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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME ONE OF TWO VOLUMES

**APOLLO 9  
ONBOARD VOICE  
TRANSCRIPTION  
(U)**

**RECORDED ON THE  
COMMAND MODULE  
ONBOARD RECORDER  
DATA STORAGE EQUIPMENT  
(DSE)**

**April 1969**

**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. SECTION 793 AND 794. THE TRANS-  
MISSION OR REVELATION OF WHICH IN ANY MANNER  
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**MANNED SPACECRAFT CENTER  
HOUSTON, TEXAS**

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## INTRODUCTION

This is the transcription of the Apollo 9 flightcrew 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 David M. Goldenbaum, Test Division, Apollo Spacecraft Program Office, to whom questions regarding this document should be referred.

The Apollo 9 mission was flown March 3 to March 13, 1969.

Communicators in the text are identified as follows:

### Command module:

CDR	Commander	James A. McDivitt
CMP	Command module pilot	David R. Scott
LMP	Lunar module pilot	Russell L. Schweickart
SC	Unidentifiable crewmember	

### Mission Control Centers:

CC	Capsule communicator (CAP COMM)
F	Flight
LCC	Launch Control Center
S	Surgeon

### Remote sites:

AA	Unidentified ground station
AB	Airboss (Recovery aircraft)
CT	Communications technician (COMM TECH)
R3	Recovery 3 (Recovery helicopter)

In the text, a series of three dots (...) is used to designate those portions of the communications which 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.

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DAY 1

-00 00 00 14 LCC 14, 13, 12, 11, 10, 9, 8, 7, 6 -  
-00 00 00 05 LCC IGNITION! 4, 3, 2, 1, 0 -  
00 00 00 03 LCC LIFT-OFF!  
00 00 00 04 CDR Feeling good.  
00 00 00 12 LCC Clear the tower!  
00 00 00 14 CC Roger. Tower clear.  
00 00 00 15 CDR Roger. I have a roll program, and I do read you loud and clear.  
00 00 00 19 CC Roger. Roll program.  
00 00 00 24 CDR A nice afterburner.  
00 00 00 30 LMP Our SPS helium pressure's dropped to zero.  
00 00 00 34 CMP Still okay.  
00 00 00 35 CDR Yes.  
00 00 00 36 CMP Pretty close to the curve, Jim.  
00 00 00 38 CDR Okay.  
00 00 00 41 CC Apollo 9.  
00 00 00 43 CC MARK.  
00 00 00 44 CC Mode 1 Bravo.  
00 00 00 45 CDR Okay, 1 Bravo.  
00 00 00 46 CMP RCS COMMAND.  
00 00 00 50 CDR Now we're getting a little noise.  
00 00 00 52 CMP Yes. About 48 or so.  
00 00 00 57 CMP Okay, there goes the cabin relief.

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Day 1

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00 00 00 59 CDR Okay. Primary EVAP's nice and low.  
00 00 01 08 CMP Looks good, Jim, on the curve.  
00 00 01 10 CDR Roger, Dave. A couple g's.  
00 00 01 14 CDR We're at 01:14; MAX q is about 01:21.  
00 00 01 25 CMP It's a tad high; but it's okay.  
00 00 01 27 CDR Okay.  
00 00 01 43 CMP It looks good, Jim, on the curve.  
00 00 01 46 CDR Thank you, Dave. We're through MAX q; now it's no sweat.  
00 00 01 57 CDR Mode 1-C here --  
00 00 01 58 CC Apollo 9, you are GO for staging. And you are Mode 1 Charlie.  
00 00 02 00 CDR Roger; 1 Charlie.  
00 00 02 04 CMP EDS AUTO's OFF.  
00 00 02 09 CDR Okay, stand by for inboard; they should come - at about now; there's inboard. Huh!  
00 00 02 27 CMP It's a little low, Jim.  
00 00 02 29 CDR A little low? Okay.  
00 00 02 36 CDR Okay, we should have outboard in about 5 seconds.  
00 00 02 39 CMP Okay.  
00 00 02 54 CDR ..., Rusty?  
00 00 02 55 IMP It's ON.  
00 00 02 56 CDR Okay, ON.  
00 00 02 59 CC Apollo 9, Houston. Your thrust looks good. You are GO for tower JET.  
00 00 03 00 CDR Thank you.

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Day 1

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00 00 03 01 CMP Okay, you've got 44; look's good.  
00 00 03 11 LMP We've got a lot of S-band noise.  
00 00 03 14 CMP ...  
00 00 03 15 CDR ...  
00 00 03 16 CMP Here we go, gang.  
00 00 03 17 CDR Okay.  
00 00 03 18 CMP Tower JET --  
00 00 03 19 LMP Look at it; look at it!  
00 00 03 20 CMP It's GO! Black out there, isn't it?  
00 00 03 25 CDR Everything's looking neat here, and we've got the tower off.  
00 00 03 28 LMP Great show, man.  
00 00 03 29 CMP 243 psf is a little low, Jim.  
00 00 03 31 CDR Okay.  
00 00 03 32 CC Apollo 9, we're still in guidance initiate; everything looks good.  
00 00 03 34 LMP Should we tell him about that helium?  
00 00 03 35 CDR Yes, ...  
00 00 03 37 LMP Yes; right at lift-off, we had an indicated SPS helium pressure go to zero.  
00 00 03 40 CC Apollo 9, you are GO all the way; everything looks good.  
00 00 03 43 CDR Roger.  
00 00 03 53 CMP I don't know if he read that.  
00 00 03 56 CDR Houston, did you read our comment that our SPS helium pressure went to zero? Indicated zero at lift-off?

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00 00 04 07 CC Apollo 9, this is Houston. I did not copy.  
00 00 04 10 CDR Roger; be advised our SPS helium pressure went to zero at lift-off.  
00 00 04 15 CC Roger; copy.  
00 00 04 16 CMP I see you're riding low and parallel, Jim.  
00 00 04 19 CDR Okay.  
00 00 04 20 CDR If you've got any good words on that, why don't you give them to me when you --  
00 00 04 22 CC Roger; and it is GO here, Apollo 9.  
00 00 04 25 CDR Very good!  
00 00 04 28 LMP That might be a circuit breaker, Jim.  
00 00 04 30 CDR Yes, okay.  
00 00 04 31 LMP I'll check it later. The systems look good.  
00 00 04 34 CDR Yes, everything looks hunky-dory! If we just got --  
00 00 04 36 LMP The boiler's working.  
00 00 04 38 CMP RCS is good, Jim.  
00 00 04 40 CDR Fine.  
00 00 04 45 CMP Holding low and parallel.  
00 00 04 46 CDR Okay.  
00 00 04 52 LMP Boy, that cut-off - That's a hell of a cut-off, isn't it?  
00 00 04 54 CDR Yes, not bad. There's that horizon. Boy, is that pretty! Wow!  
00 00 05 00 CMP You're not supposed to say that, you've been here before.  
00 00 05 01 CDR Beautiful!

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00 00 05 02 CC Apollo 9, it's 5 minutes. Everybody's happy as a clam here. Looking good!

00 00 05 06 CDR Whooee!

00 00 05 07 CMP Coming up on the big word, Jim.

00 00 05 09 CDR Okay.

00 00 05 12 LMP Boy, that S-band is really noisy.

00 00 05 15 CDR Is it?

00 00 05 16 LMP Yes.

00 00 05 21 CMP I'll give you a standby, buddy.

00 00 05 22 CDR Okay. Align all - ail the pieces all the way.

00 00 05 38 CMP We're coming right back in, Jim.

00 00 05 39 CDR Very good! Looks good!

00 00 05 41 CMP Very good.

00 00 05 42 LMP Shoot!

00 00 05 44 CDR God, that's pretty!

00 00 05 45 LMP That's terrible!

00 00 05 46 CDR That's so pretty, I can't believe it!

00 00 05 51 LMP If it keeps making that noise, I'm going to turn it off.

00 00 05 55 CDR Looks bad, Rusty?

00 00 05 57 LMP Well, it - it's stopped now.

00 00 05 58 CDR Okay, we're coming up on 6 minutes, so you can get ready for your antenna shift.

00 00 06 03 LMP Yes, I'm all set for it.

00 00 06 09 LMP Okay, 16 OMNI ... - -

00 00 06 11 CMP Okay. Give a yes ... - -

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00 00 06 12 CC Fine. You have S-IVB-to-orbit capability.

00 00 06 15 CDR Roger there; Roger there.

00 00 06 17 CC Your level-sense-arm time is 08 plus 21; predicted S-II cut-off, 08 plus 56.

00 00 06 23 CDR 08:21 and 08:56.

00 00 06 25 LMP Roger; and we got S-BAND OMNI to Delta.

00 00 06 28 CC Copy, OMNI Delta. Thank you.

00 00 06 41 IMP Systems look good. Just boiling away. Look at that ...

00 00 33 59 CDR It might help, Dave, I don't know. Dave, do you want the floodlights on?

00 00 34 02 CMP Sir?

00 00 34 04 CDR Do you want my floodlights on?

00 00 34 06 CMP Yes, why don't you turn them on?

00 00 34 08 CDR Hey, the sun's still shining on my side, Rusty.

00 00 34 09 LMP Oh, it is really?

00 00 34 10 CDR Yes.

00 00 35 15 CMP Hey, they're not bad through the telescope, Jim.

00 00 35 17 CDR They're not, huh?

00 00 35 18 CMP Not bad at all.

00 00 35 19 CDR Good. Got something you recognize?

00 00 35 20 CMP Oh, yes. ...

00 00 35 27 CMP Let's get the first one in - Sirius.

00 00 35 37 LMP Hey, I can see it. I can see the stars now.

00 00 35 40 CMP Shoot, I got Orion.

00 00 35 42 LMP Still daylight, Jim?

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00 00 35 43 CDR Heck, yes. I can see a star. How do you like that?  
00 00 35 49 CDR Your baby.  
00 00 36 06 CDR Were they really?  
00 00 36 07 CMP Yes.  
00 00 36 23 CDR Can you really? Well, we're pitching around pretty fast.  
00 00 36 26 CMP Yes. I never got either one.  
00 00 37 37 CC That is affirmative, and this changes slightly as the S-IVB vents, but that was a pretty good hack at it on Canary.  
00 00 37 46 CDR That's not a bad boost, then.  
00 00 37 48 LMP No, we had 88 by 138.  
00 00 37 51 CMP Gee, that's not too hot.  
00 00 37 53 CC And we'll have you here at Tananarive for about another 5 minutes.  
00 00 37 58 CDR Roger. You got the - you say that our SPS helium tank pressure looks good, huh?  
00 00 38 05 CMP Hey, Jimmy. There's the first one.  
00 00 38 06 CDR How about that!  
00 00 38 07 LMP Hey, look at that.  
00 00 38 09 CDR First star, huh? Stand by. David says his first star angle is five balls.  
00 00 38 19 LMP Great going, Dave.  
00 00 39 03 LMP Hey, Jim. ... do a fine align.  
00 00 39 08 CMP Houston, Apollo 9. Did you copy the torquing angle?

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- 00 00 39 10 CC We have no data here at Tananarive, Dave. You'll have to read them to me.
- 00 00 39 14 CMP Oh, very well. GET was 39:00; plus 00116, minus 00032, minus 00108.
- 00 00 39 30 CC Roger, Apollo 9; this is Houston. I copy the time and the angles. Thank you.
- 00 00 39 36 CMP Works like a charm.
- 00 00 39 38 CC Roger; looks like the platform was right there. And that was a nice speedy job on that 52.
- 00 00 39 52 CMP Good old AUTO optics.
- 00 00 40 03 CMP Hey, I've got the moon out here.
- 00 00 40 04 LMP Yes, man.
- 00 00 40 05 CMP Oh, hey, isn't that pretty? Gee, hot diggity.
- 00 00 40 09 CDR (Laughter)
- 00 00 40 11 CMP That's really slick.
- 00 00 40 13 CDR Jettison the dust covers; I think if we were flying over some storm now, I see some lightning out there. Jettison the dust covers; backup COMM check. Have you done that, Rusty?
- 00 00 40 21 LMP No, I haven't done that backup COMM check --
- 00 00 40 23 CDR Alright, that's Carnarvon.
- 00 00 40 24 LMP That's Carnarvon.
- 00 00 40 26 CDR Yes. And ... purge checks, caution and warning system, SCS attitude reference comparison. Okay, wait just a minute.
- 00 00 40 39 CMP That moon really wipes out the star field.  
Ooh! ...
- 00 00 40 48 CDR These pencils are going to really be a bear.
- 00 00 40 50 LMP The what is?

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00 00 40 51 CDR

These pencils. The one I have doesn't have any Velcro on it. The Velcro's all worn off. Can you imagine that?

00 00 40 59 LMP

That's because you've been using it so much.

00 00 41 01 CDR

No, there's no knob - nub on it. Okay, we've got the - I'm going to go to the flight plan, here in a minute. I see I made a terrible mistake. I should have brought the whole mini-flight plan with me.

00 00 41 17 IMP

I - I got mine, Jim, if you need one.

00 00 41 20 CDR

I have the first day, but I should have brought the rest of it, too.

00 00 41 23 IMP

MAIN BUS TIES are OFF. Okay.

00 00 41 30 CDR

Okay, we got to prepare the cameras - the Hasselblad and the sequence camera.

00 00 41 44 CDR

I'll unstow the checklist and the cameras. We don't need the checklist; we've got them - GDC align --

00 00 41 50 CC

Apollo 9, this is Houston. We're going to lose you here at Tananarive in about 45 seconds, and we'll see you over Carnarvon at 52.

00 00 41 59 CDR

Roger; 52 at Carnarvon.

00 00 42 02 IMP

Carnarvon at 52.

00 00 42 09 CMP

Okay, first star check on Regor. Right there.

00 00 42 14 CDR

Is it really? Great.

00 00 42 15 CMP

Regor has a little ... on it.

00 00 42 17 CDR

You wouldn't recognize Regor if you saw it.  
(Laughter)

00 00 42 20 CMP

Hey, listen, Regor has a little tiny star right next to it.

00 00 42 23 CDR

I'll tell you, I wouldn't recognize Regor if ...

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00 00 42 42 CMP That's ... the checklist ...  
00 00 42 45 CDR Oh, is that right?  
00 00 42 48 CMP Yes, should be 34 to 38.  
00 00 43 04 LMP A and B are 32. C is 37. Battery -  
00 00 43 12 LMP Hey, Dave, are you in 4 Bravo down there?  
00 00 43 18 CMP No, 4 Bravo - What do you mean?  
00 00 43 21 LMP ...  
00 00 43 23 CMP Oh, yes, sir.  
00 00 43 25 LMP Okay, what does it read?  
00 00 43 27 CMP 3.5 volts.  
00 00 43 30 LMP Oow! That's low!  
00 00 43 31 CDR What's that?  
00 00 43 33 LMP Battery relay bus. 3.5, huh?  
00 00 43 45 CMP 3.7 ...  
00 00 43 49 LMP Oh, okay, that's because the main buses - the battery buses are low. Reading 32 like the battery buses.  
00 00 44 03 CDR Think you're sorry we wasted all that time ...?  
00 00 44 07 LMP No.  
00 00 44 08 CDR (Laughter)  
00 00 44 09 LMP I'm just so happy to be disappointed. Okay, I got the ECS monitoring check done, and everything looks good there. Dave, can I make ... yet?  
00 00 44 21 CMP Yes, go ahead.  
00 00 44 23 CDR Rusty, do you want to turn the cabin fan off ...?  
00 00 44 25 LMP Okay, I'll try them both off.

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00 00 44 34 CDR (Laughter) Just because you're cold, huh? I'll probably find out that my green handles don't ...  
00 00 44 43 LMP Did you get the GDC alignments all done, Jim?  
00 00 44 45 CDR Yes, I did. I got the GDC alignments done. Read the other one.  
00 00 44 52 LMP Uhh -  
00 00 44 55 CDR I got the service module RCS check done, the command module RCS done, the EMS check done.  
00 00 45 04 LMP Service module RCS monitoring - You got that?  
00 00 45 07 CDR I did that.  
00 00 45 08 LMP Command module RCS monitoring?  
00 00 45 09 CDR Did that.  
00 00 45 10 LMP Jet - jettison the dust covers - You got that done? I'm waiting for the backup COMM check and 52 - P52. ... PIPA bias ...  
00 00 45 34 CDR ... the flight plan ... out, Dave, and see ...  
00 00 45 40 LMP What the hell am I going to do with an update book? The problem is the whole - the whole ... and we don't even ...  
00 00 45 48 CMP Yes.  
00 00 45 54 CDR Oh, here. Let me - I'll just stick it temporarily ...  
00 00 46 06 LMP There it is. Now, I guess you could do your SPS attitude reference ... DSKY.  
00 00 46 21 CMP Okay, the fuel cell purge check; I'm just going to check O<sub>2</sub>, right?  
00 00 46 27 CDR I don't know, Dave.  
00 00 46 28 CMP Fuel cell purge.  
00 00 46 30 CDR Check, yes.

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00 00 46 37 CMP ... why don't we ... -  
00 00 46 42 CDR Oh!  
00 00 46 46 CMP Well, all we're supposed to do is check it and see if it doesn't leak anymore.  
00 00 46 50 CDR I'll check it.  
00 00 46 55 CMP Okay, fuel cell 1 purge is okay; fuel cell 2 is - very good.  
00 00 47 04 LMP Okay. ..., Davey.  
00 00 47 05 CMP Alright.  
00 00 47 06 LMP Let me give you your ...  
00 00 47 13 CMP This looks good.  
00 00 47 16 LMP Caution and warning checks. Stand by for MASTER ALARM - no-sweat MASTER ALARM.  
00 00 47 26 LMP Okay, caution and warning lamp test, ON. How many are we supposed to have out?  
00 00 47 31 CDR One, two, three, four - all on the bottom row.  
One, two, three, four are out.  
00 00 47 36 LMP That's good.  
00 00 47 39 CMP Did you get your - your MASTER ALARM, Jim, up there?  
00 00 47 41 CDR Yes.  
00 00 47 42 CMP Good.  
00 00 47 46 LMP Okay. That looks good - I got that.  
00 00 47 56 CDR I forgot to watch the altimeter during the launch to see if it works.  
00 00 48 00 LMP Okay, POWER to OFF. Okay, caution and warning - checked that. Hey, you installing the optics there, Davey?  
00 00 48 06 CMP Yes, sir.

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00 00 48 07 CDR

...

00 00 48 10 LMP

... You got the SCS AUTO reference comparison, Jim? Or are we going to do that?

00 00 48 14 CDR

On the - on the DSKY?

00 00 48 15 IMP

Yes.

00 00 48 16 CDR

I'll do that in just a second.

00 00 48 18 LMP

Okay, and I'm going to go on with the SPS monitor checks.

00 00 48 19 CDR

Anyone remember where we put the checklist?

00 00 48 21 LMP

Right here, I got it.

00 00 48 30 CDR

Okay, why don't you give me the bag, so you won't have to sit there and hold it? That's a good idea.

00 00 48 49 CDR

Oh, this is a heck of a lot harder to operate than the other one.

00 00 48 55 CMP

Well, you just can't put all these ...

00 00 48 57 CDR

Yes, you just - can't sit on anything ...

00 01 01 29 LMP

Here, let me see if that ... gage - No, N2A and N2B look okay, and it's just the SPS pressure that's down.

00 01 01 37 CDR

Okay, that sounds like we've got a good ... bad news if ...

00 01 01 50 CMP

Yes, that would have been bad news, we'd really ...

00 01 01 54 LMP

Yes, wouldn't it?

00 01 01 56 CMP

Whether we ... it or not. Well, I guess there's no sense in monitoring that thing.

00 01 02 04 CDR

No (laughter). ... I don't know whether it was the ... coming off or what it was. I think it came out of that hole up there.

00 01 02 29 CMP

Rusty, do you have any ...?

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00 01 02 32 LMP Yes, I got a bag.

00 01 02 33 CMP Let me ...

00 01 02 34 LMP Hey, I love that! Here goes one - ... and I already have it.

00 01 02 42 CMP Hey, you know you can see the earth real good now. My God!

00 01 02 44 CDR See the what?

00 01 02 45 CMP Earth. See it?

00 01 02 46 CDR Let me turn my floods down ... Hey, we're coming back into some daylight.

00 01 02 54 LMP Dave, that backup - that data is on the back of that sheet. Yes, you see how to write it into the block update stuff here?

00 01 03 03 CMP I'll just ... right here.

00 01 03 06 LMP Okay, ...

00 01 03 07 CMP Okay, here is some ...

00 01 03 17 CDR Okay, let's do the PIPA bias ...

00 01 04 18 LMP Yes, you want to store the COAS ... Yes, you've got to get the ORDEAL and ...

00 01 05 14 CDR Roger.

00 01 05 25 CDR Did you get the fuel cell purge checked, Rusty?

00 01 05 28 LMP Yes.

00 01 05 30 CDR ...?

00 01 05 31 LMP Yes, ... S-band ...

00 01 05 40 CDR You did the SPS monitor check which ...?

00 01 05 42 LMP Right. I got to find some stupid place to put my helmet now.

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00 01 05 54 CDR

Okay, let me recap. That's the end of the check-list as far as I can see. We haven't done the PIPA bias check. You've done the P52, and that's good. You've done your backup - No, you haven't done that yet.

00 01 06 17 LMP

That's not a very good place to - Yes, it is.

00 01 06 19 CDR

Rusty, did you get the ECS monitor check?

00 01 06 21 LMP

Yes, I did.

00 01 08 11 LMP

How about the water gun - is that working?

00 01 08 25 CC

...

00 01 08 38 LMP

Let's see, Dave, I've got to help you ...

00 01 08 50 CDR

Is it turned off? Okay.

00 01 09 04 CDR

Roger, Houston. Read you loud and clear. How about us?

00 01 09 08 CC

...

00 01 09 11 LMP

You are?

00 01 09 13 CDR

Houston, this is Apollo 9. Do you read us?

00 01 09 28 LMP

You sure get a lot of - a lot of gas in that.  
... This tastes better.

00 01 09 39 CMP

Hey, look at that sunrise. Pretty! God, that's beautiful! Oh!

00 01 09 58 CDR

Roger, Houston. This is Apollo 9. Do you read me?

00 01 10 03 CMP

Houston, Apollo 9. You're coming through weak, but clear.

00 01 10 26 CMP

Roger. Get the data book!

00 01 10 30 LMP

I haven't got it. Dave, let me see. What am I doing? I'm trying to find a checklist, huh? Yes, well, here's ... it's got the flight plan, procedures book, and crew log ...

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00 01 10 45 CMP Alright.

00 01 11 25 CMP Roger. ...

00 01 11 30 LMP Boy, the sun's come up like thunder over Galway Bay, or something.

00 01 11 38 CMP Yes, ...

00 01 11 43 CMP Okay.

00 01 11 46 LMP Man, oh man, it's daytime again.

00 01 11 52 CMP ... checklist ...

00 01 12 03 LMP Okay, ...

00 01 12 11 LMP ... break lock, isn't it? Pretty definite.

00 01 12 17 CDR Let's see how the windows are doing.

00 01 12 20 LMP Mine looks pretty good. I've got - ...

00 01 13 48 CDR You looking for another bag? Oh, a temporary stowage bag. ...

00 01 13 51 LMP Well, Dave, it's supposed to be in the data card - cloth bag.

00 01 14 15 CMP I'll be damned if I can't get my temporary stowage bag open for anything!

00 01 16 36 CMP Oh, hey, let's get these Mae Wests off before we ... down.

00 01 16 40 CDR Oh, that's a good idea.

00 01 16 42 CMP Hey, hey, hey.

00 01 16 43 CDR As a matter of fact, I'll even stow ...

00 01 16 47 CMP Okay, you - you're pretty safe until about -

00 01 16 50 LMP Okay. I'll get my - Cabin pressure's now 5.4 by the way.

00 01 17 10 LMP Not me, not me!

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00 01 17 12 CMP That sounds like a McDivitt talking.  
00 01 17 13 CDR No, I haven't done it yet. I'm going to save mine up. When I go, buddy, you're going to know it.  
00 01 18 04 CDR Yes, and I'm going to get some ...  
00 01 18 14 CDR We should get one out of ... set.  
00 01 18 18 CMP Well, at least that's why ... for me.  
00 01 18 30 LMP It's hard as heck to get this thing out of these ...., isn't it, Jim?  
00 01 18 33 CDR Yes, I'm going to lose all this stuff ... I've got some time.  
00 01 18 41 LMP Dave, if you got those cameras all ...  
00 01 18 50 CDR Would you believe it's getting very difficult to see the numbers over there on the EMS DELTA-V counter? It really is. ...  
00 01 18 57 CMP Let's see.  
00 01 19 00 LMP Yes.  
00 01 19 08 LMP Dave, you got to move it down ...  
00 01 19 10 CMP Whoo! Yes, ... move around a little ...  
00 01 19 37 CDR Yes, you're able to move around a little bit. I don't have to worry about sticking my feet through the instrument panel.  
00 01 19 40 LMP Boy, that - that damn hardware ...  
00 01 19 43 CDR Dave, you want to take your Mae West off?  
00 01 19 45 CMP Yes.  
00 01 19 53 LMP Okay, I'm going to put the lights ...  
00 01 20 11 LMP Dave, you got another - another clip?  
00 01 20 20 CDR Well, maybe we ought to just get them all out, Dave.

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00 01 20 22 LMP Yes, let's just get them all out.  
00 01 20 38 LMP Photo ... plan - photo ... plan, it says on day 1.  
00 01 20 49 CDR Hey, if somebody spits, it ... right on ... stuff.  
00 01 20 53 LMP (Laughter)  
00 01 21 06 LMP ... a roll of tape out ... and stick it up here  
where ...  
00 01 21 09 CDR Hey, I wonder if we ought to tape up our pens.  
00 01 21 17 LMP Tape up our pens?  
00 01 21 18 CDR Yes, tape up our spare pens, so it doesn't eva-  
porate, dry out.  
00 01 21 20 LMP Yes, I know.  
00 01 21 41 LMP Boy, we've been up here an hour already. ...  
Postinsertion unstowage, mount and initialize  
ORDEAL, SPS monitor check - Shoot, we're way the  
hell ahead of schedule. Extend the docking probe  
... The next thing that I can see ... that's at  
41 - 48 or so.  
00 01 22 20 CDR Maybe you ought to get the big flight plan.  
00 01 22 31 CDR Okay, is the tape recorder on, Mr. Schweickart?  
00 01 22 33 LMP Yes, I guess so ...  
00 01 22 37 CDR Where's that other one? The other one's --  
00 01 22 40 LMP You want the little one?  
00 01 22 41 CDR Well, I wanted to do that - debriefing on tape.  
00 01 22 47 CMP I'll get the little one for you.  
00 01 22 50 LMP What else do we need - A camera.  
00 01 22 56 CDR ... The most important thing we need right now  
is a camera ... so that we have them -  
00 01 23 05 LMP ... Hasselblad, and that's got MAG A on it --

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Day 1

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00 01 23 14 CDR

Let's see. Turn the tape recorder on ... During the boost, lift-off was noticeable ... vibrations ... vibrations 1 or 2 seconds. At T minus - T plus 12 minutes, ... roll was noticeable and giving oscillations on the ratemeter of about 1 degree per second ... vibrations and oscillations ..., and no problems during the ... --

00 01 23 59 CC

Apollo 9, this is Houston through the Redstone. Standing by.

00 01 24 02 CDR

Roger. Thank you.

00 01 24 08 CDR

It was very quiet up until about 50 seconds and ... high peak ... vibrated ... not bad at all ... quiet out again about ... --

00 01 24 25 CC

Apollo 9, this is Houston through the Redstone.

00 01 52 59 LMP

... That's the first of many times.

00 01 53 01 CDR

Yes, but - all welcome.

00 01 53 05 LMP

S-IV LM - S-IV B/LM SEP, two, are both CLOSED.

00 01 53 11 CDR

Verified.

00 01 53 12 LMP

Okay, CB DOCKING PROBE, two, CLOSED.

00 01 53 15 CDR

Okay. CB DOCKING PROBE, two, CLOSED.

00 01 53 19 LMP

DOCKING PROBE EXTEND/RELEASE, EXTEND/RELEASE until barber pole.

00 01 53 24 CDR

Okay. I'm going to call Houston and tell them we're doing that. Houston, Apollo 9.

00 01 53 29 CC

Go, Apollo 9.

00 01 53 31 CDR

We're ready to extend the docking probe. You ready?

00 01 53 34 CC

Boy, we're - we're all ears down here. Please let us hear how that goes.

00 01 53 39 CDR

Okay, fine. It's in work.

00 01 53 41 LMP

Okay, --

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00 01 53 42 CC Roger.

00 01 53 43 LMP EXTEND/RELEASE switch to EXTEND/RELEASE until  
barber pole. Whooee. Would you believe it went --

00 01 53 50 CDR We got a good one.

00 01 53 51 LMP Yes. DOCKING PROBE EXTEND/RELEASE --

00 01 53 53 CC Roger. Copy. That makes us all happy.

00 01 53 58 LMP Gray, at full extend. I'd say that was 0.3 of a  
second again, Dave.

00 01 53 59 CDR Yes.

00 01 54 00 CMP Roger. It was just like the chamber. We heard  
it go out; it took a couple, or 0.3 of a second.

00 01 54 06 CDR Then RELEASE until talkback?

00 01 54 07 CC Roger. Copy.

00 01 54 08 CDR Okay.

00 01 54 09 CDR Then note DOCKING PROBE talkback gray at full  
extension.

00 01 54 10 LMP Okay, talk --

00 01 54 11 CDR Then RELEASE?

00 01 54 12 LMP Hey, who's reading this thing?

00 01 54 13 CDR Me.

00 01 54 14 LMP You want to take my job?

00 01 54 16 CDR I will in a minute, yes.

00 01 54 17 LMP DOCKING PROBE EXTEND/RELEASE to RETRACT; talk-  
back, gray.

00 01 54 18 CDR RETRACT; talkback is gray.

00 01 54 20 LMP COAS mounted.

00 01 54 23 CMP Okay.

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00 01 54 24 LMP COAS POWER, ON.  
00 01 54 26 CMP COAS POWER's coming ON.  
00 01 54 27 LMP Verify RCS DAP loaded.  
00 01 54 29 CDR I'll tell you what. Why don't you start putting our helmets and - Oh, they're down here a step.  
00 01 54 34 LMP Yes.  
00 01 54 35 CMP Okay, Rusty.  
00 01 54 36 CDR I think I ought to go put mine on.  
00 01 54 37 CC And, Apollo 9, this is Houston. We'll fall off at Canaries here in about another minute, and we'll see you over Tananarive around 09.  
00 01 54 45 LMP Roger; Tananarive at 09.  
00 01 54 49 LMP Okay, you want to load the RCS DAP, Dave?  
00 01 54 51 CMP Alright.  
00 01 54 52 LMP 11102.  
00 01 55 01 CMP Okay.  
00 01 55 02 LMP Okay, and R-2, all ones.  
00 01 55 08 CMP Okay. 11102 and 11111?  
00 01 55 11 LMP Okay, and I guess you PROCEED out of there.  
00 01 55 13 CMP Yes.  
00 01 55 15 LMP Okay, load NOUN 17.  
00 01 55 18 CMP Okay.  
00 01 55 21 CDR Boy, I wish I had a towel ... --  
00 01 55 23 LMP That's wrong. Okay, try VERB 25.  
00 01 55 26 CMP Okay.  
00 01 55 27 LMP 18143.

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00 01 55 30 CDR You didn't run across a towel or anything down there, did you?

00 01 55 33 CMP A what, Jim?

00 01 55 34 CDR A towel?

00 01 55 35 CMP They're up underneath me.

00 01 55 36 CDR ... clean off my visor.

00 01 55 37 CMP They're up underneath me. Lay up at A-1, Jimmy

00 01 55 40 CDR A long ways up there.

00 01 55 41 LMP 09436.

00 01 55 46 LMP Okay. 01478.

00 01 55 51 LMP Looks good. 183.43, 94.36, 14.78.

00 01 55 56 CMP 180 - 181.43, right?

00 01 55 59 LMP Yes, yes.

00 01 56 00 CMP Okay.

00 01 56 01 LMP Okay, NOUN 22.

00 01 56 03 CMP Okay.

00 01 56 06 LMP 121.43.

00 01 56 09 CMP Okay.

00 01 56 10 LMP 274.36.

00 01 56 14 CMP Okay.

00 01 56 15 CDR Oh, Davey, you didn't get me the helmet visor cover.

00 01 56 20 CMP Yes. It's un - it's in the L-1, Jim.

00 01 56 22 CDR L-1, what's that?

00 01 56 23 CMP No - it's in the L-shaped bag, I'm sorry.

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Day 1

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1 00 01 56 25 CDR L-shaped bag, okay.  
00 01 56 27 LMP 345.22.  
00 01 56 32 CMP Okay.  
00 01 56 33 CDR I'll go get that.  
00 01 56 34 CMP Let me check that: 121.43, 274.36, 345.22. That looks good.  
00 01 56 42 LMP Set the docking attitude on attitude set dials.  
00 01 56 46 CMP Alright.  
00 01 56 47 LMP 121.4.  
00 01 56 49 CDR Where did you say those towels were, Dave?  
00 01 56 51 CMP The towels? I think they're underneath me in A-1, way up here.  
00 01 56 56 LMP Oh, isn't it pretty out? Whoohoo! Look at those thunderstorms.  
O 00 01 56 59 CDR What am I hooked on up there? ... hanging over.  
00 01 57 05 LMP 121.4; Dave, you got that?  
00 01 57 08 CMP Coming up. Okay. 121.4, okay?  
00 01 57 10 LMP 274.4.  
00 01 57 12 CMP Alright. A little longer.  
00 01 57 20 LMP See if I can see a star in the daytime now.  
00 01 57 24 CMP 274.4, wasn't it?  
00 01 57 26 LMP Right, and 345.2.  
00 01 57 32 CMP 345.2, okay.  
00 01 57 35 LMP Okay, that's it. SEP preparation now. S-IVB attitude, deadband, and H<sub>2</sub> vent rate, confirmed by MSFN.

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Day 1

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- 00 01 57 50 CMP Got to align the GDC - Did we get that again?  
Yes, we did.
- 00 01 57 55 LMP Jim, while you're down there, how about WASTE  
STOWAGE VENT, CLOSED.
- 00 01 57 59 CDR I got that.
- 00 01 58 00 LMP SUIT CIRCUIT RETURN valve, CLOSE.
- 00 01 58 02 CMP Okay, just a minute.
- 00 01 58 04 LMP Wait a minute now. I guess we've got to don our  
helmets and gloves first before we do that one.
- 00 01 58 10 CDR Yes.
- 00 01 58 18 CDR There he is, right there.
- 00 01 58 20 LMP It's - getting dark again.
- 00 01 58 23 CDR Does that every few minutes. Okay, I think I'll  
put my helmet and gloves on and then put that on.  
Ouch!
- 00 01 58 36 LMP I got a few spots on my window, but I don't see  
much gunk.
- 00 01 59 00 CDR (Singing)
- 00 01 59 10 LMP Try my SPS helium again. Maybe it came back in  
order. Boy, it really hit the peg, I'll tell you.  
It looked like it was going to go right off the  
bottom of the ... Boing! Looked like a reset.
- 00 01 59 24 CMP (Laughter)
- 00 01 59 43 LMP Man, I'll tell you, when that water boiler boils,  
it really puts the temperature down there.
- 00 02 00 04 LMP There it is. It's getting dark.
- 00 02 00 11 CMP It sure is, isn't it?
- 00 02 00 13 LMP Yes. Oh, there's lightning. Look at all that  
lightning on the horizon.
- 00 02 00 23 CMP Now you can see stars, Rusty. See the stars?

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Day 1

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- O 00 02 00 25 IMP Let me look. I got my lights up awful bright.
- 00 02 00 29 CDR Tell you one thing I'm going to have is some navigation here with this medal. Let me get this thing out of there.
- 00 02 00 39 LMP No, I don't yet. Oh, let me get my checklist out of the way.
- 00 02 00 43 CMP Got one right at 12 o'clock.
- 00 02 00 45 LMP Do we really?
- 00 02 00 47 CMP Yes.
- 00 02 00 48 LMP Oh, yes. Yes, I see it. Yes, about 3 degrees above the horizon? Yes. Sure do.
- 00 02 00 55 CDR Why don't you start getting your helmets on so we can get -
- 00 02 00 57 CMP Here, give me mine, Jim.
- 00 02 00 58 LMP Ahh, what a drag!
- O 00 02 01 01 CDR ...
- 00 02 01 04 CMP Jim, I need you to hand me mine.
- 00 02 01 06 CDR Okay. Just a second; I'm trapped. Oh boy!
- 00 02 01 13 LMP Okay, it's turnover time. Slowly I turn. (Singing
- 00 02 01 53 LMP Clever, Rusty - put your old fingerprint right on the helmet.
- 00 02 01 56 CDR Here, I have a rag here if you can use it.
- 00 02 01 59 LMP Oh, that's okay. I'm - I'm sure I didn't get it enough to even notice.
- 00 02 02 12 CMP Jim, the bags go in A-5, which is the CO<sub>2</sub> canister right down --
- 00 02 02 16 CDR Okay.
- 00 02 02 17 CMP -- to the right of the --

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0 00 02 02 18 CDR Okay, let me just - Just a minute until I get my visor.  
00 02 02 23 CMP Okay.  
00 02 02 24 CDR I'll be right with you.  
00 02 02 31 LMP Okay, one each, helmet, on ... tied down. Oh, tha  
was a brilliant one!  
00 02 02 42 CDR By the time I get it out, I won't need it; my helm  
will already be bashed up. Oh, shoot. Crash, ban  
Where did we get this thing?  
00 02 03 00 LMP Am I in your way, Jim?  
00 02 03 02 CDR No, no.  
00 02 03 04 LMP Okay.  
00 02 03 10 LMP Okay, I got the helmet on.  
00 02 03 28 LMP Oh, I got a foggy helmet.  
00 02 03 30 CMP Do you?  
00 02 03 31 LMP Whooee! Sure is.  
00 02 03 34 CMP How come, is it foggy already?  
00 02 03 36 LMP I don't know, but it's really fogging.  
00 02 03 39 CMP You got your flow on?  
00 02 03 40 LMP Yes. Helmet, too.  
00 02 03 42 CDR Hey, what's the suit-inlet temperature? I feel  
kind of warm.  
00 02 03 45 CMP Suit inlet is 47 degrees.  
00 02 03 48 CDR Hmmm!  
00 02 03 56 CDR Here, they go down here in A-5, huh?  
00 02 03 59 CMP Yes.  
00 02 04 16 LMP Mmm.

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Day 1

27

00 02 04 23 LMP

Ahh, there goes a hair. By the time this flight's over, I'm not going to have any hairs left on my forearm; I'll say that.

00 02 04 31 CDR

Wow, how do you ever get these things in here? All three of them went in there, Dave.

00 02 04 42 CMP

Yes, there - should be EVA gloves on the left. You ought to be able to get them all in there, Jim.

00 02 04 46 CDR

Tell you what; rather than fool around with that, I think I'll just stick them down here in the - Well, maybe I better not.

00 02 04 50 CMP

Put them in a temporary - F-1 or F-2 up near the temporary ...

00 02 04 56 CDR

I think I'll do that. I want to get back up there and get going on this thing, so we don't - have to leave.

00 02 05 01 CMP

Yes.

00 02 05 06 CMP

Get them out again soon anyway.

00 02 05 14 CMP

Here's mine.

00 02 05 15 CDR

Okay, I'll be with you in just a minute.

00 02 05 17 CMP

Oh, I'm sorry. I thought you were done.

00 02 05 19 CDR

No, not quite. Not quite.

00 02 05 27 CDR

Okay, I'll take it.

00 02 05 29 LMP

Now, let me get that. Okay, I got that one. Ouch! Boy, I got a real hair in there.

00 02 05 34 CDR

Where's your bag, Rusty, or don't you need me to stow it?

00 02 05 36 LMP

It's - it's up at the head there. I think it's okay.

00 02 05 39 CDR

Okay, good.

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- 0 00 02 05 44 LMP I guess I ought to get that dark slide off there; it's liable to smack me in the chops. Oh, we're not going to thrust, are we, yet? Hey, Jim, before you get up, could you pull my leg strap tighter?
- 00 02 05 56 CDR Sure. Is that noticeably tighter?
- 00 02 06 07 LMP Yes, that's as tight as they go. Okay, that's better. That's good.
- 00 02 06 12 CDR Okay, now I've got to get yours.
- 00 02 06 14 CMP Okay, so I can ...
- 00 02 06 19 LMP Oh, no!
- 00 02 06 21 CMP What?
- 00 02 06 22 LMP Guess what's missing?
- 00 02 06 23 CMP What?
- 00 02 06 24 LMP A Hasselblad camera.
- 0 00 02 06 25 CMP Oh, no.
- 00 02 06 26 CDR What do you mean, it's missing? (Laughter)
- 00 02 06 28 LMP It's not where I put it, on the Velcro.
- 00 02 06 30 CDR Okay.
- 00 02 06 32 LMP So, it's got to be floating around somewhere in the cabin.
- 00 02 06 43 LMP Damn!
- 00 02 06 44 CDR There it is, down there.
- 00 02 06 45 LMP You got it?
- 00 02 06 46 CDR Yes. I see it; I haven't got it.
- 00 02 06 48 LMP Okay.
- 00 02 06 55 LMP Dave, let me see if I can read you something here.

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0 00 02 06 57 CMP Okay.

00 02 06 58 LMP EMERGENCY CABIN PRESSURE to OFF; no, Dave - Jim's got to do that.

00 02 07 02 CDR Let me - let me go ahead and get those. Here's your camera.

00 02 07 05 LMP Where? Okay.

00 02 07 08 CDR EMERGENCY CABIN PRESSURIZATION's OFF.

00 02 07 09 LMP No, stand by here; I - I'm screwed up. SUIT CIRCUIT RETURN valve, CLOSED.

00 02 07 15 CMP Okay. Yo - Everybody in their suit okay?

00 02 07 17 CDR Everybody's in their suit. EMERGENCY CABIN PRESSURE to TEST, and PRESS until cabin reaches 5.7, and I'll let you know.

00 02 07 26 CMP I can't get that son of a bitch closed.

00 02 07 28 CDR You want me to?

00 02 07 31 CMP There, it's closed. Boy, that's a bitch, isn't it, Jim?

00 02 07 33 CDR Yes, really it's - it's tough to move; you - you're such a -

00 02 07 39 CMP You say you're ready, Jim?

00 02 07 40 CDR Well, not really. Let me try to get done here.

00 02 07 42 CMP Oh.

00 02 07 44 CDR Boy, am I messing up my helmet!

00 02 07 45 CMP What are you doing?

00 02 07 46 CDR Putting my face helmet --

00 02 07 47 LMP Pressurizing the cabin.

00 02 07 48 CDR Okay, EMERGENCY CABIN PRESSURE - PRESS to TEST going now.

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- 00 02 07 53 LMP Okay. And we'll probably get an O<sub>2</sub> FLOW HIGH warning.
- 00 02 07 58 CDR How we doing?
- 00 02 07 59 LMP We are 5.0 something.
- 00 02 08 06 CDR Okay, the warning's going to come on in a second here.
- 00 02 08 09 LMP We're not even to 5.1 yet, Jim.
- 00 02 08 11 CDR Oh.
- 00 02 08 12 LMP We got a long way to go.
- 00 02 08 13 CDR How did the surge tank go?
- 00 02 08 18 LMP Surge tank is 8 - 820 or so. Okay, we're 5.25; surge tank is now 800. 5.4; surge tank is 780. Now we're about 5.5; surge tank, 760. And 5.6 almost, and the surge tank is 720. And we're about 5.7.
- 00 02 09 15 CDR Okay?
- 00 02 09 16 LMP Okay. EMERGENCY CABIN PRESS to OFF.
- 00 02 09 20 CMP EMERGENCY CABIN PRESS to OFF.
- 00 02 09 21 LMP EMS MODE to STANDBY.
- 00 02 09 24 CMP EMS, STANDBY.
- 00 02 09 26 LMP EMS FUNCTION to DELTA-V.
- 00 02 09 29 CMP DELTA-V.
- 00 02 09 30 LMP Counter zero.
- 00 02 09 32 CMP Okay, it's set at minus 100.
- 00 02 09 34 LMP Oh, okay, that's a wrong - that's a baddy in here
- 00 02 09 36 CMP Yes, I know. We - that's -
- 00 02 09 38 LMP Align the GDC.

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O 00 02 09 41 CMP Okay.  
00 02 09 43 LMP FDAI 1, INERTIAL.  
00 02 09 45 CMP Now wait a minute, Rusty. Let me finish aligning  
the GDC first.  
00 02 09 48 LMP Yes, sir.  
00 02 09 49 CMP Okay. I was behind; fixed in a minute.  
00 02 09 52 LMP I'm sorry.  
00 02 09 54 CDR Boy, you center these three hoses and --  
00 02 09 56 CC Apollo 9, Houston through Tananarive.  
00 02 10 00 LMP Roger, Houston. You're 5 square.  
00 02 10 05 LMP What's that?  
00 02 10 07 CMP Oh, gunk.  
00 02 10 09 LMP Okay, you ready, Dave?  
O 00 02 10 11 CMP No.  
00 02 10 12 LMP Okay.  
00 02 10 16 LMP Oh, you know what I needed on this damned camera  
was a handle.  
00 02 10 22 CDR It's too late now.  
00 02 10 23 LMP Shoot, yes.  
00 02 10 36 CDR I can't keep my bloody nose off of that thing.  
00 02 10 48 CMP Okay, GDC is aligned.  
00 02 10 49 LMP FDAI 1, INERTIAL.  
00 02 10 52 CMP Okay, read me those attitude-set numbers again.  
00 02 10 57 LMP Okay. 121.4.  
00 02 10 59 CMP Okay.

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0 00 02 11 00 LMP Okay?  
00 02 11 01 CMP Yes.  
00 02 11 02 LMP 274.4 --  
00 02 11 03 CC And, Apollo 9, this is Houston. We'll have you over Tananarive here for about the next 5 minutes. We're standing by; I have not heard any transmissions from you here.  
00 02 11 13 CDR Okay, we're proceeding through the separation-through-withdraw checklist.  
00 02 11 19 LMP 345.2.  
00 02 11 23 CDR Houston, you read Apollo 9?  
00 02 11 25 CMP 345.2 and 274 what?  
00 02 11 28 LMP 274.4 on the middle --  
00 02 11 29 CC Okay, Apollo 9; Houston. I heard just the first part of that; I'll just stand by here.  
() 00 02 11 37 LMP Oh, shoot. You know what I forgot?  
00 02 11 38 CMP What?  
00 02 11 39 LMP So clever! Just a smartass!  
00 02 11 40 CDR No sunglasses, huh?  
00 02 11 41 LMP Yes.  
00 02 11 42 CMP Oh, me too, damn it!  
00 02 11 46 CDR Son of a gun! You want mine, Dave?  
00 02 11 51 CMP I got mine handy.  
00 02 11 52 LMP Hey, you want to take your helmet off, and put it on?  
00 02 11 56 CMP Yes. I guess I will.  
00 02 12 00 LMP Okay, I'll stop reading the checklist here.

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- 00 02 12 03 CDR Just a second now, I'll loosen up - I'll shut your suit flow off so you can get your helmet back on.
- 00 02 12 09 CMP Now wait a minute. I don't need to do that, Jim. I can pop a glove and do it. Yes, it's easier to pop a glove.
- 00 02 12 13 CDR Alright.
- 00 02 12 15 LMP I tell you, this damned camera won't stay anywhere. Let me try it Velcro on the back, there. Okay, camera, stay there now. Yes, I'm going to pop a glove and put mine on, too.
- 00 02 12 36 CMP Jim, could you hang on to these things for me for a minute? I have a -
- 00 02 12 43 LMP Whee! I got myself in the nose anyway.
- 00 02 12 58 CDR What's the flow at?
- 00 02 13 02 LMP/CMP O<sub>2</sub> FLOW HIGH.
- 00 02 13 05 LMP Wonder wha - Oh - wonder why that is.
- 00 02 13 12 CDR Oh, Dave took his helmet off.
- 00 02 13 15 LMP Yes, me too. Does that make a difference?
- 00 02 13 18 CDR Yes.
- 00 02 13 34 CDR Back a little farther. Okay, that's it. Here you go. How you doing?
- 00 02 13 46 LMP Okay, I'm - I'm about to take my helmet off here, so - -
- 00 02 13 48 CDR Okay, why don't I press on with the checklist with Dave? EMERGENCY CABIN PRESS TEST - we've done that; EMERGENCY CABIN PRESS, OFF; EMS MODE, STANDBY -
- 00 02 13 54 LMP We're all the way down to the bottom, Jim.
- 00 02 13 56 CDR EMS FUNCTION, DELTA-V; counter, zero -
- 00 02 14 00 LMP We're three lines from the bottom.

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00 02 14 01 CDR Align of GPS - GDC; you've done that? FDAI 1, INERTIAL.

00 02 14 05 CMP INERTIAL.

00 02 14 06 LMP FDAI 2, VERB 83, adjust ORDEAL.

00 02 14 10 CMP Okay.

00 02 14 13 CDR ...

00 02 14 23 CDR Hey, I'm really unstable here.

00 02 14 27 LMP You got your seatbelt on, Jim?

00 02 14 28 CDR Yes, it's about over my knees.

00 02 14 31 IMP Okay, I'll take over again. Okay, are you in POO, Dave?

00 02 14 37 CMP Just - I'm doing ORDEAL.

00 02 14 38 CDR He's ad - he's adjusting ORDEAL.

00 02 14 39 LMP Okay.

00 02 14 46 CMP Okay, back to POO.

00 02 14 47 LMP Okay, in POO, and then MANUAL ATTITUDE, three, RATE COMMAND.

00 02 14 51 CMP I guess they're in RATE COMMAND.

00 02 14 54 CDR Yes, that's really bad, isn't it?

00 02 14 57 IMP (Laughter) LIMIT CYCLE, OFF.

00 02 14 59 CMP That CYCLE's OFF.

00 02 15 00 IMP ATT DEADBAND, MIN.

00 02 15 01 CMP MIN.

00 02 15 02 LMP RATE, LOW.

00 02 15 03 CMP LOW.

00 02 15 04 LMP TRANSLATION CONTROL POWER, ON, up.

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0 00 02 15 06 CMP ON, up.  
00 02 15 07 LMP ROTATIONAL CONTROL POWER NORMAL, two, AC/DC.  
00 02 15 10 CMP Two, AC/DC.  
00 02 15 11 LMP DIRECT, two, MAIN A/MAIN B.  
00 02 15 12 CMP DIRECT, two, MAIN A/MAIN B.  
00 02 15 14 LMP SPACECRAFT CONTROL to CMC.  
00 02 15 18 CMP Yes, that's in FREE; flip it to CMC.  
00 02 15 20 LMP CMC MODE, FREE.  
00 02 15 22 CMP FREE.  
00 02 15 23 LMP BMAG MODE, three, to RATE 2.  
00 02 15 25 CC ..., Houston. We'll lose you at Tananarive here in about 1 minute. If you've tried to call me, I haven't received anything, so we'll see you over Carnarvon at 26.  
00 02 15 39 CDR Roger, Houston; Carnarvon at 26.  
00 02 15 42 CC And, Apollo 9, that will be Carnarvon at 26.  
00 02 15 46 CDR Roger, Houston; Apollo 9. Carnarvon at 26.  
00 02 15 49 LMP Okay -  
00 02 15 50 CMP Okay, I got the --  
00 02 15 53 LMP Did you get the BMAG MODE, three, to RATE 2.  
00 02 15 55 CMP That's affirm.  
00 02 15 56 LMP Okay, LAUNCH VEHICLE SPS INDICATOR to S-II/S-IVB.  
00 02 16 01 CMP S-II/S-IVB.  
00 02 16 02 LMP LV GUIDANCE to IU.  
00 02 16 08 CMP IU.  
00 02 16 09 LMP LUNAR INJECT, SAFE.

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0 00 02 16 12 CMP SAFE.  
00 02 16 13 LMP UP TELEMETRY, IU, to BLOCK.  
00 02 16 16 CMP BLOCK.  
00 02 16 18 LMP AUTO RCS SELECTOR, 16, to MAIN B.  
00 02 16 20 CMP Okay. Coming up.  
00 02 16 23 LMP Okay.  
00 02 16 34 CMP 16 to MAIN B.  
00 02 16 36 LMP Okay, RCS - CIRCUIT BREAKER RCS LOGIC, two, CLOSE.  
00 02 16 44 CMP Two, CLOSE.  
00 02 16 45 LMP TVC SERVO POWER 1, AC-1/MAIN A.  
00 02 16 49 CMP Okay, let's see how much time we got here? We got  
20 minutes. I sort of hate to be putting all that  
power --  
00 02 16 56 CDR Yes, let's - let's wait a little while.  
00 02 16 57 LMP Okay, you want to wait there?  
00 02 16 58 CDR Yes.  
00 02 16 59 LMP Okay.  
00 02 17 09 LMP We've got 9 minutes.  
00 02 17 11 CMP 02:34 is the maneuver.  
00 02 17 14 LMP Okay, well - well, Carnarvon's at 26; that's what  
I was looking at.  
00 02 17 16 CMP Yes.  
00 02 17 24 LMP Get in that pocket, you stupid thing.  
00 02 17 40 LMP I was thinking it was time to dark adapt, but  
that's probably the worst thing we could do.  
00 02 17 48 CDR Dark adapt with your sunglasses on, huh?

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- 00 02 18 02 LMP Yes. I will turn it down a little bit and see what it looks like out there, though. Oh, isn't that a pretty earth?
- 00 02 18 20 LMP See if you can see those - S-IVB thrusters firing.
- 00 02 18 24 CDR I've seen some light out the side window. I never was really sure whether it was the S-IVB thrusters or --
- 00 02 18 30 LMP Yes, I have, too. I - I just saw a flash; that's what reminded me of it.
- 00 02 18 39 CMP That COAS sure looks like we rolled. I guess it's just me.
- 00 02 18 43 CDR Hey, how does our horizon look out there, Dave? Can you see it alright?
- 00 02 18 46 CMP Yes. The COAS looks like we're in a roll. Did you notice that, Jim?
- 00 02 18 50 CDR No, I didn't. I just turned on to see what it looked like.
- 00 02 18 53 LMP Which way am I? I'm - I'm - looking north out my window, aren't I? Yes. Because I can see the Big Dipper on the horizon.
- 00 02 19 00 CMP I wonder if just the way I am in the seat -
- 00 02 19 03 CDR No, you look straight.
- 00 02 19 05 CMP Did it - did it look straight when you checked it out?
- 00 02 19 07 CDR No, I said you look straight. No, I did - all I did was turn it on to see if the light lit, Dave.
- 00 02 19 13 LMP Looks level to me, Dave.
- 00 02 19 14 CMP No, I didn't mean the reticle.
- 00 02 19 16 LMP I know. Oh, I see.
- 00 02 19 18 CMP If - if - if I look - it just doesn't.
- 00 02 19 21 LMP Yes, I know what you're saying.

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00 02 19 24 CMP

I'll check on the horizon when we come up there.

00 02 19 40 CDR

Okay, Rusty, you read the checklist down through DET STARTUP, and then I'll read it from there on over to a --

00 02 19 46 LMP

Right. I'm just trying to picture what I'm going to do with my checklist at that point.

00 02 19 49 CDR

I'm still trying to figure out what I'm going to do with mine, too. I pulled up my suit --

00 02 19 52 LMP

Maybe I ought to tighten down my seatbelt here and - stick it under me or something.

00 02 19 59 CDR

Hey, how about that? You want to try sticking it up there?

00 02 20 02 LMP

Where's that? Under there?

00 02 20 05 CDR

But the hand - Hey, the hand controller is going to be in your way.

00 02 20 07 CMP

Yes, I have a hard time getting my arm over there without banging something --

00 02 20 10 CDR

Well, you've got - you've got one of those here; maybe you can stick it in there?

00 02 20 14 LMP

Maybe I can; I'll try it.

00 02 20 21 CMP

All the RCS look good, Jimmy?

00 02 20 24 CDR

Looks good. Quad C is really down there.

00 02 20 29 LMP

Looks like a good spot, Jim.

00 02 20 31 CDR

Okay.

00 02 20 36 LMP

Let me just check my Hasselblad, and make sure it's ready to go --

00 02 20 37 CDR

Hey, you know, it looks okay, Dave.

00 02 20 39 CMP

Okay.

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- 00 02 20 44 LMP Okay. The dark slide is out. We don't have a filter on it. I thought we were supposed to have a haze filter on it.
- 00 02 20 53 CDR Yes, we were.
- 00 02 20 59 LMP We got the film - ASA - -
- 00 02 21 00 CDR It's supposed to be mounted on there.
- 00 02 21 02 LMP Yes, that's what I thought.
- 00 02 21 06 CMP Are you checking these things off, I mean sort of making a line by them or something, Rusty, when you go through them to make sure we get them all?
- 00 02 21 14 LMP I can, Dave; I haven't been.
- 00 02 21 17 CDR What's that? The checklist, Dave?
- 00 02 21 18 CMP Yes. Since it's sort of a one-time checklist - I think we sort of stop in the middle. Oh, I don't care; just so we get them all.
- 00 02 21 29 CDR Yes.
- 00 02 21 40 CDR When we get over Carnarvon, you're going to have to go ahead and get a GO for arming the pyros.
- 00 02 21 47 LMP Um hum. Okay, the camera looks like it's ready to go.
- 00 02 21 56 CDR Okay, when we - -
- 00 02 22 10 CDR You're going to push the plus-X thing and hit the strip button, and I'm going to start the clock. Let's see how our arms fit in here, Dave, with the clock's starting ...
- 00 02 22 19 CMP Okay.
- 00 02 22 20 CDR Which one is the clock?
- 00 02 22 21 CMP The next one.
- 00 02 22 22 CDR This one?
- 00 02 22 23 CMP No.

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0 00 02 22 25 LMP Okay, 3-1/2 minutes to Carnarvon.  
00 02 22 27 CMP The one that says RE - that says START.  
00 02 22 30 CDR I can't see it.  
00 02 22 31 CMP Okay, it's the third one from the right. You got it?  
00 02 22 33 CDR Yes.  
00 02 22 35 CMP Okay.  
00 02 23 02 LMP Hey, you want to read down those again?  
00 02 23 05 CMP Guess I'm not sure what we are going to do. I'm going to go: 3, 2, 1; I'll start thrusting at 1; hit the button at MARK; and then you start the clock.  
00 02 23 13 CDR I'm going to start the clock.  
00 02 23 15 CMP I'll go - 1001, 1002, 1003; come off of it; come back up here 15 seconds. Prior to 15 seconds, I'll go: SCS ACCELERATION COMMAND on PITCH.  
00 02 23 31 LMP Alright.  
00 02 23 33 CMP Start the PITCH around -  
00 02 23 34 CDR I'll - I'll punch in VERB 62 for you at that time.  
00 02 23 37 CMP Right. And - coming around, I'll stop it.  
00 02 23 42 CDR FDAO SCALE ... 5/5 INERTIAL ...  
00 02 24 11 LMP Dave, surge tank is coming back up. It's up at 800 now.  
00 02 24 15 CMP Good.  
00 02 24 18 LMP Cabin pressure is 5.8 or so.  
00 02 24 34 CDR Let's see here. You know your rates?  
00 02 24 37 CMP Alright, ... I pitch down, and when I get the DAP rate back, RATE COMM'AND, CMC, then stop it, MINIMUM IMPULSE, roll it, and ... to get us lined up

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- 00 02 24 49 CDR Okay.
- 00 02 24 50 CMP And ... translation from CMC. And when we get in - 50 feet or so, we lock it up with the SCS and drive it in.
- 00 02 25 03 CDR Okay, real good.
- 00 02 25 04 CMP And when we get there, CMC, and lock it up ... If it gets out of hand, you're going to ... rates in it? If that's okay, you're going to ...
- 00 02 25 20 CDR Okay.
- 00 02 31 24 CMP ..., Apollo 9. We have a rather anomalous behavior on this number 1 H<sub>2</sub> tank. It's - it appears to light the cryo warning light every time it gets down there before the heater comes on. You might start thinking about how we're going to handle that for the sleep period, because it keeps setting off the MASTER ALARM.
- 00 02 31 43 CC Roger, Apollo 9. Copy. And that is in work.
- 00 02 31 48 CMP Okay, thank you.
- 00 02 31 57 CC And, Apollo 9, this is Houston. We'll go right on through an ARIA as soon as we come off of Carnarvon on this one in about 20 seconds.
- 00 02 32 30 CDR What's that? [Machinegun-like noises]
- 00 02 32 33 LMP Sounds like a World War II movie (laughter).
- 00 02 33 10 CDR What's the pitch attitude, Dave?
- 00 02 33 15 CMP ...
- 00 02 33 20 CC Apollo 9, this is Houston through an honest-to-goodness ARIA. How do you read?
- 00 02 33 25 CDR Houston, this is Apollo 9. We're reading you wah-wah-wah-wah-wah-wah. How about us?
- 00 02 33 34 CC Roger on the wa-wa, Apollo 9.
- 00 02 33 38 CDR Okay, we're reading you then.

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00 02 33 42 LMP Good old ARIA.

00 02 33 50 CDR Houston, according to all calculations, our S-IVB ought to start maneuvering in about 6 or 8 seconds.

00 02 34 01 CDR/CMP There it goes.

00 02 34 07 IMP ... look at this.

00 02 34 10 CMP Oh, boy, look at that spacecraft go.

00 02 34 32 LMP I can see the - the stars in the Big Dipper here.

00 02 34 45 CDR ... now and the ...

00 02 34 50 LMP That S-band's ...

00 02 38 09 CMP We've made it.

00 02 38 10 LMP Oh, we did?

00 02 38 11 CMP Yes.

00 02 38 17 CDR Let's wait until we get good daylight before we do ...

00 02 38 19 LMP Yes, I think so, too, Dave. I don't think they're in any big hurry. Did you say ...? You see, that thing's going to take a long time, and I think it's about --

00 02 38 40 CDR That looks pretty ...

00 02 38 43 CMP Got it?

00 02 38 45 LMP Yes.

00 02 38 50 LMP Isn't that something?

00 02 39 56 LMP S-band looks great ... Let's see how wild it is.  
...

00 02 40 09 LMP 2 hours and 40 right now - The Huntsville at 02:40 for about 7 minutes.

00 02 40 14 CDR Okay.

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00 02 40 22 LMP ... get Hawaii next ... that thing seems to be spurious. Well, what do you say?

00 02 40 30 CMP Alright. It's about that time.

00 02 40 33 LMP Okay. VERB 37, ENTER; 47, ENTER.

00 02 40 36 CMP 37, ENTER; 47, ENTER.

00 02 40 41 LMP PYRO - switch PYRO ARM, two, ON, up.

00 02 40 45 CMP PYRO ARM, two, ON, up.

00 02 40 47 LMP CMC MODE to HOLD.

00 02 40 49 CMP CMC to HOLD.

00 02 40 51 LMP Okay. Okay, now we want to go - the THC to plus X and hold; CSM/LV pushbutton, hold, and release; and the LV tanks go to LOW, and start the DET up from zero. Okay, is everybody ready - -

00 02 41 10 CDR Oh, okay, go ahead.

00 02 41 12 LMP Okay. 3, 2, 1 - Bang! It's gone.

00 02 41 20 LMP 4 seconds and release it.

00 02 41 22 CMP Okay.

00 02 41 24 LMP That's 100.8. Dave, you have anything ... - -

00 02 41 27 CMP Yes, I have to check for ACCELERATION COMMAND; SPACECRAFT CONTROL to SCS.

00 02 41 30 LMP Okay, we got that?

00 02 41 33 CMP Yes, sir.

00 02 41 34 LMP You got the 5 and 5?

00 02 41 36 CMP ...

00 02 42 14 LMP Hey, David, there goes the ... on the panel. See it?

00 02 42 18 CMP Yes.

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00 02 42 19 CDR Man, look at that son of a gun go!

00 02 42 20 LMP Okay, Dave, ... is just beautiful. Just halfway around. Okay, just right there, Davey. Just leave it like it is ... nice and bright there.

00 02 42 30 CMP Okay.

00 02 42 31 LMP Right there ... Not too bright at all.

00 02 42 38 CMP That help?

00 02 42 39 LMP Yes.

00 02 42 40 CDR Is the camera running?

00 02 42 42 LMP Turn it on!

00 02 42 44 CMP Okay.

00 02 42 51 LMP Okay, ... right in the right place there.

00 02 42 52 CMP Isn't it!

00 02 42 53 LMP Right there.

00 02 42 55 CDR When you get that, you want to get MANUAL ATTITUDE, PITCH, to RATE COMMAND.

00 02 43 00 LMP That's good. Okay, now.

00 02 43 01 CDR SPACECRAFT CONTROL, CMC.

00 02 43 02 CMP Okay. You look good, Jim.

00 02 43 04 CDR Good. Null your translation and your rates.

00 02 43 10 CMP Think they've nulled.

00 02 43 11 CDR Okay, fine.

00 02 43 12 CMP I'm going SCS, MINIMUM IMPULSE.

00 02 43 13 CDR SCS, MINIMUM IMPULSE. That a boy. ...

00 02 43 14 CMP ... let's see - I'm going to damp out - Oh, shoot,

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- 00 02 43 21 CDR What's the matter?
- 00 02 43 23 CMP Well, our pitch angle isn't exactly right - it doesn't look right.
- 00 02 43 27 CDR Okay.
- 00 02 43 31 LMP That's alright; we're going to fly around a little bit, Dave.
- 00 02 43 34 CMP Alright.
- 00 02 43 35 LMP Okay. I want you to roll left 60 ... SPACECRAFT CONTROL to CMC and ... RATE COMMAND.
- 00 02 43 44 CDR I'll talk to Houston here. Houston, Apollo 9.
- 00 02 43 51 CC Go, Apollo 9. This is Houston.
- 00 02 43 53 CDR Roger; it's out there, and we're turned around and proceeding with the stationkeeping and docking.
- 00 02 44 00 CC Tremendous, Apollo 9. Thank you.
- 00 02 44 08 LMP I'm going to have to ..., Jim. Do you know that? (Laughter)
- 00 02 44 11 CDR That's interesting. That's a big fellow.
- 00 02 44 17 LMP Sure is!
- 00 02 44 19 CMP It's a great big fellow.
- 00 02 44 22 CDR Okay, I'm going to stow the gear --
- 00 02 44 24 CC Roger; copy that.
- 00 02 44 27 LMP ... go to RATE COMMAND ... CMC MODE ...
- 00 02 45 18 LMP Okay, you got the DOCKING PROBE extended there and that's in the RETRACT position?
- 00 02 45 25 CDR Okay.
- 00 02 45 27 LMP You ... stabilize there at 50 feet or so and go to BMAG.
- 00 02 45 30 CMP Okay. Going back to CMC.

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00 02 45 34 LMP Going back to CMC.

00 02 45 44 LMP You can see the thrusters hitting the ... on the t

00 02 45 50 CC ...

00 02 45 59 CDR What did he say?

00 02 46 00 LMP I didn't hear it.

00 02 46 19 CC Apollo 9, this is Houston. We're going to lose yo  
here in about 45 seconds, and we'll see you over  
Hawaii in about 5 minutes at 51.

00 02 46 23 CDR Roger.

00 02 46 28 CC And we may have ARIA in here, but if it's like the  
last one, we won't hear much out of you.

00 02 46 32 CDR Yes, we think, as a matter of fact, we'd be better  
without it.

00 02 49 38 LMP How ... to get there?

00 02 49 49 CMP I hate to use all this fuel.

00 02 49 51 CDR That's okay. Better to get it than - a little ext  
fuel, than not get it.

00 02 50 05 CDR Can you see him, Davey?

00 02 50 06 CMP Yes, I'm alright. I can see him, I just can't -

00 02 50 14 LMP Yes, it looks like you're coming over now pretty  
good. I can see the vent on this side going off.

00 02 50 26 LMP Yes, you're coming in good now.

00 02 50 28 CMP Yes. Yes, it looks good.

00 02 50 39 LMP I don't know where to point this stupid camera.

00 02 51 01 CC Apollo 9, this is Houston. We should have you  
through Hawaii; standing by.

00 02 51 06 CDR Roger.

00 02 51 10 CMP Damn it, Jim, I just can't translate sideways.

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00 02 51 13 CDR Is that right?  
00 02 51 15 CMP Just can't do it.  
00 02 51 17 CDR Give it a big push.  
00 02 51 18 CMP I did! I'm on it.  
00 02 51 26 CDR You on it right now?  
00 02 51 27 CMP Yes. Look at that DELTA-V counter, or the EMS, or the DSKY rather.  
00 02 51 32 CDR Yes, something's wrong.  
00 02 51 39 CMP Yes, these things are going crazy ... Try it now.  
00 02 56 55 CMP It's coming.  
00 02 56 56 CDR Okay. Get her all lined up?  
00 02 57 00 CMP Okay, SCS, and ATT 1/RATE 2. Well, it looks like it ripped a little bit off the - off the top of the SLA on one side. Just a little piece hanging out there. That is looking beautiful now.  
00 02 58 02 LMP Well, that's looking beautiful, David. I'm going to start the camera again. Well, I'll wait for a minute here.  
00 02 58 08 CMP Yes.  
00 02 58 20 CC And, Apollo 9, Houston. We've got you through the Redstone; standing by.  
00 02 58 35 CDR Roger.  
00 02 58 36 LMP Roger, Houston. We're about 25 feet now and closing slowly.  
00 02 58 42 CC Copy.  
00 02 58 51 LMP That looks beautiful, Dave.  
00 03 01 11 LMP ... only way they'd do it, Dave.  
00 03 01 13 CDR Is it - is it damping it down - is the probe damping it down?

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- 00 03 01 15 CMP It's damped good, Jim. I want to get it lined up, Rusty. I want you to get 12 latches. Now we're coming. Patience.
- 00 03 01 25 CDR Yes. We'll do it when you're ready, David.
- 00 03 01 36 CMP It's very stable.
- 00 03 01 39 CDR Isn't it, though?
- 00 03 01 40 CMP Yes. I just want to make sure that we're really lined up. Okay, Jim, that looks like a good one. Have at it.
- 00 03 01 50 CDR Okay, RETRACT coming now.
- 00 03 01 53 CMP Here it comes. Coming in.
- 00 03 02 00 CDR Come on, baby.
- 00 03 02 02 CMP We're coming.
- 00 03 02 03 LMP How about that! We got two of them. And we got a MASTER ALARM - -
- 00 03 02 06 CMP/CDR For no apparent reason.
- 00 03 02 07 CMP Roger, Houston; we're hard docked.
- 00 03 02 10 CC Roger, Apollo 9. Understand hard dock. Good show!
- 00 03 02 19 CMP You know what I think it was?
- 00 03 02 20 CDR What?
- 00 03 02 21 CMP Probably a static discharge, because there was nothing on the caution and warning panel.
- 00 03 02 24 CDR Yes.
- 00 03 02 25 CMP Yes, that - Remember the old Agena?
- 00 03 02 26 CDR Yes.
- 00 03 02 27 CDR Houston, Apollo 9 here. We got a MASTER ALARM when we did the docking - when we made the contact.
- 00 03 21 21 CMP Yes. That's a pretty good setting.

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00 03 21 28 LMP Houston, Apollo 9. You with us now?

00 03 21 29 CDR Okay? Alright. Next?

00 03 21 32 CMP Just a minute. Go ahead.

00 03 21 33 LMP Okay, tunnel hatch removal was the next.

00 03 21 36 CMP Go.

00 03 21 38 LMP Okay. HATCH PRESSURE EQUALIZATION valve, open counterclockwise.

00 03 21 53 CDR Pressure staying up?

00 03 21 55 LMP Yes.

00 03 21 56 CDR Okay, I op - -

00 03 21 57 LMP We're up at 4.5 - -

00 03 21 59 CDR - - it's all the way open.

00 03 22 00 LMP You got it open?

00 03 22 01 CDR Open.

00 03 22 02 LMP Po - Pump handle, unstow, pull to STOP. A.

00 03 22 06 CDR What?

00 03 22 09 LMP Pump handle, unstow; pull to STOP; and it says "parentheses A." Push - I mean set to U, and push to STOP.

00 03 22 33 CDR Okay.

00 03 22 34 LMP Dave, you know, you might check some circuit break over there and see if anything else might have popped.

00 03 22 38 CMP Yes.

00 03 22 39 CDR Okay, we're ready to go; we're in U.

00 03 22 42 LMP Okay, push to STOP.

00 03 22 44 CDR Ah humm. Let's see what happens here.

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00 03 22 53 CMP That's loose.

00 03 22 55 CDR Yes, here's that - here's that washer, Dave.

00 03 22 57 LMP Verify gearbox disconnect socket, V - U.

00 03 23 01 CDR U.

00 03 23 03 LMP Pump handle, stow.

00 03 23 07 CDR Stow.

00 03 23 08 LMP Remove hatch; pass to LMP. Hey, let's move this down, huh?

00 03 23 17 CMP Yes, that should go all the way down.

00 03 23 21 CDR (Laughter)

00 03 23 22 CMP Okay, Jimmy. Gingerly.

00 03 23 27 CDR Yes.

00 03 23 29 CMP Like porcupines?

00 03 23 31 CDR Yes, it's just not easy to handle up here, Dave, compared to the other way.

00 03 23 34 CMP Yes, I can imagine.

00 03 23 36 CDR I think what we have to be careful of is that we don't get it moving so fast that it cuts the hose or something.

00 03 23 40 CMP No, you're blocked by the hose ...

00 03 23 41 LMP Let me, I'll just undo that ... - -

00 03 23 54 CDR I'll get it; just a minute.

00 03 23 56 CMP You want me to hold this?

00 03 23 58 LMP I think you're alright now, Jim, with the hatch, if you just keep coming.

00 03 24 05 CDR ...

00 03 24 10 CDR Wait just a second ...

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00 03 24 14 CMP Yes. We need to slide it up - face up toward Rusty to get it in.

00 03 24 24 CDR Okay.

00 03 24 25 CMP Okay. Whoop! Easy. The LMP now has the hatch.

00 03 24 29 CDR Okay, Rusty, would you hold this?

00 03 24 30 LMP Alright. Do you have your hand under it, Dave?

00 03 24 31 CMP I got it on top.

00 03 24 34 LMP Hard to hold.

00 03 24 35 CDR Okay.

00 03 24 36 LMP Yes.

00 03 24 37 CDR Okay, go.

00 03 24 38 CMP Okay, docking latch verification.

00 03 24 41 CDR Okay.

00 03 24 42 CMP Latch handle; pull to verify hook engaged, 12 latches. And, you know, as you go around, Jim, check the red pit and check the bungee.

00 03 24 51 CDR Yes.

00 03 24 53 CMP You ought to - On up - You can check each latch, you know, all three of those things, and we'll have it.

00 03 24 56 LMP Can you see up there?

00 03 24 58 CDR A little.

00 03 25 00 CMP Watch your feet.

00 03 25 01 CDR I am; I just want to get it someplace. Okay, latch 1. The pit is in. The bungee is straight up and down. The handle's engaged. Latch 2, the handle's engaged, and red button is there. And it looks like the bungee - Gee, it's a weird view up here. Okay. 3. Looks okay.

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- 00 03 25 33 CMP Hey, you're checking that the bungees are parallel, right?
- 00 03 25 36 CDR Right.
- 00 03 25 37 CMP Okay.
- 00 03 25 41 CDR Okay, 4 looks good; 5 looks good; 6 looks good. All the triggers are triggered. 6 looks good; 7 looks good - ... 9 looks good.
- 00 03 26 28 CDR Let me un - let me unscrew myself here. Oh, shoot! Getting up in the tunnel.
- 00 03 26 47 CMP It's a big mother.
- 00 03 26 49 LMP Yes.
- 00 03 26 50 CDR Okay, 10 looks good; 11, 12, they all look good.
- 00 03 26 55 CMP Okay, GN2 BLEED button, red, press for 10 seconds.
- 00 03 27 01 CDR GN2 BLEED button.
- 00 03 27 03 CMP It's at the base of the probe, Jim.
- 00 03 27 04 LMP Right, the little one here; it says --
- 00 03 27 05 CMP Yes.
- 00 03 27 06 CDR You see it?
- 00 03 27 07 LMP That spring-loaded button?
- 00 03 27 08 CDR Yes. Okay, it's bleeding down. Oh, shoot, it moved!
- 00 03 27 17 CMP What moved, the probe?
- 00 03 27 18 CDR Yes.
- 00 03 27 19 CMP Yes, it should move. You've taken the pressure off your --
- 00 03 27 21 CDR Yes, I know it.
- 00 03 27 22 LMP Scared you, though, didn't it?

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00 03 27 23 CDR Yes, I thought - Man! What's going on?

00 03 27 24 LMP (Laughter)

00 03 27 26 CDR That's supposed to be 15 seconds underway. Yes, I just - I could hear it going, and it bled down.

00 03 27 31 CMP Okay. You still got it in?

00 03 27 33 CDR No, I've released it now.

00 03 27 35 CMP Okay. It wasn't quite 15 seconds, but - -

00 03 27 38 CDR Oh, okay, I'll put it up some more then. Okay, next.

00 03 27 42 CMP Okay, LM connector fairings, two, orange, open.

00 03 27 47 CDR Okay, one of them is open; it got knocked open, I guess, during the dock - LM connector fairings, open.

00 03 27 55 CMP Okay, unstow one connector.

00 03 27 57 CDR Ooh, gracious!

00 03 27 59 LMP They're hard to reach; don't lose them.

00 03 28 03 CDR Yes.

00 03 28 04 LMP Oh, boy, this is bad, because the next thing it says is the systems test meter at 4 Delta.

00 03 28 08 CMP I'll get that. Can you hold a minute, Rusty?

00 03 28 11 LMP Yes, stand by, let me - I - I'll - Hold on there a minute, Dave.

00 03 28 13 CMP I got it.

00 03 28 15 LMP Arm up here. Okay.

00 03 28 18 CDR Boy, those are tough to get.

00 03 28 19 LMP I think I got it, Dave.

00 03 28 20 CMP Yes. Okay. Don't lose them, because if you lose them, you can't get them back.

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00 03 28 24 CDR I know it. Okay, I've got one.

00 03 28 27 LMP Okay, you've got one?

00 03 28 28 CDR I've got one.

00 03 28 29 LMP Dave, you want to look at 4-D and --

00 03 28 32 CMP Yes, if I can get down here. Gee!

00 03 28 38 LMP Okay. Connect and lock. Jim?

00 03 28 43 CDR Okay, in work.

00 03 28 44 CMP 4-D to zero.

00 03 28 45 LMP Okay, connect and lock, and then look at it.

00 03 28 49 CDR Oh, shoot! This thing is spring-loaded. I'll never be able to hold my hand in there - until I get the --

00 03 28 57 CC Apollo 9, this is Houston through Ascension. Standing by.

00 03 29 02 LMP I'll get them.

00 03 29 03 CDR Okay, ...

00 03 29 04 LMP Roger; we're mating the umbilicals right now.

00 03 29 08 CC Understand you're connecting the umbilicals.

00 03 29 12 LMP You got it in, Jim?

00 03 29 13 CDR No.

00 03 29 17 CDR I think so; let me check. Boy, that's really tight in here. Okay, there it goes ...

00 03 29 45 LMP You got it?

00 03 29 47 CDR Okay, got it.

00 03 29 48 LMP Okay, position the umbilic - Jim, Dave, what's the systems test meter read?

00 03 29 52 CMP Zero. That's just the first one.

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0 00 03 29 53 LMP Okay, yes, I know - I'll - I'll just --  
00 03 29 55 CDR Okay, go ahead. Next.  
00 03 29 56 LMP Position umbilical in slot and close fairing.  
00 03 30 00 CMP You know where that slot is, Jim?  
\* 00 03 30 02 CDR Yes, okay.  
00 03 30 03 CMP It's up behind there; you have to wind it around.  
00 03 30 05 CDR Yes. It doesn't fit in there too neatly.  
00 03 30 08 CMP No, it doesn't.  
00 03 30 22 CDR Okay.  
00 03 30 24 LMP Okay. Repeat for the second one - umbilical.  
00 03 30 44 CDR Boy, the lighting is atrocious on this one.  
00 03 30 47 CMP You want a flashlight? I got one right here.  
00 03 30 49 CDR No. It's just not very good. Lock?  
00 03 31 01 LMP Boy, that docking worked beautiful! Man, that was soft as could be!  
00 03 31 07 CDR Yes. Old Eagle Eye Fleegle sneaked it right in --  
00 03 34 18 CC Roger. Copy the small oscillations, 0.2 to 0.3. Thank you.  
00 03 34 23 LMP Okay. Hatch installation: align hatch in tunnel.  
00 03 34 26 CC See you over Tananarive, 44.  
00 03 34 29 LMP Roger.  
00 03 34 31 CDR You want to get up there and take a look at it before I ..., Dave?  
00 03 34 32 LMP And what was the sunrise time, Houston?  
00 03 34 34 CDR Say again. You want to look at it before --  
00 03 34 36 CC Sunrise time is 04 plus 08.

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- 00 03 34 39 LMP Roger. 04 plus 08.
- 00 03 34 41 CMP If you got them in, they're in.
- 00 03 34 42 CDR Just thought you might want to look and see what
- 00 03 34 44 LMP You got that hatch, Dave?
- 00 03 34 45 CDR -- ... like before you had - had to do it next t
- 00 03 34 48 LMP Dave, you got the hatch?
- 00 03 34 50 CMP Yes, I got it.
- 00 03 34 52 CDR Hey, let me - let me put these other umbilical covers back kind of out of the way.
- 00 03 35 00 LMP Hey, what the - Oh, my God! Did that one scare the hell out of me!
- 00 03 35 02 CMP What?
- 00 03 35 03 CDR What's that?
- 00 03 35 04 LMP I just looked out the window and the LM wasn't th
- 00 03 35 06 CMP Yes, it's dark right now.
- 00 03 35 07 LMP ... Who!
- 00 03 35 11 CDR Let me get down here and look around one more tim where I can see those bungees better.
- 00 03 35 16 CMP It's pretty hard to have a LM out there, isn't it Or not to have one with Jim in the tunnel.
- 00 03 35 18 CDR (Laughter)
- 00 03 35 29 CMP Okay, bring the hatch back.
- 00 03 35 32 LMP Okay, hatch installation: align hatch in tunnel step 1.
- 00 03 35 37 CMP Watch that cover. That crap comes off easy.
- 00 03 35 42 CDR First thing, I've got to rotate it here.

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Day 1

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- 00 03 35 44 CMP Yes, it's on the checklist there. Oh, shoot!  
There goes the checklist!
- 00 03 35 50 CDR That's okay. That's - I'll get it.
- 00 03 35 52 CMP Okay.
- 00 03 35 54 LMP It's caught on this side, Jim. Over here.
- 00 03 35 58 CDR I was just getting the checklist.
- 00 03 35 59 LMP Okay.
- 00 03 36 00 CDR ... down below.
- 00 03 36 04 LMP If you can't - Okay.
- 00 03 36 11 CDR Oh, boy! I have the -
- 00 03 36 15 LMP Have you got it?
- 00 03 36 17 CMP Don't drop it.
- 00 03 36 19 CDR (Laughter)
- 00 03 36 20 LMP It's heavy.
- 00 03 36 39 LMP Say, Da - Dave, sunrise at 04 plus 08, I think they said.
- 00 03 36 42 CMP Yes. We're in good shape.
- 00 03 36 48 LMP Look what I found, Dave.
- 00 03 36 51 CMP How did that get out?
- 00 03 36 52 LMP I don't know; I found it floating over here in the middle of all that.
- 00 03 36 56 CDR Okay, I have it up.
- 00 03 36 57 CMP Good.
- 00 03 36 58 LMP Okay, pump handle, unstow; set to L and push to STOP.
- 00 03 37 07 CDR Oh no, come on. There we go. Hell!

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- 00 03 37 17 LMP Hey, these sunglasses weren't a very good idea, Dave.
- 00 03 37 20 CMP Huh?
- 00 03 37 21 LMP They scratched up the inside of my visors something fierce.
- 00 03 37 24 CMP Did they really?
- 00 03 37 25 LMP Yes, boy!
- 00 03 37 26 CDR Okay, we're ready to go to LATCH.
- 00 03 37 27 LMP Okay, push to STOP.
- 00 03 37 31 CMP Looks like the outside to me.
- 00 03 37 32 LMP No, it's inside.
- 00 03 37 36 CDR Huh!
- 00 03 37 37 LMP Okay?
- 00 03 37 42 CDR I really can't tell.
- 00 03 37 44 LMP Is the disconnect socket in L?
- 00 03 37 47 CDR Yes, it sure is.
- 00 03 37 48 LMP That's all it needs then.
- 00 03 37 51 CMP You can - you should be able to see the latches over center, Jim.
- 00 03 37 56 CDR Yes. I just was looking at the holes to see if it went in the right holes.
- 00 03 38 09 LMP How is it?
- 00 03 38 10 CDR Okay, that one there is okay; I can verify it. Let me get my flashlight out. Should have had it before. Okay, that's in. That one is pretty. Okay. Alright, they're all in!
- 00 03 38 36 LMP You got them?
- 00 03 38 37 CDR Yes.

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Day 1

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- 00 03 38 38 LMP Okay, pump handle select is STOW; and push to STOW.
- 00 03 38 42 CDR Pump handle select goes to STOW. To STOW.
- 00 03 38 50 LMP Okay, HATCH PRESSURE EQUALIZATION valve, closed, clockwise.
- 00 03 39 01 LMP LM TUNNEL LIGHTS, OFF. Okay.
- 00 03 39 05 CMP Wait until he gets through.
- 00 03 39 15 LMP Okay, and the GET is now - huh - 03:39:15.
- 00 03 39 16 CMP Okay. Got it.
- 00 03 39 20 LMP Okay, install RHC number 1 on LEB mount.
- 00 03 39 25 CMP Well, I'm going to put that back where we got it.
- 00 03 39 29 LMP Pre-LM ejection.
- 00 03 39 35 LMP Okay, the cabin pressure is slowly building. It's at 5 - I mean 4.6, now 7.
- 00 03 39 47 CDR Ohh! This is a real place to stow something.
- 00 03 39 58 LMP What do you want me to do with my - -
- 00 03 39 59 CDR Wait just a moment, there's a little -
- 00 03 40 01 LMP Yes.
- 00 03 40 02 CDR There we are.
- 00 03 40 03 LMP I'm not sure if you're just bumping into me or whether you're trying to get me to - or whether you're trying to tell me something.
- 00 03 40 05 CDR It's a - it's a little of both.
- 00 03 40 09 LMP Boy, I'll tell you, I've - I've knocked this doggone camera off more times.
- 00 03 40 18 CDR Okay, Rusty, I'm going to stow the hand controller back here.
- 00 03 40 23 LMP Okay.

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00 03 40 40 CDR Okay, just a second now - -  
00 03 40 41 LMP Okay, now one -  
00 03 40 42 CDR -- ... the cables.  
00 03 40 43 LMP Let me copy down a few other things here. 000, and now systems test meter is going from about 0.4 to 2, huh?  
00 03 41 07 CDR I don't know what it's going now; I can't see it.  
00 03 41 12 LMP I'm - I'm watching it.  
00 03 41 25 CDR Yes, and I'm not sure whether you damage this wire more by putting it back in the holder or - or not.  
00 03 41 30 CMP Damage what?  
00 03 41 32 CDR Whether you damage this - this hand controller cable more by putting it in the - in the cable holder, or by leaving it alone.  
00 03 41 48 CDR Oh, man, I'm not going to do that anymore. Just leave it there, Dave. Okay, now, let's see. We need to put Rusty's suit hoses back up. You can turn the tunnel lights out now.  
00 03 42 01 LMP I think they're out. Aren't they, Dave?  
00 03 42 02 CDR No, they're still ON.  
00 03 42 04 LMP Okay, TUNNEL LIGHTS coming OFF. Okay.  
00 03 42 09 CMP How's that tunnel look there, Colonel?  
00 03 42 11 CDR Not bad! Not bad at all, as a matter of fact! It's very easy to work in, Dave, except that it just takes a long time.  
00 03 42 26 CMP Yes.  
00 03 42 33 CDR Man, I'm getting hungry!  
00 03 42 34 CMP Boy, I'm starving!  
00 03 42 36 LMP Yes, I could use some. Okay, the next thing I see is pre-LM ejection at 04:11 GET.

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Day 1

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- 00 03 42 50 CMP That's 30 minutes, isn't it?
- 00 03 42 52 LMP Yes, almost exactly. Hey, now, Dave, could you look at the quantity on there? I think the damn film is empty.
- 00 03 43 04 CMP I just changed it.
- 00 03 43 05 LMP You just changed it?
- 00 03 43 06 CMP Yes.
- 00 03 43 07 LMP Okay, do we really want to get this?
- 00 03 43 10 CMP Huh?
- 00 03 43 11 LMP Do we really want to --
- 00 03 43 12 CDR What's the photo plan say?
- 00 03 43 14 LMP Well, it doesn't have another magazine for today.
- 00 03 43 21 CDR Well, then let's not use it.
- 00 03 43 23 CMP Hey, I'll tell you, let's take a little. You can take it when we get going.
- 00 03 43 29 LMP Okay, but let's not --
- 00 03 43 30 CMP Okay, but don't you think we ought to take it coming out of SLA? I think we ought to be able to --
- 00 03 43 33 LMP Okay.
- 00 03 43 34 CMP -- have some film of coming out of the SLA.
- 00 03 43 35 LMP Okay, we'll do that, and - How about everybody yelling "Film" at me, huh?
- 00 03 43 40 CDR I'll tell you what, when we come out, though, Rusty - You want to come out and pitch, though, right away.
- 00 03 43 47 LMP I'll just - I'll hold my finger right on the button.
- 00 03 43 50 CDR Yes, I - I don't think we're going to see much around the - We're not going to see the SLA out there really.

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0 00 03 43 56 LMP Well, I think we will.  
00 03 43 57 CMP Yes, Jim, you get to see -  
00 03 43 58 CDR Yes.  
00 03 43 59 CMP From what I can see, Jim, I think we will.  
00 03 44 00 CDR ... okay.  
00 03 44 01 LMP I think you will, and I think you need to do that.  
00 03 44 02 CDR Where'd my checklist go?  
00 03 44 04 LMP It's over there.  
00 03 44 05 CMP Shoot, let's use it. That's what we got it for.  
00 03 44 06 LMP You've already got the film in, huh, Dave?  
00 03 44 09 CMP Yes, sir, and you can run a check, if you like.  
Six frames per second.  
00 03 44 12 CDR But we allocated it for other things, too.  
00 03 44 16 CMP It's running.  
00 03 44 17 LMP It's running?  
00 03 44 19 CMP It's off.  
00 03 44 20 LMP Okay.  
00 03 44 21 CMP Hey, that RL on that COAS is neat. I mean on that  
target.  
00 03 44 26 CDR Is it?  
00 03 44 27 CMP Yes. Yes. I can see an RL distance --  
00 03 44 29 CC Houston through Tananarive. Standing by.  
00 03 44 33 LMP Okay, Houston --  
00 03 44 34 CMP Roger, Houston.  
00 03 44 35 LMP (Laughter) Sorry, go ahead, Dave.

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Day 1

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- 0 00 03 44 38 CMP Okay. Houston, we've got the tunnel closed out at the hatch back in, and I guess we're getting set now for the ejection.
- 00 03 44 47 LMP Hey, I'll tell you one thing I want to do is take off these sunglasses.
- 00 03 44 50 CC Okay, Apollo 9. I heard you answer me, but you're unreadable at this time.
- 00 03 44 55 CMP Roger. The tunnel is closed out; the hatch is in; we're preparing for ejection.
- 00 03 45 03 CC Roger. Copy. The hatch is closed out, and you are pressurizing.
- 00 03 45 09 CDR Okay, Dave.
- 00 03 45 10 LMP Okay, why don't we collect ourselves here?
- 00 03 45 13 CMP Yes. I want to get strapped back in here.
- 00 03 45 16 LMP Jim, can I lower that one notch?
- 00 03 45 18 CDR Oh, yes. If you need it.
- 00 03 45 25 LMP Okay.
- 00 03 45 26 CMP Oh, oh, the MASTER ALARM.
- 00 03 45 27 LMP O<sub>2</sub> FLOW, CRYO PRESSURE --
- 00 03 45 28 CDR Oh, God bless that thing! Oh, that's going to - I'm telling you that's going to really screw this flight up.
- 00 03 45 33 CMP Yes.
- 00 03 45 43 LMP Dave, have we --
- 00 03 45 44 CDR You want me to give you a hand, Dave?
- 00 03 45 45 CMP No, I'll get it. We ought to make sure we get the AUTO RCS SELECT where it ought to be.
- 00 03 45 53 CDR Yes.
- 00 03 45 54 CMP Yes. We'll go through a whole ...

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- 00 03 45 56 LMP Okay.
- 00 03 45 57 CDR Docking latch verification.
- 00 03 45 59 LMP Hey, I'd like to take my glove off, too, and get my helmet off, and get this damn - helmet - or - sunglasses off. What do you think, Jim?
- 00 03 46 13 CDR Yes, go ahead. Let's - -
- 00 03 46 15 LMP Looks safe enough?
- 00 03 46 16 CDR 04:11; yes, we've got - 15, 20 minutes. Boy, have I got some gouges on this visor!
- 00 03 46 25 LMP Yes, me too.
- 00 03 46 26 CDR Not mine - I mean, this is just on the other visor  
Really ...
- 00 03 46 32 CMP Yes, from screwing around up there?
- 00 03 46 35 CDR That probe really is in the way (laughter). You know it hangs down right in amongst everything.
- 00 03 46 54 CMP Yes, ...
- 00 03 47 14 CDR Yes, I like it.
- 00 03 47 17 LMP Boy, did they ever scratch up that visor! Who!
- 00 03 47 19 CDR Did they really? Oh, you've got a - Oh, looks like you've got a bunch of scratches on the outside, Rusty.
- 00 03 47 25 LMP How could I get them on the outside? I don't think I touched anything on the outside.
- 00 03 47 28 CMP That's what they look like to me.
- 00 03 47 31 CDR Boy, they sure do! That's the outside! And you're right; you really have massacred it! Huh!
- 00 03 47 41 CMP Hey, I'll tell you something. You've got to have a brighter COAS.
- 00 03 47 45 CDR Is that right?

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Day 1

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- 0 00 03 47 46 CMP I couldn't even see it when we got down on the target. I was going for that needle for the cross.
- ( ) 00 03 47 52 CDR Oh, boy!
- 00 03 47 54 CMP Couldn't even see it! I could see it barely, bare. It sure isn't very bright. On that white cross, you know?
- 00 03 48 01 CDR Yes.
- 00 03 48 02 CMP The background, the cross is all white. It washes it out.
- 00 03 48 05 CDR Hmm!
- 00 03 48 12 CMP Well, where are we?
- 00 03 48 17 LMP We're ready to start the pre-ejection procedures. Come on, get in there!
- 00 03 48 30 CDR Okay, LM TUNNEL LIGHTS, ON, right? Load the DAP. NOUN 46 is 21102.
- ( ) 00 03 48 36 LMP Okay, back to the reading here. I'm in configuration.
- 00 03 48 40 CMP Okay, let me get back to the - the channel.
- 00 03 48 44 LMP I'm going to turn some lights down.
- 00 03 48 45 CDR You want me to load your DAP for you?
- 00 03 48 46 CMP Here, go ahead.
- 00 03 48 47 LMP Oops!
- 00 03 48 48 CMP VERB 46, ENTER; okay, excuse me.
- 00 03 54 50 CMP Rusty, did you check all the settings on the came again, too?
- 00 03 54 55 LMP Let's check them.
- 00 03 54 56 CMP Okay, 11, 250, 25 feet.
- 00 03 55 06 LMP And what MAG have you got there?

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- 00 03 55 08 CMP Number I.
- 00 03 55 10 LMP Okay. Oh, hey, wait a minute, that's just right. We're supposed to have I for LM ejection.
- 00 03 55 17 CMP I'll be damned.
- 00 03 55 18 LMP ...?
- 00 03 55 19 CMP Oh, alright.
- 00 03 55 20 LMP Yes.
- 00 03 55 23 CDR Look in there and see if I does anything else later on.
- 00 03 55 27 CMP See what?
- 00 03 55 28 CDR See what else we do with I. Nothing?
- 00 03 55 57 CMP Not a thing. Okay, Jimmy.
- 00 03 56 05 CDR Alright, Dave.
- 00 03 56 06 CMP Let's go through that.
- 00 03 56 07 CDR Right, let's do that.
- 00 03 56 08 CMP Okay, I'll give you a 3, 2, 1, mark, and S-IVB/LM - Here you go, Jim. And you do that little switch there that doesn't have any stripes on it --
- 00 03 56 21 CDR Right.
- 00 03 56 22 CMP -- and I'll start the clock.
- 00 03 56 24 CDR Okay.
- 00 03 56 25 CMP And I'll go CMC, AUTO, and at 5 seconds I'll burn aft, pretty ...
- 00 03 56 30 CDR Right.
- 00 03 56 31 CMP At 25, we'll proceed ...
- 00 03 56 34 CDR Okay. That's what it says.
- 00 03 56 37 CMP Okay, we got the needle set. Okay.

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- 00 03 57 08 CMP Well, if one quad had to get screwed up, C was the best one.
- 00 03 57 12 CDR Actually, I think we used more out of A than -
- 00 03 57 14 CMP That's what I mean. C is the one that was hurting -
- 00 03 57 18 CDR Oh, yes. I wonder if that's a real - what the real quantity is there?
- 00 03 57 21 CMP I don't know. Let me see.
- 00 03 57 24 CDR Hey look. It was this talkback - this talkback and this talkback were all barber pole.
- 00 03 57 30 LMP Boy, that's a bad - bad scene.
- 00 03 57 35 CDR I wonder if that means we're going to have to look out for those things every time we give it a jolt.
- 00 03 57 38 LMP Hey, as a matter of fact, Jim, we ought to check them right after we jumped off of this thing. It might be something like that.
- 00 03 57 42 CDR Yes.
- 00 03 57 43 CMP Yes, you're right. Okay, if it looks like we're hung up for some reason, I'll go to the tightest deadband we've got and give her some aft thrust. Trying to control pitch and yaw doesn't seem to be the thing to do.
- 00 03 58 06 CDR Yes.
- 00 03 58 07 CMP According to the Langley study, you're better off not screwing around.
- 00 03 58 14 LMP You know, your - your hand-controller action there didn't seem to have much effect when we were - before hard dock either.
- 00 03 58 19 CMP Well, until that one final time, it seemed to - The - the translational controller did nothing.
- 00 03 58 27 CDR Is that right?

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00 03 58 28 CMP

Just did nothing, and I finally got the MINIMUM IMPULSE going in pitch, and that seemed to do as much as anything.

00 03 58 32 CDR

Hmm.

00 03 58 33 CMP

But it doesn't do much there either.

00 03 58 35 CDR

No, it sure doesn't.

00 03 58 39 CMP

But Kotanchik was really gungy about that --

00 04 05 25 CC

Apollo 9, this is Houston. You're coming off of Carnarvon here, but we will be monitoring your ejection through an ARIA.

00 04 05 37 CMP

Roger. Those ARIA's make an awful lot of noise, Houston. We're having trouble reading each other.

00 04 05 42 CC

Roger; copy.

00 04 05 54 CMP

Rusty, don't forget the camera.

00 04 05 56 LMP

Okay, I'll not.

00 04 06 01 CMP

You have the S-IVB/LM ...

00 04 06 06 LMP

Why don't we ask them to - I'm going to turn my VHF ...

00 04 06 25 CDR

Houston, this is Apollo 9. You're very loud and making all kinds of noise and unreadable. We have to talk to each other here, so it would be best if you didn't transmit.

00 04 06 31 CC

Apollo 9, Houston. Say again.

00 04 06 36 CDR

Houston, Apollo 9. You're making very much noise on VHF; it would be better if you did not transmit to us.

00 04 06 46 CC

Roger. Understand that you want the ARIA down. Is that affirmative?

00 04 06 51 CDR

Roger. I think that would be better if the ARIA were down for this pass.

00 04 06 54 CC

Okay, copy.

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Day 1

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00 04 07 00 LMP Okay. You ready to start PYRO ARM, two, going up.

00 04 07 07 CMP PYRO ARM, two, ON, up.

00 04 07 09 LMP TVC SERVO POWER, two, AC 1/MAIN A.

00 04 07 11 CMP AC 1/MAIN A.

00 04 07 13 LMP Okay, circuit breaker S-IV B/LM SEP, two, are CLOSED ...

00 04 07 21 CMP They're CLOSED ...

00 04 07 25 LMP Okay. LM is ...

00 04 07 34 LMP Okay, now we're standing by for the check ...  
Okay, why don't we wait until ...? It's still pretty ...

00 04 07 53 CMP Okay, I ..., don't you, Rusty?

00 04 07 56 LMP ...

00 04 07 58 CMP Okay, that's good. 3, 2, 1 --

00 04 08 04 CT ARIA 1, ARIA 1 --

00 04 08 05 CMP MARK.

00 04 08 06 CT -- Cape COMM TECH. Go LOCAL, go LOCAL.

00 04 08 07 LMP That wasn't too bad. Okay, thrust aft for 3 second

00 04 08 13 CMP Okay, complete.

00 04 08 14 LMP Okay, you got the evasive maneuver --

00 04 08 16 CDR All the thrusters look good, here.

00 04 08 17 LMP Proceed to pitch down at 25 seconds.

00 04 08 21 CMP Okay. ...

00 04 08 23 LMP I got the cameras still going.

00 04 08 24 CMP We're clear of Houston. Hope they can hear us.  
CMC is in AUTO.

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0 00 04 08 29 LMP At 25 seconds --  
00 04 08 30 CMP Proceed.  
00 04 08 31 LMP -- start the pitch down. We're pitching?  
00 04 08 34 CDR Okay.  
00 04 08 35 CMP We're pitching.  
00 04 08 36 LMP Okay.  
00 04 08 37 CMP Camera, Rusty?  
00 04 08 38 LMP THC/RHC, unlock. The camera is still running, yes  
00 04 08 42 CMP You can turn it off. I guess we got nothing to see right now.  
00 04 08 45 LMP Okay, there's the --  
00 04 08 46 CDR/CMP O<sub>2</sub> FLOW HIGH.  
00 04 08 47 LMP Well, we - we're pitching down, aren't we?  
00 04 08 50 CMP Yes, sir. We ought to see the S-IVB coming into view.  
00 04 08 52 CDR Why don't you turn the camera off until we see it?  
00 04 08 55 LMP Okay, camera off. Okay, at completion of the - You got the RHC and THC unlock?  
00 04 09 01 CMP There it is.  
00 04 09 02 LMP There it is. I'm going to take the pictures.  
00 04 09 04 CMP Okay. No, you can't see it through here, Rusty, yet. Just wait.  
00 04 09 11 LMP Oh, beautiful, beautiful. Look at all those white stars!  
00 04 09 20 CMP Okay, now you can get one, Rusty.  
00 04 09 22 LMP Got it; it's going.

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00 04 09 23 CMP Okay. At the completion of the maneuver, hit an ENTER.

00 04 09 28 CDR Roger. You're going to get the ENTER; I'm going to call 47 out.

00 04 09 31 CMP How are your callsigns, Jim?

00 04 09 33 CDR I checked them. They're all okay.

00 04 09 34 CMP Okay. Okay, when we get to - Okay, coming up alright.

00 04 09 46 LMP Looks like a clean SEP by the looks of the S-IVB.

00 04 09 49 CMP Yes.

00 04 09 50 CDR Why don't you shut that off and take some --

00 04 09 51 LMP Okay, it's shut off.

00 04 09 52 CDR -- take some stills.

00 04 09 53 LMP Hasselblads, yes. Okay, you guys got the rest of this now?

00 04 09 55 CMP Yes. We're alright. Looks okay. Maneuver's coming up. ... The DAP works very well.

00 04 10 04 CDR Yes, I noticed that.

00 04 10 07 LMP Hey, Jim, keep watching the S-IVB.

00 04 10 09 CDR Are you?

00 04 10 10 LMP Because I can't see it very well anymore.

00 04 10 11 CDR Okay.

00 04 10 12 CMP Okay, ENTER. We're there. Okay, call P47.

00 04 10 20 CDR Hey, why don't you call it, Dave? I can't look out there and see in here, too.

00 04 10 24 CMP Okay.

00 04 10 25 LMP VERB 37, ENTER; 47, ENTER.

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00 04 10 29 CMP Okay.

00 04 10 30 LMP Okay, and at 3 minutes, you want to thrust aft for --

00 04 10 35 CMP 6 seconds.

00 04 10 36 LMP -- 6 seconds.

00 04 10 38 CMP Okay, we're 234. How we doing, Jimmy?

00 04 10 43 CDR She's right out there.

00 04 10 46 CMP She sure is.

00 04 10 49 CDR Heck, we're going away from it, Dave. Good.

00 04 10 50 LMP (Laughter) That's the best direction ...

00 04 10 54 CMP Okay. 250 and P47 just came up.

00 04 10 57 LMP Okay. Thrust aft for -

00 04 10 58 CMP Okay. 5, 4, 3, 2, 1 -

00 04 11 05 CMP MARK.

00 04 11 06 CMP Thrusting aft, 3, 4, 5, 6, and -

00 04 11 11 CMP OFF.

00 04 11 12 LMP Man, you can't even feel that, can you?

00 04 11 13 CDR Yes, I could just barely --

00 04 11 14 CMP Okay, we got 0.7 or 0.8 of a foot per second --

00 04 11 17 LMP Okay, SECS PYRO ARM, two, OFF.

00 04 11 19 CMP Two, PYRO ARM, OFF.

00 04 11 22 LMP SECS LOGIC, two, OFF. O<sub>2</sub> FLOW HIGH.

00 04 11 24 CDR Oh, boy!

00 04 11 25 CMP What's the matter, Jim?

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Day 1

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00 04 11 26 CDR      Oh, nothing, we're alright. It's just a warning light, Dave.

00 04 11 29 LMP      LOGIC, two, OFF.

00 04 11 30 CMP      LOGIC, two, OFF.

00 04 11 31 LMP      (CB) SECS ARMS, two, OPEN.

00 04 11 33 CMP      Two, OPEN.

00 04 11 34 LMP      I want to get my --

00 04 11 35 CDR      ... that camera now?

00 04 11 42 CDR      Okay, I don't - How many pictures are they looking for? We're doing great.

00 04 11 45 CMP      Go get them. We're in good shape on the controls; we're in MINIMUM IMPULSE, and we're stable.

00 04 11 49 CDR      Okay.

00 04 11 50 LMP      We're okay?

00 04 11 51 CDR      Give me the Hasselblad, Rusty.

00 04 11 52 LMP      You want the Hasselblad, first?

00 04 11 53 CDR      Yes.

00 04 11 54 LMP      Okay, here you go. Should be all set up, Jim.

00 04 11 57 CDR      Is the ... set out? --

00 04 11 58 LMP      Check - check it to make sure, though, because I might have just turned it then.

00 04 12 00 CDR      Oh, shoot! ... waste the pictures.

00 04 12 02 LMP      Oh! Check out - check the thing. You got time. It's going to be there a long while.

00 04 12 07 CDR      I can't see in here. Hey, I'll check it for you. I can't see it; I can't tell if --

00 04 12 11 LMP      Stand by.

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00 04 12 12 CDR Is the red light on?  
00 04 12 14 LMP Okay. It's all set.  
00 04 12 17 CDR Okay. We're going okay?  
00 04 12 19 LMP O<sub>2</sub> FLOW HIGH, again. No sweat. Okay, CMC to FREE.  
00 04 12 23 CMP CMC to FREE.  
00 04 12 24 LMP PRO and 00, ENTER.  
00 04 12 27 CMP PRO, 00, ENTER.  
00 04 12 30 LMP MANUAL ATTITUDE, three, to MINIMUM IMPULSE.  
00 04 12 32 CMP MINIMUM IMPULSE.  
00 04 12 34 LMP SPACECRAFT CONTROL to SCS.  
00 04 12 36 CMP SCS.  
00 04 12 37 LMP Reload the DAP.  
00 04 12 38 CDR You know, we're not getting away from him very fast.  
00 04 12 41 LMP Don't expect to, did you? Okay, a 2 and all 1's.  
00 04 12 49 CMP Alright. 21111. Alright?  
00 04 12 53 LMP Right. Okay. EMS MODE - EMS FUNCTION to OFF.  
00 04 12 58 CMP EMS FUNCTION, OFF.  
00 04 13 00 LMP EMS MODE to STANDBY.  
00 04 13 01 CMP STANDBY.  
00 04 13 02 LMP Do you want those angles?  
00 04 13 03 CMP No, we're okay.  
00 04 13 04 LMP TRANSLATION CONTROL POWER, OFF.  
00 04 13 08 CMP THC POWER, OFF.

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- 00 04 13 10 LMP Your LV/SPS INDICATOR to GPI.
- 00 04 13 13 CMP GPI.
- 00 04 13 14 LMP RHC and THC, locked.
- 00 04 13 16 CMP Okay, locked and locked.
- 00 04 13 18 LMP TVC SERVO POWER, two, to OFF.
- 00 04 13 19 CMP TVC SERVO POWER, two, OFF.
- 00 04 13 22 LMP Okay. Maintain S-IVB view through window hatch with RHC number 1. Okay. I think that's about the end of the reading, here.
- 00 04 13 34 LMP God, that's beautiful! Could you see him real well, Jim? Because I - He's right out in front of me.
- 00 04 13 38 CDR Yes, he's right in the middle. He's right in the middle.
- 00 04 13 40 LMP He is? Okay. Good, because he's right in the middle of my window, too.
- 00 04 13 43 CMP Hey, Rusty?
- 00 04 13 44 LMP Yes.
- 00 04 13 45 CMP I'm going to take the camera; I'm going to lead it here a little bit and point it, and why don't you take a few? I've got it frozen now. Go ahead.
- 00 04 13 53 CDR Well, it looks like he's gaining on us again.
- 00 04 13 55 LMP Yes. Okay, it's going?
- 00 04 13 59 CMP Yes.
- 00 04 14 00 LMP You want me to go to 24 and take a few, Dave?
- 00 04 14 03 CMP No, that's okay. Just take a couple.
- 00 04 14 04 CDR Yes, I - I don't think 24 is going to show us any more than -
- 00 04 14 09 LMP Oh, that's beautiful!

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- 00 04 14 13 CDR See if you can't get that moon over there in the background?
- 00 04 14 16 LMP Yes. I got it once. Well, that's alright.
- 00 04 14 21 CMP Are you taking at 1, Rusty?
- 00 04 14 22 LMP No, 6.
- 00 04 14 25 CMP Okay, that ought to be enough anyway.
- 00 04 14 26 CDR Yes, that ought to be enough.
- 00 04 14 27 IMP Okay, camera's off.
- 00 04 14 28 CDR Houston, this is Apollo 9. Do you read? I think we lost them.
- 00 04 14 33 IMP We're just starting to lock on now, Jim.
- 00 04 14 35 CDR Okay.
- 00 04 14 41 IMP Okay, it goes to orbit rate at 04:25, so it's quite a ways out. Oh, is that pretty!
- 00 04 14 49 CMP Except - Well, I tell you how we can tell. If we had the old diastimeter out, we could figure it out; but I guess we don't. Let me see if I can tell on the COAS.
- 00 04 14 56 CDR We've got to get down underneath it, you know that?
- 00 04 15 00 LMP He comes back up again, though, Jim, according to those charts. If the simulator is any good at all, Jim -
- 00 04 15 10 CMP ... the COAS. Let me get a - a reading on him. He's right now 3 - 1, 2, 3 degrees.
- 00 04 15 18 CMP Houston, Apollo 9.
- 00 04 15 21 CC Go, Apollo 9. This is Houston.
- 00 04 15 23 CMP Okay, Houston. You're coming in very weak; but be advised we've had a successful ejection, and - we are presently separating very slowly from the S-IVB. We've got him in sight out of all the windows.

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Day 1

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- 0 00 04 15 40 CDR We're not getting in gimbal lock, are we?
- 00 04 15 41 CMP No.
- 00 04 15 42 LMP Well, it was right at 11, wasn't it? I mean, right at 08?
- 00 04 15 45 CDR No, we were about 5 seconds --
- 00 04 15 46 LMP About 5 or 10 seconds later.
- 00 04 15 48 CMP Okay - Houston, if you can read - the ejection time was 4 hours 8 minutes and 5 seconds.
- 00 04 15 55 LMP O<sub>2</sub> FLOW HIGH, again.
- 00 04 15 57 CMP What the hell's that for?
- 00 04 16 01 CDR I wonder if the LM tunnel's leaking.
- 00 04 16 10 CMP Okay, he's a little more than 3 degrees. I think we're opening.
- 00 04 16 17 LMP Yes. Well, hell, we can't be closing.
- 00 04 16 21 CMP Well, with that vent --
- 00 04 16 22 LMP Augh!
- 00 04 16 23 CMP -- that vent was a lot more than I expected on the turnaround, Rusty.
- 00 04 16 24 CDR Yes, me too - me too.
- 00 04 16 26 CMP A lot more. We - I never did stop - I never took out what I put in on getting off of him.
- 00 04 16 33 LMP Yes, but even if he is venting, he - he still should be separating from us with that attitude. He's the same diameter as the thruster's throat right now. I'll monitor him that way.
- 00 04 16 52 CDR ...
- 00 04 16 59 CDR Isn't that smooth?
- 00 04 17 02 LMP Nice and smooth, isn't it?

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00 04 17 03 CDR What are we in? MINIMUM IMPULSE?

00 04 17 05 CMP Yes.

00 04 17 08 CC Go, Apollo 9. This is Houston. If you read - we did copy your transmission of a successful ejection. You are moving away. We did copy the time, but --

00 04 17 10 CMP He's not going down any farther.

00 04 17 13 CC -- we would like for you to verify the minutes - if you can try it again.

00 04 17 18 LMP The what?

00 04 17 20 CDR Houston, this is Apollo 9. Say again, please.

00 04 17 23 CC Roger. Would you give me your ejection time again, please?

00 04 17 28 CDR Roger. It was 08:05.

00 04 17 35 CC Roger; we copy. Thank you, and we'll see you over Hawaii at about 24.

00 04 17 40 CDR Roger. Why don't you check, Rusty, and see what time this guy gets ready to do the maneuver?

00 04 17 45 IMP/CMP 04:25.

00 04 17 47 CMP Yes, let's --

00 04 17 48 CC Apollo 9, this is Houston. If you can read me, the S-IVB maneuver time is 25 plus 04.

00 04 17 58 CDR Roger; 25:04.

00 04 18 01 LMP Okay, I got that.

00 04 18 06 CMP 1, 2. Hey, he's getting smaller, Jim.

00 04 18 12 CDR Yes, I noticed that, too.

00 04 18 14 LMP I'm measuring him against the thrusters.

00 04 18 16 CDR You know, he's still venting up this way at it, too.

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Day 1

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- 0 00 04 18 19 LMP Yes. It's the only way he can vent.
- 00 04 18 22 CDR (Laughter)
- 00 04 18 26 LMP By-by, S-IVB baby.
- 00 04 18 42 CDR Man, he's really venting a lot.
- 00 04 18 45 CMP Hey, it sure is.
- 00 04 18 52 LMP Boy, there are a bunch of pieces of plastic and stuff floating around out there, aren't there?
- 00 04 18 56 CDR Yes.
- 00 04 18 57 LMP I just saw a piece of Scotch tape float by. That was probably a piece of the LM. The only thing I know with Scotch tape holding it together.
- ( ) 00 04 19 08 CMP He's sure not where he really ought to be.
- 00 04 19 10 CDR Is that right?
- 00 04 19 12 CMP Yes.
- 00 04 19 14 CDR We haven't done a thing yet, have we? Since we came up?
- 00 04 19 16 CMP I don't know - Well, I'm keeping the attitude sort of squared away by pulsing, but he ought to be higher in the window - based on the - -
- 00 04 19 25 CDR Yes.
- 00 04 19 26 CMP Oh, shoot! They never had the vent model in the simulator, though.
- 00 04 19 29 LMP Yes, that's probably the difference right there.
- 00 04 19 32 CMP That's right. Never had the vent model in the simulator.
- 00 04 19 39 LMP He's definitely going away, though.
- 00 04 19 42 CMP I'm going to put him over where you can see him, Jim.
- 00 04 19 46 CDR I can see him fine, Dave.  
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00 04 19 51 CMP He's slowly closing the gap, though.  
00 04 19 56 LMP You think he's getting closer, Dave?  
00 04 19 57 CMP No, I mean - my visual gap, I'm sorry.  
00 04 19 58 LMP Oh, I see.  
00 04 20 02 CMP He's - I don't think he's getting closer.  
00 04 20 04 LMP No, I don't either.  
00 04 20 09 CMP ... sure isn't where he's supposed to be right now.  
About 2.5 degrees now ...  
00 04 20 42 CMP Once he does his pitch to ORB rate, he ought to go -  
which way - Let me see - He'll go down and start  
venting away from us. That's good.  
00 04 20 52 LMP Hey, guys, you know what I think that O<sub>2</sub> HIGH FLOW  
is?  
00 04 20 55 CDR What?  
00 04 20 56 LMP I'm not sure, but I have an idea that it's the fact  
that we got a little higher leak rate, right now --  
00 04 21 03 CMP Yes, with the LM?  
00 04 21 04 LMP -- and when the - and when the accumulators go, I  
think it might go overtime. Because right now,  
we're reading - we're reading 0.6 on the leakage.  
The cabin is up at - about - just about 50. We  
probably ought to fill up the first bottle.  
00 04 21 27 CMP Yes.  
00 04 21 32 CDR Wait until we get through with lift-off.  
00 04 21 34 LMP Yes. Let me look at the flight plan and see where  
we stand here.  
00 04 21 41 CDR Why don't you do something with the camera here?  
He's not in a very good position for picture taking.  
00 04 21 47 LMP Okay. Stand by.

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0 00 04 21 57 LMP Here you go. Give me it. Okay.  
00 04 22 00 CDR What was his maneuver time again?  
00 04 22 01 LMP/CMP 25:04.  
00 04 22 03 CDR Thank you. You guys sing a nice song.  
00 04 22 06 LMP (Laughter)  
00 04 22 09 CMP Vent, vent, vent! Boy!  
00 04 22 14 CDR I'd say he vents about once a second.  
00 04 22 16 CMP Really?  
00 04 22 17 LMP Yes. I was - I was watching that before when Dave  
was trying to dock with him - It - He kind of blows  
and then it stops, and then it blows and then it  
stops.  
00 04 22 27 CMP We've got a roll-rate error in case you wonder what  
we're doing.  
00 04 22 30 CDR Okay.  
00 04 22 33 CMP It's the only way I can really ...  
00 04 22 36 CDR Yes, he's getting much smaller.  
00 04 22 39 CMP Yes. What's the time of the - 04:25 is his time  
of maneuver?  
00 04 22 43 LMP 04:25:04 is the maneuver time --  
00 04 22 46 CDR When's his burn time?  
00 04 22 47 LMP Burn time is 04:45:51. It's 20 minutes after that.  
00 04 22 58 LMP Yes, and what's our burn time?  
00 04 23 02 CMP About 3 hours.  
00 04 23 07 CDR No, it can't be that long after it, can it?  
00 05 57 56 CDR Alright, 5.1 seconds. I've got the clock.

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- 00 05 58 06 CDR Stand by for 30 seconds. Is that right?
- 00 05 58 09 LMP Right.
- 00 05 58 17 CDR Did you null ullage?
- 00 05 58 20 CMP Yes, null ullage. Just like the simulator.  
DELTA-V to AUTO; EMS to AUTO. Average g.
- 00 05 58 37 LMP Man, look at it count.
- 00 05 58 42 CMP 0.4? That's alright.
- 00 05 58 48 CMP Alright for a PROCEED, Jimmy?
- 00 05 58 49 CDR Okay for a PROCEED.
- 00 05 58 50 CMP Okay.
- 00 05 58 58 LMP 99. PROCEED. 2, 1 -
- 00 05 59 02 LMP IGNITION. 3, 2, 1 -
- 00 05 59 06 CMP SHUTDOWN. Okay. Engine's shut off. The LM is  
still there, by God!
- 00 05 59 13 LMP Okay -
- 00 05 59 15 CDR Burn complete.
- 00 05 59 16 LMP Okay, I want --
- 00 05 59 17 CC Roger. Copy. Burn complete.
- 00 05 59 18 LMP -- to get the DELTA-V THRUST, OFF.
- 00 05 59 19 CDR DELTA THRUST, OFF.
- 00 05 59 20 LMP Okay. Verify all thrust-off cubes. GIMBAL MOTORS,  
four, to OFF, one at a time.
- 00 05 59 24 CDR Okay. PITCH 1, OFF.
- 00 05 59 26 LMP Verify.
- 00 05 59 27 CDR PITCH 2, OFF.
- 00 05 59 28 LMP Verify.

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00 05 59 29 CDR YAW 1, OFF.  
00 05 59 30 LMP Verify.  
00 06 25 14 CDR I'll check on that, Dave.  
00 06 25 15 CMP Okay.  
00 06 25 17 CDR It says here, "Open full control simulation panel,  
close the EVAP water control secondary valve."  
00 06 25 27 CMP Alright. It's CLOSED.  
00 06 25 31 CDR Okay.  
00 06 25 38 CDR Did we lose him yet?  
00 06 25 42 LMP Yes.  
00 06 25 43 CDR Remind me to tell him.  
00 06 25 51 CDR You might try a urine dump. We're coming up on  
that time; it's near the terminator.  
00 06 26 03 CMP You know, that's really sort of fun.  
00 06 26 04 CDR What (laughter)?  
00 06 26 05 CMP Banging into my leg. How's that for a position at  
the AUTO optics?  
00 06 26 11 CDR (Laughter)  
00 06 26 17 LMP Wonder if I rolled stomach-down if I can take a  
leak.  
00 06 26 21 CDR You might; it might be psychological.  
00 06 26 23 LMP Oh, I'm sure it is.  
00 06 26 25 CMP Mine's psychological, too, and I've tried every  
position.  
00 06 26 28 LMP (Laughter) I can't - I can't find the psychologi-  
cal --  
00 06 26 31 CDR I bet we have to go down and grab a hold of some-  
thing first.

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00 06 26 35 CMP Yes, something with a little handle on the left.

00 06 26 38 CDR Yes.

00 06 26 42 LMP It's funny, I didn't have much trouble taking the first one.

00 06 26 47 CMP Oh, well, I guess if it hurts bad enough, I'll pee.

00 06 26 52 LMP If you don't get kidney stones, first. Oh, did you get the tunnel?

00 06 27 00 CDR Yes.

00 06 27 01 CMP It's open?

00 06 27 02 CDR It's IM PRESS.

00 06 27 04 LMP I'll be damned. The flow is off-scale low.

00 06 27 06 CDR Yes.

00 06 27 07 CMP Good.

00 06 27 10 LMP It's magic.

00 06 27 14 CMP Hey, Jim, you really drank a lot of potable water.

00 06 27 17 CDR Oh, gees, listen, I ate - Well, it was almost un-drinkable.

00 06 27 19 CMP It is. I think we need to get some bags out.

00 06 27 22 CDR Yes, let's - -

00 06 27 23 CMP It's full of gas.

00 06 27 24 CDR - - ... getting something to eat. Somebody has got to stay here and drive the boat, though, don't they?

00 06 27 28 LMP I'll, I'll - -

00 06 27 29 CMP Well, here, can I do it?

00 06 27 30 LMP No. I'll get it. Pass me the food.

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Day 1

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- 0 00 06 27 34 CDR Yes, why don't you just stuff the food up here  
and - -
- \* 00 06 27 35 LMP Yes, that's a good idea.
- 00 06 27 36 CDR - - and Rusty and I - -
- 00 06 27 37 CMP I've got to get through all this folderol to do  
this. I'll tell you, that's a good place to hold  
your checklist because something keeps getting in  
the way.
- 00 06 27 44 CDR The rings.
- 00 06 27 45 LMP Oh, no, it's this screw up there that I keep banging  
into.
- 00 06 27 51 CDR Here, let me attack this problem. How am I going  
to get this thing off? What am I going to do with  
it when I get it off?
- 00 06 27 57 CMP Where do we start with food? Anybody know?
- 00 06 28 00 LMP Hey, you guys turn your heads. Maybe I can take a  
leak.
- 00 06 28 01 CDR Right here.
- 00 06 28 06 LMP I feel like my balls are asleep.
- 00 06 28 09 CMP Hey, - -
- 00 06 28 10 CDR You got me interested in going, and now I just went,  
and I think I wet on myself.
- 00 06 28 13 LMP (Laughter)
- 00 06 28 14 CMP That's what I've been afraid of.
- 00 06 28 17 CDR My poor talleywhacker's shriveled all up, I've  
been so frightened here on this.
- 00 06 28 20 LMP (Laughter)
- 00 06 28 22 CMP Toothbrushes, gang; toothbrushes! I found the  
toothbrushes.
- 00 06 28 25 LMP The food is right behind them, Dave.

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- 00 06 28 27 CMP The pink one. The white one.
- 00 06 28 32 CDR Hey, did we have any place in here to eat today?
- 00 06 28 35 LMP No.
- 00 06 28 36 CDR I don't know if we did or not. Let me look. Would you believe, eat period ... 5 hours long.
- 00 06 28 52 LMP Yes, isn't that ridiculous? I'm telling you. That's pretty much hustle.
- 00 06 28 57 CDR Yes, it was. But we were lucky that we got it done
- 00 06 28 59 CMP (Laughter) Yes, we -
- 00 06 29 01 LMP Why? I don't feel lucky.
- 00 06 29 03 CDR Well, we - we could have got it done, there's just no doubt about that --
- 00 06 29 06 LMP Yes, we had a - we had a really -
- 00 06 29 07 CDR -- ... louse up a lot of fuel.
- 00 06 29 09 LMP Yes, we had a couple of real fine problems that got right in the middle of there, that took a lot of time.
- 00 06 29 14 CDR What?
- 00 06 29 15 LMP The damned RCS, for one. That docking would have gone bang, just like --
- 00 06 29 19 CDR Oh, I - Oh, I meant - this other thing here.
- 00 06 29 21 LMP Yes - -
- 00 06 29 22 CDR Yes, yes, that's right.
- 00 06 29 23 LMP I - I'll tell you, I think - -
- 00 06 29 24 CDR ... even worry about these things.
- 00 06 29 25 LMP -- I think you did a brilliant job on that. I really do. I'll tell you the truth.
- 00 06 29 29 CMP Man, I was really -

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00 06 29 33 LMP I bet that was a terrible feeling --  
00 06 29 34 CMP ... figure out what --  
00 06 29 35 LMP -- really frustrating.  
00 06 29 38 CMP Gee, I was really, really feeling awful --  
00 06 29 40 LMP Oh, look at that beautiful horizon!  
00 06 29 43 CMP -- I was figuring I hadn't got you guys in the 1  
and I was about ready to just lose you.  
00 06 29 47 CDR Oh, come on. Even if you hadn't - shit, oh dear  
That's the breaks of the ball game, David, and  
you either do it or you don't --  
00 06 29 52 CMP That's what I get paid for --  
00 06 29 53 LMP Hey, the earth is concave up.  
00 06 29 54 CMP Rusty, here's your day 1, meal B.  
00 06 29 57 LMP Day 1, meal B.  
00 06 29 58 CMP I'm going to give everybody a toothbrush, now.  
Okay?  
00 06 30 00 LMP Oh, gee, what are we going to do with that?  
00 06 30 02 CDR What are we going to do with that?  
00 06 30 03 CMP I wonder what --  
00 06 30 04 CDR I don't even want one. I'm going to leave my  
teeth dirty.  
00 06 30 06 LMP Oh, I want one.  
00 06 30 09 CMP Rusty, I'm going to give you the red toothbrush.  
00 06 30 11 CDR No, I get the red one.  
00 06 30 12 CMP Oh, you do?  
00 06 30 13 CDR Yes, that's right.  
00 06 30 14 CMP Okay, there's yours.

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- 00 06 30 15 CDR I don't want it, though.
- 00 06 30 18 CMP I'm going to give Rusty the blue one.
- 00 06 30 19 CDR Shit, I can't figure out what - what to do with my checklist, and other valuable items like that. I can only ... Should we unsuit tonight and go to bed in the other suit?
- 00 06 30 30 LMP You bet your ass.
- 00 06 30 33 CMP Russell, your blue toothbrush.
- 00 06 30 34 CDR That's going to take 2 days to get unsuited.
- 00 06 30 38 CMP Okay, Jim doesn't want his toothbrush, which means I've got to carry it for him, so I will.
- 00 06 30 41 CDR No, you don't have to carry it.
- 00 06 30 43 CMP I don't know what else to do with it.
- 00 06 30 45 CDR Will that thing go through my neck?
- 00 06 30 48 CMP It will go around it. I'm going to find some obscure piece of Velcro to put that toothbrush on. Okay.
- 00 06 30 56 CDR All we're going to have with that toothbrush is a loose toothbrush in here.
- 00 06 31 04 CMP Another pack. I'm going to get - I get three food packs out, okay?
- 00 06 31 11 CDR Oh, shoot, I want one, too. Well, they both should be around there.
- 00 06 31 17 CMP Rusty, here's another one.
- 00 06 31 20 LMP Oh, for me?
- 00 06 31 22 CMP No, I'm getting three out. Okay?
- 00 06 31 23 LMP Oh, one for each of us.
- 00 06 31 24 CMP Yes, and then I'll put this thing back.
- 00 06 31 26 LMP Okay, yes.

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O 00 06 31 36 CMP Okay, here's mine.  
00 06 31 41 LMP Alright.  
00 06 31 48 CDR Shit, I'm going to take these pockets off, too.  
I don't know what I'm going to do with those things  
either.  
00 06 31 52 CMP Just stow them.  
00 06 31 53 CDR Where do you stow your pocket?  
00 06 31 56 CMP Oh, you can find a place.  
00 06 32 06 LMP Jim, your toothbrush will be the marker.  
00 06 32 08 CDR Okay, fine.  
00 06 32 19 CDR Where am I trying to go, anyway? 68, 291, and 330.  
I tell you, I'm just going to - I'm just going to  
drift right on over there, and I'm not going to  
use a - a thing but PULSE, and I'm going to just  
end up there.  
O 00 06 32 34 LMP Really?  
00 06 32 35 CMP You have that written down or something, Jim,  
somewhere?  
00 06 32 37 CDR ... it's in here.  
00 06 32 40 CMP Oh, okay. You got the pad, huh?  
00 06 32 44 CDR Does anybody remember what we've done so far today?  
00 06 32 48 LMP Yes. I tried to log some things, but -  
00 06 32 50 CMP I want to get on that - that Sony and get that  
T&D started.  
00 06 32 56 LMP Hell, that's not a very good spot; it hides the  
clock.  
00 06 33 04 CDR Maybe we ought to put that Y-Y strut out again,  
Dave. Can we do that?  
00 06 33 08 CMP It's out.

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- 00 06 33 09 CDR No, it's - it's still loose.
- 00 06 33 11 CMP You can do it. Can you reach it?
- 00 06 33 12 CDR Yes, I can - I can reach it.
- 00 06 33 13 CMP It's alright to do it.
- 00 06 33 15 CDR ... the other way.
- 00 06 33 17 CMP Yes.
- 00 06 33 18 LMP Why do we want to put the Y-Y strut out again?
- 00 06 33 20 CDR Oh, so it doesn't jiggle back and forth.
- 00 06 33 24 LMP Oh.
- 00 06 33 25 CDR I get nervous listening to it jiggle.
- 00 06 33 36 CDR Uh oh. You know what?
- 00 06 33 37 CMP/LMP What?
- 00 06 33 38 CDR We can't do the daylight star check if we're looking at the earth, can we?
- 00 06 33 41 CMP Not very well.
- 00 06 33 43 LMP No, but you're getting there. Yes. That attitude takes care of that.
- 00 06 33 47 CMP Yes.
- 00 06 33 49 CDR Yes, I wonder if it takes care of us for the whole time? Oh, look, we're - Heck, we're posigrade again.
- 00 06 34 06 LMP Yes, that's right. So one-half of a REV from right now, puts us - facing the sky.
- 00 06 34 11 CDR Yes, except we have to do a 90-degree pitch ...
- 00 06 34 14 LMP No.
- 00 06 34 15 CMP What are we doing with trash?
- 00 06 34 19 LMP Put it in the TSB.

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Day 1

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00 06 34 22 CMP Yes. I'm sure going to be passing a lot of trash here, while I make supper - or breakfast, or whatever we're eating.

00 06 34 33 LMP Damn, I have just got to take a leak.

00 06 34 36 CDR Rusty, maybe if you - you stood up.

00 06 34 38 IMP Alright.

00 06 34 39 CMP Jim, I've tried - I'm in the same boat. I've tried every which-a-way.

00 06 34 42 CDR Why don't you get the urine dump system out and try that?

00 06 34 44 IMP (Laughter) You know - That might be a good idea. Suck your tinker out the hole.

00 06 34 54 CDR I'm going to dump mine, so I can get more room in it.

00 06 34 59 LMP I'm afraid to take one, because when I do, I'll overflow.

00 06 35 14 LMP Noo! Hope I can reach those scissors. Yes.

00 06 35 35 CMP What's the time - what's the sunrise time? Do we have that?

00 06 35 39 IMP Oh, I can - I can give you an estimate ...

00 06 35 42 CDR It was 06:49, I think.

00 06 35 43 LMP Oh, no, it's 7 something.

00 06 35 45 CMP Was it? Sunrise time?

00 06 35 47 LMP Well, it is - it is on the flight plan.

00 06 35 50 CDR What was the time for that?

00 06 35 52 LMP 07:05, which is on the flight plan.

00 06 35 54 CDR It says, "GET start, sunrise - Oh, sunrise minus 15."

00 06 35 57 CMP Okay, what time was that?

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- 0 00 06 35 58 CDR Oh, my goodness. That's 06:49; that's in 14 minutes.
- 00 06 36 01 LMP Yes, I go to ...
- 00 06 36 02 CDR Do we have to be there then?
- 00 06 36 03 LMP Yes.
- 00 06 36 05 CDR Oh, shit. Then, I'm going to have to hurry faster. I'm going to have to - shoot - waste some fuel there. Am I even armed? Yes. Are those things firing out there? I heard them. Ooh! Bull's-eye. Boy, they really light up the sky, don't they? And I've got to go 110 degrees, yet.
- 00 06 36 40 CMP (Cough) Damn, they're on. More pieces of junk.
- 00 06 36 46 CDR Hey, I'm going to get something to eat before I die.
- 00 06 36 48 CMP Here, what do you want?
- 00 06 36 50 CDR I want something with some liquid in it.
- 00 06 36 58 CMP Excuse me.
- 00 06 37 07 CDR We'll, we've got a lot of basic housekeeping yet to do. Holy Christmas! We're supposed to go to sleep in an hour.
- 00 06 37 14 CMP An hour?
- 00 06 37 15 CDR Aren't we? 8 o'clock, I think ... 8 hours. You got to be kidding.
- 00 06 37 21 CMP God, you know it's almost a quarter to 6?
- 00 06 37 24 CDR Yes. Hey, Lu, get that up for 06:30, babe.
- 00 06 37 29 CMP Steak, salmon salad, cocoa, chicken and gravy. Cow boy! I got to make that stuff. Whooee!
- 00 06 37 38 CDR Oh, hey, you know what we're supposed to have?
- 00 06 37 40 LMP Those other meals.
- 00 06 37 41 CDR Those other meals, yes.

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- 00 06 37 42 CMP Oh, yes. They're up there by Rusty's head.
- 00 06 37 44 CDR Hey, I think I'll have one of those.
- 00 06 37 45 CMP Hey, I think I will, too. Oh, that's great. Let's start, well, you know, gradually.
- 00 06 37 51 CDR Start what gradually?
- 00 06 37 53 CMP The other crap.
- 00 06 37 54 CDR This stuff here? Here, give me one of those other meals.
- 00 06 37 59 LMP Here, let me see if I can stow some things here down there.
- 00 06 38 00 CDR Hey, there's no ... one. Hey, I've got the white one. I've got Dave's.
- 00 06 38 06 LMP What - what - what color is mine?
- 00 06 38 09 CMP Blue. I gave you the three first bags I found. I hope those are the right ones.
- 00 06 38 21 CDR Oh, but I could sure use some ...
- 00 06 38 30 LMP Oh, mine's - I - I - I opened the red one. Whose is that?
- 00 06 38 33 CDR Doesn't make any difference; ... we're all starting the same.
- 00 06 38 36 LMP Hell, yes.
- 00 06 38 53 CMP Cloudy down there.
- 00 06 39 00 CDR Really is. Hey, there's the Big Dipper over there.
- 00 06 39 04 CMP Well, I'll be looking in here, when we get there.
- 00 06 39 07 LMP Boy, that airglow --
- 00 06 39 08 CDR You know, we can't --
- 00 06 39 09 LMP -- really shows up.
- 00 06 39 10 CDR -- see Polaris. Dave?

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- 00 06 39 13 CMP Sir.
- 00 06 39 14 CDR Polaris isn't up.
- 00 06 39 17 CMP That's right. We won't be looking at Polaris. We'll be looking at - just above ... ... Alphecca.
- 00 06 39 37 CDR I'm not getting very far as far as ... --
- 00 06 39 39 LMP Boy, that airglow is really prominent. Holy smoke! Gee, it really stands out.
- 00 06 39 48 CDR Yes, I can see it. Obviously, you don't have to be a genius to figure out it's there (laughter).
- 00 06 39 52 LMP Yes, you sure don't.
- 00 06 39 55 CDR Three dummy astronauts can figure that out almost every day.
- 00 06 40 02 CMP Let me see, I got 9 minutes before I got to get - adaptate to -
- 00 06 40 05 CDR Hey, Dave, I'm not going to be there.
- 00 06 40 08 CMP Well, I'm sorry - I mean - I ... That's okay. Listen, let me explain this to you. I just read up on it.
- 00 06 40 12 CDR (Laughter) Yes, would you?
- 00 06 40 13 CMP Yes.
- 00 06 40 14 CDR I'd like to know what you're trying to do because I got to -
- 00 06 40 16 CMP I got to begin dark adaptation at 40 - 15 minutes prior to sunrise. And then I count the stars at sunrise.
- 00 06 40 25 CDR Oh, you're supposed to be in that attitude, huh?
- 00 06 40 27 LMP At sunrise, I got to be in the attitude, but I don't have to be - We don't have to be there at 15 minutes prior, because I just focus - close my eyes.
- 00 06 40 37 CDR Sunrise minus 15 is 49, so - -

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00 06 40 39 CMP Yes.

00 06 40 40 CDR -- 7 - 7 is when I have to be there - 7 o'clock. 20 minutes. And I've got to go - pitch ... I got to go ...

00 06 40 55 CMP Think I'm going to take the Sony into the ... when I go.

00 06 41 01 CDR Yes, you don't even - can't even see a change - I'm - I'm on the 1-degree-per-second scale here, and I fired 10 to 12 pulses here and it doesn't even wiggle the needle.

00 06 41 08 CMP You know - you know something I'm beginning to realize?

00 06 41 12 CDR What?

00 06 41 13 CMP All this time, I've been playing around in the simulator --

00 06 41 14 CDR Yes?

00 06 41 15 CMP -- docked, you've been in the LM. You've never seen this. I've seen it in the simulator. It's - That's the way it is in the simulator. Holy Christmas. Terrible!

00 06 41 22 LMP Hey, how about the water gun?

00 06 41 25 CDR What are we going to - what are we supposed to do with these? I guess we're supposed to wad up the garbage, and put it back where we got it?

00 06 41 29 LMP Yes.

00 06 41 30 CMP Let's see if the Sony is recording at 6 hours 41 minutes.

00 06 41 36 LMP Jim, you got the water gun?

00 06 41 38 CDR No, I haven't; I'll get it for you in just a minute.

00 06 41 39 LMP Okay.

00 06 41 40 CDR Stow this crap, so I'll know about where it is.

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00 06 42 39 CDR

What do I do with all - Oh, you wanted the water gun, that's right.

00 06 42 44 LMP

Maybe if I put water in the bag, maybe it will make me think of leaking.

00 06 42 49 CDR

I think it will, but let's see. Start thinking about emptying my bag, here. My water bag.

00 06 42 56 LMP

Hey, what is this supposed to be, half-ounce squirts?

00 06 43 00 CMP

I don't know. Let's see, ... 6 minutes I think I'll do - talk about the T&D - ... want to talk about the T&D ... Yes.

00 06 43 11 LMP

And, I wonder if we ought to try the hot water. Hey, we - we never turned on the hot water.

00 06 43 13 CMP

We did T&D - -

00 06 43 14 LMP

Yes, we did.

00 06 43 15 CMP

- - It started out just about as planned. We pitched around, and when we got around facing the S-IVB, we were directly lined up and just exactly right according to the angles on the ball, although we seemed to be a little bit high in pitch. We did - we did some pitchup to get the - the needle, and it looked like we were lined up relative to the COAS. And the vent seemed to be somewhat more than we expected; the S-IVB started closing, and I had about 0.6 of a foot per second in at separation, and when we turned around, I never took any out. And the S-IVB closed the gap, naturally. I guess we were something like 50 feet away when we turned around and were facing it. In the process of trying to get lined up with the target, we noticed there was no left translation, and we started drifting over some to the right; and I backed off to keep clearance, for the S-IVB to continue to close, and I tried to find the problem. And after a while, it became apparent there definitely was no left translation. And we cycled the switches for RCS AUTO CONTROL and changed A/C ROLL all up to BUS A; all the rest were on BUS B, and nothing seemed to work there. We got no translation in SCS RATE COMMAND or any control mode, for that matter. We

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drifted out to our right of the S-IVB, and I yawed left to try and get back in by translating forward which put us across the front of the S-IVB to the left side. And about that time, figured out the problem and discovered that the quad C primary and secondary propellant isolation valves were talkback talkbacks were barber pole, and that the quad B secondary isolation valve talkback was barber pole And another thing we had tried prior to discoverin the talkbacks was the DAP, to see if that might be a problem, and it seemed to be working alright except for the translation to the left. Back to the talkbacks, when Jim closed the isolation valve - or opened the isolation valves and the talkbacks were gray, we definitely knew - got a definite translation capability to the left, and went to CMC HOLD and realigned with the COAS, and on the target on the S-IVB. And about the time we got realigned visually, the needle had preset, with a VERB 62; we were lined up almost exactly, which showed that the preflight-calculated angles were just right. And we needed no closing velocity; the S-IVB closed the gap with the venting. And we proceeded on in, and contacted it at approximately 0.3 foot per second, and capture occurred immediately, and there were no postcontact dynamics to speak of. It drifted up a little bit and yawed left a little bit, which would have been an apparent pitchdown, yaw left to get it centered; and we went to CMC FREE on contact, and it seemed to damp out the position, misaligned by a couple of degrees in pitch and about 1 in yaw. I attempted to align with the translational thrusters, just MINIMUM IMPULSE, and it didn't seem to do much good. So, I went to SCS MINIMUM IMPULSE and the rotational controller and that seemed to work alright, aligning the COAS to the target. And the one thing that was noticeable: with the COAS full bright, it was very difficult to see the luminated reticle against the bright target background, and by this time, the sun was pretty much over our shoulders and there was - the target was very bright. Once we got aligned with the - the target, the standoff cross, why we initiated retraction, and it took 8 to 10 seconds to retract. The vehicles went straight in, and it sounded like we got two sets of latches in almost very - in a very short time in between,

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but it sounded like you could hear two groups of latches going, and dynamics was very slight. Fel like a good solid line. I guess that was about the size of it. Jim, you want to go through what you saw?

- 00 06 48 04 CDR Yes. Well -
- 00 06 48 08 CMP Why don't we - why don't we all go through what -
- 00 06 48 10 CDR Well, there's a nice little ... that just came of
- 00 06 48 15 LMP How do you get the gas out of these bags, I wonder
- 00 06 48 24 CDR Drink it, I guess.
- 00 06 48 26 LMP Hmm.
- 00 06 48 27 CDR Dave, would you stick this under the hot water and give me a shot or two - -
- 00 06 48 32 CMP Can you wait a minute.
- 00 06 48 33 CDR Sure. You want me to try to fix that for you?
- 00 06 48 46 CMP It's not running and it's not - You got to push the red button right there.
- 00 06 48 50 CDR ... I'm going to have to ... move it slow. Okay Well, let's see, there's hardly anything else I can - there's very little I can add to what Dave has already said except that when we extended the probe, it only took a - just a second or so for it to get out. There was a definite thunk, and the talkbacks changed, and there was a - every indication that it had gone out immediately. When we came back in, I was watching the talkbacks, and they both changed to gray, at - at the same time, which would indicate that all the latches were close together. When we checked the tunnel, we found all the latches had secured and everything looks okay up to there. There didn't seem to be any problem I didn't get a chance to - to examine the - the drogues, to see if they had any damage. I don't think ... we were in a little bit of a hurry. An I couldn't see up there very well at the time; we'll get to that tomorrow.

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00 06 50 07 CMP Give it to Rusty and we'll have that all here.

00 06 50 09 CDR Yes.

00 06 50 10 LMP I don't think I have anything on it.

00 06 50 12 CMP Okay.

00 06 50 14 CDR Boy, this has really got the gas in here. Holy cow!

00 06 50 16 LMP Boy, it really does.

00 06 50 20 CMP Okay, star-adaptation dock - dark-adaptation time.

00 06 50 23 CDR Okay, now I got to start stopping this mother.

00 06 50 28 LMP Oh, the DAP? Oh, no.

00 06 50 30 CDR No.

00 06 50 32 LMP ... in the morning.

00 06 50 34 CDR Yes, looks like the coloration would be a little better.

00 06 50 38 CMP I don't think so.

00 06 50 41 CDR Here, let me try one in yaw and see what happens. Oh, man, and that really wiggles, doesn't it?

00 06 50 57 LMP Yes, it really does. Shaking up all my food.

00 06 51 10 CMP How close are you, Jim?

00 06 51 12 CDR I'm about 15 degrees in pitch, Dave, and about 25 degrees in yaw; 70 degrees off in roll.

00 06 51 28 LMP Oh, yes. That chicken and gravy would be good with hot water.

00 06 51 30 CDR (Laughter) You always do that.

00 06 51 36 LMP Dave, do you have any hot water? For any of this stuff?

00 06 51 38 CMP Yes.

00 06 51 53 CMP You want some, Rusty? CONFIDENTIAL

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- 00 06 51 55 LMP Yes, I need 3 ounces if you got time.
- 00 06 51 58 CMP How much does a squirt give? I've forgotten.
- 00 06 52 00 LMP I don't know either. It's either a half or a whole.
- 00 06 52 11 CMP I gave Jim --
- 00 06 52 12 CC Hello, Apollo 9. This is Houston through Tananarive. Do you read?
- 00 06 52 15 CDR Roger, Houston. This is Apollo 9 here, reading you loud and clear. Houston, how do you read Apollo 9?
- 00 06 52 30 CDR Hey, that COMM is going to have to get better, or we're not going to do any rendezvous.
- 00 06 52 37 LMP Well, that's pretty clever. Looks like they sealed the bag on the other side of the line.
- 00 06 52 41 CMP Let's see, one squirt is how much, you think?
- 00 06 52 44 CDR It's either a half of an ounce, or a whole ounce.
- 00 06 52 46 CMP How much do you put in this bag, Rusty? You remember? Oh.
- 00 06 52 48 LMP 3 ounces.
- 00 06 52 49 CMP Three - I'll give you three squirts.
- 00 06 52 54 LMP Is it warm?
- 00 06 52 55 CMP Boy, it's really warm.
- 00 06 52 57 LMP Good.
- 00 06 52 58 CMP Hot! I'll give you a cold.
- 00 06 53 00 LMP Noo!
- 00 06 53 01 CMP It's really hot, Rusty.
- 00 06 53 04 LMP Well, it tastes good.
- 00 06 53 05 CMP Alright. I'm afraid it'll melt the bag.

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- 00 06 53 08 LMP      Oh, my God, that hot?
- 00 06 53 11 CMP      Well, I'm going to let you look at it and tell me how you like it, because I'm going to have to turn the lights down here.
- 00 06 53 15 LMP      Okay.
- 00 06 53 16 CMP      Okay?
- 00 06 53 23 LMP      Boy, that's neat, Davey.
- 00 06 53 49 LMP      Oh, man, ...
- 00 06 53 55 CMP      Rusty, I'm going to count stars, so maybe you could remember the number for me. Okay?
- 00 06 54 00 LMP      Okay, you want me to ... 1, 2, 3, 4, 5, or mark, mark, mark, mark, or what?
- 00 06 54 05 CMP      Oh, I'll count the number and give you a number.
- 00 06 54 07 LMP      Okay --
- 00 06 54 08 CMP      I'll count them in quadrants. I'll count - four - I'll give you four numbers per quadrant, okay?
- 00 06 54 12 LMP      Okay. When are you going to start? Oh, you're not going to start yet.
- 00 06 54 16 CMP      At 7 hours ... the number ...
- 00 06 54 19 LMP      Okay. Well, 15 minutes after 49, huh?
- 00 06 54 26 CMP      49, 59:05. Is that right?
- 00 06 54 29 LMP      04, yes.
- 00 06 54 30 CMP      04, okay.
- 00 06 54 32 LMP      Don't cheat now.
- 00 06 54 35 CMP      Hey, I'm not; I'm not going to cheat now.
- 00 06 54 41 CDR      Hey, that really wiggles that thing. I wonder what that stroking test is going to feel like.

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- 00 06 54 49 CMP I'm going to run the DSKY here to line the optics up, Jim, in case you want to --
- 00 06 54 51 CDR Go ahead.
- 00 06 54 52 LMP Leave unto tomorrow the evils thereof.
- 00 06 54 58 CMP Throw me an alarm, huh! I bet I know what's wrong on the zero. Okay. Stupid idiot.
- 00 06 55 04 CC Okay, Apollo 9. This is Houston through Tananarive. We're probably not getting you here. We got about another minute and a half, and if you can read me, we'll see you over Guam at about 17.
- 00 06 55 15 CDR Roger, Houston. This is Apollo 9. We're reading you loud and clear through Tananarive. We'll look for you over Guam. How do you read me?
- 00 06 55 22 CC Oh, we're getting you here now. I didn't read you at all the first time or two around.
- 00 06 55 26 CDR Okay, I heard you call us a couple of times and I answered. I guess we're just not getting down to you.
- 00 06 55 33 CC Roger. It hasn't been too stern here off Tananarive today.
- 00 06 55 39 CDR Okay. We're just taking a little time out to eat here right now. We haven't had anything to eat yet, so, that's a - If you wonder what we're doing, that's it.
- 00 06 55 49 CC Okay. Our plan is that as we come over Guam and back across the States, why, we'll discuss all our systems problems and so forth before you go to sleep tonight.
- 00 06 56 05 CMP Roger. I got bad news for them.
- 00 06 56 07 CDR What's that?
- 00 06 56 08 CMP The moon's in the way.
- 00 06 56 10 CDR Oh, no, is it really? (Laughter)
- 00 06 56 11 CMP Are we at the attitude, Jim?

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- 00 06 56 15 CDR We're 30 more degrees in roll.
- 00 06 56 16 CMP Oh, 30. Okay, maybe it'll be alright.
- 00 06 56 18 CDR No hurry.
- 00 06 56 20 CMP Don't hurry! Hey, can somebody fix me a Tang or something?
- 00 06 56 31 LMP Yes.
- 00 06 56 32 CMP I'm thirsty.
- 00 06 56 35 LMP Although, I don't dare put anymore in the bright end.
- 00 06 56 40 CC And we speak Sayonara at Tananarive. See you over Guam.
- 00 06 56 43 CDR Adios.
- 00 06 56 45 LMP Undo my chin strap.
- 00 06 56 52 CMP Oh, boy, does that taste good. Oh, boy, umm, umm.
- 00 06 56 56 CDR (Laughter) We're just going to leave Dave down there and -
- 00 06 56 59 CMP Nice guy.
- 00 06 57 17 CMP The moon's still there.
- 00 06 57 26 CDR We're right at the pitch attitude, Dave, I've got - 30 degrees to go on roll.
- 00 06 57 31 CMP Which roll?
- 00 06 57 32 CDR Rolling right.
- 00 06 57 34 CMP (Laughter) Right.
- 00 06 57 36 CDR Another 20 degrees to go --
- 00 06 57 38 CMP Hey, it shouldn't be bad all the way.
- 00 06 57 39 CDR -- yaw. But really yaw is turning into pitch now, so -

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00 06 57 43 LMP Boy, are those stars bright out there.  
00 06 57 50 CMP The old Southern Cross. Hey, wonder if I can see  
the Magellanic Clouds?  
00 06 57 58 LMP We'll look some other night.  
00 06 57 59 CDR Yes, that's what I was thinking.  
00 06 58 34 LMP Have you had chicken and gravy up yet, Jim?  
00 06 58 35 CDR Yes, I'm eating it right now. Oh, boy. ...  
00 06 59 09 CMP Is that pulses? ...  
00 06 59 10 CDR Those are acceleration pulses.  
00 06 59 11 CMP No, don't do that.  
00 06 59 14 CDR Dave, I can't even - I don't even - I'm in the  
1-degree-per-second scale, here, and I can't even  
make it move.  
00 06 59 20 CMP You got to be patient, Jim.  
00 06 59 23 CDR I am, but I'm going in the wrong direction.  
00 06 59 24 CMP ...  
00 06 59 25 CDR You know, it's better - One - one acceleration  
pulse will - give you the same rate as 50 minimum  
impulses.  
00 06 59 30 CMP ...  
00 06 59 32 CDR Lord, give me patience and hurry up (laughter).  
00 06 59 38 LMP (Laughter) Don't make me laugh; I'm eating.  
00 06 59 51 LMP That moon is going to be right -  
00 06 59 55 CDR Is it really?  
00 06 59 56 CMP Yes.  
00 07 00 06 CDR Okay, we're up to roll attitude, and we're just  
about 3 or 4 degrees from pitch attitude, and - -

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00 07 00 11 LMP

Hey, Dave, in the daytime, I bet the moon will go - maybe it will. Yes, it probably will.

00 07 00 20 CMP

What about - You got to pitch down? Is that right, Jim?

00 07 00 23 CDR

Yes, to you, it looks like I'm going to have to pitch down about another 10 degrees.

00 07 00 26 CMP

Oh, well, it'll be alright, then.

00 07 00 29 CDR

I'll get the roll off.

00 07 01 02 CDR

Okay, you got 3 minutes. Hey, at 3 minutes, I'll just go ahead and stop it wherever we are.

00 07 01 08 CMP

Okay. Let's see, you got to pitch down there, ... the moon's right on the edge of the field of view right now.

00 07 01 15 CDR

Okay, I'm only going to pitch down another 6 degrees

00 07 01 17 CMP

6 is what I need, Dad. If you do that, we'll be alright.

00 07 01 30 LMP

Umm. Boy, now, are we going to be ...? (Laughter)

00 07 01 49 LMP

We have to use a little tablet, huh?

00 07 01 52 CMP

Yes.

00 07 01 59 CDR

... shining on the prism. I'll be darned.

00 07 02 01 CMP/LMP

...

00 07 02 03 CMP

Yes. ... the prism. It's splitting the prism, almost.

00 07 02 24 CDR

Have I pitched down far enough?

00 07 02 26 CMP

Yes, just about.

00 07 02 28 CDR

Because I'm there. What I should do now is yaw left about 5 degrees.

00 07 02 31 CMP

Well, that would be just about - just about right.

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- 00 07 02 34 CDR Will it? Okay.
- 00 07 02 37 CMP I wouldn't sweat it though, Jim.
- 00 07 02 39 CDR I stopped the pitch motion now. Now, I'm just going to let what I - my yaw that I had in there going on over. Now I got about 0.000001 degree per second.
- 00 07 02 51 LMP Oh, boy. One down. David, I'm going to make you a drink if you're -
- 00 07 02 59 CMP Good for you.
- 00 07 03 07 LMP Hey, sunrise is coming up.
- 00 07 03 08 CMP Yes, ... almost time right now, huh?
- 00 07 03 11 LMP What? No, about 45 seconds and it's going to be sunrise.
- 00 07 03 18 CMP In 45 seconds, tell me and I'll start time.
- 00 07 03 20 LMP Okay. Tell me if - if - it is about 10 seconds to go.
- 00 07 03 27 CDR Okay, the LM is starting to get lighter.
- 00 07 03 29 CMP Okay.
- 00 07 03 33 LMP Jimmy, can you handle some trash, here?
- 00 07 03 47 CMP How are we doing, Rusty?
- 00 07 03 49 LMP You got another 10 seconds -
- 00 07 03 52 LMP MARK.
- 00 07 03 53 CMP Okay.
- 00 07 03 54 LMP Go.
- 00 07 03 55 CMP 10 seconds until sunrise?
- 00 07 03 56 LMP Oh, yes, 10 seconds until 04. It's not really sunrise yet. We really ought to wait until sunrise.

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00 07 04 02 CMP No, let's do it on the - on the - on the time.  
00 07 04 04 CDR It was 06:49:45.  
00 07 04 07 LMP Oh, 45, okay, Jim. Excuse me, Dave, you got awhile - ways to wait yet.  
00 07 04 10 CMP Oh, do I?  
00 07 04 11 LMP Yes, you got 40 seconds more - That's about right.  
00 07 04 13 CMP Okay. We're rotating, or rolling, or something.  
00 07 04 16 CDR We are?  
00 07 04 19 CMP Or it's me. Man, that thruster - Ha ho. The quad.  
00 07 04 26 CDR Okay, close your eyes for just a minute, Dave, and I'll give it one little shot here.  
00 07 04 30 CMP Okay, closed. Okay.  
00 07 04 36 CDR Okay, back to MINIMUM IMPULSE.  
00 07 04 37 LMP Okay, 10 seconds, Dave. Okay, there, now it's sunrise.  
00 07 04 42 CDR Yes.  
00 07 04 43 LMP Okay, now stand by; 3, 2, 1 -  
00 07 04 47 LMP MARK.  
00 07 04 48 CMP Okay.  
00 07 04 59 CMP Okay, I got 19.  
00 07 05 01 LMP 19 in one quadrant?  
00 07 05 03 CMP 19 altogether.  
00 07 05 04 LMP 19, total?  
00 07 05 05 CMP Yes. Boy, now, it's just - it's really zapping right off of the quadrant. Man, oh man!  
00 07 05 19 CMP Okay, the daylight star check, started out about 10 seconds prior to the official sunrise, and

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counted through to about 19 stars, the last few of which were in the Big Dipper - Well, the Big Dipper is the last one to remain visible starting from the upper right quadrant, going counterclockwise. When the sun came up, it filled the inside of the quad, and one of the jets on the LM quad that sticks down, the one that points to about - it's like about minus X. And as soon as that filled up with light, it washed out everything but a couple or three stars and the Big Dipper.

- 00 07 06 08 LMP You can still see some, Dave?
- 00 07 06 09 CMP Yes, I can still see a few stars, and right now it's how late, Rusty?
- 00 07 06 15 LMP It's 06:15.
- 00 07 06 19 CMP 06:15.
- 00 07 06 20 LMP 07:06:15.
- 00 07 06 21 CMP 07:06:15. I can still see a couple of stars, and the Big Dipper.
- 00 07 06 25 LMP Great.
- 00 07 06 26 CMP And another thing that was noticeable: the moon was probably about 4 or 5 degrees above the field of view, and it reflected on the prism, on the telescope, and gave a light gray band right across the center.
- 00 07 06 45 CMP Okay, GET plus 5; I've got to do it again.
- 00 07 06 49 LMP Plus 5?
- 00 07 06 50 CMP Plus 5, yes. Okay, that's going to be at - What time now - That's --
- 00 07 06 56 CDR Let's see what - I wonder what - It was 07:04:45 was the first one.
- 00 07 07 04 LMP Okay, so this one's going to be 07:09:45. Okay, you got - you got over 2 minutes, Dave.
- 00 07 07 13 CMP Okay.

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00 07 07 14 IMP I'll give you your cocoa, here, if you want to make some hot cocoa.

00 07 07 17 CMP Oh, great.

00 07 07 19 LMP Stand by. I'm going to cut the bottom for you.

00 07 07 21 CDR Don't lose your dark adaptation.

00 07 07 23 CMP Yes, that's right. Don't lose my dark - I'm going to just keep my eyes closed. Let's wait for a while. I'll eat later.

00 07 07 28 LMP Okay, I've got it all ready, so - I was just feeling sorry for you.

00 07 07 39 CMP I know it.

00 07 07 40 CDR Me too.

00 07 07 42 LMP I's going to make me some salmon salad, now. How was that, Jim?

00 07 07 49 CDR What?

00 07 07 50 LMP The salmon salad.

00 07 07 51 CDR How is it?

00 07 07 52 LMP Yes.

00 07 07 53 CDR I don't like it.

00 07 07 55 LMP Did you eat it?

00 07 07 56 CDR I haven't gotten to it, yet.

00 07 07 57 LMP Oh.

00 07 08 02 CMP You know what I need is something to drink before I die.

00 07 08 09 LMP You got that gun? No, I got the gun.

00 07 08 15 CDR All I get out of there is air.

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- 00 07 08 16 LMP I know. You know, the hot water didn't put in - as near as much gas as the gun does. I wonder why? I bet the cold water is better down there, too.
- 00 07 08 47 CDR I wonder if this plastic on this thing will melt - Oh, ...
- 00 07 08 55 LMP (Singing) Cloudy.
- 00 07 09 00 LMP You've got just about a minute, Dave. Okay.
- 00 07 09 06 LMP (Singing) --
- 00 07 09 12 CDR I'm going to shoot a little pulse here, David.
- 00 07 09 13 CMP Okay. (Singing)
- 00 07 09 14 LMP -- (Singing) --
- 00 07 09 19 CMP Can you even the needles, Jim?
- 00 07 09 20 CDR Yes.
- 00 07 09 21 LMP -- (Singing)
- 00 07 09 26 CDR Oh, hell, it's ...
- 00 07 09 29 LMP 20 seconds, David.
- 00 07 09 30 CDR Probably got to pack these things with - with as little bit of air in them as possible, too --
- 00 07 09 33 CMP Okay, how many seconds, Rusty?
- 00 07 09 37 LMP About 10, now.
- 00 07 09 38 CMP Okay.
- 00 07 09 40 CDR -- so that when we depressurize this thing, we don't have them all inflate.
- 00 07 09 44 CMP Give me a mark, ... when you get there.
- 00 07 09 45 LMP Okay, 1 -
- 00 07 09 46 LMP MARK.

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Day 1

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00 07 09 51 CMP ...  
00 07 09 53 LMP Nothing?  
00 07 09 54 CMP Got the horizon!  
00 07 09 56 LMP Ooh.  
00 07 09 57 CDR Really?  
00 07 09 58 LMP What kind of a star check is that?  
00 07 10 08 CMP ...  
00 07 10 10 CDR What?  
00 07 10 12 CMP ... trying to figure out how to make this thing ...  
00 07 10 14 CDR Okay.  
00 07 10 15 CMP On the - 5 minutes after sunrise, got the horizon  
and no - no stars at all, and the quads are now  
very bright. Got a - the cloud cover - it seems  
the earth is mostly blue --  
00 07 10 35 LMP (Laughter)  
00 07 10 36 CMP -- with (laughter) white clouds, but it's not a  
dense cover of white clouds. ... and the sky is  
black, and there are no stars visible at all, and  
I can still see the prism split - the reflection  
on the prism split, which gives me a light band  
across the center of the field of view. And I  
guess that's about the size of it.  
00 07 11 12 LMP Okay, I got that down in the record ... Hey, you're  
supposed to have horizon in here, I guess.  
00 07 11 18 CMP You are?  
00 07 11 19 LMP Yes.  
00 07 11 25 CMP Sure no stars out there.  
00 07 11 28 LMP You want your drink?  
00 07 11 30 CMP Yes, guess I'll put it down ...

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Day 1

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00 07 11 31 LMP      Oops, made me spill it.  
00 07 11 34 CDR      I have it; I have it.  
00 07 11 37 CDR      Say, did you cut the end off for him?  
00 07 11 38 LMP      Yes, it's all set.  
00 07 11 42 CDR      Okay, I guess we ought to look at the flight plan,  
                          and see what else we're supposed to be doing here.  
00 07 11 46 LMP      I got it right here. Nothing.  
00 07 11 54 CDR      Weren't we supposed to change one of those lithium  
                          hydroxide canisters or something?  
00 07 11 58 LMP      Oh, yes. We need that --  
00 07 12 00 CDR      We need - we need to get the big flight plan out,  
                          I guess.  
00 07 12 02 LMP      -- filter change, number 1; we missed it. 3 to A,  
                          1 to B-5.  
00 07 12 51 CDR      Davey, here's your thing.  
00 07 12 52 CMP      Okay.  
00 07 12 54 LMP      Oh, if there's a smile on my face, it's because I  
                          just took a leak.  
00 07 12 59 CDR      (Laughter) Dave, would you also fill mine up for  
                          me when you get -  
00 07 13 06 CMP      Sure. This water gun is terrible. It didn't do  
                          too bad last time, Jim. Look.  
00 07 13 12 CDR      Did it?  
00 07 13 13 CMP      No, I got - I don't have that much air in that one.  
00 07 13 15 CDR      Oh, yes. Maybe you just have to get the head off  
                          of it. Pchoo!  
00 07 13 24 LMP      Okay, let's see. I guess I might as well eat some  
                          dry things here. Unfortunately. Lug-lug-lug-lug-  
                          lug, chug-a-lug, chug-a-lug. Now, which ones are

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Day 1

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worst? Toasted breadcubes or sugar cookie cubes?  
I guess I'll save them for dessert. You know, no  
matter which way I look, it feels like it's down.

- 00 07 13 55 CDR Yes, me too.
- 00 07 14 01 LMP (Singing) Oh, cloudy. (Singing)
- 00 07 14 22 CMP How did your stuff come out, ounce-wise - -
- 00 07 14 25 CDR Hey, did we ever get the cabin vent open again down  
there?
- 00 07 14 27 CMP No. Oh, my God, let's open the cabin vent.
- 00 07 14 30 CDR Yes, boy.
- 00 07 14 31 CMP Hey, it's alright; we were going to close it at  
noon - at night.
- 00 07 14 34 LMP Yes, why don't we open her?
- 00 07 14 37 CDR No kidding. That's right. I have the LM as  
holding at zero. Okay, waste stowage vent, right?
- 00 07 14 42 CMP/LMP Right.
- 00 07 14 44 CDR Shoot, open the ... vent.
- 00 07 14 57 CMP (Laughter) Look what just came off.
- 00 07 14 59 CDR What?
- 00 07 15 01 CMP The optics eyepiece. Great, great.
- 00 07 15 05 CDR Tape them down.
- 00 07 15 12 CMP Hey, how did your water come out ounce-wise, on  
those two things I have you?
- 00 07 15 17 LMP Oh, mine came out good, Dave.
- 00 07 15 21 CMP Seemed about right?
- 00 07 15 22 LMP Yes.
- 00 07 15 23 CDR Would you squirt mine full when you get a chance  
down there?

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Day 1

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00 07 15 25 CMP Yes, chunk it here ... --  
00 07 15 27 CDR Sure.  
00 07 15 28 CMP -- let me get my - some tape on these optics, so I don't lose them.  
00 07 15 31 LMP Oh, does this food taste good.  
00 07 15 33 CDR Does the what taste good?  
00 07 15 34 LMP Food.  
00 07 15 35 CDR Oh, yes.  
00 07 15 46 LMP You know, the thing that impresses me most is how quiet it is.  
00 07 15 49 CDR What are we doing with the cabin fan? I think they're both off, aren't they?  
00 07 15 52 LMP Turn one to see what it sounds like.  
00 07 15 56 CDR Go ahead; number 2 coming ON.  
00 07 16 01 LMP Right in the air, huh?  
00 07 16 03 CMP Yes.  
00 07 16 04 LMP Even that's not too bad.  
00 07 16 19 CDR Supposed to start our rest period in less than 2 hours - an hour and 45 minutes.  
00 07 16 23 LMP Ha ha!  
00 07 16 42 CDR They forgot a few things in here, like taking your suit off, and putting it back on, and -  
00 07 16 47 CMP Yes.  
00 07 16 48 LMP Dave, you want some more food?  
00 07 16 52 CMP Well, let me get - I haven't got what I got, yet. I'm busy as a little beaver.  
00 07 17 04 CDR Gee whiz, we don't have a thing to do until -

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00 07 17 07 LMP Oh, Dave's got to change that filter.

00 07 17 10 CMP Yes, I will; just hang on, gang.

00 07 17 12 LMP Yes, no, I'm not rushing you. I just want to - I just don't want to forget it.

00 07 17 15 CMP Yes.

00 07 17 16 CDR Let me have that water gun. Man, I need some - something to drink.

00 07 17 19 LMP Okay, ...

00 07 17 29 IMP Okay, Jim, I'll get yours now.

00 07 17 31 CDR Okay.

00 07 17 32 LMP Hot or cold?

00 07 17 34 CMP Hot.

00 07 17 35 CDR Yes, hot.

00 07 17 56 CMP Oh, man, that's a load of air. Whooee. Man, I'll tell you, this toasted bread cru - cubes never tasted better.

00 07 18 02 CDR Hmm.

00 07 23 26 CDR How's that stuff taste?

00 07 23 28 LMP Okay, Houston, go ahead with the NAV check.

00 07 23 30 CC Okay. Time: 008:10, all zeros; minus 2719, plus 02980, 1256. End of update.

00 07 23 52 LMP Roger, understand. 008:10, all zips; minus 2719, plus 02980, 1256. How's that?

00 07 24 09 IMP Houston, Apollo 9. Did you get the readback?

00 07 24 14 LMP Houston, did you get the readback? Okay.

00 07 24 17 CMP How does that look?

00 07 24 18 LMP You got it there, Jim - Dave?

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Day 1

C [REDACTED] ELLA

00 07 24 20 CMP Yes.

00 07 24 21 LMP 2719 --

00 07 24 22 CMP 2719, 291 --

00 07 24 23 LMP Yes?

00 07 24 24 CMP -- 1256.

00 07 24 26 LMP Hey, it's the wrong sign on the latitude - on the longitude.

00 07 24 32 CMP Okay. They're both - both minus.

00 07 24 34 LMP Yes, that's funny. We've got a plus here.

00 07 24 43 LMP Houston, Apollo 9. Oh, we lost them. Hey, I hear thrusters firing. You know?

00 07 24 52 CMP I might have kicked something down here.

00 07 24 57 LMP Sounds like it.

00 07 24 59 CMP Hey, listen, are we about time to take suits off, and all that stuff?

00 07 25 03 CDR Yes, if we're going to sleep with them off, we're going to have to start taking them off.

00 07 25 06 CMP Say again.

00 07 25 08 CDR You want to sleep with them off, you can go ahead and start taking them off.

00 07 25 11 CMP What are you going to do?

00 07 25 12 CDR I don't know. It's a pain in the can to get them off. I wonder if I - I might not just keep it on tonight.

00 07 25 30 CDR Hey, here's another card; here's your S-IVB, ...

00 07 25 35 CMP Oh, yes.

00 07 25 51 LMP Oh boy, oh boy! Would you believe that even the salmon salad tastes good?

[REDACTED]  
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Day 1

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- ( ) 00 07 26 08 CMP Well, let's see, what do we have else to do?
- 00 07 26 11 CDR Not much. Vent the batteries, terminate the cabin purge; ... we just got it started. (Laughter) Change that lithium hydroxide canister.
- 00 07 26 21 CMP Yes. Yes, I got a real problem trying to pee, you know that? It's terrible.
- 00 07 26 29 LMP Yes, I'll tell you, it took me a long while, too. I just - finally made it.
- 00 07 26 39 CDR Maybe if you took your suit off, it may help, Dave.
- 00 07 26 41 CMP You know, I might just do that.
- 00 07 26 42 CDR Oh, hell!
- 00 07 26 46 LMP What?
- 00 07 26 48 CDR Some of my chocolate got away. Maybe I dropped  
... - -
- 00 07 26 53 LMP Gee, and we've got to get those napkins and all that stuff out, too.
- ( ) 00 07 26 56 CDR Yes.
- 00 07 26 57 CMP I think I will take my suit off.
- 00 07 26 59 LMP Hey, that ought to be interesting. Here goes David for an hour.
- 00 07 27 06 CDR If he's not doing P52's, he's under the seat.
- 00 07 27 49 LMP Who's making that racket down there?
- 00 07 27 51 CDR Where?
- 00 07 27 54 LMP Sounds like it's right under my couch. Maybe it's Dave's suit -
- 00 07 28 25 LMP Man, this blue suit's stable, isn't it?
- 00 07 28 27 CMP Yes, sure is.
- 00 07 28 35 CMP See if we got any perigee torquing now there. We're headed towards perigee, right now.

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Day 1

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00 07 29 03 CDR Here's another piece of trash.  
00 07 29 05 LMP Wonder what this blue stuff is.  
00 07 29 12 CDR I don't know.  
00 07 29 24 CDR That was really good.  
00 07 29 26 LMP What's that?  
00 07 29 27 CDR That chocolate.  
00 07 29 28 LMP Umm.  
00 07 29 29 CDR I want some water or something to drink.  
00 07 29 31 LMP Save mine for dessert.  
00 07 29 34 CDR What?  
00 07 29 35 LMP Yes. Here, hold on, Dave.  
00 07 29 41 CDR Man, you really going at it, aren't you?  
00 07 29 53 LMP Hold on. There you go.  
00 07 30 01 CDR You want a hand with anything?  
00 07 30 37 CDR Here, you want a hand, Dave?  
00 07 30 54 CDR Oh, hey, you had your watchband on. That might have had something to do with it.  
00 07 31 17 CDR What?  
00 07 31 31 LMP Well, I hope the girls have got the champagne out.  
00 07 32 12 CDR How's that surge tank, Rusty?  
00 07 32 15 LMP Surge tank is hovering at 700.  
00 07 32 18 CDR Boy, that thing sure doesn't refill very fast, does it? I'd like to get that fifth tank filled up. Can you see what the --  
00 07 32 25 LMP Maybe we ought to shut --

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Day 1

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00 07 32 26 CC Greeting, Apollo 9. This is Houston through Hawaii.

00 07 32 29 LMP Roger, Houston; Apollo 9.

00 07 32 34 CC Roger. I didn't get to confirm all your NAV check-out. If you run it, you have probably discovered the sign was wrong on the longitude.

00 07 48 23 LMP Hey, Dave (laughter).

00 07 48 24 CDR (Laughter)

00 07 48 25 LMP You want to check with - the panel 250 is configured right, and I'll start charging battery B up?

00 07 48 31 CMP Okay.

00 07 48 32 CC We'll see you over Tananarive at about 24 or 25.

00 07 48 36 CDR Roger; thank you. And we'll get a PRD report for you as soon as we figure out what it is.

00 07 48 42 CC Roger.

00 07 48 45 CDR And, Houston, I'm going to start charging battery B right now for you.

00 07 48 48 CC Okay, and that's a dosimeter reading over Tananarive.

00 07 48 52 CDR Roger.

00 07 49 02 CDR What'd you say?

00 07 49 12 LMP Ah. ... I'll take ..., Dave. Didn't say you wanted ... or anything? Oh, boy. Look on the top, right there.

00 07 49 30 LMP Oh, my aching back. Number 1, and the time you took it out was 07:49, Dave.

00 07 49 42 LMP Well, we're right on there?

00 07 49 47 CDR Yes, how about the one we put in? Was it marked? Huh? Oh. ...

00 07 49 59 LMP I ought to put a charge on B. Okay.

00 07 50 01 CDR Okay.

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Day 1

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- 00 07 50 02 IMP Whee! 2-1/4 amperes.
- 00 07 50 15 LMP Oh, it's way down. 07:50:00 - start charge on BAT B; 2.25 amps and 83, 1.5. Oh, no; hey, you know, this stuff ... And 33 volts, 3 volts.
- 00 07 50 59 CDR There isn't a single ...; well, I'll be a son of a gun.
- 00 07 51 32 CDR ...?
- 00 07 51 47 LMP What? Here, let me take a peek.
- 00 07 52 02 LMP Dave, could you run a P50 and see if everything is normal there? Okay.
- 00 07 52 24 LMP Hey, our O<sub>2</sub> flow's up again, finally. 0.55 now.
- 00 07 52 39 LMP That's what I get.
- 00 07 52 42 CDR Here's the number here, Dave. Here it is right here, I think. This supposed to be number 3? Is this one supposed to be number 3, that I have here? Yes, here it is, marked right here.
- 00 07 52 58 CDR Huh? Okay? Is it? That's really bad.
- 00 07 53 20 CDR Hey, I'm telling you we're going to get in trouble with those lithium hydroxide canisters. I'll bet you two bits.
- 00 07 53 30 LMP Well, I guess if he keeps marking them well, we may be able to avoid it.
- 00 07 53 49 CDR I'm going to go ahead and power down to G&N and stop worrying about getting in gimbal lock.
- 00 07 53 58 CDR What? What'd you say, Dave?
- 00 07 54 10 CMP Hey, Jim, look at the sun coming through the sextant.
- 00 07 54 12 CDR Where? Oh, yes.
- 00 07 54 19 CDR (Cough) Excuse me.
- 00 07 54 27 CDR Beautiful, Rusty, beautiful. You've got an eyeful of chocolate. (Cough)

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May 1

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- 00 07 54 54 LMP Isn't that amazing, that the LM held together?
- 00 07 54 57 CDR Yes, it is.
- 00 07 55 10 LMP Uh oh! Look at that O<sub>2</sub> flow, Jim.
- 00 07 55 13 CDR Huh?
- 00 07 55 14 LMP That O<sub>2</sub> flow is working its way up.
- 00 07 55 16 CDR Oh, shoot, it is.
- 00 07 55 25 CDR What? Do you? What's the matter, aren't you feeling good?
- 00 07 55 37 CDR Okay. I may go down and try to empty my bladder, here.
- 00 07 55 42 LMP I'm trying to figure out what we're supposed to be doing.
- 00 07 55 52 CDR It's - Coming up on 8 o'clock, vent the batteries and terminate the cabin purge, you're supposed to do.
- 00 07 56 08 CDR You're supposed to do another P52 IMU realign to REFSMMAT ... You're supposed to do P52 IMU realign at about 08:20, about 25 minutes. Want me to do that one, Dave?
- 00 07 56 32 CDR I'd better do that one of mine, and see what the optics look like. Rusty, sit here and watch this, and make sure we don't get any gimbal lock. Everything's turned off. Yes. Why don't you do that?
- 00 07 56 51 LMP Boy, I'll tell you, I feel - I feel a heck of a lot better after eating. I didn't really feel bad before eating, but I felt hungry. ... myself to the hoses. (Laughter)
- 00 07 57 18 CMP Yes. Yes, it does feel good after a hot lunch ..., doesn't it?
- 00 07 57 25 LMP Boy, you know, swallowing all of this gas, you can't help but fart all over the place.
- 00 07 57 30 CMP Yes.

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Day 1

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00 07 57 37 LMP That's a real challenge for that poor lithium hydroxide.

00 07 57 39 CDR Yes?

00 07 57 45 CDR Yes, I'll do that, Dave.

00 07 57 53 LMP Dave, you're kind of socking them in there, aren't you?

00 07 58 09 LMP Hey, I'm going to try a small one, here, Dave. You want some? No? Is that white?

00 07 58 19 CDR Hey, I'll have a couple of pieces of medium.

00 07 58 24 CMP Here you go.

00 07 58 41 LMP I can't figure out whether I'm sleepy.

00 07 58 53 LMP Here's a tissue dispenser. Here's a tissue dispenser. Say, and Dave, there's a couple - You want some towels, too? You want some towels, too?

00 07 59 23 LMP I'll get you one. No problem. Yes, me too. I don't know how I'm going to get more - any more to eat, though. I don't know but what I should go and eat one of those 'yuk' meals? I wonder if I eat one of those things -

00 07 59 47 LMP Did you clean your ...?

00 07 59 51 CDR My ... support?

00 07 59 52 LMP Yes.

00 07 59 53 CDR No, I have it over there.

00 07 59 54 LMP Look, don't hold back.

00 08 00 01 CMP Why don't you go ahead?

00 08 00 06 CDR Yes, this time ...

00 08 00 17 LMP There's our friendly O<sub>2</sub> FLOW HIGH.

00 08 00 19 CMP Oh, shoot, is that right?

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Day 1

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- 00 08 00 21 LMP Yes.
- 00 08 00 23 CDR Dave, is that thing pulled out over there?
- 00 08 00 36 CDR Is that ECS return valve over there pulled out?  
I think it is.
- 00 08 00 48 CMP Yes.
- 00 08 00 53 CDR Well, I suggest we turn off the LM tunnel vent.
- 00 08 01 00 LMP Or close the purge. Let's see what happens. Here,  
let me - Hold on. Let's see which one is doing  
what. Let's do them one at a time and look at  
the ECS.
- 00 08 01 10 CDR Let's turn off the purge valve first.
- 00 08 01 13 LMP Okay.
- 00 08 01 14 CDR We're supposed to have that on, come to think  
about it. Ready?
- 00 08 01 23 LMP Yes.
- 00 08 01 29 CDR I'm not sure that you're going to see any response,  
right away.
- 00 08 01 33 LMP Yes, I got an O<sub>2</sub> FLOW HIGH (laughter).
- 00 08 01 47 CDR I don't even know what I did with that --
- 00 08 01 48 LMP Hey, yes, it's coming down.
- 00 08 01 49 CDR Is it coming down?
- 00 08 01 50 LMP Yes. Let's just leave it there for a while and  
see what it stabilizes out.
- 00 08 02 04 CDR (Laughter) David, you need another arm! Here, let  
me - Give me something. Hey, Dave, watch out,  
you're going to get your fingers in your eyeball.
- 00 08 02 23 LMP Hey, here's a good way to hold your chow. At least  
it seems to work pretty well. You get a pair of  
... like this - Dave, let me have one of those

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anyway. David, let me have one of those before you put it away.

00 08 03 41 LMP

Oh, this is going to feel good, too.

00 08 03 55 CDR

Oh, boy, what a mess. You know how to get out that dump and take the ...? ..., I can't get the urine dump stopped.

00 08 04 05 LMP

We're supposed to do a P52 or something, aren't we?

00 08 04 07 CDR

Yes. Sure are.

00 08 04 09 LMP

Jim, the flow is down to 0.6 and it's still going down a little bit.

00 08 04 19 CDR

Would you believe we're looking right at the earth?

00 08 04 22 LMP

Yes, you sure are. Let's see, we're going to our right, so if David rolls left a couple of pulses, we'll be able to see it in a little while, Jim.

00 08 04 41 CDR

Okay.

00 08 04 47 CMP

Do you know where I put - Where's my checklist? If ..., I'm going to do this thing. I've got to get my checklist. Okay, what did I do with it? It's in my pocket. Never mind. It's in my pocket.

00 08 05 02 LMP

(Singing) Hey, I feel like a new man.

00 08 05 09 CDR

I'm going to get something to eat. I haven't eaten since ...

00 08 05 12 LMP

Hey, you want me to get some of that good food out?

00 08 05 14 CDR

Yes, would you get some of that ...? I'll have some of that.

00 08 05 17 LMP

Yes, I think I can reach it; let me try.

00 08 05 21 CDR

We're not going to do a sextant calibration to the trunnion bias, are we?

00 08 05 26 CMP

Ah -

00 08 05 27 LMP

Huh?

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Day 1

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- 00 08 05 28 CDR You're not going to do a sextant - sextant calibration to the trunnion bias, a P27 midcourse ...?
- 00 08 05 37 CMP I doubt it.
- 00 08 05 41 LMP (Singing)
- 00 08 05 53 CDR P52, IMU realign.
- 00 08 05 57 LMP (Singing)
- 00 08 05 58 CDR CMC, ON; ISS, ON; SCS, operating; BMAG, three; G&N POWER OPTICS; CMC MODE, FREE.
- 00 08 06 11 LMP (Singing)
- 00 08 06 12 CDR Dave, where are your hoses? Where are your hoses
- 00 08 06 21 CDR We've got to get the screens and put on that one. Oh, did you? Oh. Oh, what's that?
- 00 08 06 34 LMP Good. That's - that, we want to happen.
- 00 08 06 37 CDR Trouble is, you know when it comes back on and flips us off - flip ON - OFF like that a couple of times, it's going to blow the horn.
- 00 08 06 42 LMP Well, but it's not going to - it's going to stay on now.
- 00 08 06 45 CDR I know it; when it comes back up in the middle of the night, it'll - going to blow a horn.
- 00 08 06 49 LMP No, it'll only come to 235, see?
- 00 08 06 54 CDR Now, what's it - what's it - what's the horn come on at?
- 00 08 06 56 LMP I don't know. I got - I'm - under the effect of this turning effect, here. Hold on.
- 00 08 07 04 CDR Dave, don't these eyepieces move around?
- 00 08 07 12 LMP (Singing)
- 00 08 07 13 CDR Do these eyepieces move around?
- 00 08 07 17 LMP What do you want, Jim?  
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- 00 08 07 18 CDR Oh.
- 00 08 07 19 LMP I got turkey and gravy out. You want turkey and gravy?
- 00 08 07 23 CDR Yes.
- 00 08 07 24 LMP Would you?
- 00 08 07 25 CDR Any of that stuff there.
- 00 08 07 26 LMP Give me a - give me a pair of scissors, Dave, since you got them out.
- 00 08 07 39 LMP (Singing) Oh, baby (laughter).
- 00 08 07 41 CDR Is it okay to go to zero optics here, Dave? Zero optics, CMC?
- 00 08 07 48 LMP (Singing)
- 00 08 07 57 LMP Oh, shoot. I can't reach that, silly ... What bag is that? What's this bag - What's this floating here? What's that?
- 00 08 08 15 CDR Look's like --
- 00 08 08 21 LMP (Singing) Is this somebody's trash? I guess that's Jim's lunch.
- 00 08 08 27 CDR That's my water bag up there. Don't ... the DSKY.
- 00 08 08 30 LMP No, I'm just steadyng myself.
- 00 08 08 38 LMP Okay, David, baby.
- 00 08 08 39 CDR There is nothing down there but earth, Dave.
- 00 08 08 41 LMP Yes, Dave. If you roll left, I think - Well, I don't know, shoot. We're winning the - Rolling right. Which way are we rolling - on the rate meter? What?
- 00 08 09 05 CDR Where's all that equipment we dump the urine bags with?
- 00 08 09 11 LMP Hey, I'll look for that in a minute. Here you go, Jim. You want this?

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- 00 08 09 16 CDR Yes. Wonder what I'm going to do with that? Let me see. Right in here.
- 00 08 09 27 LMP Dave, do you want one? Okay. Oh, I've got to get our spoons out of there, too. (Singing)
- 00 08 09 46 LMP I don't know where in the heck that - Yahoo!
- 00 08 10 01 LMP Dave, there's your scissors. I don't know if they're going to stay there or not. (Singing)
- 00 08 10 23 CDR Hey, I wonder if we're supposed to dump our waste water?
- 00 08 10 25 LMP Let me see how high it's getting, Jim. (Singing)
- 00 08 10 33 LMP Water, water, water, water. Waste water is 67 percent. Potable is 90, about. Waste is - waste is about 68 percent, Jim.
- 00 08 10 54 CDR Okay.
- 00 08 11 03 LMP (Singing)
- 00 08 11 11 LMP Yes, I'm about to dive in for them here.
- 00 08 11 19 CDR No, we're still looking at the earth, Dave.
- 00 08 11 37 LMP (Singing) Have you got the utility light? Hey, anybody got the utility light?
- 00 08 11 45 CDR There isn't one.
- 00 08 11 46 LMP Oh.
- 00 08 11 48 CDR You want the flashlight down here?
- 00 08 11 49 LMP You can't be serious. No, I think I see them.
- 00 08 11 59 CDR (Laughter)
- 00 08 12 01 LMP Boy, oh boy, these things weren't packed very well! These spoons are - the bags of the spoons are all blown - are all blown up.
- 00 08 12 18 LMP (Singing) Boy, this damn turning effect really grabs you, doesn't it? (Singing)

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- ( ) 00 08 12 27 CDR Look, Dave. We're getting some stars out there.
- 00 08 12 50 LMP (Singing) Look at that bag, Dave. Isn't that good packing?
- 00 08 13 01 LMP (Singing)
- 00 08 13 09 LMP David, you're white, huh? That bag smells, too. (Singing)
- 00 08 13 23 CDR Hey, Dave, doesn't that eyepiece slide around down there?
- 00 08 13 29 CDR Yes. Then it turns around like this.
- 00 08 13 32 LMP Hey, look at that. They engraved the spoons. It says, "Commander 9."
- 00 08 13 44 LMP No, it's open, sir.
- 00 08 13 53 LMP (Singing)
- 00 08 14 09 LMP Well, David, congratulations. You made it through a docking this time. How about that? Spoons! Part number SED 39104130.
- ( ) 00 08 14 23 CDR Okay, Dave, just a little bit farther and I think I can get Rigel and Sirius. You're going to have to come down here and show me how this thing works, tomorrow.
- 00 08 14 39 LMP Yes. A spoon - I see a spoon. Oh, a spoon ... spoon. That's rich!
- 00 08 14 48 CDR Okay, let me start through this dude. Let's see, I want to call VERB 37; VERB 37, ENTER; 52, ENTER. I want to do a REFSMMAT. Okay, I want a VERB 22 -
- 00 08 15 06 LMP We've got more plastic bags! I guess I might as well throw them away. You got the TSB over there, David?
- 00 08 15 13 CDR ... like that?
- 00 08 15 24 CDR PROCEED. That's 225. Let's see, I can come out of zero now, can't I? On zero. Then it proceeds to PICAPAR.

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- 00 08 15 37 LMP Why don't you name them? You want Rigel and Sirius don't you?
- 00 08 15 39 CDR Yes.
- 00 08 15 40 LMP Okay, then enter in 215; that's Sirius.
- 00 08 15 43 CDR Okay, there's a 14. Why don't you stop us now, Dave? 14. That's Canopus.
- 00 08 15 52 LMP That's not a bad one. Moderately bright star.
- 00 08 16 07 CDR Shoot, I can't get the God-blessed thing in focus
- 00 08 16 19 CDR Okay, I see him down there. We do PICAPAR - we got that. 01 70. CMC verify; OPTICS ZERO, OFF; PROCEED - you hit a PROCEED here, and then it goes and looks for it, doesn't it?
- 00 08 16 39 CDR That right, David? Okay.
- 00 08 16 45 LMP OJT.
- 00 08 16 46 CDR Okay, that's it; now, put your shaft and trunnion out.
- 00 08 16 49 LMP Man, oh man. I'm making up for what you guys were doing before, let me tell you. I am challenging the system!
- 00 08 17 00 CDR Okay. Okay, that's good. Now what do I do? Do I go to MANUAL here? Got that?
- 00 08 17 19 CDR There's Canopus. Okay, go to MANUAL.
- 00 08 17 33 CDR Boy, oh goodness gracious sakes alive! They're going like a scalded ape. Back to CMC. Yes, we're really whipping along there, aren't we?
- 00 08 17 46 LMP Now don't say that.
- 00 08 17 47 CDR Let me just see if I can catch it, Dave.
- 00 08 17 51 LMP Whee! Just see if he - he'll - he'll see if he can catch it.
- 00 08 17 55 CDR They're really going. I just can't keep up with them.

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- 00 08 18 08 LMP Look at this, Dave.
- 00 08 18 12 CDR Well, I guess I can't even stay up with it in - in LOW. Let me -
- 00 08 18 36 CDR Okay, that looks like about enough. I'm getting I'm catching up with it now. OPTICS, LOW, will get it there.
- 00 08 18 53 LMP You open that new meal, Dave? You open that goo meal? How'd it taste?
- 00 08 19 20 CDR Okay, 50, 25, 16. PRO.
- 00 08 19 23 CMP Have you done marked? Was it a good mark, I gue
- 00 08 19 29 CDR Yes. Terminate marks. Okay, on those good mark I'll hit a PROCEED; and that was a bright star, so hit a PROCEED. Go back to CMC. 16, Sirius; want that. And I hit a PPOCEED. Okay, ...
- 00 08 19 51 LMP (Singing)
- 00 08 20 03 LMP Oh, shoot, Dave.
- 00 08 20 06 CMP Looking at the earth, again?
- 00 08 20 08 CDR That's behind the - oh, that's - behind the LM, I think. Where do we go now? I'm looking at th LM. Go to the what?
- 00 08 20 27 LMP Sextant. Yes? May not be behind the LM in the sextant.
- 00 08 20 34 CDR My gosh, it isn't. There's a star out there.
- 00 08 20 41 CDR Well, should I mark on it? I can't possibly identify it as Sirius.
- 00 08 20 45 LMP Is it bright?
- 00 08 20 46 CDR Bright.
- 00 08 20 47 LMP Mark on it.
- 00 08 20 57 LMP I have a feeling that when I open this bag that everything is going to fall in my face.

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00 08 21 12 CDR Okay, 50, 25, 16 ... 16 - Oh, that says Procyon.

00 08 21 26 CDR Okay. I read the wrong number, anyway.

00 08 21 32 CDR ... Alright, and that one's the right star; I gue  
and ... give it AUTO optics.

00 08 21 36 LMP Oh, look at that!

00 08 21 37 CDR Oh, shoot, damn, I screwed up!

00 08 21 43 LMP Well, let's see, you want to go to the next - We  
want to get the torquing angles here, don't we?  
Oh, darn, next thing. Hey, that's pretty good.  
Why don't you write those down on something or  
other?

00 08 21 56 LMP Okay, I've got them. Mm-hmm. We ought to get the  
big flight plan out.

00 08 22 09 LMP Where is it? Is it in R-12 here? Dave.

00 08 22 14 CDR You know where it is?

00 08 22 17 LMP Okay. Stand by, Jim; I'll get it for you now.

00 08 22 21 CDR Alright.

00 08 22 22 LMP Where have you been writing yours down, Dave?  
Where have you been writing yours down?

00 08 22 33 LMP Jim.

00 08 22 38 CDR Careful, boy, there's a - -

00 08 22 42 LMP (Laughter)

00 08 22 54 LMP Now, you got to write the time, huh?

00 08 23 15 CDR Okay.

00 08 23 27 LMP Gee, it doesn't say. Is this it here?

00 08 23 33 CDR That's the wrong - That's at 9 hours. We're over  
here. I'll just write it down in there.

00 08 23 38 LMP The time is 08:20 - Oh, you've got it down there,  
don't you?

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- 00 08 23 41 CDR No, I don't. What ti - -
- 00 08 23 42 CDR Yes, 08:22.
- 00 08 23 43 LMF Yes, 08:23 was the time. Oh, but you do it when you proceed, 08:24. No, when the hell do you do it?
- 00 08 23 52 CDR I do it - I did this one when I did the -
- 00 08 24 18 LMP You know, turkey and gravy is pretty good, but that other stuff will never hack it.
- 00 08 24 22 CDR Okay, ready to torque, Dave? Oh. Time to fire at 24:30.
- 00 08 24 32 LMP 20 - 24:30.
- 00 08 24 40 CDR Okay, now what do we do with this one? ENTER; that ends it, doesn't it? Hey!
- 00 08 24 47 CMP ...
- 00 08 24 48 CDR Hey, how about that? I got right through that, and didn't screw it up much.
- 00 08 24 56 LMP Hey, we'd better get this - this data figured out. It's absolutely atrocious the way it is. The data, the flight plan.
- 00 08 25 02 CC Apollo 9, this is Houston through Tananarive.
- 00 08 25 07 LMP Roger, Houston; Apollo 9. Go ahead.
- 00 08 25 10 CC Roger. I'm not reading you very good at all, but are you reading me well enough to take in your block data? I'm ready to send that if you can read it.
- 00 08 25 20 LMP Roger. Stand by just 1.
- 00 08 25 24 CC Okay.
- 00 08 25 26 LMP The block data, here I'll copy it - I got a - All I need to do is get rid of a few things here. Where'd it go? Where's the - You got that book? Block data.

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- 00 08 25 44 LMP Okay, Houston, go ahead.
- 00 08 25 47 CC Roger. Reading block data number 2: 009 3 Bravo, plus 256, plus 1450, 013:14:31, 2928; 010 - okay - Charlie Charlie, minus 195, minus 1617, 015:02:51, 2928; 011 Alfa Charlie, plus 008, minus 0230, 015:40:24, 2928. And am I coming through alright, Apollo 9?
- 00 08 27 37 LMP Roger. What was the first area?
- 00 08 27 42 CC Okay, I - I've still got some more for you, but my first area was 009 3 Bravo.
- 00 08 27 56 LMP Roger. Ready to continue.
- 00 08 27 59 CC Okay, continuing on: 012 Alfa Charlie, plus 101, minus 0321, 017:13:49, 2928; 013 2 Alfa, plus 250, minus 0264, 018:50:57, 2928; and the last one, 014 Alfa Charlie, plus 308, minus 0279, 020:24:40, 2928. That is the end of the block data, and your SPS trim angles for this: pitch, minus 133; yaw, plus 135, and that is the end of the block data. Before you start the readback, there are a couple of other comments for you.
- 00 08 30 00 LMP Okay, go ahead.
- 00 08 30 03 CC Roger. We'd like to have you verify that you will do a waste water dump down to 25 percent prior to the rest period.
- 00 08 30 13 LMP Roger. Waste water dump down to 25 percent prior to the rest period.
- 00 08 30 18 CC That is affirmative, and I guess I'd like to have a dosimeter reading if - if you've got it.
- 00 08 30 30 LMP Roger; stand by. Do you have your dosimeter?
- 00 08 30 34 CDR Here, I'll get mine; just a minute.
- 00 08 30 36 LMP See if I can find mine, here. Oh, shoot, there's the Hasselblad down there. What do you know?
- 00 08 30 54 LMP Okay, the LMP dosimeter is 8001.
- 00 08 31 01 CDR Mine's 3102.

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00 08 31 04 CMP Houston, do you read?

00 08 31 05 CC Roger; 80 - Go ahead.

00 08 31 06 CMP Roger. LMP is 8001.

00 08 31 12 CC Roger. I copy the LMP 8001. Say the next one.

00 08 31 16 CMP Roger. Say yours, Jim.

00 08 31 17 CDR CDR is 3102.

00 08 31 22 CC Roger. And the CMP?

00 08 31 24 CDR We're not going to be able to get his. His dosimeter is all packed up.

00 08 31 32 CC Roger. Copy. No reading for the CMP, thank you. And we've only got about 20 seconds here before we leave. On this surge tank coming up, we say, if you would bring the REPRESS pack on the line and give us a reading on that, it might help us troubleshoot that.

00 08 31 56 LMP Send a REPRESS back on the line!

00 08 32 01 CC And we're going to lose you here, Apollo 9, at the end of the pass. The next pass is scheduled over Hawaii at 05, which is right at the beginning of your rest period.

00 08 32 12 CDR You want our fuel cell purge?

00 08 32 20 LMP Well, we can dump the waste water. Hey, you want to - What do we want to do with the block data? We've got to figure out what to do with some of these.

00 08 32 26 CDR Yes, we've got to have a little council of war here when we - when we get through here. Why don't you go ahead and eat, Dave? I want to find a couple of other things. I want to get the suit-hose thing We got to get that data figured out. This is terrible, the way it's going around.

00 08 32 40 LMP Yes, we got too damn many books.

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00 08 32 46 CDR

We've got to get the checklist out. I'm going to start using that as the Bible. Let me get a couple I want to get this thing to dump my urine bag overboard, and I also want to get this thing to put on the vent line. Hey, would you check, Rusty, and see how many hours of sleep we have tonight? I think we have 10.

00 08 33 04 LMP

Okay, I'll check that. Sunrise coming up out at the front there.

00 08 33 35 CMP

Ouch (laughter).

00 08 33 39 CDR

I guess we ought to stow the optics. Whoop-te-do, whoop-te-do.

00 08 33 51 LMP

Put the dark slide back in the Hasselblad.

00 08 33 56 CDR

Let's see, we want this on return line, don't we?

00 08 34 05 LMP

I'm going to turn your suit flow back on now, Dave.

00 08 34 25 LMP

Let's see, the waste water is 70 percent.

00 08 35 16 CDR

Oh, boy. These hoses of mine are really keen. These hoses of mine are really keen.

00 08 35 28 CDR

What - what did you say, Dave? Yes, I wouldn't doubt that at all.

00 08 35 47 CDR

Hey, that was my bang. Rusty, would you like a towel?

00 08 35 53 LMP

No, not right at the moment. I wouldn't quite know what to do with it.

00 08 35 59 CDR

Okay. Now, if I could just find - Urine bag, receiver, roll-on ..., waste management water in case of emergency - Whooee, I'm hot! These fans are so persistent. Do you know where that hose is, Dave? Do you know where that hose is that we use to dump our suits?

00 08 36 40 CMP

Yes, right down ...

00 08 36 42 CDR

Right down on - Oh. Where's the contraption that goes on the thing?

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00 08 36 47 LMP

It's up - it's there right under my foot, Jim.  
Right up in there.

00 08 37 01 CDR

Huh! Most of it's right here. - (laughter) on  
the flo - What in the heck is that? Here's that  
contraption.

00 08 37 09 LMP

Yes.

00 08 37 11 CDR

Huh. Let me get it hooked up here. Do you  
remember how to do?

00 08 37 24 LMP

Yes.

00 08 37 25 CDR

I guess it doesn't make any difference which of  
these two we plug it into; they just ... together

00 08 37 28 LMP

Let's just use - let's keep using the same one,  
though.

00 08 37 31 CDR

Yes.

00 08 37 32 LMP

Which one are you going to use?

00 08 37 33 CDR

I'd like to use the one closest to the LEB.

00 08 37 36 LMP

Okay.

00 08 37 45 CDR

What does this do?

00 08 37 52 CDR

You could start powering down to G&N if you want,  
Dave. You could probably start powering down to  
G&N.

00 08 38 05 CDR

My knees hurt. Feels like I have the bends in  
my knees.

00 08 38 17 CDR

Well, that was pretty stupid (laughter). I want  
to dump my urine bag, and I just went ahead and  
plugged it all ... in there. Let's see, we got  
to turn the heaters and stuff on, don't we? Are  
they on?

00 08 38 30 LMP

The breaker's in.

00 08 38 32 LMP

Yes, the URINE DUMP HEATER's ON.

- 00 08 38 35 CDR Waste H<sub>2</sub>O's dumped? Sure are.
- 00 08 38 40 LMP Yes.
- 00 08 39 07 CDR Okay. Hey, why don't we get the book out - the book of instructions out and read it to me?
- 00 08 39 13 LMP Uh.
- 00 08 39 14 CDR Wait a minute, I'll just get the book of instructions out, and read it to myself.
- 00 08 39 17 CDR Yes.
- 00 08 39 18 LMP I'm about done eating here, I think.
- 00 08 39 24 LMP God, I've been eating for two REV's.
- 00 08 39 33 CDR Gracious, what happened? This thing - this thing must have blown up my suit. It blew up up (laughter) - my urine collection. It must had 15 psi air trapped in it. I plugged it in and it went oops! Grabbed a hold of me. Oh man, is that thing ever tight!
- 00 08 40 03 LMP Is that your UCD?
- 00 08 40 05 CDR Yes, the thing actually inflated.
- 00 08 40 16 CDR Just a second there, and I'll give you one more ...
- 00 08 40 52 LMP I'll say one thing for this chow; it's tasty. Kind of gooey, but - -
- 00 08 41 13 CDR Hey, Dave, where did you put my old towel? My little towel? Oh.
- 00 08 41 25 CDR Urine dump mode; here we go. P and GA - PGA urine collection bag dump: connect urine transfer hose and filter through urine ...; connect urine transfer hose to 5 QD; WASTE MANAGEMENT URINE valve to DUMP.
- 00 08 41 47 LMP Complicated, huh? Didn't even say anything about the heater, huh?
- 00 08 41 51 CDR No. Good checklist.
- 00 08 42 08 CDR Okay.

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00 08 42 15 CDR What?  
00 08 42 18 LMP Don't get sucked overboard, Jim.  
00 08 42 25 CMP Ho, boy. Back with you.  
00 08 42 27 LMP Hello, David, welcome home.  
00 08 42 29 CMP Oh, boy. Hey, you want to start that powerdown, Rusty?  
00 08 42 32 LMP Yes.  
00 08 42 33 CMP Yes, let me - let me just fold up this bag.  
00 08 42 36 CDR The circuit breakers and everything are ready for the urine dump.  
00 08 42 39 LMP Yes, sir, let me verify them. Yes, sir, they stayed in.  
00 08 42 43 CDR Okay, I'm going to go ahead and dump this.  
00 08 42 46 LMP Hey, which one is it going to come out now, David? You ought to - might as well watch it out there.  
00 08 42 50 CMP Yes.  
00 08 42 52 LMP I think it comes out your side over there.  
00 08 42 54 CMP Yes, it does. Right above the hatch - or right over here.  
00 08 42 59 CDR Man, I can feel it gurgling like mad.  
00 08 43 01 LMP I see it, too.  
00 08 43 03 CMP Yes, it's raining.  
00 08 43 05 LMP Oh, yes, look at it. Holy smoke! Frosty particles. There goes our roll rate (laughter). No, it isn't either.  
00 08 43 15 LMP It's a nonthrust urine dump, huh?

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- ( ) 00 08 43 18 CMP Why don't you take all your stuff when you get through with it and put in one big bag and wrap it up with tape, Rusty? What do you say?
- 00 08 43 23 LMP Oh, I already gave some to Jim.
- 00 08 43 26 CMP Okay --
- 00 08 43 27 LMP I thought he was putting it in - in over there.
- 00 08 43 28 CMP Well, I'll stick it in --
- 00 08 43 29 CDR Yes, I did. I put it back the food container over here, Dave.
- 00 08 43 30 LMP That's a good idea, though. We ought to wrap it in tape - you know.
- 00 08 43 34 CMP But we need to split - start splitting that tape in half.
- 00 08 43 37 LMP Yes ...
- 00 08 43 41 CDR I wonder how you know when this thing is empty.
- ( ) 00 08 43 44 CMP Your dick goes out the door (laughter). I shouldn't say that; we're being recorded, I guess.
- 00 08 43 57 LMP I don't know, but when you're done, shoot; you can just pass it to me.
- 00 08 44 01 CMP Yes, and when you're done, you can pass it to me.
- 00 08 44 06 LMP ... Snowing out there, though.
- 00 08 44 24 CMP By George, there's a LM out there. Would you believe that?
- 00 08 44 29 LMP Urine is purging all over that. Bouncing off.
- 00 08 44 32 CDR Is it bouncing?
- 00 08 44 33 CMP Yes, especially off the black stuff.
- 00 08 44 35 LMP Hey, it's really neat. Oh, I ought to have a movie of this. Hey, no kidding.
- 00 08 44 39 CMP What?

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00 08 44 40 LMP

It goes out - it will ricochet off of one - off of one surface and up to the other and bounce off the other. It's real neat!

00 08 44 47 CMP

Yes, I'm watching them, too.

00 08 44 50 LMP

Boing! (Laughter) You know what it's like, it's like salt moving something. Probably going to end up with urine in the thrusters. Hey! By Jove, is that a hole?

00 08 45 07 CMP

Where?

00 08 45 08 LMP

Not sure you can see it. Can you see the quad over here in front of me?

00 08 45 12 CMP

Yes.

00 08 45 13 LMP

Do you see the black - -

00 08 45 14 CMP

Yes.

00 08 45 15 LMP

- - shroud inboard? Do you see a piece of yellow tape there? I don't think you can see it, Dave.

00 08 45 19 CMP

I don't think I can either.

00 08 45 20 LMP

No. I don't know - I can't tell whether it's a little patch or whether it's a hole.

00 08 45 33 CDR

I don't know whether I'm sucked on or not. I guess I am.

00 08 45 36 LMP

No, you're still flowing, Jim. You're still putting out lots of particles.

00 08 46 05 CMP

Hey, Rusty.

00 08 46 06 LMP

Yes.

00 08 46 07 CMP

Why don't we go through that powerdown? Okay?

00 08 46 10 LMP

You know, there's one little particle out there that's spinning like mad.

00 08 46 13 CDR

Tell you what I'm going to do: I'm going to just pull this thing off of mine and let it purge through for a minute.

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00 08 46 20 CMP Okay, now, let's see. That's the --  
00 08 46 21 CDR Wait. It won't purge, though, will it?  
00 08 46 22 CMP -- on the back of your checklist.  
00 08 46 24 LMP On the back of my checklist.  
00 08 46 26 CMP Here, who wants this? Who else wants to get plugged  
in? Get that --  
00 08 46 29 LMP Here, why don't you just stick it right on me?  
00 08 46 42 LMP No, didn't make it.  
00 08 46 45 CDR Okay, better?  
00 08 46 47 LMP Yes, I think so. Oh, I can feel it going down.  
00 08 46 55 CDR Man, a lot more room in that thing now. Okay, we  
ought to dump the water now, too, I guess, huh?  
00 08 47 02 LMP Yes, give me about a minute. Here, let me find it,  
Dave. Cabin REPRESS, command module pressure dump,  
bias, past urine water dump, potable chlorination,  
... alignment. SPS. What's that? Powerdown or up?  
00 08 47 32 CDR Should say powerdown.  
00 08 47 33 CMP Waste water tank dump.  
00 08 47 35 LMP Spacecraft powerdown?  
00 08 47 36 CMP Yes, spacecraft powerdown.  
00 08 47 38 LMP POO.  
00 08 47 41 CMP Okay. We're in POO.  
00 08 47 45 LMP Get VERB 48, ENTER; hey, I think I'm empty.  
00 08 47 47 CDR Do you?  
00 08 47 48 LMP Yes, I ...  
00 08 47 52 CMP VERB 48, ENTER.

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- 00 08 47 53 LMP Okay, load R-1, A equals zero, so I guess it says zero - anything.
- 00 08 48 01 CMP Jim, have you seen this - this sun - on the DSKY?
- 00 08 48 03 LMP Boy, oh boy. Look at that.
- 00 08 48 05 CMP Have you seen it, Jim? The sun on the DSKY?
- 00 08 48 09 CDR No, I haven't really. Did it completely blank it out?
- 00 08 48 12 CMP It re - it really wiped it out. It really wiped it out.
- 00 08 48 14 CDR ... spraying water out there like mad!
- 00 08 48 17 LMP Yes, aren't we?
- 00 08 48 21 CDR And it's not even hooked on you anymore. Wonder how they'd do a purge on it now.
- 00 08 48 27 LMP On - that?
- 00 08 48 28 CDR Yes, it still doesn't have any purge fittings.
- 00 08 48 33 LMP It doesn't have to have any purge fittings.
- 00 08 48 35 CDR How do you purge the urine out of the line when they get done with it?
- 00 08 48 37 LMP There's another little fitting you put in there --
- 00 08 48 39 CDR Yes, but I wonder where it is.
- 00 08 48 40 LMP Well, the last time I saw them, they were up underneath the couch here where I'm sitting. No, there's a - there's a - an elbow somewhere down here.
- 00 08 48 49 CDR I think - I think it's right over here.
- 00 08 48 50 LMP Yes, I think it's in the top one up there.
- 00 08 48 54 CDR No, it's not.
- 00 08 48 55 LMP Well, it - No - Hey, Jim, it's in the back one over there, and it's in that - in that piece of - of stuff that came out. There it is, on that wall.

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00 08 49 12 LMP Listen to it gurgle.  
00 08 49 17 CMP Now I need to pee. Now I need to do all that.  
Does it gurgle, Jim?  
00 08 49 28 CDR Just sucking it through there, Dave.  
00 08 49 29 CMP No, I thought you were --  
00 08 49 31 CDR I was cleaning it out, just to see if it was going  
to clean out.  
00 08 49 34 LMP Okay, Dave, you want to load a zero in the first  
slot. No DAP, huh? And a PRO, PRO, PRO.  
00 08 49 48 CMP Here you are, sir.  
00 08 49 52 LMP And a VERB 46, ENTER.  
00 08 49 56 CMP Okay.  
00 08 49 57 LMP Okay, VERB 37, ENTER; 06, ENTER.  
00 08 50 02 CMP Okay.  
00 08 50 03 LMP You got the flashing 52?  
00 08 50 05 CMP Right.  
00 08 50 06 LMP Okay, CMC powerdown. PRO. Hold until the STANDBY  
light's ON.  
00 08 50 12 CMP The light switch here.  
00 08 50 14 CDR STANDBY light's not ON!  
00 08 50 16 LMP No, I was - I was turning my lights up, Jim.  
00 08 50 17 CDR Okay.  
00 08 50 20 CMP Okay.  
00 08 50 21 LMP Stand by.  
00 08 50 22 CDR There it is.  
00 08 50 23 LMP Okay, CMC MODE to FREE.

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00 08 50 25 CMP FREE.

00 08 50 26 LMP G&N IMU POWER, OFF. ISS warning, RESET.

00 08 50 33 CMP Wait a minute; G&N POWER IMU. Here goes our ball, gang. You ready to bite the bullet?

00 08 50 40 LMP (Laughter)

00 08 50 41 CMP You mean if it's not one, we watch it grow.

00 08 50 45 LMP You've got to throw the switch, Charlie.

00 08 50 50 CMP Oh, okay, G&N POWER, OFF.

00 08 50 53 LMP And IMU POWER, OFF.

00 08 50 54 CMP G&N POWER and IMU, huh? That does it; that zaps it. Which area, now?

00 08 50 59 LMP Huh?

00 08 51 00 CMP What area do you want? You want G&N POWER - IMU --

00 08 51 02 LMP G&N - It says it - I don't know --

00 08 51 03 CMP No, it says G&N POWER, IMU --

00 08 51 04 LMP No, it doesn't. It says G&N IMU POWER. All one word. G&N IMU POWER, OFF.

00 08 51 09 CDR How about the OPTICS POWER?

00 08 51 10 LMP Okay, that's next.

00 08 51 11 CDR Oh, that's next. Okay, G&N POWER IMU, OFF.

00 08 51 14 CMP Let's see - That's the only one we got.

00 08 51 15 CDR Here goes IMU, OFF.

00 08 51 21 LMP G&N OPTICS POWER, OFF.

00 08 51 23 CMP OFF.

00 08 51 26 LMP Okay, SCS ORDEAL POWER, OFF. FDAI, INERTIAL.

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00 08 51 31 CMP Okay.

00 08 51 34 CDR What are our rates right now, Dave? I wonder if we ought to damp them down at all.

00 08 51 37 CMP No, we're almost zero. We got a little bit of yaw.

00 08 51 39 CDR Okay.

00 08 51 40 CMP Forget it then.

00 08 51 41 CDR Huh?

00 08 51 42 CMP Let's just forget it.

00 08 51 43 LMP EMS FUNCTION, OFF.

00 08 51 46 CMP EMS FUNCTION's OFF.

00 08 51 47 LMP EMS MODE to STANDBY.

00 08 51 48 CMP STANDBY.

00 08 51 49 LMP CMC ATTITUDE, IMU.

00 08 51 55 CMP Oh, yes, yes. Oh, this one's ... to use.

00 08 51 58 LMP Yes, it's always ... FDAI SCALE, 5 and 1.

00 08 52 03 CMP Right.

00 08 52 04 LMP FDAI SELECT, 1.

00 08 52 07 CMP 1.

00 08 52 08 LMP FDAI SOURCE, CMC.

00 08 52 12 CMP CMC.

00 08 52 13 LMP ATTITUDE SET, IMU.

00 08 52 15 CMP IMU.

00 08 52 16 LMP MANUAL ATTITUDE, three, to RATE COMMAND.

00 08 52 18 CMP Okay, let's see.

00 08 52 23 LMP You got that?

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00 08 52 24 CMP Yes, I'm thinking, you know, we're - Here we go.

00 08 52 26 LMP Okay.

00 08 52 27 CDR What?

00 08 52 28 CMP We're turning them all off.

00 08 52 30 LMP Let me see if we're in the right thing here.

00 08 52 33 CMP What do we do - what do we go to --

00 08 52 34 CDR We just go down to WARM UP, don't we?

00 08 52 37 LMP Yes.

00 08 52 39 CMP Okay, I think I'll wait for the - if I go to RATE COMMAND. Let's turn off the jets before I do that. Okay? We should have thought of that, because if I go to RATE COMMAND now and then SCS -

00 08 52 52 LMP Why don't I change the checklist now? We're probably going to do this a few times.

00 08 52 53 CDR Yes.

00 08 52 54 CMP Okay, let's turn the jets off.

00 08 52 56 LMP What do you want?

00 08 52 57 CMP Let me see where the jets are now. We had moved those to a certain point. Let me look at your checklist.

00 08 53 03 LMP AUTO - AUTO RCS THRUSTERS came OFF way down here.

00 08 53 07 CMP I wonder if we should have coarse aligned? No. No, the IMU is just drifting now, isn't it?

00 08 53 14 LMP See, we're up here: MANUAL ATTITUDE, three, RATE COMMAND.

00 08 53 18 CMP Yes, well, let me look at - on down. I want to see whether --

00 08 53 19 LMP Yes, right here.

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00 08 53 21 CMP -- and what is - It comes before - We moved it up for a reason. Now, I want to see if I can remember why.

00 08 53 33 CDR Are you going to find another thing here to -

00 08 53 35 CMP Let's move that up, so we don't turn the jets on.

00 08 53 37 LMP Move what up?

00 08 53 38 CMP Move the 16 RCS jets OFF prior to going to RATE COMMAND.

00 08 53 42 LMP Okay. That's all you want to move up?

00 08 53 44 CMP Yes.

00 08 53 50 LMP Okay, AUTO RCS SELECT, 16, OFF.

00 08 53 54 CMP Okay.

00 08 53 57 LMP MANUAL ATTITUDE, three, to RATE COMMAND? Oh, I'm sorry.

00 08 54 04 CMP We're about 0.1 of a degree per second, Jim. You want to damp that or let it go?

00 08 54 08 CDR No, why don't we just let it go?

00 08 54 13 LMP MANUAL ATT - oh (laughter).

00 08 54 15 CMP 16 of them, man.

00 08 54 17 LMP Yes, I know, I - -

00 08 54 18 CMP Okay, three, to RATE COMMAND.

00 08 54 21 LMP Okay, three, to RATE COMMAND.

00 08 54 22 CMP Okay?

00 08 54 23 LMP LIMIT CYCLE, ON, of all things to have.

00 08 54 24 CMP ON?

00 08 54 25 LMP ATTITUDE DEADBAND, MAX.

00 08 54 26 CMP MAX.

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00 08 54 27 LMP RATE, LOW.  
00 08 54 28 CMP LOW.  
00 08 54 29 LMP THC POWER, OFF.  
00 08 54 30 CMP OFF.  
00 08 54 31 LMP ROTATION CONTROL POWER NORMAL, two, to OFF.  
00 08 54 32 CMP OFF; OFF.  
00 08 54 34 LMP DIRECT, two, to OFF.  
00 08 54 35 CMP OFF; OFF.  
00 08 54 36 LMP SPACECRAFT CONTROL, SCS.  
00 08 54 37 CMP SCS.  
00 08 54 38 LMP CMC MODE, FREE.  
00 08 54 39 CMP FREE.  
00 08 54 40 LMP BMAG MODE, three, to RATE 2.  
00 08 54 42 CMP RATE 2.  
00 08 54 43 LMP SCS TVC, two, to RATE COMMAND.  
00 08 54 44 CMP RATE COMMAND.  
00 08 54 45 LMP EMS ROLL, OFF.  
00 08 54 48 CMP EMS ROLL's OFF.  
00 08 54 49 LMP 0.05g SWITCH, OFF.  
00 08 54 50 CMP OFF.  
00 08 54 51 LMP LV/SPS INDICATORS to P<sub>c</sub>, GPI. What! What was that?  
00 08 54 59 CMP What's that?  
00 08 55 01 LMP L - V/S - P - S INDI - -

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00 08 55 02 CMP Yes, okay, Pe, GPI. I thought that I heard something - -

00 08 55 04 LMP Oh.

00 08 55 05 CMP Go, go.

00 08 55 06 LMP TVC GIMBAL DRIVE, PITCH and YAW, to 1.

00 08 55 11 CMP TVC GIMBAL DRIVE, PITCH 1; YAW 1.

00 08 55 14 LMP EDS POWER, OFF.

00 08 55 15 CMP OFF.

00 08 55 16 CDR Don't wiggle your feet around, Rusty. There's some long pieces of plumbing sticking out down there.

00 08 55 22 LMP Your EDS POWER, OFF?

00 08 55 23 CMP It's OFF.

00 08 55 24 LMP TVC SERVO POWER, two, OFF.

00 08 55 25 CMP Two, OFF.

00 08 55 26 LMP FDAI POWER, 2 - FDAI POWER, OFF.

00 08 55 30 CMP FDAI/GPI POWER, OFF.

00 08 55 33 LMP LOGIC POWER 2/3, OFF.

00 08 55 36 CMP 2/3, OFF.

00 08 55 39 LMP Let me see what our fuel cells are doing now.

00 08 55 46 CMP Okay.

00 08 55 47 LMP SCS ELECTRIC - SCS ELECTRONIC POWER, OFF.

00 08 55 48 CMP Okay. ELECTRONIC POWER's OFF. Okay.

00 08 55 54 LMP SIGNAL CONDITIONER/BIAS POWER, OFF.

00 08 55 56 CMP OFF; OFF. Okay.

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00 08 56 00 LMP

BMAG POWER, two, to WARM UP.

00 08 56 01 CMP

Okay. BMAG 1 to WARM UP; 2 to WARM UP. Okay.

00 08 56 08 LMP

What was that? We got a MASTER ALARM - Do we get one when we turn that off?

00 08 56 11 CMP

Yes, we sure did. And I think we were supposed to.

00 08 56 13 LMP

Yes.

00 08 56 14 CMP

Correct, remember?

00 08 56 15 LMP

I don't remember it, but I - That's what I wondered --

00 08 56 16 CMP

Yes. Yes, I remember hearing that now.

00 08 56 18 LMP

Okay, that's it. We sure didn't drop much current. I'll say that for it.

00 08 56 22 CMP

That's all there is to the whole bloody powerdown checklist?

00 08 56 25 LMP

Well, systems. Go next to the systems.

00 08 56 27 CMP

Oh, yes, well, that ought to take some more. Let's see, did you turn the S-BAND, ON? Yes, you did. You can turn that OFF now, too.

00 08 56 34 LMP

Oh.

00 08 56 35 CMP

We're on HIGH GAIN ANTENNA.

00 08 56 36 LMP

Oh, it's OFF. No, I turned that OFF right after I turned it ON.

00 08 56 39 CMP

Oh, okay.

00 08 56 40 LMP

I turned it ON, slewed it, and turned it OFF.

00 08 56 41 CMP

Okay.

00 08 56 44 LMP

Okay. We don't want to purge, huh?

00 08 56 46 CDR

I don't know.

00 08 56 50 LMP

Well, gees; you're the captain, for Christ's sake.

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00 08 56 54 CDR I asked them; they didn't know either (laughter).  
00 08 56 56 LMP (Laughter) They didn't hear you, I'm afraid.  
00 08 56 58 CDR I know.  
00 08 56 59 LMP Hey, I wonder if I could con you into pulling a  
fruit pack out there with some Tang in it, Jimmy?  
00 08 57 03 CDR Yes, I'll get - I'll get that stuff in just a  
minute. Hey, you want to dump your urine?  
00 08 57 06 LMP Oh, yes.  
00 08 57 07 CDR Why don't you get that dumped and over with so we  
can --  
00 08 57 09 LMP Oh, yes. Oh, yes, then we got to start the waste  
water dump.  
00 08 57 11 CDR Where'd that other piece go?  
00 08 57 14 CMP What other piece?  
00 08 57 15 CDR Oh, hell, we didn't lose that thing?  
00 08 57 17 CMP You didn't give me but one. I only saw one piece.  
00 08 57 21 CDR Oh, screw it! There's another piece on it.  
00 08 57 24 CMP You sure?  
00 08 57 25 CDR It's not snapped in here?  
00 08 57 26 CMP No.  
00 08 57 27 LMP It would snap around the thing, Jim.  
00 08 57 29 CDR Snapped right around here, yes.  
00 08 57 31 CMP I didn't see anything. Here's a screw (laughter).  
00 08 57 38 CDR Oh.  
00 08 57 39 LMP (Laughter) Where the hell did that screw come from  
00 08 57 40 CMP I don't know.

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- 00 08 57 43 LMP Hey, give me that towel. I'd like to wipe up fingers. They're sort of dirtied up.
- 00 08 57 47 CMP I was going to give you my fresh one when I got to it, but -
- 00 08 57 48 LMP Well, that's okay - -
- 00 08 57 49 CDR Oh, son of a buck. Look around for a - You can't dump your urine with that - You have something already hooked to your - I'm sure you don't. Hey, Dave, you just can't dump your - You're going to have to put your suit back on to dump it.
- 00 08 58 06 CMP Don't tell me that. Where - where - where - where could it - that thing go?
- 00 08 58 20 LMP Hey, Jim, the cryo pressure's coming down to 200. They wanted to put the fan on, right?
- 00 08 58 25 CDR Yes, when it got to 200.
- 00 08 58 27 LMP Yes, why don't I let it go a little bit more?
- 00 08 58 30 CMP I don't see that thingamajig, Jim.
- 00 08 58 32 CDR Well, Dave, I don't either, and I don't - sure don't know where it went. I thought it was right there on that strap.
- 00 08 58 37 CMP Was there a strap for it?
- 00 08 58 38 CDR Yes, right here.
- 00 08 58 40 CMP Oh. Shoot.
- 00 08 58 47 CDR It's not down in there, in amongst this stuff anywhere, is it?
- 00 08 58 52 CMP Sure isn't.
- 00 08 58 53 CDR Oh, boy!
- 00 08 59 01 LMP ...
- 00 08 59 02 CDR This isn't it here; it's - it's the other one. I'm sorry, Dave. You just can't dump your urine.

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00 08 59 13 CMP I'm going to have to dump my urine.

00 08 59 15 CDR I know it. Let's look around, and see if you can't find it.

00 08 59 18 CMP I'm looking.

00 08 59 27 LMP Hey, I see it.

00 08 59 28 CDR Where is it?

00 08 59 29 LMP It's underneath my head. Stand by. Let me go dive for it. Here, hold my checklist.

00 08 59 35 CMP Oh, I can get it, Rusty. I think I can long-arm it.

00 08 59 37 LMP No, I don't think you can make it, Dave. It's too far over.

00 08 59 42 CMP Yes, look. Here, I got it.

00 08 59 44 LMP You're sure, huh?

00 08 59 45 CMP Yes.

00 08 59 46 LMP Oh, okay. You're not strapped in it yet there, are you? You got it?

00 08 59 52 CMP Yes, that's it. We keep cleaning up for McDivitt.

00 09 00 02 LMP Fuel cell O<sub>2</sub> purge; fuel cell H<sub>2</sub> purge; cryo fans O<sub>2</sub> and H<sub>2</sub> on for 3 minutes. Oh, we need to get out my new timer. I knew there was a sound missing.

00 09 00 19 CDR Hey, where's the - -

00 09 00 22 LMP Oh, boy!

00 09 00 26 CDR - - the female QD on the waste-water panel? I don't know where in the heck that thing is. Anybody know where that is?

00 09 00 32 LMP Yes - -

00 09 00 33 CMP Yes, it's under the dash.

00 09 00 34 LMP - - right up - -

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00 09 00 35 CDR Under where?

00 09 00 36 LMP What female QD? There's one in R-5.

00 09 00 38 CDR It's under where?

00 09 00 39 CMP Right under me - You mean the one to do the water dump?

00 09 00 41 CDR Yes.

00 09 00 42 CMP It's right under my shoulder - The far left one as you go up there. Your left, the far one.

00 09 01 01 LMP Boy, that purge tank sure isn't coming --

00 09 01 03 CMP It's dumping. Oow!

00 09 01 05 LMP It's really not coming up very much.

00 09 01 07 CMP I'm dumping.

00 09 01 08 LMP You sure you are?

00 09 01 09 CMP Yes, I can feel it. See, and this bag --

00 09 01 10 LMP Oh, yes, there it goes again.

00 09 01 12 CMP That bag was like full, George. I mean that bag was really full.

00 09 01 19 CDR Dave?

00 09 01 20 CMP Yes.

00 09 01 21 CDR When you get done, why - why don't you stick this on the end of it and let us purge through it - for a while?

00 09 01 24 CMP Okay.

00 09 01 31 CMP Oh.

00 09 01 40 LMP Hey, Jim, where are you? On the couch?

00 09 01 42 CDR No, I'm right down here in the LEB again. I'm trying to find some place to put this cottonpicking checklist.

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- 00 09 01 58 CDR Okay, I'm going to get ready to dump the waste water, here.
- 00 09 02 04 CMP Let me finish dumping my urine.
- 00 09 02 06 CDR Yes. Waste water tank drain: Use as desired to ... maintain; attach the ... hose filter to the ... QD; install the female QD on the waste water tank.
- 00 09 02 16 LMP Hey, have we gone duplex A, receive A, only at night, here?
- 00 09 02 19 CMP Yes.
- 00 09 02 21 CDR Oh, screw me. I need another tool.
- 00 09 02 24 CMP Toolkit's under Rusty's ass. Under here - Yes.
- 00 09 02 28 CDR Why do we need another tool for that thing? Well, I sure do. I didn't realize you needed another tool for that.
- 00 09 02 38 CMP Yes, you do.
- 00 09 02 47 CDR Hell, it's going to take us 3 hours a day to figure out what to do in here. My knees hurt.
- 00 09 02 58 LMP Yes, I'm going to get out of my suit as soon as we've done this powerdown.
- 00 09 03 01 CMP I'll tell you, it's sure a lot better.
- 00 09 03 03 LMP I'll bet. Jim, are you up under the couch again?
- 00 09 03 08 CDR No, I'm going to - I'm looking for the toolkit. I'm sort of under your couch now, yes. Why?
- 00 09 03 11 CMP Toolkit's right there in the --
- 00 09 03 12 CDR That's alright. I'll get it.
- 00 09 03 13 CMP -- it's right there --
- 00 09 03 14 CDR I know where it is. I --
- 00 09 03 15 CMP Okay.

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00 09 03 18 CDR Just trying to get to someplace that I can reach it.

00 09 03 24 LMP Boy, I'll tell you, R-12 is not much help.

00 09 03 28 CDR Oops! There's something. I wonder what that is? Here's some little bags. I wonder what they do. Anybody know what this does?

00 09 03 38 CMP What?

00 09 03 39 LMP Yes, that's the bag for the jack screws. Leave it in there. That's for when we get ready to do all that fancy show biz.

00 09 03 56 LMP Get my little - -

00 09 03 57 CDR Ouch!

00 09 03 58 LMP Did I get you?

00 09 03 59 CDR Just a little.

00 09 04 00 LMP Excuse me.

00 09 04 03 CDR Do we screw this female thing in here and just leave it there, I wonder?

00 09 04 08 CMP No, you take it back out, I think.

00 09 04 13 LMP (Singing)

00 09 04 17 CDR Hey, here's our other tool. We want to get that out - our other tool E -

00 09 04 22 CMP Well, let's don't lose it.

00 09 04 23 LMP (Singing)

00 09 04 25 CDR You don't want to have both tool E's out?

00 09 04 26 CMP Huh?

00 09 04 28 CDR Don't you want to have both - both of - -

00 09 04 29 CMP Oh, yes, but I don't want to - you know - Yes, gosh. Two tool E's out. Agreed.

00 09 04 33 CDR What tool goes in there? God damn it! R?

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00 09 04 41 LMP I - I don't know. Anybody else want anything else out of R-13 while I'm in there?

00 09 04 44 CDR I want something to eat, but I'm going to get to that in a minute.

00 09 04 52 CDR There it is right there. Tool L.

00 09 05 01 LMP (Singing)

00 09 05 05 CDR Holy Christmas!

00 09 05 06 LMP (Singing) Watch out for my feet. I'm trying to turn over here, and it isn't the easiest job in the world. Okay. Oops! (Singing)

00 09 05 28 CDR Would you believe I can't open it?

00 09 05 29 LMP (Singing)

00 09 05 32 CDR There it is.

00 09 05 33 LMP (Singing)

00 09 18 25 LMP The fuel cell.

00 09 18 29 CMP We're presently in the process of purging the O<sub>2</sub> fuel cell.

00 09 18 33 CC Affirm.

00 09 18 35 CMP Okay. 2 is going to purge.

00 09 18 39 CC And is your H<sub>2</sub> tank 1 fan on at this time?

00 09 18 45 CMP We'll bring it on now. We notice it's 200.

00 09 18 47 CC Okay.

00 09 18 50 CMP H<sub>2</sub> fan 1, ON.

00 09 18 51 CDR Oh, we didn't have the QD's to the other thing go ...

00 09 19 02 LMP Hey, Jim, it's still flowing like mad.

00 09 19 03 CDR Is it really?

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- 00 09 19 04 CMP No, it stopped.
- 00 09 19 07 CDR It's probably --
- 00 09 19 08 LMP No, it's going in spurts.
- 00 09 19 09 CDR -- it's probably what was in the line, Rusty.
- 00 09 19 10 LMP Yes, it's going in spurts.
- 00 09 19 20 CDR Oh, boy, what a mess. I guess the water --
- 00 09 19 22 CMP You get a lot of water?
- 00 09 19 24 CDR Oh, enough to make it kind of messy here. We're going to have to -
- 00 09 19 28 LMP Here's a towel, Jim. Right here.
- 00 09 19 29 CDR No, I'm going to suck it out of here in just a minute. Would you hold on to this for me?
- 00 09 19 33 CMP Here, I'll get it.
- 00 09 19 35 CDR As long as I have the - end of this water hose, I'll just stick it in there --
- 00 09 19 39 CMP Let's not pick up any dirt with it.
- 00 09 19 42 CDR Don't intend to.
- 00 09 19 44 CMP How - Does it have a filter on it?
- 00 09 19 46 LMP Yes, it has a filter on the other end.
- 00 09 19 47 CDR Yes. That's right. It's already sucked the water up. How about that?
- 00 09 19 52 LMP That quick, huh?
- 00 09 19 53 CDR Yes. What happened was - it sucked it right through the quick disconnect here - And the ... just sucked it out by itself.
- 00 09 20 09 LMP Why don't I turn the cryo fans on, too?

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- 00 09 20 28 CDR Okay, Dave, would you give me that wrench - that tool again, please?
- 00 09 20 31 CMP Yes, sir.
- 00 09 20 44 CDR (Laughter) I hate to tell you this, but that hunk of Velcro isn't fixed to anything.
- 00 09 21 08 CMP Okay.
- 00 09 21 19 LMP CO<sub>2</sub> canister change - We got done; WASTE MANAGEMENT OVERBOARD DRAIN will be going OFF, and WASTE STOWAGE VENT valve to CLOSED; S-BAND OMNI to B; COMM, basic, DUPLEX A and RECEIVE (A) ONLY, so I'll do that. DUPLEX A.
- 00 20 55 24 CDR You got to put number 2 in the ..., Dave, because number 1 has ...?
- 00 20 55 31 CMP Yes.
- 00 20 55 35 LMP What did you say, Jim?
- 00 20 55 36 CDR Got to put number 2 in ...
- 00 20 56 07 CMP Well, you're right. You know, I even wrote him a big question about that.
- 00 20 56 11 CDR Right. ... answer back ...
- 00 20 56 14 CMP Yes ... number 2. ...
- 00 20 56 17 CDR ...
- 00 20 56 19 CMP I ate mine. Because it's got ... - Oh, that's Rusty's.
- 00 20 57 09 CDR Hey, has everybody had some water? Because if they do, I'm going to chlorinate the water.
- 00 20 57 12 CMP Yes, I've got some.
- 00 20 57 13 CDR Rusty, did you get some?
- 00 20 57 53 CMP Rusty, where are our ...?
- 00 20 58 01 CDR What are you looking for?

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00 20 58 03 CMP Rusty's ...  
00 20 58 07 CDR Well, he thinks it's on the floor, here?  
00 20 58 21 CDR There it is, up there in the tunnel.  
00 20 58 30 LMP There you go.  
00 20 58 34 CDR ... to chlorinate the water ...?  
00 20 58 39 CMP ... flight plan. .  
00 20 59 04 LMP Hey, Jim.  
00 20 59 05 CDR Yes?  
00 20 59 06 LMP Before you chlorinate, let me figure this ...  
00 20 59 11 CDR Okay.  
00 20 59 19 LMP There's 15 minutes before realignment, Jim.  
00 20 59 28 CDR Yes, you better do that first.  
00 20 59 49 CDR We really ought to chlorinate the water at night  
when we go to bed ...  
00 21 00 55 LMP If somebody's getting into A-7, I'd like to get  
film pack U.  
00 21 01 01 CDR Okay, stand by. . . . pretty full, Rusty?  
00 21 01 17 LMP Fairly full.  
00 21 01 24 LMP I'm going to put next to this film pack how much  
we've used out of it - by the way - so far. Yes.  
00 21 02 08 CDR Can I give you a hand, Dave?  
00 21 02 52 LMP Tell you what, maybe we ought to wait until we get  
through ... this alignment gets done, before we  
do that ..., before we do the ...  
00 21 04 02 CDR Well, maybe we ought to unstow the covers here ...  
The Wally Schirra dark-adapt covers.  
00 21 04 18 LMP Guess we ought to stow these film packs where they  
came from, huh?

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- 00 21 04 23 CDR Yes, if they don't ...  
00 21 04 27 LMP Well, no. See, it's not empty, but I've logged how much we have remaining --  
00 21 04 31 CDR Okay.  
00 21 04 33 LMP -- I think I'll write it on the tape, too.  
00 21 04 35 CDR Only way we're ever going to know --  
00 21 04 37 LMP Yes.  
00 21 04 38 CDR -- where it is.  
00 21 05 09 LMP Okay, and it goes in B-8.  
00 21 05 54 LMP Hey, Dave, ... when you get a chance.  
00 21 07 02 LMP You know anything about this spotmeter reading? No, hell. We're in the wrong attitude anyway.  
00 21 07 29 LMP Jim, how far away do you think that target is?  
00 21 07 33 CDR The one right in front of us?  
00 21 07 34 LMP Yes.  
00 21 07 39 CDR 3-1/2 feet.  
00 21 07 40 LMP Really?  
00 21 07 41 CDR Yes.  
00 21 07 42 LMP 3-1/2?  
00 21 07 51 CDR It's probably about 5 feet to the ...  
00 21 07 55 LMP Okay, I'm going to focus on 5.  
00 21 08 54 LMP Should be right up above my toe, but it's not, I guess. Oh, I don't know.  
00 21 12 47 LMP Doesn't seem to taste as good this morning.  
00 21 12 49 CDR (Laughter) Maybe you're starting to get ...  
00 21 14 50 CDR Got that? You're going to have to hurry.

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00 21 15 37 CDR I'm going to give it a whack in yaw ... come in, Dave.

00 21 15 49 CDR Boy, you know what, Dave? I wouldn't be a bit surprised if this stroking test isn't very exciting, because just these direct-yaw pulses couple with the pitch. I was thinking about this last night, you know. I think we ought to really evaluate what we see here and decide here whether we're going to do another one - decide whether we're going to do that 100-percenter or not.

00 21 16 17 CDR Okay, you better - you better - ... P52.

00 21 16 25 CMP Okay.

00 21 16 26 LMP I need to stow one thing.

00 21 16 28 CDR What?

00 21 16 30 LMP Stow that -

00 21 16 33 CDR Tell you what - He's only got an hour to get - do all those things. Let's us - What's the burn time?

00 21 18 29 CMP ... VERB 48; 311.02 we have.

00 21 18 37 CDR Yes.

00 21 18 39 CMP Can tell when we get there whether ... Okay, we want that to be zero ...

00 21 19 07 LMP We decide the 10 percent, huh?

00 21 19 37 CDR Did I ever turn the DAP on VERB 46? I did a long time ago.

00 21 20 06 LMP Okay, ready for thrusting?

00 21 20 18 LMP MASTER ALARM ... nothing ... caution/warning ...

00 21 20 47 LMP We've got a fairly high vent flow here ...

00 21 21 11 CDR Have a high vent flow in what, Rusty?

00 21 35 59 LMP By God, I've finally seen our friendly Orion out there.

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00 21 36 36 CDR You want me to get that for you, Dave? Hey, are you alright, Dave? Yes, I'll get it for you.

00 21 37 27 CMP I'm ... go higher.

00 21 37 30 LMP Go up higher, Dave. Dave, can you go up higher?

00 21 37 43 LMP Hold on. Have you got it?

00 21 38 29 LMP ... down ...

00 21 38 34 CDR Who's ... are these? Are these yours?

00 21 38 35 LMP Dave's.

00 21 38 38 CDR You're going to lose that film pack.

00 21 38 40 LMP No, it's going to be stowed as soon as Dave has time.

00 21 38 47 CMP Hey, why don't you stick it in your pocket or something, Rusty? We're not going to have time. We're down to 30 minutes.

00 21 38 53 LMP Okay.

00 21 39 15 CDR What did you do? Did you hurt yourself? What? Oh, oh, you alright now?

00 21 39 37 LMP ... doing down there, ...

00 21 39 53 CDR Guess we're not going to have time to do a star check. I'm going to turn my ... stuff on ...

00 21 40 34 LMP Hey, Jim? Jim? Yes, I can. Can you hear me? Do we want to change the configuration of the CABIN REPRESS or EMERGENCY valve when we put our helmets and gloves on, or not?

00 21 48 24 LMP Have you got that flight plan?

00 21 48 30 CMP No.

00 21 48 37 CDR Is it still dark out there?

00 21 48 38 LMP Yes.

00 21 48 39 CMP Yes.

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00 21 48 54 CDR What's the time?

00 21 48 57 LMP ...

00 21 48 58 CDR What's your status?

00 21 49 00 CMP Stand by. The star is 21.

00 21 49 11 CDR Where is it?

00 21 49 13 LMP ... the horizon.

00 21 49 25 CMP The angle - Here you go, Jim. Got it?

00 21 49 52 CDR 21.

00 21 49 58 LMP Let's see, what can I call up here, Dave? 1692?

00 21 50 02 CMP 1691. ...

00 21 50 08 CDR Oh, 1691. Okay. ... I'm at zero, moving to MANUAL, and I'm ... at - 208.

00 21 51 24 CMP We're a few degrees off, Jim.

00 21 51 25 CDR Okay.

00 21 51 38 CDR Oh, there's the moon.

00 21 51 50 CMP Want me to tighten it up for you, Jim?

00 21 51 52 CDR No, if he's just out there, I'll be lucky. I'm not sure I'm going to be able to see if the moon's out there, Dave.

00 21 51 58 CMP The sun's coming up, too.

00 21 52 18 CMP Here comes the sun.

00 21 52 19 CDR The sun's coming?

00 21 52 20 CMP Yes.

00 21 52 35 CMP ... ought to be right there.

00 21 52 49 CDR All I can see are the speckles right next to the spacecraft.

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Day 1

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00 21 52 53 CMP Yes, I bet you've had it.  
00 21 52 56 CDR Yes, I think I have, too. How much time do we have?  
00 21 53 01 LMP 19 minutes.  
00 21 53 02 CDR Hold this, Rusty.  
00 21 53 05 LMP Okay, I got it.  
00 21 53 08 CDR Let's see, I want to go back to zero and CMC, right?  
00 21 53 11 CMP Right. I could tighten up P40.  
00 21 53 18 CDR No. Dave, I couldn't see out there.  
00 21 53 23 CMP Well, yes, but you can see stars in the daytime.  
00 21 53 24 CDR I could see a thousand of them, out there and I can't.  
00 21 53 26 CMP What? No, no, no, no.  
00 21 53 30 CDR In the sextant?  
00 21 53 31 CMP In the sextant. You ought to be able to see them. Just tighten it up and look, okay?  
00 21 53 34 CDR I just zeroed it, Dave.  
00 21 53 38 CMP You could unzero it - You want to look at it, or you want to assume we're okay?  
00 21 53 42 CDR Oh, let's assume we're okay. ...  
00 21 53 51 CDR What was it - what was it, 13.2?  
00 21 53 56 CMP They were 280, 280.4, and 13.2. 208.4.  
00 21 54 03 CDR That's 208, yes.  
00 21 54 04 CMP I'm going to go into P40 to get you there, Jim.  
00 21 54 05 CDR Okay.  
00 21 54 06 CMP Okay.

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00 21 54 25 CDR 208.4 and 13.2.

00 21 54 38 CMP Okay, we're right there.

00 21 54 51 CDR I don't see any stars.

00 21 54 54 CMP Well, wait a minute. You got to get your - Okay.

00 21 55 04 CDR My what?

00 21 55 16 CDR Well, Dave, I don't see a thing.

00 21 55 17 CMP You don't, hey?

00 21 55 19 LMP Can anybody see the ground?

00 21 55 30 CMP Well, you ought to see it.

00 21 55 33 LMP How about looking down to see if you can see the ground?

00 21 55 36 CMP I can see the ground over to the right, here.

00 21 55 39 CDR I can see the ground in the -

00 21 55 41 CMP Are we out of plane north?

00 21 55 45 LMP Let's see, the ground is - Yes, yes, we are. Yes, we're out of plane north.

00 21 56 04 CDR How much time do we have?

00 21 56 06 LMP 16 minutes.

00 21 56 15 CDR The whole sky is just very light, Dave.

00 21 56 25 LMP You ought to be just about looking at the ground, Jim.

00 21 56 27 CDR Yes, you know, I don't understand. I am - I am with the sextant, and I'm not with the telescope. How about that? ... can't tell it if I am. Oh, yes, there I am. Yes. Okay, zero and CMC.

00 21 56 43 CMP Good ...

00 21 57 03 CMP Oh, what in the hell?

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Day 1

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00 21 57 40 LMP ... on, Dave?  
00 21 57 43 CMP Yes, just a minute.  
00 21 58 01 LMP Well, there's a new strap; I never saw that one before.  
00 21 58 04 CMP What's your DELTA-V counter setting, Rusty?  
00 21 58 05 LMP DELTA-V counter is 845.7.  
00 21 58 10 CMP Okay.  
00 21 58 36 CDR ...  
00 21 58 44 CMP Okay, Rusty, if you want to go ahead on, let's go ahead on.  
00 21 58 49 LMP Okay, are we in P40?  
00 21 58 51 CMP We're in P40.  
00 21 58 54 LMP Okay, and we're in AUTO and CMC. BMAG MODE, three, to RATE 2.  
00 21 58 59 CMP RATE 2.  
00 21 59 01 LMP Align the spacecraft in ROLL.  
00 21 59 02 CMP Aligned.  
00 21 59 04 LMP Proceed.  
00 21 59 06 CMP Okay, we've trimmed already.  
00 21 59 07 LMP Alright, check panel 8.  
00 21 59 17 CMP Okay, panel 8 looks okay.  
00 21 59 19 LMP Okay, AUTO RCS SELECT; A/C and B/D ROLL's, four, OFF.  
00 21 59 25 CMP Okay, your load is going --  
00 21 59 26 CDR ... UCD.  
00 21 59 34 CMP A/C ROLL coming OFF. Are you going to want to hold this?

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Day 1

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00 21 59 40 CDR Yes, I'll hold that.  
00 21 59 41 CMP You want to hold that. I checked the --  
00 21 59 45 LMP Is your A/C ROLL, OFF?  
00 21 59 46 CMP A/C ROLL's OFF.  
00 21 59 48 LMP Okay, set the DELTA-V indicator?  
00 21 59 50 CMP Set.  
00 21 59 52 LMP Verify - Jim, you want to verify that number for  
the pad?  
00 21 59 56 CDR Okay. Whoops! ... there goes a ring. Now, what  
are we going to do with that? The numbers should  
be DELTA-V counter 245.7.  
00 22 00 06 LMP Okay. The EMS DELTA - FUNCTION to DELTA-V.  
00 22 00 09 CMP DELTA-V.  
00 22 00 10 LMP MANUAL ATTITUDE, three, to RATE COMMAND.  
00 22 00 13 CMP Three to RATE COMMAND.  
00 22 00 15 LMP ATTITUDE DEADBAND, MIN.  
00 22 00 16 CMP MIN.  
00 22 00 17 LMP RATE, LOW.  
00 22 00 19 CMP RATE's LOW.  
00 22 00 20 LMP TRANSLATION CONTROL POWER, armed.  
00 22 00 21 CMP Armed.  
00 22 00 24 LMP SCS TVC, two, to RATE COMMAND.  
00 22 00 26 CMP Two to RATE COMMAND.  
00 22 00 29 LMP DELTA-V<sub>cg</sub> to LM - CSM/LM.  
00 22 00 30 CMP CSM/LM.  
00 22 00 33 LMP Stand by for 6 minutes.  
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Day 1

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00 22 00 35 CMP Okay.

00 22 00 39 LMP What time is it now?

00 22 00 41 CMP 11.

00 22 00 42 LMP Okay. Wonder if that's going to stay down.

00 22 00 50 CMP No. Why don't you put it in the bag, over there, or something?

00 22 00 53 LMP We don't have a bag.

00 22 01 02 CMP ...

00 22 01 04 LMP Well -

00 22 01 11 CMP Okay, 0.4 of a second, NO-GO for the second one and 1 degree per second, and we shut her down.

00 22 01 16 CDR Right.

00 22 01 27 LMP You got the ball - the ball aligned. Okay, and you're going to hit it after 1 minute, right?

00 22 01 31 CMP After 1 minute. VERB 68, I'm ... go to low scale.

00 22 01 35 LMP Okay.

00 22 01 38 CMP What's the total burn time?

00 22 01 41 LMP 1 minute and 51.2 seconds.

00 22 01 43 CMP Okay.

00 22 01 45 LMP I got it all set up. That ought to hold it.

00 22 02 06 CMP ... is terrible.

00 22 02 07 CDR Isn't it, though?

00 22 02 09 CMP That's the worst I've ever seen it. Worse than the simulator.

00 22 03 34 CDR It's amazing how that - that sextant doesn't look at the same thing that the telescope does when you're looking out at the ...

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00 22 03 41 CMP Yes. Sure is.  
00 22 03 59 CDR Well, we're going sideways. Headed north.  
00 22 04 11 CMP That's encouraging.  
00 22 04 12 CDR Yes.  
00 22 11 36 CDR 30 seconds.  
00 22 11 37 LMP EMS to AUTO.  
00 22 11 38 CDR Okay. ..., OFF..  
00 22 11 39 LMP Okay, PIPA, ... full count.  
00 22 11 45 CDR Full count.  
00 22 11 46 LMP Full count.  
00 22 11 51 CDR Ready, Dave.  
00 22 11 52 CMP Ready, Jimmy.  
00 22 11 56 CDR 9, 8, 7, 6, 5, ...  
00 22 12 05 CMP Got a good line.  
00 22 12 06 CDR Good.  
00 22 12 07 CMP Gimbal motors look good.  
00 22 12 09 CDR Good.  
00 22 12 14 CMP ... PC is good. Okay, camera's back off.  
00 22 12 20 LMP Okay, 1 minute and 30 seconds remaining in the  
burn. 2, 1 -  
00 22 12 26 LMP MARK.  
00 22 12 28 CDR Looks good, Rusty.  
00 22 12 31 LMP Okay. PU's looking better now.  
00 22 12 33 CDR Okay.

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Day 1

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00 22 12 35 CMP Pc looks good, gimbal motors are steady; we're coming back in on the steering.  
00 22 12 40 CDR Okay. You've got 20 seconds to go to the ...  
Okay, Dave --  
00 22 12 48 CMP Okay, we're drifting to the side in a roll ...  
00 22 12 51 CDR Go to 51, Dave.  
00 22 12 53 CMP Okay, 51.  
00 22 12 54 CDR Okay.  
00 22 12 57 LMP You have 9 seconds to go.  
00 22 12 59 CDR You want to put VERB 68 up now?  
00 22 13 01 CMP Okay.  
00 22 13 02 CDR 3, 2, 1 -  
00 22 13 05 CDR ENTER.  
00 22 13 09 CMP Okay, got the gimbals; your rates are less than 0.1.  
00 22 13 13 CDR Okay.  
00 22 13 14 CMP Damps? Looks fine.  
00 22 13 17 CDR Okay. Very good.  
00 22 13 18 CMP Shoot, no, that is enough.  
00 22 13 19 CDR Yes.  
00 22 13 20 LMP Yes. Camera coming off again.  
00 22 13 21 CDR Yes.  
00 22 13 23 LMP Okay, 30 seconds to go.  
00 22 13 24 CDR ... I can't hear you both.  
00 22 13 26 LMP Mark, 30 seconds. Okay, the clock looks good.  
00 22 13 30 CDR ... feet per second. How's the DSKY look?

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Day 1

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00 22 13 32 CMP Looks good. Looks good.

00 22 13 34 CDR 166 feet per second; 18 seconds to go.

00 22 13 41 CMP Okay, looks great.

00 22 13 42 LMP 15.

00 22 13 46 LMP 10.

00 22 13 51 LMP 5, 4, 3, 2, 1 -

00 22 13 56 LMP MARK.

00 22 13 57 CMP SHUTDOWN. Pe's OFF; GIMBAL MOTORS coming OFF.  
Rusty?

00 22 13 59 LMP DELTA-V's thrusts OFF first, Dave.

00 22 14 01 CMP They're OFF.

00 22 14 02 LMP Okay.

00 22 14 03 CMP PITCH 1.

00 22 14 04 LMP Go.

00 22 14 05 CMP YAW 1.

00 22 14 06 LMP Go.

00 22 14 07 CMP PITCH 2.

00 22 14 08 LMP Go.

00 22 14 09 CMP YAW 2.

00 22 14 10 LMP Go.

00 22 14 11 CMP Okay, we're shut down --

00 22 14 13 LMP TVC SERVO POWER 1 and 2, OFF.

00 22 14 15 CMP TVC SERVO POWER 1, OFF; 2 is OFF.

00 22 14 17 LMP ATTITUDE DEADBAND, MAX.

00 22 14 19 CMP MAX.

00 22 14 20 LMP RATE, HIGH.

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Day 1

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00 22 14 21 CMP HIGH.  
00 22 14 22 LMP SCS.  
00 22 14 23 CMP SCS.  
00 22 14 24 LMP MAIN BUS TIES coming OFF.  
00 22 14 26 CMP A, OFF ...  
00 22 14 39 CC Apollo 9, I've got minus 0001, plus 0007, and plus 0003.  
00 22 14 48 CDR Okay, that's pretty good, and the DELTA-V counter was minus 5.0.  
00 23 11 15 CMP I got the feeling ...  
00 23 11 37 CMP What did you say ...?  
00 23 11 54 CMP Boy, ...  
00 23 12 03 CDR Are we?  
00 23 12 09 CMP ... S-band.  
00 23 12 56 CDR Okay, that thing ...?  
00 23 13 58 CDR ..., now what do I do for the suit?  
00 23 14 19 CDR Hey, Dave, where's ...?  
00 23 14 22 CMP Huh?  
00 23 14 24 CDR Where's ...?  
00 23 14 29 CDR ...  
00 23 15 10 CDR Jim, try to remind me I can ... will you? ...  
00 23 22 57 CDR Look's good.  
00 23 23 00 CMP ...  
00 23 23 03 CDR Yes.  
00 23 23 08 LMP Ahh! My side.

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Day 1

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- 00 23 23 18 CMP ... you didn't hurt yourself!
- 00 23 23 20 CDR ... got the front of my side ... Huh!
- 00 23 26 10 CDR ... last night, I ... my stars because I thought ...
- 00 23 26 15 LMP Jim, ... look up the stars on my star ... sleep on my side last night.
- 00 23 26 29 CDR Yes.
- 00 23 26 30 LMP ... I kept ... I kind of thought I'd been sleeping on my back last night and I wanted to get over on my side.
- 00 23 26 35 CMP But for some reason there, I've been keeping my head up like this ... it's so stiff ... (laughter).
- 00 23 26 52 LMP Hey, I like my ...
- 00 23 26 54 CMP Do you?
- 00 23 26 55 LMP Yes.
- 00 23 28 04 CDR You know, it doesn't look like we're 150 miles up, does it?
- 00 23 28 09 LMP What does it look like?
- 00 23 28 10 CDR I don't know, but it sure doesn't look like it to me.
- 00 23 28 12 CMP Well ... awfully hard ...
- 00 23 28 14 CDR ... - looking at the clouds and all ...
- 00 23 28 22 LMP How many times have you ... from 150 miles?
- 00 23 28 31 CMP ... going like a bat out of hell ... on a piece of tape with a grease pencil.
- 00 23 28 42 CMP Yes, good idea.
- 00 23 29 39 CDR Dave, could you put this up there on the ... somewhere? I've got a little one sticking in there already.
- 00 23 30 00 CDR Okay, ... let's start cleaning up with ...  
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Day 1

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00 23 30 13 CMP .... Jim.  
00 23 30 16 CDR I know it; I've got to ...  
00 23 30 23 CDR Russ, ...  
00 23 30 38 CDR Let me know ...  
00 23 30 49 CDR Oh, look there at that ... Whooh!  
00 23 31 01 CDR ... I wonder why it's ...  
00 23 31 21 CMP Hey, ... didn't we take a couple of Hasselblad  
pictures of the S-IVB?  
00 23 31 24 LMP Yes. I took a bunch of them, as a matter of fact.  
00 23 32 07 CDR How's that for ...  
00 23 32 25 CMP Hey, Russ.  
00 23 32 26 LMP Yes.  
00 23 32 36 CMP I'm going back to ...  
00 23 32 39 CDR Say, by the way, how does that look?  
00 23 32 41 CMP It's down in the A-5, I think ...  
00 23 32 45 CDR Oh, yes, ...  
00 23 32 47 CMP Yes. Hold on.  
00 23 33 19 CMP Would you load the cameras before the next check-  
list ...?  
00 23 33 39 CMP ... I think it's ... star chart ... and leave it  
off.  
00 23 33 53 LMP What the hell have you done with all the power in  
the fuel cells ...? Let's budget that; we need i  
Jim, switch your cryos down.  
00 23 34 28 CDR You ready, gentlemen?  
00 23 34 29 CMP Ready. Let me get my ... down.

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Day 1

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00 23 34 36 LMP Okay, count them off, because that's number 50 that you refer to there.

00 23 35 15 CC Roger; I haven't heard anything.

00 23 35 22 CMP Okay, stand by, Houston. How do you read Apollo 9?

00 23 35 27 CC Apollo 9, this is Houston. Reading you loud and clear.

00 23 35 37 CC Apollo 9, this is Houston. I read you loud and clear.

00 23 35 41 CDR Roger; ready to copy ...

00 23 35 50 CDR Houston, Apollo 9.

00 23 35 52 CC Apollo 9, I'm reading you loud and clear. How me?

00 23 35 56 CMP Same here; ready to copy.

00 23 36 58 CC Roger. You'll have to stand by here; don't have it yet. Let me give you an estimate of when it's going to come out of the trench.

00 23 37 05 CDR Okay.

00 23 37 10 CDR I thought he said he ...

00 23 37 11 CMP I thought he did, too.

00 23 37 35 LMP I guess you better ... Okay, and you better hit it after 1 minute.

00 23 37 40 CMP Okay, 1 minute; VERB 68 ... What's the total burn time?

00 23 37 48 LMP 1 minute 51.2 seconds. ... 51.2 seconds.

00 23 37 50 CMP That ought to hold it.

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DAY 2

01 01 17 07 LMP See if you don't - see if you don't feel two bump  
on the start. Okay?

01 01 17 10 CDR EMS MODE to AUTO.

01 01 17 11 CMP EMS to AUTO.

01 01 17 18 CDR Okay, go for the proceed. Okay? 20 seconds.

01 01 17 21 LMP That damn ullage is still counting - I mean, that  
PIPA.

01 01 17 31 CDR 10, 9, 8, 7, 6, 5, flashing; PROCEED.

01 01 17 41 CMP Good start. Pc looks good; gimbal motors look  
beautiful.

01 01 17 44 CDR ... SPS ... is no sweat.

01 01 17 45 CMP SPS.

01 01 17 48 CDR Okay.

01 01 17 53 CMP Stable.

01 01 17 59 LMP Okay, the camera's off.

01 01 18 01 CDR CRYO PRESS ...

01 01 18 02 CMP Russ, put on the CRYO PRESS. We need a little li  
you know?

01 01 18 09 CDR Yes. It's like the simulator.

01 01 18 11 CMP You're drifting over to the roll a bit, Jim.

01 01 18 14 CDR Okay. Okay, got about 20 seconds to go to RESTAR  
Okay, you can come up with your 5/l's scale.

01 01 18 24 CDR Okay. Come up 5/l's.

01 01 18 27 CDR Okay, call out VERB 68.

01 01 18 28 CMP VERB 68.

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Day 2

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01 01 18 30 CDR We've got 10 seconds to go. 5. 5 now --  
01 01 18 35 CMP Camera on.  
01 01 18 37 CDR - - 3, 2, 1 -  
01 01 18 40 CDR ...  
01 01 18 41 CMP 0.2, 0.0, zero. Holding zero.  
01 01 18 45 CDR Okay.  
01 01 18 46 CMP Now it's oscillating zero to point minus 0.2;  
crossing in yaw at 0.2, and it's damped out - almost  
like the ME, but not quite --  
01 01 18 55 CDR Not quite as violent.  
01 01 18 56 CMP - - violent.  
01 01 18 57 CDR Yes. Okay, now to get it back under control, you  
want to go back to 5/5.  
01 01 19 00 CMP Completely damped?  
01 01 19 02 CDR Yes.  
01 01 19 03 CMP Okay, camera coming off.  
01 01 19 04 CDR Okay.  
01 01 19 05 CMP Okay, I'm waiting for crossover. Is that yet?  
01 01 19 08 CDR Should be in 80 seconds. Should be about ...  
01 01 19 16 CMP CRYO PRESS and PU sensor. No sweat. Okay?  
01 01 19 52 CDR ... Okay? I'll call them out ...  
01 01 19 56 LMP I'm going to leave this off here so the rest of  
you can ...  
01 01 20 24 CMP DELTA-V counter's ...  
01 01 20 37 CDR Got a minute and 45 now. Everything is still  
looking good, Dave.  
01 01 20 45 CMP Okay.  
01 01 20 47 CMP I think I'll go back to normal on the PU, here.

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Day 2

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01 01 20 49 CDR Okay, fine. A minute and a half to go.  
01 01 20 54 CMP Hey, that thing's a pain in the ass.  
01 01 21 00 CDR Okay, DELTA-V counter and the PGNCS look pretty good.  
01 01 21 04 CMP Okay.  
01 01 21 06 CDR Okay, you have a minute and 15.  
01 01 21 07 CMP Okay.  
01 01 21 08 CDR 30 seconds until you start ... I'll count you down to it.  
01 01 21 10 CMP Okay, we're 5/5, okay?  
01 01 21 13 CDR Okay, we're 5/5. Everything looks good over here.  
01 01 21 14 CMP Alright.  
01 01 21 16 CDR You're going to have about 0.6 on this trim, and we're going to have you pitching at about - at least a half in yaw.  
01 01 21 20 CMP Okay.  
01 01 21 24 CDR Okay, 55 seconds; so we have 5 seconds to go.  
01 01 21 32 CMP Okay.  
01 01 21 33 CDR 3, 2, 1 -  
01 01 21 35 CDR Switch, OPEN.  
01 01 21 38 CDR That a boy! Things looking good. At about 35 seconds to go now ... At 30 seconds to go on the PGNCS at 250 feet per second to go on EMS.  
01 01 22 00 CMP Okay. At 20 seconds to go -  
01 01 22 03 CMP MARK.  
01 01 22 04 CMP We're within time.  
01 01 22 05 CDR That's good. 150 feet per second to go; that's about 15 seconds. 100, now. 90, 80, 60, 40, 20; we have shutdown now.

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Day 2

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01 01 22 21 CMP Okay, DELTA-V THRUST, OFF.  
01 01 22 23 CDR Okay.  
01 01 22 24 CMP Okay, GIMBAL MOTORS, Rusty?  
01 01 22 26 LMP Okay.  
01 01 22 27 CMP PITCH 1.  
01 01 22 28 LMP Yes, verify - -  
01 01 36 20 CC Roger; stand by. We haven't got that out of FIDO yet.  
01 01 36 27 CDR Okay, go ahead and get it.  
01 01 36 29 CMP Okay. And also, Houston, you might have some words to say after you look at the data there on the SPS P sensor. Both normal and AUX have a pretty high increase. I'd like to know if you want to go DECREASE on the next burn.  
01 01 36 40 CC Roger. Apollo 9, we're going to have some words on the PUGS for - for the SPS 4.  
01 01 36 48 CMP Okay.  
01 01 36 49 CDR Yes, like disable it.  
01 01 36 50 CMP Yes (laughter).  
01 01 36 51 LMP There goes another one of my straps.  
01 01 36 58 CDR Check that CB switch over there?  
01 01 37 02 LMP Yes, sir. You want SPS 4?  
01 01 37 04 CDR ...  
01 01 37 17 LMP Malfunction, EPS.  
01 01 37 18 CC Apollo 9, Houston. We're losing you here. We'll see you over Tananarive with a preliminary orbit, I hope.  
01 01 37 25 LMP Roger.

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Day 2

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- 01 01 37 34 LMP You know, I find myself lifting my head.
- 01 01 37 38 CDR Yes, me too. I guess that's why I have a stiff neck. I must have slept like that last night.
- 01 01 37 41 LMP Yes, I - I - I'm - I'm generating. Oh, we have a little piece of metal sitting right outside the window, here.
- 01 01 37 49 CDR Oh, really?
- 01 01 37 50 LMP It's turning over slowly, slowly, slowly.
- 01 01 37 53 CDR Take a picture of it.
- 01 01 37 57 LMP Oh, it's not worth taking now.
- 01 01 37 59 CDR Yes, but you know, it might be an interesting little sidelight.
- 01 01 38 03 LMP Alright (laughter). I don't want to use very much film on it.
- 01 01 38 07 CDR No, no, ...
- 01 01 38 08 LMP I can give it to Bill Peterson and say, "See what fell off when he did the stroking ..." Let me put it down to six frames or so.
- 01 01 38 29 LMP Okay.
- 01 01 38 35 CDR Hey, what's this film magazine doing here? We could use - -
- 01 01 38 38 CMP That's the one that I was ... I just didn't have time to put it away - -
- 01 01 38 42 CDR Put it away.
- 01 01 38 43 CMP - - ... easy to follow.
- 01 01 38 46 CDR Sure is.
- 01 01 38 47 CMP Should be marked, too; I wrote on it. I think I did.
- 01 01 38 49 CDR C and D; f:ll and 2/50ths here?

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- 01 01 38 53 LMP Okay, I'll log that in the film log as piece of platinum.
- 01 01 38 57 CDR ...
- 01 01 38 59 LMP Why don't you set that on 24 again, Mr. Scott?
- 01 01 39 03 CMP I guess it doesn't make any difference what that's set on, I guess.
- 01 01 39 07 CDR Why don't you look and see where magazine H is supposed to go?
- 01 01 39 09 CMP Okay, on - on G -
- 01 01 39 16 LMP I'll take that, Dave.
- 01 01 39 19 CMP G, H.
- 01 01 39 20 CDR It's in that - it's in the book right in front of you, Dave, if you want to check it.
- 01 01 39 28 CMP H, G; no, D-3, Jim. The very first one. The first one we used. The only place for D-3 to put it is on the camera. There's no - I don't think there's a hole for it in D-3.
- 01 01 39 45 CDR Oh, yes.
- 01 01 39 46 LMP Okay, I is going to circ - cycle the purge valve.
- 01 01 39 52 CDR Yes, ...; put it in B-8?
- 01 01 40 02 LMP The purge valve didn't seem to help. Stand by for the alarm; I'm going to try that again.
- 01 01 40 20 LMP Hey, you know it purges too much, too.
- 01 01 40 23 CMP Really?
- 01 01 40 24 LMP Think so. It's only supposed to increase 0.6 on the O<sub>2</sub>, right?
- 01 01 40 28 CMP Right. Whatever kind of panel there.
- 01 01 40 31 LMP Yes, it goes a lot higher than that?
- 01 01 40 33 CDR Oh. You mean it increases more than 0.6?

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Day 2

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- 01 01 40 35 LMP Yes. Let me just check out the ... and see what happens.
- 01 01 40 43 LMP Yes, it sure does.
- 01 01 40 47 CDR Maybe your sensor is screwed up.
- 01 01 40 52 LMP Okay, it's reading 0.6 right now. No, it's reading 0.7. And 0.6 would be 1.3 - goes off scale high. That's interesting.
- 01 01 41 08 CDR Goddamnest thing ...; there's no place to put the film magazine here either.
- 01 01 41 13 CMP I took one out of there the other day, Jim. There ought to be an empty hole.
- 01 01 41 16 CDR Yes, but I put "I" in it.
- 01 01 41 18 CMP Oh.
- 01 01 41 19 CDR Where is that?
- 01 01 41 20 CMP The one we have in there - where'd you get it, I wonder? Why don't you just put it in the F-1 until we - pull another one out? Where did U go? Where did the ... U go?
- 01 01 41 32 LMP Boing, boing.
- 01 01 41 34 CMP Put it in A-7. Yes, A-7 has got a spot, Jim.
- 01 01 41 40 LMP Boing.
- 01 01 41 54 LMP Mind if I write in your malfunction book here, David?
- 01 01 41 56 CMP Heck, no. That's what it's for.
- 01 01 42 43 LMP Okay. We seem to be okay on the ammeter - right with the other ones, and the condenser exhaust, and all that stuff is looking good.
- 01 01 43 57 LMP Did you report that last set of torquing angles to them?
- 01 01 44 00 CMP No, I sure didn't, Rusty.
- 01 01 44 02 LMP Okay, I guess we ought to do that.

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- 01 01 44 03 CMP Good.
- 01 01 44 32 LMP Slowly, all of my gages are ... Boing.
- 01 01 44 38 CDR Really?
- 01 01 44 41 LMP Well, of these ... such as fuel cells, ..., flow have gone out.
- 01 01 44 47 CDR SPS helium pressure, cryo pressure.
- 01 01 44 50 LMP (Laughter)
- 01 01 44 57 LMP Oh, boy. Say, how are our rates? We might want to --
- 01 01 45 08 CMP Right now?
- 01 01 45 09 LMP -- Yes, we might want to damp them, because roll, pitch, and yaw were right about, you know, zero.
- 01 01 45 14 CMP Oh, I know, but we're - we're way off. And there's no telling where we'll be.
- 01 01 45 20 LMP Okay.
- 01 01 45 21 CMP You know, if we're 90 degrees away, now, we're liable to go all the way back around.
- 01 01 45 41 LMP I think it's the suit that bends me backwards that makes my back hurt.
- 01 01 46 20 CMP Rusty, give me a flight plan ... the update.
- 01 01 46 26 LMP Okay. Oh, it's getting toward sunset ... 2000 ...
- 01 01 46 56 LMP (Singing) One of these books is the flight plan.  
(Singing)
- 01 01 47 14 LMP What magazine is that, Dave, that's in there?
- 01 01 47 18 CMP That's U.
- 01 01 47 20 LMP U?
- 01 01 47 21 CMP U.
- 01 01 47 22 CDR Hey, I just put H down in A-7.

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01 01 47 26 LMP Where - where did you get it?

01 01 47 28 CDR Out of F-1. ...

01 01 47 56 CDR Well, this whole pass, we do nothing again. Don't we have IMU align the next time? ... up again? ...

01 01 48 48 CDR As soon as we do that, we can get ready to go to bed.

01 01 49 01 CC Apollo 9, Houston through Tananarive.

01 01 49 04 CMP I got them there.

01 01 49 05 CDR Okay.

01 01 49 06 CMP Roger, Houston; Apollo 9. How do you read?

01 01 49 12 LMP They're not going to read us.

01 01 49 15 CMP Houston, Apollo 9. How do you read?

01 01 49 19 LMP Try the other antenna.

01 01 49 21 CC Apollo 9, Houston. I think you're trying to answer me, but you're unreadable. Our orbit is showing you at 271.8 by 109.5.

01 01 49 37 LMP Okay, I got that.

01 01 49 41 CMP Roger; how do you read on the other antenna here?

01 01 49 44 CC You're essentially unreadable, Apollo 9. I can detect you are transmitting.

01 01 49 56 CMP Get that, Jimmy?

01 01 49 57 CDR Yes.

01 01 50 00 LMP That's about nominal, isn't it?

01 01 50 02 CDR Yes. Sure is.

01 01 51 10 LMP What's the setting up there? Something like f:11 on the 1/250th, right?

01 01 51 14 CMP Yes.

01 01 51 17 LMP What's the focus? 5 feet, right?

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01 01 51 24 CMP Right.

01 01 51 25 LMP Okay.

01 01 52 20 CDR Oh, boy. Tomorrow is going to be a long one.

01 01 52 23 LMP Boy, you're right.

01 01 52 25 CDR We get up at 39:30. At 54:30, we do SPS number 5. Whew! And at 57, we go to sleep.

01 01 52 44 CMP Oh, you're kidding. That's a long day. How about that? We got frost on the inside of the window.

01 01 52 52 CDR Yes. On this side of it?

01 01 52 56 CMP Yes, it's right in here with us.

01 01 52 59 LMP Condensation.

01 01 53 02 CDR After all, it's cold out there.

01 01 54 55 LMP Ohh, look at that star out in front of us. Hey, what the hell is that? A shooting star? Oh, God damn!

01 01 55 04 CDR What?

01 01 55 05 LMP That freaking quad. That fakes me out every time.

01 01 55 10 CDR (Laughter)

01 01 55 12 LMP The edge of the quad - -

01 01 55 13 CMP Hey, Rusty, there's a - there's a quad out there - -

01 01 55 14 LMP Why don't you shut up?

01 01 55 15 CDR Would you look at it every once in a while to see if it's still there?

01 01 55 19 LMP Can you see it, Dave?

01 01 55 22 CMP The quad? Yes.

01 01 55 23 LMP The edge of that thruster's being lit up. Looks like a streak, with a dash mark through it. Really, it looks like a persistent tail.

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Day 2

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01 01 55 36 CDR Boy, you know, you have - we have to be up and into the LM in 2-1/2 hours.

01 01 55 41 LMP Boy, oh boy.

01 01 55 44 CMP That's going to be sporty.

01 01 55 46 CDR That's right; that's up, suit, crap, pee, eat, clear the tunnel.

01 01 56 03 LMP Hey, by the way, talking about tunnel, how's the LM DELTA-P doing?

01 01 56 08 CDR Well, let me look up there and see. Says zero.

01 01 56 13 CMP ... probably still ... same ones ...

01 01 56 17 LMP It's in LM PRESS.

01 01 56 19 CMP Oh, it is LM PRESS?

01 01 56 20 LMP Yes.

01 01 56 21 CDR Good.

01 01 56 23 LMP I don't think the gage reads, though.

01 01 56 27 CDR Yes, it does.

01 01 56 28 LMP Does it?

01 01 56 29 CDR DELTA-P.

01 01 56 30 LMP It ought to be zero if we have it in LM PRESS.

01 01 56 33 CDR Huh?

01 01 56 34 LMP It ought to be zero. If we have it in LM PRESS, it ought to be zero. It ought to be zero; I'm pretty sure.

01 01 56 41 LMP Ohh, my feet. God!

01 01 56 44 CDR Hey, son, you want to come stand down here for a while?

01 01 56 46 LMP Hell, that's a good idea. That's a good idea ...

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- 01 01 56 48 CDR I want to get that Exer-Genie exerciser out. All the other guys said that really helped. Matter of fact, why don't I get it out right now?
- 01 01 56 55 LMP Oh, what are we going to do with it, Jim?
- 01 01 56 56 CDR We can't use it now. Wait until we get our feet propped.
- 01 01 56 58 LMP I can use it right here. Okay?
- 01 01 57 00 CMP If you want to exercise, don't let us stop you.
- 01 01 57 04 CDR You never have before.
- 01 01 57 05 CMP Huh?
- 01 01 57 06 CDR You've never stopped me before - -
- 01 01 57 07 CMP ... so crazy; you say you want to do some exercise.
- 01 01 57 11 LMP Why don't you go run, Jim?
- 01 01 57 12 CDR If you were - if you weren't in town carousing around at the beach - with all the broads and everything, you'd have been out at the gym with us working out every morning and every night.
- 01 01 57 23 CMP I was working out. Isn't that right, Rusty?
- 01 01 57 24 LMP That's right.
- 01 01 57 25 CMP I was working out.
- 01 01 57 26 LMP I wonder what you got going down there, baby. I don't know.
- 01 01 57 28 CMP Oh, you wouldn't believe it.
- 01 01 57 30 CDR Hey, where is the Exer-Genie? (Laughter) That ought to take the rest of the day.
- 01 01 57 34 CMP It's up under his right shoulder.
- 01 01 57 38 CDR That sounds like a suit-off exercise.
- 01 01 57 44 CMP This water is really wild. You got any - any meals down there? I think I'll have me some juice.

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01 01 57 51 LMP Boy, I think I'll have some brownies.

01 01 58 00 LMP I can't figure whether I'm acclimatizing to this game or not.

01 01 58 05 CDR Why? You trying to feel better, or you don't know?

01 01 58 08 LMP Well, --

01 01 58 09 CMP Hey, Jim, ...

01 01 58 10 LMP -- I don't feel bad, but I still don't --

01 01 58 11 CC Apollo 9, Houston. We're going to lose you at Tananarive in about a minute, and we'll see you over Carnarvon at 05.

01 01 58 19 LMP Roger, Houston. How do you read us now?

01 01 58 22 CMP How about it? I'd like a meal, Jimmy. You got a white --

01 01 58 25 CC Houston, Apollo 9. Say again.

01 01 58 28 LMP Roger. Do you read us now?

01 01 58 31 CC I can make you out now, barely. Before, I couldn't read you at all.

01 01 58 40 LMP Okay, we'll see you at 05 at Carnarvon.

01 01 58 44 CC Roger.

01 01 58 46 LMP I don't want to talk to them when I can't hear --

01 01 58 47 CDR Do you know what time it is down at the Cape?

01 01 58 48 CMP What time is it at the Cape? It's 1 o'clock in the afternoon.

01 01 58 52 CDR Noon in Houston! Seems like it's about nighttime again, doesn't it?

01 01 58 56 CMP It does.

01 01 58 57 CDR Are you particularly concerned about which one of these meals you get?

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- 01 01 59 01 CMP We ought to eat the white ones because they make this big sample thing afterwards to see who ate what. For science, I'll take a white one.
- 01 01 59 07 CDR No, I mean, do you care which white one?
- 01 01 59 09 CMP Oh, hell no. I didn't know that they were any different. I mean, I never even looked at the difference. I just ... eat ... what you give me.
- 01 01 59 18 CDR Oh, shit, here's some more garbage. Got your scissors, Dave?
- 01 01 59 28 CMP Yes.
- 01 01 59 34 CDR Oops! Oops!
- 01 01 59 41 CDR Can you wait just a second, there?
- 01 01 59 43 CMP Yes, what the hell did I do with them - with my scissors?
- 01 01 59 46 CDR Wow! That's the experiment, fully packed.
- 01 01 59 50 CMP The what?
- 01 01 59 51 CDR It's got to be a - LSMFT.
- 01 01 59 55 CMP That's the stuff for your teeth.
- 01 01 59 58 CDR A toothbrush?
- 01 01 59 59 CMP Dental floss.
- 01 02 00 00 CDR Dental floss.
- 01 02 00 01 CMP Oh, no.
- 01 02 00 03 CDR That's what I need.
- 01 02 00 05 CMP You got any more of those meals up there above your head in U-2 - those good turkey dinners?
- 01 02 00 09 LMP Yes. No turkey.
- 01 02 00 12 CMP What have you got?
- 01 02 00 13 LMP Should be beef and ham.

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- 01 02 00 14 CMP Oh, hey, you've got a beef sandwich --
- 01 02 00 15 CDR Hey, I'll have one of those. Yes, I think I'll eat one of those.
- 01 02 00 17 CMP I'll take a beef one, if you got it.
- 01 02 00 18 CDR Y'all want some - you want something out of here?
- 01 02 00 20 CMP A juice, yes. I want a - Give me a meal, and I'll take the juice out.
- 01 02 00 26 LMP Okay. Stand by.
- 01 02 00 28 CMP Stand by, Jim; I've got a grape up here. I forgot Wait just a second.
- 01 02 00 32 CDR You're way ahead of me on meals, you know that? I don't like that.
- 01 02 00 38 CMP I haven't eaten - I haven't eaten two whole meals yet.
- 01 02 00 41 CDR You what?
- 01 02 00 42 CMP I don't think I've eaten two whole meals yet.
- 01 02 00 44 LMP I haven't either.
- 01 02 00 45 CDR Neither have I.
- 01 02 01 16 CDR Okay, I give up looking for it. Where is the Exer Genie? Up here, did you say?
- 01 02 01 20 CMP Under Rusty's right shoulder.
- 01 02 01 22 CDR Where's that?
- 01 02 01 24 CMP The one on the far side over there.
- 01 02 01 26 LMP R-13, or whatever that's called.
- 01 02 01 28 CMP It's in A-1, but it's way over here - on the side. A-8 or A-1 or whatever the one is over there.
- 01 02 01 38 CDR Way up at the head end, huh?
- 01 02 01 40 CMP Yes.

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01 02 02 00 LMP Hey, while you're up there, Jim, you could get some meals for us.

01 02 02 02 CDR Oh no, I think my ... are coming off.

01 02 02 07 LMP (Laughter) All 10 of them, huh? 11 of them?

01 02 02 28 LMP Ohh.

01 02 02 32 CDR Oh, shoot.

01 02 03 00 CDR I heard that funny noise, too; what is it?

01 02 03 03 CMP I don't know. What's that noise? Anybody know?

01 02 03 06 CDR No, I don't.

01 02 03 07 LMP The hiss?

01 02 03 08 CMP Yes.

01 02 03 09 LMP No, I don't know, either. Do you know?

01 02 03 13 CDR Stopped?

01 02 03 14 CDR/IMP Yes.

01 02 03 15 CMP It stopped.

01 02 03 22 LMP Okay.

01 02 03 23 CMP ... for Houston; it looked - it sounded like ...

01 02 03 26 LMP No, that was coming up on the RT.

01 02 03 44 LMP (Singing)

01 02 03 58 LMP Dave.

01 02 03 59 CMP Oh, what a good fellow. Hey, you're a winner. Beef and potatoes.

01 02 04 06 LMP Here's a --

01 02 04 07 CMP Just what I wanted.

01 02 04 08 LMP -- here's a white bag.

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01 02 04 20 LMP Hey, as a matter of fact, I will. Oh, no. Did it wrong.

01 02 04 26 CMP What happened, Jim?

01 02 04 32 LMP Boy, I'm warm in this suit.

01 02 04 48 LMP I'll try red to blue and blue to red again.

01 02 05 17 LMP Hey, that's the way to go: red to blue and blue to red; the hell with the return.

01 02 05 34 CMP ... that these beef and potatoes are the ones that you ate ... --

01 02 21 56 LMP Hey, you know something, Jim?

01 02 21 58 CDR Uh oh.

01 02 21 59 LMP What?

01 02 22 00 CMP What?

01 02 22 01 CDR Boing!

01 02 22 03 LMP I was thinking last night - about that noise. We got ignition late.

01 02 22 12 CDR What?

01 02 22 13 LMP We got ignition late on launch. You know that? We usually get it at 9; we got it about 5 seconds. Did you notice that? You were pretty busy, probably.

01 02 22 27 CDR No, we got it about when I thought we were going to get it.

01 02 22 30 LMP Usually get the thrusters at 10, ignition, 8, 7. We were 10, 9, 8, 7, 6, ignition.

01 02 22 38 CDR Then we lift off at zero.

01 02 22 40 LMP Yes, but I don't think we lifted off when we should have lifted off. I think we were late.

01 02 22 47 CDR We lifted off right with it --

01 02 22 48 LMP I don't think so; I think we -

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- 01 02 22 49 CDR -- within a second or so maybe.
- 01 02 22 50 LMP Yes, but I think we were late, all the way down the line. I was really surprised because as we went - just standing there, and we hadn't got ignition yet, I - I thought - -
- 01 02 23 00 CDR Uh oh.
- 01 02 23 01 LMP -- that was bad news,
- 01 02 23 04 CDR Hmm!
- 01 02 23 05 LMP But I just - that's all I had to do was sit there and listen and watch, you know? And I'll bet you we were late.
- 01 02 23 11 CDR That's what I was doing, too.
- 01 02 23 12 LMP Yes, but you were thinking about a lot of other things. And I'll bet you we were late.
- 01 02 23 31 CMP Boy, talk about dry, wow!
- 01 02 23 35 CDR What - the meat? (Laughter)
- 01 03 23 36 CMP Yes.
- 01 02 23 38 CDR Good thing the potatoes aren't - they're soggy.
- 01 02 23 50 CMP ... the door in that waste compartment; it will pop open when you press on it.
- 01 02 23 55 CDR Hey, I'm putting most of that stuff over here in the big temporary stowage bag, then. But, trouble is, I don't know what we're going to do with it.
- 01 02 24 25 LMP ...
- 01 02 24 27 CDR What?
- 01 02 24 29 LMP The Kleenex.
- 01 02 24 30 CDR What?
- 01 02 24 31 LMP The Kleenex.
- 01 02 24 32 CDR What? Oh.

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01 02 24 50 CC Apollo 9, this is Houston through the Huntsville.  
We're transmitting now --

01 02 24 56 CMP ... go, Schweickart ...

01 02 24 58 CDR Be quiet.

01 02 24 59 CC -- trying to evaluate the COMM, and it's pretty  
noisy to me. Can you read me at all?

01 02 25 04 CMP Houston, this is Apollo 9. Roger; we read you.  
You're weak and a little bit noisy.

01 02 25 18 CC Apollo 9, this is Houston. If you can read me,  
and you've got the time, could you give me a short  
count?

01 02 25 27 CMP Roger. Short count: 1, 2, 3, 4, 5; 5, 4, 3, 2, 1.  
Apollo 9, out.

01 02 25 45 CDR Golly! There's sure a lot of air in this thing here.

01 02 25 53 IMP Hey, Jim, I let mine sit for a long while, and all  
the air gathered in one bubble, and it went away  
from all the rest of it. I'm getting really nice  
water.

01 02 26 11 CC And, Apollo 9, this is Houston. Giving you a short  
count. Maybe to try to help set up their equipment:  
1, 2, 3, 4, 5; 5, 4, 3, 2, 1. Houston, out.

01 02 26 32 CMP Roger, Houston; Apollo 9. 1, 2, 3, 4, 5; 5, 4, 3,  
2, 1. How do you read us?

01 02 27 16 CC Apollo 9, Houston. Do you read?

01 02 27 20 CMP Houston, Apollo 9. Read you weak, but clear.

01 02 27 51 CMP Roger; how do you read now?

01 02 27 54 CC You're coming through, but real weak. I can make  
it out, however.

01 02 27 57 CMP Roger; that's the same for you. You're coming through  
clear, but very weak.

01 02 28 06 CC Okay, understand; clear, but weak. Are you getting  
this background static?

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- 01 02 28 13 CMP No, there's some background static, but not tremendous.
- 01 02 28 19 CC Copy.
- 01 02 28 37 CDR Say, you can really taste the chlorine in our water now!
- 01 02 28 40 LMP That's great!
- 01 02 28 41 CDR Yes.
- 01 02 28 53 CDR Boy, we're sure getting a lot of moisture on a lot of windows.
- 01 02 28 58 CMP Houston, Roger; Apollo 9.
- 01 02 29 16 CDR You ever get the air bubble out, Rusty?
- 01 02 29 46 CDR You want down here?
- 01 02 30 43 CMP Would you fill that, Jim, with water?
- 01 02 31 02 LMP I may die of malnutrition up here, but I don't feel hungry.
- 01 02 31 04 CDR You ought to keep eating though.
- 01 02 32 11 CMP Jim, here you go.
- 01 02 32 14 CDR What?
- 01 02 32 15 CMP ... would you put some water in here for me, please?
- 01 02 32 18 CDR Just a second, I've got to get one bite of food of my own in here between water spurts.
- 01 02 32 21 LMP Oh, no. You didn't shave today.
- 01 02 32 27 CDR I know it. Neither did you, but you can't tell it on you.
- 01 02 32 32 CMP ... Hey, I need seven squirts of cold. It said 7 ounces.
- 01 02 32 39 CDR What is it, pudding?
- 01 02 32 41 CMP Huh?

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01 02 32 43 CDR What is it?  
01 02 32 45 CMP Pineapple-grapefruit drink.  
01 02 32 47 CDR Seven squirts?  
01 02 32 48 CMP Oh, I don't know; fill it up.  
01 02 32 49 CDR Hey, that's pretty up against the sun.  
01 02 32 54 LMP What, your bag?  
01 02 32 55 CDR Yes.  
01 02 33 58 CMP Comemos, amigo.  
01 02 34 00 CMP Hey, amigo, would you give me one with hot water,  
please?  
01 02 34 04 CDR Hey, amigo, how'd you like to take a flying leap?  
01 02 34 08 CMP I ain't your amigo.  
01 02 34 10 CDR May I have another bite of my own in the middle, he  
Sf.  
01 02 34 13 CDR These aren't even mine; I don't know whose they are  
01 02 34 17 LMP They any good?  
01 02 34 18 CDR Yes, they're cheese crackers, or something.  
01 02 34 20 LMP Oh, I had some of those last night; they are pretty  
good.  
01 02 34 23 CDR Maybe they are mine. I never did have any.  
01 02 34 27 CMP ...  
01 02 34 28 CDR Okay, four shots of cold, right?  
01 02 34 29 CMP No, three shots of warm!  
01 02 34 30 CDR Oh, gees, Dave; I'm sorry.  
01 02 34 32 CMP Golly, I like warm juice.

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01 02 34 35 CDR Huh?

01 02 34 37 CMP I like warm things - warm and sweet.

01 02 34 41 CDR Hey, listen, I've already got two shots of cold in it. You want me to mix it up, or you want me to go all cold?

01 02 34 49 CMP Put some warm - put warm water in it.

01 02 34 51 CDR I'll put one warm in there, okay.

01 02 34 52 CMP It's too late to ...

01 02 34 55 CDR Yes (laughter).

01 02 34 59 CMP Alright. I'll be down there later.

01 02 35 02 CDR When you send an amateur to do a pro's job, that's what you get.

01 02 35 05 CMP Huh.

01 02 35 08 CC Apollo 9, Houston through Hawaii. How do you read?

01 02 35 12 CMP You're coming in about 4 by 5, Houston.

01 02 35 18 CC Apollo 9, say again.

01 02 35 21 CMP Roger; you're coming in 5 square, now.

01 02 35 25 CC Oh, real good. Stand by and let me check and see if we're ready for your long count.

01 02 35 31 CDR For a what count?

01 02 35 32 CMP Either long or wrong. I would suggest - -

01 02 35 33 CDR Long.

01 02 35 34 CMP - - long.

01 02 35 35 CDR Yes, okay, that's - right - He asked me - he told me - -

01 02 35 38 CC Okay, Apollo 9, this is Houston. We'd like you to start - -

01 03 15 46 CC - - if it did, the readings before and after.

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O 01 03 15 51 LMP

Okay, the answer is yes; it did change. The unbalance tended to decrease, but then it came back up again; and it also caused the MASTER ALARM to go on and off, and so I switched back to NORMAL. Both NORMAL and AUX indicate an increase in the oxidizer unbalance. I can't give you a quantity reading on the auxiliary system because it was moving. Just for information, during a burn, the oxidizer unbalance jumped all around.

O 01 03 16 31 CC

Okay, Apollo 9. We copied that. Thank you very much.

O 01 03 16 36 LMP

Okay, and if you can't think of anything better to do with it, we might consider shutting it off on some of these later burns, because it - it takes a lot of time to reset those MASTER ALARMS in the middle of a burn.

O 01 03 16 50 CC

Roger, Apollo 9. We've been considering that, and - unless we can come up with something better, that's probably going to be our recommendation. We're still trying to troubleshoot it; that's the purpose of this question.

O 01 03 17 02 LMP

Okay.

O 01 03 17 04 CMP

Besides that, it changes the pulse rate, too.

O 01 03 17 06 LMP

(Laughter)

O 01 03 17 12 CC

Sorry, Apollo 9. Change of what? I didn't catch your last statement.

O 01 03 17 16 CDR

Heart rate.

O 01 03 17 17 CMP

Afraid our MASTER ALARM changes the heart rate.

O 01 03 17 21 CC

Oh, Roger. Understand. Didn't notice that down here You looked cool as a cucumber.

O 01 03 17 30 CMP

Sweaty palms.

O 01 03 17 35 LMP

Evaporative cooling (laughter). Whoop. There's always hot food there.

O 01 03 18 03 CDR

It is dark out there?

O 01 03 18 06 LMP

Yes.

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01 03 18 07 CMP Starting to -  
01 03 18 08 CDR Okay, let's go to 40.  
01 03 18 09 CMP Your big chance, Jim.  
01 03 18 10 CDR What?  
01 03 18 11 CMP Your big chance.  
01 03 18 12 CDR Okay. Go to 40.  
01 03 18 20 CDR Okay. What do you say we go to 52, huh?  
01 03 18 24 CMP Jimmy.  
01 03 18 25 CDR VERB 37, ENTER; 52 -  
01 03 18 32 CMP The sun setting through the center hatch?  
01 03 18 34 LMP Yes.  
01 03 18 42 LMP Hey, Dave, this time when you start to maneuver,  
watch - Oh, hell, that antenna blocks your view.  
01 03 18 47 CMP I'll try to see it - I'd like to --  
01 03 18 49 LMP Boy, it really flares up out there, no kidding.  
01 03 18 52 CMP I'll try to watch it.  
01 03 18 53 LMP You know, it's not just the flash from the exhaust  
going by - It really - I don't know what it is.  
It might be actually burning the paint there.  
01 03 19 06 CDR Okay, 52. We want to do a preferred, right?  
01 03 19 10 CMP One this time, and through forevermore.  
01 03 19 12 CDR (Laughter) Okay, we'll do a PRO here?  
01 03 19 19 CMP Middle gimbal angle is 61 degrees and after - It  
doesn't like that - Well, that's okay. We're at 63  
right now.  
01 03 19 26 CDR Are we? Okay, well, you even want to look at it?  
01 03 19 30 CMP Yes, let's look at it.

01 03 19 32 CDR Okay, VERB 5 - NOUN ... desired angles and GIMBAL LOCK. Okay. RESET. 08. You ready to go?

01 03 19 49 LMP Proceed. ...

01 03 20 00 CMP Okay, go.

01 03 20 01 CDR Okay, PRO.

01 03 20 08 CMP That god-blessed moon.

01 03 20 18 CDR Want to look at that program alarm, too?

01 03 20 20 CMP That should be the same one, Jim. Did you get a RESET?

01 03 20 24 CDR Yes, I had a RESET.

01 03 20 25 CMP Let's look at that one and ... --

01 03 20 27 CDR Okay. Oh, it is. RESET; 08. Okay, 50/15.

01 03 20 38 LMP Boy, that moon's bright.

01 03 20 40 CDR Okay, that says PICAPAR - At least, it did last time - still does. It's PRO. 01 70 16.

01 03 21 05 LMP Must be Procyon or something, isn't it?

01 03 21 07 CMP Let's see. Procyon, yes.

01 03 21 13 CDR Okay, let's see. You get the zero; OPTICS going to CMC; OPTICS, ZERO OFF; proceed.

01 03 21 26 LMP There you go.

01 03 21 36 LMP Right into the antenna.

01 03 21 41 CDR Would you believe I can't even identify Procyon?

01 03 21 43 CMP/LMP Ohh!

01 03 21 44 CDR No, I can't. It's halfway between the radar antenna and the leg or something. I really can't.

01 03 21 52 CMP It's the S-band antenna.

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202 Day 2

01 03 21 56 CDR Well, the landing radar and then there's something else there. It's probably just the S-band antenna.

01 03 21 58 CMP Yes.

01 03 22 05 CDR Okay. I'll be in RESOLVED and LOW ... Want 51 up? We sure do. Right there. Okay.

01 03 22 36 LMP Kind of drifting, aren't you?

01 03 22 39 CDR Oh, no, not too bad.

01 03 22 42 IMP You want me to stop it?

01 03 22 44 CDR No.

01 03 22 45 IMP You are headed for the right way.

01 03 22 49 CDR Okay.

01 03 23 00 CDR Okay, that's ... by 16; that says, "Did you like it?" and I guess I did, so I can proceed. Procyon was 16. Still can't identify it. Proceed; okay, 23 - Denebol CMC; and if you like that, we can proceed again.

01 03 23 36 CDR PRO - Oh, shoot, we're right behind it.

01 03 23 51 CDR (Laughter) Would you believe I can't recognize that one either?

01 03 23 58 CMP Oh, well. ...

01 03 24 00 CDR It's about 8 degrees from the moon.

01 03 24 07 CMP Well, our onboard star charts have ... moon.

01 03 24 09 CDR Do they?

01 03 24 10 CMP ..., yes. It's along the Mercator area.

01 03 24 17 CDR Oh, shoot, I don't even know where that is.

01 03 24 19 CMP Yes, I don't either ...

01 03 24 22 CDR Thanks.

01 03 24 24 CMP I thought that would be a big help.

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Day 2

203

01 03 24 32 CDR Hey, I can't see out.

01 03 25 09 CDR Okay.

01 03 25 29 CDR I don't like that one.

01 03 25 37 CDR That fuzzy reticle is really kind of crappy, isn't it?

01 03 25 40 CMP Yes, it sure is.

01 03 25 57 CDR Shit, I don't like that one either.

01 03 26 07 CDR That's a good one - 23. Denebola. I ought to be able to see Regulus or something. I guess not. Oh, I screwed up, didn't I?

01 03 26 29 CMP That's alright, for a beginner.

01 03 26 31 CDR Well, I'm not the pro. Okay, shall we PRO? We shall proceed.

01 03 26 45 CDR Where's the flight plan? Anybody know?

01 03 26 46 LMP Yes.

01 03 26 47 CMP Right here.

01 03 26 53 CDR Thank you.

01 03 26 59 CC Apollo 9, this is Houston through Tananarive.

01 03 27 04 LMP Roger, Houston. How do you read?

01 03 27 15 LMP Houston, Apollo 9.

01 03 27 19 CC Okay, I'm reading you okay. Just standing by here. We'll have you here for about 8 minutes across Tananarive.

01 03 27 28 LMP Roger. You want to copy some torquing angles?

01 03 27 32 LMP I'll read it to him.

01 03 27 33 CMP ... will have to read ...

01 03 27 35 CC Roger; go ahead.

01 03 27 36 LMP Okay, plus 00298, minus 00374, minus 00649.

~~CONFIDENTIAL~~

204 Day 2

~~CONFIDENTIAL~~

01 03 27 48 CDR You ready, Dave?  
01 03 27 49 CMP Yes.  
01 03 27 50 CC Roger; I copy.  
01 03 27 52 LMP Okay, and the time will be 27:28:00.  
01 03 27 59 CC Roger. Copy time - 27:28:00, and I copied the angle.  
01 03 28 03 LMP Roger.  
01 03 28 04 CMP How about that. Now try a third star check, Jimmy.  
01 03 28 10 CDR Okay, we go back to - We PRO here, don't we?  
01 03 28 13 CMP We PRO here, yes.  
01 03 28 14 CDR Okay. Do we PRO here?  
01 03 28 18 CMP PRO here.  
01 03 28 28 CDR 21.  
01 03 28 29 CMP Is that a new one?  
01 03 28 30 CDR Yes, that's Alphard.  
01 03 28 32 CMP Okay, let's see - proceed here, go to Alphard.  
01 03 28 37 CDR Okay, let's go back to CMC; proceed.  
01 03 28 39 LMP Man, I got to watch this, because I don't know where  
the heck we are.  
01 03 28 43 CDR PRO:  
01 03 29 00 CDR I don't even see a star. I think we're inside the -  
I think we're inside the spacecraft.  
01 03 29 05 CMP Can you see in the sextant?  
01 03 29 06 CDR Yes. There is a star right there in the sextant.  
01 03 29 14 LMP Right in the middle?  
01 03 29 15 CDR Yes. Well, it's about a - it's 0.05 degrees out  
maybe.

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01 03 29 21 LMP Does it have a 20-something next to it?

01 03 29 23 CDR (Laughter) No, it sure doesn't.

01 03 29 24 LMP Doesn't, huh?

01 03 29 26 CDR It's just disappeared, too. The LM is in the way again. It's disappeared in the sextant, too. Is that a star check or not, Mr. Scott?

01 03 29 39 CMP You can't recognize it?

01 03 29 40 CDR No.

01 03 29 41 CMP Does it look like it's close to Alphard?

01 03 29 42 CDR I can't tell, Dave; I can't see any sky at all right now. All I can see is the LM.

01 03 29 48 CMP Oh, you - -

01 03 29 49 CDR And the star already disappeared in the sextant, too, so - It was in there in the beginning.

01 03 29 54 CMP - - you can go another way, and - You can go back -

01 03 30 01 CMP How about Regulus? Is that in your field of view?

01 03 30 04 CDR No, there's nothing in the field of view right now, except the LM.

01 03 30 08 LMP Why don't we go to the burn attitude and check it out?

01 03 30 10 CMP Yes, that's probably the best thing to do.

01 03 30 11 CDR Yes, I think so. There's three stars - I'm pretty - -

01 03 30 14 CMP I'm pretty - I would call that a star check if you got one right in the sextant, really, wouldn't you?

01 03 30 19 CDR Yes, I guess so. I didn't - I couldn't recognize any of the three of them, though.

01 03 30 25 CMP We got - we got lots of time - -

01 03 30 26 CDR Okay, what?

01 03 30 27 CMP Why don't you go to P00, and I'll sweep this over here?

01 03 30 32 CDR Okay, I'll go to P00 right here.

01 03 30 33 CMP Yes, I'll just start sweeping this over here.

01 03 30 34 CDR Okay, VERB 37, ENTER; 00, ENTER; and the next time through, we don't want to use a one, huh?

01 03 30 44 CMP That's correct.

01 03 30 49 CDR Wait a second. Are we - are we going to torque it again and do another whole alignment?

01 03 30 53 CMP No.

01 03 30 54 LMP No, not if you don't use a one.

01 03 31 03 CDR It looks like the moon is shining off the LM. It's shining right into the telescope. I can see the vague outline out there of something, and this great big halo.

01 03 31 19 CMP Good grief, we don't want that.

01 03 31 22 CDR I wonder where it is with respect to our stars, Rusty?

01 03 31 26 LMP Well, it looks like it was right next to - Denebola there.

01 03 31 33 LMP That's because it's not too close to Sirius.

01 03 31 40 CMP People who can't recognize Procyon: Whooh!

01 03 31 45 CDR Well, Procyon - I couldn't recognize Procyon, Dave, because it was between a couple protrusions on the LM.

01 03 31 50 CMP Oh.

01 03 31 51 CDR It was just lucky that the star was even there.

01 03 31 58 CMP Hey, Jim, you close to the garbage bag?

01 03 32 00 CDR Yes.

01 03 32 01 CMP I got a garbage for you.

0 01 03 32 04 CDR That LM really gets in the way, doesn't it?

01 03 32 05 CMP Yes, it sure does.

01 03 32 07 CDR Boy, I can see trying to do - alignments on the way to the moon like that. Holy Christmas. I wonder how you'd ever do it?

01 03 32 16 LMP Do them on the planets - sun and the moon - and then get a star in the sextant.

01 03 32 29 CDR Yes, but we wouldn't be able to do any better than we're doing here.

01 03 32 32 LMP Right.

01 03 32 33 CDR You - you just - you'd look and there'd be a star in the sextant, and say, "Yes, that must be my star."

01 03 32 37 LMP That's right.

01 03 32 39 CDR But heck, if you get small torquing angles, it's your star.

( ) 01 03 32 45 CMP Jimmy, I got all the numbers to the planets. When we get all through with all the other stuff, I'd really like to find some time trying to do some daylight alignments.

01 03 32 56 CDR Why sure.

01 03 32 57 CMP Alright?

01 03 33 02 CDR Like day 5, 6 - I mean 6, 7, and 8.

01 03 33 04 CMP Yes. You know, when we're through with everything.

01 03 33 07 LMP Hey, maybe you and I could do an alignment, huh?

01 03 33 10 CMP I don't know. We'd have to talk to the boss.

01 03 33 13 CDR I don't know.

01 03 33 14 CMP It takes a lot of skill.

01 03 33 16 CDR That's right. It takes a lot of skill.

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- 01 03 33 47 LMP When you fire, pitch up, that's the time to look out the window, Dave.
- 01 03 33 51 CMP Yes, I don't want to do that now ...
- 01 03 33 53 LMP Yes, I mean - I don't want you to, either.
- 01 03 34 00 CMP Yes, I think I've got my own ...
- 01 03 34 05 LMP How is it that thing keeps skewing - It hits the deadband, I guess?
- 01 03 34 09 CMP Yes, ... 5-degrees deadband ...
- 01 03 34 23 CDR Man, that LM really obscures a lot of the field of view.
- 01 03 34 29 LMP Well, I guess I feel better after having eaten that.
- 01 03 34 32 CDR You mean that you didn't like it, huh?
- 01 03 34 35 LMP I - No, I forced it down.
- 01 03 34 38 CDR Yes, you got to keep your strength up.
- 01 03 34 42 LMP You're right. What a crummy existence: eat when you don't like to; sleep because it says so on the flight plan; if you don't sleep, you just lay there. You ought to be out carousing around with a bunch of broads or something - or making more money.
- 01 03 34 58 CMP You're making a lot more money. You're overpaid as it is.
- 01 03 35 02 CDR Right. This zero-g existence is easy.
- 01 03 35 05 CMP Wonder what kind of per diem we're getting now?
- 01 03 35 07 CDR A dollar a day, I think. I tried to claim mileage on Gemini IV; they wouldn't give it to me.
- 01 03 35 13 CMP (Laughter)
- 01 03 35 14 LMP Hey, Jim, you got any tape down there?
- 01 03 35 16 CDR Yes, what kind of tape you looking for?

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Day 2

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( ) 01 03 35 19 LMP Something that'll - I want to get this stuff - in a fairly tight ball.

01 03 35 24 CDR Oh, okay. ...

01 03 35 36 CDR Are we getting there, Mr. Maneuverer?

01 03 35 39 CMP Oh, very, very slowly.

01 03 36 01 LMP Damn it. That was the piece I didn't want to get out. Oh, don't go up there!

01 03 36 05 CC Apollo 9, we'll see you over Carnarvon at about 42.

01 03 36 13 LMP Roger. Somewhere at 42.

01 03 36 16 CDR Here you are.

01 03 36 21 LMP You got another one?

01 03 36 23 CDR Another one, whoo!

01 03 36 41 CDR Whoop! That stays here; you get the little piece.

( ) 01 03 36 56 CMP Up to cryo PRESS.

01 03 36 57 LMP Cryo PRESS. Okay. Cryo PRESS is on for the night.

01 03 37 01 CMP Hey, man, I'm sure - I was sure glad when that finally went off last night.

01 03 37 04 CDR Hey, listen. We're going to have to tape that thing over - or something. That mother kept bothering me all night long.

01 03 37 09 CMP Me, too.

01 03 37 10 CDR I have to look away from the sunny - sunlit window, then I'd be looking right at that thing.

01 03 37 24 LMP Okay, Jim, here's some garbage.

01 03 37 39 LMP Try some of my wonderful hydrogen-filled water.

01 03 37 51 CDR Let's see. The star check we want is - the star angle we want anyway is - I wonder if we ought to tell them about our broken readout here?

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210 Day 2

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01 03 38 12 LMP Boy, oh boy, that water tastes terrible, doesn't it?  
01 03 38 15 CDR Is it chlorine or the hydrogen?  
01 03 38 17 LMP The chlorine. That's the first time I've tasted chlorine in it.  
01 03 38 29 LMP You pitch up yet there?  
01 03 38 31 CMP No.  
01 03 38 32 LMP Okay.  
01 03 38 33 CMP Why? You see it?  
01 03 38 36 LMP Turn out your light and watch it.  
01 03 38 38 CMP Wow!  
01 03 38 41 CDR See that.  
01 03 38 42 CMP It really lights it up, doesn't it?  
01 03 38 43 IMP I don't think it lights it up; I think it's more than that.  
01 03 38 46 CMP No, I mean - the sparkle.  
01 03 38 48 LMP Yes, but I think it's - I think it's actually -  
01 03 38 50 CMP Yes, you can almost see the --  
01 03 38 52 LMP -- burning to it, kind of.  
01 03 38 53 CDR Yes.  
01 03 38 57 CMP What do you know?  
01 03 38 59 IMP Boy, that water is so bad, I don't believe it's digestible.  
01 03 39 04 CDR (Laughter)  
01 03 39 05 IMP I'm serious. That's really bad. Has it changed taste for you guys?  
01 03 39 12 CDR Yes. Considerably more chlorine in it than there was.

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Day 2

211

01 03 39 14 LMP Shoo, boy!

01 03 39 17 CMP ... can't hardly see ...

01 03 39 25 LMP Oh, that's so bad it - it - it actually stings my mouth.

01 03 39 30 CDR Oh, yes?

01 03 39 32 LMP Yes. Oh boy. Oh, let me have the water gun. God, that's terrible! Phew!

01 03 39 47 CDR The water gun has really got the gas in it.

01 03 39 50 LMP Yes, I know it, but - -

01 03 39 51 CDR Be prepared. Well, this probably has a lot of chlorine in it, too.

01 03 39 58 LMP I'll try it.

01 03 40 10 LMP Augh yuck, it sure does! Augh! That water gun ...

01 03 40 22 CDR Smells like a swimming pool in here.

01 03 40 24 LMP Oh God, that tastes terrible. Man, let's not do that for another couple of days.

01 03 40 32 CDR (Laughter)

01 03 40 40 CDR Maybe I put in two chlorines and no buffer. What about that?

01 03 40 43 LMP Oh, man, that is really bad. Psshho!

01 03 40 47 CMP It's not too bad with juice.

01 03 40 49 CDR In a disguise, you mean?

01 03 40 52 LMP Wow!

01 03 40 58 CDR Well, let's see. You're not using the DSKY, are you?

01 03 41 01 CMP No.

01 03 41 03 CDR Let me load in my - Drive this thing over to the right place.

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01 03 41 07 CMP

Your what?

01 03 41 08 CDR

Let me just drive the optics over to the right place.

01 03 41 11 CMP

We've got a ways to go, Jim.

01 03 41 12 CDR

I'll just get them there and leave them there.  
Then when they keep dribbling on over, I can watch.  
Let me put this in. 1691; is that correct?

01 03 41 25 CMP

Yes, sir.

01 03 41 30 LMP

You could do an AUTO drive, if you want.

01 03 41 32 CDR

No.

01 03 41 36 LMP

I thought you were going to load the DAP maneuver.

01 03 41 38 CDR

I was, but I ... going the wrong way.

01 03 52 55 CC

And Apollo 9, this is Houston. We're about to lose  
you here at Carnarvon. We'll see you at Huntsville  
at about 59.

01 03 53 04 LMP

Roger. You want me to try that test in AUX, or are  
you still thinking about it?

01 03 53 07 CC

Well, our plan is, we're going to have you disable  
these - the PUGS for this burn, and we'll talk about  
that over the Huntsville or Hawaii. We're coming up  
on 30 minutes of the burn, and we figure we should  
just go ahead and chuck it for this one.

01 03 53 24 CDR

Okay.

01 03 53 25 LMP

What'd he say? - Go ahead and do what for this one?

01 03 53 27 CDR

Disable them.

01 03 53 28 LMP

Well, hell, we might as well run the test then.

01 03 53 31 CDR

No, I think they are going to do something next time.

01 03 53 34 CMP

Okay, Jim, you ought to be just about there.

01 03 53 36 CDR

Okay. There is a star - just about there, Dave.  
It's a bright star. I see another bright star that  
might be Arcturus ... something else ...

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Day 2

213

- 01 03 53 48 CMP Deneb ought to be out there close to it.
- 01 03 53 51 CDR No, I - I can't see anything that dim. There are thousands of little bits and pieces floating around, and then there's a star out about 4 or 5 degrees.
- 01 03 54 00 LMP Anybody happen to know where the PUGS breakers are?
- 01 03 54 03 CMP Yes, they're over here, Rusty.
- 01 03 54 05 LMP Oh, okay. Shoot, I'd like to test that son of a gun ... to see what it's going to do.
- 01 03 54 17 CDR Okay, we're like 30 - 30 minutes prior to the burn. You can ... here.
- 01 03 54 24 LMP You know we lose the PUGS here, and that means we don't have any onboard readout of quantity.
- 01 03 54 32 CMP Yes, that's right; we sure don't, do we?
- 01 03 54 34 LMP (Laughter)
- 01 03 54 41 CDR Well, Dave, all I can tell you is there is a bright star about 4 degrees from the center.
- 01 03 54 45 CMP Beautiful. Jim, you've been doing so good --
- 01 03 54 47 CDR (Laughter)
- 01 03 54 48 CMP -- and you're so proficient now that I have every confidence in you that this'll be the right way.
- 01 03 54 54 CDR I'll tell you there's a thousand of them that aren't holding still, though.
- 01 03 55 03 CMP I think we ought to - get the - Make sure we're ready. Want to do helmets and gloves this time, Jimmy?
- 01 03 55 11 CDR I don't care. I don't think we need to.
- 01 03 55 14 CMP Goody.
- 01 03 55 18 CDR It's going to be a short one.
- 01 03 55 21 LMP I need to get my glove out, to get my watch off.
- 01 03 55 39 CDR 27 seconds - Is that what it is here?

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Day 2

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01 03 55 41 CMP I think ... - -  
01 03 55 42 LMP ... 28.3.  
01 03 55 45 CDR Okay. 243 to 260. Okay, it's off 2 degrees in sha  
and 1 degree in trunnion - -  
01 03 56 00 CMP Oh, that - that's something new to me.  
01 03 56 01 CDR Yes, I'm not sure that that's the star, though.  
All I - There's just a star there, Dave, ...  
01 03 56 05 CMP Yes. Yes, if there's no - -  
01 03 56 08 CDR It's a bright star - -  
01 03 56 09 CMP - - ... in the daytime.  
01 03 56 10 CDR There are no other stars that I can see.  
01 03 56 12 CMP Close that panel down there - the B-1.  
01 03 56 20 LMP Yes, I'll tell you, I sure feel a lot better after  
I ate.  
01 03 56 24 CMP Even when you're not hungry, huh?  
01 03 56 25 LMP Even when you're not hungry. Yes, it's a terrible  
thing, to force-feed, but -  
01 03 56 31 CDR Okay, OPTICS to zero and CMC. Gee, I'll bet I'm  
getting about that.  
01 03 56 39 LMP Yes, I've been listening to that.  
01 03 56 41 CDR (Laughter) Well, now I have a wealth of information  
available to me: the moon, landing lunar, the quad  
Do you need any of this hot poop for your -  
01 03 56 59 CMP ... nobody else is doing them anyway.  
01 03 57 02 CDR Let me put the optics away, and I'll be right with  
you.  
01 03 57 49 CDR We ought to check these optics in the morning and  
see if they're still clean.  
01 03 57 55 CMP Well, you been putting your fingers on them?

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Day 2

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- 01 03 57 57 CDR No, just the - All the water that's been splashing around and the lint and putting your fingers on them. The whole bit.
- 01 03 58 02 CMP You're not supposed to put your fingers on them.
- 01 03 58 04 CDR I know you're not. But you're not supposed to have dirt floating in here either. We do have that.
- 01 03 58 11 CMP Not more than 90 percent of the time.
- 01 03 58 16 LMP Yes, we do. 100 percent of the time!
- 01 03 58 47 CDR I've yet to make that thing work. ...
- 01 03 59 04 CDR The spacecraft looks like it is getting smaller all the time.
- 01 03 59 17 LMP I think it looks like it gets dirtier.
- 01 03 59 18 CMP Kind of like the TV set doesn't look as good, and the wife doesn't look as good, you know.
- 01 03 59 24 CDR Yes.
- 01 03 59 25 CMP It's all those things. Familiarity breeds contempt.
- 01 03 59 28 CDR Where's that tape I had down there?
- 01 03 59 38 CDR How long to the burn time?
- 01 03 59 40 LMP 25 minutes.
- 01 03 59 46 CMP Hey, my toothbrush managed to stay there during all that.
- 01 03 59 58 CC -- CAP COMM. How do you read?
- 01 04 00 07 CC Roger; understand. Would you give me a call when you do?
- 01 04 00 12 LMP Can you hear that?
- 01 04 00 13 CDR ... bad and then some.
- 01 04 00 15 CMP Give them extra volume when you -
- 01 04 00 18 LMP Houston, Apollo 9.

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01 04 00 21 CC Apollo 9, Houston. You are loud and clear.  
01 04 00 27 LMP Roger; you're still quite weak, but -  
01 04 00 50 CC ...  
01 04 01 08 LMP The Huntsville, bouncing down off a satellite ...  
01 04 01 16 LMP Yes, it's the Huntsville off a satellite, that's why.  
01 04 01 35 CC ...  
01 04 01 55 CDR Wonder what this goes to?  
01 04 02 18 LMP What?  
01 04 02 19 CDR Nothing, I was just listening. Here, Rusty, the flight plan again. Can you stash it away over there, or you want me to just hold it?  
01 04 02 29 LMP Oh, I'll stash it away.  
01 04 02 45 CMP First unsuited burn! Okay. A new milestone. Where do I put my head?  
01 04 02 52 CDR That's what I was wondering - Do you want to put the helmet on?  
01 04 02 58 CMP I think I will, because it puts my head upright.  
01 04 03 01 LMP I bet you don't have a bit of trouble holding it.  
01 04 03 03 CMP I bet you're right. Good idea to leave it like it is.  
01 04 03 08 LMP Houston, Apollo 9. How do you read now?  
01 04 03 11 CC Apollo 9, this is Houston. I read you loud and clear. Did you copy my last transmission?  
01 04 03 17 LMP That's a negative. You were way down in the mud.  
01 04 03 21 CC Okay. We're recommending that you disable the PUGS for this burn. We'd like to have you turn the SPS GAGING switch OFF, and pull the two circuit breakers on panel 8, labeled SPS HEATER GAGING, MAIN A/MAIN B.  
01 04 03 39 CDR Okay?

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Day 2

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01 04 03 40 LMP Roger. SPS GAGING, OFF, and the breakers are OPEN.

01 04 03 44 CC Okay, very good. Thank you, Apollo 9.

01 04 03 47 LMP Roger.

01 04 03 50 CDR Okay, now, you want the DAP loaded, maybe?

01 04 03 53 CMP Yes, sir. Roger.

01 04 03 55 CDR ...

01 04 04 01 CMP He didn't say any more about those dips, did he, Rusty?

01 04 04 05 CDR No, he didn't.

01 04 04 06 LMP No.

01 04 04 07 CMP Okay, ...

01 04 04 12 LMP Remind me, Jim, on those cryo's. We want 175 MIN.

01 04 04 16 CDR 175 MIN, okay.

01 04 04 20 CMP The LM's going to be the heavy one after this one, you know?

01 04 04 23 LMP Yes.

01 04 04 26 CDR Yes, how about that?

01 04 04 41 LMP Boy, it's almost bedtime.

01 04 04 47 CDR Yes.

01 04 04 57 LMP Maybe I'll close up these tapes, so I don't get all that stuff in the tape.

01 04 05 07 CDR 10 degrees in pitch, 10 degrees in roll, and about 3 degrees in yaw, with two out. That's not bad.

01 04 05 31 LMP I'm going to test the camera here again. Okay, it works.

01 04 06 00 LMP Getting them both banked again, huh?

01 04 06 01 CC ... - -

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01 04 06 02 CDR

Yes.

01 04 06 15 LMP

Houston, Apollo 9. You're breaking up very badly.  
Lots of noise on the S-band cutting you out there.

01 04 06 22 CC

Roger. We'll see you over Hawaii at 10.

01 04 06 24 LMP

Roger. Hawaii at 10. You came through pretty good  
that time, if you want to try it again.

01 04 06 33 CC

No, I understand that we're LOS.

01 04 06 36 LMP

Okay. We get the GO/NO-GO over Hawaii.

01 04 06 50 CDR

Okay.

01 04 06 58 LMP

Now, isn't that funny? That damn fuel cell O<sub>2</sub> flow  
(cough) came back in (cough).

01 04 07 26 LMP

Ain't any ... like the service. ...

01 04 07 36 CDR

Better ... the PGNCS (laughter).

01 04 07 38 LMP

Test caution and warning, here.

01 04 07 45 CDR

Get your MASTER?

01 04 07 46 LMP

Yes.

01 04 07 48 CDR

Okay.

01 04 07 53 LMP

Okay, you got the DAP loaded and all that?

01 04 07 56 CDR

Yes.

01 04 07 57 CMP

DAP's loaded.

01 04 07 58 LMP

TVC's roll jets selected?

01 04 08 00 CMP

Roger; AC ROLL, OFF.

01 04 08 02 LMP

Okay, and you got an ullage selection this time,  
too, right?

01 04 08 06 CDR

Yes, that's right.

01 04 08 07 CMP

I don't know ... ullage is ...

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Day 2

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01 04 08 12 LMP Here's where we use our fuel.  
01 04 08 14 CMP What did we agree to? Four jets, 17 seconds. Right?  
01 04 08 18 CDR I got four jets, 18 seconds.  
01 04 08 20 LMP 17.  
01 04 08 22 CDR What's the flight plan say?  
01 04 08 28 LMP Flight plan says four jet, 18, unfortunately.  
01 04 08 33 CDR Pity.  
01 04 08 35 LMP Pity. You've got a slow reaction time, though, Dave.  
01 04 08 40 CMP Say again?  
01 04 08 41 LMP I said you've got a slow reaction time.  
01 04 08 44 CMP Yes. Let's hope I got a safe SPS engine, too.  
Give me a number for the DELTA-V counter, please.  
01 04 08 51 LMP Okay, DELTA-V counter is 294.5.  
01 04 08 56 CMP Thank you.  
01 04 08 58 CDR Can you verify that change?  
01 04 08 59 LMP Yes. Sure. 294.5.  
01 04 09 02 CDR Okay, ready to PRO down this thing here?  
01 04 09 05 CMP Yes, I think we can.  
01 04 09 06 LMP What time is it?  
01 04 09 07 CMP 15 minutes. Oh, we're alright --  
01 04 09 10 LMP Yes, let's wait.  
01 04 09 11 CMP -- for a while. 18 seconds.  
01 04 09 17 LMP Boy, that sun is really in the wrong place, you  
know it?  
01 04 09 19 CMP Yes.

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01 04 09 20 CDR It hits you very nicely for these burns, doesn't it?

01 04 09 22 LMP Yes, all these north burns. Luckily, at burn time it's a little bit better. Look at that thing.

01 04 09 39 CMP Oh, my goodness!

01 04 09 42 LMP That's how my stomach feels.

01 04 09 44 CDR Yes, mine too. That's exactly what I was thinking. I imagine my tummy looks exactly like that.

01 04 10 25 CC Apollo 9, this is Houston through Hawaii; standing by.

01 04 10 31 LMP Roger, Houston; Apollo 9. We're coming up on the burn here.

01 04 10 35 CC Roger. You're loud and clear, and we'll have your GO/NO-GO shortly. Let everybody take a look at your data.

01 04 10 42 LMP Okay.

01 04 24 08 LMP Okay, I've got EMS to AUTO.

01 04 24 10 CMP Okay, EMS to AUTO.

01 04 24 25 CDR 20 seconds.

01 04 24 26 LMP ... Good ullage. Alright ... Proceed.

01 04 24 32 CDR 10 seconds.

01 04 24 38 CMP 599, proceed.

01 04 24 44 CMP Good start; ... Pc is good; GIMBAL MOTORS are good.

01 04 24 48 CDR Looks good, men. 19 seconds. 15 seconds on the PGNCS.

01 04 24 57 CMP Okay, looks good.

01 04 25 05 CMP 6, 5, 4; looks good.

01 04 25 11 CMP Shut down? A-1 four shut down. GIMBAL MOTORS, Rusty?

01 04 25 14 LMP Ready.

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- 01 04 25 15 CDR PITCH 1, YAW 1, 2 - PITCH 2 - -
- 01 04 40 48 CDR Okay, so the purge we're going to do later; CRYO FANS, O<sub>2</sub> and H<sub>2</sub>, ON, for 3 minutes; and the fan thing - Let's see. Oh, that little goody I looked up in the big flight plan: our special little heater operation. Wonder if they want to do the fan?
- 01 04 41 13 LMP Which one?
- 01 04 41 14 CMP I would assume we'd do the - You know, the powerdown and let these things go.
- 01 04 41 18 LMP I would think we would.
- 01 04 41 19 CDR H<sub>2</sub> - -
- 01 04 41 20 LMP I think we ought to - -
- 01 04 41 21 CDR - - fan or the O<sub>2</sub> fan?
- 01 04 41 22 LMP Well, if we just turn it on to stir it up, that'll get rid of the - the stuff, and it's not going to disturb - and as long as we don't put any heat in, that is not going to disturb it for 3 minutes.
- 01 04 41 32 CMP Yes, I'd assume that we'd do that, unless they say otherwise.
- 01 04 41 37 LMP Yes. Okay, little timer, coming out. H<sub>2</sub> 1. Watch this, David, I'll try this O<sub>2</sub> fan. It didn't do it that time. Last time it went "boing!"
- 01 04 42 20 LMP Waste water dump - let's see how our waste water is doing. It - it's 57 percent today. Want to dump it?
- 01 04 42 30 CDR Yes, we probably ought to.
- 01 04 42 31 LMP Yes.
- 01 04 42 32 CMP It's down to 25 ...
- 01 04 42 34 CDR Here's the flight plan back again.
- 01 04 42 35 CMP Okay. You want it back?

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01 04 42 38 CDR No, I said, "There, it's back again to you for a minute." Oh, let's see. Where'd I put all that stuff? Oh, it's way up here on top.

01 04 42 51 LMP When do we have another CO<sub>2</sub> canister change? Tonight or tomorrow morning?

01 04 42 55 CDR Tonight.

01 04 42 57 LMP See if I find that? I don't see it.

01 04 43 03 CDR Yes, wasn't there one in there?

01 04 43 04 LMP No.

01 04 43 05 CMP I don't see it either. Yes, sir. 30 hours. I thought.

01 04 43 12 LMP 30 hours! Oh, hell, I'm looking at the wrong flight plan here. Hold on.

01 04 43 16 CMP Got an eat period in here.

01 04 43 19 CDR I'm eating again, fellows.

01 04 43 21 CMP I could take a little more before bed.

01 04 43 24 CDR I'd like to get rid of this gas, or whatever that stuff is that's churning around.

01 04 43 27 CMP Why don't we get out of our suits? This would be a good time to do that. Huh?

01 04 43 31 CDR Hey, it would. I could do that before I went down there and got the roll.

01 04 43 33 CMP Why don't you - why don't you hop out of your suit?

01 04 43 36 CDR I wonder if I ought to leave my suit on tonight. I really froze to death last night.

01 04 43 40 CMP Why don't you change your suit?

01 04 43 44 CDR You know what I --

01 04 43 45 LMP Look at that. I got a washer hanging on the window.

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01 04 43 50 CDR Maybe I could get a - Rusty, were you warm in that sleeping bag?

01 04 43 53 LMP Yes.

01 04 43 54 CDR There's another one down there, isn't there?

01 04 43 55 LMP Yes.

01 04 43 56 CMP Yes.

01 04 43 57 CDR Maybe if I put my lightweight suit on, and put my - Get in the sleeping bag, too. You know.

01 04 44 07 LMP Here's today's collection of trash. Here's your thing, Jim.

01 04 44 12 CDR What thing?

01 04 44 13 CMP The thing being the ... - -

01 04 44 16 CDR No, I have another one down here.

01 04 44 17 CMP Okay, check.

01 04 44 20 LMP By the way, red to red, blue to - I mean, red to blue, blue to red works good, having the red this way. Got a few things on it, too.

01 04 44 31 CDR Like this blue in, and then suck it out someplace else?

01 04 44 34 LMP Yes.

01 04 44 44 CMP Did you know we have some rates! I mean just all of a sudden.

01 04 44 47 CDR They're looking good to me.

01 04 44 50 LMP We turned the EMAG's off.

01 04 44 53 CMP No. I mean - I can tell - I mean, by watching the IMU.

01 04 44 57 CDR Oh.

01 04 44 58 CMP But it has stopped moving.

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- 01 04 45 00 LMP It stopped moving?
- 01 04 45 01 CMP Yes.
- 01 04 45 02 LMP Hey, you have a big frosty spot over there, don't you?
- 01 04 45 03 CMP Yes.
- 01 04 45 04 CDR Oh, yes. It comes and - But I think that's on the inside, isn't it?
- 01 04 45 08 CMP Yes.
- 01 04 45 09 CDR That's on the inside of the inside pane.
- 01 04 45 11 CMP That's correct. I can wipe it with my fingers.
- 01 04 45 17 LMP It's a colder window over there. Well, shoot. I guess I've lost the COMM channel. Audio -
- 01 04 45 36 LMP And when you're done down there, you're going to dump the waste water, right?
- 01 04 45 39 CDR What?
- 01 04 45 40 LMP You're going to dump the waste water, too, huh?
- 01 04 45 41 CDR Yes, as soon as I can get my suit off, I can dump the waste water.
- 01 04 45 43 LMP Okay.
- 01 04 45 45 CMP Pardon me, gang. I just said "Pardon me." I got rid of some gas!
- 01 04 45 56 CMP Hey, listen, I'll take - Before you get into all that, how about handing me a food pack, Jim?
- 01 04 46 05 LMP Whoo, boy! (Laughter) Hey, I'm hungry too, now. EMERGENCY CABIN PRESSURE to BOTH. We got that?
- 01 04 56 33 CDR I got them.
- 01 04 56 45 LMP Houston, Apollo 9. We'll catch you with the injector TEMP on next station.

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0 01 04 56 51 CC Roger. We're about to lose you here at Ascension and the next station is Tananarive at about 04. Our COMM has been pretty bad. I won't even try to talk with you unless you contact us, and I'll contact you next over Carnarvon at 19.

0 01 04 57 09 LMP Roger.

0 01 04 57 22 LMP What do you say?

0 01 04 57 26 CMP I thought I heard something. Maybe it was you, bumping around.

0 01 04 57 39 LMP Thought we had some hoses.

0 01 04 57 40 CMP Yes.

0 01 04 58 30 LMP Boy, that's as low as I've seen those fuel cells.

0 01 04 58 35 CMP Sure has powered down.

0 01 04 58 37 LMP 15 amps apiece.

0 01 04 58 39 CMP Huh!

0 01 04 58 48 LMP Jim, can you get some systems test meter stuff? 5 C and D; 6 A, B, C, D.

0 01 04 59 16 LMP 4 point what?

0 01 04 59 24 LMP Okay.

0 01 05 00 14 CMP I put it in the far right-hand corner over there?

0 01 05 00 38 CMP Do you have your little crew logbook, Rusty? You did? I always get you when you put it away, now.

0 01 05 00 47 LMP Yes.

0 01 05 00 49 CMP Why don't you just leave it out over there, because I - Stick it up there while the night's going on in case ... (Sneeze)

0 01 05 02 31 LMP Hey, do you know which radio they're ...?

0 01 05 02 59 LMP Jim, when you're ready down there, you can dump the water anytime. Okay?

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01 05 04 21 LMP Hey, our surge tank is tanked up again. Do you want to fill it again?

01 05 04 51 LMP Hey, Dave.

01 05 04 52 CMP Yes.

01 05 04 53 LMP The surge tank is full. Do you want to dump it?

01 05 04 58 CMP Jim was going to fill the ...

01 05 05 44 LMP O<sub>2</sub> ... is 82 and 84.

01 05 06 24 LMP ...

01 05 07 47 LMP Houston, how do you read over Tananarive here?

01 05 08 25 LMP Yes. Yes. Already.

01 05 08 57 LMP Check. 52 percent.

01 05 09 15 CMP Turn your lights out back there, Jim.

01 05 09 25 LMP We just passed Tananarive.

01 05 09 30 LMP Isn't that pretty.

01 05 09 46 LMP Boy, that airglow is really thick outside. Wow! On the side, it's not very thick at all.

01 05 10 16 LMP Stand by. 49. Got a long way to go.

01 05 10 26 LMP Hey, it's real thick out ...

01 05 13 02 LMP ... the tunnel for LM PRESS.

01 05 13 06 CDR Okay.

01 05 13 12 LMP How about the systems test meter? 4 Delta?

01 05 13 14 CDR Right.

01 05 13 15 LMP Good.

01 05 13 29 LMP It's 35.

01 05 14 11 CDR Boy, my lips are drying out.

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01 05 16 02 CDR I need some cold water. How's yours?

01 05 17 14 LMP 7 ounces of cold, please. Oh, Jim, you can shut off the deadband, please. Yes, it's already down to 20.

01 05 18 07 CMP Hey, we're all done through powerdown.

01 05 18 40 LMP Thank you.

01 05 28 28 CC -- 034:19:01, 3859; 023 4 Charlie, plus 145, minus 1675, 035:56:03, 4856; 024 Alfa Charlie, minus 216, minus 0070, 036:24:11, plus 53 - -

01 05 30 07 LMP At 30 hours, we got to change the cartridge. At 30 hours, we change a CO<sub>2</sub> cartridge.

01 05 30 25 CMP SIMPLEX A isn't taking. If we want them, we'll tell them on B. They'll be standing by B.

01 05 30 29 LMP B and A. They're going to be receiving both. Right.

01 05 30 45 CMP What did I say?

01 05 30 46 LMP Huh?

01 05 30 47 CMP Isn't that what I said?

01 05 30 48 LMP Well, the way you said it, it sounded like you were saying they were going to listen only on B.

01 05 30 51 CMP No, I said that we'd be on SIMPLEX B - A, and they'd be standing by.

01 05 30 55 LMP Yes, you said they'd be listening on B. Yes.

01 05 31 01 CMP Do you want to come up here, Jimmy? Do you want to go down; you're going to get down. Go ahead. I'll eat.

01 05 31 08 LMP Well, I - You want to copy the - finish up the block data?

01 05 31 10 CMP Yes.

01 05 31 11 LMP Okay. We should be getting it over Guam. I'm - I got that far through.

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- 01 05 31 37 CMP You know it would be better if you got something to eat or something.
- 01 05 31 42 LMP Yes?
- 01 05 31 43 CMP If I go down, because then we'll have the sets off.
- 01 05 31 45 LMP Okay. Good idea.
- 01 05 31 46 CMP Then Jimmy can come up here, and I'll go down and ... stay there.
- 01 05 31 51 LMP Okay.
- 01 05 32 18 LMP Hey, I want to chuck those. I know damn right well I'm not going to eat them. Those are this morning's. You probably ought to tape over the end. Yes. And then throw them in the PSB there, I guess.
- 01 05 32 59 LMP Yes, I can put it in, Jim.
- 01 05 33 35 CC Apollo 9, Houston. Do you read through Guam?
- 01 05 33 39 LMP Houston, Apollo 9. Roger; we read you; how us?
- 01 05 33 43 CC Read you 5 square. How far did I get?
- 01 05 33 46 LMP Okay, I got to the last line in 24 Alfa Charlie, and I got a 53 there and that's all.
- 01 05 33 54 CC Okay, the last line in Alfa Charlie is 5397. And reading on the next one: 025 4 Charlie, minus 178, minus 1620, 039:13:13, 8020. The last one: 026 Alfa Charlie, minus 042, minus 0260, 039:33:59, 4000. That's the end of the update. I'd like to go back to the third line and 4 Charlie - 023 4 Charlie, the third one I read. The third line in that should be minus 1625. And the - your SPS trim angles: pitch, minus 0.9; yaw, minus 0.7.
- 01 05 35 35 LMP Okay, a readback on them all. Do we have enough time to read them all back?
- 01 05 35 39 CC Apollo 9, before you start the readback, we'd like to have you turn on the H<sub>2</sub> purge heaters. And what we are working up to is, just before your rest period,

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it looks like we're going to have to purge to get the pressure in H<sub>2</sub> cryo tanks down to 175.

- 01 05 39 31 LMP Okay, the LMP is now reading 8002. Whoeee!
- 01 05 39 41 CDR Hello, Houston. This is CDR. I already have my suit off, and I've got it packed down in the bottom. Do you want it or - I can get it for you, if you really want it.
- 01 05 40 03 CDR Houston, Apollo 9.
- 01 05 40 07 LMP Houston, Apollo 9. Jim, I'm not hearing you at all. You must not be on intercom. You probably don't have the suit power on or anything.
- 01 05 40 37 LMP How come I'm not hearing you?
- 01 05 40 47 LMP Here you are, Jim. Jim! Jim!! Can you hear me?
- 01 05 40 54 LMP I know - Why aren't you hearing me?
- 01 05 40 59 CDR I wonder if I can talk to Dave.
- 01 05 41 00 LMP I don't know. Okay.
- 01 05 41 15 LMP How was it coming out, David? Any better than going in?
- 01 05 42 00 LMP Hum.
- 01 05 42 10 LMP What? I didn't hear you.
- 01 05 42 19 LMP Oh, ... busy.
- 01 05 42 50 CDR Whoeee! That hot water is really hot water.
- 01 05 42 54 LMP Yes, it is, isn't it?
- 01 05 43 04 CDR (Singing)
- 01 05 43 19 CDR Boy, that orange tastes good. Umm!
- 01 05 43 21 LMP Yes, doesn't it though?
- 01 05 43 26 LMP It doesn't dissolve too well, though.

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01 05 43 29 CDR I'm sure I had a bag of water up here. Where did I - where'd it go? ...? There it is. Which is the ...?

01 05 44 08 CDR (Laughter) The way you did that, it looked like you stepped right through a hole. You went up a little ways, then you went down and you just kept getting lower and lower and lower.

01 05 45 18 CDR What is it?

01 05 45 19 CMP Going out?

01 05 45 20 CDR (Laughter) I doubt that.

01 05 45 37 LMP You monitoring the radio, Jim?

01 05 45 40 CDR Yes.

01 05 45 41 LMP Okay.

01 05 45 45 LMP I'm going to start disrobing here.

01 05 45 46 CDR Alright.

01 05 46 05 LMP (Laughter)

01 05 46 12 CDR Ooh, that's hot!

01 05 46 41 CDR Oh, hell. I guess I got a wad in there. Mostly just gas.

01 05 47 01 LMP What? Yes.

01 05 47 09 CDR Boy, do my legs feel better today - Whoo! They really ached last night.

01 06 17 44 CDR Well, that's what I did.

01 06 17 46 CC Okay, very good. That solved that problem and we've reminded you of the canister, and that will keep you from getting a MASTER ALARM, and we're not going to answer you anymore.

01 06 17 55 CDR What are you, a smart guy? Hey, which one of those good teams is on right now, Gold, or White, or Orange?

01 06 18 03 CC It's the - it's the G<sup>2</sup> team, good Gold.

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01 06 18 08 CDR

The big Gold, huh? Okay.

01 06 18 42 CDR

Hey, Smokey, is Sonny coming on tonight?

01 06 19 00 CDR

Change A and put in B - This place is foul out there.

01 06 19 20 CDR

That's what his mother calls him. Hadn't you heard about that? Yes. Yes, yes, when Ward got - tried to make an astronaut. You know, he lives in Jackson. My mother sent me a clipping - Oh, on - There's another boy from Jackson who wants to be an astronaut. It was a clipping from the paper, and it was a report from Mrs. Ward saying, "Oh, Sonny wanted to be an astronaut for such a long time, and I'm glad Sonny made it" (laughter). You know, the first time I saw him down here, I said, "Hi, Sonny, how are you doing?" Shoot, but he turned 18 shades of red and purple, and Sam Ward almost dropped dead on the spot. He said, "I thought I got rid of that!"

01 06 20 31 CDR

Yes, but you've got a name for - Oh, shoot, no, I haven't; have you got any nicknames?

01 06 20 47 CDR

(Laughter)

01 06 21 00 CDR

(Laughter)

01 06 21 09 CDR

Yes, those are great.

01 06 21 34 CDR

It says 30:20.

01 06 21 49 CDR

Do you realize, Dave Scott, that if you got sick right now and you couldn't fly until the end of June, that you'd get paid for it without this flight?

01 06 22 06 CDR

I'm just trying to get even; I don't - at least I don't have my heavy boots on.

01 06 22 17 CDR

Hey, when you get through with that, fellow, would you throw this in the garbage?

01 06 22 25 CDR

Dave, the - the only two that we need are those two right there on the left. Number 1's in front; number 2's in the back. I'll get you that piece of tape. It's in the ...

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- 01 06 23 18 CDR (Laughter) Shake it. Careful; it's going to run off. ...?
- 01 06 23 51 CDR Let's see, did you ever get that ... on the wall fill up - filled up full?
- 01 06 56 33 LMP I'm about ready to go to sleep. I'm about ready to go to sleep.
- 01 06 56 38 CMP Now, why do you want to do that?
- 01 06 56 43 LMP Sure.
- 01 06 57 10 LMP No, I'm sure I don't. Why don't you take yours?
- 01 06 57 46 LMP Why don't you turn it - Oh, yes, you could turn it down, but he wants a lot of air, I guess. If you can turn it down -
- 01 06 58 55 CDR Ooh. (Yawn)
- 01 07 07 36 CMP What? It's right underneath you.
- 01 07 18 10 CMP Hey, Jim, (yawn) did you say you knew where the - Excuse me - where the lightweight headsets were?
- 01 07 18 30 CMP I can get it. I think I might try it today. I'll get it.
- 01 07 18 39 CMP We need somebody to go on watch.
- 01 07 18 57 CMP My ears can't breathe with this thing on.
- 01 07 19 10 CMP That's what I'm doing.
- 01 07 20 15 CMP Oh, yes, good hand. I'll tell you in a minute. JAD. Must be James A. Divitt. You want yours?
- 01 07 21 13 CMP It says RS. Now who in the world would that be? Hey, you could - There's one - Oh, this is C. We got a C. Why don't you pull the other one? Let's look at it while you're already down there.
- 01 07 21 53 CMP Shoot, another red one?
- 01 07 21 59 CMP Oh, here's Rusty's. RLS. Okay. We got them all.
- 01 07 22 14 CMP Yes. What?

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- 01 07 22 27 CMP It is?
- 01 07 22 43 CMP Here's yours.
- 01 07 23 08 CMP Huh? Yes. I'll tell you what. Huh? No, just turn it on and leave it on. We don't have to wake each other up.
- 01 07 23 30 CMP Hey, Rusty. Here's your COMM stuff. Maybe you want to put it in your pocket. Then you know where it is. Get it in your eye? Up your nose?
- 01 07 23 56 CMP (Laughter) I figured you'd put it in your pocket and you'd know where it was.
- 01 07 24 10 CMP Here, give me your - I'm missing a piece, so let me - I'll - I'll take it.
- 01 07 24 15 CMP I've twisted a bloody peach in here. Yes.
- 01 07 24 25 CMP The thing that goes from here to here. I'm not even going to use that. Forget it. Stick it in your pocket.
- 01 07 24 35 CMP Too complicated for me to understand.
- 01 07 24 41 CMP That's yours, old buddy.
- 01 15 23 50 CDR Roger; understand. 39:55, primary glycol accumulator refill, fill to 50 to 55 percent, IMP 2-7, step 4. Gumdrop.
- 01 15 24 12 CDR Houston, 9. Did you get the readback?
- 01 15 24 15 CC Houston; Roger. Came through kind of weak, but it was okay. Change: move S-band conference MSFN relay up to 44 plus 18 over Honeysuckle, systems page 27. Over.
- 01 15 24 59 CDR Okay, move S-band conference MSFN relay up to 44 plus 18 over Honeysuckle, systems page 27.
- 01 15 25 12 CC Roger. Next one: move CSM one-way relay up to 45 plus 38 over Carnarvon, systems page 31. Over.
- 01 15 25 45 CDR Roger. Move CSM one-way relay up to 45 plus 38 over Carnarvon, systems page 31.

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01 15 25 57 CC

Roger. That's all of the general things. We're going to try to give your state vector and your reference - REFSMMAT; we'll send it over Guam at 40 plus 51.

01 15 26 13 CDR

Roger. 40 plus 51 for the state vector REFSMMAT.

01 15 26 19 CC

Roger; and I have your consumables.

01 15 26 24 CDR

Roger; and the consumables, okay.

01 15 26 29 CC

GET 039: 75, 17, 76, 22, 81, 22, 76, 22; 528, 44, 36, 31, 39. Over.

01 15 27 10 CDR

Okay. 039, 75, 17, 76, 22, 81, 22, 76, 22; 528, 44, 36, 31, 39.

01 15 27 35 CC

9, Houston. Your readback is correct.

01 15 27 38 CDR

Roger.

01 15 28 38 CMP

Houston, 9. Did you want to go through the block data, also?

01 15 28 43 CC

Roger. I have it if you're ready.

01 15 28 46 CMP

Okay, go.

01 15 28 47 CC

Roger. 027 Alfa Charlie, plus 090, minus 0310, 041:16:03, 3529; 028 2 Alfa, plus 249, minus 026 ...

01 15 30 05 CC

-- plus 340, minus 0290, 046:24:14, 385 ...

01 15 39 23 S

-- ... rest of that mission and have the trouble postflight. Let me ask you two other quick things while we've got you on here and ... Have you had any symptoms at all up there, Jim - any of you?

01 15 39 31 CDR

Symptoms of what?

01 15 39 32 S

Any - anything of the cold. You sound pretty nasal up there, and have you had anything that looks like any recurrence of your cold symptoms?

01 15 39 43 CDR

I don't believe so. My - my nose is stuffed. I'm going to slip some nose drops in this morning, but I expected that, and - Just let me check this.

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- 01 15 40 57 CDR      No, Rusty doesn't have any symptoms of a cold.
- 01 15 41 01 CMP      And I don't have it at all, Chuck, at this date.
- 01 15 41 06 S      Good. Okay, Jim, it's no worse as far as you're concerned than it was in Gemini. Is that right?
- 01 15 41 09 CDR      Negative.
- 01 15 41 12 CMP      As a matter of fact, Jim opened up the nose drops yesterday, and we had enough fumes in here to clear everybody up within 10 minutes.
- 01 15 41 18 S      Very good. Listen, could we get a quick report on what you did for sleep yesterday and today? We didn't get that yesterday morning and we'll wipe it out right now, if you got a minute.
- 01 15 41 29 CDR      Okay, this is Jim. I got up - On the first night, I slept in about 10-minute stretches, very restless; and I don't know how much I got cumulative, maybe a couple of hours. Last night, I slept pretty good in about - Except I had one big 4-hour period, and I had another one of about 2 or 3 hours. I slept pretty well last night.
- ( )
- 01 15 41 50 S      That's good. Your heart rate looks that way, Jim.
- 01 15 41 53 CMP      Okay, this is Dave. I slept the first night about four 1-1/2-hour cracks; and, last night, I guess I got about, oh, 7 hours total and about, maybe a couple of 3-hour stretches and another hour or hour-and-a-half stretch.
- 01 15 42 09 S      And all good?
- 01 15 42 11 CMP      Yes, it's all pretty good.
- 01 15 42 13 S      Good show. How about Rusty?
- 01 15 42 17 CMP      Rusty feels like he got a good 7 hours last night. As a matter of fact, he wanted to - he wondered when he woke up how long it had been since he went to sleep.
- 01 15 42 26 S      Good. How about the first night, Dave?

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- 01 15 42 32 CMP He says he thinks he got about 7 also, and he said he only woke up one time last night.
- 01 15 42 38 S Okay, I think that - that clears us from here. We've still got some - some time there. Did any of you get any motion sickness in the - yesterday?
- 01 15 42 54 CDR This is Jim. Negative, I don't have any. Just a second.
- 01 15 42 57 CMP Dave; negative.
- 01 15 43 05 CMP Rusty says he took a Marezine this morning just to stay ahead of it. And he also, I guess, wanted you to know that he took a Seconal each night.
- 01 15 43 12 S He did take a Seconal last ... or the ...
- 01 15 43 18 CMP Both nights.
- 01 15 50 25 CMP Yes, sir.
- 01 15 50 37 CMP Tool - no, tool E up there is the one you need. They're both up by your shoulder.
- 01 15 51 22 CMP Yes, I'm sure they'll want to watch it, and we got about 4 minutes before the time that he called.
- 01 15 52 08 CMP Hey, this food even smells good this morning. I don't know whether I can smell it or not. It's all wrapped up. How can I smell it?
- 01 15 52 20 CMP Oh, gee, that's nice.
- 01 15 53 43 CMP Hey, can somebody reach the hot-water spigot down there?
- 01 15 54 02 CMP Thank you. This is good old hot. I'm going to have me some hot chocky.
- 01 15 54 23 CMP Well, Jim, we're not over a station. I guess they don't really care, so anytime you're ready, you can grab your tool E and proceed to the glycol accumulator fill; and I shall read you the checklist - a very long, difficult process.

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0 01 15 54 50 CMP

You're not broadcasting to me. You're on PTT. That's alright. I can see your motion. Excellent! Ooh, that's nice.

01 15 55 20 CMP

Okay, step number 1: PRIMARY ACCUMULATOR FILL valve - ON! Let me see, we want to go to 50 to 55 percent; and right now we're about 35, so just turn it ON and I'll give you a call at 50, and we'll see how it stabilizes out. Okay?

01 15 55 41 CMP

Add more. Okay, turn it OFF. I figured that. Okay, turn it - you can turn it back ON. It just takes it awhile - It'll overshoot.

01 15 55 58 CMP

Okay, OFF.

01 15 56 01 CMP

Okay, back ON.

01 15 56 07 CMP

Okay, OFF.

01 15 56 11 CMP

Be ON just a tweek.

01 15 56 16 CMP

Okay, OFF. Beautiful. Well done. Now turn OFF, and that's all. Gee, you did a good job, Jim.

01 15 56 30 CDR

Okay, are you reading me now?

01 15 56 32 CMP

Yes.

01 15 57 01 CMP

Oh, yes ...

01 15 57 11 CMP

Okay, let's see, and the first thing we're going to have to do, is in 1 hour and 3 minutes is the P51, so that gives you an idea what we are in time.

01 15 57 19 CDR

Okay, fine.

01 15 57 28 CMP

Here you are. I'm going to go ahead and fill my other bags up right away.

01 15 57 37 CDR

Well - Why don't you keep - why don't you keep going? Why don't you keep - You want me to open this stuff for you?

01 15 58 38 CMP

Whew!

01 15 58 45 CDR

Too many things to hold on to here.

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- 01 15 59 05 CDR Okay? Why don't we get another one then?
- 01 15 59 22 CDR What is that anyway? I never even heard of it.  
You cracked one?
- 01 15 59 34 CMP Let's hope we get this squared away so we can get  
our update.
- 01 16 00 19 CDR Think I'll take a couple of aspirins; just a touch  
of a sign of a headache - runny nose.
- 01 16 00 41 CDR Get that? ...
- 01 16 00 43 CMP Huh?
- 01 16 00 56 CDR Do you need anything down here, Dave?
- 01 16 00 59 CMP No, not yet. I will in just a second, though.
- 01 16 01 02 CDR Okay, I'm just waiting.
- 01 16 01 14 CDR Get the other bag, too, Rusty - put the rest of the  
stuff in it.
- 01 16 01 37 CMP Okay, got a RESTART this morning when we started the  
computer.
- 01 16 01 42 CDR How about that?
- 01 16 02 31 LMP Jim.
- 01 16 02 32 CDR Yes?
- 01 16 02 33 LMP I think ...
- 01 16 02 40 CDR Oh, good.
- 01 16 02 45 CMP Alright. I'll hand you the empty bag as soon as  
I drink my hot chocky.

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- 0 02 02 04 07 LMP And, Gumdrop, you're cleared to maneuver as desired.
- 02 02 04 11 CMP Okay.
- 02 02 20 17 LMP Gumdrop, Spider. Are you starting to clear the tunnel yet?
- 02 02 20 23 LMP Okay, fine, Davey.
- 02 02 20 25 CDR I think we ought to skip that REG's check. I've got to get something to eat here, and we're starting a sublimator dryout. We'll just go ahead and skip the REG's check.
- 02 02 20 43 CMP Okay.
- 02 02 20 55 CMP You got anything to eat over there?
- 02 02 21 00 CDR Yes, Dave. I've got something to eat.
- 02 02 23 13 CMP Okay, Spider, I'm ready to clear the tunnel out if you're ready to go with it.
- 0 02 02 23 18 CDR Yes, why don't you go ahead and clear the tunnel out, Dave, so we can start getting back on the command module ECS? We've cut the sublimator off over here, and it's kind of dried out, and we want to get off of this thing.
- 02 02 26 57 LMP Gumdrop, is your tunnel - is the tunnel pressurized?
- 02 02 27 03 LMP That's a negative?
- 02 02 27 05 LMP Okay, let us know when it is.
- 02 02 27 15 LMP Say the word; we can pressurize it for you if you like.
- 02 02 27 20 CMP ...
- 02 02 27 22 LMP Okay, we'll do it.
- 02 02 27 54 CDR Hey, Dave. I pressurized the tunnel, but it might be at a higher pressure than you have there in the spacecraft. Make sure you open up that pressure valve in the tunnel hatch.

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- 02 02 28 06 CMP ... it looks like we're getting about a 0.1 differential right now.
- 02 02 28 10 CDR Okay.
- 02 02 30 03 CMP Roger. HIGH BIT RATE, Houston.
- 02 02 38 58 CC Gumdrop/Spider, this is Houston through Carnarvon.
- 02 02 39 04 CMP Gumdrop, 5 by.
- 02 02 39 06 CDR I'd like to go private with you.
- 02 02 39 09 CC You cut each other --
- 02 04 18 23 CDR Okay, I go back and get it going the other way? I'm down here, down this way? It's going this way!
- 02 04 18 31 CMP I should have called you up and accused you of firing the thrusters, but I knew you weren't.
- 02 04 18 48 CMP Oh boy, that stuff's really terrible.
- 02 04 18 49 LMP What's that?
- 02 04 18 50 CMP Chicken with vegetables.
- 02 04 18 52 LMP I had that last night; I thought it was pretty good.
- 02 04 18 55 CMP I bet!
- 02 04 19 00 CMP (Laughter) When you guys (laughter) started to get ready for the burn, I realized you were going to go backwards, so I had to run around here and get everything that wasn't settled to go plus X, and fix it to go minus X.
- 02 04 19 14 CMP Hey, there isn't hardly any storage here at all.
- 02 04 19 16 CDR No.
- 02 04 19 18 CMP I was disappointed. I braced myself against the panel.
- 02 04 19 25 LMP That's a pretty good burn, you know it?
- 02 04 19 27 CDR Right.
- 02 04 19 28 CMP ... 6 or 8 minutes of it.

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- 02 04 19 30 LMP Yes, but I mean it was - it was well-guided, much better than in the simulator.
- 02 04 19 34 CDR Yes.
- 02 04 19 35 LMP Gosh! It's hard to believe - hardly --
- 02 04 19 36 CDR Here.
- 02 04 19 37 CMP Oh, here, let me cut it for you.
- 02 04 19 38 LMP -- hardly any excursions and - looked pretty good.
- 02 04 19 55 CDR We've got to figure out some way of getting this dirt out of here.
- 02 04 19 58 CMP Boy, you're not kidding.
- 02 04 20 00 CDR I got a piece in my eye a little while ago. I got a piece of hair in my mouth.
- 02 04 20 43 LMP You want to close it?
- 02 04 20 45 LMP Thought I'd caught you.
- 02 04 20 55 CDR Is the hand controller on?
- 02 04 20 56 LMP Sir?
- 02 04 20 57 CDR Is the hand controller on?
- 02 04 21 00 CMP What I'm going to do next time is to set that 50-degree deadband around zero, and let it do it. It's just not working.
- 02 04 21 07 CDR Yes.
- 02 04 21 08 CMP Chase, chase, chase. And I bet I've spent more gas chasing it - -
- 02 04 21 13 CDR Yes.
- 02 04 21 14 LMP Than letting it deadband.
- 02 04 21 19 CDR You're darned right.
- 02 04 21 29 CMP What do we have to do during the alignment?

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( ) 02 04 21 32 LMP Next night pass.  
02 04 21 42 CMP I'd like to get some cold water one of these ...  
02 04 21 44 LMP Pardon me.  
02 04 21 55 LMP That's quite true of spaghetti. You know, I dream about oxygen. Black ox --  
02 04 22 01 CMP Lots of croutons, huh?  
02 04 22 11 CDR If you'll hand it over this way, Rusty, I'll get it  
02 04 22 46 CMP Hand it up here, and I'll squeeze it.  
02 04 24 28 CDR Are we on our way out of that gimbal-lock area now?  
02 04 24 31 CMP Yes, I think so, because -  
02 04 24 53 LMP I'm sure I can't see it now.  
02 04 24 54 CMP Okay.  
02 04 24 55 LMP I think we're awfully close.  
( ) 02 04 24 59 CMP Here you go, Rusty.  
02 04 25 09 CDR Can I take a drink?  
02 04 25 10 LMP Yes.  
02 04 25 15 LMP Probably going out the other side.  
02 04 25 17 CDR No, it's not - it's in the same place; it went back in.  
02 04 26 02 CDR You don't suppose there's some magnetic anomaly?  
02 04 26 06 LMP Turning itself - The turning is along the flight path, and it's - The ball aligns.  
02 04 26 13 CDR (Laughter)  
02 04 26 42 CMP That stuff doesn't dissolve.  
02 04 26 44 LMP You got to squeeze it.  
02 04 26 46 CMP I just did ... I didn't see much meat in it.

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- 02 04 27 02 CMP Oh boy, is it going to feel good to get that suit off tonight!
- 02 04 28 24 LMP Sounded like the TV was good.
- 02 04 29 03 CMP Hey, Jim, tell you what. Tell me where that water stuff is, if you've got time.
- 02 04 29 13 CDR Well, one fitting - Dave, it's a fitting about this long, with the QD on one side and the screw-in on the other.
- 02 04 29 19 CMP Okay.
- 02 04 29 20 CDR Well, right up on the top end.
- 02 04 29 23 CMP Okay.
- 02 04 29 38 CDR In that little box, where Rusty's sitting.
- 02 04 29 40 CMP Yes, I know - I know where you mean.
- 02 04 30 01 CDR You see it?
- 02 04 30 02 CMP Not yet.
- 02 04 30 03 CDR Alright.
- 02 04 30 04 CMP Okay.
- 02 04 30 07 CDR Now you want to get the toolkit out.
- 02 04 30 09 CMP (Cough)
- 02 04 30 12 CDR You know where that is?
- 02 04 30 13 CMP Yes. I'm going to take Rick Nigel's job when I get back. (Coughing)
- 02 04 30 33 CMP We want - which one?
- 02 04 30 35 CDR Take the whole toolkit.
- 02 04 30 46 CMP You want the one to - you want that - (coughing)
- 02 04 30 56 CDR You want to cap it.
- 02 04 31 00 LMP Here's the ..., Dave. Where do you want that?

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02 04 31 22 CMP Now I'll get tool E.

02 04 31 25 CDR There was one right over here.

02 04 31 28 CMP Okay.

02 04 31 30 LMP Really? There's only one? No, I got the one that you gave me this morning. There's only one, isn't there?

02 04 31 35 CDR No, I had the other one out and had it right over here, just for Dave.

02 04 31 39 LMP B or E? The screwdriver?

02 04 31 41 CDR Oh, E.

02 04 31 58 CMP Okay -

02 04 32 02 LMP That son of a buck doesn't want to get out of gimbal lock.

02 04 32 11 LMP Very slowly.

02 04 32 16 CDR I had it very slowly going out, too, and then it started slowly going back in.

02 04 32 19 LMP I think we're trimming - along the flightpath.

02 04 32 32 CDR Oh, oh!

02 04 32 34 LMP Don't lose it! Did you lose it?

02 04 32 36 CDR No, I got it. I wonder what happened to the wire? We capped it.

02 04 32 39 LMP It was?

02 04 32 40 CDR Right. It's not anymore. Lots of wire down there, but it doesn't do any good.

02 04 32 50 CMP Okay, give me that fitting.

02 04 33 09 CMP There's a lot of hose.

02 04 33 29 CMP Which end would you like?

02 04 33 31 CDR I want the -

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- 02 04 31 22 CMP Now I'll get tool E.
- 02 04 31 25 CDR There was one right over here.
- 02 04 31 28 CMP Okay.
- 02 04 31 30 LMP Really? There's only one? No, I got the one that you gave me this morning. There's only one, isn't there?
- 02 04 31 35 CDR No, I had the other one out and had it right over here, just for Dave.
- 02 04 31 39 LMP B or E? The screwdriver?
- 02 04 31 41 CDR Oh, E.
- 02 04 31 58 CMP Okay -
- 02 04 32 02 LMP That son of a buck doesn't want to get out of gimbal lock.
- 02 04 32 11 LMP Very slowly.
- 02 04 32 16 CDR I had it very slowly going out, too, and then it started slowly going back in.
- 02 04 32 19 LMP I think we're trimming - along the flightpath.
- 02 04 32 32 CDR Oh, oh!
- 02 04 32 34 LMP Don't lose it! Did you lose it?
- 02 04 32 36 CDR No, I got it. I wonder what happened to the wire? We capped it.
- 02 04 32 39 LMP It was?
- 02 04 32 40 CDR Right. It's not anymore. Lots of wire down there, but it doesn't do any good.
- 02 04 32 50 CMP Okay, give me that fitting.
- 02 04 33 09 CMP There's a lot of hose.
- 02 04 33 29 CMP Which end would you like?
- 02 04 33 31 CDR I want the -

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02 04 33 35 CMP That's the wrong end.

02 04 33 36 CDR I know. There should be a filter on that end down there, Dave.

02 04 33 38 CMP I put the filter away this morning.

02 04 34 06 LMP Oh, okay, plus it right in the - urine, huh?

02 04 34 12 CDR Yes. You got that thing going right over you.

02 04 34 17 LMP Well, gee, that's just a little black hose. It doesn't even compete with the other ones. Okay, now you have it rolling down the back of your suit. I'll get out of the way and ... now.

02 04 34 32 CMP (Cough)

02 05 06 20 LMP Lo and behold, you're going to be ... going to the John, Dave.

02 05 06 27 CDR Hmm, let me set the control for you.

02 05 06 47 CDR What were those gimbal angles again, Rusty?

02 05 06 52 CDR What?

02 05 07 05 CMP Did it go up?

02 05 07 34 CMP You're all set ...

02 05 08 07 CDR Would you shut off the vent, Dave? It feels cold. It feels like ...

02 05 08 11 CMP Yes.

02 05 08 31 CMP Well. I wonder why ...

02 05 08 38 CDR It looks like there's a big bag on there, doesn't it?

02 05 08 39 CMP Yes, I know.

02 05 21 06 CMP Yes. Yes. 25 degrees. 20 or ...

02 05 21 48 LMP Hardly any ...

02 05 21 51 CMP Really?

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02 05 21 53 CDR ... What did you say about 25 degrees, Dave?

02 05 22 04 CMP Well, folks, we might not get the attitude in time to get a star check for the burn.

02 05 22 08 LMP Yes, I - I see that. If you could do it ...

02 05 22 15 CMP ... do a good job here.

02 05 22 24 CDR I'm not sure ... on this deal.

02 05 22 42 CDR I get ...

02 05 22 45 CMP Yes.

02 05 22 47 CDR Even though it ...

02 05 22 58 CMP ... sleepy ... stop.

02 05 23 10 CMP ... What do you want to do with these?

02 05 23 12 CDR ...

02 05 23 13 CMP No.

02 05 23 21 CMP Yes, that - that's silly.

02 05 23 25 CDR Okay, ...

02 05 23 54 CDR Yes, we should be coming on ... a star like this one.

02 05 23 58 CMP Yes, I've got the Big Dipper again.

02 05 24 03 LMP Right where we started. ... than this, Jim.

02 05 24 13 CDR No, I'm not; but if we just get the ..., I think we're going to get a lot more stars in the ...

02 05 24 17 LMP Oh, okay.

02 05 24 22 CMP Yes, okay, I see ...

02 05 24 45 CDR There's a couple of big ... not too many.

02 05 25 08 CMP Seems the Apollo ... won't roll.

02 05 25 50 CMP Who put this on starboard? ... a light came on for that.

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02 05 25 54 CDR      Oh! (Laughter) That's Dave.

02 05 26 00 LMP      No, I didn't think that ... would do it.

02 05 26 38 CMP      Shit, ... right to it.

02 05 28 37 LMP      ...

02 05 28 39 CDR      You that far?

02 05 28 40 LMP      Yes. You don't think we can do it, Dave?

02 05 28 43 CMP      No, ...

02 05 28 46 CMP      Yes, that's what I've been doing ... flight plan.

02 05 28 53 CDR      Yes.. It is, too.

02 05 28 55 CMP      You're right, Jim.

02 05 29 00 LMP      Well, that ... was planned.

02 05 29 03 CDR      Let it stay down here for this time. ... I come back up here.

02 05 29 13 CDR      Dave, you want to change my hoses over to the right side?

02 05 29 15 CMP      Okay. Come here. ... You want all these helmets and gloves off?

02 05 29 24 CDR      Yes.

02 05 29 32 LMP      ... on this thing.

02 05 29 55 LMP      You want - you want to try to make a third star check when we get there, Jim?

02 05 29 58 CDR      Go ahead.

02 05 30 02 CMP      You ... stars in here ... alright, Rusty.

02 05 30 04 LMP      Yes? You want to use their star check? We've never had one yet. Oh, I'll try. If we have to ... up there, I'll try it.

02 05 30 53 LMP      Alright, let's see.

02 05 30 56 CDR      I don't want to put a light on it ...

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02 05 31 00 LMP I ought to go back up and wrap around.  
02 05 31 03 CDR I know.  
02 05 31 04 CMP Make sure it's alright, Jim.  
02 05 31 05 CDR Hey, how do you like that?  
02 05 31 07 CMP Rusty's - -  
02 05 31 13 CDR Turn that thing off. ... Okay?  
02 05 31 15 LMP Hey, I got - I'll do my COMM, too.  
02 05 31 19 CMP Okay.  
02 05 32 39 LMP Hey, you got my air ..., Dave?  
02 05 32 47 CMP Yes.  
02 05 35 06 CC ... Tananarive.  
02 05 35 09 CDR Hello, Houston; Apollo 9. Hello, Houston; you rea  
Apollo 9?  
02 05 36 07 CDR Where's my helmet? Is that it down there?  
02 05 36 10 CMP ...  
02 05 36 22 LMP ... that silly gravel out there, Jim.  
02 05 36 26 CC ... Houston. We'll see you over at Carnarvon at 4  
02 05 36 30 CDR Okay, Houston; Apollo 9.  
02 05 38 26 LMP Oh, you've got that strut there now.  
02 05 38 35 CDR I think we could probably take that strut down.  
Dave, we're not using that ..., are we?  
02 05 38 45 LMP ... Dave have to leave it there.  
02 05 38 48 CDR (Laughter) We're not using that support strut any  
more, are we?  
02 05 38 52 LMP That's okay; it's not in my way.  
02 05 38 55 CDR Are you getting around here?  
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02 05 38 56 LMP Okay.  
02 05 38 58 CDR Okay.  
02 05 38 59 LMP It's alright.  
02 05 39 05 CDR It's alright, Dave.  
02 05 39 56 CDR What?  
02 05 42 33 LMP Ohh!  
02 05 43 18 CDR (Yawn)  
02 05 53 37 CMP Bypass the - RESTART routine, and exit the program.  
Okay?  
02 05 53 40 LMP Okay.  
02 05 53 41 CMP Your input's 47? You ... a DELTA-V ... minus Y ...  
put a time in ... Is the meter on?  
02 05 53 54 CMP There's no light.  
02 05 53 56 CDR Yes, yaw is 30 degrees.  
02 05 53 59 CMP ...  
02 05 54 00 CDR Yes, we're going ... that ... should be going back-  
wards, turning to the north with - down. Not this  
way. So, what we'll do is we'll just come up and  
yaw. Okay?  
02 05 54 17 CMP Roll right.  
02 05 54 19 CDR Roll right.  
02 05 54 25 CDR What?  
02 05 54 29 CDR Okay.  
02 05 54 38 CMP But I would think you'd probably want to ...  
02 05 54 42 CDR At 4 or 5 feet per second ...  
02 05 54 48 CDR All we're trying to do is satisfy the DELTA-V for  
the ...  
02 05 54 51 CMP Okay.

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02 05 54 52 CDR Then you have to go back and retarget it for the -  
02 05 54 57 CMP Yes, you know that - that was almost three times the  
... and one time, it's four times as ...  
02 05 55 19 CDR ...  
02 05 56 07 CDR You want to take this ... down, or can you read it  
okay? ...  
02 05 56 28 CDR Have any trouble with your head yesterday? Your  
head - holding it up?  
02 05 56 32 CMP With my head?  
02 05 56 33 CDR Holding it up during the burn?  
02 05 57 04 CDR You're going to do what?  
02 05 57 05 LMP Trying to see if I can ...  
02 05 57 07 CMP What if you can't?  
02 05 57 29 CDR Burgie hasn't seemed to be much help to us on this,  
has he? (Laughter)  
02 05 57 33 LMP Who?  
02 05 57 34 CDR Burgie.  
02 06 05 02 CDR Hey, Ron, is Sonny there with you?  
02 06 05 07 CC Is who with me?  
02 06 05 09 CDR Oh, never mind. I'll get you over Hawaii.  
02 06 05 16 CC Roger. Smokey is still here.  
02 06 05 18 CDR No, Sonny. Sonny Morton.  
02 06 05 23 CC Yes. He's here, too.  
02 06 05 26 CDR Okay.  
02 06 05 28 CMP (Laughter) You dirty rat, McDivitt --  
02 06 05 29 CC Hello, Jimmy.

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02 06 05 30 CMP Oh, boy. Oh, (laughter) ye gods!

02 06 06 14 CMP How much time we got, Jim?

02 06 06 16 CDR 20 minutes.

02 06 06 17 CMP Be right here.

02 06 06 18 CDR I think - I think this thing is trimming, you know that? ... although they still say zero.

02 06 07 08 LMP I'll try a ...

02 06 07 19 CMP Okay, how many feet, for sure?

02 06 08 58 CDR (Laughter) What you doing down there?

02 06 09 36 CDR Boy, that DELTA-V counter is really drifting.

02 06 09 41 CMP Did you get it set?

02 06 09 43 CDR No.

02 06 09 45 CMP 5 - 7.3.

02 06 09 47 LMP 7.3.

02 06 10 16 LMP How low are we supposed to let the cryos go?

02 06 10 24 LMP We did?

02 06 10 26 CDR The fans are supposed to be ON now?

02 06 10 37 CMP No. You want the fans OFF - both?

02 06 10 53 CDR ... reading 700.

02 06 11 20 CMP Want me to do the reading this time, Rusty?

02 06 11 23 LMP No, I'm - I'm okay.

02 06 11 24 CMP Okay. It may be better to do something.

02 06 11 27 LMP Yes, oh yes, I think it would be.

02 06 11 30 CDR Boy, that rendezvous window is really getting cloudy up, isn't it?

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02 06 11 38 CMP I think the windows are doing pretty damn well!

02 06 11 40 LMP Well, I do, too.

02 06 11 41 CDR All of them except the rendezvous window.

02 06 11 43 LMP Mine is doing great over here. There's not any on it at all.

02 06 11 47 CDR I didn't even get a chance to look at this - the sight. I looked up there at one time to see if was ... and it was, and then I tried to put the COAS up for you.

02 06 11 54 LMP Yes.

02 06 11 55 CMP I turned it on for you a couple of times, but you couldn't get me.

02 06 11 58 LMP Yes?

02 06 11 59 CMP It works.

02 06 12 04 CDR I think I found out at one time that ...

02 06 12 06 CMP Yes. I seem to recall it. Had your curtain drawn at night, didn't you?

02 06 12 12 CDR Huh?

02 06 12 13 CMP You had your upper curtain drawn.

02 06 12 15 CDR Oh, yes.

02 06 12 18 CMP Hey, did - did you start up the glyc - the evaporator this morning, or not?

02 06 12 21 CDR No, huh uh, no.

02 06 12 25 CMP Take it or leave it.

02 06 12 27 CDR Leave it go.

02 06 25 39 CMP EMS, OFF.

02 06 25 41 CDR OFF.

02 06 25 45 CMP ... my watch.

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02 06 25 55 CDR How we doing?  
02 06 25 56 CMP Okay. Hold on back there. Brace your head.  
02 06 26 01 CMP Average g is working.  
02 06 26 04 LMP 10, 9, 8, 7, 6, 5, proceed, 2, 1 -  
02 06 26 13 LMP IGNITION. 3 is ON.  
02 06 26 17 CDR Okay - It opened all the way.  
02 06 26 19 LMP Okay.  
02 06 26 22 CMP 35 seconds. Okay. Looks good. DSKY and the EM agree.  
02 06 26 28 CMP 25 seconds to go. I think the entire DSKY and E are good.  
02 06 26 32 CDR ... clock.  
02 06 26 34 LMP The clock - if it stops, you're okay.  
02 06 26 36 CMP 20 seconds. DSKY and EMS are good.  
02 06 26 41 CDR DSKY's ...  
02 06 26 42 CMP 15.  
02 06 26 43 CDR It's coming back. It might knock it out.  
02 06 26 47 CMP 10.  
02 06 26 48 CDR Time agrees.  
02 06 26 49 CMP Okay.  
02 06 26 51 CMP 5.  
02 06 26 57 LMP Okay, they all closed.  
02 06 26 59 CMP Okay, get the breakers in. Okay, then GIMBAL MO OFF, one at a time.  
02 06 27 04 CDR 1, 2, 3, 4.  
02 06 27 08 CMP Okay, verified. TVC SERVO POWER 1 and 2, OFF.

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02 06 27 12 CDR Two, OFF.

02 06 27 13 CMP ATT DEADBAND, MAX.

02 06 27 14 CDR Okay, DEADBAND, MAX.

02 06 27 15 CMP RATE, HIGH.

02 06 27 16 CDR RATE, HIGH.

02 06 27 17 CMP SPACECRAFT CONTROL, SCS.

02 06 27 18 CDR SCS. That thing is really pulsing. Would you say -

02 06 27 21 LMP Houston, Apollo 9.

02 06 27 24 CC Houston, Roger. We copy your residuals; request DELTA-V<sub>c</sub>.

02 06 27 26 LMP Roger.

02 06 38 48 CDR ... You go ahead.

02 06 38 50 LMP Deke, this is Rusty. I'm not sure that it's not a combination of things, but I think it is related to motion also. And unless I can get some food in me, and keep it in me, I'm not going to be feeling much better. Now, I'm planning to try and eat up a storm tonight, but, in all frankness, I sure won't have much appetite.

02 06 39 13 CC Well, the Marezine doesn't help you much, huh?

02 06 39 18 LMP Well, it's kind of hard to say. This morning, I took a Marezine before breakfast, and then very shortly after breakfast, it all came back up - in the middle of all that commotion that we were - that we were going through, getting ready to get through that tunnel. I would guess that, under the same circumstances tomorrow morning, it'd probably be very much the same.

02 06 39 51 CC Roger.

02 06 39 52 CDR And another thing, Deke, I think we've got to stretch out the - we got to get a little extra time in here. Today I had a bag of fruit salad and a bag of cocoa or something like that for breakfast. About 12 hours

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later is - I have time to eat. And I think that if - We don't want to attack that rendezvous, which is about an 18-hour day, like that.

02 06 40 15 CC

I couldn't agree more; we'll have to take a look at the book.

02 06 40 18 CDR

I think if we have enough time tomorrow, to prepare the spacecraft pretty good tomorrow night, then we can get up in the morning, and maybe get to bed a little earlier, get up in the morning the next day, and probably make that timeline.

02 06 40 33 CC

Roger. I just wanted to make one comment on this private loop so you all understand it. We are summarizing it down here; it's not being released word by word, but it is being summarized to the press. I don't know if you guys understood that or not, so we don't want you to hold back telling anything you think is appropriate. But you should understand that it is being summarized. It is considered ...

02 06 40 56 CDR

Roger; I understand that.

02 06 40 59 CC

And we'd like to express our thanks to you for doing a great job today. It was outstanding.

02 06 41 05 CDR

Well (laughter), we're just up here, trying to do what we've been practicing for a few years. I'll tell you, we sure got a lot of comments on how to operate in the spacecraft with suits on and with three - three great big pairs of hoses. Also, I'll tell you off the record here, ... if we're still in private - (cough)

02 06 41 31 CMP

Yes, we're ...

02 06 41 32 CDR

There's a lot of little things that have to be fixed up (cough) to make this spacecraft really operable inside - like --

02 06 41 41 CMP

I think they're gone, Jim.

02 06 41 44 CDR

-- like numbering those God-blessed lithium hydroxide cans.

02 06 41 48 CMP

Oh, yes.

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- 02 06 41 49 LMP And that water - -
- 02 06 41 52 CDR That LM. Nothing's fit for that God-blessed LM, Dave. I - Hey, do you know that - the OPS came - pallet came loose during that burn - (cough) ...
- 02 06 42 00 CMP Did it really?
- 02 06 42 02 CDR Yes, it went floating around when I went back to get it.
- 02 06 42 04 LMP Oh, boy.
- 02 06 42 09 CDR There's not - I bet you there's not 50 percent of the things over there that work.
- 02 06 42 23 CMP Where are we?
- 02 06 42 25 CDR You know something?
- 02 06 42 27 CMP Oh shit, no, I didn't ...
- 02 06 42 32 LMP I was going to say, boy, that water that I got, chlorinated water, taste ... either.
- 02 06 42 37 CDR Hey, this - this is terrible, this water here.
- 02 06 42 39 CMP We haven't - we haven't chlorinated it yet, have we, today?
- 02 06 42 42 LMP No.
- 02 06 42 43 CMP Okay, look. Let's get our food before we chlorinate it.
- 02 06 42 46 CDR When are we due to do that stuff, David?
- 02 06 42 47 CMP I don't know, but, boy, I don't want to eat food with all that crap in it again.
- 02 06 42 51 CDR It'll still have to be chlorinated.
- 02 06 42 52 CMP But it's not - I've been tasting it - it's not as bad as it was last night. I'll tell you, that - that - that water I had last night burned my mouth when I put it in there.
- 02 06 43 07 CMP Jim, could you wait just a second? Hey, Jim?

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( ) 02 06 43 11 CDR Yes.

02 06 43 12 CMP Let me get this stuff put back together here before you come down.

02 06 43 18 CDR ... right over here ...

02 06 43 35 CMP Be with you in just a second, Jim.

02 06 43 37 LMP Have you got the AUTO RCS, OFF, Jim?

02 06 43 40 CDR AUTO RCS, OFF.

02 06 43 41 LMP Okay, MANUAL ATTITUDE, three, to RATE COMMAND.

02 06 43 43 CDR RATE COMMAND.

02 06 43 45 LMP LIMIT CYCLE, ON.

02 06 43 47 CDR LIMIT CYCLE, ON.

02 06 43 49 LMP ATTITUDE DEADBAND, MAX.

02 06 43 50 CDR MAX.

( ) 02 06 43 51 LMP RATE, LOW.

02 06 43 52 CDR RATE, LOW.

02 06 43 53 LMP THC POWER, OFF.

02 06 43 55 CDR ...

02 06 43 57 LMP ROT CONTROL NORMAL, two, to OFF.

02 06 44 00 CDR OFF.

02 06 44 01 LMP DIRECT, two, to OFF.

02 06 44 03 CDR OFF.

02 06 44 04 LMP SPACECRAFT CONTROL to SCS.

02 06 44 05 CDR SCS.

02 06 44 06 LMP CMC MODE, FREE.

02 06 44 07 CDR FREE.

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02 06 44 08 LMP BMAG's, three, to RATE 2.  
02 06 44 10 CDR RATE 2.  
02 06 44 11 LMP SPS TVC to RATE COMMAND.  
02 06 44 13 CDR RATE COMMAND.  
02 06 44 14 LMP EMS ROLL, OFF.  
02 06 44 16 CDR EMS ROLL, OFF.  
02 06 44 17 LMP 0.05g SWITCH, OFF.  
02 06 44 18 CDR OFF.  
02 06 44 19 LMP LV/SPS INDICATORS to Pc.  
02 06 44 22 CDR Pc.  
02 06 44 23 LMP TVC GIMBAL DRIVE, PITCH and YAW, to 1.  
02 06 44 28 CDR 1.  
02 06 44 29 LMP EDS POWER, OFF.  
02 06 44 32 CDR EDS POWER, OFF.  
02 06 44 35 LMP TVC SERVO POWER, two, to OFF.  
02 06 44 37 CDR ...  
02 06 44 40 LMP FDAI POWER, OFF.  
02 06 44 42 CDR ... FDAI POWER ...  
02 06 44 45 LMP LOGIC POWER 2/3, OFF.  
02 06 44 47 CDR LOGIC POWER 2/3, OFF.  
02 06 44 50 LMP SPS ELECTRONIC POWER, OFF.  
02 06 44 52 CDR ...  
02 06 44 54 LMP SIGNAL CONDITIONER BIAS POWER to OFF.  
02 06 44 57 CDR ...

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02 06 44 58 LMP BMAG POWER, two, to WARM UP.  
02 06 45 01 CMP That's it?  
02 06 45 03 LMP Yes.  
02 06 45 12 CMP Okay, Jim. Done?  
02 06 45 16 LMP Yes. We supposed to purge tonight? They said anything about it?  
02 06 45 24 CMP No, it's - I'll tell you, I would go - Let's see, wish -  
02 06 45 30 CDR ...  
02 06 45 32 CMP Yes. Let's see what the flight plan says here.  
02 06 45 44 LMP 55.  
02 06 45 47 CDR ...  
02 06 45 50 LMP So am I. I got some last night. I was coughing last night.  
02 06 46 01 CMP ... and go chase it. Yes, take one in the other hand, too, and blow.  
02 06 46 06 CDR Okay.  
02 06 46 12 LMP You say anything about a purge, Jim or Dave?  
02 06 46 15 CDR Well, they did say to activate the water, though.  
02 06 46 18 CMP No, they never have. And I guess that means do it. I - Let's see, where's our next station pass? Ascension we want at 46. We just had Ascension, didn't we?  
02 06 46 33 LMP Yes. What's next?  
02 06 46 38 CMP Pretoria? 55:05.  
02 06 46 40 LMP Tananarive.  
02 06 46 43 CDR Dave, I didn't ...  
02 06 46 45 CMP Yes.

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02 06 46 49 LMP

Okay, I'll just get the cryo fans.

02 06 46 54 CMP

Why don't we ask them what they want when we get there?

02 06 46 58 LMP

Alright.

02 06 46 59 CMP

Let's start eating then. Yes, why don't you just eat, and let's just ask them what they want done with the fan, because they've been different --

02 06 47 04 LMP

Now, let me see if there's something else I can do here. Waste water dump; we already did that. WASTE MANAGEMENT OVERBOARD DRAIN, OFF; WASTE STOWAGE VENT, CLOSED; S-BAND, OMNI B; and COMM, basic. Which is A dupe - Oh, what are we going to do tonight on the COMM? Could it - Probably ... A SIMPLEX, ..., I guess.

02 06 47 25 CMP

Yes, A SIMPLEX.

02 06 47 26 LMP

EMERGENCY CABIN PRESSURE to BOTH. Have we got the cabin pressure configured yet?

02 06 47 31 CMP

Yes. I been doing that off and on today several times.

02 06 47 33 LMP

Okay. SURGE TANK, ON. I'm sure it is. PLSS, OFF.

02 06 47 38 CMP

I'll check it.

02 06 47 40 LMP

Yes?

02 06 47 41 CMP

Yes.

02 06 47 42 LMP

LM TUNNEL VENT to LM PRESS.

02 06 47 44 CMP

Yes.

02 06 47 45 LMP

SYSTEMS TEST to 4 Delta.

02 06 47 48 CMP

Here it is.

02 06 47 52 LMP

Onboard readouts to MSFN. Okay, I'll get that stuff. Where's the log, Dave?

02 06 47 59 CMP

It's in - The crew log? It's over where you can log them in.

02 06 48 06 LMP

Oh, yes, that's right.

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- 02 06 48 09 CMP Hey, you know, I found today the 70-millimeter thing - We started on the last page.
- 02 06 48 15 LMP Yes, I know. I took that on the 16-millimeter, didn't I?
- 02 06 48 21 CMP Yes. Well, it's - I don't know; it's hard to tell those tabs really are meaningful.
- 02 06 48 30 LMP Well, at times, they're -
- 02 06 48 34 CDR You want me to help?
- 02 06 48 35 CMP Put the time in.
- 02 06 48 36 LMP Oh, okay. 54:48:37.
- 02 06 48 54 LMP You want to give me a service module RCS ...
- 02 06 48 56 CMP Yes. Quad A, 75; B, 76; C, 69; D, 69. Oh, I'm sorry. 74, 74. I'm sorry.
- 02 06 49 23 LMP I was saying: Man, we really ate it out of those today.
- 02 06 49 26 CMP Yes, pardon me.
- 02 06 49 31 LMP Okay, I need - I need the systems test meter stuff, Jim.
- 02 06 49 39 CDR Coming up.
- 02 06 49 40 CMP 5 C, D, and which one of those other things?
- 02 06 49 56 CDR ... 5 C and D? ...?
- 02 06 50 01 LMP Right.
- 02 06 50 02 CDR Let's see, ...
- 02 06 50 28 LMP Okay, thank you.
- 02 06 50 37 LMP Houston, Apollo 9.
- 02 06 50 49 CDR Oh hell.
- 02 06 50 52 LMP We're supposed to be using about 4 percent out of everything - 5 percent out of everything except Bravo. And Bravo we use 8 percent.

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02 06 51 01 CMP Yes, we used lots of gas today.

02 06 51 05 LMP How are we on our redline?

02 06 51 06 CMP Well, we dropped a little low on it; we lost today. But I'm not surprised with all that damn running in the gimbal lock every 5 minutes.

02 06 51 16 CDR ...?

02 06 51 18 CMP Yes.

02 06 51 38 LMP Houston, Apollo 9.

02 06 51 42 CC Houston; go.

02 06 51 47 LMP Roger. We've got consumable status for you here.

02 06 51 48 CC Roger. We're ready to copy.

02 06 51 50 LMP Okay, service module RCS, A, B, C, D. Ready to copy?

02 06 51 55 CC Go.

02 06 51 56 LMP 75, 76, 74, 74.

02 06 52 04 CC 75, 76, 74, 74.

02 06 52 07 LMP Roger. BAT C, 37.0; PYRO A, 37.1; B, 37.1. And we got the command module injector temperatures for you.

02 06 52 27 LMP 5 Charlie, off scale high; 5 Delta, 4.85; 6 Alfa, Bravo, Charlie, and Delta, all off scale high.

02 06 52 42 CC Roger; all off scale high except 5 Delta at 4.85.

02 06 52 47 LMP That's for Charlie. I mean that's affirmative.  
(Laughter)

02 06 52 53 CC Okay. We show you 129.1 by 123.6. We're refining it, but it looks okay.

02 06 53 03 CMP Hmmm!

02 06 53 04 LMP Roger. Do you have any words on a purge tonight?

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- 02 06 53 08 CDR You're getting a lot out of plane here. Is that 11 feet per second?
- 02 06 53 10 CC Say again. Words on a purge?
- 02 06 53 14 IMP Roger. Do you want us to purge the fuel cells tonight?
- 02 06 53 19 CC Roger. Stand by.
- 02 06 53 24 CMP We didn't lose too much.
- 02 06 53 29 CDR Yes, but, Houston, I don't - I didn't know if I commented or not right there - right after SPS 5, but that was really some wild steering that we got on that one. I don't mean that we were out of --
- 02 06 53 33 CMP ... wild.
- 02 06 53 34 CDR -- it wasn't out of control or anything. It is just that we sure built up some large attitude errors.
- 02 06 53 43 CMP Mister Wild, you're cranked up (laughter). Your errors went out to like 3 degrees or -
- 02 06 53 49 CDR Yes, really out to about 5 or 6. They went off scale.
- 02 06 53 51 IMP Did they really?
- 02 06 53 52 CDR Yaw went way off scale. Went off scale and kept going out off about another degree and a half.
- 02 06 54 00 IMP Okay, we're 2 percent low on A, 2 percent low in C, 1-1/2 percent low in B, 1-1/2 percent low in D. That's not too bad.
- 02 06 54 21 CDR No, shoot, I thought you had - I thought you were getting --
- 02 06 54 23 IMP I did it wrong.
- 02 06 54 24 CDR I thought ... went down farther today. That's what we are with respect to the nominal.
- 02 06 54 30 CMP Yes.
- 02 06 54 31 CDR That's pretty good.

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02 06 54 32 CMP That screwed up the first time.  
02 06 54 36 CDR Oh.  
02 06 54 44 LMP Houston, Apollo 9.  
02 06 54 52 LMP Dave, they call out a purge in the - in the flight plan?  
02 06 54 55 CMP Yes, I think they do, Rusty -  
02 06 55 08 CMP If I can find it.  
02 06 55 25 CMP Nope. They haven't been putting purges in here either.  
02 06 55 29 LMP Yes, they have.  
02 06 55 42 CMP Yes, they sure did.  
02 06 55 54 LMP Do we have any of that real food left?  
02 06 55 57 CMP Yes.  
02 06 55 58 LMP What is it?  
02 06 56 00 CMP I wonder.  
02 06 56 05 LMP Ugh, ham.  
02 06 56 06 CMP Oh, boy. That ought to make you thirsty.  
02 06 56 12 LMP Boy, I wish that sounded good. I really do. Man, I wish it sounded like it -  
02 06 56 16 CMP Yes.  
02 06 56 24 LMP It just doesn't sound good. Nothing sounds good. Even the thought of food doesn't sound good.  
02 06 56 32 CDR That's too bad. It takes a miserable situation and turns it around into an almost unbearable one.  
02 06 56 38 LMP Yes.  
02 06 56 39 CMP Hey, you can do almost anything, if you're not sick. You know? You can go and go and go. You get pissed off, but - sure, but you can go.

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- 02 06 56 50 LMP Yes. Okay, well, we got everything done in the powerdown except the DSKY --
- 02 06 57 02 CDR Did we ever get that state vector?
- 02 06 57 03 LMP -- the fuel cell purge and the -
- 02 06 57 04 CMP No.
- 02 06 57 06 CDR I never thought it came up either.
- 02 06 57 08 CMP We were in BLOCK.
- 02 06 57 10 CDR Oh, we are in BLOCK when they tried to send it?
- 02 06 57 13 CMP No, they didn't try to send it yet. They didn't try and send - I just said we are in BLOCK.
- 02 06 57 15 CDR Oh. I guess ... timing.
- 02 06 57 23 CMP Well, who wants to take their suit off? I'll help them.
- 02 06 57 27 CDR You want to? I've had mine off first each night.
- 02 06 57 30 CMP No, I beat you the first night.
- 02 06 57 32 LMP Yes, you did.
- 02 06 57 33 CDR It's Rusty's turn.
- 02 06 57 34 CMP You going to take your suit off?
- 02 06 57 36 CDR Yes, why don't we give Rusty his druthers.
- 02 06 57 39 LMP Yes, I guess.
- 02 06 57 40 CMP Get comfortable.
- 02 06 57 43 LMP Yes, if I don't get sick getting comfortable.
- 02 06 57 46 CMP Why don't you let all the rest of the poweringdown stuff and all that be ours, and you go get your suit off, clean up, try to eat, and go to bed?
- 02 06 57 56 LMP Okay. Cleaning up sounds pretty good.
- 02 06 57 59 CMP Get one of those towels and wash and - -

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02 06 58 00 LMP Yes.

02 06 58 02 CMP -- all that stuff. That'll make you feel better.

02 06 58 08 LMP Okay. You want to watch the radio?

02 06 58 09 CMP Yes, I'll take it.

02 06 58 10 CDR Tell you what, Rusty. Why don't we get up here in the top and let you unsuit, pack your suit away down here, and you could just go there on the bottom of your - of your seat, fold your seat up, and sit there and clean up while Dave and I take care of all the rest of this. You'd be out of the way, and you'd be vertical and -

02 06 58 36 LMP Okay, SUIT POWER coming OFF.

02 06 59 35 CDR That's fine.

02 07 03 53 LMP Davè, ...?

02 07 03 54 CMP Yes. Right up in the F-1, right above your head.

02 07 03 56 LMP Okay.

02 07 04 03 CMP That's F-1. Go ahead and I'll put it on.

02 07 04 09 CDR Oh, no.

02 07 04 10 CMP Boy oh boy, are you cute!

02 07 04 12 LMP ...

02 07 04 15 CMP You'd make a great basketball player. I hope you been trying to teach your kids.

02 07 04 27 CMP Oh, yes.

02 07 04 29 CDR (Laughter)

02 07 04 35 CMP No, go get it. Let's don't stuff up anymore in - of that good stuff in -

02 07 04 51 LMP Hey.

02 07 04 52 CMP ...

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D 02 07 05 03 CDR You want to hand me that stuff and I'll ...  
02 07 05 05 CMP What?  
02 07 05 06 CDR That ... stuff.  
02 07 05 07 CMP No, I can get it. Go ahead. No sweat.  
02 07 05 09 CDR I'm not doing anything ...  
02 07 05 11 CMP There's nothing going on now. We're not even there wherever "there" is.  
02 07 06 07 CDR ... looks like ... getting ...  
02 07 11 33 CMP I know it. Hey, you might check that screen down there where those suit circuits ... I cleaned it about an hour after you went over it this morning. It was filthy then.  
02 07 11 53 CDR It looked like it ... on it, or something on it.  
02 07 11 56 CMP Yes.  
02 07 11 57 CDR ... something ... a lot of ... washing from ...  
02 07 13 13 CMP What?  
02 07 13 14 CDR ... RCS ...  
02 07 14 15 LMP No. Thank you. I've got a stable position, here. Gravity gradient. I usually float up, but I'm not floating up tonight.  
02 07 14 35 CMP It's coming in on the PDA.  
02 07 14 37 LMP ...  
02 07 14 38 CMP Yes.  
02 07 14 39 LMP ... get past that period --  
02 07 14 44 CMP That's right. Maybe you do overcome it. Very interesting.  
02 07 15 16 CDR Guess I'll go to bed later on.

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02 07 18 09 CMP

Oh, I'll get one later, Jim. No, I've got one in my pocket. Thank you.

02 07 19 57 CMP

I'll tell you one thing, boy, that - that probe sure worked quick today. Oh boy, I couldn't believe it. I was a little afraid of the forces on putting it back in - that they had doubled. Gee, it was nothin' less than 50 pounds all the way. Right number of strokes. Gee, it worked good. Those guys, they really ought to get a - a rose or something out there. They really did a good job.

02 07 20 22 LMP

...

02 07 20 23 CMP

Huh?

02 07 20 24 LMP

...

02 07 20 29 CMP

It's a new bunch of guys.

02 07 20 32 LMP

...

02 07 20 33 CMP

Oh, yes. They got a bunch - they got a couple of g's from LAD - He came from LAD. He was an airplane designer. He didn't even know how to spell Apollo when he got there.

02 07 20 53 CMP

He's the guy that really did the most work on that latch. That's sort of his big project.

02 07 21 03 CMP

We haven't tried those yet - but once.

02 07 21 07 CMP

Yes.

02 07 21 11 CMP

Yes. It really looked nice.

02 07 21 21 CMP

I did notice that somebody going through caught one of those umbilical covers and popped it open. I mean that's no big deal. I just closed it. You know the little plastic ones that close down?

02 07 22 18 CMP

What? It should fold flat, Jim.

02 07 22 35 CMP

Yes, that center couch came out pretty good today, too. Yes. It's a lot easier to tell at zero g.

02 07 22 42 CDR

Really?

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02 07 22 43 CMP

Oh, yes. Shoot, I'd - I had that flat done - I had the whole thing reconfigured from the time I'd - I had my helmet and gloves - I had to put helmet and gloves on. No, wait a minute - Took the couch out first. The end of the burn until I got the couch back in, and I was ready to put my helmet and gloves on - was 10 minutes from the time I started putting helmet and gloves on until I had the drogue out was 15 - which was really - That's pretty - that's pretty efficient, you know.

02 07 23 22 CMP

Yes, I rolled it up and put it down underneath there

02 07 23 38 CMP

Sir?

02 07 24 14 CDR

Ouch! Oh-ho-ho-ho-ho!

02 07 25 24 CMP

I think I stuck it in the front of the L-bag there, Rusty. I was in a pretty big hurry - I think. I pu a bunch of stuff in there.

02 07 25 37 LMP

(Laughter) ...

02 07 25 43 CMP

Find it?

02 07 28 33 CMP

Trying to figure out why we keep going the same way.

02 07 28 43 CMP

Oh, I know it.

02 07 28 48 CMP

Hey, there's a satellite. I ... see one. No, no, n It's way out there, it's stable. You got to come up here and look down. You got to come up farther. An look down almost between minus Y and plus Z. ... ou of your way ... there it is.

02 07 29 23 LMP

...

02 07 29 24 CDR

See that, Dave?

02 07 29 29 LMP

...

02 07 29 30 CMP

No, there's only one! You guys saw a satellite last night. I see one tonight. That's the one.

02 07 29 40 LMP

...

02 07 29 42 CMP

A satellite! Go back to the LEB.

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02 07 29 45 LMP What?

02 07 29 46 CMP Go back to the LEB! You don't like my little th

02 07 29 51 CMP God, what is that? Oh, where'd you get it from?

02 07 30 05 CMP Yes. Well, you know we ought to be able to --

02 07 30 07 CDR ... stuff in there?

02 07 30 09 LMP ...

02 07 30 11 CMP The one down there is useless - down here is all

stuff. That one, I cleaned that out once this m

02 07 30 32 CMP I cleaned that out this morning. Thanks.

02 07 31 23 CMP Hey, there's a big one. A great big one went by

02 07 31 56 CMP Yes, this window's really getting foggy, isn't i

02 07 32 08 CMP That'll hold for a couple of days.

02 07 32 42 CC Apollo 9, Houston through Guam.

02 07 32 46 CMP Roger, Houston; Apollo 9. Go ahead.

02 07 32 51 CC Roger. We're kind of standing by for S-band loc

here to get an E-memory dump from you.

02 07 32 57 CMP Oh, very well. And we never saw the state vectc

in.

02 07 33 05 CC Roger. It'll be coming in there shortly, as soc

get the lockup.

02 07 33 08 CMP Okay.

02 07 38 36 CC -- was that we have to be in HIGH BIT RATE for

PGNCS-to-AGS initialization.

02 07 38 48 CMP Roger; understand. Hey, they said they had to

HIGH BIT RATE for the PGNCS-to-AGS initializatio

02 07 38 56 CC Now, we're just about to LOS here. I'll give yo

more dope on tomorrow's activities when we get to

Hawaii.

02 07 39 05 CMP Okay. Understand. And he also said --

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02 07 39 07 CC

And if you think about it, if there are any changes in the window fogging from yesterday.

02 07 39 12 CMP

No. Well, yes, as a matter of fact, the left-hand rendezvous window is picking up some more around the edges. It looks like it'll be okay for the rendezvous, but it's - the only one of the bunch that's degrading. The rest of them still look pretty good

02 07 39 34 CMP

By-by, Houston.

02 07 39 39 CMP

Said the PLSS COMM checks were all good. They were having trouble with the sites. They recorded them, and sent them back from the sites and they all sounded real good.

02 07 41 02 CMP

That was pretty good.

02 07 41 25 CMP

Night-night, computer.

02 07 41 42 CMP

Are you getting your oral thermometer, or temperature? Oh, isn't that cute?

02 07 41 59 CMP

Hey, you know, these books really aren't too bad the way they're set up. They're really not bad. It's where - We all got stuff to play with.

02 07 42 19 CMP

Yes. Or maybe - or maybe we're just not smart enough to be able to change it. You have - you know, roll with the punch.

02 07 42 38 CMP

Yes. And - and if somebody's passing a block update you could still be working with the other stuff. I don't think they're bad. Given 7 more days, I bet we'd think they're probably pretty good.

02 07 42 56 CMP

Hey, I don't know what to do with this thing.

02 07 43 07 CMP

You know, it -

02 07 43 16 CMP

Got to do that. I was all ready. I know it. I know it.

02 07 43 52 CMP

What is it?

02 07 43 58 CMP

Nominal, 98?

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- 02 07 44 00 CMP That's probably close to nominal, isn't it? Well, see, that should convince you you're not sick. It convinced me.
- 02 07 44 24 CMP I guess, if you don't have anything to eat. Oh, I'm sorry. Anybody want something?
- 02 07 44 33 CMP I hate to put this camera up there without a lens on it, because I'm afraid some dirt will get in it. Huh? No, this lens doesn't fit on it - on the window. Yes, let's put it in here. Let me -
- 02 07 45 03 CMP You know, I was going to take a picture after you dock ... burn. No, you had the lens. There wasn't anything to take a picture of anyway.
- 02 07 45 19 CMP Yes, I never saw a plume either, and I looked hard.
- 02 07 45 27 CMP Oh, yes.
- 02 07 45 38 CMP Here you go, Rusty.
- 02 07 46 07 CMP Oh yes, well -
- 02 07 46 23 CMP Here's a power cable you can stick in there, Jim.
- 02 07 46 46 CMP Yes, they sure are.
- 02 07 46 53 CMP Oh, I always thought that was a pretty good idea.
- 02 20 01 07 LMP Testing. Yes, I guess you're not on the intercom though, Jim. I'm not hearing you anyway.
- 02 20 01 36 CDR Can you hear me now, Rusty?
- 02 20 01 37 LMP Yes, that last one, I did.
- 02 20 01 39 CDR Okay, I think I'm ...
- 02 20 01 42 LMP Yes.
- 02 20 01 55 LMP Okay, I guess the next thing I've got to do is eat now. No, I've got this ham up here. But I'll need some juice with that, too. Now, let me finish up this water first. And then I'll have you fill that up again.
- 02 20 03 03 LMP Okay.

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- 02 20 03 10 LMP You got some salve there, Dave, or something for your lip? Oh, I thought you - I saw you wiping something on.
- 02 20 04 15 LMP When you get a chance, Dave, I'd like a bagful of water here.
- 02 20 05 27 LMP Yes.
- 02 20 05 35 LMP No.
- 02 20 06 03 LMP Yes.
- 02 20 06 11 LMP Very good.
- 02 20 07 13 LMP Oh. Jim? Hey, never mind, I'll get it. Yes.
- 02 20 07 43 CC Apollo 9, Houston through Carnarvon.
- 02 20 07 47 LMP Go ahead, Houston; Apollo 9.
- 02 20 07 51 CC Roger. Did you get my comments there on EVA - AH 5?
- 02 20 07 57 LMP Stand by. Houston, we only got part of it, and then you cut out.
- 02 20 08 05 CC Okay. Are you ready to go over it a little bit more there?
- 02 20 08 11 LMP Jim, you want to take it or not?
- 02 20 08 14 CC Okay, on EVAH 5, step 3, delete lines 2 and 3; step 4, delete line 1.
- 02 20 08 26 LMP Roger.
- 02 20 08 27 CC And add LMP SUIT ISOLATION to SUIT DISCONNECT.
- 02 20 20 02 LMP You got it now? Do you? Okay.
- 02 20 20 06 LMP Okay.
- 02 20 20 19 LMP Okay, it sure increased the heart rate yesterday. Three of them (laughter).
- 02 20 20 42 LMP Roger; understand; Mercury at 26 with block data.
- 02 20 22 08 LMP Okay.

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02 20 22 35 LMP Okay, it's already supposed to be done. And it's 8 to B; 6 to B-6. Right.

02 20 25 50 LMP Yes, I had a couple of honest-to-God barfs this morning.

02 20 26 32 LMP Houston, Apollo 9. How do you read?

02 20 26 41 CC Roger, Apollo 9; this is Houston. We've got you through Mercury.

02 20 26 45 CDR Good morning, Smokey. How you doing?

02 20 26 49 CC Oh, real good. How are things in the wild blue?

02 20 26 53 CDR The wild black. We're doing alright this morning.

02 20 27 01 CC Okay, and I've got block data number 8 for you when you're ready to copy.

02 20 27 05 LMP All set. Go ahead.

02 20 31 17 LMP Got them in - Oh, ...

02 20 31 22 CC The way you are reading them is fine, just keep pressing.

02 20 31 25 LMP 471 Bravo, plus 33.1, minus 62.0, 73:20:28, 435.4; 481 Alfa, plus 28.8, minus 64.0, 74:54:09, 435.4; 494 Bravo, plus 32.0, minus 161.9, 77:40:30, 435.4; 54 Bravo, plus 33.7, minus 162.0, 79:14:13, 435.4. Pitch trim, 1 point - minus 1.07; yaw, minus 1.11.

02 20 32 26 LMP Houston, 9.

02 20 33 59 LMP No, I'm not even using that UCD. The only thing I use is that UCDA. Man, I think that's great.

02 20 34 14 LMP What?

02 20 34 26 LMP 8 to Bravo; 6 to Baker 6.

02 20 34 51 LMP Oh! Oh, I'm sorry, Dave. What did I -

02 20 36 56 LMP Hey, Dave.

02 20 36 58 CMP Hey.

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02 20 37 00 LMP Look, the only reason we had an IMU alignment was for the photography. We're not going to take any pictures, so why don't we just screw it?

02 20 37 07 CMP ...

02 20 37 09 LMP Why?

02 20 37 10 CMP ...

02 20 37 12 LMP Why? Why not just float?

02 20 37 30 LMP What do we need to even fire up at all for today? Why do we have to fire up the platform at all today I don't see any reason at all. It was only for the EVA attitude. We shouldn't even have to fire a jet

02 20 38 51 LMP Hey, can I get a breakfast out, Jim? Yes.

02 20 40 08 LMP Okay. Thank you. And here's a piece of trash for the basket.

02 20 41 14 LMP Hey, Dave. Next pass, why don't I ask them? Okay.

02 20 42 01 LMP No, let me cut it for you first.

02 20 44 02 LMP Let me know, Dave, when you got time to get me some water.

02 20 44 12 LMP What about them? I haven't - I never started.

02 20 44 23 LMP What - what didn't you do?

02 20 45 02 LMP Where'd you put my checklist?

02 20 46 23 LMP Here - why don't I just mark one? No, I can tell by the numbers. Hold on a minute.

02 20 46 40 LMP Yes, this one's mine.

02 20 46 51 LMP We supposed to take pages out? That's going to be tough because those rings are sealed. Oh, no, they're not.

02 20 47 09 LMP Hey, can you give me yours? I got data marked on mine. 17 and what? Oh, wait a minute. Systems 17 Okay, systems 17. I thought that was already in the EVA checklist. I guess not.

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02 20 48 12 LMP

Man, I don't have enough hands.

02 20 49 03 LMP

Okay, there's systems 17. What were the other one  
33 and 34? 32 and 33.

02 20 49 52 LMP

We do, huh? Okay.

02 20 50 02 LMP

Okay -

02 20 50 12 LMP

Where did Jim put that?

02 21 13 20 LMP

Yes, just a minute, Dave, Jim.

02 21 13 42 CDR

Now, see - There's - they're three - Dave, there ar  
three - three rolls of film in a bag over there in  
A-7. Did you look in there?

02 21 14 12 CDR

Did we log that S-1 in the film log, Rusty? That w  
used it for - used it for the dock ...

No.

02 21 14 23 CDR

I wonder if I should put the exterior or the interior  
on this one. Put the interior on?

02 21 14 51 LMP

What's the setting for interior?

02 21 14 53 CDR

I don't know.

02 21 14 57 LMP

What magazine was it - it was S that we used?

02 21 14 59 CDR

Yes. It was S.

02 21 15 04 LMP

And that was 49 something, wasn't it? What the hell  
was that burn time?

02 21 15 15 CDR

What is the setting for the interior, do you have it  
in that log there? ...

02 21 15 21 LMP

Stand by. I'm flipping pages like mad, here.

02 21 15 30 CDR

I'm going to put the 18-millimeter - I mean the  
5-millimeter lens on it also.

02 21 16 09 LMP

Okay, f:2 at a 60th.

02 21 16 14 CDR

f:2.

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- 02 21 16 15 LMP Six frames per second.
- 02 21 16 17 CDR f:2 at 1/60th, six frames per second.
- 02 21 16 31 LMP Which one are you using? Q?
- 02 21 16 33 CDR R, the one we had with us yesterday.
- 02 21 16 38 LMP Oh, okay. You - you're talking about the LM.
- 02 21 16 43 CDR Yes.
- 02 21 16 44 LMP Which one are we loading on the CSM?
- 02 21 16 46 CDR I don't know. (Cough)
- 02 21 16 59 LMP Q is the one we're supposed to use on the IVT.
- 02 21 17 06 CDR Dave had that one all loaded yesterday when we came back, but we were in such a big hurry, he didn't get a chance to take a picture.
- 02 21 17 27 CDR Let's see, the sample end goes on to the --
- 02 21 17 43 CDR Goes where, now?
- 02 21 18 05 CDR Here, I'll get it, Dave.
- 02 21 18 16 CDR Yes. It's got some junk in it. Smells!
- 02 21 18 42 CDR Want to use my EVVA. Okay. Fine.
- 02 21 19 05 CDR Yes.
- 02 21 19 18 CDR Oh, boy, we're running late again.
- 02 21 19 48 CDR Yes. We have some antifog, if that's what you want to know.
- 02 21 20 18 CDR That it?
- 02 21 20 24 CDR I went through the film pack; where did that come from?
- 02 21 20 30 CDR Magazine M.
- 02 21 20 45 CDR Okay. Very good.

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- 02 21 20 57 CDR Yes. I'd like - I think we start getting all this kind of stuff out of here.
- 02 21 21 12 CDR We don't need stuff like that right near the hatch.
- 02 21 21 31 LMP Here, I'll leave this stuck up here, Dave, because you get a chance to eat that again.
- 02 21 21 54 LMP This is going to really be a play-it-by-ear day, man.
- 02 21 21 57 CDR Yes.
- 02 21 22 15 LMP Oh, I think we ought to be able to get most of these objectives accomplished.
- 02 21 22 23 CMP Okay. I've got two more food packs here that I - to wrap up and throw away.
- 02 21 22 44 LMP Say, you know what we ought to do today, Jim? I don't know if they mentioned it, but we ought to unstow the radar and do the rendezvous radar self-check.
- 02 21 22 50 CDR No, they didn't mention it. We talked to them about that last night.
- 02 21 22 54 LMP Yes. Let's mention it today - If we get time over there somewhere, let's make sure we remember to do that.
- 02 21 23 00 CDR I want to check out lights, too. Maybe we ought to bring our systems rate checklist back over there with us.
- 02 21 23 08 CMP ...
- 02 21 23 12 LMP Yes.
- 02 21 23 18 LMP Well, we started that boiler dryout too fast yesterday. Boy, we were lucky we didn't hurt something there. In fact, we may still have hurt something. We may have that damn tube saturated with water. I think we ought to wait until Dave has got the tunnel almost ready, so that as soon as we start that thing you can get off the suit loop, Jim.
- 02 21 23 37 CMP ...
- 02 21 23 40 CDR See who got it, huh?

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( ) 02 21 23 44 LMP      Dave, do you have the tape anywhere there?

02 21 23 50 LMP      I used the only one I see. Oh - I know.

02 21 24 05 LMP      Sure did.

02 21 24 23 LMP      Okay, you got that nasty old food - waste bag arou  
there?

02 21 24 30 LMP      Yes. I've got it. Okay.

02 21 24 53 LMP      Here.

02 21 25 06 LMP      Okay, here's some - a meal that I didn't eat all c  
Close that up. ...

02 21 25 28 LMP      Now, what the hell am I going to do with that?

02 21 25 34 CDR      Here, I'll take it and stick it over here in this  
other temporary storage bag.

02 21 25 37 LMP      Okay. I'll try to remember it's in there, because  
want to finish it up later.

( ) 02 21 25 41 CDR      Yes. There's a whole bunch of loose food; right h

02 21 26 17 CDR      A lovely snowstorm.

02 21 26 32 LMP      Is Dave dumping?

02 21 26 33 CDR      Yes.

02 21 27 21 CDR      What? Oh. (Laughter)

02 21 27 38 CMP      ...

02 21 27 43 CDR      Well, all I can figure is stick it underneath the  
right seat, now, Dave. I don't think we ought to  
it out in orbit here.

02 21 27 56 LMP      I don't think it would be bothering us for the  
rendezvous though, Jim. Give it a half a foot per  
second; a day later, it's going to be nowhere near

02 21 28 03 CDR      A half a foot per second out of plane brings it b  
into plane. Every -

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02 21 28 11 LMP

Yes. I can't believe a day later it's going to be in the plane again. Hey - Where are you, Dave? still taking a leak? Okay. Well - here, maybe I can get it. Oh - oh, there it is. Let's put it in. Hey, you are right in the right place. You

to throw this little thing in that waste disposal

02 21 29 00 LMP

Boy, they ought to have more of those around.

02 21 29 14 LMP

No, the one - the one that was - that right there. The other one, I don't know where that came from. This is the one I wet this morning, yes. Yes, this one is a good one, though.

02 21 29 38 CDR

What?

02 21 29 40 CMP

...

02 21 29 43 CDR

Okay. Let me see what I can do.

02 21 29 49 LMP

All the stuff out of that waste bag. Yes, boy, too, and I can't imagine it's not going to. Eat that or split the bag down the side. Some of the bags are probably going to explode, Dave. I mean you know, go boom. So be ready to hear some booms. I wonder where I can put this towel?

02 21 30 14 CDR

Look at what we have for string.

02 21 30 17 LMP

Hey, we had some string. No, that was great big

02 21 30 24 CDR

What?

02 21 30 26 CMP

...

02 21 30 29 CDR

I'm going, too. Here's a - You know --

02 21 30 36 CDR

You try to do it with this scrap.

02 21 31 09 LMP

Dave, you're not going to be using this mirror, are you? Okay, I'm going to put my towel up underneath it.

02 21 31 26 CMP

...

02 21 31 28 LMP

Don't - don't rush it. Groove.

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- 02 21 31 47 LMP Say, I'm going to have to put my command module checklist away. What other books do you want out?
- 02 21 31 53 CMP ...
- 02 21 31 56 LMP I'm afraid they're not all going to fit. You want the flight plan out or not?
- 02 21 32 06 LMP Okay. Here's the systems EVAL checklist, Jim. We don't want that anymore, right?
- 02 21 32 10 CDR Yes. Why don't you take it with you? Put it in the ISA. Let's take it back over there with us.
- 02 21 32 15 LMP Okay.
- 02 21 32 16 CDR Maybe we'll want to - want - maybe we can test another run out of it.
- 02 21 32 20 LMP You want - Dave - Here - Hey, Jim, most of them are in the rendezvous checklist, which is over there.
- 02 21 32 25 CDR Let's take it along anyway - -
- 02 21 32 26 LMP Okay.
- 02 21 32 27 CDR -- just put it in the ISA. Will you put that in the ISA?
- 02 21 32 31 CMP Okay.
- 02 21 32 32 LMP Oh, excuse me.
- 02 21 32 54 LMP Hey, where's that other checklist? You got it with you?
- 02 21 32 57 CDR Yes. I have it.
- 02 21 32 58 LMP Okay. Boy.
- 02 21 33 03 CDR There you are, Davey. I got it closed up, but I don't know if it's going to stay.
- 02 21 33 21 CDR What?
- 02 21 33 23 CMP Wonder where I ought to put it.
- 02 21 33 24 CDR I'd just put it underneath the right seat. I don't know where else you could put it.

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- 02 21 33 27 LMP Shoot, man. I guess.
- 02 21 33 53 CDR I can see, tomorrow, we're going to have to get up about an hour earlier than we planned.
- 02 21 34 07 LMP Okay. We've got a procedures book, a log, and a - something. That's six today - LCG, update book, crew log, and procedures book. You don't want any of the out, do you? Dave?
- 02 21 34 36 CDR He can't -
- 02 21 34 37 LMP Yes. Do you want the crew - the crew log, the procedures book, or the - Okay. Okay. Then we're ready to stow anytime. And my LMP checklist, too. Okay, and there's a pair of scissors.
- 02 21 35 35 LMP Hey, you don't have anyplace to stow these, do you?
- 02 21 35 39 CDR No, I sure don't.
- 02 21 35 53 LMP Okay.
- 02 21 36 22 LMP Okay, I've got almost everything cleaned up over here that looks like it - it could possibly be any trouble.
- 02 21 37 07 LMP Man, our rates are almost zero.
- 02 21 37 11 CDR We got a - we get about a little bit of pitch down -
- 02 21 37 16 LMP 0.1 of a degree per second pitch. Not very much yaw got almost 0.2 of a degree per second roll.
- 02 21 37 21 CDR Oh, you got the BMAG's?
- 02 21 37 22 LMP Right.
- 02 21 37 40 LMP You got that camera over there?
- 02 21 37 42 CDR No, I haven't.
- 02 21 37 44 LMP Okay, I want to take - I'm supposed to take moving pictures of you guys stowing the tunnel, I guess.
- 02 21 37 53 CDR Dave, how do you have that - What - what film pack does that camera have in it?

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02 21 38 07 CDR

Yes. Listen, never mind, you get - you get going. You're the pacing item on how late we're going to be Why - why don't you go ahead and do that, and we'll work out - See if you can take him with this other camera - They don't have camera ... problem.

02 21 38 20 LMP

Yes. We got to get the power cable.

02 21 38 23 LMP

We can take some SWA pictures.

02 21 38 26 LMP

Oh, boy, we ought to take - we ought to -

02 21 38 32 CDR

Shoot! We're so God-blessed far behind right now, better not screw around.

02 21 38 36 LMP

If you can get the power cable, I can wrap it up over here and just leave it hanging right here after we get done, Jim.

02 21 38 46 CDR

We'll probably ...

02 21 38 48 LMP

Well, let me see if I can see it there. There's the remote cable hanging right there.

02 21 38 57 CMP

The power cable for the camera - Why don't you go ahead and get suited up?

02 21 39 01 LMP

It looks like it's all the way down at the other end here.

02 21 39 05 CDR

Go ahead. Listen, we're about an hour late now and so - We don't - I'd rather be on time and get the rest of the test done and to hell with the pictures. We could fake taking it all out sometime.

02 21 53 24 LMP

There is the drogue -

02 21 53 50 LMP

Where's that camera?

02 21 54 41 LMP

Okay, I'm going to stop taking pictures and get ready to go.

02 21 54 45 CDR

Okay.

02 21 54 59 CDR

Can you -

02 21 55 04 LMP

Dave, want me to go across the top?

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- 02 21 55 05 CMP Wa - wait. Can you pick your feet up? I need to get in here.
- 02 21 55 09 LMP They're already as high as they can go.
- 02 21 55 14 CMP Those hoses! Unbelievable!
- 02 21 55 17 CDR Yes, as a matter of fact, they are sort of, aren't they?
- 02 21 55 33 CMP Absolutely unbelievable! The best thing, Rusty, I guess, though, you can go anyway you want.
- 02 21 55 39 LMP Yes, well --
- 02 21 55 40 CMP Your hoses are down here; you've got to come out through --
- 02 21 55 42 LMP I've got to go this way.
- 02 21 55 44 CMP No, you've got to come this way; your hoses are all across here.
- 02 21 55 47 LMP No, that's alright, Dave. I'll just --
- 02 21 55 49 CDR -- that pole, Dave.
- 02 21 55 50 CMP Oh, okay! I did that purposely. ...
- 02 21 55 53 LMP This morning - I was clever. Okay, I've got to get my helmet and gloves on here.
- 02 21 56 02 CMP Do you really?
- 02 21 56 03 LMP Yes.
- 02 21 56 04 CMP Why don't you just take them with you?
- 02 21 56 07 LMP Okay.
- 02 21 56 08 CDR It's probably going to be alright over there. We've already pressurized.
- 02 21 56 11 CMP We're here. If you - you know, if you have your helmet and gloves on when you go through the tunnel, and we don't have ours on, why - we're in trouble!
- 02 21 56 26 LMP Okay, now I need my hoses.

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02 21 56 27 CMP In here. Here you go.

02 21 56 30 LMP Hoses, hoses, hoses!

02 21 56 59 LMP Okay, I'm going to - dump the dump valve; and - we're in AUTO, so we're probably going to get a hiss here.

02 21 57 06 CDR Okay.

02 21 57 07 LMP Watch the O<sub>2</sub> flow - or watch the cabin pressure.

02 21 57 10 CDR Yes. Okay, the O<sub>2</sub> flow is going up very slowly, very slowly. Cabin pressure's staying right up. 0 - -

02 21 57 18 LMP Okay.

02 21 57 19 CDR -- O<sub>2</sub> flow's up at 1; we're going to get a MASTER ALARM. Cabin pressure's staying right on up.

02 21 57 25 LMP DELTA-P is okay. No more leakage.

02 21 57 30 CDR Okay, we'll still probably get the MASTER ALARM, here.

02 21 57 35 LMP Hatch in open.

02 21 57 36 CDR Okay.

02 21 57 37 CMP There's the MASTER ALARM, O<sub>2</sub> FLOW HIGH; alright.

02 21 57 42 LMP Okay, lights are on again.

02 21 57 44 CMP Okay.

02 21 58 04 CMP ... couch, if anything.

02 21 58 08 LMP Hey, Jim?

02 21 58 09 CDR Go.

02 21 58 10 LMP I don't think I'm going to need it, but you want to bring that barf bag over?

02 21 58 13 CDR Yes.

02 21 58 14 LMP Ouch!

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02 21 58 15 CDR Where is it?

02 21 58 17 CMP In the ...

02 21 58 20 CDR Rusty.

02 21 58 21 LMP Stand by 1. Okay.

02 21 58 28 CMP Well, I'll send it to you, just a minute. ...

02 21 58 34 CMP Okay, here it comes.

02 21 58 36 LMP Stand by. Okay, go ahead. Jesus, not so hard!

02 21 58 40 CMP That thing really goes good, doesn't it?

02 21 58 42 LMP (Laughter) God damn!

02 21 58 44 CDR Did you get it?

02 21 58 45 LMP Yes!

02 21 58 46 CMP You alright?

02 21 58 47 LMP Man!

02 21 58 48 CMP Thought that little piece of plastic wouldn't hardly go at all.

02 21 58 50 LMP It's a Bob Sellers shot.

02 21 58 53 CDR LMP verify LCG is donned; remove the leg pockets fro the PGA - -

02 21 58 58 LMP Yes, we went through all that.

02 21 58 59 CMP -- CDR retains scissors; stow in the ISA: sequence camera; one 16-millimeter MAG of P; one partially full, R; don't take any C-IN - -

02 21 59 08 LMP Alright, we went through that once.

02 21 59 09 CDR Remote cable, we don't need that; sequence camera bracket, don't need that; SWA, you got that? One 70-millimeter magazine, E.

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- 02 21 59 16 LMP Something else we might bring over, by the way, is some of that tape, so we can collect some of this trash over here.
- 02 21 59 22 CDR Yes, I have some in my pocket.
- 02 21 59 24 LMP Okay.
- 02 21 59 25 CDR LMP transfer --
- 02 21 59 26 LMP Oh, God damn it!
- 02 21 59 28 CDR -- LMP transfer to the LM with the EVA checklist and the flight plan cards, two. I'm not sure whether -- where those flight plan cards are.
- 02 21 59 35 LMP No, I'm not either. As a matter of fact, we really need one of those.
- 02 21 59 40 CDR Actuate the dump cabin valve and ingress the LM.
- 02 21 59 43 LMP Okay, we're in.
- 02 21 59 44 CDR FLOODLIGHT, ALL; EXTERIOR LIGHTING, OFF.
- 02 21 59 47 LMP EXTERIOR - FLOODLIGHTS to ALL; EXTERIOR LIGHTING is OFF.
- 02 21 59 50 CDR DESCENT H<sub>2</sub>O, OPEN.
- 02 21 59 52 LMP Stand by. I've got a big bunch of stuff here; I got to stick it in this bag.
- 02 21 59 59 LMP Okay, DESCENT H<sub>2</sub>O --
- 02 22 06 47 CDR PRIMARY EVAP --
- 02 22 06 48 LMP Number 2, CLOSE.
- 02 22 06 49 CDR DESCENT H<sub>2</sub>O, OPEN.
- 02 22 06 50 LMP OPEN.
- 02 22 06 51 CDR WATER TANK SELECTORS, DESCENT.
- 02 22 06 52 LMP DESCENT.
- 02 22 06 53 CDR SUIT TEMP, COLD.

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- 02 22 06 54 LMP COLD.
- 02 22 06 55 CDR CABIN TEMP, NORMAL.
- 02 22 06 56 LMP NORMAL.
- 02 22 06 57 CDR Next step, CABIN RELIEF AND DUMP, two, to AUTO.
- 02 22 07 00 LMP FORWARD is in AUTO, and the UPPER is in AUTO.
- 02 22 07 02 CDR Okay, next step: DFI: PRIMARY, ON; SECONDARY, OFF.
- 02 22 07 07 LMP Stand by.
- 02 22 07 12 LMP PRIMARY, ON; SECONDARY, OFF?
- 02 22 07 14 CDR Yes.
- 02 22 07 16 CDR UTILITY LIGHTS, both, as desired.
- 02 22 07 17 LMP As desired.
- 02 22 07 18 CDR Forward hatch closed and locked.
- 02 22 07 19 LMP Forward hatch is closed and locked.
- 02 22 07 20 CDR EPS activation checkout: DFI, ON. Let's see, AC POWER, ON. What's this (cough) "DFI, ON" at - down at the bottom mean? R/D, A and B, POWER, OFF.
- 02 22 07 39 LMP No, that's after the power transfer, Jim.
- 02 22 07 41 CDR Okay. CSM position LM POWER to RESET, then OFF. Okay? Going RESET, then OFF. Ready?
- 02 22 07 47 LMP Stand by. All set.
- 02 22 07 50 CDR Okay. RESET?
- 02 22 07 52 LMP Okay, did it.
- 02 22 07 53 CDR Then OFF. Okay, we're showing - we're showing 00 lighting: ANNUNCIATOR/NUMERICS to ERIGHT. Okay, one caution --
- 02 22 07 59 LMP Stand by; I'm trying to stow this stupid eye thing. (Coughing) Damn it, come on; get in there, you son of a gun!

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02 22 08 13 CDR Hey, there's something wrong with something. I don't think you're getting it.

02 22 08 16 LMP Yes, I'm getting it here.

02 22 08 25 LMP Okay.

02 22 08 26 CDR Okay.

02 22 08 27 LMP What was your next one now?

02 22 08 28 CDR LIGHTING: ANNUNCIATOR/NUMERICS to BRIGHT.

02 22 08 30 LMP ANNUNCIATOR/NUMERICS to BRIGHT.

02 22 08 32 CDR One caution light, nine power-failure lights.

02 22 08 35 LMP That's a verify.

02 22 08 36 CDR Next step: CB(11), INSTRUMENTATION: SIGNAL CONDITIONER 1, CLOSE; INSTRUMENTATION --

02 22 08 41 LMP Okay, stand by. SIGNAL CONDITIONER 1, CLOSE.

02 22 08 45 CDR EPS: TRANSLUNAR BUS TIE, CLOSE.

02 22 08 46 LMP TRANSLUNAR BUS TIE, CLOSE.

02 22 08 47 CDR DESCENT ECA CONTROL, CLOSE.

02 22 08 49 LMP ECA CONTROL, CLOSE.

02 22 08 50 CDR DC BUS VOLT, CLOSE.

02 22 08 51 LMP DC BUS VOLT, CLOSE.

02 22 08 52 CDR CB(16), INSTRUMENTATION: SIGNAL SENSOR, CLOSE.

02 22 08 57 LMP SIGNAL SENSOR, CLOSE.

02 22 08 59 CDR PCM/TE, CLOSE.

02 22 09 00 LMP PCM/TE, CLOSE.

02 22 09 02 CDR SIGNAL CONDITIONER 2, CLOSE.

02 22 09 04 LMP SIGNAL CONDITIONER 2, CLOSE.

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02 22 09 05 CDR COMM: PRIMARY S-BAND; POWER AMP, CLOSE.  
02 22 09 07 LMP PRIMARY S-BAND; POWER AMP.  
02 22 09 09 CDR PRIMARY S-BAND; TRANSMITTER/RECEIVER, CLOSE.  
02 22 09 11 LMP TRANSMITTER/RECEIVER.  
02 22 09 12 CDR PMP, CLOSE.  
02 22 09 13 LMP PMP.  
02 22 09 14 CDR EPS: DISPLAY, CLOSE.  
02 22 09 15 LMP EPS: DISPLAY.  
02 22 09 16 CDR DESCENT ECA, CLOSE.  
02 22 09 17 LMP DESCENT ECA CONTROL.  
02 22 09 20 CDR No, this says DESCENT ECA, CLOSE.  
02 22 09 23 LMP Oh, I thought you said "ECA, CLOSED."  
02 22 09 25 CDR DC BUS VOLT, CLOSE.  
02 22 09 26 LMP DC BUS VOLT, CLOSE.  
02 22 09 28 CDR TRANSLUNAR BUS TIE, CLOSE.  
02 22 09 29 LMP TRANSLUNAR BUS TIE, CLOSE.  
02 22 09 30 CDR Next step: CB(11), COMM: VHF B TRANSMITTER, CLOSE  
02 22 09 35 LMP Stand by.  
02 22 09 36 CDR Dave, get ready to set up the receivers a little bi  
early.  
02 22 09 38 CMP Okay.  
02 22 09 40 LMP VHF B TRANSMITTER, CLOSE.  
02 22 09 42 CDR VHF B to DATA.  
02 22 09 43 IMP VHF B coming to DATA right now.  
02 22 09 45 CDR TELEMETRY to LOW.

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02 22 09 48 LMP DATA; LOW.  
02 22 09 50 CDR Okay, Dave, --  
02 22 09 51 CMP ...  
02 22 09 52 CDR LOW? Okay? Next step: verify BAT's 1, 2, 3, 4, and talkback LOW.  
02 22 09 57 LMP Verified.  
02 22 09 59 CDR DESCENT BAT's?  
02 22 10 00 CMP Gray.  
02 22 10 01 LMP Gray.  
02 22 10 03 CDR BAT 5 and 6, NORMAL, BACKUP, four, talkback barber pole.  
02 22 10 07 CMP Roger.  
02 22 10 08 CDR Check the BAT and BUS voltages. When BUS voltages less than 27, you go to high tap.  
02 22 10 13 LMP Okay, they're right at 27, so I'll go to high tap.  
02 22 10 16 CDR Okay, CROSS TIE BALANCE LOADS, OPEN.  
02 22 10 18 LMP Okay, stand by. BALANCE LOADS, OPEN.  
02 22 10 23 CDR Okay, then we go each battery --  
02 22 10 25 LMP Okay.  
02 22 10 26 CDR -- to HIGH VOLTAGE.  
02 22 10 31 LMP ALL HIGH VOLTAGE.  
02 22 10 32 CDR Okay, CROSS TIE BALANCE LOADS, CLOSED.  
02 22 10 34 LMP BALANCE LOADS, CLOSED.  
02 22 10 35 CDR Okay, DFI, ON.  
02 22 10 36 LMP Okay.  
02 22 10 37 CDR R/D A and B, and POWER, ON, I guess.

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- 02 22 10 41 IMP Okay, that's R/D A; R/D B; DFI, ON.
- 02 22 10 45 CDR Okay, CB(11), AC BUS B and A: BUS TIE INVERTERS 2 and 1, four of them, CLOSE.
- 02 22 10 52 IMP Got them.
- 02 22 10 53 CDR AC BUS VOLTAGE, CLOSE.
- 02 22 10 54 IMP AC BUS VOLT, CLOSE.
- 02 22 10 55 CDR EPS: INVERTER 1, CLOSE.
- 02 22 10 56 IMP INVERTER 1, CLOSE.
- 02 22 10 58 CDR CB(16), EPS: INVERTER 2, CLOSE.
- 02 22 10 59 IMP INVERTER 2, CLOSE.
- 02 22 11 01 CDR And the next step: POWER/TEMP MONITOR to AC BUS.
- 02 22 11 04 IMP MONITOR going to AC BUS.
- 02 22 11 07 IMP Go.
- 02 22 11 08 CDR INVERTER 1, then INVERTER 2.
- 02 22 11 10 IMP INVERTER 1, into the upper end of the green; INVERTER 2, into the upper end of the green.
- 02 22 11 14 CDR Okay, CB(11), EPS: INVERTER 1, OPEN.
- 02 22 11 16 IMP INVERTER 1 coming OPEN.
- 02 22 11 18 CDR Let's see, R/D INSTRUMENTATION B, CLOSE. We've already done that.
- 02 22 11 20 IMP Got it.
- 02 22 11 21 CDR Activate the S-BAND for TM.
- 02 22 11 22 IMP Okay, go.
- 02 22 11 24 CDR S-BAND to PM, PRIME, PRIME, VOICE, PCM, RANGE, OFF, LOW.
- 02 22 11 34 IMP Go.
- 02 22 11 35 CDR Glycol pump activation: CB(16), ECS: DISPLAYS, CLOSE.

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02 22 11 41 LMP      ECS: DISPLAYS, CLOSE.  
02 22 11 43 CDR      CB(11), ECS: GLYCOL PUMP AUTO TRANSFER, CLOSE.  
02 22 11 48 LMP      GLYCOL PUMP AUTO TRANSFER, CLOSE.  
02 22 11 49 CDR      GLYCOL PUMP 1, CLOSE.  
02 22 11 50 LMP      1, CLOSE.  
02 22 11 51 CDR      GLYCOL PUMP AUTO TRANSFER, OPEN.  
02 22 11 52 LMP      AUTO TRANSFER, OPEN.  
02 22 11 54 CDR      Then go to GLYCOL PUMP 1.  
02 22 11 56 LMP      Roger; 1.  
02 22 11 57 CDR      Okay. CB(11).  
02 22 12 01 LMP      Gee, that sounds like it's got some air in it.  
02 22 12 02 CDR      What?  
02 22 12 03 LMP      Go ahead. It sounded like it had some air in it.  
02 22 12 06 CDR      Okay, CB(11), ECS: GLYCOL PUMP 2, CLOSE.  
02 22 12 09 LMP      2, CLOSE.  
02 22 12 10 CDR      GLYCOL PUMP AUTO TRANSFER, CLOSE.  
02 22 12 11 LMP      AUTO TRANSFER, CLOSE.  
02 22 12 14 CDR      Okay, caution and warning checkout: CB(16),  
                          INSTRUMENTATION: CWEA, CLOSE.  
02 22 12 18 LMP      Stand by. CWEA, CLOSE.  
02 22 12 21 CDR      Okay, you should have the LGC, CES AC, CES DC warning  
                          lights, the PRE AMPS, the HEATER, and the GLYCOL, and  
                          ECS caution lights.  
02 22 12 28 LMP      Got them all.  
02 22 12 29 CDR      H<sub>2</sub>O SEP COMP lights, ON.  
02 22 12 30 LMP      Got it.

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02 22 12 31 CDR Okay, LIGHTING: ANNUNCIATOR/DOCKING/COMPONENT, CLOSE; that's a circuit breaker.

02 22 12 33 LMP Okay, got it.

02 22 12 34 CDR MASTER ALARM, CLOSE.

02 22 12 36 LMP MASTER ALARM, CLOSE. Got the ALARM.

02 22 12 38 CDR Okay, HEATERS: DISPLAY, CLOSE.

02 22 12 40 LMP Reset; HEATERS: DISPLAY, CLOSE.

02 22 12 42 CDR Okay, next step. RCS TEMP/PRESS MONITOR, cycle, to HELIUM.

02 22 12 46 LMP Okay. I don't know - I don't know why the hell we do that. We don't have that light on --

02 22 12 50 CDR Okay, HEATER TEMP MONITOR, cycle, then LANDING. Let's just put it up and see.

02 22 12 52 LMP A hangover.

02 22 12 53 CDR GYRO TEST, POSITIVE RATING.

02 22 12 56 LMP Hey, wait a minute, let me look at the quads here. the way, the quad temperatures are 70, 90, and in ball park.

02 22 13 01 CDR Okay.

02 22 13 02 LMP Okay.

02 22 13 03 CDR LAMPS ON? Good. Check all positions.

02 22 13 05 LMP Okay, coming up.

02 22 13 14 LMP 4 - they're all ON; 3's are all ON; 2 - they're all ON; 1 - they're all ON; ALARM TONE works, then OFF again. Okay, go ahead.

02 22 13 28 CDR Okay. Circuit breaker activation: CB(11), row 1, all OPEN except: AC BUS B: SYSTEMS ENGINEER WIND HEATER is CLOSE.

02 22 13 40 LMP All OPEN except?

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02 22 13 42 CDR Yes, row 1, all OPEN except. And I'm going to r  
a bunch.

02 22 13 47 LMP Okay.

02 22 13 49 CDR AC BUS B: SYSTEMS ENGINEER WINDOW HEATER is CLC

02 22 13 52 LMP Go.

02 22 13 53 CDR NUMERICS LIGHTING is CLOSE.

02 22 13 55 LMP Go.

02 22 13 56 CDR BUS TIE INVERTER 2 and 1, CLOSE.

02 22 13 59 LMP Roger. Go through AC BUS VOLT.

02 22 14 02 CDR AC BUS A: BUS TIE INVERTER 1 and 2, CLOSE; AC E  
VOLT, CLOSE; COMMANDER WINDOW HEATER, CLOSE.

02 22 14 09 LMP COMMANDER WINDOW HEATER. Boy, we could do withc  
those.

02 22 14 10 CDR TAPE RECORDER, CLOSE.

02 22 14 12 LMP TAPE RECORDER, CLOSE.

02 22 14 13 CDR INTEGRAL LIGHTING, CLOSE.

02 22 14 14 LMP INTEGRAL LIGHTING, CLOSE.

02 22 14 16 CDR Row 2, all OPEN except: FLIGHT DISPLAYS: MISSI  
TIMER, CLOSED.

02 22 14 20 LMP MISSION TIMER, CLOSED.

02 22 14 21 CDR That one is OPEN?

02 22 14 22 LMP CLOSE; OPEN.

02 22 14 23 CDR Row 3, all OPEN except: HEATERS: RENDEZVOUS R/  
STANDBY, CLOSE.

02 22 14 28 LMP RENDEZVOUS RADAR STANDBY, CLOSE.

02 22 14 30 CDR LANDING RADAR, CLOSE.

02 22 14 32 LMP LANDING RADAR, CLOSE.

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02 22 14 34 CDR DOCKING WINDOW, CLOSE.

02 22 14 35 LMP DOCKING WINDOW, CLOSE. Boy, we could do without all those window heaters.

02 22 14 39 CDR Well, just leave them ON and we'll see if we open them up when we go along. Okay, INSTRUMENTATION: SIGNAL CONDITIONER 1, CLOSE.

02 22 14 46 LMP Go.

02 22 14 48 CDR ANNUNCIATOR/DOCKING/COMPONENT, CLOSE.

02 22 14 51 LMP Go.

02 22 14 52 CDR Row 3, all others OPEN.

02 22 14 54 LMP OPEN.

02 22 14 56 CDR Row 4, all OPEN except: CABIN FAN 1, CLOSE.

02 22 14 58 LMP CABIN FAN 1, CLOSE.

02 22 14 59 CDR GLYCOL PUMPS 2 and 1, CLOSE.

02 22 15 01 LMP Go.

02 22 15 04 CDR GLYCOL PUMP AUTO TRANSFER, CLOSE.

02 22 15 06 LMP AUTO TRANSFER, CLOSE.

02 22 15 07 CDR COMM: VHF B TRANSMITTER, CLOSE.

02 22 15 09 LMP VHF B TRANSMITTER, CLOSE.

02 22 15 10 CDR VHF A RECEIVER, CLOSE.

02 22 15 11 LMP A RECEIVER.

02 22 15 12 CDR CDR AUDIO, CLOSE.

02 22 15 13 LMP CDR AUDIO.

02 22 15 14 CDR PGNS: IMU STANDBY, CLOSE.

02 22 15 15 LMP PGNS: IMU STANDBY.

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02 22 15 17 CDR All others, OPEN.  
02 22 15 18 LMP All others, OPEN.  
02 22 15 19 CDR Row 5, all OPEN except: EPS: BAT FEED TIE, two,  
CLOSE.  
02 22 15 22 LMP Go.  
02 22 15 23 CDR CROSS TIE BALANCE LOADS, CLOSE.  
02 22 15 24 LMP Go.  
02 22 15 25 CDR TRANSLUNAR BUS TIE, CLOSE.  
02 22 15 26 LMP Go.  
02 22 15 27 CDR DESCENT ECA CONTROL, CLOSE.  
02 22 15 28 LMP Go.  
02 22 15 29 CDR DESCENT ECA, CLOSE.  
02 22 15 30 LMP Go.  
02 22 15 31 CDR ASCENT ECA, CLOSE.  
02 22 15 32 LMP Go.  
02 22 15 33 CDR DC BUS VOLT, CLOSE.  
02 22 15 34 LMP ASCENT ECA, CLOSE; DC BUS VOLT, CLOSE.  
02 22 15 37 CDR R/D INSTRUMENTATION B, CLOSE.  
02 22 15 40 LMP Okay, I got it - all the DFI, ON.  
02 22 15 42 CDR All others OPEN.  
02 22 15 44 LMP Okay, go.  
02 22 15 45 CDR CB(16).  
02 22 15 46 LMP Go.  
02 22 15 47 CDR Row 1, all OPEN except: FLIGHT DISPLAY: EVENT  
TIMER/SYSTEMS ENGINEER FDAI, CLOSE.  
02 22 15 51 LMP Got it.

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02 22 15 52 CDR All others OPEN.  
02 22 15 54 LMP Go.  
02 22 15 55 CDR Row 2, all OPEN except: LIGHTING: FLOOD, CLOSE.  
02 22 15 56 LMP Go.  
02 22 15 57 CDR ANNUNCIATOR/DOCKING/COMPONENT, CLOSE.  
02 22 15 58 LMP Go.  
02 22 15 59 CDR MASTER ALARM, CLOSE.  
02 22 16 00 LMP Go.  
02 22 16 01 CDR STAB/CONTROL: ASA, CLOSE.  
02 22 16 02 LMP Go.  
02 22 16 03 CDR INSTRUMENTATION: CWEA, CLOSE.  
02 22 16 06 LMP Go.  
02 22 16 07 CDR SIGNAL SENSOR, CLOSE.  
02 22 16 08 LMP Go.  
02 22 16 09 CDR PCM/TE, CLOSE.  
02 22 16 11 LMP Go.  
02 22 16 12 CDR SIGNAL CONDITIONER 2, CLOSE.  
02 22 16 13 LMP Go.  
02 22 16 14 CDR ECS: SUIT FLOW CONTROL, CLOSE.  
02 22 16 15 LMP Go.  
02 22 16 16 CDR SUIT/CABIN REPRESS, CLOSE.  
02 22 16 17 LMP Go.  
02 22 16 18 CDR All others OPEN.  
02 22 16 19 LMP Go.

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02 22 16 20 CDR Row 3, all OPEN except: COMM: DISPLAYS, CLOSE.  
02 22 16 23 LMP Go.  
02 22 16 24 CDR SYSTEMS ENGINEER AUDIO, CLOSE.  
02 22 16 25 LMP Go.  
02 22 16 26 CDR VHF A TRANSMITTER and B RECEIVER, CLOSE.  
02 22 16 29 LMP A TRANSMITTER and B RECEIVER?  
02 22 16 31 CDR CLOSE.  
02 22 16 32 LMP Alright.  
02 22 16 33 CDR Okay, PRIMARY S-BAND POWER AMP's ON.  
02 22 16 36 LMP Go.  
02 22 16 37 CDR PRIMARY S-BAND TRANSMITTER/RECEIVER, CLOSE.  
02 22 16 38 LMP Go.  
02 22 16 39 CDR PMP, CLOSE.  
02 22 16 40 LMP Go.  
02 22 16 41 CDR ECS: DISPLAYS, CLOSE.  
02 22 16 42 LMP Go.  
02 22 16 43 CDR PRIMARY GLYCOL EVAPORATOR, CLOSE; PRIMARY EVAPORATOR -  
PRIMARY GLYCOL EVAPORATOR FLOW, CLOSE.  
02 22 16 48 LMP Go.  
02 22 16 49 CDR CABIN FAN 2, CLOSE.  
02 22 16 50 LMP I'm going to leave that OPEN. It makes too much  
noise as it is. Go ahead.  
02 22 16 53 CDR CABIN FAN CONTROL, CLOSE.  
02 22 16 54 LMP Go.  
02 22 16 55 CDR CABIN REPRESS, CLOSE.

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02 22 16 56 LMP Go.  
02 22 16 57 CDR SUIT FAN 2, CLOSE.  
02 22 16 58 LMP Go.  
02 22 16 59 CDR SUIT FAN DELTA-P, CLOSE.  
02 22 17 00 LMP Go.  
02 22 17 01 CDR SUIT/FAN component light come on?  
02 22 17 02 LMP It is.  
02 22 17 04 CDR DIVERTER VALVE, CLOSE.  
02 22 17 05 LMP DIVERTER VALVE.  
02 22 17 06 CDR CO<sub>2</sub> SENSOR, CLOSE --  
02 22 17 07 LMP Go.  
02 22 17 08 CDR MASTER ALARM may come on; all others OPEN.  
02 22 17 09 LMP No MASTER ALARM. Go ahead.  
02 22 17 10 CDR Row 4, all OPEN except: HEATERS: DISPLAYS, CLOSE  
02 22 17 12 LMP Go.  
02 22 17 13 CDR EPS: DISPLAYS, CLOSE.  
02 22 17 14 LMP Go.  
02 22 17 15 CDR DC BUS VOLT, CLOSE.  
02 22 17 18 LMP Okay, we got S-BAND ANTENNA, too. Go ahead.  
02 22 17 21 CDR INVERTER 2, CLOSE.  
02 22 17 22 LMP INVERTER 2.  
02 22 17 24 CDR ASCENT ECA, CLOSE.  
02 22 17 25 LMP Go.  
02 22 17 26 CDR DESCENT ECA, CLOSE.

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O 02 22 17 27 LMP Go.  
02 22 17 28 CDR DESCENT ECA CONTROL, CLOSE.  
02 22 17 29 LMP Go.  
02 22 17 30 CDR TRANSLUNAR BUS TIE, CLOSE.  
02 22 17 31 LMP Go.  
02 22 17 32 CDR CROSS TIE BALANCE LOADS, CLOSE.  
02 22 17 33 LMP Go.  
02 22 17 34 CDR BAT FEED TIE, two, CLOSE.  
02 22 17 35 LMP Go.  
02 22 17 36 CDR All others OPEN.  
02 22 17 37 LMP Okay.  
02 22 17 38 CDR Okay, get your timer set. It'll be 70 --  
02 22 17 39 LMP Yes, let me - let me turn on the water first.  
02 22 17 42 CDR Okay.  
02 22 17 45 LMP Okay, water's on.  
02 22 17 46 CDR Okay, MISSION TIMER set; it will be 70:18 in  
10 seconds.  
02 22 17 52 LMP No, I can't make it.  
02 22 17 53 CDR Well, set it to whatever you think you can make.  
02 22 17 55 LMP Okay. How about 70:18:30?  
02 22 17 57 CDR Okay.  
02 22 18 15 CDR 15 now.  
02 22 18 20 LMP 70:18:30. Okay.  
02 22 18 22 CDR Okay. 22, right?  
02 22 18 24 LMP Okay.

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02 22 18 27 CDR 3, 2, 1, -  
02 22 18 30 CDR MARK.  
02 22 18 32 LMP Okay, now I'll give you a 35: 2, 1 -  
02 22 18 35 LMP MARK.  
02 22 18 37 LMP 70:18:35.  
02 22 18 39 CDR Okay. CB(16), INSTRUMENTATION: CWEA, OPEN and RECLOSE.  
02 22 18 43 LMP Okay, CWEA coming OPEN and RECLOSE.  
02 22 18 47 CDR Okay, MASTER ALARM, ON; ECS: HEATER and GLYCOL caution lights, and H<sub>2</sub>O SEP, SUIT FAN component lights, ON.  
02 22 18 55 LMP Go.  
02 22 18 56 CDR Okay, ECS activation and checkout: O<sub>2</sub>/H<sub>2</sub>O QUANTIT MONITOR, ASCENT 2, ASCENT 1, and DESCENT.  
02 22 19 03 LMP ASCENT 2 - You want to copy these?  
02 22 19 04 CDR Yes.  
02 22 19 06 LMP Okay, it's 99 and 99, 99 and 97, and the DESCENT is 95 and 82. Okay?  
02 22 19 23 CDR DESCENT O<sub>2</sub>, OPEN.  
02 22 19 25 LMP DESCENT O<sub>2</sub>. Stand by. DESCENT O<sub>2</sub>, OPEN.  
02 22 19 31 CDR SUIT GAS DIVERTER to PUSH/CABIN.  
02 22 19 33 LMP SUIT GAS DIVERTER going PUSH/CABIN.  
02 22 19 37 CDR PRESS REG's A and B to EGRESS.  
02 22 19 39 LMP Okay. REG's A to EGRESS, B to EGRESS.  
02 22 19 44 CDR SUIT GAS DIVERTER automatically extends and CABIN FANS go OFF.  
02 22 19 47 LMP Roger.  
02 22 19 48 CDR Okay, SUIT PRESSURE, 4.8 to 5.2.

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- 02 22 19 51 LMP That's a verify: 5.0.
- 02 22 19 53 CDR CB(16), ECS: CABIN FAN CONTROL, OPEN --
- 02 22 19 57 CDR/LMP Okay.
- 02 22 19 58 CDR -- cabin fans should pop off.
- 02 22 19 59 LMP CABIN FAN CONTROL, OPEN.
- 02 22 20 01 CDR Okay. SUIT FANS back to 2 - I mean, SUIT FAN 2.
- 02 22 20 05 LMP SUIT FAN 2.
- 02 22 20 07 CDR Okay, MASTER ALARM, SUIT/FAN warning light ON momentarily.
- 02 22 20 10 LMP Got it. You're going to have to talk a lot louder now, Jim.
- 02 22 20 12 CDR ECS caution light, H<sub>2</sub>O SEP COMP light, ON, then OFF in less than 2 minutes.
- 02 22 20 17 LMP Roger.
- 02 22 20 19 CDR PARTIAL PRESSURE CO<sub>2</sub> should be less than 7.6.
- 02 22 20 21 LMP It's zero.
- 02 22 20 23 CDR Okay. Ready to go on to the next step?
- 02 22 20 24 LMP Go.
- 02 22 20 25 CDR Suit fan, H<sub>2</sub>O SEP check. CB(16), ECS: SUIT FAN 2, OPEN.
- 02 22 20 33 LMP SUIT FAN 2 coming OPEN.
- 02 22 20 34 CDR You get the MASTER ALARM, SUIT/FAN warning light, and SUIT FAN component warning light.
- 02 22 20 37 LMP Got them.
- 02 22 20 39 CDR Next step. When ECS caution light, H<sub>2</sub>O SEP light, and MASTER ALARM are ON, CB(11), ECS: SUIT FAN 1, CLOSE. I guess it's OFF.
- 02 22 20 49 LMP SUIT FAN 1 going CLOSED.

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02 22 20 52 CDR Okay. H<sub>2</sub>O SEP SELECTOR, SEP 1.

02 22 20 55 LMP H<sub>2</sub>O SEP going to - push SEP 1.

02 22 21 02 CDR Okay, SUIT FAN to 1.

02 22 21 04 LMP Okay, SUIT FAN to 1.

02 22 21 06 CDR Okay, SUIT/FAN warning light and SUIT FAN component light, OUT. ECS caution light, H<sub>2</sub>O SEP COMP light OUT in less than 2 minutes.

02 22 21 13 LMP Okay, go.

02 22 21 14 CDR CB(16), ECS: SUIT FAN 2, CLOSE.

02 22 21 17 LMP SUIT FAN 2, CLOSE.

02 22 21 20 CDR Hello, Houston; Apollo 9.

02 22 21 25 LMP I think that's it.

02 22 21 26 CDR Need a count on the DFI.

02 22 21 27 CDR Hello, Houston; Apollo 9.

02 22 21 29 LMP No lock, Jim.

02 22 21 30 CDR No lock, okay. Well, no sense in doing a ... Why don't you POWER, OFF and R/D A, OPEN?

02 22 21 36 LMP Okay. Or you want to wait until we get them?

02 22 21 39 CDR The heck with them. Let's just go on.

02 22 21 41 LMP Okay. Stand by. DFI POWER has gone OFF; R/D A, OPEN; and LEB, CLOSED. You don't have that.

02 22 21 48 CDR Okay, S-band and VHF activation. Set your COMM configuration. S-BAND. Ready?

02 22 21 55 LMP Go.

02 22 21 56 CDR PM, PRIME, PRIME, VOICE, PCM, RANGE, RIGHT, LOW.

02 22 22 04 LMP Go.

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Day 3

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02 22 22 05 CDR VHF; ON, ON, VCICE, ON.  
02 22 22 10 LMP Go.  
02 22 22 11 CDR S-BAND and VHF ANTENNA, as desired. AUDIO, bo - both -  
02 22 22 15 LMP (Sigh)  
02 22 22 17 CDR S-BAND to T/R, volume to just hear MSFN; ICS to T/R.  
02 22 22 24 LMP Okay, go ahead and read through them, Jim. I'm doing them while you're reading them.  
02 22 22 28 CDR Okay. S-BAND to T/R; ICS to T/R; RELAY OFF; AUDIO CONTROL to NORMAL.  
02 22 22 34 LMP Okay, I've got it all complete.  
02 22 22 46 CDR VOX, ICS; VHF A COMMANDER is T/R, LMP's is OFF; VHF B COMMANDER is OFF, LMP's to T/R. Connect the umbilical to your right side: red to red and blue to blue.  
02 22 22 51 LMP Okay, that's in work.  
02 22 22 55 CDR Okay, Dave, you want to configure simplex B?  
02 22 22 57 CMP Simplex B. Hey, we forgot to chlorinate the water.  
02 22 23 02 CDR I know it. I didn't forget it; I kept remembering it  
02 22 50 04 CMP Spider, Gumdrop.  
02 22 50 09 LMP Go ahead, Gumdrop.  
02 22 50 11 CMP Roger. The tunnel's closed now - the hatch is closed and I'd like you to verify the dump valve's in AUTO.  
02 22 50 18 LMP It's verified.  
02 22 50 20 CMP Okay, I'm going to vent the tunnel now, okay?  
02 22 50 24 LMP Okay.  
02 23 08 23 CMP Spider, Gumdrop.  
02 23 08 29 LMP Yes, go ahead.

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02 23 08 30 CMP What you guys doing over there?  
02 23 08 32 LMP Making noises.  
02 23 08 34 CMP Yes.  
02 23 08 35 LMP We're making our regulator check; it's going to ma  
a few noises here for you.  
02 23 08 38 CMP Okay.  
02 23 08 39 LMP You can hear that all the way over there, huh?  
02 23 08 42 CMP Oh, yes. Very loud.  
02 23 08 43 LMP Okay, stand by for another one.  
02 23 10 18 LMP Here comes another noise, Gumdrop.  
02 23 10 19 CMP Okay.  
02 23 10 23 CMP Gosh!  
02 23 10 35 CDR Another noise.  
02 23 10 41 CMP Boy, that was a big one.  
02 23 13 26 CC Apollo 9 - Gumdrop/Spider, this is Houston through Carnarvon.  
02 23 13 31 CDR Roger, Houston; this is Apollo - this is Spider, t  
02 23 13 36 CMP And the Gumdrop.  
02 23 30 19 CMP Spider, Gumdrop.  
02 23 30 23 CDR Go ahead.  
02 23 30 25 CMP Are you going to be ready for the COMM check here  
the - over Mercury?  
02 23 30 28 CDR Keep trying.  
02 23 30 30 CMP Okay, I'll be standing by for you to give me the  
whenever you want me to go to EVA configuration.  
02 23 30 34 CDR Okay. How much time have we got, Dave?

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- 02 23 30 36 CMP We've got about 3 or 4 minutes until you hit the Mercury.
- 02 23 30 41 LMP Okay, we're not - we're probably not going to make it, but we'll - we'll mush on.
- 02 23 30 44 CMP Okay.
- 02 23 39 52 CC -- in about a minute - here. Let's see if we can give you a fast reading.
- 02 23 39 59 CDR Okay, he's feeling a lot better, and he looks like he's - he's acting like he feels a little better. Maybe we can extend this a little bit.
- 02 23 40 08 CC Okay. That's - that's your - judgment there, and we say go ahead if you feel that way, Jim.
- 02 23 40 15 CMP Okay --
- 02 23 40 16 CDR Let me - I'd like to configure them that way, and we'll see how things go.
- 02 23 40 20 CC Okay, very good. And we'll see you over Guaymas about 52.
- 02 23 40 25 CDR Okay.
- 02 23 41 20 CDR Hey, Gumdrop; Spider.
- 02 23 41 24 CMP Roger. Go ahead.
- 02 23 41 26 CDR Hey, Rusty's feeling a lot better and he's looking better, too. Maybe we ought to let him get out on the front porch or something.
- 02 23 41 32 CMP Hey, man, I agree with that; the camera's all set.
- 02 23 41 35 CDR Okay, good --
- 02 23 41 36 CMP Great!
- 02 23 41 37 CDR -- just hang loose and we'll see how it goes here.
- 02 23 41 38 CMP Okay, all I've got to do is push the button.

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02 23 41 39 CDR

Okay, I think we still ought to terminate it - at  
the end of that daylight pass.

02 23 41 45 CMP

Okay.

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DAY 4

- 03 00 19 09 CC Roger. You're loud and clear on that one.
- 03 00 19 17 CDR Let me check to see if everything is glued down.
- 03 00 19 19 CMP (Laughter)
- 03 00 19 39 CDR Okay.
- 03 00 19 40 LMP Okay. Why don't we get this pressure-integrity check out of the way?
- 03 00 19 43 CDR ... okay. Verify the following: helmet and visor, two, locked and adjusted; helmet tiedown, two, adjusted.
- 03 00 19 50 LMP Okay. My helmet's tiedown ..., your helmet is lock alright.
- 03 00 19 55 CDR O<sub>2</sub> connectors.
- 03 00 19 59 LMP Okay, you've got two connect and locked ...
- 03 00 20 03 CDR Okay, are they in?
- 03 00 20 04 LMP Those are in and locked. You want to check two of them on me? Okay. Those you don't have to worry about.
- 03 00 20 16 CDR ... O<sub>2</sub> connectors, six locked; H<sub>2</sub>O connectors, two, locked.
- 03 00 20 24 LMP Okay, yours are locked.
- 03 00 20 25 CDR Okay, ... are locked; I checked yours earlier this morning.
- 03 00 20 28 LMP Okay.
- 03 00 20 29 CDR RELIEF valve, two, open.
- 03 00 20 31 LMP Mine's OPEN - to OPEN. Boy, that sun is bright.
- 03 00 20 38 CDR Yes. Wrist locks, four, locked.
- 03 00 20 51 LMP It's locked.

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- 03 00 20 53 CDR Glove straps, four, adjusted.
- 03 00 20 56 LMP Okay, mine are alright. Let me tighten this one a little.
- 03 00 21 03 CDR LMP PGN DIVERTER, two, vertical.
- 03 00 21 06 LMP I already checked those.
- 03 00 21 07 CDR Okay. Verify necessary service module RCS thrusters disabled. Hey, Gumdrop, you got the right thrusters disabled?
- 03 00 21 16 CMP Roger. ...
- 03 00 21 23 LMP Now.
- 03 00 21 24 CDR What?
- 03 00 21 25 LMP ... again.
- 03 00 21 26 CDR ..., I heard him fine.
- 03 00 21 27 LMP I know, but when you - You try to talk to him, and you're both on A, you see, and it was just garbled.
- 03 00 21 32 CDR I heard him fine. Okay, SUIT GAS DIVERTER, pull to EGRESS. Ready?
- 03 00 21 41 LMP Ready.
- 03 00 21 43 CDR CIRCUIT RELIEF, CLOSE.
- 03 00 21 47 LMP CIRCUIT RELIEF - it's CLOSE.
- 03 00 21 50 CDR CABIN GAS RETURN, OPEN.
- 03 00 21 51 LMP You want me to read out to you, Jim?
- 03 00 21 53 CMP Yes. ... midposition on that.
- 03 00 22 00 LMP Let me see where we are now. Okay. We got SUIT GAS DIVERTER, pull to EGRESS; SUIT CABIN RELIEF - SUIT CIRCUIT RELIEF, CLOSE; CABIN GAS RETURN, OPEN - okay CO<sub>2</sub> CANISTER SELECT, midposition.
- 03 00 22 14 CDR Midposition.

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- 03 00 22 16 LMP Okay. PRESSURE REG A, CLOSED.
- 03 00 22 18 CDR PRESSURE REG A, CLOSED.
- 03 00 22 20 LMP Okay, purge the suit loop by setting PRESS REG B to DIRECT O<sub>2</sub> for 2 minutes.
- 03 00 22 25 CDR Okay.
- 03 00 22 26 LMP Okay, now the cabin may relieve on this.
- 03 00 22 30 CDR 24 ... Okay, what else do we need to do in here?
- 03 00 22 41 LMP Well, we've got to wait for 2 minutes. But after ... - Okay, the next thing you do then is set the CABIN GAS RETURN to EGRESS, and then PRESS REG B to CLOSE. And we want to maintain the suits above the cabin. We may have to go to DIRECT O<sub>2</sub> occasionally in order to do that, because we breathe them down ..
- 03 00 23 06 CDR PRESS REG B goes to CLOSE.
- 03 00 23 09 LMP Yes. We - we got them to CLOSE, see, and then, although we have high O<sub>2</sub> in the suit loop - Jim, I think you're pretty far over towards secondary on that. Not that it makes any difference - Okay. And then the next thing that we do is a - verify that we're disconnect from all restraints. And unstow and mount the EVAH card.
- 03 00 23 34 CDR ...
- 03 00 23 35 LMP Okay, and the next thing we discuss is on the EVAH card. It should start out with PLSS FAN, ON; SUIT ISOLATION LMP to SUIT DISCONNECT; et cetera, is that right?
- 03 00 23 53 CDR It says CDR PRESSURE-INTEGRITY check: SUIT/CABIN REPRESS, CLOSED; CABIN REPRESS, CLOSED.
- 03 00 23 59 LMP Okay, on top of that - written right on the top should be --
- 03 00 24 02 CDR Oh, PLSS FAN, ON.
- 03 00 24 03 LMP -- yes.

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- 03 00 24 04 LMP Okay, so that's where that picks up. Jim, while you're waiting, you might as well stow that water gun a little better.
- 03 00 24 25 CDR Okay.
- 03 00 24 33 LMP And in order to keep from snagging -
- 03 00 24 36 CDR ... for a few minutes.
- 03 00 24 40 LMP Okay, let me ... SUIT GAS RETURN to EGRESS. All the way around, clockwise.
- 03 00 24 49 CDR What was that? What did you get - the CABIN GAS RETURN to EGRESS?
- 03 00 24 52 LMP CABIN GAS RETURN to EGRESS. Right. And I want to - Okay, PRESS REG B, CLOSED.
- 03 00 24 59 CDR PRESS REG B, CLOSED.
- 03 00 25 00 LMP Okay, now we want to keep our suits up by going to DIRECT  $\text{O}_2$  on occasion. Either REG. Okay,  $\text{CO}_2$  CANISTER SELECT to PRIMARY. Okay?
- 03 00 25 16 CDR Okay.
- 03 00 25 18 LMP Okay, why don't we build our suits up a little bit just to make sure we don't ... back in? Okay. And now we're ready for the EVAH card. So if you want to stow this, you can.
- 03 00 25 50 CDR Okay, PLSS FAN, ON. It's 32 minutes; we're going to have to -
- 03 00 25 55 LMP No, we're just about right.
- 03 00 25 57 CDR ... so I can see.
- 03 00 26 00 LMP Okay, flip the light ... - Oh, okay, I don't know which way you want your light.
- 03 00 26 04 CMP ...
- 03 00 26 05 LMP Okay.
- 03 00 26 07 CDR Okay.

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- 03 00 26 08 LMP I'm going to go to ... here and then turn the PLSS FAN, ON, and you're going to make the integrity check. You want me to read to you?
- 03 00 26 13 CDR Yes. Why don't you go ahead and do that?
- 03 00 26 14 LMP Stand by there, I want to turn this off. Turn mine off too, Jim. Okay, and I got the PLSS FAN, ON.
- 03 00 26 23 CDR Warble tone is off.
- 03 00 26 26 LMP Stand by. Okay, it's off.
- 03 00 26 28 CDR SUIT ISOLATION, LMP, SUIT DISCONNECT. Okay. Go ahead.
- 03 00 26 36 LMP Okay. SUIT/CABIN REPRESS to CLOSE.
- 03 00 26 40 CDR SUIT/CABIN REPRESS, CLOSE.
- 03 00 26 41 LMP Okay, ... you go to CABIN REPRESS, CLOSE.
- 03 00 26 47 CDR CABIN REPRESS, CLOSE.
- 03 00 26 49 LMP Okay, CABIN REPRESS valve to AUTO.
- 03 00 26 51 CDR CABIN REPRESS to AUTO.
- 03 00 26 54 LMP SUIT GAS DIVERTER, PULL/EGRESS.
- 03 00 26 56 CDR PULL/EGRESS.
- 03 00 26 57 LMP CABIN GAS RETURN to EGRESS, and SUIT CIRCUIT RELIEF to CLOSE.
- 03 00 27 03 CDR EGRESS and CLOSE.
- 03 00 27 04 LMP Okay. PRESS REG A, CLOSE.
- 03 00 27 06 CDR PRESS REG A, CLOSE.
- 03 00 27 08 LMP PRESS REG B, DIRECT O<sub>2</sub>.
- 03 00 27 12 CDR DIRECT O<sub>2</sub>.
- 03 00 27 13 LMP Okay, build up your suit to 8.85, and I can - I can give you a call on that. Oh, you can see it on your gage, actually.

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- 03 00 27 41 LMP Okay, let me know when you're going to do it; I'll time you 1 minute.
- 03 00 27 46 CDR ...
- 03 00 27 47 LMP Okay. ... now wait until you got down there again. 35 seconds to go.
- 03 00 27 58 CDR Okay.
- 03 00 28 12 LMP Okay. And you want it to be less than 0.3 decay. Okay, you got about 25 seconds to go.
- 03 00 28 43 LMP Okay, there you are.
- 03 00 28 44 CDR Okay, ...
- 03 00 28 48 LMP Okay, PRESS REG B to CLOSE. Okay, SUIT CIRCUIT RELIEF to AUTO. When suit decays to about 5.5 psi, SUIT CIRCUIT RELIEF to CLOSE; you don't want to get down to the CABIN PRESS. And the cabin's about to relieve, Jim. We are - The cabin's all the way up to 5.5 right now. ... I'll check it. I'll give you a call.
- 03 00 29 12 CDR Okay, yes. I can't see it.
- 03 00 29 14 CMP Okay. You're - you're at 7 now. Keep coming. Keep coming; you're at 6.5, 6.3, 6.2. Okay, you're about 6 now. Alright, back to CLOSED.
- 03 00 29 29 LMP Hey, Gumdrop; Spider.
- 03 00 29 32 CMP Roger; go, Spider.
- 03 00 29 35 CDR We'll be relieving here shortly .. into the tunnel.
- 03 00 29 41 LMP PRESS REG A and B to EGRESS.
- 03 00 29 45 CDR PRESS REG A and B to EGRESS.
- 03 00 29 49 LMP Okay. Here, I want to turn the PLSS FAN, OFF, and then you can turn on my suit flow, again.
- 03 00 29 56 CDR Okay.
- 03 00 29 57 LMP Okay, PLSS FAN's OFF. No, the other one.

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- 03 00 29 58 CDR I'm sorry (laughter).
- 03 00 30 01 LMP There I go. Okay, I'm back on.
- 03 00 30 08 CDR Okay, and I got the warning tone back again.
- 03 00 30 11 LMP Okay, we're -
- 03 00 30 16 LMP ... again. Okay, we're standing by for 30 minutes.
- 03 00 30 28 CDR Gumdrop, are you calling?
- 03 00 30 31 CMP Negative.
- 03 00 30 52 CDR Gumdrop, how long do you have us until DEPRESS - or, egress. I mean? To sunrise?
- 03 00 30 56 CMP ... until now ...
- 03 00 31 07 CDR What time - What are you counting down to? Do you have a clock counting down?
- 03 00 31 12 CMP Matter of fact, I don't.
- 03 00 31 18 CDR Hawaii says about 35 minutes until first sun - sunrise
- 03 00 31 30 LMP Okay, we got the battery connectors; we got plenty of O<sub>2</sub>, fan's off, and the pump is off.
- 03 00 31 37 CDR Not fixed up yet.
- 03 00 31 40 LMP Say again?
- 03 00 31 41 CDR We got to get your OPS hooked on you properly.
- 03 00 31 44 LMP Well, that comes during this second series of things here.
- 03 00 31 53 CDR Okay, but what I'd like to have you do is just go up there, and I'd get on that porch and be exercising out around the golden slippers and stuff. If you feel bad, don't hesitate to get back in here, because that's going to -
- 03 00 32 04 LMP Okay.
- 03 00 32 06 CDR ...

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03 00 32 07 LMP      No problem.

03 00 32 09 CMP      ... one-g mockup at about 2 in the morning.

03 00 32 23 CDR      If you get back through the door okay, we can close the door and REPRESS just like that, and get your helmet off.

03 00 32 28 LMP      Yes, ...

03 00 32 32 CDR      Okay, now on this next series of steps, that's the one where we don't want to dally or I'm going to get pretty hot.

03 00 32 43 LMP      So even though it's not the egress time, I want to get the door open and get the ... off.

03 00 32 47 CDR      Okay.

03 00 32 51 LMP      And I've got these so I can read them. Okay.

03 00 32 53 CDR      Right.

03 00 32 56 CMP      Spider, Gumdrop.

03 00 32 57 CDR      Go ahead.

03 00 32 58 CMP      ... sunrise is at 7 ...

03 00 33 09 CDR      Okay.

03 00 33 10 LMP      Okay. It's 29 minutes away, right?

03 00 33 16 CDR      Okay, they - they gave me a time - a different time on that update this morning, Dave. I can't remember what it was. I wrote it down in the book here.

03 00 33 24 CMP      I just - I ...

03 00 33 28 CDR      Okay.

03 00 33 29 CMP      I'm going to set that to 29, ...

03 00 33 32 CDR      Okay, why don't we just let it go and we'll sort of assume that it was 29? We'll just subtract 3 minute

03 00 33 36 CMP      Okay.

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03 00 33 38 CDR LMP pressure-integrity check, CB(16).  
03 00 39 46 CMP Roger. I copy.  
03 00 41 32 CMP Say again.  
03 00 41 40 CMP Spider, Gumdrop.  
03 00 41 47 CMP Okay.  
03 00 47 30 LMP Oh, very good.  
03 01 01 56 CMP Okay, Spider; Gumdrop. The hatch is open. No sweat. It just swings like it ought to swing.  
03 01 02 06 CMP No. It stays just where I want it, where I put it.  
03 01 03 21 CMP Yes.  
03 01 03 43 CMP Oh, man, that's really pretty.  
03 01 03 54 CMP Hey, I can see Rusty's foot!  
03 01 03 59 CMP Yes. All set.  
03 01 04 07 CMP Okay. Hey, this is like spectacular!  
03 01 04 13 CMP Oh, bcy. Sure can.  
03 01 04 27 CMP If Jim looks out the top window, he can see me.  
03 01 04 33 CMP Oh.  
03 01 05 32 CMP Yes, you really can see her at night, can't you?  
03 01 06 27 CMP Okay. Rusty, the sun's going to be just about over your left shoulder. How's that?  
03 01 06 38 CMP Right.  
03 01 06 56 CMP Yes, I had to turn the LIMIT CYCLE, OFF; it was just banging too much.  
03 01 07 24 CMP Sort of looks like it. ...  
03 01 07 52 CMP Yes, I missed that one.  
03 01 07 59 CMP You missed that one.

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- 03 01 08 15 CMP Oh, there! That looks comfortable. Isn't that spectacular?
- 03 01 08 20 LMP Really is.
- 03 01 09 11 CMP 5 square. How me?
- 03 01 09 16 CMP That's right. Why don't you - Say hello to the camera, or something.
- 03 01 09 48 CMP Yes, I can see the one behind you, and - as a matter of fact, I don't even see the probe. Must be ...
- 03 01 10 30 CMP Oh, really.
- 03 01 11 01 CMP No, I haven't gotten it yet. Isn't it there?
- 03 01 11 05 CMP You're kidding?
- 03 01 11 19 CMP By George, you're right. I can see where it was, but it's gone. Sure enough.
- 03 01 11 29 CMP Gee, that's too bad.
- 03 01 11 43 CMP Okay. Coming off now.
- 03 01 11 54 CMP Fine, fine.
- 03 01 12 00 CMP They're fine.
- 03 01 12 14 CMP Hey, come out to take a peek.
- 03 01 12 18 CMP Hey, yes, right through the hatch window.
- 03 01 12 33 CMP Yes. Yes. Matter of fact, if I can get number 1, I can get them all, right? I better get the tether.
- 03 01 13 12 CMP Pretty, pretty, isn't it?
- 03 01 13 27 CMP ...
- 03 01 13 52 CMP Hey, Jim. Hey, you can take a picture of me getting the thermal samples, maybe.
- 03 01 14 00 CMP Say again.
- 03 01 14 05 CMP Okay. I'll stand by.

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03 01 14 12 CMP Okay.

03 01 14 25 CMP The left hand? (Laughter) Hey, they're fine.

03 01 14 39 CMP I am a mole in the hole.

03 01 15 05 CMP Yes. I noticed.

03 01 15 14 CMP Alright! Fair deal. Get out here where I can line up on you.

03 01 15 28 CMP Okay, amigo.

03 01 15 36 CMP Hey, I like these handles.

03 01 15 44 CMP Oh, me. Yes.

03 01 15 53 CMP Good, Jim. I'm not going to stay in the sun too long, but it feels fine.

03 01 16 12 CMP Yes, I'll just come out, take a couple of snaps, and then go back in.

03 01 16 22 CMP Yes.

03 01 16 46 CMP Yes, that's what I'm set on.

03 01 18 31 CMP Yes, that's a pretty one.

03 01 19 03 CMP Oh, hey! I got one of those too, now that you mention it. Just don't move, Russell.

03 01 19 19 CMP Me and my big ...

03 01 50 08 CDR I got my foot caught.

03 01 50 14 LMP Okay, you ready?

03 01 50 16 CDR Yes. Let's go back to that 215 thing there.

03 01 50 20 LMP CM sequence camera, off. OPS antenna, stow. You want to stow that?

03 01 50 32 CDR It's alright; just leave it right there.

03 01 50 33 CC ... we lose you over Canaries here in a couple of minutes. We'll see you over Tananarive about 06.

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- 03 01 50 39 CDR Okay.
- 03 01 50 40 LMF Okay, DUMP valves, both, in AUTO.
- 03 01 50 42 CDR Wait a second, I want to check --
- 03 01 50 45 LMP Get it? Well, the heck with it.
- 03 01 50 51 CDR Okay, I got it. DUMP valve, AUTO. Looks like it should be in AUTO. It is. Okay?
- 03 01 50 59 LMP Okay. DUMP valves, both, in AUTO; CABIN REPRESS to AUTO. Okay, now, I'm going to - ... up here, I want to ... my oxygen ... Okay, go ahead.
- 03 01 51 10 CDR CABIN REPRESS going to AUTO. Let's see, let's - What are the steps after that? Log DELTA-T CABIN REPRESS to AUTO/CABIN?
- 03 01 51 17 LMP Yes.
- 03 01 51 18 CDR At 4.4 psi.
- 03 01 51 19 LMP Okay.
- 03 01 51 20 CDR Okay.
- 03 01 51 27 CDR Huh?
- 03 01 51 30 LMP Is it in AUTO?
- 03 01 51 31 CDR ... AUTO?
- 03 01 51 39 CDR How about that? It's not repressing.
- 03 01 51 43 LMP Oh, that's alright. SUIT FLOW CONTROL, CLOSE. Jim?
- 03 01 51 53 CDR What a second. What's that?
- 03 01 51 54 LMP SUIT FLOW CONTROL, CLOSE.
- 03 01 51 55 CDR Oh, yes. Alright. SUIT FLOW CONTROL, CLOSE.
- 03 01 52 07 LMP Okay, now. CABIN REG's A and B to CABIN; PRESSURE REG's A and B to CABIN, and now it will REPRESS.
- 03 01 52 15 CDR There we go!

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03 01 52 24 CDR How are your ears? How are your ears, Rusty?  
03 01 52 30 LMP ...  
03 01 52 39 CDR Okay. Okay, we're at 2 psi.  
03 01 52 48 LMP Okay. 2.6. ...  
03 01 52 59 CDR Okay, 3. Boy, I don't even see the cabin pressure  
... 3.5.  
03 01 53 28 CDR Are you coming up with it, or are you slipping down?  
03 01 53 30 LMP I'm right with it now.  
03 01 53 32 CDR ... beautiful.  
03 01 53 34 LMP Okay.  
03 01 53 35 CDR Okay. CB(16): SUIT FLOW, CLOSE. Okay, we've had  
the MASTER ALARM ... Verify pressure increase and  
give CMP GO for REPRESS. Okay, Gumdrop; this is  
Spider here.  
03 01 53 48 CMP Roger, Spider. I'm ready to REPRESS, if you are.  
03 01 53 56 LMP Yes, we are already repressed now, Dave.  
03 01 53 58 CMP Okay.  
03 01 54 00 LMP Okay, now we can REPRESS you, too.  
03 01 54 03 CDR You'll have to do the last part of it.  
03 01 54 05 LMP Okay, we got - we're much greater than 35 percent,  
though.  
03 01 54 08 CDR We have about 68.  
03 01 54 10 CMP Okay, give me a minute, and I'll keep you posted.  
03 01 54 18 CDR ...  
03 01 54 20 CMP Great. Looks good.  
03 01 54 28 CDR Yesterday, I wouldn't have given you a plug nickel  
for that.

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- 03 01 54 30 CMP I wouldn't have either.
- 03 01 54 32 CDR In fact, I wasn't sure we were even going to be up here today.
- 03 01 54 39 LMP I feel hungry.
- 03 01 54 40 CDR (Laughter)
- 03 01 54 52 LMP I'll tell you what. Let's get me back on the ... here.
- 03 01 54 56 CDR You ready to go?
- 03 01 54 57 LMP Yes.
- 03 01 54 58 CDR Okay. So you want PLSS O<sub>2</sub>, OFF?
- 03 01 55 01 LMP Yes, it's off. I --
- 03 01 55 02 CDR Okay, LMP operates the OPS PURGE valve to DEPRESS the suit. You've done that?
- 03 01 55 06 LMP Yes, I've already --
- 03 01 55 07 CDR REPRESS valve closes at 4.4; if LM DESCENT O<sub>2</sub> - DUMP valve, OPEN; verify ...
- 03 01 55 11 LMP Okay, I've already done that.
- 03 01 55 14 CDR CABIN REPRESS --
- 03 01 55 15 LMP That's okay.
- 03 01 55 19 CDR Let me give you these next two readings. CABIN 1 FAN, CLOSE. ...
- 03 01 55 26 LMP Okay, ...
- 03 01 55 33 CDR CABIN FAN 2.
- 03 01 55 34 LMP Okay. CABIN GAS RETURN to AUTO.
- 03 01 55 36 CDR CABIN GAS RETURN to AUTO.
- 03 01 55 39 LMP SUIT CIRCUIT RELIEF to AUTO?
- 03 01 55 42 CDR RELIEF is in AUTO.

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03 01 55 44 LMP SUIT GAS DIVERTER valve to PUSH/CABIN.  
03 01 55 47 CDR PUSH/CABIN.  
03 01 55 49 LMP Okay. Doff gloves, helmets, and EV visors. Okay.  
03 01 55 56 CDR We're not going to pressurize him.  
03 01 55 58 LMP Huh?  
03 01 56 00 CDR You want to take your helmet off? You'll have to put that stuff back on if we're going to pressurize him.  
03 01 56 04 LMP Right.  
03 01 56 05 CDR ...  
03 01 56 14 CDR Dave, how are you doing over there?  
03 01 56 16 CMP ...  
03 01 56 22 LMP Okay. ... also want to do something here. I want to turn the pump off before I turn the boiler on. I have to remember to do that ...  
03 01 56 55 LMP Okay, plug me in, and then go to it.  
03 01 56 58 CDR Stand by just a minute, Dave.  
03 01 57 01 LMP I'm okay where I am, Jim.  
03 01 57 04 CDR Well, I have a backup.  
03 01 57 13 CDR Hey, I just want to put Rusty on the suit hoses from the spacecraft, and I'll be right with you. Okay?  
03 01 57 20 CMP Very well.  
03 01 57 27 CDR Okay. Okay, now, ...  
03 01 57 43 LMP Probably not open?  
03 01 57 44 CDR It is open.  
03 01 57 45 LMP Okay.  
03 01 57 52 LMP Hey, tell you what --

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- 03 01 57 53 CDR I don't want to force it in.
- 03 01 57 55 LMP I can ... a lot better than you can, I think.
- 03 01 57 57 CDR ... push ... on the ..., if you want to push on it.  
To get it started, all you do is push it.
- 03 01 58 02 LMP ...
- 03 01 58 05 CDR Yes. Okay, Dave, are you ready?
- 03 01 58 08 CMP Ready for what?
- 03 01 58 18 CMP Hey, say again what you want me to be ready for.  
Say again. Go ahead. Stand by.
- 03 01 58 26 CDR Me repressurize you with the LM oxygen.
- 03 01 58 31 CMP Stand by. I'm not ... yet out of the PLSS ...
- 03 01 58 49 LMP Jim, you can hear him, but he can't hear the first  
part of what you say; that's the problem.
- 03 01 58 54 CDR I can hear him cut off. It sounds like - I can hear  
something; it goes along and stops like that.
- 03 01 59 02 LMP Yes, but about 50 percent of the time, you're talking  
while he's saying stuff to you, and you miss the  
first three words. That's right.
- 03 01 59 12 CMP Stand by and let me make sure that the ... is con-  
figured right.
- 03 01 59 18 LMP Since we're in CABIN, all we got to do is open that,  
and it will automatically REPRESS.
- 03 01 59 29 CMP Okay, Jim, I'm going to have to open the VENT valve  
in ... first. ...
- 03 01 59 33 CDR ...
- 03 01 59 35 CMP Right.
- 03 01 59 36 CDR Okay, what's your cabin pressure now?
- 03 01 59 38 CMP Okay, I'm up to 2.0 with the PLSS package only.  
I'm going to go ahead and open the ... PRESSURE  
EQUALIZATION valve, and that will drop me back

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down until I fill the tunnel up, and then you can fill me up. Okay?

- 03 02 00 01 LMP Okay, very good.
- 03 02 00 04 CDR I heard him cut off again. He goes along, drops right off like that.
- 03 02 00 07 LMP You heard his voice cut off that --
- 03 02 00 09 CDR No, there's a long string of static that just - just cuts off.
- 03 02 00 14 LMP ... some trash.
- 03 02 00 16 CDR I know it ... copper with a screw through it. ...
- 03 02 00 24 CMP Okay, Spider, go ahead and give me ...
- 03 02 00 30 CDR Yes, I'll give you ...
- 03 02 00 33 CMP Okay.
- 03 02 00 38 CDR Cabin pressure, Rusty; would you read that to me?
- 03 02 00 41 LMP Yes, it's 4.5, 4.4, --
- 03 02 00 47 CDR Dave, going up?
- 03 02 00 48 LMP -- 4.3, --
- 03 02 00 49 CDR Are you going up?
- 03 02 00 50 CMP Roger. Up to 2.0.
- 03 02 00 52 LMP Okay, it's going up slowly, Jim. You just leave it open.
- 03 02 00 58 CMP Okay, I'm up to 2.3.
- 03 02 01 01 LMP How's your O<sub>2</sub> quantity? Okay, it's going to cut off in a minute. We got 65 percent. No sweat. And it's building up, Jim; we're ahead of them, so it's going to cut off and open up again.
- 03 02 01 14 CDR Yes, I'm cutting it off myself, too, because there's so much crap floating around back here, I want to get in the DUMP valve.

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03 02 01 19 LMP Okay. Okay, you can open it up again. Leave it open.

03 02 01 27 CDR ...

03 02 01 32 CMP Okay, it's coming down again; it's about 4.2. There it goes again.

03 02 01 42 LMP Okay, our O<sub>2</sub> quantity is 62 percent. No sweat.

03 02 01 48 CMP Okay, I'm up to 3.5.

03 02 01 51 LMP We're up to 4.7, Jim.

03 02 01 53 CDR Okay.

03 02 02 07 LMP Okay, we're 4.8; it's going to cut off again here.

03 02 02 13 CDR Where are you at now, Dave?

03 02 02 15 CMP Okay, I'm at 4.2, and the cabin pressure ...

03 02 02 19 CDR 4.2?

03 02 02 21 LMP Give it one more shot here ...

03 02 02 24 CDR At 4.2?

03 02 02 27 CMP 4.2.

03 02 02 32 LMP Could you read that, Jim? He's 4.2.

03 02 02 36 CDR I'll give you just a little more.

03 02 02 39 CMP Okay.

03 02 02 42 CDR ... for you.

03 02 02 44 LMP Okay. If we can - That's all you're getting?

03 02 02 46 CMP Yes.

03 02 02 47 LMP Okay.

03 02 02 55 LMP Okay, ... tank up again.

03 02 03 01 CDR The tank?

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- 03 02 03 02 LMP Yes, go ahead.
- 03 02 03 05 CDR Configuring here now. I'm giving you all you're going to get.
- 03 02 03 06 CMP Okay, thank you.
- 03 02 03 18 CDR Okay, CABIN FAN 1, CLOSE; CABIN GAS - doff helmets and gloves.
- 03 02 03 22 LMP Okay.
- 03 02 03 38 CDR Oh, boy. All the time did not have those ... on.
- 03 02 03 40 LMP Yes. I guess I'd better stay here until I connect it into the COMM. You want to open my flow, Jim?
- 03 02 04 02 CDR Okay, you all set?
- 03 02 04 05 LMP Okay, thank you.
- 03 02 04 19 LMP Boy, now I can see better.
- 03 02 05 25 CDR Okay.
- 03 02 05 28 LMP Okay. CABIN FAN 1 and 2, CLOSE; CABIN GAS RETURN to AUTO; SUIT CIRCUIT RELIEF to AUTO; GAS DIVERTER, PUSH/CABIN now. Okay, CABIN PRESSURE REG's are in CABIN. Doff gloves, helmets, and visors; set the LM COMM, basic. I believe I'll go tell Dave we're going back to basic COMM, huh?
- 03 02 05 49 CMP Roger. I caught that; going back to basic COMM.
- 03 02 06 07 CDR Okay, now we want to configure --
- 03 02 06 16 CDR He can't hear me, I don't believe.
- 03 02 06 18 LMP He can't?
- 03 02 06 19 CDR I can't hear you. Come back out here. I can't hear you.
- 03 02 06 55 CC Spider/Gumdrop, Houston through Tananarive. Receiving no transmission. I'll stand by and talk to you over Carnarvon at 22.

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- 03 02 07 03 CDR Okay, Houston, this is Spider here. We're about to repressurize at this time. Everything is hunky-dory onboard, and we're just reconfiguring. We're trying - we're trying to make that TV pass for you.
- 03 02 07 25 CMP Houston, Gumdrop. Did you copy Spider?
- 03 02 07 30 CDR Let's see. ... on this, and I'll put the cover back on this again.
- 03 02 08 31 CC Spider/Gumdrop, Houston through Tananarive. How do you read?
- 03 02 08 37 CMP Houston, Gumdrop. 5 by. How me?
- 03 02 09 31 CC Roger. Are you hearing anything from the spacecraft?
- 03 02 09 34 CT Negative. Downlink from the spacecraft, but you are going out, though.
- 03 02 21 06 CMP Spider, Gumdrop.
- 03 02 21 09 LMP Okay, go ahead, Gumdrop.
- 03 02 21 10 CMP How are you doing over there?
- 03 02 21 12 LMP Okay, we're trying to get through the - the mess in here and get it back stowed again.
- 03 02 21 18 CMP Okay, everything's squared away over here. We're back up to 5.1; ...
- 03 02 21 25 LMP Okay.
- 03 02 21 30 CDR Good job, David Scott.
- 03 02 21 34 CMP Good job to you guys! Hey, that was really a neat demonstration. That really looked pretty neat.
- 03 02 21 45 LMP Yes, it really was, as a matter of fact.
- 03 03 19 35 LMP Hey, Gumdrop.
- 03 03 19 38 CMP Go ahead.
- 03 03 19 39 LMP Find out what we do with this superwide, whether we leave it here or bring it back?

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03 03 19 43 CMP Okay. Stand by.

03 03 19 45 LMP Thank you.

03 03 20 05 LMP See, I've got no way of telling really. There's - there's nothing I have here that really tells me what to do.

03 03 20 11 CMP Okay. It tells me that you take it back over there tomorrow, but it doesn't - doesn't say what.

03 03 20 17 LMP Okay. It says we take the superwide back here tomorrow?

03 03 20 20 CMP Let's see, let me check the other books.

03 03 20 23 LMP Okay.

03 03 20 26 CDR Don't sweat it, Dave. We'll just bring a couple of cameras back.

03 03 20 30 CMP Okay.

03 03 21 04 CMP Hey, Spider. How far are you from ... update?

03 03 21 09 CDR We're pretty quick.

03 03 21 11 CMP Oh, really?

03 03 21 12 CDR Yes, where - where do you stand, Dave?

03 03 21 14 CMP Well, I can ..., I'll get it ready for you.

03 03 21 17 CDR Okay. Let us know when - when you're ready.

03 03 21 21 CMP Okay.

03 03 21 23 CDR We've got some more cleanup too, but probably by the time you get ready, we'll be ready to go ...

03 03 21 28 CMP Okay, I'm trying to get a little bit of ...

03 03 25 43 CC Gumdrop/Spider, this is Houston through Ascension, and we're deleting this backup voice check.

03 03 25 50 CMP Roger.

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- 03 03 25 57 LMP And, Houston, this is the Spider. As soon as we get the tunnel clear, we're going to be transferring back and drying out the sublimator.
- 03 03 26 05 CC Roger. We agree with that. We'll just be standing by.
- 03 03 32 08 CC See you over Tananarive at 42.
- 03 03 32 16 CMP Roger.
- 03 03 39 47 CDR Hey, Gumdrop? You about ready?
- 03 03 39 50 CMP I've got a bunch of other things to do, but I'm taking the hatch out right now.
- 03 03 39 56 CDR Okay, I think we're getting ready to leave here.
- 03 03 39 59 CMP Okay, I've got the basic stuff down here, just a bunch of little cleanup items.
- 03 03 42 37 CC Spider/Gumdrop, Houston through Tananarive; standing by for about 4 minutes. See you at Carnarvon at 56.
- 03 03 42 45 CDR Spider.
- 03 03 42 47 CMP Gumdrop.
- 03 03 43 01 CDR Hey, Dave? How would you like to have us mix up some food for you with this LM water?
- 03 03 43 03 CMP Oh, hey, that would be alright.
- 03 03 43 10 CDR Okay. It's really a lot better.
- 03 03 43 12 CMP Gee, I wouldn't mind trying some of that.
- 03 03 43 18 CMP You're the good guys.
- 03 03 47 55 CDR Dave, are you up working in the tunnel?
- 03 03 47 58 CMP Say again.
- 03 03 47 59 CDR Are you up in the tunnel?
- 03 03 48 00 CMP Yes, open the door.
- 03 03 48 02 CDR Okay.

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03 04 02 47 CC

Roger. We're recommending that you be off of the LM ECS hoses by 76 plus 10. That's about 8 minutes from now, if you can make it. We'd also like to know the time at which you do go off. About 1 minute to LOS here at Carnarvon, and I'll probably see you over Hawaii around 21.

03 04 03 31 LMP

Okay, I'll be on the command module hoses by that time.

03 04 03 40 CC

And, Spider, one more question. Could you - would you have time to tell me whether the suit isolation disconnect circuit breaker is in or out?

03 04 03 55 LMP

Suit flow control circuit is closed. I believe that's what you want.

03 04 04 02 CC

That's what I wanted, Rusty. Thank you. It's closed.

03 04 04 03 LMP

Roger.

03 04 04 58 LMP

Okay, Gumdrop; Spider.

03 04 05 02 CMP

Go, Spider.

03 04 05 03 LMP

Roger; how about sending ...?

03 04 05 06 CMP

Okay.

03 04 05 22 LMP

Okay, and I'm going to go off the LM COMM now, and why don't you give me about a minute and then put me - all the switches ON on my COMM panel.

03 04 05 30 CMP

Okay.

03 04 06 04 LMP

Okay, I'm ON.

03 04 08 30 CDR

Okay. Let's start counting this mother down.

03 04 08 38 LMP

Okay.

03 04 08 53 LMP

Anybody know where the camera fuses are?

03 04 08 56 CDR

Ahh - No, I don't.

03 04 09 02 LMP

Boy, I knew.

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03 04 09 04 CDR I saw it once, too. In something.

03 04 09 07 LMP Yes, we ran into one earlier in the flight.

03 04 09 10 CDR Yes.

03 04 09 11 LMP A fuse, a camera fuse. Where is it?

03 04 09 17 CDR There's one in your data bag.

03 04 09 20 LMP That's where we saw it.

03 04 09 24 CDR It's worth a try.

03 04 09 41 LMP You going to try to get back to the same place, Jim?

03 04 09 57 CDR Hey, did you put it in the middle - the COAS? The slot?

03 04 10 00 LMP Okay.

03 04 10 29 CDR Great!

03 04 12 08 CDR Well!

03 04 12 43 CDR Okay.

03 04 12 56 CDR Too bad!

03 04 13 01 LMP Did you find your camera, Jim?

03 04 13 06 LMP Voila!

03 04 13 10 LMP Voila! Le camera, she work!

03 04 13 14 CDR She works! Did you get the fuse?

03 04 13 17 CC Gumdrop/Spider, this is Houston through the Huntsville. I'll have you about 2-1/2 minutes. And Gumdrop, do you read?

03 04 13 29 CDR What's going on? Okay.

03 04 13 31 LMP This is Spider here; go ahead.

03 04 13 34 CC Okay. Could you pass the word to Gumdrop there that we will pick him up - We'll pick y'all up over Hawa in about 8 minutes at 21.

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03 04 13 39 LMP Hey, dummy, he's calling you.  
03 04 13 41 CMP Oh. Houston, Gumdrop; go.  
03 04 13 44 CC The first item will be some block data that I'd like to get out of the way, and then we'll have some questions on the optics, and on the cryo plan for tonight.  
03 04 13 53 CDR Did you get that, David?  
03 04 13 55 CMP Roger. When did you say you were going to do that?  
03 04 13 58 CC We'll do that over Hawaii - coming across the States - We'll have Hawaii at 21, and we would like to have them to have their block data pad out.  
03 04 14 05 CMP Okay, we'll be all set.  
03 04 14 08 CC Okay.  
03 04 14 09 CMP Okay, Jimmy.  
03 04 14 13 CC And, Gumdrop, we're trying to do some COMM troubleshooting here. This will be VHF only at Hawaii, if we can make it, and I'd like to insure that your VHF is set up.  
03 04 14 25 CMP Okay, all set. VHF only.  
03 04 14 27 CC Okay.  
03 04 14 36 CMP You ready to go, Jimmy?  
03 04 14 46 CDR Oh, no, I'm going ...  
03 04 14 53 CMP Wait a minute, wait a minute ...  
03 04 14 58 CMP Whoo!  
03 04 15 30 CDR Okay, Rusty. You ready?  
03 04 15 32 LMP Yes.  
03 04 15 33 CDR Okay, we got initial powerdown. FDAO 1 and 2, INERTIAL.  
03 04 15 38 LMP Roger.

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03 04 15 39 CDR EARTH/LUNAR POWER, OFF.

03 04 15 41 LMP EARTH/LUNAR POWER, OFF.

03 04 15 42 CDR LIGHTING, OFF.

03 04 15 43 LMP LIGHTING, OFF.

03 04 15 44 CDR MODE, HOLD/FAST; ALTIM - ALTITUDE SET at 130.

03 04 15 48 LMP Roger.

03 04 15 49 CDR MASTER ALARM, OFF? ASC HELIUM SELECTOR, both? STAGE, SAFE and guarded.

03 04 15 54 LMP I'll verify it.

03 04 15 56 CDR AUDIO CONTROL, all switches, OFF. COAS, OFF.

03 04 15 59 LMP Alright. Stand by.

03 04 16 06 LMP Okay, go ahead.

03 04 16 10 CDR Next step: TTCA (COMMANDER's), JETS, down.

03 04 16 11 LMP JETS, down.

03 04 16 12 CDR Next step: OVERRIDE ANUN, OFF; NUM, OFF; INTEGRAL, OFF. Are you SIDE PANELS, OFF?

03 04 16 19 LMP Okay.

03 04 16 20 CDR I didn't think they would be. INTEGRAL's DIM.

03 04 16 22 LMP Okay.

03 04 16 23 CDR Next step: TRANSPOINTER SCALE, HIGH MULT.

03 04 16 27 LMP HIGH MULT.

03 04 16 28 CDR RATE/ERROR MONITOR, LANDING RADAR/COMPUTER.

03 04 16 31 LMP LANDING RADAR/COMPUTER.

03 04 16 32 CDR ATTITUDE MONITOR, PGNS.

03 04 16 35 LMP PGNS.

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03 04 16 36 CDR                   GUIDANCE CONTROL, PGNS.  
03 04 16 37 LMP                   PGNS.  
03 04 16 38 CDR                   MODE SELECTOR, LANDING RADAR.  
03 04 16 40 LMP                   LANDING RADAR.  
03 04 16 41 CDR                   Alright, RANGE/ALTITUDE MONITOR, ALTITUDE/ALTITUDE RATE.  
03 04 16 43 LMP                   ALTITUDE/ALTITUDE RATE.  
03 04 16 44 CDR                   SHAFT - SHAFT and TRUNNION, 50 degrees.  
03 04 16 46 LMP                   50.  
03 04 16 47 CDR                   RATE SCALE, 25.  
03 04 16 49 LMP                   Alright, stand by just a minute here, Jim; I want to plot a point here. My temperature just started going up.  
03 04 16 59 CDR                   How soon --  
03 04 17 00 LMP                   Ahh, I just turned down the - 26; yes.  
03 04 17 18 CDR                   Is that COAS on? Or is that docking part of it ... right, Dave?  
03 04 17 22 CMP                   Yes.  
03 04 17 23 LMP                   3, 14, 7 --  
03 04 17 24 CDR                   It's off 4-1/2 degrees in pitch and about a half degree in yaw.  
03 04 17 26 CMP                   Oh, you're kidding!  
03 04 17 28 CMP                   And, what it is. I'm not in the right place ...  
03 04 17 37 CDR                   You!  
03 04 17 38 LMP                   You'd better keep a sharp eye on --  
03 04 17 39 CMP                   Okay.  
03 04 17 42 CDR                   RATE SCALE, 25.

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03 04 17 43 LMP 25.  
03 04 17 45 CDR THROTTLE CONTROL, AUTO.  
03 04 17 46 LMP AUTO.  
03 04 17 47 CDR MANUAL THROTTLE, COMMANDER.  
03 04 17 48 LMP COMMANDER.  
03 04 17 49 CDR ENGINE ARM, OFF.  
03 04 17 51 LMP ENGINE ARM, OFF.  
03 04 17 52 CDR X-TRANSLATION, 2 JETS.  
03 04 17 54 LMP Roger; 2 JETS.  
03 04 17 55 CDR BALANCE COUPLES, ON.  
03 04 17 56 LMP BALANCE COUPLES, OFF.  
03 04 17 57 CDR ASCENT HELIUM --  
03 04 17 58 CMP No-o-o.  
03 04 17 59 CDR BALANCE COUPLES, ON!  
03 04 18 00 LMP Okay, Jim.  
03 04 18 01 CDR ASCENT HELIUM REG's 1 and 2, talkback gray.  
03 04 18 04 LMP Gray.  
03 04 18 05 CDR DESCENT HELIUM REG: 1, talkback gray; 2, talkback  
barber pole.  
03 04 18 09 LMP Ahh --  
03 04 18 10 CDR ... got the barber pole one.  
03 04 18 12 LMP No.  
03 04 18 13 CDR We turn the POWER, OFF, on this one?  
03 04 18 14 LMP No, the POWER, OFF, is three grays and one barber pole.  
03 04 18 18 CDR Have we had the POWER, OFF, yet?

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03 04 18 19 LMP Yes, we never put the breakers on there.  
03 04 18 21 CDR Oh, that's right, yes.  
03 04 18 22 CDR PROPELLANT QUANTITY MONITOR, OFF.  
03 04 18 25 LMP PROPELLANT QUANTITY MONITOR, OFF.  
03 04 18 27 CDR PROPELLANT TEMPERATURE/PRESSURE MONITOR, ASCENT.  
03 04 18 30 LMP ASCENT.  
03 04 18 31 CDR HELIUM MONITOR, OFF.  
03 04 18 32 LMP HELIUM MONITOR going OFF.  
03 04 18 33 CDR ABORT and ABORT STAGE, flush and guarded.  
03 04 18 35 LMP Flush and guarded.  
03 04 18 36 CDR ASCENT SYSTEMS A and B, ASCENT FUEL and ASCENT OXIDIZER, four, talkback - talkback barber pole.  
03 04 18 41 LMP Roger.  
03 04 18 42 CDR SYSTEMS A and B, QUADS 1, 2, 3, 4, (eight), OPEN; talkback gray.  
03 04 18 46 LMP Gray.  
03 04 18 47 CDR THRUSTERS, talkback barber pole.  
03 04 18 49 LMP THRUSTERS, barber pole.  
03 04 18 51 CDR A and B MAIN SHUT OFF VALVE, talkback --  
03 04 20 23 SC Roger.  
03 04 20 24 CDR ... LMP JETS, down.  
03 04 20 27 LMP JETS, down.  
03 04 20 28 CDR CONTROL, all systems, OFF.  
03 04 20 31 LMP All systems, OFF.  
03 04 20 32 CDR Roger. VHF TRANSMITTER and RECEIVER is OFF.

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03 04 20 40 LMP Okay.

03 04 20 41 CDR TRACK MODE, OFF.

03 04 20 42 LMP Say again.

03 04 20 45 CDR TRACK MODE, OFF.

03 04 20 48 LMP TRACK MODE, OFF. Did you say B TRANSMITTER, OFF, also?

03 04 20 52 CDR Yes, A and B TRANSMITTER and RECEIVER, OFF.

03 04 20 53 LMP Okay.

03 04 20 55 CDR Next step. SUIT GAS DIVERTER, PUSH and CABIN.

03 04 42 01 LMP Okay, it won't stay there.

03 04 42 03 CDR CABIN REPRESS, CLOSE.

03 04 42 05 LMP Okay, if you're ready, here it comes again.

03 04 42 07 CDR Yes, here comes that ... - -

03 04 51 42 CC Apollo 9, we are going to lose you here at Antigua. We'll see you over Ascension at about 59.

03 04 51 49 CDR Roger.

03 04 51 50 LMP Hey, tell them we're done with the dryout.

03 04 51 53 CDR Hey, Houston, looks like we're all done drying out the water boiler. What do you think?

03 04 52 00 CC Stand by, Apollo 9.

03 04 52 04 CMP You know, when you called it that time, the damned thing was shining right through the hatch window.

03 04 52 15 CDR Looks to me like it's just about right, Dave.

03 04 52 17 CMP Yes, I maneuvered about 5 - -

03 04 52 19 CC That's negative. We don't think it's dry yet, Apollo 9. We'll try to give you a hack here on our estimate.

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- 03 04 52 25 CMP Okay, please do.
- 03 04 52 28 CDR They don't think it's dried out yet, Rusty.
- 03 04 52 30 LMP They don't?
- 03 04 52 31 CMP No. Well, I had to maneuver about 40 degrees, I guess, altogether; I had an hour to do it in, so it worked out fairly well. I'm glad we sat down and talked about that now - that sun-angle bit. You know, with the model, that day we did it, a long, long, long time ago, you know?
- 03 04 52 50 CDR Yes.
- 03 04 52 51 CMP You know? Instead of having gimbal angles - torquin angles. That was a - that was a good thing.
- 03 04 52 59 LMP Jim, here's your pea soup.
- 03 04 53 01 CDR Oh, good! I think I'll eat that right now. Cold pea soup ... cold pea soup ...
- 03 04 53 13 CDR (Laughter)
- 03 04 53 16 LMP Well, I tell you, I'm really scramble.
- 03 04 53 18 CDR (Laughter)
- 03 04 53 22 LMP Another day of up, up, up (laughter).
- 03 04 53 26 CDR Listen, you just get things set tomorrow, because it's my day for looking out the window; man, you're going to have to fight me to get your hands - to get one of those cameras away. I haven't taken a pictur yet, hardly. I'm going to take some nice pictures of the ground - of the whole world; I'm just going to make a strip map of the world. You're supposed to do SO 65, yet (laughter).
- 03 04 53 56 CMP Hey, listen, I need to get a picture of Rusty coming down through the hatch. Why don't I ...
- 03 04 54 02 CDR Hey, Dave.
- 03 04 54 03 CMP Yes.

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03 04 54 04 LMP I meant to tell you that TCA helped yesterday. Give me another one today. Oh, yes, oh, I see a lot easier ...

03 04 54 18 CDR Okay, Dave.

03 04 54 21 LMP Yes. I got the camera working. I changed the fuse, and it works. That doesn't mean that's what was wrong with it, but at least that's - that made it work.

03 04 54 43 CDR Hmm, ... gummed up the inside; I've already gummed up the outside. I'm going to have to take another crap tonight.

03 04 54 48 CMP You take one last night?

03 04 54 49 CDR Yes. ...

03 04 54 55 CMP Ha!

03 04 54 59 LMP Hey, has anybody done that - How about sending me some - some of my own food so I can eat. I'm hungry, man.

03 04 55 06 CMP Yes. That's a good idea. ... These are the two that he sent up here, okay?

03 04 55 12 LMP Hey, look what's coming down my way.

03 04 55 13 CDR What?

03 04 55 14 LMP Toothpaste.

03 04 55 17 CMP Well, how did that get out?

03 04 55 18 LMP I don't know how, but it did. Dave has a lot of good useful things - all kinds of things ... like the toothpaste, the ... cover. ... something like this.

03 04 55 28 CMP Okay, just a minute, let me put the toothpaste away before I get more mess. I had it away ... the food bag. Hey, what's the setting in here of earth? Better get the spotmeter.

03 04 55 43 LMP Hey, how are they going to let us know when it's dry?

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- 03 04 55 46 CDR They're going to talk to us over some other place in about 57 minutes, roughly.
- 03 04 55 58 CDR Umm. Not enough light in there. Hey, that's a pretty picture out there. The clouds. Hey, this thing is as stable as a rock, isn't it?
- 03 04 56 46 LMP I don't think it's going to work. But it's worth a try. Wide open at 1/50th. That's what it is. Let me get down here where I can get - more ov de whol show!
- 03 04 57 24 CMP Hmm. Yes.
- 03 04 57 33 CDR Do you still have the BMAG's on?
- 03 04 57 37 CMP What?
- 03 04 57 38 CDR I just wondered if you still had the BMAG's on? Why is it we're not going into gimbal lock today?
- 03 04 57 51 CMP Well, we have -
- 03 04 57 55 CDR Are you doing anything, Rusty?
- 03 04 57 56 LMP Yes. I'm eating.
- 03 04 57 58 CMP ...
- 03 04 58 01 CDR Oh, yes. Hey, I can see one of the running lights on the LM.
- 03 04 58 15 LMP Can you really?
- 03 04 58 16 CDR Yes, it's lit up.
- 03 04 58 17 CMP Here, let me turn it off.
- 03 04 58 18 CDR Okay.
- 03 04 58 19 CMP Did you really?
- 03 04 58 20 CDR Yes. Now it went off. ... I'll be darned; there's another one right out there. Well, the next I need to get is ...
- 03 04 58 33 CMP Okay.

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- 03 04 58 44 CDR Oh, boy, that pea soup is really not mixing too well. The world's lumpiest pea soup. Hey, did anything blow up over there?
- 03 04 58 56 LMP Huh?
- 03 04 58 57 CDR Did anything blow up ... door open?
- 03 04 58 58 LMP No. ...
- 03 04 59 02 CDR Oh, man. I really had a tough time getting my door open. Who!
- 03 04 59 04 LMP Yes! You'll have a tough time getting it closed, too.
- 03 04 59 07 CDR Oh.
- 03 04 59 08 CMP Yes, it always makes the ground go "gulp" when McDivitt starts working on a hatch.
- 03 04 59 13 CDR (Laughter) ... It's just that Rusty wouldn't get out of the way.
- 03 04 59 21 CDR ...
- 03 04 59 22 LMP ...
- 03 04 59 23 CDR He's like a big ... He comes in and stands around, and lets you wait on him. Close the door, will you?
- 03 04 59 36 CDR Oh, boy!
- 03 04 59 37 CMP Well, I'm sorry that camera didn't work for the little transfer you did, because it looked pretty easy.
- 03 04 59 44 LMP Well, it was.
- 03 04 59 46 CMP I tried to take some Hasselblads, but I didn't have that ready, because I'd been fighting with that damn camera. That EVA glove I had was so bad - I just thought that my right hand - it was good for grabbing hold of the hatch handle and that was about all.
- 03 05 00 13 CDR Oh, you take more than ... this water - -
- 03 05 00 15 CC Apollo 9, Houston through Ascension.

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03 05 00 18 CDR Hello, Ascension. Hello, Houston; this is Apollo 9.  
03 05 05 48 CDR LANDING RADAR STANDBY, CLOSED.  
03 05 05 50 LMP Oh, I'm sorry. Hold on. Okay, now, LANDING RADAR,  
STANDBY: RANGE RADAR going OFF - Yes, LANDING RADAR,  
CLOSED.  
03 05 06 04 CDR INSTRUMENTATION: LANDING RADAR, CLOSED.  
03 05 06 05 LMP Roger.  
03 05 06 08 CDR SIGNAL CONDITIONER 1, CLOSED.  
03 05 06 09 LMP Roger.  
03 05 06 11 CDR LIGHTING: ANNUNCIATOR/DOCKING (laughter) CLOSED --  
03 05 06 14 LMP Got them.  
03 05 06 15 CDR -- all others OPEN.  
03 05 06 16 LMP Got them.  
03 05 06 17 CDR Row 4, all OPEN except PGNS: IMU STANDBY.  
03 05 06 21 LMP Go.  
03 05 06 22 CDR All others OPEN. You get a MASTER ALARM and a  
GLYCOL PUMP.  
03 05 06 32 LMP Go.  
03 05 06 34 CDR Okay, row 5, all OPEN except: EPS: BAT FEED TIE,  
two, CLOSED.  
03 05 06 38 LMP Got it.  
03 05 06 39 CDR CROSS TIE BALANCE LOADS, CLOSED.  
03 05 06 42 LMP Go.  
03 05 06 43 CDR DESCENT ECA CONTROL, CLOSE.  
03 05 06 44 LMP Go.  
03 05 06 45 CDR DESCENT ECA, CLOSE.

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03 05 06 46 LMP Go.  
03 05 06 47 CDR DC BUS - BUS VOLTS, CLOSE.  
03 05 06 52 LMP Go.  
03 05 06 53 CDR DFI POWER, OFF.  
03 05 06 55 CDR DFI PWER, OFF.  
03 05 06 57 CDR CB(16).  
03 05 07 01 LMP ... I don't - Did you read DESCENT ECA CONTROL and DESCENT ECA, CLOSE?  
03 05 07 04 CDR Yes, I did.  
03 05 07 05 LMP Okay.  
03 05 07 06 CDR Then I read DC BUS VOLTS, CLOSED, too.  
03 05 07 07 LMP Alright, go ahead.  
03 05 07 09 CDR Okay, well - CB(16), row 1, all OPEN.  
03 05 07 14 LMP Go.  
03 05 07 15 CDR Row 2, all OPEN except LIGHTING: LIGHTING is CLO  
03 05 07 19 LMP Go.  
03 05 07 20 CDR STAB/CONTROL: ASA, CLOSED.  
03 05 07 21 LMP Go.  
03 05 07 22 CDR INSTRUMENTATION: SIGNAL SENSOR, CLOSED.  
03 05 07 26 LMP Go.  
03 05 07 27 CDR SIGNAL CONDITIONER 2, CLOSE.  
03 05 07 28 LMP Go.  
03 05 07 29 CDR Row 3, all OPEN - Oh, all others OPEN on row 2.  
03 05 07 31 LMP Okay.  
03 05 07 33 CDR Row 3 is all OPEN.

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( ) 03 05 07 34 LMP Row 3, all OPEN?  
03 05 07 35 CDR Yes.  
03 05 07 41 LMP Okay.  
03 05 07 42 CDR Row 4, all OPEN except: HEATERS: S-BAND ANTENNA,  
CLOSED.  
03 05 07 47 LMP Go.  
03 05 07 48 CDR EPS: DISPLAY is CLOSED.  
03 05 07 50 LMP Go.  
03 05 07 51 CDR DC BUS VOLTAGE, CLOSE.  
03 05 07 52 LMP Go.  
03 05 07 53 CDR DESCENT ECA, CLOSE.  
03 05 07 54 LMP Go.  
03 05 07 56 CDR DESCENT ECA CONTROL, CLOSE.  
03 05 07 58 LMP Go.  
03 05 07 59 CDR BAT FEED TIE, two, CLOSE.  
03 05 08 00 LMP Okay, once again. We got to leave the ... BUS TIE,  
CLOSED. BALANCE LOADS, CLOSED? That's missing, too.  
Okay, go.  
03 05 08 12 CDR That's the BAT's and the BUS VOLTAGES. Wait a second,  
do we have DC - DESCENT ECA CONTROL, CLOSE?  
03 05 08 17 LMP Yes.  
03 05 08 18 CDR BAT FEED TIE, two, CLOSE.  
03 05 08 19 LMP Yes.  
03 05 08 20 CDR Okay. Check the BAT's and BUSES.  
03 05 08 26 LMP You want them read out?  
03 05 08 28 CDR Yes, go.

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03 05 08 29 LMP Okay, 31 - all four of them are 31; 37 and 37 on 5 and 6; BUSES are 31 and 31; and the ED BAT's are 36.5 and 37.3.

03 05 08 49 CDR ... Okay, BAT 1, LOW VOLTAGE, OFF/RESET, talkback barber pole.

03 05 08 56 LMP Okay.

03 05 08 58 CDR Got BAT 1, LOW VOLTAGE, and talkback, LOW.

03 05 09 04 LMP Go.

03 05 09 05 CDR ...

03 05 09 06 LMP Got them.

03 05 09 07 CDR ... BAT BUS VOLTAGES ... ED/OFF.

03 05 09 18 CDR CB(11), INSTRUMENTATION: SIGNAL CONDITIONER 1, OPEN.

03 05 09 22 LMP SIGNAL CONDITIONER 1, OPEN.

03 05 09 27 CDR EPS: DESCENT ECA CONTROL, OPEN.

03 05 09 29 LMP DESCENT ECA CONTROL, OPEN.

03 05 09 31 CDR DC BUS VOLT's OPEN.

03 05 09 33 LMP DC BUS VOLT's OPEN.

03 05 09 34 CDR CB(16), ... - CB(16), INSTRUMENTATION: SIGNAL SENSOR, OPEN.

03 05 09 40 LMP SIGNAL SENSOR, OPEN.

03 05 09 41 CDR SIGNAL CONDITIONER 2, OPEN.

03 05 09 43 LMP SIGNAL CONDITIONER 2, OPEN.

03 05 09 44 CDR EPS: DISPLAY's OPEN.

03 05 09 46 LMP EPS: DISPLAY's OPEN.

03 05 09 50 CDR DC BUS VOLT's OPEN.

03 05 09 51 LMP DC BUS VOLT's OPEN.

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03 05 09 52 CDR DESCENT (cough) - DESCENT ECA CONTROL, OPEN.  
03 05 09 56 LMP Go.  
03 05 09 57 CDR CROSS TIE BALANCE LOADS, CLOSED.  
03 05 09 59 LMP Go.  
03 05 10 01 CDR CROSS TIE BALANCE LOADS, CLOSED!  
03 05 10 03 LMP Yes, we left it CLOSED.  
03 05 10 05 CDR Okay, DESCENT H<sub>2</sub>O, CLOSED.  
03 05 10 08 LMP I think I'm going to want a drink of water.  
03 05 10 13 CDR ... drink some water. ...  
03 05 10 26 LMP Really good water.  
03 05 10 43 LMP Oh, DESCENT H<sub>2</sub>O, CLOSE.  
03 05 10 49 LMP I'll tell you, if ... the CSM. Yes. You know something, we didn't close the DESCENT O<sub>2</sub> again.  
03 05 10 55 CDR ... I noticed that ... --  
03 05 10 58 LMP I got it closed now. Let's see what else we've got: We've got --  
03 05 11 01 CDR ...  
03 05 11 02 LMP -- we've got the REG's in EGRESS, too. That should be in CLOSE.  
03 05 11 05 CDR I wonder how come they do that? I never thought about that.  
03 05 11 10 LMP Okay. Now I've got a little bird. Okay, everything looks good, now.  
03 05 11 23 CDR Okay, CSM position LM POWER to CSM.  
03 05 11 29 LMP Hey, when - when that happens, look out the window and see ... docking lights.  
03 05 11 32 CDR I'm already looking.

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03 05 11 34 LMP      Alright. ... good.

03 05 11 37 CDR      How about that? Goes out. Whee! Everything works!

03 05 11 41 CDR      FLOOD's OFF.

03 05 11 43 LMP      FLOOD, OFF.

03 05 11 44 CDR      Lights should stay on.

03 05 11 45 LMP      They do.

03 05 11 46 CDR      LIGHTS - UTILITY LIGHTS, both, OFF.

03 05 11 48 LMP      Okay, both, OFF.

03 05 11 51 CDR      CSM LM POWER; ...?

03 05 11 53 LMP      Yes.

03 05 11 54 CDR      ... checking the volts. ... the wrong thing.

03 05 11 59 LMP      Really?

03 05 12 00 CDR      ...

03 05 12 09 CDR      OVERHEAD DUMP - CABIN DUMP valve to AUTO.

03 05 12 11 LMP      Yes, it's in AUTO.

03 05 12 13 CDR      LMP transfer to the CSM and secure the hatch --

03 05 12 15 LMP      Okay, let me get my helmet here.

03 05 12 16 CDR      -- with the EVA checklist. Wait a minute, let me also ... take some pictures.

03 05 12 23 LMP      Well, I'm going to ... the helmet up first - and the gloves.

03 05 12 40 CDR      Okay, stand by, here comes some gloves. Humph! Come on, gloves! ... Okay, ready?

03 05 13 15 LMP      No.

03 05 13 16 CDR      Okay. Let me know.

03 05 13 45 CDR      That pea soup still tastes like pea soup.

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03 05 13 47 LMP Okay, I ready.

03 05 13 48 CDR You ready?

03 05 13 49 LMP I ready.

03 05 13 52 CDR ...

03 05 13 57 LMP Okay, now, I'm ready.

03 05 13 59 CDR Now you're ready, huh?

03 05 14 01 LMP Ready.

03 05 14 02 CDR Okay.

03 05 14 08 LMP I guess I'll come up feet first.

03 05 14 11 CDR Okay, I got it.

03 05 14 12 LMP You want to pull up the hose, Jim?

03 05 14 14 CDR Wait, I don't know; let me - No, I can't pull up your hose. ...

03 05 14 29 LMP ... can you pull my hose?

03 05 14 33 CMP Okay, ...

03 05 14 36 LMP Okay, just give it a -

03 05 14 39 CMP Is this the way?

03 05 14 41 LMP Yes.

03 05 14 42 CMP Okay to start pulling, okay?

03 05 14 44 LMP Let me see, let's figure out how the best way to do this is going to be. How about taking a ... over here? That makes it a little better. Oh, I'll close the hatch, Jim.

03 05 15 03 CMP I - I can close the hatch, Rusty.

03 05 15 06 LMP No, I don't want to ..., Dave. Let me just put my feet down on this side of it until my feet down through there and go in here. Okay?

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03 05 15 15 CMP Well, I don't know where you mean it, but alright.

03 05 15 23 LMP Oh, stand by.

03 05 15 37 LMP Okay, ...

03 05 15 39 CMP Okay, you ... - As a matter of fact, if you want to put your feet towards me -

03 05 15 43 LMP Yes. That's what I - -

03 05 15 44 CMP This way -

03 05 15 59 LMP Now, that did it.

03 05 16 13 CMP They're hooked the other way, Jim.

03 05 16 15 LMP Let me disconnect them ...

03 05 16 45 CMP Okay.

03 05 16 55 CMP ... Would you get that, too, please?

03 05 17 00 LMP Yes.

03 05 17 43 LMP (Laughter) Oh, wait a minute here, let me get that ...

03 05 17 51 CDR Where's that superwide-angle Hasselblad?

03 05 18 51 CDR Boy, are we going to have a short night tonight. Whooee!

03 05 19 19 CDR ...?

03 05 19 26 CDR Okay. Okay. Yes. Oh, boy!

03 05 20 30 CDR Yes. I'm still - Don't like to eat, I must admit.

03 05 20 38 LMP Yes, I do - Well, I know it; there's no question if I'd eat, I'd feel a lot better, but boy, I'm - I really ... I don't have much appetite.

03 05 20 51 CDR Yes. I know it.

03 05 21 57 CDR Oh, boy! Tomorrow we have 2-1/2 hours to do everything we did today plus a P51 in the morning. It took us 2-1/2 hours today to do that - just get

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ready. We've got to figure out some better way to get the hell out of here tomorrow.

03 05 22 16 LMP

Yes, but we've - ...

03 05 22 18 CDR

There's one little ground station ... What we ought to do is get up an hour earlier and get a little more organized, get over there quicker.

03 05 22 27 LMP

Why in the hell do they put the whole job in 1 day? What the hell is the goddamn rush?

03 05 22 32 CMP

Because we're liable to die ... - -

03 05 22 33 LMP

Oh, shoot! We're liable to die.

03 05 22 38 CDR

Well, one thing we ought to do is fix up that ISA tonight - bypass the ... star check. Oh, there's the place - Oh, they can call us an hour early. They'll call us over Ascension an hour and a half earlier. They can - yes, they can call us over Guam about 50 minutes early. I think if they got us up over Guam? Oh, hell, Guam is ... If they get us up over Guam, and we've got the ISA all squared away, and we don't dillydally getting our suits on, I think we can be out of here on time. ... we've got a bypass ... if we take plenty of time ... Yes, you know the status check is about 4 to 5 minutes.

03 05 24 01 CMP

...

03 05 24 18 CMP

What else have we got to do?

03 05 24 24 CDR

I tell you what, is everybody going to get out of these suits?

03 05 24 28 LMP

No, I'm not ...

03 05 24 34 CDR

...going to get out of your suit. What? Well, maybe two of us ought to get out of their suits, and put it back together in the ...

03 05 24 56 CDR

... already we're into our sleep time; that extra hour that we were supposed to have is all gone.

03 05 25 09 CMP

Where - where's my helmet bag? Hey, Jim, I think that's mine over there. This one's for ...

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03 05 25 15 CDR Here's mine here. Here's mine, right here, Dave.

03 05 25 23 CMP Okay, well, I'll go below.

03 05 25 26 CDR Right out where I could see it. That's why we couldn't find it.

03 05 26 02 CDR One more big day.

03 05 26 05 LMP Yes, ... exactly ...

03 05 26 08 CMP Boy, I'll tell you, I'm ...

03 05 26 11 CDR (Laughter)

03 05 26 15 CMP I'm agreeing with what you said, huh?

03 05 26 17 LMP Yes.

03 05 26 19 CMP ... hungry ... normal food.

03 05 26 58 LMP ... all the way around.

03 05 27 04 CDR ... EVA visors ...

03 05 27 12 CMP The one that - the old ones don't cover all the visible glass.

03 05 27 17 CDR I know, but that doesn't have anything to do with that little hunk of black rubber. I guess we ought to be ... a little more specific. Why do you have to put them on with a piece of black rubber when all the other ones fit so well?

03 05 27 27 CMP Yes, but it's the space that I ..., Jim. ... worry about black rubber. It's just a much ...

03 05 27 34 CDR Yes.

03 05 27 40 CDR What? What? Oh.

03 05 28 07 CMP You know that ... scared hell out of me?

03 05 28 10 CDR What's that?

03 05 28 11 CMP That first ... check.

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- 03 05 30 17 LMP Hey, we also have to figure out something to cover you up with tonight, Dave.
- 03 05 30 23 CMP ... cryo PRESS.
- 03 05 30 26 LMP What did you say --
- 03 05 30 28 CC Apollo 9, Houston.
- 03 05 30 30 LMP Roger, Houston; Apollo 9.
- 03 05 30 35 CC Roger. Rusty, we've got a message for you if you're ready to copy.
- 03 05 30 41 LMP Roger. Stand by. Let me get a book.
- 03 05 30 45 CC Okay. It's just a message on the malfunction procedures. You don't need to copy it.
- 03 05 30 49 LMP Okay, go ahead.
- 03 05 30 50 CC Okay, the message is: we've reviewed the --
- 03 05 33 57 LMP Roger.
- 03 05 34 00 CMP Looks like the day to get that one - that one COMM cable up.
- 03 05 34 09 LMP Well, we're still putting the spacecraft back together, getting the drogue and the probe and stuff like that in the tunnel, and rearranging the other stuff.
- 03 05 34 30 CC Okay. Are you going to have a chance to get spacecraft batteries and service module RCS readouts for us?
- 03 05 34 35 LMP I'll get that for you in just a minute.
- 03 05 34 37 CC Okeydoke.
- 03 05 34 39 LMP Have we powered down yet?
- 03 05 34 42 CDR No, we haven't done that either. Why don't you and I do that and get on this other stuff here first?
- 03 05 34 46 LMP Well, we've got to power down to ..., Jim.

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- 03 05 34 48 CDR Well, okay ...
- 03 05 34 51 LMP No, I think Dave ... Let me see if Dave has got one in ... No, Dave doesn't have one ... He doesn't have the systems book. ...
- 03 05 35 30 CDR Okay.
- 03 05 35 40 CC Apollo 9, Houston.
- 03 05 35 43 CDR Roger.
- 03 05 35 45 CC You can go AUTO on the heaters now and turn the fans off.
- 03 05 35 51 CDR Okay. AUTO on the heaters and turning the fans off.
- 03 05 35 54 CC Yes. On the H<sub>2</sub> tanks.
- 03 05 35 56 CDR Okay, I hope you're back on ...
- 03 05 36 08 CC Roger. Apollo 9, Houston; we're going to lose you here in a minute, and we'll pick you up at Guam for the systems stuff. That will be about 41.
- 03 05 36 15 CDR Okay, fine.
- 03 05 37 00 CDR Did they already pass us all our block data?
- 03 05 37 02 LMP I thought Dave copied that ...
- 03 05 37 12 CDR Yes, Dave, we need the checklist for the powerdown here, so when ... on the batteries.
- 03 05 37 17 CDR Okay, ... What?
- 03 05 38 27 CDR Let's see, you power up, then power down.
- 03 05 38 53 CDR Say, did we - did we ... the CMC? Yes, ... Okay, POO; VERB 48, ENTER. Dave, did you get our state vector update?
- 03 05 39 08 LMP Okay, VERB 48, ENTER.
- 03 05 39 12 CDR And no DAP.
- 03 05 39 13 LMP No DAP's in there.

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03 05 39 15 CDR Okay, PRO, PRO, PRO.  
03 05 39 16 LMP PRO, PRO, PRO.  
03 05 39 19 CDR VERB 46, ENTER.  
03 05 39 21 LMP VERB 46, ENTER.  
03 05 39 25 CDR Call P06.  
03 05 39 28 LMP VERB 37, ENTER; 06, ENTER.  
03 05 39 34 CDR Okay, now -  
03 05 39 38 LMP PRO until STANDBY, is that what you mean?  
03 05 39 44 CDR STANDBY! CMC MODE, FREE.  
03 05 39 47 LMP CMC MODE, FREE.  
03 05 39 50 CDR G/N IMU POWER, OFF, and G/N OPTICS, OFF.  
03 05 40 13 CDR Okay, SCS ORDEAL POWER, OFF; FDAI, INERTIAL.  
03 05 40 19 LMP FDAO POWER, OFF.  
03 05 40 22 CDR EMS FUNCTION, OFF.  
03 05 40 24 LMP EMS FUNCTION, OFF.  
03 05 40 25 CDR EMS MODE, STANDBY.  
03 05 40 26 LMP STANDBY.  
03 05 40 29 CDR CMC ATTITUDE, IMU.  
03 05 40 31 LMP CMC ATTITUDE to IMU.  
03 05 40 32 CDR FDAO SCALE, 5/1.  
03 05 40 34 LMP 5/1.  
03 05 40 35 CDR FDAO SELECT to 1.  
03 05 40 36 LMP 1.  
03 05 40 38 CDR FDAO SOURCE to CMC.

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03 05 40 41 LMP CMC.  
03 05 40 45 CDR ATTITUDE SET to IMU.  
03 05 40 47 LMP IMU.  
03 05 40 48 CDR AUTO RCS, 16, OFF.  
03 05 40 54 LMP Okay, OFF.  
03 05 40 59 CDR MANUAL ATTITUDE, RATE COMMAND.  
03 05 41 00 LMP RATE COMMAND.  
03 05 41 01 CDR LIMIT CYCLE, ON.  
03 05 41 02 LMP LIMIT CYCLE, ON.  
03 05 41 03 CDR ATTITUDE DEADBAND, MAX.  
03 05 41 04 LMP MAX.  
03 05 41 05 CDR RATE, LOW.  
03 05 41 06 LMP LOW.  
03 05 41 07 CDR THC POWER, OFF.  
03 05 41 08 LMP OFF.  
03 05 41 09 CDR ROTATIONAL CONTROL POWER NORMAL, two, OFF.  
03 05 41 11 LMP Two, OFF.  
03 05 41 12 CDR DIRECT, two, to OFF.  
03 05 41 16 LMP Okay, two, OFF.  
03 05 41 18 CDR SPACECRAFT CONTROL to SCS.  
03 05 41 19 LMP SCS.  
03 05 41 20 CDR CMC, FREE.  
03 05 41 22 LMP CMC, FREE.  
03 05 41 23 CDR BMAG MODE, three, RATE 2.

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03 05 41 25 LMP RATE 2.  
03 05 41 26 CDR TVC, two, RATE COMMAND.  
03 05 41 27 LMP RATE COMMAND --  
03 05 41 28 CDR SCS TVC to RATE COMMAND.  
03 05 41 29 LMP Okay.  
03 05 41 30 CDR EMS ROLL, OFF.  
03 05 41 31 LMP EMS ROLL, OFF.  
03 05 41 32 CDR 0.05g switch, OFF.  
03 05 41 33 LMP OFF.  
03 05 41 34 CDR LV/SPS INDICATORS to Pc.  
03 05 41 36 LMP Pc.  
03 05 41 37 CDR TVC GIMBAL DRIVES, PITCH and YAW, 1.  
03 05 41 40 LMP 1.  
03 05 41 41 CDR EDS POWER, OFF.  
03 05 41 45 LMP EDS POWER, OFF.  
03 05 41 47 CDR TVC SERVO POWER, two, OFF.  
03 05 41 49 LMP Two, OFF.  
03 05 41 50 CDR FDAI POWER, OFF.  
03 05 41 52 LMP FDAI POWER is OFF.  
03 05 41 55 CDR LOGIC POWER 2/3, OFF.  
03 05 41 58 LMP OFF.  
03 05 41 59 CDR SCS ELECTRONICS POWER, OFF.  
03 05 42 00 LMP SCS ELECTRONICS POWER is OFF.  
03 05 42 02 CDR SIGNAL CONTROL/BIAS POWER, OFF.

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03 05 42 04 LMP OFF.

03 05 42 05 CDR BMAG POWER, two, to WARM UP.

03 05 42 09 LMP Let's see, two to WARM UP?

03 05 42 10 CDR One to WARM UP and ... , okay?

03 05 42 15 LMP Okay, did we ever --

03 05 48 58 CDR Okay, thank you.

03 05 49 01 LMP You know what? I just ...

03 05 49 09 CDR Okay, what else do you want to do?

03 05 49 12 LMP Oh, nothing, Jim.

03 05 49 13 CDR Okay. I need that systems test meter readout ... What did you do with that systems test meter readout, so we can get that data to Houston before we lose them? Did you get us that systems test meter readout from 5 C and - D? Well, hell, they've gone ...

03 05 49 46 CDR Wait a second. Wait a second. Rusty, --

03 05 49 51 CMP ...

03 05 49 53 LMP Yes.

03 05 49 54 CMP ...

03 05 50 05 CDR Okay.

03 05 50 29 CDR Why don't you take your suit off ... with your suit off ...

03 05 50 41 LMP Hey, we ... one for ... in quad B.

03 05 50 43 CDR Did we really? (Laughter) Are we doing ... today? ... than you had yesterday.

03 05 51 11 LMP ...

03 05 51 14 CDR B is ... Did you say A and B? Yes. Okay, use ...

03 05 52 07 LMP Dave, the first ... shows that the tunnel's okay.

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03 05 52 15 CMP ...  
03 05 52 27 LMP Good.  
03 05 53 30 CDR (Laughter)  
03 05 54 17 LMP Did we ... the tape?  
03 05 54 23 CDR Yes. It's right there.  
03 05 56 13 CDR Houston, Apollo 9.  
03 05 56 15 CC Apollo 9, Houston. Go.  
03 05 56 20 CDR Okay. Ready to copy the systems readout?  
03 05 56 23 CC Roger. Go.  
03 05 56 26 CDR Okay, quad quantities A, B, C, D: 75, 77, 71, 72; BAT C, 37.0; PYRO A and B, 37.1.  
03 13 58 18 CC Apollo 9, Houston. We noticed the AUTO switchover to REG 2, and we'd like you to go back to number 1.  
03 13 58 26 CDR Okay. Roger. We'll do that.  
03 13 58 30 CC Okay. We're just about LOS; Ascension at 27, and you might be thinking about it. We could use a rundown on crew health, sleep, and pills taken the last couple of days if you can give it to us there.  
03 13 58 49 CDR Okay, let me ask you a question with the radiators there. Do we have a problem or what?  
03 13 58 57 CC We don't know yet at this time, but don't think so.  
03 13 59 01 CDR ..., but the automatic switch is in radiator 1 now. Okay?  
03 13 59 30 CDR Houston, ... Apollo 9.  
03 19 23 59 CDR Hey, Gumdrop, would you disable your B-3 thruster? We're going to unlimber the radar here.  
03 19 24 02 CMP Roger. It is disabled.  
03 19 24 03 CDR Roger; thank you.

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03 19 24 07 LMP COMP ACTIVITY light --  
03 19 24 09 CDR Check your transponder. It'll be off, too, please.  
03 19 24 11 CMP Roger. Transponder is off.  
03 19 24 16 CDR Okay.  
03 19 33 10 CMP Spider, Gumdrop. That's about in.  
03 20 27 57 CMP That should be right lined up now.  
03 20 28 08 LMP What is your roll angle?  
03 20 28 10 CMP 180.  
03 20 28 13 LMP Okay, I know what our problem is. It's the docking ring angle and it's - So we should read 2 degrees more than normal. Okay, let's go.  
03 20 28 21 CMP How about that?  
03 20 32 54 CDR ... 5 minutes on my mark.  
03 20 32 55 CDR MARK.  
03 20 32 57 CDR Okay.  
03 20 56 44 LMP Roger. ... That'll be Carnarvon at 23.  
03 20 56 52 CMP Okay, Spider. I'm just about at the attitude now in plane and the roll is the ... attitude ...  
03 20 56 53 CDR Okay, you look good to us.  
03 20 57 20 CMP Okay, thanks, Smokey.  
03 20 57 21 CDR If this COMM doesn't improve, David, we're going to have an awfully quiet rendezvous.  
03 20 57 31 CMP Roger.  
03 20 57 49 CMP Crew, I have 5 minutes on my mark. 2, 1 -  
03 20 57 53 CMP MARK.  
03 20 57 54 CDR Roger; we're right with you.

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03 20 57 55 LMP Right with you.  
03 21 02 25 CMP 30 seconds. Average g is NOM.  
03 21 02 27 LMP Roger.  
03 21 02 50 CMP 5, 4, 3, 2, 1 -  
03 21 02 55 CMP BANG.  
03 21 03 21 CMP Okay, 5 feet per second.  
03 21 03 23 LMP Roger. Looks good. Okay, zero residual.  
03 21 03 30 CMP Roger.  
03 21 03 34 LMP Hey, I'm getting a VERB 80. Okay, you just want t  
track them on the COAS. Right. AC breaker in  
place? VERB ...  
03 21 03 45 CMP Right.  
03 21 03 55 LMP ... get the AC breaker in. Did you get a time on  
03 21 03 58 CDR No, I didn't.  
03 21 04 00 LMP Okay, I'll call you when it's about --  
03 21 04 03 CDR It was about 59 there.  
03 21 04 04 LMP Say again.  
03 21 04 05 CDR It was about -  
03 21 04 09 LMP Okay, we'll make sure.  
03 21 04 15 LMP Okay, Gumdrop. The tracking light's coming on.  
03 21 04 17 CMP Okay.  
03 21 04 24 LMP Yes. Wow! Yes, it sure is.  
03 21 04 29 CMP Yes, right between the eyes.  
03 21 04 31 CDR You know, I don't think I'd been able to track you  
on my COAS. It's not bright enough.  
03 21 04 35 LMP You can probably get it close, Jim.

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03 21 04 48 CDR Okay.

03 21 04 57 LMP Okay.

03 21 05 18 CDR Yes, the camera's off.

03 21 05 25 LMP I'm standing by with a VERB 41, NOUN 72, as soon as I - get the flashing - Okay, there we go.

03 21 05 37 CMP Okay, I got the big ...

03 21 05 40 CDR Okay, Gum.

03 21 05 48 LMP And I'm all ready - to the camera. Okay, stand by. I'll be 1 second.

03 21 06 01 CMP Okay.

03 21 06 14 LMP Okay, you ready?

03 21 06 15 CMP It's ready.

03 21 06 16 LMP Okay, here it goes.

03 21 06 26 LMP And there it is. Stand by. We haven't got the NO TRACK light out yet, but it's blocked off. Okay, the NO TRACK light is out. ... Hey, ... we call a VERB 83 ... ENTER. Okay, it says he's a - 1200 feet.

03 21 07 07 LMP Okay, the radar is a GO. Wait a minute, that's - that's going to change again.

03 21 08 31 LMP Okay, Gumdrop, ...

03 21 08 35 CMP Right. Go.

03 21 08 36 LMP Gumdrop, you're - we're done with the radar check.

03 21 08 40 CMP Gee, that's pretty good. Fine.

03 21 08 44 CDR Now we're going to put our EXTERIOR LIGHT to DOCK and get ready for the alignment.

03 21 08 50 CMP Roger.

03 21 14 52 CMP Hello, Spider; Gumdrop. I've got my alignment, and third star check on two bright stars.

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03 21 16 00 LMP Okay, we're in the middle of ours, Gumdrop. We'll be right with you.

03 21 16 05 CMP Okay.

03 21 18 43 CMP Okay, a ... has you within 1 degree.

03 21 18 46 LMP Man, that'll be great.

03 21 22 59 CC Gumdrop/Spider, Houston through Carnarvon. Standing by.

03 21 23 06 CMP Gumdrop; Roger.

03 21 23 09 CC Gumdrop, confirm the SEP burn.

03 21 23 11 CMP SEP burn on time and a good burn, and everything looks good.

03 21 23 16 CC Thank you.

03 21 23 32 LMP And Spider's here. We've finished marking our Sirius and we're in the fourth set on Acrux.

03 21 23 39 CC Roger, Spider; you're loud and clear.

03 21 24 54 LMP Would you believe five zeros?

03 21 24 57 CMP Beautiful.

03 21 24 58 CC Roger, Spider.

03 21 25 30 CC That looks mighty pretty, Spider.

03 21 25 34 LMP Thank you.

03 21 26 30 CMP Spider, Gumdrop. I can see your jets burning just as clear as a bell.

03 21 26 34 CDR Roger; I was watching your light down there.

03 21 26 37 CMP You just gave a big burst.

03 21 26 39 LMP Roger.

03 21 26 44 CMP Lights up the whole sky.

03 21 26 53 CC Gumdrop, Houston. Did you do a P52 here?

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03 21 26 56 CMP Right, and stand by and I'll give you the angles.

03 21 26 59 CC Roger.

03 21 27 04 CMP It'll be about 5 minutes.

03 21 27 07 CC Okay.

03 21 29 26 CC Okay, Spider and Gumdrop, this is Houston. I'll lose you at Carnarvon in about a minute; and bring up your S-band volumes about that time. We'll have you at Honeysuckle.

03 21 29 36 CDR Okay.

03 21 31 35 CMP Spider, Gumdrop. I've got you at 1.78 miles and 4.8 feet per second.

03 21 31 40 CDR Okay.

03 21 31 47 LMP Are you firing a lot out there?

03 21 31 49 CMP Yes, just spurts. Yes.

03 21 31 54 CDR Yes, it actually put your light out, I can't even see it.

03 21 31 56 CMP Just pulsing.

03 21 32 20 CMP Gumdrop, Spider. Do you have your light on? Is your light out?

03 21 37 08 CDR Okay.

03 21 37 10 CDR I have it showing about a degree or so out of plane, already.

03 21 37 25 LMP Yes, I do too.

03 21 37 43 CMP I have us about 7 minutes late on the crossing, and I don't know why.

03 21 37 46 CDR You gave us what?

03 21 37 47 CMP About 7 minutes late for the horizontal crossing.

03 21 37 49 CDR Oh, really?

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Day 4

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03 21 37 50 CMP Yes. I don't understand it, Rusty.

03 21 37 54 CDR Gee, we're just about crossed right now. We're look - we're going to be looking up at you, I think, here, if I pitched all the way around. ...

03 21 38 04 CMP Oh, my ORDEAL slewed good.

03 21 38 15 CMP No, I better wait until you clear the ...

03 21 38 18 CDR Okay.

03 21 43 22 CDR Dave, it looks like we're having horizontal crossing right about now.

03 21 43 25 CC Spider and Gumdrop, this is Houston through the Mercury. Standing by for your burn.

03 21 49 40 CDR Okay.

03 21 49 44 LMP ENGINE GIMBAL to ENABLE.

03 21 49 46 CDR ... ENABLE.

03 21 49 59 LMP Am I?

03 21 49 52 CC Everything looks good here, Spider. It was a good burn.

03 21 49 55 CDR Okay, it was a little rough; it got a little rough and chuggy around 20 percent as I was throttling up. I waited for it, and then throttled to --

03 21 50 03 LMP INVERTER 1, OPEN.

03 21 50 04 CDR Check.

03 21 50 07 CC Roger; we're losing you at the Mercury and we'll see you over Texas about 05.

03 21 50 13 LMP Okay, and you can debrief the burn.

03 21 50 14 CDR Okay. Got it?

03 21 50 15 LMP Yes.

03 21 50 16 CDR Okay.

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Day 4

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03 21 50 41 LMP You want to pitch now and -  
03 21 50 43 CDR Yes.  
03 21 50 44 LMP Okay.  
03 21 50 45 LMP See, I - I'm going to -  
03 21 51 01 CDR Get that one.  
03 21 51 08 LMP Yes. See him?  
03 21 51 10 CDR Yes.  
03 21 51 18 CDR Hey, we really got to pitch pretty fast on that.  
03 21 51 21 LMP Wonder what it looks like from over there?  
03 21 51 26 CMP Your broadcast begins.  
03 21 51 28 LMP Thank you. Hey, keep after us, will you, Davey?  
03 21 51 32 CMP Okay.  
03 21 51 36 CDR Boy, are you down below us!  
03 21 56 01 CMP Hey, Spider; Gumdrop. I've had about three marks  
and it's starting to go away.  
03 21 56 05 CDR Okay, we're getting 3 degree ... here, but they're  
starting to come in.  
03 21 58 59 CDR Gumdrop, for your info, I can still see you out at  
12 miles.  
03 21 59 05 CMP Roger; and I can still see you.  
03 21 59 06 CDR Good.  
03 21 59 07 CMP Matter of fact, you're just a great big bright star  
in there. In the sextant, ... Ooh, I can still see  
your ...  
03 21 59 16 CDR Is that right?  
03 21 59 17 CMP Right.

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Day 4

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03 22 05 53 CC Spider/Gumdrop, Houston through Texas. Standing by.  
03 22 05 57 LMP Hello there, Houston ...

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## DAY 5

- 04 00 32 35 CC Hello, Spider/Gumdrop, Houston through Carnarvon.  
How did it go?
- 04 00 32 40 LMP Houston, this is Spider. How do you read?
- 04 00 32 41 CC I'm reading you 5 square, Spider.
- 04 00 32 45 LMP Hey, let me give you the CDH time. It is 96:58:14.
- 04 00 32 52 CC Roger. Copy 96:58 plus 14, and that is a bias  
time, affirmative?
- 04 00 32 58 LMP Affirmative; that's the actual time we will per-  
form CDH.
- 04 00 33 03 CC Roger; copy.
- 04 00 33 05 CDR Houston, this is Spider. How do you read me?
- 04 00 33 09 CC I'm reading you loud and clear, Jim.
- 04 00 33 11 CDR Okay. The staging went okay. We are staged.  
However, Gumdrop can't find us in his optics any  
longer, and we may have knocked out our tracking  
light.
- 04 00 33 23 CC Roger, Spider; copy.
- 04 00 33 27 CDR Before, we could see it flashing out on our quads  
out here, and I don't see it flashing now, although  
the flash may have been reflected off something on  
the descent stage.
- 04 00 33 37 CC Roger; understand, Spider.
- 04 00 33 42 CDR Okay. And, Houston, this is Spider. I forgot what  
I was going to ask you.
- 04 00 33 51 CDR Houston, I know what I want to tell you. That burn  
we made was 40 feet per second; 40.0, in case you  
are interested.
- 04 00 34 01 CC Roger, Spider. Could you give me  $T_{ig}$  and  $\Delta V_y$ ?

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Day 5

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04 00 34 08 LMP Roger. The  $T_{ig}$  of the burn was the  $T_{ig}$  that you passed us on the pad for CSI and  $\Delta-V_y$  was zero.

04 00 34 21 CC Roger, Spider. Thank you very much.

04 00 34 24 LMP Roger. And our first solution after CDH, we have a 4-second-early TPI.

04 00 34 34 CC Copy, Spider.

04 00 34 40 CMP Houston, Gumdrop is reading you, but very weak.

04 00 34 43 CC You are coming loud and clear to me, Gumdrop.

04 00 34 47 CMP Okay.

04 00 34 59 CC And, Spider, this is Houston. The first cut at it, your CDH time looks real good. And could you give me an onboard RCS quantity?

04 00 35 08 LMP Roger. Onboard RCS is reading 85 and 77.

04 00 44 01 CMP Roger, Houston. Gumdrop copies; pad over Huntsville at 47, and can you transmit to Gumdrop from ...

04 00 44 14 CC Gumdrop; transmit to Gumdrop how?

04 00 47 36 LMP Gumdrop, Spider.

04 00 47 38 CMP Go.

04 00 47 39 LMP Okay. Here is the burn: minus 39.2, plus 0.1, and minus 13.7.

04 00 47 56 CMP Roger. Minus 39.2, plus 0.1, and minus 13.7.

04 00 48 03 LMP That's Charlie.

04 00 48 05 CC Spider, this is Houston. Do you read me?

04 00 48 09 LMP Roger, Houston. Spider copies.

04 00 48 10 CC Roger. I just copied your solution. I have one that's pretty close to it, if you'd like to copy a CDH pad.

04 00 48 18 LMP Roger; go.

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Day 5

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04 00 48 20 CMP Go; Gumdrop.

04 00 48 21 CC Roger. And Roger, Gumdrop. 096:58:1400, minus 382, minus 009, minus 151, 305, minus 381, minus 153. End of update.

04 00 48 56 LMP Roger. 096:58:1400, minus 382, minus 009, minus 151, 305, minus 381, minus 153.

04 00 49 12 CC Spider, that is affirmative. Your readback is correct.

04 00 49 21 CMP Spider, Gumdrop here. I did not copy the update ... I got the ground pad ... did ...

04 00 49 29 LMP That's affirmative ...

04 00 49 31 CMP Okay. I've got the ground pad now, and I'll monitor it ... 1 minute late.

04 00 49 37 LMP Okay. Very good.

04 00 49 53 CDR Do you have all of our solution here, Dave?

04 00 49 58 CMP ...

04 00 50 01 CDR Okay. That's plus 0.1.

04 00 50 04 CMP 0.1.

04 00 50 06 CDR Alright.

04 00 52 49 CC Spider/Gumdrop, we'll see you over the Redstone at about 03.

04 00 52 58 CMP Roger. Gumdrop copies; Redstone, 03.

04 00 56 43 CDR Okay, Gumdrop, we're at 130.

04 00 56 46 CDR MARK.

04 00 56 47 CMP Roger; ...

04 00 57 04 CMP Roger, Spider. Gumdrop's right with you and ready to support.

04 00 57 07 CDR Very good.

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Day 5

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04 01 02 03 CDR Gumdrop, is that how you ... them?  
04 01 02 04 CMP ...  
04 01 02 07 CMP Okay, we ... along here ...  
04 01 02 51 CMP ... a meteor ...  
04 01 02 56 CMP ... You're about ... 1 degree from the center of  
the sextant.  
04 01 03 00 CDR That a boy. Remember that beer we were talking  
about the other night? I'll buy you one, Dave.  
04 01 03 08 CMP Okay.  
04 01 03 10 CC Spider/Gumdrop, Houston; standing by. How did it  
go?  
04 01 03 15 CDR Well, it's sort of a kick in the fanny by compari-  
son to the DPS, but it went alright. Good friend  
over there in the Gumdrop can see me again. I'm  
off at daylight.  
04 01 03 27 CC Very good; understand.  
04 01 03 31 CMP Houston, Gumdrop.  
04 01 03 41 CC Spider, Houston. We are still showing the APS  
ARMED. Can you verify that?  
04 01 03 47 CMP Oh, gee.  
04 01 03 50 CDR Yes. Thank you very much. Thank you, Houston.  
04 01 03 53 CC Roger. You're welcome.  
04 01 04 06 CC Spider, this is Houston. Did you burn the solution  
that I heard you pass to Gumdrop?  
04 01 04 13 CDR I burned the PGNS solution, which is the one that  
I passed to Gumdrop.  
04 01 04 18 CC Very good. Understand you burned it and on the  
time.  
04 01 04 22 CDR That's affirmative.

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04 01 04 47 CMP

... I don't know.

04 01 04 49 CDR

Gumdrop, why don't you give me your message, and we will relay it to them.

04 01 04 56 CMP

Okay. Wait just a minute.

04 01 10 45 CDR

And, Gumdrop, Spider. Anytime you want to check your range or range rate, just let us know.

04 01 10 52 CMP

Okay. Stand by.

04 01 34 09 CC

Spider/Gumdrop, this is Houston. We're about a minute or so LOS from Canaries. There is an ARIA if you need it up to about 42. We'll see you at Carnarvon at 06, and Dave Reed's smiling now. And we might catch you at Tananarive at 49, but we haven't had much luck yet.

04 01 34 33 CDR

Okay.

04 01 34 48 CC

And, Spider, this is Houston. Did you - did either vehicle read over Tananarive the last pass when we were calling?

04 01 35 00 CDR

Houston, this is Spider. I don't remember. We've been over so many stations so many times, I couldn't tell you.

04 01 35 08 CC

Okay, it was right at around CSI, right - immediately after your CSI burn.

04 01 35 14 CDR

Roger; I read you once or twice, but it was pretty bad.

04 01 35 18 LMP

We called the CDH time down to you, too, but didn't get any reply.

04 01 35 24 CC

Okay. Thank you.

04 01 35 26 CMP

And Gumdrop doesn't remember whether he heard you or not.

04 01 35 31 CC

Okay.

04 01 37 25 CDR

Say, Davey, I think I see you again!

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Day 5

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- 04 01 37 28 CMP Oh, very good!
- 04 01 37 34 CDR Boy, I'll tell you, you're awful small.
- 04 01 37 37 CMP I don't doubt that at all. We're still out at 41 miles.
- 04 01 37 46 CDR Okay, and, as a matter of fact, you're fading on me.
- 04 01 38 01 CDR Now I've got you again. You're going through the horizon, right now.
- 04 01 38 11 CMP Okay.
- 04 01 38 25 CMP Spider, Gumdrop. Will you have your final solution before, like about a minute?
- 04 01 38 30 CDR I hope so, Dave.
- 04 01 38 32 CMP Okay. Just to remind you that I'd like your time as soon as you get it.
- 04 01 38 36 CDR Yes, we're going to proceed at 14 minutes, and then we'll give it to you as soon as it comes up, which should be in about a minute or 2.
- 04 01 38 43 CMP Okay, thank you.
- 04 01 42 48 CMP Okay, Spider. I still have you against the earth background.
- 04 01 42 52 LMP Great!
- 04 01 42 56 CMP This thing is really tracking!
- 04 01 42 59 LMP Do we have a light?
- 04 01 43 01 CMP No, no, it's still daylight to me. You're a little black spot in the dark, in the light background.
- 04 01 43 16 CDR Okay, we're at about 14:25 now.
- 04 01 43 19 CMP Okay.
- 04 01 44 17 LMP Okay, Gumdrop, this is Spider. Our time - You ready to copy?

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Day 5

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04 01 44 24 CMP Go ahead.

04 01 44 28 LMP Gumdrop, you ready?

04 01 44 30 CMP Roger; standing by. Go ahead and read it.

04 01 44 31 LMP Okay, 97:57:59.

04 01 44 40 CMP Okay, good. My last time was 97:58:08.

04 01 44 45 LMP Roger.

04 01 44 46 CDR That's great!

04 01 44 56 LMP Where do you stand now?

04 01 45 04 LMP What I'm - I'm looking for - a 40 - for a 30<sup>4</sup> re - I'm looking for a plot point.

04 01 45 09 CDR Right there.

04 01 45 10 CDR MARK.

04 01 45 11 CMP Hot mike.

04 01 45 12 LMP Hold. Okay, it's 31.9 - 32 - 3<sup>4</sup> markup.

04 01 45 19 CDR 33.9, yes.

04 01 45 20 CMP Hot mike.

04 01 45 28 LMP ... plus 60.

04 01 45 40 LMP Okay, we're right on the plot.

04 01 45 54 LMP 11 ... 7 ... 081 is - Why don't you call in to him

04 01 46 09 CDR Dave, here are our DELTA-V's.

04 01 46 12 CMP Go ahead; I'm ready to copy.

04 01 46 13 CDR Roger; plus 19.4, plus 0.4, minus 9.7.

04 01 46 23 CMP Roger; plus 19.4, plus 0.4, minus 9.7.

04 01 46 30 CDR Roger; that's correct.

04 01 46 32 CMP Good.

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Day 5

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- 04 01 46 39 LMP You want to compare now? 19.4, I got 19.6.
- 04 01 46 49 CMP Okay, Spider; Gumdrop.
- 04 01 46 53 CDR Go ahead, Gumdrop.
- 04 01 46 54 CMP Okay. You got a hot mike, and also my elevation angle on your time is 27.32.
- 04 01 46 59 CDR Great.
- 04 01 48 17 CDR Dave, just as a matter of interest, the moon has just come up, and it's going to be shining right on our front face, so maybe you'll be able to track us in the moonlight.
- 04 01 48 25 CMP Great!
- 04 01 48 26 CDR And I also got ...
- 04 01 48 28 CDR I'll go to docking lights for you at this time, since we don't have a light.
- 04 01 48 32 CMP Okay. Here's my answer to your time. 19.4, 0, and 8.8.
- 04 01 48 41 LMP Great!
- 04 01 50 05 CC Spider/Gumdrop, Houston through Tananarive; standing by. I did copy your final solution; sounds great.
- 04 01 50 13 CDR Roger; Spider.
- 04 01 50 16 CMP Gumdrop.
- 04 01 50 26 CC Spider, Houston. The only one I wasn't sure of was your DELTA-V<sub>x</sub>. I read it as 197.
- 04 01 50 36 CDR I think it was 194; I'll have to check. Just a minute.
- 04 01 50 39 CMP 19.4, Smokey.
- 04 01 56 17 CC Spider/Gumdrop, this is Houston. We'll see you over Carnarvon at 06.
- 04 01 56 22 CDR Roger.

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04 01 56 24 CMP Spider, Gumdrop. Coming up to 133 now, and ready to support.

04 01 56 29 CDR Okay, I was right with you.

04 01 56 31 CMP Okay.

04 01 57 32 CDR AVERAGE g is ON.

04 01 57 33 LMP Right.

04 01 57 50 CDR About 10 seconds.

04 01 57 52 CMP Roger.

04 01 58 02 CDR Thrusting.

04 01 58 16 CDR Okay, we're getting it in slowly here.

04 01 58 18 CMP Good.

04 01 58 25 CDR You ought to be able to see it; it looks like the Fourth of July.

04 01 58 28 CMP I can. I can see you perfectly.

04 01 58 45 CMP How'd you do?

04 01 58 48 LMP Looks good.

04 01 58 50 CMP Okay.

04 01 58 53 CDR Okay, we had all zips when we went.

04 01 58 55 CMP Good.

04 01 58 59 CDR There's two. Okay. Okay, coming to the next side here. Okay, VERB 93, ENTER, right away.

04 01 59 11 CMP Okay, and I'll get that other.

04 01 59 14 CDR VERB 93, ENTER.

04 01 59 16 CDR Okay, VERB 37, ENTER; 20, ENTER. Did we ever break lock?

04 01 59 22 LMP No.

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Day 5

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- 04 01 59 23 CMP Hot mike.
- 04 01 59 29 CDR Okay, I'm going to bypass the maneuver.
- 04 01 59 34 CMP Hot mike.
- 04 01 59 35 CDR Thank you.
- 04 02 03 22 CMP Spider, Gumdrop. I'm afraid I just can't see you without that light.
- 04 02 03 25 CDR Okay, Dave. We only ask you to do what's humanly possible.
- 04 02 03 35 CMP Okay.
- 04 02 03 43 CMP You're against an earth background with a bunch of clouds which doesn't help anything.
- 04 02 03 46 CDR Yes, I know it. Are you all set up for our docking?
- 04 02 03 51 CMP All set.
- 04 02 03 52 CDR Okay, what do you think happened to the probe on the way out, Dave?
- 04 02 03 56 CMP I'm not really sure. I think it just got hung up on the capture latches. I took a look to see if it had extended all the way, and the ... was in the retract position; and, when I went back up to extend the second time, you dropped right off.
- 04 02 04 08 CDR Okay. I want to get on that thing as soon as possible, just in case something's wrong.
- 04 02 04 15 CMP Roger; I'm with you.
- 04 02 05 03 CDR Okay, Dave, we're ... for our first midcourse.
- 04 02 05 05 CMP Okay.
- 04 02 11 45 CC Spider/Gumdrop, Houston. We're about 1 minute LOS Carnarvon. We'll see you over Huntsville in about 8 minutes.
- 04 02 11 50 CDR Okay, Houston, what did you decide about that post - or after I get up there, should I go ahead and dock, or not?

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04 02 11 56 CC

Okay, Jim, we're looking through here, and there are a couple of things we really would like to have, and that's some pictures taken of the ascent-engine area. And we would like to get the rendezvous-radar corona test.

04 02 12 12 CDR

Okay. It depends on when I break out in the sun-light what I can do for you.

04 02 12 15 CC

Okay, very good.

04 02 12 19 CDR

I'm going to go into darkness; I'm wondering how we're going to get the probe fixed.

04 02 12 23 CC

Okay, we understand. And have you talked this over with Dave? We haven't heard his comments on the - on the probe.

04 02 12 32 CDR

Dave, can you hear him?

04 02 12 34 CMP

Roger; copied.

04 02 12 38 CDR

Roger, Houston. You copy Gumdrop?

04 02 12 41 CC

We've got Gumdrop here, but I'm going to lose you in just a few seconds. We'd like to have your comments on the probe, too, over Huntsville up there.

04 02 12 50 CMP

Okay, and be ready to give me a GO for the pyro arm there, too, please.

04 02 12 54 CC

Okay, very good.

04 02 17 03 CDR

Okay, Dave, we're trying for our second midcourse.

04 02 17 07 CMP

Okay.

04 02 17 37 CDR

Want my DELTA-V for my next midcourse, Dave? Gumdrop?

04 02 17 44 CMP

Yes, go ahead.

04 02 17 45 CDR

Okay, plus 0.2, minus 0.9, minus 1.8.

04 02 17 53 CMP

Got it.

04 02 19 47 CDR

Okay, about 15 seconds to go, Dave.

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Day 5

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04 02 19 51 CMP Roger.

04 02 20 03 CDR Okay, thrusting.

04 02 20 21 CDR Okay, they're essentially zero.

04 02 20 23 CMP Okay.

04 02 20 30 CMP ...

04 02 20 32 CDR I have 18 700 feet right now and 42 feet per second.

04 02 20 38 CMP Roger. That's 3.0 miles and 43 feet per second.

04 02 20 43 LMP Great.

04 02 20 45 CMP What's your pitch angle?

04 02 20 47 CDR It's about 86 degrees, something like that.

04 02 20 53 CMP Okay.

04 02 21 24 LMP Did you get the 90 yet?

04 02 21 35 CDR Dave, did you hear them say they wanted to get some pictures of the ascent-engine area?

04 02 21 39 CMP Roger. I got that. Thanks.

04 02 21 41 CDR Okay.

04 02 21 45 CDR Oh, I see you out there, coming into sunlight.

04 02 21 48 CMP Great.

04 02 21 50 CDR You're the biggest, brightest, friendliest-looking star I've ever seen. Do you want --

04 02 22 01 CC And, Spider/Gumdrop, Houston. We are copying you through the Huntsville - next 5 minutes.

04 02 22 06 CDR Okay.

04 02 22 09 CC And, Gumdrop, in regards to your last request, we have no TM here at the Huntsville in regards to that pyro arm.

04 02 22 19 CMP Roger; understand.

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Day 5

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04 02 22 42 CMP Houston, Gumdrop.

04 02 22 50 CC Go, Gumdrop; Houston.

04 02 22 52 CMP Roger; what we're going to do up here - The only thing I can think of on that probe is that my finger slipped off the switch before it got all the way out. Other than that, I just can't think of a thing.

04 02 23 05 CC Roger. That's about the only thing that we can come up here with, that you didn't hold the switch long enough, Dave. ... I guess - How do you feel about it? Do you think it's anything - any problem?

04 02 23 22 CMP No, I really don't. I went back to see if it had gone all the way out, to RETRACT, and I had the barber pole which said that it had extended all the way. Then I went up to EXTEND again, and it dropped right off.

04 02 23 38 CC Roger, Gumdrop; copy.

04 02 24 01 CDR -- tell me when you want --

04 02 24 09 CDR Dave, I think what we'll do is come on up and stop out front there, pitch over so you can look at our ascent engine, then pitch back around; and then we'll start the docking.

04 02 24 19 CMP Okay.

04 02 24 26 CMP I agree; I think we ought to get on with it.

04 02 24 27 CDR Yes.

04 02 24 38 CMP What kind of rates do you have there?

04 02 24 39 CDR I have 9800 feet and a range rate of 32-1/2 feet per second.

04 02 24 45 CMP Roger.

04 02 24 47 CDR I have just a little bit of line-of-sight rate up.

04 02 24 51 CMP Alright. I got just about 9000 feet ...

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Day 5

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04 02 24 55 CDR Okay.  
04 02 25 21 CDR Okay, operate on my line-of-sight rate now, Dave.  
04 02 25 26 CMP Okay.  
04 02 26 50 CDR Okay, just went through 6000 feet at 30 feet per second.  
04 02 26 54 CMP Okay.  
04 02 27 05 CC Okay, we copy you. Right on the braking schedule, Spider, and we'll see you over Hawaii in about 3 minutes.  
04 02 27 38 CDR Okay, Dave, I can see the shape of the spacecraft now for the first time.  
04 02 27 42 CMP Good.  
04 02 28 25 CDR Okay, Dave, I'm at 3000 feet; I'm braking down at 20 feet per second.  
04 02 28 30 CMP Okay.  
04 02 28 50 CDR Okay, we're 20 feet per second now at 2400 feet.  
04 02 28 54 CMP Alright.  
04 02 29 04 CMP I got a little line-of-sight rate.  
04 02 29 07 CDR Yes, me too.  
04 02 29 26 CDR Okay, I'm coming up on 1500 feet; I'm braking down to 10 per second.  
04 02 29 29 CMP Okay.  
04 02 29 45 CDR Okay. There we are - We're at 10 feet per second at 1500 feet.  
04 02 29 53 CDR Boy, are you bright! Dave, I'm not sure I'm going to be able to see to dock with this COAS I have.  
04 02 30 37 CDR Okay, I'm at 950 feet, 10 feet per second.  
04 02 30 40 CMP Okay, that looks pretty good.

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- 04 03 02 44 CMP ... I'm going to put it in lockup and hold it there  
... don't be too ...
- 04 03 02 49 CDR That a boy!
- 04 03 07 13 CT Okay, ARIA. You can go LOCAL. I guess we're not  
going to them. We'll try them through Ascension.  
Thank you.
- 04 03 07 19 CDR Go ahead, Houston. You just came in.
- 04 03 07 22 CC Roger, Spider. We are curious about the option on  
the AOT star alignment; are you going to do that?
- 04 03 07 48 CDR Houston, I don't know. How long do we have for  
that dock - or that on-band APS burn now?
- 04 03 07 55 CC Stand by.
- 04 03 07 58 CDR I've got my flight plans stuck someplace else right  
now.
- 04 03 08 26 LMP And, Houston, anytime you've got it, we'll take the  
update on the P30 for the APS burn.
- 04 03 14 55 CC Spider, Houston.
- 04 03 15 00 CMP Houston, Gumdrop; go.
- 04 03 15 01 CC Gumdrop, would you relay to Spider that we would  
sure like to have him check that OPS heater again,  
before he stows that OPS that had failed. And I'm  
going to lose you here, and we'll try to talk to  
you over Tananarive at around 25.
- 04 03 15 16 CMP Roger; understand.. Spider, they want you to check  
the OPS heater - the one that failed before you  
put it away.
- 04 03 15 25 LMP Okay.
- 04 03 15 28 CMP They got it, Houston.
- 04 03 15 29 CC Roger, Gumdrop. Copy. And I copied Spider there.
- 04 03 22 59 CDR Gumdrop, you got the tunnel pressurized?

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- 04 03 23 01 CMP I'm doing it right now.
- 04 03 23 03 CDR Dave, if you want, we can pressurize it for you.
- 04 03 23 09 CMP Well, I'll get it halfway. Why don't you do it halfway?
- 04 03 23 13 CDR Okay.
- 04 03 23 23 CDR All the way.
- 04 03 23 29 CMP I've still got a DELTA-P. Huh!
- 04 03 23 36 CDR Maybe our pressure just isn't high enough.
- 04 03 23 38 LMP No, ours is higher than his; ours is 5.2. DELTA-P may be the other way, Dave.
- 04 03 23 47 CMP No, because I started out from one end of the ..., and worked halfway back to ...
- 04 03 23 54 LMP Okay, well, it's - The tunnel's 5.2.
- 04 03 24 01 CMP Okay, it came down; it must have just been hung there.
- 04 03 24 05 LMP Okay.
- 04 03 24 07 CMP Thank you.
- 04 03 24 08 LMP REG's A and B are in EGRESS.
- 04 03 24 09 CDR Yes.
- 04 03 24 10 LMP OVERHEAD VALVE is OPEN; stow OPS for - stow - stow helmet bags on the deck, yes.
- 04 03 24 20 LMP They go in - Get them as close as you can, and as far forward as you can, Jim.
- 04 03 24 26 LMP That's good.
- 04 03 24 37 LMP Really is.
- 04 03 25 47 CDR Hey, Gumdrop. Are we in any kind of an attitude for docked alignment?

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- 04 03 25 52 CMP Oh, I don't know. I guess - I'll check. What kind of attitude do you want?
- 04 03 26 00 LMP I fired that one, Dave. Hey, right now we're in the right kind of attitude.
- 04 03 26 08 CDR Hey, listen now, maybe if you went to FREE, and we took control here, we could just jockey around and do it.
- 04 03 26 15 CMP Okay, I'm for that. I'll go to FREE, and you got it.
- 04 03 26 19 LMP Yes, we have it.
- 04 03 26 27 CMP But I'm 12 - 30 something - I guess 55 degrees from gimbal lock; we're okay.
- 04 03 26 40 CMP But I'm not going to be able to monitor your attitude. Okay?
- 04 03 26 44 CDR Okay.
- 04 03 26 49 CC Spider/Gumdrop, Houston through Tananarive.
- 04 03 27 47 CC Spider/Gumdrop, this is Houston transmitting in the blind; I'm not picking you up. We would like to recommend you use the LM RCS just as much as possible. We used just a little more command module - CSM RCS there than we predicted on the rendezvous.
- 04 03 28 10 CDR Roger, Houston. Gumdrop, did you copy? We're doing that.
- 04 03 28 13 CMP I copied.
- 04 03 28 14 CC Okay, real good.
- 04 03 30 24 CMP Spider, Gumdrop.
- 04 03 30 25 LMP Go ahead.
- 04 03 30 27 CMP How about that mate? 12 latches again!
- 04 03 30 30 LMP Hey, that's really great, isn't it?

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04 03 30 33 CMP Yes, all of them just locked in solid as they can be.

04 03 30 37 LMP When you threw me off into oblivion out there, I was wondering if - I was wondering if I was ever going to hear those latches go "click" again.

04 03 30 44 CMP Oh, yes, they were going to work.

04 03 30 53 LMP That's already there, Jim.

04 03 30 56 CMP Do you have a good pressure vessel over there?

04 03 30 59 CDR Roger; we do.

04 03 31 01 CMP Okay.

04 03 31 19 LMP Wait a minute now; hold on there --

04 03 31 23 LMP Okay, you can go either way.

04 03 31 28 LMP Far wide.

04 03 31 34 LMP No, I can't use pulse, Jim. I got to -

04 03 31 38 LMP Jim, I can't help that!

04 03 31 39 CDR Well, you couldn't mate --

04 03 31 41 CMP Got mate.

04 03 46 10 LMP Will you have a pad by that time?

04 03 46 13 CC That's affirmative. I have the pad in my hand now.

04 03 46 18 LMP Okay, we'll see you at Hawaii with it.

04 03 46 20 CC Roger.

04 03 46 26 LMP Okay.

04 03 46 45 LMP Huh?

04 03 46 48 LMP Well, no.

04 03 47 17 LMP Yes.

04 03 47 27 LMP Yes.

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- 04 03 47 31 LMP Yes, they're somewhere that's real handy.
- 04 03 48 10 LMP Well, shoot!
- 04 03 48 13 LMP Wait a minute.
- 04 03 48 22 LMP There's so much junk over here.
- 04 03 48 27 LMP Huh?
- 04 03 48 32 LMP Oh, I don't know - soon as - (laughter). Yes.
- 04 03 48 44 LMP Huh?
- 04 03 48 47 LMP Sure. It's the COAS.
- 04 03 49 05 LMP Yes, we got plenty of room over there for stuff.
- 04 03 49 12 LMP Are you still attitude-holding over there?
- 04 03 49 21 LMP Okay.
- 04 03 49 44 LMP Hey, listen, don't stow this quite yet.
- 04 03 50 37 LMP Yes.
- 04 03 51 09 LMP I'm going to take me a pee.
- 04 03 51 23 LMP It what?
- 04 03 52 01 LMP ... oh, come on. Dirty bastard outfaked me.
- 04 03 52 11 LMP Gee, I thought I had one all figured out.
- 04 03 52 36 LMP Hey, this thing is hot! Yes, whew!
- 04 03 52 43 LMP Quite a surprise.
- 04 03 53 01 LMP Those guys really make things strong.
- 04 03 53 27 LMP Huh? This thing right here? Take that bolt out? That bolt out, it comes right off. Take that off.  
...
- 04 03 53 49 LMP Yes, I got that big bagful of garbage.
- 04 03 54 34 LMP Here you go. Huh? Wait, just wait a minute, until I ...

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- 04 03 55 50 LMP Is the toolkit out, or did you put it back?
- 04 03 55 55 LMP Oh, shoot! I was going to go find the toolkit, but it's not where the toolkit goes!
- 04 03 56 08 LMP What do you want - the ...?
- 04 03 56 16 LMP I wonder what happened to that thing.
- 04 03 56 30 LMP Hey, Jim. You don't remember where you put the toolkit, do you?
- 04 03 56 40 LMP No, sir.
- 04 03 56 56 LMP You're lethargic!
- 04 03 57 16 LMP Yes, here it comes. Huh?
- 04 03 58 32 CMP Is that far enough?
- 04 03 58 35 LMP Yes, that's as far as it goes.
- 04 03 58 39 LMP Well - well, I guess you can get it one more - Yes, you can collapse it a little bit more.
- 04 03 58 56 LMP Here, I'll get it.
- 04 03 59 05 LMP I'm not sure we can do it out here. Pull it out to the green ... Right there. Now stroke.
- 04 03 59 20 LMP That's it. That's all the way.
- 04 04 00 37 LMP What else you need?
- 04 04 01 17 LMP Shouldn't we ought - You probably not ought to screw it up too much, because if the pyros don't go - That's the only way we're going to get off. Yes.
- 04 04 01 35 LMP Yes, people will laugh. Not you.
- 04 04 01 45 LMP Take those things off that and ...
- 04 04 01 51 LMP Take that off and give them a ... boop-boop! ...
- 04 04 02 06 LMP Oh, I'm sorry, Jim. Guess I was holding my ... too ...

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- 04 04 03 06 LMP All this stuff is being recorded for the ground review.
- 04 04 03 10 CMP Yes.
- 04 04 03 17 CMP Okay.
- 04 04 03 47 LMP You know what else we need to do? Bring all the logs.
- 04 04 03 57 LMP What are you bringing that for?
- 04 04 04 01 CMP Got anything for ...?
- 04 04 04 11 LMP (Laughter) ... bad ...
- 04 04 04 40 CC Spider/Gumdrop, this is Houston through Hawaii.
- 04 04 04 44 CDR Hello, Hawaii; Gumdrop. We're making progress.
- 04 04 04 49 CC Roger; understand, and, whenever you all are ready, I have your APS depletion pad and your LM jettison attitude.
- 04 04 04 59 CMP Okay --
- 04 07 15 53 CC Okay. We're working on the block data, and we should have it before we leave here.
- 04 07 16 01 CDR Okay, I'll be all set.
- 04 07 16 04 CC And, by the way, our LOS at Texas is about 30.
- 04 07 16 09 CDR Okay.
- 04 07 16 13 CC And we're curious if you might have any additional comments on the LM jettison there.
- 04 07 16 20 CDR No, it went off pretty clean. We had a - a bang like a regular pyro, and it pushed us back with a - something like 0.4 of a foot per second but it's kind of hard to tell, but that's what it - sort of felt like - it was supposed to be. And it looked like a complete separation. The docking ring looked clean, but we couldn't see too much of it because it went away pretty fast. And it got as much as a mile and a half away when it finally burned.

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- 04 07 16 47 CC Oh, okay.
- 04 07 16 49 CDR The maneuver to the separation attitude didn't work out good, because I guess we never tried it in the simulation. We sort of slipped into gimbal lock, but I think we got the right position.
- 04 07 17 03 CC Okay.
- 04 07 17 04 CDR Anything else?
- 04 07 17 06 CDR The angles that we got were new and different, and we just were watching the LM, because ... --
- 04 07 17 11 CC Okay. And by the way, the LM is in an orbit 37 - about 3750 miles by 125.
- 04 07 17 14 CDR Oh, really?
- 04 07 17 21 CC 9, Houston. We could also use those dosimeter readings.
- 04 07 17 25 CDR We thought you'd probably ask for that.
- 04 07 17 28 CC Roger.
- 04 07 17 30 CDR Wait a minute.
- 04 07 31 36 CDR What's that? BAT B in PYRO A ...
- 04 07 32 20 CDR Oh, you know, we're supposed to put this -
- 04 07 32 27 CDR Didn't want to reply.
- 04 07 32 37 CDR That's right, Dave.
- 04 07 33 18 LMP Hey, you know what I seem to do is ... you got to hold on. I hit the ceiling ...
- 04 07 33 27 CMP ... too bad you don't have the golden slippers.
- 04 07 33 30 LMP Got a point. See the whole ... If you lean backwards too long, ...
- 04 07 33 37 CDR Is it really?
- 04 07 33 41 CMP Go get your color picture.

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04 07 33 46 LMP Huh?

04 07 33 55 CDR I got the ... CDH in the wrong direction ...

04 07 34 05 CMP Yes, it was.

04 07 34 12 CDR Yes, sir, that hurt ... got a program.

04 07 34 16 CDR Yes. I know.

04 07 35 09 LMP Whoopee!

04 07 42 31 CDR I don't know; we just changed that one out.

04 07 49 48 CDR No, it's the ... seems sort of hot, isn't it?

04 07 50 32 CDR I just went through all my -

04 08 08 09 CC Apollo 9, Houston through Tananarive.

04 08 08 14 CDR Roger, Houston. We're still here.

04 08 08 26 CDR Houston, Apollo 9.

04 08 09 15 CMP Too late, huh? Did ... camera ever -

04 08 09 29 LMP Sure. Just wind it around and look at the skies, and all that stuff.

04 08 09 36 CMP You're right. I ... That's kind of good.

04 08 09 41 LMP Yes.

04 08 09 47 CMP Besides, it's ...

04 08 09 50 LMP Yes, I know. Yes, I was thinking about it.

04 08 09 54 CC Apollo 9, Houston.

04 08 09 57 CMP Houston, 9.

04 08 10 00 CC Roger, Dave. We showed a CMC restart between our last state vector update and the Redstone pass. Did you power it down and then back up?

04 08 10 14 CMP Yes, we had it in STANDBY and we had a gimbal lock light on, which had our PGNCS light on. We decided

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to go back and power everything up, so we could get the IMU coarse align out of gimbal lock, so we wouldn't have the lights on during the night. Did we bomb you?

- 04 08 10 30 CC Roger. But we're satisfied now with the restart, Dave.
- 04 08 10 34 CMP Okay. We didn't get a restart light, though.
- 04 08 10 39 CDR Hey, Rusty.
- 04 08 10 40 CMP He's ...
- 04 08 10 41 CC Roger. It's normal. It just adds our counter down here when you power up.
- 04 08 10 45 CMP Oh, oh, yes. That's right. Yes, the reading counter. Okay.
- 04 08 10 52 CC On the H<sub>2</sub> pressures, if it looks like it's going to trigger the MASTER ALARM, we'll wake you up for a manual REPRESS, and then you can go back to sleep.
- 04 08 11 03 CMP Okay, fine.
- 04 08 11 05 CC We don't expect it, though.
- 04 08 11 06 CMP Alright. You might have to holler a couple of times.
- 04 08 11 27 LMP We're almost through with that one, Jim.
- 04 08 11 29 CDR I know.
- 04 08 11 32 LMP Alright.
- 04 08 11 37 CDR Okay, ...
- 04 08 12 15 CMP (Laughter)
- 04 08 12 28 CC Apollo 9, Houston. Congratulations from the Gold Team. It was a very fine day. We'll see you in the morning.
- 04 08 12 34 CMP Oh, thank you very much, Gold Team. You guys did a very fine job, too.

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04 08 12 40 CC Roger.

04 08 12 42 CMP Stand by. Somebody else wants to make a comment.

04 08 12 59 CDR Hello, is this the wonderful Gold Team?

04 08 13 06 CDR Houston, this is Apollo 9; this is Apollo 9.

04 08 13 16 CDR Hello, Houston. Hello, Houston.

04 08 13 23 CDR Hello, Houston; Apollo 9.

04 08 13 26 CC Apollo 9, Houston. Go.

04 08 13 28 CDR I just want to tell you guys what a great job you all did today.

04 08 13 34 CC Thank you.

04 08 13 37 CDR Yes, I - I thought the whole ground team was about as good as I've ever seen or hope to see. I want to congratulate you all.

04 08 25 20 AA [Airport control tower conversation begins and continues uninterruptedly]

04 08 28 44 CMP ... Tower, Apollo 9.

04 08 29 01 CMP ... Tower, Apollo 9.

04 08 31 47 AA [Control tower conversation ends]

04 08 32 49 LMP Let's see. You know what I think ... 1.5 to 1.6  
...

04 08 33 51 LMP Hey, you know, if you wait - You awake?

04 08 33 58 LMP You awake, Mr. ...? And let it ...

04 08 34 03 LMP Gee, that's very good. Ready? Okay, ORDEAL POWER, OFF; FDAI, INERTIAL. Incidentally, the ORDEAL worked pretty good today.

04 08 34 18 LMP I know, isn't that funny? EMS FUNCTION, OFF; EMS MODE, STANDBY; CMC ATTITUDE, IMU. FDAI, SCALE, 5/1; SELECT, the 1; SOURCE, CMC. ATTITUDE SET,

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IMU; 16 RCS, OFF; MANUAL ATTITUDE, three, RATE COMMAND; LIMIT CYCLE, ON; ATTITUDE DEADBAND, MAX; RATE, LOW; THC POWER, OFF; RHC POWER, OFF - all four; SPACECRAFT CONTROL, SCS; CMC, FREE; BMAG's, RATE 2; SCS TVC, RATE COMMAND; EMS ROLL, OFF; verify g, OFF; LV/SPS to Pc/GPI; TVC GIMBAL DRIVES, PITCH and YAW, to 1; EDS POWER, OFF; TVC SERVO POWER, two, OFF; FDAI POWER, OFF.

- 04 08 35 29 LMP      LOGIC 2/3, OFF; SCS ELECTRONICS POWER, OFF; SIGNAL CONDITIONER/BIAS POWER, OFF; B - BMAG's, WARM UP.
- 04 08 35 42 LMP      Purge the fuel cells - uh oh - beep, beep, beep, beep. There you go - Okay. ... here.
- 04 08 36 09 LMP      CO<sub>2</sub> - WASTE MANAGEMENT DRAIN - S-BAND; COMM, basic; EMERGENCY CABIN PRESSURE to BOTH; SURGE TANK, ON; PLSS, OFF - I usually put it - tunnel. No, it's not; it should be - it should be. Yes. No, it's not.
- 04 08 36 47 CMP      Go ahead. ...
- 04 08 36 48 LMP      ...
- 04 08 37 02 LMP      LM TUNNEL VENT, LM PRESS.
- 04 08 37 14 LMP      Okay? We're all powered down according to -
- 04 08 38 04 LMP      Do what?
- 04 08 39 10 LMP      Hey, we're ending up - the deorbit burn with - 55 percent propellant.
- 04 08 39 18 LMP      This profile shows 55 percent RCS when you get to the deorbit burn. What the heck! - If you don't use it - what's it up here for?
- 04 08 39 33 LMP      Here's two sets of bacon bars.
- 04 08 39 37 LMP      I got one of those. I like them.
- 04 08 40 01 LMP      Where's my peaches?
- 04 08 40 11 LMP      Yes, they really are, aren't they?
- 04 08 40 28 CMP      ... the S-band.

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- 05 02 43 30 CC ... exposure 15. As you come into El Paso, if it looks like it's completely socked over, you can terminate, but we want to keep going up through 15.
- 05 02 43 48 LMP Okay, you want to read back? Do we have time?
- 05 02 43 52 CC We've got about 30 seconds. Go ahead.
- 05 02 43 53 LMP Okay. 180, 327, 50, 000, 123:55:20, N/A, ORB rate; southwest U.S., 124:00:20, 06, 25; Houston, 124:05:15, 06, 03.
- 05 02 44 23 CDR Why don't you put 15 in parentheses, there. Or write "at least 15" or something like that so you can -
- 05 02 44 30 CMP Hey, Rusty, there's a film pack and a screw up above your head, that might come crashing down.
- 05 02 44 38 LMP Yes, that sure would.
- 05 02 44 41 CDR It looks like an empty one. Is it?
- 05 02 44 44 LMP No, that's the good one.
- 05 02 44 46 CDR Why does it say "empty" on it?
- 05 02 44 48 LMP Oh, well, I mean, yes. If it's been used and it's not empty, it would say so.
- 05 02 44 57 CDR Hey, and I can't find the scissors, Rusty, and that's bothering me.
- 05 02 45 00 LMP Well, heck, we'll find them.
- 05 02 45 02 CDR I know, but I don't want to find them in somebody's leg with a thing like so.
- 05 02 45 04 LMP Hey, Jim, why ... picky with words today. You really ...
- 05 02 45 08 CDR Look, I said, "That's an empty one," and you said, "No, that's a good one." How many empty film pack did we carry with us on the flight, Rusty?

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- 05 02 45 14 LMP It's a used - it's a used one. I'm sorry. Yes, it's empty.
- 05 02 45 17 CMP Good. There's a bunch of them ...
- 05 02 45 21 CDR The comment was, "It was an empty one, and we ought to put it away."
- 05 02 45 24 LMP Okay, I'm sorry.
- 05 02 45 36 CMP Hey, Rusty, would you pass me my ...
- 05 02 45 40 LMP Yes.
- 05 02 45 42 CMP You want some? ... They did say ORB rate?
- 05 02 45 49 CDR Yes.
- 05 02 45 50 LMP Yes. I think this is, yes. Okay?
- 05 02 46 29 LMP Did you get the update on the next burn? I guess we did, didn't we?
- 05 02 46 32 CMP Yes. We got it ...
- 05 02 46 35 LMP Yes, I'll get it. It's in here, I believe.
- 05 02 46 38 CMP Okay. ... Let's see what ... the DAP.
- 05 02 46 41 CDR Yes, load the DAP. Wonder what happened to my checklist.
- 05 02 46 47 LMP There was one over behind you there, and I can still see it. I don't know if that's yours or not.
- 05 02 46 51 CMP ... your big checklist is in R-3.
- 05 02 46 55 CDR R-3, okay. I think that one over there is the - one from yesterday. It's the rendezvous systems day checklist we were using to power down the spacecraft. Oh, my goodness gracious, sakes alive, where'd that come from?
- 05 02 48 21 CMP What's that thing over there?
- 05 02 48 26 CDR Got this all figured out, David?

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- 05 02 48 29 CMP I think so.
- 05 02 48 53 CDR We had a card there, don't we?
- 05 02 48 55 CMP We had a card, for how to load them, but -
- 05 02 49 01 CDR It is 0.68 degrees per second.
- 05 02 49 04 CMP Yes, but we want the ones for this altitude.
- 05 02 49 07 CDR Yes, I know it. I'm just - -
- 05 02 49 08 LMP Yes, actually, we want one for the altitude we're going to be at after that burn.
- 05 02 49 13 CMP Yes.
- 05 02 49 14 LMP Which is kind of - going to be a little variable but, heck, I guess that's within the deadband, isn't it?
- 05 02 49 18 CMP Maybe it's on.
- 05 02 49 21 CMP ... the altitude. ... how we figured the ORB rat and the altitude.
- 05 02 49 27 CDR I don't know.
- 05 02 49 29 LMP You can tell our period, can't you, Dave, by putt in the same - No, ... put the same ... Can we te our period anymore?
- 05 02 49 41 CMP The period?
- 05 02 49 43 LMP Yes. Orbital period. Out of this computer, can we get that?
- 05 02 49 51 CMP If we've got the apogee or perigee, we can call the time for perigee for the next one. Give me just 1 minute or so, if you can. Starting the 1 minute ...
- 05 02 50 13 LMP Who's going to click the remote camera now?
- 05 02 50 17 CDR Oh, we'll let you click it.
- 05 02 50 20 LMP Okay, I'll get set up to do that, then. I'm sett: the arrow at 6 seconds, 25 exposures.

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05 02 50 43 CC

Apollo 9, this is Houston through Ascension. And Rusty, I got the readback all the way through the SO 65. I just wanted to make sure that you got my additional comments.

05 02 50 55 CMP

Let's ask him about our orbit rate.

05 02 50 56 LMP

Okay, the additional comment.

05 02 57 43 CDR

I know it, but we don't have the right alignment for the burn.

05 02 57 49 CC

Apollo 9, Houston. About 30 seconds LOS Ascension we'll see you at Tananarive about 09, if we can talk to you.

05 02 57 57 CDR

Okay, I got a quick question. All these angles that you're going to get us are based on - on the REFSMMAT that we had in there for the previous burn, right?

05 02 58 05 CC

Affirmative, Apollo 9.

05 02 58 09 CDR

Okay.

05 02 58 11 CC

On your attitudes for the burn, you'll be about 0.2 off. I didn't bother passing those. It's essentially 000.

05 02 58 20 LMP

Okay. Very good.

05 02 58 21 CMP

Come on. You're falling down on the job. 0.2?

05 02 58 26 CC

Okay. Sorry about that.

05 02 58 28 CDR

VERB 37, ENTER; 30, ENTER.

05 02 58 32 CMP

Used to be a ...

05 02 58 36 CDR

(Laughter) 25 and 590, alright.

05 02 58 41 LMP

You saying the alignments for - the preferred alignments for both those burns are the same?

05 02 58 45 CDR

Yes. 0038, 000. Oh, that's funny.

05 02 58 54 CMP

Rusty, here are the updated figures ...

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05 02 59 00 CDR

38.8.

05 02 59 05 CMP

Why don't you tell me what time to take the first picture, and I'll write the GET down ...?

05 02 59 13 LMP

Jim is going to take them.

05 02 59 14 CDR

I'm going to take the pictures, and he's going to take the pictures out the side window.

05 02 59 16 CMP

Okay. You tell me, and I'll write it. Okay?

05 02 59 23 LMP

Well, the GET's already logged.

05 02 59 26 CMP

That the first picture?

05 02 59 27 LMP

Yes, it's in the update.

05 02 59 28 CDR

It's in the update form.

05 02 59 29 CMP

Oh. Okay.

05 02 59 31 CDR

Okay, want to set your clock?

05 02 59 37 LMP

Jim, how many pictures did you just take?

05 02 59 41 CDR

I didn't take any - Oh, I took one.

05 02 59 43 LMP

One?

05 02 59 46 CDR

Out of - out of focal and stop setting and --

05 02 59 51 LMP

Did you wind it? No, okay. That was 109.

05 03 00 02 CDR

(Laughter) You damn well see about the clock, Scott.

05 03 00 08 CMP

I don't ever do it this way, though.

05 03 00 12 CDR

Well, you ain't doing it the way you - Did you leave the picture until you get the clock set?

05 03 00 17 CDR

As a matter of fact, get me over at the right attitude so I can do a star check.

05 03 00 21 CMP

We are - we're going that way free.

05 03 00 24 CDR

I bet it's going to be Regulus.

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- 05 03 00 27 CMP Don't say anything - don't say anything ...  
05 03 00 29 CDR (Laughter) Don't blow it.  
05 03 00 31 CMP I'm going to concentrate on this ...  
05 03 00 33 CDR You know what ... you have over there? (Laughter)  
Oh, it's going up. Okay.  
05 03 00 56 CMP ... That'll be another burn.  
05 03 01 06 CDR Oh, you do that, and I'll go check - put the  
optics up again.  
05 03 01 13 CDR You want the pad?  
05 03 01 15 CMP No, I don't need it.  
05 03 01 23 CDR Hey, we still have the g-meter cover out. Hot dog!  
05 03 01 52 LMP Dave, can you drag out the orbital map behind the  
...?  
05 03 01 56 CMP Yes.  
05 03 01 57 LMP I want to try and figure out where we're going to  
be --  
05 03 01 59 CMP ... find it?  
05 03 02 00 LMP -- at that time. Hey, Jim, where'd you hide that  
orbit map?  
05 03 02 07 CDR It's right behind the ...  
05 03 02 19 LMP Boy, they would put the U.S. right at the doggone  
fold, wouldn't they?  
05 03 02 24 CDR Yes, that - There is a nice way that you could  
make one of those maps, too. And that sure isn't  
it.  
05 03 02 41 CDR Man, I'm telling you. It's really black out there.  
Did I forget to take something off? Hey, one of  
our lights is out down here.  
05 03 02 55 CMP What light? Really?

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- 05 03 02 57 CDR Yes, a floodlight.
- 05 03 02 59 CMP It just went out. It was on this morning.
- 05 03 03 05 CDR Now it works. Works in DIM 2 only.
- 05 03 03 14 CDR Actually, DIM 1 with one light isn't bad. Hey, what am I looking at here? Can you look out the window and see what I'm looking at? It's just absolutely black in there.
- 05 03 03 24 CMP It's probably the ground. Yes, must be thunderstorms down there.
- 05 03 03 30 CDR Gee. I don't see a thing. I don't even see a thunderstorm.
- 05 03 03 32 CMP The horizon's up near here, right now.
- 05 03 03 34 CDR You got the update book there, Dave?
- 05 03 03 37 CMP No, I don't. Hey, that's the spacecraft.
- 05 03 03 40 CDR Oh, there's a little speck of light over there.
- 05 03 03 49 LMP Gee, it can't be. Oh, maybe it is.
- 05 03 04 15 LMP Jim, when you're done with the update book -
- 05 03 05 56 LMP Oh, this map has got to be wrong.
- 05 03 06 00 CDR Oh, I'm finally starting to see something out there
- 05 03 06 41 (Noise)
- 05 03 06 49 CMP What in the world is that?
- 05 03 06 51 CDR I don't know.
- 05 03 06 54 LMP Sounds like somebody's making a telephone call.
- 05 03 07 02 CMP We're getting ... another 25 degrees.
- 05 03 07 06 CDR Okay.
- 05 03 07 41 CMP ... DELTA-V<sub>c</sub>, Rusty?
- 05 03 07 43 LMP DELTA-V<sub>c</sub> is 24.0.

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05 03 07 56 CDR Oh, here it comes.  
05 03 08 04 CDR We're almost there.  
05 03 08 19 CMP We're there. The wide deadband.  
05 03 08 40 CDR Dave, you didn't turn the C and D --  
05 03 08 41 CC Apollo 9, Houston through Tananarive. Do you read?  
05 03 08 44 CMP Roger. This is Apollo 9.  
05 03 08 51 CDR Hey, Dave?  
05 03 08 52 CMP Huh?  
05 03 08 53 CDR You didn't turn quad C and D on.  
05 03 08 56 CMP I know it. I didn't need to.  
05 03 08 57 CDR Oh, okay.  
05 03 08 58 CMP I was going to ATTITUDE HOLD, here.  
05 03 08 59 CDR Alright, fine.  
05 03 09 00 CMP The wide deadband ...  
05 03 09 01 CDR I'm going to go - I'm going to --  
05 03 09 03 CMP Okay.  
05 03 09 04 CDR -- use the - use - the DSKY, now.  
05 03 09 08 CC Apollo 9, Houston through Tananarive. I am not  
reading you. Your ORB rate is 0.067.  
05 03 09 18 CMP Roger. Copy 0.067.  
05 03 09 24 CDR Good.  
05 03 09 50 CDR Okay, Rusty, what are the gimbal angles - or the  
sextant and shaft angles - sextant shaft and  
trunnion angles?  
05 03 09 57 IMP 64.6 and 11.09, minus.  
05 03 10 13 CDR Shit, what are we reading here? 14 and 19!

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05 03 10 18 CC

Apollo 9, this is Houston. We'll see you over Carnarvon at about 22, just before your burn.

05 03 10 24 CMP

Roger. Carnarvon at 22.

05 03 10 30 CDR

How close are we --

05 03 10 31 CC

And, Apollo 9, I'm not getting you back. You're busting up. Your ORB rate is 0.067, and we'll have the rest of your angles for you after your burn.

05 03 10 41 CMP

Roger. I understand. Thank you.

05 03 10 47 CDR

Dave?

05 03 10 49 CMP

Huh?

05 03 10 50 CDR

How close you are there?

05 03 10 51 CMP

5 degrees.

05 03 10 57 CC

Dave, if you can read me, I'll pass this to you now. The checklist there on CMP 315 - Those values are to be used; those are your roll angles. In other words, in this one, where you're at 180-degree roll, you would use that column versus your ORB rate of 0.067 to get those values to log in for the procedures.

05 03 11 24 CMP

Roger. Very good. Thank you.

05 03 11 27 CMP

That's what I sort of suspected, but I really -

05 03 11 30 CC

Those are your outer-gimbal angles, Dave, and I'll cover this with you again, because I may not be getting through.

05 03 11 38 CMP

Oh, you got through just fine.

05 03 11 41 CMP

Okay, are you looking through there right now, Jim?

05 03 11 43 CDR

Yes, but would you believe, it's not going around.

05 03 11 47 CMP

Oh, you mean the telescope isn't working?

05 03 11 49 CDR

No. The sextant is not working.

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Day 6

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05 03 11 54 CMP The sextant isn't working?

05 03 11 55 CDR I mean the - the telescope isn't working, yes.

05 03 11 57 CMP Here, let me borrow this thing to send a ...

05 03 12 02 CDR Okay. What thing?

05 03 12 03 CMP The DSKY?

05 03 12 04 CDR Yes, go ahead.

05 03 12 08 CMP I'm sending a ...

05 03 12 10 CDR Not over Tananarive, it doesn't.

05 03 12 12 CMP No, they don't get any data, do they?

05 03 12 17 CDR Yes. I can't even drive it around zero now, Dave.

05 03 12 21 CMP Yes, I know. I can't either. Do you want to do it, or you want to figure that we got a good alignment and just check last time and, if we're at 000, we'll be close enough?

05 03 12 39 CDR Yes, we're close enough. Shoot, let's do the burn.

05 03 12 41 CMP I'm with you. Then I'll load the DAP.

05 03 12 46 CDR Oh, my aching back.

05 03 12 50 CMP Well, I know how to work around it, Jim, so don't - don't sweat it.

05 03 12 59 CDR You're going to have a little trouble working around it if you can't use the shaft at all. You start now at about 1<sup>4</sup> degrees, it looks like.

05 03 13 06 CMP Yes, I know, but that's the way it was before.

05 03 13 08 CDR 1<sup>4</sup> degrees? It's got a multiple of 6<sup>4</sup> in there.

05 03 13 12 CMP Oh, really?

05 03 13 13 CDR Yes.

05 03 13 19 CMP VERB 48. Okay. Now, now, ...

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- 05 03 13 47 CMP Okay, B/D is on. B/D seems to be alright. Roll quad at zero is B/D ON. ... B/D quad.
- 05 03 14 05 LMP Hey, Dave, let's press on with the reading?
- 05 03 14 14 CMP ... PRO, PRO, PRO. ...
- 05 03 14 47 LMP Could always tap the controller. ... at 1/100th of a foot per second, and screw up ...
- 05 03 15 01 CDR What would we do if it wouldn't work?
- 05 03 15 04 LMP Oh, I don't know. Maybe check with several more things. I don't know what else we could check, but you could probably think of a few more.
- 05 03 15 31 LMP Okay. Ready to read?
- 05 03 15 42 LMP I'm getting that FUEL CELL 2 light again. It's working its way up again.
- 05 03 15 48 CMP ...
- 05 03 15 49 CDR Yes, we already have it.
- 05 03 15 51 LMP Oh.
- 05 03 16 02 CMP You know, I found something else that was different the other day.
- 05 03 16 04 CDR What?
- 05 03 16 06 CMP In the simulator that we used - The mount on the left armrest. In the simulator, in the ..., you could crank that all the way down. This key here is going to stop about a third of the way down.
- 05 03 16 18 CDR (Laughter)
- 05 03 16 20 CMP For the EVA, I put this hand controller over there so I could use my good gloves, but the way it works, it was like this. In the mockup, I could set it like this, like this one here. But here, it's set almost like that.
- 05 03 16 36 CDR Yes, great. Okay, we're down to 8 minutes. We got off to something else.

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Day 6

405

05 03 16 41 CMP Did you get your strut locked, Rusty? I guess not, huh? ...  
05 03 16 50 LMP No.  
05 03 16 54 CMP Okay. Let's do a P40.  
05 03 16 56 CDR Okay.  
05 03 16 57 LMP Okay, here we go.  
05 03 16 58 CDR P47.  
05 03 17 00 LMP You got the DAP and the ullage selection TVC roll jet, huh? Okay, BMAG MODE, three, to RATE 2.  
05 03 17 08 CMP RATE 2.  
05 03 17 13 LMP SPACECRAFT CONTROL to CMC.  
05 03 17 15 CMP RATE 2 ... SPS thrust to align in roll.  
05 03 17 23 LMP Okay. CMC MODE to AUTO.  
05 03 17 27 CDR Just a second. He's not that far yet.  
05 03 17 30 LMP Oh, okay, I'm sorry. It's got "align in roll" down here. That's why I thought you meant you were down here.  
05 03 17 37 CMP I'd like to get P40 ... before ...  
05 03 17 39 LMP I know, but ...  
05 03 17 44 LMP Okay.  
05 03 17 46 CDR We got 07:22, Rusty, so we got plenty of time.  
05 03 18 01 CMP Oh, ...  
05 03 18 56 CMP That's better.  
05 03 19 00 CDR Okay. 6 minutes, I hope.  
05 03 19 03 CMP Be right up.  
05 03 19 07 LMP Okay, SPACECRAFT CONTROL, CMC; CMC MODE to AUTO.

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- 05 03 19 09 CMP They're going to pick us up at 22, so they'll be able to get the - -
- 05 03 19 12 LMP No, they won't. You'll have to turn on the circuit breaker.
- 05 03 19 19 CMP Okay, CMC in AUTO. Go ahead.
- 05 03 19 24 LMP I got the SPS HELIUM valve; BMAG MODE, three, to RATE 2.
- 05 03 19 28 CMP RATE 2.
- 05 03 19 29 LMP Align spacecraft in roll.
- 05 03 19 30 CMP Aligned. PRO or continue. Okay, I want to continue; check panel 8.
- 05 03 19 41 LMP Set up your AUTO RCS, ROLL.
- 05 03 19 44 CMP Okay, set.
- 05 03 19 46 LMP Set the DELTA-V indicator, 24.0.
- 05 03 19 50 CMP Okay, it's set.
- 05 03 19 51 LMP Verify EMS FUNCTION, DELTA-V.
- 05 03 19 53 CMP DELTA-V.
- 05 03 19 54 LMP MANUAL ATTITUDE, three, to RATE COMMAND.
- 05 03 19 56 CMP RATE COMMAND.
- 05 03 19 57 LMP ATTITUDE DEADBAND, MIN; RATE, LOW.
- 05 03 19 59 CMP LOW.
- 05 03 20 01 LMP TRANSLATION CONTROL POWER, ON.
- 05 03 20 02 CMP ON.
- 05 03 20 03 LMP SCS TVC's, two, to RATE COMMAND.
- 05 03 20 05 CMP RATE COMMAND.
- 05 03 20 06 LMP DELTA-V<sub>cg</sub> to CSM.

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Day 6

407

05 03 20 08 CMP CSM.  
05 03 20 09 LMP TVC GIMBAL DRIVE, PITCH and YAW, to AUTO.  
05 03 20 11 CMP AUTO.  
05 03 20 12 LMP MAIN BUS TIES are coming ON. MAIN 2, B and C.  
Okay, TVC SERVO POWER 1, AC 1/MAIN A.  
05 03 20 25 CMP AC 1/MAIN A.  
05 03 20 26 LMP TVC 2, AC 2/MAIN B.  
05 03 20 27 CMP 2, AC 2/MAIN B.  
05 03 20 28 LMP ROTATIONAL CONTROL POWER, NORMAL, two, to AC.  
05 03 20 31 CMP AC.  
05 03 20 32 LMP DIRECT, two, to OFF.  
05 03 20 33 CMP Two to OFF.  
05 03 20 35 LMP BMAG MODE, three, to ATT 1/RATE 2.  
05 03 20 37 CMP ATT 1/RATE 2.  
05 03 20 38 LMP SPACECRAFT CONTROL to SCS.  
05 03 20 40 CMP SCS.  
05 03 20 41 LMP RHC 2, unlocked.  
05 03 20 43 CMP Unlocked.  
05 03 20 44 LMP PITCH and YAW 1, START, ON.  
05 03 20 46 CMP Okay, PITCH 1, START, ON.  
05 03 20 48 LMP Verify.  
05 03 20 49 CMP YAW 1, START, ON.  
05 03 20 50 LMP Verify.  
05 03 20 51 CMP Okay.  
05 03 20 52 LMP Verify trim control and set.

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05 03 20 53 CDR      0.9 and 1.1.  
05 03 20 57 CMP      0.9 and 1.1, okay.  
05 03 21 00 LMP      Verify MTVC; THC, clockwise.  
05 03 21 02 CMP      Clockwise.  
05 03 21 03 LMP      Verify no MTVC.  
05 03 21 04 CMP      Okay.  
05 03 21 06 LMP      PITCH 2 and YAW 2, START, ON.  
05 03 21 08 CMP      PITCH 2, START, ON; YAW 2, START, ON.  
05 03 21 11 LMP      Verified. Verify MTVC; confirm and set GPI TRIM.  
05 03 21 16 CMP      Okay, set.  
05 03 21 17 LMP      SPACECRAFT CONTROL to CMC.  
05 03 21 19 CMP      CMC.  
05 03 21 20 LMP      THC, NEUTRAL.  
05 03 21 21 CMP      NEUTRAL.  
05 03 21 22 LMP      Verify no MTVC.  
05 03 21 24 CMP      No MTVC.  
05 03 21 25 LMP      Proceed.  
05 03 21 26 CMP      Okay.  
05 03 21 28 LMP      ROTATIONAL CONTROL POWER, NORMAL, two, to AC/DC.  
05 03 21 31 CMP      AC/DC.  
05 03 21 32 LMP      DIRECT, two, to MAIN A/MAIN B.  
05 03 21 35 CMP      MAIN A/MAIN B.  
05 03 21 36 LMP      ENTER.  
05 03 21 39 LMP      Well, alright, Jimmy, I guess we're ready.

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Day 6

409

05 03 21 40 CDR Okay, let me ENTER.  
05 03 21 42 LMP Okay.  
05 03 21 44 CDR Ready for the ...?  
05 03 21 45 LMP Sure. Ohh!  
05 03 21 46 CDR (Laughter)  
05 03 21 52 LMP I looked at it all day yesterday, and it still surprises me.  
05 03 22 20 LMP - - get a camera out. ...  
05 03 22 26 CMP Yes.  
05 03 22 30 LMP Yes, it only happens that ... it hit on the MAG, and I put that down a little bit, so that the bottom came - out a little bit.  
05 03 22 44 CMP Does that magazine still work?  
05 03 22 46 LMP Yes, ...  
05 03 23 23 CMP Yes, you're right.  
05 03 23 27 CDR Yes, and let's make sure we get those things put away.  
05 03 23 29 CMP Hey, that was really great!  
05 03 23 32 LMP Quite a kick, huh!  
05 03 23 34 CMP Yes, that was great! You know, you guys have been doing all those big-kick burns - -  
05 03 23 41 CDR No, we really haven't - -  
05 03 23 44 CMP - - compared to ours - -  
05 03 23 45 CDR No, you know the biggest engine we have is only 10 000 pounds.  
05 03 23 51 LMP ... about 10 000 pounds.  
05 03 23 53 CMP ... What's your ascent engine?

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- 05 03 23 54 CDR 20 to 3500 pounds.
- 05 03 23 55 CMP Oh!
- 05 03 30 42 CDR That's like about half of the P38. Did that knock you on your can? (Laughter)
- 05 03 30 47 CMP Hey, that was really great!
- 05 03 30 53 CDR Okay - Well - Hey, just as a matter of interest. P30 said that we were going to get 120.4 perigee and we actually got, at least out of this thing here - It says 120.6. ... P30 said we were going to get 110.7 and we got 111.9. Not bad, huh?
- 05 03 31 15 LMP Okay, let's hunch along on that S0 65. That's about right in here.
- 05 03 31 48 CMP Gee, I'd like to come rescue you now.
- 05 03 31 52 CDR (Laughter) You fink!
- 05 03 31 57 CDR Listen, all the time I knew you wanted to come rescue me.
- 05 03 32 00 CMP Huh?
- 05 03 32 02 CDR All the time I knew you wanted to come and rescue me.
- 05 03 32 03 CMP That's alright. ... give him a flyby.
- 05 03 32 04 CDR Sorry to disappoint you there.
- 05 03 32 05 CMP Well, that's alright. I didn't want to ...
- 05 03 32 10 CDR My nerves couldn't stand it; I'm getting too old for that kind of stuff.
- 05 03 32 13 CMP I could tell you were fretting when your light went out.
- 05 03 32 17 CDR Yes, by then everything was going off pretty smoothly.
- 05 03 32 19 CMP Yes, it sure was.

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Day 6

411

05 03 32 24 CDR

As a matter of fact, when - all the TPI solutions converged, I figured, well, at least we're going to get a chance to see you again, even if I lost the radar right then, and lost all the COMM, (laughter); we had a - we had a solution we could burn on something.

05 03 32 37 LMP

Even if you can't dock.

05 03 32 38 CMP

The three of them converging like that, ...

05 03 32 44 CDR

Okay, David - okay, let's you and I talk this thing over here, while Rusty sets up the camera.

05 03 32 47 LMP

Okay, I'm going to line this thing up ... --

05 03 32 48 CDR

Did you - did you get those new attitudes?

05 03 32 49 CMP

Yes, I've got them.

05 03 32 50 CDR

Okay.

05 03 32 52 CMP

What time is this supposed to start?

05 03 32 53 CDR

We're supposed to be there at 123:55:20.

05 03 32 56 CMP

Right, ...

05 03 32 57 CDR

That's when we want to go into ORBIT RATE.

05 03 33 00 LMP

Right.

05 03 33 01 CMP

Let me get this setup. 55:20 and we're 22 minutes ...

05 03 33 07 CDR

... goes 10 minutes.

05 03 33 09 CMP

Yes.

05 03 33 10 CDR

Try to get it - Why don't you start on an even 20? (Laughter) And then just go from there?

05 03 33 18 CDR

55:20.

05 03 33 23 CDR

My gosh!

05 03 33 24 LMP

Hey, as a matter of fact, let's get a new magazine. We're already up to 110 photos, aren't we?

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- 05 03 33 30 CDR Yes.
- 05 03 33 31 LMP Where - where are they stowed?
- 05 03 33 32 CDR There are a couple right down over here underneath your seat. I'm not sure whether they are used or not; as soon as we finish this burn, I want to go down and inventory all the film.
- 05 03 33 39 LMP We've only used two 70's.
- 05 03 33 40 CDR Okay.
- 05 03 33 42 LMP This is the second one, so let me just put it away here. In fact, why don't I mark "used" on it, huh?
- 05 03 33 47 CDR Okay.
- 05 03 33 50 LMP You got any better ideas? How about writing on here "used"? Huh?
- 05 03 33 56 CDR Okay. You might say "put away" or something like that at 123:34. We've got to find out how many pictures are on those --
- 05 03 34 09 CMP Hey, what was our - We - Who wrote down what the quads were this morning? A/B? - Or did you write them down?
- 05 03 34 16 CDR Yes, he said, "Use A/B."
- 05 03 34 18 CDR Post-return to NORMAL, two-Jet authority.
- 05 03 34 21 CMP Yes, I got that. How about the ... pad?
- 05 03 34 22 CDR See what it says up on the top.
- 05 03 34 28 CDR Use B/D ullage, B/D roll, and SCS systems. B and D, AUTO.
- 05 03 34 36 CMP Well, that may be the updated command module control ...
- 05 03 34 37 CDR Okay. Yes, I think with - That's - Let's see, A is .55, and B is really high; it's --
- 05 03 34 45 CMP How about B, though ... --

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Day 6

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- 05 03 34 47 CDR ...
- 05 03 34 48 CMP -- different from B and A.
- 05 03 34 49 CDR And C is - C is 60; D -
- 05 03 34 52 CMP I think it was A and - -
- 05 03 34 55 LMP Oh, hey, do we have a - You have got the procedures book, Dave?
- 05 03 35 01 CDR I have it.
- 05 03 35 02 LMP Hey, Jim, how about letting me look at it, and see if there's anything - any one of those magazines in particular that's scheduled for - ground photographs?
- 05 03 35 13 CDR Well, it doesn't make any difference anymore, because from now on that's all we're going to take are ground photographs, so -
- 05 03 35 21 CDR I don't want that up there. Put it back over here.
- 05 03 35 49 CDR Hey, get your ...; I want to check out the SO 65, using that book.
- 05 03 35 53 LMP Okay.
- 05 03 35 54 CDR I think anyway - Well, from now on, all - -
- 05 03 35 56 LMP Yes, they are.
- 05 03 35 57 CDR -- we're going to take are ground pictures.
- 05 03 35 58 CMP Whoop!
- 05 03 35 59 LMP That's okay.
- 05 03 36 02 CDR I hope.
- 05 03 36 07 CDR Okay, we've worked down to the point where we're going to remove the dark slides from all the magazines.
- 05 03 36 12 CMP ...
- 05 03 36 13 CDR What?

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05 03 36 15 CMP

~~Can you turn the intercom on?~~

05 03 36 18 LMP

He can't listen.

05 03 36 19 CDR

Yes, do you have trouble walking and chewing gum, too?

05 03 36 30 LMP

Your hand controller's still hot, Dave.

05 03 36 39 CC

Apollo 9, Houston through Guam. Do you read?

05 03 36 43 CMP

Roger, Houston. And I read you 5 by. How me?

05 03 36 47 CC

Okay, I'm reading you a little weak, but Dave, I don't know if I've confused you on this page 315 or not ...

05 03 36 53 CMP

Yes, you did.

05 03 37 09 LMP

Actuate system one cycle, and verify for observation ... Okay.

05 03 39 02 CC

Apollo 9, Houston. If you read me, the roll on our SO 65 pad where we gave you 180 should be zero.

05 03 39 11 CMP

Oh, okay; the roll on the SO 65 pad should be zero. Okay.

05 03 39 16 CC

Roger.

05 03 39 18 LMP

S'all right!

05 03 39 19 CDR

S'all right!

05 03 39 26 CDR

Okay, got to get down there where I can see all those mothers move.

05 03 39 29 LMP

Well, let's get to the attitude, early, just so we can, maybe roll 180, in case it's all dicked up.

05 03 39 41 CDR

I can see three of them moving.

05 03 39 42 LMP

Dark slides move with all ... at one cycle.

05 03 39 44 CDR

Okay, here we go. 3, 2, 1 -

05 03 39 47 CDR

MARK.

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Day 6

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- 05 03 39 49 CDR Three of them moved.
- 05 03 39 50 LMP Four of them moved. Man, that was pretty. See it?
- 05 03 39 51 CDR That was very breathtaking (laughter).
- 05 03 39 56 LMP Perfect!
- 05 03 39 59 CDR Hey, they don't say what to do with the paddles, but all the paddles are there, and locked. I think they're all out there; those are all alright - they're all on, and they're locked. They didn't have any covers on them, so we don't have to worry about them.
- 05 03 40 12 CMP You got a picture of the horizon in four colors.
- 05 03 40 15 LMP (Laughter) Did I?
- 05 03 40 16 CMP Yes.
- 05 03 40 17 CDR And the window looks like it's going to get it just as clear as it's ever going to get.
- 05 03 40 25 CDR Oops, Davey, we have a problem: we have to disable jet A-3.
- 05 03 40 30 CMP Say again?
- 05 03 40 31 CDR We're going to have to disable jet A-3.
- 05 03 40 34 CMP Yes, you're right. Here we go again ... Shoot.
- 05 03 40 40 CDR I wonder why? C is our low tank, too.
- 05 03 40 42 CMP It fires out here.
- 05 03 40 43 CDR Shoot! And that's going to interfere with anything! In the daytime, looking at the ground?
- 05 03 40 46 CMP Oh, Christ.
- 05 03 40 48 CDR Let's disable - Let's use B - ... hell, the only other one we can use is C; B and C.
- 05 03 40 55 CMP We got to use A or B - ...
- 05 03 40 57 CDR Yes, that's what I say: use B and C.

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05 03 40 59 CMP B is in low, here.

05 03 41 00 CDR Yes.

05 03 41 05 LMP Houston, Apollo 9.

05 03 41 11 LMP We've lost him.

05 03 41 15 CDR Yes, it's a little low on that quad; boy, I - Let's see ... off our redline.

05 03 41 18 LMP ... you know, the chance that you're going to have to be taking pictures just at the moment that's firing a jet is nil.

05 03 41 24 CMP It's nothing.

05 03 41 25 LMP And even if it did fire accidentally --

05 03 41 27 CMP Yes, I think you're right.

05 03 41 29 CDR That did it! Have you got the update book?

05 03 41 32 CMP No, that's the log.

05 03 41 34 CDR Where's the update book? Here it is, I have it. I believe you're right. We're now in MAG C.

05 03 41 58 CDR My goodness, the hybrid DAP redline for quad C is 49 percent. Oh, no, hybrid DAP's aren't quite that high. What's PU mean?

05 03 42 13 CMP Propellant used, utilized, usable.

05 03 42 18 LMP What's that expression, Jim?

05 03 42 38 CDR Are we all ready for this now?

05 03 42 39 CMP No.

05 03 42 41 LMP Yes. Yes, we are?

05 03 42 48 CDR Shoot, there's not that much difference between C and A. What have we got loaded in there?

05 03 43 01 CMP I've got A and B loaded in there. We'll have to reload it before ...

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Day 6

417

05 03 43 22 CDR

Why don't you leave A in there? It says DAP redline for A is 7 percent more than it is for C. Shoot, B has the highest redline and the lowest fuel.

05 03 43 32 CMP

Yes, let's don't use it --

05 03 43 33 CDR

Yes, that's a good idea.

05 03 43 35 CMP

-- I don't think it's worth it.

05 03 43 49 CMP

You ... something, Rusty?

05 03 43 54 CDR

Okay, at GET 5 minutes prior to the first site, disable jet A-3, orient the spacecraft for update, set up orbit rate - ... ATT HOLD.

05 03 44 03 CMP

Set up ORB RATE. Somebody's been ... I can do that.

05 03 44 14 CDR

I want to have somebody ...

05 03 44 16 LMP

Oh, hey, I want to resume BAT A charge. There's nothing like a real-time flight plan, I always say.

05 03 44 24 CDR

Don't you wish a real-time flight plan in this thing ... never bat an eyelash, because you didn't have time (laughter). ... over there and did that ... after the DPS burn, starting an hour and some late, so that sucker was still pretty stiff. But he missed a couple.

05 03 44 56 CMP

A couple of ...

05 03 44 57 CDR

Okay, we'll be at the attitude in about 10 minutes -

05 03 44 59 LMP

Okay.

05 03 45 01 CDR

And then we have -

05 03 45 08 CDR

I'm going to scoot over here and use your clock, if you don't mind.

05 03 45 13 CMP

That's right. Why don't you check it to be sure I get it right?

05 03 45 20 LMP

What's it counting down to?

05 03 45 24 CMP

5:20. It should be 55:20.

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- 05 03 45 25 CDR Okay, that's what it's counting down to.
- 05 03 45 28 LMP And we take the pictures 5 minutes after that. Is that right?
- 05 03 45 37 CDR Well, let's look at our checklist. Yes, we take pictures 5 minutes after that. You start at 5 and stop at 7:30, or when the clouds hit you.
- 05 03 46 05 LMP Okay, the north is coming into view.
- 05 03 46 08 CMP I tried to set up ORB RATE and get a few - Get there and hold it and we'll get a GDC align, and I'll try and set up ORB RATE. ... doesn't work ... GDC ... GDC ...
- 05 03 46 22 CDR We still have ORB RATE in there, don't we?
- 05 03 46 23 CMP Yes, but ...
- 05 03 46 27 CDR Looking through here, it looks pretty good.
- 05 03 46 30 CMP Yes, but we'd hate to miss the pictures if the DAP doesn't work right.
- 05 03 46 34 CDR Yes.
- 05 03 46 40 CDR Listen, we come back with so 65 pictures, and we're going to be great.
- 05 03 46 45 LMP That's really a big deal, isn't it?
- 05 03 46 54 CMP Okay, we're there and we're holding.
- 05 03 46 56 CDR Okay.
- 05 03 46 58 CMP On the wide deadband and I'll tighten it up ...
- 05 03 47 13 LMP Zero, I think ...
- 05 03 47 28 CMP Okay, ORB RATE ...
- 05 04 17 04 CC Okay, real good. That was our report according to aircraft from Los Angeles. Tucson was supposed to be clear, and I think with the scattered deck, it should still be good was the word I had, so I'm glad you took them.

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Day 6

419

05 04 17 19 CDR

Yes, better to take them today than to not take them tomorrow.

05 04 17 23 CC

That's - that's right, and we're going to lose you in about 20 seconds here, and we'll see you at Ascension at 26.

05 04 17 31 CDR

Okay.

05 04 17 32 CMP

Jim, how about you running through the program --

05 04 17 33 CDR

Go to it, yes. You - Why don't you not bother answering anybody, and figure out how to landmark track? Maybe I ought to figure out how to help you.

05 04 17 44 CMP

I - I - I can show you - I can show you how to -

05 04 17 47 CDR

Rusty, you answer the phone.

05 04 17 49 LMP

I will.

05 04 17 54 CMP

I was looking to see where you are. What's in the procedures book?

05 04 17 59 LMP

The only trouble with SO 65 is the 35-pound ...

05 04 18 03 CDR

Yes.

05 04 18 12 CMP

What the hell happened to my UCDA? Gee, it floats all over.

05 04 18 18 CDR

There was a UCD down here that I thought was yours.

05 04 18 20 CMP

A UCDA that was right there - Yes, that's where I hung it.

05 04 18 22 CDR

Oh. You're talking about the other one.

05 04 18 27 CMP

Oh, I see it. It's up at the head chow chest.

05 04 18 34 CDR

Dave, what page is that in the checklist? - When we do P22? Where's P22 in the checklist?

05 04 18 42 CDR

Well, I have a checklist like yours. I'm supposed to have everything you have in yours. Maybe it's in G&N ...; let me look in the front.

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Day 6

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05 04 18 54 CDR

Okay? Yes. I've got it.

05 04 19 45 CDR

Hey, how in the hell are you going to do landmark tracking if you can't operate the shaft? Oh, we use the sextant though, don't we? No, we don't; we use the telescope.

05 04 20 02 CDR

I have the optics in zero and CMC, I'm quite sure. Yes, I am. I'm well trained. I don't really like to do that, but I ...

05 04 20 12 LMP

You don't like to do what?

05 04 20 14 CDR

Put it in zero and CMC. Hey, as a matter of fact, you ought to go down there and see if you could even drive the optics. There's no sense in ... all this fuel away -

05 04 20 20 LMP

I could do it alright this morning.

05 04 20 23 CDR

Well, I couldn't drive it at all at 14 degrees.

05 04 20 28 LMP

Okay, well, why don't you - Are you all through with that stuff?

05 04 20 29 CDR

Yes.

05 04 20 30 LMP

... command module then.

05 04 20 31 CDR

Okay.

05 04 20 32 LMP

... the program ...

05 04 20 35 CDR

Let's swap COMM hoses again, please. We'll have to unswap them.

05 04 21 30 LMP

Yes, I think so. Sure looks like it. What spot? Oh, I didn't notice. I didn't hear you. I was too busy rubbernecking. You don't have to inventory the Hasselblad, because I can tell you exactly what we've got there.

05 04 22 11 LMP

We've used magazines A and B, and I'm 30 pictures into C. And all the rest are left, and I'll tell you how many that is in a minute - if I can find the damn thing. Where's the procedure book?

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Day 6

421

05 04 22 47 LMP

You got the procedures book, Dave? Can I see it for just a second? Haiti - that's the place I was trying to think of. Can I use this procedures book for just a second, Dave?

05 04 23 39 LMP

Okay, we've got D and E, so that's 240, I guess - plus 30 left in here - I mean plus 90 left in there, so that's 330. Oh, hey, look at this. Yes. A through E, 150, so we've got some left on A and B, too.

05 04 24 33 LMP

Well, B we stopped at about 110, and A we stopped about - somewhere around 100, 90 or so. We'll just write it down in pencil, and - and we'll just write it in this and scratch it out when we finish it up. Dave, you've got to do your alignment first, don't you?

05 04 25 18 LMP

Hey, we brought back some LM film, too. Where did - where did we stow that? Okay, we've got - a film pack there, too, and this doesn't say how many's in that, but it's about - what? 60?

05 04 26 17 LMP

It's working, Jim. I'm going to go right across in front of you here, Dave.

05 04 26 24 CMP

Okay.

05 04 26 26 LMP

Make a film survey. Hello, Davey.

05 04 26 29 CMP

Yes, it's working.

05 04 26 30 LMP

It is working now?

05 04 26 31 CMP

Yes. They give you a time for a nominal alignment?

05 04 26 33 LMP

Yes, 125:03:00.

05 04 26 35 CMP

I'm supposed to do it now?

05 04 26 37 LMP

You're supposed to do a nominal alignment when we get into dark for that time.

05 04 26 54 LMP

120 - I'm sorry.

05 04 26 57 CMP

That's okay. 125:03:00.

05 04 27 08 CMP

Okay, 03 -

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05 04 27 10 LMP Am I in your way, Dave?  
05 04 27 11 CMP No. And all zips.  
05 04 27 17 CDR And I assume, Rusty, that that's what that time -  
that's next to nominal P52 means.  
05 04 27 20 LMP Yes. Right.  
05 04 27 22 CMP Okay, Jim, a - Roll, pitch, and yaw, and that  
looks - Roll? 11, pitch - Yes, that'll be fine.  
05 04 27 38 CC Apollo 9, Houston through Ascension.  
05 04 27 41 CDR Roger, Houston; Apollo 9 here.  
05 04 27 44 CC Roger; good evening.  
05 04 27 46 CDR Hi, how are you?  
05 04 27 48 CC Good shape, good shape. About ready for our  
evening fireside chats again, it looks like.  
05 04 27 52 CDR Yes, when you said good evening, I was absolutely  
amazed. I looked at my watch, and it says 3:30  
down at the Cape.  
05 04 27 58 CC That's right.  
05 04 27 59 CDR How are you there, young Mr. Ron?  
05 04 28 02 CC Good shape, good shape.  
05 04 28 03 CDR Good.  
05 04 28 04 CC We're working on our landmark-tracking pad. We  
should have that before we finish up here, I hope.  
05 04 28 09 CDR Okay, and I want you people to be - to realize  
that we're having this trouble with the shaft on  
the telescope, and we may not be too successful  
with this thing.  
05 04 28 24 CC Roger. We understand that.  
05 04 28 26 CDR Alright.  
05 04 28 29 CMP Alright, Jim, I guess I don't have any stars.

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Day 6

423

05 04 28 30 CDR You don't, huh?  
05 04 28 31 LMP No.  
05 04 28 32 CMP I've got a program alarm.  
05 04 28 33 CDR I'll be darned. Well, you ought to have some sta  
Let me do a little --  
05 04 28 35 CMP Do a little roll --  
05 04 28 36 CDR -- do a little check, here.  
05 04 28 37 CMP Wait, let me see which way to go.  
05 04 28 38 CDR I want to go - Roll left.  
05 04 28 40 CMP Yes.  
05 04 28 42 CDR Okay, I'll do a little trick. Yes. Okay, and  
then we just put the B roll on, won't we?  
05 04 28 48 CMP I said I think ...  
05 04 28 51 CDR And SCS is --  
05 04 28 52 CMP ...  
05 04 28 53 CDR MINIMUM IMPULSE. Check the ... Gee, it really  
looks like you ought to be able to see stars.  
05 04 29 11 CMP Well, ...  
05 04 29 16 CDR I'm all dicked up ... Well, the earth is that wa  
that's the sky out this way. I'll be a son of a gun. Okay.  
05 04 29 35 CDR Is it too bright up here, Dave? You want me to s  
those other lights?  
05 04 29 37 CMP ... --  
05 04 29 38 CC Apollo 9, Houston. Have your landmark update.  
05 04 29 43 CDR Roger; just a minute.  
05 04 29 44 CMP Give me the book, and I'll get it for you.

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- 05 04 29 46 CDR You want me to get it or you want to get it?
- 05 04 29 48 CMP I'll get it. I've got to wait for you to roll around anyway.
- 05 04 29 49 CDR Okay.
- 05 04 29 52 CC Apollo 9, Houston.
- 05 04 29 55 CMP Roger, Houston; stand by.
- 05 04 29 59 CC Okay, you're real weak there. I'll go ahead and read. Your landmark ID 011: your GET 125:32:1600, and you'll be 60 miles north of track. We have about 30 seconds to LOS; probably Carnarvon at 57.
- 05 04 30 35 CMP Roger; say again the roll, pitch, yaw, shaft, and trunnion.
- 05 04 30 41 CC Roger. We don't have that now; it's N/A.
- 05 04 30 45 CMP Okay, and I missed the number. Was it 011?
- 05 04 30 48 CC Affirmative, your landmark ID is 11.
- 05 04 30 51 CMP Okay, thank you, and 125:32:1600.
- 05 04 30 55 CC Roger.
- 05 04 31 02 CMP Where's your procedures book? Oh, I don't need that yet, I guess.
- 05 04 31 09 CDR Forget it. I see you're doing alignment, ... right now.
- 05 04 31 14 CMP Yes.
- 05 04 31 15 CDR One thing at a time. I'll try to get your tracking data out for you if you'd like.
- 05 04 31 21 CMP Yes. You mean the landmark track?
- 05 04 31 22 CDR Yes.
- 05 04 31 23 CMP The landmark?
- 05 04 31 24 CDR Yes. Okay, you're going to be doing it on Baja California, and I'll - a -

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Day 6

425

- 05 04 31 27 CMP Okay, you can stop the rates. I got a good ...  
05 04 31 37 CDR Okay, ...  
05 04 31 42 CMP Better not.  
05 04 32 03 LMP Hey, you want to put these magazines back where  
they started out?  
05 04 32 08 CDR Well, yes; you know, it might not be a bad idea.  
05 04 32 09 CMP I think it would be a good idea.  
05 04 32 11 CDR Yes.  
05 04 32 12 LMP Okay, I - I'll segregate them here.  
05 04 32 14 CDR Okay. And then, Rusty, if you - -  
05 04 32 16 LMP ... as a matter of fact, it isn't down where it's  
supposed to be. Maybe Dave knows where it is.  
05 04 32 21 CDR Okay, well - I'll tell you what, when you're  
going around the spacecraft, there's some up  
here in F-1, and you might get that film out of  
the IOS, too - the ISA. Try to get it all in a  
pile someplace.  
05 04 32 53 CMP And if you don't find the film - Well, we'll wait  
until after landmark tracking's over.  
05 04 33 01 LMP Well, as a matter of fact, we've got to stow the  
LM film somewhere.  
05 04 33 04 CMP Uh oh! MASTER ALARM.  
05 04 33 06 CDR Got it. I'll be there; just a minute, let me look.  
FUEL CELL 2 and CRYO PRESS. Yes, tank 1 is down.  
... hydrogen tank ...  
05 04 33 40 LMP Now, don't be so serious, now. How could you do  
that?  
05 04 33 43 CDR (Laughter) You didn't! You ought to be ashamed of  
yourself. You're as bad as me. I'm going to throw  
you in the wastebasket.  
05 04 34 34 CMP (Singing)

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- 05 04 34 51 CMP ... that 64 again. Is it A or B?
- 05 04 35 08 CDR Oh, I gave you the wrong scoop. You targeted Baja - northern Baja California. It's right across the Gulf of California. Mexico proper.
- 05 04 35 59 CMP You got some light on out there, Jim?
- 05 04 36 02 CDR Outside?
- 05 04 36 03 CMP Yes.
- 05 04 36 05 CDR No. The moon is out there, but that's on the other side of the spacecraft, Dave. Well, no - On second thought, we're - we're looking --
- 05 04 36 14 CMP Something's reflecting; maybe it's the moon.
- 05 04 36 16 CDR The moon might just be getting into the optics. It's not quite on the Z - X-axis. It's just about - oh, maybe 20 ...
- 05 04 36 27 CMP Yes.
- 05 04 36 31 CDR The moon is about 10 degrees above the X-axis.
- 05 04 36 46 CMP Well, shoot. ...
- 05 04 37 24 CMP 125:03:00, right?
- 05 04 37 26 CDR Verified.
- 05 04 37 33 CMP That okay?
- 05 04 37 34 CDR Roll, pitch, and yaw. Yes, that's what we're on now.
- 05 04 38 47 CMP 25, Acrux ...
- 05 04 38 50 CDR What'd you do, get Canopus and Acrux?
- 05 04 38 52 CMP Yes.
- 05 04 38 54 CDR That's almost as good as my Sirius.
- 05 04 39 04 CMP There's Acrux, way down there.
- 05 04 39 24 CMP Acrux is weak, because it's got a buddy.

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Day 6

427

- 05 04 39 30 CDR Right next to it, huh?
- 05 04 39 31 CMP ... in - I don't know whether it's pitch or something - It's some rate.
- 05 04 39 36 CDR Some rate. Okay, it looks like it's probably pitch, Dave. Pitch - That's not a B, that's a sequence, so we use A for that.
- 05 04 39 44 CMP Okay, can't hold it for much longer.
- 05 04 39 46 CDR Okay.
- 05 04 39 47 CMP I'm looking at the rates. ... pitch going ... okay?
- 05 04 39 56 CMP Okay, that's good. I'm ...
- 05 04 40 01 LMP ... help?
- 05 04 40 10 CMP ... Will I hurt your arm? That's not my tracking arm; ...
- 05 04 40 15 CDR (Laughter)
- 05 04 40 24 CMP I knew we were going to have high angles, because we were too far off.
- 05 04 40 30 CDR What were they? Oh, the first numbers?
- 05 04 40 32 CMP Have you got the flight plan, Jim?
- 05 04 40 34 CDR I have it right here. What do you need?
- 05 04 40 39 CMP Those angles - Like those - -
- 05 04 40 41 CDR Oh, oh, yes. Right, coming up.
- 05 04 41 01 CMP I can't even figure out what they do with this data. This doesn't sound ... tell them ... two people can do.
- 05 04 41 06 CDR Okay, very good. ... Yes.
- 05 04 41 09 CMP ... is 30.
- 05 04 41 11 LMP Okay.

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- 05 04 41 12 CMP      Reading from right to left: 124:41:30.
- 05 04 41 24 CDR      Hey, troops, we're more than halfway through the flight.
- 05 04 41 27 CMP      Gees, that's good.
- 05 04 41 31 LMP      ... this is okay.
- 05 04 41 34 CMP      Yes, it sure is.
- 05 04 41 38 CDR      Hey, that's right. We'll still have a little eating, won't we? ... find that stuff in the flight plan that ... Oh, that's another couple of hours yet.
- 05 04 41 51 LMP      Hey, that's the end of your day (laughter). Can you believe that?
- 05 04 42 08 CMP      ...
- 05 04 42 10 LMP      Hey, I tell you one thing, we got lots of it left, though - movie film.
- 05 04 42 14 CDR      Movie film?
- 05 04 42 15 CMP      How's that look, Jim?
- 05 04 42 17 CDR      200 - 106; that's good.
- 05 04 42 22 CMP      ... torquing angles ...
- 05 04 42 32 CMP      I'll be darned.
- 05 04 42 35 CDR      Let me slide over there and turn Rusty's light - Rusty, do you need your lights up that bright? Yes, I guess you do, as a matter of fact. Hey, I just got a view out the window better. Fix your window or you can't do it.
- 05 04 42 47 LMP      Where the hell is B-8?
- 05 04 42 50 CDR      B-8's down there in the bottom. Should be in the lower equipment --
- 05 04 42 53 CMP      Way, way over here, Rusty.
- 05 04 42 55 CDR      -- in the lower equipment bay.

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Day 6

429

05 04 42 56 CMP

By my left foot. And we've got to get alignment. Boy, there's Regor and he's got a little buddy, too. Okay. And it seems to be working, Jim.

05 04 43 06 CDR

Good. And I'll tell you, it's hung right about 14 degrees, and I couldn't drive it manually at all.

05 04 43 23 CMP

You've just got to have the right touch, Jim.

05 04 43 26 CDR

I know it. I figure as long as you know how to do it, I don't have to have the right touch. If you don't know how to do it, then I'll do it. Then I'll get the right touch.

05 04 43 52 CMP

Necessity is the mother of invention.

05 04 43 54 CDR

Right.

05 04 43 55 CMP

What's her father?

05 04 43 56 CDR

They weren't able to find him.

05 04 44 02 CMP

Are you saying necessity is a bastard?

05 04 44 07 CDR

Egads.

05 04 44 11 LMP

Need the procedures list.

05 04 44 13 CMP

Here's the procedures book.

05 04 44 15 CDR

Hey, I need the landmark-track book, too.

05 04 44 18 CMP

Landmark ...

05 04 44 19 LMP

Oh, the map, Jim.

05 04 44 20 CDR

Yes, I tried to get those out, but I was just going to get in the way.

05 04 44 23 LMP

I'll get them ...

05 04 44 25 CDR

I'll show you where the landmark is, just a minute.

05 04 44 27 CMP

Yes. Okay.

05 04 44 28 CDR

I can show you it right now?

05 04 44 47 CDR

Oh, yes? What - what was it? Tell me. Tell me.

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430

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05 04 44 52 CMP

... I wanted to find out if I had analyzed it right.  
If it worked for landmark tracking - if it doesn't  
work --

05 04 45 00 CDR

Where did you find that piece of gunk?

05 04 45 02 CMP

(Laughter)

05 04 45 04 CDR

I'll put you in gimbal lock, and you won't even  
track.

05 04 45 08 CMP

You know that mechanical screw-in on that?

05 04 45 10 CDR

Yes.

05 04 45 11 CMP

It came floating out of there, and that shaft screw  
... go as far as the trunnion. We still have to  
unlock ... I'm not sure because maybe what this  
extra one of these things is - See, it's got to  
have one of these things ... --

05 04 45 26 CDR

Looks like it's been cut in half, too.

05 04 45 29 CMP

...

05 04 45 32 CDR

Yes. ... a zipper pocket. Why don't you put it  
in your zipper pocket down there?

05 04 45 36 CMP

...

05 04 45 37 CDR

Oh, do you? I don't have much in my zipper pocket.  
Give it to me.

05 04 45 41 CMP

...

05 04 45 43 CDR

Here, I'll take that, and let me show you where the  
landmark is; right there, number 11; right there.  
In Mexico, right across the Gulf ...

05 04 45 52 LMP

Can you pick it up on the next REV?

05 04 45 54 CDR

No.

05 04 45 55 CMP

I just copied ...

05 04 45 59 CDR

I tell you what, I'll get a piece of tape and tape  
that to my chain ... the tape. I'll just tape it  
on my chain, here.

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Day 6

431

- 05 04 46 11 CMP ...
- 05 04 46 14 CDR Good, maybe you can help it; it may stop working completely (laughter). Throw me the tape, and I'll tape it up for you. Get out your landmark-track map.
- 05 04 46 21 CMP I don't know where the tape - -
- 05 04 46 22 LMP Hey, Jim.
- 05 04 46 23 CDR Yes.
- 05 04 46 24 CMP Can you ... a second?
- 05 04 46 26 CDR Can I do what?
- 05 04 46 27 LMP Jim, you work your foot loose?
- 05 04 46 28 CDR Yes.
- 05 04 46 34 CMP Let's see: 125:32:16 ... 47 - -
- 05 04 46 40 CDR Hey, you do the landmark tracking - -
- 05 04 46 41 CMP -- ..., 32 and 45 - -
- 05 04 46 46 CDR You start the landmark tracking about 125:40, Dav
- 05 04 47 19 CMP Okay. You start it at 40, you said?
- 05 04 47 23 CDR Yes, just about that time.
- 05 04 47 40 CMP Landmark number 11.
- 05 04 47 49 CDR Hey, Rusty, if you're fooling around down there (laughter) or whatever you're doing, would you break out the other standard Hasselblad, please?
- 05 04 47 59 LMP Where is it?
- 05 04 48 00 CDR I don't have any idea. Oh, that should be in the We didn't leave that in the LM, did we?
- 05 04 48 08 LMP No, we brought it over.
- 05 04 48 10 CDR Okay, then it's in the ISA, and the ISA is at the hatch cover - the tunnel hatch bag. It should be

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- bound underneath my seat, strapped on the bottom of my seat.
- 05 04 48 34 LMP Boy, this damned ... is an impossible container! It sure is - -
- 05 04 48 38 CDR That - that little one down there?
- 05 04 48 39 LMP - - Damn!
- 05 04 48 40 CDR It has to go in there exactly the way it says: front and then the right side up and everything, or you will really get screwed up. You'll get it in, and you won't be able to get it out again.
- 05 04 49 06 LMP Boy! McDivitt, does your corner stink?
- 05 04 49 09 CDR (Laughter)
- 05 04 49 11 LMP Man, oh man!
- 05 04 49 16 CDR Must be from your suit, huh?
- 05 04 49 33 LMP Hey, where's the ... thing, in the L-shaped bag?
- 05 04 49 35 CDR Yes.
- 05 04 49 41 LMP The bottom or top, do you know?
- 05 04 49 42 CDR Oh, no. I'm sorry now. I - I wasn't thinking. I - It's - it should be - Not in the L-shaped bag, it's in the tunnel hatch bag, which is strapped on the bottom of my seat.
- 05 04 50 16 CMP Hey, ...
- 05 04 50 18 LMP Yes, ...
- 05 04 50 22 CMP Give me a minute, and I'll have some calculating, here.
- 05 04 50 26 CDR How are we going to do this? I guess I'll just - -
- 05 04 50 28 CMP Oh, I'll tell you.
- 05 04 50 29 CDR - - point the nose down the track, and - -
- 05 04 50 30 CMP No, no.

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Day 6

433

05 04 50 31 CDR -- pitch down a little bit?  
05 04 50 32 CMP No.  
05 04 50 33 CDR No? Alright. You tell me then.  
05 04 50 35 CMP We've got all that worked out.  
05 04 50 38 CDR Who - who's this "we" jazz?  
05 04 50 41 CMP Come on now. ...  
05 04 50 46 CDR Oh, hell. Would you get me the piece of tape in here, and I'm quite sure that it is. ...  
05 04 51 07 CMP Okay, the - I'll brief you.  
05 04 51 11 CDR Dave, would you give me the tape while you're briefing me?  
05 04 51 13 CMP The tape? I just looked in here and couldn't find it.  
05 04 51 16 CDR Oh, really?  
05 04 51 17 CMP Yes.  
05 04 51 18 CDR I thought sure we put it back in there this morning. I had looked in there once ... But I only went through --  
05 04 51 22 CMP Here's another little piece; here, I'll give it to you.  
05 04 51 24 LMP Okay, I don't need much of a piece.  
05 04 51 26 CMP Jim?  
05 04 51 27 CDR Thank you.  
05 04 51 28 CMP Do you have one?  
05 04 51 30 LMP What?  
05 04 51 31 CMP Tape?  
05 04 51 32 LMP No, no --

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- 05 04 51 33 CMP ... that's okay. Here, Jim.
- 05 04 51 39 CDR Thank you.
- 05 04 51 45 CDR Did you check the optics to see if they weren't around 64.2?
- 05 04 51 50 CMP Yes, it goes all the way.
- 05 04 51 55 CDR I'd like to have a reliable set of optics. It's really no computer ... and I'd like to have the whole thing working.
- 05 04 52 04 CMP Hey - I'll tell you - I'll give you the thing to read that we - that we put together here. But anyway, what you do - We're - we're going to track with the roll-yaw thing. So you get out of plane, below the bull's-eye, and you point - you cock the thing up until you - -
- 05 04 52 18 CDR I thought we were tracking on the in-plane.
- 05 04 52 20 CMP No, no, no, no. We're going to do the roll-yaw.
- 05 04 52 22 CDR Oh, shoot.
- 05 04 52 23 CMP Which is really only roll. It's real easy. You get out of plane - Actually, you end up pitch down below the bull's-eye out of plane - You cock the optics up - -
- 05 04 52 33 CDR Yes, and then we just roll over.
- 05 04 52 35 CMP You just roll. You put in an ORB RATE roll. We could do this with - I'd like to, if, you know, if we get good at it later on, use the ORB RATE thing to see if one guy could do this by himself, when on the moon. You get the spacecraft going in ORB RATE automatically - -
- 05 04 52 52 CDR The yaw - yaw-roll or the - the pitch.
- 05 04 52 58 CMP Why, you could do - you could do - X Y Z ...
- 05 04 53 03 CDR I think it would be easier if one guy were doing it and could use the procedure we just used except for pitch.

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435

- 05 04 53 12 LMP Good point. Good point.
- 05 04 53 16 CMP Yes, but it'd cost more here, too, ...
- 05 04 53 18 CMP Well, anyway -
- 05 04 53 19 CDR Okay. But that's an out-of-plane one; I thought we did anyway with the out-of-plane one when ... and we were only going to do the in-plane one.
- 05 04 53 22 CMP No, we're doing the out-of-plane one, because that was for the LM on.
- 05 04 53 26 CMP Yes.
- 05 04 53 29 CMP Anyway, you get out there, and you just set up a roll rate, and I'll do AUTO OPTICS. And then when I get locked on, you try and reach me in ORB RATE roll, as we come out.
- 05 04 53 40 CDR If I pitch down, I'd ... see the horizon.
- 05 04 53 42 CMP Yes.
- 05 04 53 43 CDR Yes. I -
- 05 04 53 45 CMP Deke and I worked it out once where you just yawed out of plane and pitched down and stayed right below the bull's-eye. And Frank Hughes said that Lovell and Borman had worked one out which you did a little different, which you roll and then pitch out of plane; and, that way, you've got your optics cocked up already which might be a little cheaper.
- 05 04 54 11 CMP You - you roll - You're charging along in plane, heads up; you roll 90 degrees, then you pitch 55 degrees. Then you roll again, you get the optics - zero optics near the horizon. That's all there is to it.
- 05 04 54 34 CDR Oh, you roll - -
- 05 04 54 35 CMP I've never done that, but that sounds like - Why don't you think about it, and do whichever way you think is best? There's - there are two ways. One way, we're applying in plane - -
- 05 04 54 44 CDR Yes.

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05 04 54 45 CMP

-- with an in-plane alignment. One way is to yaw out and pitch down and stay below gimbal lock. The other way is to roll while you're in plane and pitch up 55 degrees, which is not - That keeps you out of gimbal lock, too. Then your optics are cocked, and you have to roll to get the optics line of sight sort of perpendicular to the ground.

05 04 55 07 CDR

Yes, that's no - You end up with you not really being - not having your axis perpendicular to the plane.

05 04 55 13 CDR

Yes, I know it.

05 04 55 15 LMP

You got the plane, like this, in the orbit here, like this. See, the optics really would rotate this way with respect to the plane, if you had a zero trunnion. And, you know --

05 04 55 27 CMP

Yes, you want to have it - you want to start it as near zero as you can.

05 04 55 30 CDR

Yes.

05 04 55 31 CMP

So you have as much articulation on --

05 04 55 34 CDR

Yes.

05 04 55 35 CMP

-- this as you go by.

05 04 55 36 CDR

Seems like you don't want to be pitched down.

05 04 55 38 CMP

I - I - That's what I thought, too, until --

05 04 55 41 CDR

There's 55 degrees.

05 04 55 44 CMP

It seems to me like when you get over the target - you want to be - The target's right down here -

05 04 55 48 CDR

Yes, and we're going this way.

05 04 55 49 CMP

You'd like to be - like this? As you - as you come in to it, you'd sort of like to be like this, so that the optics has a full run. If the target's here, and you're coming around the world like that you know, and then you start your ORB RATE as you get over it. But you do your tracking out here. You only get about 40, 45 seconds, in earth. It

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really goes quick. Once you get the target, man, you really got to get on it. Anyway, think about it; do whichever way --

05 04 56 19 CDR

It almost seems like it's the best way is if the plane were this way - You would bet you ought to be yaw down 90 degrees, pitch down about 30.

05 04 56 28 CMP

Yes.

05 04 56 31 CDR

In other words, you go like this; you're going to have a little more time on your -

05 04 56 35 CMP

Yes, I think that's better, too, but I don't know; it's six of one and half dozen of the other.

05 04 56 40 CDR

Well, listen, if you're through screwing around here, I'll start --

05 04 56 43 CMP

No, I want to run through the program once more.

05 04 56 45 CDR

(Laughter)

05 04 56 48 CMP

A little detail.

05 04 56 49 CDR

Yes, a minor detail.

05 04 56 57 CDR

Okay, I think I'll go ahead and align the GDC here while we're waiting.

05 04 57 02 CMP

Yes, just go to RATE while we're waiting.

05 04 57 34 CDR

Did you find all that stuff, Rusty?

05 04 57 36 LMP

Yes, I'm gradually finding it.

05 04 57 38 CDR

(Laughter) You're running it down. How many cameras --

05 04 57 41 CC

Apollo 9, Houston through Carnarvon. Standing by.

05 04 57 45 CDR

Roger, Houston; Apollo 9 here.

05 04 57 49 CC

Roger. I just wanted to make sure that you got the word that that landmark is 60 miles north of your track.

05 04 57 55 CDR

Roger; 60 miles north. Thank you.

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05 04 58 00 CMP

So that means you're going to have to yaw - yaw left.

05 04 58 03 CDR

Yaw to the left, that's right.

05 04 58 16 LMP

Jim?

05 04 58 17 CDR

Yes.

05 04 58 18 LMP

Can you do something here for me?

05 04 58 24 CDR

That ... little ... go up and go right through that ... found a place I might want to put the camera.

05 04 59 02 LMP

Hey, where do you want to stow this LM data? Why don't we leave it in the ISA? I'd sort of like to sort it out and start thinking about where we're going to put it, so why don't we just leave it there for right now?

05 04 59 12 LMP

Okay.

05 04 59 13 CDR

We've got some other books, and some other LM data books up there, too, that we want to get ...

05 05 00 01 CC

Apollo 9, Houston. 30 seconds LOS; Guam at 07.

05 05 00 06 CDR

Alright, Houston. Okay.

05 05 00 20 CMP

Ow!

05 05 00 42 CDR

Yes, that ought to do it ...

05 05 01 18 LMP

Well, I came up with a conclusion that we've got all the movie film we could possibly use.

05 05 01 26 CDR

Yes. We didn't really get as much stuff done as I had hoped.

05 05 01 34 LMP

Well, I don't think we used as much film getting it done as we hoped - I mean, as we thought.

05 05 01 38 CDR

Yes.

05 05 01 40 LMP

Well, I think we took pictures of everything we planned to.

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- 05 05 02 02 LMP Wow, that fuel cell 2 is really up there now!
- 05 05 02 05 CDR How high is it?
- 05 05 02 13 LMP It's up at 186.
- 05 05 02 20 CDR What's the limit? 220, isn't it? 225?
- 05 05 02 22 LMP I don't know. 200, I guess, or 250; I don't know. They changed it everytime they went up to wherever they had the limit. (Laughter) Oh, goodr
- 05 05 02 51 LMP Hey, we never did chlorinate the water.
- 05 05 02 53 CMP Oh, that's right.
- 05 05 03 00 LMP I think we'll probably live.
- 05 05 03 02 CMP Do you really think so?
- 05 05 03 04 LMP I'm not sure.
- 05 05 03 29 CDR Oh, shoot! Look, I brought another map along just so we'd have another map to look at to tell where we were. It's down in my suit, and I have get it out ...
- 05 05 03 44 CMP Okay, I think I got it squared away.
- 05 05 03 48 CDR Okay.
- 05 05 03 50 CMP I think I got it squared away. Oh, look, there that landmark tracking, landmark ID, control me time required to acquire and identify, comment, coordination of optics and spacecraft motion, Okay. Well, I'll put it in there and hope that AUTO optics drives.
- 05 05 04 10 CDR Hey, does the ... and the mechanical drive ..., does it move now? Is it --
- 05 05 04 15 CMP No, it's still stuck ...
- 05 05 04 25 CMP Oh! Would you believe I just looked in there, I looked right into the sun.
- 05 05 04 31 CDR (Laughter) Yes, I'd believe that because the s just now coming up.

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- 05 05 04 37 CMP Oh, yes.
- 05 05 04 42 CDR Is there a - is there standard down there, too, Rusty? In the ISA?
- 05 05 04 51 LMP Yes, I passed it up!
- 05 05 04 52 CDR Pass me the wide.
- 05 05 04 58 LMP Hey, where in the hell did I put the standard? I got it out.
- 05 05 05 01 CDR You gave me it. Wait a minute now; maybe you didn't. You have a standard over there? Alright, I have a standard over here.
- 05 05 05 05 LMP Yes.
- 05 05 05 06 CDR Okay, I thought you passed me - Okay, then --
- 05 05 05 08 LMP No, I passed you two of them.
- 05 05 05 10 CDR Alright.
- 05 05 05 15 CMP Okay, we got 27 minutes. I think I know - I know what I'm going to do. I want to make five marks, maybe.
- 05 05 05 35 CDR I guess I might as well take sunrise photo for the flight.
- 05 05 05 52 CDR (Singing) ... Oh, it looks ... 15.
- 05 05 06 10 CMP Hey, maybe you guys want to take a - No, you won't be able to see it. Oh, I bet you will after -
- 05 05 06 15 CDR The what?
- 05 05 06 16 CMP Pictures of this place.
- 05 05 06 18 CDR No, we won't be able to see it.
- 05 05 06 20 CMP Hey, listen. I guess - What you want to do - is - What are you going to do now? You're going to -
- 05 05 06 26 CDR I'm going to pitch around, and I'm going to try and get down below the ball.

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- 05 05 06 29 CMP Yes.
- 05 05 06 30 CDR Okay, now the thing that - the thing that's going to be tough is to be able to tell exactly where I am in roll.
- 05 05 06 36 CMP Yes, I know it. How are you going to do that?
- 05 05 06 38 CDR I'm going to be pitch down, I'm going to try to look out the window, and I'm going to try to get -
- 05 05 06 41 CMP You ought to be able to shoot a horizon.
- 05 05 06 42 CDR Yes. That's why I'm going to - that's why I want to go on over there and pitch down.
- 05 05 06 45 CMP You want to be cocked up so that your Z-axis - -
- 05 05 06 49 CDR Look out the window right now.
- 05 05 06 58 CMP Yes.
- 05 05 06 59 CDR Okay, you want to be something like that.
- 05 05 07 01 CMP ... but you're in plane now.
- 05 05 07 03 CDR Yes, I know, but I want to be out of plane - -
- 05 05 07 04 CMP Out of plane.
- 05 05 07 05 CDR - - pitch down, and roll - -
- 05 05 07 06 CMP Just like that; yes, that looks like that would be good. Yes, and then you're going to start - When we get there, you start a roll right.
- 05 05 07 16 CDR Left. Right - -
- 05 05 07 19 CMP Roll right, but don't start to roll right - -
- 05 05 07 21 CDR - - until you get the - -
- 05 05 07 22 CMP - - until I say - -
- 05 05 07 23 CDR - - say to roll right.
- 05 05 07 25 CMP - - that we're getting there.

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05 05 07 27 LMP

That ought to be exciting! ...

05 05 07 29 CDR

(Laughter)

05 05 07 32 CMP

Do you feel like you're a guinea pig to a - You know, here we practice for all this stuff, that we're really going to do, and we've done it all; and now we've got to stumble through this other stuff like a bunch of stumblebums.

05 05 07 44 CC

Apollo 9, Houston through Guam.

05 05 07 47 CDR

Go ahead, Houston. This is Apollo 9.

05 05 14 10 CC

9, Houston. We'd like to verify that you are in PRIMARY and not NORMAL when you went through block 4.

05 05 14 18 CDR

Oops, I beg your pardon; I was in NORMAL.

05 05 14 23 CMP

I'll go to - I'll go PRIMARY for you, and do it.

05 05 14 25 CC

Roger.

05 05 14 27 CDR

... MASTER ALARM ...

05 05 14 52 CC

9, Houston. If you can hold off there, we're about LOS. We'll catch you first time in Hawaii on that.

05 05 15 01 CMP

Roger. I've got the data now, if you'd like it.

05 05 15 46 CDR

Are you eating again?

05 05 15 56 CDR

Now I know why you go down there into the lower equipment bay. All the time, I thought you were down there taking ...; you're down there eating.

05 05 16 03 LMP

Man, I get hungry.

05 05 16 04 CDR

You're really a nice guy. Sneak out on your buddies and eat.

05 05 16 08 LMP

It's the only way I ever get to eat in this outfit.

05 05 16 29 CMP

I hope it isn't cloudy.

05 05 16 31 LMP

No, it was nice and clear down there, Dave.

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05 05 16 50 CMP

They kind of like the sun-glint pictures, don't they?

05 05 16 53 CDR

Yes, as a matter of fact, they do.

05 05 16 54 LMP

No, you guys, don't use them all up. Wait until we get to a higher orbit. That's prettier up there.

05 05 17 00 CDR

How many pictures did we decide we had, Rusty?

05 05 17 03 LMP

I can't tell because Dave has the procedures book.

05 05 17 05 CDR

You done with the procedures book, Dave?

05 05 17 07 CMP

No, I'm just getting ready to start using it now.

05 05 17 08 CDR

Yes, okay.

05 05 17 09 CMP

Listen, without this crutch over here - Why, landmark tracking would be a zero; it probably will be a zero anyway.

05 05 17 40 CDR

Let's see; those quads we were supposed to use were A and D, weren't they? A and D. B OFF, C OFF, D OFF, A ON.

05 05 18 09 CMP

Got to hurry. I'm making myself nervous.

05 05 18 17 CDR

Making me nervous.

05 05 18 20 CMP

I don't mind your ... I know how to do that.

05 05 18 23 CDR

(Laughter)

05 05 19 00 CMP

How about that? Actually, the son of a gun is really smart!

05 05 19 08 CDR

Don't do that; I was - I was moving towards gimbal lock, and all of a sudden, bang, there it is; you know, and I - Oh, shoot!

05 05 19 17 CMP

Where are we? Over the Pacific, aren't we?

05 05 19 19 CDR

Right.

05 05 19 20 CMP

Have you rolled up yet to clock yourself?

05 05 19 22 CDR

No, I haven't, Dave. I'm still horizontal.

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- 05 05 19 26 CMP Okay. Got 12 minutes. If you do that, I can --
- 05 05 19 29 CDR 12 minutes for what?
- 05 05 19 30 CMP Until we start - mark it.
- 05 05 19 33 CDR No, we don't.
- 05 05 19 34 CMP Yes. We sure do.
- 05 05 19 37 CDR What time do we start marking? I thought it was at about 40. 125 --
- 05 05 19 40 CMP No, 32. The pad was at 32.
- 05 05 19 43 CDR Oh, okay. (Yawn) You have ...
- 05 05 19 45 CMP Yes, that's out of the field of view.
- 05 05 19 47 CDR Oh.
- 05 05 19 49 CMP Several times. Steady, steady according to R-3.
- 05 05 21 11 LMP It's cloudy again.
- 05 05 21 12 CMP Yes, so far. Hey, which way do we go? We're going to the right, huh? I mean I hate to tell you what we're coming up with. Lots of more clouds.
- 05 05 21 23 CDR Yes. It was clear over Baja this morning, so - As a matter of fact, it was clear over on the other side, too.
- 05 05 21 35 CMP Do you remember what time that last pass was over the - What time did we start that other thing?
- 05 05 21 45 LMP 124:00:20 - Something - It was 124:03:48 that they wanted me to ... my update.
- 05 05 22 05 CMP We got a long way to go, Jim, in roll.
- 05 05 22 08 CDR Right.
- 05 05 22 11 CMP I'd really like to be seeing the horizon.
- 05 05 22 12 CDR Okay, can we get them over there --
- 05 05 22 13 CMP Yes.

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05 05 22 14 CDR

We're coming up on that right now.

05 05 22 16 CMP

Okay.

05 05 41 29 CDR

Yes, it doesn't make any difference whether you can hear it or not.

05 05 41 41 CMP

Quarter of 4 ... which way is the land here?

05 05 41 45 CDR

It's ... back that way.

05 05 41 50 CMP

You see the Panama Canal?

05 05 41 54 CDR

(Laughter)

05 05 41 55 LMP

We must be close to it; I think we might have passed it.

05 05 41 59 CMP

Do you know - do you know - Did we go across Venezuela or something?

05 05 42 04 LMP

... you want to get it locked to target, Dave?

05 05 42 16 CDR

Yes. No, actually, when you were doing that, I didn't - didn't know what to do, so I was just looking out the window here, and pretty soon - out here - pretty soon I saw the - coastline come up and ... the distance from Baja and the Gulf ... are really quite low, but I couldn't see - I couldn't see the Gulf so we could ... pass it. By then you were - I might have -

05 05 42 44 CMP

... would have had the marks long before this --

05 05 42 46 CDR

I needed you to tell me whether to roll fast or not, because - we - When we're cocked up like this I can't see down through that way.

05 05 42 51 CMP

Well, did you hear me marking?

05 05 42 53 CDR

Yes.

05 05 42 54 CMP

... just perfect. I was right on it. But then, it disappeared; I took about one ...

05 05 43 02 CDR

Okay, well, by then, see, I had - I had started about a half-a-degree-per-second roll, because it didn't ...

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- 05 05 43 08 CMP That was fine; that was just right.
- 05 05 43 10 CDR But I should have started a little earlier --
- 05 05 43 13 CMP Yes, probably a little -
- 05 05 43 14 CDR -- because, as we came across - See, I thought you were looking instead of being right there. You were still over like this. And that's when I started rolling.
- 05 05 43 25 CMP Yes.
- 05 05 43 28 CDR I couldn't even tell you how far ... whether it was the optics or the spacecraft, because I was having trouble getting on to target.
- 05 05 43 35 CMP Yes.
- 05 05 43 36 LMP ... the optics or the ...
- 05 05 43 44 CDR Are we pointed down at the ground now?
- 05 05 43 46 CMP Yes, just about.
- 05 05 43 47 LMP ... my side is.
- 05 05 43 50 CMP And I tracked - two sets of ...
- 05 05 43 56 CDR You tracked what?
- 05 05 43 57 CMP Two sets of ... as you were coming across it. That's the ... track I've seen ... --
- 05 05 44 02 LMP I know, --
- 05 05 44 03 CMP -- which is the ...
- 05 05 44 04 LMP -- but it worked fine on the clouds.
- 05 05 44 07 CMP It's way off on the state vector ... Quite a ways off from the target.
- 05 05 44 13 LMP Oh, yes.
- 05 05 44 14 CMP AUTO OPTICS, yes. ... This big island, really ... and ... the target ... It's as far from the target

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over here as that island. It seems to me, I got to give you a state vector up there.

- 05 05 44 35 CDR Ohh, let's see. Is there a scale on here anywhere?
- 05 05 44 40 CMP No. ...
- 05 05 44 48 LMP 89.
- 05 05 44 50 CDR What?
- 05 05 44 51 CMP Pretty far off.
- 05 05 44 52 CDR Pretty far off. Oh, shit, I'm going to have to waste some fuel here or go into gimbal lock.
- 05 05 45 03 IMP ...
- 05 05 45 04 CDR Oh, we don't go to drifting flight until 127 ... Power down spacecraft at 127. And a filter change.
- 05 05 45 21 CMP Oh, look at that funny-looking planet. My God! ...
- 05 05 45 28 CDR ... hold up, Dave. Hmm. I'll be darned.
- 05 05 45 34 CMP It's like a great big round cloud with a peak in the middle. Looks like a mountain.
- 05 05 45 41 CDR Well, shoot, I hate to waste that gas, ...
- 05 05 45 47 CMP You don't use much though.
- 05 05 45 51 CDR ... Matter of fact, I did all of that in B - B roll - or B roll. I only had 6 seconds and I had B-1 and B - two B-roll thrusters on, and two A-pitch thrusters on, and two yaw-B thrusters on.
- 05 05 46 10 CDR I think B is so hard to ...
- 05 05 46 20 CDR Where is that update book that has the consumable redlines here?
- 05 05 46 29 LMP It's in the update pad; I don't know where that is.
- 05 05 46 37 CMP ... look at the map, Jim.
- 05 05 46 39 CDR Do what?

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- 05 05 46 40 CMP ... map?
- 05 05 46 43 CDR Get out the other map, too, so ... map ...
- 05 05 46 52 CMP Probably too far off now. Oh, I see, I was going down the south of coast - coast of South America, that's what I was doing.
- 05 05 47 00 CDR I think we're in the other orbit there.
- 05 05 47 03 CMP Oh, okay. I was going across the middle of South America.
- 05 05 47 08 CDR Oh, did you get that far, David?
- 05 05 47 10 CMP Oh, shoot, I guess I better go ahead and ... Oh, I got a - a thought. Maybe we ought not to power the IMU down.
- 05 05 47 22 CDR Why?
- 05 05 47 28 CMP I'm not sure I can do a P51 with ...
- 05 05 47 33 CDR Well, I'm pretty sure you can't. I guess we could always maneuver the spacecraft. ... the shaft and the ...
- 05 05 47 46 CMP No, you go to - to zero.
- 05 05 47 49 CDR Yes, that's a good idea.
- 05 05 47 50 CMP Just go to zero.
- 05 05 47 51 CDR Yes, okay. We got a couple or three REV's before that.
- 05 05 48 13 CDR (Singing)
- 05 05 48 18 CMP Rusty.
- 05 05 48 19 LMP Yes. Yes, what?
- 05 05 48 24 CMP Nothing. ... those clouds.
- 05 05 48 30 LMP Yes, they're broken clouds.
- 05 05 48 31 CDR You got some more on landmark tracking tomorrow, Dave.

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- 05 05 48 34 CMP Yes. I was just ...
- 05 05 48 36 CDR Matter of fact, you have all the time. Holy Christmas, you do the landmark tracking all day long tomorrow!
- 05 05 48 41 CMP Yes?
- 05 05 48 42 CDR Yes!
- 05 05 48 43 LMP Yes, I thought they said today's was for ... Look, we're right down on top of a thunderstorm down there.
- 05 05 48 49 CDR Man, we really do it tomorrow: P51, ... the update, P52, landmark tracking, ..., landmark tracking, P52, landmark tracking, P52, landmark tracking --
- 05 05 49 07 LMP ...
- 05 05 49 08 CDR -- landmark tracking, P52, landmark tracking --
- 05 05 49 10 LMP (Laughter)
- 05 05 49 18 CMP Shoot, all we're doing now is going around here trying to - Shit, I want to look for a while.
- 05 05 49 23 CDR Yes. Let's just do that. Let's just take an hour out for looking.
- 05 05 49 26 CMP Where is that big map?
- 05 05 49 27 LMP Right here.
- 05 05 49 29 CDR Let's see if we can get a map update. Dave, drive the boat - drive the boat for a while just to see if we get a gimbal lock. Let me go down and get the other map - I was going to throw out the weather map. I said, "No, don't do that; put it in my pocket." We've still got the SO 65 ...
- 05 05 49 42 CMP ... No, we determine the landmarks, yet.
- 05 05 49 46 LMP Do we?
- 05 05 49 47 CMP Yes, we got a great big world map.

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