.

CMP (Laughter)

LMP Cabin pressure?

09 16 27 48 CDR I don't understand. We had little or no ... forecast up here and I had 25 on the - 25 percent on the - when it - that first came up - 25 percent on the angle of attack, but the needle wasn't - oh, maybe a degree. PITCH needle was a degree off. YAW was right in. And it stayed up to 25 for a while, and then she dropped slowly on back. ...

SC ...

CDR Yes, that's the way I remembered the - Man, it really gets rough ... and then I remember the S-II just the way it was. A big long ... But the S-I, it shakes and rattles and gets it's big muscles going and then it starts really hauling. And then it busts up against ... Max Q.

And once you get through max Q, then it also quiets down and starts hauling.

09 16 29 01 IMP There they are.

CDR All right.

IMP Hello, Houston. This is America.

CMP What happened to my tea bag? I think I lost my spots. (Laughter)

CDR Put it under there. Bag ...

CMP Oh, there it is.

IMP Hello, call Houston. America. Over.

CDR We got another 15 or 20 minutes to eat. ... configuration.

[REDACTED]

LMP What are your angles?

CDR Minus 10 and 25, REACQ and NARROW. Minus 10 and 25, REACQ and NARROW.

CMP ...

LMP It's just not matched yet.

09 16 31 14 CMP You ... by MANUAL and WIDE first and then REACQ and NARROW, don't you?

CMP Oh, okay - -

CDR HIGH GAIN, MANUAL, minus 10; and then REACQ and NARROW ...

CMP Okay; that's because - that's because it's an eat period and it takes a little bit longer in that position, bounces back and forth. If you went to MANUAL and WIDE, those values ... now, then it'll pick it up. And then go back to REACQ and NARROW.

CDR He's right. You can't argue with success.

LMP Hello, Houston; America.

CMP ...

09 16 32 13 LMP ... nothing to do anyway.

# # #

[REDACTED]

**(This page Unclassified)**

Tape 17-03447

**APOLLO <sup>17</sup> MISSION**

**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER GDS DURING LUNAR ORBIT 75 AND  
TRANSEARTH COAST**

**Time Segments (AET)**

**From**

09 17 55 45

**To**

09 18 25 50

Tiem and voice good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MRC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

**GROUP 4**  
**Downgraded at 3-year**  
**intervals; declassified**  
**after 12 years**

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

09 17 55 45 CDR Good. Okay; TVC SERVO POWER, AC 1.

09 17 55 49 CMP Okay; there's AC 1.

CDR And AC 2.

09 17 55 51 CMP AC 2.

CDR Okay. ROT CONTROL POWER to DIRECT's, AC.

CMP Okay.

CDR NORMAL, AC; DIRECT's, OFF.

09 17 55 57 CMP NORMAL is AC; DIRECTs are OFF.

CDR Okay; BMAGs, 1/2.

09 17 56 01 CMP Okay; BMAGs are uncaged.

CDR Okay; SPACECRAFT CONTROL, SCS.

09 17 56 07 CMP Okay; STS [sic].

CDR Arm your ROT CONTROLLER.

09 17 56 09 CMP It's armed.

CDR Okay. Start your motors.

CMP Okay; PITCH 1 -

09 17 56 13 CMP MARK it.

CDR Got it.

CMP YAW 1 -

09 17 56 15 CMP MARK it.

CDR Got it. Okay; plus - Let's see; verify trim.  
Control and set.

09 17 56 20 CMP Okay.

CDR Plus 0.63.

09 17 56 23 CMP Plus about 0.6.

CDR And plus 0.86.  
09 17 56 26 CMP 0.86 is almost 9 - is about right there.  
CMP Okay; verify . . .  
09 17 56 33 CMP It's a minus, plus; minus, plus. Okay; you try yours?  
CDR Okay.  
CMP Okay; both work.  
CDR Okay. Put that - put that at 0.8. You got 1.8. That's where you had it set.  
CMP Right here?  
CDR Go to plus 0.86.  
CMP Okay; thank you. Okay.  
CDR And plus 0.6.  
CMP And a plus 1 - okay, 0.6. Okay.  
CDR That looks good. SPACECRAFT CONTROL to CMC.  
09 17 57 07 CMP Computer has it.  
CDR Okay; clockwise.  
09 17 57 11 CMP Okay; clockwise.  
CDR Verify no MTVC.  
09 17 57 13 CMP No MTVC.  
CDR Got PITCH 2 and YAW 2.  
CMP Okay; PITCH 2 -  
09 17 57 16 CMP MARK it.  
CDR Got it.  
CMP YAW 2 -

09 17 57 19 CMP MARK it.  
CDR Got it. Okay; set trim.  
09 17 57 22 CMP Okay; we'll try a little trim.  
CDR Plus 0.6.  
09 17 57 25 CMP Plus 0.6.  
CDR Plus 0.9.  
09 17 57 29 CMP And a plus 0.9.  
CDR Verify MTVC.  
09 17 57 35 CMP Okay; plus - it's a minus, and a plus.  
CDR Here, let me get my --  
CMP Okay; you got it?  
CDR Okay, my ... is locked.  
CMP Okay. And trim looks good. Okay.  
CDR Okay. HAND CONTROLLER, neutral.  
09 17 57 49 CMP Okay; neutral. Computer has it --  
CDR Verify no MTVC.  
09 17 57 52 CMP No MTVC.  
CDR Verify GPI returns to zero.  
09 17 57 55 CMP Returns to zero.  
CDR Okay; ROT CONTROL, AC, DC.  
09 17 58 00 CMP AC, DC.  
CDR DIRECTs, MAIN A/MAIN B.  
09 17 58 03 CMP Yes, I'll put the DIRECTs - both of them ON.  
CDR Okay; BMAGs to RATE 2.

~~CONFIDENTIAL~~

Tape 17-03447  
Page 4

[REDACTED]

09 17 58 06 CMP BMAGs are RATE 2.

CDR Okay; I'm going to trim.

CMP Okay.

09 17 58 15 CDR Okay; she's trimmed. BMAGs 1/2.

CMP Okay. Did you get a 618?

CDR Just one. Just the last one.

CMP Okay.

CDR Here she is.

CMP Yes.

CDR BMAGs 1/2.

09 17 58 25 CMP Okay. BMAGs, 1/2.

CDR Okay; I'm going to ENTER. You ready for your Auto test?

CMP Okay. Let's try her.

CDR Okay; PRO.

09 17 58 34 CMP Plus 2, minus 2, zero; plus 2, minus 2, zero.

CDR Okay, baby.

CMP 2, 3, 4, 5. Here we go. Ha-ha! ...

CDR About 0.7 and - -

CMP 0.7 and - -

CDR - - 1.0

CMP - - 1.0; something like that. That was good; that was close.

LMP Everything looked good over here on it.

CMP Okay.

[REDACTED]

CDR Okay. RATE, HIGH. SCALE, 5/1.

09 17 59 06 CMP SCALE, 5/1.

CDR RATE, HIGH?

09 17 59 08 CMP RATE, HIGH.

CDR Okay; EMS mode. Stand by for 1 minute.

CMP Stand by until 1 minute?

CDR NORMAL and THC POWER, ON at 1.

CMP Right.

CDR Okay; after, you'll pick up at DELTA-V THRUST A.

CMP DELTA-V THRUST A at 0.05 g - I mean average g.

CDR Okay.

CMP Average g.

CDR Pick up 4-jet ullage at 12 seconds, and I'll get the PRO.

CMP Okay; 4 jets; 12 seconds. (Humming)

CDR Two minutes.

CMP Two minutes; okay.

CDR Attitude looks good. How does your GDC look to you? Why don't you just doublecheck it?

CMP ... right here. PITCH there and there. Go to GDC. Align the old GDC at the last minute. Okay; she's looking good. It's drifted a little bit from where we uncaged it. ... and we'll be right together.

CDR Okay.

CMP Okay. 5/1; 1/2; CMC; GDC; MANUAL ATT is RATE COMMAND: ATT DEADBAND, MIN; RATE to HIGH;

[REDACTED]

TRANS CONTROLLER POWER's OFF; AC/DC; AC/DC;  
DIRECTs; DIRECTs; CMC in AUTO; ATT 1/Rate 2 on  
3; RATE COMMAND; GIMBAL MOTORS; CSM to AUTO.  
Okay.

CDR Okay; at 1 minute we'll pick up EMS to NORMAL  
and TRANS CONTROLLER POWER, ON.

CMP Okay.

CDR Our time is 2 plus 25.

CMP Okay.

09 18 01 11 CDR MARK it. One minute. NORMAL.

09 18 01 13 CMP Okay; EMS is NORMAL.

CDR And verify NORMAL.

CMP TRANS CONTROL POWER is ON. And TRANS CONTROL  
is armed.

CDR Okay; at 12 seconds you pick up - at average g,  
you pick up DELTA-V<sub>A</sub>, and at 12 seconds, pick up  
4 jets.

CMP Okay. And you're on the DELTA-V THRUST switch.  
DELTA-V THRUST A switch, that is.

CDR Okay; you guys ready? Here comes average g.

CMP Okay.

CDR DSKY, blank. Okay; here's average g.

09 18 01 44 CMP Okay; DELTA-V THRUST A is ON.

09 18 01 45 CDR DELTA-V THRUST A is NORMAL.

CMP Four jet; 12 seconds, right?

CDR Four jet at 12 seconds.

CMP Okay.

CDR And you are in ATTITUDE RATE, right there.

CMP 16, 15, 14, 13 -

CDR Okay; 12 seconds. You have ULLAGE.

CMP See the rates get up?

CDR ...

CDR VERB 99.

MS 3, 2, 1 -

09 18 02 12 CMP Okay; there goes the thrust.

CDR ...

CMP Okay, - ... B is ON. Ho, ho, we're going!

CDR Okay; you got a little --

CMP Okay; looks good.

CDR -- less than 1/2 a g.

CMP Okay.

LMP Pressures are good. Yes.

CDR Okay. Attitude looks good.

CMP Okay.

CDR CMC and EMS are GO.

CMP Okay.

CDR I'll give you a first cut at the burn time here in a couple of seconds.

CMP Okay. Looking good. A little more of ... burn ...

CDR ... about 223 your first cut.

CMP Beautiful pitch oscillation.

CDR Okay. You watch attitude, and --

CMP Okay.

CDR -- I'll watch EMS at the computer.

CMP ... roll that time.

CDR Okay.

CMP Okay. It rolled a different way (laughter). The computer - the ... left.

CDR Okay.

09 18 02 50 CDR MARK it. EMS and CMC are GO.

CMP Okay. Chamber pressure is up around 93. We're in good shape.

CDR Okay. You got all your balls and all your pressures, Jack?

LMP Everything's great.

CDR Okay.

CMP Okay. Looking good. Ready to go.

CDR Okay; CMC and EMS are right together.

CMP Okay.

CDR I'll give you another hack here at what the computer expects it to be. 1 - 224 is what it expects.

CMP Okay. Roll at the left ... is going back the other way now.

CDR Okay.

CMP And it's rolling at a rate of around 0.2 of a degree per second.

CDR Burn time may be about a second no - shorter than nominal, and EMS and CMC are still GO.

CMP Okay. Still looking good.

CDR Four degrees, starting to accelerate now; it's 14.

CMP Yes, it's up almost a half a g.

LMP About a minute to go.

09 18 03 38 CDR Okay. It looks good, Jack.

LMP Thirty seconds ahead.

CDR Burn time now is - shutdown is burn time plus 2 seconds and a minus 40 on the EMS.

CMP And a minus 40. Okay.

LMP Half a g feels like a lot, doesn't it?

CMP Yes, it sure does. Wonder what entry is going to feel like.

LMP A lot.

CDR Both the EMS and CMC are GO, Ron.

CMP Okay; they're looking good. Attitudes are pretty good. There's a little yaw drift and - -

CDR I'll give you one hack at 20 some odd seconds here - -

CMP ...

LMP Thirty seconds.

09 18 04 08 CDR Computer's a little less than you, Jack.  
I'll tell you right - Computer says 23.  
Computer says 2 plus 23. Okay; Jack, the count is all yours whenever you want to pick it up - -

LMP Okay.

CDR - - and CMC and EMS are GO.

CMP Okay.

CDR Stand by to back it up.

CMP I'll back it up.  
CDR Plus 2 seconds and minus 40.  
CMP Okay.  
LMP Ten seconds, 5 seconds, 4, 3, 2, 1 -  
09 18 04 36 LMP ZERO.  
CMP Okay; shut down to 23.  
CDR Twenty-three is closed.  
CDR Okay; great.  
CMP 30470. And I'll proceed off that to get the latitude ... Okay. Let's see; I got a plus Y; don't trim. Let me get back to attitude.  
CDR Okay; no trim. You didn't trim, did you?  
CMP I didn't trim. No.  
CDR Okay.  
CMP Yes, we got a little bit of Z in there. That's why I wanted to get back to attitude for.  
CDR That's just - You want it within 0.2. Okay; you're there.  
CMP Okay; we're there.  
CDR Happy? Let's see.  
CMP Let me zap it just a sukosh there. Let's see, attitude --  
CDR Looks okay.  
CMP That's all right.  
CDR I have 2 plus 7 and ... residual.  
CMP Okay, Jack; YAW 2.

LMP Go.  
CDR Okay -  
09 18 05 24 CMP MARK it.  
LMP Got it.  
CMP ... two.  
09 18 05 25 CMP MARK it.  
LMP Got it.  
CMP One.  
09 18 05 27 CMP MARK it.  
LMP Got it.  
CDR 184.  
CMP One.  
09 18 05 30 CMP MARK it.  
LMP Got it  
CDR 184.  
LMP Got it.  
09 18 05 32 CMP Okay. SERVO POWER is OFF.  
LMP You ready for the BUS TIES?  
CMP Let's see.  
CDR ...  
CMP Yes. You turn the BUS TIES off.  
09 18 05 43 IMP Okay. B is OFF.  
CDR 359. Okay.  
CMP ...  
~~CONFIDENTIAL~~

09 18 05 48 LMP BUS TIES are OFF.

CMP Okay. ... POWER is OFF. ...

LMP POWER looks good.

09 18 05 53 CMP ..., OFF. DIRECT ULLAGE circuit breakers are OPEN. PITCH 1 and YAW 1 are OPEN.

SC ...

CMP Okay; you got the minus 18.1 on the DELTA-V?

SC (Cough)

CDR Yes.

CMP Okay; SP ... - -

CDR Two plus 0.3, Jack, is what I calculated right on the money.

CMP (Coughing)

LMP Count 23; that's exactly what I had.

CDR That's what the computer was going to. VERB 66 is in.

CMP Let's see, BUS TIES, you got those OFF? BIT RATE to LOW.

LMP BIT RATE - No, they want it in HIGH. They said leave it HIGH.

CMP Oh, leave it HIGH; okay. Okay; check the SIM bay.

CDR VERB 25, ENTER.

LMP Okay. SIM bay is going to be checked.

CDR Plus 34500.

CMP Okay. ... \*

CDR Plus 122500.

CMP Okay.

CDR And plus 32000.

09 18 06 38 CMP That looks good.

CDR Okay; you caged?

CMP Caged; ready to go.

CDR CMC in AUTO?

CMP CMC in AUTO.

CDR Okay; let's get over there. I'm ready; here we go.

CMP Okay. Let's see, I forgot - you - you use PD ... Okay.

CDR We're at - No - no, you're PD. You use a PD - use PD.

CMP Okay. I'll turn AC, OFF. No trim; how about that!

CDR That's outstanding.

09 18 07 01 CMP Outstanding! Ha, ho, beautiful!

CDR Boy, that half a g sure felt like quite a bit, though.

CMP Yes ...

CDR Let's get some things set up. Jack, when you get that cue card set up, let me know. You want to stay in HIGH.

LMP Yes.

CDR Yes, HIGH.

LMP Post SPS burn has to come ...

CDR We'll start working on the TV.

LMP TV is ready to go.

CDR Okay. And after we get to attitude, you can "inhibit all jets except," Ron.

CMP Okay.

CDR Okay; and we got - UV COVER, OPEN?

CMP Okay.

CDR Well, wait a minute. Wait til the jets get - wait until we get there. We ought to wait until we get to attitude.

09 18 07 38 CMP Yes, as soon as we get to attitude, we'll open those things.

LMP Okay.

CDR We're on our way home, guys.

CMP Hot dog!

CDR We're on our way home.

LMP Yes, sir.

CDR I'll tell you, it's good to be on your way home, boy.

CMP Good to be on your way, but there's a little extra load up there, though.

LMP Hey, here comes the Sun.

CMP Give me a ... back on? Yes, it's too late (laughter).

LMP Snap.

CMP (Laughter) That's right. Maybe ... Let's see, I got everything off, I think.

09 18 08 28 CDR Okay. Did - Make sure you got everything off on this side, your BUS TIES and the whole works.

CMP Can't see a thing; looking right in there. Okay; DELTA-V THRUST - Yes, that's OFF. GIMBAL MOTORS are OFF. We got those. ...

CDR On the TV switch, you got to worry about getting the S-BAND AUX to TV and TV to ON.

CMP ... Yes, we could do that now.

CDR Yes, you can turn that on, except the - Turn the TV on. We have closed circuit.

CMP Yes. Get closed circuit.

LMP Okay; monitor power is on.

CDR We want to go to 3.5, 1.5. Watch that gimbal lock.

SC (Sneeze)

CMP Supposed to make it. It'll stop --

CDR AOS is at 55; that's 6 minutes.

CMP 55, huh?

09 18 09 20 CMP There's the old terminator.

LMP Give me - Make sure I have about 90 seconds prior to - couple minutes prior to AOS to warm up the ...

CMP Warm up what?

LMP Warm up the ...

CMP Let's turn it on now. Turn it on now.

CDR You can turn it on now.

LMP Well, okay.

CDR Turn it on ... Don't point that thing into the Sun, though. That's one thing you really want to watch.

[REDACTED]

CDR I guess we're going to fly right ...

09 18 10 21 CMP Yes. We're going to fly right up the terminator.

CDR Okay; 345 ...

CMP There is a ...

CDR We're almost there.

CMP Look at the chamber pressure; it's back to zero now. Boy, you sure lot - left a lot of junk back there from that SPS burn. ... to go.

CDR ... not a very good attitude from here so far.

CMP Sure as heck doesn't, as a matter of fact. ... See, we go up pretty fast. I could see it out of this window. And we're starting to rotate around. We should see out window 3.

LMP I'm going to leave the handle up for a while.

CMP Okay; we're at attitude.

CDR We are now. Okay; Ron, you want to inhibit all jets except D-1 and B-2.

CMP Do you want Dog 1 --

09 18 11 32 CDR Inhibit them all. Leave D-1, ON; B-2, ON; A-3, ON; and C-4, ON; B-3, ON; and D-4, ON.

CMP Okay.

CDR So, tell me which ones you've got on.

CMP ... complete. Well, except for one row there. Okay.

CDR You got D-1, B-2, A-3, C-4, B-3.

CMP Yes.

CDR And B-4.

CMP Yes.

[REDACTED]

CDR Okay. Now you can get those covers open, Jack.

LMP Okay; I'm going to give the camera to you then.  
And it's all set on the lunar setting. Might want  
to snake that cable around a little bit.

LMP Lost my ...

CDR Okay; UV COVER, OPEN. And IR COVER, OPEN.

09 18 12 21 LMP Okay. UV is OPEN.

CDR IR, OPEN.

09 18 12 28 LMP IR is OPEN and both are gray.

CDR MAPPING CAMERA/LASER ALTIMETER COVER, OPEN.

09 18 12 33 LMP And that's OPEN.

CDR Okay; you want to go to - MAPPING CAMERA, EXTEND.

09 18 12 39 LMP Okay; MAPPING CAMERA is EXTENDED. Barber pole.

CDR Okay; AUTO and NARROW for acquisition, and we're  
all set. We're not acquisition yet but - Oh, this  
is all ... around here.

LMP Okay; after MAPPING CAMERA, EXTEND ...?

CDR Let me get the camera through here, Jack. ...  
able to move.

CMP We're at the wrong attitude.

LMP How did that happen?

CDR You can unplug it ...

LMP Well, why don't - -

09 18 13 17 CMP Can you guys see something - out of window 3?  
Just put it in STANDBY, and it doesn't transmit.

LMP Yes, just ... Okay, you're ... to STANDBY?

CDR Yes, I guess I got to take the switch off.

[REDACTED]

CMP What do you have to do, unplug it?

LMP That should get it.

CMP Are you sure you can see the Moon out of window 3?

LMP Need some more?

CDR No ... That's good. Yes, that's good. ... We won't worry about that. Put your hand controller down. There you go.

CMP ... over there. Here's where we're going.

09 18 14 15 LMP Okay. You're plugged back in.

CDR Okay.

LMP And you ... your picture.

CMP ... okay.

LMP You got the ... Yes, that's for outside, though. It's not inside ...

CDR No, it's ...

LMP You got part of the Moon out of that window there now.

CMP Yes. You got out of window ... 3?

LMP ...

CMP There's Sklodowska.

LMP Yes. That's good. Excellent.

CMP There's Sklodowska. I can see it.

LMP Perfect.

CMP Is the picture good?

LMP Yes.

CMP Okay; great.

[REDACTED]

LMP Okay. I'll let you know when we got AOS.

09 18 14 50 CDR I can tell we's coming home. Boy, is - that one-half g surprised me.

CMP Me, too.

CDR That was fairly ...

CMP Yes.

LMP I was trying to hold my head up, but I finally gave up.

CMP (Laughter) Yes, I did, too. I finally relaxed and put my head down.

LMP Okay; they're there. Give them a picture.

CMP They're there?

CDR Yes.

LMP ... signal strength?

CDR We want to go NARROW and AUTO for acquisition.

LMP We're there.

CDR AUTO and NARROW?

LMP Yes.

09 18 15 22 CDR Let's go AUTO. Oh, you're in AUTO. Oh, okay. Hey, Ron.

CMP Moving up. ... have a tape recorder. Son of a gun.

LMP You're not in the picture. You can't get --

CMP Yes, they don't have --

CDR Hello, Houston; this is America.

CDR 47 and 250.

~~CONFIDENTIAL~~

CMP There you go. You know you got the right button this time.

LMP Yes, we're not peaked out.

LMP What's the deal, Ron?

CMP ... reacquire, Jack. Go to MANUAL and WIDE and then -

LMP You think that'll do it, huh?

CMP Yes. And then try REACQ and NARROW.

09 18 16 36 LMP Well, they wanted AUTO.

CMP Well, give it - give it -

LMP Wait a minute. It's starting to drift.

CMP Okay.

CDR It says 47. Did you want REACQ or AUTO?

LMP Well, they asked for AUTO.

CMP They asked for AUTO, but stop - pause in the MEDIUM. See, when you --

LMP Pause in the medium?

CMP Yes, pause in the medium a little bit.

LMP I thought the medium didn't make any difference ...

CMP Well, it really doesn't, but it gives it a chance --

LMP There you go.

CMP There you go.

LMP Wait a minute.

CMP Yes.

LMP No -

~~CONFIDENTIAL~~

CMP ... we lost them.

LMP They dropped off.

CMP We lost them. (Sneeze)

09 18 17 16 CC America, this is Houston. We'd like the high gain, please.

LMP Roger, Houston. There you go.

MS (Laughter)

LMP I need the ...

CDR Can't pick it up.

SC (Cough)

CDR Houston, do you read America?

CC That's affirmative, America. We have a picture. Over.

CDR Roger, Houston. America has found some fair winds and following seas, and we're on our way home.

CC Okay; that's great news.

LMP There you go.

CDR It sure is, Gordo.

CMP You betcha, by golly. It's outstandingly good. That was a good burn, too. We'll give you the burn report in a bit.

09 18 18 28 LMP Here comes Tsiolkovsky ... You can give it to them if you swing over --

CDR I'm looking at it. I'm looking at it.

LMP Yes, but if you move and look out --

CDR No, I got to be in the ... right here.

LMP Do you have Tsiolkovsky ... How'd you do that?  
No, that's not Tsiolkovsky.

SC ...

LMP Well, I'm not sure - Tsiolkovsky is down in there.

LMP There you go. Might zoom - zoom in just a little.

CDR Okay, Houston. I'm going to try and give you Tsiolkovsky from about the nadir.

CDR ... focus?

LMP Focus ... Yes, no - no, zoom is down in the next middle one. Yes.

CMP Yes. That's zoom.

LMP Well, but I mean open it - give them a full view. You have to unzoom it.

CMP There you go.

09 18 19 50 CDR Houston, this is a grand place to be right now.

CC I'll bet it is, and we've got a great picture of Tsiolkovsky. Got it right in the center, and good focus. Great picture.

CDR I know there's not as many smiling faces down there as there are up here, but we're making up for the difference in numbers.

CC Roger.

CDR Gordo, I'll give you a quick burn report. The burn was on time. Burn time was 2 minutes and 23 seconds. Delta-V<sub>GX</sub> was 3047.0. Attitude at the end of the burn was 184, 005, 359. That's 184, 005, and 359. There was no trim. The residuals are minus 2, plus 0.7 - Correction, minus 0.2, plus 0.7, and plus 0.2. Delta-V<sub>c</sub> was minus 18.1.

CC Roger. We got those.

09 18 21 15 LMP And, Gordy, the unbalance is about 30 pounds, and oxidizer is 2.8, and fuel 2.9. And I blew FULL DECREASE the whole burn.

CC Roger, Jack.

CMP How's the picture look, Gordy?

CC Red fine.

CDR I'd like to tell you exactly what we're looking at, but I can't quite see it.

LMP Gordy, the country Gene's pointing out is south of the orbit that we're been following for several days, and Ron even more than Gene and I. And it's some of the - striking country of the far side of the Moon that human beings don't very often have a chance to see, but a trend's been started in the last few years, and I suspect it will continue.

CC Roger, Jack.

CDR Gordy, America performed superbly.

CC America, Houston. We need PAN CAMERA OPERATE now.

MS (Laughter)

CDR Thank you. PAN CAMERA's going to OPERATE.

LMP Anything else?

CDR Well, ... all these other ...

CC And can you verify that you got the other SIM bay items that precede that?

CDR We're verifying that right now.

LMP Go ahead. Read them.

CDR Okay. PAN CAMERA, STANDBY. MONO.

09 18 23 26 LMP Okay; it's STANDBY, MONO.

CDR POWER.

09 18 23 28 LMP POWER.

CDR V/h, HIGH ALT.

09 18 23 30 LMP HIGH ALT.

CDR MAPPING CAMERA, ON.

09 18 23 32 LMP MAPPING CAMERA is ON.

CDR IMAGE MOTION, INCREASE plus three ... steps. And then OFF.

LMP Do you want barber pole?

CDR Yes. No - Barber pole plus three steps.

LMP Okay.

CDR Yes. And then it's OFF.

09 18 23 50 LMP Okay; it's OFF.

CDR And PAN CAMERA to OPERATE.

09 18 23 55 LMP Okay. And it's OPERATE. And it's gray.

SC ...

LMP Okay, Gordy. The SIM bay should be squared away.  
Pardon our --

CMP I can't -

CC Okay; thank you.

LMP -- slowness there.

CDR Gordo, I'll try and take you across the terminator,  
if I can.

CC All right.

CMP If I could - one crater I know.

LMP We're seeing country south of Tsiolkovsky now that  
we've never seen before.

CMP Where is Tsiolkovsky?

09 18 24 37 LMP Right down out of my window.

CMP Oh. Okay; and then we're looking south, right?

LMP Yes, yes. And when we got a picture of Tsiolkovsky back, I think maybe even you can see one of the things that both Ron and I have noticed about it is, number 1, it's a basin that is comparable in its freshness and apparent age to the - probably the Imbrium Basin on the near side of the Moon; and, secondly, it has an unusual area in its northeast quadrant that - from which the blanket is excluded. There is an apparent slide. We're not sure what it is, but the normal indications of an ejecta blanket are just not there.

CC Roger that, Jack, and we can see those features you just described.

LMP Okay, and for your - for your - for your - -

CC The camera - if you can figure out a way to hold it a little steadier, that would help, but we're getting good resolution.

09 18 25 50 CDR Okay, Gordo, I'm working on it.

# # #

(This page Unclassified)

Tape 17-03448

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**  
**Time Segments (AET)**

**From**

09 18 25 56

**To**

09 18 53 57

Voice good; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

09 18 25 56 CDR -- however many days we've been there could find it, don't you? Huh. I can't see anything.

CMP When you see Tsiolkovsky south, the potential peaks form an arrow that points south, Gordy.

LMP Which way is north or south ...

SC Still not Tsiolkovsky.

LMP What did you do, zoom?

CMP Yes, I'm looking right at Peacock.

LMP Oh, you're - Oh, I see. Oh we're moving away.

CMP (Laughter)

LMP That points south? That full zoom? Okay; there you go.

LMP Where's your camera? There, I can't see anything over here, so -

LMP Yes, I'm getting them --

CDR There you go.

LMP Pretty good - pretty good bunch of - Want to take this one and I'll hold it over here.

CDR ... change windows now.

LMP Here, you want me to do it?

CDR I can do it. Go ahead and ... I can do ...

LMP Well, yes. I can't look if you're going to put it in this window. Go ahead. No? Go ahead. Well, show it - show the picture.

CMP Okay.

LMP You're - yes, but you can't - you're not getting - ... of the terminator.

CDR ... window.

[REDACTED]

CC Okay, Houston, your altitude right now is 820 - 835 miles. Over.

CDR Okay, 835 miles. And climbing out like a dingbat.

CMP Okay, frames 5 through 20 - frames 5 through 20 were taken on mag Papa Papa, at that altitude.

09 18 28 15 CMP There's Smythii down there. Finally figured out where we are. Right down underneath the window. I can see it now.

LMP Gordy, as far as we can, we'll try to run you a little bit - a little bit along the orbital track. I'll be panning the camera more or less westward. Tsiolkovsky starting and Tsiolkovsky is itself in the center Fermi, and moving on to the east, the next big pair of craters that we have spent some time studying is Hilbert, which is just south, is right there, and just a little bit northwest of there is Pasteur.

CDR How's the - Ron, if you zoom it, let me know. I have to focus ...

09 18 29 20 LMP Both Hilbert and Pasteur appear to be very old basins, much older than Tsiolkovsky and they have, as you can see, a fill in them, apparent fill, - very flat looking at this distance and very light colored. It's an event on the Moon of which we have relatively little understanding at this time, but possibly the Apollo 16 results, when they're fully known, through the analysis of the samples and other data, may shed some light on that event.

CMP Hey, we are moving up. That's a full circle, now.

09 18 30 08 LMP Okay, stand by. Now we're going to be able to pan a little bit more east now of Pasteur and start to show you the crater Smythii, the basin Symthii, really. It's one of the older large basins on the Moon. It has none of the obvious features of big basins such as Imbrium or Serenitatis. But it's nevertheless roughly circular, has a mare fill and a very - I'm pointing right now to the hint of a second ring - -

[REDACTED]  
CONFIDENTIAL

CDR There's Tycho, Ron.

LMP -- outside, but the main - the main ring is the one Ron's talked to you a lot about. It has his double-ring craters in it --

CMP Hey, ...

LMP -- and we're pointing to some of those right now.

09 18 31 00 CDR Okay, Houston, we can now see Tycho. We're seeing probably about 75 to 80 percent of the entire Moon - face, anyway, lit up. The rays of Tycho are very obvious from here.

LMP Want the camera over there, Gene?

CDR Let me show it to them, the full thing of that horizon. Give them an idea where - we're looking at.

SC Cough.

LMP No.

CDR No, Gordy.

LMP No.

CDR No, you won't see Tycho probably --

CMP You won't see Tycho at all, I don't think - Tycho is going to be around on the other side. Which one are you looking at? I can't see which one you're -

LMP You can - Langrenus is visible now at the edge of Fecunditatis there, if you want to show that one.

CDR Just this side of Fecunditatis?

LMP And Humboldt is a crater that ought to show up very well on the television. That's the cracked floor crater there with a little dark mare on it.

09 18 33 09 CMP There's all the swirls in Marginis. You can really see them now.

~~CONFIDENTIAL~~

LMP Oh, yes. Why don't you get -

CMP Yes. Can you get some of the swirls - -

LMP Okay. Early in our orbit, and particularly Ron, he had a chance to - to work on the question of the light-colored - -

CDR ... by them on the way.

LMP - - swirls and Marginis has outstanding examples of them and I'll try to get the camera pointed on those in the northern part of Marginis. Let me orient you, as soon as we're focused here. Okay. Smythii - I'll point right at the center of Mare Smythii, and then move up towards Neper, and then into the swirled area a little bit more north. And Gene will zoom you in and let you see what some of that looks like. I don't think we have a full answer of what the swirls are, but some of the things that we saw in Taurus-Littrow and later from orbit around Sulpicius Gallus may to suggest to people, from now on, that the possibility of alteration from fluids in the interior of the Moon is more than just a possibility. Can you see the swirls, Gordy? Are the very diffused light-colored areas that cross various topographic features? Okay, I'm going to -

09 18 35 07 LMP Okay, I'm going to give you an end-on view, if I can, of mare - of the Crisium Basin. You should be seeing that now. How is that, Gene?

CDR ... looking at it. ... trying to show them our landing site.

LMP Yes, that's right. And before long, we'll be able to show you the landing site and Taurus-Littrow and I think you probably see Proclus, which is the bright crater just off the horizon now. That's the one with the excluded-ray zone on its western southwestern side. It's not in view yet.

09 18 35 44 CMP We may not see that. I think we're going the other way.

~~CONFIDENTIAL~~

- LMP Right in the horizon. The landing area, Taurus-Littrow, and the edge of the Serenitatis Basin is probably just on the horizon now and - I'm not sure exactly - -
- CMP Hey, you can see the dark part of Serenitatis sticking out of the sea of Proclus - the ray-excluded zone. No, that's Fecunditatis sticking up there, isn't it? Because the ray perpendicular to our track now points right to the landing site right off - off - off of Proclus.
- LMP The area where one of the Russian vehicles set down and returned samples from is just about in the center of your field of view now. Just on the north side of Fecutun - Fecunditatis.
- 09 18 36 46 CDR Wow! That's not a bad climb, is it, Gordy?
- LMP A friend of mine says, "Wow woozle!"
- CMP Looking out window - window 3 now, and the Moon is just the size of the window, and I've got my face right up against the window.
- LMP Or maybe his head is just the size of the Moon. We're not sure which.
- CMP (Laughter) That's right.
- CDR I don't know what's happening down there now, Gordy, but this is where the action was one time.
- LMP Okay, we're starting to, I think - in a little bit be able to show you the edge of the Serenitatis Basin. It's moving a little slowly right now. It looks like it's creeping over the horizon.
- CMP It's going to creep over the horizon, maybe, but I think we - -
- LMP But I'll tell you what's on the horizon now. I'm not sure I - I can get it. Let me try the rendezvous window. I think I can show them Apollo 11's landing site.

[REDACTED]

CDR Yes, right behind - right - -

LMP You probably can get it - the south portion of Tranquillity there, if you - Out the center window would be better.

CMP Yes, center window you can get it.

LMP See the southern part of Fecunditatis and then the Tranquillitatis takes off to the west there, Gene, right along that southern edge of Fecunditatis is where Apollo 11 set down.

LMP Yes, and a little bit north of the line that - of the ray of those two craters.

09 18 38 23 CDR Could you handle the focus without looking at the ...?

CDR That's in focus if you leave it all the way ...

LMP Okay, Gordy, the center of your picture is - about right in there, is the edge, southern edge, of Tranquillity and the Apollo 11 area. And that was the ground track, of course, for Apollo 8 and Apollo 10. Yes, we'll put you back on Langrenus, which is one of the Copernican-age craters in this part of the Moon, and I believe it was Apollo 12 had an excellent opportunity for some several orbits to study Langrenus.

09 18 39 54 LMP Okay, our landing site is in view now, Gene.

CMP Over - How about right in there?

CDR Okay, I'm pointing at it.

LMP You're a little bit off the field - let me move - you're almost out of the field here - let's see. Proclus - Our landing area is just about in the center of your field of view right at the horizon now.

CDR ... focus ... the zoom, huh?

[REDACTED]

LMP That's the best focus we got, Gene.  
CDR Zoom it in on them.  
LMP Okay, full zoom. And right in that region in the center should be the landing site of Apollo 17. Known hereafter, I guess, as the Taurus-Littrow area.  
LMP Yes. ... There you go.  
09 18 41 11 CMP Oh, man (chuckle). That is really moving out (laughter).  
CDR I'm sure glad they cleared the traffic out of the way.  
LMP Let me - Gene. let me switch over briefly and show

---

them the North and South Poles, which nobody really has done much with yet except for Lunar Orbiter and some of the Russian vehicles.

CDR Why don't you give them a round view of the Moon?  
LMP There's a spectacular valley off - on the South Pole. I don't know the name. It looks like one of these long chain of - chain of craters. Does that show up, Geno? ...  
CDR Why don't you take it over there?  
LMP Let me try it with - -  
CDR That's the ...  
CMP ... try some of these others.  
LMP Well -  
CDR I don't know if you can get it there or not.  
LMP Oh, here's where I can get it. Okay, Houston, we're in - -  
SC Good picture.

[REDACTED]

LMP      Huh? Good picture? Back in the south polar regions. There's a - I think you can probably see a long chain of craters, which - so far unvisited by man. In fact, the whole region has, and that goes for the North Pole.

CC      Roger, Jack. That's very interesting.

09 18 43 00 LMP      I think that's the best we've got, Gordy. That's full zoom. It's one of the biggest crater-chain crater valleys that I've seen on the Moon. It - We saw some crossing Mendeleev, in the first few days, I think we talked about, similar in shape but not nearly as big. Let me move over briefly to give you another view of Humboldt, which should show up very well now. We're just about directly overhead. It's unusual - one of the few craters on the Moon that have apparently a flooded floor that appears to have been domed. And - you probably can see some of the cracks in that floor - that have suggested doming to many observers. How's that?

CDR      Good.

LMP      Around the edge of the dome floor, you can see some of the dark mare that is prevalent elsewhere in the region but not so abundant within Humboldt.

SC      Can you - if can see - if you can see - Check it ...

LMP      Langrenus, you mean?

CDR      Tsiolkovsky ...

LMP      Oh, okay.

CMP      Out the window.

09 18 44 47 LMP      Oh, all right. Hey, there's another view, if you will bear with us, of our old friend Tsiolkovsky. Okay?

CDR      Okay, I got it.

[REDACTED]

LMP Yes, it's one of the more pic - picturesque basins, I guess, part - although it's big, it's not so big you can't look at it all at once. Smythii and Crisium and Serenitatis and Imbrium, in particular, are hard to look at all at once. You're always down inside of them in a 60-nautical-mile orbit. One of the -

09 18 45 44 LMP (Laughter) Okay. That's pretty good. I was going to say about 200 kilometers, I think, is what it is, but - -

CMP That's right.

CDR And, Gordy, of course, it's on a - a part of the Moon that you - you don't see from where you are.

LMP Not yet, anyway. Okay. Let's see if we can move on along our orbital track that we've been following and see what's new that's come into view. Once again, I'll pick you up at Smythii - and move you into Mare Marginis, the Margin Sea. And all the mare, you may recall now, we have pretty good evidence as a result of the Apollo - -

CDR Change the ... around.

LMP - - Program - -

CMP Okay.

LMP - - that our theories of basalt flows that some 3 to 4 billion years ago, in round numbers, were erupted on the Moon and filled many of the low areas that existed at that time. Not an awful lot has happened to the Moon since - except for the impact craters - some of the younger ones - since 3 billion years ago, which is one of the reasons it becomes so interesting to man. It's - the Moon is frozen in a period of history 3 billion years and older, which is a period of history that we cannot recognize very readily on Earth because of the dynamic processes of mountain building and oceans and weathering that are taking place even at the present time. Understanding that early history of the Moon may mean an understanding of the early history of the Earth. And I think we're

[REDACTED]

well on our way to a first-order understanding of that history as a result of the Program. Okay, going to take you a little bit farther along - again to Proclus, which is the obvious partially rayed crater with a big excluded zone to the southwest. There's Mare Fecunditatis and its contact area with the Sea of Serenity, Mare Serenitatis. And the landing site now - has to be just about on the horizon. I think we were a little premature before.

09 18 48 31 CMP Yes, we were. There's Macrobius A and B just beyond Proclus there. Yes, that's really Macrobius.

LMP Now you're starting just to see the - Mare of Serenitatis come over the horizon.

CMP Yes.

LMP And if you take a line from Proclus between the two bright craters - -

CMP You're not going to get more of the Moon unless we - There's space up here.

LMP Yes. Yes. How's that?

CMP Oh, that's good.

LMP Take that line, and that will take you just about to the landing area, right at the edge of the next big mare that you see.

09 18 49 43 CDR The site, Gordo, is now just to the left - left and a little below center of your picture. You can - you can see that region of mountains that sticks out, and the landing site is - well, from here, anyway, right in that area.

LMP Right. I guess my line was a little bit north of where we actually should have pointed you. There's some dark area just showing up and around the edge of Serenitatis on the horizon. I think that will show in your picture as - if I remember some of these from Apollo 10 before. And it's just this side of the dark area that the Taurus-Littrow area sits, in the mountains, there.

[REDACTED]

LMP Yes, and you also - -

CDR Yes. They should.

CMP Yes. You should.

LMP Vitruvius should be visible to you just to the south of the landing area.

CDR Vitruvius is in the monitor, so they should have it.

09 18 51 08 CDR Jack, I think you've got a good view. You can see Censorinus now. You can probably get a real good shot at the 11 site at Tranquillity.

LMP Yes, you're right.

CDR There's old Censorinus. It's awfully big.

LMP Okay, that's nor - the southern border of - (Laughter).

CDR See, old Censorinus is right in the middle of the screen. You've been there before.

CDR 2000 miles. We've got about a 95-percent full Moon in front of us.

LMP Not too far - matter of fact, I think the Apollo 16 landing area would be just about on the horizon, to the south of Tranquillitatis. And back up to something that's dear and near to our hearts. You probably now can pick out the mountains, the North and South Massif, if you really look closely. What do you think, Gene, from the monitor? Can they see that?

CDR I can't even see the Massifs with the naked eye.  
No.

LMP See that dark area there, next to ... - -

CDR I know where - Yes. I know where to look, but it's sort of hard to pick them out. But you are looking right at it. You've got it right - just to the left center. It's just about perfect now, the

CONFIDENTIAL

landing site. There's a little dark area in that peninsula of mountains that sticks out, and the site is just about right in that area.

09 18 53 26 LMP I wish we could show you some of the -  
LMP Come on, you guys, I can even see the light mantle.  
CDR Extrapolation is the nature of our art.  
LMP I wish we could - -  
CDR (Laughter) I didn't hear him.  
09 18 53 57 LMP Say again. (Laughter)

# # #

CONFIDENTIAL

(This page Unclassified)

Tape 17-03442

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>09 23 55 58</u>	<u>10 00 03 51</u>
<u>10 00 15 54</u>	<u>10 00 21 31</u>
_____	_____
_____	_____
_____	_____
_____	_____

Time good, voice poor.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (6) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

09 23 55 58 SC ... go in the bag?

SC Yes.

SC Okay, up the max ...

LMP Are we spinning?

CMP Yes.

CDR Can you watch this for me?

LMP Yes, ... antenna.

CDR Can you watch the - right here.

LMP Yes.

CMP Can you follow it? Don't worry about it if you can't.

CDR You didn't have that caution and warning power on?

CMP That's right.

CDR Why was the caution and warning power on?

CMP I don't know. Hope ... maybe it was before.

SC ...

CDR But it won't work this way.

SC There it is now, one bulb ...

CDR PYRO power should be ARMED.

CMP What did we do with those covers?

SC ... now ... cover.

SC Do you want to take these down?

CMP ... batteries ...

CDR Huh?

CMP ... batteries...

~~CONFIDENTIAL~~

CDR (Music) Okay, let's not do any more than we really have to do to until we get ... right there.

SC ...

LMP Sure wish I had one ... camera ...

SC ... - all of it.

CMP I'm sure I ... all of it.

SC ...

CMP Yes. How about that.

10 00 00 46 CDR All you got to do is go out there and take a few pictures of him and, you know, and then let it float back in there or hand it to me or something.

LMP Yes.

SC Right on.

CDR ... What do you got it set on, f/8?

LMP f/8.

CDR 250th. Do you want some orange, Jack?

LMP I'll probably take it off. ...

CMP That might be - they used to be back over yonder and they might be ...

CMP ... mag of film ... mag. ... mags put on there?

CDR Okay, let's - let's think about Houston.

10 00 02 19 CC America, Houston. G&C, with his years of experience, thinks that PTC is going to hold. It's looking good so far, and so I think ... to go ahead and configure to go to sleep there ...

CDR Okay, we're in the process now, Gordy. Thank you.

LMP What did he say?

SC       ..., I guess.

SC       (Whistling)

CDR      Okay, I might as well pour me some water, ... well,  
          we want to wash our hands ...

10 00 03 51 CMP     That doesn't seem to matter much though, Gene.

TIME SKIP

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

10 00 15 54 LMP That's the way we - ... down here. ...  
CDR Here it is; I got it.  
CMP How do you work this?  
SC ... according to ...  
SC ...  
CDR ... are all this way all the time.  
LMP Okay, the only thing left to do is ...  
CDR Now I'm going to get out of your way, Ron.  
CMP ...  
CDR (Laughter) I hope you ...  
CMP ...  
CDR Well, I'd be satisfied with ...  
CDR Well, if I'd known you were planning to be there,  
I would have ...  
SC ...  
SC Yes.  
10 00 19 54 SC ... I ... your big ...  
10 00 21 31 SC ... water ...

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03464

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER HSK DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>10 08 03 34</u>	<u>10 08 03 48</u>
<u>10 08 15 34</u>	<u>10 08 23 51</u>
<u>10 08 36 51</u>	<u>10 08 45 39</u>
<u>10 08 59 21</u>	<u>10 09 06 30</u>

Voice fair; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

10 08 03 34 CMP Well, here we are, folks, in the old postsleep checklist again. And that takes care of the old postsleep checklist (laughter).

10 08 03 48 LMP Bob, we can't quite see Tsiolkovsky any more. I can't make it out. That's probably just about it now. ... anyway, but we've come around to the side where we've got Copernicus well inside the horizon. And can look down at ...

TIME SKIP

~~CONFIDENTIAL~~

[REDACTED]

10 08 15 34 CMP Think I'll go in and light a cigarette tonight.

SC Okay.

10 08 15 44 CMP No. I'll have to go through it by myself, you know.

SC March around ...

SC ...

CMP Before I have something to do.

SC We're through.

CMP No, I was just wondering ...

LMP Turn it over.

CMP I finally decided ...

LMP Well, are you going to start smoking again or are you going to --

CMP No, I don't think so, Jack. I'm going to quit.

LMP You going to quit? It'll take a lot of courage and fortitude.

CMP Yes.

LMP People around you are smoking theirs.

CMP ... stop from smoking because he smokes as much as anybody I know.

SC Yes.

LMP Did he get scared?

CMP Yes, he got scared.

SC ...

SC Yes. That's the whole point.

CMP I was up to - oh, two packs a day. I - I never went beyond two packs a day. But - every once in a while, I hit two packs. It got so it was very seldom just one.

~~CONFIDENTIAL~~

10 08 17 21 LMP That's lots of cigarettes.  
SC Small thing ...  
SC ...  
SC ...  
CMP Yes (laughter). ... that's true. No. ...  
SC ...  
CDR You feel like eating?  
CMP I do.  
CDR I bet you they asked for one.  
LMP If you're not feeling right ...  
CMP No, I feel great. I really do.  
CDR I bet you they ask for one.  
LMP Think about us ...  
CMP Yes, we've - That's why I said we ...  
CDR Sure is a dull SIM. (Laughter)  
SC ...  
10 08 18 46 CDR You know, I'm surprised that I'm not as spacially disoriented when I wake up in PTC as I was in lunar orbit. I don't know how you explain that one.  
LMP I find that I can sleep ...  
CDR I don't know.  
CDR Ron, if you want to heat up the hot water --  
CMP I've already heated it.  
CDR Oh, it's all ready. Okay.

CMP      Unless you want it ...  
CDR      No, that's all right.  
10 08 19 33 CMP      Good water?  
SC      I think so.  
SC      ...  
CDR      (Laughter) We're generally dumping down to something again today.  
CMP      Yes.  
10 08 20 02 LMP      Bob, is your EECOM friend going to let us practice the waste water dump again today?  
CC      I kind of expect so. Stand by, and let me find out for sure. Roger, Jack. There's one coming up at 252:50, about 2 hours from now.  
LMP      Okay. We'll start reviewing that one. We'll be ready for him this time.  
CC      We won't let you sneak behind the Moon on this one.  
LMP      (Laughter)  
LMP      (Singing) What did we do with the Flight Plan? That - That was ...  
CMP      Yes.  
CDR      Zero. Whew! It's cold in here.  
SC      ...  
CDR      I woke up because I was cold.  
LMP      I want some coffee.  
CMP      I'll get some.  
CDR      Huh?  
CDR      How about some cocoa?

CMP (Laughter) Want some cocoa?

10 08 23 51 LMP Very good.

TIME SKIP

[REDACTED]

[REDACTED]

10 08 36 51 CC We don't - Would you clarify that request?

MS (Laughter)

LMP ... on the heater.

LMP Well, we've been getting a lot of complaining.

CMP Very good. ...

CDR Tell them about my - my - my back bottom side heater.

LMP Where are the - -

CC Jack, you might use reel 2 if you want to. It's about the only thing we can think of.

MS (Laughter)

LMP Reel 2. Yes, you get the idea.

10 08 37 38 LMP Anyway, it's cold. It's not really that bad, Bob, but we're hearing a lot about it.

CC Okay. Well, we'll work it out here, if we can try.

LMP Well, you might discuss it with SPAN.

10 08 38 06 CDR I like not to - like not to waste reel 2. It's got some other good uses.

CDR Hey, where are the darn adhesives?

CMP They're in the ...

CDR I know they're in here. I just can't find - -

CMP ...

CDR They're in the bag?

CMP ...

CDR I thought it was ... There they are.

CMP Anything I can ...

[REDACTED]

CDR (Laughter) Where's ...

LMP Didn't sound very good to me either.

CMP ... Gene, I guess ...

CDR That's not a gosh darn problem. Nobody ever got that idea across.

10 08 39 04 LMP How do you feel, Ron? Are you tired again?

CMP Yes.

LMP Still do, huh?

CDR If you do, take a couple of those ... like they tell you.

LMP You might as well throw a Seconal in on top of them (laughter). You know, if it worked once, it might work again.

CMP ...

LMP Yes. And you got any comparison about traveling to ...

CMP If I hold my stomach ... inside and make - make it a cabin ...

MS (Laughter)

SC It's closed.

10 08 39 55 LMP I think I got grits this morning. That's good. I was wondering what I might have in here that tastes different. Grits will taste different.

CMP They sure will. I'll go along with that.

SC ...

CMP It's starting to ...

CDR Gee, I thought charcoal was a laxative. Isn't charcoal a laxative?

LMP That's all you need is a Coke.  
CDR One of them was ba - Baby Ruth.  
CDR You're greedy.  
LMP I don't want it.  
LMP I had been doing all the ...  
CDR It's cocoa. I love cocoa normally, but I tell you, this flight has just made me - really made my stomach bad, I think. Something has. I'll just blame it on cocoa.

10 08 41 44 LMP You ought to put that on the wall.  
CMP Yes. ...  
LMP Now, who the heck can eat with three coffee bags and everything else laying around?  
CMP Nobody.  
LMP That seems to be the most popular song on the tapes.  
CDR I never had to - I just turned it around and it --  
LMP No, I know. But it's coming to repeating itself on various tapes.  
SC Put another Simon and Garfunkel on.  
CDR Ron, I want to take out a can of fruit down there somewhere rather than eat this. Must be a can of fruit around somewhere.  
CMP I don't have any ... You want a can of fruit?  
CDR Yes. I want a can of fruit.  
LMP Yes. I won't bother you any more. The grits and ... is going.  
CDR What's going in?  
SC (Singing)

[REDACTED] CONFIDENTIAL

10 08 43 57 LMP Here's the catsup going in.

CMP ... something the other day we ate at dinner.

CDR Maybe cocoa would be better if it was hot.

CMP Huh? Yes.

CDR Maybe I'll try it.

CMP Don't look for those ... Here's some more.

CDR I don't want any more, Ron.

SC ... taking it.

CDR Get that trash out of there.

LMP Yes. We want to get rid of everything we can today; otherwise, we take it all home.

CDR ...

LMP Yes.

CMP I'll bring you some hot water.

CDR Hey, Ron, not hot water I - -

SC ...

LMP He's not ... cause he's not supposed to.

10 08 45 39 LMP Put more in there, and I'll be out of your hair.

TIME SKIP

[REDACTED]

10 08 59 21 CDR I prefer not to give you a GO for EVA, Ron, until you get your sensors ...

CDR Good old Challenger. I don't care that - that bird has absolutely nothing wrong with it. You can't even count that regulator. The worse thing that we had with that was probably a transducer shift.

LMP That was it, huh?

CDR One of the command regulators had a slight leak by it, but it even reset itself there once.

LMP Yes. A pretty brief anomaly reported on the LM.

10 09 00 37 CDR The radar - landing radar was absolutely superb!

LMP Did it lock on good to start with?

CDR It locked on. It locked out before it normally would have yawed at 70 degrees out. And when you yaw back in, you put the radar to the point on the ...

LMP Yes.

CDR I think it yawed more than 20 degrees. Only at 70, she - she - the light started - Well, before I yawed, the caution light started blinking. So I just yawed about 70, and the light started blinking and went off. Boy, they sure picked up that - that high point of 30 000 feet. I don't know if you're watching, Jack.

10 09 01 11 CDR Oh course, you might have had that one locked in.

CDR The rendezvous radar, Ron, was absolutely superb. Absolutely superb!

LMP I guess that VHF locked on right after insertion. You guys shut down on insertion.

CDR I was going ... ... insertion shut down, and it locked on, just like that.

LMP I got to ... recycle your tone.

CDR Yes.

LMP That tone was beautiful. Just like in the - -

CDR Schedule?

LMP -- in the chamber over there in Houston. As soon as you got that thing - beep, whoo, whoo. That's weird.

CDR Well, when old Tom and I were talking about that, when we first heard it, you know when that - that ... at that time. Tom and I were talking about it, and we - you know, we forgot we were on hot mike to John, and John said - after a long silence, he said, "Hey, you guys hear that too." (Laughter) And he was just ...

LMP I was going to turn it on, and I really didn't have time to do that.

SC I forgot about ...

CMP (Laughter) Oh, yes. I didn't hear it.

SC ...

CMP Yes.

SC ...

CMP Put one of those Simon and Garfunkel tapes on.

10 09 03 17 LMP Simon and Garfunkel. Okay.

LMP (Laughter) Are you sure? Would you like to try again?

CC Well, that's all right, Jack. We'll live with it for a while. We're looking at - no need to acknowledge this - we're looking at your temperature problem. And there's a couple of obvious things I'm sure you've undertaken, but if you haven't - all the window shades off. Get some sunlight in there. And might crank on all the lights to get some more heat load in there. Also the - of course, the cabin fan and the temperature - CABIN TEMP control thumbwheel - It's your option on that. The other things, like mixing valve adjustment and powering up other items, we're looking at very

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

seriously, but we would like to not do those items until after the EVA this morning. We'd like to remain the status quo on the ECS system with the exception of - You do have the cabin fans on your option there. But we would like to re - retain the rest of it status quo until after the EVA.

LMP Well, thank you for all your research in there, Bob. I'll let the commander make the decisions. It - it's his thermostat.

CC Roger.

CMP The CMP feels pretty good so - -

CDR I'll see if they can get me mad this morning. That'll warm things up. Temperature's on the way up.

CC Roger. Trying to get reel 2 up to you, if you want.

CDR Pardon?

10 09 05 18 LMP He offered reel 2 again.

CC Said I'll bring reel 2 up to you, if I can get there.

CDR Well, reel 2 will sure be an imaginative start when you consider all I've got is Ron and Jack.

CMP It is going to be very interesting to see what reel 2 is.

MS (Laughter)

LMP You given some of these.

CDR I hope we have.

CMP Sort of be interested in the ... and the ... in 109, too.

CMP I hope old Bill Cole heard that. (Cough)

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Tape 17-03464  
Page 13

LMP You'll like him when you meet him, Ron. He's a super guy. He's a sharp guy, a very sharp guy.

10 09 06 30 CDR Yes.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03455

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING TRANSEARTH COAST  
Time Segments (AET)

From	To
10 21 19 04	10 21 24 19
10 21 24 34	10 21 28 58
10 21 29 34	10 21 29 41
10 21 39 00	10 21 48 54
10 22 08 12	10 22 08 19
10 22 35 52	10 22 46 32

Time, good; voice, okay.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

CONFIDENTIAL

10 21 19 04 CMP Huh?  
CDR Hold on ...  
CMP Okay. I thought you were through. ...  
SC Those are the ... this thing here.  
SC (Music)  
LMP Huh?  
CMP Let's see ...  
CDR There's our tissue.  
SC Spread them out.  
CDR You want a - you got a bag for the command module stuff or what?  
SC No, ...  
LMP Ron, will this stuff fit?  
CDR If I could ... two hands ... and a ...  
10 21 21 54 LMP ... they fit in there? Are you coming? ...  
CDR ... the legs of the ... and leave them here for?  
CMP ... what?  
CDR Why did you leave the legs of the ... here?  
LMP Camera stand.  
CDR ... legs of the ...  
CMP Oh, I thought I might be able arrange the thing so that you can see through it. ... be the judge of ... antenna. You got to be down between ... your camera.  
CDR You got a place to stow those things? ...  
CMP No, I'll - -  
~~CONFIDENTIAL~~

Tape 17-03455  
Page 2

[REDACTED]

CDR I can put - -

LMP ...

10 21 24 19 CDR Where was that bag? I saw it there.

TIME SKIP

~~CONFIDENTIAL~~

10 21 24 34 CDR Will that fit in A-7?  
LMP ... at the window ... It's right ...  
CMP ...  
LMP ... to look at that?  
LMP What are you going to do, Ron? You going to find a bag for your stuff?  
CMP Yes, somehow.  
LMP Why don't we stick this - stuff this camera in there, too.  
CMP Don't know what ... jettison bags ...  
CDR Yes, I was just trying to make - those jettison bags are easy to fold up. But they're hard to stow ...  
CMP Yes, that's right.  
CDR Well, we'll find another bag. We'll put whatever else - command module and - stuff the camera ... and I'll - wait a minute check those - maybe I got a bag in here. Here's a sanitation supply bag.  
CMP Here's the tape. ...  
CMP Put that in there.  
CDR We'd like to get those cables --  
CMP ... anything else I can do.  
10 21 27 00 LMP Temporarily we'll put it in there to protect it ... we hang it up.  
CDR ... the cable.  
LMP What cable?  
CDR Will they fit in there? ... maybe we can just ...  
CMP Well, I don't know ...

LMP Is that all you have? Sort of a LM return item,  
isn't it?

CDR It is a LM return item.

LMP Where are they?

CDR ... up there.

LMP Yes, I'll get to it.

LMP Normally it would have been jettisoned, right?

CMP ...

CDR ... What is it?

CMP What?

LMP These are LM-CM umbilicals ...

CMP ...

CDR ... down here.

LMP See anything else, Ron? That would be considered  
jettisonable?

10 21 28 58 CMP Huh? ...

TIME SKIP

10 21 29 34 CMP What did you do with the two ... two handles ...?

LMP They're back in that TSB, I think.

CMP ...

10 21 29 41 LMP Weren't they?

TIME SKIP

[REDACTED] CONFIDENTIAL

[REDACTED]

10 21 39 00 LMP Yes, just wondering how the high gain is working out for you.

LMP Okay.

CDR ... 20 ... A-4, 22-B ...

10 21 39 47 CMP Well, I need some exercise, ... exercise. Well, - ... Hey, I got to do a P52.

LMP Huh?

CMP I got to do a P52 pretty soon. Where are we? 264:20.

LMP The next ... do it this PTC ... next ... we're going to sleep in.

CMP All right. They are, aren't they?

LMP How are you going to fix those?

CDR Yes, ...

CMP Boy, everything's great. ...

LMP ... the one that's probably cutting in and out now.

CC Jack, Houston. Over.

LMP Go ahead.

CC The high gain is holding on there, but we think we can improve our - the time we can hold on to narrow beam width a little bit if you'd tweak it to PITCH, plus 15, and YAW, plus 185, please.

CDR B is getting to be a bear, isn't it? ...

LMP Plus 15, you said, Gordy? Gordy, you said plus 15?

CC Plus 15 and a plus 185.

10 21 42 03 LMP Okay.

LMP Ron, darn you. Gee!

CMP ... (Laughter) get another ...

[REDACTED]

CDR ... another moment, though.

CMP ... (Laughter) Yes.

CDR Are these things supposed to go there? ...

LMP No, it's not bad at all. There's only one strap on them, as a matter of fact.

CDR ... Huh?

LMP I don't know ... because they'll have to be strapped on top of it, top A - top A-1 and top of A-2. So you got to restrap them.

CMP There's two broken wires. I think the other one's about ready to break.

LMP Gordy, the canister's changed.

CC Thank you.

LMP Yes, ... starting to cut out completely on me, for reception.

CMP One of those may be on - may be down there on - some other ones may be ...

SC ... pressure on it.

LMP No, there it is. About 5 o'clock - 5 o'clock central standard.

CMP Five o'clock tomorrow afternoon ...

CDR For the press conference?

CMP Yes.

LMP ... 30 minutes. No, ... in an hour. No, 30 minutes ... scale.

10 21 46 46 CDR I'm going to give this guy one more chance. I hope he's better on the other side.

CMP Do you read me? 1, 2, 3.

LMP Yes, you're coming through loud and clear. Do you read me?

CMP 1, 2, 3; 1, 2, 3.

LMP Yes. Do you read me? 1, 2, 3; 1, 2, 3. Do you read me? 1, 2, 3; 1, 2, 3. Do you read me? 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 1, 2.

CMP Yes ... something stuck down there ...

CDR Yes ...

LMP Both ears. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. And a 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 1, 2. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 1, 2.

CMP It's not cutting out now, but ... just sick.

LMP That's all right. Whatever it is - -

CDR Yes, we don't - -

CMP Still ...

CDR Yes -

CMP Okay, we're in good shape.

CDR I guess you're looking at the orange light too, huh?

CMP Getting ... Those were my ... (Laughter) Yes. That's all right. If it goes - if it goes into gimbal.

CMP No. Are we seeing - no, we're PTCing now, with no jets, huh?

CDR ...

CMP Oh.

10 21 48 54 CMP No, it's on ... You're right.

TIME SKIP

~~CONFIDENTIAL~~

[REDACTED]

Tape 17-03455  
Page 9

10 22 08 12 CDR P52 any time you want.

10 22 08 19 CMP Okay.

TIME SKIP

[REDACTED]

10 22 35 52 LMP Covers open and closed.

CDR Jack, ... they'll cue you on that.

CMP ...

LMP Houston, I doubt if it's a problem, but UV COVER's still OPEN.

CC Roger, Jack.

CMP (Singing) I think we just ... zap it and it'll be right.

CDR I think it will. I think VERB 40 will take it, too. I wouldn't be surprised if I did load 20.

CMP (Laughter)

CDR Called up 20.

CMP Yes.

CDR Called up 20 ...

CMP ... VERB 40 in this spacecraft. That's right; go ahead. It'll work.

CMP Looks about right.

CMP Call it again.

CDR Yes, ... come back and ...

10 22 36 58 CDR Looks good, Gordy. Matches the ball.

CC Roger. We see that. We're getting high bit rate now, by the way, also.

CDR I don't know. You can track it down, but I called up NOUN 20 to check the roll angles, and it was not what we were using in the book here, of 14 degrees. And I very easily could have - could have loaded 20 instead of 22, which I would feel a lot better about if that were the case.

CC Okay. We'll sure track that one down.

CMP (Laughter) Beautiful. How about a cup of coffee?

CDR A cup of tea.

CMP A cup of tea?

CDR It's about eating time.

10 22 37 41 CMP Is it? Oh, it's time to eat, huh?

LMP I don't want anything to eat.

CMP Oh, okay.

LMP Something to nibble on, maybe.

CDR No more nuts in there?

CMP Nuts are all gone. Nuts are all gone. But we may have some - Yes, I'd feel a lot better if that's what happened.

CDR I - The more I think about it, Ron, the more I think - -

CMP Yes, it's funny, I wasn't paying any attention to what you were loading there.

CDR Oh, if I had loaded 20 I wouldn't either. I called 20 to check the roll angle so I could reload it.

10 22 38 18 CMP Yes, I kind of screwed you up, too. I was asking you questions about - you know, where we're going what we're doing - distracting you from - -

CDR No, that's not ... - -

LMP I figured ... running against the LEB.

CMP (Laughter)

CDR Doesn't make any difference what the case was. I hope I loaded 20.

CMP Yes, me too.

CDR I wasn't going to suggest that.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP (Laughter)

CDR That sure takes away all the im - impact I had about that P52 though.

LMP Are you there?

CDR No, we have 90 ... to go.

CDR That'll wake them up down there in the MOCR.

CMP Yes. (Laughter) Yes, that's right. Did you say you wanted a new jug?

CDR Yes.

CMP I think we owe it to ourselves. We better have a new jug.

10 22 39 12 LMP I've already thrown my old one away. I'm glad you mentioned it. But I sort of quit drinking water, though. I've just been drinking these juices.

CMP That's probably a good idea.

LMP I don't like the water. I'd rather - I can take the gas ... it's easier - You know, it's like drinking bad water. You know, like in Houston. You can - -

CMP Yes.

LMP - - you can drink the chlorinated water if you can mix it with something.

CDR You got another omni for them there?

LMP Like booze.

CMP Oh, I'm sorry.

CMP Hey - I think they should be able to figure that out. Maybe, I don't know. Let's see how much the glitch was, you know, when they rezero them and where we were. What a measurement ...

~~CONFIDENTIAL~~

CC America, we're ready now for you to proceed on per Flight Plan with the VERB 49 to the sleep PTC attitude. We have not had a chance to go back over the data, but we'll give you a call as soon as we get a chance to check it. Over.

10 22 40 51 CDR Okay, Gordy. One other interesting thing while we went back and looked at NOUN 22 after the glitch. We still had the NOUN 22 angles I had loaded for the previous VERB 49 at 263:40, which either - even makes me feel more like I did not load 22 on this next time around.

LMP Have an EMP ... for the commander.

CMP (Laughter) Yes, that's right.

CC Yes, it sounds - it sounds like we might have the problems nailed down, but we'll doublecheck that.

CMP You got a - ... Here's one in here.

CDR This is a gross admission, if that's the case; but I'd rather have it that way.

CC We won't hold it against you.

LMP I was half asleep, but not anymore.

CMP That's right.

MS (Laughter)

CMP That's right.

LMP (Laughter) ... call it up ...

CC America, Houston. Why don't you hold the PRO on - on this VERB 49 until we have a chance to check and see if we're going to have a gimbal lock problem.

CDR Okay.

10 22 42 46 CDR Gordy, can I use the roll we got, 142?

CMP ... That's what I asked Jack and see if - going to have run into gimbal lock when you go from there to - to the other one.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CDR I'll stand by until you check that gimbal lock out.

CMP What did I do with that thing. Throw it away?

CC Stand by. We're checking that.

CMP What do you need?

CDR ...

CC Your answer is negative, Geno. The present roll - the maneuver should - shows on our computer, you'll go to gimbal lock. So suggest you go to 14 and then start to maneuver ... Over.

CDR Okay.

LMP ... that hydrogen separator failed. I just don't think it separated ...

CDR That's right.

LMP See that's ...

CDR ... water in there and the hydrogen separator conversion failed and all the other stuff ...

CMP What the heck. What do I do if the separator failed?

LMP Yes. ... said it failed?

CDR ...

LMP Yes, I heard that.

LMP ... expert on hydrogen separation. I just don't think it's ever been particularly successful.

10 22 44 28 CMP Oh, no, it never has.

LMP You guys didn't have one, did you? You resulted in it.

CMP Yes, you're the ones it started with.

CDR Did we?

~~CONFIDENTIAL~~

LMP ... started the complaining.

CMP Yes.

LMP Did you have the same bloated feeling on 10?

CDR We felt - we felt a lot of water, a lot of gas and water.

LMP ...

CDR We never had to take -

CMP Well, you don't like the food. Heck, that's ... data points --

CDR I never had to take three bites ... I never had to take any pills or anything like that.

LMP How did the food on 10 differ from what we've been eating?

CDR I don't know ... I don't know what we've been using ...

CDR ... on 15 and 16, huh? That's a lot of ...

CMP ... diet ...

10 22 45 19 CDR You have a piece of Velcro laying around?

CMP What kind of Velcro?

CDR Something I can put right here ...

LMP What do you want? Pile or hook?

CDR What do I need to ... Hook, I guess.

LMP Pile.

CDR I don't know ... put it on here.

LMP Oh, yes, you want a hook.

CMP I just took it off of my feed package.

LMP Here.

[REDACTED]

CMP You need a red one ...

CDR Why? Are you going to check your outs ...?

CMP Yes. Mine's out ... It's got a blue --

CDR ... I'll get a red one.

LMP What have you got to nibble on? You know - sweet?  
Got any crackers?

CMP Yes. There's some graham crackers in there.

LMP No, there aren't. Those are cubes.

CMP Well, ... sort of ...

LMP ... What are we having, wet packs for dinner?

CMP Yes.

LMP I'd eat a wet pack.

10 22 46 32 CMP Well --

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03461

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING TRANSEARTH COAST  
Time Segments (AET)

**From**  
10 22 50 28  
  
**To**  
10 22 50 28

Time and voice good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance technical details of significant launch vehicle malfunctions, (3) provide flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

[REDACTED]

Tape 17-03461  
Page 1

10 22 50 28 LMP      Works every time, doesn't it?

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03459

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER HSK DURING TRANSEARTH COAST**

**Time Segments (AET)**

<b>From</b>	<b>To</b>
10 17 27 24	10 17 27 40
10 22 45 29	10 22 46 49
10 22 50 01	10 22 50 26
11 00 38 47	11 00 38 52
11 00 58 06	11 00 59 02

Voice fair; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

10 17 27 24 CDR Give me that thing off of there will you, Ron?  
10 17 27 40 CMP Yes.

TIME SKIP

[REDACTED]

10 22 45 29 CDR ... spacecraft.

LMP Okay; good.

CDR Smile.

LMP You know - -

CDR You need that kind of stuff.

LMP ... don't want to ... Put it down here.

CDR Oh yes, you want ...

CMP I just took if off my food package.

CDR Here.

CMP You need a red one though, right?

CDR Why, you got to take yours out?

CMP Yes, mine's out ... lunar ...

CDR ...

CDR What have you got to nibble on? No - sweet. You got any crackers?

CMP Yes, there's some graham crackers in there.

CDR No, there aren't; those are cubes.

CMP Well, all right.

CDR ... what do we have, wetpacks for dinner?

CMP Yes. I'd eat a wetpack.

CMP Well, ...

CMP Well, why don't we just start eating dinner?

CDR Is it that time of day?

10 22 46 49 CMP Matter of fact; it is.

TIME SKIP

10 22 50 01 CMP (Laughter)  
CDR Wise - wise guy.  
10 22 50 26 CDR Works every time, doesn't it?

TIME SKIP

[REDACTED]

Tape 17-03459  
Page 4

~~CONFIDENTIAL~~

11 00 38 47 CMP I don't know. ...

CDR ... does.

11 00 38 52 LMP Hey.

TIME SKIP

11 00 58 06 CMP No. If that changes, this has got to change.

CDR Yes.

CMP The BD or AC.

CDR ... any other place.

CMP Well, yes. That's right; B-1, or B-2 - B-1.

CDR Can't really stow that big box of wrenches until we go to sleep tomorrow, after we wake up the next day.

CMP ...

11 00 59 02 CMP We always used the ...

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03449

APOLLO 17 MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING TRANSEARTH COAST

Time Segments (AET)

From	To
<u>10 23 36 40</u>	<u>10 23 44 14</u>
<u>10 23 48 03</u>	<u>10 23 56 14</u>
<u>11 00 14 10</u>	<u>11 00 21 01</u>
<u>11 00 35 30</u>	<u>11 00 39 54</u>
<u>11 00 53 07</u>	<u>11 00 59 03</u>
<u>11 01 29 25</u>	<u>11 01 36 55</u>

Time good, voice fair to good.

SECURITY CLASSIFICATION

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

10 23 36 40 CDR I don't know that I would have if I had to take that Seconal as much as I hate to admit it. I have about decided though that my particular discomfort of wake - waking up is characteristic of the environment and not of Seconal. Because I - the nights I didn't take any and I got to sleep and then woke up, I felt the same defocus of most of my senses, partic - sight, for one thing, and hard to bring it in and just general - awareness of some kind of disorientation.

10 23 37 32 LMP 6:30.

CDR You mean I have to keep eating?

CMP (Chuckle)

LMP Pre-sleep checklist. No film mags required for the next day.

CDR Huh? We got some.

CMP Yes, we've got to get that - that Nikon's got a whole ... take ...

10 23 38 00 CDR Well, take all those nice little shots you like to have with me shaving or having ...

CMP We could do that one of your - your changing ...

CDR (Laughter) Yes, changing my ... That's right. Changing my feeling of well-being, too (laughter).

LMP How about a bath, a change of clothes and everything?

LMP How about a bath and a change of clothes?

CMP Yes, I could ...

LMP I've got to turn right around tomorrow and put those sensors on again.

CDR Yes, I'm not going to bother taking mine off, I don't think.

CMP Well, I put them on, I guess, for entry.

LMP Yes, even I might be interested in your heart rate during entry (laughter).

CMP Yes. Ohhh.

10 23 39 20 LMP Old EMS has been looking pretty good, huh?

CDR Except when ...

LMP No. That - -

CMP ... anything with them.

CDR ...

LMP Very - -

CDR ... has gotten better.

CMP Yes.

LMP Erratic though, isn't it?

CDR No.

CMP ... to within 0.2 of a foot per second.

10 23 40 32 LMP I think you got the window dirty when you were out there.

CDR Someone's going to have to go wash it.

LMP Ohhh.

LMP Can't get much fuller.

10 23 42 03 CMP The UV's on now, huh?

CDR Oh, I don't know.

LMP Yes, but the cover's closed on the IR.

CMP Oh, the cover's closed again.

CDR I'll put the optics ... for you.

CMP ...

CDR See anything up there worthwhile?  
LMP You could on the Moon at night, couldn't you?  
CDR Oh, yes.  
SC ...  
LMP Tomorrow's the first real nothing day we've got,  
you know that?  
CDR ...  
CMP (Laughter) You're right.  
CDR I'll bet ... fall off during ... and I'm going  
to -  
CMP That's going to be a regular PTC attitude.  
10 23 44 09 LMP It's UV stellar attitude.  
10 23 44 14 CMP ...

TIME SKIP

[REDACTED] CONFIDENTIAL [REDACTED]

[REDACTED]

10 23 48 03 CMP I'm going to take that medicine.

CDR Did you notice how those lines moved around at 1/6 g? ... the Rover lines.

LMP ...

CDR Was it ... lines? This is more random than that was - -

CMP Yes.

CDR -- with those Rover lines and step lines. I ... them to ... one time... tell the difference. Oooh - all the way down at the end of the Rover in some of the Rover lines.

LMP Thank you, Ron.

CDR This is just random in zero g. Look what you just did.

LMP Well, a vi - a vi - -

CDR I hit my hand again.

10 23 49 30 LMP That's one of the - that's what your gravimeter was with the vibrating - strain - gravimeter - frequency of vibration being a measure of the gravitational field.

CC They're looking forward to seeing you tomorrow on the press conference and back on Earth shortly thereafter. I got one from Nassau Bay, too, if the commander's listening.

10 23 52 41 CMP You want to listen?

CDR He's listening.

CC Okay, Gene. Your mother and family have arrived. They - in fact, they just walked in from a party with Barbara. They all wish you to hurry home and send their love. Over.

CDR Very good, Gordy. And I return mine.

[REDACTED]

CMP You lost him.

10 23 56 14 LMP Check the EMERGENCY CABIN PRESS to BOTH there,  
Gene, please.

TIME SKIP

[REDACTED]

[REDACTED]

11 00 14 10 (Music)

11 00 16 53 CDR Yes, we ought to get that ...

11 00 17 15 CDR Thought you could get that over here.

11 00 18 16 CC America, Houston. I'll turn you over to the crew astrologer here. Pleasant dreams.

11 00 18 23 LMP Thank you, Gordy. And we enjoyed the day with you. See you tomorrow.

11 00 18 43 LMP Well, so much for that handover.

11 00 18 56 CMP ... over and unplug it.

LMP (Chuckle)

11 00 19 07 LMP Haven't you learned better than to unplug with an interval between?

11 00 20 07 LMP Our old panel 2 MASTER ALARM glitch is gone.

CMP ...

CDR Do you ...

LMP No.

CDR No?

LMP No, I haven't seen any. Have you? Do you have any?

CMP ... 4 hours. ...

CDR ... anything else I can have. Do you have any?

LMP Well, there also seemed to be a little bit of correlation when we were pumping up - pumping up the cabin or had a high pressure in the cabin.

CMP ...

11 00 21 01 LMP Yes. I got it on the Flight Plan before we go to sleep.

TIME SKIP

[REDACTED]

11 00 35 30 LMP Excuse me, Gene.

11 00 35 55 CDR ... fine ... Muscles ... go down and never have to go up ...

LMP Muscles probably are extending you.

11 00 36 21 LMP Houston, we're going to turn the cabin fan off for a while. It's off. Sorry, it's already off. It's off.

CC Okay; we copy. Cabin fan is already off.

LMP That's right. They're - I - I think they're ... things around ...

CDR Wish you'd turn it on.

LMP Oh, I thought you said off.

CDR No, I want you to turn it on.

LMP Oh, I'm sorry. Turns out the request was to turn it on, so we will.

CC Okay, understand you're going to turn the cabin fan on. ... - -

11 00 36 54 LMP MARK it. MARK it.

11 00 38 30 CC America, Houston. We'd like to talk to Captain America, please.

LMP Give him about 5 or 10 minutes and he'll be with you. They - -

CC Okay; have him call us when he gets ready.

LMP Okay. They - For some reason they want to talk to you, Ron.

CMP Who wants to talk to me?

LMP I don't know. Parker does.

CMP ...?

LMP They.

Tape 17-03449  
Page 8

11 00 39 43 CMP Houston. This is the command module pilot. Go ahead.

SC ...

11 00 39 54 CMP Oh, we went out of contact?

TIME SKIP

11 00 53 07 CMP Well, I wonder if I can get by without any Afrin tonight. I think I'll try it and see. ... better ... I hate to use that too much because it gets so it won't do any good. And I'd kind of like to make sure I have some for entry.

CMP (Cough) I wonder what we have for decongestant.

CDR ...

CMP ...

CDR Well, let's see, we got to chlorinate and we got to pump up the cabin.

CMP And clean the screen.

CDR ... screen and I'll take the chlorinate. How's that?

CMP Okay.

CMP ... got it?

11 00 55 40 LMP Man, I'll take those Lomotils before I - before ... - I said, if I try to get it, I'll take a Lomotil, you know?

CMP Trouble is, you don't know it.

CMP You don't? No, that's the ... But I defecated. I didn't have the slightest idea until I defecated.

CMP Is there ... in the water?

CMP The thing just floats around, though.

LMP Been here all day.

CMP Oh, yes, yes. Yes, I got ...

CDR Get up at 8 o'clock guys.

CMP 8 o'clock, huh? Well, set my watch.

CMP Any of these ...?

[REDACTED]

CDR Anywhere ... these jets. We're always going to use ..., okay? Ignore these ...

CMP In quad D, huh?

CDR Even the ... See all these ... are ... changed them all. See, like here? B-1, B-2, A-3 ... jets here ... stop it. ... and all that ... you know? ... change.

CMP Yes. Well, if that changes, this has got to change.

CDR Yes.

CMP ... and BD are - AC - -

CDR ... other way.

CMP Well, yes. That's right; B-1 and B-2; B-1.

11 00 58 45 CDR Can't really stow the big box ... until we go to sleep tomorrow after we wake up the next day.

CMP The ... back down here?

11 00 59 03 LMP ... really just a tiedown job is all.

TIME SKIP

[REDACTED]

11 01 29 25 CMP - - ... unhooked (chuckle).

CDR Huh?

LMP They were stuck right there. Well, whose are these? These got a dosimeter in them.

CMP Those are mine. I need to get the dosimeter out (laughter).

LMP Well, where - are these mine?

CMP Yes.

LMP These are mine?

CMP Yes.

LMP Okay.

CMP I think so. ..., isn't it?

LMP I didn't tie them up, Ron. You must have tied them up.

CMP I tied them up.

LMP Okay. Well, hey - -

CDR ...

LMP - - hey - hey.

CMP (Laughter)

LMP No more feces in this trailer.

CMP (Laughter) No more feces.

LMP Ron - Ron, ... to defecate. It's my turn next so I got to hold my breath longest.

CMP You do? (Laughter)

11 01 30 18 LMP Well, I'm not going to - I'm not going to - I'm not going to put these in there tonight. I can't get - -

CMP Oh, heck, no. ...

CMP ...

CDR Can you get at that OPS? They want to get that ... That'll make them happy.

CMP Gosh, how did that thing get so dirty?

LMP ... with us probably.

CDR Can you get at it okay, Jack?

CDR Anyone going to want the med kit?

CMP Jack, you want a pill? You want Lomotils or --

CDR ... set it back here. You may want ... If you can't find it here, ... floating around the cockpit. ...

LMP ... to unpack everything.

CDR No way to - no way to - That depends on how ... it gets.

CMP That's what I thought, Gene. They don't care about pumping the cabin up. But they don't like having that ... in here either.

CDR Yes.

CDR Coming up.

LMP How much is the pressure now?

CDR May have to do it again tomorrow.

11 01 33 32 CDR ... is about 5.4.

CMP Yuk. The decompression got chlorine all over back here.

LMP What?

CMP Chlorine.

LMP ... about chlorine?

CMP Shoot, this thing is all wet.

CDR It stays wet all the time. I haven't seen it dry since I've been here.

CMP Oh, yes?

CDR 5.6.

LMP Where in the heck are we?

CDR That's good, Jack.

CMP ...

11 01 34 34 CDR We're looking at 5.7 in the cabin.

CC So are we.

CDR ...

LMP ... Don't put it back in. ... ask Bob if we have to do that again tomorrow.

CDR Bob, you going to want to do that again tomorrow?

CC Yes, Gene. ... do it again prior to emptying the OPS.

CDR Okay.

LMP ... from ... wrapping around here.

CDR Okay.

CMP A good pack job. A good pack job. That ... thing. Pardon the French, but -

CMP I can't turn the darn thing.

LMP There you got it started. That'll do it. Try again. If you get the threads wrong, you can't -

CMP Well, the threads were right.

LMP Sometimes you can screw it on real easy.

Tape 17-03449  
Page 14

11 01 36 55 CMP

[REDACTED] CONFIDENTIAL  
I think the problem was that it didn't break the -  
You know, the needle doesn't penetrate that - I  
don't know where in the heck we are.

# # #

[REDACTED] CONFIDENTIAL

**(This page Unclassified)**

Tape 17-03445

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**

**Time Segments (AET)**

**From**

**To**

10 17 37 18

10 17 39 09

11 01 55 50

11 01 55 50

Voice good, time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

Tape 17-03445  
Page 1

10 17 37 18 CDR Jack, you got ... moving around out there.  
LMP I grabbed ... as far as I could over here.  
CDR You ... your foot was in here. You back in there.  
CDR Yes, you did get tangled up with the camera cable to start with, I guess. I don't know what you did with all those straps for these cables, but I'd like to put a piece of tape on them.  
10 17 38 23 CDR We're missing the time lines ... our Flight Plan.  
10 17 38 30 CDR You want to get the O<sub>2</sub> heaters off?  
10 17 38 38 CDR Hello, Houston; this is America. Looks like the repress package is up - is back up; my surge tank is back up. Would you like to turn the cell off and turn the O<sub>2</sub> heaters off?  
CC Geno, EECOM says affirmative to all that.  
CDR Okay, Gordo, how are you doing?  
CC ... Ron's stroll around the service module. ... had a ball.  
10 17 39 09 CDR Yes, he did.

TIME SKIP

~~CONFIDENTIAL~~

Tape 17-03445  
Page 2

~~CONFIDENTIAL~~

11 01 55 50 CMP

... the ... that it didn't break the - you know,  
the needle doesn't penetrate that -

# # #

~~CONFIDENTIAL~~

**(This page Unclassified)**

Tape 17-03443

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**

**DUMPED OVER GDS DURING TRANSEARTH COAST**

**Time Segments (AET)**

**From**

10 16 50 56

**To**

10 17 52 21

Voice poor; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

10 16 50 56 LMP ... 4 days, we ... - I'll put it on for reentry anyway, I think.

CDR Hey, what are you getting up? The bag? There's a - it's a - could we stow it? There's nothing to hook on. Forgot about that.

LMP Well, yes, but - huh?

CDR Through there? Like that? It seemed like it would go this way. We'll hook it like this.

CDR Okay, but we got to hook it here somewhere, temporarily. Give him enough room to get his thing in. Well, here's where it goes. Right here. Right on my ... couch. Comes through from the - from the hatch side, right?

CDR Huh? Say again? I want - -

SC ...

CDR Before we hook this end, let's - let's get this - oh, boy. Get this out of the way. For the front. Got a latch cover for that handy?

CDR Just let it sit there.

CDR Bet you don't have a hatch handle. There. Hatch handle. Okay. Jack, you going to stow? ... getting your legs up.

CDR Wait a minute. Okay. Okay. Get this part of the bag up. How can I get to it? Well, on this - on the front of the - on this - Here you go.

10 16 54 58 CDR There's a lot of room up here. Boy, I'm glad we got that 9 inches, I'll tell you.

CDR Oh, you - Is there a center thing to hook? Wait a minute - let me - let me hook it. Yes, it is, Jack. Well, yes, I guess. Wait a minute.

CDR Is it - is it the same kind of hook, Ron? With those short little rings? Oh, shoot! Yes, I see it. I can't - I can't do that. You'll have to pick it up from the back end to do that. I'll hold it too,

[REDACTED]

Jack, if you want to push it. Well, shoot.  
You're - Yes, you're almost there. You almost did.  
Is that a leg or an arm?

SC ...

10 16 56 06 CDR Yes. You got to - you got to push it through, and  
then there's a ring that snaps on the hook. Yes,  
I can't get my arm in there because - I could get  
it if you loosen the back side of the bag. See it?  
There it is. It goes through from your end - No,  
from your end - goes through both of those square  
slots. Yes. No, from your end. Well, no, it's  
got to go through from your end into every hook.  
If you can go through from your end, just - -

SC ...

CDR The hook broken?

SC ...

CDR Well, just stick it through it. I'll - I'll get it  
down here. Just stick it through, and I'll get  
it down here. I - I'll put the back - -

SC ...

10 16 57 57 CDR That's all right. I'll just put the ring on it,  
even though it's outside. It'll stay, I think.  
Yes, you got to come through there from your side,  
see. And that's what I say, you've got to push  
through there.

SC Okay.

CDR Okay. How's that? Let me see if I can get my ...  
going. Yes, I've got a ... Okay, the hook's fixed.

CDR Here's a PRD that's going to get lost back there.  
Yours?

10 17 00 25 CDR No. Wait. Let's leave ... up like this.

CDR I think you got it now, Jack. Here it is. I've  
got it. That'll make use of the bag.

[REDACTED]

CDR Hey, you're way - you're back here. You're all the way back. I think - Yes, I don't see how you can - I don't see how you can get any more.

CDR Yes, I guess - you're - Yes, but somebody's got to go on comm, so --

SC ...

CDR Put this over by Jack. This thing. Will you? Ron, are you going on comm?

CDR Ron? Did you go on comm? Oh, boy! ...

CDR Do I hear you on?

10 17 02 50 CMP Yes, I'm on.

CDR You can get off then.

CMP Are we ... them down?

CMP (Laughter) Gee, it's ... (laughter).

SC ...

CMP Yes (laughter).

SC ...

CMP (Laughter) Yes, they sure have. (Cough) Man, I don't know. What did he say?

SC ...

CMP (Laughter) He was sure worried about my scissors down there (laughter).

CDR ... the ...

CMP Yes - worried about the scissors and where they are. Yes.

10 17 07 25 CMP It's open right now, but we're going to close it here shortly. Do you think we need it closed now?

CC            ...

CMP          Oh, I see, okay. Yes, we'll - we'll close it after a bit here. (Cough)

10 17 07 50   CMP          Well, we can CLOSE the WASTE STOWAGE VENT any time now to restore fuel.

CMP          You can get a little bit more air down there, if you want - you can get a little bit more air, if you want to undo those things there.

SC            (Laughter) Oh, ...

CMP          Well, I gave you something to bring back.

CMP          (Laughter) Yes, that heat.

SC            ...

CMP          Well, yes, in that - Yes.

CMP          Isn't it, though?

CMP          (Laughter) Yes, when I first stuck my head out there, the - -

SC            ...

CMP          Yes, I know. We're in ... Wait a minute.

CMP          Okay. Aaah. Whoosh.

CC            ...

10 17 13 35   CMP          That ... Wait a minute.

CMP          Houston took who? 61 to 17?

CC            ...

CMP          Okay, 20 to 3, New York over Dallas, huh? 20 to 3, right now. New York over Dallas.

CC            ...

CMP Okay. Yes.

SC ... got it. This the ..., huh?

CMP Oh, okay. That's all right.

CMP They're coming along. We've got two guys who have their suits off now.

CMP (Laughter) That's right. Hey, hope North American doesn't think I was badmouthing their spacecraft down here because, you know, there was a little bit of blistered paint on it. That doesn't mean anything. It's still a very good spacecraft.

CMP (Laughter) Okay.

CMP Okay, Bob.

10 17 18 17 CDR Okay, Houston. The CDR back up.

CMP Yes, we have a site handover here in about 2 - 2 or 3 minutes ... lose comm.

CMP Do we have to take these off in this - -

CDR ...

CMP Do we have to take - -

CDR You don't have to, just the small one.

CMP How's it look? Well, we better put it on ...

CMP ... go the ...

CDR Well, hand me that other LEVA bag, and I'll put ...

CMP ... these LEVAs? I didn't even notice the scratch.

CDR ... still in the ...

CMP (Laughter)

CDR Okay. Let's ... that LEVA to you, or anything else like that?

CMP No.

CDR ... or anything like that?

CMP Yes, I did, matter of fact. I took both of them.

CDR Did you?

CMP Yes. Yes, it's where somebody scratched them with the - -

CDR Yes, you . . . - -

CMP Put a scratch right down the middle of it when I was trying out the visors.

CDR Here, I'll get the . . . connected.

CDR Oh.

10 17 20 15 CDR There's a . . . in the thing. Nothing worth . . . about that.

SC (Cough)

CDR Get your helmet, Jack. Let's put it in here.

LMP Just a second. I'll get rid of it.

CDR Oh, this is Ron's.

LMP . . . flight accessory bag. Shoot! I didn't get to stick my head out that end.

SC . . .

CDR Got a purge valve . . . to happen.

CMP Uh-huh.

CDR WASTE STOWAGE VENT still OPEN?

10 17 25 17 CDR Houston, America. The WASTE STOWAGE VENT valve is CLOSED.

CDR . . . I think . . . the checklist and see what we missed out on.

CMP            ...

CDR            He ain't on ...

LMP            Why don't you ... give ...

LMP            Yes.

CDR            Give me that ...

SC             ...

CDR            That's worse than that ... checklist.

LMP            What ...?

CDR            Now then. As soon as you pick up the checklist,  
I think you'll find out we got quite a bit of it.  
And I won't take these off because I don't know  
where they go. I'll just take -

CDR            ...

CMP            ...? My ...

CDR            ...

LMP            ... No.

CDR            Jack, are you - you available?

LMP            Yes, I just shipped some stuff to you. What about  
these, ...? Okay. Well, I - I'll read them off  
as soon as you get out of your suit.

10 17 33 23 CDR            Couple things. ... we got. ... we got.

CDR            Better ... those switches ... set in that space-  
craft. That's the ...

LMP            Yes.

CDR            All right.

~~CONFIDENTIAL~~

[REDACTED]

CDR You guys, I'll bet, are hungry, aren't you? Know why? Because we got up at 7 and ate breakfast, and it's now 5, and we haven't eaten yet.

CDR Is your ... normal?

LMP I just think it may be somewhere. I can't - ... there.

CDR Jack, you catch ...?

LMP No, ...

CDR Okay. Well, watch that ...

LMP ...

CDR Probably couldn't hear. Your foot was in here.

LMP ... back in there.

CDR Yes, you did get tangled up in your cameras.

CMP ... Is that what I did?

CDR I don't know what to do with all those cameras and cables. And ... (laughter).

CDR ... in the Flight Plan.

CDR Ever get the O<sub>2</sub> HEATERS OFF?

10 17 38 37 CDR Hello, Houston; this is America. Looks like the REPRESS PACKAGE is UP. My SURGE TANK is back UP. Would you like us to turn the cell off and turn the O<sub>2</sub> heaters off?

LMP Okay, Gordo. How you doing?

LMP Yes, he did.

CDR Is eating a contingency in our EVA - post? (Laughter)

CDR Ron? ... this.

[REDACTED]

CMP Okay.

CDR Let you do (laughter) it again ... water will kill you (laughter).

CMP All right, that's ... That's ...

CDR Ron? One small thing ...

CDR Yes, let's get this back operational here.

SC ...

CDR Huh?

SC ...

CDR I just wrote, "EVA day," to go with ...

CMP ...

CDR Don't know what else they can do with it. No way to transfer it from the LM, that's for darn sure. And I'm not going to drink it so I can ...

10 17 44 47 CDR I took my ... off, as a matter of fact. I hope not.

CDR Sorry, I put my ... on ...

CDR All right?

CMP Yes.

CDR Okay.

CDR Okay.

LMP What?

CDR Are we ... in the Flight Plan?

LMP ...

CDR ... time for it. Let me get this suit out of the way here.

LMP        ... Yes, ... --

CDR        No, put your suit in ... - What did you say?

LMP        ...

CDR        Pecan! Hiding them out again, huh?

CDR        Huh?

CMP        ...

10 17 49 42 CDR        That's where you've got to put the rock box, too.  
... put the rock bag up there. Still get my ...  
rocks.

CDR        ... getting ...

CDR        I'll tell you one thing. For these constant wear  
gar - or these coveralls, you don't have to press  
them very often.

CMP        (Laughter)

CDR        They just wrinkle now ... (laughter).

CMP        Sure looks funny.

CDR        Yes.

CC         ...

10 17 52 21 CDR        Go ahead.

# # #

~~CONFIDENTIAL~~  
(This page Unclassified)

Tape 17-03458

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING \_\_\_\_\_**  
**Time Segments (AET)**

**From**

10 17 37 19

**To**

10 17 39 09

11 01 36 56

11 01 36 56

Time and voice good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

10 17 37 19 CDR Jack, you got your --  
LMP ... moving around out there.  
CDR I grabbed the ... as far as I could over here. ...  
in the mirror. Your foot was in here. Get back  
in there. Yes, you did get tangled up with the  
camera cable to start with, I guess. I don't know  
what you did with all those straps for these cables.  
Why don't you just put a piece of tape on it or  
something?  
CDR We're missing time lines on the Flight Plan.  
10 17 38 31 CDR Did you ever get the O<sub>2</sub> HEATERS OFF?  
CDR Hello, Houston; this is America. It looks like the  
- REPRESS PACKAGE is up. My SURGE TANK is back up.  
Would you like me to turn the FILL OFF and turn the  
O<sub>2</sub> HEATERS OFF?  
CC ...  
CDR Okay, Gordo. How you doing?  
CC ...  
10 17 39 09 CDR Yes, he did.

TIME SKIP

Tape 17-03458

Page 2

11 01 36 56 CMP

[REDACTED]  
I think the problem was that it didn't break the -  
you know, the needle doesn't penetrate that --

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03460

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER MAD DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>11 08 30 30</u>	<u>11 08 32 17</u>
<u>11 08 36 57</u>	<u>11 08 37 18</u>
<u>11 08 51 10</u>	<u>11 08 51 46</u>
<u>11 08 56 10</u>	<u>11 08 57 55</u>
<u>11 09 09 04</u>	<u>11 09 14 52</u>

Voice fair; time good.

---

---

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

---

---

11 08 30 30 CDR I'm glad I'm not in those suits.  
                  CMP ... jett bag ...  
                  CDR Well, we - set up a warmer configuration, they'll call you.  
                  CMP Put the spacecraft in a -  
                  CDR In a warmer mode. Hot dang, here's the water on the ... instead of the ice.  
                  LMP Light the pilot.  
                  CMP Light my fire, baby. (Laughter) (Singing)  
                  CMP Start the battery A, Jack, whenever you feel like it.  
                  LMP Starting now, huh?  
                  CMP Yes, sir.  
                  CC Okay. And, America, we'd also like to get BAT A to CHARGE.  
                  CMP (Laughter) Read my Flight Plan.  
                  LMP That's in work right now, Bob. Thanks for the call.  
                  CC ...  
11 08 31 46 LMP Well, we're trying to keep your spirits up today.  
11 08 32 17 CDR You hear what he said?  
                  CMP Oh, okay.

[REDACTED] TIME SKIP

Tape 17-03460  
Page 2

~~CONFIDENTIAL~~

11 08 36 57 CDR I think you guys are ...  
                  CMP Yes, sure. We check with each other.  
                  CDR Bring up the water on these ...  
                  CDR Boy, I bet these are pretty active. Let's get  
                  that darn ... valve.  
  
11 08 37 18 LMP That's 4 - 14 degrees.

TIME SKIP

~~CONFIDENTIAL~~

11 08 51 10 LMP One more.

LMP Houston, 17.

CC ...

LMP That's affirm. I've got some reports for you, if you're ready to copy.

CC Okay. ...

11 08 51 46 LMP Okay. CDR menu - I'll try negative reporting. He did not eat three apricot cereal cubes, pears. And at lunch he did not eat half a cereal bar. And at dinner he did not eat tomato soup, half a hamburger, and the date fruitcake. Add - On lunch he had also - positive now - lemonade, two pec - -

TIME SKIP

Tape 17-03460  
Page 4

[REDACTED]

11 08 56 10 LMP Boy, you drink a lot of water.

CDR Yes.

LMP That should do it, Bob. Thank you for your indulgence.

CC Roger, Jack. ...

CMP Wish I had another coffee about now.

CDR ... got something to do.

CMP ... out?

CDR Take them until about noon to figure out --

CMP Yes, while you're still --

CDR -- What's going on and what you said. And then they'll say they really don't fully understand it and they've got to talk to us. Hey, you guys cold?

CMP ...

CDR ... inverter, and that would be MANUAL --

LMP Houston, 17.

CDR -- ... valve, right? Tell them to repeat those ...

LMP We thought we'd warm up the cabin. And if I recall correctly, you approve of us putting INVERTER 3 onto MAIN A and going to MANUAL on the TEMP IN and taking the EVAP TEMP up to about 59 degrees.

CC That's affirmative.

LMP Oh my, how's that for a memory?

CDR ...

LMP How about weather map data when we do it though.

CMP Yes.

[REDACTED]

CDR Let me know - Let me find the valve, and then -  
where the heck is it? I haven't been down here.

LMP Down there in the water ...

CMP Okay.

CDR Over here?

11 08 57 55 LMP No, no, the - -

TIME SKIP

11 09 09 04 LMP ... 4 ...  
LMP Thank you.  
CMP ... pretty ... out ..., doesn't it?  
LMP If you're loose, I don't understand why they told you to eliminate cereal.  
CMP I don't either, you know.  
CDR Doesn't make any sense.  
LMP I never heard that before.  
CMP They are more concerned with the gas, than they were with the loose bowels, I think.  
LMP Faulty hardware equipment; hardware in the spacecraft.  
CDR I'll never forget that face --  
CMP They ate too much --  
CDR -- mouthing off when we were talking long time ago.  
CMP What's it supposed to do?  
LMP How's that shower in Skylab work?  
CMP I don't know.  
LMP ... trap shot into it and just -  
CDR ... spray water ...  
LMP It's a lot of holes or something around here.  
CDR It would be too hard to ... shower if you can get rid of the water ...

LMP Yes. I've had a lot of ... showers.

CMP (Laughter)

11 09 14 52 LMP Urine showers, milk showers, hot water showers.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03467

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER MAD DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>11 09 14 26</u>	<u>11 09 17 07</u>
<u>11 09 29 52</u>	<u>11 09 36 43</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Time and voice good.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

**CONFIDENTIAL**

11 09 14 26 CMP How does that shower in Skylab work?

LMP I don't know.

CMP ... strap yourself into it and it just - -

SC ... it just spray water - -

CMP Yes.

SC ...?

CMP I think so. A lot of holes around you. Shouldn't be too hard to have a zero-g shower if you can get rid of the water ...

LMP You know, I've had a lot of zero-g showers.

CMP (Laughter)

LMP Urine showers, milk showers, hot water showers.

CMP Whoops, excuse me ... What time is that big thing today?

LMP Five o'clock.

CDR ... stowage ... ALFMED.

CMP (Laughter)

LMP We go into the ALFMED prep?

MS (Laughter)

SC ...

MS (Laughter)

11 09 16 12 LMP Got to have a full stomach for ALFMED.

CMP Got to have a full stomach for ALFMED. ... stomach?  
(Laughter)

LMP Oh, shoot ...

CDR Yes.

~~CONFIDENTIAL~~

LMP      Laughter ... you get back ... You know, the real  
          reason ... because you want to be prepared for  
          ALFMED ...

MS      (Laughter)

          (Music)

CDR      That guy, what's his name there, Mauriot, is not  
          a bad music maker.

11 09 17 07 CMP      No, he's ...

TIME SKIP

~~CONFIDENTIAL~~

11 09 29 52 LMP Coming up ...

CC Okay, would you like to hear the contents of this telegram that went out of here today to the "U.S.S. Ticonderoga"?

LMP Yes, sir.

CC It's to the "U.S.S. Ticonderoga," passed to the NASA Team Leader. It says, "Stullken, we know exactly where the spacecraft is, and we know exactly where it's going to land. Now, if you can figure out approximately where you are, we will be in good shape."

SC (Laughter)

CC Pull yourself together, and move 50 feet from the target point. Let's end this program right." Signed, The Guys in the Trench, MCC, Houston.

SC (Laughter)

CDR Beautiful, Bob, beautiful.

LMP ... sounds like he might have a little bit of a cold.

CMP ...

CDR Oh ...

LMP That's the way I felt last night after I ate, full and then all of a sudden I had to get rid of it.  
(Music in background)

LMP Probably just a result of being completely clean. That's possible.

CMP ...., huh?

LMP Get a little bacteria going or something.

CMP Oh, bacteria. I don't think there was any bacteria.

LMP Well, but I mean, I think that's what does it. You know ...

~~CONFIDENTIAL~~

CDR            ...

CMP            No, I don't know about that. I cut myself with a dark slide the other day - that needle, I guess.

11 09 33 01 CMP            How about handing the ... camera.

SC            ... little one ... Nikon ...?

SC            I'm going to set up and get some close pictures.

SC            Should have taken pictures of the ...

CMP            Yes.

LMP            What are we dealing with here? All set?

CMP            I don't know. You have to adjust the ...

LMP            No, I mean ASA wide?

CMP            ASA 4000, yes.

LMP            Reset the -

CMP            ... may be too much light. I don't know.

LMP            Looks like we have our old shutter failure here.

CMP            We did?

LMP            Yes.

CMP            ... do that. ... one on.

LMP            ...

CMP            Isn't that the way we did it?

LMP            That did it.

CMP            That did it? When you're ready ... I want to start ... I can't drink that much water.

11 09 34 23 LMP            ... wide open, too.

CMP Is it wide open?  
LMP ...  
CMP ... Okay.  
LMP Hey, it's just a drop ... drop ...  
CMP ... can't get a drop (laughter).  
LMP Just barely squeeze it.  
CMP I did. It just squirts - sprays.  
LMP ...  
MS (Laughter)  
SC ...  
CMP (Laughter)  
LMP Move your foot.  
CMP Oh (laughter).  
LMP I'll take this stern commander-type picture.  
CMP Right.  
LMP Admiral America.  
CDR ...  
LMP No, it's flammable.  
11 09 36 43 CMP (Laughter)

# # #

(This page Unclassified)

Tape 17-03469

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
DUMPED OVER MAD DURING TRANSEARCH COAST  
Time Segments (AET)

<b>From</b>	<b>To</b>
11 10 26 01	11 11 20 05
11 11 39 19	11 11 46 37

Voice fair, time good.

## **SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year intervals; declassified after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~

Tape 17-03469

Page 1

11 10 26 01 IMP ... let me stow this thing ...  
CMP Yes, okay ...  
LMP Well, ALFMED is in A-8.  
CMP ... you have there now.  
LMP Okay.  
CMP Right here.  
LMP Ron, let's stow our dirty underwear in A-1, too.  
CMP Okay.  
LMP You want A-8?  
CMP Yes.  
LMP ALFMED.  
CMP Wait a minute.  
CDR ... have an ALFMED?  
LMP Okay. ALFMED ought to be in there - 35-millimeter cassettes. Four of them in the bag.  
SC ...  
LMP They up here?  
SC Yes, ...  
SC ... still got the ... camera.  
SC ... , Ron, ... get back up here.  
LMP That's ... The filters, they're all - they're in the same bag right?  
SC ... cassettes in here?  
LMP You want the CIN cassette in there?  
CDR Yes, stick it in the bag because of the ... be in the camera, see?

~~CONFIDENTIAL~~

[REDACTED]

LMP Okay.

11 10 27 32 CDR Unless we finish it up today.

LMP What we really ought to do is put that CIN cassette over here in - -

CDR ... camera ... camera goes?

LMP Yes, where the camera goes. Stick one of these ... around there ...

CDR Oh, boy.

CDR This film is all used, huh?

LMP Yes, it's all used.

LMP Okay. You ready?

CMP No, hold on a minute.

11 10 29 02 LMP Oh, okay. Well, doing that, there should be 75-millimeter mags, three of them in a bag.

CMP Okay ...

LMP I see you've got two others in there, which I don't carry -

SC ...

LMP Not for A-8.

CDR Ron, here you go.

LMP You think those are supposed to go in R-13, too?

CDR No.

LMP Let me check.

LMP Four, three, and three should be in R-13.

CMP Four, three, and three?

LMP That's right.

[REDACTED]  
CONFIDENTIAL

~~CONFIDENTIAL~~

Tape 17-03469  
Page 3

CMP ... in there, too.

11 10 29 50 IMP No, they're crossed out on here.

CMP ... put them?

IMP Well, we'll find out, I guess. Well, let's see. Maybe we can leave them in there and see what happens.

CMP Okay.

SC ...

IMP Okay, Bob. I'm up to date on the O<sub>2</sub> purges now.

CMP Let's see, we don't want to open A-2, do we?

CDR Huh?

CMP There's still some room in A-2 for that thing.

CDR No, let's not open it unless we have to.

CMP No, let's - no, let's ... pack it around in B-1.

CDR B-1 ...

IMP (Cough) The tape cassette kit is supposed to go in there, Ron.

CMP Right in here.

IMP Yes.

CMP Okay.

IMP There's the batteries and the EMU maintenance kit.

CMP There should be two of them, though ...

CMP Yes. All right, there's two EMU maintenance kits.

IMP Okay.

CMP Batteries?

[REDACTED]

11 10 31 17 LMP Well, the tape recorder stuff. No.

CMP Okay. We'll leave room under there for the tape recorders.

LMP Okay. The inflight exerciser.

CMP ... supposed to be in R ... exerciser ... the one down in the corner.

LMP Over here.

SC ...

LMP I think they stay there. H<sub>2</sub> gas separators.

CMP Are there two of those things around?

11 10 32 08 LMP No, not that I know of.

CDR We'll take that thing off ... mark them.

LMP We're going to have to get into - into A-8, again. We're going to keep playing tapes and using the separator.

SC Yes.

LMP Snag line should be in there.

CMP ...

LMP PGA interconnects?

CMP Yes, they're there.

LMP Tone booster. Let's put that in here.

LMP Okay. There are four items not in there yet. And the 70 millim - the extra mags. I don't know - Those are --

SC ...

LMP Well, they're not listed here, but - Oh, no, excuse me. That was just section 1. Section 2: CWGs, three - we have two, I guess.

[REDACTED]

CMP Two.

LMP LM temp stowage bag, purse - we don't have that any more.

CDR No, we've got that one ... one bag is down there.

LMP No, that's the temporary stowage bag. The purse is what they mean.

CDR ... down here.

LMP The purse isn't here.

CMP Yes, but what is that thing that ...?

CDR Did you ever get that stowage - -

11 10 33 41 LMP That's the tether bag.

CDR ...

LMP Well, I don't know. We can put that in there instead.

CDR Put that in there. Yes, let's - -

LMP Where did we put that? There it is. No, that's not it.

SC ...

LMP Okay. Here.

CDR 35-millimeter camera adapter.

LMP ... Okay. Lightweight headsets, section 2.

CDR I'm going to wear mine.

CMP ...

LMP You will, huh? Well, let me give you mine.

SC You don't want me to wear those.

CMP There's the 35-millimeter bracket up there in ... l.

[REDACTED]

SC Okay.

CMP Just under that - 16-millimeter bag.

IMP Okay. You all have a light headset.

CMP Okay.

SC ...

SC I don't think we ... that one.

IMP What's that? Oh, yes.

CDR Do you know which ...?

IMP The ALFMED blindfolds will go in there. We used those. Okay, section III: CWG electrical adapter, one in a bag.

CMP There you are.

11 10 35 57 IMP Okay, 70-millimeter mag, three in a bag, LM.

CMP Wait a minute. Okay, what were those other 70s you gave me?

IMP Well, they're - they're on there, too, in section I. So --

CMP Okay. Well, I need three items. That's two, and I need three 70-millimeter mags.

IMP LM ones?

CDR No, the ones you read before.

IMP Well, the ones I read before - I guess they're not LM. All right. Okay.

CMP So I need three of them in a bag, coming out of F-2.

11 10 36 39 CDR I'm looking for that bracket, Ron.

CMP That bracket - it's a little flat bracket - bracket.

SC ... That's it.

[REDACTED]

CDR What about your sextant adapter, your eyepiece?

CMP Oh, I'll ... something. I forgot where it goes.  
Have to look on the entry.

LMP Okay, Gene. We need a - -

CDR There you go, Ron.

LMP - - three 70-millimeter mags in a bag.

CMP They're up in F-2.

LMP F-2.

CMP There should be a three bagger up there.

LMP ...

CMP Which one?

CDR ...

LMP That's a three bagger we're looking for. A bag  
of three.

CMP Yes, ... it's got - I don't know, three or four  
pictures left. No, it's fully exposed. ...

LMP ... 105.

CMP Yes, but I only could go to 106. The rest of them  
I had to keep for calibration or something.

CDR ...

CMP No, it doesn't make any difference.

LMP There should be a bag there.

11 10 38 07 CMP There should be a bag - three bagger.

LMP I guess you don't care anymore, do you, Ron?

CMP No, I don't care anymore. ...

CDR You know which one of these was the rendezvous?

[REDACTED]

LMP No. You can look back in the Flight Plan and find out, but -

CDR Mark it if you find out.

CMP That's in section 3 of the Flight Plan.

CDR Section 3?

LMP Yes. What have we got now? What have we got out now?

CDR ...

11 10 39 07 IMP Okay, Ron, here's three.

CMP Okay. ...

LMP Well, Gene wants to mark one of them if it's the right one.

SC ...

LMP Should be configure camera.

CDR Beginning of the rendezvous?

CMP Before the rendezvous, yes.

CDR Configure camera - KK ...

LMP I don't know whether KK is in there or not.

CDR Yes, ...

LMP I didn't put them in so Ron can tell. I can't get them in any other way.

SC Did you ...?

SC There's KK.

SC Huh?

SC ... KK.

CDR Write something on there.

[REDACTED]

CONFIDENTIAL

LMP Okay, Ron - Stand by on those. You got the camera bracket, tool kit; 16-millimeter mag, two in a bag?

CMP I don't have those yet.

LMP Okay. But you have the LM - you have the 70-millimeter LM - two LM magazines.

CMP Yes. I've got a total of 5 remaining.

LMP Yes, that's right.

CMP And I will have a total of 3 - ...

11 10 41 00 LMP Okay, do those two 16-millimeters come in a four-magazine package? Yes, probably.

CDR ... I got four magazines ...

LMP Okay, here's - here's two.

CDR ...

LMP ... JJ.

SC ...

LMP No, I just want two in there.

SC ...

LMP Okay, here's one VHBW. If we ever need any ... today, that's where we put them.

LMP Okay.

LMP Okay. Your waste - You ready?

CDR No.

LMP Well, waste management backup bag. That's all in there. We haven't used that, have we?

SC No, it's still there.

LMP How about the urine filter assembly, three in a bag? I guess we've taken ... out.

[REDACTED]

CMP We don't need them anymore, do we?

LMP ... use them once.

CDR ...

LMP There's two, I think.

CDR R-11.

LMP R-11.

CMP ... here they are, right here.

LMP Got all three of them?

CMP ...

SC ... one ...

LMP The ... is ...

CDR ... I got a big one ...

11 10 43 37 LMP No, you want the little one. The big one stays there.

SC No, ...

LMP It doesn't make a lot of difference.

LMP Okay. But your waste management backup bag is in there.

LMP Okay, side of A-8. I guess that's it for A-8. We've got five items to add in there.

SC ...

LMP Okay. Tape cassettes, tape batteries, H<sub>2</sub> gas separators, tone booster, and the ALFMED blindfolds.

CMP ... got a lot of room.

LMP Got some room left, huh?

CMP I'm pretty sure we will have.

[REDACTED]

LMP Okay. Why don't - on the - ... why don't you write down that mag ...

SC ...

SC ... write down which mags ...

CMP ... awhile ago ...

CDR ... get it all, Ron?

CMP Yes.

CDR ...

CMP Yes.

CMP What have you got room enough for?

CDR This much room, except we've got a tone booster.

CMP The tone booster can fit right in here. ...

11 10 45 33 LMP Okay. I've got a note here if you've got some room in there.

LMP It looks like this one ...

LMP Okay.

SC ...

SC ...

LMP Hand them up here and I'll put them in the bag.

LMP Okay. On the side of A-8, you ought to have the vacuum brush..

SC ... right here ...

CDR What are you looking for? The vacuum brush that's down in the ... bag here?

LMP No, right over here, Gene.

CDR No, that's ...

[REDACTED]

[REDACTED]

IMP Gene?

SC ...

CDR Well, I know, but ...

CDR The vacuum brush and what else?

11 10 47 19 LMP Okay. The urine hose with adapter and two straps we'll have to leave out. Right?

CMP Yes, we'll have to leave it out.

LMP Okay. I've got it marked. EVA guards - left, right, and center with straps. We've got those in there. And unipod pole assembly's in there. So the hose is left. Okay. Pick your next spot.

CMP The only one we got left is A-7.

LMP Oh, no. We've got - what?

SC The intervalometer.

CMP Oh, yes, we do.

LMP I get my - I can get the intervalometer into U-1 if you want.

SC ...

LMP One does. Yes, 20-second or ... And I can get that - Anybody want to use the monocular again?

CMP No, I don't think so.

LMP And the - Hand me that stowage bag, and I'll get it out of there.

SC ... over here.

11 10 48 52 LMP It's under your couch.

SC ...

LMP Okay.

[REDACTED]

SC ...

LMP Yes.

LMP I will verify that. Where did it go? Where did the book go? The book.

LMP U-4, we add cassettes, batteries, intervalometer ... 250. That's done.

CMP Yes. I guess we may as well start working on - -

SC ...

LMP You want A-1?

CMP ... and see if we can get the rest of them.

LMP Okay. A-1 should be 16-millimeter mags, seven in two bags.

CMP Oh, that's where they all go, huh?

11 10 50 29 LMP And the 70-millimeter mags, four in two bags.

CMP I got one ... around here. Give me that one.

LMP Go ahead.

CC About 15 minutes or so ago, we noticed ... in the AUTO position.

11 10 51 23 LMP It is in the AUTO position.

CC - - in the AUTO position.

LMP And we see the "2" here also.

CC Okay, we're - we'd like to just leave everything like it is ...

LMP Okay.

CC We don't anticipate any problem here ... number 1.

CDR Jack, you need this now?

LMP Yes, I will. Why don't you just hand me a bag?

CDR Okay, Ron. Here are two 70s. ... here.

LMP You need to end up with four 70s in two bags.

CMP Four 70s in two bags.

LMP Seven 16s in two bags.

CMP Okay, I ... two ...

LMP No, you got those.

CMP ...?

CMP ... 70-millimeter camera bracket ...

LMP Yes. Sextant adapter, also.

CMP 70-millimeter -

LMP Did you get the 16s yet, Ron?

CMP No.

LMP Huh?

CMP No, I don't have the 16s yet.

LMP Have three.

CMP Okay. ... We're going to need that ..., okay?

LMP Well, one of those is not --

CMP Okay. ...?

LMP No.

CMP ...

LMP Why don't you hand it to me, and I'll put it in my bag for you.

CMP ...

LMP Well, I don't want ... emptied out, I think.

CMP            ...

LMP            I don't know.

CMP            ...

11 10 55 25 LMP            Okay, where do you stand on 16s? You got seven of them yet?

CMP            I've got two (laughter).

LMP            Can you find any more 16s, Geno?

CDR            Yes. Over there.

CMP            ... Wait a minute. Okay. We've got two more - in R - in R-13 right here.

LMP            Here's the intervalometer also, Ron. It belongs down there.

CDR            I have three more here for you. ..., Ron.

CMP            No, we use that internal one, Geno, for - I think he said ... here.

CDR            ...

LMP            How many do you have now, Ron?

CMP            Okay, I've got three - four - five.

LMP            Five? There's one on the camera and - -

CMP            Okay, ... six.

LMP            - - there should be one somewhere else.

CMP            That was that - It's probably that one we took to the LM.

CDR            What? What?

CMP            The one you guys took to the LM.

11 10 56 34 LMP            That's right. And that's over here in R-13 now, right?

[REDACTED]

CDR Right.

LMP Should we leave it there?

CDR Leave it there.

LMP Okay. Then I'll change this to a "6," and R-13 is going to have a change here. Well, they don't even want those there. I wonder where they're going to want them?

CDR ...

LMP That's for - that's right. I'm assuming there's some consideration for that in here.

CDR ...

LMP Well, it depends on how many things you change, I guess. Whether ... means something. Okay. Got six, you've got 70-millimeter mags, the interval timer, the tape recorder, I've got marked as later. Remote control cable with strap? That's probably still in there, isn't it?

11 10 57 39 CMP No, it's in ... 1.

LMP Okay. TV ringsight in there?

CMP ...

LMP Okay. I'll give it to you.

CMP ...

LMP Here you go.

CDR ...?

LMP I don't think we need a ringsight, do we?

CMP ...

CDR ...

LMP Hardly in Earth view.

[REDACTED]

CDR ...

LMP Got remote control cable there, Geno?

CDR ... somewhere ...

LMP You got the remote control cable?

CDR Yes, I think so.

LMP Okay. How about the sextant adapter?

CDR ...

LMP Okay.

CMP ...

CDR ...

LMP Yes.

CMP ... Oh, we can't get it in it. ...

CDR ...

CMP ...

CDR I'll get it. ...

CMP ... little thing that goes in here.

CDR ...?

CMP Goes ... - -

LMP You got your towels?

CMP Three bags of them, yes.

11 11 01 18 LMP Okay. The LM DSEA goes there. Flag kit and APK. That's this one down here on the - in the Volkswagen ...

CMP ... this is ...?

LMP Well, we don't have one.

~~CONFIDENTIAL~~

LMP And our APK goes in there.  
CMP Right in there?  
CDR Our APK --  
CMP What do - what do they have in R?  
CDR Isn't that in R-something or other?  
LMP Well, they have it in - they have it in A-1.  
CMP ...  
LMP Well, okay.  
CDR Here, Ron, you want to ...  
CMP All right. ...?  
LMP Pardon?  
CMP ...  
LMP You want to leave it in R-1. I'll mark it there.  
CMP Wouldn't it be just as well ...?  
LMP Well, I don't have any idea how much thought's gone into anything. That's the only reason I'm asking --  
CMP I don't think very much.  
11 11 02 41 CMP Most - most of the thought that goes into it is, hey, where is it going to fit, you know?  
LMP Yes, but then I'm sure the entry guys assume that this is the way it's stowed.  
CMP ...  
LMP What was that?  
CMP ...  
LMP Oh, okay. A change to the change.

~~CONFIDENTIAL~~

LMP Okay. I've got a bunch of items related to TV that - and the tape recorder that aren't in there. Or aren't permanent yet. And -

LMP That's it, Ron.

CMP That's all?

LMP For A-1, except for the TV stuff.

CMP We've really got a lot of room in here, too.

LMP How - how - how large, approximately?

CMP Oh, let's see. The only thing we've got left is another mag of film, and it's about the same size as one of the other side ... lot of room. ...

LMP Okay, on the top of that compartment, we'll eventually put the decom bag and - decom bag and the jett bag.

11 11 05 06 CMP Okay; that jett bag is what - ... usually for - for all the LM goodies. ...

LMP Okay.

CDR ... the OPS?

CMP A-7.

CDR Wet deck.

CMP ...

CDR How much ... battery ...

CMP Which one?

CDR Tape recorder ...

CMP ... recorder battery. ...

LMP Okay, that's - they're supposed to go in the --

CDR ... marked. We marked those as something that's not in A-8 yet.

~~CONFIDENTIAL~~

CMP            ...  
LMP        Okay. You want - -  
CMP        U-2.  
LMP        - - U-2.  
CDR        Binoculars.  
LMP        Okay.  
CDR        Binoculars in here?  
LMP        Only stowage bags will go in there.  
CDR        Only stowage bags? Where do we put the helmets?  
CMP        I don't understand that either.  
CDR        ...  
CMP        Yes, we'll ...  
CDR        ... not enough stowage ...  
CMP        ... - -  
LMP        Okay. Cabin fan filter in bag. Not yet.  
            Binoculars, med kit, auxiliary.  
CMP        It's there.  
11 11 06 50 LMP        Intervalometer, 8 seconds, in bag, huh?  
CMP        ... not going to be - -  
LMP        Oh, that other one, the timer - that was the thing  
            that was supposed to go over there.  
CMP        That's where the timer is.  
LMP        I'm sorry. I -  
CMP        The intervalometer goes ...?  
LMP        The 8-seconder, yes.

~~CONFIDENTIAL~~

CMP ...

LMP Yes.

LMP And - Okay. So you're waiting for the cabin fan filter in U-2. That's it for U-2.

CMP ... bag in here ...

LMP What? Okay.

CMP (Laughter)

LMP That should have been in a bag, by the way. Okay.

CMP Decom bag?

LMP Okay. Pick your compartment.

CDR It's in U-2.

CMP Loan me your ...

11 11 08 59 CMP U-2 is probably the one that ...

LMP Yes.

CMP Okay. ...?

CDR U-3. ... with the ...

CMP No, on the --

LMP U-3. COAS filter, COAS bulb, 16-millimeter camera bracket - we're using that.

SC ...

LMP LM docking target, yes. Docking target adapter.

SC ...

LMP You got all the COAS stuff. Okay. U-3 is square. Pick me another one.

SC ...

[REDACTED]

[REDACTED]

CMP            ...

LMP            Oh, here's what they - they expected us to leave the helmets in the LEVAs.

SC            ...

LMP            Yes.

CMP            ...

LMP            Yes, cut and paste.

CDR            I'm going to do that right now.

LMP            Well, unfortun - Okay. We're going to have to fix up mine. Think I've got Ron's gloves in there now. Stuffed in there.

CDR            ... another one ... bags ... bags ...

LMP            Yes, I think so. Yes, looks like it.

LMP            Where are you, Ron?

CMP            ...

LMP            Oh.

11 11 11 36    CMP            Here's another - another long --

CDR            Long one?

CMP            Yes.

CDR            ...

LMP            Return enhancement [?]. Where does that go?

CMP            ... along with the other one I had.

LMP            It's not on here.

CDR            Use the ... bag, Ron.

CMP            Yes, ...

~~CONFIDENTIAL~~

CDR        ...

LMP        How short? Here, I've got one up here.

CMP        ... got one.

CMP        Either that or we take the - -

LMP        Here you go, Ron.

CMP        - - ... stowed.

LMP        That's not what you wanted?

CMP        I'll tell you what we might do. Let me put this probe on here and tie these other bags down with - tie the probe to the side of these boxes along there, you know. Put the - the rock bags around the probe, the rock bag ties around the probe. ... Let's do that.

11 11 13 31 LMP        Well, there really isn't a - Wait a minute - Backup water, is that what this is?

CMP        Yes, backup water.

LMP        I don't know why they can't ever say names. Okay. Now, water bag assembly.

CMP        I'm pretty sure it's the PGA bag.

LMP        PGA bag. You're right. Will that fit in there? I don't think so.

CMP        ...?

LMP        I don't think so. U-2. Did you do U-2 yet? I don't think you did U-2. Is U-2 going to have a lot of room in it?

CMP        ...

CDR        You want to try to get this in U-2?

CMP        Don't think we can stow it ...

CDR        It won't, huh? ...

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP That means it's probably the LMP . . . - -  
CDR It will fit into U-1. Let's see.  
11 11 14 49 CDR We supposed to have some LCGs left in this  
spacecraft?  
CMP No, I don't think so. No.  
LMP They're listed here for entry.  
CMP Yes, because they - the reason they are is because  
sometimes the guys wear the LCGs in.  
CDR That's right. That's why those LCGs - -  
CMP Plus - -  
CDR - - . . . always . . . wear the LCGs.  
LMP Why don't we put this in there?  
CMP Yes.  
CDR LCGs . . . going to . . . Where the heck . . .?  
LMP You saving these plastic bags?  
CDR No. I was for a while, because I thought I may  
have to use them for jettison from the IM.  
SC (Cough)  
LMP Sounds like an AC glitch or something.  
CMP May have to shoot that thing. . . works.  
LMP Okay.  
CMP . . . thing . . . stowage . . . , huh? . . . stowage bag  
up there is any . . .  
LMP Okay, U-1, we added - what did I call that thing?  
Waste - water bag assembly.  
CMP . . .

~~CONFIDENTIAL~~

11 11 18 15 LMP Okay. U-1 is closed out.

CMP I think this goes down there in the LEB, doesn't it?

CDR Yes.

CMP Okay. ... short ...

LMP Okay. You want to know where those go, huh?

CDR ...

CMP Well, ... over there.

LMP What do you think those might be called? Other than LEVAs? What kind of helmet?

CMP EVA.

CDR ... two.

LMP EV gloves.

CDR ...

CMP Yes, put them on the ... platform.

LMP Yes. We saw something last night on that, didn't we? (Laughter) ... made ...

CDR ...

LMP Yes, I think that was supposed to go in A-7.

CDR ...?

LMP Yes.

CMP ... same ... with the ... switched from A-7 to A-8.

11 11 20 05 LMP Wait a minute here. Yes.

TIME SKIP  
[REDACTED]

~~CONFIDENTIAL~~

11 11 39 19 CDR How's the cabin now?

LMP 5.5.

SC ...

CC ...

LMP Go ahead.

CC We've identified ... - -

CDR Don't worry about these things coming down on reentry.

CC - - ...

CDR (Laughter)

CMP Okay, Bob. I've looked at some of those things that - but ... to make sure that I've covered everything and the fact that we checked it again, why don't we go over them again?

CMP Wait a minute. I'll get my flashlight and then we can start doing it again, systematically.

CDR How's the cabin, Jack?

11 11 41 19 LMP It's 5.5.

CDR It's scissors, my dear Watson, scissors.

CC ...

CDR Houston, America.

CC ...

11 11 41 57 CDR Bob, it looks like we're going to make it on this OPS depress. She's reading zero, and she's just barely bleeding out where - somewhere around 5.5. So I'm just going to let it bleed out now, and then we'll stow it.

CC ...

~~CONFIDENTIAL~~

SC (Music)

CDR Seventeen.

LMP ...

CDR Oooh! Caught my ... on one of those hooks down there. I got to take a leak.

CMP I'm getting in the goody locker.

LMP The docking probe cable is going in there now.

CMP In where?

LMP L-2.

CDR What do you want on - -

LMP And your camera PCM cables? They're still in there?

CMP Let's see, PCM cable ...

LMP L-3.

CMP Yes, the food locker.

LMP Is the contingency feeding system in there, now?

CMP Yes.

CDR L-3? It's L-4.

CMP No, it's not.

LMP There is no L-4.

CMP No, I mean ... - -

LMP No, the contingency feeding system - -

CDR Oh, the system. Yes. The system, yes - food - the food system in there, yes.

LMP Fecal bag transfer bag? Is there one of those in R - L-3?

CMP ... fecal bag transfer bag. ...

CDR Huh? ...  
CMP What the heck is that? ...?  
CDR ...  
LMP Okay. R-5. You got couch straps back in there? Probe storage straps, utility straps, cosmic ray - these straps. That sounds like it's about right. R-6.  
11 11 44 47 LMP See, the chlorine syringe is not in R-6 yet, I gather.  
CMP Now what are you doing?  
CDR ...  
CMP Yes, but there is still a lot of little ... things we got to pick up tomorrow, isn't it?  
LMP Yes.  
SC ...  
LMP Your G&N Sun filters in there, now?  
CMP Yes, they're in there.  
LMP Did you put the helmet stowage bags in the --  
CMP ... Yes, --  
LMP -- U-2 yet?  
CMP -- U-2. Okay.  
LMP Okay. Where are the PLV ducts?  
CMP Oh, they're in ... bags, I guess.  
CMP They ain't.  
11 11 46 37 LMP They ought to be somewhere temporarily. Stow -

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03470

**APOLLO<sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER MAD DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>11 10 38 30</u>	<u>11 10 41 35</u>
<u>11 13 38 14</u>	<u>11 14 50 28</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Voice fair; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

11 10 38 30 CDR Do you know which one of these was the rendezvous?

CMP No. You can look back at the Flight Plan and find out.

CDR Mark it when you find out.

CMP That's on section 3 of the Flight Plan.

LMP Section 3?

CMP Yes.

LMP What have we got there now?

SC ...

LMP Okay, Ron. Here's 3.

CMP Okay.

SC ...

LMP Well, Gene wants to work with them, so I won.

CDR ... should we configure the camera?

LMP Should we configure camera.

CDR Before rendezvous?

LMP Before the rendezvous, yes.

CDR Configure camera - KK. You're right on that?

CMP I don't know whether I have KKs in there or not.

CDR Yes.

CDR I didn't put them in so Ron could tell, but I can't get them in any other way.

LMP Can't get them in there?

CMP Here's KK.

[REDACTED]

~~CONFIDENTIAL~~

CDR Huh?  
CMP Here's KK.  
CMP Looks like something on you.  
LMP Okay, Ron. Standby on those. You got the camera bracket, tool kit?  
CMP Tool kit.  
LMP Sixteen millimeter mag, two in a bag?  
CMP I don't have those yet.  
11 10 40 42 LMP Okay; but you have the LM. You have the 70-millimeter LM - two LM magazines.  
CMP Yes. I've got a total of five LM magazines.  
LMP Yes, that's right. And you will have a total of three CSM. Okay; and those two 16 millimeters come in a four magazine package? Yes, probably.  
CMP No, I've got them. I've got four magazine packages.  
LMP Okay; here's - here's two.  
CMP Okay; let's use two of these. Here's JJ. Can you use one more? There's one roll left.  
LMP I just want two in there, Ron.  
CMP Two? Okay.  
11 10 41 35 LMP Okay; here's one ... If we ever need any ... made, that's where we put it.

TIME SKIP

~~CONFIDENTIAL~~

11 13 38 14 CDR Houston, America.

CC Go ahead.

CDR Do you suspect it was a - a power glitch, or do you think the control actually failed and you're just now verifying it?

CC Negative on either of those cases. We've just had lots of spurious changes in the past history on flights. John's sitting here saying you had a number of times on 10, and so - since we're not - We just think the power controller probably saw a temperature glitch or something, and we think it will just come right back. No problem.

CDR I - Come to think of it, I guess we did, now that he recalls it.

CC We'd like OMNI Charlie.

11 14 39 11 CMP Okay; you have OMNI Charlie.

CC And while you're there, we'd like the UV COVER to OPEN now.

11 14 39 22 CMP Okay; we'll open the UV COVER.

CMP Okay, Houston. I'm ready to proceed on this pitch maneuver.

CC Roger.

11 14 40 35 CMP And, Houston, the readback on the flow controller there. We'll check panel 5. ECS RADIATOR CONTROL circuit breaker AC 1; verify it's CLOSED. Then we'll put the ECS FLOW CONTROLLER to position number 1. And we'll turn the ECS FLOW CONTROLLER POWER, OFF, then center.

CC It's OFF, center, Ron, and then up to the POWER.

CMP Okay. I couldn't figure out my writing. Okay; that's right. The power is OFF, center, and then - back to POWER. Then wait 20 seconds, and put the ECS FLOW CONTROLLER in AUTO.

[REDACTED]

CMP Okay; you want to start that now?

CMP Houston, America. Do you want to start that now?

CC That's affirmative.

CMP Okay.

CC That's affirmative. Any time. And in case you're wondering - case you're wondering about that middle step, that's a reset to logic step by going off on the POWER and then back to POWER.

CMP Okay.

11 14 42 35 CMP Okay. ECS FLOW CONTROLLER is going to position 1. Okay; ECS POWER is OFF, and it's back to POWER. And we're waiting 20 seconds.

11 14 43 14 CMP Okay; FLOW CONTROLLER is going to AUTO now - and stays gray, it looks like.

CC That's what we expected. And needless to say, Ron, we'll be watching your ECS system very carefully for you, just in case it flips back. We don't expect any problem.

CMP Okay; mighty fine.

SC ...

CMP ... You might have the gimbal on. You just might. May have left it on. ...

CMP Okay; I have pitch for you at 146°.

11 14 46 51 CC And, America, Houston. I've got a midcourse 7 and a MIDPAC entry pad.

CMP Okay. Just wait 1, please.

CC Roger.

SC ...

CDR That doesn't sound like it.

[REDACTED]

SC        ...  
CDR      Okay.  
SC        ...  
CDR      What?  
SC        ...  
CMP      Yes, they're doing business. Finally got it.  
CMP      Yes. Give it the old ... Take me a couple ...  
CDR      Yes.  
SC        ...  
CDR      ... Did he dump them off?  
CMP      Well, yes. He dumped them off. ...  
  
11 14 49 34 CC     And, America; Houston. We'd like to bring up the  
                  high gain so we can get the dump going and get the  
                  data down. It's a YAW, plus 15; PITCH, 204.  
                    
CMP      Okay.  
CC        Say again. PITCH, plus 15; YAW, 204.  
  
11 14 49 51 CMP     Okay. PITCH, 15; YAW, 204.  
                    
CC        Roger.  
CDR      Do we have control?  
CMP      Yes.  
  
11 14 50 28 CDR     Okay.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape \_\_\_\_\_ 17-03451

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**

**Time Segments (AET)**

**From**

11 15 26 08

**To**

11 15 49 29

Time good; voice fair.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

11 15 26 08 CC America, Houston. We'd like ACCEPT. We've got a state vector that goes with those pads we've called up.

CDR Okay, Bob. You've got ACCEPT.

CC And you can get into the Flight Plan. We gave you about a 15-minute bonus on your eat period there. You can jump right into the eat period, if you want.

CDR Okay. Thank you, Houston.

SC Might as well ...

LMP I'll tell you what might be the problem with that ... getting your system saturated with salt all of a sudden it starts rejecting it.

CMP Saturated with what?

LMP Salt, potassium, and what have you. Starts rejecting it and --

CDR See the potassium content in our food was lower than 16. It might have taken longer to do it. Anybody seen the spoons? Oh, there they are.

LMP And when it rejected them into your intestines, then that soaks up water.

SC ...

CMP Those ... old meatballs were a little bit different.

SC ...

SC (Whistling)

CDR ... noticed you've both ... start staying ... to eat.

LMP We've been waiting.

CMP ... Right.

LMP Guess I've got food on every page of the Flight Plan.

SC ... Oh, well.

CDR They don't know whether you stand in the bottom of the spacecraft.

SC (Laughter)

CDR And I don't either. Get a picture of me and my meatballs.

SC Yes.

CDR Big old ...

CMP Boy, he's trying ... good light attitude.

SC ...

CDR One or the other has got to be upside down.

SC Okay.

CDR You know we might end up jettisoning those antennas yet, Ron.

CMP Why?

CDR Well, we had a tough time getting one out, didn't we? ... been icing up?

CMP Yes. ...

LMP ... got RCS ... all over the skies.

11 15 34 13 CMP ..., our att is 60.

SC Ohhhhhhhh. Oh. Oh - Got to ...

SC You ...

CMP Watch right behind you. That's ...

[REDACTED]

SC Where's that?

SC See that one coming?

SC Yes, I know. Can't look now.

CMP Okay?

LMP Okay.

CMP ... thing is hard to put on. ...

CDR ... you can keep going. Let me know when you're ready.

CMP Yes, wait a minute.

CDR Huh?

CMP Wait a minute. Okay.

CDR ... get it all in. ...

SC (Laughter)

CMP That's about the only thing left.

CDR What did they say about it?

CMP They don't know which way it's supposed to ...

LMP Couldn't you describe it to them or are they all wound differently?

CMP He just wanted ...

LMP Yes, but shouldn't each comm carrier be wound ...

CMP Oh, you could, but ...

CDR We don't know what other wires may be broken ... other ones broken.

CMP ... problem ...

[REDACTED]

[REDACTED]

CDR ... at least 4,000.  
CMP 500.  
CDR Huh?  
CMP 500.  
CDR Why 500?  
CMP ...  
CDR ...?  
11 15 38 54 SC ... our UV attitude to stellar.  
CDR Yes, we ought to be - Where's the eyepiece?  
Down there, isn't it?  
SC ... necessarily.  
CMP You know it's UV attitude.  
CDR They wanted to turn the command module right into  
the Sun. They've picked the right attitude.  
LMP Yes.  
CMP We will maneuver to - Oh shoot, I - ... about  
180 degrees in PITCH and about 180 degrees in ROLL.  
CDR You can resolve that one when you ask them. ...  
CDR How much pitch?  
CMP ...  
SC ... roll ... pitch the other way.  
SC ... yaw a little bit.  
CDR Return ...  
SC ...  
CDR Huh?

[REDACTED]

SC ...

11 15 40 54 LMP It doesn't look any different now. You know, it could be the way the spacecraft is.

CDR Might be?

CMP You know, you two guys could be ... the drivers up there. Matter of fact, it looks a lot like you. - subtle.

SC ... look that way.

CMP Got two drivers on the side and a little tunnel coming up the middle.

SC ... be the eighteenth.

11 15 42 17 LMP Ron, could I trouble you for a cup of that nonpotassium coffee.

CMP Nonpotassium coffee, coming up.

LMP Thank you.

SC ...

SC No. There you are ...

CDR Wake me up. I thought you said this morning there was no coffee left, Ron.

CMP ... had one, so I don't know. ... may seem like ...

LMP Thank you, sir.

SC ...

LMP Well, what questions do you think they'll ask us today? Let's see how good you guys are.

CDR Oh, think they'll ask us about the ... PS monitor yesterday. Why do we ... when the other guys do not.

[REDACTED]  
~~CONFIDENTIAL~~

CMP (Laughter)

LMP They're going to ask you about your medical problem, Ron.

CMP You know ... - -

CDR They're going to ask you now if you and Gene, - now because you're a scientist and you've gone to the - to the Moon, and a geologist have gone to the Moon ... exotic ... within reach in the universe. At the present time, are you - can you - -

CMP You're going to give your hot water up.

CDR Have you reached the epitome of your goals or something?

LMP Pinnacle - pinnacle - -

CDR (Laughter) yes, pinnacle of life.

LMP Yes.

11 15 44 01 CDR And they're going to ask me, "Now that you've been back to the Moon for the second time, have you - have you changed, or has it changed you?"

LMP No, they're going to ask - they're going to ask you what are you going to do now that you're - can't fly anymore.

CMP (Laughter)

SC ...

SC ... contact.

SC ... really?

CDR I got to wipe that water off. You're not getting the commander's feet wet.

CMP (Laughter)

CDR I've never ... sure

LMP It was - it had rained, just a shower. (Laughter)

CDR Oh, I think of that half ... with the ...

LMP 6.4 g's, gang.

CMP Coming up. 6.4. Whew!

CDR I'll tell you my impression of the - of the view of the fireball. I think you ... of your own. ... gave us the impression we ... - -

CC ...

11 15 45 43 LMP Okay; he'll get it. Is it by any chance printing upside down?

CC ...

CMP (Laughter) I'm upside down in the tunnel.

CC ... new trick?

LMP I don't see how his family is going to live with him.

CDR ...

CMP We're not going to be able to do that for very much longer, you know.

CC About 21 hours and 52 minutes.

CDR You're part upside down.

CMP (Laughter)

CDR There goes your chicken soup upside down.

LMP There goes your garbage again.

CDR You knocked four things off; all the time.

SC Hey, there ... got a white stag on it. (Laughter)

CDR Ron, there's a piece of ...

[REDACTED]

CMP Whoop! (Laughter)

CDR The - got to say that fireball ... my impression, because I won't see it. ... Is that your ... you're at the obvious place. You know, you're at the far end of a - of a hollow, tubular, - tubular yet converging, sheet of fire. And you're on the inside looking out. But to me it was - it was just brilliant - brilliant violet-purple and white, and they were just streaming from the space-craft. Just fires ... just like if you could see to the end of that apex, you could look 10 miles away. Maybe it is. Maybe you can. I don't know how long it is. But it - to me it was all purple - light purple and white. It was a spectacular view. Spectacular.

11 15 48 12 CMP You don't have any fears though because you can't see nothing.

CDR No, I'll - I'll - -

LMP ... by the window ... just go by ...

11 15 48 23 CDR You'll be in the middle, and you'll be looking through clear visibility, I think. That's as I recall it. Then you can see the darn - darn tube converging; Like being on the inside of a comet, probably from where we are.

CDR You got that?

11 15 49 29 SC ...

# # #

[REDACTED]

**(This page Unclassified)**

Tape 17-03450

**APOLLO17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**  
**Time Segments (AET)**

**From**

11 15 47 45

**To**

11 16 26 45

Time good; voice good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 773 and 774, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

11 15 47 45 LMP - - purple, white - purple, and white. It's a spectacular view. Spectacular!

CMP You won't be able to see it, though, because you can't ...

CDR No. All I'll see ... go by the window ... as it goes by ... You'll be in the middle, and you'll be looking through clear visibility, I think. That's as I recall it, right? And you can see the darn - darn tube converging. It's like being on the inside of a comet, probably. ...

SC We got that. ...

CDR Wait a minute ... all locked up.

LMP Probably about right, now, I think.

CDR Huh?

11 15 49 51 LMP Probably about right now.

CMP This butterscotch pudding has - has a big air bubble in it. It's about half full -

LMP Report them to the - to the Food and Drug Administration.

CMP Yes.

SC Don't ...

SC ...

LMP I hope you wrote that down.

SC ...

11 15 52 33 CMP That's what I've been trying to figure out every night, you know. Like every once in a while --

SC ...

LMP I - I think you'd find it, because my sense of knowing where my feet and legs ... disappears.

CMP Yes.

LMP Have you ever - have you noticed that? All of a sudden, you're not sure whether - where they are (laughter).

CDR It might be something like ...

LMP I can - I can kind of relax a little bit.

CDR I think my legs ...

CMP Yes, they are.

CDR See, mine are - mine are ...

11 15 53 07 CMP ... it up like that ...

CDR I think ...

SC Thank you.

LMP I guess our 14th day was lift-off day, right?

SC ...

LMP So, we got a 14th day by - or into the 14th day by --

SC ...

CMP First day was a 15-hour day.

SC Huh?

CMP First day was a 15-hour day.

SC ...

11 15 55 18 LMP I think the Flight Plan was pretty well done, Ron. I congratulate you. I cared very little in doing it myself.

CMP ... Holloway is the one who really did all the work.

LMP Well, he should be congratulated also. I think it was an outstanding Flight Plan.

LMP Well, what ... about the television.

SC ...

SC It's a little close.

CMP What matters a little ...

SC ...

LMP Therefore, we ought to put it up and make a - ...

SC Yes.

SC Wonder what ...? (Laughter)

CMP You wasn't thinking anything about it (laughter).

LMP Crawling out of the instrument panel again.

SC Wow! ...

SC Now I'll get through with you.

SC ...

SC ... camera down and ...

SC (Cough)

11 15 58 04 LMP What are you doing? Drawing again?

CDR Yes, I ...

CMP You know, I really didn't see anything this morning.

LMP Huh? I thought you were lying, Ron.

CMP No, I didn't see anything this morning.

CDR I did. I got about - I counted about 18 of them. ..., but I didn't want to tell him. I didn't want to disillusion you.

CDR I don't know about my bowels, but my kidneys sure  
are filling up fast.

11 15 59 09 CMP That's a sign.

CDR Huh?

LMP That's the first sign.

CMP That's the first sign.

MS (Laughter)

(Music)

LMP She doesn't sound as good-looking as she is; al-  
though, I don't know - never look at women.

CDR Yes, she's not - she's not a beautiful woman;  
she's - a sexy little wench. Some broad.

LMP I guess she does pretty well, doesn't she? ...

CDR She's been in Caesar's Palace in Vegas.

SC ...

LMP Well, that takes care of that part of life for you.

CDR Yes. Right on schedule. Knocked off eating  
(laughter). Oh, I got to take a leak. I hate to  
get - everytime I do, I get my hands dirty and ...

11 16 01 46 CDR We can set that camera up and have the patch and  
the flag there. And we can still get in a patch  
and flag if we turn it on. And then, you know, we  
can - If two of us get in there, one of us can just  
go back to ... ... setting that was already  
established ...

LMP Yes, that'll work.

SC ...

11 16 02 11 CMP Got anything with your name on it?

CDR With me leaking in the box.

CMP ... upside down here.

MS (Laughter)

LMP Let me out! (Laughter)

CDR Our names are on the patch, Ron, I guess.

CMP Say hello to the ... right above the patch.

SC ... - (laughter).

CMP I just ... (laughter).

11 16 05 25 LMP ... That was the first time when I concentrated or - or thought about it, I haven't seen light flashes. Tell you, the first night or two, I'm not sure I did. I thought - -

CMP Yes, I looked ...

(Music)

SC You guys got another three-quarters of a tank.

LMP Gosh! Who said there's no stars out there?

11 16 08 22 LMP Just about pointed at Polaris, I think.

SC What?

LMP Well, the Big Dipper's out here.

SC ...

SC ...

LMP If you had - No, I'm sorry. We're 90 degrees, of course. Polaris is right over there about off Y. SIM bay may be pointed at Polaris.

CDR ... Castor and Pollux, right out opposite ...  
So, ...

[REDACTED]

LMP SIM bay is pointed at Polaris.

CDR ...

LMP There's the Dipper and the two pointing stars. They're right like this. Polaris is down there, somewhere.

SC ...

(Music)

11 16 10 23 LMP Where are your patches and flags, Ron?

CMP We ought to figure out a ... job.

SC ...

CMP Crawl around on the floor down here and see if I can find it.

LMP We could put them right there.

CMP They'd blow off (laughter).

LMP Captain America!

MS (Laughter)

LMP Is it a bird? Is it a plane? No.

CDR You know, you might do that joke when ... Make it real short. Maybe you ought to ... Maybe you've heard me tell it, I don't know. Get in that old plane and play around with a balloon and all sorts of ... got from the Moon. ... Run into the head and lift up the seat ... I'll look back and say, "Oh, my gosh, is that ... Doctor, quick, quick, com here! Come here!" You got to ... tells the doctor what's wrong and ... No, no ... you got to come here ... She came in there and ... Come over here quick and look. So she lifts up the lid and he looks. Where is it? He looks down in there again ... poking around ... Wow! Where'd you get that? (Laughter) So he puts the lid down, and he says, "Oh, my gosh, lady." She says, "What - what's wrong with me?" He says,

[REDACTED]

"No, nothing." "You're all right," he says.  
"Now don't tell anyone this because it's not confirmed,  
but I think you and I are the first two people in the world to be a part of it."

MS (Laughter)

CMP Oh, boy.

LMP No, you hadn't told me that one.

11 16 12 45 CDR Do a neat job. No, you want to keep the name on that - -

CMP Yes, I want to keep the name on the suit. I can tape over it, if you want me to.

CDR Well, we'll take it off.

CMP Why don't we just tape around it?

LMP You want this trimmed, don't you?

CMP Yes - I - Yes, you can trim that.

LMP I can cut it, but I won't have anything to mount it with.

CMP Yes.

11 16 13 06 LMP Put tape around it. Hold it while I tape around it.

SC ...

LMP Okay.

CMP I need the flag.

LMP Is that okay?

CDR No, I'm keeping the flag ...

LMP Sure you got all the stripes and everything?

CMP It doesn't look ...

[REDACTED]

CDR Here, get out of the way and we'll see if we can find a place around here. Wouldn't - couldn't we - if we all sort of get down in there, the three of us get together there, maybe we can put it in a place like this. ... Then, we'll know it will always be there.

11 16 14 04 LMP Well, we really need to get the camera out, I guess. Yes, let me - -

CDR Get the camera out; let's take a look at it.

CMP I'll get the camera out. I'll do a temporary tape job here.

CDR You could put the flag right over the top of it. We could do that, and then, they'll always sort of be there if ...

LMP Somebody will think we're advertising that new movie, a sequel to "Shaft," called "Trunnion" (laughter).

SC ...

CDR Temporary.

CDR Did you get your sensors fixed, Ron?

CMP ...

CDR They haven't said anything, have they?

SC ...

CDR There aren't any around here.

SC ...

SC ...

11 16 15 43 CDR Okay; those look great.

LMP We'll look at it.

CDR Yes, let's look at it.

[REDACTED]

LMP What Gene said over the VERB-NOUN list. Better yet, maybe - -

CDR ...

LMP - - we better put it with the ... alarm (laughter).

CDR Hey, listen. I - I didn't want to take any chances. I - I - I'm a little superstitious. I got that last one on purpose (laughter). I didn't want anything to change for TEI.

LMP A fine point.

CMP Yes, it would (laughter).

LMP That's a data point. ... (laughter).

11 16 16 30 CMP Houston, America. Okay, Bob. I've kind of fiddled around with the sensors, now. Are they working okay now?

SC ...

SC ...

CMP Okay. Good enough.

CDR It doesn't make any difference what - what's ... get the picture lined up.

CDR No, I'm ...

CMP Yes. Got it?

SC ...

CDR The light is up near the front.

CMP Ought to be bright ...

CDR We need the - Ron - the ...

CMP ...

CDR Oh, you gave it to me. Did you give it to me?

CMP Well, you might find ...  
CDR Here it is.  
LMP ...  
CDR A what?  
LMP Short circuited. Check your ..., Gene.  
CDR I don't think I ended up with it.  
SC ... here.  
11 16 19 30 CDR Oh? No.  
CMP What could be short circuited?  
SC All right.  
LMP Well, let's see; let me get our ...  
CMP Well, one says ... The other one just ...  
SC ...  
CDR Maybe we can just tape it.  
CMP Oh. Yes. Yes.  
CDR Why don't we just tape it right there?  
SC ...  
LMP Why don't we - Yes, that's ...  
CDR Well, this may be high ... be down at the same level the camera will be.  
11 16 21 01 LMP All right; let's try it.  
CDR ...  
LMP Okay. All we have to do is turn it on, I think. We don't want to do that, don't want to do that.  
SC ...

LMP Huh?

SC ...

CDR You mean average?

LMP You got to have it ...

CDR Oh, yes. You'd better talk to the ground. They don't know ... Stand by.

LMP Stand by? Then you don't go to ground with it. You want to go to ...

CDR Okay. You got to have their permission first.

LMP Well, let's check it. I don't want to ruin whatever the ground's doing.

CDR Yes.

11 16 22 20 LMP TV operations.

CDR Yes. You're right. Yes.

SC You haven't ... scientific ... scientific to get ...

SC ...

SC ...

LMP Why don't we - Say, Houston; 17.

CC Go ahead, 17.

LMP Yes, we'd like to run a check here on this TV set-up. Are we going to disturb you if we go to TV on the S-BAND AUX switch?

CC Stand by on that. Let me check with OSO.

LMP Boy, it sure would help. And, Bob, if it is an inconvenience, could you look ahead and find a time when we could have 10 or 15 minutes, if possible, to work this out?

[REDACTED]

~~CONFIDENTIAL~~

11 16 23 44 CC Roger.

SC ...

SC ...

CMP ... fruitcake.

LMP Where's that tape? ... What'd I do with it?

CMP With what?

LMP Well, I just had it a minute ago, then I ...

SC ...

LMP I can't figure out ...

LMP How does that look? That look all right?

CMP Looks like it's going to work pretty good.

LMP That about right?

CMP ...

LMP Huh?

CMP Yes, it looks good to me.

11 16 26 45 LMP ... any tape here ...

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03452

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**

**Time Segments (AET)**

**From**

11 19 07 02

**To**

11 19 16 54

11 19 35 00

11 19 59 41

Time good, voice fair.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

**CONFIDENTIAL**

11 19 07 02 CDR Your ... angles now, Jack, plus 30 and 190.

LMP They're there. Minus - -

CDR No, plus 30.

LMP Plus 30, minus - Right.

LMP And minus what?

CDR 190.

LMP 190?

LMP Probably ought to pick these things out of the spacecraft. ... These - these here. Think we ought to take them somewhere and ... - -

CDR Yes, let's put them on ...

LMP - - see what would happen. ...

LMP ...

CDR Tell you what, rather than keep them here, I'm going to have to take some of this stuff out of the Flight Plan, anyway. I'd better put them here. ...

CDR Got any more?

CMP ... Here it is.

CDR Huh?

CMP Three or four of them?

CDR Yes, they're multiples.

LMP (Singing) "brave dare not go - to follow that star, no matter how hopeless, no matter how far - to fight."

LMP Where's the time on this?

SC ...

LMP (Singing)

LMP (Cough) (Laughter) (Singing)

LMP Put your mouth over it; see if you light up  
(laughter).

CC ... , Houston. We'd like to throw a few switches on  
panel 230 and try to get the HF antennas retracted.  
Over.

LMP Okay. Go ahead.

CC First of all, RADAR, OFF.

SC (Singing)

11 19 15 15 LMP Okay, Gordy, the RADAR is OFF.

CC Okay, ... HF ANTENNA ... RETRACT. ... give us a  
mark, please. It should take about - oh, at least  
a minute.

LMP Okay - okay, going to RETRACT -

11 19 15 31 LMP MARK it. Oh, HF-2? Gordy, I started 1. I'm sorry.

CC ... all right. Keep it. It doesn't matter; just  
keep working on 1 there. Keep it in RETRACT.

LMP Okay, it's in RETRACT and stayed there.

LMP ... let the old master. Don't use 1 first until  
you get to me again.

LMP What did you say? Huh?

CDR That was me.

CMP These two on the bottom here ... got these up at  
the top, and on --

LMP Did you give me a battery a minute ago?

CMP ... one of the batteries ...

CDR Let me know when you're ready.

LMP Huh?

11 19 16 54 CMP Wait a minute. Okay. (Laughter)

TIME SKIP

[REDACTED]

11 19 35 00 CMP ... watching where that Sun is, you know what I mean?

CDR ...?

CMP Yes. You got a little ... in your ...

11 19 35 08 LMP Gordy, it's OPEN.

CC Thank you.

LMP Doesn't it bother you to wield such power, Gordy?

CC ... - -

CDR I'll give you one of mine if you want one.

CC -- ... accustomed to it.

CMP No, I've got one (laughter).

CDR I've got a lot of them. I'm not going to use them, though.

CMP I'm not either. I've got a lot of them, too, but I haven't got anything ...

CDR No, Ron, you lost your towel (laughter).

CMP ... rather scratchy. I don't see a thing, either. That's what bothers me.

CDR ...

CMP Well, guess I'll do it.

LMP OMNI Delta, when they need it, is their strong one.

CMP What?

LMP OMNI Delta when they need it ... strong one.

CMP Okay.

SC (Music)

CMP ...

LMP Huh?

CMP That way I won't have to take one in the morning.

11 19 36 31 LMP What?

CMP Defecate (laughter).

LMP What do you say we go into the Challenger?  
(Laughter)

CMP So here I am, trying to convince myself I ought to - I ought to not take one to keep everything as clean and smelling nice as I can, and you're sitting there telling me you're ...

CDR Well, you're probably right. Better to take one tonight than tomorrow. I may end up having to anyway.

CDR Clean off my screen here while I'm at it. So I can get maximum air circulation.

CMP Aaaah.

LMP Those ... will sure work.

CDR Keep you from defecating, ties up your stomach  
(laughter).

SC (Laughter)

CDR I think I'm going to ask for a private conference and see what else they can recommend for you  
(laughter).

11 19 38 06 CMP Right. (Laughter) Does wonders.

LMP Surprised they didn't comment on my having taking one. There it is! The Earth!

MS Where?

CDR Every - By golly, it is.

~~CONFIDENTIAL~~

[REDACTED]

CMP You know, this is getting to be a - -

CDR That's just a big crescent Earth, I'll tell you.

LMP Yes, sir.

LMP Gordy, for the first time in seemingly several days, we see the Earth.

SC (Laughter)

CDR Would you like to - -

LMP Afraid I don't know whether or not there's any weather down there.

CDR Well, where did it go? We still maneuvering? There ...

CC ... can't see ...

11 19 39 03 LMP No, sir. You're down to a fingernail, if you'll pardon the expression. It - Oh, let's see - it's about a - What do you think, Gene? About a one-eighth Earth - one-sixth to one-eighth Earth?

CMP ...

CDR Hey, look at - -

CMP No, ...

LMP Got a picture of Ron (laughter). You can see it later (laughter).

CDR We're orbiting to go around ...

CDR You're looking at the Pacific, ... and - because it's 5 o'clock in Los Angeles. And that's what you're looking at - the terminator in Los Angeles.

LMP ... on the map there?

CDR Well, that's a little bit of both, yes.

CMP ...

[REDACTED]

CDR Well, where else could the Sun be going down at 5 o'clock on the face of the globe except one spot?

11 19 41 27 LMP Yes, we've been looking at - we've been looking at sunset all along, not sunrise.

CMP ...

LMP I think you're seeing the airglow.

CDR Yes. ... have that on the ...

LMP I think I ought to ... or something.

CDR Our destination.

CMP ...

LMP Huh?

CMP ...

LMP Hey, gang, do we have any film?

CDR Want a mag?

LMP Why don't you dig it out, Ron?

CDR Think we ought to have a picture of the Earth, Ron? ...

CMP ...

LMP You have anything?

CMP ...

LMP Yes. Ron, I think it's one ...

CMP Okay.

LMP Did we do them all?

CDR How could we do them all from ...?

[REDACTED]

CDR Did we pressurize that at all?

LMP I don't think so. Pressurize what?

CDR The hatch.

CMP Well, we do sometimes. We have super ...

CDR Can you get the ... millimeter?

LMP Yes, I can get that. It's over in the -

CMP ...

LMP Is that ...?

CMP ...

CDR We're supposed to maneuver here, so we'd better do that.

LMP Why don't you let me stow that ... (laughter).

CDR You know how - what - -

11 19 45 51 LMP I don't see it in here, Ron.

CMP You ...

LMP Oh, yes. I see. Yes, I'm - 35?

CMP ...

CDR Who's got the biomed on? Ron?

CMP ... I had it on.

CDR Hello, Houston; America.

CC ...

CDR Hey, Gordo, 286:52 on the Flight Plan and at 287:40 - Is there an update on - on that? CMP put his biomed harness on - oh, I guess 4 to 6 hours ago.

[REDACTED]

CC Yes, let me check on that. ... something on this when I left last night, but ... get the latest here.

CDR Okay. Huh?

CMP ... on me?

11 19 47 23 CDR Well, they changed my name out for yours, see? And then what we do tomorrow, the other - other two guys put it on.

CMP ...

CDR Yes, yes.

CMP ... we ..., huh?

CDR ...

CMP Okay.

LMP Well, we'll try it again. Darn it.

CDR Go ahead, ... then all off all at once.

LMP No, ...

LMP ...?

LMP I'll take care of them.

CMP You ... - -

LMP No, not ..., just one of them. You can always ... take one of them.

CDR Take our red ones or your orange ones, if you don't care.

CMP Which one do you want?

CDR You - you open it. You take one.

CMP Which one do you want? Huh?

~~CONFIDENTIAL~~

CDR ... three. Okay, I - got an orange one.

LMP They're like Chiclets?

CMP Well, they're sticky.

SC ... the first one.

CMP ...

CDR ... my omni ... here.

CMP ... omni ...

LMP ... We'll do that.

CMP ...

LMP ...

11 19 52 48 CDR I left it on there, but ... also. I left it on there.

CMP ...

CDR But that bracket don't come off there.

CMP ... Houston at ...?

CDR No, ...

LMP Boy, are we going in our private loop. Gordy's been gone for 10 minutes.

11 19 54 28 CC America, we're ready now for ... MODE, FREE and AUTO. VERB 48, VERB 49, ... On the biomed, we're going to leave it up to you. Whoever - draw straws or whatever - whoever you decide to wear the biomed tonight, ... your choice.

CDR That's easy, Jack and I will put it on in the morning. How's that?

CC ...

~~CONFIDENTIAL~~

LMP Yes, they know that.

CDR He has the option to take it off if he wants to  
... - -

CMP You - get to watch ... America tonight then.

CDR I think it's only fitting that they watch Captain America.

CMP (Laughter)

SC (Cough)

CDR HIGH GAIN, when we get there, Jack, will be minus 37 and 48. They're getting easy down there.

SC (Cough)

11 19 56 21 CDR Maybe they're not on tonight.

CDR Let's see. There's something that we haven't played, isn't there?

LMP Here's something that we haven't played.

CDR What?

LMP Is that one of his we haven't played?

CMP Now, that one -

LMP Yes, how many - how many of them are in there of his? Is there a lot of them in there?

SC (Cough)

LMP I'm ready for almost anything.

CMP Just look at it. (Laughter) Yes.

11 19 57 38 CC ... Houston. We'd like OMNI Alfa.

LMP Are you bouncing that off the wall and catching it?

CDR ...

~~CONFIDENTIAL~~

CDR ... must have taken ... off.

CDR They must have taken the anti ... off. None left.  
Put the bag in there first.

11 19 59 41 CC America, Houston. We can take the high gain now  
that you're there.

# # #

~~CONFIDENTIAL~~

(This page Unclassified)

Tape 17-03453

**APOLLO <sup>17</sup> MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**DUMPED OVER GDS DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>11 20 39 33</u>	<u>11 20 43 46</u>
<u>11 20 56 00</u>	<u>11 21 04 03</u>
<u>11 21 16 39</u>	<u>11 21 20 59</u>
<u>11 21 53 29</u>	<u>11 22 01 25</u>

Time good; voice poor.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MRC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/68.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

11 20 39 33 LMP Sure?

CMP Why don't we ...

CDR I'm not sure I can do that, Ron. I'd like to, I think, but I'm not sure I can.

CMP Well, how can you ...?

LMP ... my ...

CDR How about a nice hot shower for y'all?

LMP No, I don't want ...

CMP We haven't been up that long.

CDR ... the bags? ... on? ...

CDR Okay.

LMP ... don't know what I'm going to do when I'm ...

11 20 43 46 CDR Hey, let's ... going.

TIME SKIP

11 20 56 00 LMP ... in the lab could see their crew ... be very ...  
CMP ... no ...  
CMP Do you still ... head off? (Laughter) I mean -  
CMP That reminds me of ...  
LMP ... like a ...  
CMP Oh, that was good for you.  
LMP That was --  
CMP ... No, it was before we ...  
CMP Yes.  
LMP ...  
CMP Yes.  
SC (Music)  
LMP Yes, everything. (Cough)  
LMP Does help.  
CDR It's all there behind you. In that box. Is it empty?  
SC Next one's on the - on the ...  
LMP ... be there to ... (Laughter)  
CDR ...  
CMP I already talked to him once.  
CDR ... supposed to be ... --  
CMP Right here?  
CDR ...  
CMP Yes.

CONFIDENTIAL

CDR ...

CMP Okay.

CDR ...

11 21 04 03 CMP Houston, America. How's the - CMP's in biomed.

TIME SKIP

[REDACTED]

11 21 16 39 CDR ...? That can't be ... a long time.  
LMP ... Yes.  
CMP Well, I'll let it go this time.  
CDR Oh, 3 and 30 seconds.  
CMP Bring mine up ...  
11 21 19 39 CMP Okay, we'll torque at 59:45.  
11 21 20 29 CMP Okay, we'll stop it on 146 roll.  
CDR ...? 46?  
CMP No, 146. 146.  
CDR We got a canister yet to unstow. I'll put that on  
this page.  
11 21 20 59 CMP All right.

TIME SKIP

~~CONFIDENTIAL~~

11 21 53 29 CDR Hey, Bobby McGee?

LMP ... that.

CMP (Laughter) What are you ... (laughter) ... moving ...? Here.

CDR How'd you ... pick all those ...?

CMP (Laughter)

LMP You guys will probably be ...

CMP (Laughter)

LMP I don't know how these ... - -

CMP (Laughter)

LMP - - ... - -

CMP/CDR (Laughter)

LMP ... is almost exactly the right material ... - -

CMP Yes (laughter).

LMP It has the grip. Ever seen a ...?

CMP (Laughter) Yes (laughter).

CDR I finally took a mouthful. You can't do it in the back.

CMP (Laughter) Thought you might ... (Laughter)

CDR Oh, I ...

CDR Who wants the peach ambrosia already?

CMP I got mine. I'm going to have ...

LMP ... Pretty good. You're right. ... solidified ...

CMP I don't know how mine got solidified. Might have been a ...

[REDACTED]

CDR Right. Shouldn't ...

CDR ... at ... right now.

CMP Yes?

CDR ... - -

CMP This one?

CDR ...

CMP Bet it is, really.

CMP It's all gone.

CDR ... all that we can. ... - -

LMP Pass me a graham cracker. Got a graham cracker cube?

SC (Music)

CDR Sure is ... What is this one?

CMP I think that's ... meal ... or whatever ... you want ... Piece of cake? ...?

LMP Yes.

CMP Okay, ... coming down right here.

CDR I think we've got - All this other is a lot more than you can do ... I - I - I - I think that's it. I think you get up to a point where all of a sudden, your - your body decides you don't want any more. And that puts it all in your intestines. And that draws all the water out of your body. ...

11 21 59 27 CMP I think ... as good as any. How does the - just because the salt's down there - seems like that would dry it out.

LMP No, it - You have - -

CMP Oh - -

[REDACTED]

LMP -- You tend to - tend to try to balance the salt concentration. You get a high salt ... all water ...

CMP Oh, okay.

LMP You try to reach equilibrium. I don't know - the membranes, but in all these ... membranes, you get this concentration of salt.

CMP Uh-huh.

LMP That's through your intestines. That's why - that's why epsom salts come right ...

CMP Oh, I see, I see. You don't put the salt - -

LMP ... dissolves the water out - -

CMP - - dissolves the water - -

LMP - - of your body, and the whole thing is ...

CMP ... Whole ..., huh? They say the way to eat these things is to cut them. Do you know?

CDR That's the way I've been doing it.

CMP I've got an extra amount of water in this thing.

CDR Don't squeeze it when you cut it, then.

CMP (Laughter) Okay.

CDR ...

11 22 00 38 CMP Well, the cold water never has had too much, I don't think. Course we never use the cold water in that gas separator, because we always like to have hot water.

CDR ... you got that gas separator on backwards.

CMP (Laughter) Yes, maybe it is. No everybody said that she was pretty ... about it. No way. ...

[REDACTED]

CDR Are you - are you ...?

CMP Uh-huh.

11 22 01 25 CDR Well, I'm sorry I made that ... You want two  
ambrosias? (Laughter)

# # #

[REDACTED]

(This page Unclassified)

Tape 17-03454

**APOLLO<sup>17</sup> MISSION  
APOLLO DSE CM VOICE DUMP TRANSCRIPTION  
DUMPED OVER GDS DURING TRANSEARTH COAST**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
<u>11 22 18 10</u>	<u>11 22 19 39</u>
<u>11 22 35 03</u>	<u>11 22 42 01</u>
<u>11 22 54 09</u>	<u>11 23 02 08</u>
<u>11 23 14 22</u>	<u>11 23 23 43</u>
<u>11 23 35 30</u>	<u>11 23 42 51</u>
<u>11 23 54 55</u>	<u>12 00 02 16</u>

Voice fair to poor; time good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL, Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

GROUP 4  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

11 22 18 10 CMP What ...? (Music)

SC Told you.

CMP Yes, ... Well, I'm still not.

SC ... talk about ...

11 22 19 39 CMP EVA.

TIME SKIP

[REDACTED]

11 22 35 03 LMP Yes. I think stable 1.

CMP It might be.

CDR ...

CMP Yes.

CDR Okay, ... small jet bag.

CMP ... put the weight on there. You have the weight.

SC ...

SC Yes.

CMP ... about half ... about like it ought to be.

CDR ... got a ... in it? What's the ...

CMP I'd say 25 pounds total.

LMP Ron, your pan camera.

11 22 38 37 CDR Hello, Houston; America.

CDR Gordy, we're just - finishing chow and doing a little cleaning up, and I'm doublechecking the stowage and so forth. But we do have a minute. Is there, by any chance, any late news? Anything going on today that might be of interest?

CC Okay. I haven't heard of anything. ... this morning? Is that correct?

CDR Yes, we sure did.

CC Okay, I'll see if there's ... couple of minutes.

CDR Okay. How's the Houston weather today?

CC It was overcast but warmer. Kind of standard winter weather for around here. Not nearly so frigid as it has been the last couple of days.

11 22 39 27 CDR Okeydoke.

CDR Put me a little of that toothpaste, will you, Ron?

CDR How about if I ...

11 22 42 01 CMP ... report it to the - to the - -

TIME SKIP

11 22 54 09 SC Okay.

CDR Okay, Gordo; the entry stowage will be as - as in the Flight Plan Supplement, with the exception that there is a - a small LM jettison bag, max weight of about 25 pounds, which will be - which is already, as a matter of fact, packed in A-7. And the presently used jettison bag weight really isn't very much at all; that's just housekeeping trash and so forth. We will tie between A-2 and A-3 and there's probably not, at the most, more than 5 pounds there.

CMP Except the LEVAs ...

CDR And right now we haven't seen any specific spot to tie down the LEVAs. If you've got a recommendation, we'll take it. If not, we'll just pick a spot down in the LEB area to tie them down.

CC Okay, I'll see if we have a plan for that.

CDR There are actually two LEVAs and a helmet bag.

CDR It says PGA bag but - -

SC (Laughter)

CDR Yes.

CDR I moved down about 1 degree now. What are you looking at? Moon?

CDR How's the sextant - Oh, you can't look through it, that's right.

CDR You get the Earth coming around the other side?

CMP Yes.

11 22 57 56 CMP I never did ... one, but the window. Oh, I see. That might ...

CDR Man, you look like a new man. Put some of it in that - that stuff in the med kit, that very light

cream in the little bottle. I think that's better - well, ... Yes, except they call it a first-aid cream. Either that or it's - I like that better than I do the ... stuff in here.

LMP Ron, I tell you. Let me see. I think you're a genius. I don't think you can grow hair in one g, but if you stand on your head ... (Laughter) If you stand on your head, you could probably grow it. I think you got one of those nice round heads. No wonder women like you.

CMP Look at ...

SC (Laughter)

LMP ... like you're naked out there in breeze. Shoot, bald-headed men turn me on.

CMP (Laughter) I didn't do too bad.

LMP Here. ... Get over there.

CMP Okay.

11 22 59 08 LMP Get over there. Oh, Ken Mattingly --

CMP (Laughter) Wait a minute. Wait.

CDR You coming my way?

CMP Yes, ... (Laughter)

SC I'll hold it ...

CMP I think - I can get - wait a minute ...

CMP (Laughter)

CDR ...

SC ...

LMP Does this taste like mint?

CMP No, ...

Tape 17-03454  
Page 6

LMP Good.

CMP I think ...

SC ...

11 23 02 08 CMP Thank you.

TIME SKIP

11 23 14 22 CMP (Humming)

CMP ...

CDR Huh?

LMP Give me that coin thing ...

CMP ...

LMP That's where you put it the other day. I've just been putting it there ever since. ... You're the one who put it there.

CMP ...

LMP I don't know where it goes. Where does it go?

SC ...

CDR Huh? ...

CMP ...

11 23 16 03 CDR ... I've got one.

LMP ... one more ...

CMP (Laughter)

CDR Okay, Houston. America's listening.

CDR Georgia Tech's leading Iowa State 31 to 24 in the fourth quarter, Liberty Bowl.

MS (Laughter)

CDR Fastie says there's no atmosphere, no out gassing on the Moon. He has it as only 1 percent of the expected predicted hydrogen.

CDR Truman - Truman's unchanged.

11 23 19 02 CDR Population growth is decreasing.

CDR A guy built a private flying machine.

MS (Laughter)

LMP Merry Christmas.

CDR Thank you for the news, Gordo. That's a very -  
a very enjoyable evening to go to bed with on  
our final night of the flight.

11 23 23 43 LMP I hope you wrote that down.

TIME SKIP

11 23 35 30 LMP ... getting cruddy all the time.  
CMP Are you going to be ...?  
CDR ... one type ...  
LMP ...  
CMP (Humming)  
SC Huh?  
SC ...  
LMP Either that or I need a ...  
CDR Yes. I ...  
LMP I don't know how your ... got down there.  
CMP I don't see ... got any ...  
LMP Okay, how do you read?  
CMP Loud and clear.  
LMP Okay.  
CMP Yours pretty good?  
11 23 37 27 LMP Yes. It seems to be all right. Just a little tight, but I can fix that.  
LMP Okay.  
CDR ... headband ... a little more.  
CMP I think the headband ... Yes. Yes. If you do that, you want to cut that ... on the LEVA.  
LMP We have to get in here anymore for anything?  
CDR Yes. We got to get in there ... that coolant control.  
CMP Yes.

CMP ... right.

CMP You want me to ... there, Gene?

CDR Huh? Can you stow them? ...

LMP There you go ... over my old ... Thank you.

CMP Okay, one more time and you ... it.

CDR Ron, I tell you, you have been the only problem we've had in this flight.

CMP (Laughter) That's right. My comm carrier.

CDR Comm carrier, scissors, articles.

CDR Well, shoot.

CMP ... do that?

CDR No, I've got it.

LMP ... CABIN REGs are BOTH.

CDR ... go that way, if you would.

CMP ...

SC Yes.

11 23 41 26 CMP I doubt if it would mean anything to you.

CDR I think ... off ...

SC Yes. ... 80 ...

CDR ...

CMP ... be three ...

11 23 42 51 CDR I'm getting a ...

TIME SKIP

11 23 54 55 CDR ... take that ... off the bottom ...  
CMP ...  
CDR ... take it off ...  
CMP ...  
CDR Huh?  
CMP ...  
CDR ... preentry - final preentry stowage check calls  
for it to be on.  
CMP ... over that thing ...  
CDR ... calls for the ... - on the ... to be on.  
CDR Here you go, Ron.  
CMP Hey, Gene?  
CDR Yes?  
CMP Come to think about it, all you got to really have  
is that ATG up there ...  
CDR All right.  
LMP ... we have a lot of stuff ...  
CMP ... right down on the bottom there's a little ...  
CDR ...  
CMP ...  
CDR ... little more ...  
LMP I'd rather ... stable 2 or something ... anyhow.  
LMP We are chlorinated and stowed on ...  
11 23 58 33 CMP Chlorinated for the last time ... bags we can ...  
CDR Okay, now who needs help?

CMP I think we're in mighty good shape.

LMP ... You might look at the LEB DSKY ...

CDR ... off on the ...

CDR Houston, America.

CDR We bid you hello, Bob; and at the same, good night.

CDR Well, we thought we'd give you about 8 hours to think about it.

CDR See you in the morning, babe.

CMP Okay.

SC ... down there in the ...

CMP Let's see, I can ...

SC Yes.

SC Let me check. Yes, I'm ...

12 00 02 16 CMP ... which is about 11:30 ... what time I'm going to ... okay.

# # #

(This page Unclassified)

Tape 17-03471

**APOLLO 17 MISSION**  
**APOLLO DSE CM VOICE DUMP TRANSCRIPTION**  
**CARRIED TO SPLASHDOWN**  
**Time Segments (AET)**

<b>From</b>	<b>To</b>
12 13 07 26	12 13 51 43

Time and voice good.

**SECURITY CLASSIFICATION**

The material contained herein has been transcribed into a working paper in order to facilitate review by interested MSC elements. This document, or portions thereof, may be declassified subject to the following guidelines:

Portions of this document will be classified CONFIDENTIAL. Group 4, to the extent that they: (1) define quantitative performance characteristics of the Apollo Spacecraft, (2) detail critical performance characteristics of Apollo crew systems and equipment, (3) provide technical details of significant launch vehicle malfunctions in actual flight or reveal actual launch trajectory data, (4) reveal medical data on flight crew members which can be considered privileged data, or (5) reveal other data which can be individually determined to require classification under the authority of the Apollo Program Security Classification Guide, SCG-11, Rev. 1, 1/1/66.

**GROUP 4**  
Downgraded at 3-year  
intervals; declassified  
after 12 years

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

12 13 07 26 CC America, Houston. The batteries are on line, and they look good to us.

12 13 07 31 LMP Okay, and the tape recorder's ON here.

CMP Okay.

12 13 08 19 CDR 01:37.

12 13 08 43 CDR Okay, let's start the sep ... - -

CMP Okay, let's start sep - sep checklist here.

12 13 08 47 CDR Okay, Houston, we're pressing ahead here about 5 minutes early.

CDR Okay, circuit breaker ELS/CM ... - -

SC Sep prep.

CC Roger.

CDR - - ... CLOSE.

12 13 08 56 CMP Okay, ELS/CSM [sic] SEP BAT A, BAT B, CLOSED.

CDR Okay, you got those good ... for ... launch.

CMP Yes.

CDR Okay. PRIMARY GLYCOL to RAD, PULL TO BYPASS.

12 13 09 07 CMP Okay, I'll BYPASS the old PRIMARY RADIATORS.

CDR REPRESS PACKAGE FILL to 865-935, then - -

CMP Okay - -

CDR - - then ON.

12 13 09 19 CMP Okay, REPRESS PACKAGE valve is going ON.

CDR O-N, right?

CMP O-N.

CDR Okay. O<sub>2</sub> service module supply, OFF.

[REDACTED] CONFIDENTIAL

12 13 09 26 CMP Okay, we'll cut off the service module supply of oxygen.

CDR Okay, ...

12 13 09 35 CMP Okay, SURGE TANK is verified ON.

CDR CABIN PRESSURE RELIEF VALVE \*\*\*

12 13 09 41 CMP Okay, PRESSURE RELIEF valves are verified NORMAL.

CDR Okay, ABORT SYSTEM PROPELLANT \*\*\*

12 13 09 48 CMP Okay, we're verified in RCS COMMAND.

CDR Okay, SERVICE MODULE RCS secondary fuel \*\*\*

12 13 09 56 CMP Okay. SECONDARY FUEL. That's A's, B's, C's, and D's; all OPEN.

12 13 10 09 CDR Okay. VHF AM A and B, OFF, center.

LMP They're OFF.

12 13 10 10 CMP VHF is OFF.

CDR HIGH GAIN POWER, OFF.

12 13 10 13 LMP POWER's OFF.

CDR FUEL CELL PUMPs, three of them, OFF.

12 13 10 19 LMP Okay, PUMPs are coming OFF; 1, 2, 3.

CDR Okay. FUEL CELL 2 MAIN A, OFF.

12 13 10 30 LMP Okay, 2 MAIN A's OFF.

CDR Okay, verify the loads are balanced.

12 13 10 36 LMP Look good; couple amps. Houston, the loads appear to be balanced on MAIN A, MAIN B fuel cells.

CC Roger, Jack. We copy that.

[REDACTED] CONFIDENTIAL

[REDACTED]

CDR Okay, on your side. Circuit breakers, ECS RAD CONTROL HEATER, two of them OPEN.

12 13 10 54 LMP Okay. CONTROL HEATERs, 1, 2.

CDR Circuit breakers, RAD HEATERS OVERLOAD, two of them, OPEN.

12 13 11 01 LMP HEATERS OVERLOAD, 1, 2.

CDR Okay. WASTE WATER/URINE DUMP HEATERS, OFF.

12 13 11 07 LMP WASTE WATER/URINE DUMP HEATER - -

CDR Correction. Circuit breakers, WASTE WATER/URINE DUMP HEATER - -

12 13 11 11 LMP - - OPEN.

CDR - - open.

12 13 11 14 LMP Okay. And they're open.

CDR Okay. POTABLE WATER HEATER, OFF.

12 13 11 18 LMP Okay, it's OFF.

CDR Okay, GLYCOL EVAP TEMP IN to MANUAL.

12 13 11 24 LMP It's MANUAL.

CDR Okay, Ron, you've got about 10 minutes to your horizon check.

CMP Okay. Don't see anything yet.

LMP Houston, step 5 on 2-2 is complete.

CC Roger, America.

LMP Or (5), I guess it is.

CDR Stand by here for just a little bit.

CMP Okay.

[REDACTED]

~~CONFIDENTIAL~~

CDR You don't want to go into 61 too much so we'll --

CMP No. We don't want to go into --

CDR So we'll stand by.

CMP I don't think you're going to see the horizon anyhow. You might.

CDR That depends on where that Sun - when that Sun goes down. Moonset is at 16, so you may - you may see horizon.

CDR Behind window? Won't be a bit surprised if we see it.

CMP Might.

CDR I'll take P61 just before the horizon.

CC America, Houston. You may be interested. We've just taken another look at your last batch of data, and it confirms your pad. You are absolutely nominal, right on the pad.

CDR Good news, Robert. Thank you.

CMP Outstanding.

CC We aim to please.

CDR Okay, and we're going to keep it nominal.

12 13 15 24 CDR Go into P64 - or P61 at - at just prior to 40. That'll give us - that'll be just about right.

CMP Okay, that'll be all right. It'll be a little bit different, but that'll do it.

CDR Different than what?

CMP Than what the pad is, probably. Well, not much -- -- ... And there's no ... time here at all.

~~CONFIDENTIAL~~

CDR When normally do you - do we go in? I think we're -  
right in here, anywhere in here is where we go in.

CMP Yes. Anywhere in there.

CDR Yes, I want to be here.

CMP Yes.

CDR I want to be down to 62 by 43.

CMP By 43.

CDR And I want to verify these numbers.

CMP Yes.

CDR I'll probably go in about 39.

CDR Want a drink of water?

CMP Yes.

12 13 16 39 CDR Be sure we lock this.

CMP Yes, it'll lock it. Fit the lock in.

CMP Getting cold in here.

CDR Um-hmm.

CMP It won't be for long, probably.

CDR Want some?

LMP Thank you.

LMP Gosh, look at that signal strength - on that  
omni. Close.

LMP Here you go.

12 13 17 38 CDR Stand by. Ready to go on that 61. Ready?

[REDACTED]

CDR Okay. Lat is minus 1788, 163, and lift vector up. Okay. I like all that. Okay. G<sub>MAX</sub> is 7.02. Wait a minute - that might - that's all right. That's a little ... --

CMP That's okay. We'll - we're a little bit early.

CDR That's okay; 36, 6079, and minus 657. Okay? Okay. Okay, NOUN 63 says range to go is 10,604, went in just a sukosh early; 36, 165; yes. Just a sukosh early. Okay?

CMP Okay.

CDR And that's from .05 G and that looks good.

CDR Okay, we're happy with those numbers.

CMP Yes, they look pretty good.

CDR Okay, on 62. I'll wait until you get the horizon.

CMP Oh, you can go ahead and go on through there and then I'll -

CDR Okay. Okay. MAN ATT RATE - three to RATE COMMAND, verify?

12 13 19 35 CMP RATE COMMAND.

CDR Okay, DEAD BAND, MIN.

12 13 19 40 CMP DEAD BAND, MIN.

CDR RATE, LOW.

12 13 19 42 CMP RATE, LOW.

CDR Correction. RATE, HIGH. RATE, HIGH.

CMP Yes, HIGH. Okay, ... that's better.

CDR DEAD BAND, MIN; RATE, HIGH.

12 13 19 48 CMP DEAD BAND, MIN; RATE to HIGH.

~~CONFIDENTIAL~~

CDR Okay, SPACECRAFT CONTROL, SCS.

12 13 19 51 CMP SCS.

CDR Okay, next thing is the yaw out of plane, let's wait for your horizon, which comes in about 1 minute.

CMP About 1 minute. Okay. Doubt if we'll see it. We might, though.

CDR It's getting dark. You may just very well see it, babe.

CMP Huh?

CDR It's getting dark.

CMP ... will?

CDR Yes.

LMP No, I turned the lights down. That's all.

CDR Oh. Oh, okay. I thought it was getting (chuckle) I thought it was getting dark in here.

CDR Back to an Earth li - Earth - -

CMP I got the sun shining right in my left window here.

12 13 20 34 CDR Got another minute to go; 301:37.

12 13 21 07 CDR Thirty seconds.

12 13 21 35 CDR You ought to be seeing it, Ron. Take a look now. 301:37.

CMP I don't see anything. Do you see anything, Jack?

LMP I don't see a thing.

CMP (Chuckle) I knew it.

LMP Well, maybe; yes, I do.

~~CONFIDENTIAL~~

CDR You got the horizon?

LMP Yes, I got the horizon's glow. I can see the glow.

CDR See it, Ron?

LMP Yes, it's just ... - -

CDR Look at - look at your 31.7 ... - -

LMP - - ... very dim, very dim glow.

CMP Well, you see, I got too much shine in ...

LMP Yes.

CMP Sun's shining in on here - glaring on the window.

CDR Okay, that's good. We got it.

CMP That's good; as long as it's there somewhere.

CDR Yes, yes.

CMP Oh, I see it. It's off to the left.

CDR Yes. There it is.

CMP Oh, it's out the left window (chuckle).

LMP There it is.

CDR Yes. I got it, too.

CMP Okay, yes. That's a dark horizon though.

CDR Okay, Houston, we've got the horizon. We're yawing out of plane now.

LMP Looks like the ... - -

CDR Okay, let's yaw.

CC Roger.

LMP The Earth's getting pretty big, isn't it?

~~CONFIDENTIAL~~

12 13 22 21 CDR Okay, Ron, yaw at 45.

CMP Okay, I will.

LMP Yes, sir; that's getting pretty big, isn't it?  
Look at it now.

CDR Yes.

CMP Yes, see. You can see it better when you yaw out  
of plane. We must be just seeing the horn now.

LMP Oh, that's the air glow mainly.

CMP Yes, that's the air glow.

LMP Full Moon ... - -

CMP But, see, that's the horn that's - that we've been  
seeing all the time.

CDR Okay, Jack, you want to verify your MAIN BUS TIES  
are ON.

12 13 22 49 LMP Okay. That's verified.

CDR Ron, you want to verify your PRIMARY GLYCOL RADIA-  
TORS, BYPASS.

12 13 22 53 CMP Verify BYPASS.

CDR EMS MODE, STANDBY. That's verified.

12 13 22 58 CMP Okay.

CDR Okay, ... - -

CMP STAND BY. Jack, when we yaw out here, can you get  
a picture?

CDR Oh, shoot!

LMP I can try. I can get part of it.

~~CONFIDENTIAL~~

CDR Okay. BMAGs, ATT 1/RATE 2. Okay?

12 13 23 17 CMP Okay, BMAGs, ATT 1 RATE 2. RATE COMMAND, SCS.  
... - -

CDR Okay, Jack verified the bus ties. Okay, RCS LOGIC, ON.

12 13 23 25 CMP COMMAND MODULE RCS LOGIC is ON.

CDR Okay, SECS LOGIC, up and ON.

12 13 23 31 CMP SECS LOGIC verified ON.

12 13 23 32 CDR And SECS ARM, coming up and ON.

12 13 23 34 CMP Okay, here comes the pyros. PYRO A, PYRO B.

12 13 23 42 CDR Okay, Houston. On my mark, I am going to hit the CM/SM SEP.

12 13 23 47 CDR 3, 2, 1, -

12 13 23 50 CDR MARK it. We got it.

CMP Oh, ho! Did we get it! That thing really bangs, doesn't it?

12 13 23 55 CDR Okay, TRANSFER, COMMAND MODULE? You got thr - You got it?

12 13 24 02 CDR Looks like we got a good separation, Houston. Okay, MAIN ATT, MIN IMPULSE.

12 13 24 07 CMP Okay, MINIMUM IMPULSE.

CDR BMAGs, RATE 2.

12 13 24 09 CMP RATE 2.

CDR CAUTION AND WARNING, COMMAND MODULE.

12 13 24 12 LMP It's there.

CDR Okay, RCS TRANSFER, COMMAND MODULE, I got.

CC - - ... sites in 1 minute. There'll be a slight break of comm here.

CMP Okay.

CDR Okay, RCS pressure still looks good. LOGIC, OFF.

CC - - ... go to OMNI Charlie.

CDR COMMAND MODULE RG - LOGIC, OFF. Monitor voltage - voltage - -

12 13 24 28 CMP OMNI Charlie.

CDR Voltage MAIN A and MAIN B, Jack.

12 13 24 30 LMP I'm monitoring.

CDR Make sure it's still up.

LMP Yes, it's good.

CDR YAW back to zero and select Charlie.

12 13 24 34 CMP Okay, we're yawing back to zero.

CDR And you got Charlie, right?

LMP Yes, we got Charlie.

CDR Okay. Pitch to entry attitude, 152. Boy, that sure created a lot of junk around here.

CMP (Laughter) Got junk all over the place (laughter).

CDR You might be able to see it out there if you look. Down this way.

LMP I saw the jet firing.

CDR Did you? Okay.

LMP You know - you know, there's a lot of stuff streaming by us, the ullage jets.

CDR Okay, Ron, you can pitch down 152, when you get to it.

[REDACTED]

CMP Okay. Yes, wait a minute. I'm going to take a look at the horizon here first.

CDR EMS DATA fir - data's still good.

CMP Okay, stand by. 36, 170, 1044. Okay, we're MINIMUM IMPULSE, RATE 2, SCS; DIRECTs are ON; AC/DC.

CDR 1044 point. Okay. This is all we got. Just what's under us.

LMP It'll be enough.

12 13 25 52 CDR Okay, verify to DATA. We are in ENTRY. Okay, whenever you're ready, I'll - when you get back in, I'll give you the ENTRY DAP.

CMP Very good. I'm ... SCS, anyhow.

CDR Okay. Impact latitude and longitude, okay. 1788, 6613, and a minus 1. That's good. Should be NOUN 22.

CMP It will be.

CDR Okay, until you get back to 1 - about 152. You - you might have - you might see it out there. I don't know if you can.

CMP You know the sound of the jet firing is a lot louder than what we usually had the simulators set for.

CMP Okay, we're back to the dark horizon again, but the ... are on down.

CDR Turn some lights on; how about it?

CMP On?

CDR On, yes.

CMP There you go.

CDR Get your ... on, too.

[REDACTED]

CMP Everything up.

12 13 27 44 CDR Okay, we're coming up at 63. Okay, there's G. There's  $V_I$ , and there's range to go. And I'll check them against the EMS.

CMP Okay.

CDR They're right. Here.

CMP Okay, 4153 miles to go, huh?

CDR Yes.

CMP Velocity is 31,253 feet per second, increasing.

12 13 28 24 CDR Okay, Houston. We're at 63, and we're just standing by for .05 G.

CDR Sure getting cold.

CMP Probably warm up after while, I'll bet.

CDR Warm up on the water.

CMP You know, this thing kind of wants to - wants to yaw left all the time.

CDR Keep it coming down now.

CDR Probably can't see the Moon, but - maybe you can out one of those windows. I don't know where it is.

12 13 29 41 CC America, at 9 minutes prior to entry interface here, you're looking great down here.

CDR Okay, Bob. We're looking good on board and standing by for .05 G.

CMP ...

CDR You know what you did?

LMP Can't win them all. What does yours ...?

[REDACTED]

CMP (Chuckle)

CDR No, it should be down and stuck. That should be in.

LMP ... that down.

LMP (Laughter) We still got hydrogen tank (laughter). Houston, be advised that hydrogen tanks 1 and 2 still seem to be with us.

CMP (Laughter)

LMP We've got gage readings - plus 200 psi.

CC Roger. We'll run that one through EECOM.

CMP (Laughter)

CDR Okay, Ron, SCALE 5/5.

CMP Well, we'll save you - save the 5/5 for a minute.

CDR Okay, ROT CONTROL POWER, two DIRECTs, MAIN A and MAIN B.

12 13 31 15 CMP DIRECTs are MAIN A and MAIN B.

CDR Got both controllers armed?

CMP Both controllers are armed.

CDR Okay. Pitch error needle goes --

CMP ... AC 1.

CDR -- toward zero approaching .05 G. And your .05 G attitude is - I just wrote it down.

CMP Should be 153, I think; isn't it?

CDR I just wrote it down.

LMP No more eating upside down.

CMP Here it is, there.

[REDACTED]

~~CONFIDENTIAL~~

CDR Okay, 153.

CMP Yes, no more eating upside down. I was just getting used to that. It's a lot of fun. Getting used to it. I was used to it after the second day - first day.

CDR Keep going. You're going the wrong way.

CMP You know that the - -

CDR Yes, I see that.

CMP It - it wants to trim itself pitch up, too. I got to keep bopping the right yaw, and I got to keep pitching down to make it go down. You see the - the rate just decreases.

CDR Um-hmm.

12 13 32 23 LMP Two minutes to moonset.

CMP Two minutes to moonset. I don't even see a Moon. There it is up there. Can you see it, Jack? It's out of window 3.

LMP Oh, there it is; yes.

CMP It should be off to your right, you might be able to see it.

LMP Okay, yes. I see it.

12 13 32 39 CDR Okay, moonset's at 16:14.

CMP That's the way the Moon looked about 13 - 14 days ago.

CDR ... smaller ...

CMP Small one like that.

CDR Yes.

LMP Well, I don't think I'm going to make it. There it is. Yes, I'll be able to see it now. When? In about a minute.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

CMP Try the pressures on both ranges. They still okay?

CDR They're both GO. They're both GO.

CMP Okay.

CDR Okay, you're just about there.

12 13 33 43 CMP Five minutes to RRT.

LMP ... you want ...

CDR Okay, I will. You got about - a little better than 2 minutes.

LMP Two minutes? You sure? I thought it was 14.

CDR Sixteen.

CMP Sixteen. 304:16 on my card.

LMP Okay.

CDR Yes, 16:14. ... went gray - barber pole? It's got a cross coupling.

CMP Yes, it's got a little bit of a cross coupling, on it. Think we might be picking up C [?] 55. Might be picking up a few rates anyhow. Probably not yet.

CDR Um-hmm.

CMP Usually about 59.

12 13 34 59 LMP Got a little oscillation in the amp meter on - when I'm on PYRO BAT. Voltages are good.

CMP Just lose them?

LMP No. They're okay.

CMP Noise disappeared.

LMP The needle - the needle is loose in there or something.

~~CONFIDENTIAL~~

CMP Oh.

LMP Good in the other positions. Just getting an oscillating signal when I switch to it.

CMP You couldn't - couldn't see a star out there if you had to. There's all kinds of little white particles floating around out there from the jets.

LMP Well, I've lost the Moon.

CDR Well, we've had --

CMP Yes, I've lost it, too, out the window.

LMP What do I need to change omnis here?

CDR No, not according to this.

LMP How's your pitch?

CDR Good.

CMP Pitch is good.

CDR You lose the Moon?

LMP Yes, I can't - I can't find it now.

12 13 35 57 CDR I got it. I'll watch it go over the horizon.

CMP A little bit to the right, Gene?

CDR Lot of daylight out there.

12 13 36 04 CDR There it goes. Moonset.

CMP Set.

LMP A little early.

CDR Well, it's not all the way down yet.

LMP ... --

12 13 36 14 CDR MARK it. Moonset.

[REDACTED] CONT'D [REDACTED]

LMP That's about 3 seconds.

CMP About 2 seconds. Not bad.

CDR Okay.

CMP Houston, America. Do you still read?

CC ... loud and clear. We're going out through ARIA.

LMP ... read.

CMP Okay.

12 13 36 34 CDR And, Houston, moonset was on time. And we're coming up on 2 minutes from RRT, and we're GO onboard.

CC Roger, America. You're looking great.

CMP Yes, there's the horizon. Got the horizon now.

CDR Okay, babe, let's watch your needles.

CDR Okay, Ron, I'll verify the EMS on both range to go and V<sub>I</sub>. And at .05, we'll get NORMAL and --

CMP G and A [?]. If it's good, then we'll go to CMC.

CDR Are the switches happy?

CMP Switches look good. We got RATE COMMAND to go yet.

CDR And you're --

CMP I'll get that --

CDR You're in RATE 2 on -

CMP RATE 2 on the BMAGs.

12 13 37 33 CDR Okay; 36 172. We're getting close.

CMP Okay, about a minute - to 400,000 feet.

[REDACTED] END OF TAPE [REDACTED]

LMP Isn't that something?

CDR And are we moving!

CMP Are we moving in there! Gee whiz! Look at that Earth go by.

CDR Well, you're much higher than circular velocity, that's why. See, you're - you're at a - you're just at suborbital altitude almost.

CMP Hey, needle's off the peg, by the way.

CDR Okay, very good.

CMP Just looking good.

CDR See, you're supercircular velocity with a less-than-circular altitude, so you really are going by. Whew!

CMP Hey, Jack, can you take a picture of that, too? Get a picture of the horizon? ... - -

LMP ... know - -

CMP Is that pointed at the horizon?

LMP ... about this? ... - -

CDR No, don't take it down. Leave it in. Don't take it off.

CMP That's all right. ... - -

CDR Don't take it off. Don't take it off.

CDR Okay, Houston, we're 5 seconds from RRT.

CC Roger, America.

12 13 38 41 CDR RRT.

CMP Okay, we'll go to RATE COMMAND?

[REDACTED] CONFIDENTIAL

12 13 38 51 CDR Okay, 36 and 1050. Stand by.

12 13 38 54 CMP Okay. And .05 G is 29. We're picking up a glow.

12 13 38 59 CDR .01 G. .02.

LMP There's the G.

CDR Okay, we're trimming in now.

LMP Coming in.

12 13 39 10 CDR .05 G. Get it on.

CMP Okay; .05 G. We got a - -

CDR The numbers look good.

CMP Numbers look good. Let's get the computer.

CDR Okay.

12 13 39 16 CMP 5/5 and SCALE. Here we're coming in. Man, look at that bright!

CDR - - ... Here you go, babe.

CMP Man, that's really bright. I can't even look outside.

CDR Okay.

CMP Coming down the pike. There's one g - -

LMP ...

12 13 39 27 CDR Okay, 0.8.

CMP Okay, we're coming down. . . . - -

12 13 39 32 CDR ... one g, 1.4.

12 13 39 35 CMP Okay, there's 2.

12 13 39 36 CDR 1.7.

CMP Be sure to put the sun glasses on.

12 13 39 38 CDR 2.0.

12 13 39 39 CMP Three.

12 13 39 40 CDR Three g's.

CMP Gee, criminy; that's coming down!

12 13 39 43 CDR Three g's.

12 13 39 44 CMP Okay, there's 4 g's. There's 4 - -

12 13 39 46 CDR 3.8, 4 ...

LMP Come on down there, 5.

12 13 39 51 CDR Five g's.

CMP Okay. Gee, criminy. That's work ... There's 6.

12 13 39 56 CDR Six g's.

LMP Okay.

12 13 39 58 CDR Six g's.

CMP SCS is looking good.

CDR ... roll.

LMP Okay.

12 13 40 00 CDR 6.3, 6.5.

CMP 6.5.

LMP She switched yet?

12 13 40 05 CDR 6.6, 6.5. Okay.

CMP 6 point - point 5.

LMP 6.5, okay.

CDR There's the roll. Ready roll.

[REDACTED]

CMP Okay, it's rolling right. . . - -

CDR G's coming off.

CMP G's coming off.

CDR 5.4. 5.1.

CMP Can't see the stupid EMS, but there it goes.

CDR Okay, it's working good.

CMP Okay - -

12 13 40 25 CDR 4.4 g's.

CMP There it goes.

12 13 40 28 CDR 4.2; it's coming off. Roll 180.

CMP Okay, that's right.

CDR She's looking good.

CMP There's the EMS. I got it.

CDR I'll - I'll give you a hack when you're subcircular.

CMP Okay. That's all right. We're coming down.

12 13 40 36 CDR 3.8 g's.

12 13 40 37 CMP There's 4.

12 13 40 39 CDR Okay, roll up 142.

CMP Okay. That's all right. It's doing good.

12 13 40 42 CDR Roll up 80.

12 13 40 43 CMP Okay, 4 g's.

12 13 40 44 CDR Roll up 50.

12 13 40 45 CMP 3.8.

[REDACTED]

12 13 40 46 CDR 3.8. Looking good here, Ron.  
CMP Okay. ... lift our ... should be.  
12 13 40 51 CDR Okay, left 60.  
CMP Okay.  
12 13 40 53 CDR Left 80.  
CMP That's good.  
12 13 40 57 CDR Okay, holding at 4 g's. Okay, there's 67.  
CMP P67.  
CDR P67. Zero roll.  
CMP Zero roll, okay. We're doing all right.  
CDR Okay.  
CMP Left 23. That's right.  
CDR Left 23, left 65.  
12 13 41 07 CMP Okay, got a range to go; 400 on the EMS and 450  
on the range to go.  
CDR Okay.  
CMP ...  
CDR Okay, looking good here.  
CMP I'm trying to look at ..., but I can't see  
(laughter). Okay, here comes 4 g's.  
12 13 41 21 CDR Okay. Roll left 100.  
CMP Left 100.  
CDR Roll left 100.  
12 13 41 26 CMP Okay, minus 95.

12 13 41 28 CDR Okay, we're 45 long; we're 21 south, and we're flying it out.

12 13 41 32 CMP Three g's. Okay.

CDR Okay, roll right.

CMP Okay, ... - -

CDR Okay, we'll fly that south error out.

CMP That's good. We're over the top.

CDR That's what we wanted.

CMP Okay, I got a potential of 350 and 350. Okay, ... see the horizon - -

CDR Okay, roll right 80.

CMP - - ... air glow.

CDR Roll right 80.

CMP Okay.

CDR That's just going to fly our south error out.

CMP South error out; okay.

CDR We're 30 long and 20 shou - south; ... to go. Okay, still carrying about 3 g's. Roll right 80.

CMP Okay, that's good.

CDR How's the EMS look?

CMP EMS is on top.

CDR Okay.

CMP We got a potential of 300, 287 on the EMS.

CDR Okay, that's GO.

CMP Okay, it's looking good.

12 13 42 09 CDR Okay, roll right 65. Our south error's coming out.

CMP Okay.

12 13 42 12 CDR We're 10 long, 14 south. She's going to hold this right roll for a while.

CMP Aah.

12 13 42 19 CDR Okay, roll right 50.

CMP It's hard to hold my head up ... - -

CDR Still looking good.

CMP Okay.

CDR Yes, I know. Me, too.

CMP (Laughter) I'll hook it on this ... - -

12 13 42 28 CDR Okay, roll right to 40. It's looking good.

CMP Okay, looking good. 200 to go? 200. ... - -

CDR Okay, Jack, we'll cu - we're at - -

CMP - - ... 3 g's.

CDR - - 4 minutes from RRT now.

LMP Roger.

CMP Three g's.

CDR Okay, roll right 40 - -

CMP ... going back up there ...

CDR Looking good.

CMP Okay.

CDR Roll right 40.

CMP That's where we came through - that little spot back there.

CDR Okay, down-range error is good, and cross range is coming in.

CMP Okay, roll right 50 yet. Roll right 50, still at 3 g's.

CDR Okay, that's still good, because our down range or cross range just came in.

CMP Okay, we should reverse . . . - -

CDR Not - not - not until this goes plus in a while.

CMP Okay.

CDR ... reverse, I'll give you a hack.

CMP Three g's; got a potential of 130 - got 130 range.

CDR Looking good - 3 g's.

CMP Right on.

CDR Okay, roll right 40.

12 13 43 14 CMP Okay, right 40.

CDR Okay, right 45.

12 13 43 17 CDR/CMP Right 45.

CDR Okay, down range is getting north so we're going to reverse here, shortly.

CMP Okay, the g's getting a little less, about 2.8.

CDR Okay, she's going to reverse. Roll right 50. Stand by for reverse.

CMP Okay.

12 13 43 28 CDR/CMP There's the reverse!

CMP Okay, over the top.

CDR Roll left 60.

12 13 43 31 CMP Okay. Still about 2.9 g's.  
CDR Okay, roll left 60.  
CMP There goes some more pieces off the other side of the spacecraft.  
CDR Roll left 70 - -  
CMP - - ... it didn't stay ... - -  
CDR - - ... picking ... We're north and long.  
CMP Okay. Not bad. About 2.8 g's yet.  
CDR Okay, roll left 75.  
CMP Got a potential of 65, 65 - -  
CDR Roll left 75.  
12 13 43 51 CMP 8000 feet a second. Okay?  
CDR Okay; 06 - NOUN 64. Range to go is 400. Does that agree? Pretty good?  
12 13 44 05 CMP No, 40. That's right.  
CDR 40, I mean.  
CMP That's right. ... degrees.  
CDR Okay, roll left 70; downra - downrange is ... long - -  
CMP ... 3.1 g's.  
CDR Okay. She's going to reverse on here shortly.  
CMP Okay, there she goes over the ... - -  
12 13 44 16 CDR There she is there's the reversal.  
CMP That ought to relax those g's a little bit.  
CDR Hey, I'm following those pretty good.

[REDACTED]

CMP There, that's good. Beautiful computer.

CDR Roll right. Roll right 80.

CMP Okay, about 3.1 g's.

CDR Roll right 80. We're a little south. We're flying north.

CMP We're about 4500 feet a second.

CDR Okay, roll ...; CMC is GO.

12 13 44 31 CMP Okay. Into the scroll, 22 miles; 4000 feet a second.

12 13 44 35 CDR Okay, Jack, it's coming up on 6 minutes.

CMP Zero plus 88 degrees. Okay, that's good.

CDR Coming up on 90K.

LMP Steam pressure's still there.

CDR Okay. Roll right 90, Ron. Looking good.

CMP Okay, looking good.

CDR Cross range is right in. Down range, you got a mile ... - -

CMP Okay. We ought to be in there.

CDR - - It's there. Roll left 80.

CMP Roll left. Okay. About 2.2 g's.

CDR Roll left 80.

CMP Okay. It feels like you're on a merry-go-round now.

CDR Okay, roll left 80.

LMP Here comes the steam pressure.

12 13 44 59 CDR Okay, that's right. That's about 06:20, Jack.

[REDACTED]

COPYRIGHTED MATERIAL

CMP ...  
LMP I got her for you.  
CMP You got it? Okay.  
CDR Okay, it's roll left 80.  
CMP Roll left 80; still good.  
CDR Roll left 80, down range and cross range are in.  
12 13 45 07 LMP Steam pressure's pegged.  
CMP Okay, 2 g's.  
LMP Steam pressure is pegged.  
CMP Steam pressure is pegged, okay. Is that on time?  
CDR That's right. Yes.  
LMP A little late.  
CDR Drogues will be at 07:39.  
CMP Drogues at 07:39. Okay. Come in. Rolling back right. ... - -  
CDR Roll right 100. Okay, there's 67.  
CMP Okay. ... freeze at 67.  
CDR Okay. Huh?  
CMP Freeze it in 67.  
CDR Okay. Short 1.8 miles according to this.  
CMP Short 1.8, it says. Okay. Call it out.  
CDR Hello, Houston; this is America. We're showing 1.8 short. ... - -  
12 13 45 38 CMP Okay, 50K, Jack.  
LMP Okay, it's 50K.

COPYRIGHTED MATERIAL

CDR        ... drogues.

LMP        SECS PYRO, two, ARM.

12 13 45 43 CMP        ARM the PYROs.

LMP        CABIN PRESSURE to BOOST/ENTRY.

12 13 45 45 CMP        CABIN PRESSURE to BOOST/ENTRY.

CDR        Houston, America. We're showing 1.8 miles short.

LMP        Pyros?

CMP        ARM the PYROs.

CDR        17.86 by minus 167.5.

LMP        They're ARMED.

CMP        They're ARMED.

LMP        And we're stable, right?

CMP        We're stable.

LMP        Looking good.

CMP        Coming down like a son of a buck. Man, oh, man!

LMP        Okay, give me a call at 30K.

12 13 46 02 LMP        Okay, there's 35K.

LMP        Stand by.

CMP        Stand by for ELS LOGIC, right?

LMP        Right. LOGIC and AUTO.

CMP        Okay. There goes all the paper off the spacecraft.

LMP        Look for 30K.

CMP        Okay, there's 30K.

CONFIDENTIAL

CDR Stand by for the drogues.

LMP Okay.

CMP ELS to AUTO - or LOGIC and then to AUTO.

LMP And then the AUTO.

CDR Okay, stand by for the ... - -

CMP Okay, stand by for the apex.

CDR Hold on.

12 13 46 20 CMP Then the drogues. Okay. There we go!

CDR You got a drogue?

LMP There's the drogues.

CMP There goes the drogues.

CDR ... drogues.

CMP Okay, back them up.

LMP Two good drogues.

CDR Okay.

LMP Two good drogues.

CMP Hey, I can't hear you, Jack.

CDR Two good drogues!

LMP We got the drogues.

CDR Drogues are GO!

CMP Okay, drogues are GO.

CDR Okay, stand by for Jack.

CMP Son of a buck!

CDR Okay, what have you got on that checklist, Jack?

[REDACTED]

CMP Hey, that really vibrates!

LMP Cabin pressure's going up.

CDR Very good.

CMP What's that?

LMP Stand by for mains.

CMP Okay. There's 15K.

CDR Okay, Houston, America in the blind. We got the mai - or we got the drogues; we got the drogues. Coming through 15K. This is America showing about 1 mile short. We've got the drogues.

LMP Stand by for mains.

CMP Okay. Okay, there's 12, 13K.

CMP Now let's go through that checklist.

LMP Okay. Stand by for mains.

CMP 12K.

CDR Hey, Ron, why don't you go on to PTT when you do that, so I can talk to them.

CMP Go ahead.

12 13 47 15 LMP Okay. Mains at 11K.

12 13 47 17 CDR There are the mains.

CMP Gee, criminy.

LMP Okay.

CDR There are the mains.

LMP Okay.

CDR They're still reefed. They're still reefed --

[REDACTED]

LMP        ... - -

CMP        Still reefed.

CDR        There they go.

CMP        There they go. Okay, they're dereefing.

LMP        Got two good ones.

CDR        Okay, Houston, our mains are out.

LMP        Two good ones.

CMP        Two good ones. Let's get the third one.

CDR        Why don't you go off so I can talk to them? Is it out?

LMP        The third one is not good yet.

CMP        Third one's not good yet.

CDR        Hello, Houston, the mains are out - -

LMP        - - ... three mains.

CMP        Okay, we got three mains now.

LMP        Three mains.

CDR        Okay, Houston, this is America. We got three mains. We're coming through 8000 feet.

LMP        SURGE TANK O<sub>2</sub>, OFF.

CDR        Ron, SURGE TANK.

12 13 47 48    CMP        SURGE TANK, okay. SURGE TANK is OFF.

LMP        Okay, REPRESS PACKAGE, OFF.

CDR        Hello, Recovery; this is America. We've got three good mains.

CMP        REPRESS PACKAGE, OFF?

~~CONFIDENTIAL~~

CDR Coming through 7K. We're about 1 mile short.

LMP REPRESS PACKAGE, OFF.

12 13 47 59 CMP It's OFF.

12 13 48 00 LMP ANTENNAS, RECOVERY, A's going to SIMPLEX.

CMP Okay.

TIC \*\*\* 35, 050 presently on your \*\*\* 7 - -

LMP CABIN PRESSURE, DUMP - -

R-1 Relay, Tico; say again bearing, distance.

TIC Relay presently bearing 050; you are on your 245 56 - -

CDR - - ... One minute to go.

CMP Okay, the DAC's coming down.

LMP Okay, stand by.

CDR Okay, Recovery; this is America - -

LMP STRUT LOCKS.

CDR We got three good mains; we're at 6500 feet.

R-1 ... bearing 050. We're on your 24 \*\*\* 6 miles.

LMP STRUT LOCKS, UNLOCK.

LMP Got that one, Geno?

R-2 This is Photo, visual. Bearing 250, ... 000 at 3.5.

LMP ... three of them.

TIC Photo, Tico. Roger; out.

R-1 Apollo 17, this is Recovery. Good morning.

CDR Hello, Recovery. It's a beautiful day. We're out at 610 - -

LMP RELAY BUS, OPEN.

CDR -- and we've got three good mains.

LMP ELS LOGIC, up; verify.

R-1 This is Recovery; Roger. We've got a nice visual on you.

CMP LOGIC and AUTO.

R-1 They're blooming nicely; ... all ...

LMP FLOODS, POST LANDING.

CDR Outstanding!

CMP FLOODS to POST LANDING.

CDR And all is well on board. All is well on board.

CMP There's the clouds down there.

R-1 ... Recovery. Wonderful.

LMP I'm not going to ...

CDR You sound good down there --

LMP ... POST LANDING?

R-1 Waiting for you.

CMP Okay.

LMP ... hundred feet.

CMP Okay.

CDR ... Did you ...?

TIC Stand by ... Recovery, my visual bearing bears 100 --

CDR Wait until I get this ...

~~CONFIDENTIAL~~

TIC - - my positive, 280 at 11.  
CDR Okay, I'll get it.  
R-1 Recovery, Tico. Roger; out.  
LMP Oh, there - okay, I guess it is.  
R-1 We have a visual bearing 245; Tacan, 070 ...  
LMP Okay, we're rolling a little ways - -  
CDR Hello, Recovery; this is America. We're out  
at 4000 feet now, and all is well.  
CDR Aren't those pretty.  
CMP Beautiful, man, oh, man!  
LMP ... those things come out ... all on there.  
R-1 This is Recovery. Roger.  
CDR Okay, Jack, the next big move is ..., the breaker  
check, and stand by for 800 feet. Okay?  
LMP ... in, are we?  
CDR We're at 3500 feet.  
CMP ... out ...  
CDR Well, that's at ... feet.  
R-1 Recovery, Tico.  
TIC Go ahead.  
R-1 Request computer read-out. Over.  
TIC Not yet. Apollo 17 - -  
R-1 This is Recovery.  
TIC - - standing by for your DSKY read-up.

~~CONFIDENTIAL~~

CDR Okay, Houston, DSKY shows minus 1.3, lat. is minus 17.88; long. is minus 166.11.

CMP Ha, hah! Beautiful.

CDR Okay, 2500 feet.

R-1 Recovery; Roger.

TIC ... Tico --

CDR At 800 feet, we want the CABIN PRESSURE RELIEF, two of them, CLOSED.

LMP Okay, we'll close them at 800 feet. Okay?

CMP ... clouds. Scattered clouds.

12 13 50 47 CDR Hello, Recovery. America's through 2000 feet.

R-1 Recovery; Roger.

P-1 This is Photo circling the command module as it descends. The three main parachutes are fully deployed.

LMP -- ... CABIN PRESSURE RELIEF --

CMP Okay.

CDR There's 15, 1600 feet.

CDR Okay, America is out of 1500 feet.

CDR ... they?

CMP Yes. See any holes ... this way?

LMP Just beautiful, I don't see any holes at all.

CDR ... --

P-1 Three main parachutes are fully deployed. The command module is descending, and Photo is circling as it descends.

[REDACTED]

CMP - - ... hundred.

CDR Okay, there's 900. And America is now out of - -

LMP At 800?

CDR - - 800 feet.

LMP Okay. CABIN PRESSURE RELIEF, two of them, CLOSED.

12 13 51 38 CMP Two, CLOSED.

CDR And here come the BUS TIES.

CMP ... CLOSED.

CDR You got them?

LMP Yes.

12 13 51 43 CDR Okay, we're off.

END OF TRANSCRIPT

~~CONFIDENTIAL~~