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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
APOLLO 16

APRIL 16 LAUNCH

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CHANGE A
FLIGHT PLAN

PREPARED BY
FLIGHT PLANNING BRANCH
CREW PROCEDURES DIVISION

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MARCH 27, 1972



APOLLO 16

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FLIGHT PLAN

CHANGE A

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ACKNOWLEDGMENTS

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The CSM and LM Attitude information was taken from the document, "Operational Lunar Orbit Attitude Sequence for Apollo 16, (Mission J-2)" to be published.

Consumable Analysis data were prepared by the Consumables Analysis Section of the Mission Planning and Analysis Division.

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ABBREVIATIONS

ABB	abbreviation or abbreviated
AC	alternating current
ACCEL	accelerometer
ACN	Ascension
ACT	activation
ACQ	acquisition or acquire
ADAPT	adapter
AEA	abort electronics assembly
AGS	abort guidance subsystem
AH	ampere-hours
ALSCC	Apollo lunar surface close-up camera
ALSD	Apollo lunar surface drill
ALSEP	Apollo lunar surface experiment package
ALT	altitude
ALTM	altimeter
AM	amplitude modulation
AMP or amp	amperes
AMPL	amplifier
ANG	Antigua
ANT	antenna
AOH	Apollo Operations Handbook
AOL	Atlantic Ocean line
AOS	acquisition of signal or acquisition of site
AOT	alignment optical telescope
AP	alpha particle spectrometer
APS	ascent propulsion subsystem
ARIA	Apollo range instrumentation aircraft
ARS	atmosphere revitalization system
ASC	ascent
A/T	alignment technique
ATT	attitude
AUX	auxiliary
AZ	azimuth
BAT	battery
BEF	blunt end forward
BD	band
BDA	Bermuda
BIOMED	bio-medical data
BKWD	backward
BMAG	body mounted attitude gyro
BP	barber pole
BRKT	bracket
BSLSS	buddy secondary life support system
BT	burn time
BU	backup

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ABBREVIATIONS (CONT)

BW	black and white (Film 3400)
BWD	backward
BW1	black and white (Film 3401)
CAP COM	capsule communicator
CAL	calibration
CAMR or CAM	camera
CARR	carrier
CB or cb	circuit breaker
CCGE	cold cathode gage experiment
CCIG	cold cathode ion gage
CCU	Comm carrier umbilical
CCW	counter clockwise
CDH	constant delta altitude
CDR	Commander
CDU	coupling data unit
CEX	color exterior(SO-368)
CIN	color interior(SO-168)
CIRC	circulation
CK	check
CKT	circuit
C/L	centerline or checklist
CM	command module
CMC	command module computer
CMD	command
CMP	Command Module Pilot
CNTL	control
C/O	check out
COAS	crew optical alignment sight
COMM	communications
CONFIG	configuration
COMP	compare or compensate
CONT	continue or contingency
CP	control point
CPLLEE	charged particle lunar environment experiment
CRO	Carnarvon, Australia
CRYO	cryogenic
CS	contingency sample
CSI	coelliptic sequence initiation
CSM	command and service modules
CST	central standard time
CSVC	core sample vacuum container
C/S	central station
CTR	center
C&WS	caution and warning system
CW	clockwise
CWEA	caution and warning electronics assembly

ABBREVIATIONS (CONT)

CWG	constant wear garment
CYI	Grand Canary Island
DAC	data acquisition camera
DAP	digital auto pilot
DB	deadband
DC	direct current or data camera (70mm.)
DC5	500mm data camera/lens
DCA	digital command assembly
DCC	Commander's data camera
DCL	Lunar Module Pilot's data camera
DECON	decontamination
DEDA	data entry and display assembly
DEG	degrees
DEPL	depletion
DES	descent
DET	digital event timer
DIFF	difference
DIR	direct
DK	docked
DO	detailed objective
DOI	descent orbit insertion
DPLY	deployment
DPS	descent propulsion system
DR	door
DRT	dome removal tool
DS	documented sample
DSCRM	discreminator
DSE	data storage equipment (CSM)
DSEA	data storage equipment assembly (LM)
DSKY	display and keyboard
DSM	deep space measurement
DTO	detailed test objective
DUA	digital uplink assembly
DWN	down
E	erasable or enter
ECS	environmental control system
ED	explosive device
EDT	eastern daylight time
EFH	earth far horizon
EI	earth (atmosphere) interface and entry interface
EKG	electrocardiogram
EL	electric Hasselblad camera
ELECT	electrical
ELEV	elevation

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ABBREVIATIONS (CONT)

EMER	emergency
EMS	entry monitor system
EMU	extravehicular mobility unit
ENG	engine
ENH	earth near horizon
ENT	entry
E.O.	earth orbit
EOM	end of mission
EPO	earth parking orbit
EPHEM	Ephemeris
EPS	electrical power subsystem
EQUIP	equipment
ERECT	erectable
ERR	error
EST	eastern standard time
ETB	equipment transfer bag
EV	extravehicular
EVA	extravehicular activity
EVAP	evaporator
EVCS	extravehicular communications system
EVT	extravehicular transfer
EXP	experiment
EXT	external
EXTD	extend
f	f-stop
FAM	familiarize or familiarization
FC	fuel cell
FCS	fecal containment system
FDAI	flight director attitude indicator
FLT	flight
FM	frequency modulated
FOV	field of view
FPS	feet per second
fps	frames per second
FR	frame(s)
FREQ	frequency
FT or ft	feet
FTO	flight test objective
FTP	full throttle position
FTT	fuel transfer tool
FWD	forward
G.A.	gas analysis
GA	gimbal angle
GAL	galactic
GBI	Grand Bahama Islands

ABBREVIATIONS (CONT)

GBM	Grand Bahama (MSFN)
GDC	gyro display coupler
GDS	Goldstone, California
GET	ground elapsed time
GETI	ground elapsed time of ignition
GETIL	ground elapsed time of landing for TIG time of abort burn
GLY	glycol
GMT	Greenwich mean time
G&C	guidance and control
G&N	guidance and navigation
GNCS	guidance, navigation and control system (CSM)
GR	gamma ray spectrometer
GWM	Guam
GYM	Guaymas, Mexico
H ₂	hydrogen
HA	apogee altitude
HAW	Hawaii
HBR	high bit rate (TLM)
HBW	high speed black and white film
HD	highly desirable
HDC	hasselblad data camera
HFE	heat flow experiment
HGA	high-gain antenna
HI	high (switch position)
HOR	horizon
H ₂ O	water
HP	perigee altitude
HR	hour(s)
HSB	helmet stowage bag
HSK	Honeysuckle (Canberra, Australia)
HTC	hand tool carrier
HTR	heater
HTV	USNS Huntsville
ICDU	inertial coupling data unit
ID	identification
ICG	inflight coverall garment
ICS	intercomm system
IGA	inner gimbal angle
IGN	ignition
IMC	image motion compensation
IMU	inertial measurement unit
INCR	increase
IND	indicator
INIT	initialization
INT	interval

ABBREVIATIONS (CONT)

IP	initial point
ISA	interim stowage assembly
ISS	interim stowage shelf
IU	instrumentation unit
IVC	intervehicular communications
IVL	intervalometer
IVT	intravehicular transfer
iR	inclination of the ascending return
JETT	jettison
KA	kilogram
KM	kilometer
kwh	kilowatt hour
LA	launch azimuth or laser altimeter
LAT	latitude
LBLR	low bit rate (TLM)
LB or 1b	pound(s)
LCG	liquid cooled garment
LCRU	lunar communications relay unit
L/D	lift/drag
LD	lunar day (TV lens)
LDG	landing
LDMK	landmark
LEB	lower equipment bay
LEC	lunar equipment conveyor
LEVA	lunar extravehicular visor assembly
LFH	lunar far horizon
LGC	LM guidance computer
LH	left-hand
L/H	local horizontal
LHEB	left-hand equipment bay
LHFEB	left-hand forward equipment bay
LHSSC	left-hand side storage container
LiOH	lithium hydroxide
LLM	lunar landing mission
LLOS	landmark line of sight
LM	lunar module
LMP	Lunar Module Pilot
LNH	lunar near horizon
L/O	lift-off
LOD	lunar orbit docked
LOI	lunar orbit insertion
LONG	longitude

ABBREVIATIONS (CONT)

LOS	loss of signal or loss of site
LPD	landing point designator
LPO	lunar parking orbit
LPM	lunar portable magnetometer
LR	landing radar
LRRR or LR3	laser ranging retro-reflector
LRV	lunar roving vehicle
L/S or LS	landing site or lunar surface
LSM	lunar surface magnetometer
LT	light
LTG	lighting
LUB	lubrication
LV	launch vehicle
L/V	local vertical
LVPD	launch vehicle pressure display
 M	 mandatory
MAD	Madrid, Spain
MAG	magazine (camera)
MAN	manual
MAX	maximum
MAX Q	maximum dynamic pressure
MBW	medium black and white film
MC	mapping camera
MCC	midcourse correction
MCC-H	Mission Control Center - Houston
MDC	main display console
MEAS	measurement
MED	medical
MEED	microbial ecology evaluation device
MESA	modular experiment stowage assembly
MET	mission event timer
MGA	middle gimbal angle
M/I	minimum impulse
MIN	minimum or minutes(s)
MIR	mirror
MLA	Merrit Island, Florida, launch area
mm or MM	millimeter
MNA or MNB	main electrical bus A or B
MNVR	maneuver
MON	monitor
MONO	monaural
MPL	mid-Pacific line
MPS	main propulsion system
M/R	mixture ratio (fuel to oxidizer)

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ABBREVIATIONS (CONT)

MS	mass spectrometer
MSFN	Manned Space Flight Network
MSO	mass spectrometer outgassing
MTN	motion
MTVC	manual thrust vector control
MULT	multiplier
N ₂	nitrogen
NAV	navigation
NEG	negative
NK	Nikon camera
NM	nautical miles
NO.	number
NOM	nominal
NXX	Noun XX
O ₂	oxygen
OBS	observation
O/F	oxidizer to fuel ratio
OGA	outer gimbal angle
OID	octal identifier
OMNI	omnidirectional antenna
OPR	operate
OPS	oxygen purge system
OPT	option
ORB	orbital
ORDEAL	orbit rate display earth and lunar
ORIENT	orientation
OVBD	overboard
OVHD	overhead
P	pitch or program
PAD	voice update
PAN	panoramic
PART	particle
PCM	pulse code modulation
PC	plane change or chamber pressure
PDI	powered descent initiation
PER or PC	Pericynthion
PGA	pressure garment assembly
PGNCS	primary guidance, navigation and control system (LM)
PGNS	primary guidance navigation system (LM)
PHOTO	photograph
PIPA	pulse integrating pendulous accelerometer
PKG	package

ABBREVIATIONS (CONT)

PKS	Parks, Australia
PLSS	portable life support system
PM	phase modulated
POL	polarity or polarizing
POS	positive
PRD	personal radiation dosimeter
PREF	preferred
PREP	preparation
PRESS	pressure
PRIM	primary
PROP	proportional
PRN	pseudo random noise
PRPLNT	propellant
PSE	passive seismic experiment
PSIA	pounds per square inch absolute
PSID	pounds per square inch differential
PSIG	pounds per square inch gage
PT	point
PTC	passive thermal control
PTT	push to talk
PU	propellant utilization
PUGS	propellant utilization gaging system
PWR	power
PXX	Program XX
PYRO	pyrotechnic
QTY	quantity
QUAD	quadrant
R	roll or range
R&B	red and blue
RAD	radiator, radial, or radiation
RCDR	recorder
RCS	reaction control system
RCU	remote control unit
RCV	receiver
REACQ	reacquire
REFSMMAT	reference stable member matrix
REG	regulator
REL	release
REQD	required
RETR	retract
REV	revolution
RH	right-hand
RHC	rotational hand controller
RING	ringsight
RLS	radius of landing site

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ABBREVIATIONS (CONT)

RMT	remote
RNDZ	rendezvous
RNG	range or ranging
ROD	rate of descent
RR	rendezvous radar
RSI	roll stability indicator
RSLV	resolver
RT	realtime
RTC	realtime command
RTG	radioisotope thermoelectric generator
RXX	Routine XX
SA	shaft angle
SATT	satellite
S-BD	S-BAND
SC	spacecraft
SCE	signal conditioning equipment
SCS	stabilization control system
SCT	scanning telescope
SE	southeast or subearth
SEC	secondary
SECO	S-IVB engine cutoff
SECS	sequential events control system
SEF	sharp end forward
SEL	select
SEP	separate
SEQ	sequence
SEVA	standup extravehicular activity
SIDE	suprathermal ion detector experiment
SII	Saturn II (second stage)
SIM	scientific instrument module
S-IVB	Saturn IVB(third stage)
SLA	service module LM adapter
SLOS	star line-of-sight
SM	service module
SPECT	spectrometer
SPOT	spot meter
SPS	service propulsion system
SR	sunrise
SRC	sample return container
SRX	S-Band receiver mode no. X
SS	sunset or subsolar
STBY	standby
STDN	Spaceflight Tracking and Data Network (formerly MSFN)
STX	S-Band transmit mode no. X

ABBREVIATIONS (CONT)

SUBSAT	subsatellite
S.V.	state vector
SW	switch
SWC	solar wind composition
SWE	solar wind experiment
SXT	sextant
SYS	system
T EPHEM	time of Ephemeris update
TA	trunnion angle
TAN	Tananarive, Madagascar
TB	time base or talkback
TCA	time of closest approach
TD	touchdown
T&D	transposition and docking
TD&E	transposition docking and LM ejection
TDS	thermal degradation sample
TEC	transearth coast
TECH	technique
TEI	transearth injection
TEMP	temperature or temporary
TERM	terminate
TEX	Corpus Christi, Texas
TGT	target
THC	translation hand controller
TIG	time of ignition
TLC	translunar coast
TLI	translunar injection
TLM or TM	telemetry
TPF	terminal phase final
TPI	terminal phase initiation
TPM	terminal phase midcourse
T/R	transmitter/receiver
TRANS	translation
TRK	track or tracking
TRUN	trunnion
TSB	temporary stowage bag
TV	television
TVC	thrust vector control
TWR	tower
UCTA	urine collection transfer assembly
UHT	universal hand tool
ULL	ullage
UMB	umbilical

ABBREVIATIONS (CONT)

UNBAL	unbalance (meter)
UNDK	undock
US	United States
UV	ultraviolet
V	velocity
VG _{IMU}	velocity to be gained as related to IMU orientation
VGX	velocity to be gained (X-body axis)
VGY	velocity to be gained (Y-body axis)
VGZ	velocity to be gained (Z-body axis)
VR	resultant velocity
VX	velocity along the X-axis
VY	velocity along the Y-axis
VZ	velocity along the Z-axis
VAN	USNS Vanguard
VHBW	very high speed black and white film (2485)
VHF	very high frequency
VLV	valve
VOX	voice keying
VXX	Verb XX
W	Watts
WRT	with respect to
X	time of closest approach (symbol)
XDOT	rate of change along the X-axis
XFER	transfer
XMIT	transmit or transmitter
XPNDER	XPNDRtransponder
Y	yaw
YDOT	rate of change along the Y-axis
ZDOT	rate of change along the Z-axis
ZPN	impedance pneumogram
ΔH	altitude change (difference)
ΔP	pressure change (difference)
ΔR	position change (difference)
ΔV	velocity change (difference)
ΔVC	velocity change at engine cutoff
ΔVT	velocity change loaded pre-burn
#	frame number(s) (for camera data)
Ø	latitude
λ	longitude

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PHOTOGRAPHIC NOMENCLATURE

AAA/BBB/CCC/DDD - EEE, EEE, (fGG, HHH, III) JJ fps or DJ FR (KK% MAG)

AAA - Location from which photography is to be accomplished

BBB - Camera

CCC - Lens

DDD - Film Type

EEE - Photography aids (i.e., brackets, intervalometer, mirror, etc.)

fGG - Lens Aperture Setting

HHH - Shutter Speed

III - Focus Distance in Feet

JJ - Number of frames for DC, EL & NK cameras

JJ - Frame Rate for the DAC only

KK - Magazine percent for the DAC only

CODE EXAMPLE:

1. CM4/DAC/18/CEX-BRKT, SPOT (S,1/250, ∞) 12 fps (50% MAG)

Meaning: Photos are taken from CM right hand rendezvous window using the DAC with .18mm lens and S0368 film. The camera will be bracket mounted with the following camera settings: f-stop from spotmeter reading, shutter speed 1/250 of a second, focus at infinity, 12 frames per second, 50% MAG.

2. CM4/EL/80/BW-BRKT, IVL (f5.6,1/250, ∞) 10 FR

Meaning: Photos are taken from CM right hand rendezvous window using the Electric Hasselblad camera with the 80mm lens and black & white film (3400). The camera will be bracket mounted with the following settings: f-stop (aperture) f5.6, shutter speed 1/250, and focus at infinity. The operation of the shutter will be controlled by the intervalometer. Ten frames have been allotted for this sequence.

CAMERA LOCATIONSCOMMAND MODULE

CM-1	LH Side Window
CM-2	LH Rendezvous Window
CM-3	Hatch Window
CM-4	RH Rendezvous Window
CM-5	RH Side Window

LUNAR MODULE

LM-1	LH Window
LM-2	Docking Window
LM-3	RH Window

CAMERA MOUNTSCSM

Electric Hasselblad (EL) +X axis +12°

Electric Hasselblad (EL) normal to RH Side Window

Data Acquisition Camera (DAC) with right angle mirror +X axis

Data Acquisition Camera (DAC) with SXT Adapter - same as SXT shaft & trunnion.

Data Acquisition Camera (DAC) with right angle mirror rotated 180° looking aft out RH side window.

NIKON (NK) Two positions

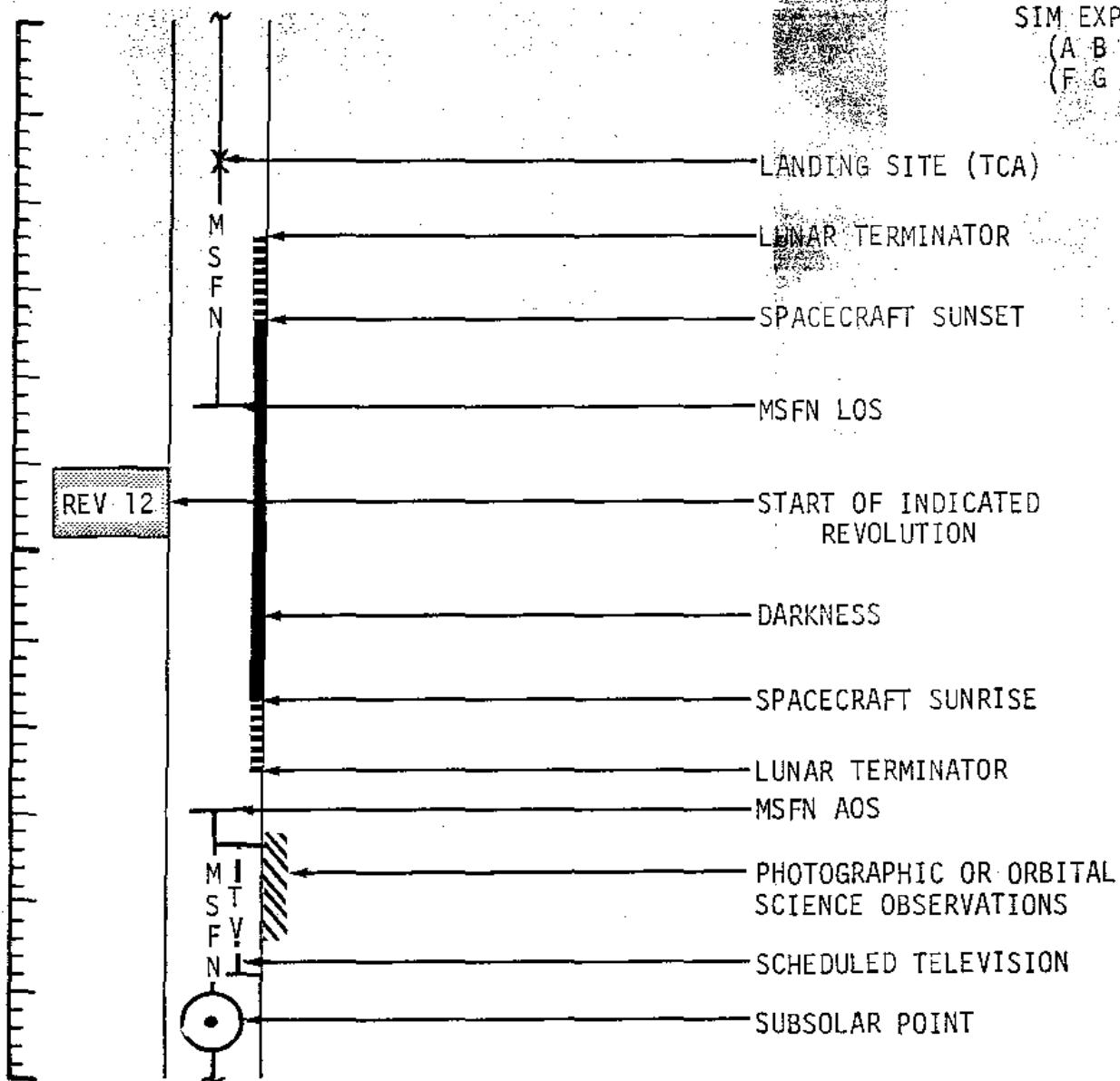
parallel to +X axis

+X axis +30°

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SYMBOL NOMENCLATURE



SIM EXP STATUS
(A B C D E)
(F G H I J)

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SCIENTIFIC INSTRUMENT MODULE
EXPERIMENT STATUS CODE

EXP STATUS CODE

A	B	C	D	E
SIM ATT	MAP CAMR (Cover/Position)	GAMMA RAY BOOM	MASS SPECT BOOM	ALPHA/X-RAY COVER
+ X FWD	0 CLOSED	0 RETR	0 RETR	0 CLOSED
- X FWD	1 OPEN/EXTD	1 DPLY	1 DPLY	1 OPEN
* NON SIM	2 OPEN/RETR	2 PARTIAL	2 PARTIAL	
F	G	H	I	J
PAN CAMR	MAP CAMR/ LASER ALTM	GAMMA RAY EXP/SHIELD	MASS SPECT EXP/ION SOURCE	ALPHA/X-RAY
0 OFF	0 OFF/OFF	0 OFF	0 OFF/OFF	0 OFF/OFF
1 STBY	1 STBY/OFF	1 ON/OFF	1 STBY/OFF	1 OFF/STBY
2 ON	2 ON/ON	2 ON/ON	2 ON/ON	2 ON/ON
3 BOOST	3 STBY/ON	3 ON/STBY	3 ON/STBY	3 OFF/ON
	4 ON/OFF	4 STBY/STBY	4 STBY/STBY	4 ON/STBY
	5 ON (IMC OFF)/OFF			

SIM EXP STATUS

(ABCDE)
(FGHIJ)

SECTION 1 - FLIGHT PLAN NOTES

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1-1

FLIGHT PLAN NOTES

I. Crew

- A. Crew designations are as follows:

<u>Designation</u>	<u>Prime</u>	<u>Backup</u>
Commander (CDR)	Young	Haise
Command Module Pilot (CMP)	Mattingly	Roosa
Lunar Module Pilot (LMP)	Duke	Mitchell

- B. The nominal CM couch positions are:

<u>Activity</u>	<u>Left</u>	<u>Center</u>	<u>Right</u>
Launch thru TLI	CDR	CMP	LMP
T&D thru Entry	CMP	CDR	LMP

- C. The PGA's are worn as shown in Table 2-1.

- D. The crew biomedical harness and sensor wearing schedule is shown in Table 2-2.

- E. A crew status report containing the following information for each crewman is voiced to MCC-H after each crew sleep period:

1. Radiation - Personal Radiation Dosimeter (PRD) readout.
2. Food - all menu items not consumed and all pantry snack items eaten.
3. Sleep - estimated sleep quantity and quality.
4. Medication - All medications taken.
5. Medical Observation - commentary solicited on health status, adaptation to spaceflight, medical hardware performance, etc.

- F. Negative reporting is used in reporting completion of each checklist.

- G. All onboard gauge readings are read directly from the gauges with no calibration bias applied.

II. CSM Systems

A. Communications

1. The preferred S-Band communication modes are:
 - (a) Uplink Mode 6 (Voice, PRN, and Updata)
 - (b) Downlink Mode 2 (Voice, PRN, TLM-HBR)
2. VHF Duplex B is used for launch, and Simplex A is used for earth-orbit operations.
3. Table 2-3 summarizes the MSFN coverage available for the CSM.
4. Table 2-4 contains a summary of the scheduled CSM & LM TV transmissions.
5. MCC-H switches OMNI antennas during TLC PTC periods, OMNI and HGA during TEC PTC periods. The crew manages antenna operations during all other TLC and TEC periods.
6. The HGA will be managed by the crew and MCC-H in order to minimize SIM bay experiment data loss at AOS and LOS while in Lunar orbit during awake periods. Data System will be controlled by MCC-H after the initial turn-on during TLC.

B. DSE

1. During the earth-orbit phase, the CSM LBR data is recorded when the CSM is not within MSFN coverage. The DSE is dumped during the pass over the US prior to TLI if possible.
2. CSM LBR data will be recorded during all P24 landmark tracking.
3. CSM HBR will be recorded during Launch, TLI, SIVB/CSM SEP, TD&E, all CSM SPS maneuvers, Sim Door Jettison, docking, undocking, and LM Final Separation.
4. LM LBR data will be recorded during MSFN LOS periods between LM comm activation and PDI.
5. All entry data will be recorded in HBR during the blackout.

C. Electrical Power

1. The CSM normally remains powered up throughout the mission.
2. Table 2-5 lists the fuel cell purges.
3. Based on cryo purity and performance, the time between fuel cell O_2 purges may be increased to coincide with water dump times. The O_2 purge at 11 hours allows a judgement to be made on the defined purge schedule.
4. The cryogenic heaters are managed such that the planned usage is obtained out of each O_2 tank. The H_2 fans are operated manually for one minute before and after each sleep cycle.
5. Table 2-6 contains the battery charge schedule.

D. ECS and Water Management

1. Potable water is chlorinated once a day after the eat period prior to each sleep period.
2. Waste water dump and fuel cell purge scheduling criteria:
 - (a) Table 2-5 contains the scheduled fuel cell purges, urine dumps and waste water dumps
 - (1) Approximately once during each 24 hours following the initial dump and purge when three crewmen are in the CSM. Reduce interval to 22 hours when one crewman is in the CSM.
 - (2) H_2 fuel cell purges are scheduled at every other O_2 fuel cell purge after the first O_2 fuel cell purge
 - (b) The most opportune times to perform waste water dumps and fuel cell purges are as follows:
 - (1) Immediately after the sextant star check in maneuver preparation or cislunar navigation
 - (2) Behind the moon, with completion of dump or purge before AOS

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- (3) At least three hours prior to SIM Bay photography and laser altimeter operation
 - (c) If possible, dumps and purges are not scheduled during the following periods:
 - (1) Ten hours before MCC-2
 - (2) Eight hours before MCC-5
 - (d) Dumps and purges are not scheduled during the following MSFN tracking periods:
 - (1) Between MCC-4 and LOI
 - (2) MSFN coverage in lunar orbit
 - (3) Ten hours before MCC-7 until entry
 - (e) All waste water dumps are manual.
3. Only one CO_2 absorber filter (LiOH canister) is changed at a time. Table 2-7 lists the LiOH canister change schedule. There are 26 filters on board, with 24 stowed at launch, only 23 are required.
4. At lift-off, the cabin contains 60% O_2 and 40% N_2 . The CM is purged after launch. The purge is terminated prior to LM pressurization after TLI. After the LM is configured for ejection, it is isolated and the CM is purged for eight more hours.
5. CSM O_2 pressurizes the LM after transposition and docking; and repressurizes the LM before TLC LM entry, MCC-4 and LM activation.

E. Guidance and Navigation

1. REFSMMAT Definitions

- (a) The "Launch Pad" REFSMMAT is used for launch, TLI, and TD&E. This REFSMMAT places the IMU X-axis along the launch azimuth at the pad and the Z-axis along the negative radius vector. The FDAO, at launch, will display roll 162° (launch azimuth $+90^\circ$), pitch 90° , and yaw 0° .

- (b) The "PTC" REFSMMAT is used for all midcourse maneuvers (except MCC-7) and for other operations during TLC and TEC. This REFSMMAT places the X-axis in the ecliptic plane and perpendicular to the earth+moon line projection in the ecliptic plane at the average time of transearth injection for the monthly launch window and azimuth range. The Z-axis is perpendicular to the ecliptic and directed south. At the beginning of the PTC Mode the spacecraft maneuvers to an FDAI display of pitch 90° or 270°.
- (c) A "Preferred" REFSMMAT is used by the CSM for LOI, Lunar-Orbit Plane Changes, and TEI. The CSM IMU X-axis aligns normally with the spacecraft x-body axis at the vehicle attitude for ignition with the thrust directed through the center of gravity. At burn ignition, the FDAI displays roll 0°, pitch 0°, and yaw 0°, except roll 180° for TEI.
- (d) The "Landing Site" REFSMMAT is used for DOI, PDI, landing, and CSM lunar orbit activities up to the first plane change. This REFSMMAT places the CSM and LM IMU X-axis along the positive lunar radius vector at the landing site at the predicted landing time and places the Z-axis in the direction of flight parallel to the CSM orbital plane. At nominal touchdown, the LM FDAI displays roll 0°, pitch 0°, and yaw 0°.
- (e) The "Lift-Off" REFSMMAT is used for all lunar activities after plane change 1, except plane change 2, and until transearth injection. This REFSMMAT places the CSM and LM IMU X-axis along the positive lunar radius vector at the landing site at predicted lift-off time, with the Z-axis down range parallel to the CSM orbital plane. At nominal lift-off time, the LM FDAI displays roll 0°, pitch 0°, and yaw 0° with slight differences reflecting actual touchdown yaw and slope tilt angles.
- (f) The "Entry" REFSMMAT aligns the IMU X-axis in the local horizontal plane in the direction of flight at entry interface. The entry REFSMMAT is used for MCC-7 and all remaining activities. The Z-axis is down along the negative radius at entry interface. At entry interface, with wings level, local horizontal, heat shield forward, inplane, lift up, heads down, the FDAI displays roll 0°, pitch 180°, and yaw 0°.

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2. The CSM external lighting is operated during the rendezvous from lift-off to docking. The running lights only are on from CSM/LM separation to PDI.
3. The time tags on attitude maneuvers in Section 3 indicate the be-there-by time unless otherwise stated. All maneuver angles are the angles read on the FDAI after the maneuver has been completed.
4. CSM/LM and CSM attitude maneuvers are normally performed at the rate of $0.2^\circ/\text{sec}$ unless other rates are required. LM maneuvers are normally performed at $2^\circ/\text{sec}$ unless otherwise specified.
5. The SIM Bay RCS configuration provides single jet control authority in each axis to eliminate contamination of the SIM experiments. Table 2-8 identifies the periods when the CSM RCS is in an uncoupled configuration.
6. Undocking is done radially, CSM below, using the soft undocking procedure. The probe is extended its full length with the LM held on by the capture latches. When the rates are nulled, the CSM releases the LM. The separation maneuver is then performed immediately.
7. LM jettison is done radially, CSM below, with final sep pyros providing approximately 0.4 foot per second thrust radial. The separation burn is performed five minutes after jettison, providing 2 foot per second thrust positive grade.
8. The standard register load for nouns 78 and 70 for SIM bay experiment pointing using the Universal Tracking Program P20, option 5 is:
N78 (+090.00)
(+052.25)
(+180.00) +X-axis forward
or (+000.00) -X-axis forward
N70 (00050)

Only changes to this standard register load will be shown as required in Section 3 of the flight plan.
9. The SC RCS configuration and maneuver control is shown as a DAP LOAD code in the time column where applicable in Section 3. During passive thermal control the code is shown as a note indicating the status of the DAP.

F. Propulsion Systems

1. In order to conserve SM RCS, the SPS engine is used to "back-up" all LM rendezvous burns requiring a ΔV greater than 12 FPS. The SPS gimbal motors are not turned on during the normal maneuver preparation.
2. The SPS always is started using a single bank; however, the other bank will be opened 2 to 5 seconds after ignition for burns longer than 6 seconds. DOI will be performed on a single bank.
3. Table 2-9 lists the CSM propulsion burns.

G. Scientific Instruments Module

1. The panoramic and mapping cameras will be placed in the boost and standby modes, respectively, during launch through TD&E, rendezvous, and all SPS thrusting maneuvers.
2. The following switches may be left in their command position between uses in order to keep track of SIM Bay experiment status:
 - a) Mapping Camera Track
 - b) Gamma Ray Boom Deploy
 - c) Mass Spectrometer Boom Deploy
 - d) Mapping Camera/Laser Cover
 - e) Alpha/X-Ray Cover

These switches will be in the OFF (center) position during SPS burns and all other events that may induce vibration or shock, i.e., undocking and rendezvous through LM jettison.

3. The SIM experiment status will be indicated in the upper right-hand corner of each page, or half page in the CSM flight plan, of Section 3. The first line will indicate the CSM attitude and experiments positions at the beginning of each hour or half-hour as applicable. The second line indicates the experiments' functional modes as previously set up. Page xxiv defines the SIM experiment position and mode status code.
4. The position of boom mounted experiments is indicated by the length of the boom measured from the fully retracted position.

III. LM Systems

A. Communications

1. The preferred S-Band communications are:
 - (a) Uplink Mode 7 (Voice, Updata)
 - (b) Downlink Mode 2 (Voice, TLM-HDR, PRN, BIOMED)
2. The LM DSEA schedule is shown in Table 2-10.

B. ECS

1. The LM contains ambient air at lift-off. During launch the pressure bleeds to zero psia. CSM O₂ pressurizes the LM after T&D. The LM is isolated after T&D and after each entry and allowed to bleed down via leakage. Before the first entry into the LM, the LM is vented to at least 2.7 PSID and repressurized with CSM O₂ in order to enrich the LM atmosphere. CSM O₂ is used to repressurize the LM for the second and third entries.
2. LM O₂ is used to pressurize the LM five times; after EVA-1, EVA-2, EVA-3, and two equipment jettison periods.
3. Table 2-7 lists the LiOH canister change schedule.

C. Guidance Systems

1. The LGC and CMC use the same landing site and lift-off REFSMMATS.
2. The AGS is placed in standby after the "GO" is given for lunar stay at T3.
3. The IMU platform is oriented so that all PIPA input axes are normal to the gravity vector, then powered down and the LGC placed in standby approximately 1 hour after TD until approximately 4 hours prior to lift-off. The LGC is placed in operate several times to update the computer clock and CSM State Vector.
4. To prevent overheating of the antenna, the rendezvous radar is pointed away from the sun and turned off when no functional use is required.

5. The LM tracking light is operated continuously in the S/C dark period during rendezvous.

D. Propulsion Systems

1. The APS/RCS interconnect is used during the lunar lift-off and ascent only.
2. Table 2-11 lists the LM propulsion burns.

E. Electrical Power System

1. The LM is powered down to a minimum level to conserve battery consumables on the lunar surface from PDI +1:00 to lift-off -4:00 hours.
2. LM battery management is scheduled on the lunar surface to equalize the usage of the five descent stage batteries. Table 2-6 contains the LM battery management schedule.

IV. Procedures

- A. CSM - Crew procedures called out in the flight plan may be found in the following documents:

1. Apollo Operations Handbook - CSM 113 (AOH), Volume 2
2. Crew Checklists
3. CSM Rendezvous Procedures
4. Lunar Landmark Tracking Attitude Studies
5. Lunar Orbit Attitude Sequence for Mission J-2

- B. LM - Crew procedures called out in the flight plan may be found in the following documents:

1. Apollo Operations Handbook LM-11, Volume 2
2. Crew Checklists
3. LM Rendezvous Procedures
4. LM Descent/Ascent Procedures
5. EVA Procedures
6. Lunar Surface Procedures

V. Synchronization of Ground Elapsed Time (GET)

The realtime GET is synchronized with the Flight Plan GET. In TLC, the GET is synchronized at 48:30 if the difference is more than ± 1 minute. In lunar orbit the GET is synchronized at 81:35 and at 191:20 if the difference is more than ± 2 minutes. The time changes are based on the expected difference between realtime and flight plan GET's at the start of lunar orbit revs. The synchronization is performed by a V70 uplink from the ground followed by the crew synchronizing the mission timer to the CMC clock.

VI. Miscellaneous

- A. Table 2-12 contains a schedule of the return to earth block data updates.
- B. Table 2-13 is the landmark tracking and landing site data.
- C. Table 2-14 contains the cryo management schedule.
- D. Table 2-15 contains the Apollo 16 Film Budget.

SECTION 2 - CHARTS & TABLES

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TABLE 2-1
(4/16)

2-1

SUIT WEARING SCHEDULE

ACTIVITY	PRESSURIZED (HARD SUIT)	SUITED (SOFT SUIT)	PARTIAL SUIT WITH- OUT HELMET & GLOVES	SHIRTSLEEVES (ICG)
LAUNCH		ALL		
EARTH ORBIT THRU S-IVB EVASIVE MNVR			ALL	
TLC & TEC EXCEPT TEC EVA				ALL
PGA TEST			ALL	
LM ACTIVATION			ALL	
UNDOCKING		CDR & LMP	CMP*	
UNDOCK +5MIN THRU CIRC			ALL	
PDI thru TD		CDR & LMP	CMP	
LUNAR STAY EXCEPT EVA				ALL -
LUNAR SURFACE EVA'S & EQUIP JETT	CDR & LMP			CMP
LIFT-OFF PREP			ALL	
LIFT-OFF THRU DOCKING		CDR & LMP	CMP	
DOCKING TO LM JETT			ALL	
LM JETT		ALL		
POST LM JETT THRU TEI				ALL
TEC EVA	ALL			
ENTRY				ALL

*CMP DON HELMET & GLOVES FOR DOCKING LATCHES RELEASE.

TABLE 2-2

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CREW BIOMED HARNESS WEARING SCHEDULE*

(4/16)

<u>GET(HR:MIN)</u>	<u>CDR</u>	<u>CMP</u>	<u>LMP</u>
Prelaunch	on	on	on
14:37	off	off	
24:55	on		off
37:20	off	on	
45:58		off	on
55:50	on		off
67:44	off	on	
79:50		off	on
93:10	on		
93:23		on	
110:45	off**		
122:35	on		
133:13			off**
146:25			on
156:55	off**		
169:05	on		
177:47	off	off	
191:02	on		off
200:55	off	on	
212:29		off	on
223:57	on		off
240:52		on	on
242:22		off	off
251:54	off		on
260:35		on	off
273:40	on	off	
284:15		on	on

*In the event of an inflight medical problem or illness the Flight Surgeon has the option to revise this schedule.

**Crew option - the Crewman not on BIOMED data downlink may elect to remove his BIOMED Harness during the lunar surface rest periods.

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TABLE 2-3
(4/16)

2-3

CSM COVERAGE BY MSFN STATIONS USING 85 FT/210 FT DISH/ANTENNA

	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
	AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
EARTH ORBIT					01:00	01:05		
	01:29	01:33						
TLI (2:30)	02:50	14:01			08:40	17:38		
	24:03	38:34					15:58	31:14
TRANSLUNAR COAST					33:06	42:25		
	48:28	62:41					40:36	55:24
LOI (74:29)	74:50	76:15			57:10	66:39		
TEI (220:20)	222:31	233:29					54:50	74:18
TRANSEARTH COAST								
	246:31	257:20					222:31	225:57
					227:57	240:34		
							239:02	249:46
					251:52	254:48		
EI (290:23)	270:58	280:59					253:23	273:29
					275:48	290:18		

TABLE 2-3 (CONT)

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CSM COVERAGE BY MSFN STATIONS USING 85 FT/210 FT DISH ANTENNA

REV	GET AT END OF REV	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
LOI		AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
1	76:40	74:50	76:15					74:51	76:15
2	78:48	76:59	78:24					76:59	78:24
3	80:42	79:11	80:16					79:11	79:28
4	82:36	81:05	82:10			81:16	82:10		
5	84:30	82:59	84:04			82:59	84:04		
6	86:24	84:53	85:39			84:53	85:58		
7	88:18	86:47	86:58			86:47	87:52		
8	90:12					88:41	89:46	89:29	89:45
9	92:06					90:35	91:23	90:35	91:40
10	94:00							92:28	93:34
11	95:54							94:22	95:28
12	97:48							96:17	97:22
13	99:47	98:09	99:21					98:09	99:21
14	101:45	100:07	101:19					100:08	101:20
15	103:44	102:06	103:18					102:06	103:18
16	105:42	104:04	105:17						
17	107:41	106:03	107:15			106:03	107:15		
18	109:39	108:02	109:14			108:01	109:13		
19	111:38	110:00	111:12			110:00	111:12		
20	113:36					111:59	113:11		
21	115:35					113:57	115:09	114:36	115:05
22	117:33					115:56	116:26	115:56	117:07
23	119:32							117:22	119:05
24	121:30							119:32	121:05
25	123:29	122:36	123:03					121:51	123:03
26	125:27	123:49	125:01					123:49	125:02
27	127:26	125:48	126:07					125:48	127:00
28	129:24	127:46	128:09					127:46	128:32
29	131:22	129:45	130:57			130:24	130:57		
30	133:21	131:43	132:56			131:43	132:55		
31	135:19	133:42	134:54			133:42	134:54		
32	137:18	135:40	136:06			135:40	136:53		
33	139:16					137:39	138:20		
34	141:15					139:38	140:50	139:38	140:49
35	143:13							141:36	142:48
36	145:12							143:34	144:46
37	147:10							145:33	146:45
38	149:09	147:34	148:43					147:31	148:43
39	151:07	149:29	150:42					149:30	150:42
40	153:06	151:28	152:40					151:28	152:29

TABLE 2-3 (CONT)

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(4/16)

CSM COVERAGE BY MSFN STATIONS USING 85 FT/210 FT DISH ANTENNA

TABLE 2-4
(4/16)

2-6

APOLLO 16 TV SCHEDULE

<u>DAY</u>	<u>DATE</u>	<u>CST</u>	<u>GET (HR:MIN)</u>	<u>DURATION (HR:MIN)</u>	<u>ACTIVITY SUBJECT</u>	<u>VEHICLE</u>	<u>STATION</u>
SUNDAY	16 APRIL	3:03 PM	3:09	0:19	TRANSPOSITION & DOCKING	CSM	GDS
THURSDAY	20 APRIL	6:19 PM	102:25	6:47	LUNAR SURFACE EVA-1*	LM/LRV	GDS
FRIDAY	21 APRIL	5:04 PM	125:10	6:35	LUNAR SURFACE EVA-2*	LRV	GDS
SATURDAY	22 APRIL	4:40 PM	148:45	8:04	LUNAR SURFACE EVA-3* & EQUIP JETT #1	LRV	GDS
SUNDAY	23 APRIL	2:02 PM	170:08	0:12	EQUIP JETT #2	LRV	MAD
SUNDAY	23 APRIL	3:24 PM	171:30	0:25	LM LIFT-OFF	LRV	MAD
SUNDAY	23 APRIL	5:16 PM	173:20	0:06	RENDEZVOUS	CSM	GDS
SUNDAY	23 APRIL	5:40 PM	173:46	0:05	DOCKING	CSM	GDS
WEDNESDAY	26 APRIL	1:49 PM	241:55	1:10	TRANSEARTH EVA	CSM	MAD

*TV will not be used while LRV is in motion.

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TABLE 2-5
 (4/16)
 FUEL CELL PURGE, URINE DUMP AND WASTE WATER DUMP SCHEDULE

GET (HR:MIN)	O ₂ FUEL CELL PURGE		WASTE H ₂ O DUMP		URINE DUMP		H ₂ FUEL CELL PURGE	
	NO	ΔT (HR:MIN)	NO	ΔT (HR:MIN)	NO	ΔT (HR:MIN)	NO	ΔT (HR:MIN)
11:15	1	11:15	1	11:15				
30:20	2	19:05	2	19:05			1	30:20
53:00	3	22:40	3	22:40				
76:23	4	23:23	4	23:23	1	06:43	2	46:03
99:25	5	23:02	5	23:02	2	23:02		
119:12	6	19:47	6	19:47	3	19:47	3	42:49
130:59			7	11:47	4	11:47		
150:44	7	31:32	8	19:45	5	19:45		
170:29	8	19:45	9	19:45	6	19:45	4	51:17
192:25	9	21:56	10	21:56	7	21:56		
216:06	10	23:41	11	23:41	8	23:41	5	45:37
239:00	11	22:54	12	22:54	9	22:54		
264:30	12	25:30	13	25:30	10	25:30	6	48:24

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TABLE 2-6

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**CSM BATTERY CHARGE AND LM BATTERY MANAGEMENT SCHEDULES
(4/16)**

CSM BATTERY CHARGE SCHEDULE

GET (HR:MIN)	BATTERY
4:33	B
23:05	A
30:50 (IF MCC 2 IS PERFORMED)	A
48:36	B
118:55	B
142:00	A
193:48	B
211:37	A
239:30	B
268:30	A

LM BATTERY MANAGEMENT SCHEDULE

GET (HR:MIN)	BATTERY						
	1	2	3	4	5	6	L
93:50	ON	ON	ON	ON	OFF	OFF	OFF
94:50					ON	ON	
94:56					OFF	OFF	
98:05					ON	ON	
98:55					OFF	OFF	
99:21	OFF	OFF					LMP
110:25	ON	ON	OFF	OFF			CDR
123:13			ON	ON			OFF
132:50	OFF	OFF					LMP
146:50	ON	ON	OFF	OFF			CDR
156:45			ON	ON			OFF
171:09	OFF		OFF		ON	ON	
171:31		OFF		OFF			

L - LUNAR BATTERY MAY BE USED ON EITHER CDR OR LMP BUS

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TABLE 2-7

(4/16)

2-9

LiOH CANISTER CHANGE SCHEDULE

CSM LiOH CANISTER CHANGE

CHANGE NO	APPROX GET (HR:MIN)	APPROX AT (HR)	INSTALL		REMOVE & STOW	
			CANISTER NO.	POSITION	CANISTER NO.	STOWAGE LOCATION
1	12:08	12	3	A	1	B5
2	24:30	13	4	B	2	B5
3	37:00	12	5	A	3	B5
4	48:37	9	6	B	4	B5
5	57:30	14	7	A	5	B6
6	71:05	11	8	B	6	B6
7	81:54	12	9	A	7	B6
8	93:25	27	10	B	8	B6
9	120:35	24	11	A	9	A9
10	144:52	23	12	B	10	A9
11	167:29	11	13	A	11	A9
12	178:25	12	15	B	12	A3
13	189:59	12	16	A	13	A3
14	202:01	13	17	B	15	A3
15	215:00	9	18	A	16	A3
16	224:11	15	19	B	17	A4
17	238:45	13	20	A	18	A4
18	251:58	12	21	B	19	A4
19	264:18	10	22	A	20	A4
20	273:57	10	23	B	21	A5
21	284:20		24	A	22	A5

NOTE: CSM LiOH CANISTER #14 IS NOT USED. IT IS TRANSFERRED TO THE LM AFTER DOCKING TO PROVIDE ROOM FOR AN SRC.

LM LiOH CANISTER CHANGE: GET (HR:MIN) 122:55 AND 157:05

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TABLE 2-8

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(4-16)

CSM RCS UNCOUPLED CONFIGURATION

FROM (HR:MIN)	TO (HR:MIN)	REASON
13:20	13:40	RATE DAMPING FOR PTC
35:45	36:05	RATE DAMPING FOR PTC
56:05	56:25	RATE DAMPING FOR PTC
79:43	92:24	SIM EXP
100:57	150:26	SIM EXP
152:34	167:14	SIM EXP
178:49	191:58	SIM EXP
193:33	216:22	SIM EXP & SOLAR CORONA
217:42	218:11	SIM EXP
222:32	226:50	SIM EXP
226:50	227:10	RATE DAMPING FOR PTC
237:45	239:10	SIM EXP
241:20	244:03	CSM EVA
245:05	251:32	SIM EXP
251:33	251:53	RATE DAMPING FOR PTC
260:50	261:05	MNVR & RATE DAMPING FOR SUPER GAL AUX PTC
264:00	264:15	MNVR & RATE DAMPING FOR ECLIPTIC AUX PTC
267:00	270:00	SCO X-1
270:10	273:15	SKYLAB CONTAMINATION
273:15	275:50	CYG X-1
275:50	276:20	MNVR & RATE DAMPING FOR SUPER GAL PTC

TABLE 2-9

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(4/16)

CSM BURN/EVENT SCHEDULE

BURN/ EVENT	GET I(HR:MIN)/ BURN TIME	AVT (FPS)	ULLAGE BT	REFSMMA	RESULTANT HA/HP(NM)	DATE/ CST
LAUNCH SATURN	00:00 11MIN 44SEC	25,599.0	--	LAUNCH	90 90	APR 16 1154
S-1VB TLI	2:33:35.1 5MIN 44.2SEC	10,374.3	--	LAUNCH	--	APR 16 1428
CSM/LM EJECTION	3:59:20 3.0 SEC	0.4	--	LAUNCH	--	APR 16 1553
MCC-1	11:39	Nom Zero	--	PTC	--	APR 16 2333
MCC-2	30:39	Nom Zero	--	PTC	--	APR 17 1833
MCC-3	52:29	Nom Zero	--	PTC	--	APR 18 1623
MCC-4	69:29	Nom Zero	--	PTC	--	APR 19 0923
LOI SPS	74:28:38.5 6MIN 15SEC	2807.0	NONE	LOI	170.6 58.5	APR 19 1423
DOI SPS	78:35:30.3 24.1SEC	206.0	4 JETS 15 SEC	LDG SITE	58.6 10.8	APR 19 1830
BAILOUT SPS	79:22:07.9 11.0SEC	100.0	4 JETS 16 SEC	LDG SITE	62.6 5.3	APR 19 1916
DOI TRIM SPS	AS REQD			LS OR LOPC-1 AS REQD		
UNDOCK & SEP(RCS)	96:13:30.8 3.4SEC	1.0	NONE	LDG SITE	60.5 8.9	APR 20 1208
CSM CIRC SPS	97:41:44.5 5.9SEC	99.6	2 JETS 16 SEC	LDG SITE	68.2 51.8	APR 20 1336
LOPC-1 SPS	152:28:48.1 9.1SEC	158.7	2 JETS 17 SEC	LOPC-1	62.0 57.3	APR 22 2023
LM JETT	177:31:15.0 NO BURN	~0.4	--	LIFT-OFF	62.0 57.3	APR 23 2125
CSM SEP RCS	177:36:15.0 13.2SEC	2.0		LIFT-OFF	61.7 59.5	APR 23 2130

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TABLE 2-9 (CONT)

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CSM BURN/EVENT SCHEDULE

BURN/ EVENT	GET I(HR:MIN)/ BURN TIME	ΔVT (FPS)	ULLAGE BT	REFSMMAT	RESULTANT HA/HP(NM)	DATE/ CST
LOPC-2 SPS	198:13:46.2 15.8SEC	282.5	2 JETS 16 SEC	LOPC-2	62.9 57.9	APR 24 1308
CSM SHAPE SPS	216:49:11.7 02.2SEC	38.0	2 JETS 17 SEC	LIFT-OFF	85.0 55.0	APR 25 1243
SUBSAT LAUNCH	218:02:08	NO BURN	-- --	LIFT-OFF	-- --	APR 25 1356
TEI SPS	222:20:32.8 2MIN 30.5SEC	3212.2	2 JETS 17 SEC	TEI	--	APR 25 1815
MCC-5	239:21	Nom Zero	--	PTC	--	APR 26 1115
MCC-6	268:23	Nom Zero	-- --	PTC	-- --	APR 27 1617
MCC-7	287:23	Nom Zero	-- --	ENTRY	-- --	APR 28 1117
EI	290:22:45.8	NO BURN	-- --	ENTRY	-- --	APR 28 1417
SPLASH- DOWN	290:36:03	NO BURN	--	ENTRY		APR 28 1430

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TABLE 2-10

(4/16)

2-13

APOLLO 16 DSEA

<u>ACTIVITY</u>	<u>MODE</u>	<u>GET (HR:MIN)</u>	<u>RECORD TIME X DUTY CYCLE = TAPE USED (HR:MIN)</u>	<u>ACCUM. TAPE USED (HR:MIN)</u>
COMM ACTIVATION	ICS/PTT	94:20	4:04 x 100% = 4:04	
PDI PREP	VOX	98:24		4:04
PDI PREP	VOX	98:24	0:30 x 63% = 0:18.9	4:23
POST TOUCHDOWN (T2)	OFF	98:54		
EVA-1 PLSS COMM CK	VOX	101:50	0:50 x 63%	
EVA-1 LMP EGRESS	OFF	102:40	= 0:31.5	4:55
EVA-2 PLSS COMM CK	VOX	124:17	0:50 x 63%	
EVA-2 LMP EGRESS	OFF	125:07	= 31.5	5:26
EVA-3 PLSS COMM CK	VOX	147:50	0:50 x 63%	
EVA-3 LMP EGRESS	OFF	148:40	= 0:31.5	5:58
JETTISON #1 PREP	VOX	156:30	0:20 x 63%	
JETTISON #1 POST	OFF	156:50	= 0:13	6:11
JETTISON #2 PREP	VOX	170:03	0:17 x 63%	
JETTISON #2 POST	OFF	170:20	= 0:10.6	6:22
ASCENT COMM (L/O -17 MIN)	ICS/PTT	171:28	0:15 x 100%	
LIFT-OFF -2 MIN	VOX	171:43	= 0:15	6:37
LIFT-OFF -2 MIN	VOX	171:43	0:09 x 63%	
INSERTION	ICS/PTT	171:52	= 0.05.7	6:42
INSERTION	ICS/PTT	171:52	2:33 x 100%	
POST DOCKING	OFF	174:25	= 2:33	9:15*

*REMAINING TAPE (0:45) MAY BE USED AT CREW DISCRETION.

2-14

TABLE 2-11

(4/16)

3/6/72

LM BURN/EVENT SCHEDULE

BURN/ EVENT	GETI(HR:MIN)/ BURN TIME	ΔVT (FPS)	ULLAGE BT	REFSMMAT	RESULTANT HA/HP(NM)	DATE/ CST
PDI	98:34:40.8 12MIN 01.5SEC	6696.3	4 JET 7.5 SECs	LDG SITE	-- --	APR 20 1429
LANDING	98:46:42.0 --	NO BURN	-- --	-- --	LUNAR SURFACE	APR 20 1441
EVA-1	102:25 TO 109:25	NO BURN	-- --	-- --	-- --	APR 20 1819
EVA-2	124:50 TO 131:50	NO BURN	-- --	-- --	-- --	APR 21 1644
EVA-3	148:25 TO 155:25	NO BURN	-- --	-- --	-- --	APR 22 1619
ASCENT	171:45:08.6 7MIN 14.3SEC	6047.9	None	LIFTOFF	45.0 9.0	APR 23 1539
ORBIT INSERTION	171:52:23	NO BURN	-- --	-- --	45.0 9.0	APR 23 1546
TPI	172:39:22.9 2.5 SEC	72.1	4 JET 10.0 SEC	LIFTOFF --	61.9 44.0	APR 23 1533
BRAKING GATES	173:18:25.4 TO 173:24:27.2	33.4	-- --	-- --	59.3 59.3	APR 23 1712
DOCKING	173:50:00.0	NO BURN	--	--	59.8 59.3	APR 23 1734
LM DEORBIT	179:16:29 1MIN 35.5SEC	229.6	N/A --	LIFTOFF --	68.2 -40.6	APR 23 2310

3/27/72

TABLE 2-12

(4/16)

2-15

APOLLO 16 RETURN TO EARTH BLOCK DATA SCHEDULE

DATA	GET UPDATE (HR:MIN)	GETI* (HR:MIN)	PAD TYPE
TLI+90	1:30	4:07	COMPLETE P-30
L0+8	1:30	8:00	P37
L0+15	5:55	15:00	P37
L0+25	13:30	25:00	P37
L0+35	13:30	35:00	P37
L0+45	13:30	45:00	P37
L0+55	13:30	55:00	P37
FLYBY	33:55	69:28	COMPLETE P-30 (DOCKED)
PER+2	68:05	76:25	ABB P-30 (DOCKED)
TEI 4	72:20	83:08	ABB P-30
TEI 5	77:35	84:34	ABB P-30
TEI 12	81:30	97:45	ABB P-30
TEI 19	81:30	111:31	ABB P-30
TEI 26	108:58	125:26	ABB P-30
TEI 32	122:11	137:12	ABB P-30
TEI 41	132:30	155:07	ABB P-30
TEI 53	149:40	178:48	ABB P-30
TEI 62	177:41	196:33	ABB P-30
TEI 65	191:19	202:21	ABB P-30
TEI 72	201:25	216:17	ABB P-30
TEI 74	212:59	220:19	ABB P-30
<u>PREL</u>			
TEI 75	219:20	222:20	COMPLETE P-30
<u>NOM</u>			
TEI 75	220:58	222:20	COMPLETE P-30
TEI 76	220:58	224:21	ABB P-30

*The maneuver solutions are based on the March 1, 1972, Apollo 16 (Mission J-2) operational Trajectory Simulator Data Pack in 72-FM-61.

2-16

TABLE 2-12 (CONT)
(4/16)

3/27/72

APOLLO 16 RETURN TO EARTH BLOCK DATA SCHEDULE

NOTES:

1. All block data maneuvers are to the MPL line except:
 - a. Nominal TEI 75 and backup Rev TEI 76 is to the EOM target
(= $169^{\circ}34'W$)
2. Pass FLYBY early if pericynthion is not clear of moon.
3. The FLYBY and PER+2 maneuvers are docked. All other aborts are undocked.
4. TEI 4 assumes no DOI.
5. TEI 5 assumes DOI.
6. TEI 12 assumes no CIRC.
7. TEI 19 assumes CIRC.
8. TEI 41 assumes no LOPC 1.
9. TEI 53 assumes LOPC 1.
10. TEI 62 assumes no LOPC 2.
11. TEI 65 assumes LOPC 2.
12. TEI 72 assumes no SHAPE MNVR.
13. TEI 74 assumes the SHAPE MNVR.

3/6/72

TABLE 2-13
(4/16)

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LANDMARK AND LANDING SITE DATA

SITE	REV	LATITUDE (DEG)	LONGITUDE (DEG)	ALTITUDE* (NM)
DESCARTES		-9.000	15.516	-.1404
J-2	3	-8.917	24.481	.0000
16-1	12**	-8.859	15.482	-,0900
16-2	12**	-8.936	15.494	-,1100
16-3	12**,13&48	-9.000	15.490	-,1400
16-4	12**	-9.056	15.299	-,2000
16-5	12**	-9.122	15.641	+.0600
16-6	12**	-9.181	15.674	+.0300
F-1	49	01.872	88.253	.0000

*Difference between landmark radius vector and 938.4935
(Mean Lunar Radius)

**One of these landmarks will be picked in real time as the best
landmark to use for the low altitude landmark tracking on REV 12.

2-18

TABLE 2-14

3/6/72

(4/16)

CRYO MANAGEMENT SCHEDULE

GET HRS:MIN	O_2 HTRS 1,2,&3		H_2 HTRS 1&2		H_2 FANS 1,2,&3		
	AUTO	OFF	AUTO	OFF	AUTO	ON	OFF
00:00	1,2	3	1,2			3	1,2
03:15	1,2,3						
04:15	1,2	3					
14:38	3	1,2			3		
23:07				1,2			
31:30	1,2,3						
32:56	3	1,2					
53:20**	1,2,3						
53:45**	3	1,2					
66:10**	1,2,3						
67:45**	3	1,2					
70:05*	1,2	3	1,2			3	
93:48	3	1,2					
107:25	1,2	3					
191:27	3	1,2					
201:30	1,2	3					
241:22	1,2,3						
245:00	1,2	3					

*Open 50W cb in oxygen tanks 1, 2, & 3 at 70:05

**If LM/CM $\Delta P > 2.4$ PSID, these actions are required.

APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:DAC	FILM: CEX	MAGAZINE: AA	CAPACITY: 100%	
3:13	TL	UNDOCK S4BLM	30%	70%
3:59	TL	LM EJECTION	70%	00%
CAMERA:DAC	FILM: CEX	MAGAZINE: BB	CAPACITY: 100%	
69:59	TL	DOOR JETT	5%	95%
96:44	12	LDMK TRK	3%	92%
98:40	13	LDMK TRK	4%	88%
169:21	49	LDMK TRK F1	4%	84%
169:45	49	16-3	4%	80%
173:18	51	RENDZVOUS	40%	40%
CAMERA:DAC	FILM: CEX	MAGAZINE: CC	CAPACITY: 100%	
96:14	12	UNDOCKING	100%	00%
CAMERA:DAC	FILM: CEX	MAGAZINE: DD	CAPACITY: 100%	
177:31	53	LM JETT	50%	50%
CAMERA:DAC	FILM: CEX	MAGAZINE: EE	CAPACITY: 100%	
UNSCHEDULED				
CAMERA:DAC	FILM: CEX	MAGAZINE: FF	CAPACITY: 100%	
241:55	TE	EVA	100%	00%

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:DAC	FILM: CEX	MAGAZINE: GG	CAPACITY: 100%	
290:23	E	ENTRY	50%	50%
290:31	E	CHUTES	50%	00%
CAMERA:DAC	FILM: VH16W	MAGAZINE: HH	CAPACITY: 100%	
149:02	38	SR CORONA	2%	98%
195:35	62	SS CORONA	5%	93%
197:35	63	SS CORONA	5%	88%
200:15	64	SR CORONA	5%	83%
272:07	TE	SL CONTAM	1%	82%
272:17	TE	SL CONTAM	20%	62%
CAMERA:DAC	FILM: BW164	MAGAZINE: II	CAPACITY: 100%	
153:06	41	MASS SPECT.	76%	24%
CAMERA:DAC	FILM: CIN	MAGAZINE: JJ	CAPACITY: 100%	
05:05	TL	SC INT (OPT)	87%	13%
50:05	TL	SKYLAB FOOD	1%	12%
CAMERA:DAC	FILM: CEX	MAGAZINE: KK	CAPACITY: 100%	
UNSCHEDULED				
CAMERA:DAC	FILM: BW164	MAGAZINE: LL	CAPACITY: 100%	
UNSCHEDULED				

APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:DAC		FILM: VHBW	MAGAZINE: MM	CAPACITY: 100%
PREFLT	-	CALIBRATION	5%	95%
272:17	TE	SL CONTAM	20%	75%
PSTFLT	-	CALIBRATION	5%	70%
CAMERA:EL		FILM: CEX	MAGAZINE: NN	CAPACITY: 160 FR
3:13	TL	S4BLM	10 FR	150 FR
3:59	TL	LM EJECTION	5 FR	145 FR
7:15	TL	UV EARTH	1 FR	144 FR
12:30	TL	UV EARTH	1 FR	143 FR
29:30	TL	UV EARTH	1 FR	142 FR
52:30	TL	UV EARTH	1 FR	141 FR
68:00	TL	MOON	1 FR	140 FR
96:14	12	UNDOCKING	10 FR	130 FR
103:43	16	1 SHARANOV	63 FR	67 FR
103:55	16	7 MENDELEEV	22 FR	45 FR
214:47	72	11 AL-BIRUNI	33 FR	12 FR
CAMERA:EL		FILM: UV	MAGAZINE: OO	CAPACITY: 110 FR
7:15	TL	EARTH	8 FR	102 FR
12:30	TL	EARTH	8 FR	94 FR
29:30	TL	EARTH	8 FR	86 FR
52:30	TL	EARTH	8 FR	78 FR
68:00	TL	MOON A	8 FR	70 FR
68:00	TL	MOON B	8 FR	62 FR
104:31	16	LUNAR MARIA	10 FR	52 FR
126:20	27	LUNAR TERRA	10 FR	42 FR
151:27	40	LUNAR HORIZ	12 FR	30 FR
223:00	TE	MOON A	8 FR	22 FR
223:00	TE	MOON B	8 FR	14 FR
287:50	TE	EARTH B	8 FR	6 FR
CAMERA:EL		FILM: CEX	MAGAZINE: PP	CAPACITY: 160 FR
106:23	17	12 CROZIER	33 FR	127 FR
106:33	17	14 DESCARTES	20 FR	107 FR
130:13	29	13 CATHARIN	41 FR	66 FR
145:36	37	10 SAENGER	7 FR	59 FR
151:27	40	LUNAR HORIZ	1 FR	58 FR
212:38	71	9 FLEMING	45 FR	13 FR

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:EL		FILM: CEX	MAGAZINE: QQ	CAPACITY: 160 FR
155:13	42	5 KOHLSCHUT	80 FR	80 FR
173:45	51	DOCKING	10 FR	70 FR
191:40	60	22 PARRY	37 FR	33 FR
CAMERA:EL		FILM: CEX	MAGAZINE: RR	CAPACITY: 160 FR
215:11	72	15 DESCARTES	20 FR	140 FR
215:16	72	17 VOGEL	30 FR	110 FR
215:20	72	17 LASSELL	14 FR	96 FR
215:24	72	23 BULLITALDU	26 FR	70 FR
215:29	72	23 GASSENDI	36 FR	34 FR
215:34	72	26 HANSTEEN	10 FR	24 FR
223:00	TE	MOON	1 FR	23 FR
287:50	TE	UV EARTH	1 FR	22 FR
CAMERA:EL		FILM: VHBW	MAGAZINE: SS	CAPACITY: 115 FR
94:51	11	16 DESCARTES	6 FR	109 FR
108:39	18	18 PTOEMAEUS	6 FR	103 FR
118:36	23	20 DAVY	6 FR	97 FR
120:32	24	19 ALPHONSUS	6 FR	91 FR
128:26	28	21 GUERICKE	6 FR	85 FR
131:28	30	2 SPENCER J	6 FR	79 FR
147:15	38	4 MILLS	6 FR	73 FR
149:02	38	SR CORONA	9 FR	64 FR
154:15	41	24 DARNEY	6 FR	58 FR
165:04	47	6 ST JOHN	6 FR	52 FR
193:51	61	25 LETRONNE	6 FR	46 FR
195:35	62	SS CORONA	10 FR	36 FR
196:50	63	8 VETCHENKI	6 FR	30 FR
197:35	63	SS CORONA	10 FR	20 FR
CAMERA:EL		FILM: VHBW	MAGAZINE: TT	CAPACITY: 115 FR
PREFLT	-	CALIBRATION	30 FR	84 FR
200:15	64	SR CORONA	10 FR	75 FR
238:00	TE	CORONA CAL	6 FR	69 FR
272:07	TE	SL CONTAM	5 FR	64 FR
PSTFLT	-	CALIBRATION	15 FR	49 FR

TABLE 2-15

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3/27/72

APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:EL		FILM: HBW	MAGAZINE: <u>UU</u>	CAPACITY: 160 FR
25:00	TE	ELECTROPHOR	160 FR	00 FR
CAMERA:NK		FILM: CIN	MAGAZINE: <u>VV</u>	CAPACITY: 70 FR
47:00	TL	ALFMED	6 FR	64 FR
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>WW</u>	CAPACITY: 50 FR
UNSCHEDULED (BACKUP DIM LIGHT PHOTOGRAPHY)				
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>XX</u>	CAPACITY: 50 FR
102:52	14	EARTHSINE	22 FR	28 FR
121:10	24	GUM NEB PT 1	6 FR	22 FR
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>YY</u>	CAPACITY: 50 FR
123:10	25	ZODIACAL	42 FR	8 FR
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>ZZ</u>	CAPACITY: 50 FR
127:03	27	GEGENSCHEIN	4 FR	46 FR
142:27	35	GEGENSCHEIN	9 FR	37 FR
180:20	54	GUM NEB PT3	6 FR	31 FR
196:10	62	GUM NEB PT2	6 FR	25 FR
202:11	65	GEGENSCHEIN	3 FR	22 FR
202:23	65	GEGENSCHEIN	4 FR	18 FR
CAMERA:EL		FILM: CLX	MAGAZINE: <u>V</u>	CAPACITY: 160 FR
UNSCHEDULED				

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>W</u>	CAPACITY: 50 FR
CALIBRATION				
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>X</u>	CAPACITY: 50 FR
213:49	71	GAL SURVEY	4 FR	46 FR
214:26	71	SL CONTAM	12 FR	34 FR
238:20	TE	SL CONTAM A	6 FR	28 FR
271:05	TE	SL CONTAM B	18 FR	10 FR
CAMERA:NK		FILM: VHBW	MAGAZINE: <u>Y</u>	CAPACITY: 50 FR
CALIBRATION				
CAMERA:NK		FILM: CIN	MAGAZINE: <u>Z</u>	CAPACITY: 70 FR
UNSCHEDULED				

TABLE 2-15

3/27/72

APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
LM				
CAMERA:DCL		FILM: HCEX	MAGAZINE: A	CAPACITY: 160 FR
96:14	12	LM/CM SEP	10 FR	150 FR
96:20	12	CABIN INTERIOR	5 FR	145 FR
96:46	12	LDG SITE	5 FR	140 FR
97:55	13	EARTHRISE	5 FR	135 FR
(102:25)	LS	EVA-1	75 FR	60 FR
CAMERA:DCC		FILM: HCEX	MAGAZINE: B	CAPACITY: 160 FR
(102:25)	LS	EVA-1	47 FR	113 FR
CAMERA:DCC		FILM: HCEX	MAGAZINE: C	CAPACITY: 160 FR
(102:25)	LS	EVA-1	UNSCHEDULED	--
(124:50)	LS	EVA-2	105 FR	55 FR
CAMERA:DCC		FILM: HCEX	MAGAZINE: D	CAPACITY: 160 FR
(124:50)	LS	EVA-2	UNSCHEDULED	--
CAMERA:DCC		FILM: HCEX	MAGAZINE: E	CAPACITY: 160 FR
(148:25)	LS	EVA-3	97 FR	63 FR
CAMERA:DCC		FILM:HCEX	MAGAZINE: F	CAPACITY: 160 FR
(148:25)	LS	EVA-3	UNSCHEDULED	--
CAMERA:DCL		FILM: HBW	MAGAZINE: G	CAPACITY: 170 FR
(102:25)	LS	EVA-1	63 FR	107 FR
CAMERA:DCL		FILM: HBW	MAGAZINE: H	CAPACITY: 170 FR
(124:50)	LS	EVA-2	126 FR	44 FR
CAMERA:DCL		FILM: HBW	MAGAZINE: I	CAPACITY: 170 FR
(124:50)	LS	EVA-2	74 FR	96 FR
CAMERA:DCL		FILM: HBW	MAGAZINE: J	CAPACITY: 170 FR
(148:25)	LS	EVA-3 (POL)	132 FR	38 FR
CAMERA:DCL		FILM: HBW	MAGAZINE: K	CAPACITY: 170 FR
(148:25)	LS	EVA-3	102 FR	68 FR

GET	REV	TARGET	FILM USED	FILM REMAINING
LM				
CAMERA:DC5		FILM: HBW	MAGAZINE: L	CAPACITY: 170 FR
(102:25)	LS	EVA-1	20 FR	150 FR
(124:50)	LS	EVA-2	40 FR	110 FR
(148:25)	LS	EVA-3	60 FR	50 FR
CAMERA:DC5		FILM: HBW	MAGAZINE: M	CAPACITY: 170 FR
(148:25)	LS	EVA-3	100 FR	70 FR
CAMERA:DAC		FILM: CEX	MAGAZINE: N	CAPACITY: 100%
96:14	12	LM/CM SEP	6%	94%
96:20	12	CABIN INTERIOR	13%	81%
96:46	12	LDG SITE	6%	75%
98:42	13	DESCENT	75%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: O	CAPACITY: 100%
171:43	50	ASCENT	75%	25%
173:35	51	CSM & SIM BAY	25%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: P	CAPACITY: 100%
108:35	LS	GRAN PRIX	100%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: Q	CAPACITY: 100%
125:50	LS	EVA-2	100%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: R	CAPACITY: 100%
127:13	LS	EVA-2	24%	70%
149:10	LS	EVA-3	76%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: S	CAPACITY: 100%
152:48	LS	EVA-3	100%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: T	CAPACITY: 100%
155:00	LS	GRAN PRIX	100%	0%
CAMERA:DAC		FILM: CEX	MAGAZINE: U	CAPACITY: 100%
154:30	LS	EVA-3	100%	0%

TABLE 2-15

2-22

3/6/72

FLIGHT PLAN

MCC-H

1154 CST

NOTES

00:00
(31102)
(01111)

T

M
S
F
N

:10

LIFT-OFF APRIL 16, 1972

CSM LAUNCH CHECKLIST

BOOST PAGE L/2-7

UPDATE TO CSM
Z TORQUING ANGLE

T

C
Y
I

:20

SECO

INSERTION AND SYSTEM CHECKS

PAGE L/2-11

00:30

P52 IMU REFSMMAT REALIGN CHECK PAGE L/2-17

:40

GDC ALIGN

:50

REPORT: GYRO TORQUING ANGLES

T

CRO

01:00

π

AT SECO+20 SEC, S-IVB
MNVRs TO LH AND
INITIATES ORB RATE
(HEADS DOWN)

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____ : _____ :

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	00:00 - 01:00	1/LAUNCH-E.O.	3-1

FLIGHT PLAN

MCC-H

1254 CST

NOTES

01:00
(31102)
(01111)

MSFN

:10

:20

01:30

TD

SCS ATT REF COMPARISON CHECK PAGE L/2-17
EXTEND DOCKING PROBE PAGE L/2-18

MSFN

U.S. PASS THROUGH BDA

:40

GO/NO-GO FOR PYRO ARM (CUE MSFN)
LOGIC ON

T

CYI

:50

WATCH FIRES & SIGNS OF AFRICA

02:00

DUMP DSE
UPDATE TO CSM
TLI PAD
TLI +90 MIN ABORT
PAD
P37 (L/0+8) PAD
UPLINK TO CSM
CSM S.V. & V66

GO/NO-GO FOR PYRO
ARM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	01:00 - 02:00	1/E.O.	3-2

FLIGHT PLANNING BRANCH

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TLI
BURN TABLE

ROLL RATES	P OR Y RATES	P OR Y ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
>20°/SEC TERMINATE	>10°/SEC TERMINATE	+45° TERMINATE	$v_i = \text{PAD VALUE} + 2 \text{ SEC}$	NO TRIM

MCC-H

1354 CST

FLIGHT PLAN

NOTES

02:00
(31102)
(01111)

TLI PREPARATION PAGE L/2-27

:10

TLI, NOMINAL & MANUAL PAGE L/2-28

:20

TB6 02:23:57.1

A
R
I
A

GO/NO-GO FOR TLI

C
R
O

02:30

POO

A
R
I
A

V66 SET CSM S.V. INTO LM S.V.

*Moon is out of Window #2
CM 2/EL/250/CSX/Ring Sight
(f6.6, 1/250, -)*

TIG: 02:33:35.1
BT: 5 MIN 44.2 SEC
AVC: 10,374.3 FPS

TLI BURN STATUS REPORT

CDR - TRANS TO CENTER COUCH, CMP - LEFT COUCH

NORMAL SC/BOOSTER SEPARATIONS PAGE L/3-1

DIRECT O2 VLV - OPEN, UNTIL CABIN IS 5.7 PSI, THEN CLOSE

V48 (11103)(01111)

AT SECO: S-IVB INERTIAL
AT SECO +2 MIN 31 SEC:
S-IVB TO LOCAL
HORIZONTAL, ORB RATE,
HEADS DOWN

(11103)

(01111)

:50

M
S
F
N

S-IVB MNVRS TO SEP ATT 02:54:20

(359,146,319) OMNI C

GO/NO-GO FOR TRANPOSITION AND DOCKING

CSM SEPARATION PREP PAGE L/3-1

GO/NO-GO FOR T&D

03:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	02:00 - 03:00	E.O./TLC	3-5

MCC-H

1454 CST

FLIGHT PLAN

NOTES

03:00
 (11103)
 (01111)
 (11102)
 (01111)
 :10

T
T
V
M
S
F
N

CSM/S-IVB SEP 03:04:20

CSM MNVR TO DOCK ATT (301,326,041) (03:13)

V48 (11102)(01111)

TV (GDS) 3:09 TO 3:28 CM4 - BRKT (f22,MONITOR)

VISUALLY INSPECT AND PHOTOGRAPH S-IVB AND LM, MAG(AA,NN)

DOCK 03:14:20

T&D MNVR
 +X FOR 3 SEC ($\Delta V \sim 0.5$ FPS)
 AFTER 15 SEC PITCH UP AT
 $0.5^\circ/\text{SEC}$. V49 AUTO MNVR
 TO DOCKING ATT. NULL
 TRANSLATION AND RATES,
 +X FOR 4 SEC ($\Delta V \sim 0.7$ FPS)

DUMP DSE

GO/NO-GO FOR
PYRO ARM AND
CSM/LM EJECTIONTLI CUTOFF +
1 HR 20 MIN

:20

CM/LM PRESSURE EQUALIZATION (DECAL) PAGE L/3-5

*Earth out of window #1
 CM 1/EV/BO/CEX
 (311, 4250, -)*

03:30

TUNNEL HATCH REMOVAL (DECAL)
 DOCKING LATCH VERIFICATION (DECAL)
 LM UMBILICAL CONNECTIONS (DECAL)
 HATCH INSTALLATION (DECAL)
 PRE LM SEP & EJECTION

:40

S-IVB NON-PROPELLIVE VENT START (03:39)

(21101)
(X1111)

V48 (21101) (X1111)
 GO/NO-GO FOR PYRO ARM (CUE MSFN)
 LOGIC ON
 PYRO ARM
 P47 THRUST MONITOR

:50

S-IVB NON-PROPELLIVE VENT COMPLETE (03:54)
 PHOTOGRAPH LM EJECTION, MAG (AA,NN)

TIG: 03:59:20
 BT: 3 SEC
 ΔVT : 0.4 FPS
 ULLAGE: NONE

04:00

CSM/LM EJECTION

SPRING ACTUATOR ΔV
 ~ 0.8 FPS. 5 SEC AFTER
 EJECTION THERE IS A
 4 JET RCS -X TRANSLA-
 TION FOR 3 SEC (ΔV
 ~ 0.4 FPS) TOTAL ΔV
 ~ 1.2 FPS.

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	03:00 - 04:00	1/TLC	3-6

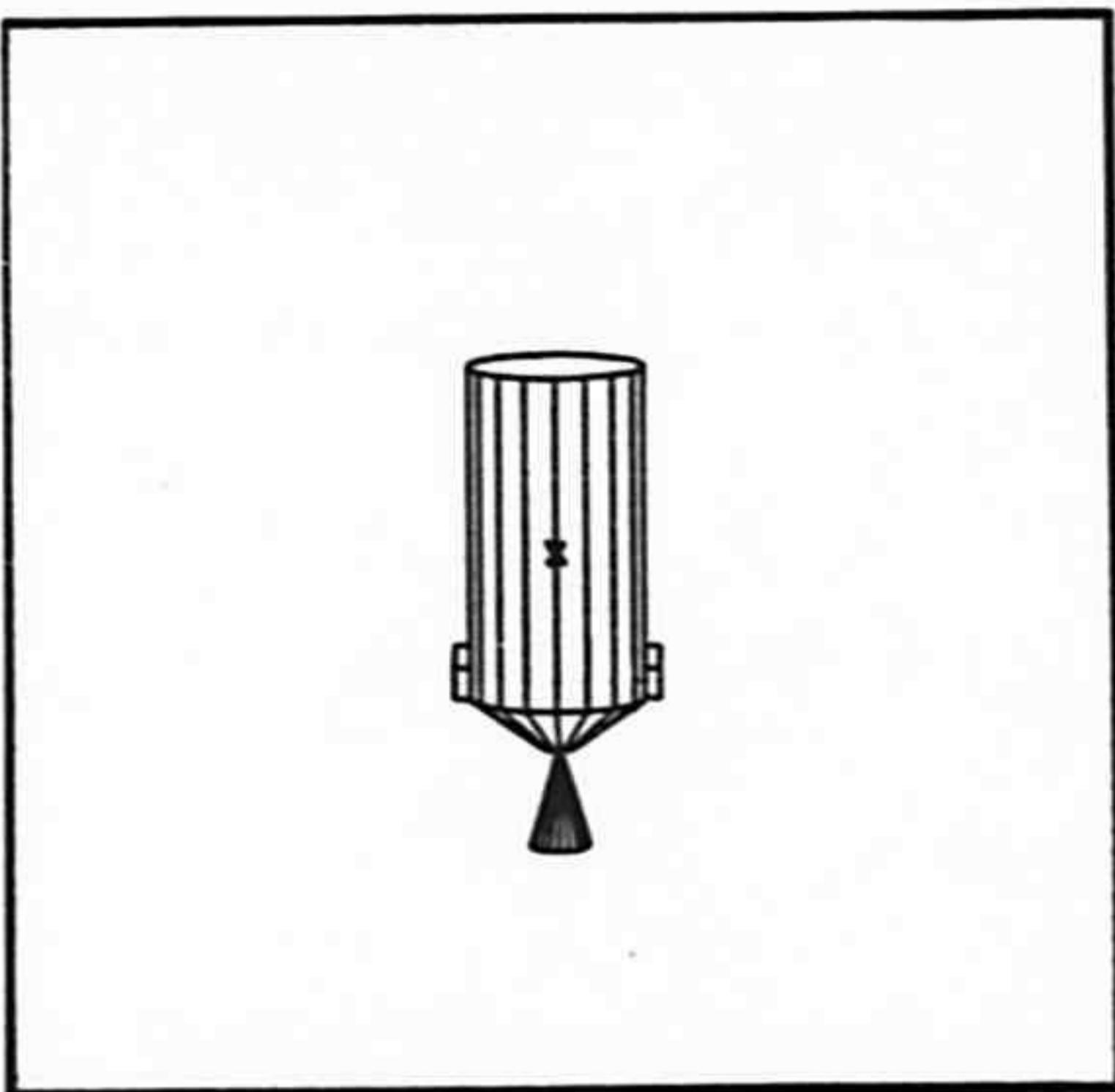
FLIGHT PLANNING BRANCH

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FLIGHT PLAN

GET 04:20

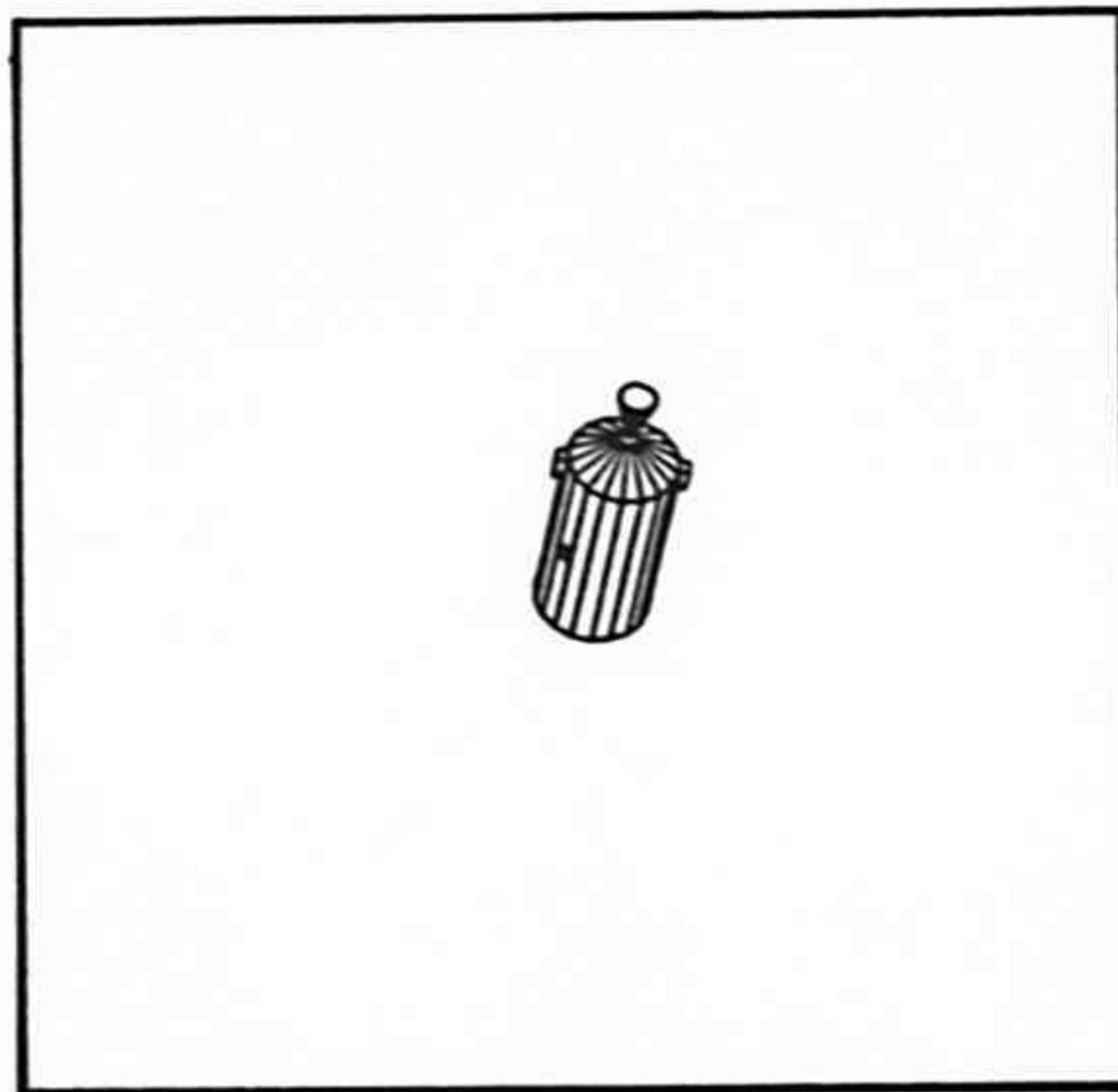
FOV 5°



S-IVB APS EVASIVE INITIATION

GET 04:41

FOV 1°



S-IVB LOX DUMP INITIATION

APOLLO 16

FINAL (4/16)

3/6/72

1/TLC

3-8

FLIGHT PLAN

MCC-H

1554 CST

NOTES

04:00
(21101)
(X1111)

POO, V66 SET CSM S.V. INTO LM S.V.
REPORT: GOOD EJECTION

V49 MNVR TO VIEW S-IVB IN HATCH WINDOW BY 04:12
(090,326,356) OMNI A

CM3/EL/250/CEK

(+8, 1/250, w)

REPORT: GO FOR S-IVB YAW MNVR

VISUALLY INSPECT S-IVB/IU THERMAL SHROUD

*NOTE: 80mm Lens is
< 400ft.*

:10

S-IVB YAW MNVR 04:12:20 (GROUND COMMAND)

GO/NO-GO FOR S-IVB
EVASIVE BURN

:20

REPORT: GO FOR S-IVB EVASIVE BURN

DUMP DSE
(DSE VOICE QUALITY
CHECK)

04:30

M
S
F
N

S-IVB APS EVASIVE BURN 04:22:20 (GROUND COMMAND)

V49 MNVR TO P52 ATTITUDE (05:25) (040,326,035)
DOFF AND STOW PGA'S HGA P -47, Y 98
TRANSFER ITEMS OUT OF PGA POCKETS
TRANSFER PRD TO CWG

S-IVB MNVRS TO PROPELLANT DUMP ATT 04:32

REPORT: LM/CM ΔP
CHARGE BATTERY B

:40

S-IVB CONTINUOUS H₂ VENT - ON 04:39

:50

INSTALL CABIN FAN FILTER (U2)

05:00

TIME & LOG ALL URINE VOIDS AND MEASURE FLUID INTAKE
UNTIL ~ 66:30 GET

THE MNVR TO ACQUIRE
THE S-IVB WILL BE
PERFORMED AT 0.2°/SEC
AND WILL BE INITIATED
AFTER GOOD EJECTION
IS VERIFIED.

GO FOR S-IVB YAW MNVR
INDICATES THAT THE
S-IVB IS IN THE CREW
FIELD OF VIEW AND
ADEQUATE SPACECRAFT
SEPARATION HAS BEEN
ACHIEVED.

THE S-IVB YAW MNVR
WILL BE PERFORMED
NOMINALLY AT LM
EJECTION +13 MIN
EVASIVE BURN ΔV
~ 9.4 FPS

LOX DUMP ΔV ~ 28 FPS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	04:00 - 05:00	1/TLC	3-9

MCC-H

1754 CST

FLIGHT PLAN

NOTES

06:00
 (21101)
 (X1111)

:10

:20

06:30

:40

:50

07:00

M
S
F
N

EAT PERIOD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	06:00 - 07:00	1/TLC	3-11

MCC-H

1854 CST

FLIGHT PLAN

NOTES

07:00
(21101)
(X1111)

:10

:20

07:30

:40

:50

08:00

M
S
F
N

CSM EXP/EVA CHECKLIST

V49 MNVR TO EARTH UV PHOTO ATT (07:15)
(207,355,039) OMNI D
EARTH UV PHOTOGRAPHY SEQ A, PAGE X/2-16
MAG (OO)
MAG (NN)

CSM SYSTEMS CHECKLIST

DEACTIVATE PRIMARY EVAP

PAGE S/1-16

EARTH DISTANCE
~ 33,300 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	-FINAL (4/16)	3/27/72-3/6/72	07:00 - 08:00	1/TLC	3-12

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

08:00
(21101)
(X1111)

V49 MNVR TO OPTICS CALIBRATION ATTITUDE (08:06)
(157,246,330). HGA P -85, Y 153

NOTES

EARTH DISTANCE
~38,900 NM

:10

P23 CISLUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00042)

42 PEACOCK

:20

P23 CISLUNAR NAVIGATION
5 MARKS ON EACH STAR, UPDATE STATE VECTOR
1. N70 (00000) (00000) (00120)
N88 (-45035)(-60456)(-65703)

LOAD W MATRIX
173 GAMMA LUPI
(EFH)

08:30

M
S
F
N

2. N70 (00000) (00000) (00110)
N88 (+27321)(-89225)(-35950)

235 PI SAGITTARII
(ENH)

:40

:50

3. N70 (00000) (00000) (00110)
N88 (+22735)(-83636)(-49882)

214 ZETA SAGITTARII
(ENH)

09:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	08:00 - 09:00	1/TLC	3-13

MCC-H

2054 CST

FLIGHT PLAN

NOTES

 09:00
 (21101)
 (X1111)

 4. N70 (00000) (00000) (00120)
 N88 (-21341)(-93878)(-27046)
204 SABIK
(EFH)

:10

**INSTALL AND EVALUATE POLAROID
FILTER ON LAST P23****LOOK AT DARK PORTION OF EARTH IN SXT - REFLECTION?**

:20

 P00
 V49 MNVR TO OPTICS CALIBRATION ATTITUDE (9:30)
 (157,246,330) HGA P -85, Y 153
M
S
F
N
 P23 CISLUNAR NAVIGATION
 OPTICS CALIBRATION STAR N70 (00042)
**READ & NOTE TPAC Values vs. N91
CHECK TPAC DRIFTS in CMC & MANUAL**

42 PEACOCK

09:30

 SECURE HGA: MAN, WIDE HGA P -52, Y 270
 V49 MNVR TO THERMAL ATTITUDE (9:40)
 (033,246,330) OMNI C

 S-IVB APS MCC-2
 GET ~09:30
 ΔV NOM. ZERO
(21111)
(X1111)
 V48 (21111)
 (X1111)
 INFLIGHT EXERCISER (A-8 SECTION !)

:40

* CSM G&C CHECKLIST

PAGE G/2-5

*PERFORM IF MCC-1
IS REQUIRED*EMS ΔV TEST & NULL BIAS CHECK
*REPORT: BIAS

:50

CREW EXERCISE PERIOD

10:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	09:00 - 10:00	1/TLC	3-14

FLIGHT PLANNING BRANCH

MCC-H

2154 CST

FLIGHT PLAN

NOTES

10:00
(21111)
(X1111)

:10

:20

10:30

M
S
F
N

CREW EXERCISE PERIOD

UPDATE TO CSM
MCC-1 MNVR PAD
CSM S.V.
UPLINK TO CSM
CSM S.V. & V66
MCC-1 TGT LOAD

:40

P52 (OPTION 3)
(PTC ORIENT)

:50

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

11:00

EARTH DISTANCE
~ 51,400 NM

P52	IMU REALIGN
N71:	— — , — —
N05:	— — — . — —
N93:	
X	— — . — — —
Y	— — . — — —
Z	— — . — — —
GET	— — — : — — : — —

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	10:00 - 11:00	1/TLC	3-15

MCC-1
BURN TABLE

NO MANUAL START OR RESTART

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	$\pm 10^\circ$ TERMINATE	BT + 1 SEC	IF < 2 FPS, TRIM X AXIS TO 0.2 FPS IF > 2 FPS, NO TRIM

MCC-H

2354 CST

FLIGHT PLAN

NOTES

12:00
(21111)
(X1111)

REPORT: LM/CM ΔP
VENT BATTERIES UNTIL SYSTEM TEST METER 7A=0

:10
(21101)
(X1111)

LIOH CANISTER CHANGE
(3 INTO A, STOW 1 IN B5)
IF MCC-1 NOT PERFORMED
CYCLE CMC MODE - FREE/AUTO
V48 (21101) (X1111)

:20

CSM EXP/EVA CHECKLIST
V49 MNVR TO EARTH UV PHOTO ATT (12:30)
(207,356,030) OMNI D
EARTH UV PHOTOGRAPHY SEQ B, PAGE X/2-17
MAG (OO)
MAG (NN)

12:30

M
S
F
N

:40
(21111)
(X1111)

V48 (21111)
(X1111)

:50

CREW EXERCISE PERIOD

13:00

EARTH DISTANCE
~ 58,100 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72	12:00 - 13:00	1/TLC	3-18

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0054 CST

NOTES

13:00
(21111)
(X1111)

CREW EXERCISE PERIOD

:10

CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)

(21101)
(X1111)

:20

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2

V49 MNVR TO PTC ATTITUDE
(N20,270,000)

P20 OPT 2 X-AXIS

N78 (0,0,0)

N79 (-0.4200, +000.50)

N34 (0,0,0)

DAP LOAD STATUS
(21101)(X1111)

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUP

UPDATE TO CSM
P37 PADS (LAUNCH
+25,35,45, & 55)

13:30

M
S
F
N

:40

PTC

:50

EAT PERIOD

14:00

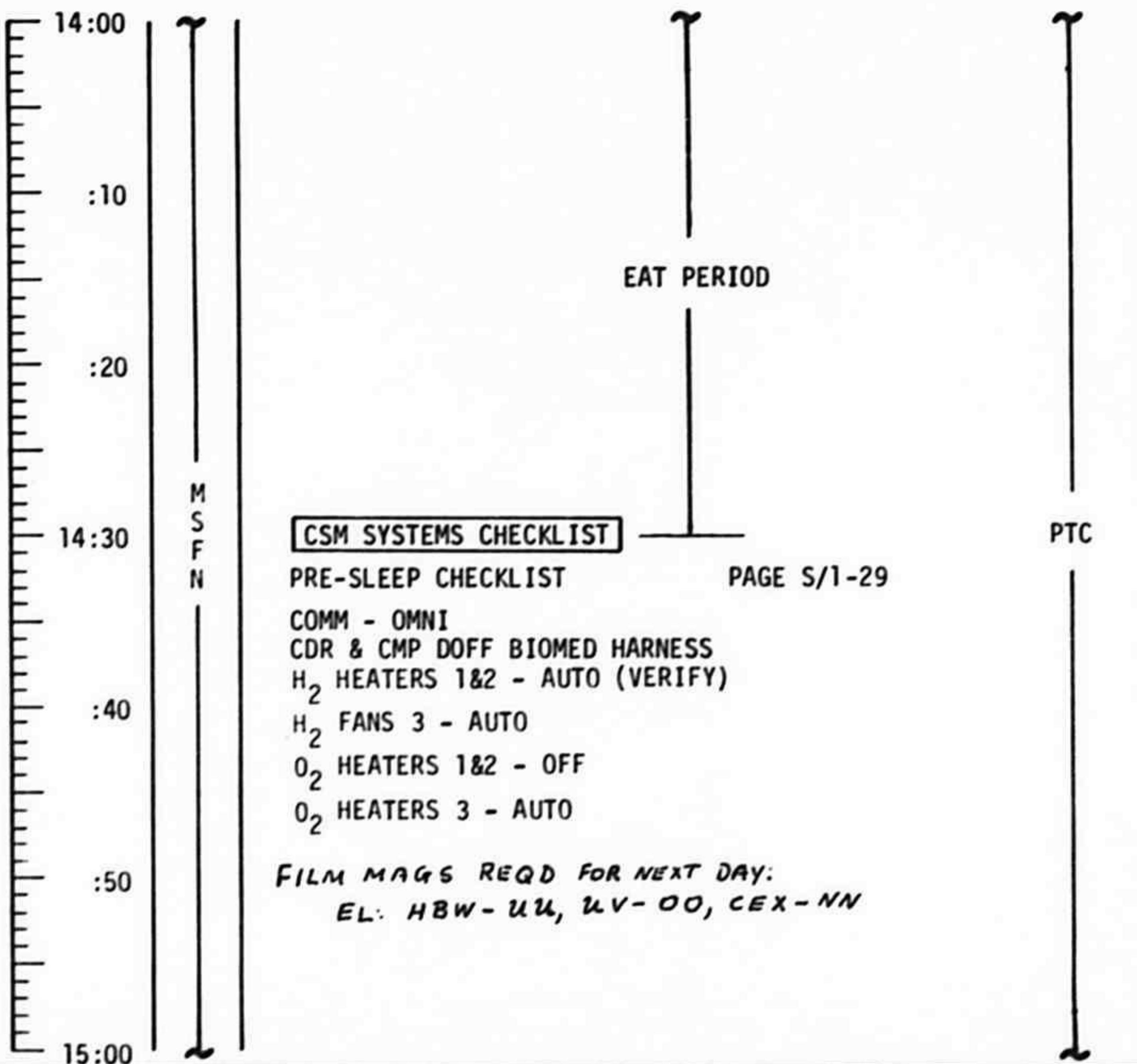
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	13:00 - 14:00	1/TLC	3-19

MCC-H

0154 CST

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)EARTH DISTANCE
~68,400 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) Chg. B	3/6/72-4/7/72	14:00 - 15:00	1/TLC	3-20

FLIGHT PLANNING BRANCH

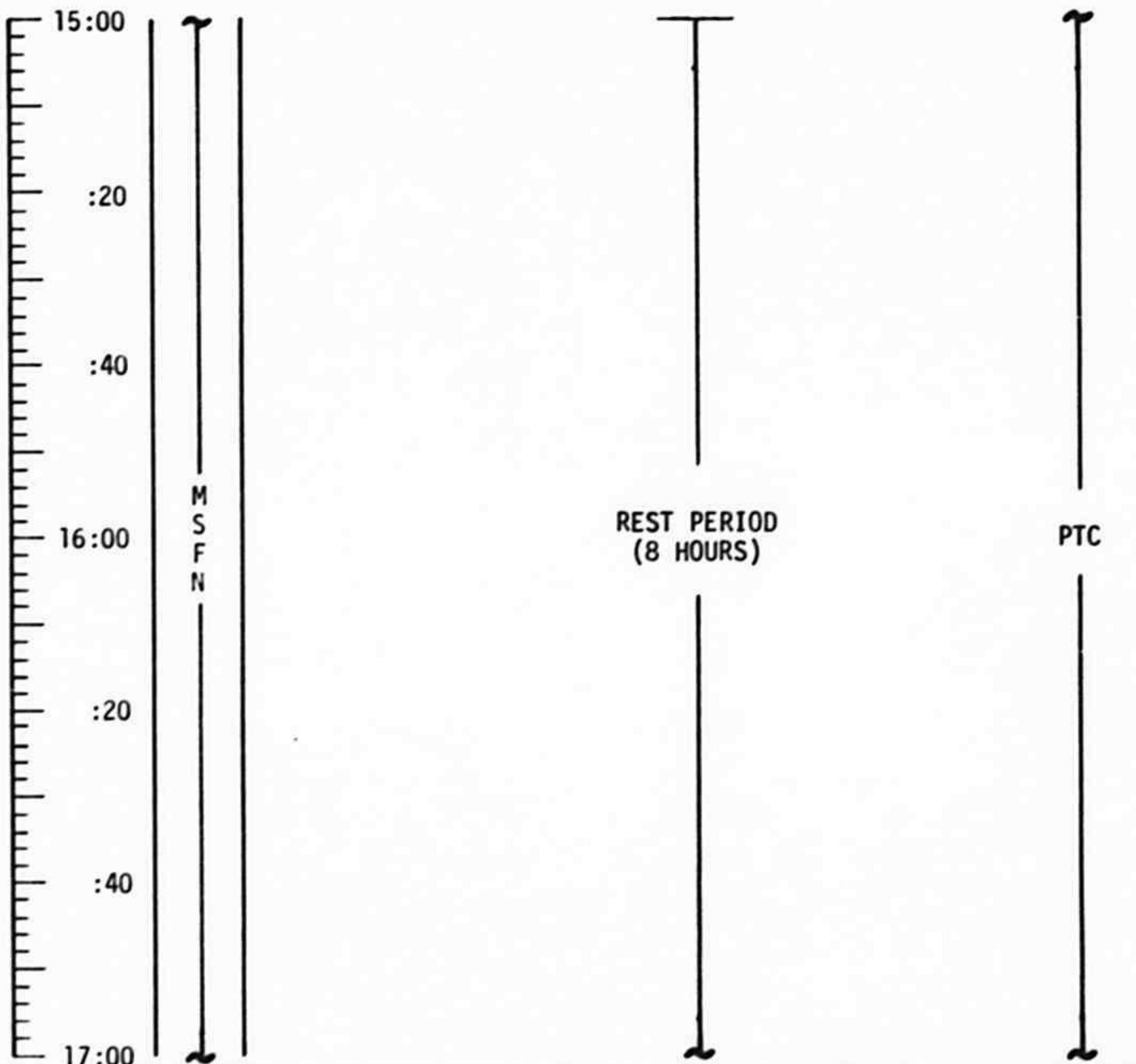
FLIGHT PLAN

MCC-H

0254 CST

NOTES

DAP LOAD STATUS
(21101) (X1111)



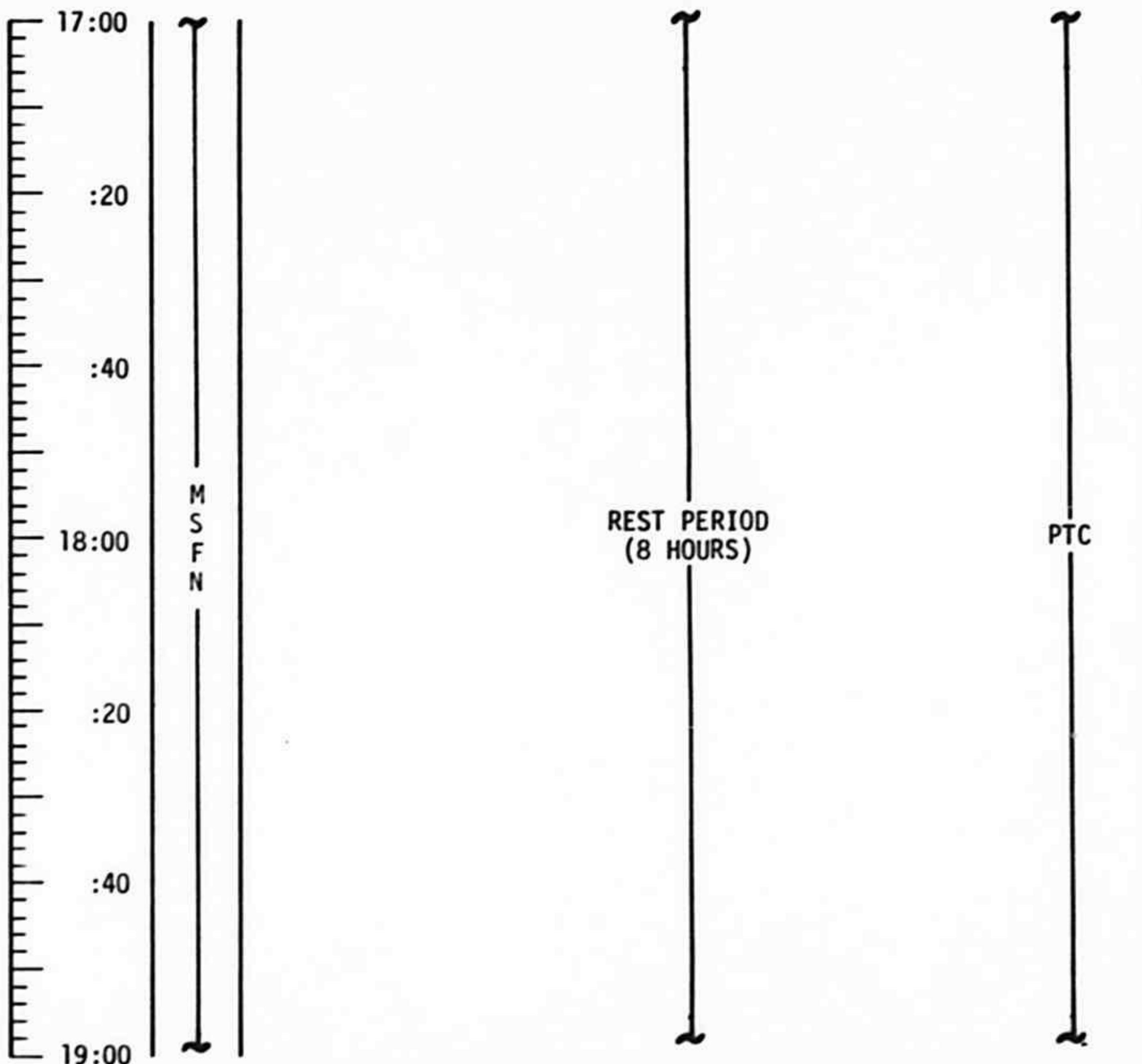
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	15:00 - 17:00	1/TLC	3-21

MCC-H

0454 CST

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101) (X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	17:00 - 19:00	1/TLC	3-22

FLIGHT PLANNING BRANCH

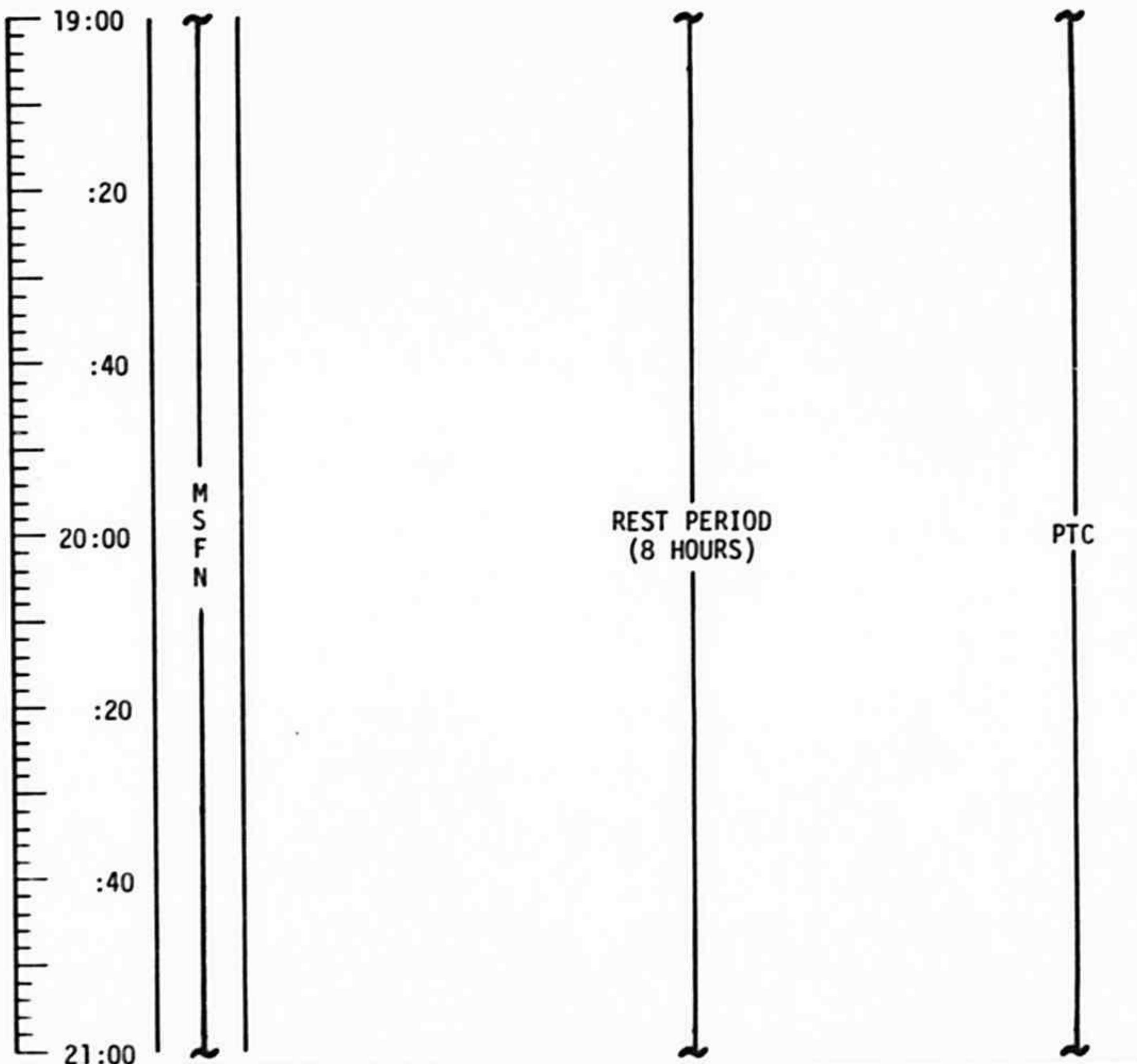
FLIGHT PLAN

MCC-H

0654 CST

NOTES

DAP LOAD STATUS
(21101)(x1111)



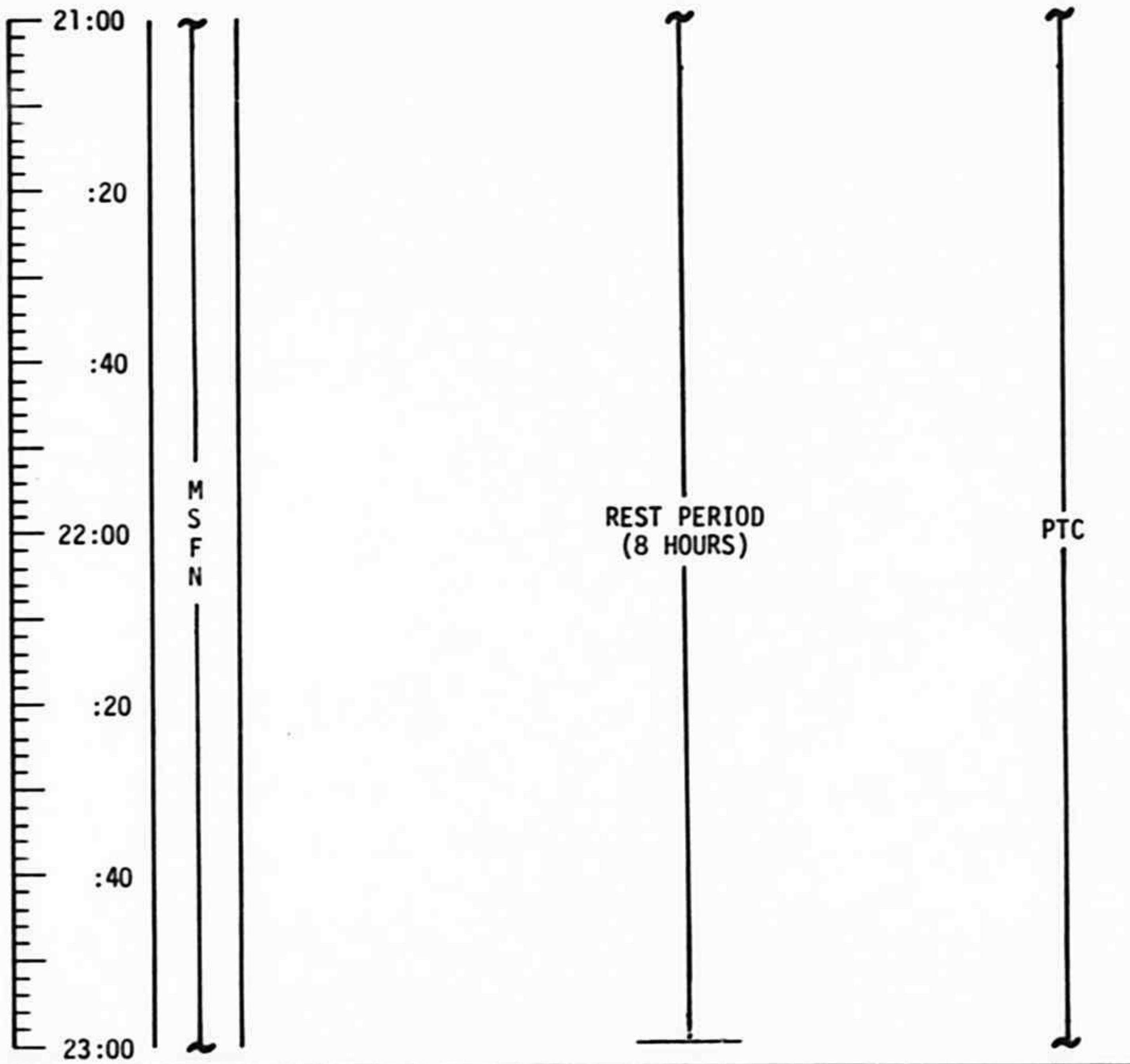
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	19:00 - 21:00	1/TLC	3-23

MCC-H

0854 CST

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(x1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	21:00 - 23:00	1/TLC	3-24

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1054 CST

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN

23:00

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST
CHARGE BATTERY A
 H_2 HEATERS 1&2 - OFF

PAGE S/1-29

NOTES

DAP LOAD STATUS
(21101)(X1111)
EARTH DISTANCE
~ 97,700 NM

:10

:20

BEGIN URINE COLLECTION PERIOD:
UNSTOW URINE SAMPLE BAGS, AS NEEDED (A6)
COLLECT URINE PER URINE DUMP MODES PAGE S/1-11
C. UTS (COLLECTION)
D. UTS/URINE BAG (TRANSFER)

COLLECTION PERIOD
BEGINS WITH SECOND
VOID AFTER WAKEUP.
EACH CREWMAN WILL
USE A SEPERATE URINE
SAMPLE BAG FOR URINE
COLLECTION.

23:30

M
S
F
N

:40

EAT PERIOD

:50

PTC

24:00

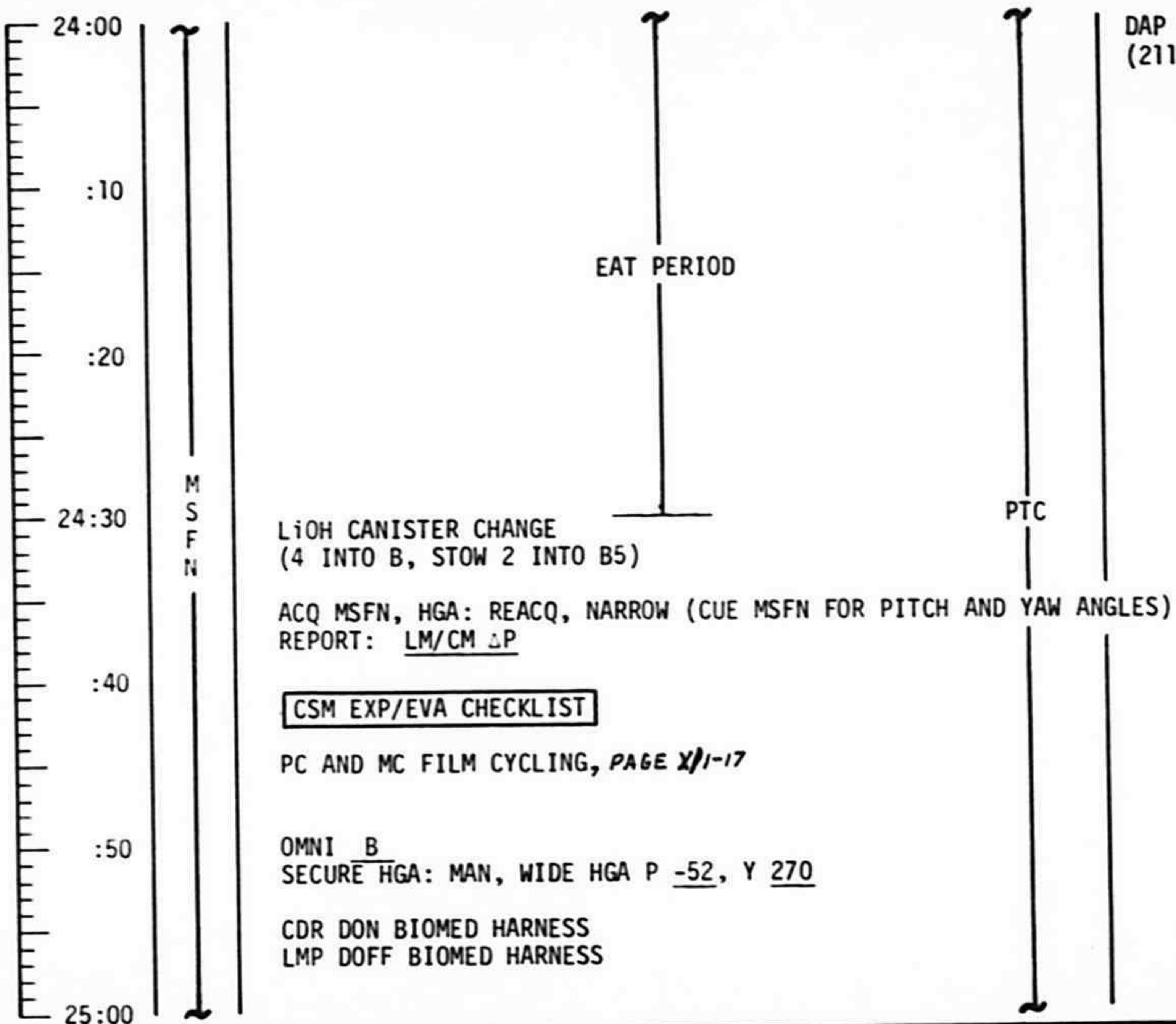
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	23:00 - 24:00	2/TLC	3-25

MCC-H

FLIGHT PLAN

NOTES

1154 CST

DAP LOAD STATUS
(21101)(x1111)UPDATE TO CSM
HGA ANGLES FOR
FILM CYCLEMSFN CMD
DATA SYS - OFF

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72	24:00 - 25:00	2/TLC	3-26

CHANGE A

FLIGHT PLANNING BRANCH

MCC-H

1254 CST

FLIGHT PLAN

25:00

:10

:20

25:30

:40

:50

26:00

M
S
F
N

CSM EXP/EVA CHECKLIST
ELECTROPHORESIS, PAGE X/2-36
MAG (UU)

ELECTROPHORESIS
 PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/6/72	25:00 - 26:00	2/TLC	3-27

CHANGE A

FLIGHT PLANNING BRANCH

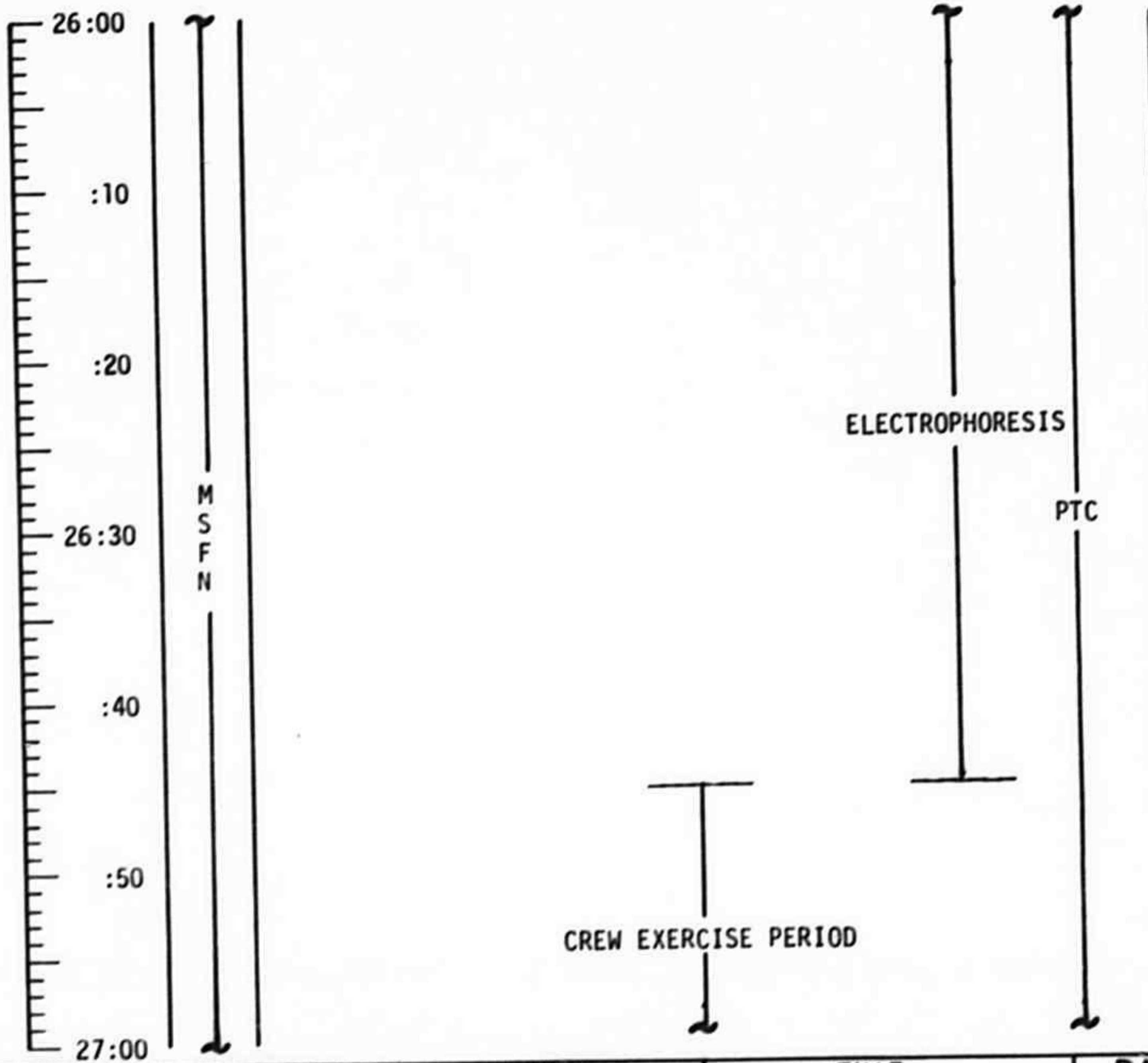
FLIGHT PLAN

MCC-H

1354 CST

NOTES

DAP LOAD STATUS
(21101)(x1111)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	26:00 - 27:00	2/TLC	3-28

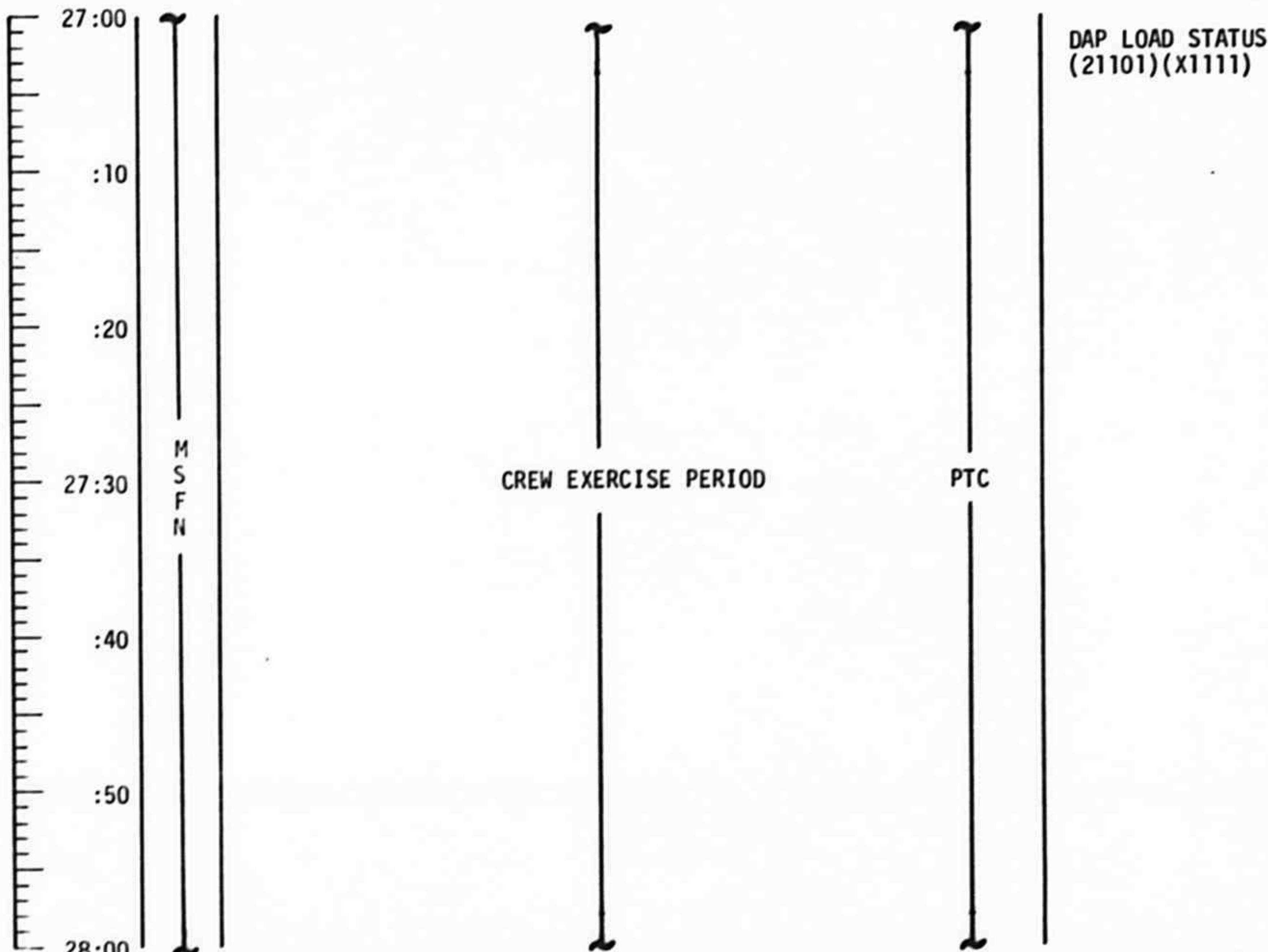
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1454 CST

NOTES



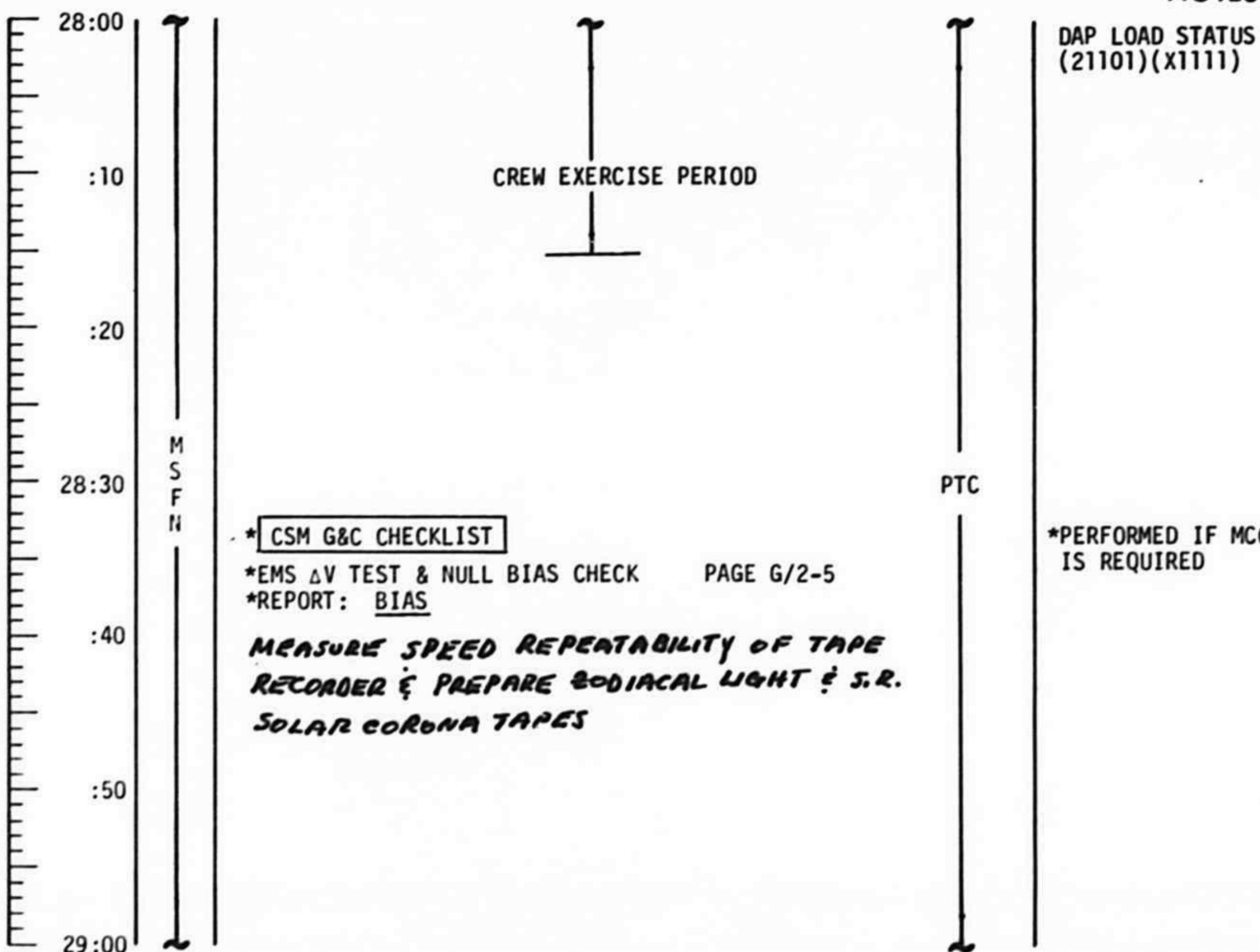
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	27:00 - 28:00	2/TLC	3-29

MCC.H

1554 CST

FLIGHT PLAN

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	28:00 - 29:00	2/TLC	3-30

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

NOTES

29:00

:10

(21101)
(X1111)

:20

CSM G&C CHECKLIST

EXIT G&N PTC PAGE G/8-3

CSM EXP/EVA CHECKLIST

V49 MNVR TO EARTH UV PHOTO ATT (29:30)

(208,358,022) OMNI D

EARTH UV PHOTOGRAPHY SEQ A, PAGE X/2-16

MAG (OO)

MAG (NN)

29:30

M
S
F
N

:40

(21111)
(X1111)

V48(21111)

(X1111)

P52 (OPTION 3)
(PTC ORIENT)

:50

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

PTC

DAP LOAD STATUS
(21101)(X1111)

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____

EARTH DISTANCE
~ 117,600 NM

MISSION

EDITION

DATE

TIME

DAY/REV

PAGE

APOLLO 16

-FINAL (4/16)

3/27/72 3/6/72

29:00 - 30:00

2/TLC

3-31

MCC-2
BURN TABLE

NO MANUAL START OR RESTART

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC	IF < 2 FPS, TRIM X AXIS TO 0.2 FPS IF > 2 FPS, NO TRIM

FLIGHT PLAN

MCC-H

1754 CST

30:00
(21111)
(X1111)

H_2 PURGE LINE HEATERS - ON
 *P30 EXTERNAL ΔV
 *CYCLE CMC MODE - FREE/AUTO
 *V48(21101)(X1111)
 *V49 MNVR TO PAD BURN ATTITUDE
 *IF SPS MIDCOURSE REQUIRED:
 * PRE SPS BURN SIM PREP (CUE CARD)
 * TERMINATE BATTERY CHARGE A
 *SXT STAR CHECK
 *P40 SPS THRUSTING OR P41 RCS THRUSTING
 WASTE WATER DUMP
 H_2 & O_2 FUEL CELL PURGE

*PERFORM IF MCC-2
IS REQUIRED

:10

:20

30:30

M
S
F
N

H_2 PURGE LINE HEATERS - OFF

TLI CUTOFF +28 HR

:40

MCC-2

TIG: 30:39
 BT: NOM ZERO
 ΔVT : NOM ZERO
 ULLAGE: NONE

:50

*V66 SET CSM S.V. INTO LM S.V.
 *IF SPS MIDCOURSE PERFORMED:
 * PC - OFF
 * MC - OFF
 * SM/AC PWR - OFF
 * CHARGE BATTERY A
 *REPORT: BURN STATUS
 *V48(21111)
 (X1111)
 REPORT: LM/CM ΔP
 IF LM/CM ΔP < 2.7 PSID, TUNNEL VENT VLV-VENT
 UNTIL ΔP \geq 2.7 PSID.

31:00

BURN STATUS REPORT

X	X			ΔTIG
X	X			BT
				V_{gx}
				TRIM
X	X	X		R
X	X	X		P
X	X	X		Y
				V_{gy}
				V_{gz}
				ΔV_c
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBAL

I

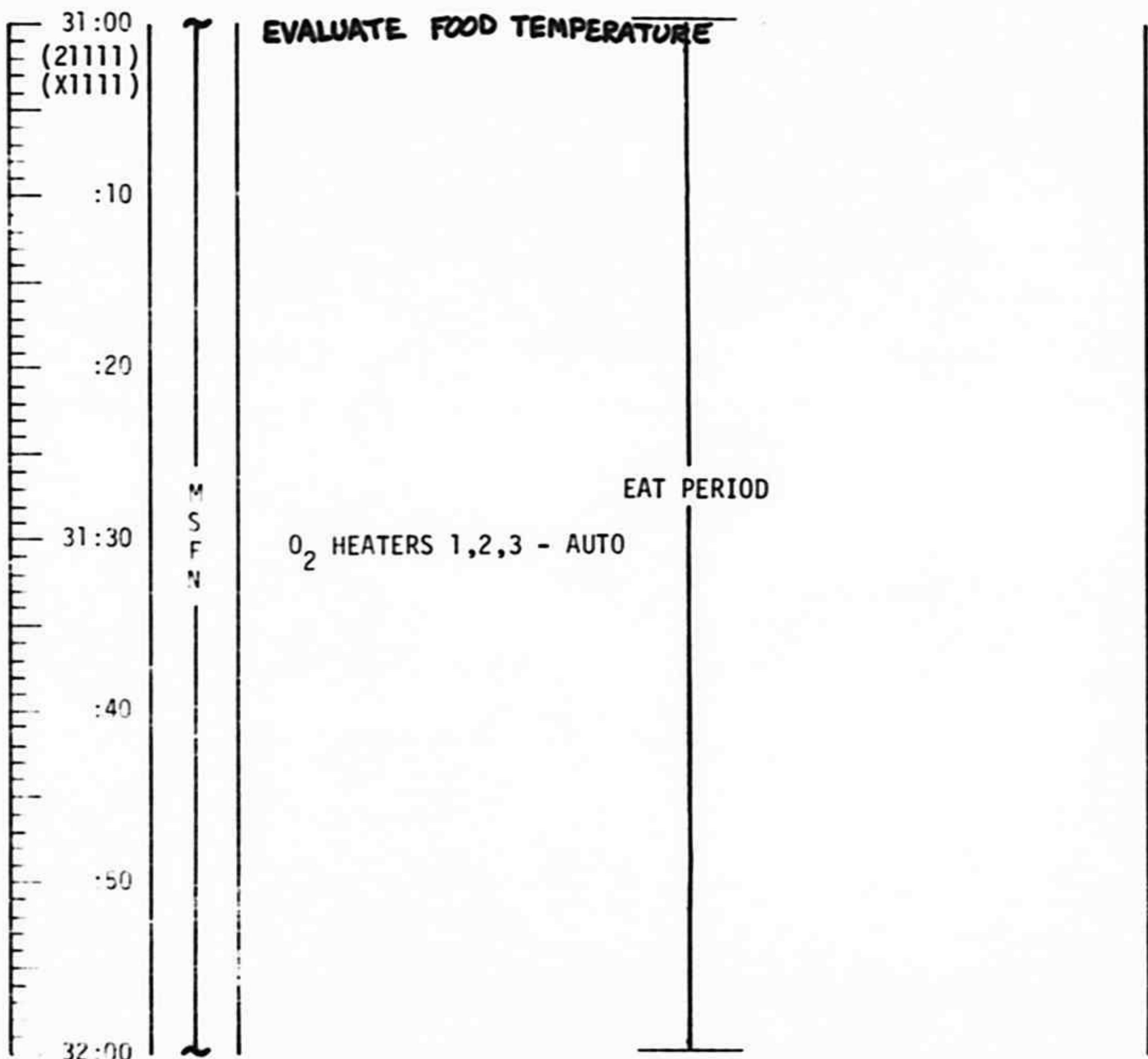
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	30:00 - 31:00	2/TLC	3-33

MCC-H

1854 CST

FLIGHT PLAN

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	31:00 - 32:00	2/TLC	3-34

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

NOTES

32:00

(21111)
(X11111)

PREPARE ITEMS PER CSM TO LM TRANSFER LIST

:10

CSM TO LM TRANSFER LIST (TLC)

:20

DIRECT O₂ VLV - OPEN
UNTIL CABIN PRESS
=5.7 PSIA, then CLOSE
V49 MNVR TO LM
CHECK OUT ATT (32:45)
(337,087,000)
HGA P -30, Y 270

32:30

M
S
F
N

:40

CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG	TEMP STOW
ICG	SCISSORS (1)	DATA FILE
CCU CABLE	CWG ELECT ADAPT W/CAP (2)	ON CREW
ON CREW	COMM CARR (2)	ON CREW
R5	INFILIGHT STRAPS (4)	ON CDR'S UMBIL
R5	UTILITY STRAPS (3)	LHSSC
R13	70MM MAG (4) IN BAG	AFT RHSSC (BW-L, HCEX-A,E & F)
R13	70MM MAG (3) IN BAG	AFT ENG COVER (BW-H & I,HCEX-D)
A8	70MM MAG (3) IN BAG	AFT ENG COVER (BW- I,K,M ,J,K,M)
R13	70MM MAG (3) IN BAG	FWD RHSSC (BW-G,HCEX-B&C)
R13	16MM MAG (6) W/BAG INCL PASSIVE DOS(0101)	RHSSC (P,Q,R,S,T & U)
R13	16MM MAG (2) IN BAG	1-W/BAG PKT (0)
R3	LM ACTIVATION C/L (2)	1-WINDOW SEQ CAMR (N)
		DATA FILE

:50

COUCHES: CDR - 0°, CMP - 0°, LMP - 180°
TUNNEL LIGHTS - ON
CM/LM PRESSURE EQUALIZATION (DECAL)
TUNNEL HATCH REMOVAL (DECAL)
PROBE REMOVAL (DECAL)
DROGUE REMOVAL (DECAL)
O₂ HEATERS 1,2 - OFF
O₂ HEATERS 3 - AUTO

33:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE X8(4/16)	3/27/72-4/7/72	34:00 - 35:00	2/TLC	3-35

FLIGHT PLAN

CSM

MCC-H

LM

CDR

LMP

2054 CST

CMP
REPORT: DOCKING
TUNNEL INDEX ANGLE
OPEN LM HATCH
LMP TRANSFER TO LM
TRANSFER ITEMS PER
LM ACTIVATION
CHECKLIST

33:00
(21111)
(X1111)

LM ACTIVATION CHECKLIST PAGE 1-3

IVT TO LM

:10

IVT TO LM

ENTRY STATUS CHECK

:20

HOUSEKEEPING

33:30

FABRICATE FLOOD LIGHT SHADES
ADD TAPE TO TUNNEL DECALS

:40

EVALUATE FLUID BEHAVIOR

:50

34:00

UPDATE TO CSM
LOI -5 HR FLYBY

M
S
F
N

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	33:00 - 34:00	2/TLC	3-36

FLIGHT PLAN

CSM
CMP

MCC-H

2154 CST

LM

CDR

LMP

HOUSEKEEPING

LM PWR - RESET/OFF
(AT LMP REQUEST)
REPORT: GET(____:____:____)

SYS TEST - 7D
SYS TEST IND = 0 VOLTS

CSM/LM VHF VOICE CHECK
(SIMPLEX A&B)

LM PWR - ON
(AT LMP REQUEST)
REPORT: GET(____:____:____)
SYS TEST - 7D
SYS TEST IND = 0.5-3.2
VOLTS

34:00
(21111)
(X1111)

:10

COMM ACTIVATION

:20

S-BAND/VHF SIMPLEX VOICE TEST

34:30

:40

OPS CHECKOUT

:50

COMM DEACTIVATION

35:00

LMP & CDR IVT TO CSM PAGE 1-21

MISSION

EDITION

DATE

TIME

DAY/REV

PAGE

APOLLO 16

FINAL (4/16)

3/6/72

34:00 - 35:00

2/TLC

3-37

MCC.H

2254 CST

FLIGHT PLAN

NOTES

	35:00 (21111) (X1111)	CLOSE LM HATCH INSTALL DROGUE (DECAL) INSTALL PROBE (DECAL) HATCH INSTALLATION (DECAL) LM TUNNEL VENT VALVE - LM/CM ΔP TUNNEL LIGHTS - OFF
:10		
:20		
35:30	M S F N	CYCLE CMC MODE - FREE/AUTO V48 (21101)(X1111) OMNI B SECURE HGA: MAN, WIDE HGA P <u>-52</u> , Y <u>270</u>
:40 (21101) (X1111)		CSM G&C CHECKLIST
:50		PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2 V49 MNVR TO PTC ATTITUDE (N20,270,000) P20 OPT 2 X-AXIS N78 (0,0,0) N79 (-0.4200, +000.50) N34 (0,0,0)
36:00		PTC

LM TO CM TRANSFER LIST (TLC)		
LM LOCATION	ITEM	CM LOCATION
ON CREW	COMM CARR (2)	ON CREW
ON CREW	CWG ADPTR W/CAP(2)	CCU CABLE
TEMP. STG.	LM ACT C/L (1)	R3
TEMP. STG.	JETTISON BAG	A2
JETT BAG	DRINK BAG (2)	TEMP STOWAGE
JETT BAG	FOOD STICK (1)	TEMP STOWAGE

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUPDAP LOAD STATUS
(21101)(X1111)

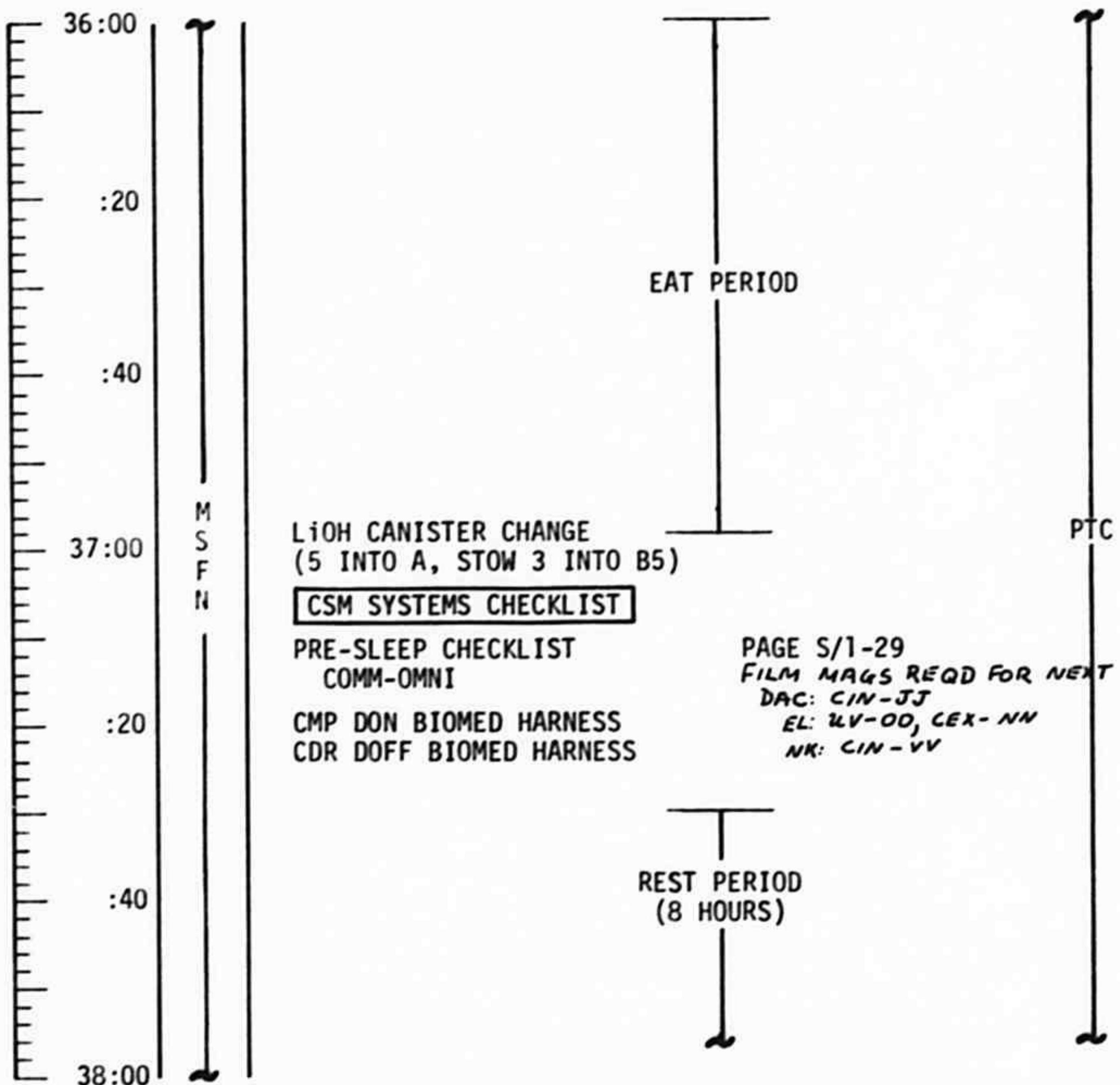
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	35:00 - 36:00	2/TLC	3-38

FLIGHT PLANNING BRANCH

MCC-H

2354 CST

FLIGHT PLAN



PAGE S/1-29
 FILM MAGS REQD FOR NEXT DAY:
 DAC: CIN-JJ
 EL: UV-00, CEX-NN
 NK: CIN-VV

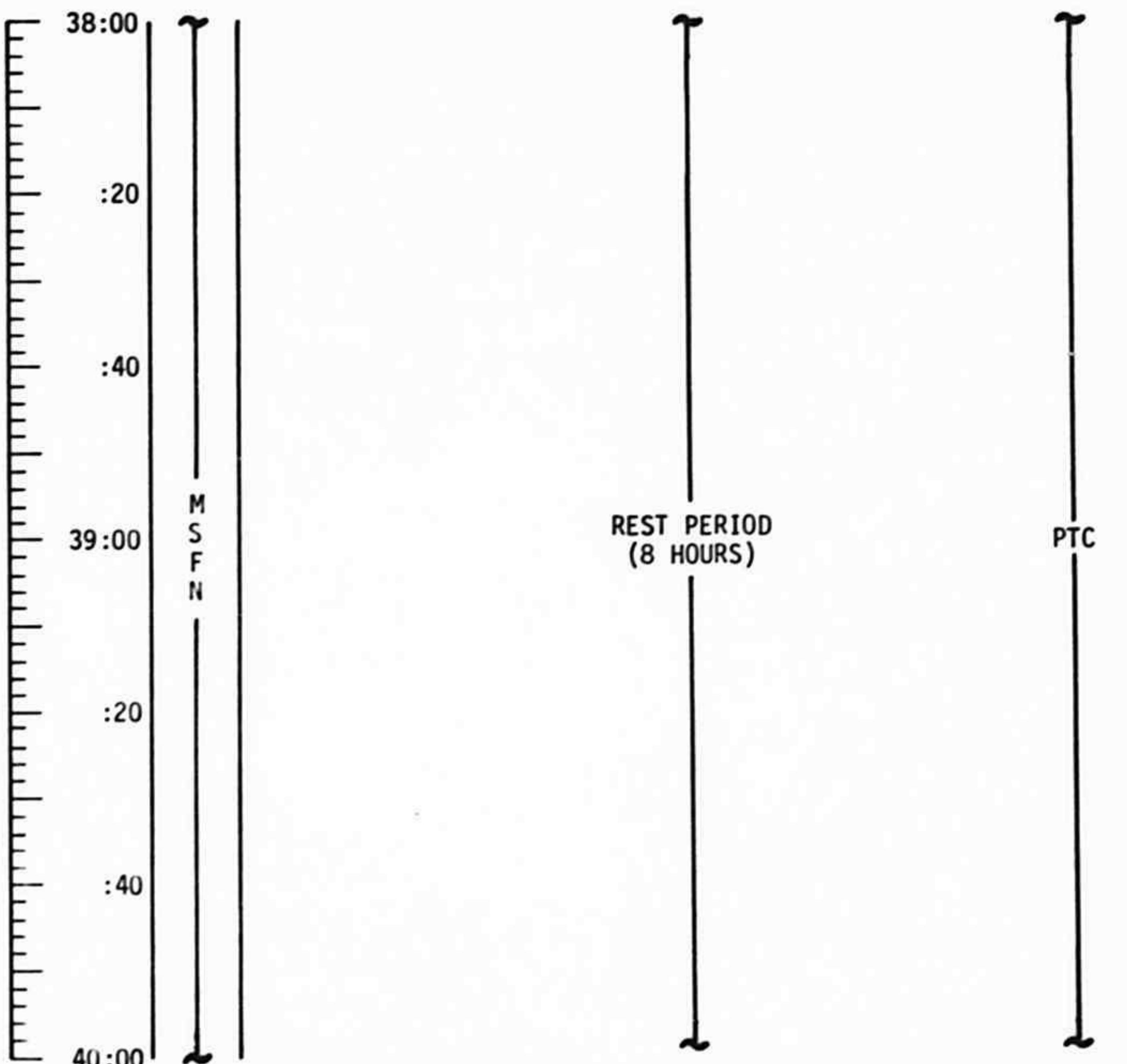
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72-4/7/72	36:00 - 38:00	2/TLC	3-39

MCC-H

0154 CST

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)

1

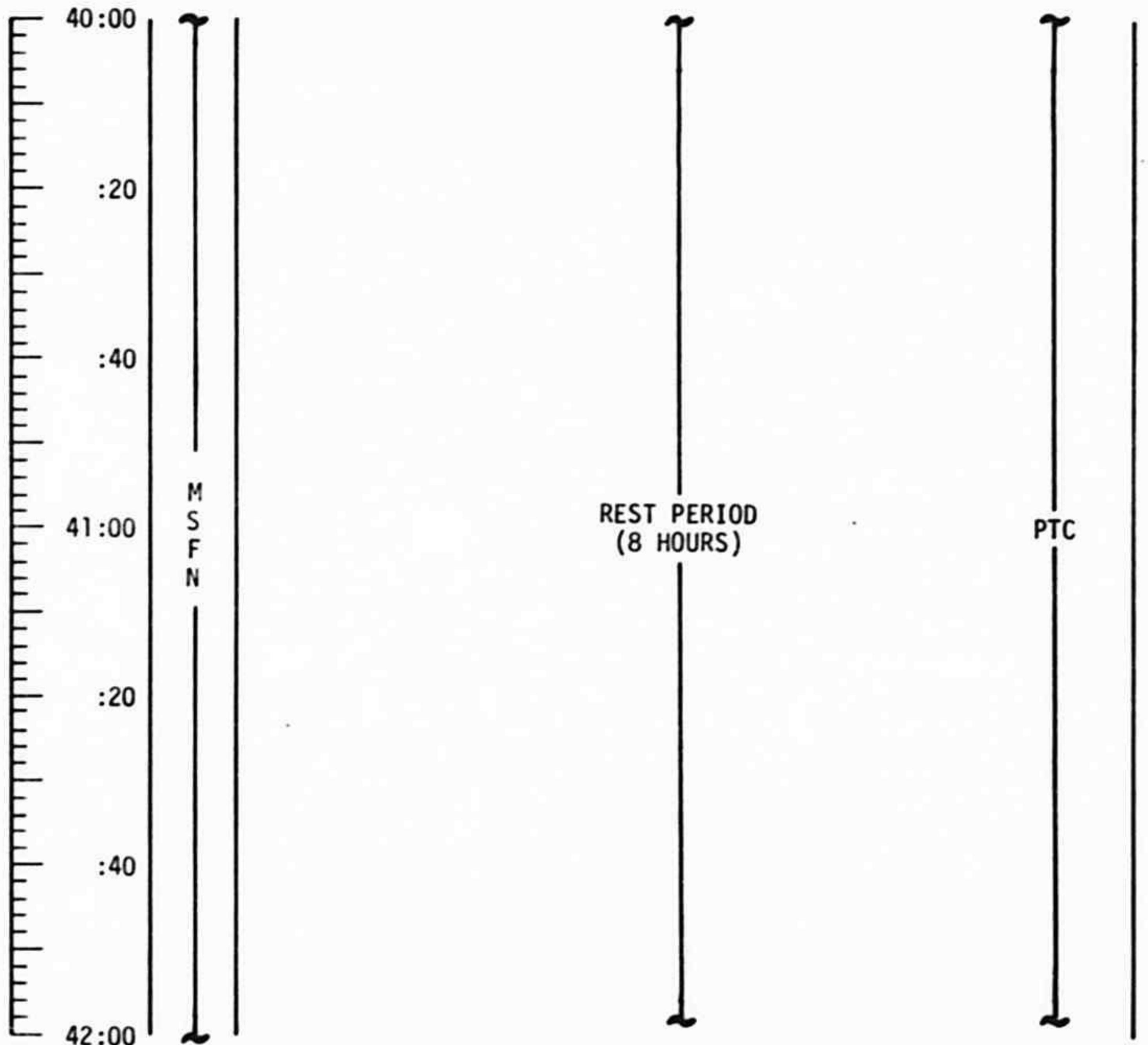
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	38:00 - 40:00	2/TLC	3-40

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0354 CST



NOTES

DAP LOAD STATUS
(21101)(X1111)

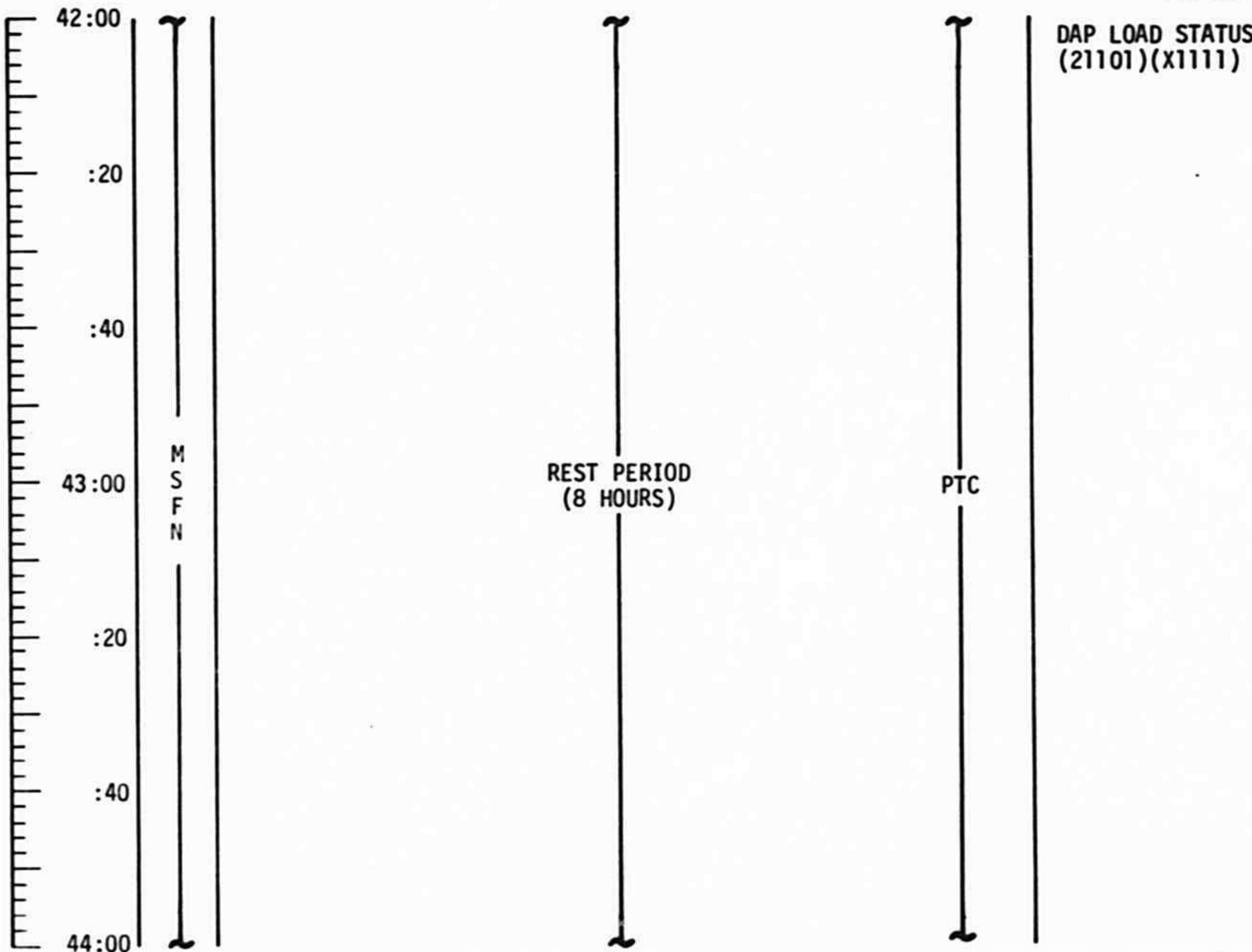
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	40:00 - 42:00	2/TLC	3-41

FLIGHT PLAN

MCC-H

0554 CST

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	42:00 - 44:00	2/TLC	3-42

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0754 CST

44:00

:10

:20

44:30

:40

:50

45:00

M
S
F
N

REST PERIOD
(8 HOURS)

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	44:00 - 45:00	2-3/TLC	3-43

MCC-H

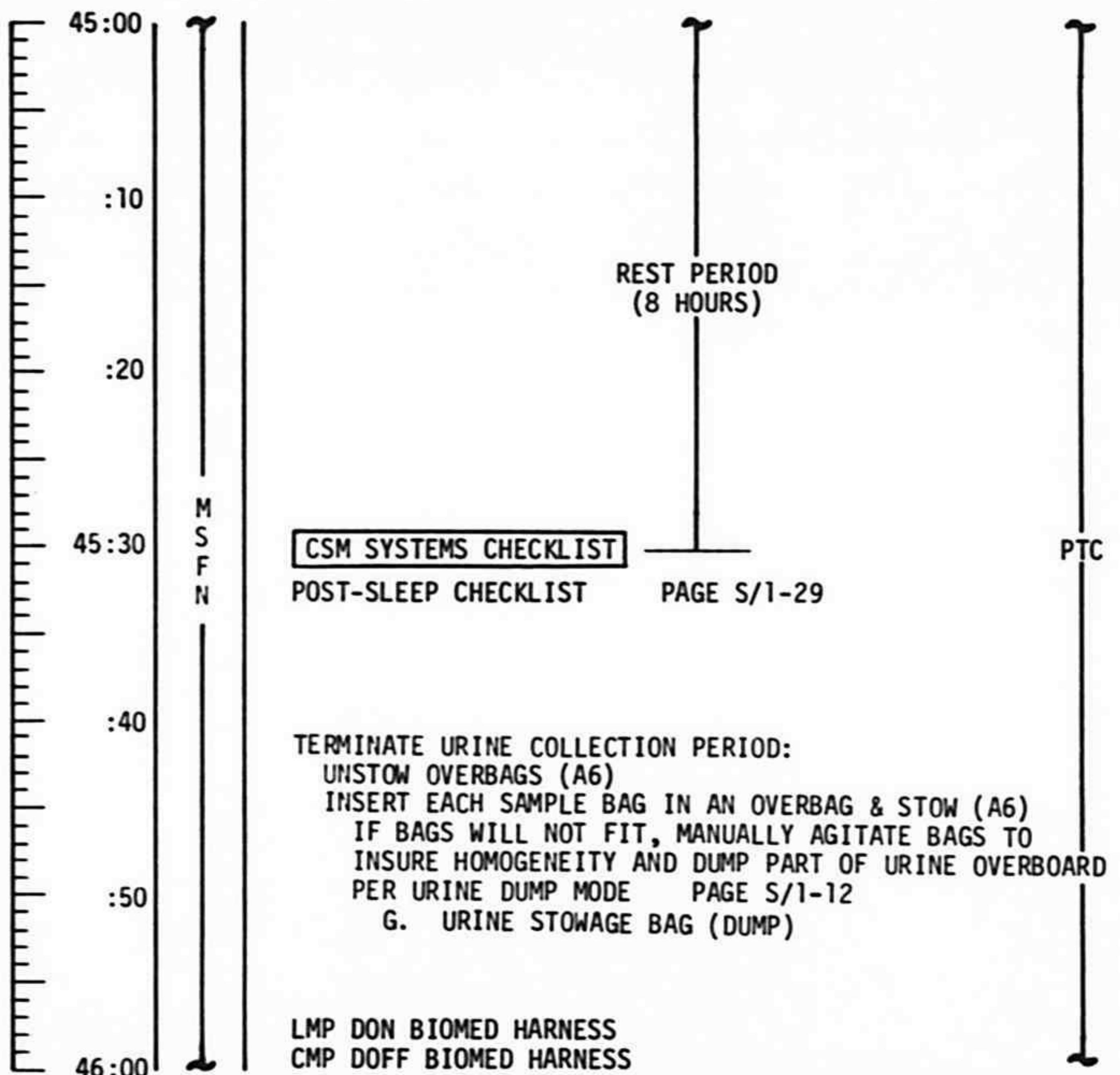
0854 CST

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN



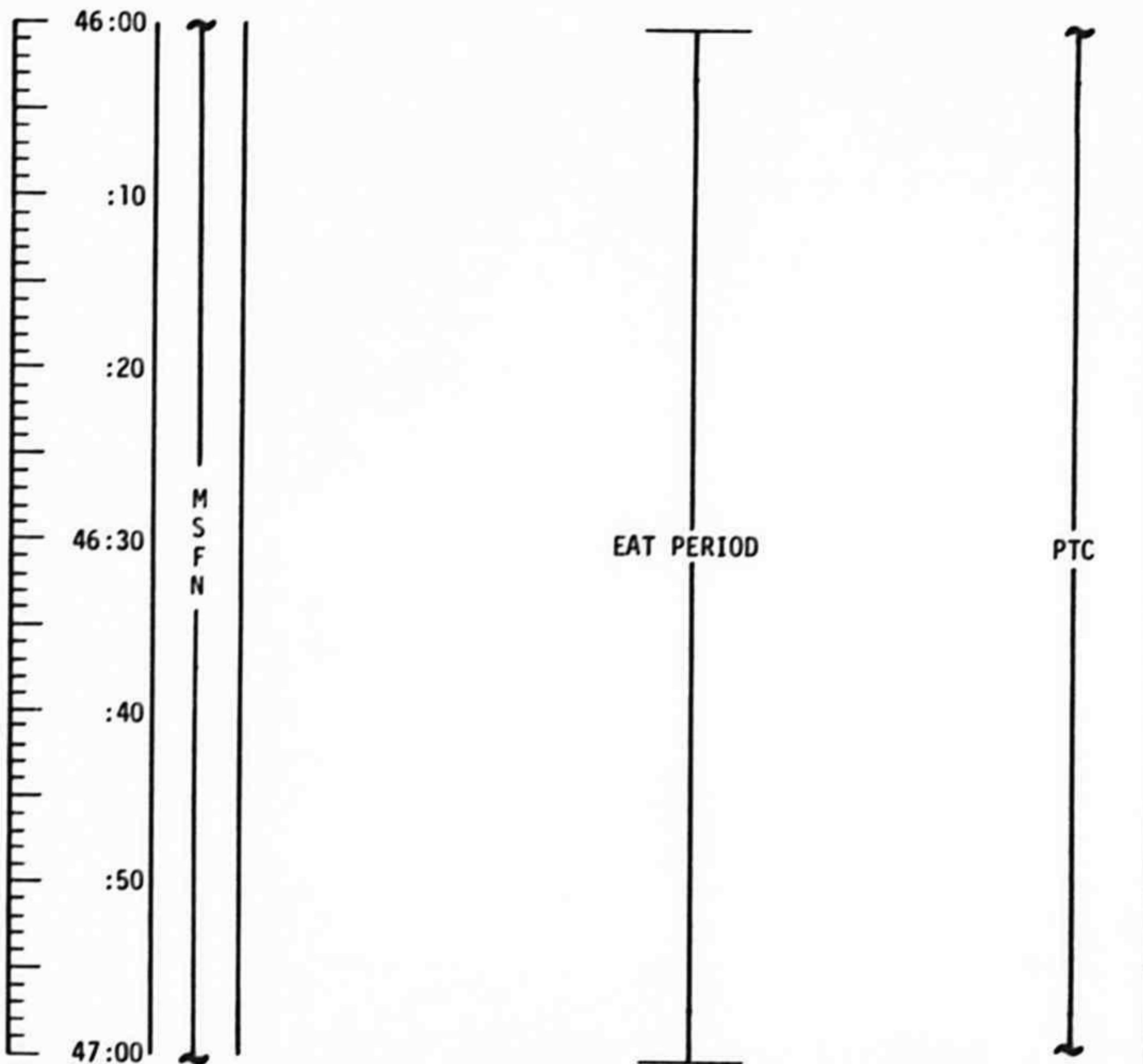
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	45:00 - 46:00	3/TLC	3-44

FLIGHT PLANNING BRANCH

MCC-H

0954 CST

FLIGHT PLAN



NOTES

DAP LOAD STATUS
(21101)(X1111)
EARTH DISTANCE
~154,300 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	46:00 - 47:00	3/TLC	3-45

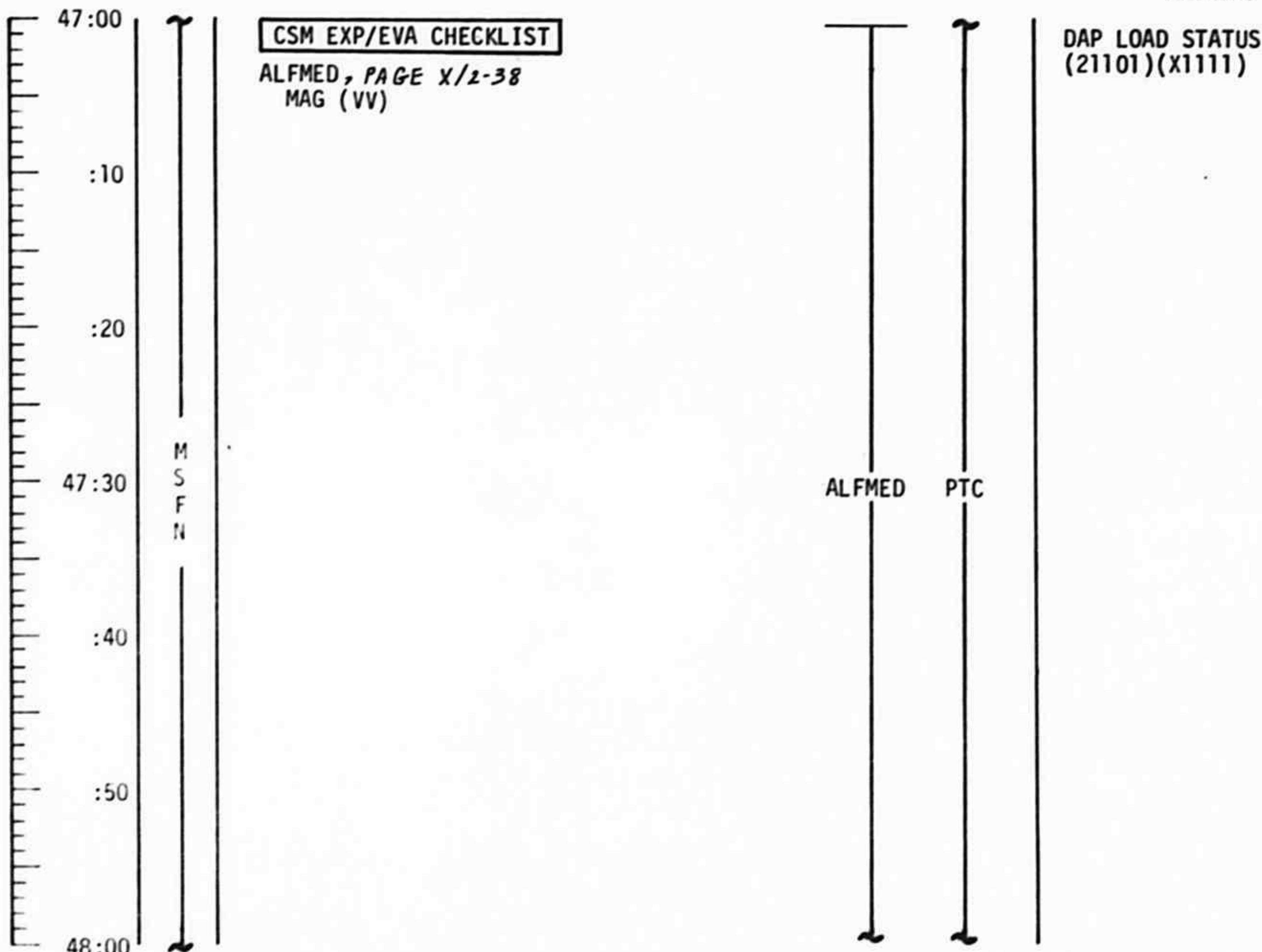
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1054 CST

NOTES

MSFN CMDS:
DSE RECORD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/6/72	47:00 - 48:00	3/TLC	3-46

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

48:00

:10

:20

48:30

:40

:50

49:00

M
S
F
N

SYNCHRONIZE MISSION TIMER TO CMC CLOCK (IF REQUIRED)
V05N01E, 1706E (T EPHEM VERIFICATION BY MSFN,
COPY ON MSFN CUE FROM DSKY)

CHARGE BATTERY B
LIOH CANISTER CHANGE
(6 INTO B, STOW 4 INTO B5)

CREW EXERCISE PERIOD

ALFMED

PTC

DAP LOAD STATUS
(21101)(X1111)

T EPHEM UPDATE

OID

LOAD B

03

04

05

LIFT-OFF TIME WILL
BE UPDATED IF THE
TIME PROPAGATED
AHEAD TO START OF
REV 2 DIFFERS FROM
76:39:38.7 BY MORE
THAN 1 MINUTE

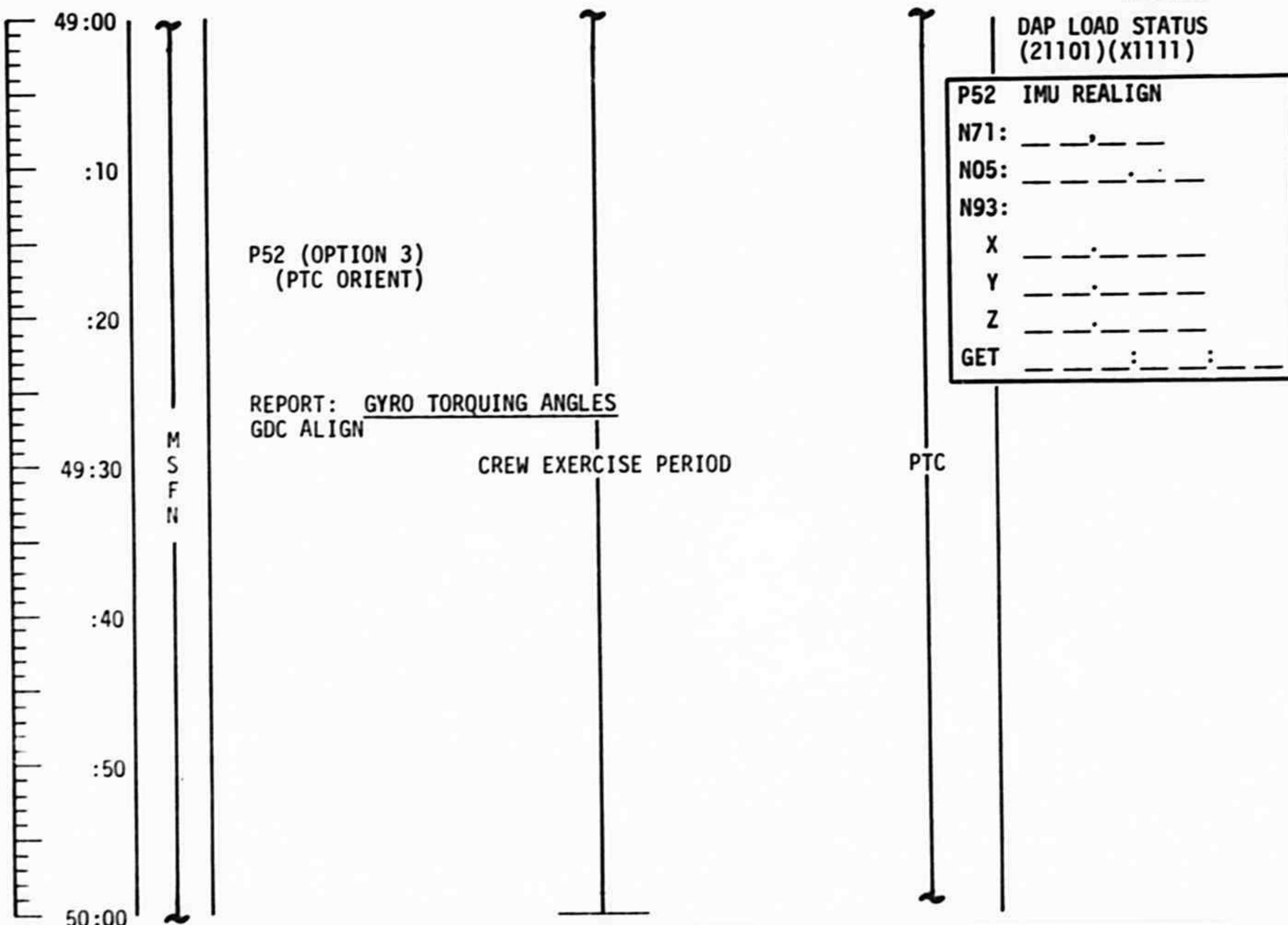
MSFN CMDS:
DSE STOP
UPLINK TO CSM
LIFT-OFF TIME
(IF REQUIRED)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	48:00 - 49:00	3/TLC	3-47

FLIGHT PLAN

MCC-H

1254 CST



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	49:00 - 50:00	3/TLC	3-48

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1354 CST

50:00

:10

:20

50:30

:40

:50

51:00

CSM EXP/EVA CHECKLIST

SKYLAB FOOD TEST, PAGE X/2-44
MAG (JJ)

EAT PERIOD

M S F N

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/6/72	50:00 - 51:00	3/TLC	3-49

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

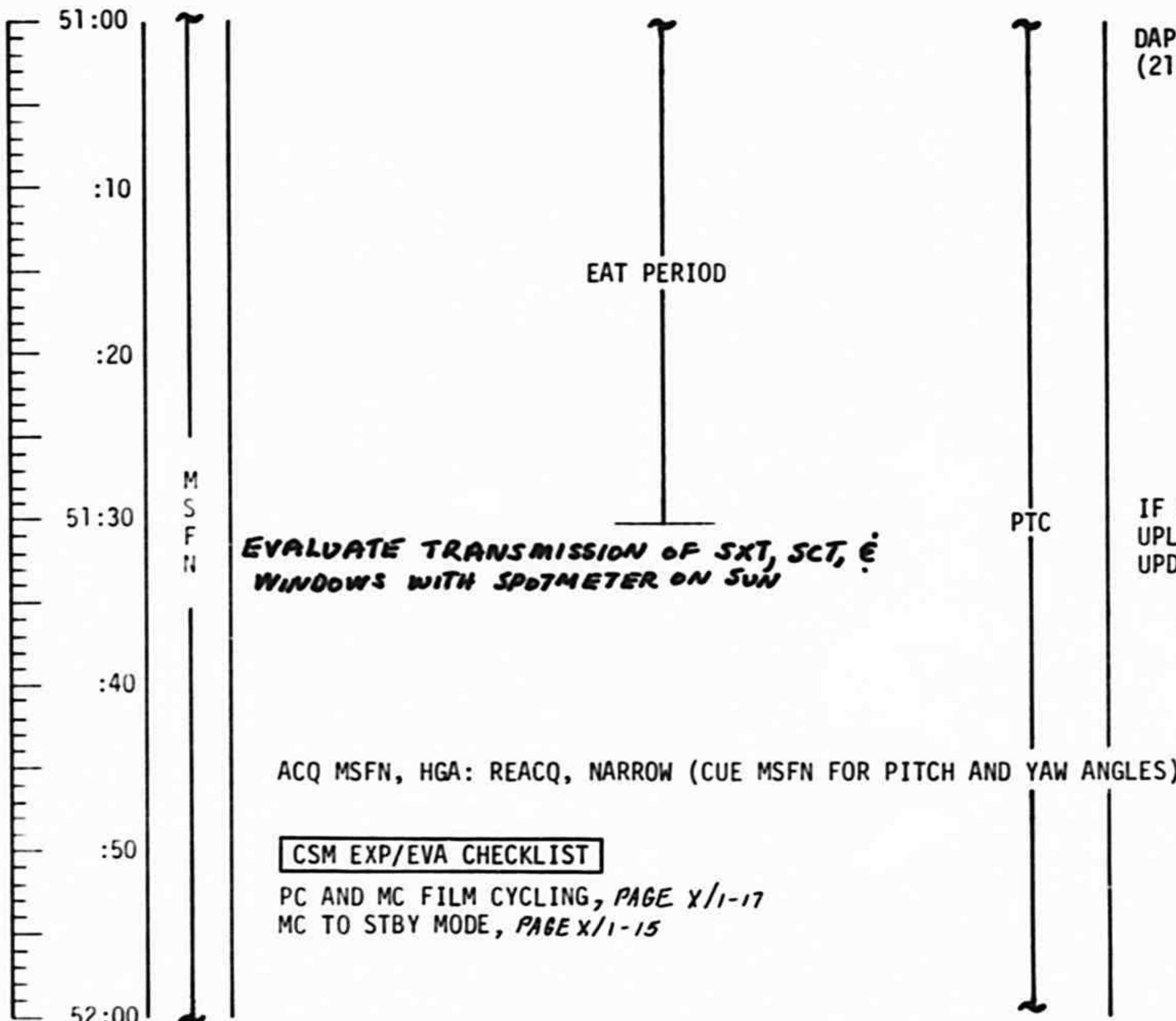
MCC-H

1454 CST

NOTES

DAP LOAD STATUS
(21101)(X1111)

UPLINK TO CSM
CSM S.V. & V66



UPDATE TO CSM
HGA ANGLES FOR
FILM CYCLING
MSFN CMD
DATA SYS - ON

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72	51:00 - 52:00	3/TLC	3-50

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1554 CST

MSFN CMD
DATA SYS - OFF

52:00

OMNI B
SECURE HGA: MAN, WIDE HGA P -52, Y 270

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

:10
(21101)
(X1111)

CSM G&C CHECKLIST
EXIT G&N PTC PAGE G/8-3

:20

CSM EXP/EVA CHECKLIST
V49 MNVR TO EARTH UV PHOTO ATT (52:30)
(208,000,017) OMNI D
EARTH UV PHOTOGRAPHY SEQ B, PAGE X/2-17
MAG (OO)
MAG (NN)

LOI -22 HOURS

52:30

M
S
F
N

:40

V48 (21111)
(X1111)

50
(21111)
(X1111)

IF MCC-3 IS REQUIRED,
PERFORM AT GET 52:29

53:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/6/72	52:00 - 53:00	3/TLC	3-51

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

NOTES

		O ₂ FUEL CELL PURGE WASTE H ₂ O DUMP	
53:00			
(21111)			
(x11111)			
:10			
		REPORT: LM/CM Δ P IF Δ P > 2.4 PSID: O ₂ HEATERS 1&2 - AUTO PRESSURIZE CSM TO 5.7 PSIA COUCHES: CDR - 0°, CMP - 0°, LMP - 180°	
53:30	M S F N	V49 MNVR TO LM CHECKOUT ATTITUDE (53:45) (341,088,000) HGA P <u>-30</u> , Y <u>270</u> TUNNEL LIGHTS - ON EQUALIZE CM/LM PRESSURE (DECAL) TUNNEL HATCH REMOVAL (DECAL) PROBE REMOVAL (DECAL) DROGUE REMOVAL (DECAL) REPORT: DOCKING TUNNEL INDEX ANGLE O ₂ HEATERS 1&2 - OFF (VERIFY)	
:40			
			CSM
:50		OPEN LM HATCH	LM ACTIVATION CHECKLIST IVT TO LM PAGE 2-1
54:00		(AT LM REQUEST) LM PWR - RESET/OFF REPORT: GET ____:____:__	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	53:00 - 54:00	3/TLC	3-52

FLIGHT PLANNING BRANCH

MCC-H

1754 CST

FLIGHT PLAN

NOTES

54:00 (21111) (X1111)		CSM	SYS TEST - 7D SYS TEST IND = 0 VOLTS PERFORM COMM CHECKS WITH LM	LM	COMM ACTIVATION
:10					
:20			(AT LM REQUEST) LM PWR - ON REPORT: GET _____ : _____ SYS TEST - 7D : _____ SYS TEST IND = 0.5-3.2 VOLTS		COMM DEACTIVATION
54:30	M S F N				
:40					IVT TO CSM
:50			LMP DON PGA WITHOUT HELMET AND GLOVES		<i>Photo A7LB Suit Donning DAC, CIN, 10mm lens</i>
55:00					

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	54:00 - 55:00	3/TLC	3-53

FLIGHT PLAN

MCC-H

1854 CST

NOTES

	55:00 (21111) (X1111)	CDR DON PGA WITHOUT HELMET AND GLOVES
:10		CMP DON PGA WITHOUT HELMET AND GLOVES LMP & CDR IVT TO LM ZIP PGA'S
:20		LMP & CDR IVT CSM CLOSE LM HATCH INSTALL DROGUE (DECAL) INSTALL PROBE (DECAL) HATCH INSTALLATION (DECAL) LM TUNNEL VENT VALVE - LM/CM AP TUNNEL LIGHTS - OFF
55:30	M S F N	DOFF PGA'S
:40		
:50		STOW PGA'S WITH URINE BAG ON TOP (PGA BAG)
56:00		CDR DON BIOMED HARNESS LMP DOFF BIOMED HARNESS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	55:00 - 56:00	3/TLC	3-54

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

NOTES

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUP

DAP LOAD STATUS
(21101)(X1111)

56:00
(21101)
(X1111)

CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
V49 TO PTC ATTITUDE
(N20,270,000)
P20 OPT 2 X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)

:10

S-170 BISTATIC RADAR FREQUENCY CHECK
VHF AM B - DUPLEX
VHF RNG - RNG
VHF ANT - LEFT (VERIFY)

:20

S-BAND UPLINK OFF
MEASURE DOWNLINK
FREQUENCY

56:30

M
S
F
N

ON GROUND CUE:
VHF AM B - OFF
VHF RNG - OFF

PTC

:40

:50

EAT PERIOD

57:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	56:00 - 57:00	3/TLC	3-55

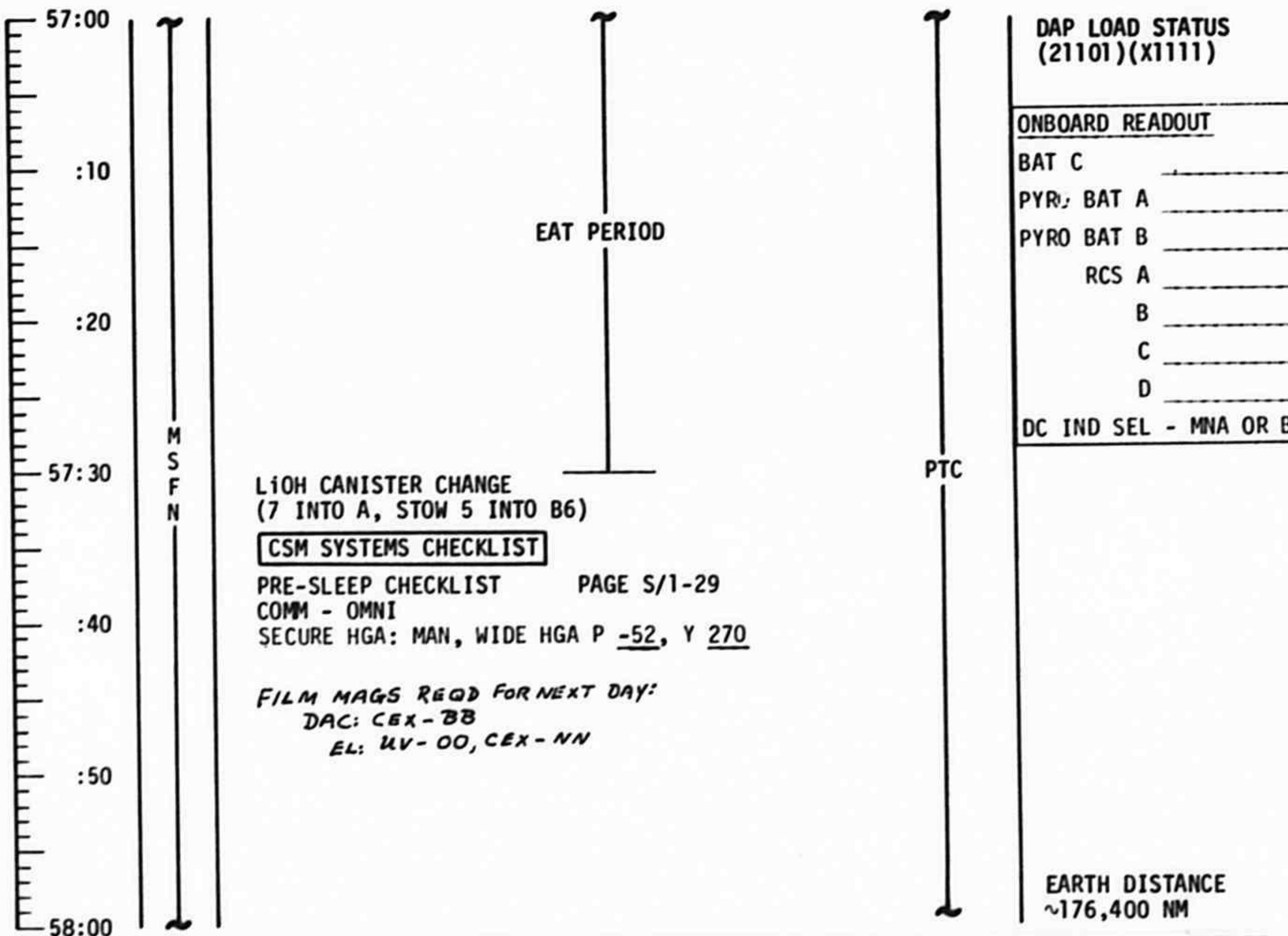
FLIGHT PLAN

MCC-H

2054 CST

NOTES

DAP LOAD STATUS
(21101)(X1111)



ONBOARD READOUT

BAT C	-----
PYRO BAT A	-----
PYRO BAT B	-----
RCS A	-----
B	-----
C	-----
D	-----
DC IND SEL - MNA OR B	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72 4/7/72	57:00 - 58:00	3/TLC	3-56

CHG. 3

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2154 CST

58:00

:20

:40

59:00

:20

:40

60:00

M
S
F
N

REST PERIOD
(8 HOURS)

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	58:00-60:00	3/TLC	3-57

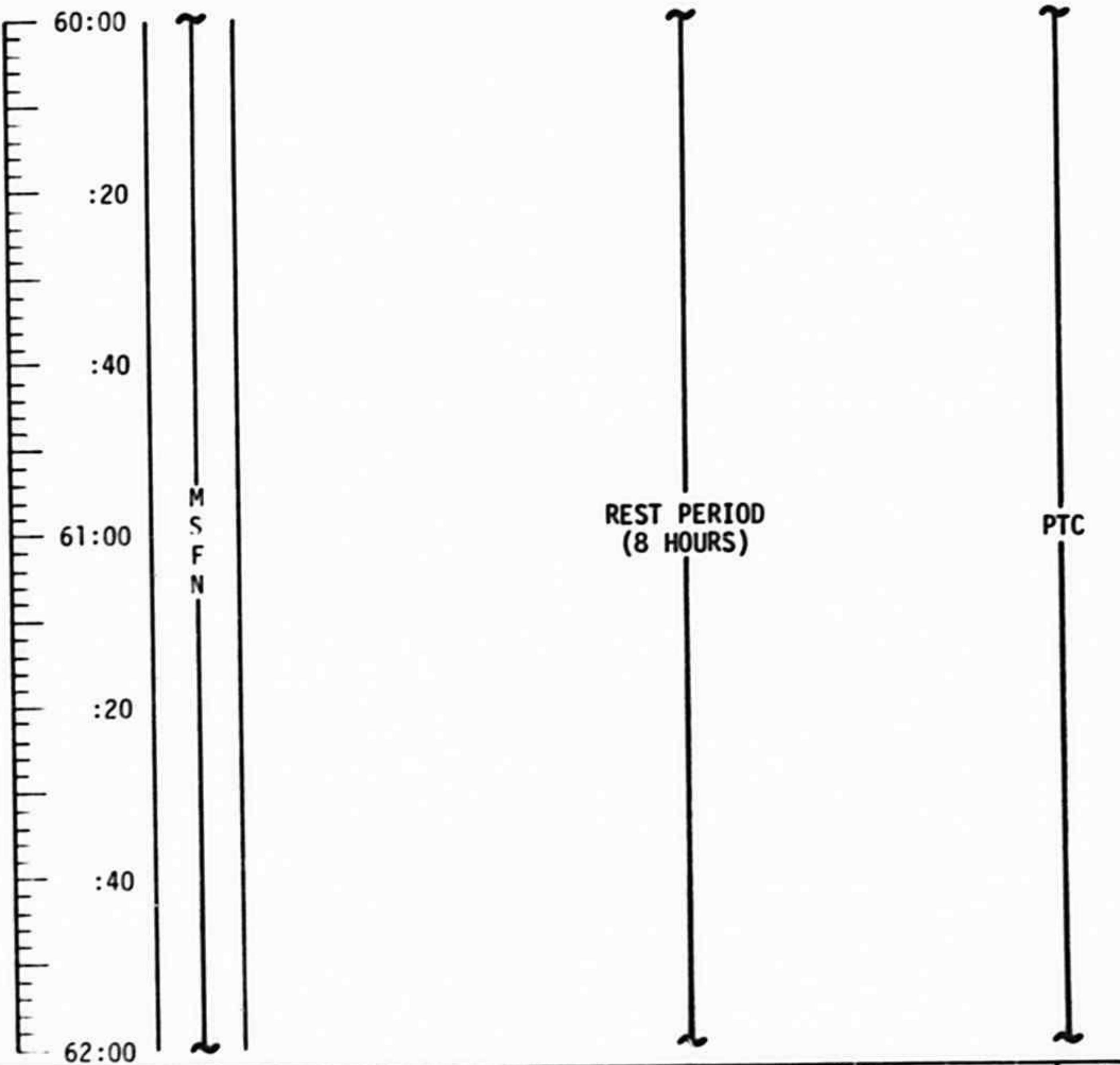
MCC-H

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)

2354 CST



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	60:00 - 62:00	3/TLC	3-58

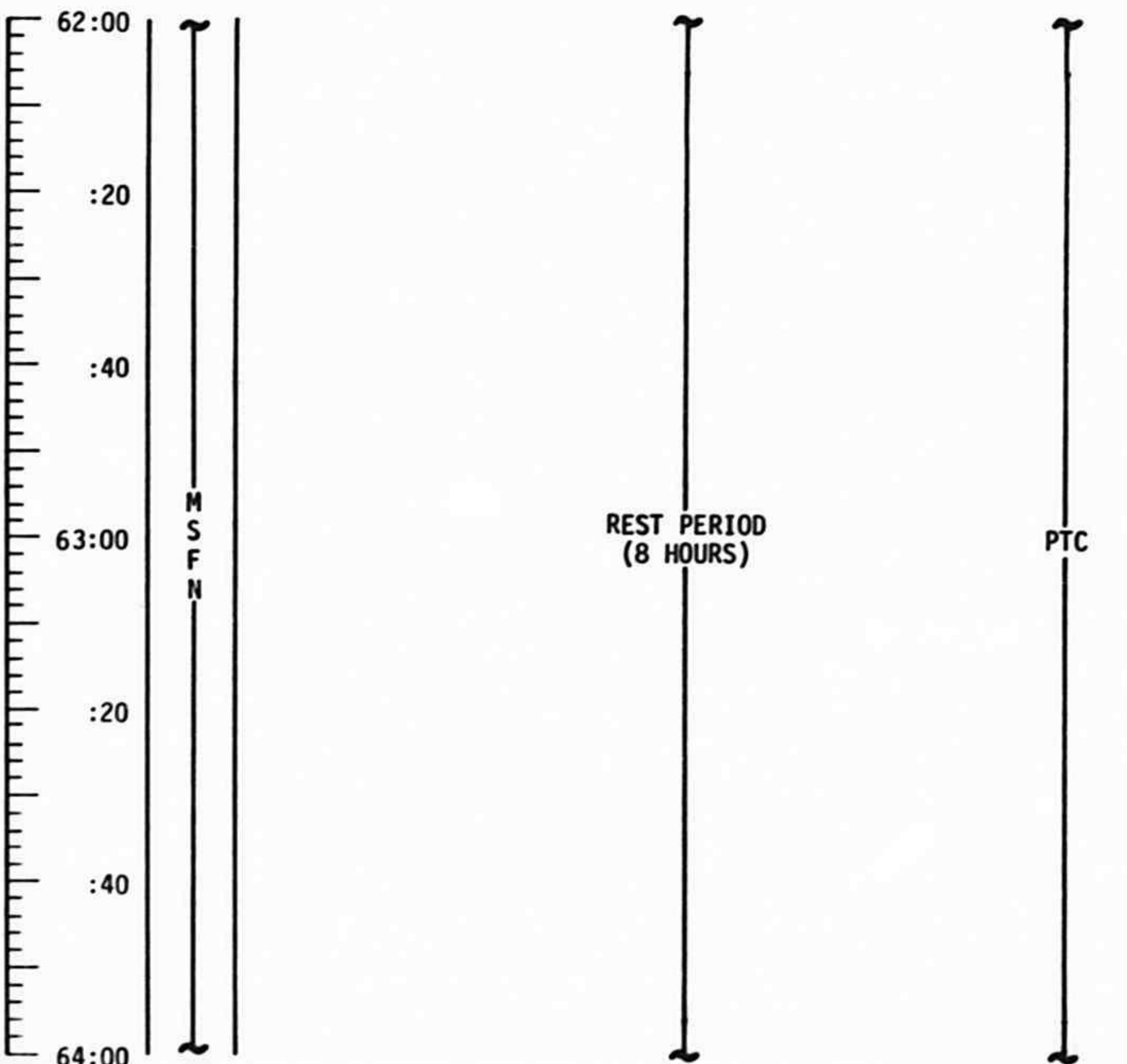
FLIGHT PLANNING BRANCH

MCC-H

0154 CST

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	62:00 - 64:00	3/TLC	3-59

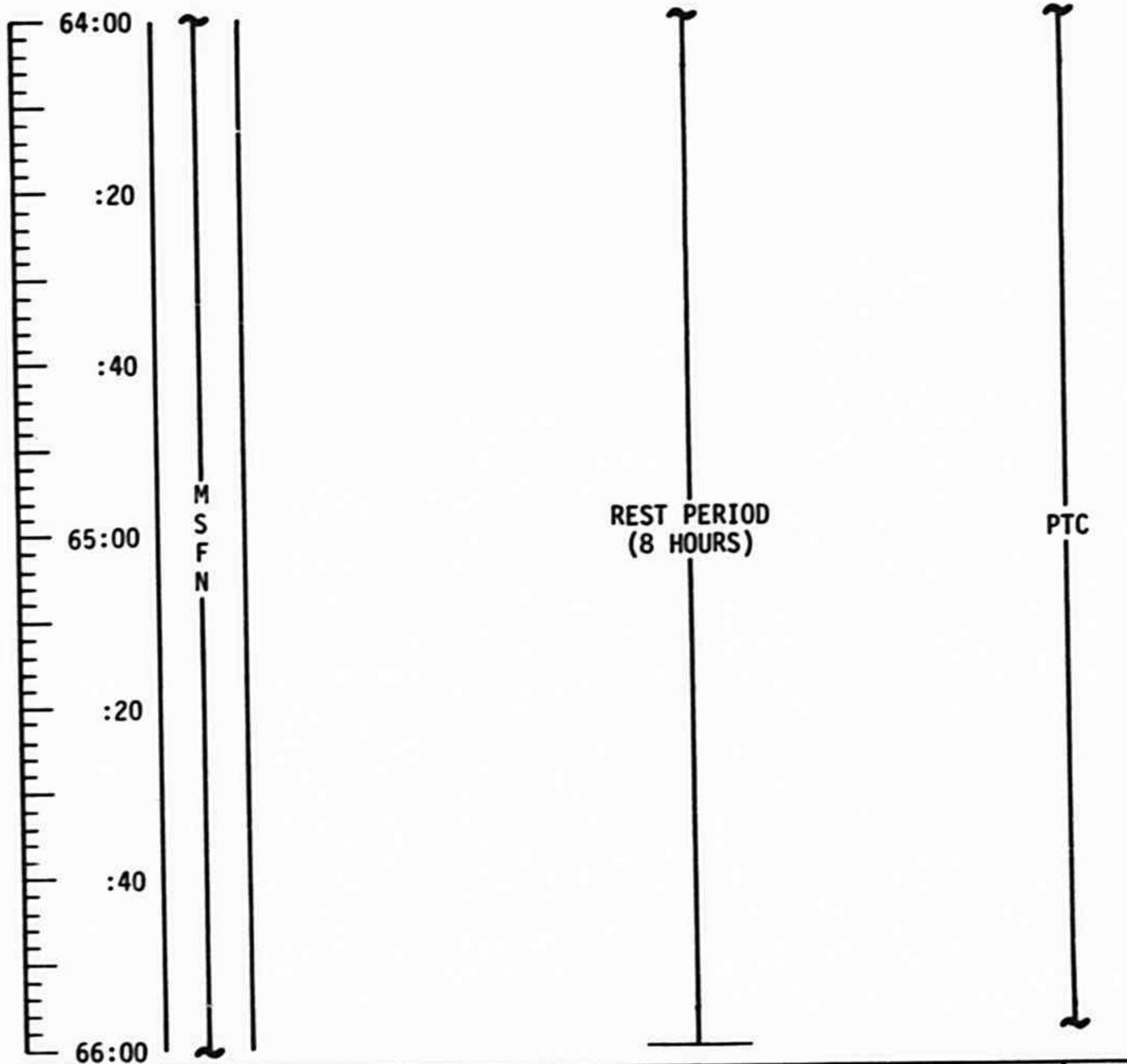
FLIGHT PLANNING BRANCH

MCC-H

FLIGHT PLAN

0354 CST

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	64:00 - 66:00	3/TLC	3-60

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0554 CST

NOTES

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN

66:00

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST

PAGE S/1-29

DAP LOAD STATUS
(21101)(X1111)

:10

REPORT: LM/CM ΔP
IF $\Delta P > 2.4$ PSID:
 O_2 HEATERS 1&2 - AUTO
PRESSURIZE CSM TO 5.7 PSIA

:20

TERMINATE TIMING VOIDS AND MEASURING FLUID INTAKE

66:30

MSFN

PTC

:40

EAT PERIOD

:50

67:00

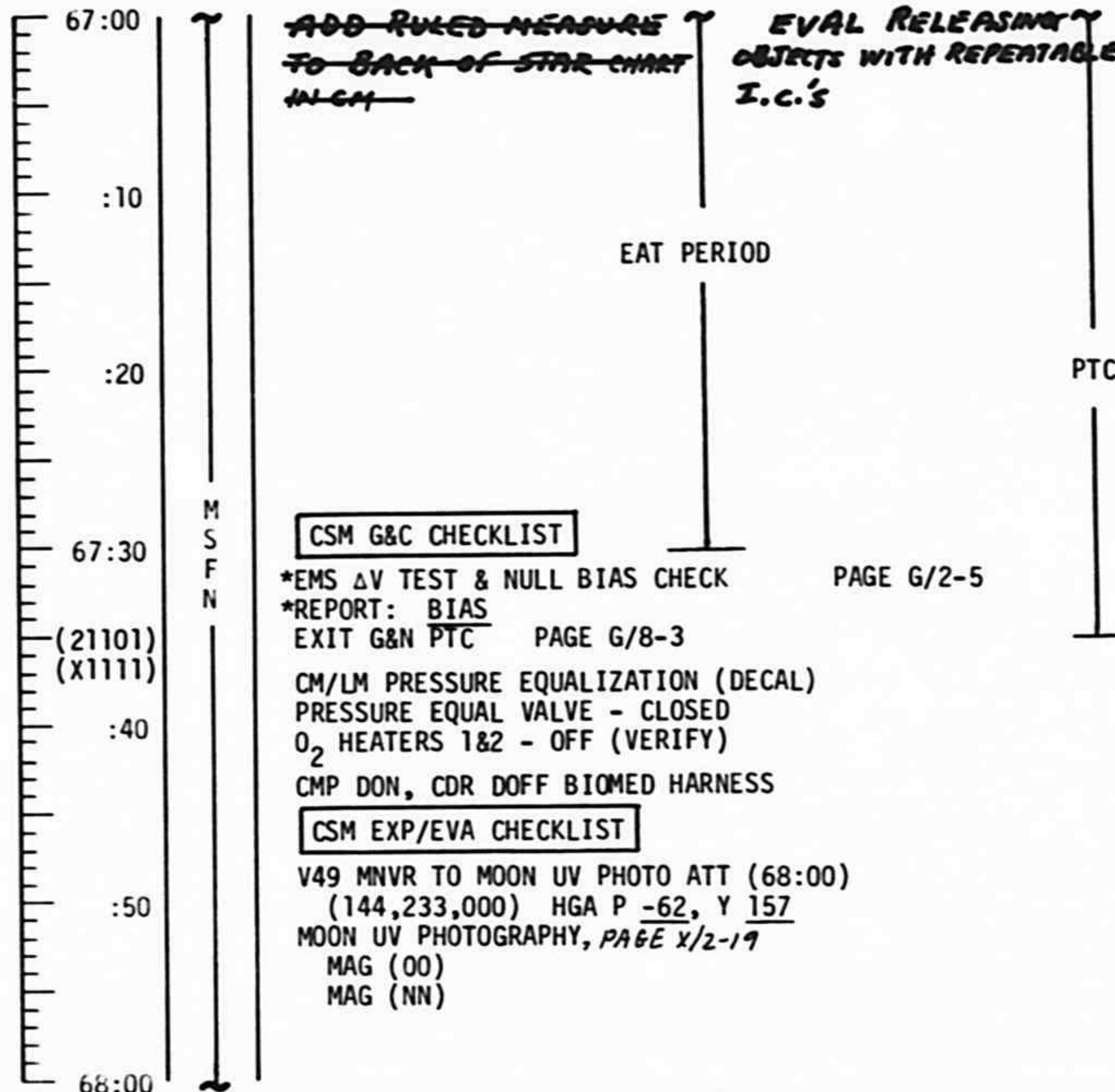
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	66:00 - 67:00	4/TLC	3-61

FLIGHT PLAN

MCC-H

0654 CST

NOTES

UPDATE TO CSM
GO/NO-GO FOR MCC-4

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72	67:00 - 68:00	4/TLC	3-62

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0754 CST

NOTES

UPDATE TO CSM
MCC-4 MNVR PAD
PERICYNTHION +2 HR
ABORT PAD
UPLINK TO CSM
CSM S.V. & V66
MCC-4 TGT LOAD

68:00
(21101)
(X1111)

:10

CONFIGURE CAMERA FOR SIM DOOR JETT PHOTOS
CM5/DAC/75/CEX (f8,1/250,100) 12 fps (5% MAG)

:20

MAG (BB) _____, MAG %
CONFIGURE CABIN FOR LUNAR ORBIT
P52 (OPTION 3)
(PTC ORIENT)

M
S
F
N

68:30

PUT VELCRO ON EL SHUTTER SPEED

:40

REPORT: GYRO TORQUING ANGLES

GDC ALIGN

:50

*P30 EXTERNAL ΔV
*V49 MNVR TO PAD BURN ATT
*IF SPS MIDCOURSE REQUIRED
* PRE-SPS BURN SIM PREP (CUE CARD)

PERICYNTHION +2 HR
ABORT PAD TARGETED
FOR A FAST RETURN
TO MPL

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____ : _____

*PERFORM IF MCC-4
IS REQUIRED
EARTH DISTANCE
~194,100 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	68:00 - 69:00	4/TLC	3-63

MCC-4
BURN TABLE
NO MANUAL START or RESTART

P OR Y RATE	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC	TRIM ONLY X AXIS TO 0.2 FPS

APOLLO 16

FINAL (4/16)

3/6/72

3-64

FLIGHT PLAN

MCC-H

0854 CST

69:00
(21101)
(X1111)

:10

*SXT STAR CHECK
*P40 SPS THRUSTING OR P41 RCS THRUSTING

:20

69:30

M
S
F
N

MCC-4

TIG: 69:29
BT: NOM ZERO
 Δ VT: NOM ZERO
ULLAGE: NONE

:40

CSM EXP/EVA CHECKLIST

SIM DOOR JETTISON, PAGE X/1-7

:50

GO/NO-GO FOR SIM DOOR JETTISON (CUE MSFN)

SIM DOOR JETTISON 69:59

MSFN CMD

DATA SYS-ON

DSE RECORD

MSFN UPDATE

GO/NO-GO FOR

SIM DOOR JETT

70:00

NOTES

*PERFORM IF MCC-4
IS REQUIRED

BURN STATUS REPORT

X	X		Δ TIG
X	X		BT
			V_{gx}
		TRIM	
X	X	X	R
X	X	X	P
X	X	X	V_y
			V_{gy}
			V_{gz}
			ΔV_c
X	X	X	FUEL
X	X	X	OX
X	X	X	UNBAL

BECAUSE OF SIM BAY
CONSTRAINTS, URINE
WILL BE COLLECTED
AND DUMPED AS
SCHEDULED IN THE
FLIGHT PLAN FOR THE
REMAINDER OF THE MISSION

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72	69:00 - 70:00	4/TLC	3-65

FLIGHT PLAN

MCC-H

0954 CST

NOTES

UPLINK TO CSM
CSM S.V. & V66
(PRELIMINARY)
LOI TGT LOAD
(PRELIMINARY)
DESIRED ORIENT(LOI)

UPDATE TO CSM
LOI MNVR PAD
(PRELIMINARY)

70:00 (21101) (X1111)	:10	V49 MNVR TO P52 ATTITUDE (70:15) (324,094,316) HGA P -17, Y 296 H_2 HEATERS 1 & 2 - AUTO H_2 FANS 3 - OFF cb O_2 TK 50W HTRS (3) - OPEN O_2 HEATERS 1 & 2 - AUTO O_2 HEATER 3 - OFF REPORT: <u>LM/CM ΔP</u> IF $\Delta P < 0.2$ PSID, PRESSURE EQUAL VALVE - OPEN IF $\Delta P > 0.2$ PSID, PERFORM CM/LM PRESSURE EQUALIZATION (DECAL)	SIM EXP STATUS (*0000) (31014)
	:20	CHECK MISSION TIMER AGAINST CMC CLOCK CSM G&C CHECKLIST	
	70:30	EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5 REPORT: <u>BIAIS</u>	
	:40		
	:50		
	71:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	70:00 - 71:00	4/TLC	3-66

FLIGHT PLANNING BRANCH

MCC-H

1054 CST

FLIGHT PLAN

NOTES

71:00
(21101)
(X1111)

GR: EXP - ON
SHIELD - ON (CTR)
LIOH CANISTER CHANGE
(8 INTO B, STOW 6 INTO B6)

SIM EXP STATUS
(*0000)
(31014)

:10

:20

LIMIT CYCLE - ON
ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS
P52 (OPTION 3)
(PTC ORIENT)

STARS _____, _____
SA _____, _____
TA _____,

P52 IMU REALIGN
N71: — —, — —
N05: — — — . — —
N93:
X — — . — — —
Y — — . — — —
Z — — . — — —
GET — — — : — — : — —

:40

:50

REPORT: GYRO TORQUING ANGLES
P52 (OPTION 1)
(LOI ORIENT)

72:00

SC CONT - CMC
BMAG (3) - RATE 2
GDC ALIGN

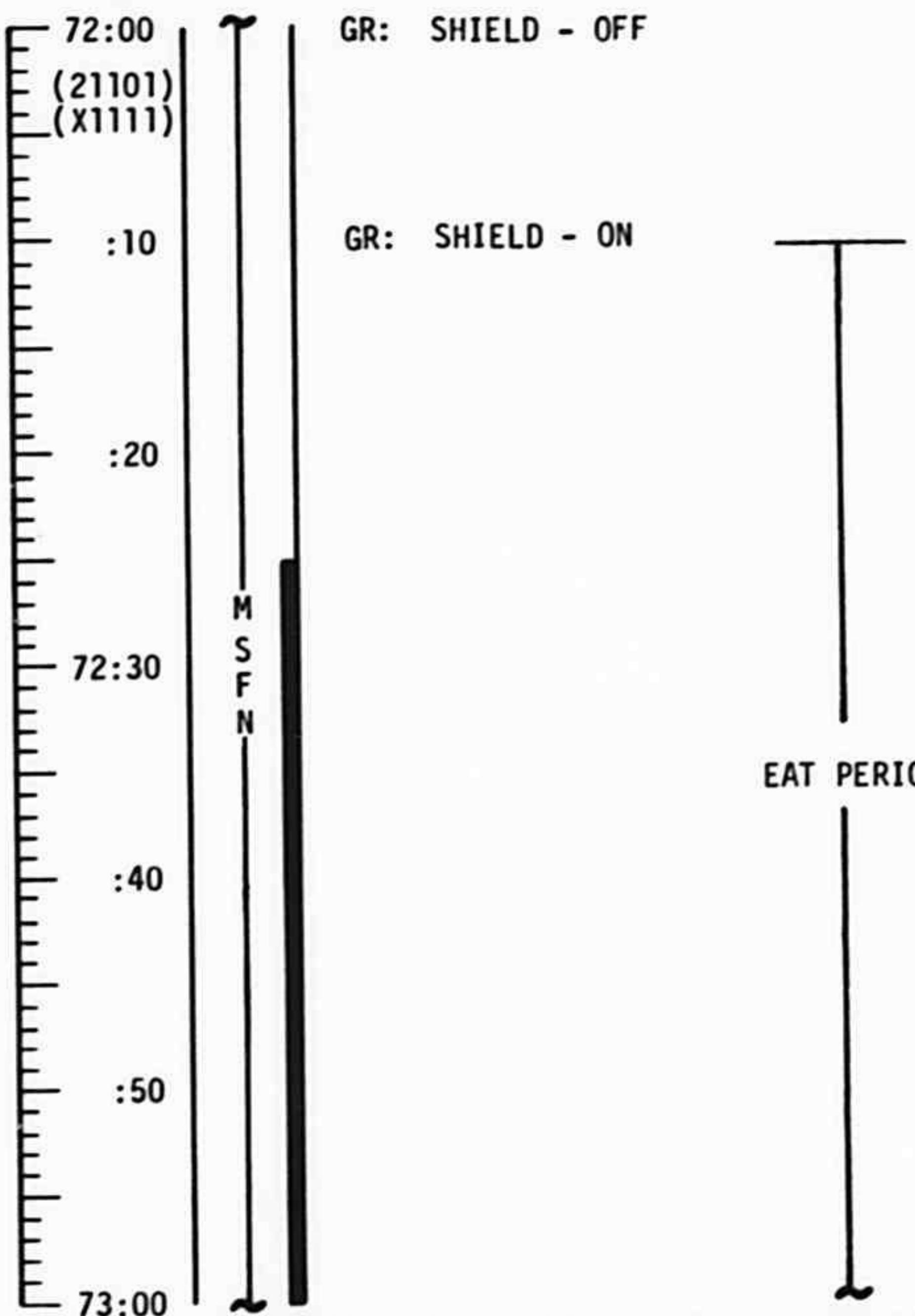
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	71:00 - 72:00	4/TLC	3-67

FLIGHT PLAN

MCC-H

1154 CST

NOTES



SIM EXP STATUS
(*0000)
(31214)

TEI 4 PAD
ASSUMES NO DOI

UPDATE TO CSM
TEI 4 PAD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	72:00 - 73:00	4/TLC	3-68

FLIGHT PLANNING BRANCH

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P30 MANEUVER

	L	O	I			PURPOSE
SET STARS	S	P	S/G	& N		PROP/GUID
R ALIGN _____	+					WT N47
P ALIGN _____		0	0	.		P TRIM N48
Y ALIGN _____		0	0	.		Y TRIM
ULLAGE _____	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0		.		SEC
				.		ΔV_X N81
				.		ΔV_Y
				.		ΔV_Z
	X	X	X			R (000)
	X	X	X			P (000)
	X	X	X			Y (000)
	+			.		H_A N44
				.		H_P
	+			.		ΔVT
HORIZON/WINDOW _____	X	X	X	.		BT
	X			.		ΔVC
	X	X	X	X		SXTS
	+			.	0	SFT
	+			.	0	TRN
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP

MCC-H

1254 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0000)
(31214)

DO NOT USE PU
VALVE FOR LOI.

THE APPROXIMATE TIME
OF CROSSOVER IS 4:20
TO 4:25 INTO THE LOI
BURN.

UPDATE TO CSM
LOI MNVR PAD
MAP UPDATE REV 1

UPLINK TO CSM
CSM S.V. & V66
LOI TGT LOAD

73:00
(21101)
(X1111)

:10

EAT PERIOD

:20

CSM SYSTEMS CHECKLIST

PRE-LOI SECONDARY GLYCOL LOOP CHECK PAGE S/1-19
C/W SYSTEM OPERATIONAL CHECK PAGE S/1-20
SPS MONITORING CHECK PAGE S/1-1
SM RCS MONITORING CHECK
CM RCS MONITORING CHECK
ECS MONITORING CHECK PAGE S/1-5

REPORT: LM/CM ΔP
OXIDIZER FLOW VALVE INCR - NORM (VERIFY)

M
S
F
N

73:30

PRE-SPS BURN SIM PREP (CUE CARD)

:40

P30 EXTERNAL ΔV

:50

V49 MNVR TO PAD BURN ATTITUDE (73:50)

OMNI D

74:00

SXT STAR CHECK

MAP UPDATE 1

LOS:

____:____:____

180°:

____:____:____

AOS WITH LOI:

____:____:____

AOS WITHOUT LOI:

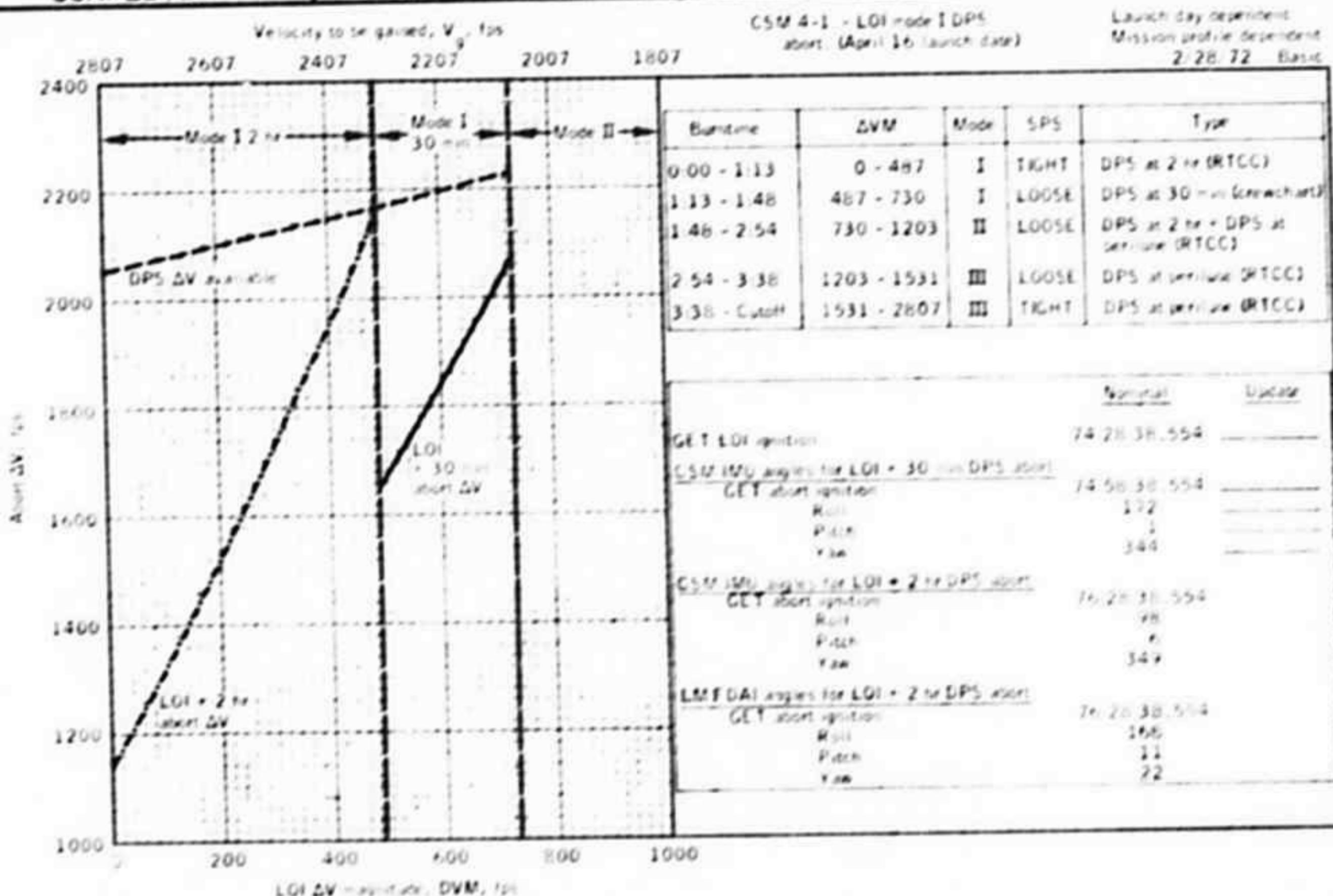
____:____:____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	73:00 - 74:00	4/TLC	3-71

LOI
BURN TABLE

IGN DELAY < 2 MIN

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TAKEOVER & COMPLETE	+10° TAKEOVER & COMPLETE	BT + 10 SEC	DO NOT TRIM



LOI mode I DPS abort

FLIGHT PLAN

MCC-H

1354 CST

RECORD VG_{IMU} DATA
GO/NO-GO FOR LOI74:00
(P40)
(0.5°DB)
(21101)
(X1111)T
M
S
F
N

P40 SPS THRUSTING

:10

GO/NO-GO FOR LOI

:20

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

74:30

POO
V66 SET CSM S.V. INTO LM S.V.
V48 (21112)(X1111)
V49 MNVR TO COMM ATT (74:49)
(176,046,007)

:40

T
M
S
F
N

POST-SPS BURN SIM PREP (CUE CARD)

ACQ MSFN HGA P -57, Y 346

:50

PC: MODE - STBY
PWR - ON

75:00

REPORT: BURN STATUS

V48 (21111)(X1111)

PC: PWR - OFF (MSFN CUE)

NOTES

SIM EXP STATUS
(*0000)
(31000)
S-IVB LUNAR IMPACT
GET: 74:30:08
LAT: 2.28°S
LONG: 31.79°WPREDICTED LOI SINGLE
BANK BURN TIME:
6 MIN 29 SEC

BURN STATUS REPORT

X	X		ATIG
X	X		BT
			V _{gx}
			TRIM
X	X	X	R
X	X	X	P
X	X	X	Y
			V _{gx}
			V _{gy}
			V _{gz}
			ΔV _c
X	X	X	FUEL
X	X	X	OX
X	X	X	UNBAL

MSFN CMDS:
DUMP DSE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	74:00 - 75:00	4/TLC-1	3-73

CSM FLIGHT PLAN

SIM EXP STATUS
(*0000)
(01214)

75:00
(21111)
(X1111)

75:30
(P20)
(3.0°DB)

MSFN UPLINK:
DESIRED ORIENT (LDG SITE)

SIM EXP STATUS
(*0000)
(01214)

GR: SHIELD - OFF

75:10

75:40

GR: SHIELD - ON (CTR)

CMC MODE - FREE
P52 (OPTION 3)
(LOI ORIENT)

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____

75:20

44 (SET LUNAR SURFACE FLAG)
CYCLE CMC MODE - FREE/AUTO
P20 OPT 5 (+Y FWD, -Z DWN) (75:23) VITE: PRO 0: ~~444445~~ N70 .
478 (+090.00)
(+090.00)
(+180.00)
479 (+003.00)
(176.000/046.007)

AT 75:23 TO
INSURE P20
ATT = INERTIAL ATT.

75:50

P52 (OPTION 1)
(LDG SITE ORIENT)

P20, CMC MODE - AUTO
GDC ALIGN

CONFIGURE FOR URINE DUMP

MSFN UPDATE:
TE1 4 TIG (IF REQD) AND GIMBAL ANGLES

75:30

76:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHG.B FINAL (4/16)	216172 11/17/72	3-74

CSM FLIGHT PLAN

1554 CST

76:00
(P20)
(3.0°DB)(21111)
(x1111)H₂ PURGE LINE HEATERS - ONM
S
F
N

76:10

MSFN CMDS: (AOS +81 MIN)
DSE RECORD

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

76:20

H₂ AND O₂ FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

76:30

SIM EXP STATUS
(*0000)
(01214)76:30
(P20)
(3.0°DB)(21111)
(x1111)TERMINATE WASTE WATER DUMP AT 10%
H₂ PURGE LINE HEATERS - OFF

REV 2

76:40

76:50

ACQ MSFN OMNI C

77:00

SIM EXP STATUS
(*0000)
(01214)

CSM FLIGHT PLAN

77:00
(P20)
(3.0°DB)
(21111)
(X1111)

MSFN CMDS: (AOS +2 MIN)
DSE REWIND

SIM EXP STATUS
(*0000)
(01214)

77:30
(P20)
(3.0°DB)
(21111)
(X1111)

MSFN UPLINK:
DOI TARGET LOAD
CSM S.V. AND V66
PIPA BIAS

SIM EXP STATUS
(*0000)
(01214)

ACQ MSFN HGA: MAN, WIDE P 10, Y 355
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +10 MIN)
DSE PLAYBACK
CUE: HGA AUTO

PC: MODE - STBY
PWR - ON

PC: PWR - OFF (MSFN CUE)

77:20

77:50
(21111)
(X1111)

P00
P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

CSM SYSTEMS CHECKLIST

C/W OPERATIONAL CHECKS PAGE S/1-20
SPS MONITORING CHECK PAGE S/1-1
SM RCS MONITORING CHECK PAGE S/1-1
OM RCS MONITORING CHECK PAGE S/1-1
ECS MONITORING CHECK PAGE S/1-5

77:30

78:00

MISSION EDITION DATE PAGE

APOLLO 16

FINAL (4/16)

3/6/72

3-76

MSFN UPDATE:

DOI MNVR PAD (78:15)
MAP UPDATE REV 3 (79:06)
J-2 LDMK OBS PAD (79:35)
TEI 5 PAD

*Descartes
CM 9/EL/250/VH8W
(55.6, 1/880, 00) 6FR
MAG SS*

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____

CSM FLIGHT PLAN

78:00
 (21111)
 (X1111)

SIM EXP STATUS
 (*0000)
 (01214)

P30; VERIFY DOI TIG AND ΔV'S
 CYCLE CMC MODE - FREE/AUTO
 V48 (21101)(X1111)
 P40

MSFN RECORD:
 VG IMU DATA

P00
 V49 MNVR TO DOI PAD BURN ATT (78:22)
 ACQ MSFN OMNI D

78:10
 M
 S
 F
 N

MSFN CMDS:
 DSE REWIND

PRE-SPS BURN SIM PREP (CUE CARD)

MSFN UPDATE:
 GO/NO-GO FOR DOI

MSFN CMDS:
 DSE RECORD

SXT STAR CHECK
 P40 (TRIM)
 VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

78:30

P30 MANEUVER

SET STARS	D	O	I			PURPOSE
	S	P	S/G	&	N	
R ALIGN	*					WT N47
P ALIGN	0	0				P TRIM N48
Y ALIGN	0	0				Y TRIM
	0	0	0			HRS GETI
	0	0	0			MIN N33
	0					SEC
ULLAGE						ΔV X N81
						ΔV Y
						ΔV Z
	X	X	X			R (000)
	X	X	X			P (282)
	X	X	X			Y (359)
	*					H A N44
						H P
	*					ΔVT
HORIZON/WINDOW	X	X	X			BT
	X					ΔVC
	X	X	X	X		SXTS
	*			0		SFT
	*			0	0	TRN
OTHER	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP
	0					LAT N61
						LONG
	*					RTGO EMS
	*					V10
						GET 0.05G

CSM FLIGHT PLAN

78:30	(P40) (0.5°DB)	SIM EXP STATUS (*0000) (31000)
(21101) (X1111)	NOTE: DOI WILL BE PERFORMED ON BANK A ONLY	
	DOI (000,180/282,359)	TIG: 78:35:30.3 BT: 24.1 SEC AVT: 206.0 FPS ULLAGE: 4 JET, 15 SEC ORBIT: 58.6 x 10.8
(21101) (X1111)	P00 V66 SET CSM S.V. INTO LM S.V.	
78:40	DELAY POST SPS BURN SIM PREP UNTIL 79:42	
	V49 MNVR TO BAILOUT BURN ATTITUDE (79:10) (000,040,000) SET HGA P -58, Y 15 FOR AOS ACQ	
REV 3		
78:50	UNSTOW AND STUDY LDMA BOOK	
79:00		

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-78

DOI BURN TABLE **NO MANUAL START**

P OR Y RATES	ATT DEVIATIONS	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT	*TRIM OVERBURNS IN X TO WITHIN 1 FPS, DO NOT TRIM Y & Z

*IF OVERBURN IS > 2.2 FPS AND < 10 FPS PITCH
180° AND TRIM WITH *X RCS THRUSTERS, IF > 10
FPS USE SPS

BURN STATUS REPORT		
X	X	
X	X	
		BT
		V _{gx}
		TRIM
X	X	R
X	X	P
X	X	Y
		V _{gy}
		V _{gz}
		ΔV _c
X		FUEL
X		OX
X		UNBAL

CSM FLIGHT PLAN

79:00 (21101) (x1111)	SIM EXP STATUS (*0000) (31000)	79:30 (21101) (x1111)	P24 (ORB NAV MONITOR LDMK)(TAKE MARKS) OPT ZERO - OFF OPT MODE - CMC OPT TEL TRUN - SLAVE TO SXT OPT COUPLING - RSLV OPT SPEED - HI	SIM EXP STATUS (*0000) (31000)
	MAP UPDATE REV <u>3</u> LOS : 180°: AOS :		LDMK ACQUISITION (TGT IN FOV ~1 MIN)	LDMK J-2 OBS T HOR: _____:_____: TCA -20 SEC: _____:_____: LAT: -08.917 LONG/2: +12.241 ALT: +000.00
79:10 ACQ MSFN HGA P -58, Y 15 MSFN CMDS: DSE STOP REPORT: BURN STATUS	• AOS - NO UP VOICE PROCEDURE • 1. WAIT 30 SEC. CHECK HGA • 2. SELECT OMNI A • 3. SELECT SEC XPNDR • 4. AFTER 3 MIN GO TO LOSS • OF COMM CUE CARD • • • • • • • •	79:40 (P20) (0.5°DB)	MSFN UPDATE: MAP CAMERA PHOTO PAD (80:35) PAN CAMERA PHOTO PAD (80:40)	POST SPS BURN SIM PREP (CUE CARD) INHIBIT ALL JETS EXCEPT A1 & C2 OR D1 & B2,A3,C4,B3,D4 P20 OPT 5 (+X FWD SIM ATT) (79:59) N79 (+000.50) HGA P -21, Y 209
79:20 MSFN CMDS: DSE REWIND MSFN CMDS: DSE PLAYBACK MSFN UPDATE: STAY/BAILOUT	NOTE: IF STAY, PROCEED WITH ACTIVITIES AT 79:27 IMMEDIATELY • SC CONT - SCS • P47 THRUST MONITOR • BAILOUT BURN (000.083/040.000) TIG: 79:22:07.9 BT: 11:05 SEC EVC: 94.7 FPS ULLAGE: 4 JET, 16 SEC ORBIT: 62.6x5.3 • P00 • V66 SET CSM S.V. INTO LM S.V. MSFN CMDS: DSE REWIND	79:50	CMP DOFF BIOMED HARNESS LMP DON BIOMED HARNESS	CSM EXP/EVA CHECKLIST SOLAR MONITOR DOOR/EXP TIEDOWN RELEASE, PAGE x/1-7
79:30 V49 MNVR TO LDMK OBS ATT (79:35)(IF NO BAILOUT REQD) (015.292.000) OMNI <u>D</u> LOAD N89 (J-2 OBS)		80:00		

CSM FLIGHT PLAN

<p>80:00 (P20) (0.5°DB) (21101) (X1111)</p> <p>MC/LA COVER - OPEN AP/XR COVER - OPEN MC - EXTD GR - DPLY (BP +2 SEC ONLY) then OFF (CTR) GR - RETR MS - DPLY (BP +2 SEC ONLY) then OFF (CTR) MS - RETR XR - ON REPORT: GAMMA RAY AND MASS SPECT BOOM DEPLOY AND RETRACT COMPLETED MS - DPLY TO 8.4 FEET (1 MIN 01 SEC) LA - ON MS: EXP - ON ION SOURCE - STBY MSFN CMDRS: (AOS +61 MIN) DSE RECORD VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)</p>	<p>SIM EXP STATUS (+0000) (01214)</p> <p>CAUTION: DO NOT EXCEED 12 SEC WITH SWITCH IN DEPLOY POSITION</p> <p>80:30 (P20) (0.5°DB) (21101) (X1111)</p> <p>PC: STBY STEREO PWR IMAGE MTN - ON MC - ON (T START) PC - OPR (T START) IMAGE MTN - INCR (BP +1 STEP)/ON</p> <p>80:40 REV 4</p> <p>IMAGE MTN - INCR (BP +2 STEPS)/ON</p> <p>EAT PERIOD</p> <p>PC - STBY (T STOP) MC - OFF (T STOP) WAIT 30 SEC MC - STBY LA - OFF IMAGE MTN - OFF MC - RETR MANUALLY ROLL COW 40°</p> <p>80:50 (P20) (2.0°DB)</p> <p>P20 OPT 5 (-X FWD SIM ATT)(81:05) N78 (+086.74) (+052.20) (+358.45) N79 (+002.00) SET HGA P 0, Y 170 FOR AOS ACQ</p> <p>81:00</p> <p>MC/LA COVER - CLOSE MS - DPLY GR - DPLY</p>	<p>SIM EXP STATUS (+1021) (03232)</p> <p>MAP CAMERA PHOTO PAD T-START: _____ : _____ T-STOP: _____ : _____ (167.3°W TO 168.0°E)</p> <p>PAN CAMERA PHOTO PAD T-START: _____ : _____ T-STOP: _____ : _____ (167.3°W TO 168.0°E)</p>
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CSM FLIGHT PLAN

81:00 (P20) (Z.0°DB) 2 (21101) (X1111)	LOOK FOR BOOMS AT FULL DEPLOYMENT <u>CONFIGURE DSE (STOP/CMD RESET/REWIND) (AOS -3 MIN)</u>	SIM EXP STATUS (-0111) (11232)	81:30 (P20) (Z.0°DB) 2 (21101) (X1111)	MSFN UPDATE: TRAJECTORY STATUS REFSMAT DO TIME (IF REQD) TEI 12 AND TEI 19 LM DAP LOAD (COPY ON PAGE 1 IN THE LM DATA CARD BOOK)	SIM EXP STATUS (-0111) (01222)
	EAT PERIOD			MSFN UPLINK: SHORT BURN CONSTANTS CSM S.V. AND V66 LIFT-OFF TIME (IF REQD) DESIRED ORIENT (LDG SITE) (IF REQD)	NOTE: LIFT-OFF TIME WILL BE UPDATED IF THE TIME OF REV 26 MERIDIAN CROSS- ING DIFFERS MORE THAN +2 MIN FROM 123:28:33.1
	ACQ MSFN HGA: MAN, WIDE P O, Y 170 S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW			SYNCHRONIZE MISSION TIMER TO CMC (IF REQD) V05N01E, 1706E (T EPHEM VERIFICATION BY MSFN, COPY ON MSFN CUE FROM DSKY)	
81:10	MSFN CUE: (AOS +4 MIN) HGA AUTO		81:40	CMC MODE - FREE P52 (OPTION 3) (LDG SITE ORIENT)	T EPHEM UPDATE 01D LOAD B 03 --- 04 --- 05 ---
	MS: ION SOURCE - ON MULT - LOW (VERIFY) DSCRM - LOW (VERIFY)	MSFN COMOS: (AOS +5 MIN) DSE PLAYBACK		REPORT: GYRO TORQUING ANGLES	
	GR: SHIELD - OFF MS: MULT - HIGH			P52 (OPTION 1)(IF REQD) (LDG SITE ORIENT)	REFSMAT DO TIME + 0 0 HRS + 0 0 0 MIN + 0 SEC
	PC: PWR - OFF (MSFN CUE)			P20, CMC MODE - AUTO GDC ALIGN	P52 IMU REALIGN N71: ---,--- N05: --- * --- N93: * --- X * --- Y * --- Z * --- GET * ---
81:20	MS: DSCRM - HIGH		81:50	L10H CANISTER CHANGE (9 INTO A, STOW 7 IN B6) MSFN UPLINK: JET-ON MONITOR LOADS	
	GR: GAINSTEP - ON(UP) 6 STEPS (STEP 1)/SHIELD - ON (CTR) MS: MULT - LOW			MSFN CMDS: (AOS +54 MIN) DSE REWIND	
81:30	MS: DSCRM - LOW		82:00	PRESSURE EQUALIZATION VALVE - CLOSE	

CSM FLIGHT PLAN

SIM EXP STATUS
(-0111)
(01222)

SIM EXP STATUS
(-0111)
(01222)

82:00
(P20)
(~~2.0°DB~~)
2
(21101)
(x11111)

CSM SYSTEMS CHECKLIST
PRE-SLEEP CHECKLIST PAGE S/1-29

LOGIC PWR (2) - OFF

MSFN CMDS: (AOS +61 MIN)
DSE RECORD

82:10

FILM MAGS REQD FOR NEXT DAY:

DAC: CEX-BB & CC

EL: CEX-NN & PP, UV-OO, VHBW-SS

NK: VHBW-XX

ONBOARD READOUT

BAT C _____
PYRO BAT A _____
PYRO BAT B _____
RCS A _____
B _____
C _____
D _____

DC INO SEL - MNA OR B

82:30
(P20)
(~~2.0°DB~~)
2
(21101)
(x11111)

REV 5

82:40

82:50

83:00

REST PERIOD
(9.0 HOURS)

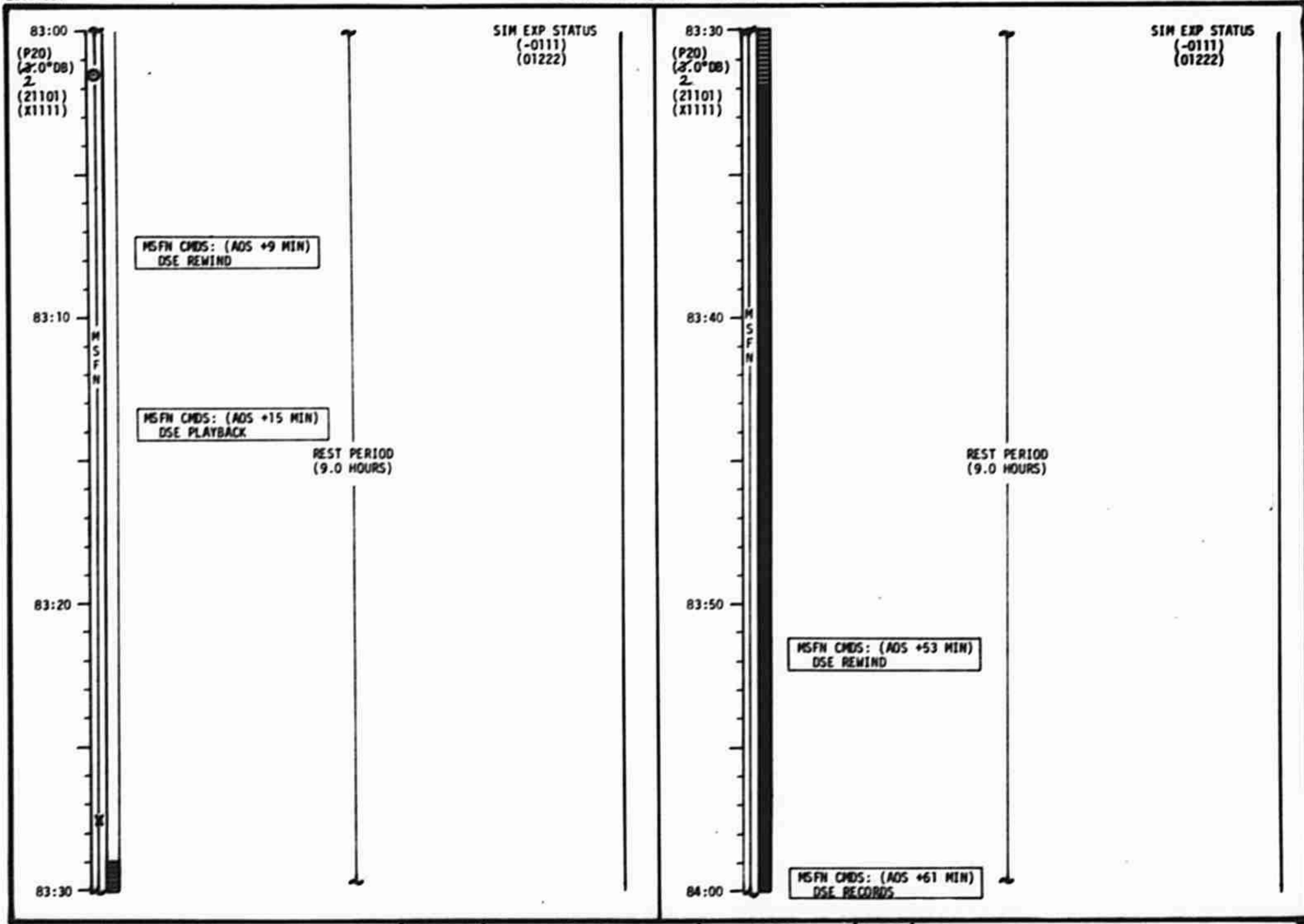
82:20

82:30

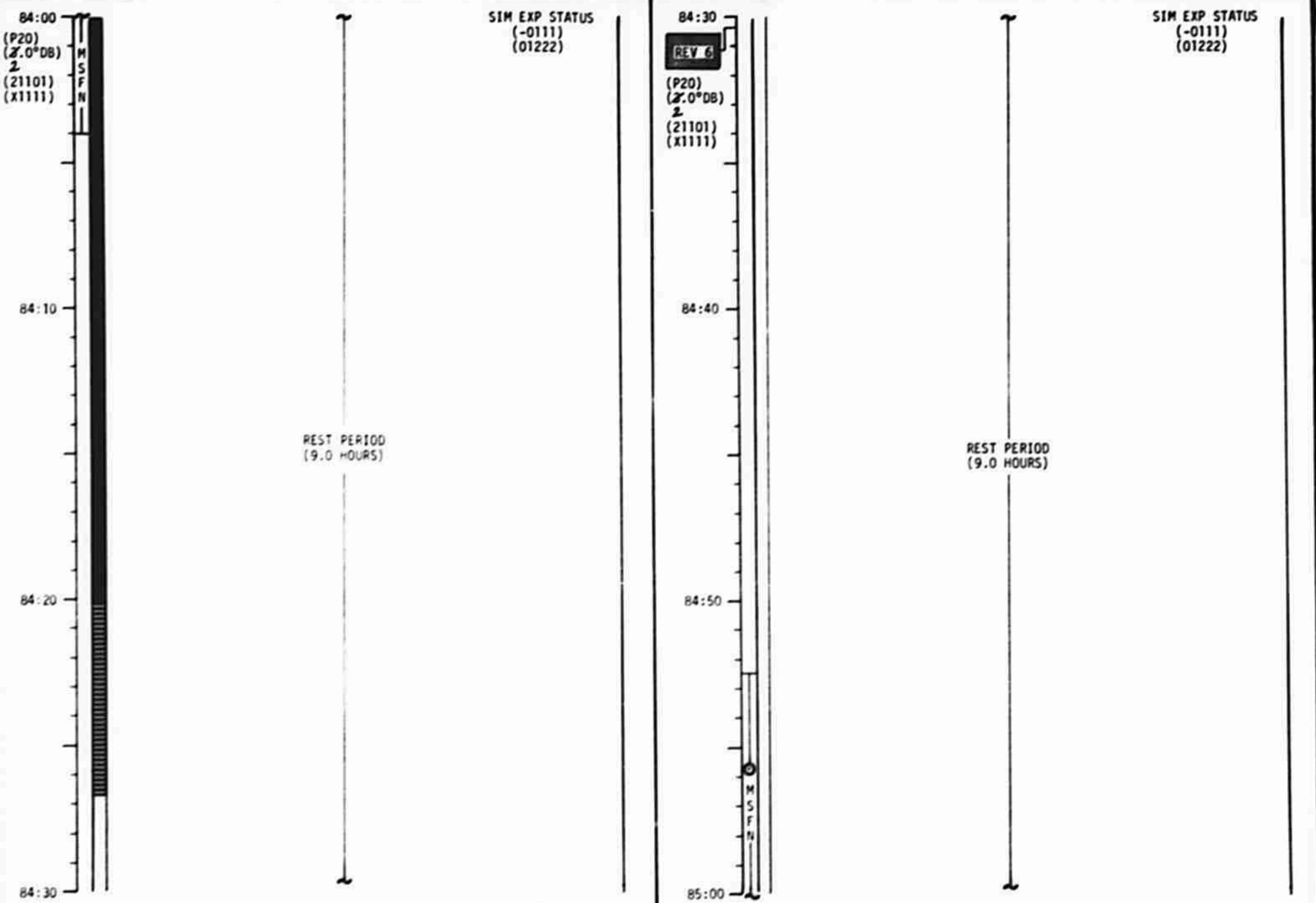
MISSION	EDITION	DATE	PAGE
APOLLO 16	B CHANGE AT EDITION (4/16)	31011972 4/7/72	3-82

2254 CST

CSM FLIGHT PLAN



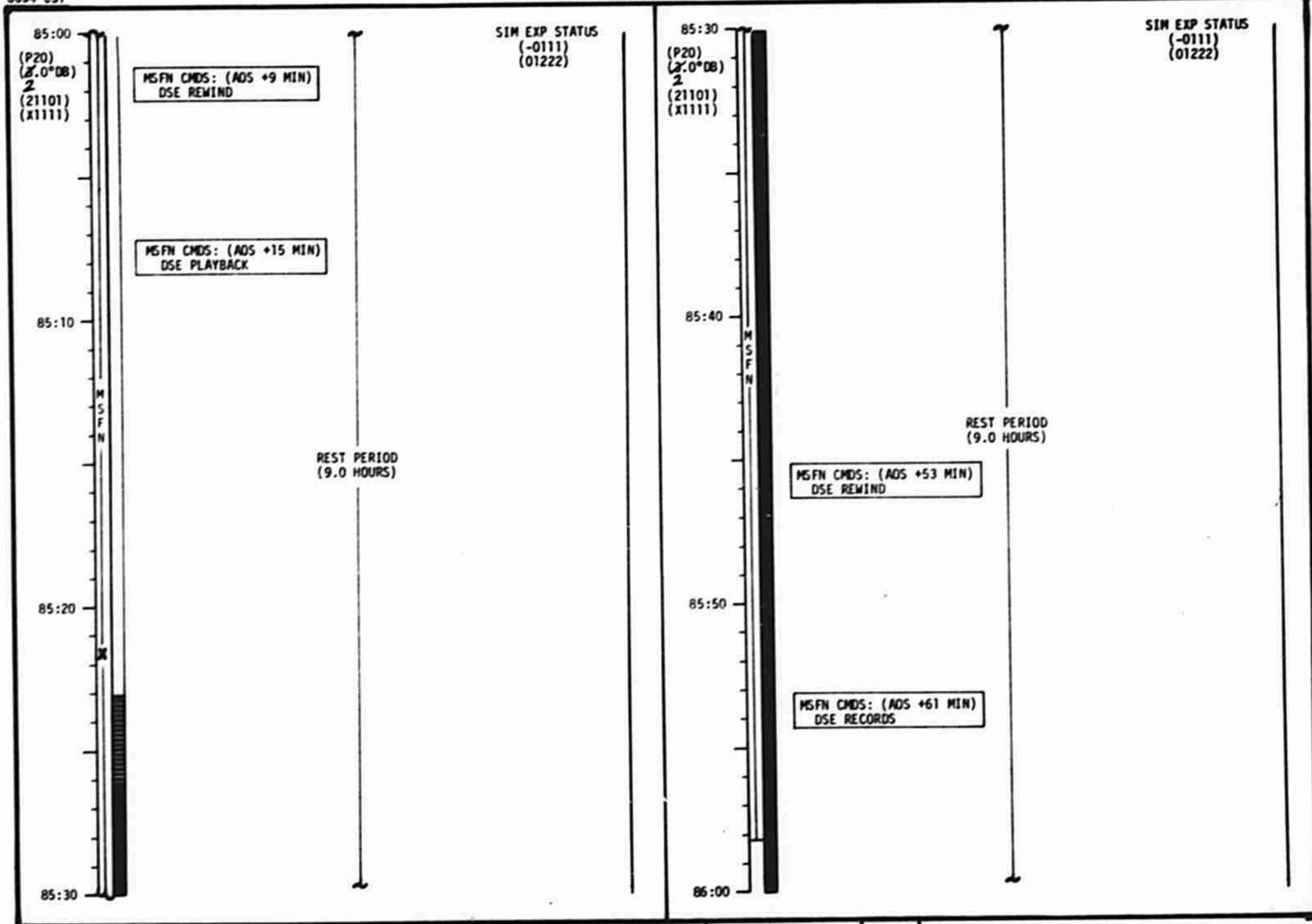
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/29/72 3/6/72	3-84

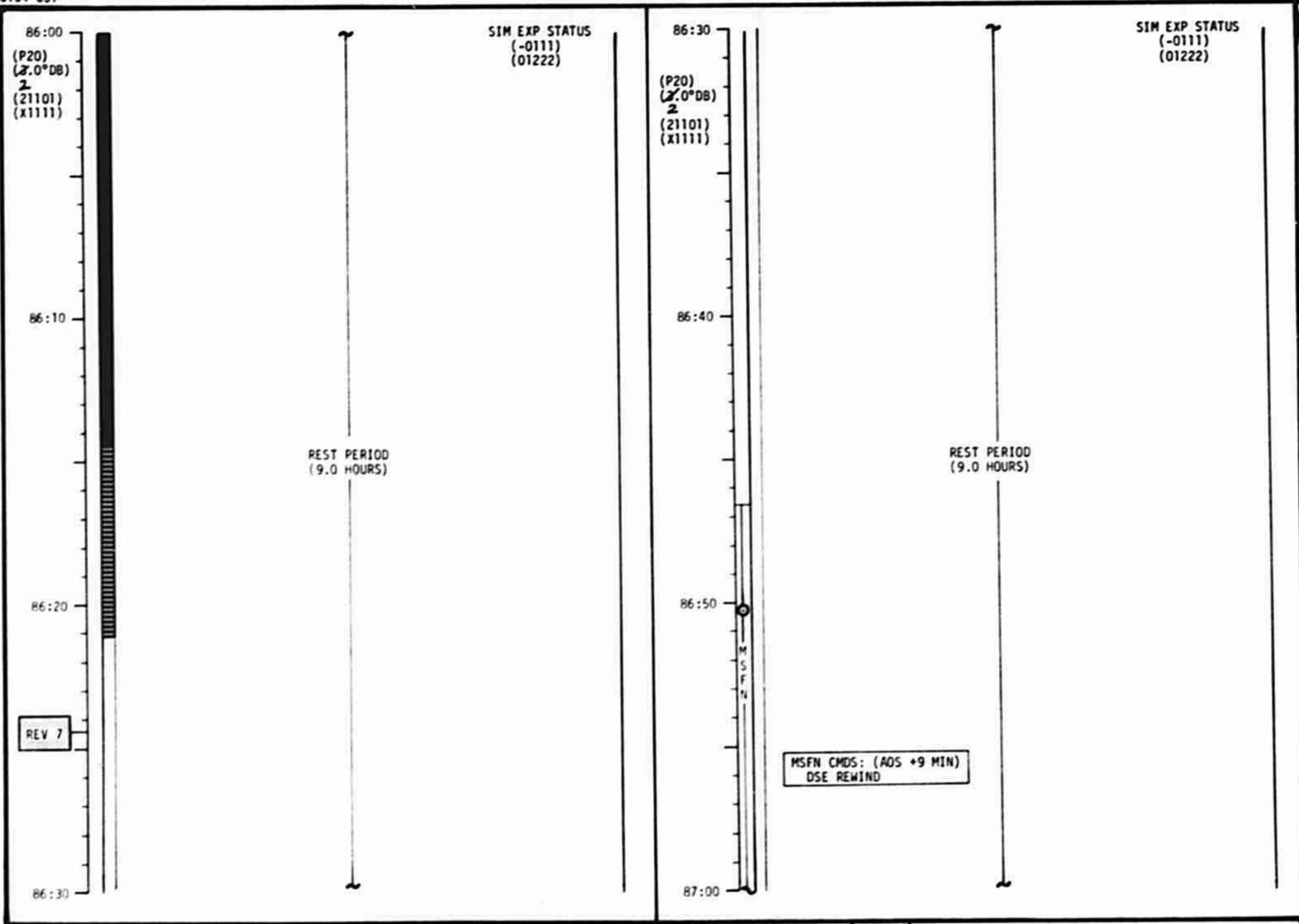
CSM FLIGHT PLAN

0054 CST



0154 CST

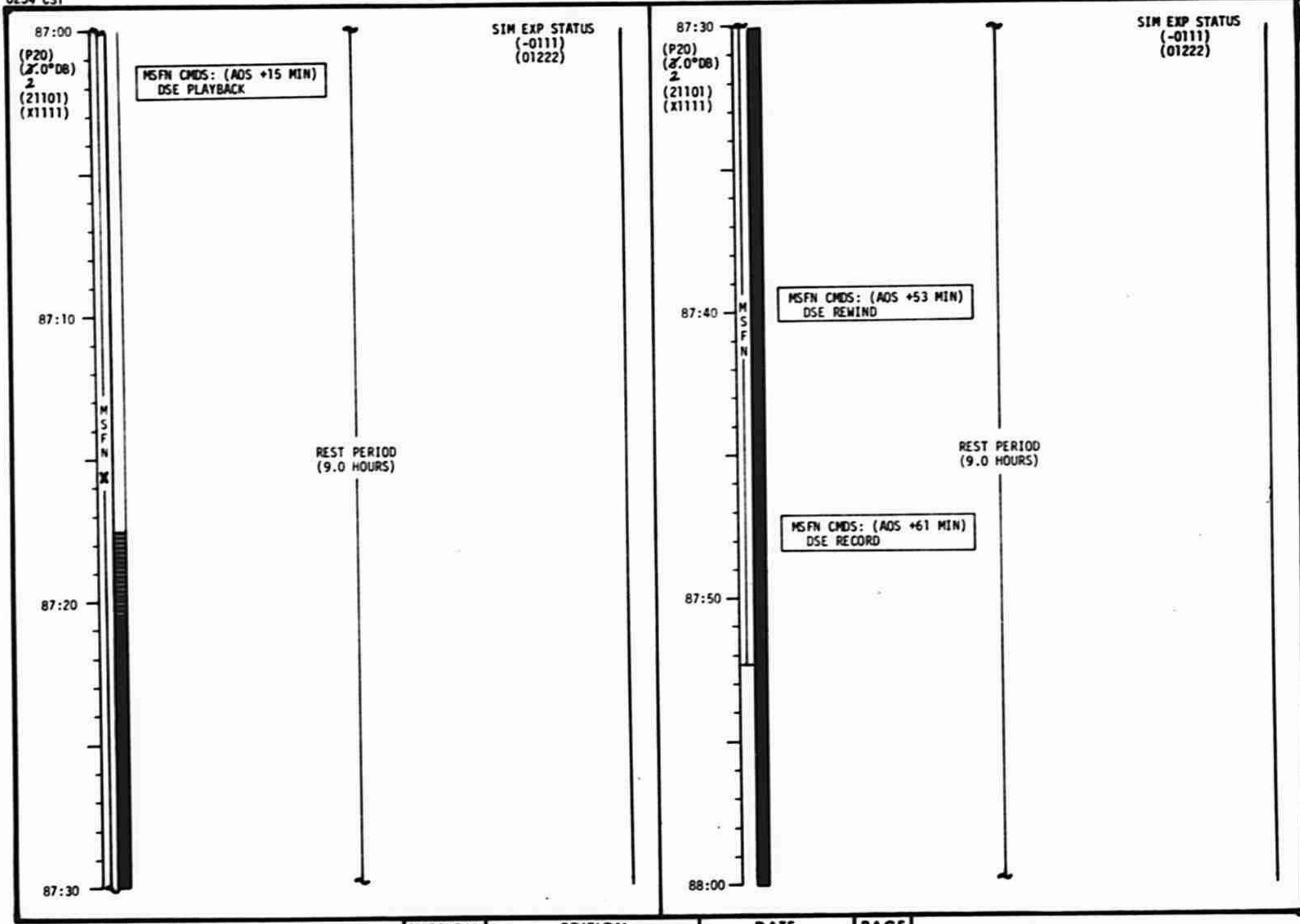
CSM FLIGHT PLAN



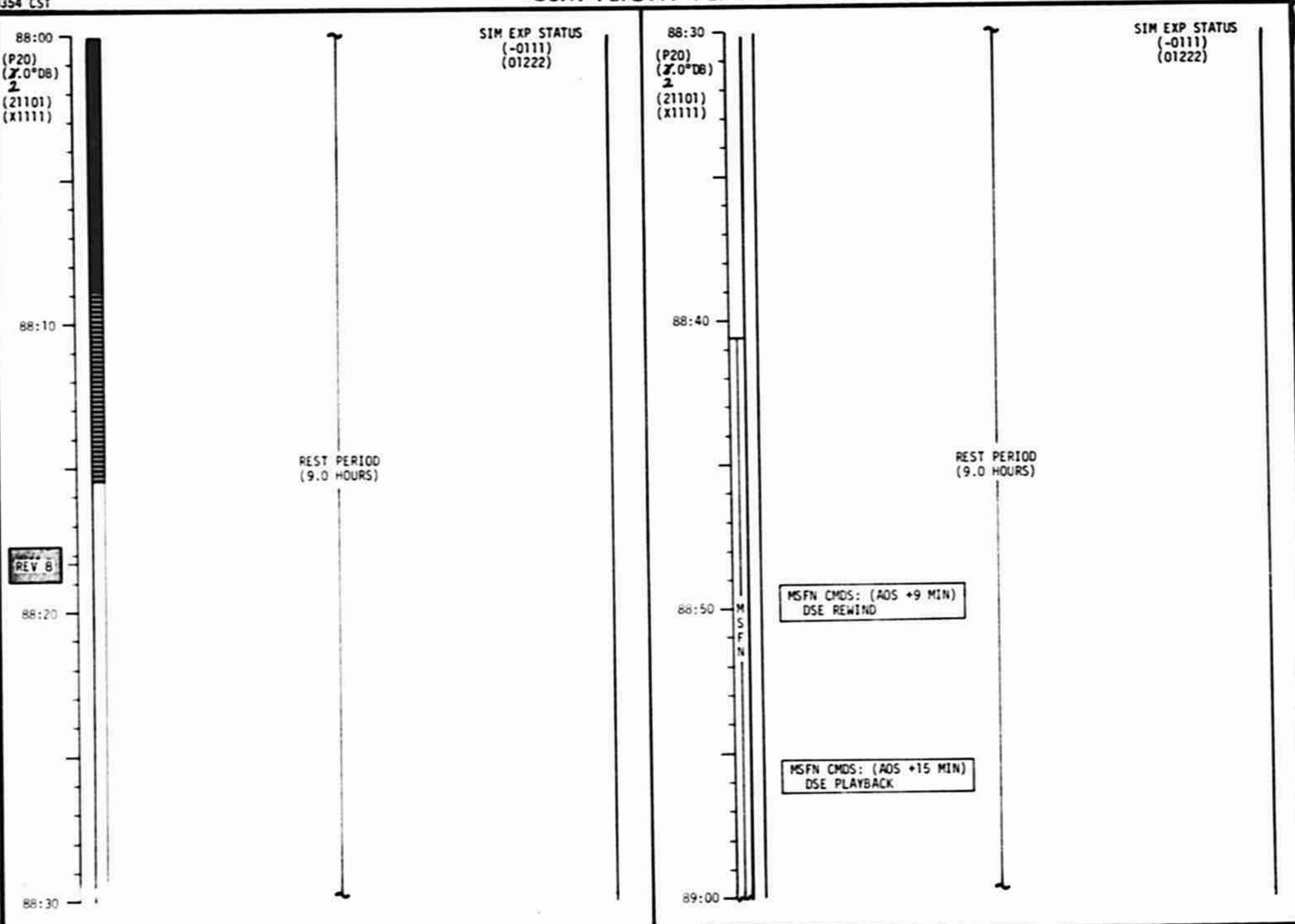
MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGEA FINAL (4/16)	3/27/72 3/6/72	3-86

CSM FLIGHT PLAN

0254 CST

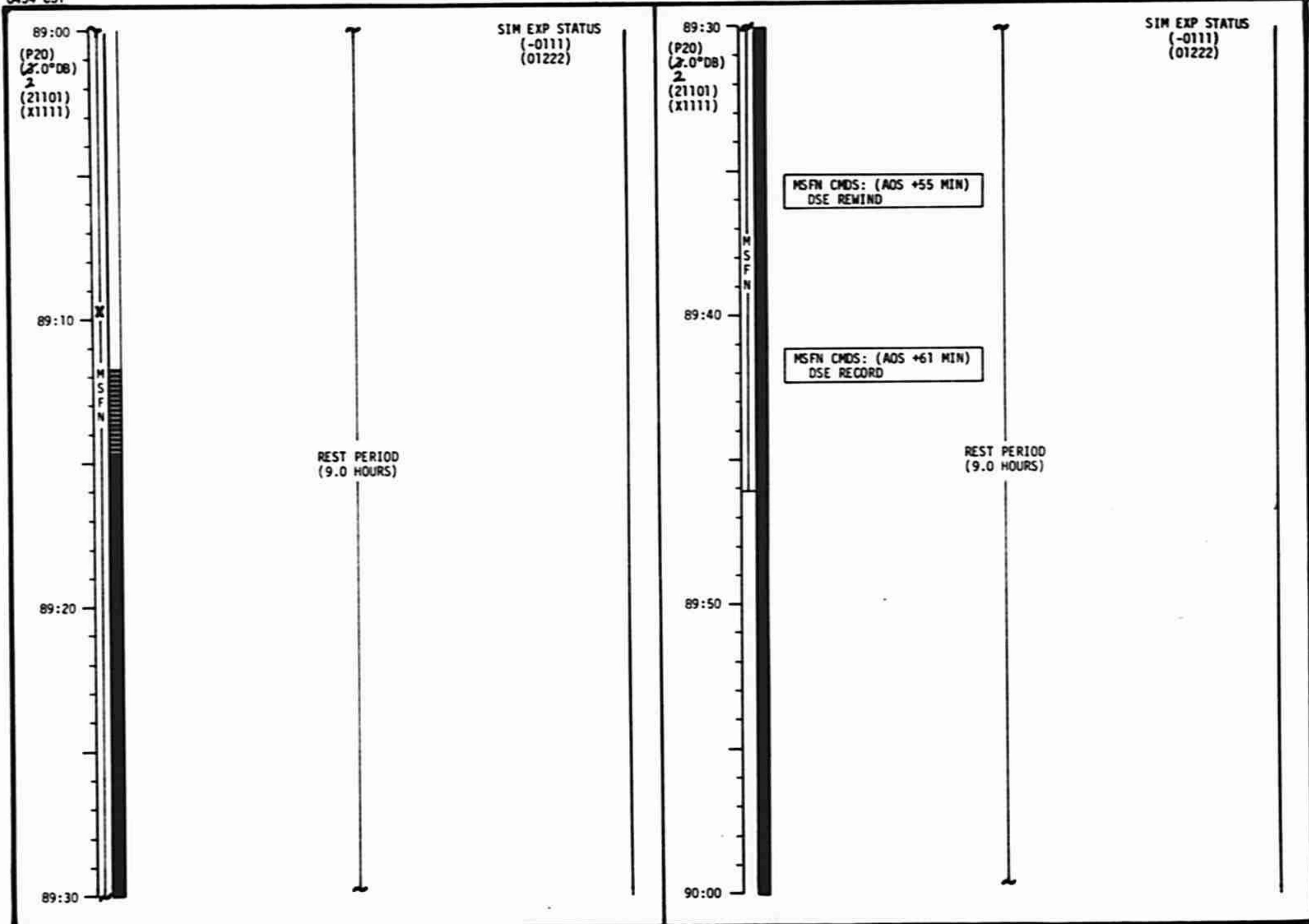


CSM FLIGHT PLAN



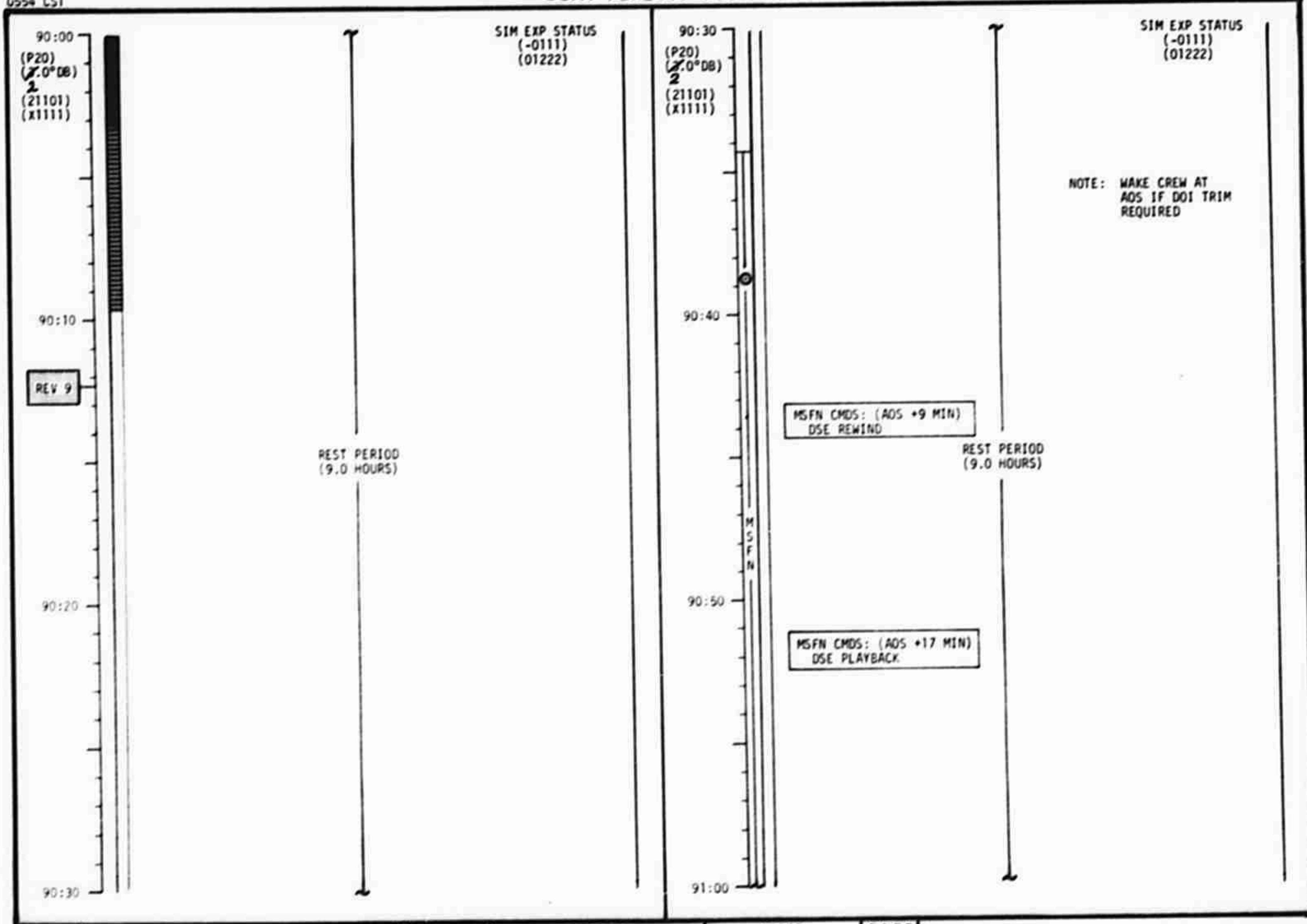
CSM FLIGHT PLAN

0454 CST



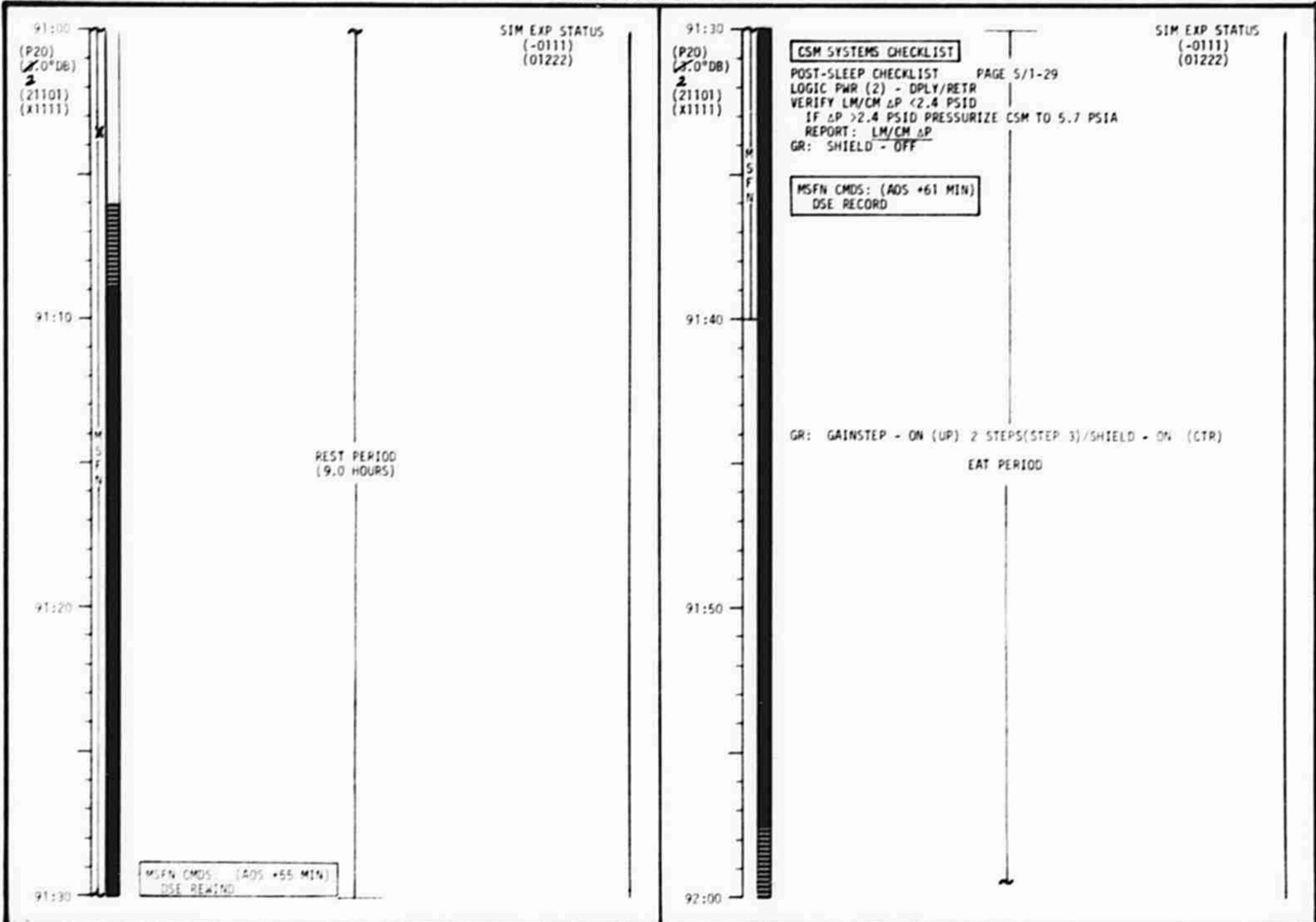
CSM FLIGHT PLAN

0554 CST



CSM FLIGHT PLAN

0654 CST



CSM FLIGHT PLAN

0754 CST

92:00
 (P20)
~~(2.0°DB)~~
2
 (21101)
 (X1111)

REV 10

SIM EXP STATUS
 {-0111}
 {01222}

92:10

MS: ION SOURCE - OFF EAT PERIOD
 EXP - STBY
 CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
 KR - STBY
 AP/KR COVER - CLOSE

92:20

MS - RETR
 GR - RETR

LOGIC PWR (2) - OFF
 ENABLE ALL JETS (BEFORE AOS)

CONFIGURE DSF (STOP/CMD RESET/REWIND)(AOS -3 MIN)

92:30

ACQ MSFN HGA: MAN, WIDE P.O. Y 170
 S-BD ANT IND > 1/2 SCALE HGA: READY, NARROW

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAC (4/16)	3/27/72 346472	3-92

CSM FLIGHT PLAN

0824 CST

92:30
 (P20)
 (2.0°DB)
 (21101)
 (X11111)

LMP: FILL DRINK BAG - EVAC, INSTALL
 INSTALL FOOD STICK

MSFN CUE: (AOS +4 MIN)

HGA AUTO

MSFN CMDS: (AOS +5 MIN)
 DSE PLAYBACK

MSFN UPLINK:
 CSM S.V. AND V66

MSFN UPDATE:
 TRAJECTORY STATUS
 FLIGHT PLAN

SIM EXP STATUS
 (-0000)
 (01214)

92:40

CDR: FILL DRINK BAG - EVAC, INSTALL
 PREPARE COUCHES: CDR -0°, CMP -0°, LMP -180°
 REMOVE PROBE STRAPS (R5)
 TUNNEL LIGHTS - ON(UP)
 VERIFY LM/CM ΔP < 0.2 PSID
 IF ΔP > 0.2 PSID PERFORM CM/LM PRESSURE EQUALIZATION (DECAL)
 TUNNEL HATCH REMOVAL (DECAL); STOW HATCH
 PROBE REMOVAL (DECAL); STOW PROBE
 DROGUE REMOVAL (DECAL); STOW DROGUE
 REPORT: DOCKING TUNNEL INDEX ANGLE

LMP DON LCG AND PGA WITHOUT HELMET AND GLOVES

92:50

93:00

CSM TO LM TRANSFER LIST		
CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG (1)	TEMP STWG
ON CREW	BIO INSTRUMENTATION (2)	ON CREW
PGA BAG	UCTA (2)	ON CREW
A2	FCS (2)	ON CREW
U1	LCG (2)	ON CREW
TEMP STWG	DRINK BAG (2)	ON PGA
TEMP STWG	FOOD STICK (1)	ON PGA
PGA BAG	SUIT ITSLA-EV (2)	ON CREW
ICG	SUNGASSES IN POUCH (2)	PGA POCKET
ON CREW	WATCH/WRIST MIRROR/WATCHBAND (2)	ON PGA
ON CREW	PEN (2)	PGA POCKET
ON CREW	PEN - FELT TIP (2)	PGA POCKET
ON CREW	PENCIL (2)	PGA POCKET
ON CREW	POCKET, C/L & SCISSOR (2)	ON PGA
ON CREW	POCKET, DATA (2)	ON PGA
ON CREW	SCISSOR	ON CREW
ON CREW	PEN LIGHT (2)	PGA POCKET
ON CREW	EAR PLUG (2 PR)	PGA POCKET
ON CREW	DOSIMETER - PERSONAL (2)	PGA POCKET
	PASSIVE (6)	
ON CREW	COMM CARRIER (2)	ON CREW
HELMET ACC BAG	IV GLOVES (2 PR) - CDR TRANSFER	TEMP STWG
HELMET BAG	HELMET (2) - CDR TRANSFER	TEMP STWG
R8	CWG ELECT ADPTR CAP (2)	ON CGW ADPTR
CCU CABLE	CWG ELECT ADPTR (2)	LHSSC
IN JETT BAG	LCG PLUG (2)	PURSE
ON PGA	GAS CONNECTOR PLUGS (4)	ON PGA
ON PGA	PGA ELECT CONN CAP (2)	PURSE
R3	LM XFER DATA CARD KIT	DATA FILE
	LM TIMELINE BOOK	
	LM DATA CARD BOOK	
	LM LUNAR SURFACE C/L	
	ORBIT MONITOR CHART (LM)	
	ASCENT MONITOR CHART	
	LM STAR CHARTS (3)	
	LM ACT C/L (1)	
	(RETURN JETTISON BAG TO CSM)	

LM FLIGHT PLAN

MCC-H

0854 CST

CDR

LMP

NOTES

93:00

M
S
F
N

:10

:20

93:30

:40

:50

94:00

IVT TO LM
TRANSFER HELMETS &
GLOVESZIP LMP SUIT
ATTACH RESTRAINTS

LM ACTIVATION CHECKLIST PAGE 3-1

IVT TO LM
 OPEN HATCH
 VERIFY DOCKING ANGLE
 TRANSFER POWER
 LIGHTS ON
 DES O₂ AND H₂O - OPEN
 ZIP CDR SUIT
 ATTACH RESTRAINTS

-2:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	93:00 - 94:00	5/10	3-94

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

<p>93:00 V48 (21111) (X1111) V45 (RESET LUNAR SURFACE FLAG) P00 P52 (OPTION 3) (LDG SITE ORIENT)</p> <p>REPORT: GYRO TORQUING ANGLES</p> <p>GDC ALIGN</p> <p>93:10 CDR DON BIOMED HARNESS, LCG AND PGA WITHOUT HELMET AND GLOVES</p> <p>P52 IMU REALIGN</p> <p>N71: _____</p> <p>N05: _____</p> <p>N93: X _____ Y _____ Z _____</p> <p>GET _____</p> <p>MSFN CMDS: DATA SYS - OFF</p> <p>V49 MNVR TO UNDOCK ATT (93:35) (000,104,000) SET HGA P -63, Y 159 FOR AOS ACC</p> <p>CMP DON BIOMED HARNESS, PGA WITHOUT HELMET AND GLOVES</p> <p>L10H CANISTER CHANGE (10 INTO B, STOW B IN B6)</p> <p>93:30</p>	<p>SIM EXP STATUS (-0000) (01214)</p> <p>93:30 (21111) (X1111) M S F N</p>	<p>SIM EXP STATUS (*0000) (01214)</p> <p>VERIFY DSE TAPE MOTION (LBR/RCD/FWD/QMD RESET)</p> <p>CONFIGURE CAMERA: (UNDOCKING PHOTOS) CM2/DAC/1B/CEX-BRKT,MIR (T8.1/250.7) 12 fps (100% MAG)</p> <p>MAG (CC) _____, MAG E _____ UTILITY PWR - ON</p> <p>CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM3/EL/250/VHBW (T11.1/250.-)6 FR</p> <p>MAG (SS) _____, FR * _____</p> <p>CDR & LMP IVT TO LM</p> <p>O₂ HEATERS 1 & 2 - OFF O₂ HEATERS 3 - AUTO</p> <p>AT LMP REQUEST: LM PWR - RESET/OFF GET _____ : _____ : _____ (RECORD) SYS TEST - 7D SYS TEST fnd - 0 volts</p> <p>94:00</p>
---	---	--

LM FLIGHT PLAN

MCC-H

0954 CST

CDR

LMP

NOTES

94:00
REV 11

UPDATE TO LM
AGS ABORT CONSTANTS

UPLINK TO LM
L/S REFSMMAT
LM S.V. & V66
LGC ABORT CONSTANT
LGC ΔT CLOCK
SYNC (IF REQD)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	94:00 - 95:00	5/10-11	3-96

MISSION TIMER ACTIVATION

EPS ACTIVATION
CONNECT TO LM COMM
CONFIGURE S-BAND

PRIMARY GLYCOL LOOP ACT
CAUTION/WARNING CHECKOUT
ECS ACTIVATION & CHECKOUT

CONNECT TO LM ECS
CB ACTIVATION
ACTIVATE RCS HEATERS

CONNECT TO LM ECS
CB ACTIVATION
TB VERIFICATION

PGNS TURN ON AND SELF TEST

VHF CHECKOUT
RECORDER - ON

LGC/CMC CLOCK SYNC
T EPHEM UPDATE

PRIM S-BAND VOICE CHECK
SEC S-BAND VOICE CHECK
STEERABLE ANTENNA ACTIVATION
BIOMED - RIGHT

V48 (32022)
E-MEMORY DUMP
DEPLOY LDG GEAR

SUIT FAN/H₂O SEP CHECK
GLYCOL PUMP CHECK

DOCKED IMU COARSE ALIGN

ASCENT BATTERY ACTIVATION
AND CHECKOUT

V06 N20

-2:00

-1:30

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0954 CST

	SIM EXP STATUS (*0000) (01214)	SIM EXP STATUS (*0000) (01214)
94:00 REV 11 (21111) (x1111)		
AT CDR REQUEST: MARK TO LM FOR LM MISSION TIMER SYNC		
94:10 REMOVE AND STOW CSM/LM UMBILICAL IN F1 or F2 INSTALL DROGUE AND PROBE (DECAL)		
PRE-LOAD PROBE (DECAL)	RELEASE DOCKING LATCH NO'S. 1 & 7 CB DOCKING PROBE (2) - CLOSED PROBE EXT/REL - RETR PROBE EXTD/REL tb (2) - bp (VERIFY) CB DOCKING PROBE (2) - OPEN PROBE EXTD/REL - OFF VERIFY PROBE EXTEND LATCH ENGAGED INDICATOR (RED) NOT VISIBLE	
94:20 VHF C/O AT LMP REQUEST VHF ANT - RIGHT VHF AM B - SIMPLEX FOR VHF B CHECK then OFF VHF AM A - SIMPLEX FOR VHF A CHECK ACQ MSFN HGA P -63, Y 159 REPORT: LM PWR - RESET/OFF GET		MAN ATT (3) - RATE CMD LIMIT CYCLE - ON ATT DB - MIN RATE - LOW BMAG (3) - ATT 1/RATE 2 SC CONT - SCS LM DOCKED IMU COARSE ALIGN
M S F N O		
LM CLOCK SYNC: V16N65E ON CDR MARK - V06N65E		TERMINATOR PHOTOS - IF TIME PERMITS
LM T EPHEM UPDATE: V05NOTE, 1706E (T EPHEM)		DESCARTES (P16-A10) CM3 CM3 (f11, 1/250,00) 6FR FR _____
94:30		V06 N20 DON HELMET AND GLOVES
94:30		95:00

LM FLIGHT PLAN

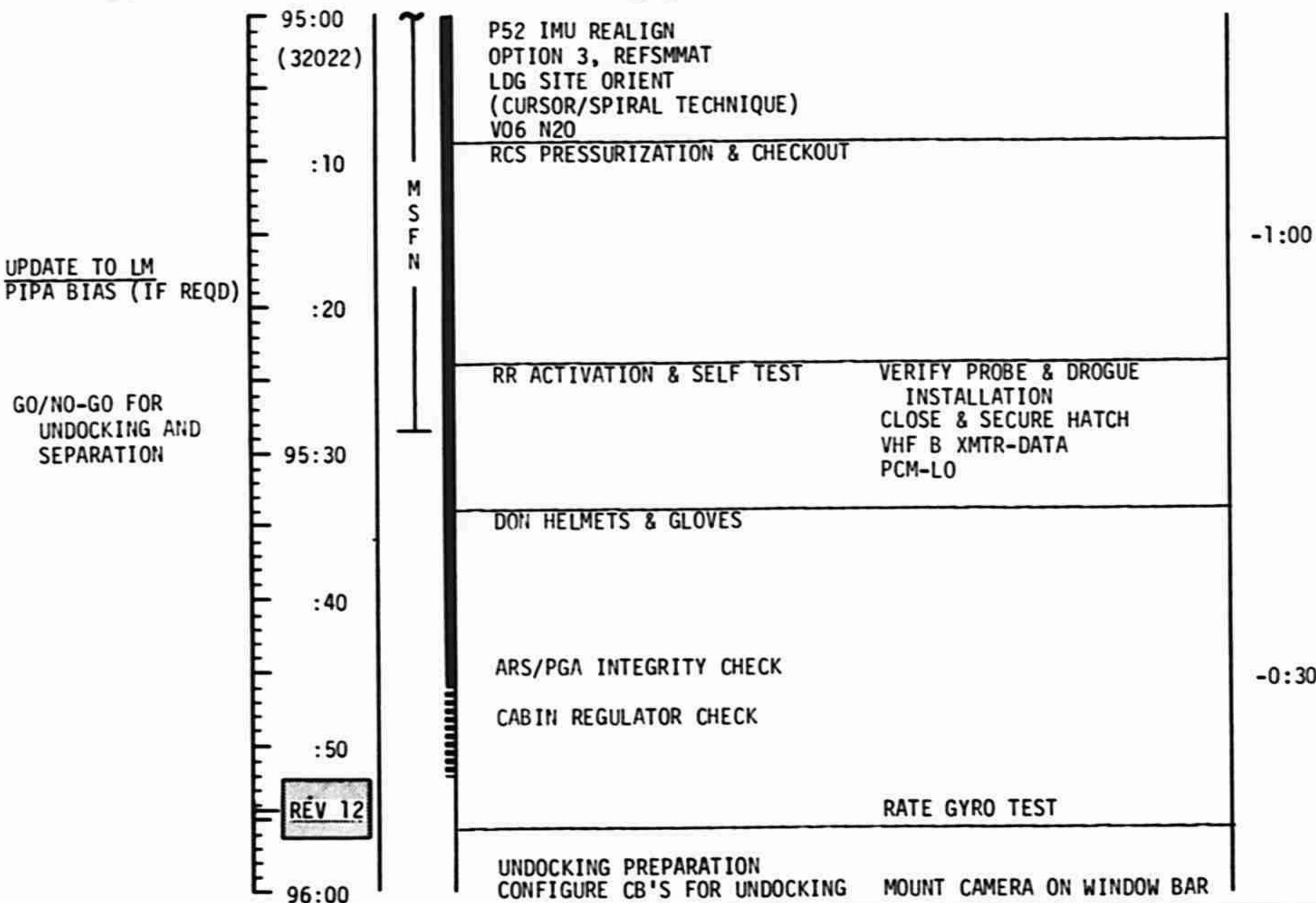
MCC-H

1054 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	95:00 - 96:00	5/11-12	3-98

FLIGHT PLANNING BRANCH

1054 CST

CSM FLIGHT PLAN

95:00 (21111) (X11111)	PGA Interconnects - AB SUIT CKT INTEGRITY CHECK (DECAL)	SIM EXP STATUS (*0000) (01214)	95:30 (21111) (X11111)	VHF ANT - RIGHT (VERIFY) VHF RCV ONLY - B DATA VHF AM A - SIMPLEX VHF AM B - OFF	SIM EXP STATUS (*0000) (01214)																		
95:10 M S F N	V06 N20 ON LM CUE: SC CONT - CMC ATT DB - MAX BMAG (3) - RATE 2 AT CDR'S REQUEST DURING RCS CHECKOUT CMC MODE - FREE FOR RCS HOT FIRE PANEL 10 MODE - VOX VOX SENS TB - 5 S-BD - OFF INTERCOM - OFF VHF AM T/R - T/R (VERIFY)		95:40 M S F N	RR XPNDR ACTIVATION AND SELF-TEST (DECAL) RR XPNDR - HTR CONFIGURE CAMERA: (UNDOCKING PHOTOS) CM2/EL/80/CEX (f8,1/250,FOCUS) 10 FR MAG (NN) _____, FR * _____ VERIFY: CM2/DAC/18/CEX-BRKT, MIR (TB,1/250,7) 12 fps UTILITY PWR - ON	113 VALUES A~2.8 B~2.2 SELF TEST C~0.3 UNLOCKED ~4.9 LOCKED																		
95:20 M S F N	AFTER LM RCS CHECKOUT CMC MODE - AUTO LM RR SELF TEST RNDZ XPNDR - OFF (VERIFY) AUTO RCS SEL B3 - OFF ROLL (8) - OFF UNTIL LM/CM ΔP > 3.5 PSID DOCKING LATCH RELEASE (DECAL) HATCH INSTALLATION (DECAL) MSFN CMDS: DSE RECORD MSFN UPDATE: GO/NO-GO FOR UNDOCK/SEP HATCH INTEGRITY CHECK (DECAL) VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)		95:50 (21101) (X11111)	TUNNEL LIGHTS - OFF ROLL (4) - ON CYCLE CMC MODE - FREE/AUTO V48 (21101) (X11111) LOAD N47 & N48 V49 TRIM MNVR TO CSM SEP PAD ATT (95:56)																			
95:30			96:00	P30; LOAD CSM SEP SET DET COUNTING UP TO UNDOCK/SEP LOAD ΔV IN EMS TO -100.0 CHECK NULL BIAS VERIFY EMS -100.0/ΔV/STBY GDC ALIGN VERIFY ORDEAL ALT SET = 40 NM	<table border="1"><tr><td>+</td><td></td><td></td><td></td><td>WT</td><td>N47</td></tr><tr><td></td><td>0</td><td>0</td><td></td><td></td><td>P TRIM N48</td></tr><tr><td></td><td>0</td><td>0</td><td></td><td></td><td>Y TRIM</td></tr></table>	+				WT	N47		0	0			P TRIM N48		0	0			Y TRIM
+				WT	N47																		
	0	0			P TRIM N48																		
	0	0			Y TRIM																		

MCC-H

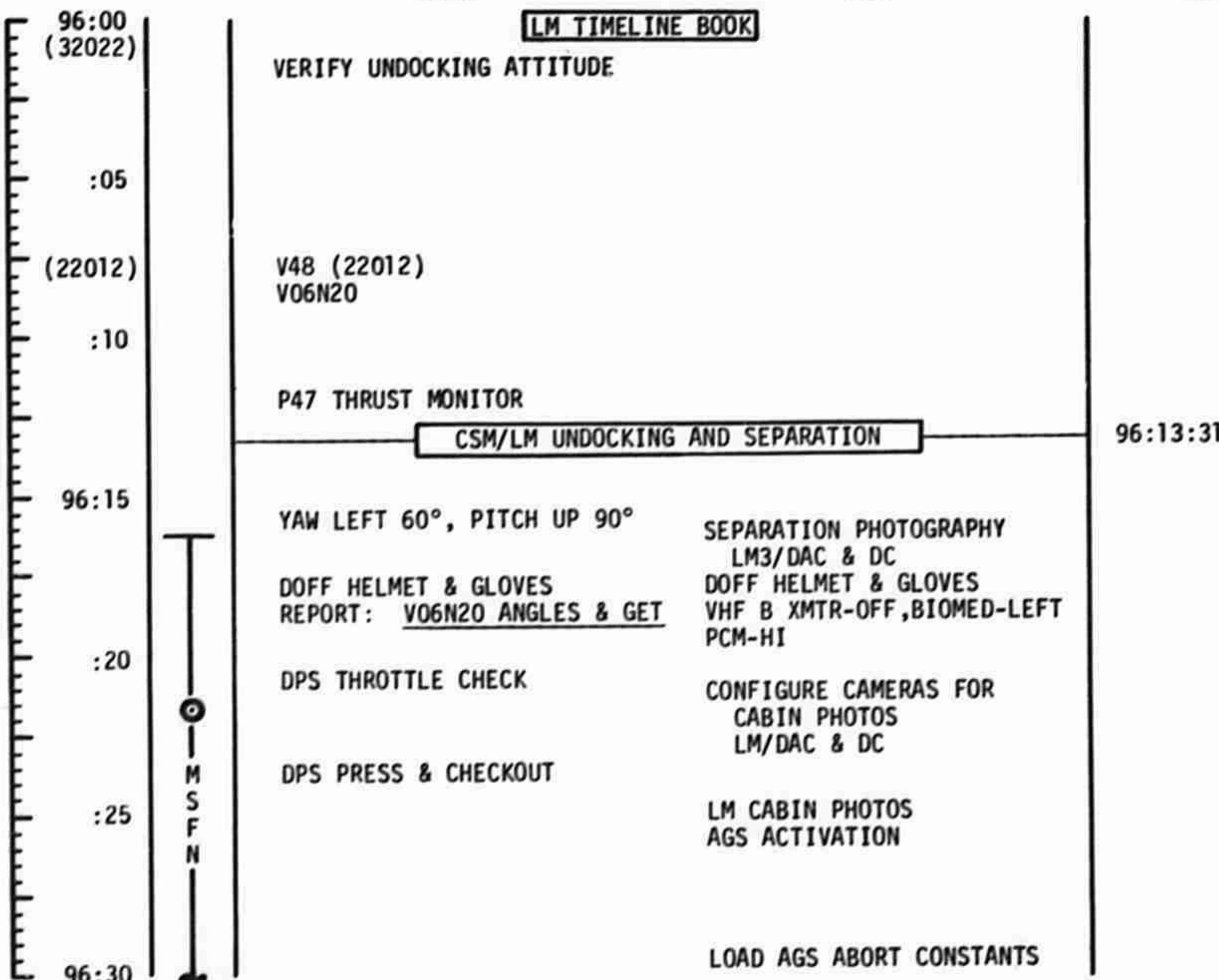
1154 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:00 - 96:30	5/12	3-100

FLIGHT PLANNING BRANCH

LM FLIGHT PLAN

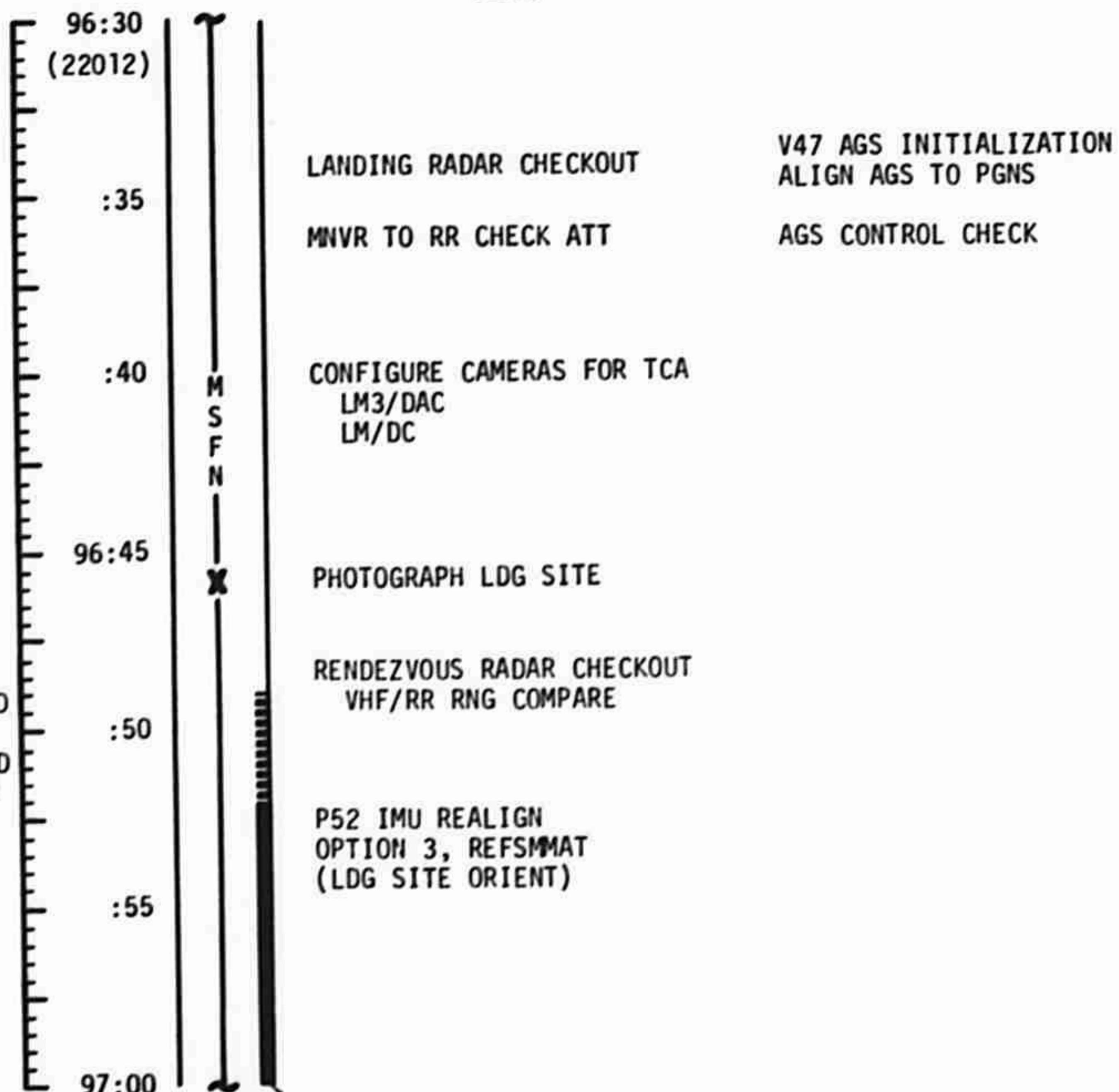
MCC-H

1224 CST

CDR

LMP

NOTES



UPDATE TO LM
AGS K-FACTOR
REV 12 LS TCA

UPDATE TO LM
CSM CIRC PAD
NO PDI+12 ABORT PAD
PDI PAD
PDI EARLY ABORT PAD
PDI LATE ABORT PAD
T2 ABORT PAD
T3 TIG

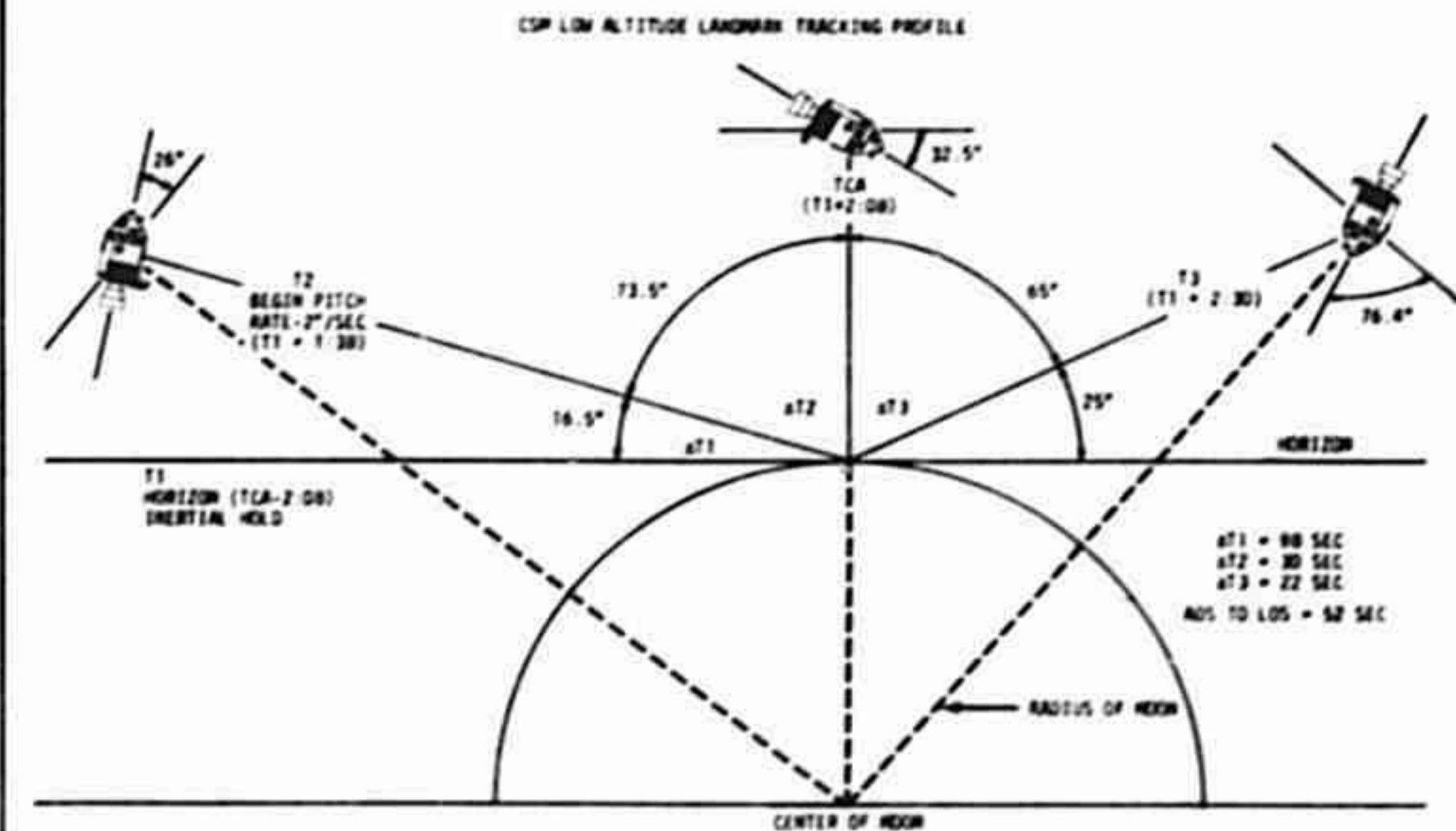
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:30 - 97:00	5/12	3-102

FLIGHT PLANNING BRANCH

1224 CST

CSM FLIGHT PLAN

96:30 (11101) (X1111)	RR XPNDR - PWR	SIM EXP STATUS {0000} (01214)
(11102) (X1111)	V48 (11102) (X1111)	
P20 OPT 2 (LOW ALT LDMK TRK) N78 (+090.00) (LOAD LDMK PAD ROLL ANGLE) N79 (-2.0000) (+000.50) N34 (LOAD T2 TIME) PRO	P52 IMU REALIGN N71: _____ N05: _____ N93: X _____ Y _____ Z _____ GET _____	
(P20) (-2.000) (0.5°08) 96:40	MSFN CMDS: DSE RECORD	
P24 (L/S LDMK 16-X) OPT ZERO - OFF OPT MODE - CMD OPT TEL TRUN - SLAVE TO SAT OPT COUPLING - RSLV OPT SPEED - HI 0:00 - T1 (HORIZON) DET - RESET/START DAC - ON		
X M S F N I X (11102) (X1111)	1:38 - T2 (AUTO PITCH RATE BEGINS) OPT MODE - MAN, TAKE MARKS 2:08 - TCA 2:30 - T3 (LDMK LOSS) DAC - OFF STOP PITCH RATE AT P 088 082 VHF RNG - RESET, COMPARE RR AND VHF RANGE ACQ MSFN HGA P -66 , Y 446 72 RECORD MAG = _____, REMOVE & STOW DAC	
96:50	MSFN CMDS: DSE DUMP	
P00 P52 (OPTION 3) (LOG SITE ORIENT) BACKUP STARS 45 & 47 REPORT: <u>GYRO TORQUING ANGLES</u>		
GDC ALIGN V49 MNVR TO COAS CALIB ATT (97:01) (060.251.354) HGA P 37, Y 257		
97:00		



P24 LDMK TRACKING (1/60)						
TOT:						
T ₁	-----:	-----:	-----:	-----:	-----:	-----:
T ₂	-----:	-----:	-----:	-----:	-----:	(96:45:15.7)
TCA	-----:	-----:	-----:	-----:	-----:	
T ₃	-----:	-----:	-----:	-----:	-----:	
P	----- °P (015)	----- °Y (296)	----- °(T2 ACQ)			
N or S N°	----- / SA	----- TA	----- (T2 ACQ)			
ADD	16-1	16-2	16-3	16-4	16-5	16-6
LAT	-08.859	-08.936	-09.000	-09.056	-09.122	-09.181
LONG/2	+07.741	+07.747	+07.745	+07.650	+07.821	+07.838
ALT	-000.09	-000.11	-000.14	-000.20	+000.06	+000.03

LM FLIGHT PLAN

MCC-H

1254 CST

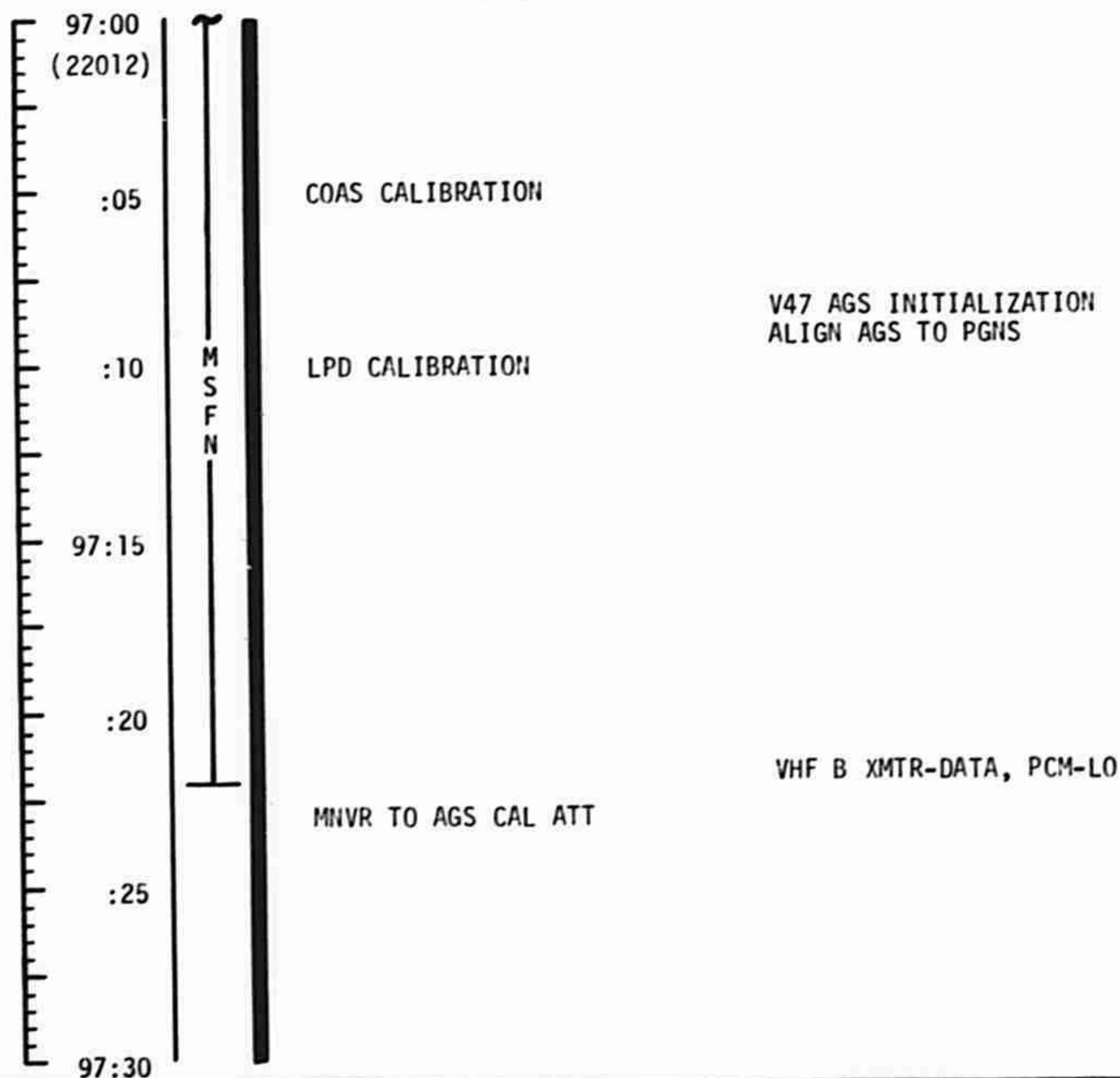
CDR

LMP

NOTES

UPLINK TO LM
CSM & LM S.V.
(CIRC - 10)
E-MEMORY
DES TARGETING

UPDATE TO LM
GYRO DRIFT COMP
(IF REQD)
PIPA BIAS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	97:00 - 97:30	5/12	3-104

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1254 CST

97:00	(11102) (X1111)	P52 (COAS CALIB) USE 26 (SPICA)	SIM EXP STATUS (*0000) (01214)
		MSFN UPDATE: CIRC PAD PADS E-N (98:15) PIPA BIAS (IF REQD)	COAS CALIB - N92
		MSFN UPLINK: CSM S.V.(CIRC-10) CIRC TARGET LOAD	SHAFT: ——•— TRUN: —•———
		P30; VERIFY CIRC TIG AND ΔV'S V49 MNVR TO CIRC BURN PAD ATT (97:17) HGA P -29, Y 171	
97:10	M S F N	GDC ALIGN VERIFY ORDEAL ALT SET = 50 NM	
(10101) (X1111)		PRE-SPS BURN SIM PREP (CUE CARD) V48 (10101) (X1111)	
		SET DET COUNTING UP TO CIRC	
(P40) (0.5°DB)		P40 (TRIM)	
		MSFN UPDATE: GO/NO-GO FOR CIRC	
97:20		VHF AM B - OFF VHF AM A - SIMPLEX VHF RCV ONLY - B DATA VHF RANGING - OFF	
		MSFN CMDS: DSE RECORD	
		VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)	
97:30			

P30 MANEUVER					
SET STARS	C	I	R	C	PURPOSE
	S	P	S/G & N		
R ALIGN	+				WT N47
P ALIGN	0	0			PTIM N48
Y ALIGN	0	0			Y TRIM
ULLAGE	• 0 0				HRS GETI
	• 0 0 0				MIN N33
	• 0				SEC
					ΔV _X N81
					ΔV _Y
					ΔV _Z
	X X X				R (000)
	X X X				P (141)
	X X X				Y (358)
	•				H _A N44
					H _P
	•				ΔVT
	X X X				BT
	X				ΔVC
	X X X X				SXTS
	•			0	SFT
	•			0 0	TRN
	X X X				BSS
	X X				SPA
	X X X				SXP

LM FLIGHT PLAN

MCC-H

1324 CST

CDR

LMP

NOTES

	97:30 (22012)		AGS CALIBRATION	
	:35			
	:40			CSM CIRC 97:42
	97:45	P76 UPDATE CSM S.V.	V47 INITIALIZE AGS	
REV 13	:50	P63 IGNITION ALGORITHM TEST MNVR TO PDI ATT	CHECK ECS, RCS, EPS, APS	
	:55			
	(22112)	V48 (22112)	CAMERA PREP FOR PDI LM3/DAC	
		PRE-PDI ECS CHECK	CAMERA PREP FOR EARTHRISE LM/DC	
	98:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	97:30 - 98:00	5/12-13	3-106

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

97:30 (P40) (0.5°06)	SIM EXP STATUS (*0000) (31000)								
(10101) (x1111)	MANUAL START CIRC BURN TABLE RESTART WITH $\Delta V_{g0} > 20\text{fps}$								
	<table border="1"> <thead> <tr> <th>P OR Y RATES</th> <th>ATT DEVIATION</th> <th>SHUTDOWN TIME</th> <th>RESIDUALS</th> </tr> </thead> <tbody> <tr> <td>10°/SEC TERMINATE</td> <td>+10° TERMINATE</td> <td>BT +1 SEC</td> <td>IF X,Y,&Z ARE <5 FPS TRIM TO <0.2 FPS DO NOT TRIM IF ANY RESIDUAL >5 FPS</td> </tr> </tbody> </table> <p>If (-) V_{gy} or (+) V_{gz}, ROLL & USE -E Thrusters</p>	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS	10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	IF X,Y,&Z ARE <5 FPS TRIM TO <0.2 FPS DO NOT TRIM IF ANY RESIDUAL >5 FPS
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS						
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	IF X,Y,&Z ARE <5 FPS TRIM TO <0.2 FPS DO NOT TRIM IF ANY RESIDUAL >5 FPS						
97:40 (10101) (x1111)	<table border="1"> <tr> <td>CSM CIRCULARIZATION (000,047/141,358)</td> <td>TIG: 97:41:44.5 BT: 5.9 SEC AVT: 99.6 FPS ULLAGE: 2 JET, 16 SEC ORBIT: 68.2 x 51.8</td> </tr> <tr> <td>POO VOICE P76 BURN DATA TO LM V82</td> <td></td> </tr> </table> <p>V49 MNVR TO LDMK TRX ATT EXCEPT IN ROLL (98:00) (060,276,000) SET HGA P 39. * 28H FOR AOS ACQ</p>	CSM CIRCULARIZATION (000,047/141,358)	TIG: 97:41:44.5 BT: 5.9 SEC AVT: 99.6 FPS ULLAGE: 2 JET, 16 SEC ORBIT: 68.2 x 51.8	POO VOICE P76 BURN DATA TO LM V82					
CSM CIRCULARIZATION (000,047/141,358)	TIG: 97:41:44.5 BT: 5.9 SEC AVT: 99.6 FPS ULLAGE: 2 JET, 16 SEC ORBIT: 68.2 x 51.8								
POO VOICE P76 BURN DATA TO LM V82									
97:50 REV 13	UNSTOW CSM RESCUE BOOK POST SPS BURN SIM PREP (CUE CARD)								
98:00									

CIRC REQUIREMENTS - CMC

ISS
0-DAC
4 SERVO LOOPS
1 DSKY
2 BANKS
7 of 8 ROLL THRUSTERS
3 of 4 Poy THRUSTERS

BURN STATUS REPORT	
X X	ATIG
X X	BT
	V g _x
	TRIM
X X X	R
X X X	P
X X X	Y
	V g _x
	V g _y
	V g _z
X	ΔV_c
X	FUEL
X	OX
X	UNBAL

LM FLIGHT PLAN

MCC-H	1354 CST	CDR	LMP	NOTES
	98:00 (22112)	DON HELMET & GLOVES PRE-PDI SWITCH CHECK	DON HELMET & GLOVES PRE-PDI SWITCH CHECK	
	:05		BATS 5 & 6 NORM FEED-ON	
	:10			
UPLINK TO LM LM S.V.(PDI - 10) RLS-2 UPDATE TO LM AGS RLS LPD BIAS	98:15	T REPORT: <u>AGS CAL NO.</u> <u>ED BAT VOLTS</u> <u>ASC BATS ON TIME</u>	PCM-HI VHF B XMTR - OFF VHF A XMTR - VOICE/RNG	
	:20		V47 AGS INITIALIZATION TARGET AGS FOR ABORT	
UPDATE TO LM N69 BACKUP RLS	:25	P63 POWERED DESCENT INITIATION	AUDIO MODE - VOX	
	98:30	LDG RDR ON FINAL TRIM	ALIGN AGS TO PGNS	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	98:00 - 98:30	5/13	3-108

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

98:00
(10101)
(X1111)SIM EXP STATUS
(*0000)
(01214)CONFIGURE CAMERA: (LOMK TRK)
CM/DAC/SXT/CEX (EXP-PAD) 1 fps (3.8% MAG)MAG (BB) — MAG 2
UTILITY POWER - ONGDC ALIGN
VERIFY ORDEAL
ALT SET = 60 NM
ACQ MSFN HGA P 39, Y 288

98:10

MSFN CMDS:
DSE DUMP

REPORT: BURN STATUS

MSFN UPDATE:
P24 LDMK TRACK (98:50)MSFN UPLINK:
CSM S.V. (P24 T2 ACQ)
LM S.V. (PDI-10)

98:20

P20 OPT 5 (LOMK TRK ATT) (98:34)
N78 (+000.00)
(-068.00)
(+000.00)
N79 (+000.50)
(000.338/276.000) OMNI 0(P20)
(0.5°DB)MSFN UPDATE:
GO/NO-GO FOR PDI

98:30

		PURPOSE	NO PDI ₁ +12 ABORT		
		GETI	HRS	+	0 0
E	N33	MIN	+	0 0	0
		SEC	+	0	
F	N84	ΔVX			
	LOCAL	ΔVY			
	VERT	ΔVZ			
G	GETI	HRS	+	0 0	
	CSI	MIN	+	0 0	0
	N11	SEC	+	0	
H	GETI	HRS	+	0 0	
	TPI	MIN	+	0 0	0
	N37	SEC	+	0	

		PURPOSE	PDI ₁ PAD		
		GETI	HRS	+	0 0
I	PDI	MIN	+	0 0	0
	N33	SEC	+	0	

		PURPOSE	PDI ₁ ABORTEARLYPAD		
		GETI	HRS	+	0 0
J	TPI	MIN	+	0 0	0
	N37	SEC	+	0	

		PURPOSE	PDI ₁ ABORT LATE PAD		
		GETI	HRS	+	0 0
K	TPI	MIN	+	0 0	0
	N37	SEC	+	0	

		PURPOSE	T2-1 ABORT PAD		
		GETI	HRS	+	0 0
L	T2	MIN	+	0 0	0
		SEC	+	0	
M	GETI	HRS	+	0 0	
	TPI	MIN	+	0 0	0
	N37	SEC	+	0	

		PURPOSE	T3 ABORT PAD		
		GETI	HRS	+	0 0
N	T3	MIN	+	0 0	0
		SEC	+	0	

LM FLIGHT PLAN

MCC-H

1424 CST

CDR

LMP

NOTES

GO/NO-GO FOR PDI
 UPDATE TO LM
 N69 NOMINAL
 N69 DOWN TRACK &
 CROSS TRACK
 N69 RADIAL

98:30
(22112)MASTER ARM-ON
ENGINE ARM-DES

VHF COMM CHECK WITH CSM

TIG: 98:34:41
 BT: 12 MIN 1.5 SEC
 ΔV : 6696.28 FPS
 ULLAGE: 4JET, 7.5SEC

PDI

MASTER ARM - OFF
V21N69
YAW TO FACE UP

98:35

V24N69

AGS ALT UPDATE @ 14K FEET
DAC ON FOR LANDING

98:40

V23N69
PITCH OVER AT P64

98:45

P66

LM LUNAR TOUCHDOWN

98:46:42

ENG STOP, ENG ARM-OFF

DAC-OFF
STORE AGS LUNAR AZIMUTH
UPDATE & ALIGN AGST1 STAY/NO-STAY
P12 POWERED ASCENT

TAPE RECORDER-OFF

T2 STAY/NO-STAY & GO/NO-GO
FOR DPS VENT

LUNAR SURFACE CHECKLIST PAGE 1-1

BATS 5 & 6 - OFF/RESET
INVERTER - 2

VENT DPS PROPELLENTS

STAY/NO-STAY FOR T1

M
S
F
N

98:50

STAY/NO-STAY FOR T2
& GO/NO-GO FOR
DPS VENT

98:55

99:00

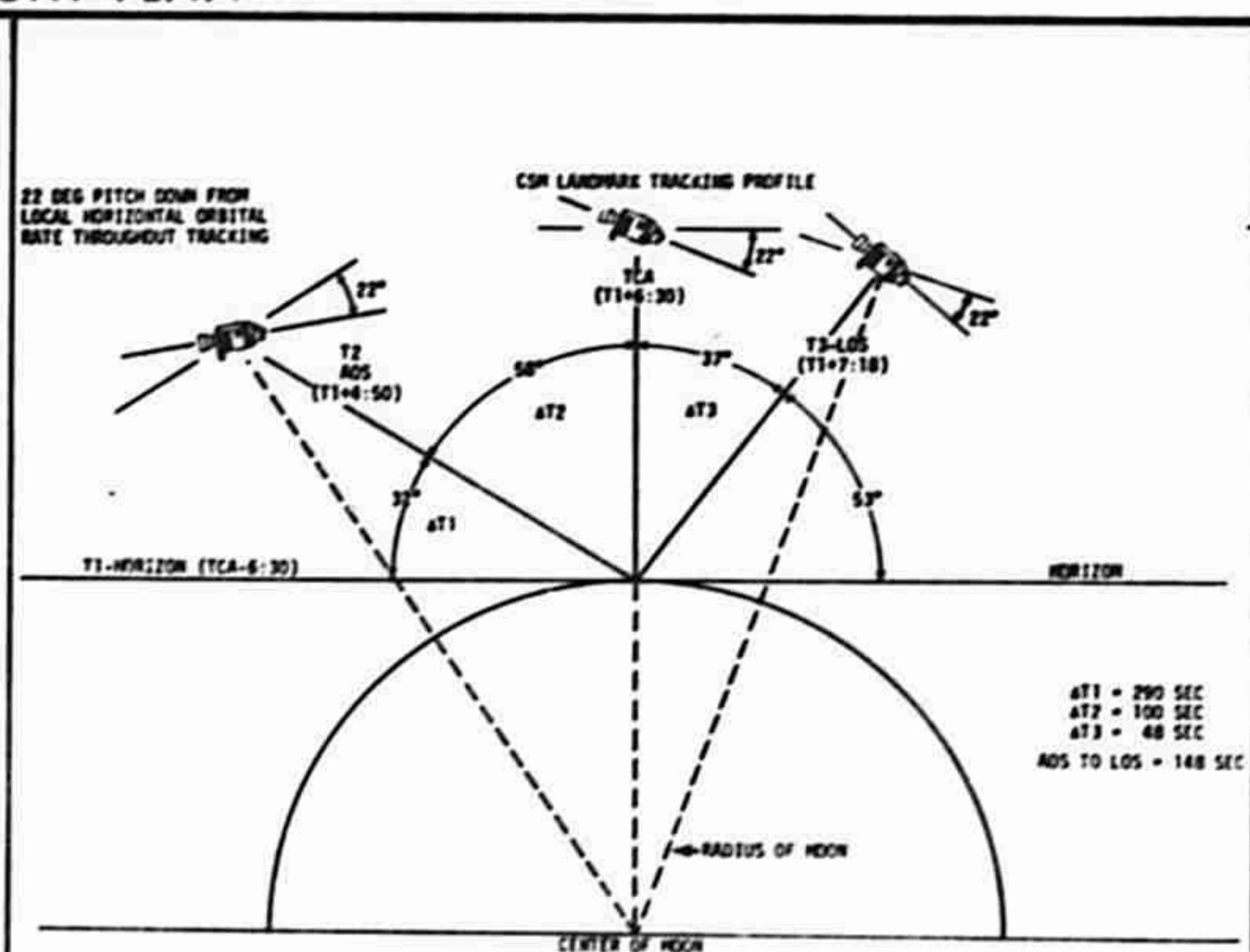
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	98:30 - 99:00	5/13	3-110

FLIGHT PLANNING BRANCH

1424 CST

CSM FLIGHT PLAN

98:30 (P20) (0.5°DB) (10101) (X1111)	HGA REQUIRED for MSFN to LM VIA CSM RELAY	SIM EXP STATUS (*0000) (01214)
VHF COMM CHECK WITH LM	P24 (L/S LDMK 16-3) OPT ZERO - OFF OPT MODE - CMC	LM PDI (98:34:41) _____ : _____ : _____
0:00 - T1 (HORIZON) DET - RESET/START		
MSFN CMDS: DSE RECORD		
98:40 (10111) (#1111)	3:50 - DAC - ON	
	4:50 - T2 (LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART	
X M S F N	6:30 - TCA 7:18 - T3 (LDMK LOSS) DAC - OFF	
	P00 V48 (10111) (X1111)	
	V49 MNVR TO P52 ATT (98:58) (140,296,000) HGA P -31, Y 310	LM TOUCHDOWN (98:46:42) _____ : _____ : _____
98:50	CONFIRM STAY/NO STAY FOR T1 VHF AM A - OFF (CTR) VHF RCV ONLY - OFF CONFIRM STAY/NO STAY FOR T2 RNDZ XPMDR - OFF V44 (SET LUNAR SURFACE FLAG)	P52 IMU REALIGN N71: _____, _____ N05: _____ * _____ N93: _____ X: _____ * _____ Y: _____ * _____ Z: _____ * _____ GET: _____ * _____
	MSFN CMDS: DSE DUMP	
99:00	P52 (OPTION 3) (LDG SITE ORIENT)	



P24 LDMK TRACKING	
TGT:	16 - 3 (1/60)
T1	_____ * _____
T2	_____ * _____
TCA	_____ * _____
T3	_____ * _____
R	_____ *P_____ *T_____ * (T2 ACQ)
N or S RM	_____ / SA _____ TA _____ (T2 ACQ)
N89	
LAT	-09.000
LONG/2	+07.745
ALT	-000.14

LM FLIGHT PLAN

MCC-H

1454 CST

CDR

LMP

NOTES

99:00 (22112) :10 STAY/NO-STAY FOR T3 UPDATE TO LM L/O TIMES FOR REVS 15 - 19	M S F N	DOFF HELMET, GLOVES & RESTRAINTS CLOSE WINDOW SHADES	DOFF HELMET, GLOVES & RESTRAINTS REPORT: DEDA 047, 053 544, 545, 546
		P57 - LUNAR SURFACE ALIGN OPTION 3, REFSMMAT A/T-3, GRAVITY & ONE CELESTIAL BODY (LANDING SITE ORIENT) PARK IMU PLATFORM	AGS LUNAR SURFACE GYRO CALIBRATION
		LM POWER DOWN PARK RR ANTENNA FOR STAY LGC STANDBY, IMU OFF OPEN WINDOW SHADES CONFIGURE FOR POWERDOWN	ALIGN AGS TO PGNS STORE AGS LUNAR AZIMUTH
		CABIN CONFIGURATION FOR LUNAR STAY STOW ARMRESTS, COAS, LEVA BAGS UNSTOW PLSS ON FLOOR STOW SLEEP RESTRAINTS TRANSFER RCU'S TO LCG BAG DEPLOY LM EVA ANTENNA DEPLOY ONE JETT BAG, STOW THREE	BATS 2,1 - OFF/RESET BAT L (LMP) - ON CHECK BUS VOLTS BIOMED - RIGHT
			CSM REV 14

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	99:00 - 100:00	5/13-14	3-112

FLIGHT PLANNING BRANCH

1454 CST

CSM FLIGHT PLAN

99:00 (10111) (X1111)	REPORT: GYRO TORQUING ANGLES GDC ALIGN CONFIGURE FOR URINE DUMP MSFN UPLINK: CSM S.V.	SIM EXP STATUS (*0000) (01214)	99:30 (10111) (X1111)	SIM EXP STATUS (*0000) (01214)
99:10 M S F N	DOFF PGA ZIP SUIT & INSTALL ELECTRICAL COVER PRIOR TO STOWING (PGA BAG) STOW UCTA (PGA BAG)		99:40 REV 14	TERMINATE WASTE WATER DUMP AT 10%
99:20	VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET) O ₂ FUEL CELL PURGE WASTE WATER DUMP URINE DUMP		99:50	COMPARE VIZ WITH MONOCULAR & BINOCULAR
99:30			100:00	

LM FLIGHT PLAN

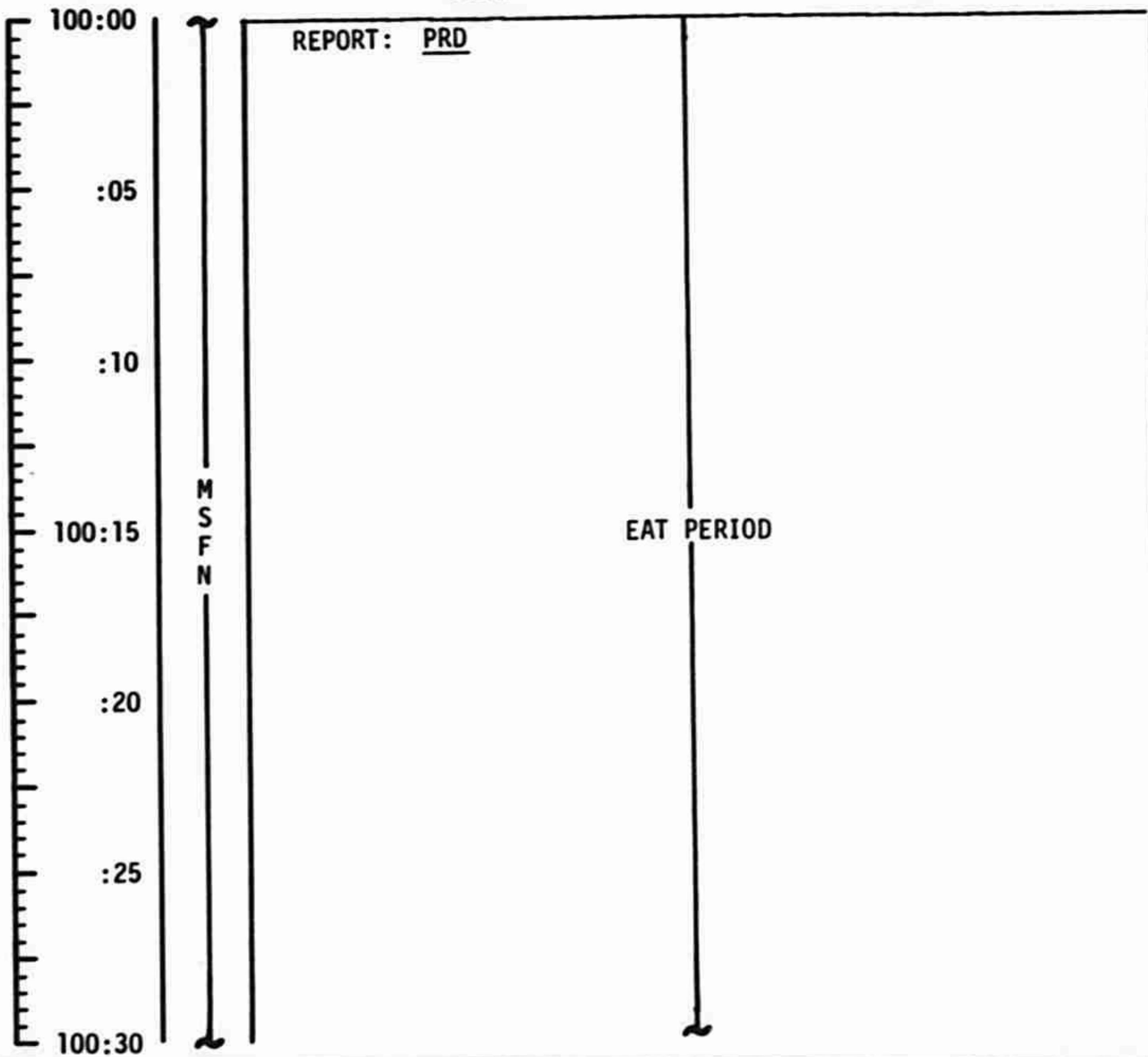
MCC-H

1554 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	100:00 - 100:30	5/14	3-114

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1554 CST

100:00
(10111)
(x1111)SIM EXP STATUS
{00000}
{01214}

ACQ MSFN HGA P -31, Y 310

100:10

MSFN UPDATE:
P24 LM VISUAL (100:55)
SIM EXP STATUS
DSE VOICE STATUSMSFN CMDS:
DSE DUMP(P20)
(0.5°DB)CYCLE CMC MODE - FREE/AUTO
P20 OPT 5 (P24 LM VISUAL TRK ATT)(100:30)
N78 (+000.00)
(-080.00)
(+000.00)
N79 (+000.50)
(000,350/296,000) OMNI D

100:20

100:30

LM FLIGHT PLAN

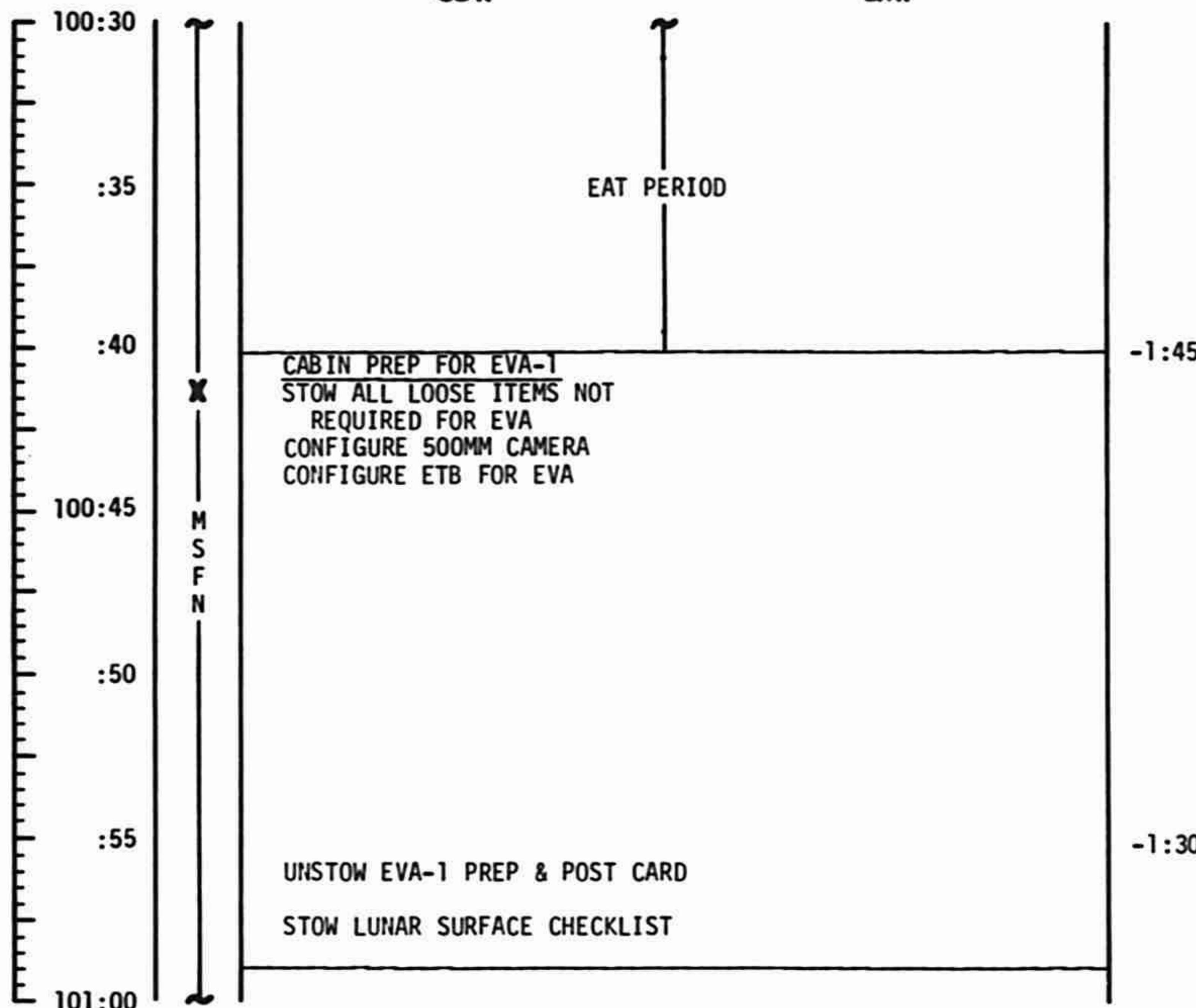
MCC-H

1624 CST

CDR

LMP

NOTES

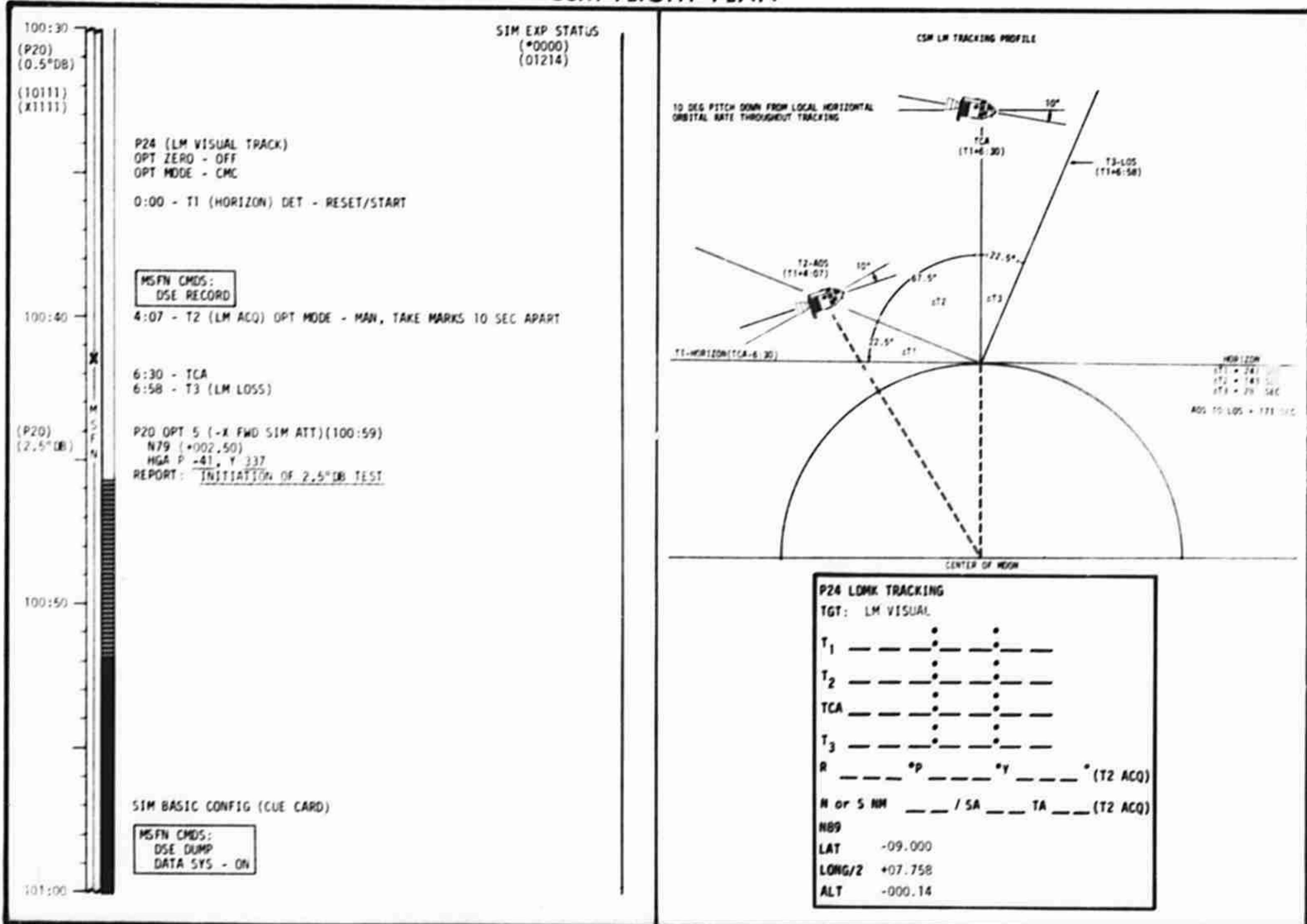


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	100:30 - 101:00	5/14	3-116

FLIGHT PLANNING BRANCH

1624 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN

MCC-H

1654 CST

CDR

LMP

NOTES

		EQUIPMENT PREP FOR EVA-1 EMPTY UCTA'S CHECK PGA ZIPPERS CDR, THEN LMP DON BOOTS	-1:20
	:10	CHECK & RESTOW OPS	
	:20	INSTALL ISS APPLY ANTI-FOG TO LEVA'S STOW HELMET BAG	-1:10
	:20	STOW ETB UNLOCK FWD HATCH HANDLE	-1:00
101:30	M S F N	PLSS DONNING CONFIGURE LMP PLSS ATTACH OPS TO PLSS LMP DON PLSS/OPS CONNECT RCU	-0:50
	:40	CDR REPEAT PLSS DONNING	-0:40 CSM REV 15
	:50	PLSS COMM CHECK VERIFY POWERDOWN CB CONFIGURATION CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON COMM & TM CHECK, REPORT: PLSS O ₂ QUANTITY	-0:30
102:00		FINAL SYSTEMS PREP	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	101:00 - 102:00	5/14-15	3-118

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1654 CST

101:00
(P20)
(2.5°DB)

MS - DPLY
GR - DPLY

(10111)
(X1111)

MS: EXP - ON
ION SOURCE - STBY
AP/XR COVER - OPEN
XR - ON

MSFN UPDATE:
EARTHSHINE PHOTO PAD (102:45)

101:10
MS
F
N

MSFN CMDS:
DSE RECORD

101:20
VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)
SET HGA P 0, Y 170 FOR AOS ACQ

EAT PERIOD

SIM EXP STATUS
(-0000)
(01214)

101:30
(P20)
(2.5°DB)

(10111)
(X1111)

MS: ION SOURCE - ON

SIM EXP STATUS
(-0111)
(01232)

101:40

REV 15

101:50

EAT PERIOD

102:00

MCC-H

1754 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

	102:00	OPS CONNECT LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA	-0:20
	:10	HELMET/GLOVE DONNING PLSS FANS - ON DON HELMETS VERIFY SUIT CONFIGURATION VERIFY EVA CB CONFIGURATION DON GLOVES PRESS REGS A&B - EGRESS	-0:10
	:20	PRESSURE INTEGRITY CHECK	
GO/NO-GO FOR CABIN DEPRESS	M S F N	CABIN DEPRESS TV - ON START WATCHES @ 3.5 PSIA	0:00/START EVA 1
	102:30	FINAL PREP FOR EVA OPEN FWD HATCH REST UNTIL COOLING SUFFICIENT, VERIFY PGA & CWEA STATUS	+0:10
	:40	EGRESS, DEPLOY MESA, LEC SURFACE FAMILIARIZATION	+0:20
	X T V	ASSIST CDR PASS LEC WITH ETB TO CDR VERIFY EVA CB CONFIGURATION	
	:50	EGRESS CLOSE HATCH SURFACE FAMILIARIZATION DEPLOY SRC TABLE	+0:30
	103:00	DEPLOY TV CAMERA OFFLOAD LRV	
		OFFLOAD LRV	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	102:00 - 103:00	5/15	3-120

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1754 CST

102:00 (P20) (2.5°DB) (10111) (X1111)	SIM EXP STATUS (-0111) (01222)	102:30 (P20) (2.5°DB) (10111) (X1111)	SIM EXP STATUS (-0111) (01222)
EAT PERIOD			
ACQ MSFN HGA: MAN, WIDE P.O., Y 170 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW			
MSFN CMDS: (AOS +2 MIN) DSE (STOP/REWIND)			
102:10		102:40	ORBITAL SCIENCE VISUALS
M S F N		X I M S F N	LANDING SITE (V9-A10)CM3
MSFN CUE: (~ AOS +7 MIN) HGA AUTO			EARTHSHINE PHOTO PAD
MSFN CMDS: (AOS +9 MIN) DSE PLAYBACK			T-START: _____ (20°W LONG)
GR: SHIELD - OFF PC: MODE - STBY PWR - ON			
CSM EXP/EVA CHECKLIST			
LUNAR SURFACE IN EARTHSHINE, PAGE X/2-25			
MAG (XX)			
102:20		(P20) (3.0°DB)	V22N79 (+003.00) REPORT: TERMINATION OF 2.5°DB TEST
PC: PWR - OFF (MSFN CUE)		102:50	CSM EXP/EVA CHECKLIST
GR: SHIELD - ON (CTR) PREPARE FOR ORBITAL SCIENCE VISUALS			LUNAR SURFACE IN EARTHSHINE, PAGE X/2-25
102:30		103:00	

LM FLIGHT PLAN

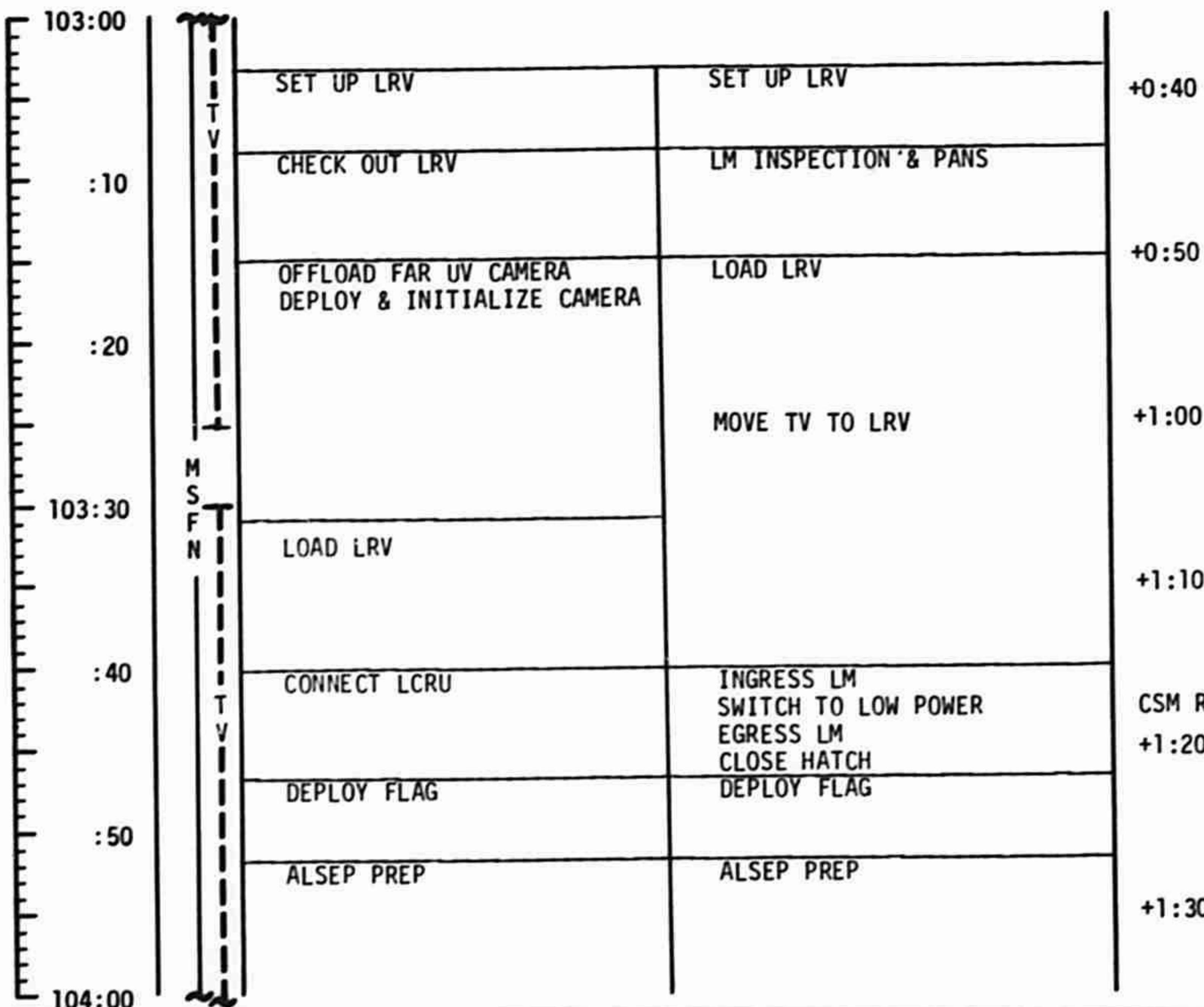
MCC-H

1854 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	103:00 - 104:00	5/15-16	3-122

FLIGHT PLANNING BRANCH

1854 CST

CSM FLIGHT PLAN

		SIM EXP STATUS (-0111) (01222)	103:30 (P20) (0.5°DB) (10101) (x1111)	SIM EXP STATUS (+2121) (01232)
103:00 (P20) (3.0°DB) (10111) (x1111)	M S F N	MSFN CMDS: (AOS +61 MIN) DSE REWIND	MC - EXTD	MAP CAMERA PHOTO PAD T-START: _____ :_____ :_____ T-STOP: _____ :_____ :_____ (165.0°W TO 2.6°W) (1-1/2 REV)
103:10		CONFIGURE CAMERA: (ORBITAL SCIENCE) CM3/EL/250/CEX-IVL(f5.6,1/125,-) 85 FR		LA - ON IMAGE MTN - ON MC - ON (T START) IMAGE MTN - INCR (BP +4 STEPS)/ON
	MAG (NN) _____ FR #	M6 - RETR TO 8.4 FEET (2 MIN 01 SEC)		
		MSFN UPDATE: MAP CAMERA PHOTO PADS (103:34) PAN CAMERA PHOTO PAD (104:13)		ORBITAL SCIENCE PHOTOS SHARONOV (P1-A1,A2) CM3(f5.6,1/125,-) 63 FR
		MSFN CMDS: (AOS +68 MIN) DSE RECORD		CHANGE SHUTTER TO 1/250
		MANUALLY ROLL CW 40°		CHANGE f-STOP TO f8
		VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)		IMAGE MTN - INCR (BP +3 STEPS)/ON
(10101) (x1111) (P20) (0.5°DB)	V48 (10101)(x1111) P20 OPT S (+X FWD SIM ATT)(103:35) N79 (+000.50) SET HGA P <u>10</u> , Y <u>0</u> FOR AOS ACQ			MENDELEEV (P7-A3,A4) CM5(f11.1/250,-) 22 FR
103:20		M5: ION SOURCE - STBY (BEGIN 4 HOUR OUTGASSING)		
	M6 - RETR TO 8.4 FEET (2 MIN 01 SEC)			
		MC/LA COVER - OPEN		
103:30	COMPLIMENT PAN CAMERA TO THE NORTH			
104:00				

LM FLIGHT PLAN

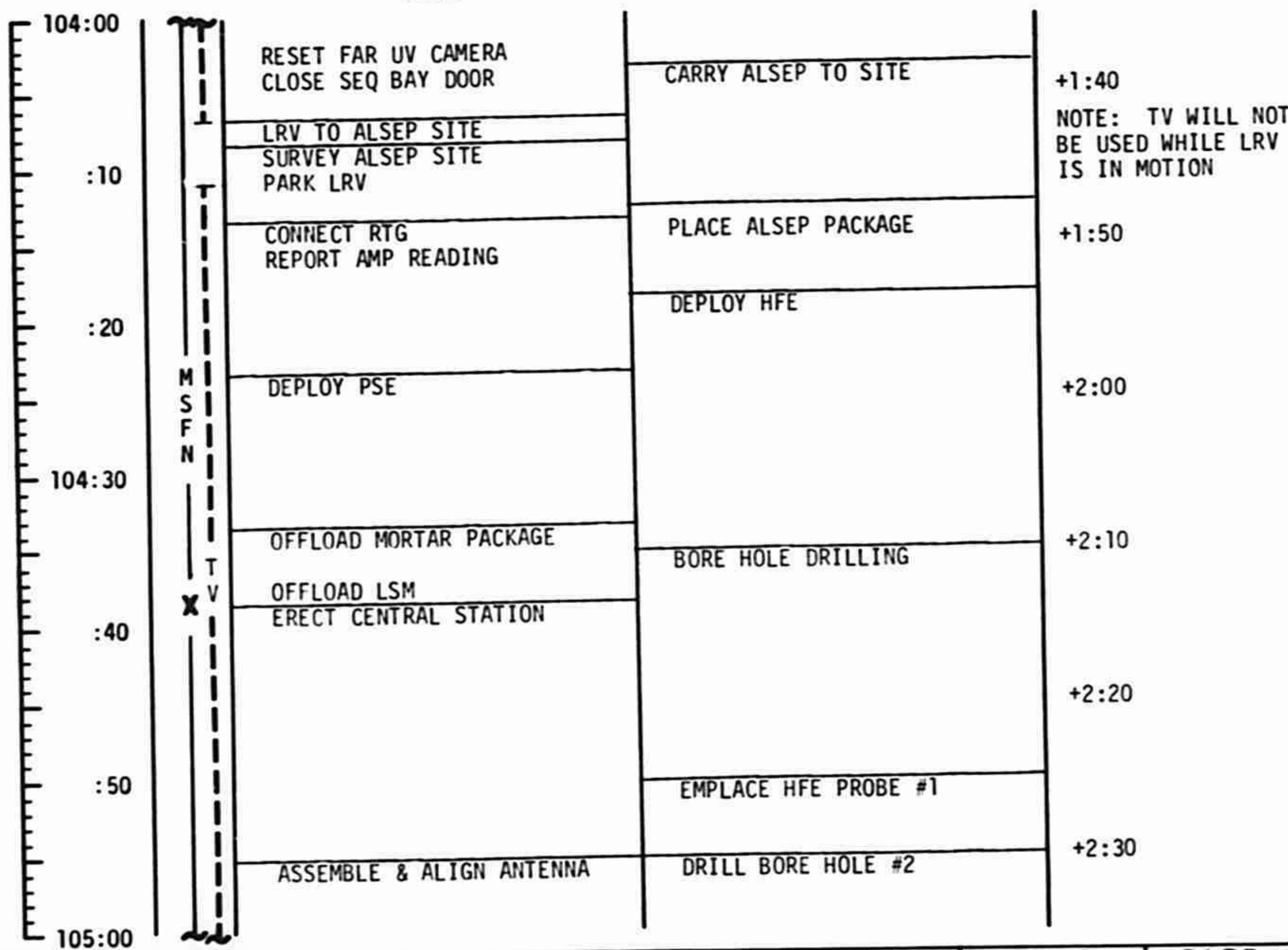
MCC-H

1954 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	104:00 - 105:00	5/16	3-124

FLIGHT PLANNING BRANCH

LM FLIGHT PLAN

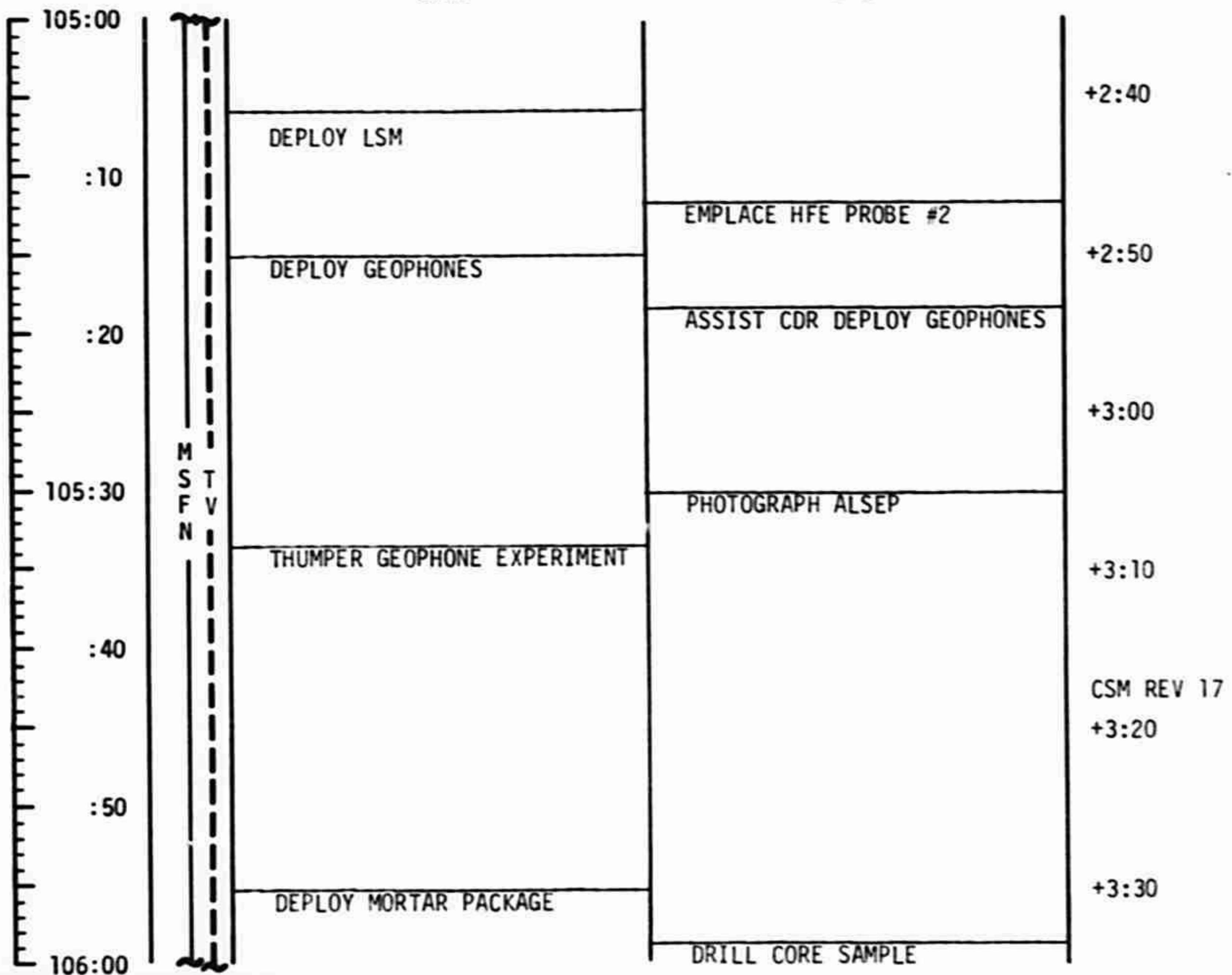
MCC-H

2054 CST

CDR

LMP

NOTES

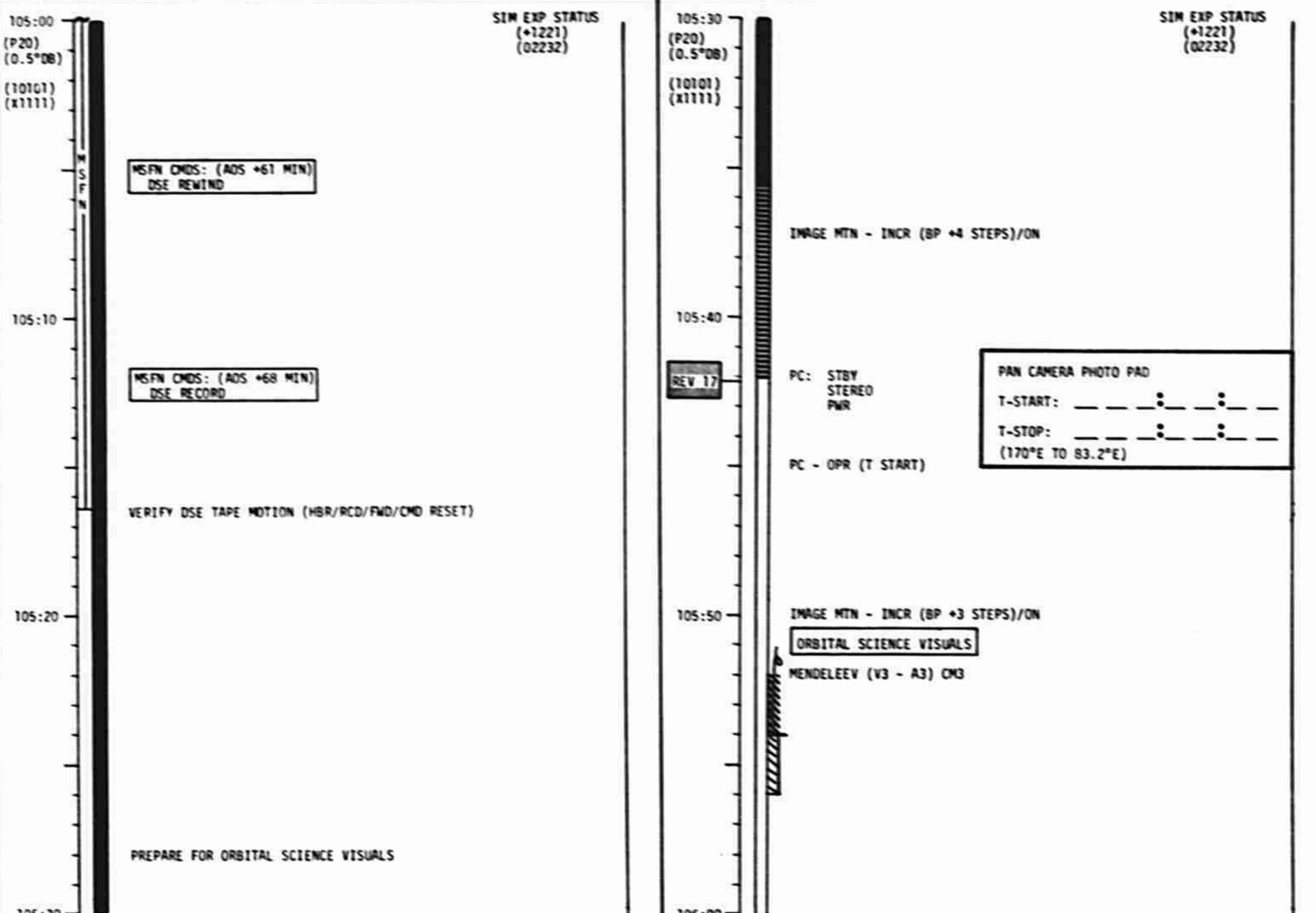


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	105:00 - 106:00	5/16-17	3-126

FLIGHT PLANNING BRANCH

2054 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN

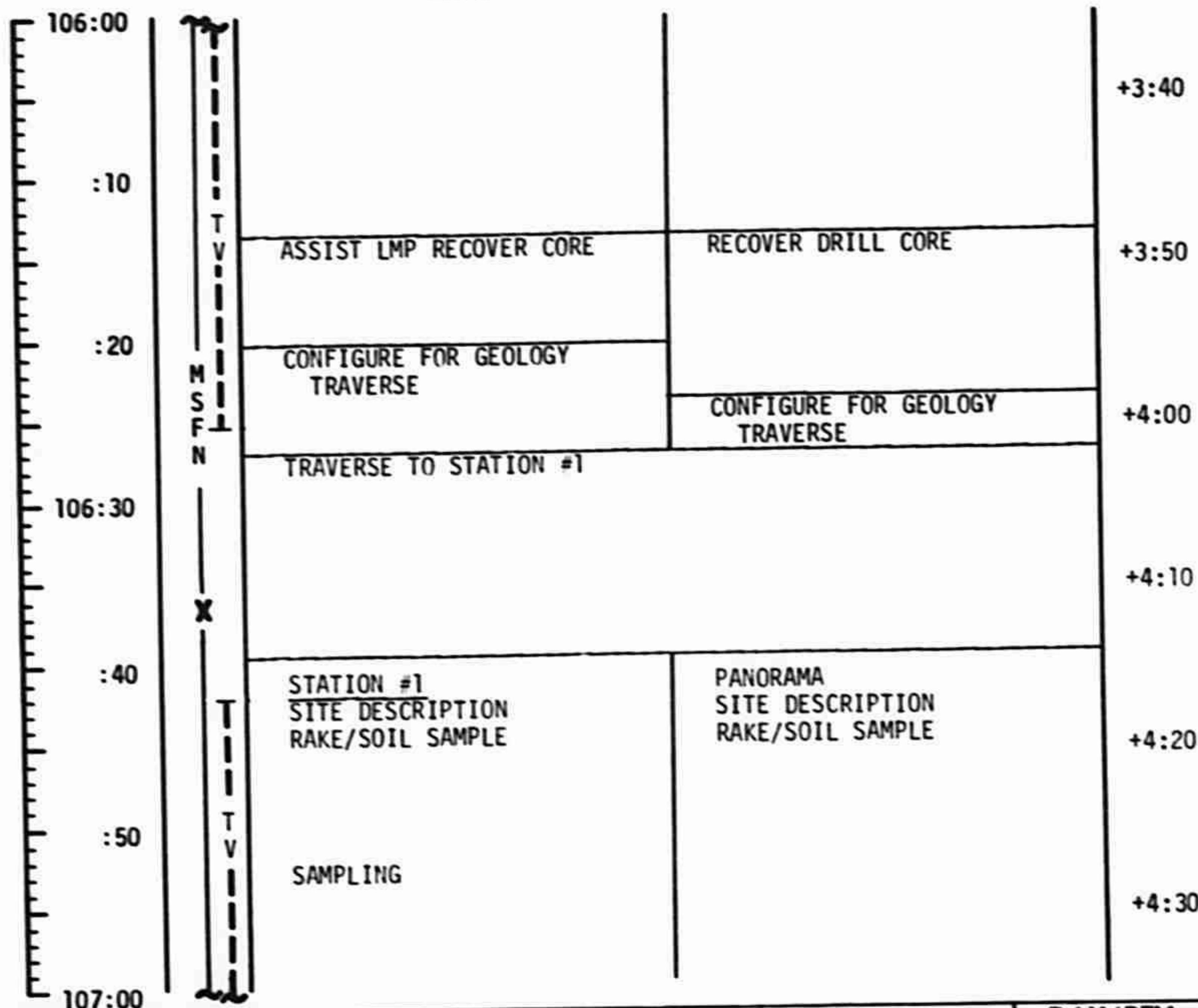
MCC-H

2154 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	106:00 - 107:00	5/17	3-128

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2154 CST

106:00 (P20) (0.5°DB)	SIM EXP STATUS (+1221) (22232)	106:30 (P20) (0.5°DB)	SIM EXP STATUS (+1111) (02232)
(10101) (X1111)	ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW	(10101) (X1111)	IMAGE MTN - INCR (BP) / ON
	MSFN CMDS: (AOS +2 MIN) DSE (STOP/REWIND)		DESCARTES (P14 - A10) CMS (f5.6,1/125,-) 20 FR
106:10	MSFN CUE: (~AOS +7 MIN) HGA AUTO	106:40	RECORD FR # _____
	MSFN CMDS: (AOS +9 MIN) DSE PLAYBACK		MC - OFF (T STOP) WAIT 30 SEC MC - STBY IMAGE MTN - OFF
M S F N	PC - STBY (T STOP)	M S F N	
	PC - OFF (MSFN CUE) GR - DPLY MS - DPLY CONFIGURE CAMERA: (ORBITAL SCIENCE) CMS/EL/250/CEX-IVL (f8.1/250,-) 53 FR		
	MAG (PP) ____ FR # ____		
106:20	IMAGE MTN - INCR (BP +4 STEPS) / ON	106:50	V48, LOAD DAP: INITIAL CSM WT. (104:43) REPORT: TERMINATION OF P20 WITH REDUCED DAP WT.
	ORBITAL SCIENCE PHOTOS CROZIER (P12 - A8,A9) CMS (f8.1/250,-) 33 FR		GR: SHIELD - OFF CMC MODE - FREE PS2 (OPTION 3) (LDG SITE ORIENT) REPORT <u>GYRO TORQUING ANGLES</u>
106:30		107:00	P20, CMC MODE - AUTO GDC ALIGN

LM FLIGHT PLAN

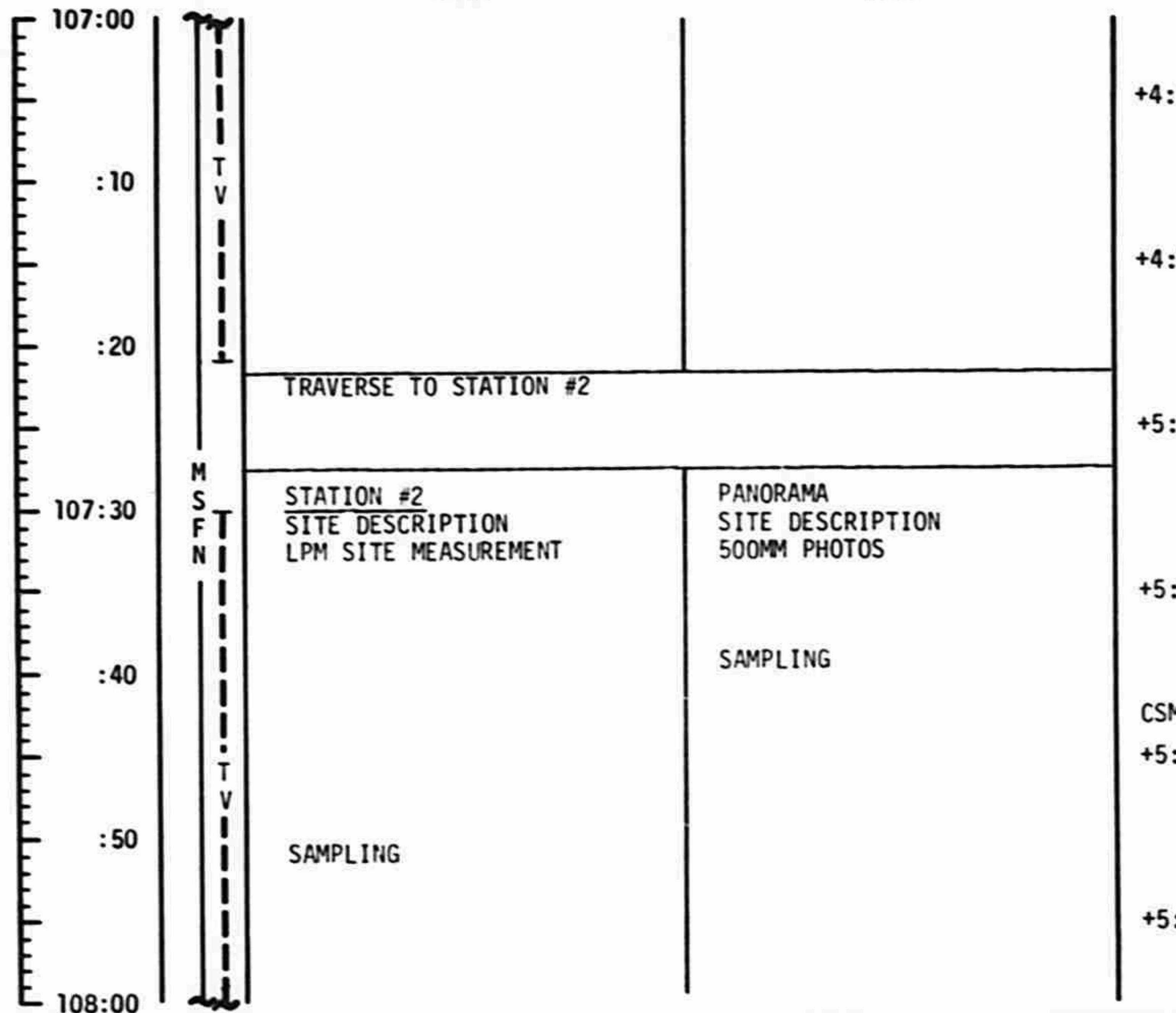
MCC-H

2254 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	107:00 - 108:00	5/17-18	3-130

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2254 CST

107:00
(P20)
(0.5°DB)(10101)
(X11111)

MS: ION SOURCE - ON (TERMINATES 4 HOURS OUTGASSING)

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

GR: SHIELD - ON (CTR)

MSFN UPDATE:
MAP CAMERA PHOTO PAD (107:48)SIM EXP STATUS
(+1111)
(03232)

107:10

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

107:20

O₂ HEATERS 1&2 - AUTO
O₂ HEATERS 3 - OFF

107:30

107:30
(P20)
(0.5°DB)(10101)
(X11111)P20 OPT 5 (40° S OBLIQUE PHOTO ATT)(107:40)
N78 (+270.00)
(+087.75)
(+180.00)
N79 (+000.50)
(182,000/082,000)
SET HGA P 10, Y 350 FOR AOS ACQ107:40
REV 18LA - OFF
IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP +3 STEPS)/ON

107:50

108:00

SIM EXP STATUS
(+1111)
(03222)

EAT PERIOD

MAP CAMERA PHOTO PAD

T-START: ____ : ____ : ____

T-STOP: ____ : ____ : ____

(178.9°E TO 1.6°W)

LM FLIGHT PLAN

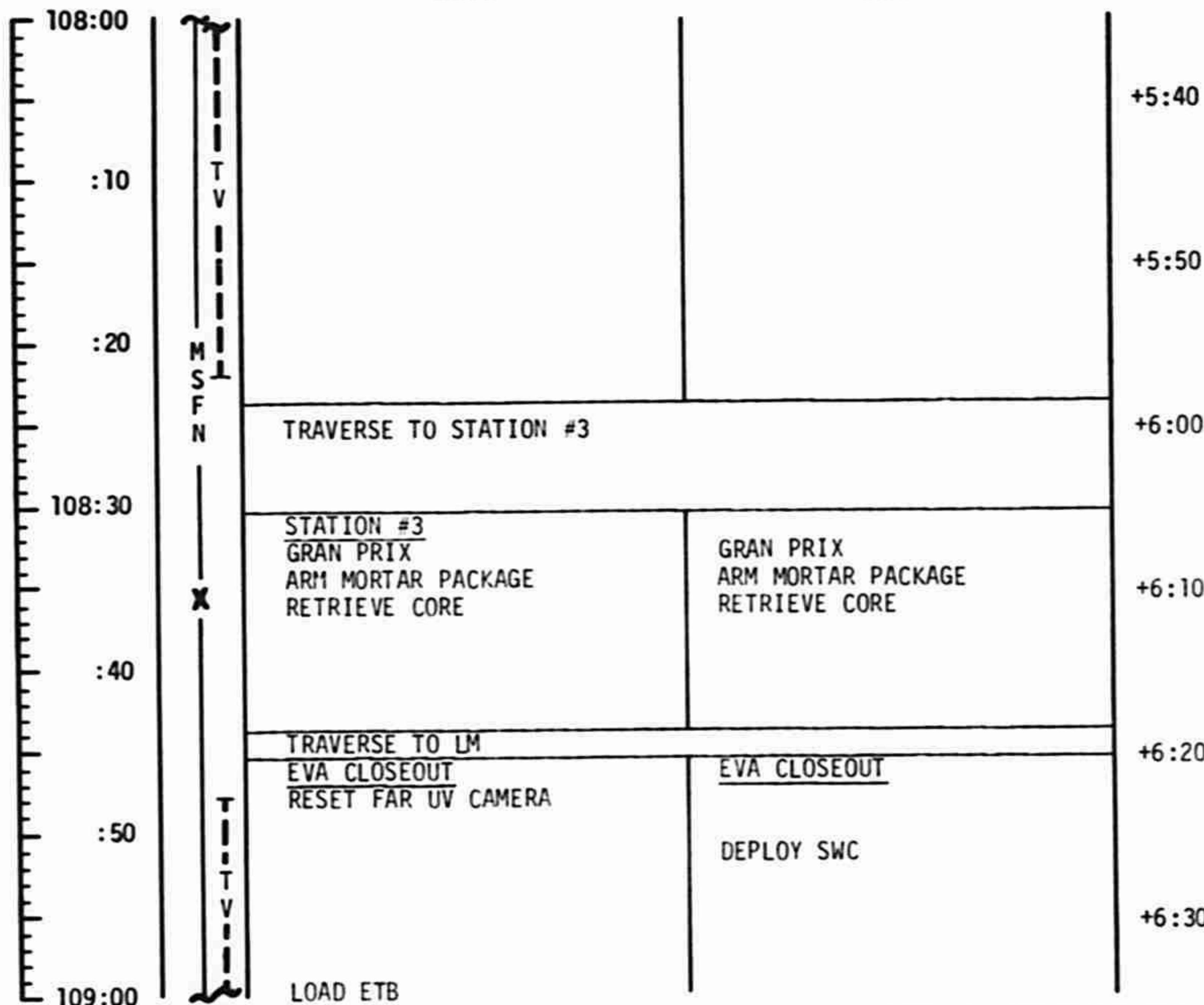
MCC-H

2354 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	108:00 - 109:00	5/18	3-132

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

108:00 (P20) (0.5°DB)
 ACQ MSFN HGA: MAN. WIDE P 10, Y 350
 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW
 (10101) (x1111)
 MSFN CMDS: (AOS +2 MIN)
 DSE (STOP/REWIND)

108:10
 MSFN CUE: (~AOS +7 MIN)
 HGA AUTO
 MSFN CMDS: (AOS +9 MIN)
 DSE PLAYBACK

M S F N O

EAT PERIOD

108:20

108:30

SIM EXP STATUS
 (*1111)
 (04222)

108:30 (P20) (0.5°DB)
 (10101) (x1111)
 CONFIGURE CAMERA: (TERMINATOR PHOTOS)
 CM3/EL/250/VHBM (f5.6,1/250,-) 6 FR
 MAG (SS) ___, FR # ___,

SIM EXP STATUS
 (*1111)
 (04222)

PLAN TO GET FLOOR & RIM, NOT SHADOW

TERMINATOR PHOTOS
 PTOLEMAEUS (P18-A11) CM3

MC - OFF (T STOP)
 WAIT 30 SEC
 MC - STBY
 IMAGE MTN - OFF
 MC - RETR

MC/LA COVER - CLOSE

108:50 (P20) (3.0°DB)
 P20 OPT 5 (-X FWD SIM ATT)(109:05)
 N79 (+003.00)
 HGA P 5, Y 170
 SET HGA P 0, Y 170 FOR AOS ACQ

CSM SYSTEMS CHECKLIST
 PRE-SLEEP CHECKLIST PAGE S/1-29
 LOGIC PWR (2) - OFF
 VHF AM T/R - RCV (PNL 9)
 VHF AM A - DUPLEX

MSFN UPDATE:
 TEI 26

MSFN UPLINK:
 JET-ON MONITOR LOADS

ONBOARD READOUT

BAT C _____
 PYRO BAT A _____
 PYRO BAT B _____
 RCS A _____
 B _____
 C _____
 D _____
 DC IND SEL - MNA OR B _____

MCC-H

0054 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

	109:00			
	:10	PHOTOGRAPH FAR UV CAMERA PACK ETB PASS ETB TO LMP RESET FAR UV CAMERA INGRESS LM	CLEAN EMU'S INGRESS LM	+6:40
	:20			+6:50
	109:30	CLOSE HATCH, REPRESSURIZE CABIN POST EVA-1 SYSTEMS CONFIGURATION VERIFY EVA CB CONFIGURATION DOFF GLOVES, DOFF HELMETS AND STOW IN BAGS TRANSFER TO LM ECS HOSES CONFIGURE AND CONNECT TO LM COMM BIOMED-LEFT		+7:00/END EVA-1
M	:40	PLSS O ₂ INITIAL RECHARGE CONNECT LM O ₂ HOSE TO LMP PLSS AND FILL CONNECT LM O ₂ HOSE TO CDR PLSS AND FILL		CSM REV 19
S	:50	DISCONNECT & STOW LM O ₂ HOSE PLSS/OPS DOFFING DISCONNECT OPS & RCU FROM PLSS		
N	110:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	109:00 - 110:00	5/18-19	3-134

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0054 CST

109:00
(P20)
(3.0°DB)(10101)
(X11111)M
S
F
NMSFN CMDS: (AOS +61 MIN)
DSE REWIND

109:10

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

FILM MAGS REQD FOR NEXT DAY:
EL: CEX-PP, UV-OO, VHBW-55
NK: VHBW - xx, YY, ZZ

109:20

109:30

SIM EXP STATUS
(-0111)
(01222)109:30
(P20)
(3.0°DB)(10101)
(X11111)REV 19
109:40

109:50

110:00

SIM EXP STATUS
(-0111)
(01222)REST PERIOD
(8.5 HOURS)

LM FLIGHT PLAN

MCC-H

0154 CST

CDR

LMP

NOTES

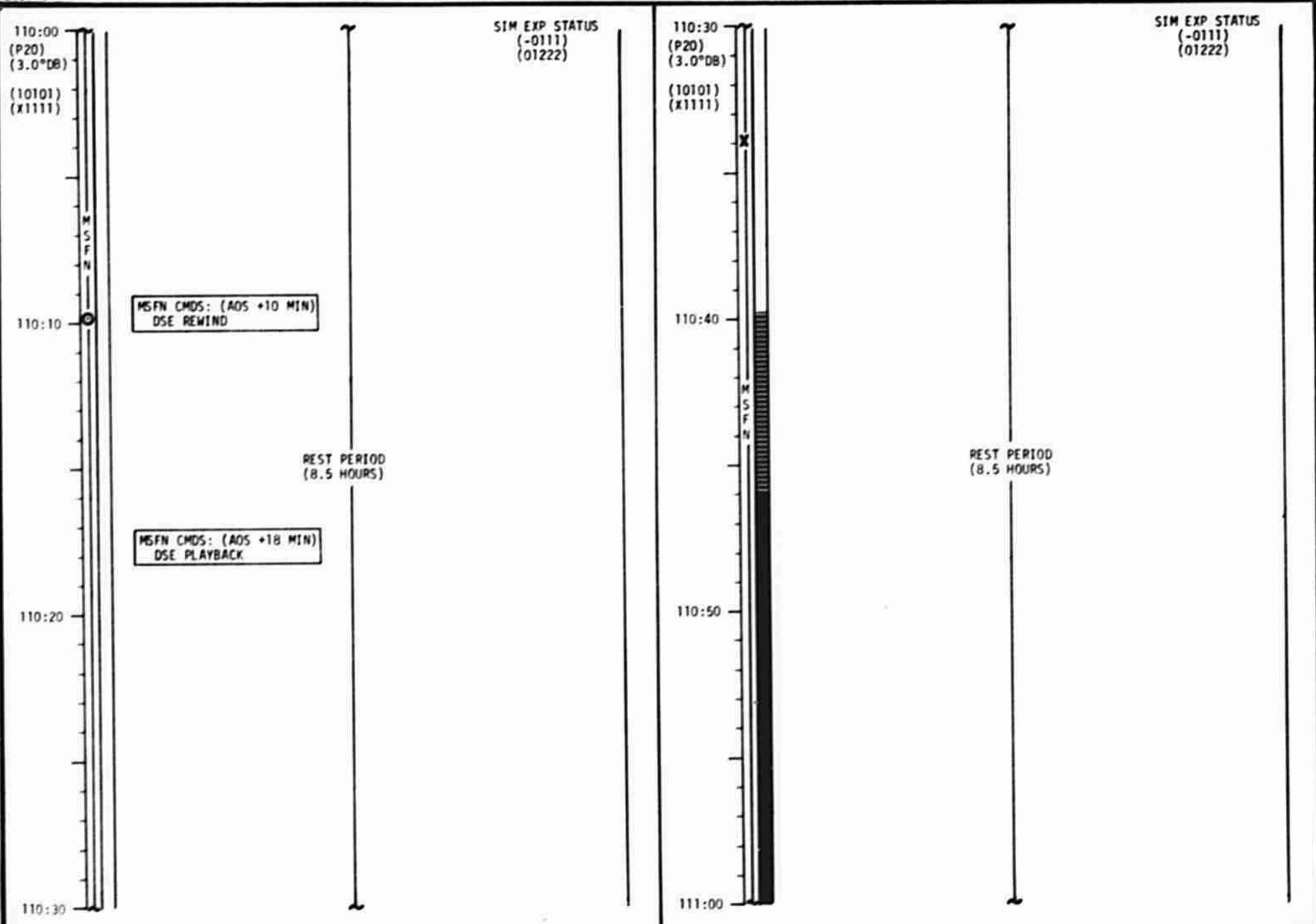
	110:00		LMP, THEN CDR DOFF PLSS/OPS REPORT: <u>OPS PRESSURE</u>
	:10		CHANGE PLSS LiOH CARTRIDGES & BATTERIES
	:20	M S F N	STOW OPS'S & PLSS'S
110:30		X	POST-EVA CABIN CONFIGURATION BATS 1&2 - ON UNSTOW LUNAR SURFACE CHECKLIST BAT L(LMP)-OFF,(CDR)-ON STOW EVA-1 PREP & POST CARDS BATS 3&4 - OFF/RESET STOW ETB CHECK BUS VOLTS
	:40		WEIGH SRC & COLLECTION BAGS, REPORT: <u>WEIGHTS</u> STOW SCALE, SRC & COLLECTION BAGS VERIFY POWERDOWN CB CONFIGURATION
	:50		DOFF SUITS <u>CDR, THEN LMP DOFF PGA,</u> BIOMED - OFF DON ICG
	111:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	110:00 - 111:00	5/19	3-136

FLIGHT PLANNING BRANCH

0154 CST

CSM FLIGHT PLAN



MCC-H

0254 CST

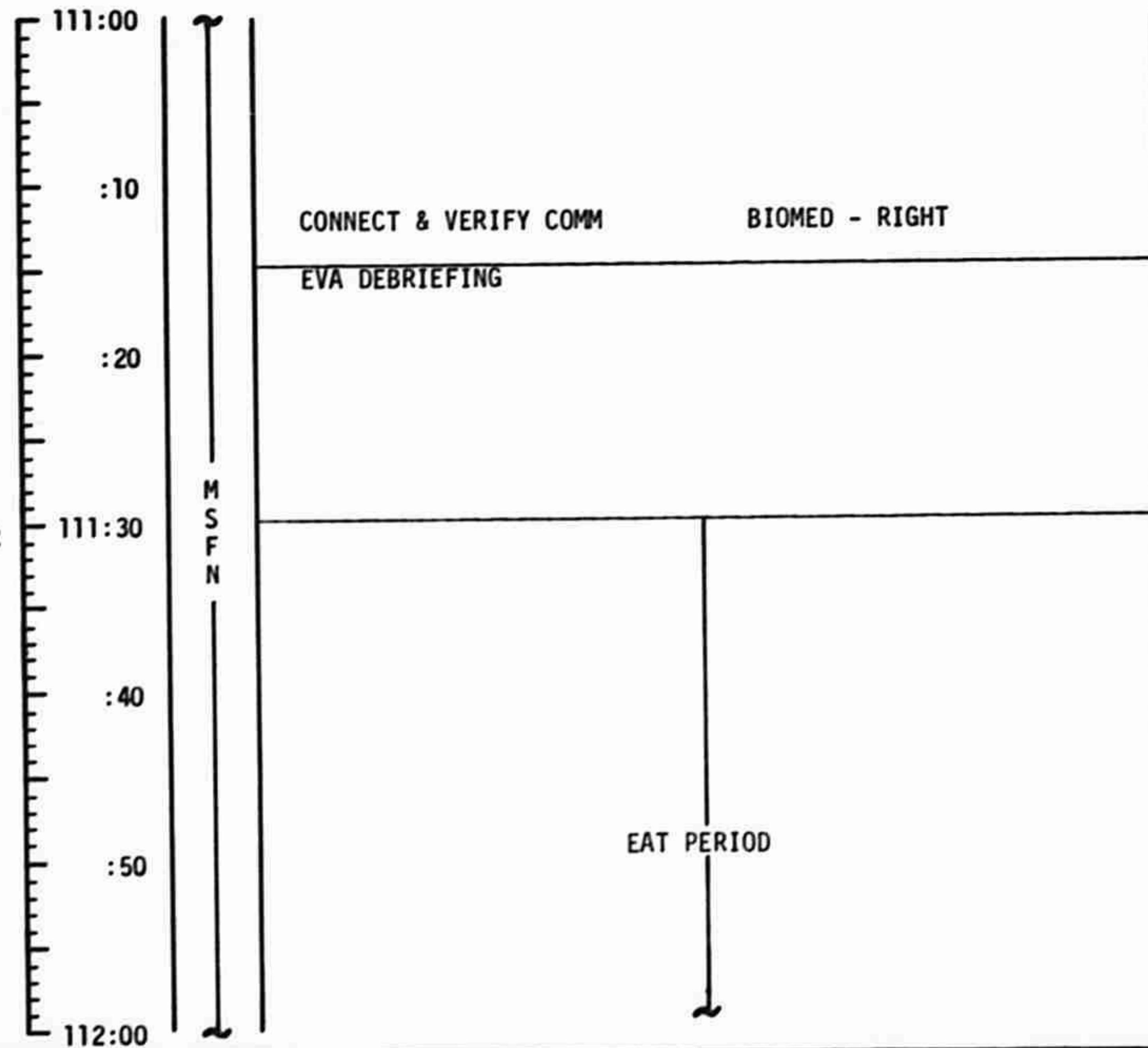
LM FLIGHT PLAN

CDR

LMP

NOTES

UPDATE TO LM
LIFT-OFF TIMES FOR
REVS 20-24



GDS 210 LOS

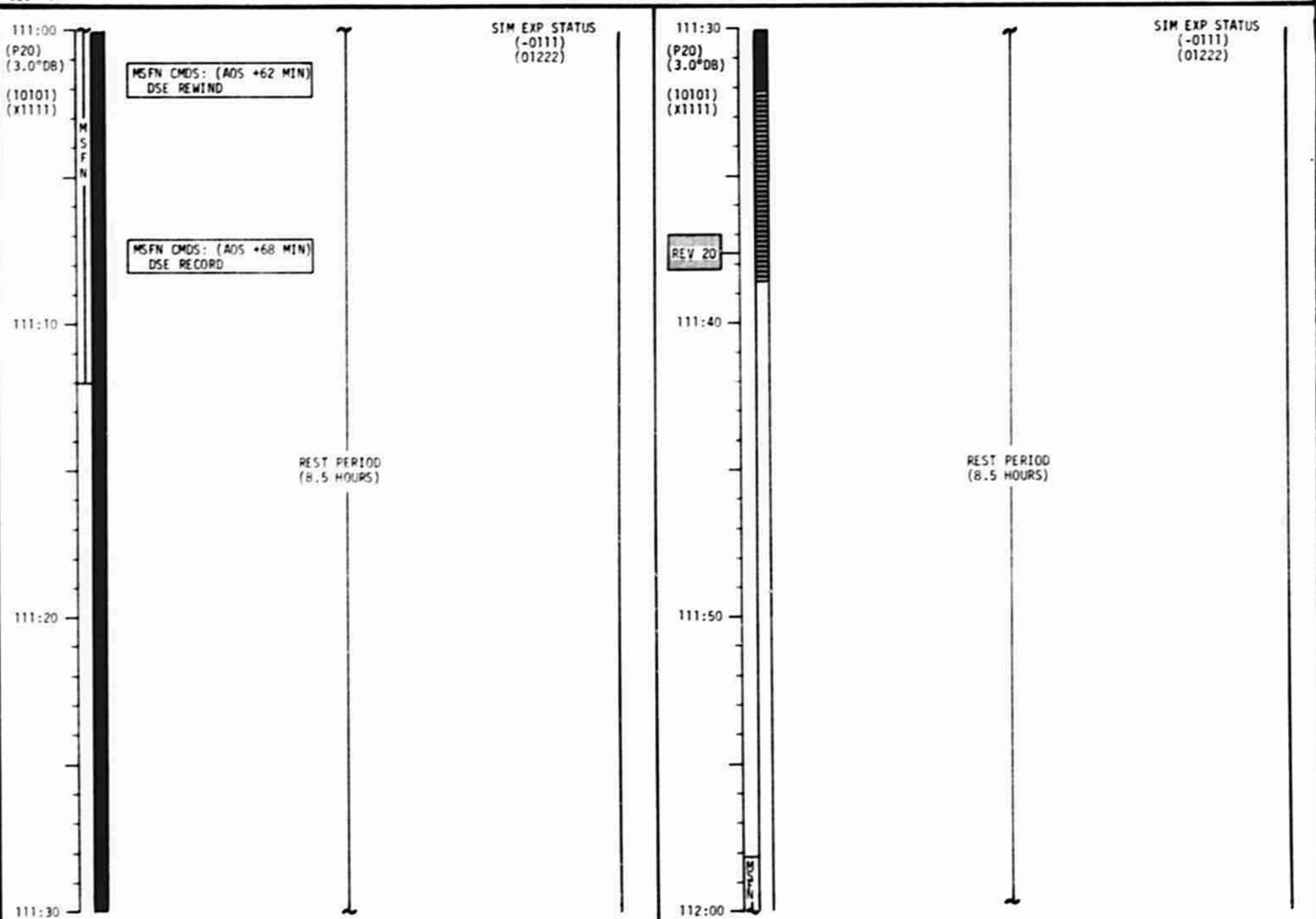
CSM REV 20

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	111:00 - 112:00	5/19-20	3-138

FLIGHT PLANNING BRANCH

0254 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-139

LM FLIGHT PLAN

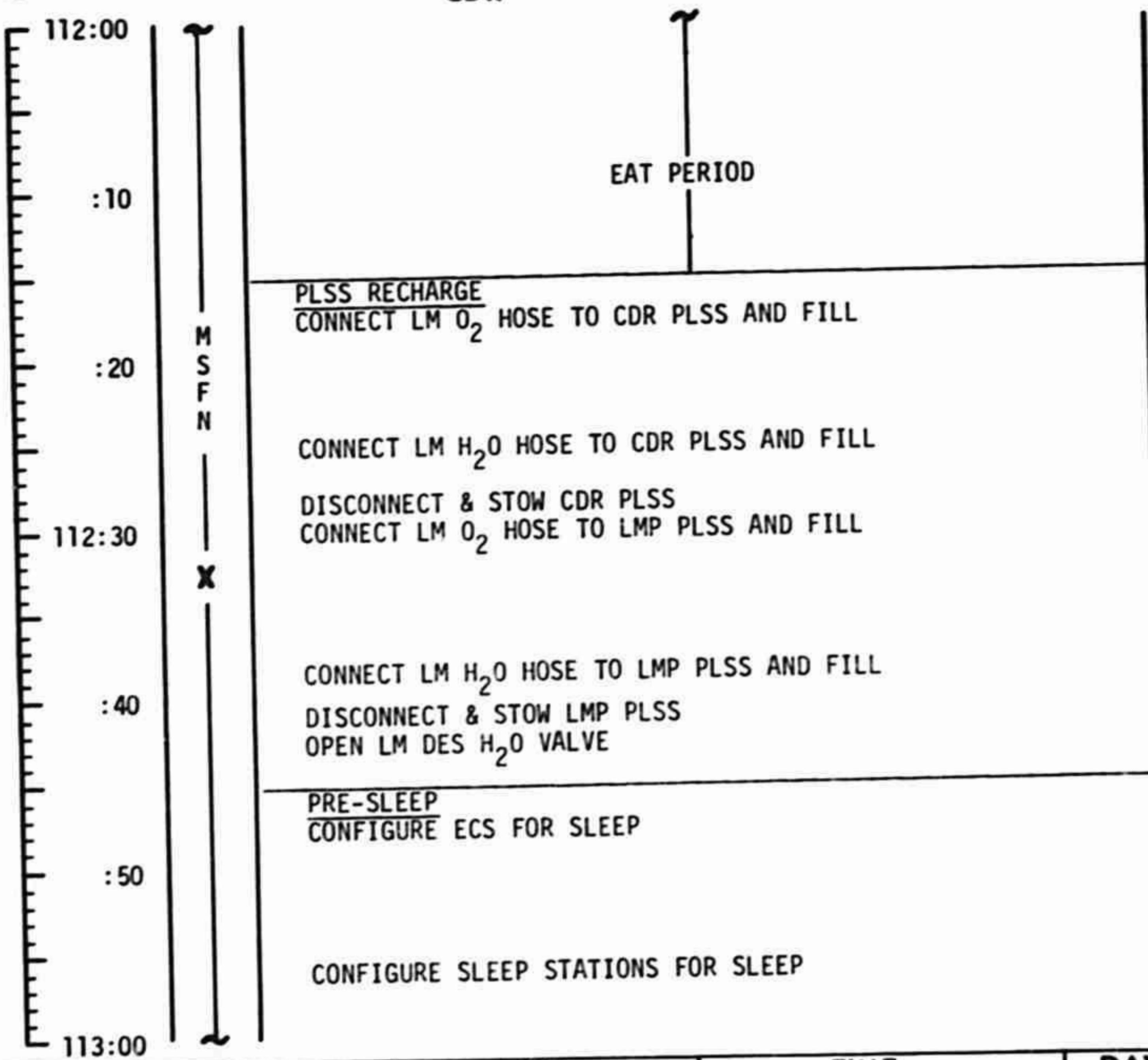
MCC-H

0354 CST

CDR

LMP

NOTES

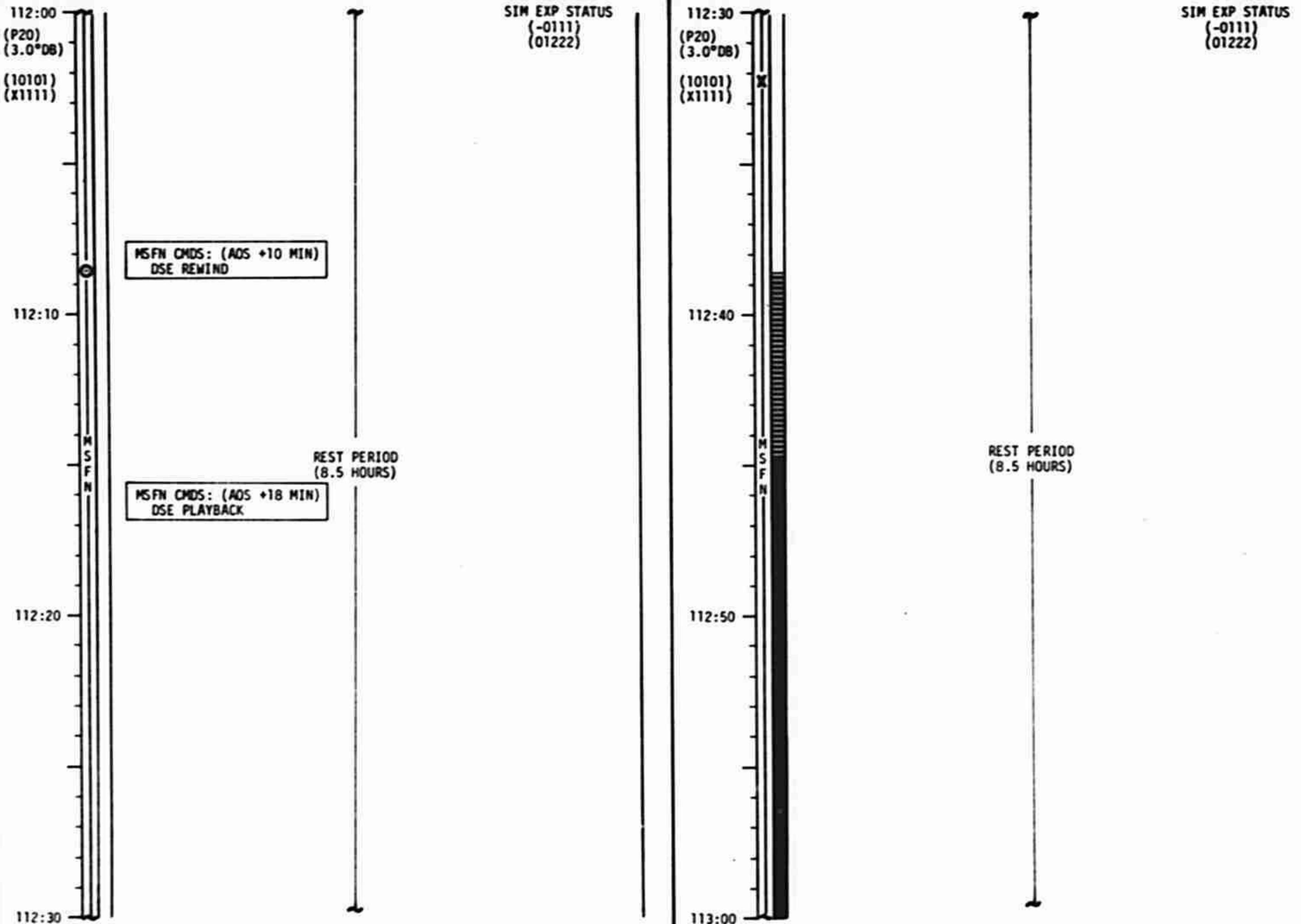


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	112:00 - 113:00	5/20	3-140

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0354 CST



LM FLIGHT PLAN

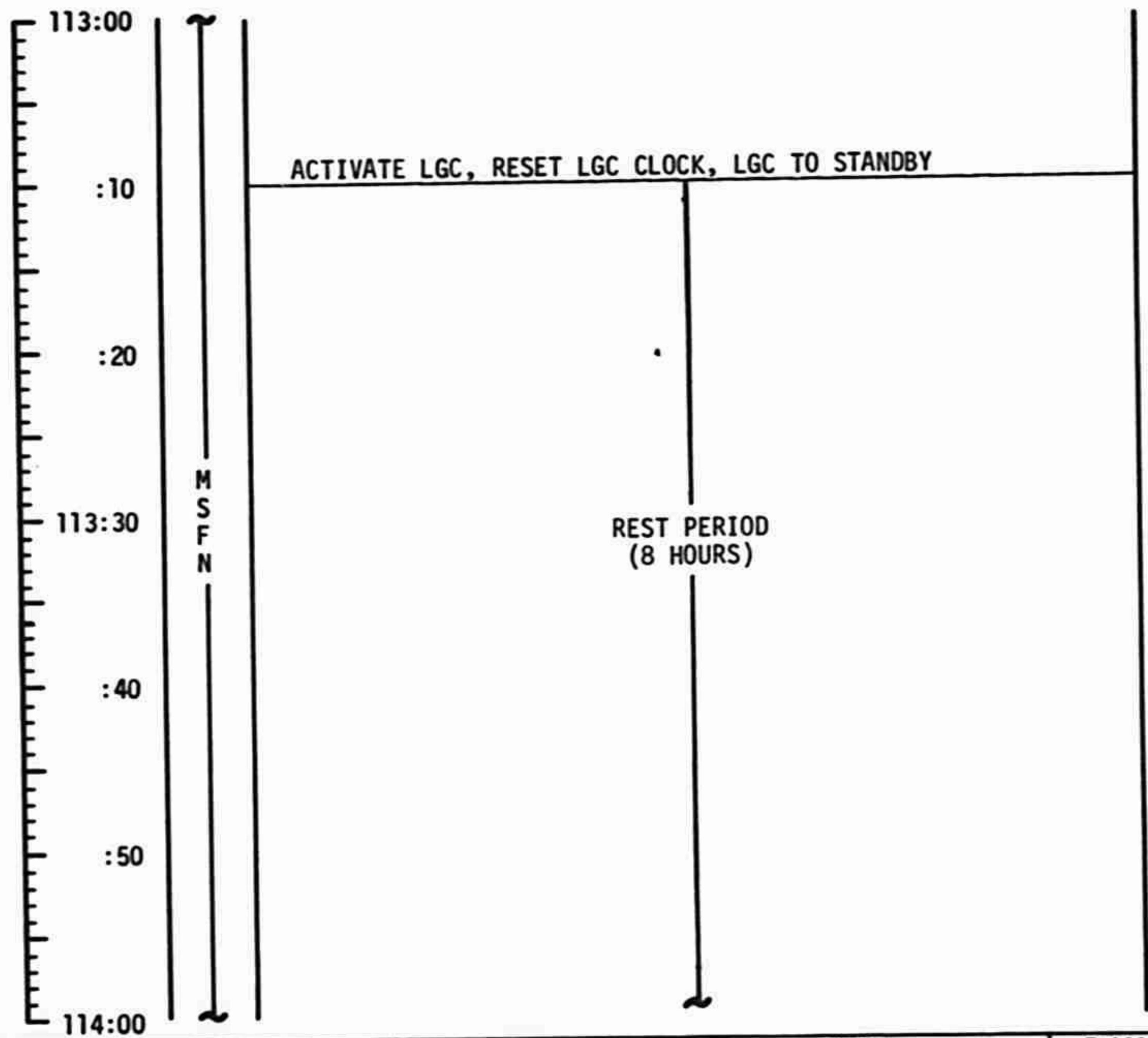
MCC-H

0454 CST

CDR

LMP

NOTES

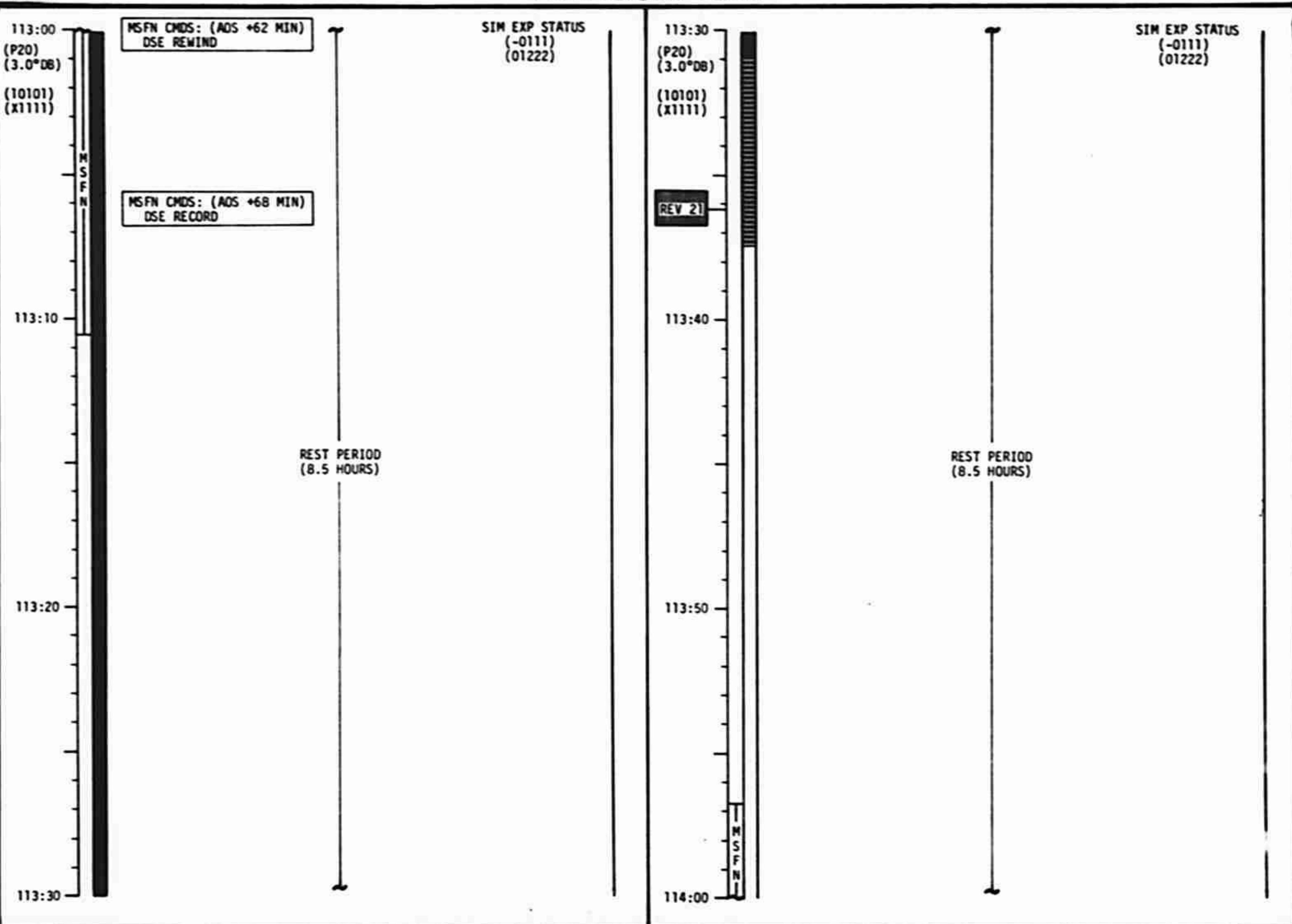


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	113:00 - 114:00	5/20-21	3-142

FLIGHT PLANNING BRANCH

0454 CST

CSM FLIGHT PLAN



MCC-H

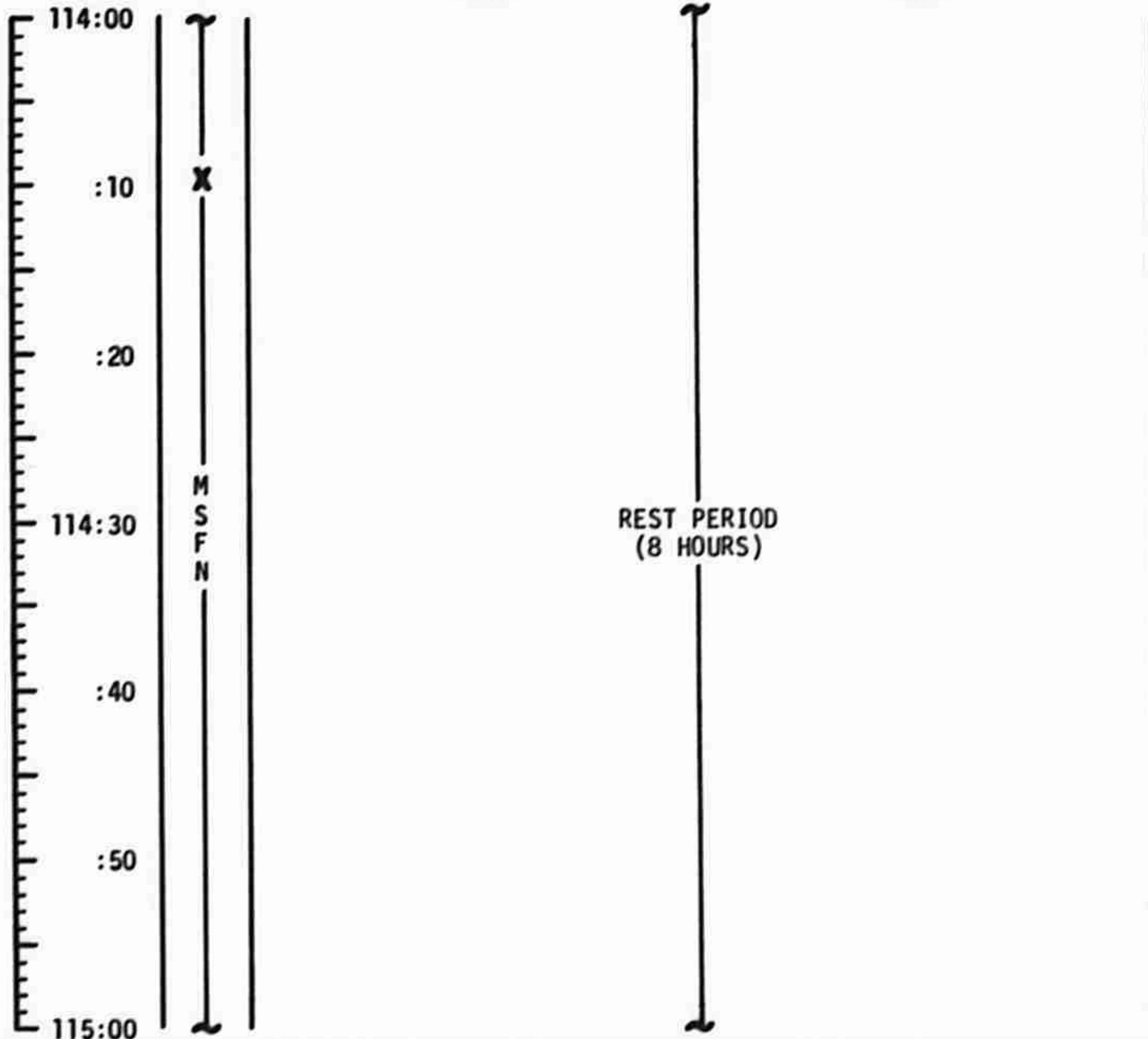
0554 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

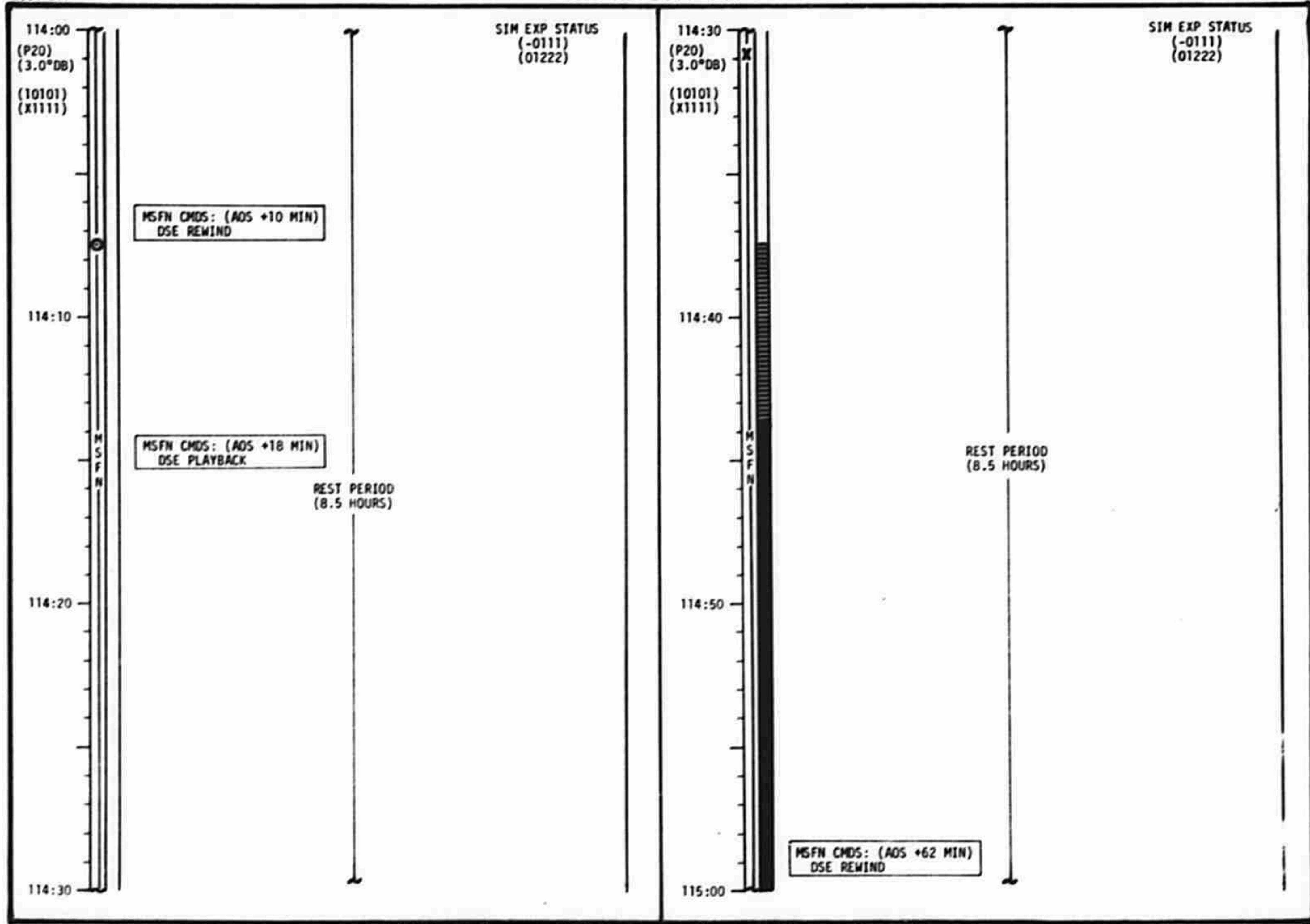


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	114:00 - 115:00	5/21	3-144

FLIGHT PLANNING BRANCH

0554 CST

CSM FLIGHT PLAN



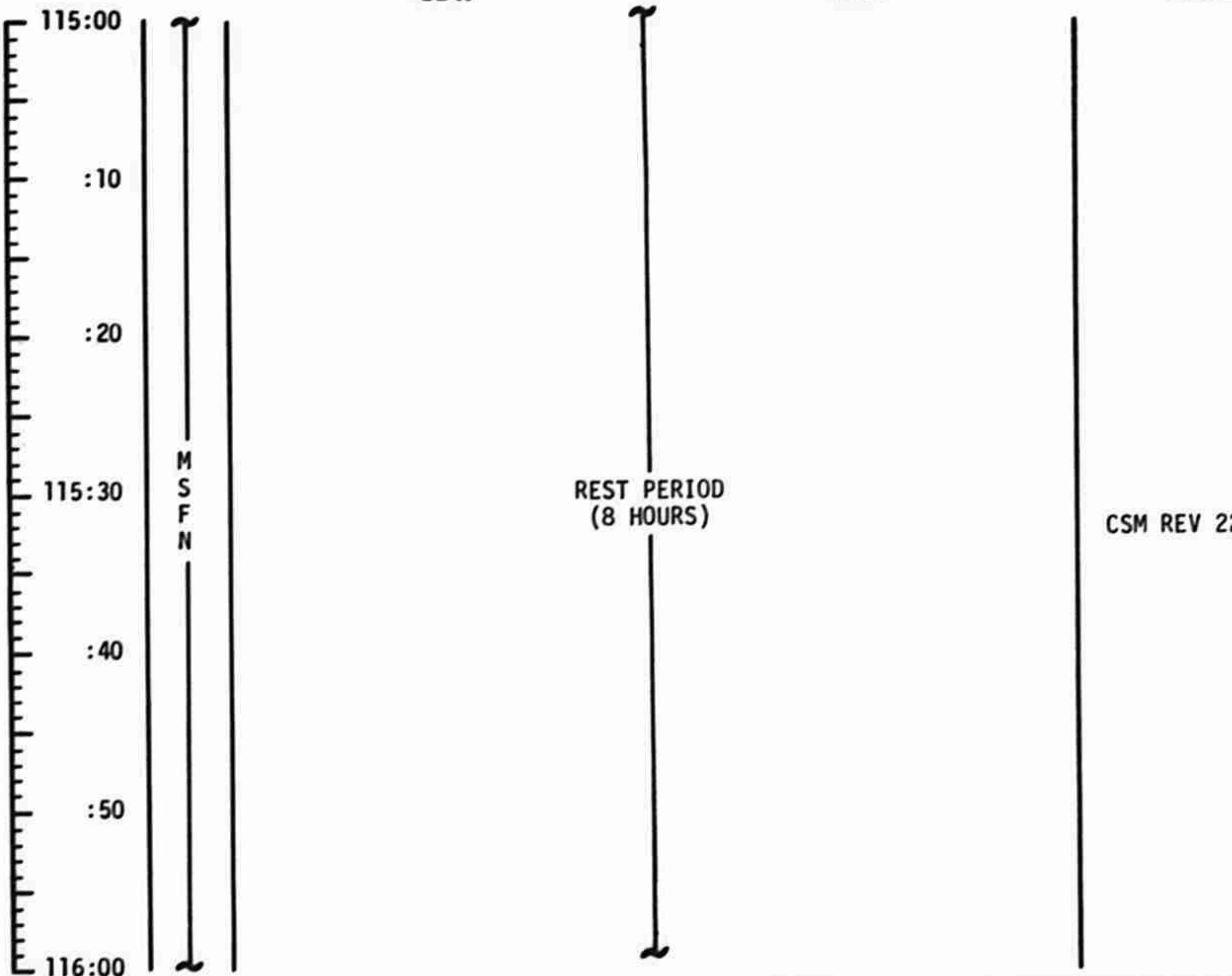
MCC-H

0654 CST

LM FLIGHT PLAN

CDR LMP

NOTES

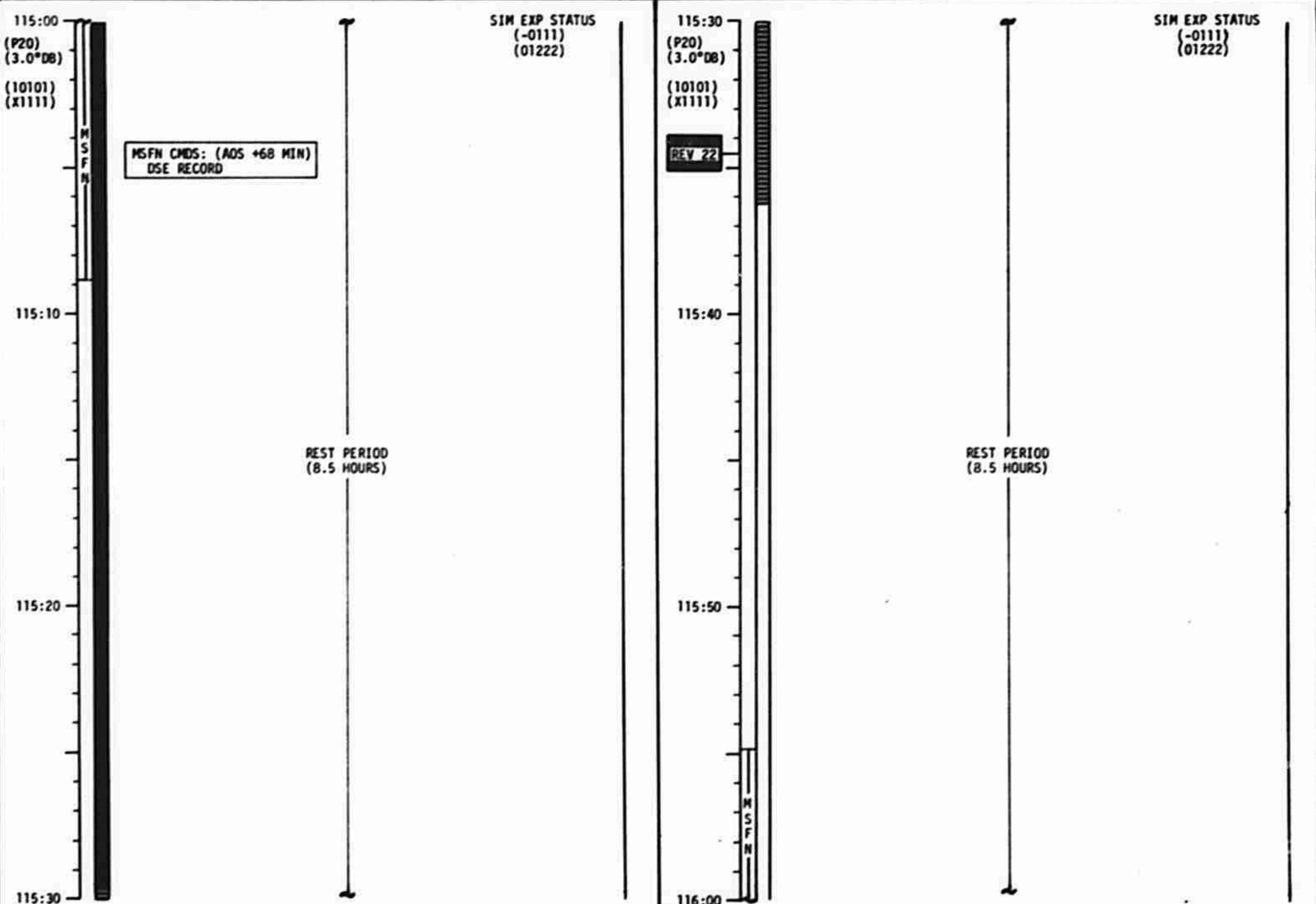


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	115:00 - 116:00	5/21-22	3-146

FLIGHT PLANNING BRANCH

0654 CST

CSM FLIGHT PLAN



MCC-H

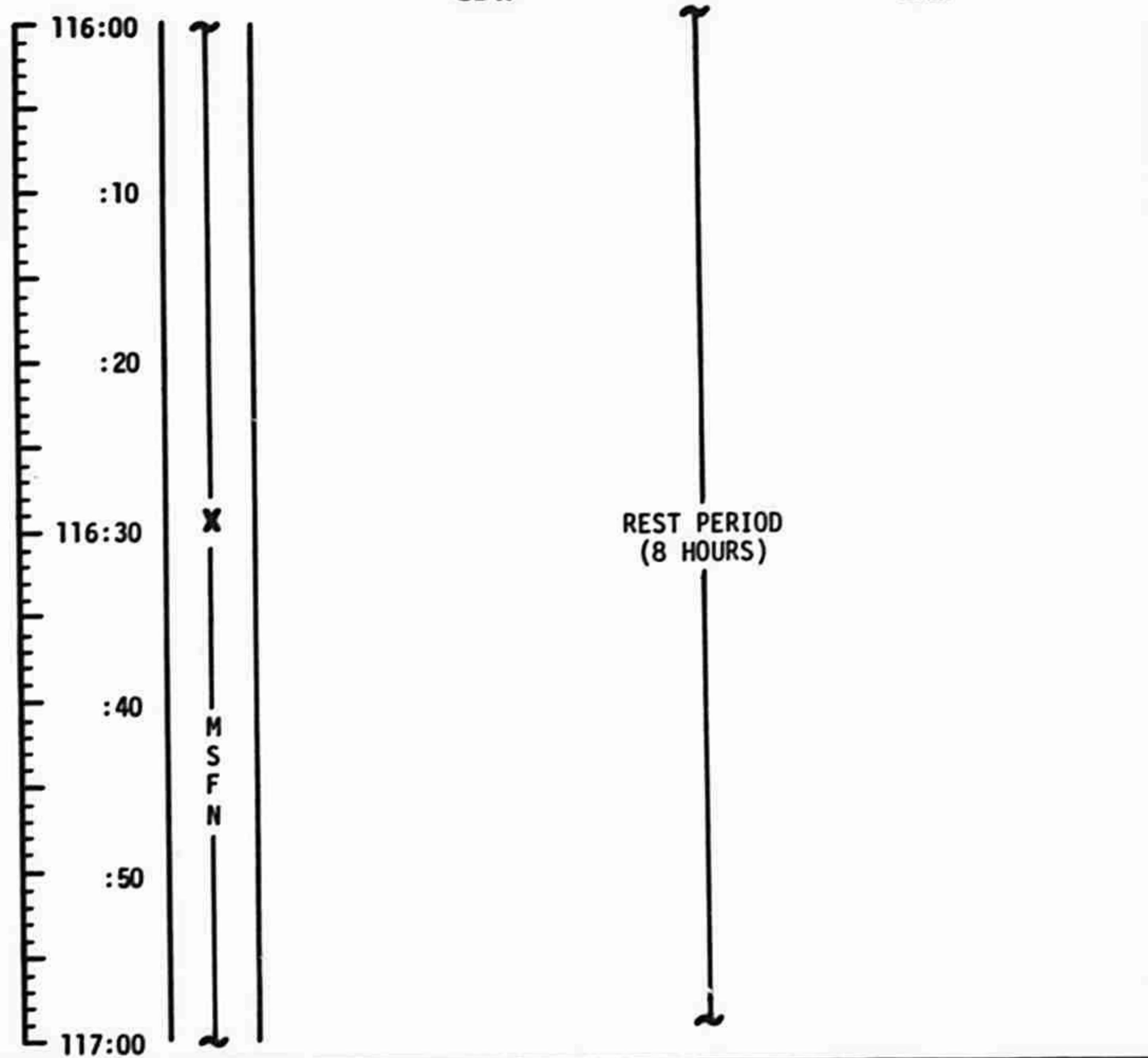
0754 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

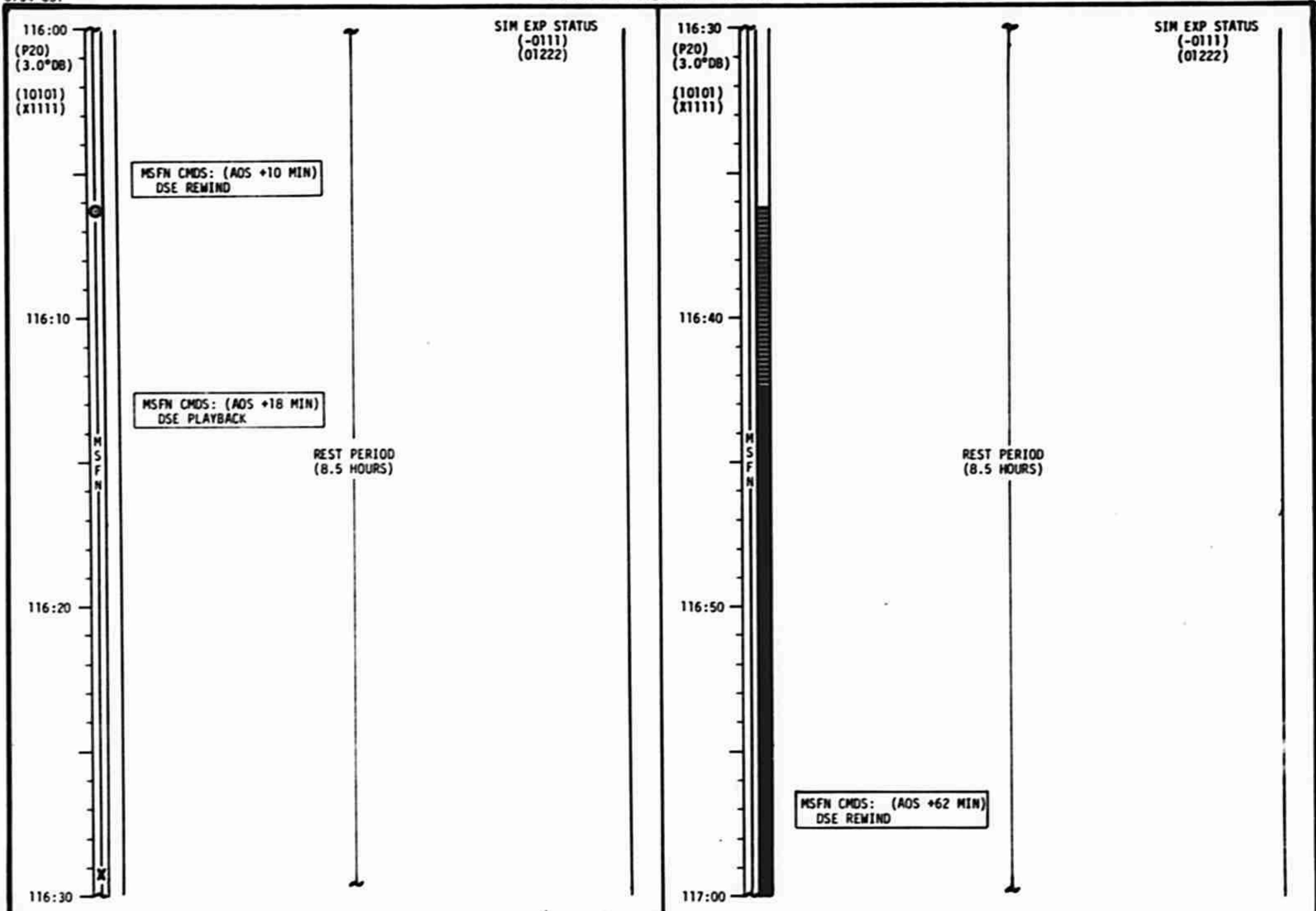


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	116:00 - 117:00	5/22	3-148

FLIGHT PLANNING BRANCH

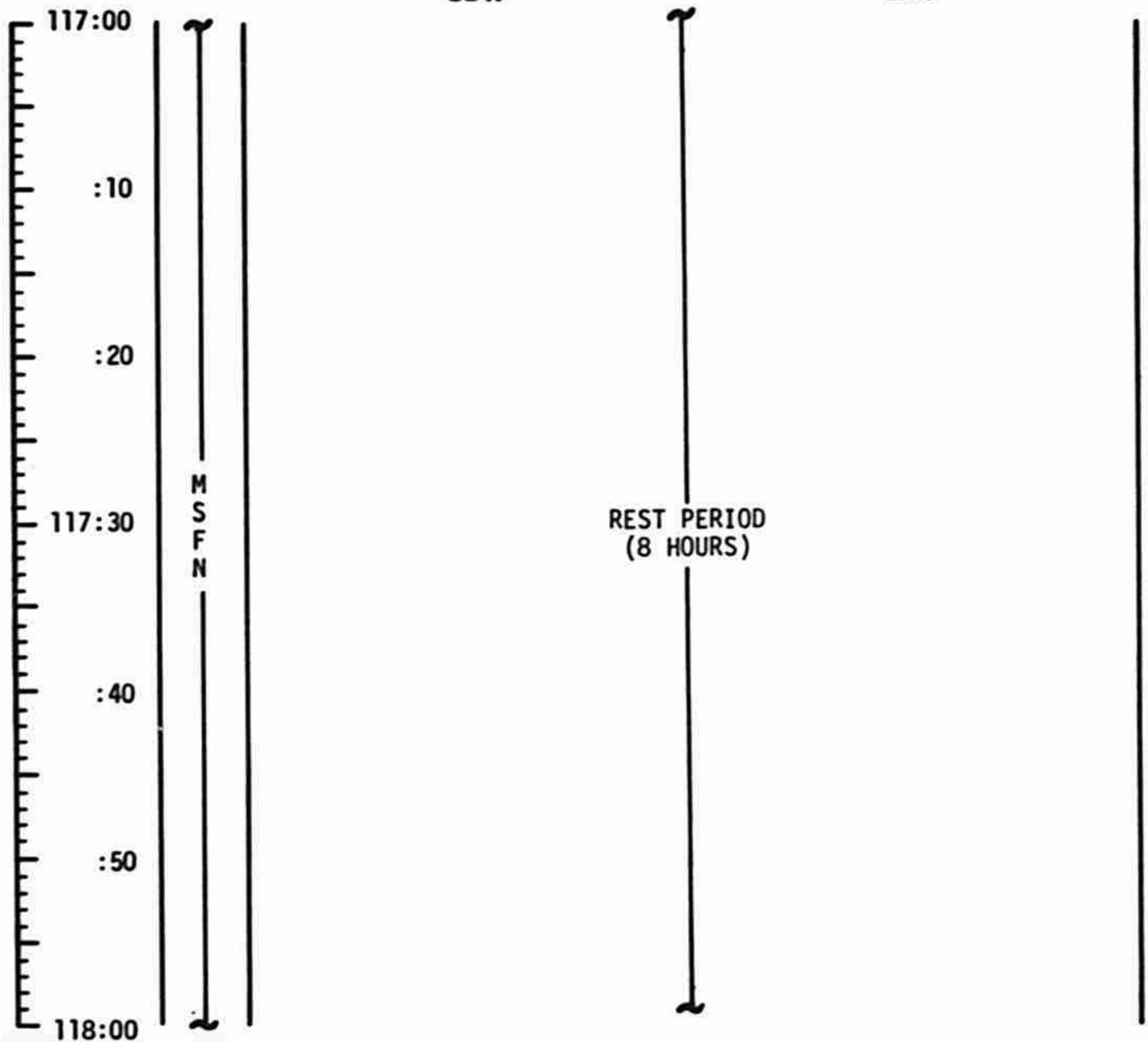
CSM FLIGHT PLAN

0754 CST



MCC-H

0854 CST

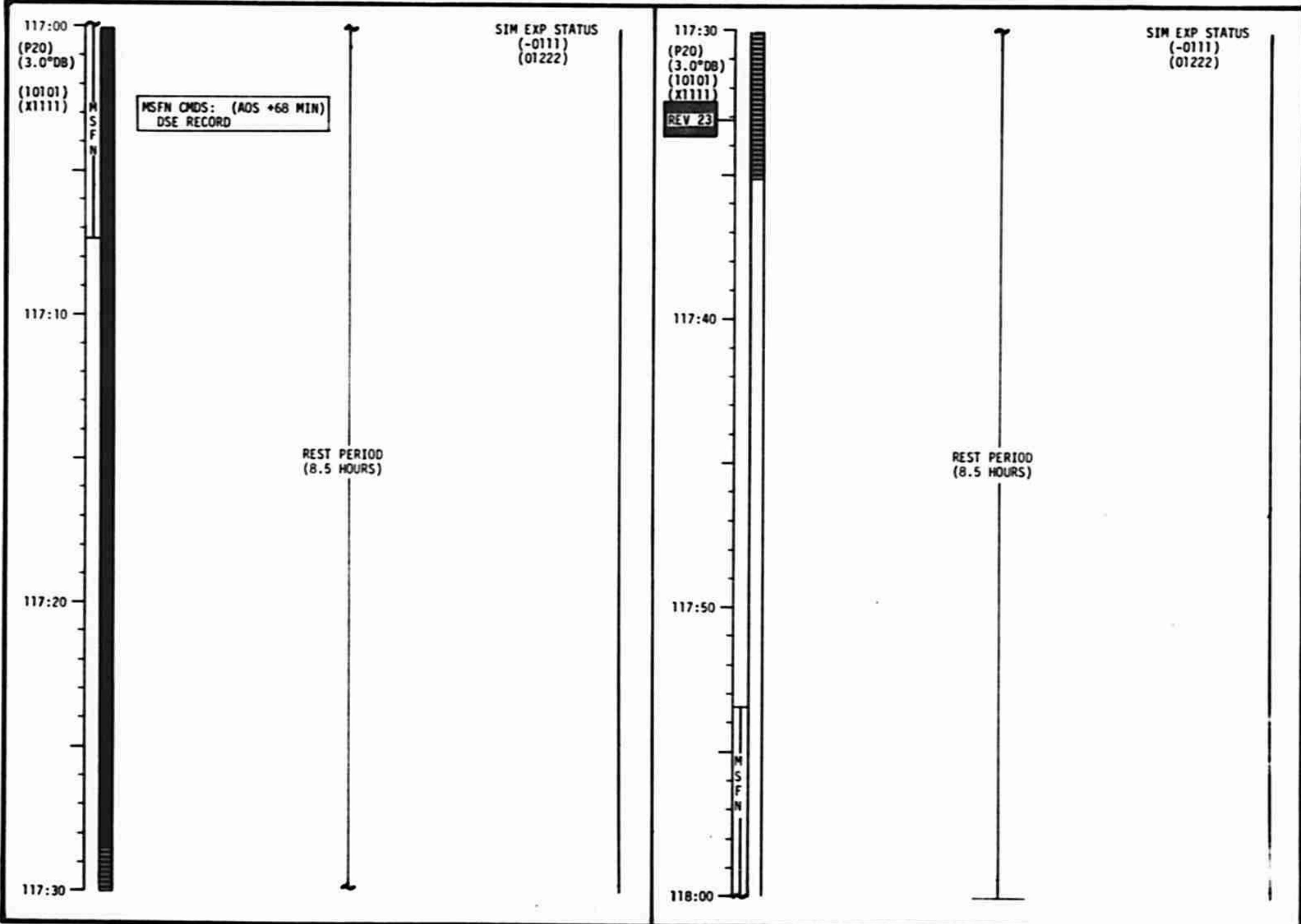
LM FLIGHT PLAN**CDR****LMP****NOTES**

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	117:00 - 118:00	5/22-23	3-150

FLIGHT PLANNING BRANCH

0854 CST

CSM FLIGHT PLAN



MCC-H

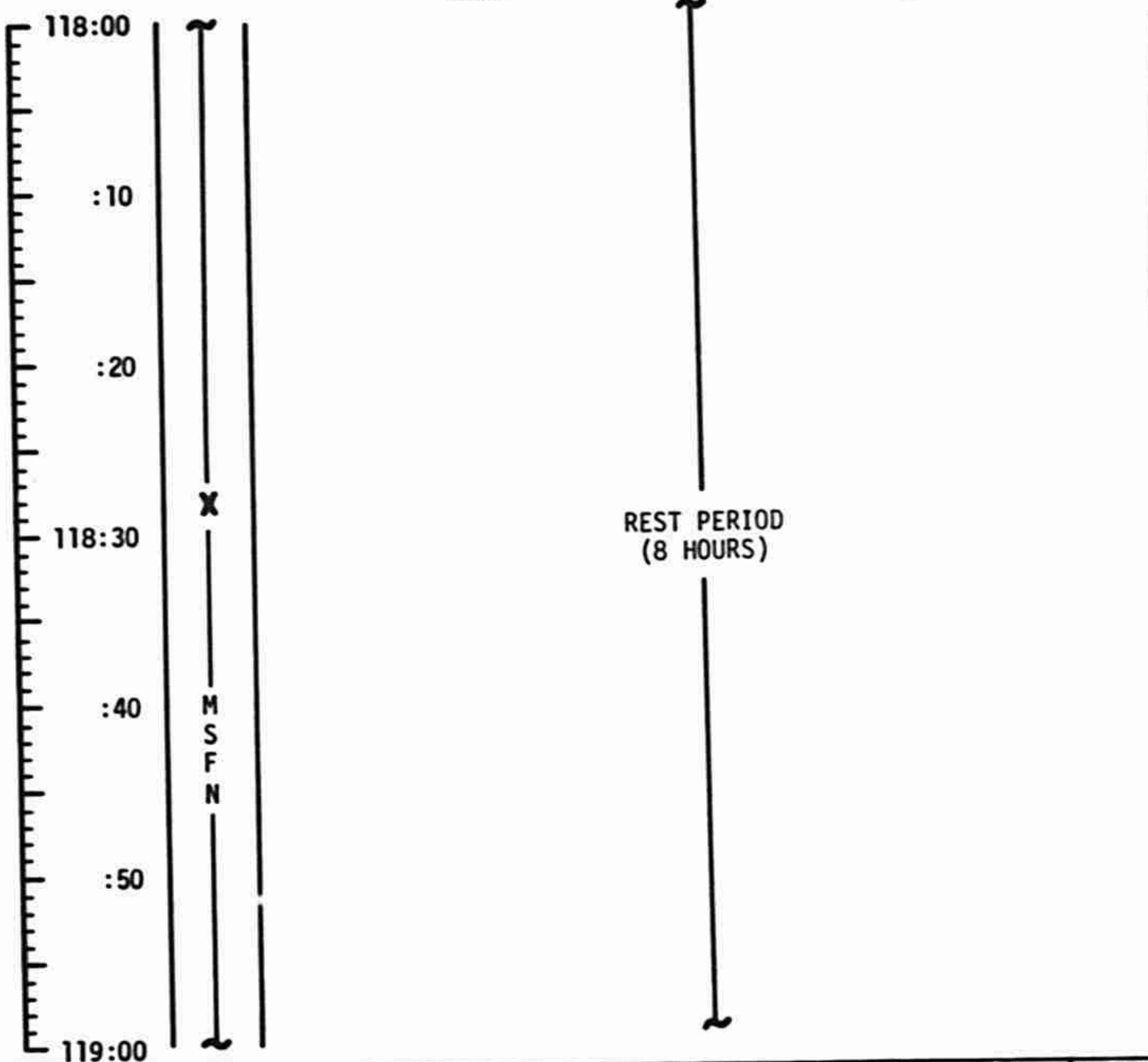
0954 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

REST PERIOD
(8 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	118:00 - 119:00	5/23	3-152

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0954 CST

<p>118:00 (P20) (3.0°DB) (10101) (X1111)</p> <p>CSM SYSTEMS CHECKLIST</p> <p>POST-SLEEP CHECKLIST PAGE 5/1-29 REPORT: COR & LMP FOOD LOGIC PWR (2) - DPLY/RETR</p> <p>MSFN CMDS: (AOS +10 MIN) DSE REWIND</p> <p>MSFN UPDATE: CONSUMABLES STATUS FLIGHT PLAN SIM EXP STATUS DSE VOICE STATUS</p> <p>MS: ION SOURCE - STBY (CALIBRATION DATA) PC: MODE - STBY PWR - ON</p> <p>MSFN UPLINK: CSM S.V.</p> <p>MSFN CMDS: (AOS +18 MIN) DSE PLAYBACK</p> <p>PC: PWR - OFF (MSFN CUE)</p> <p>GR: SHIELD - OFF</p> <p>MS: ION SOURCE - ON</p> <p>GR: SHIELD - ON (CTR)</p> <p>CONFIGURE CAMERA (TERMINATOR PHOTOS) CM3/EL/250/VHBM (+5.6, 1/125,-) 6 FR</p> <p>MAG (SS) ___, FR # ___</p> <p>118:30</p>	<p>SIM EXP STATUS (-0111) (01222)</p> <p>118:30 (P20) (3.0°DB) (10101) (X1111)</p> <p>TERMINATOR PHOTOS</p> <p>DAVY RILLE (P20 - B11) CM3 CRATER CHAIN INCLUSOR MOUNTAIN CM3(+55.6, 1/125, 00) 6FR RECORD FR #</p> <p>118:40 (P20) (5.0°DB)</p> <p>CMC MODE - FREE P52 (OPTION 3) (LDG SITE ORIENT)</p> <p>REPORT: <u>GYRO TORQUING</u> <u>ANGLES</u></p> <p>V22N79 (+005.00) (DAP DEADBAND TEST RUNS FROM 118:46 TO 120:42)</p> <p>P20 - CMC MODE - AUTO GDC ALIGN</p> <p>H₂ PURGE LINE HEATERS - ON</p> <p>CHARGE BATTERY B</p> <p>MSFN CMDS: (AOS +61 MIN) DSE REWIND</p> <p>119:00</p>	<p>SIM EXP STATUS (-0111) (01222)</p> <p>P52 IMU REALIGN</p> <p>N71: ____,-,____,-</p> <p>N05: ____,-,-,____,-</p> <p>N93:</p> <p>X ____,-,-,____,-</p> <p>Y ____,-,-,____,-</p> <p>Z ____,-,-,____,-</p> <p>GET ____,-,-,____,-</p> <p>CONFIGURE FOR URINE DUMP</p>
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MCC-H

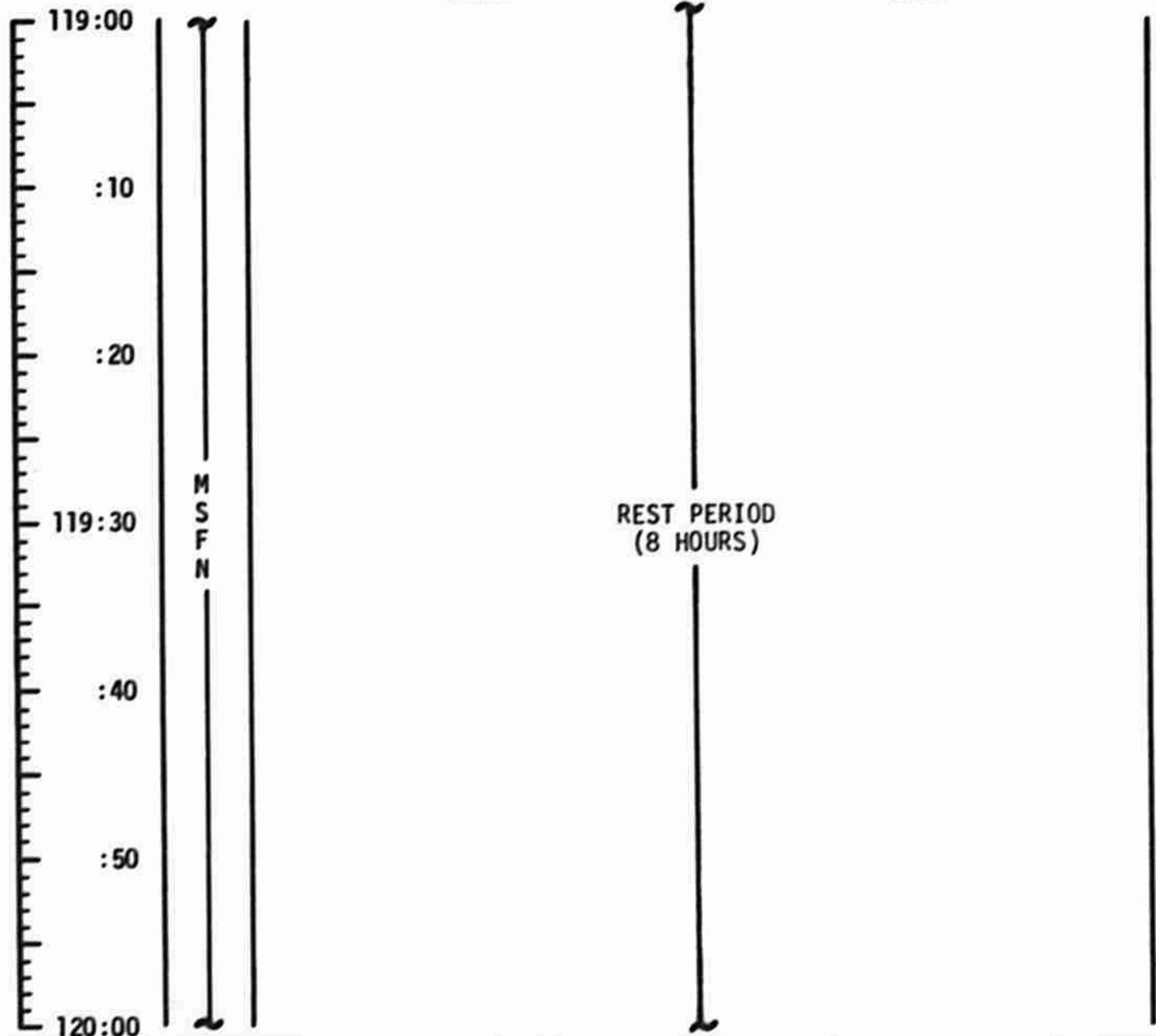
1054 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



**EST PERIOD
(8 HOURS)**

CSM REV 24

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	119:00 - 120:00	5/23-24	3-154

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1054 CST

119:00 (P20) (5.0°DB) (10101) (X1111)	MSFN CMDS: (AOS +68 MIN) DSE RECORD		SIM EXP STATUS (-0111) (01222)	119:30 REV 24 (P20) (5.0°DB) (10101) (X1111)	SIM EXP STATUS (-0110) (01222)
	VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)				
119:10	AP/XR COVER - CLOSE			119:40	EAT PERIOD
	H ₂ & O ₂ FUEL CELL PURGE				
	WASTE WATER DUMP				
	URINE DUMP				
119:20	H ₂ PURGE LINE HEATERS - OFF			119:50	ACQ MSFN HGA: MAN, WIDE P.O., Y 170
	TERMINATE WASTE WATER DUMP AT 10%				S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW
		EAT PERIOD			
119:30				120:00	MSFN CMDS: (AOS +2 MIN) DSE (STOP/REWIND)
					MSFN CUE: (~AOS +7 MIN) HGA AUTO

MCC-H

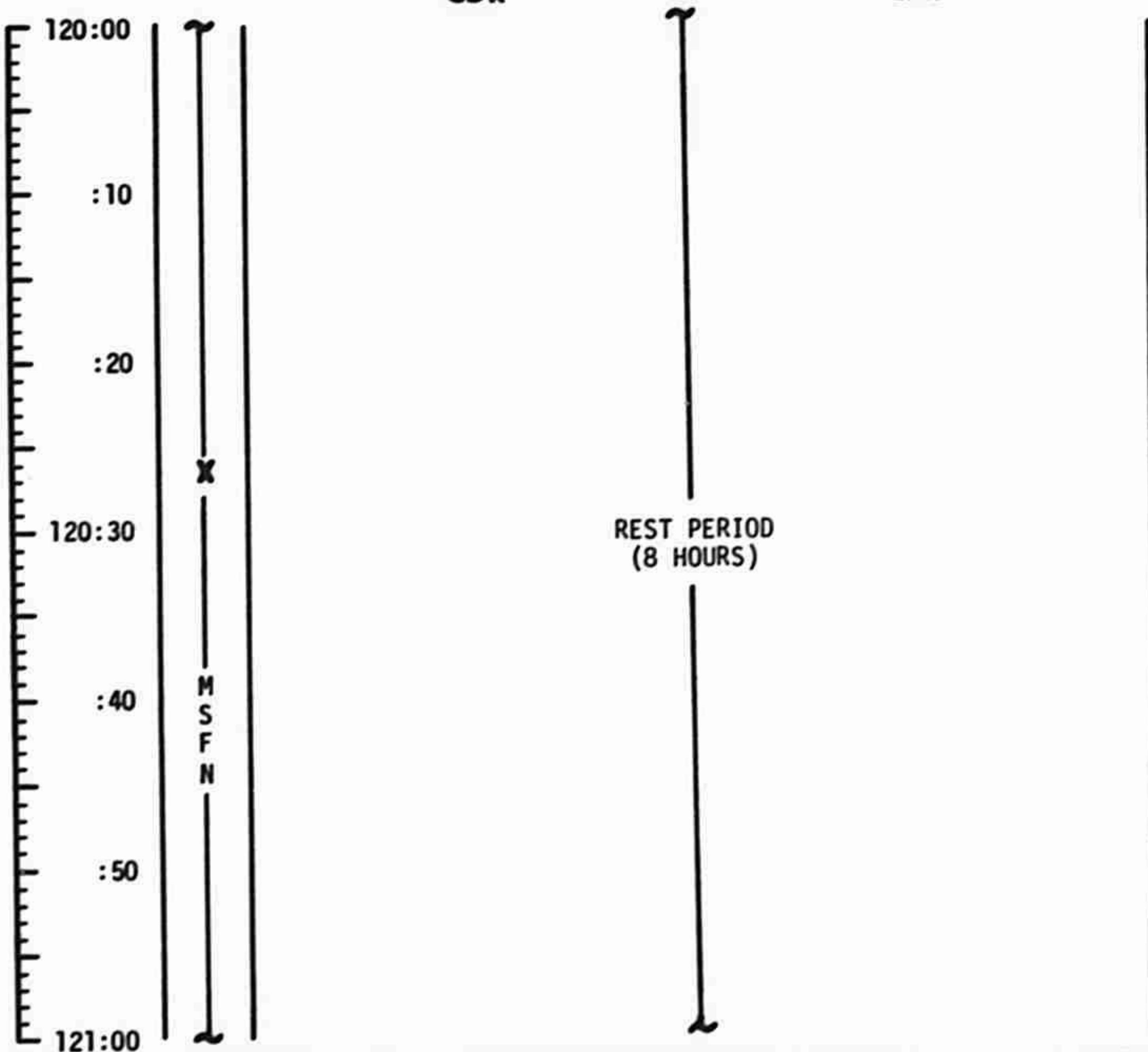
1154 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

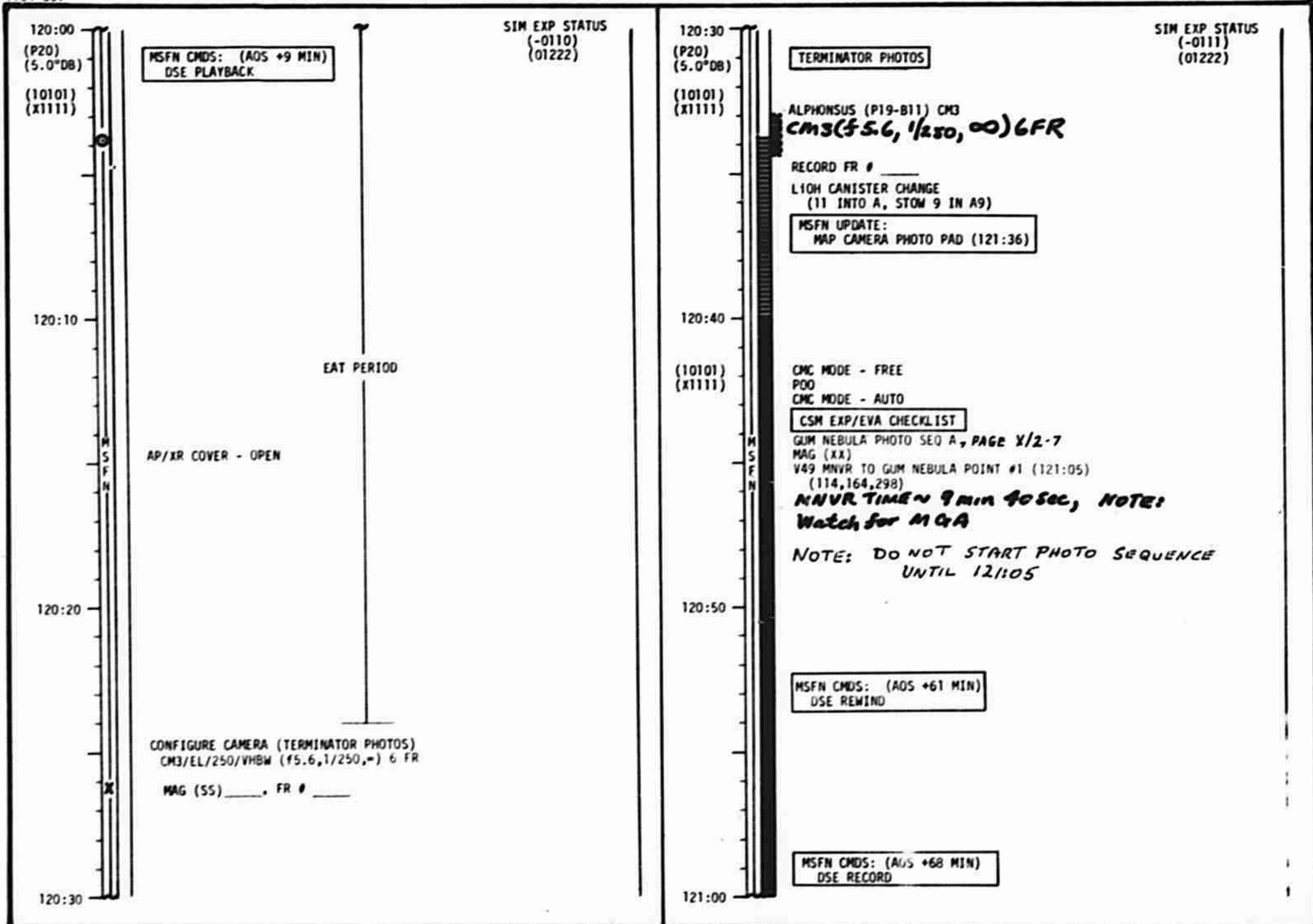


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	120:00 - 121:00	5/24	3-156

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1154 CST



LM FLIGHT PLAN

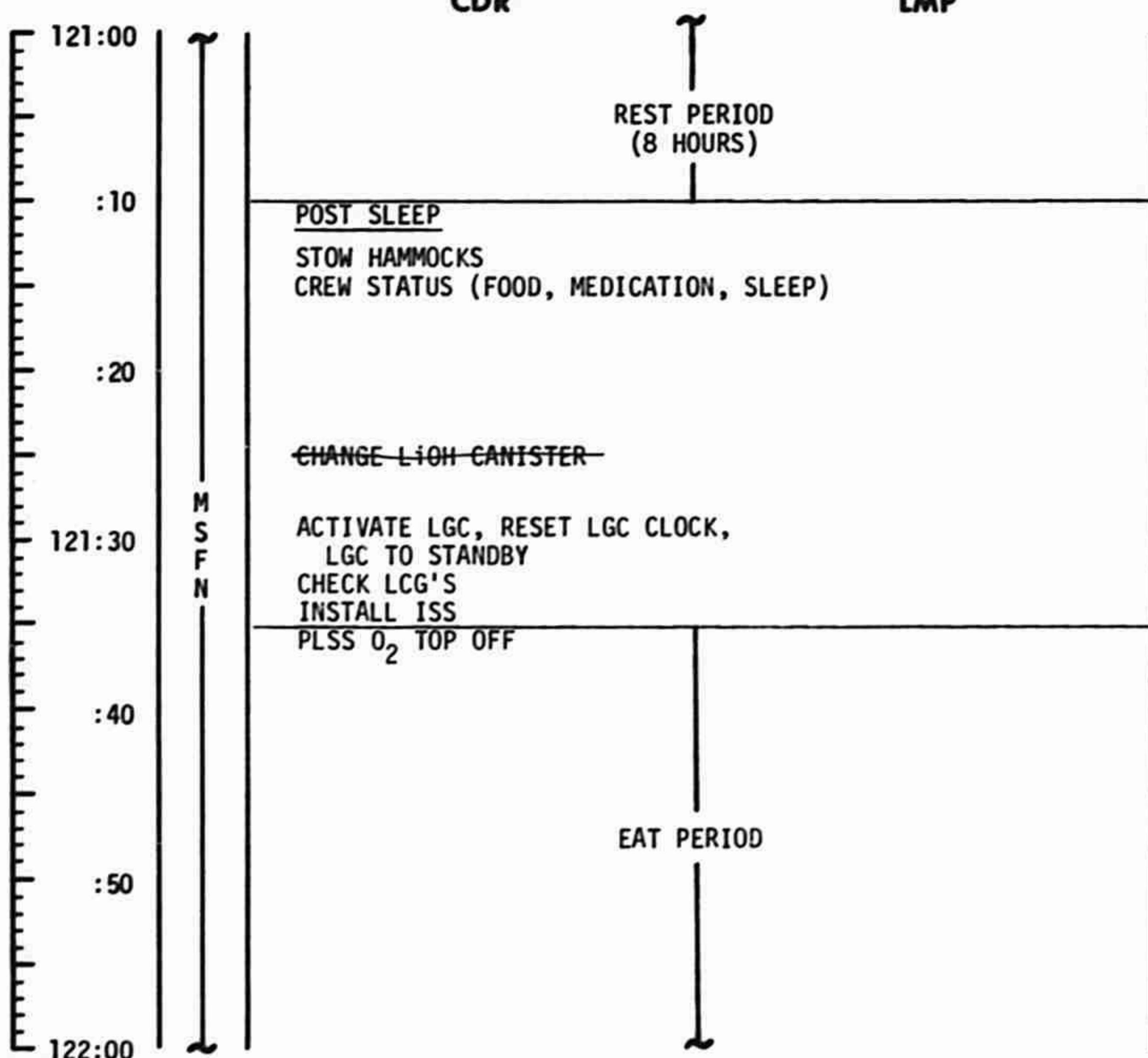
CDR

LMP

NOTES

MCC-H

1254 CST



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72 - 3/27/72	121:00 - 122:00	5-6/24-25	3-158

CHANGE A

FLIGHT PLANNING BRANCH

1254 CST

CSM FLIGHT PLAN

SIM EXP STATUS
(*0111)
(01222)

121:30

REV 25

(P20)

(0.5°DB)

(10102)

(x1111)

SIM EXP STATUS
(*1111)
(01222)

•

IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP +3 STEPS)/ON

MAP CAMERA PHOTO PAD

T-START: _____
T-STOP: _____
(171.9°E TO 8.6° W)

121:00
(10101)
(x1111)
M
S
F
N

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD PESET)

LOAD N78 FOR MNVR AT 121:25

121:10

GUM NEBULA PHOTO SEQ A STEPS 4&5

(10102)
(x1111)

V48 (10102)
(x1111) **VERY TIGHT; MNVR TIME ~ 4 MIN 45 SEC**
P20 OPT 5 (25° FORWARD OBLIQUE PHOTO ATT)(121:33) **AT 0.5 SEC/SEC**

(P20)
(0.5°DB)

N78 (+127.30)
(+045.77)
(+198.12)
N79 (+000.50)
(142.025/103.000)
SET OMNI D FOR AOS ACQ
MC/LA COVER - OPEN
MC - EXTD

121:40
(10101)
(x1111)

V48 (10101)
(x1111)

121:50

ACQ MSFN OMNI D

121:30

122:00

M
S
F
N

MCC-H

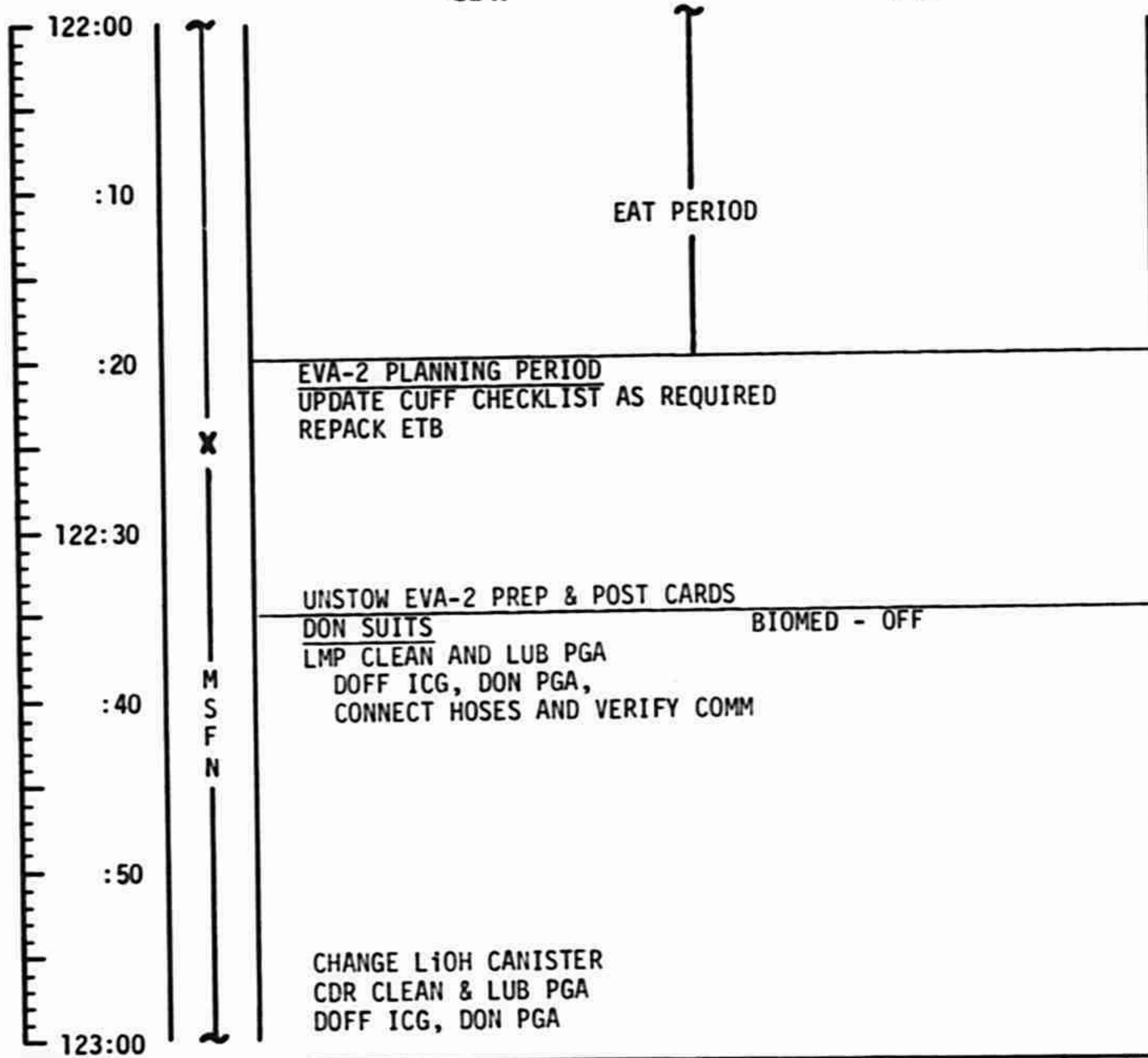
1354 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	122:00 - 123:00	6/25	3-160

FLIGHT PLANNING BRANCH

1354 CST

CSM FLIGHT PLAN

122:00 (P20) (0.5°DB) (10101) (x1111)	ACQ MSFN HGA: MAN. WIDE P 10, Y 0 S-BD ANT IND >1/2 SCALE HGA: REACQ. NARROW	SIM EXP STATUS (*1111) (04222)	122:30 (P20) (0.5°DB) (10101) (x1111)	MC - OFF (T STOP) WAIT 30 SEC MC- STBY IMAGE MTN - OFF	SIM EXP STATUS (*1111) (04222)
	MSFN CMDS: (AOS +17 MIN) DSE (STOP/REWIND) CUE: HGA AUTO				
122:10	MSFN UPDATE: ZODIACAL LIGHT PHOTO PAD (123:12) MAP CAMERA PHOTO PAD (125:33) TEI 32 PAD		122:40	Prepare ZODIACAL LIGHT TAPE & CHECK BATTERIES	
M S F N	MSFN CMDS: (AOS +25 MIN) DSE PLAYBACK		M S F N		
122:20			122:50		
X					
122:30			123:00	CSM EXP/EVA CHECKLIST ZODIACAL LIGHT, PAGE X/2-14 MAG (YY) MSFN CMDS: (AOS +66 MIN) DSE REWIND	

MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

1454 CST

123:00

:10

CONNECT HOSES & VERIFY COMM

:20

BIOMED - LEFT
 BATS 4&3 - ON
 BAT L (CDR) - OFF/RESET
 CHECK BUS VOLTS

-1:30

123:30

MSF N

PREP FOR EVA-2
STOW ALL LOOSE ITEMS NOT REQUIRED FOR EVA
 REPORT: PRD

CSM REV 26

:40

STOW LUNAR SURFACE CHECKLIST
EQUIPMENT PREP FOR EVA-2
 CHECKOUT OPS
 APPLY ANTI-FOG TO HELMETS
 STOW HELMET BAG
 STOW ETB
 UNLOCK FWD HATCH HANDLE

-1:10

:50

GDS 210 AOS

124:00

-1:00

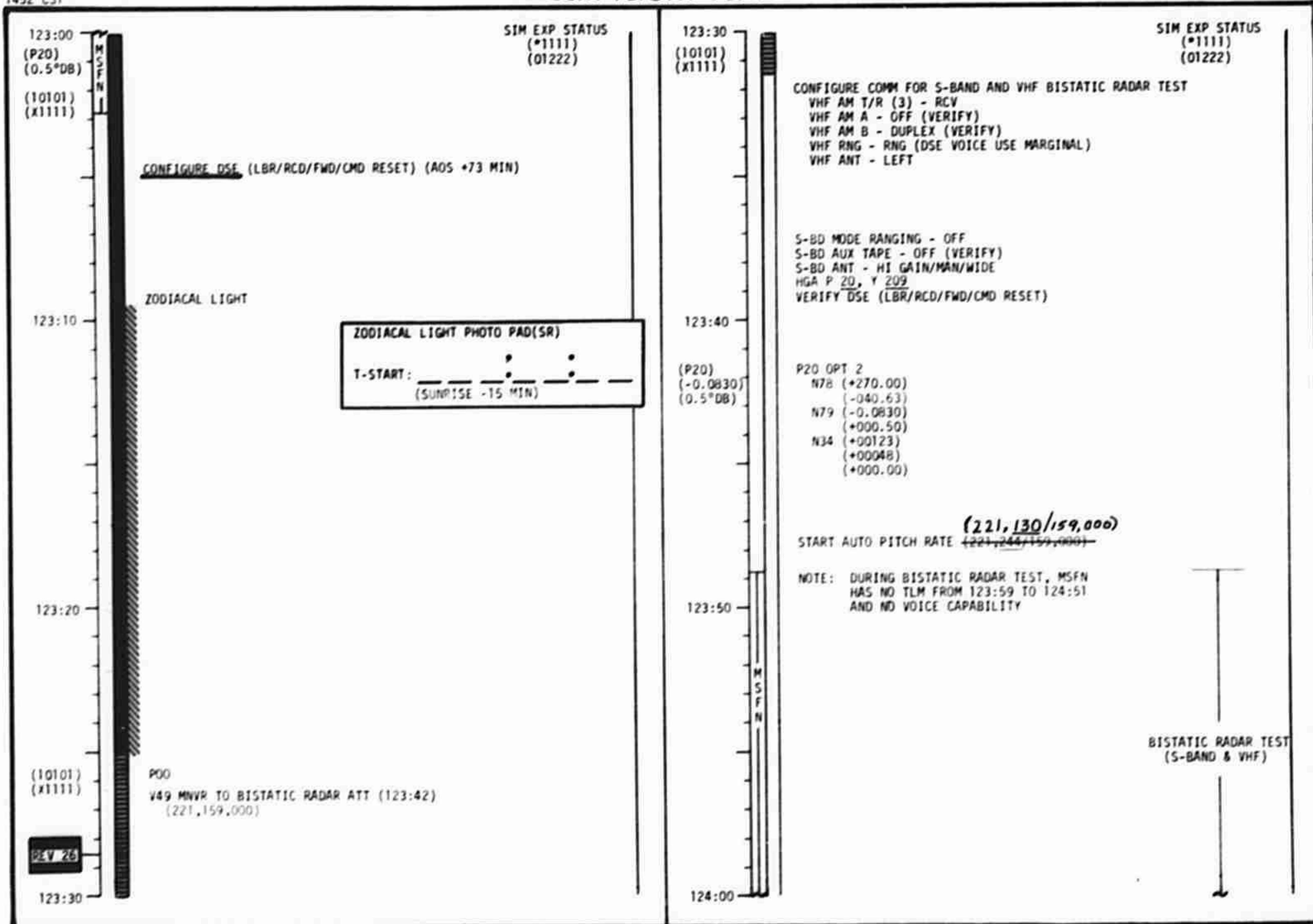
-0:50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	123:00 - 124:00	6/25-26	3-162

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1452 CST



LM FLIGHT PLAN

MCC-H

1554 CST

CDR

LMP

NOTES

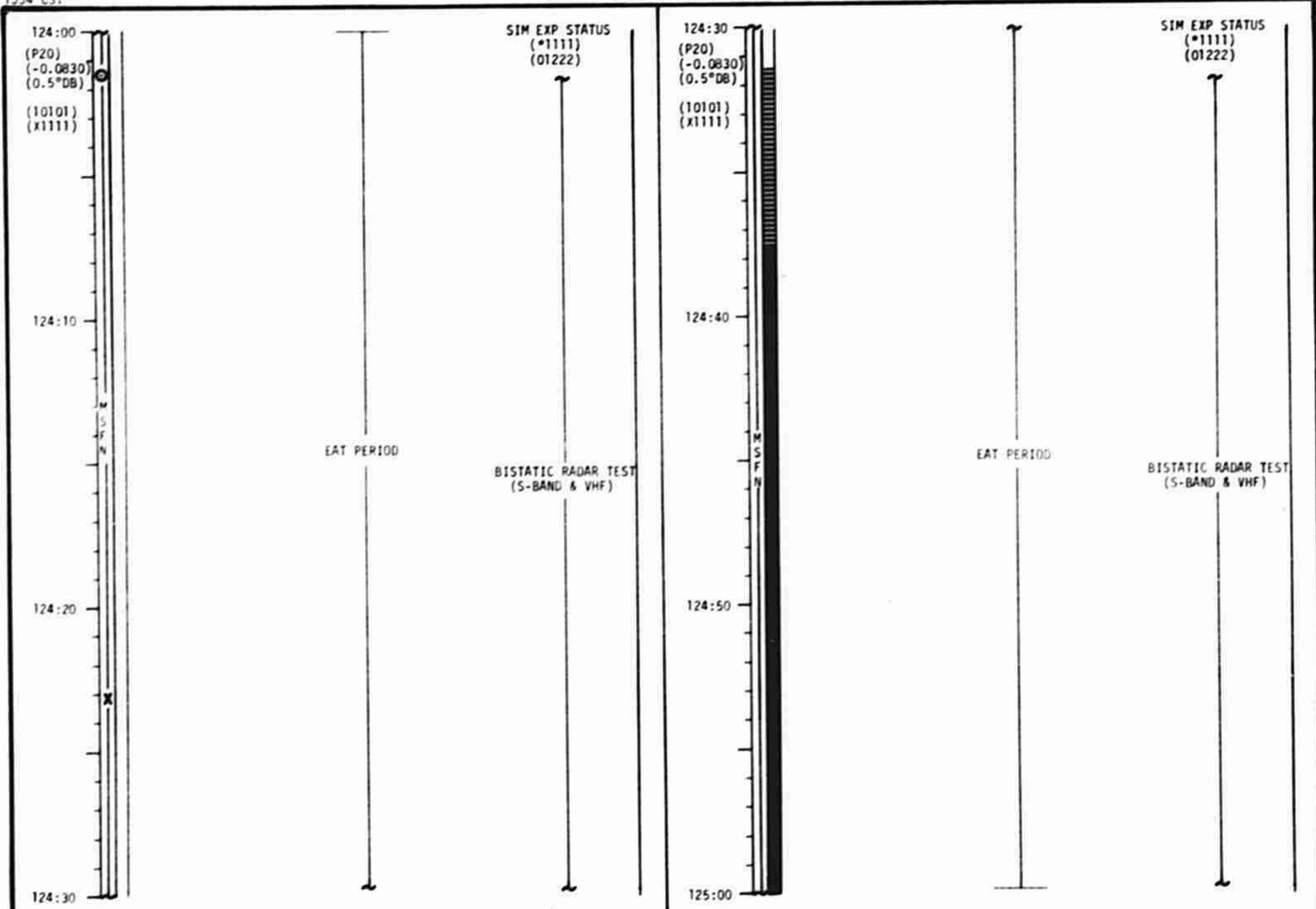
124:00		PLSS DONNING CONFIGURE LMP PLSS ATTACH OPS TO PLSS LMP DON PLSS/OPS CONNECT RCU	CDR REPEAT PLSS DONNING	-0:50
:10				-0:40
:20	X	PLSS COMM CHECK VERIFY POWERDOWN CB CONFIGURATION CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON COMM & TM CHECK, REPORT PLSS O ₂ QUANTITY TO MCC-H FINAL SYSTEMS PREP	OPS CONNECT LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA	-0:30
124:30	M S F N	HELMET/GLOVE DONNING PLSS FANS - ON DON HELMETS & LEVA'S VERIFY SUIT CONFIGURATION VERIFY EVA CB CONFIGURATION DON GLOVES PRESS REGS A&B - EGRESS PRESSURE INTEGRITY CHECK	CABIN DEPRESS START WATCHES AT 3.5 PSIA FINAL PREP FOR EVA OPEN FWD HATCH REST UNTIL COOLING SUFFICIENT, VERIFY PGA, CWEA STATUS	-0:20 -0:10
GO/NO-GO FOR CABIN DEPRESS				0:00/START EVA-2
:40				
:50				+0:10
125:00				

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	124:00 - 125:00	6/26	3-164

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1554 CST



MCC-H

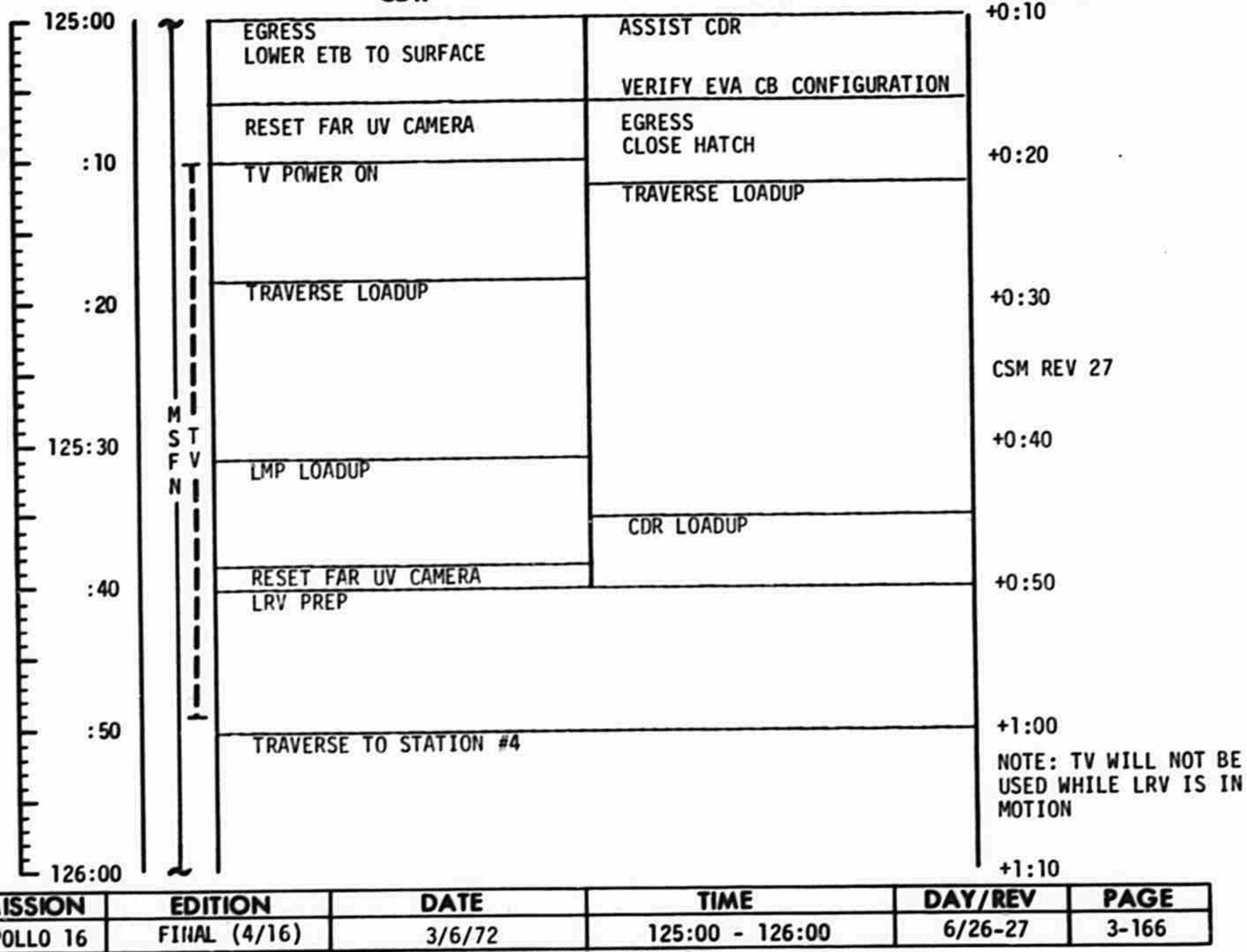
1654 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	125:00 - 126:00	6/26-27	3-166

FLIGHT PLANNING BRANCH

figure 6

CSM FLIGHT PLAN

1654 CST

 125:00
 (P20)
 (-0.0830)
 (0.5°DB)

 DISCONTINUE BISTATIC RADAR TEST
 VHF RNG - OFF
 VHF AM B - OFF
 S-BD MODE RANGING - RANGING

 (10101)
 (X1111)
 P00

 P52 (OPTION 3)
 (LDG SITE ORIENT)

 SIM EXP STATUS
 (*1111)
 (01222)

 125:30
 (P20)
 (0.5°DB)

 IMAGE MTN - ON
 MC - ON (T START)
 IMAGE MTN - INCR (BP +3 STEPS)/ON

 SIM EXP STATUS
 (*1111)
 (01222)

 125:10
 GDC ALIGN

P52 IMU REALIGN

 N71: _____
 NUS: _____ •
 N93:
 X _____ • _____
 Y _____ • _____
 Z _____ • _____
 GET _____ • _____

125:40

ACQ MSFN OMNI D

125:50

 ACQ MSFN HGA: MAN, WIDE P ~~10~~ Y ~~20~~
 S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW

 (P20)
 (0.5°DB)
 P20 OPT 5 (40°N OBLIQUE PHOTO ATT) (125:30)
 N78 (*090.00)
 (*012.25)
 (*180.00)
 N79 (*000.50)
 (102.000/080.000)
 SET ~~DMY~~ D FOR AOS ACQ

125:20

REV 27

125:30

CONFIGURE DSE HBR

 MSFN CMDS: (AOS +10 MIN)
 DSE (STOP/REWIND)
 CUE: HGA AUTO

REPORT: GYRO TORQUING ANGLES (FROM P52 AT 125:08)

126:00

LM FLIGHT PLAN

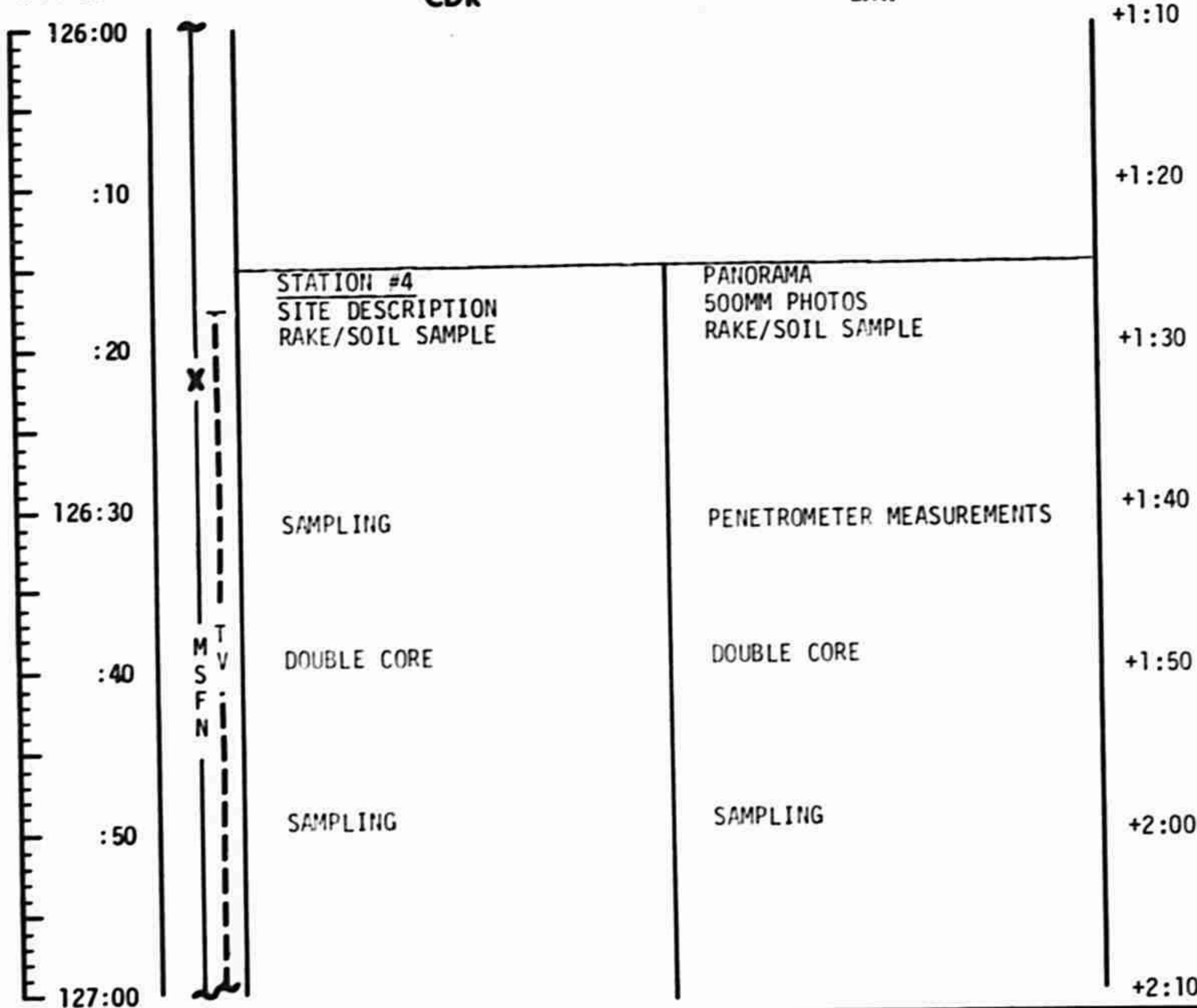
MCC-H

1754 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	126:00 - 127:00	6/27	3-168

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1754 CST

<p>126:00 (P20) (0.5°DB) (10101) (x1111)</p> <p>MSFN UPDATE: UV PHOTO PAD (126:20) MAP CAMERA PHOTO PAD (127:20) GR BOOM EXTD TIME 15 INCHES (127:18) PAN CAMERA PHOTO PAD (128:13)</p> <p>MSFN CMDS: (AOS +17 MIN) DSE PLAYBACK</p> <p>CSM EXP/EVA CHECKLIST</p> <p>LUNAR TERRA UV PHOTOGRAPHY, PAGE X/2-21 MAG (00)</p> <p>LUNAR TERRA UV PHOTOGRAPHY (DESCARTES)</p> <p>UV PHOTO PAD</p> <p>T-START: _____ (L/S - 2 MIN)</p>	<p>SIM EXP STATUS (*1111) (04222)</p> <p>126:30 (P20) (0.5°DB) (10101) (x1111)</p> <p>MC - OFF (T STOP) WAIT 30 SEC MC - STBY IMAGE MTN - OFF GR: SHIELD - OFF</p> <p>SIM EXP STATUS (*1111) (04222)</p> <p>126:40 (10101) (x1111)</p> <p>CSM EXP/EVA CHECKLIST GEGENSCHEIN CALIBRATION, PAGE X/2-5 MAG (ZZ) POO V49 MNVR TO GEGENSCHEIN CALIBRATION ATT (126:58) (297,210,000) OMNI D NOTE: DO NOT START PHOTO SEQUENCE UNTIL 126:53</p> <p>GR: SHIELD - ON (CTR)</p> <p>MS-RETR To 8.4 FEET (2 MIN 01 SEC)</p> <p>126:50</p> <p>MSFN CMDS: (AOS +66 MIN) DSE REWIND</p> <p>127:00</p>
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LM FLIGHT PLAN

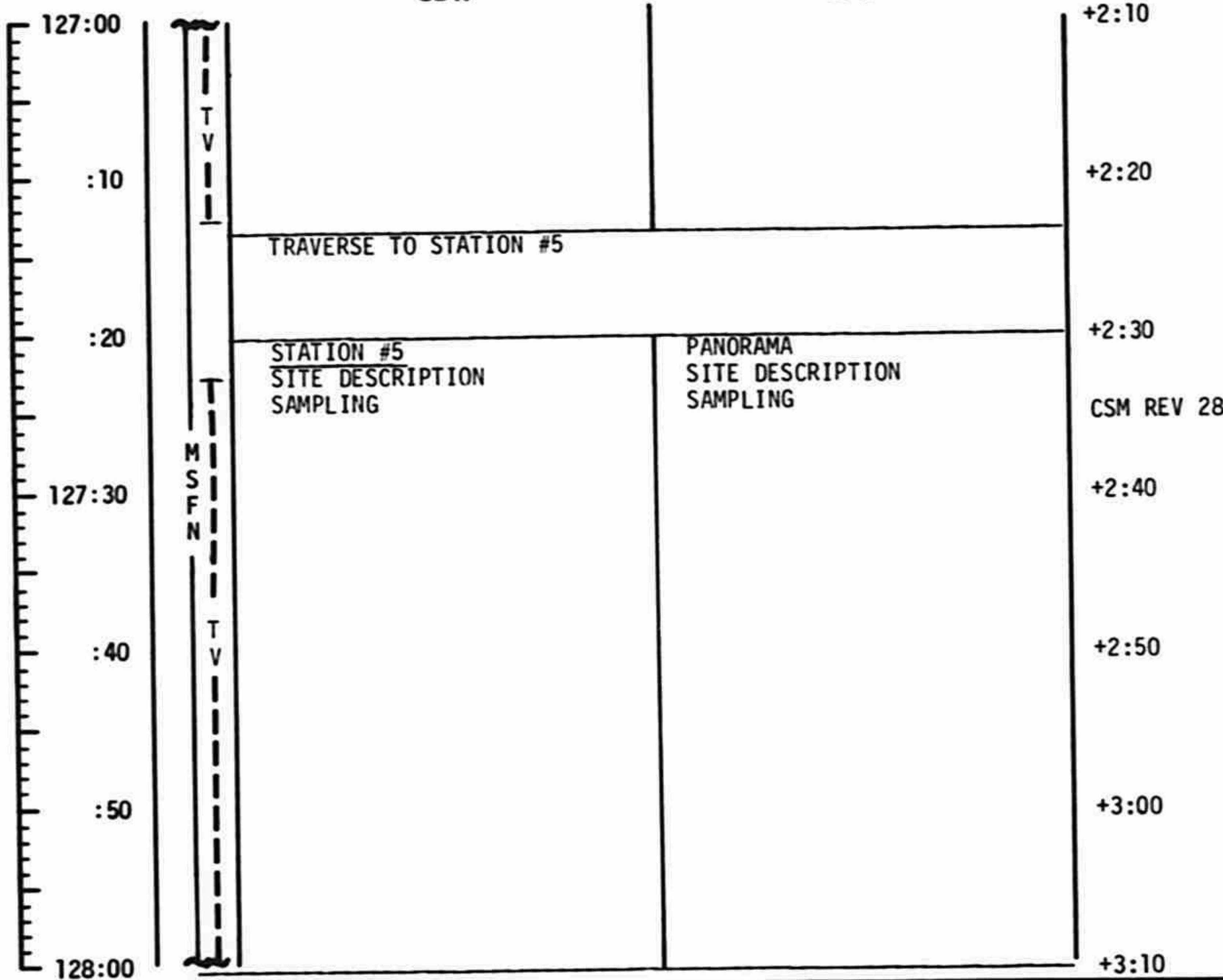
MCC-H

1854 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	127:00 - 128:00	6/27-28	3-170

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

127:00 -
(10101)
(x1111)

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN) ~~(01111)~~ (01121)
(01222)

GEGENSCHEIN CALIBRATION

127:30
(P20)
(0.5°DB)

SIM EXP STATUS
(*1221)
(02222)

127:10 -
(P20)
(0.5°DB)

P20 QRT 5 (* PWD SIM ATT) (127:29
N79 (*000,50)

127:40

GR - RET

GR - DPLY TO 15 INCHES (17 SEC)

ACQ MSFN HGA: MAN, WIDE P 10, Y O
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

127:20 -

MAP CAMERA PHOTO PA

T-START: _____ :: ::

T-STOP: — — — : — — :

(169.9°E TO 13.6°W) (1-1/2 REV'S)

REV 20

LA - ON

IMAGE MTN - OR

127:30 -

MC - ON (T START)
IMAGE MTN - INCR (BP +4 STEPS)/ON

127:50

PREPARE FOR ORBITAL SCIENCE VISUALS
KAPTEYN (v6)

MSFN CMDS: (AOS +7 MIN)
USE (STOP/REWIND)
CUE: HGA AUTO

ORBITAL SCIENCE VISUALS AT 128:01

MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

1954 CST

128:00

	TRAVERSE TO STATION #6		+3:10
:10	STATION #6 SITE DESCRIPTION SAMPLING	PANORAMA SITE DESCRIPTION SAMPLING	+3:20
:20	X		+3:30
128:30	TRAVERSE TO STATION #7		+3:40
:30	STATION #7 SITE DESCRIPTION SAMPLING	PANORAMA 500MM PHOTOS SAMPLING	+3:50
:40	M T V F N		+4:00
:50	TRAVERSE TO STATION #8		+4:10
129:00	STATION #8 SITE DESCRIPTION RAKE/SOIL SAMPLE	PANORAMA SITE DESCRIPTION RAKE/SOIL SAMPLE	
	DOUBLE CORE	DOUBLE CORE	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	128:00 - 129:00	6/28	3-172

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

128:00 KAFTEYN (V6-B7) CMS
(P20)
(0.5°DB)

SIM EXP STATUS
(+1221)
(02222)

(10101
(11111

CONFIGURE CAMERA (TERMINATOR PHOTOS)
CMS/EL/250/VHBM (f5.6, 1/125, -) & FR
MAG (SS) _____, FR # _____

128-1

128:40

PC: STBY
STEREO
PAIR
PC - QPR (T START)
IMAGE MTN - INCR (SP) / DE
PC - STBY (T STOP)
PC - OFF (MSFN CUE)

PAN CAMERA PHOTO PAD

T-START: _____
 T-STOP: _____
 (18.0°E TO 13.0°E)

128:20 = **X** IMAGE MTN - INCR (SP) / 0

128:50

RECORD FR #
V22N73 (+003.00)
ME - DRLX

GR - DPLY

128-3

SIM EXP STATUS
(+1111)
(02222)

128:30
(P20)
(3.0°DB)

$$\begin{pmatrix} 10101 \\ x1111 \end{pmatrix}$$

CREW EXERCISE PERIOD

MSFN CMDS: (ADS +66 MIN)
DSE REWIND

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (ADS +73 MIN)

LM FLIGHT PLAN

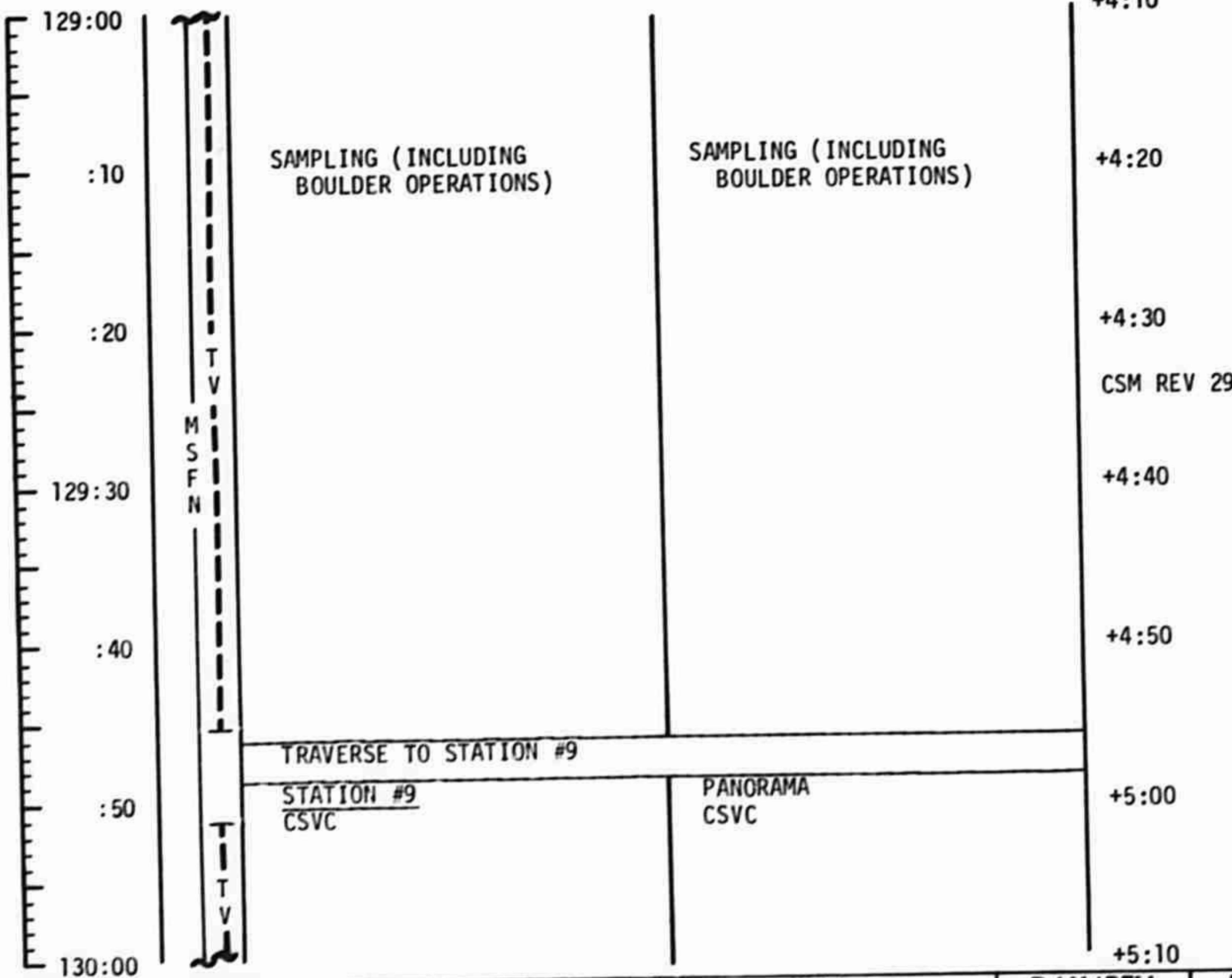
MCC-H

2054 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	129:00 - 130:00	6/28-29	3-174

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2054 CST

129:00 (P20) (3.0°DB) (10101) (X1111)	SIM EXP STATUS (+1111) (02222)	129:30 (P20) (0.5°DB) (10101) (X1111)	SIM EXP STATUS (+1111) (02222)
129:10 PREPARE FOR ORBITAL SCIENCE VISUALS		129:40	
129:20 (P20) (0.5°DB) CMC MODE - FREE V22N79 (+000.50) CMC MODE - AUTO		129:50 M S F N	ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW
REV 29			MSFN CMDS: (~AOS +7 MIN) DSE (STOP/REWIND) CUE: HGA AUTO
IMAGE MTN - INCR (BP +4 STEPS)/ON MC - OFF WAIT 30 SEC MC - STBY IMAGE MTN - OFF MC - ON ORBITAL SCIENCE VISUALS			CONFIGURE CAMERA (ORBITAL SCIENCE) CMS/EL/250/CEX-IVL (f8.1/250,-) 41 FR MAG (PP) ___, FR # ___
FARSIDE HIGHLANDS (VI-B1,B2) CMS		130:00 G	MSFN CMDS: (AOS +14 MIN) DSE PLAYBACK
129:30			

LM FLIGHT PLAN

MCC-H

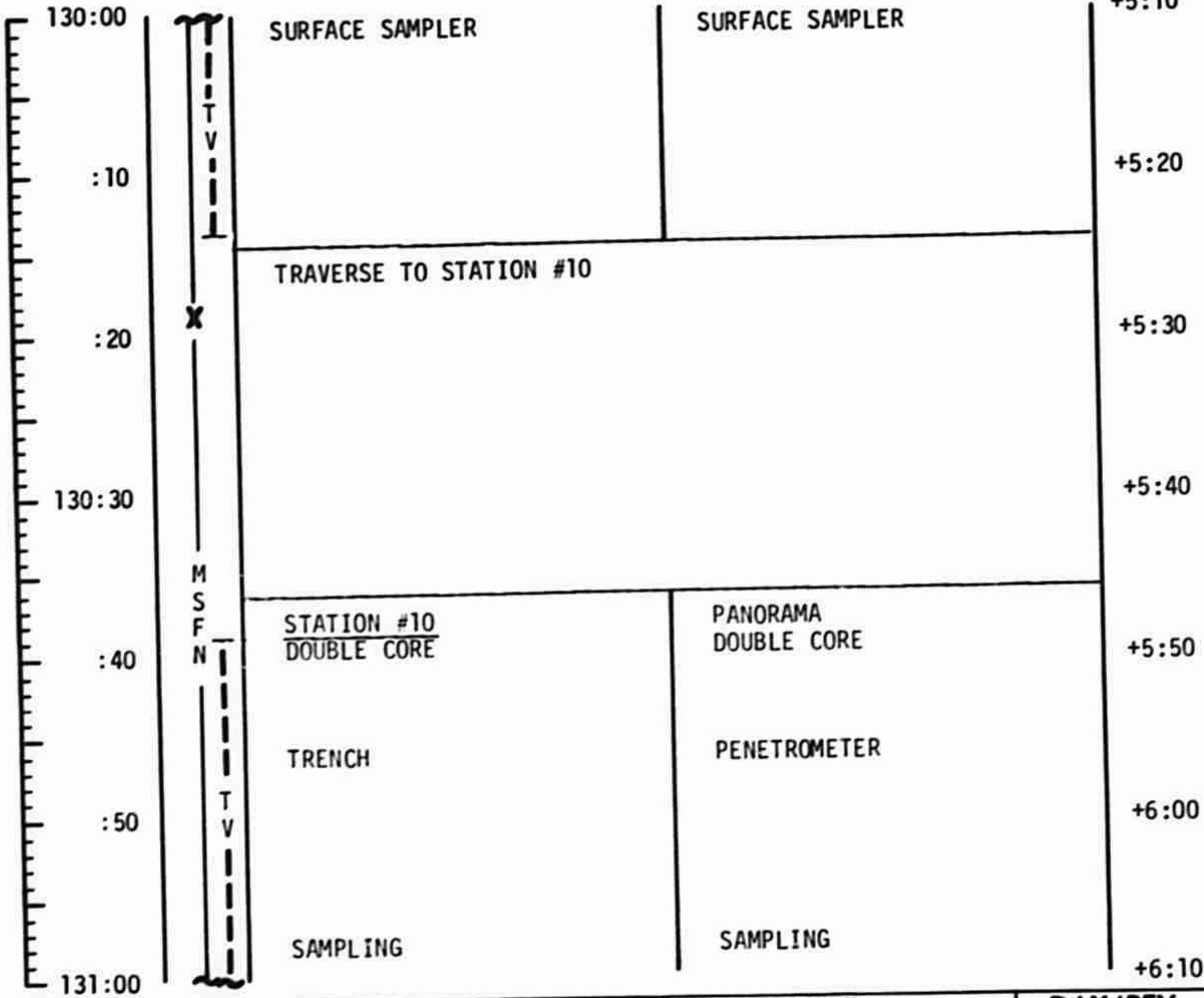
2154 CST

130:00

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	130:00 - 131:00	6/29	3-176

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

130:00 (P20) (0.5°DB) (10101) (X1111)	<i>Prepare for Photo Strip</i>	SIM EXP STATUS (+1111) (02222)	130:30 (P20) (0.5°DB) (10101) (X1111)	MC - RETR AP/XR COVER - CLOSE MC/LA COVER - CLOSE	SIM EXP STATUS (+1111) (01222)
130:10 GR: SHIELD - OFF	CONFIGURE FOR URINE DUMP		130:40 (P20) (3.0°DB)	V22 N79 (+003.00)	P52 IMU REALIGN
130:20 RECORD FR # IMAGE MTN - INCR (BP)/ OFF OFF	ORBITAL SCIENCE PHOTOS CATHARINA (P13-B9,B10) CM5 (FB,1/250,-) 41 FR		130:50 MSFN	CMC MODE - FREE P52 (OPTION 3) (LDG SITE ORIENT)	N71: _____ N05: _____ * N93: X _____ * Y _____ * Z _____ * GET _____ *
130:30 MC - OFF (T STOP) WAIT 30 SEC MC - STBY IMAGE MTN OFF LA - OFF	GR: SHIELD - ON (CTR)		131:00	REPORT: GYRO TORQUING ANGLES P20, CMC MODE - AUTO GDC ALIGN MSFN CMDS: (AOS +66 MIN) DSE REWIND CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN) WASTE WATER DUMP URINE DUMP	

MCC-H

LM FLIGHT PLAN

2254 CST

CDR

LMP

NOTES

				+6:10
131:00	T V I	TRENCH SAMPLES	TRENCH SAMPLES	
:10		TRAVERSE TO LM		+6:20
	PARK AND POWERDOWN LRV	DEPLOY HGA, DUST SURFACES PHOTO LRV		
:20	UNLOAD PLSS	RESET FAR UV CAMERA		+6:30
	PACK ETB	UNLOAD PLSS		CSM REV 30
131:30	M S T F N	CLEAN EMU	PACK SRC-2	
	SRC-2 TRANSFER	CLEAN EMU		+6:40
:40	LRV CONFIGURE RESET FAR UV CAMERA	INGRESS		
	INGRESS	RECEIVE & STOW ETB		+6:50
:50	CLOSE HATCH, REPRESS LM CABIN			+7:00/END EVA-2
	POST EVA-2 SYSTEMS CONFIGURATION			
	VERIFY EVA CB CONFIGURATION			
	DOFF GLOVES, DOFF HELMETS AND STOW IN BAGS			
	TRANSFER TO LM ECS HOSES			
132:00				

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	131:00 - 132:00	6/29-30	3-178

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2254 CST

131:00
(P20)
(3.0°DB)(10101)
(X11111)

MANUALLY ROLL CCW 40°

P20 OPT 5 (-X FWD SIM ATT)(131:26)
SET HGA P 0, Y 170 FOR AOS ACQSIM EXP STATUS
(+0110)
(01222)

131:30

(P20)
(3.0°DB)(10101)
(X11111)SIM EXP STATUS
(-0111)
(01222)

131:10

TERMINATE WASTE WATER DUMP AT 10%

131:40

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

EAT PERIOD

CONFIGURE CAMERA (TERMINATOR PHOTOS)
CM5/EL/250/VHBM (f5.6,1/125,-) 6 FR

MAG (S0) ___, FR # ____

131:50

MSFN CMDS: (~AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

REV 30

FLOOR OR

TERMINATOR PHOTOS

SPENCER JONES (P2-B2) CMS

RECORD FR #
AP/XR COVER - OPEN

132:00

PC: MODE - STBY
PWR - ONMSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

PC: PWR - OFF (MSFN CUE)

MCC-H

2354 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

	132:00	CONFIGURE AND CONNECT TO LM COMM BIOMED - RIGHT
:10		PLSS O ₂ INITIAL RECHARGE CONNECT LM O ₂ HOSE TO LMP PLSS AND FILL CONNECT LM O ₂ HOSE TO CDR PLSS AND FILL
:20	X	DISCONNECT & STOW LM O ₂ HOSE
132:30	M S F N	PLSS/OPS DOFFING DISCONNECT OPS & RCU FROM PLSS LMP, THEN CDR DOFF PLSS/OPS REPORT: <u>OPS PRESSURE</u>
:40		CHANGE PLSS LiOH CARTRIDGES & BATTERIES
:50		STOW OPS'S & PLSS'S POST-EVA CABIN CONFIGURATION BATS 2&1 - OFF/RESET UNSTOW LUNAR SURFACE CHECKLIST BAT L (LMP) - ON STOW EVA-2 PREP & POST CARDS CHECK BUS VOLTS STOW ETB
133:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	132:00 - 133:00	6/30	3-180

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2354 CST

<p>132:00 (P20) (3.0°DB) (10101) (X1111)</p> <p>M S F N</p> <p>EAT PERIOD</p> <p>X</p> <p>M S F N</p> <p>132:10</p> <p>M S F N</p> <p>132:20</p> <p>M S F N</p> <p>132:30</p> <p>M S F N</p>	<p>SIM EXP STATUS (-0111) (01222)</p> <p>132:30 (P20) (3.0°DB) (10101) (X1111)</p> <p>MSFN UPDATE: TEI 42 PAD #1</p> <p>MSFN UPLINK: JET-ON MONITOR LOADS</p> <p>CSM SYSTEMS CHECKLIST</p> <p>PRE-SLEEP CHECKLIST PAGE S/1-29</p> <p>LOGIC PWR (2) - OFF</p> <p>VHF AM T/R - RCV (PNL 9)</p> <p>VHF AM A - DUPLEX</p> <p>132:40</p> <p>M S F N</p> <p>132:50</p> <p>MSFN CMDS: (AOS +66 MIN) DSE REWIND</p> <p>CONFIGURE DSE (HBR/RCD/FWD/OMD RESET)(AOS +73 MIN)</p> <p>133:00</p>	<p>SIM EXP STATUS (-0111) (01222)</p> <p>ONBOARD READOUT</p> <p>BAT C _____</p> <p>PYRO BAT A _____</p> <p>PYRO BAT B _____</p> <p>RCS A _____</p> <p>B _____</p> <p>C _____</p> <p>D _____</p> <p>DC IND SEL - MNA OR B</p> <p>FILM MAGS REQD FOR NEXT DAY: DAC: VH8W-NH, BW164-II EL: VH8W-SS, CEX-PPE QQ, UV-OO NK: VH8W-ZZ</p>
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MCC-H

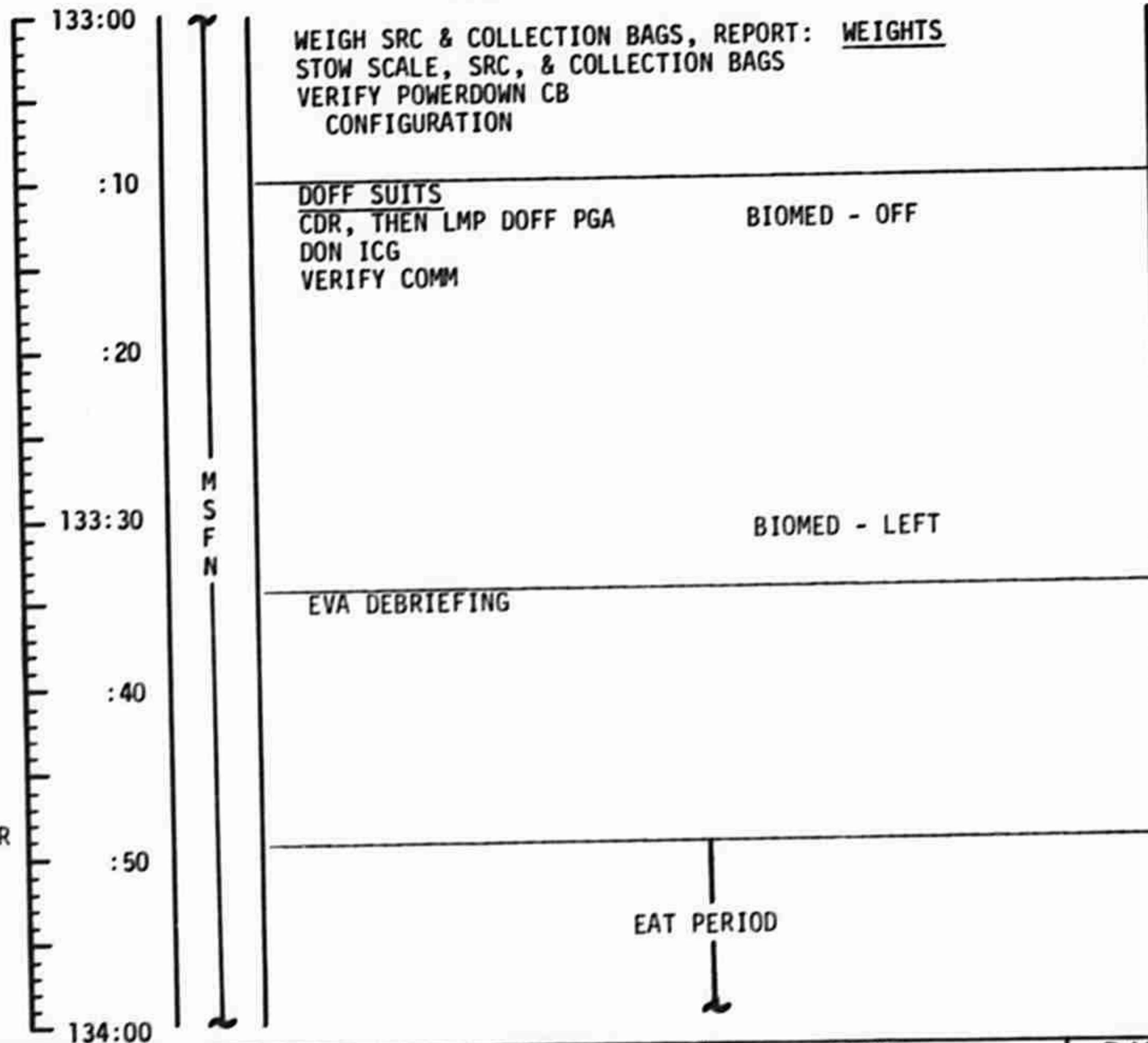
0054 CST

LM FLIGHT PLAN

CDR

LMP

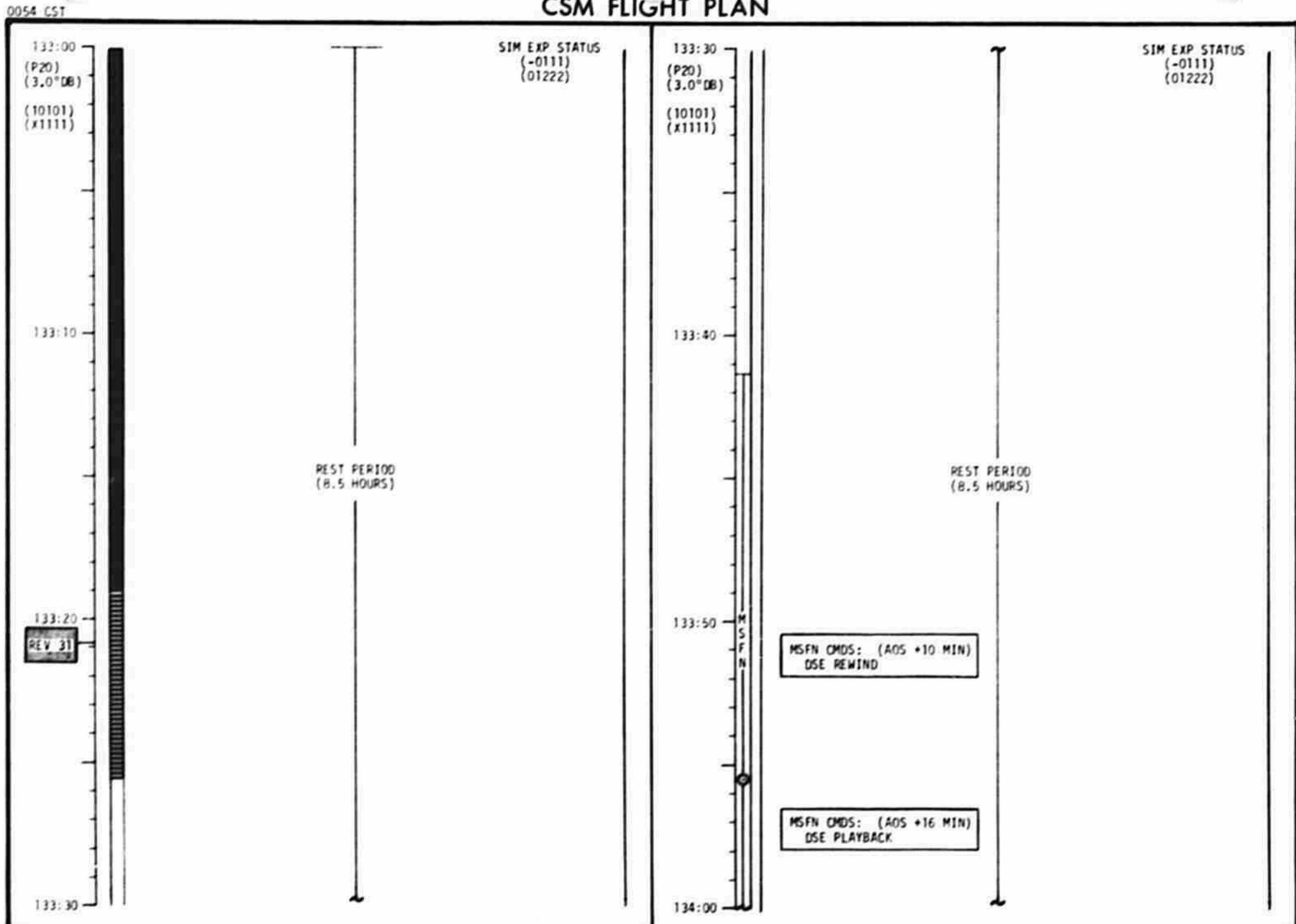
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	133:00 - 134:00	6/30-31	3-182

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

0154 CST

134:00

:10

X

EAT PERIOD

134:30

MSF
N

:40

PLSS RECHARGE
CONNECT LM O₂ HOSE TO CDR PLSS AND FILL

:50

CONNECT LM H₂O HOSE TO CDR PLSS AND FILL

DISCONNECT & STOW CDR PLSS
 CONNECT LM O₂ HOSE TO LMP PLSS AND FILL

GDS 210 LOS

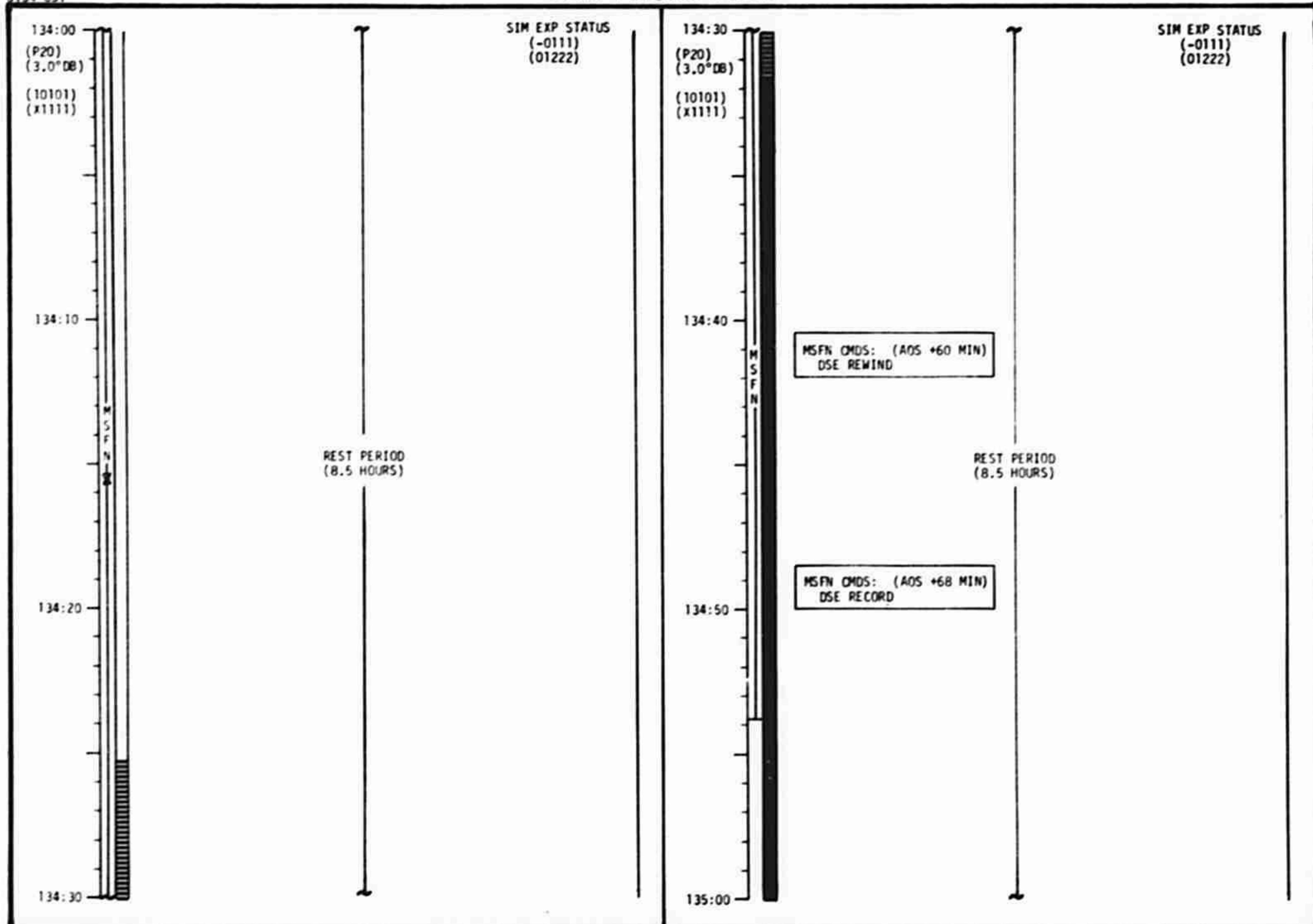
135:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	134:00 - 135:00	6/31	3-184

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0154 CST



MCC-H

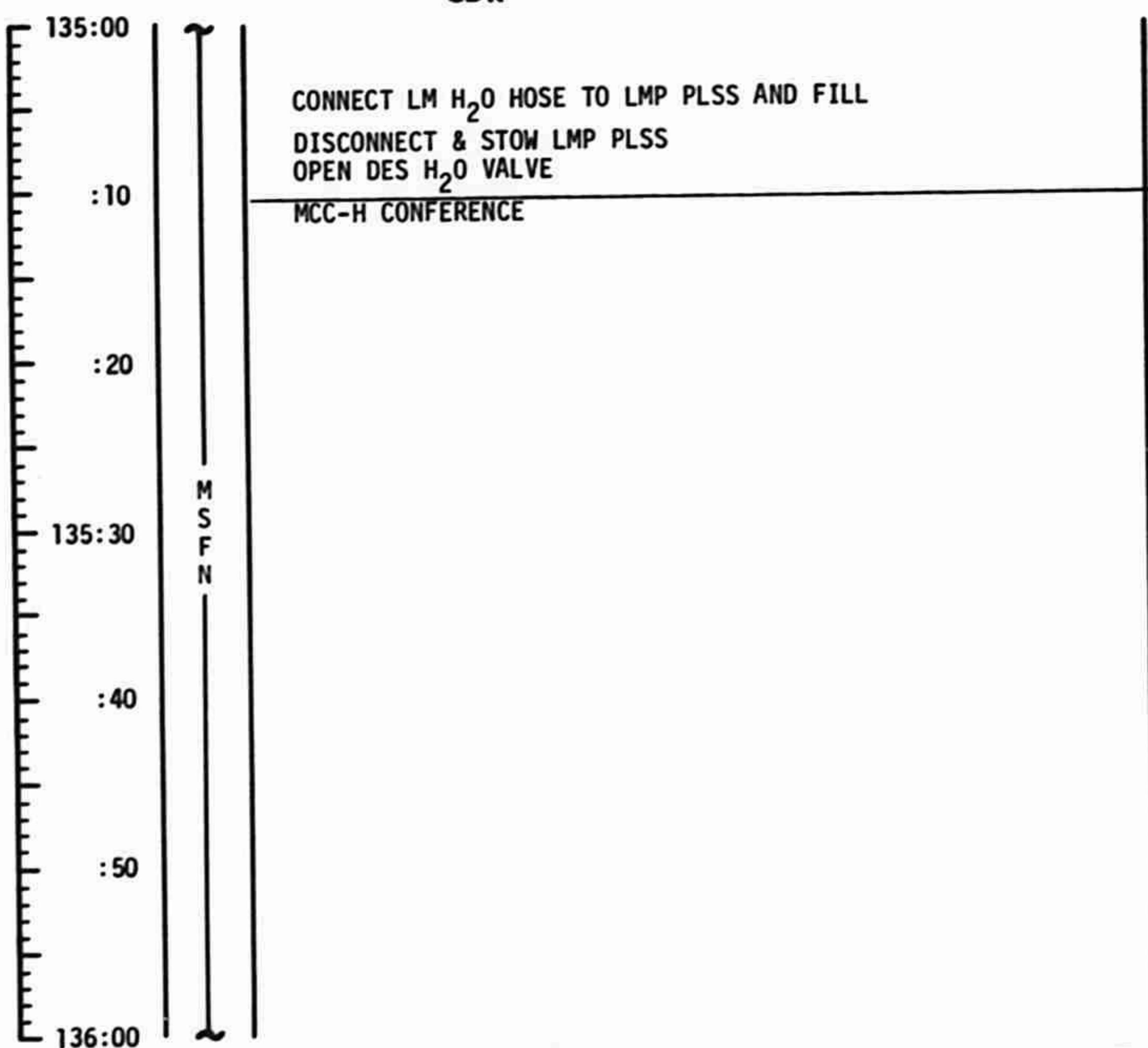
0254 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

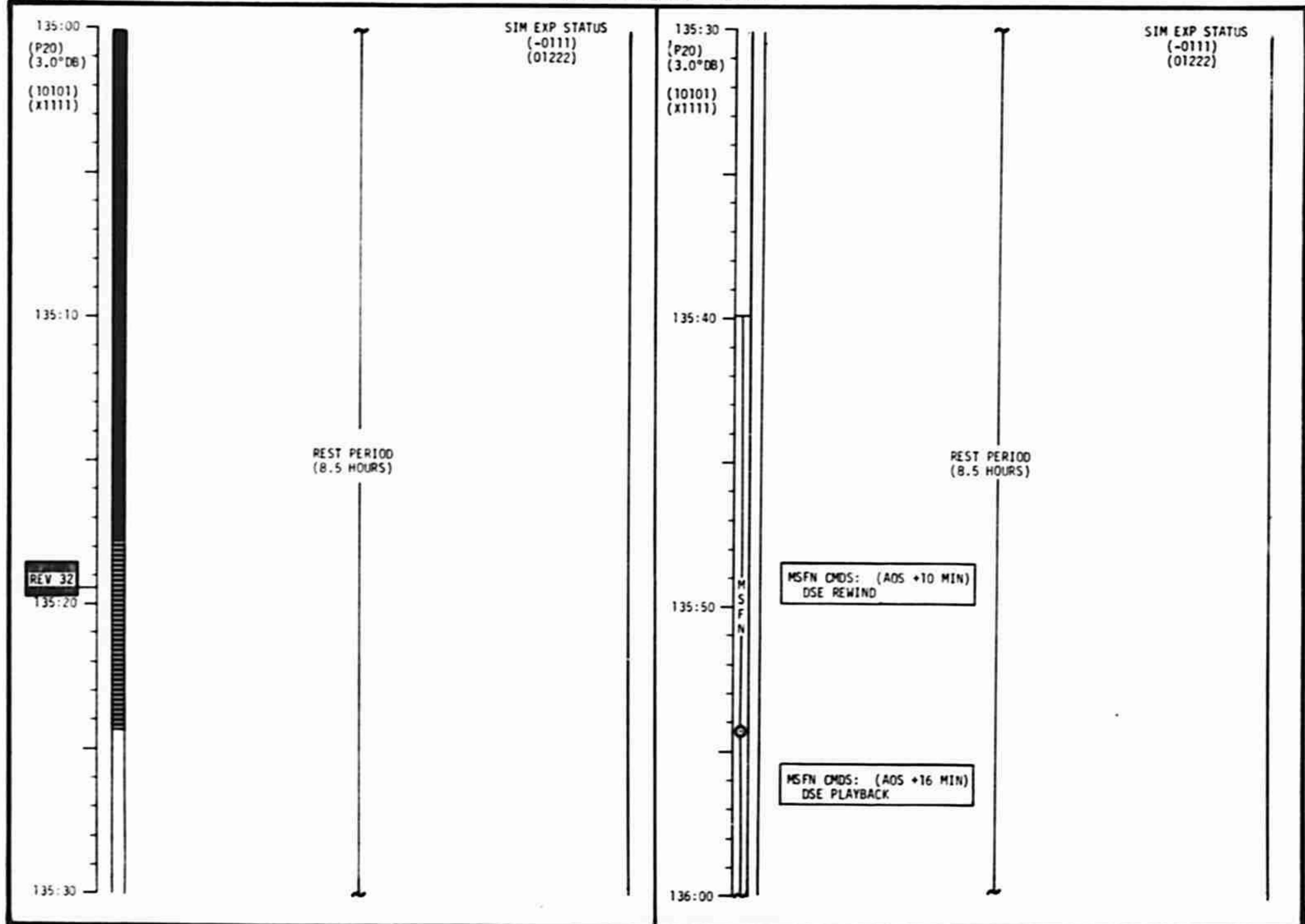


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	135:00 - 136:00	6/31-32	3-186

FLIGHT PLANNING BRANCH

0254 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN

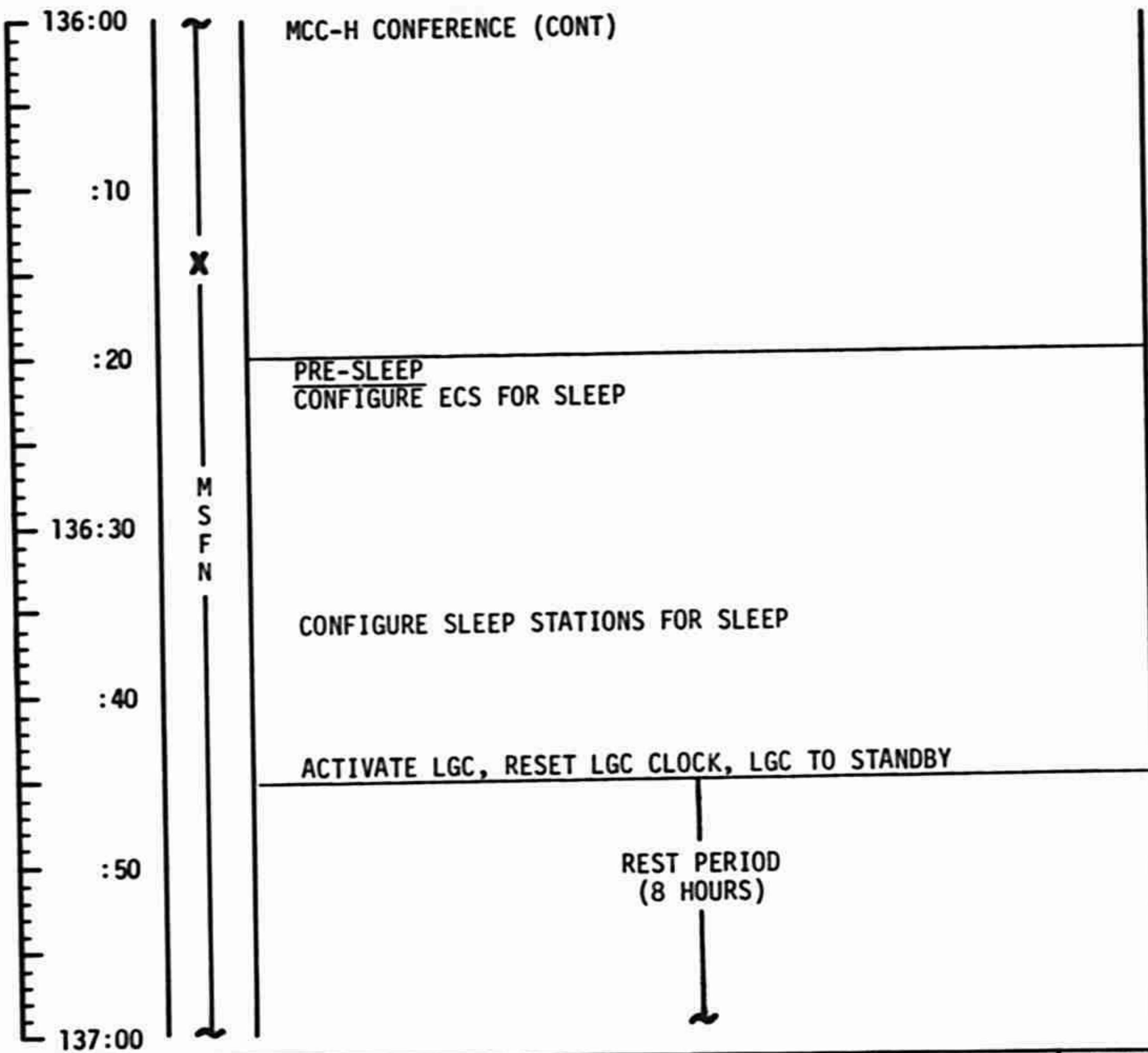
MCC-H

0354 CST

CDR

LMP

NOTES

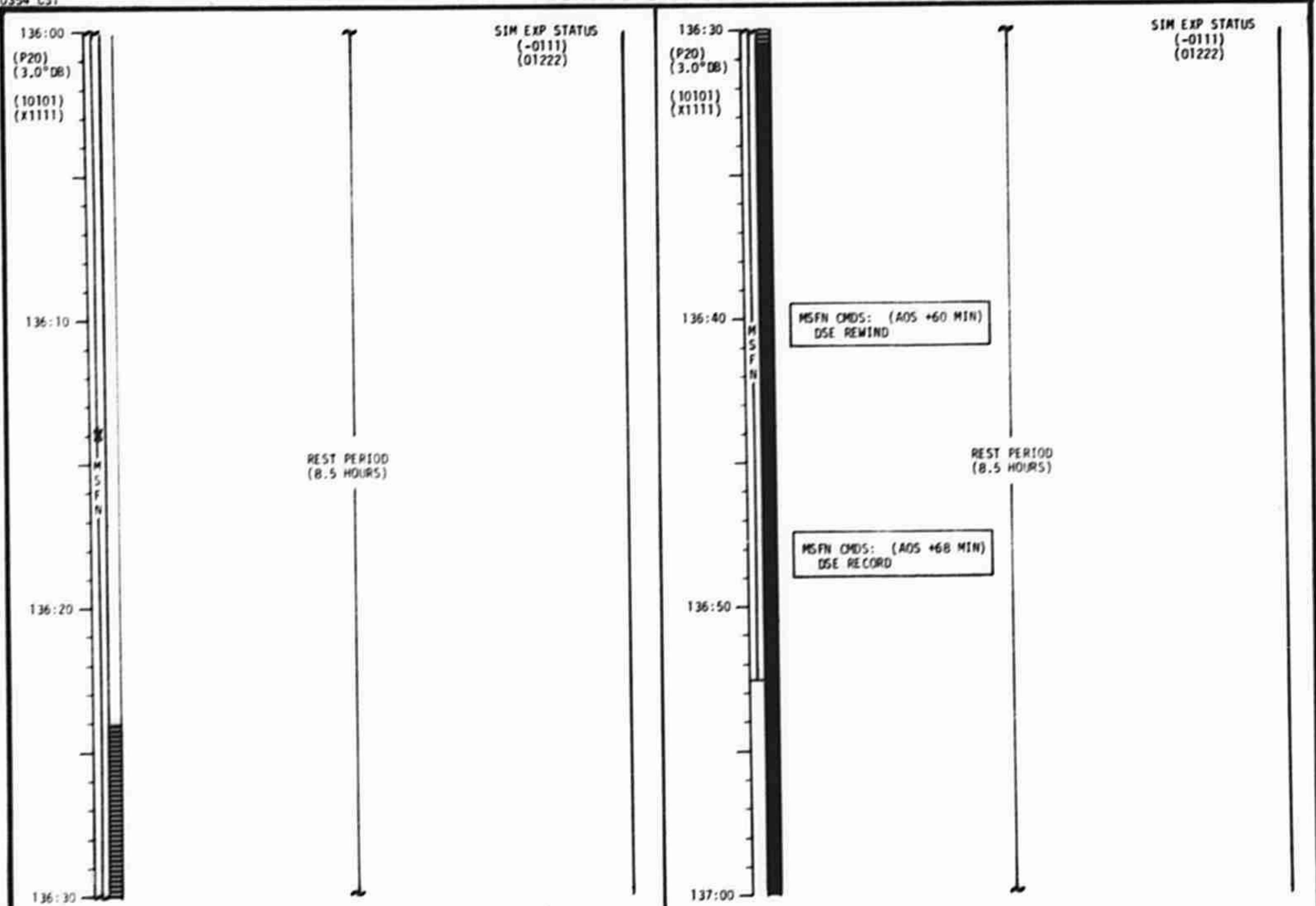


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	136:00 - 137:00	6/32	3-188

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0354 CST

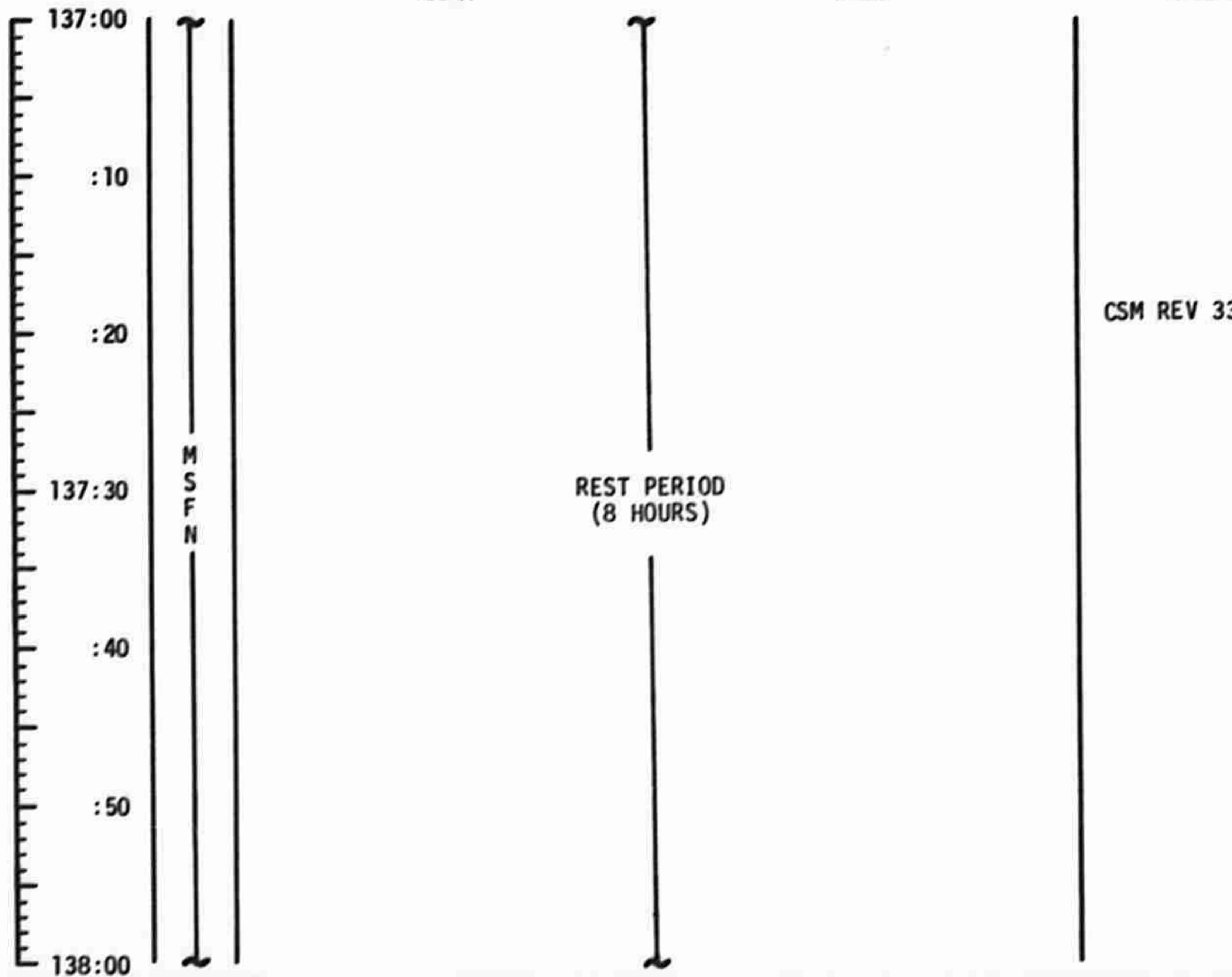


MCC-H

0454 CST

LM FLIGHT PLAN

CDR LMP NOTES

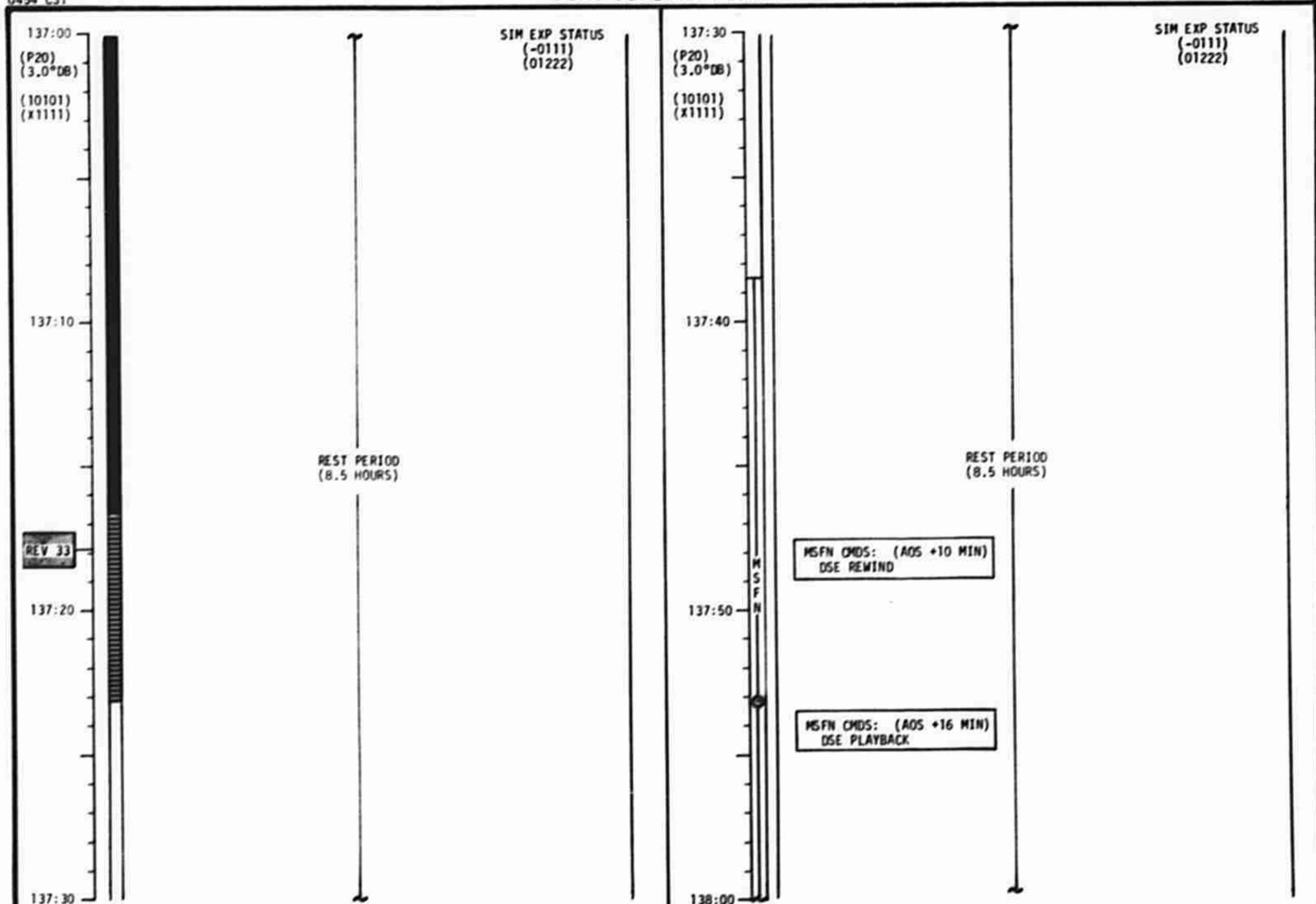


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	137:00 - 138:00	6/32-33	3-190

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0454 CST



MCC-H

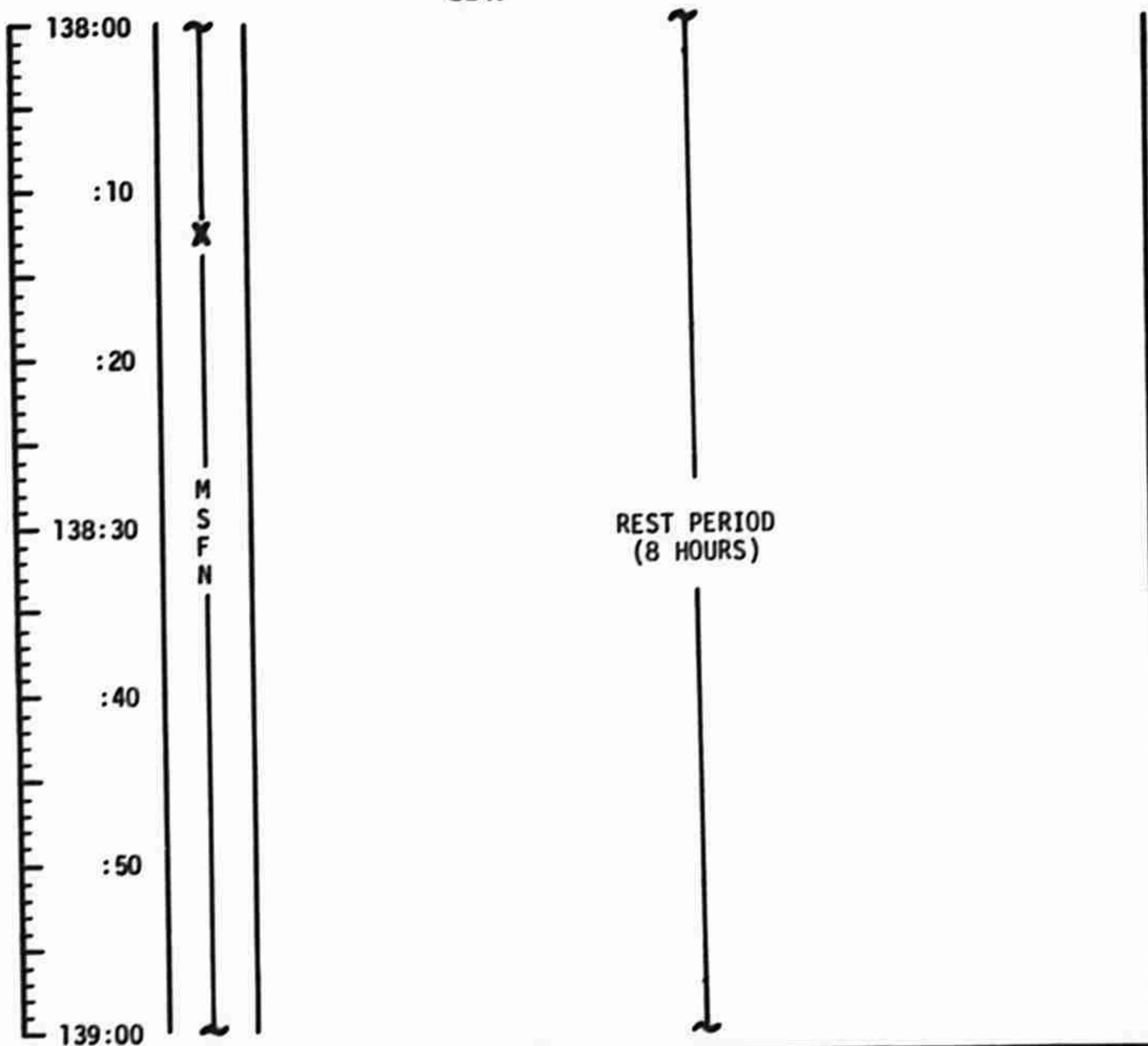
0554 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

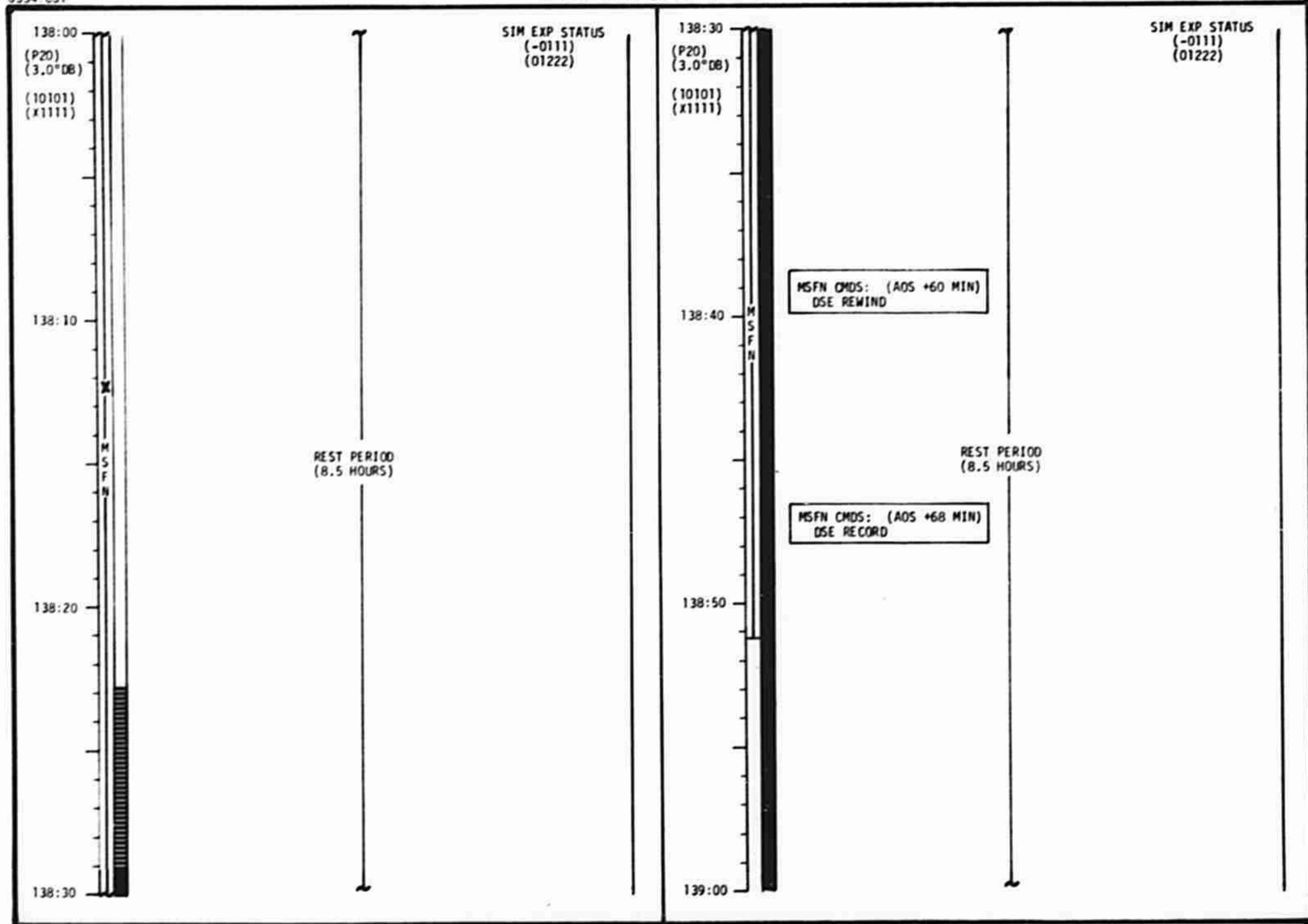


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	138:00 - 139:00	6/33	3-192

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0554 CST



MCC-H

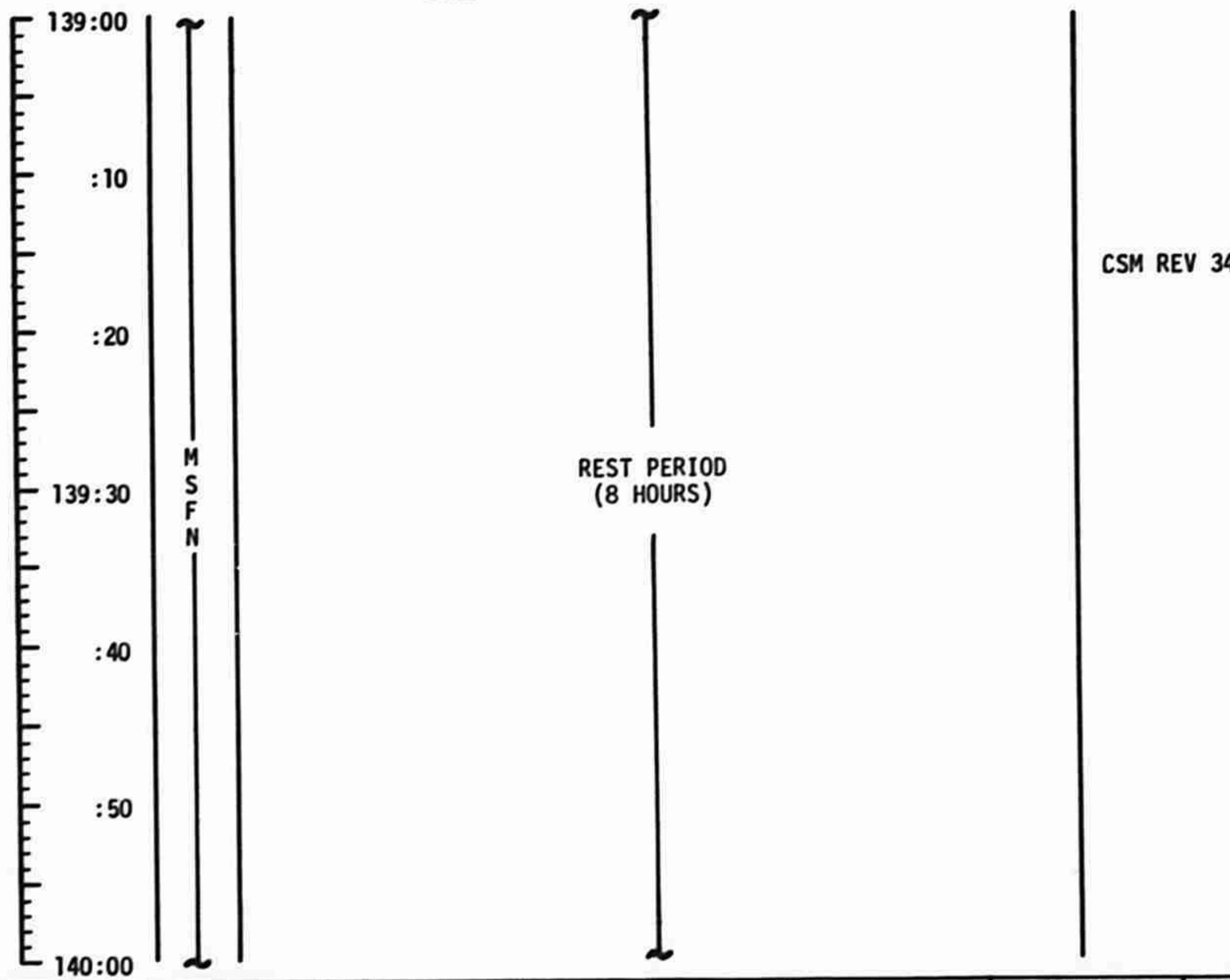
0654 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

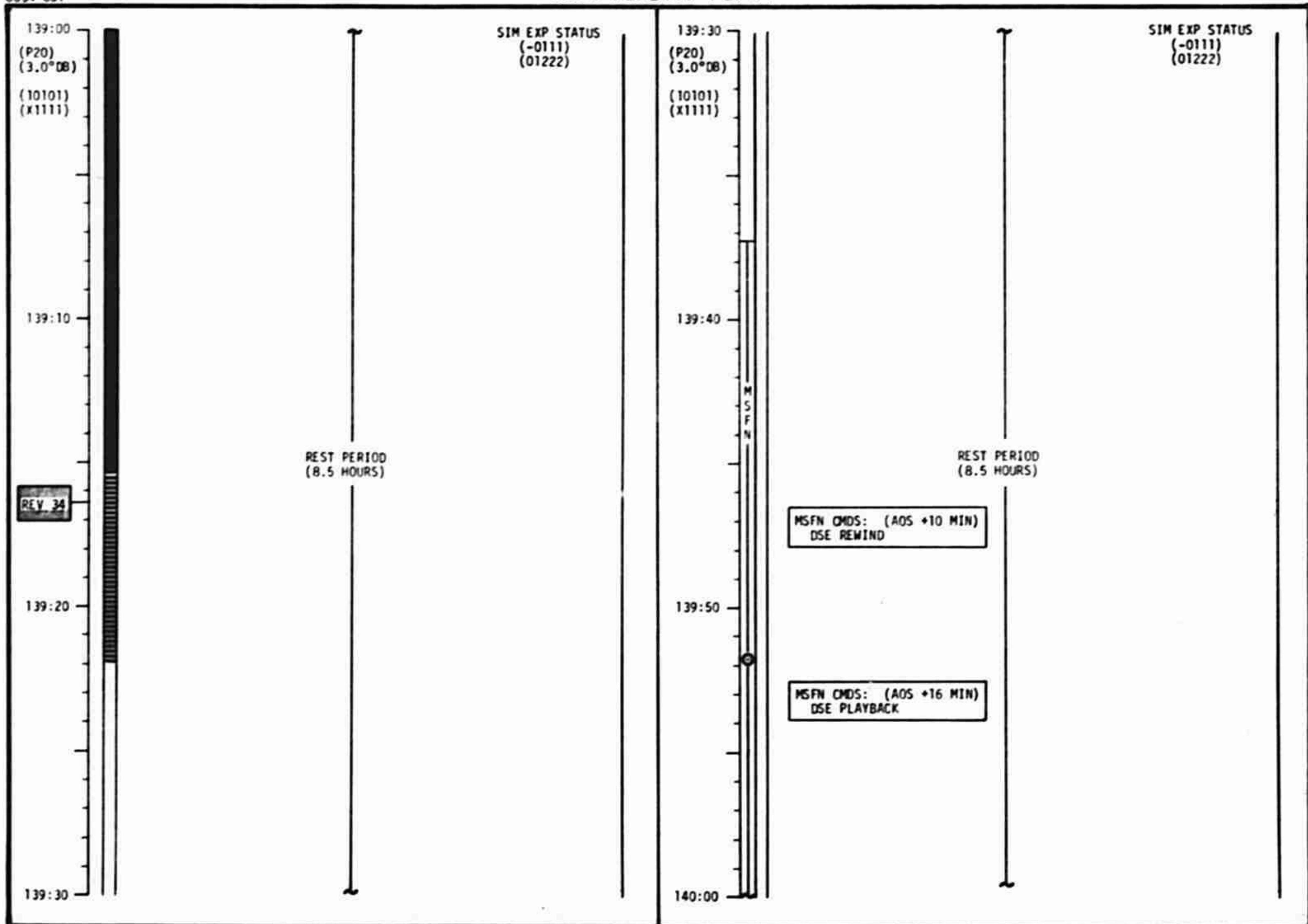


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	139:00 - 140:00	6/33-34	3-194

FLIGHT PLANNING BRANCH

0654 CST

CSM FLIGHT PLAN



MCC-H

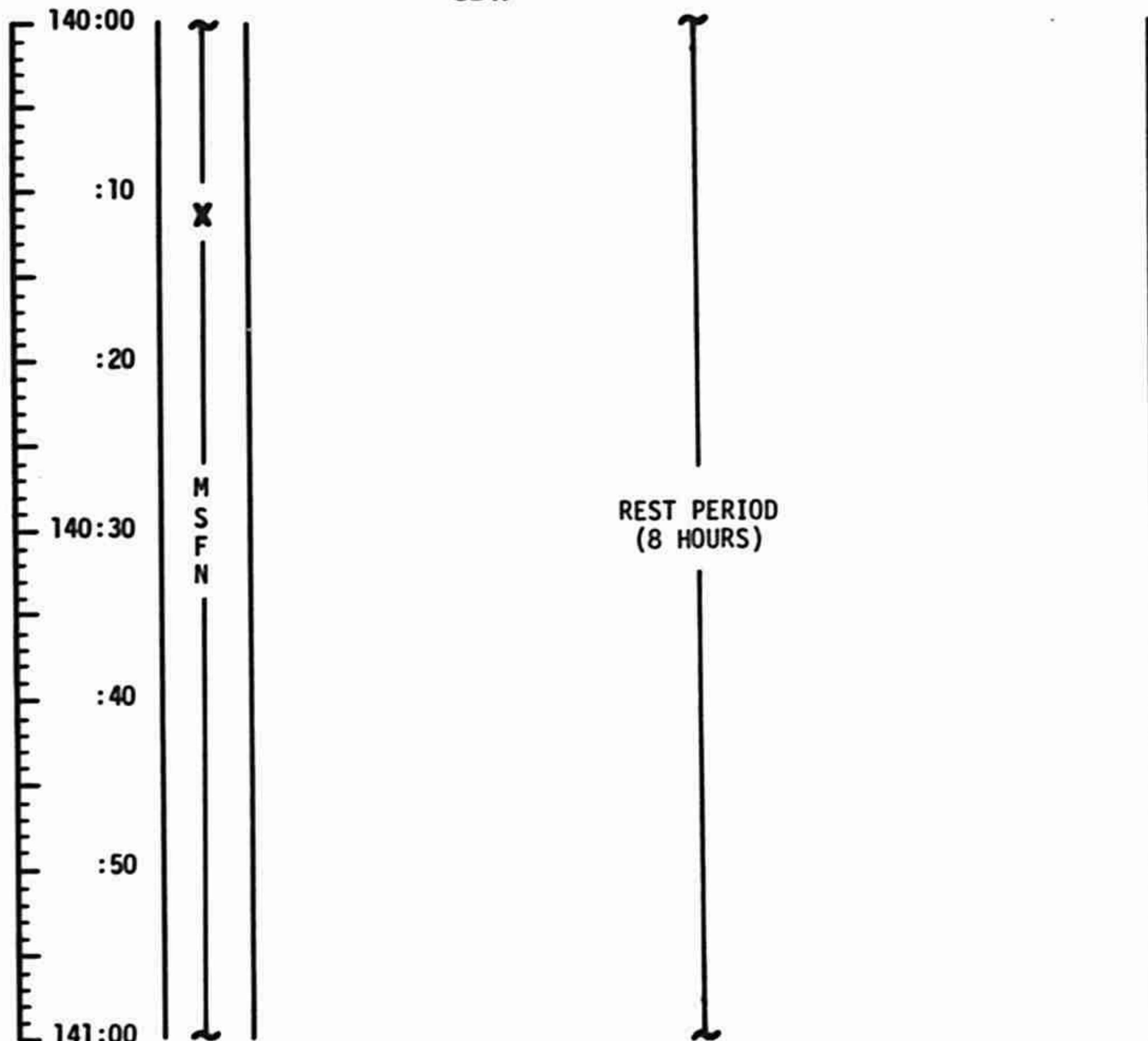
0754 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



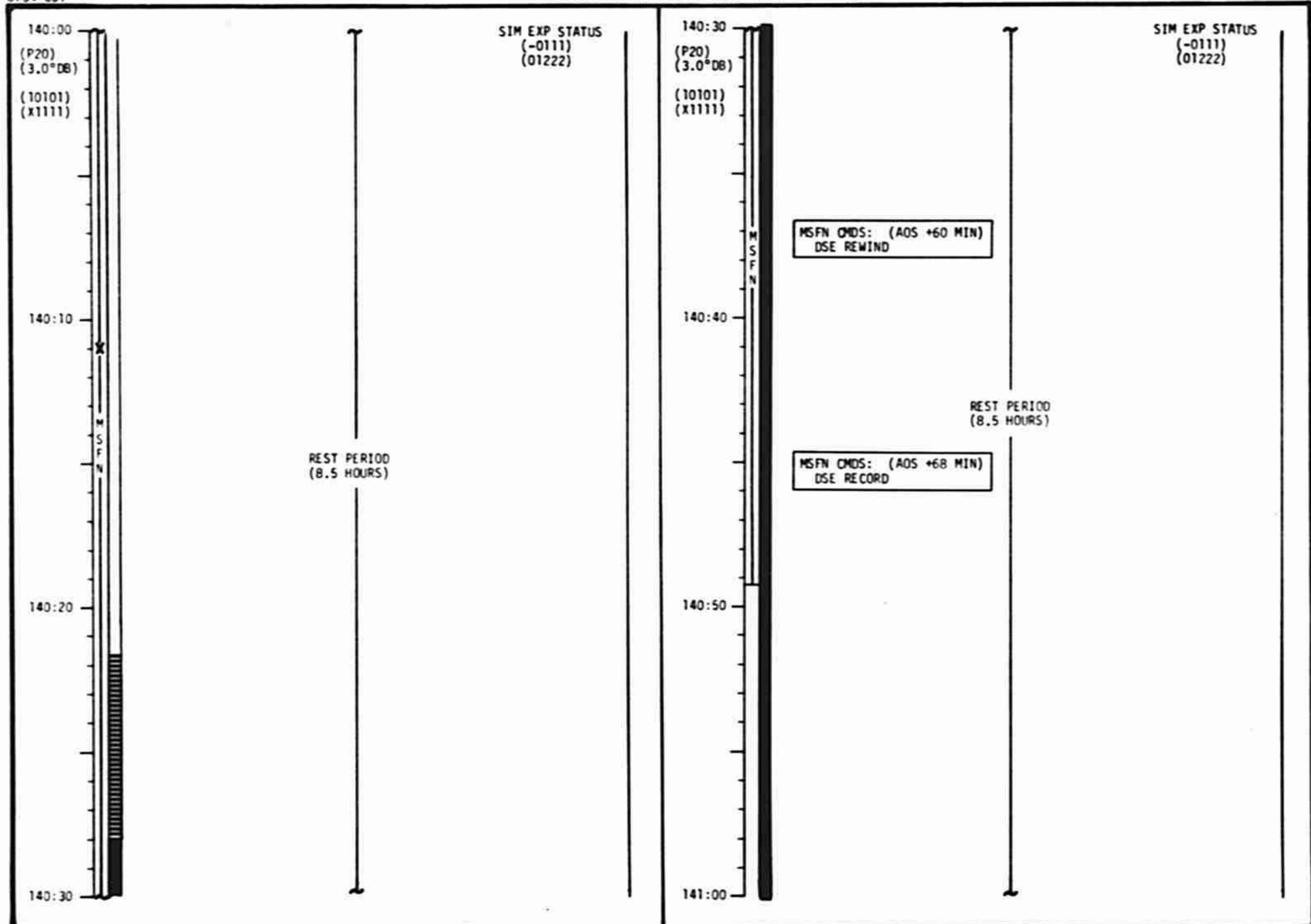
REST PERIOD
(8 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	140:00 - 141:00	6/34	3-196

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0754 CST



LM FLIGHT PLAN

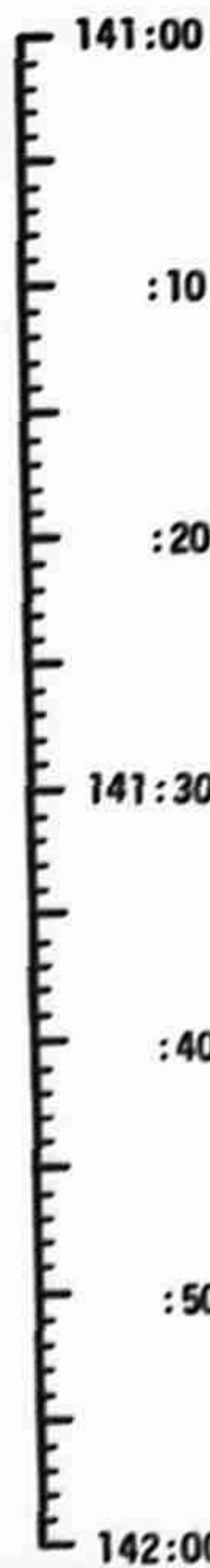
MCC-H

0854 CST

CDR

LMP

NOTES

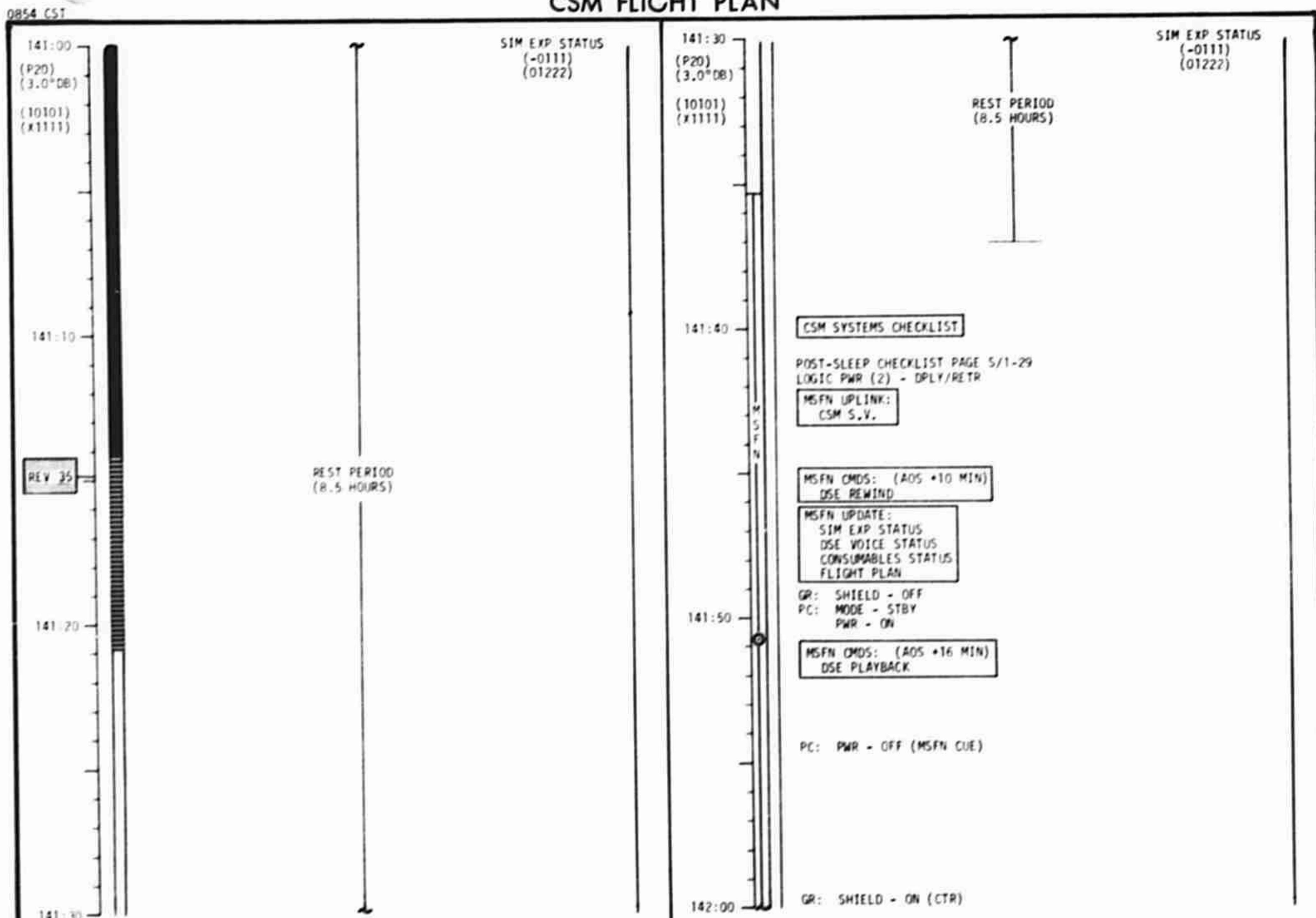
REST PERIOD
(8 HOURS)

CSM REV 35

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	141:00 - 142:00	6/34-35	3-198

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MCC-H

0954 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

142:00

:10

MSFN

:20

142:30

:40

:50

143:00

REST PERIOD
(8 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	142:00 - 143:00	6/35	3-200

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0954 CST

142:00
 CHARGE BATTERY A
 (P20)
 (3.0°DB)

(10101)
 (X1111)

(10101)
 CMC MODE - FREE
 POO
 CMC MODE - AUTO

CSM EXP/EVA CHECKLIST

GEGENSCHEIN PASS #1, PAGE X/2-1

MAG (ZZ)

V49 MNVR TO ANTI-SOLAR PT ATT (142:25)
 (167,257,356) HGA P -53, Y 218

MNVR TIME ~ 14 min 50 sec

**NOTE: DO NOT START PHOTO SEQUENCE
 UNTIL 142:30**

SIM EXP STATUS
 (-0111)
 (01222)

142:30
 (10101)
 (X1111)

GEGENSCHEIN PASS #1 (ANTI-SOLAR PT)

SIM EXP STATUS
 (*0111)
 (01222)

142:40

M5FN CMDS: (AOS +66 MIN)
 DSE REWIND

V49 MNVR TO MIDWAY PT ATT (142:49)
 (167,267,358)

MNVR TIME ~ 1min 00 sec

M5FN CUB:
 CONFIG DSE AT PROPER TIME

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

142:50

GEGENSCHEIN PASS #1 (MIDWAY PT)

143:00

V49 MNVR TO MOULTON PT ATT (143:03)
 (167,276,359)

**MNVR TIME ~
 1min 20 sec**

142:20

142:30

M
 S
 F
 N

M
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 F
 N

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M
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MCC-H

LM FLIGHT PLAN

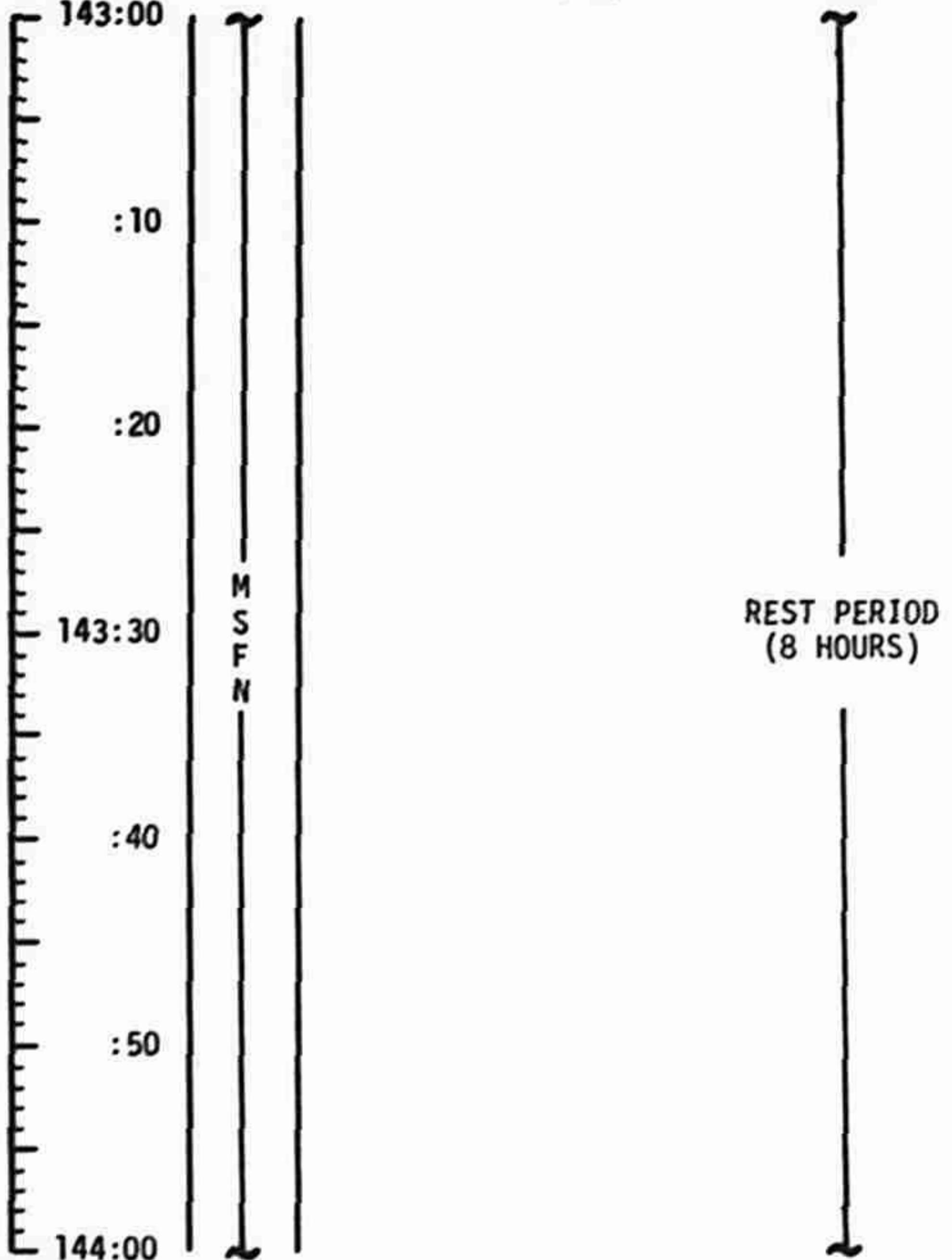
CDR

LMP

NOTES

1054 CST

143:00



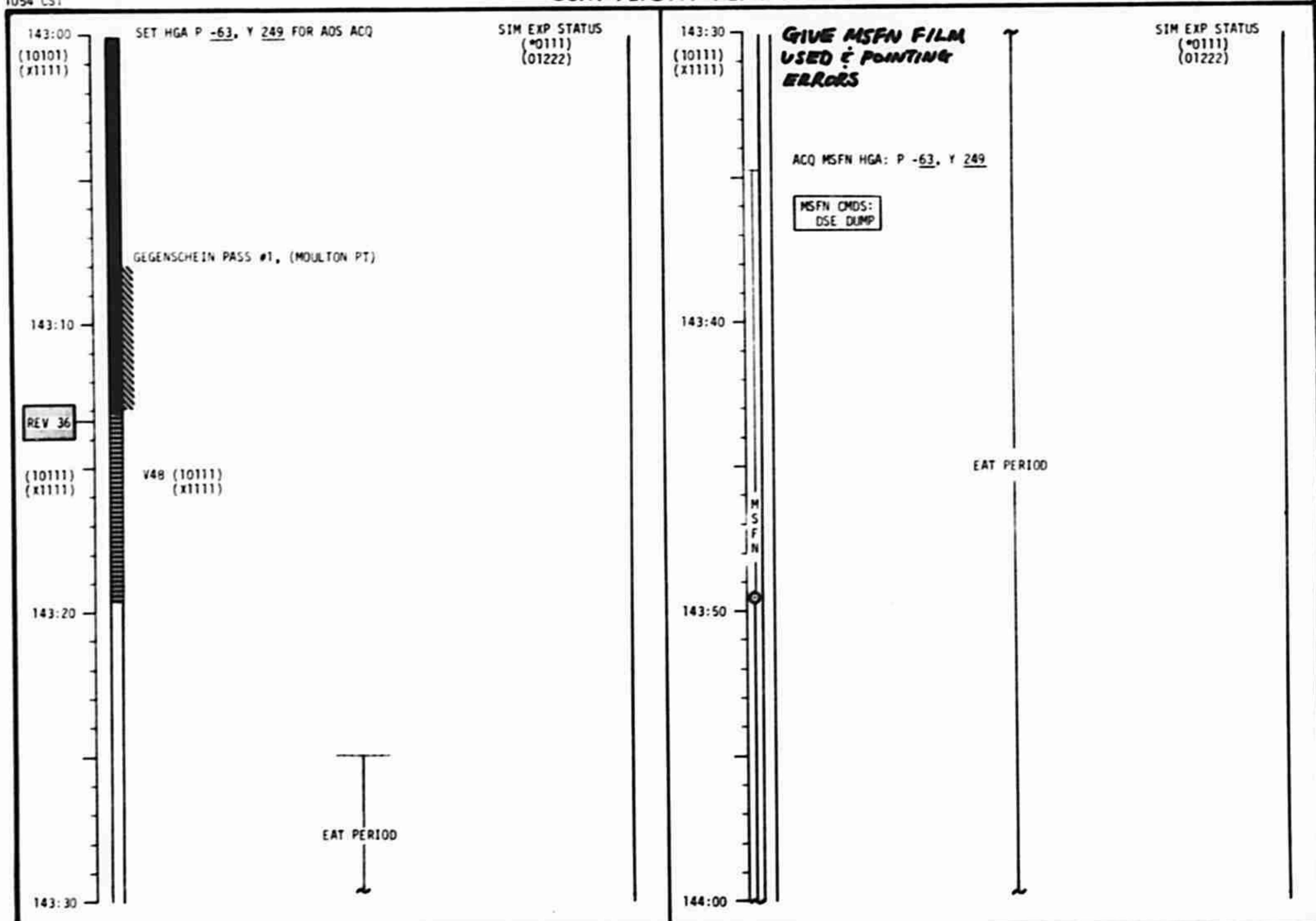
CSM REV 36

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	143:00 - 144:00	6/35-36	3-202

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1054 CST



LM FLIGHT PLAN

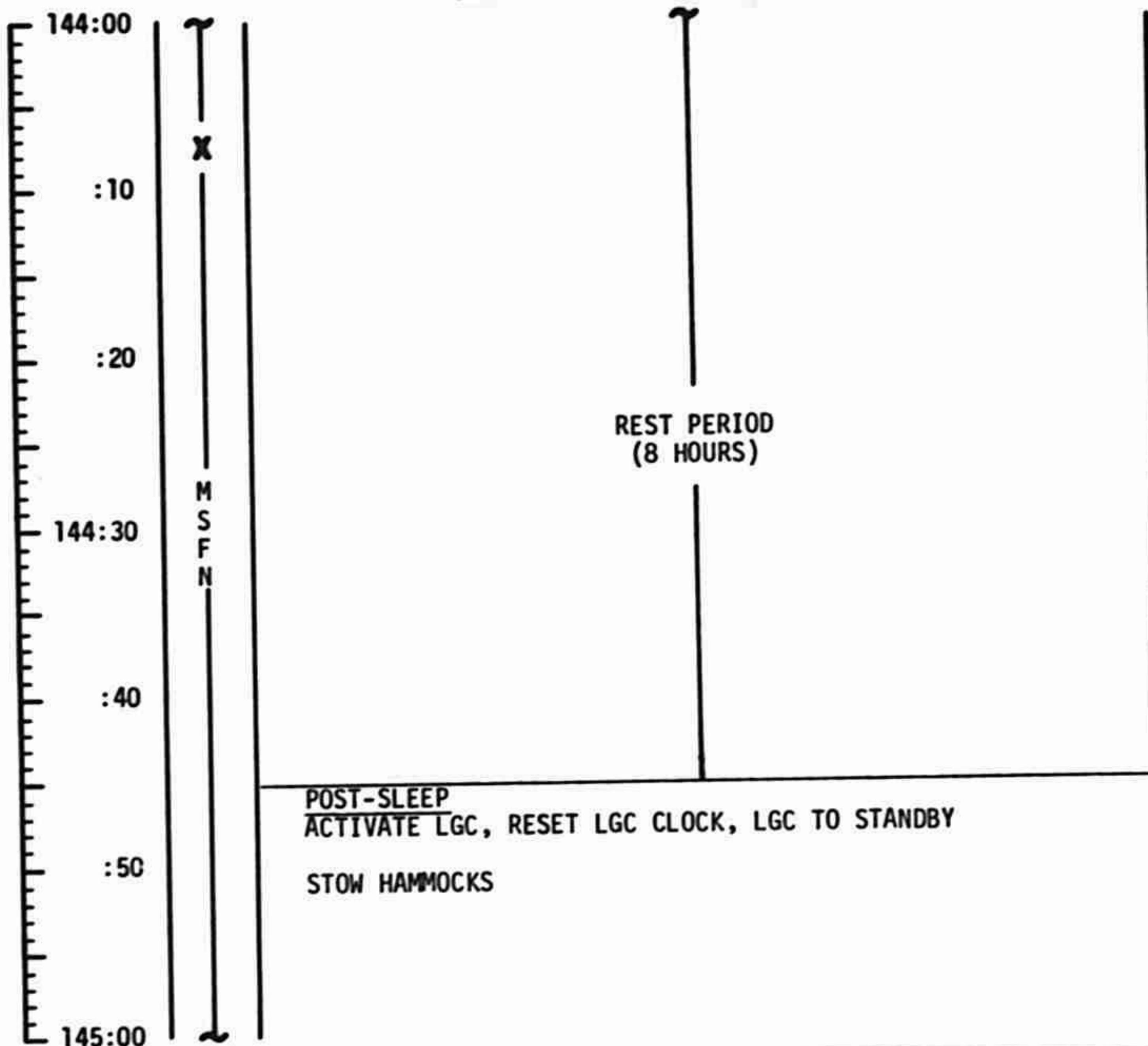
MCC-H

1154 CST

CDR

LMP

NOTES

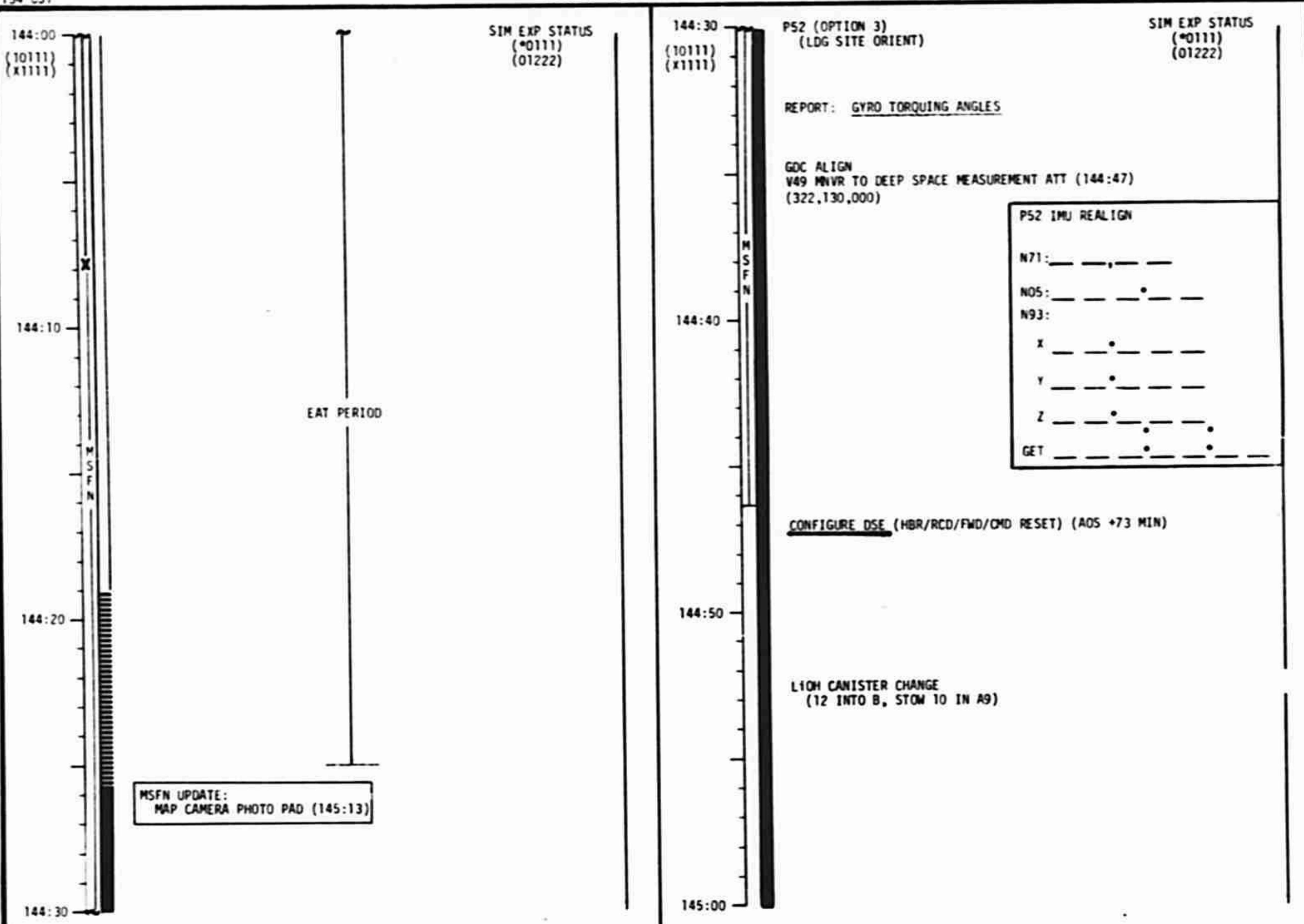


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	144:00 - 145:00	6-7/36	3-204

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1154 CST



LM FLIGHT PLAN

MCC-H

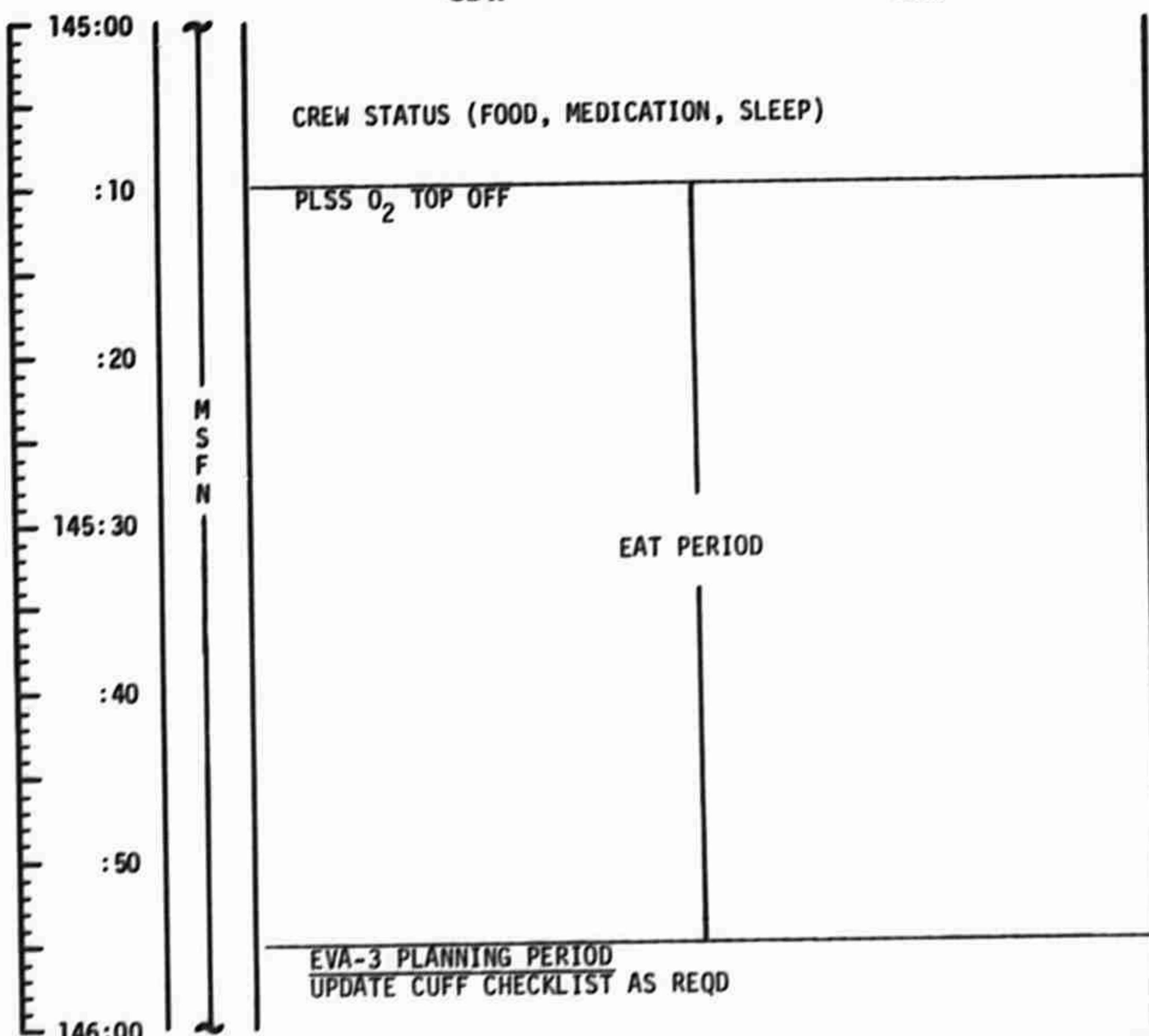
1254 CST

CDR

LMP

NOTES

UPDATE TO LM
TIME OF LIFT-OFF
FOR REV 37-43



CSM REV 37

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	145:00 - 146:00	7/36-37	3-206

FLIGHT PLANNING BRANCH

1254 CST

CSM FLIGHT PLAN

145:00 (10101) (x1111)	CYCLE CMC MODE - FREE/AUTO V48 (10101) (x1111) P20 OPT 5 (40°N OBLIQUE PHOTO ATT)(145:18) N78 (+090.00) (+012.25) (+180.00) N79 (+000.50) (102.000/081.000) SET OMNI <u>D</u> FOR AOS ACQ	SIM EXP STATUS (*0111) (01222)	145:30 (P20) (0.5°DB) (10101) (x1111)	SIM EXP STATUS (*1111) (04222)
145:10 REV 37	MC/LA COVER - OPEN MC - EXTD MAP CAMERA PHOTO PAD T-START: ____ : ____ : ____ T-STOP: ____ : ____ : ____ (159.9°E TO 20.7°W)		145:40	ACQ MSFN OMNI <u>D</u> ORBITAL SCIENCE PHOTOS SAENGER (P10-B5) CMS (f11.1/250,-) 7 FR Rooster Tail, Convergent STEREO RECORD FR # _____ ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW
145:20 IMAGE MTN - ON MC - ON (T START) IMAGE MTN-INCR (BP +3 STEPS)/ON			145:50 MSFN CMDS: (~AOS +11 MIN) DSE (STOP/REWIND) CUE: HGA AUTO	PC: MODE - STBY PWR - ON
145:30 CONFIGURE CAMERA: (ORBITAL SCIENCE) CMS/EL/250/CEX-IVL (f11.1/250,-) 7 FR MAG (PP) ____, FR # _____			146:00 PC: PWR - OFF (MSFN CUE) MSFN CMDS: (AOS +18 MIN) DSE PLAYBACK	PREPARE FOR ORBITAL SCIENCE VISUALS

MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

1354 CST

146:00

T

REPACK ETB FOR EVA-3

:10

X

UNSTOW EVA-3 PREP & POST CARD

DON SUITS

BIOMED - OFF

:20

LMP, THEN CDR CLEAN & LUB PGA'S, FILL DRINK
BAG, DOFF ICG, DON PGA
CONNECT HOSES AND VERIFY COMM

146:30

MSFN

:40

:50

147:00

BIOMED - RIGHT
BATS 1,2 & LUNAR BAT (CDR)-
ON
BATS 3,4 & LUNAR BAT (LMP)-
OFF/RESET

-1:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	146:00 - 147:00	7/37	3-208

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

146:00 (P20) (0.5°DB) (10101) (x1111)	SIM EXP STATUS (*1111) (04222)	146:30 (P20) (3.0°DB) (10101) (x1111)	SIM EXP STATUS (*1111) (03222)
			CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM5/EL/250/VH&W (f5.6,1/125,-) 6 FR MAG (55) ___, FR # ____
			SET TIMER FOR END OF EXERCISE PERIOD
			MSFN CMDS: (AOS +66 MIN) DSE REWIND
146:10 ALPHONSUS (V10-B11) CMS GR: SHIELD - OFF ME - OFF (T STOP) WAIT 30 SEC ME - STBY IMAGE MTN - OFF (P20) (3.0°DB)	146:40	146:50	<u>CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)</u> (AOS +73 MIN) CREW EXERCISE PERIOD
GR: GAINSTEP - ON (UP) 4 STEPS(STEP 7)/SHIELD - ON (CTR) LA - ON			
146:30		147:00	

LM FLIGHT PLAN

MCC-H

1454 CST

CDR

LMP

NOTES

147:00

	PREP FOR EVA-3 STOW ALL LOOSE ITEMS NOT REQUIRED FOR EVA	-1:20
:10		CSM REV 38
:20	EQUIPMENT PREP FOR EVA-3 CHECKOUT OPS APPLY ANTI FOG TO HELMETS STOW HELMET BAGS STOW ETB UNLOCK FWD HATCH HANDLE	-1:10
147:30	PLSS DONNING CONFIGURE LMP PLSS ATTACH OPS TO PLSS CONNECT RCU	-1:00
:40	CDR REPEAT PLSS DONNING	-0:50
:50	PLSS COMM CHECK VERIFY POWERDOWN CB CONFIGURATION CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON COMM & TM CHECK, REPORT: PLSS O ₂ QUANTITY FINAL SYSTEMS PREP	-0:40
148:00		-0:30

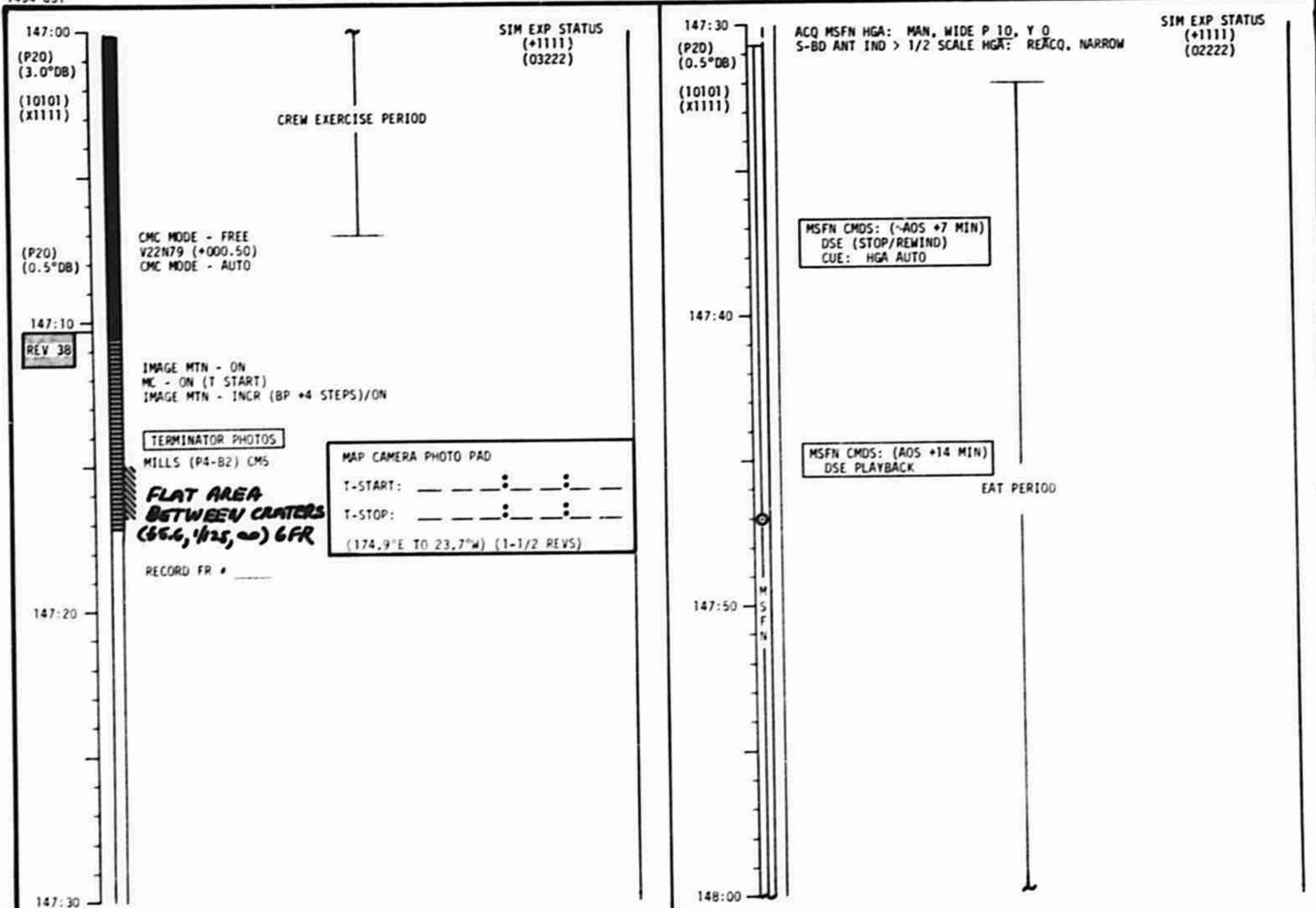
M
S
F
N

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	147:00 - 148:00	7/37-38	3-210

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1454 CST



LM FLIGHT PLAN

MCC-H

1554 CST

CDR

LMP

NOTES

	OPS CONNECT LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA	-0:20 GDS 210 AOS	
:10	HELMET/GLOVE DONNING PLSS FANS - ON DON HELMETS & LEVA'S VERIFY EVA CB CONFIGURATION DON GLOVES PRESS REGS A&B - EGRESS	-0:10	
:20	PRESSURE INTEGRITY CHECK		
	CABIN DEPRESS START WATCH AT 3.5 PSIA	0:00/START EVA-3	
148:30	FINAL PREP FOR EVA PARTIALLY OPEN FWD HATCH FINAL PREP FOR EGRESS OPEN HATCH	+0:10	
:40	EGRESS LOWER ETB TO SURFACE	ASSIST CDR VERIFY EVA CB CONFIGURATION	
	RESET FAR UV CAMERA	EGRESS CLOSE HATCH	+0:20
	TV POWER ON	UNPACK ETB	NOTE: TV WILL NOT BE USED WHILE LRV IS IN MOTION
:50	PLSS LOADUP	PLSS LOADUP	+0:30
149:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	148:00 - 149:00	7/38	3-212

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1554 CST

148:00
(P20)
(0.5°DB)(10101)
(x1111)

IMAGE MTN - INCR (BP)/ON

SIM EXP STATUS
{+1111}
(02222)148:30
(P20)
(0.5°DB)(10101)
(x1111)M
S
F
NSIM EXP STATUS
{+1121}
(02222)

148:10

M
S
F
N

EAT PERIOD

148:20

GR: SHIELD - OFF

148:40

MSFN CMDS: (AOS +66 MIN)
DSE REWINDCONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

148:30

GR: GAINSTEP - ON (UP) 4 STEPS(STEP 3)/SHIELD - ON (CTR)
MS- RETR TO 0.4 FEET (2 MIN 01 SEC)
Obtain Sunrise Solar Corona Tape &
check Batteries

148:50

CSM EXP/EVA CHECKLIST

WATCH FOR PAN CAMERA AT
COMPLETION OF THIS PASSSOLAR CORONA (SUNRISE), PAGE x/2-11
MAG (HH)
MAG (SS)

149:00

LM FLIGHT PLAN

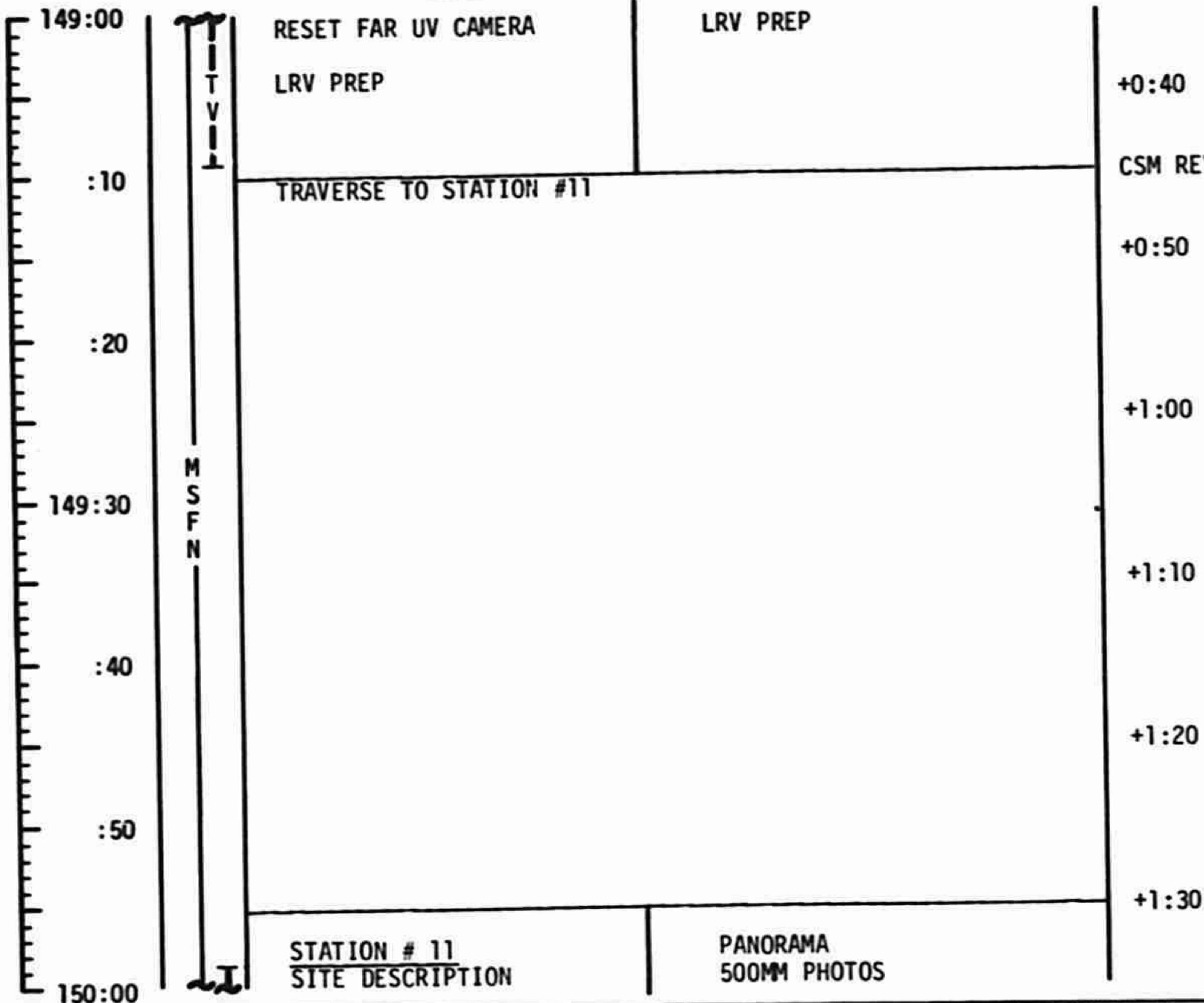
MCC-H

1654 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	149:00 - 150:00	7/38-39	3-214

FLIGHT PLANNING BRANCH

1654 CST

CSM FLIGHT PLAN

149:00 (P20) (0.5°DB) (10101) (X11111)	SIM EXP STATUS +----+(+1/2) (02222)	149:30 (P20) (0.5°DB) (10101) (X11111)	SIM EXP STATUS (+1221) (22222)
SOLAR CORONA (SUNRISE)			
	SOLAR CORONA PHOTO PAD (SR)		
	T-START: _____ : _____ : _____ SUNRISE -7 MIN		
REV 39			
149:10	GR - RETR TO 7.5 FEET (2 MIN 26 SEC) IMAGE MTN - INCR (BP +4 STEPS)/ON		
	PC: STBY STEREO PWR		
149:20	PC - OPR (T START) <i>Sunrise Solar Corona Cleanup</i> <i>Check Surface Features with Polaroid Filter</i>		
	PAN CAMERA PHOTO PAD		
	T-START: _____ : _____ : _____		
	T-STOP: _____ : _____ : _____ (145.2°E TO 95.2°E)		
149:30	ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW	149:40	
		MSFN UPDATE: PAN CAMERA PHOTO PAD (150:10) UV PHOTO PAD (151:23) LOPC-1 MNVR PAD (151:45) TEI 53 PAD	
		MSFN CMDS: (AOS +14 MIN) (ISE PLAYBACK)	
150:00	M S F N		

MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

1754 CST

150:00

:10

:20

150:30

:40

:50

151:00

SET UP FOR NEAR FIELD
POLARIMETRIC PHOTOSSAMPLING FOR NEAR FIELD
POLARIMETRIC PHOTOS

SAMPLING

PANORAMA

TRAVERSE TO STATION #12

STATION #12
SITE DESCRIPTION

RAKE/SOIL SAMPLE

FAR FIELD POLARIMETRIC
PHOTOS #1NEAR FIELD POLARIMETRIC
PHOTOS

SAMPLING

FAR FIELD POLARIMETRIC
PHOTOS #2PANORAMA
500MM PHOTOS

RAKE/SOIL SAMPLE

+1:40

+1:50

+2:00

+2:10

+2:20

+2:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	150:00 - 151:00	7/39	3-216

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1754 CST

150:00 (P20) (0.5°DB) (10101) (X1111)	PC: STBY STEREO PWR (VERIFY) PC - OPR (T START) IMAGE MTN - INCR (BP)/ON	SIM EXP STATUS (*1221) (12222)	150:30 (10101) (X1111)	SIM EXP STATUS (*0000) (01214)
	PAN CAMERA PHOTO PAD T-START: _____ : _____ : _____ T-MONO: _____ : _____ : _____ T-STOP: _____ : _____ : _____ (18.0°E TO 22.7°W)			
150:10 Check Surface Features with Polaroid Filter ReD Mare by Hasselblad	PC - MONO (T STOP -2:00) PC - STBY (T STOP) MC - OFF (T STOP) WAIT 30 SEC MC - STBY IMAGE MTN - OFF PC - OFF (MSFN CUE) MS: ION SOURCE - OFF EXP - STBY CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM MC - RETR LA - OFF XR - STBY GP - RETR MSFN UPLINK: CSM S.V. LOPC-1 TGT LOAD DESIRED ORIENT (LOPC-1)		150:40	REPORT: GYRO TORQUING ANGLES P52 (OPTION 1) (LOPC-1 ORIENT) MSFN CMDS: (AOS +66 MIN) DSE REWIND GDC ALIGN
	MS - RETR MC/LA COVER - CLOSE AP/XR COVER - CLOSE POO, ENABLE ALL JETS V49 MNVR TO P52 ATT (150:32) (142,250,042) HGA P -14, Y 250 CONFIGURE FOR URINE DUMP			
150:20 (10101) (X1111)	TERMINATE WASTE WATER DUMP AT 10%		150:50	CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +73 MIN) O ₂ FUEL CELL PURGE WASTE WATER DUMP URINE DUMP
150:30			151:00	

LM FLIGHT PLAN

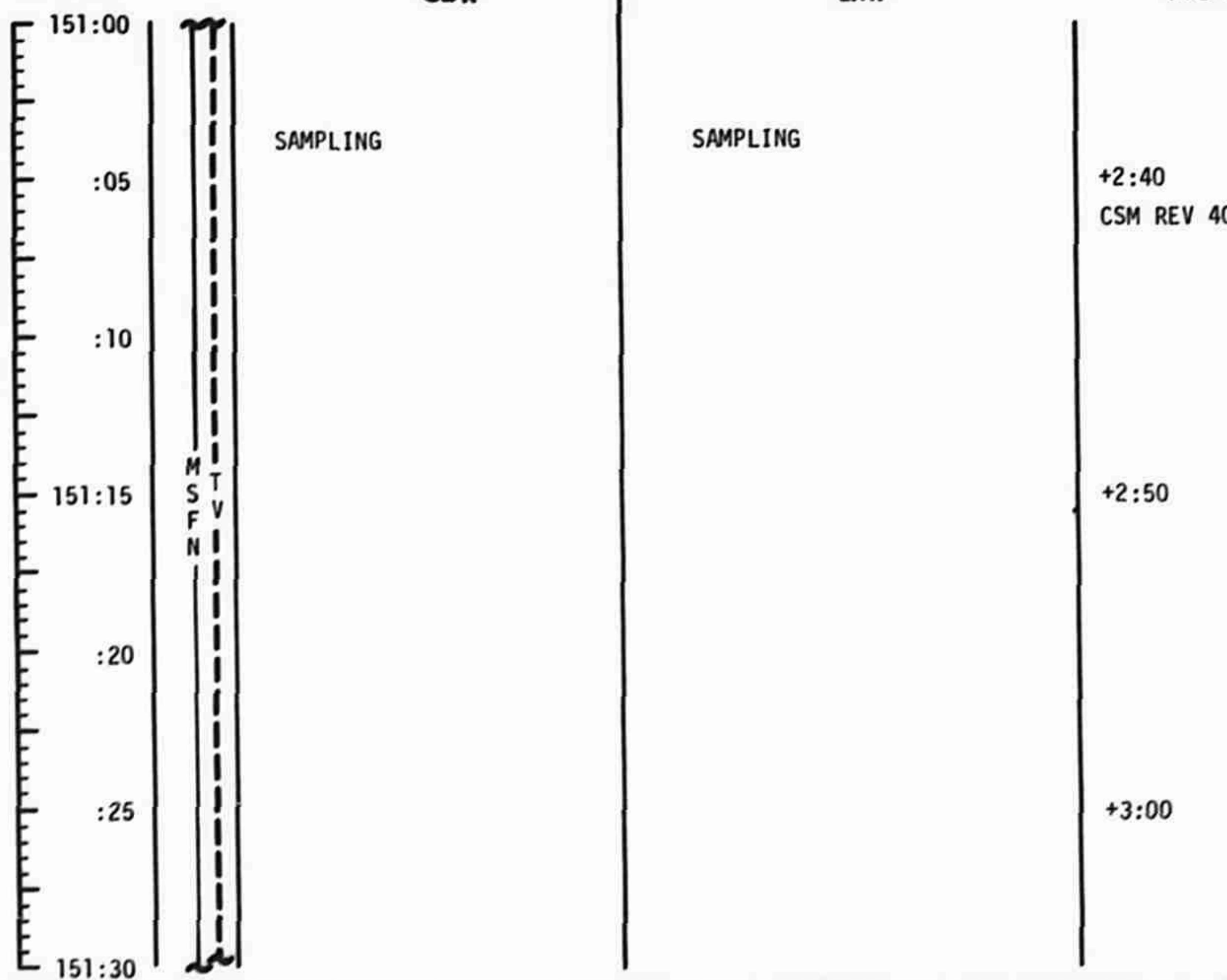
MCC-H

1854 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	151:00 - 151:30	7/39-40	3-218

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1854 CST

151:00
(10101)
(X1111)SIM EXP STATUS
(*0000)
(01214)

CSM EXP/EVA CHECKLIST

LUNAR HORIZON AND EARTH UV PHOTO, PAGE X/2-23
 MAG (OO)
 MAG (PP)
 V49 MNVR TO LUNAR HORIZON/EARTH PHOTO ATT (151:20)
 (189,000,341)

REV 40

151:10

151:20

151:30

UV PHOTO PAD

T-START: - - -
 (AOS) - - -

ACQ MSFN OMNI D
 LUNAR HORIZON AND EARTH UV PHOTO

LM FLIGHT PLAN

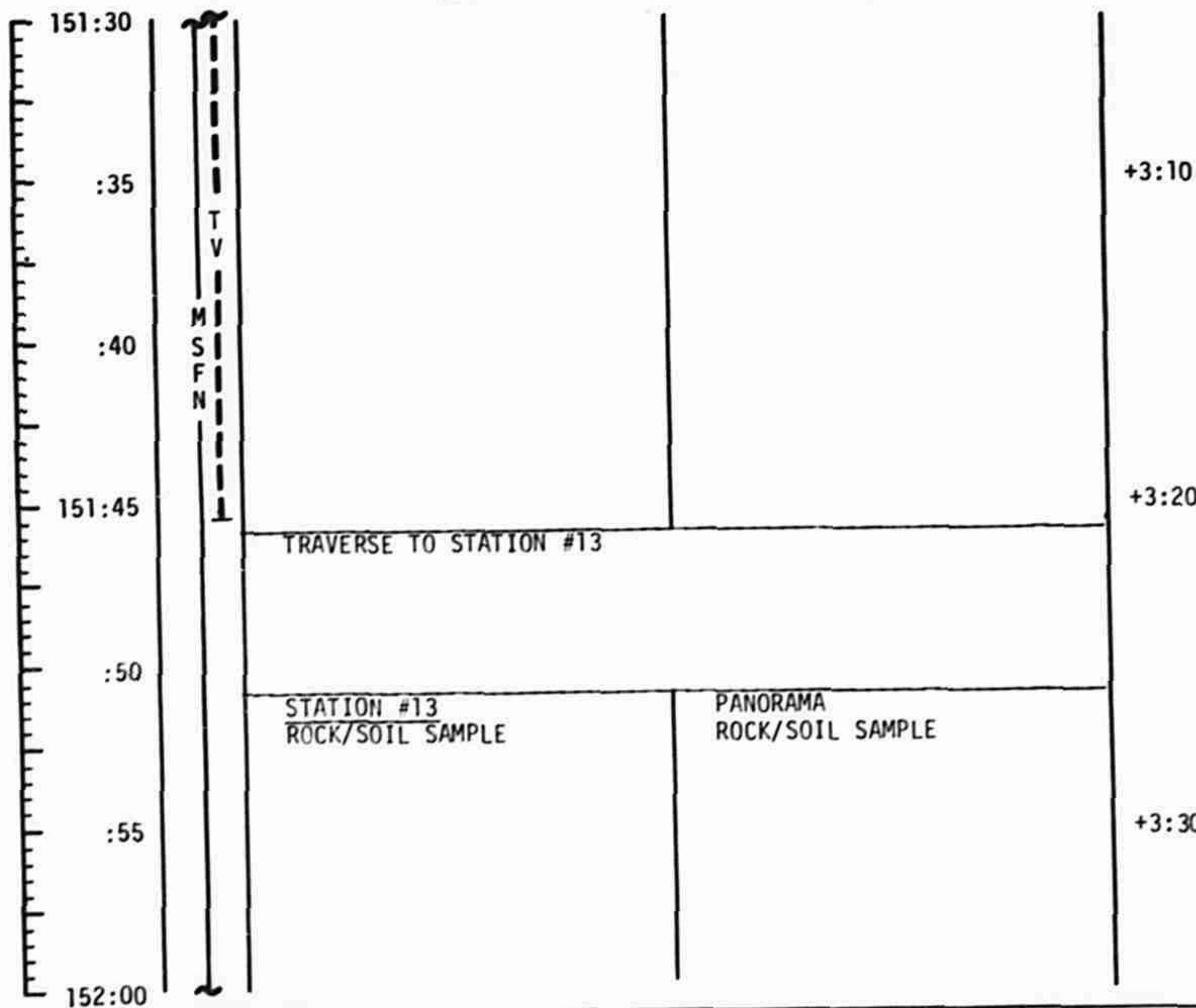
MCC-H

1924 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	151:30 - 152:00	7/40	3-220

FLIGHT PLANNING BRANCH

1924 CST

CSM FLIGHT PLAN

151:30
 (10101)
 (x1111)

SIM EXP STATUS
 (*0000)
 (01214)

P30 VERIFY LOPC-1 TIG AND ΔVs

151:40 V49 MNVR TO LOPC-1 BURN PAD ATT (151:57)
 HGA P -17, Y 285

MSFN CMDS:
 DSE DUMP

152:00

P30 MANEUVER

SET STARS	L	O	P	C	-	I	PURPOSE
	S	P	S	G	&	N	PROP/GUID
R ALIGN	+						WT N47
P ALIGN		0	0				P TRIM N48
Y ALIGN		0	0				Y TRIM
ULLAGE							HRS GETI
							MIN N33
							SEC
							ΔV X NB1
							ΔV Y
							ΔV Z
	X	X	X				R (000)
	X	X	X				P (000)
	X	X	X				Y (000)
	+						H A N44
							H P
	+						ΔVT
	X	X	X				BT
	X						ΔVC
	X	X	X	X			SXTS
	+				0		SFT
	+				0	0	TRN
	X	X	X				BSS
	X	X					SPA
	X	X	X				SXP

MCC-H

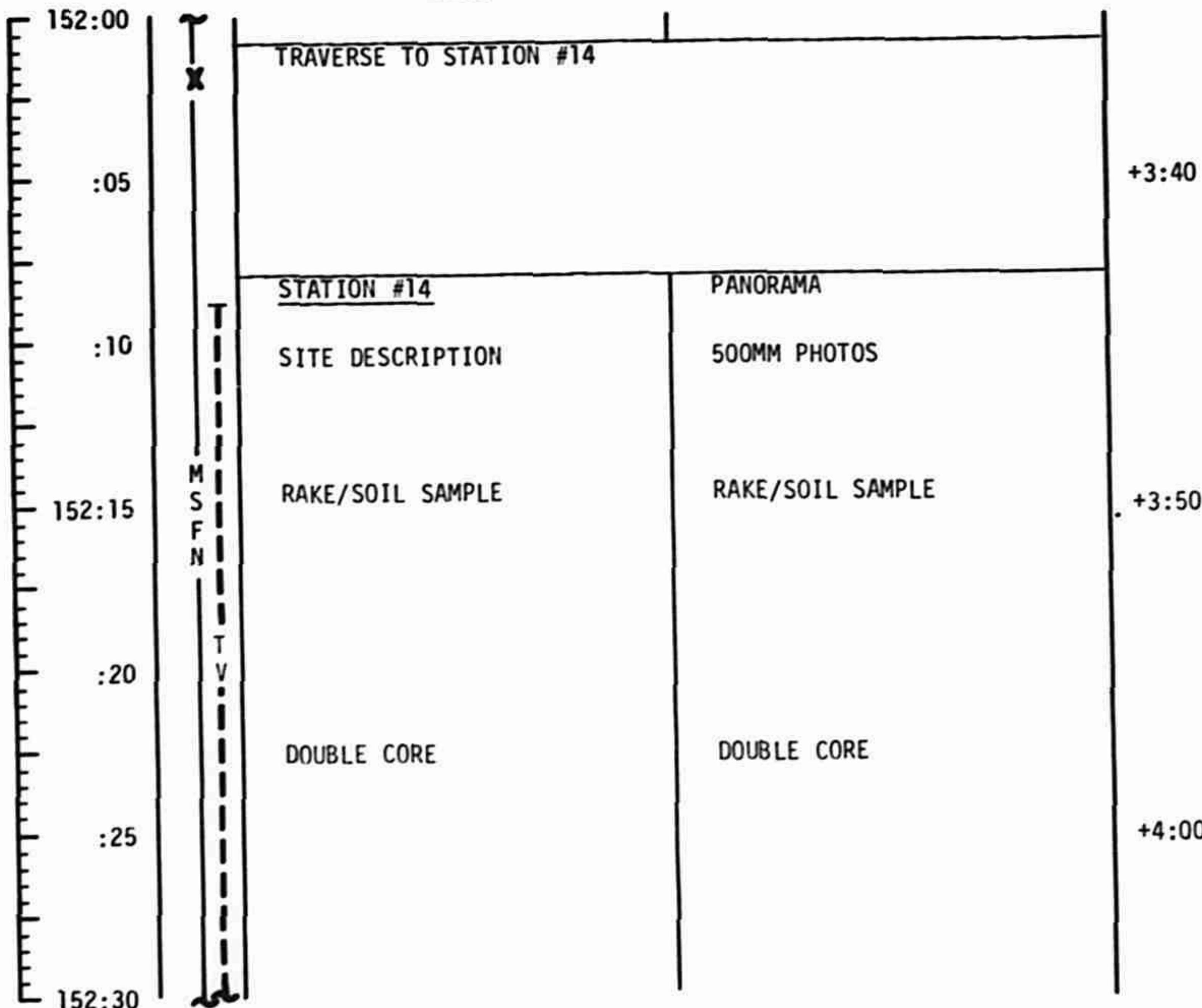
1954 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	152:00 - 152:30	7/40	3-222

FLIGHT PLANNING BRANCH

1954 CST

152:00
(10101)
(x1111)

SIM EXP STATUS
(•0000)
(01214)

PRE SPS BURN SIM PREP (CUE CARD)

SET DET COUNTING UP TO LOPC-1

152:10 — SECURE EQUIPMENT FOR LORE-1

(P40)
(0.5° ne)

P40 (TRIM)

SIX STAR CHECK

SINGLE BANK

MSFN UPDATE:
GO/NO-GO FOR LOPC-1

10P(-) (000,000,000)

FOO

TIG: 152:28:48.1
BT: 9.1 SEC
AVT: 158.7 FPS
ULLAGE: 2 JET, 17 SEC
ORBIT: 62.0 x 57.3

(10101)
(11111)

152:30

LOPC-1 BURN TABLE			
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	TRIM V_{sy} TO 0.2 FPS IF $-V_{sy}$ ROLL 90° CCW AND USE -Z THRUSTERS

MCC-H

LM FLIGHT PLAN

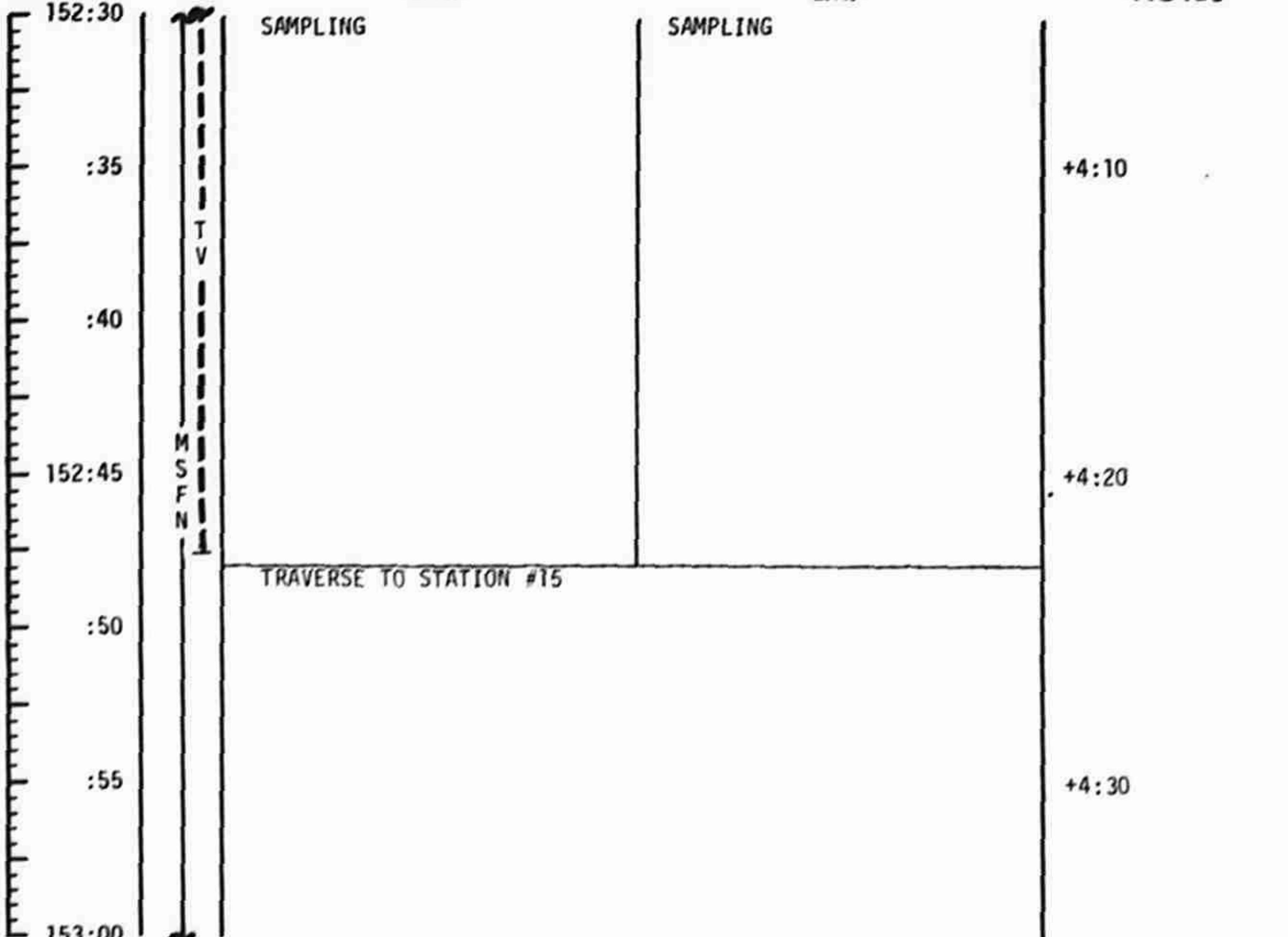
CDR

LMP

NOTES

2024 CST

152:30



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	152:30 - 153:00	7/40	3-224

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

152:30
 (10101)
 (X1111)

MSFN CMDS:
DSE DUMP
REPORT: BURN STATUS

SIM EXP STATUS
 (*0000)
 (31000)

M
 S
 F
 N

MSFN UPLINK:
DESIRED ORIENT (LIFT-OFF)

INHIBIT ALL JETS EXCEPT - A1 & C2 OR D1 & B2, A3, C4, B3, D4
 V49 MNVR TO P52 ATT (152:48)
 (219,315,015)

MSFN CMDS:
DSE RECORD

152:40

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/QMD RESET)
 POST SPS BURN SIM PREP (CUE CARD)
 AP/XR COVER - OPEN
 XR - ON
 MS - DPLY
 GR - DPLY

MS: EXP - ON
 ION SOURCE - STBY

P52 (OPTION 1)
 (LIFT-OFF ORIENT)

152:50
 (P20)
 (3.0°DB)

GDC ALIGN
 P20 OPT 5 (-X FWD SIM ATT)(153:00)
 N79 (+003.00)
 SET HGA P 0, Y 170 FOR AOS ACQ

CONFIGURE CAMERA: (MASS SPECT BOOM PHOTOS)
 CMS/DAC/18/BW164-BRKT,MIR(T5.6,1/250,-) 3 fps (762)

MAG (1), MAG 2 -----
 UTILITY PWR - ON

153:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-225

MCC-H

2054 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

	153:00	STATION #15 LPM MEASUREMENT	PANORAMA ROCK/SOIL SAMPLE	+4:40 CSM REV 41
	:10	TRAVERSE TO STATION #16		+4:50
	:20	STATION #16 LPM MEASUREMENT	PANORAMA ROCK/SOIL SAMPLE	+5:00
	153:30	TRAVERSE TO STATION #17		.
M S F N	:40	STATION #17 SITE DESCRIPTION RAKE/SOIL SAMPLE	PANORAMA SITE DESCRIPTION RAKE/SOIL SAMPLE	+5:10
T I I T V	:50	LPM MEASUREMENT	SAMPLING	+5:20
		SAMPLING		+5:30
	154:00	X		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	153:00 - 154:00	7/40-41	3-226

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2054 CST

153:00
 (P20)
 (3.0°DB)
 (10101)
 (X1111)

ASSEMBLE CAMERA, LENS, MIRROR AND MAGAZINE ON
 SPECIAL WINDOW 5 BRACKET (ROTATE LENS 180°)
 VERIFY TOP SURFACE OF MIRROR IS PARALLEL TO TOP SURFACE
 OF CAMERA

REMOVE CMS WINDOW COVER
 MOUNT DAC CARDBOARD SHADE
 REPOSITION SIDE WINDOW MIRROR
 MOUNT BRACKET ASSEMBLY TO SC
 DAC - ON

REV 41

153:10

MS: ION SOURCE - ON

MASS SPECT
BOOM PHOTOS

153:20

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
 5-BD ANT IND > 1/2 SCALE HGA: REACO, NARROW

MSFN CMDS: (AOS +2 MIN)
 DSE (STOP/REWIND)

SIM EXP STATUS
 (-0111)
 (01232)

153:30

(P20)

(3.0°DB)

(10101)

(X1111)

MSFN CUE: (~AOS +7 MIN)
 HGA AUTO

MSFN CMDS: (AOS +9 MIN)
 DSE PLAYBACK

MSFN UPLINK:
 RLS UPDATE (IF REQD)

MSFN UPDATE:
 REFMMAT 00 TIME

PC: MODE - STBY
 PWR - ON
 GR: SHIELD - OFF

SIM EXP STATUS
 (-0111)
 (01222)

153:40

REFMMAT 00 TIME

					HRS
*	0	0			MIN
*	0	0	0		SEC

PC: PWR - OFF (MSFN CUE)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
 CM3/EL/250/VHBW (f5.6,1/125,-) 6 FR

MAG (SS) ___, FR # ___

MASS SPECT
BOOM PHOTOS

153:50

GR: SHIELD - ON (CTR)
 PREPARE FOR ORBITAL SCIENCE VISUALS

LANDING SITE (VS)

ORBITAL SCIENCE VISUALS

AT 154:00

153:30

154:00

MCC-H

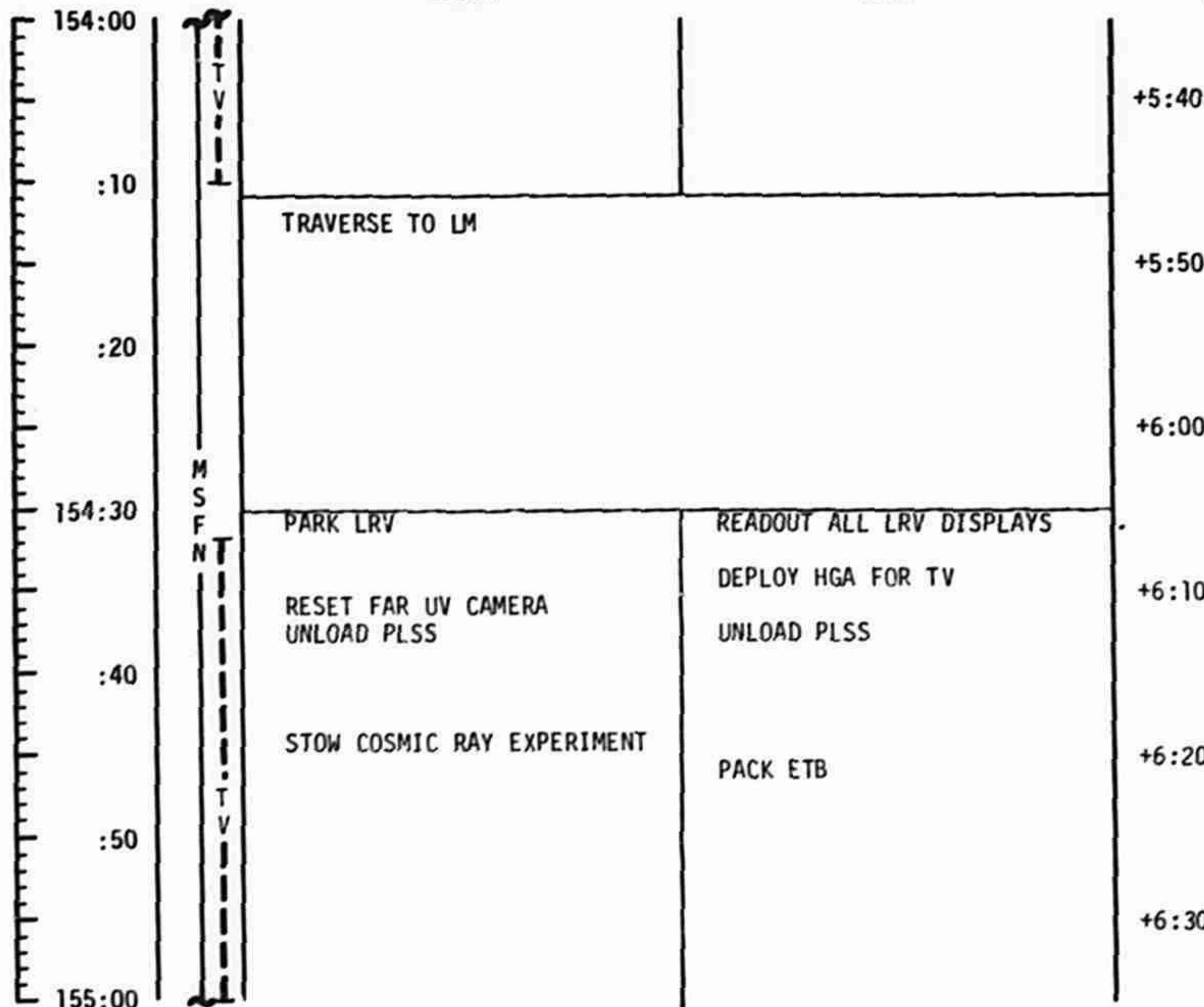
2154 CST

LM FLIGHT PLAN

CDR

LMP

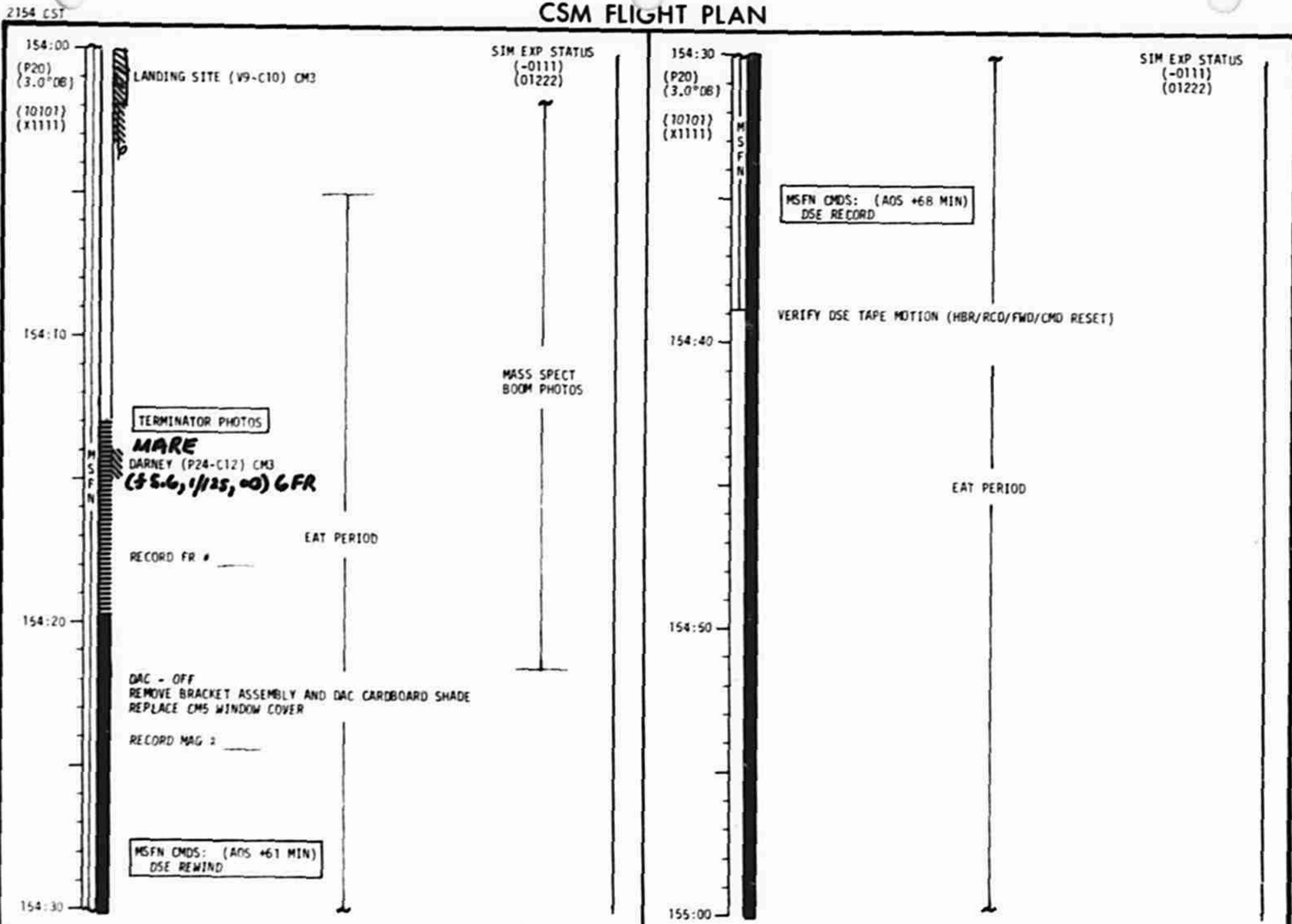
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	154:00 - 155:00	7/41	3-228

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MCC-H

LM FLIGHT PLAN

2254 CST

155:00

CDR

LMP

NOTES

LRV GRAN PRIX

FILM GRAN PRIX

CSM REV 42

PARK & CONFIGURE LRV FOR
MCC-H CONTROL

RETRIEVE SWC

+6:40

CLEAN EMU'S
RESET FAR UV CAMERA
TRANSFER ETB
INGRESS LMCLEAN EMU'S
INGRESS LM
TRANSFER ETB
TRACK LIGHT TEST

+6:50

CLOSE HATCH, REPRESSURIZE CABIN
POST EVA-3 SYSTEMS CONFIGURATION

+7:00/END EVA-3

VERIFY EVA CB CONFIGURATION
DOFF GLOVES, STOW ON COMM PANELS
TRANSFER TO LM ECS HOSES
CONNECT TO LM COMMBIOMED - LEFT
PLSS/OPS DOFFING
DISCONNECT OPS & RCU FROM PLSSLMP, THEN CDR DOFF PLSS/OPS
REPORT: OPS PRESSURE

STOW OPS'S

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72 (PWS)	155:00 - 156:00	7/41-42	3-230

FLIGHT PLANNING BRANCH

2254 CST

CSM FLIGHT PLAN

155:00
(P20)
(3.0°DB)(10101)
(X1111)

REV 42

EAT PERIOD
CONFIGURE CAMERA: (ORBITAL SCIENCE)
CMS/EL/250/CEX-IVL (#5.6.1/250.-) 80 FR
MAG (QQ) ___, FR # ___

155:10

ORBITAL SCIENCE PHOTOS

KOHL SCHUETTER (PS-C2,C3)
CMS (#5.6.1/250.-) 80 FR

CHANGE TO #8

155:20

RECORD FR # ___

ACQ MSFN HGA: MAN, WIDE P.O., Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROWMSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

155:30

SIM EXP STATUS
(-0111)
(01222)155:30
(P20)
(3.0°DB)
(10101)
(X1111)SIM EXP STATUS
(-0111)
(01222)CSM SYSTEMS CHECKLIST
PRE-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - OFFMSFN CMDS: (AOS +9 MIN)
DSE PLAYBACKVHF AM T/R - RCV (PNL 9)
VHF AM A - DUPLEXMSFN UPLINK:
JET-ON MONITOR LOADSONBOARD READOUT

BAT C

PYRO BAT A

PYRO BAT B

RCS A

B

C

D

DC IND SEL - MINA OR B

FILM MAGS REQD FOR NEXT DAY:

DAC: CEX-886DD

EL: VH8W-SS, CEX-QQ

NR: VH8W-ZZ

155:50

156:00

M
S
F
N

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg B.C. F144E (4/16)	11/10/72 16:17:22 447192	3-231

MCC-H

2354 CST

156:00

LM FLIGHT PLAN

CDR

LMP

NOTES

GO/NO-GO FOR
DEPRESS

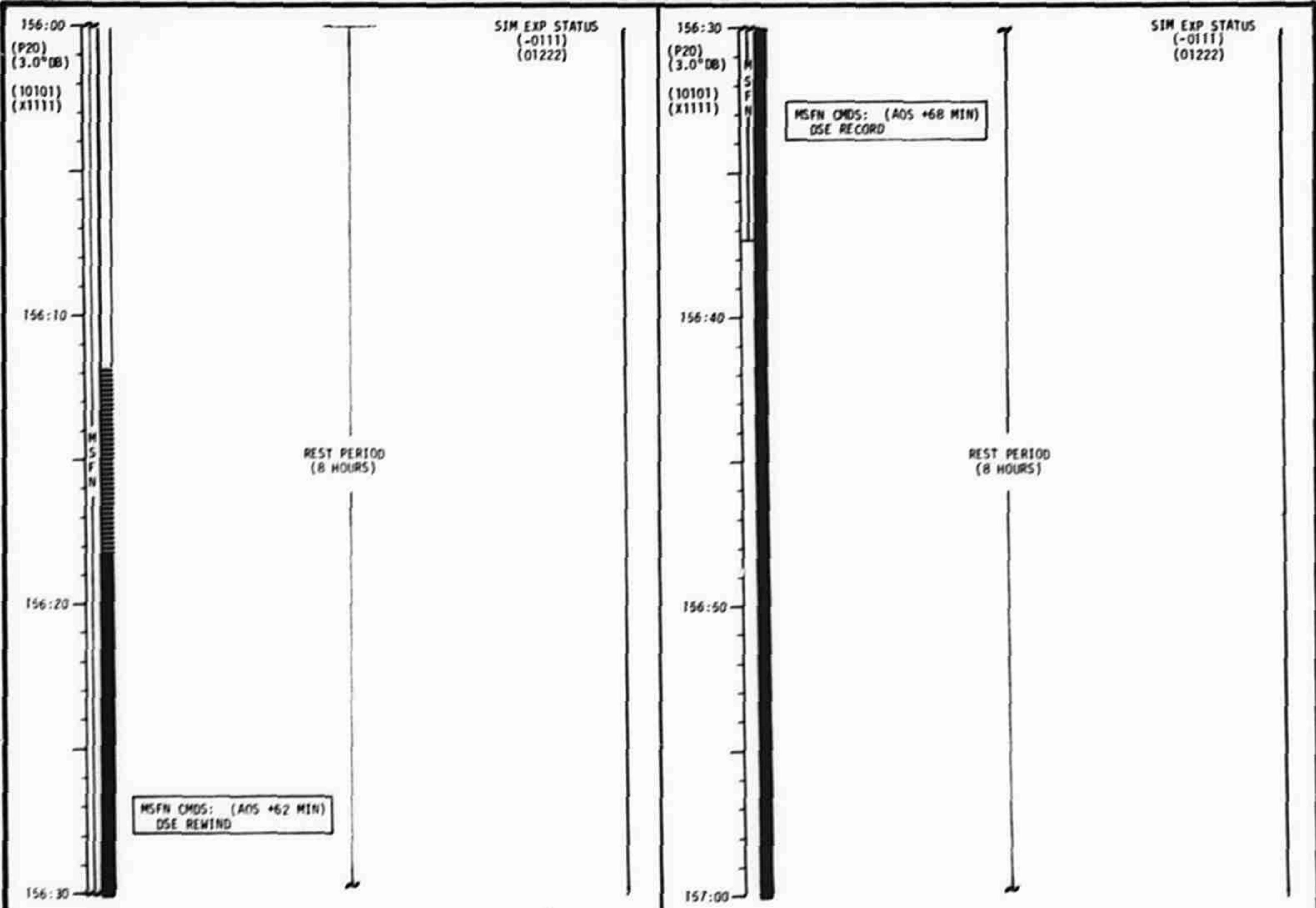
		PREP FOR EQUIPMENT JETTISON	
	:10	UNSTOW SCALE WEIGH BSLSS ROCK BAG & COLLECTION BAGS, REPORT: <u>WEIGHTS</u> WEIGH ISA STOW SCALE & BAGS UNLOCK FWD HATCH HANDLE REMOVE ISS WRAP & TIE LUNAR BOOTS, ARMRESTS, RCU'S, YO-YO'S POSITION PLSS'S FOR JETTISON DON EV GLOVES AUDIO MODE - VOX	
	:20	PRESSURE INTEGRITY CHECK	
		CABIN DEPRESS FOR JETTISON	
	156:30	EQUIPMENT JETTISON	
M		CABIN REPRESS	
S		VERIFY CABIN PRESS STABLE	BATS 3 & 4 - ON
F		DOFF HELMETS & GLOVES	LUNAR BAT - OFF/RESET
N		AUDIO MODE - ICS/PTT	CHECK BUS VOLTS
	:40	POST EVA CABIN CLEANUP	
		DOFF SUITS	BIOMED - OFF
		CDR DOFF PGA	
		DON ICG	
	:50	CONNECT AND VERIFY COMM	
	157:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	156:00 - 157:00	7/42	3-232

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2354 CST



MCC-H

0054 CST

157:00

LM FLIGHT PLAN

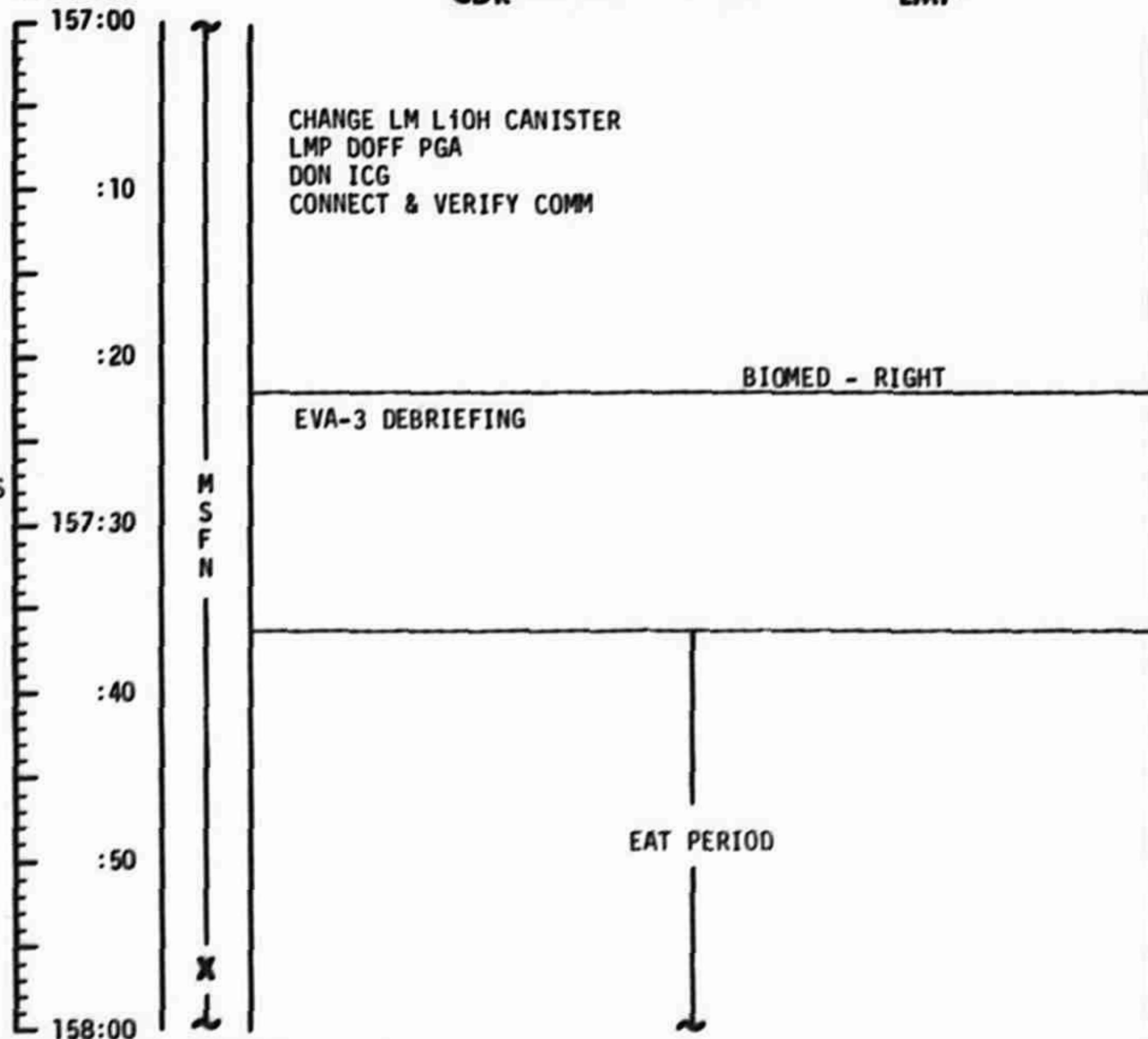
CDR

LMP

NOTES

CSM REV 43

COPY LIFT-OFF TIMES
FOR REVS 44-49

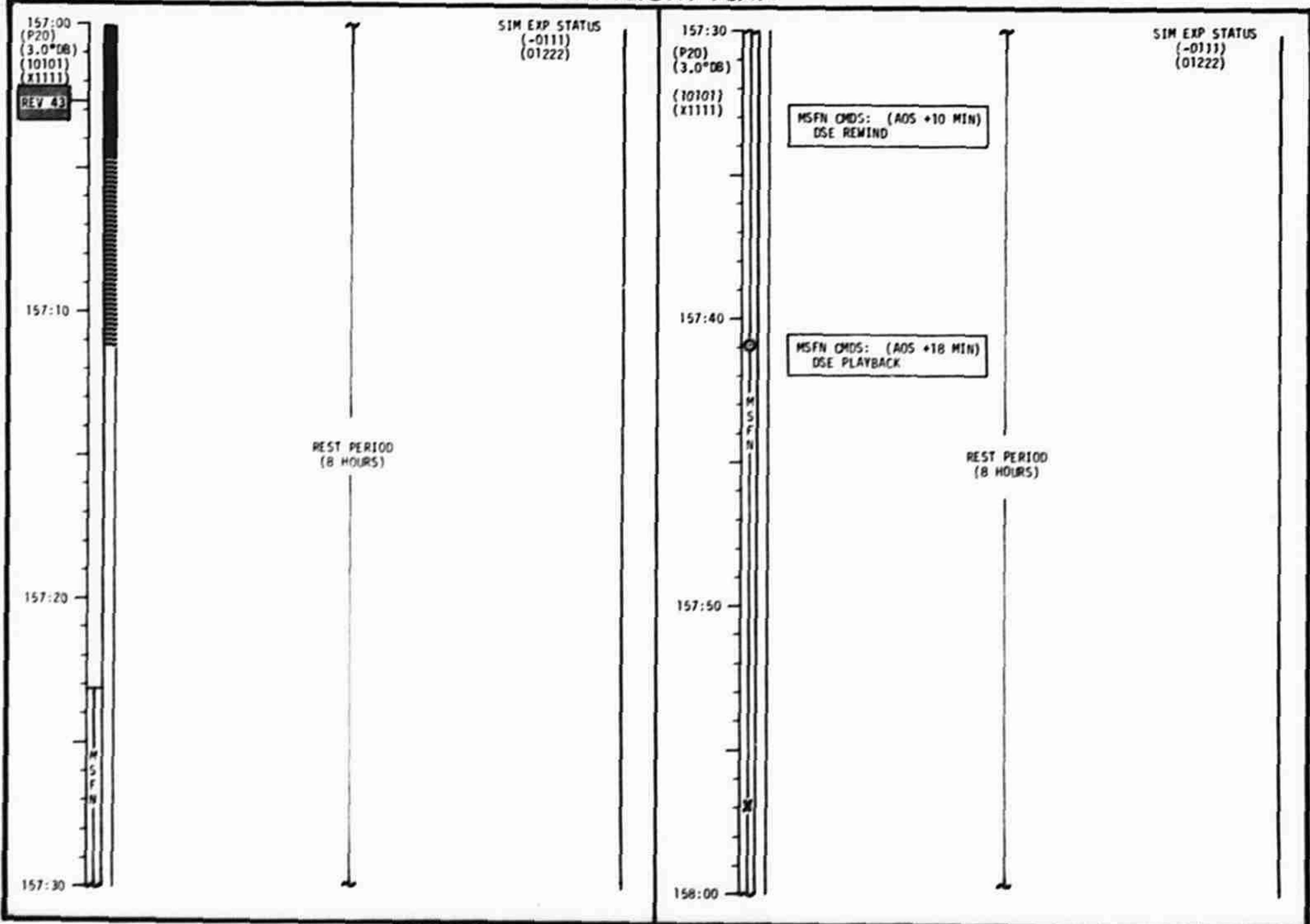


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	157:00 - 158:00	7/42-43	3-234

FLIGHT PLANNING BRANCH

0054 CST

CSM FLIGHT PLAN



MCC-H

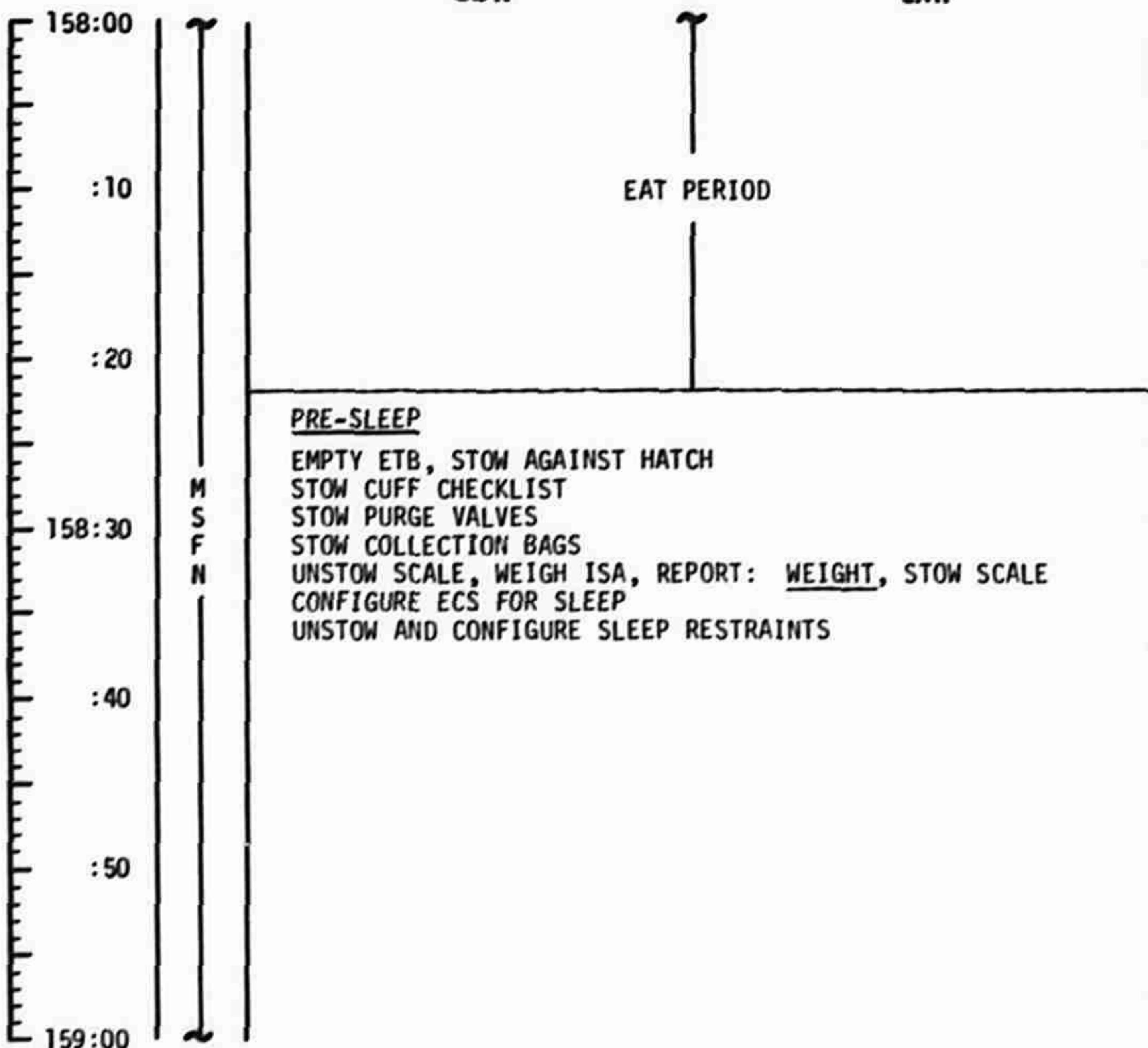
0154 CST

LM FLIGHT PLAN

CDR

LMP

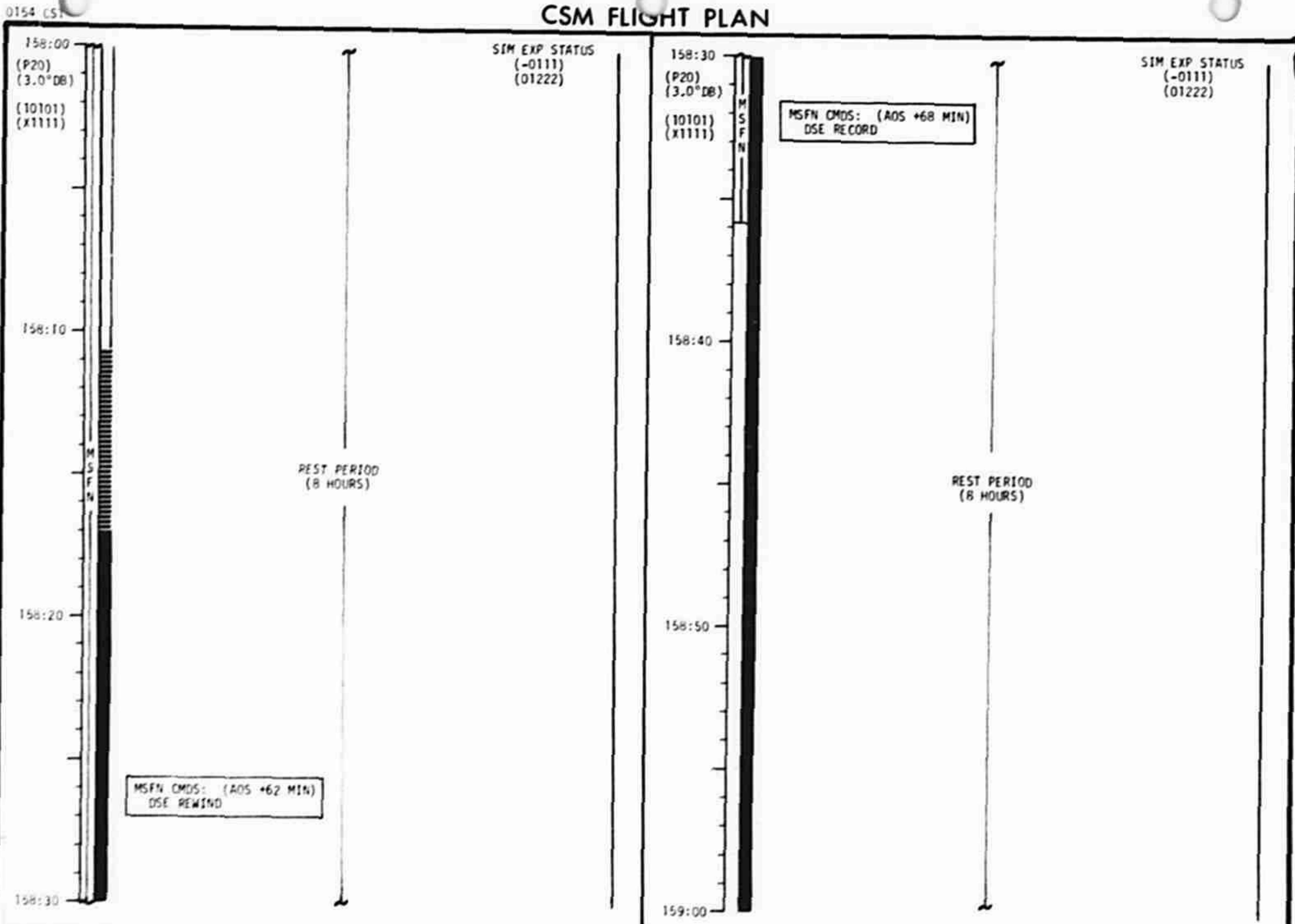
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	158:00 - 159:00	7/43	3-236

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

MCC-H

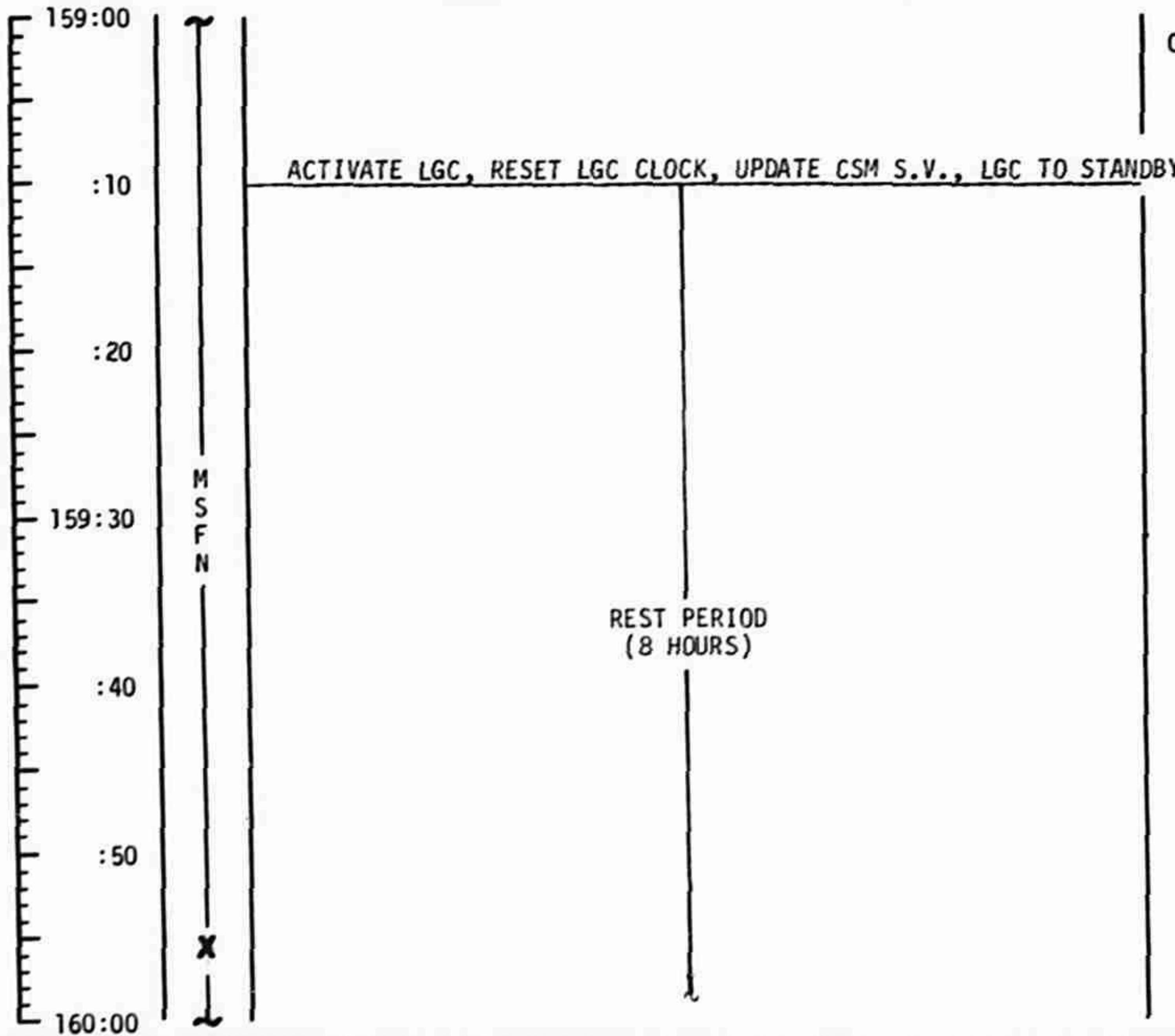
0254 CST

CDR

LMP

NOTES

CSM REV 44

UPLINK TO LM
CSM S.V.

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	159:00 - 160:00	7/43-44	3-238

FLIGHT PLANNING BRANCH

0254 CST

CSM FLIGHT PLAN

159:00

REV 44

(P20)
(3.0°DB)(10101)
(x1111)

159:10

REST PERIOD
(8 HOURS)

159:20

M
S
F
N

159:30

SIM EXP STATUS
(-0111)
(01222)159:30
(P20)
(3.0°DB)(10101)
(x1111)MSFN CMDS: (AOS +10 MIN)
DSE REWIND

160:00

SIM EXP STATUS
(-0111)
(01222)

159:40

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACKREST PERIOD
(8 HOURS)

159:50

X

MCC-H

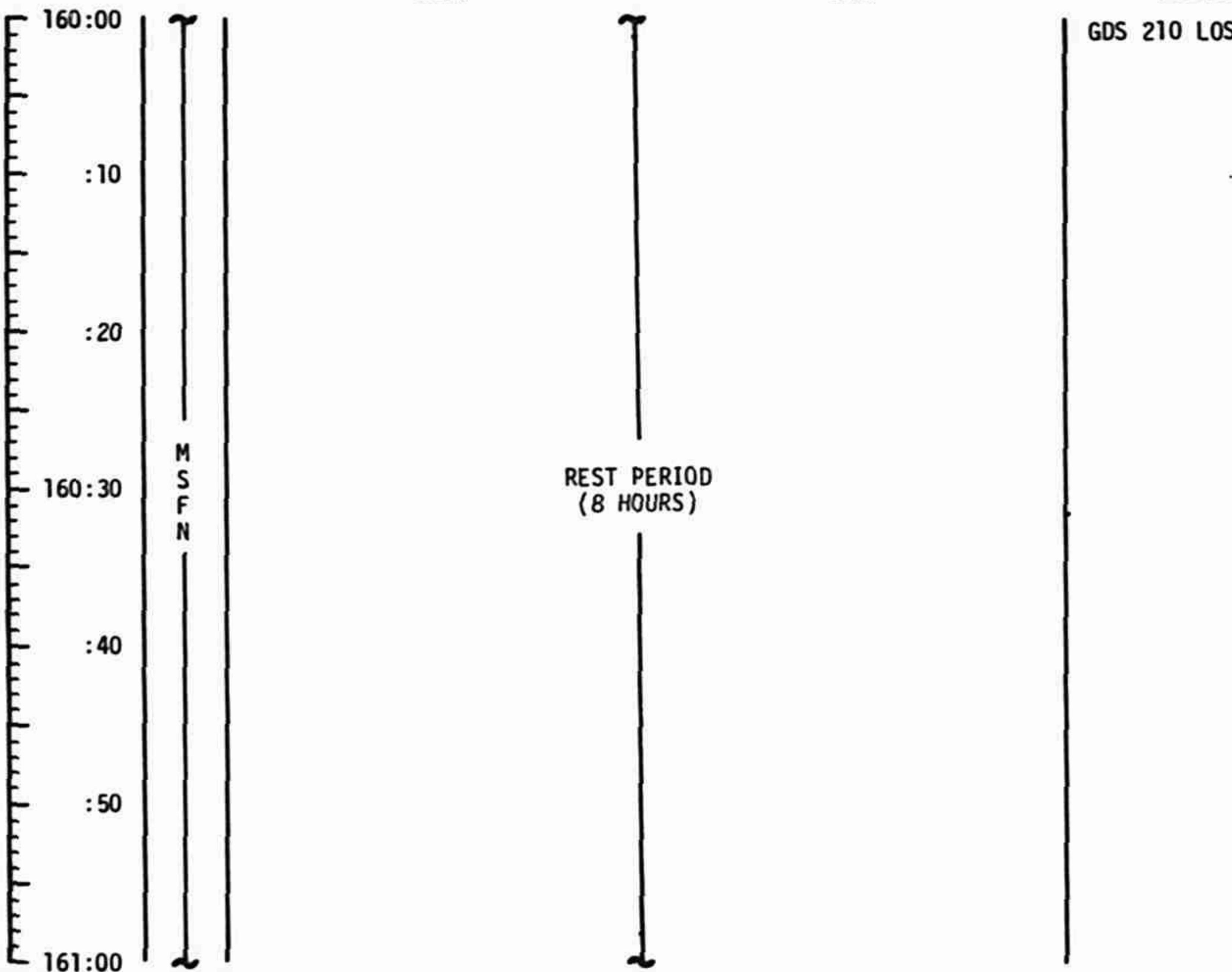
0354 CST

LM FLIGHT PLAN

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	160:00 ~ 161:00	7/44-45	3-240

FLIGHT PLANNING BRANCH

0354 CST

CSM FLIGHT PLAN

160:00
(P20)
(3.0°DB)(10101)
(X1111)SIM EXP STATUS
(-0111)
(01222)160:30
(P20)
(3.0°DB)(10101)
(X1111)MSFN CMDS: (AOS +68 MIN)
DSE RECORDSIM EXP STATUS
(-0111)
(01222)

160:10

M
S
F
NREST PERIOD
(8 HOURS)

160:40

160:20

MSFN CMDS: (AOS +62 MIN)
DSE REWIND

160:50

160:30

REV 45
161:00REST PERIOD
(8 HOURS)

LM FLIGHT PLAN

MCC-H

0454 CST

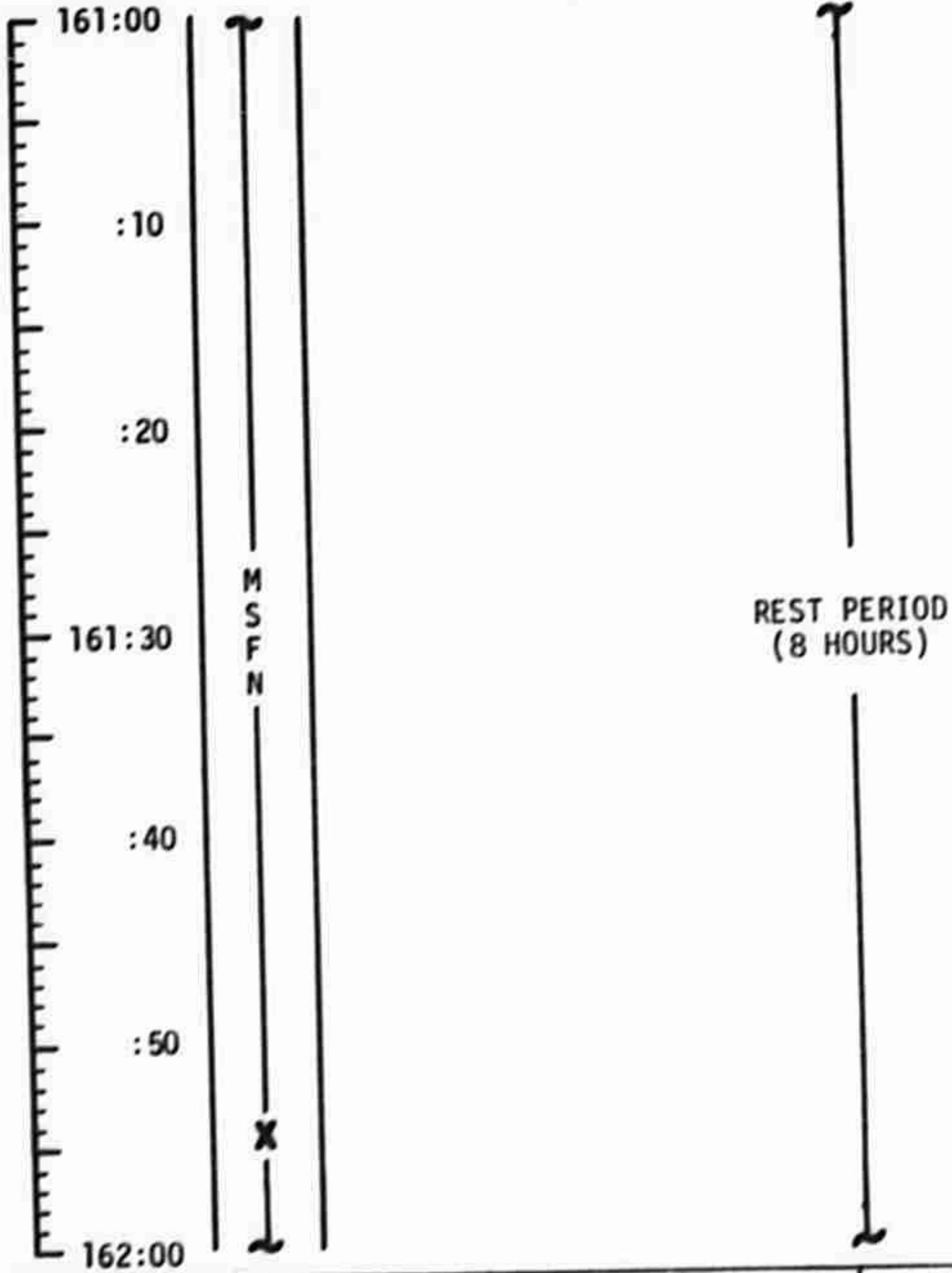
161:00

CDR

LMP

NOTES

CSM REV 45



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	161:00 - 162:00	7/45	3-242

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0454 CST

161:00
(P20)
(3.0°DB)
(10101)
(X11111)

SIM EXP STATUS
{-0111}
{01222}

161:30
(P20)
(3.0°DB)
(10101)
(X11111)

MSFN CMDS: (AOS +10 MIN)
DSE REWIND

SIM EXP STATUS
{-0111}
{01222}

161:10

REST PERIOD
(8 HOURS)

161:20

161:30

161:40

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACK

REST PERIOD
(8 HOURS)

161:50

162:00

MSFN

X

LM FLIGHT PLAN

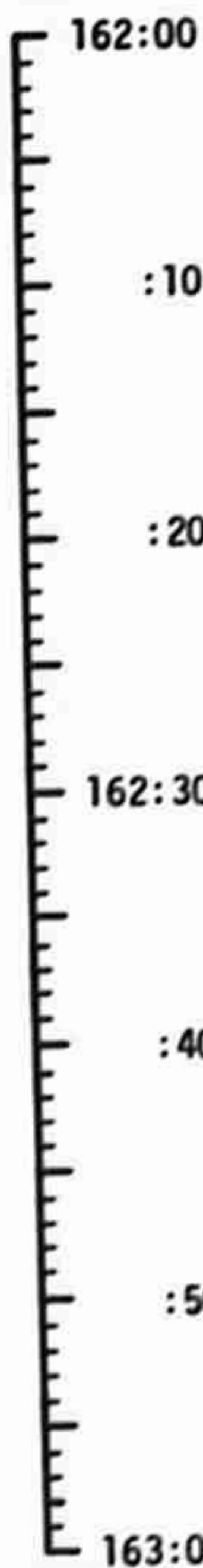
MCC-H

0554 CST

CDR

LMP

NOTES

REST PERIOD
(8 HOURS)

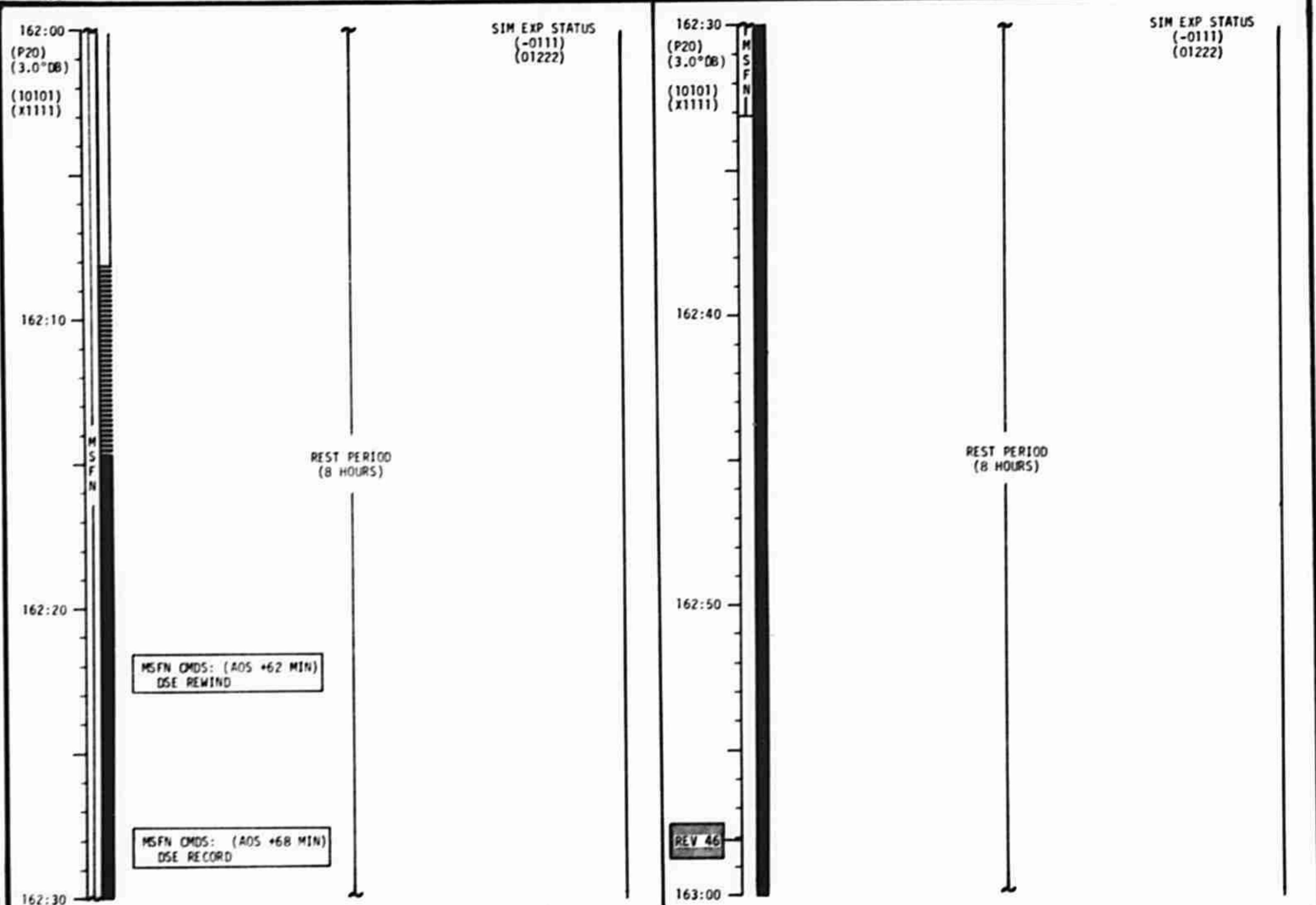
CSM REV 46

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	162:00 - 163:00	7/45-46	3-244

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0554 CST



LM FLIGHT PLAN

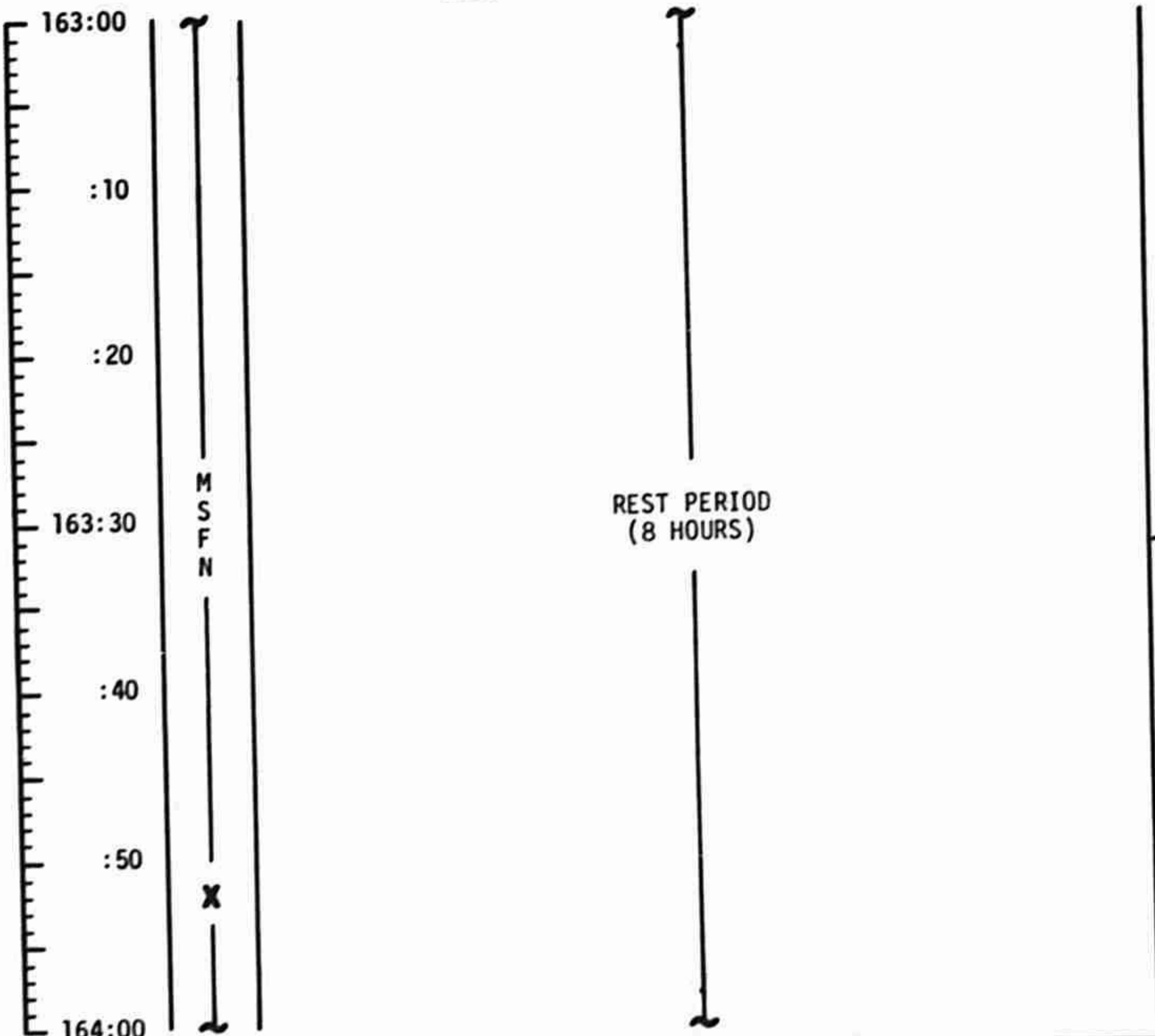
MCC-H

0654 CST

CDR

LMP

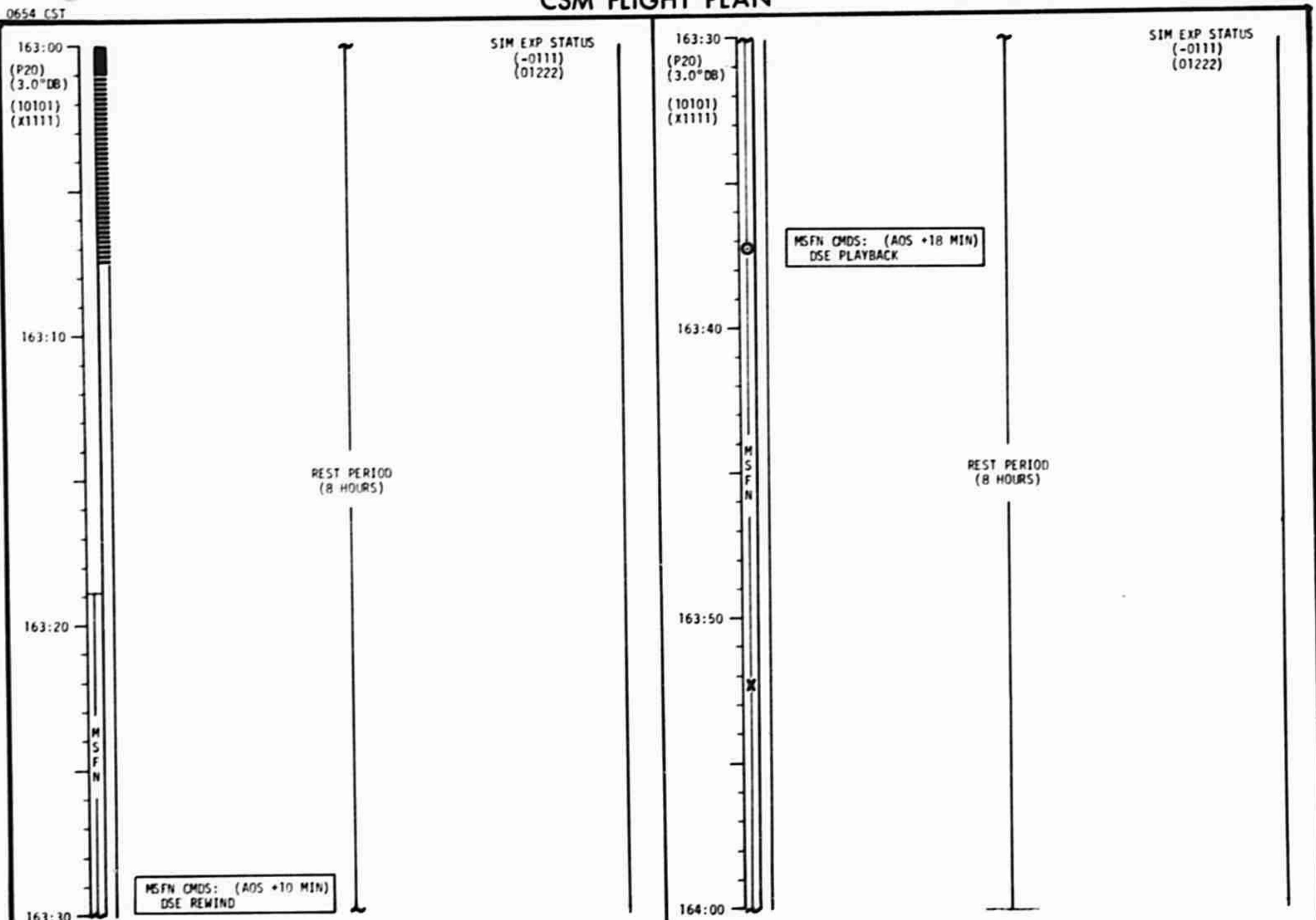
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	163:00 - 164:00	7/46	3-246

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

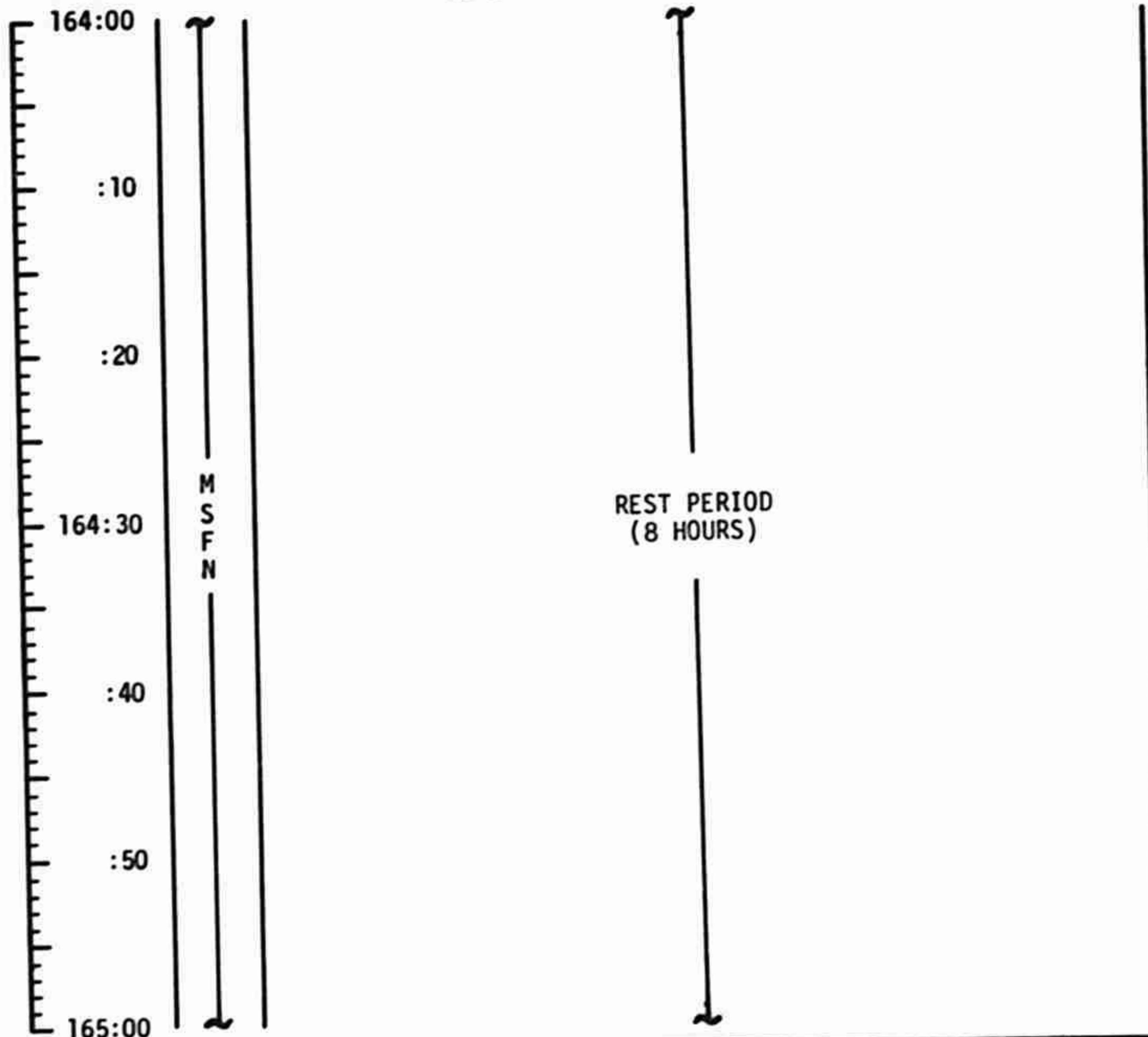
MCC-H

0754 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	164:00 - 165:00	7/46-47	3-248

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0754 CST

		SIM EXP STATUS (-0111) (01222)		SIM EXP STATUS (-0111) (01222)
164:00 (P20) (3.0°DB) (10101) (X11111)	CSM SYSTEMS CHECKLIST POST-SLEEP CHECKLIST PAGE S/1-29 LOGIC PWR (2) - DPLY/RETR GR: SHIELD - OFF MSFN UPDATE CONSUMABLES STATUS MAP CAMERA PHOTO PAD (165:04) FLIGHT PLAN SIM EXP STATUS DSE VOICE STATUS MSFN UPLINK CSM S.V.		164:30 (P20) (3.0°DB) (10101) (X11111)	VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET) MANUALLY ROLL CW 40°
164:10	GR: SHIELD - ON (CTR) P52 IMU REALIGN N71: _____ N05: _____ * _____ N93: X _____ * _____ Y _____ * _____ Z _____ * _____ GET _____ * _____		164:40 (P20) (0.5°DB)	P20 OPT 5 (+x FWD SIM BAY ATT)(165:00) N79 (+000.50) SET HGA P <u>10</u> , Y <u>0</u> FOR AOS ACQ
164:20	CMC MODE - FREE PS2 (OPTION 3) (LIFT-OFF ORIENT) REPORT: <u>GYRO TORQUING</u> <u>ANGLES</u> P20, CMC MODE - AUTO GDC ALIGN MSFN CMDS: (AOS +62 MIN) DSE REWIND		164:50	CONFIGURE CAMERA: (TERMINATOR PHOTOS) CMS/EL/250/VHBW (f5.6,1/125,-) 6 FR MAG (SS) _____, FR # _____
164:30	 MSFN CMDS: (AOS +68 MIN) DSE RECORD		165:00	REV 47 MC/LA COVER - OPEN MC - EXTD

MCC-H

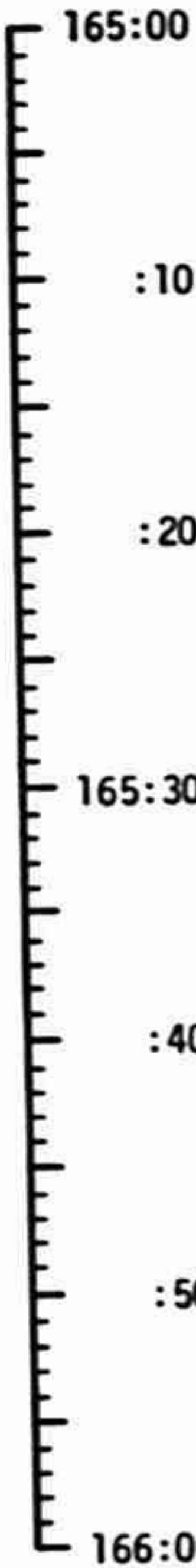
LM FLIGHT PLAN

CDR

LMP

NOTES

0854 CST

REST PERIOD
(8 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	165:00 - 166:00	7/47	3-250

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

165:00 (P20) (0.5°DB)	LA - ON IMAGE MTN - ON MC - ON (T START) IMAGE MTN - INCR (BP)/ON TERMINATOR PHOTOS (55.6, 1/25, 00) GFR ST JOHN (P6-C3) CMS	SIM EXP STATUS {+1111} {01222}	165:30 (P20) (0.5°DB)	PC: MODE - STBY PWR - ON MS - RETR TO 20 FEET (38 SEC)	SIM EXP STATUS {+1111} {02222}
(10101) (X11111)	MAP CAMERA PHOTO PAD T-START: ____ :____ :____ T-STOP: ____ :____ :____ (165.9°E TO 148.8°E)(1 REV)		(10101) (X11111)	PC: PWR - OFF (MSFN CUE) MS - RETR TO 15 FEET (36 SEC)	
RECORD FR # _____				ORBITAL SCIENCE VISUALS	
165:10	IMAGE MTN - INCR (BP +4 STEPS)/ON		165:40	COLOMBO HIGHLANDS (V7-C8,C9) CMS	
MSFN	ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW		MSFN		
MSFN	PREPARE FOR ORBITAL SCIENCE VISUALS MSFN CMDS: (AOS +2 MIN) DSE (STOP/REWIND)		165:50	IMAGE MTN - INCR (BP)/ON MS - RETR TO 10 FEET (36 SEC)	
MSFN	MSFN CUE: (~ AOS +7 MIN) HGA AUTO		MSFN		
MSFN	MSFN CMDS: (AOS +9 MIN) DSE PLAYBACK		MS - RETR TO 5 FEET (36 SEC)		
MSFN	MSFN UPDATE: MS RETR TIMES (20,15,10 & 5 FEET)		166:00	MS - DPLY	
MSFN					

MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

0954 CST

166:00

:10

:20

166:30

:40

:50

167:00

~

~

~

~

~

MSFN

REST PERIOD
(8 HOURS)

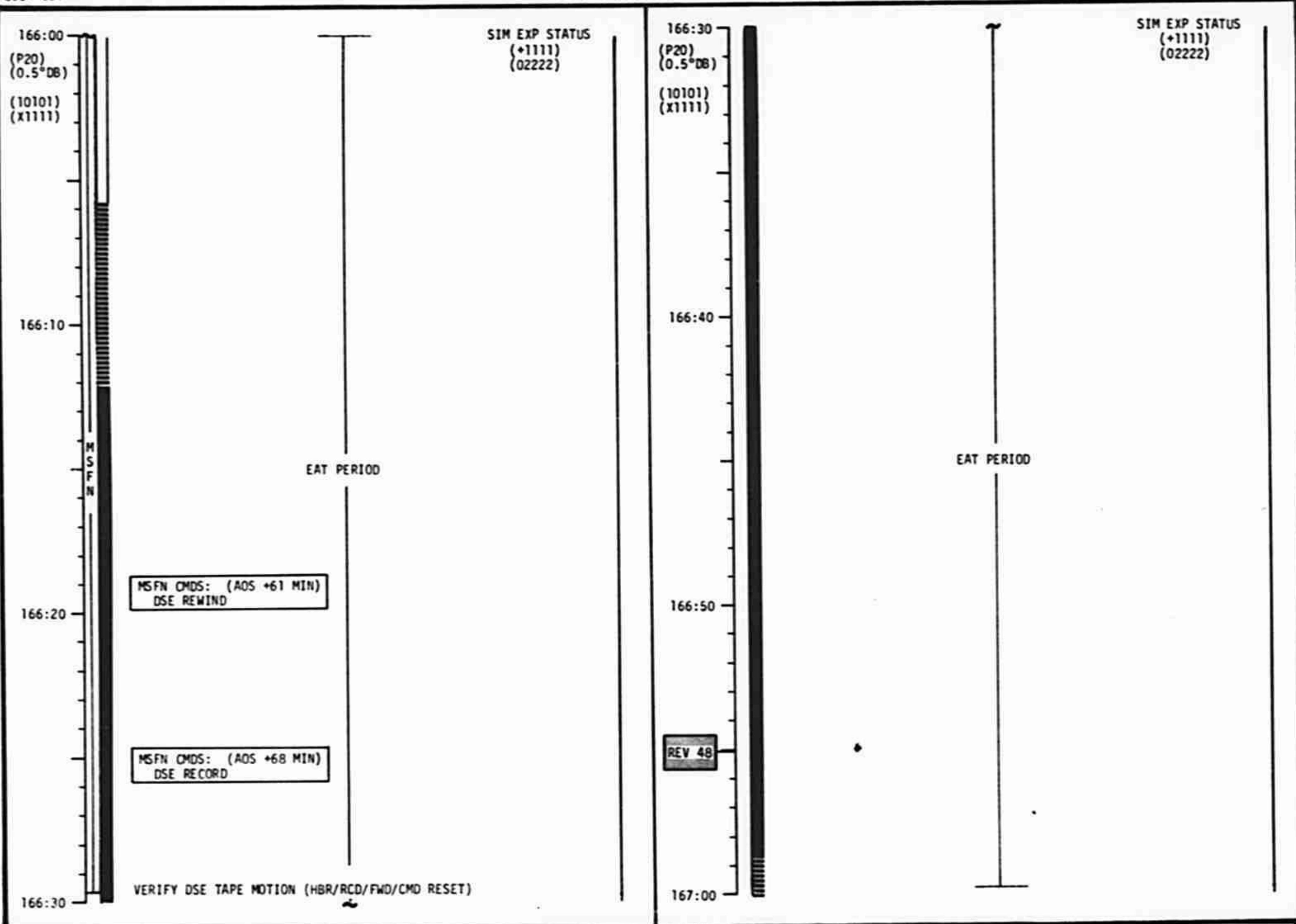
CSM REV 48

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	166:00 - 167:00	7/47-48	3-252

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0954 CST



LM FLIGHT PLAN

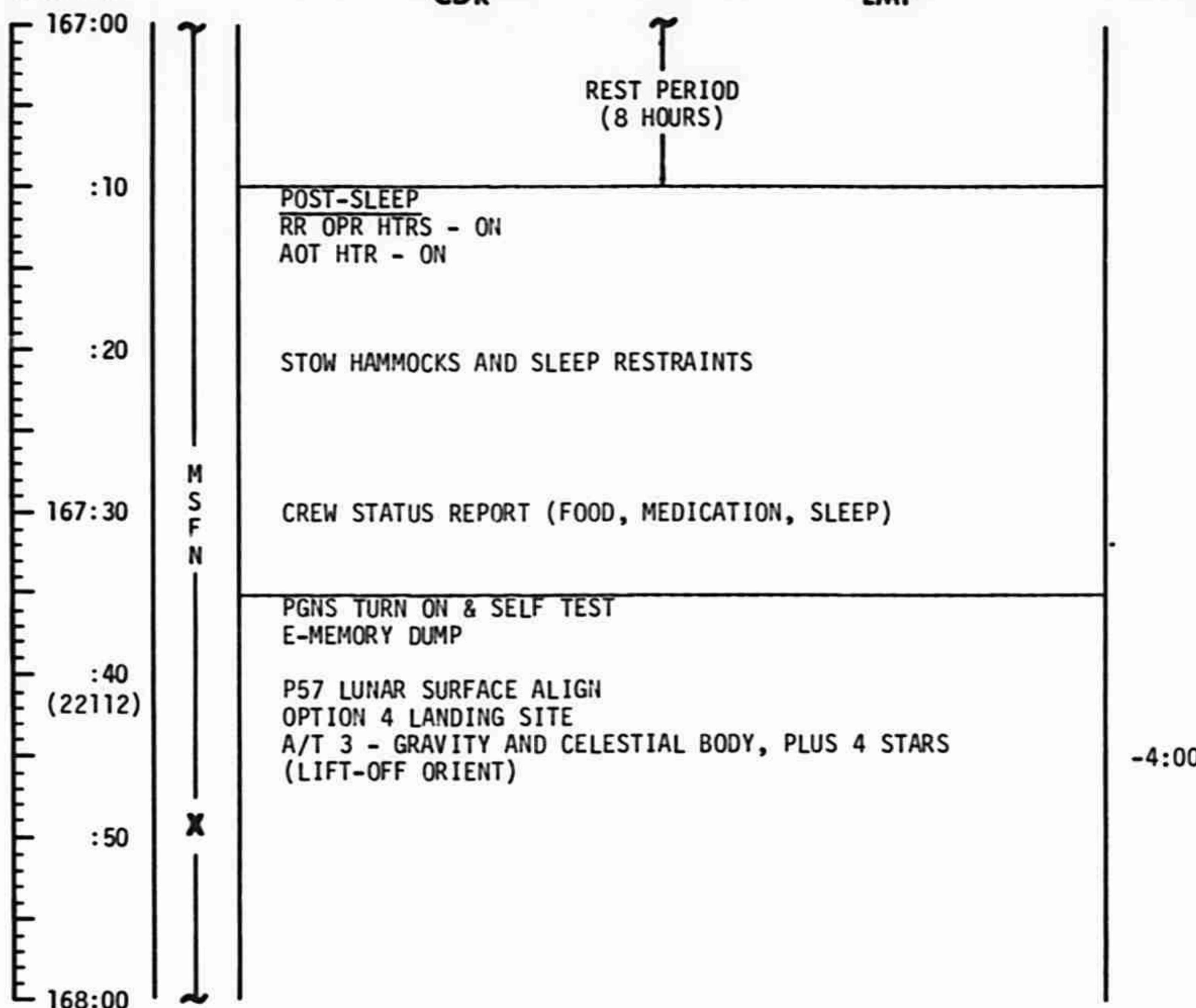
MCC-H

1054 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	167:00 - 168:00	7-8/48	3-254

FLIGHT PLANNING BRANCH

1054 CST

CSM FLIGHT PLAN

167:00
 (P20)
 (0.5°DB)
 (10101)
 (X1111)

MC - OFF (T STOP)
 WAIT 30 SEC
 MC - STBY
 IMAGE MTN - OFF
 LA - OFF
 MC - RETR
 XR - STBY
 MS: ION SOURCE - OFF
 EXP - STBY
 CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
 MC/LA COVER - CLOSE
 AP/XR COVER - CLOSE
 GR - RETR
 MS - RETR

SIM EXP STATUS
 {+11111}
 {02222}

167:30
 (P20)
 (0.5°DB)
 (11111)
 (X1111)

MSFN UPDATE:
 P24 LDMK TRACK (F-1,16-3)
 (169:15 & 169:45)

SIM EXP STATUS
 (+0000)
 (01214)

167:10

LOGIC PWR (2) - OFF
 ENABLE ALL JETS (BEFORE AOS)
 ACQ MSFN HGA: MAN, WIDE P 10, Y 0
 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
 DSE (STOP/REWIND)

167:20

MSFN CUE: (~ AOS +7 MIN)
 HGA AUTO

V48 (11111)
 (X1111)

MSFN CMDS: (AOS +9 MIN)
 DSE PLAYBACK

MSFN UPLINK:
 CSM S.V.

LION CANISTER CHANGE
 (13 INTO A, STOW 11 IN A9)

167:30

PREPARE FOR ORBITAL SCIENCE VISUALS

167:40

ORBITAL SCIENCE VISUALS

LANDING SITE (V9-C10) CMS

167:50

168:00

LM FLIGHT PLAN

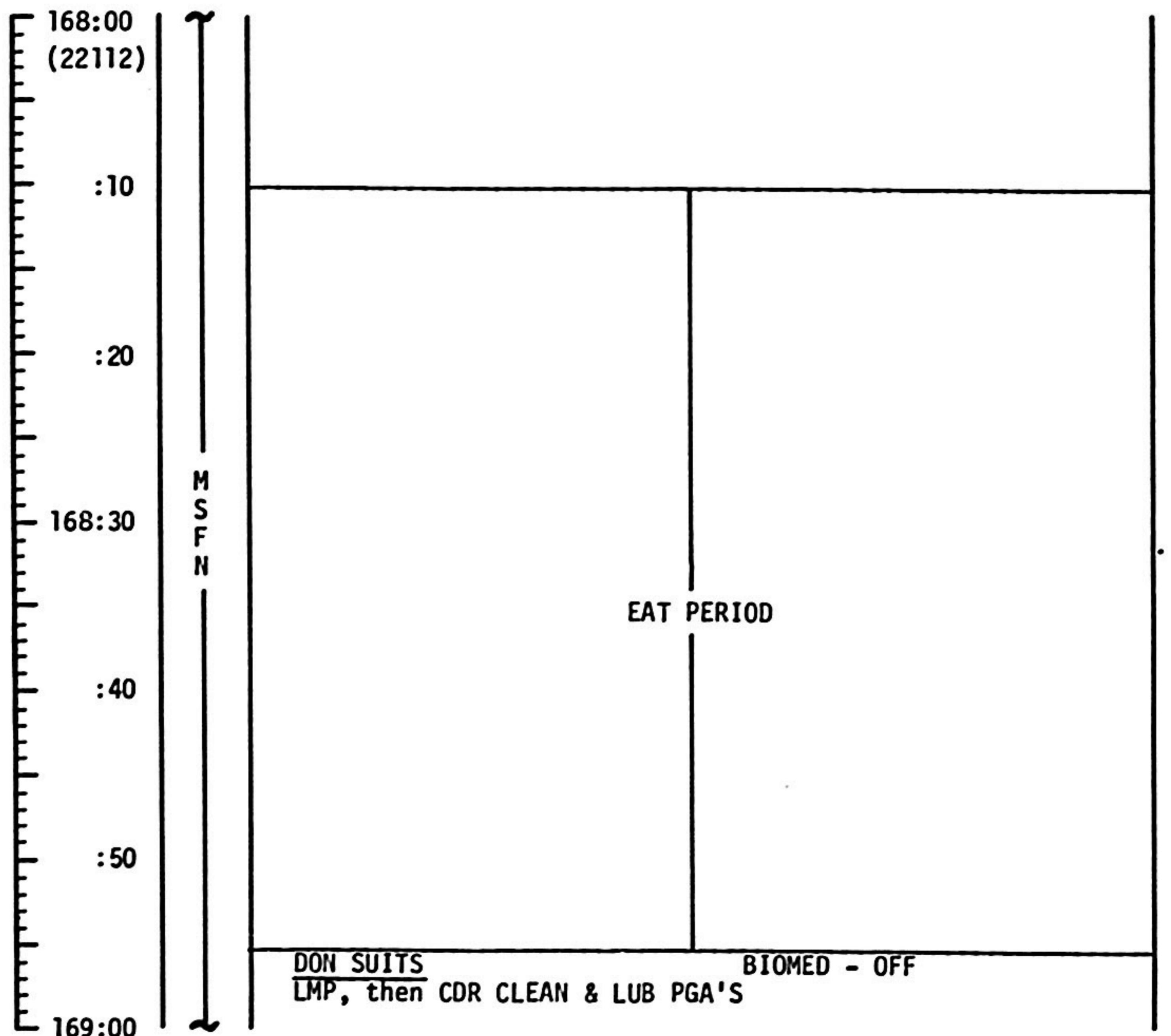
MCC-H

1154 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	168:00 - 169:00	8/48-49	3-256

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

168:00 (P20) (0.5°DB) (11111) (X1111)	SIM EXP STATUS {+0000} (01214)	168:30 (P20) (0.5°DB) (11111) (X1111)	PREPARATIONS FOR TRANSFER INSTALL (1) TSB ON LH LEB & (1) ON RH LEB REMOVE ROPE BAG FROM DECON BAGS ON TOP OF A2 STOW ROPE IN RH TSB REMOVE DECON BAG STRAPS FROM TOP OF A2 & HANG ON L3 REMOVE (2) JETTISON BAGS, (1) VACUUM BAG AND VACUUM CABLE FROM A2 STOW EMPTY JETT. BAG, VACUUM BAG & CABLE IN LH TSB PLACE REMAINING JETT. BAG ON A2 AND LOAD WITH THE FOLLOWING: L10H CANS & PARTITIONS FROM A9 (CANISTER 14 IS UNUSED) WASTE FOOD BAGS FROM A7 FECAL BAG (12 PACK) FROM A7 ELECTROPHORESIS IN BAG FROM A6 HELMET SHIELD FROM PGA BAG USED CMG'S-4 FROM A8 USED ICG-1 FROM U2 USED TISSUES, TOWELS AND MISCELLANEOUS WASTE REMOVE CMG-(3) FROM A8 - STOW IN RH TSB AND VACUUM BRUSH FROM SIDE OF A8 UNSTOW AND ASSEMBLE: VACUUM BRUSH - VACUUM CLEANER (SIDE A6) POWER CABLE (LH-TSB) AND VACUUM BAG (LH-TSB) CONNECT CABLE TO VACUUM AND TO PANEL 201 STOW ASSEMBLED VACUUM BETWEEN F2 AND MDC REMOVE CDR & LMP COVERALLS, AND HSB (3) FROM U2 INSTALL COVERALLS IN RH TSB INSTALL HSB'S IN LH TSB REMOVE SPRINGS & CLIPS FROM CLOSEOUT CURTAIN AND INSTALL REMOVE B5 & B6 CLOSEOUT CURTAIN AND STOW IN RH TSB REMOVE R12 FROM GIRTH SHELF & STOW OPEN BOTTOM & TOP OF PGA BAG	SIM EXP STATUS {+0000} (01214)
168:10 M S F N	CREW EXERCISE PERIOD	168:40		
	MSFN CMDS: (AOS +61 MIN) DSE REWIND DATA SYS - OFF			
168:20		168:50 REV 49	CMC MODE - FREE P20 OPT 5 (LOMK TRK ATT)(169:15) N78 (+000.00) (-068.00) (+000.00) N79 (+000.50) (000,338/346,000) OMNI C CMC MODE - AUTO	
	MSFN CMDS: (AOS +68 MIN) DSE RECORD		CONFIGURE CAMERA: (LOMK TRK) CM/DAC/SXT/CEX (EXP PAD) 1 fps (7.6% MAG) MAG (BB) _____, MAG % _____ UTILITY POWER - ON	
168:30 VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)		169:00		

LM FLIGHT PLAN

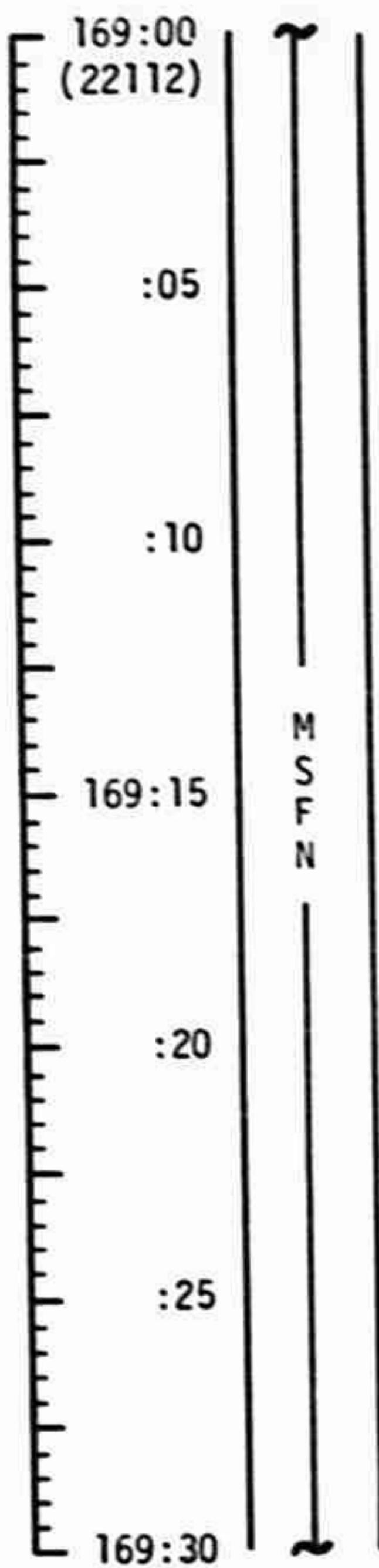
MCC-H

1254 CST

CDR

LMP

NOTES



DOFF ICG, DON PGA
CONNECT HOSES
VERIFY COMM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	169:00 - 169:30	8/49	3-258

FLIGHT PLANNING BRANCH

1254 CST

CSM FLIGHT PLAN

169:00
 (P20)
 (0.5°DB)
 (11111)
 (x1111)

RNDZ XPNDR ACTIVATION AND SELF TEST (DECAL)

113 VALUES

A ~2.8
B ~2.2 SELF TEST
C ~0.3 UNLOCKED
~4.9 LOCKED

RNDZ XPNDR - HTR

169:10

ACQ MSFN OMNI C

P24 (L/S LDMK F-1)
 OPT ZERO - OFF
 OPT MODE - CMC

0:00 T1(HORIZON)DET - RESET/START

169:20

M
 S
 F
 N

3:50 - DAC - ON

4:50 - T2(LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA

7:18 - T3(LDMK LOSS) DAC - OFF

CONFIGURE FOR VHF COMM CHECK WITH LM

VHF AM B - DUPLEX

VHF AM - T/R (PANEL 9)

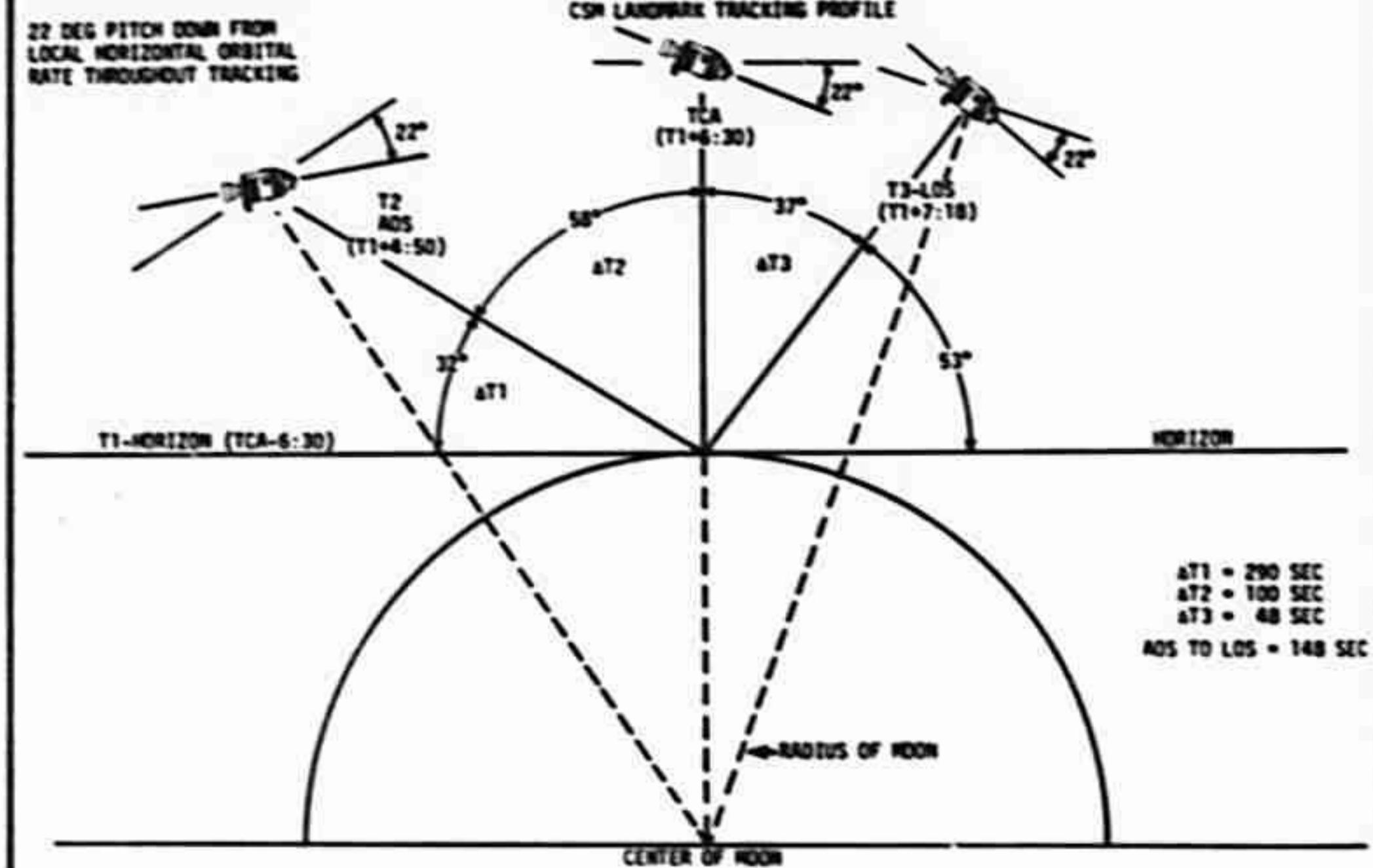
MODE - VOX

VHF ANT - RIGHT

RNDZ XPNDR - PWR

169:30

SIM EXP STATUS
 (*0000)
 (01214)



P24 LDMK TRACKING (1/250)	
TGT:	F-1
T ₁	•
T ₂	•
TCA	•
T ₃	•
R	*P *Y (T2 ACQ)
N or S MM	/ SA TA (T2 ACQ)
NBB	
LAT	+01.872
LONG/2	+44.127
ALT	000.00

MCC-H

1324 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

	169:30 (22112)			
	:35		RR - ON P22 LUNAR SURFACE NAV	
	:40		VHF VOICE CHECK	BIOMED - LEFT
UPDATE TO LM ASCENT PADS CSI PAD LM DAP WTS	169:45	M S F N X	RR - OFF TERMINATE P22	-2:00
	:50		PREP FOR EQUIP JETT #2 REPORT: PRD STOW HELMET BAG IN JETT BAG TIE JETT BAG UNLOCK FWD HATCH HANDLE	
	:55		HELMET GLOVE DONNING DON HELMETS & LEVA'S VERIFY SUIT CONFIGURATION AUDIO MODE - VOX DON EV GLOVES	
	170:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	169:30 - 170:00	8/49	3-260

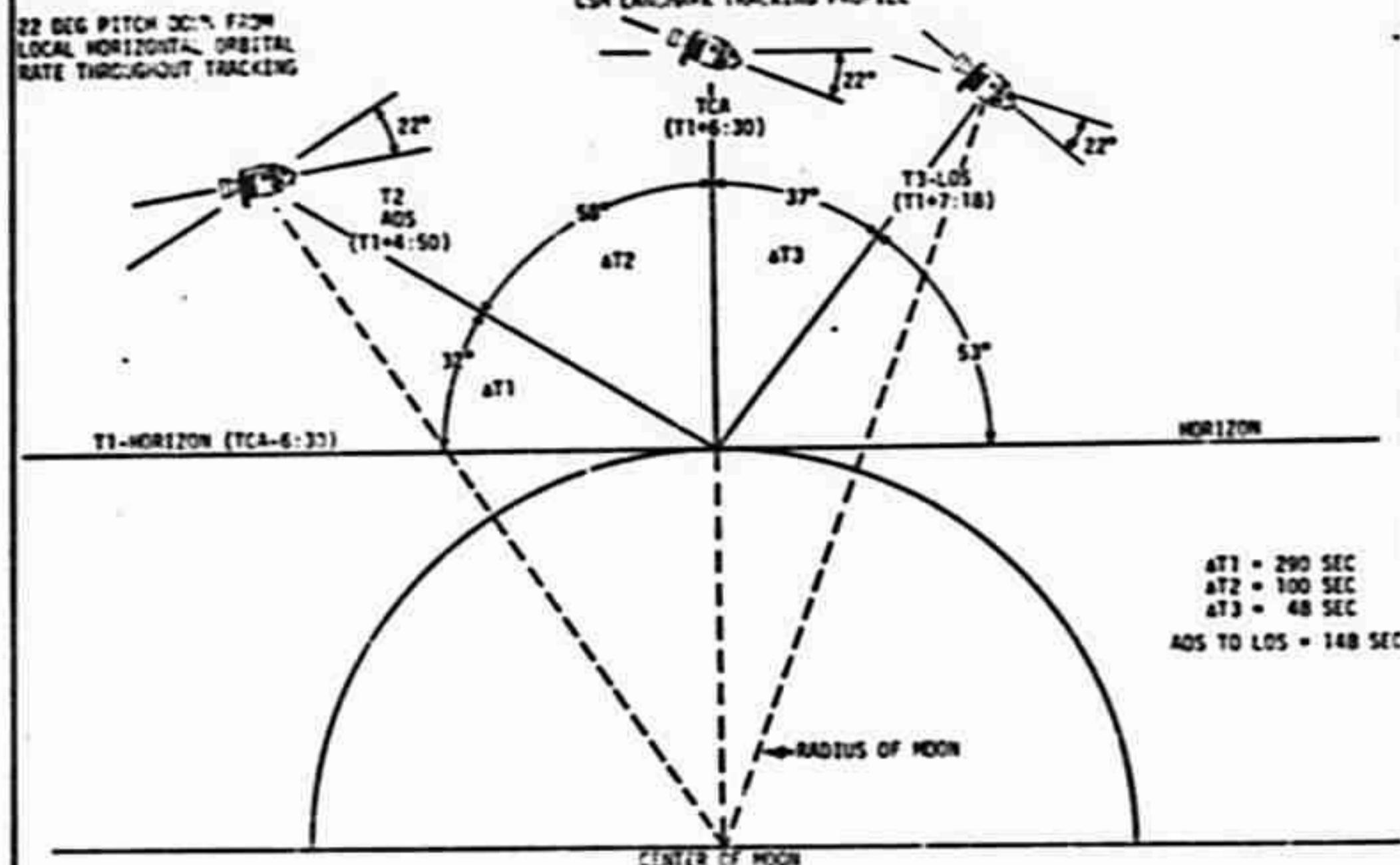
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1324 CST

169:30
 (P20)
 (0.5°DB)
 (11111)
 (X1111)
 M
 S
 F
 N
 X
 (11111)
 (X1111)
 169:40
 0:00 T1(HORIZON)DET - RESET/START
 VHF COMM CHECK WITH LM
 3:50 - DAC - ON
 4:50 - T2(LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART
 6:30 - TCA
 7:18 - T3(LDMK LOSS) DAC - OFF
 P00
 169:50
 VHF AM B - OFF (CTR)
 MODE - INTERCOM/PTT
 RNDZ XPNDR - HTR
 (11102)
 (X1111)
 CYCLE CMC MODE - FREE/AUTO
 V48 (11102)
 (X1111)
 V49 MNVR TO PS2/COAS CAL ATT (170:00)
 (180,258,357) HGA P -76, Y 258
 170:00

SIM EXP STATUS
 (*0000)
 (01214)



P24 LDMK TRACKING		(1/250)
T ₁	•	•
T ₂	•	•
TCA	•	•
T ₃	•	•
R	*P	*Y (T2 ACQ)
N or S NM	/ SA	TA (T2 ACQ)
K89		
LAT	-09.000	
LONG/2	+07.745	
ALT	-000.14	

LM FLIGHT PLAN

MCC-H

1354 CST

CDR

LMP

NOTES

170:00
(22112)

:05

PRESSURE INTEGRITY CHECKGO/NO-GO FOR
DEPRESS

:10

CABIN DEPRESS FOR JETTISON

OVHD OR FWD DUMP VALVE - OPEN, THEN AUTO AT 3.5 PSIA

DUMP VALVE - OPEN, VERIFY SUIT PRESS

HATCH OPENING

JETTISON JETT BAG

CLOSE & LOCK FWD HATCH

M
S
F
NCABIN REPRESS

CABIN REPRESS - AUTO

VERIFY CABIN PRESS STABLE

DOFF HELMETS & GLOVES

AUDIO MODE - ICS/PTT

:20

CABIN CLEANUP FOR LAUNCH

SECURE OPS ON FLOOR

STOW LEVA BAGS & SECURE

INSTALL ISA

SECURE UTILITY LIGHTS

:25

STOW ALL EVA DATA IN FLIGHT DATA FILE

170:30

-1:15

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	170:00 - 170:30	8/49-50	3-262

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

170:00
 (11102)
 (x1111)
MSFN UPLINK:
 LM S.V. (INS +5)
 CSM S.V. (L/O)
 RESET SURFACE FLAG

SIM EXP STATUS
 (*0000)
 (01214)

MSFN UPDATE:
 CONSUMABLES STATUS
 CSM S.V. (L/O)
 LM S.V. (INS +5)
 ASCENT PADS AND CSM WEIGHT COPY AT 171:10

MSFN CMDS:
 DSE DUMP

170:10
 CONFIGURE FOR URINE DUMP
 H_2 PURGE LINE HEATERS - ON
 PS2 (OPTION 3)
 (LIFT-OFF ORIENT)
 REPORT: GYRO TORQUING ANGLES

PS2 (COAS CALIB)
 USE STAR NO. 33

P52 IMU REALIGN

N71: _____
 N05: _____
 N93:
 X _____
 Y _____
 Z _____
 GET _____

COAS CALIB - N92

SHAFT: _____
 TRUN: _____

170:20
 P00
 GDC ALIGN

CONFIGURE CAMERAS: (DOCKING)
 CM2/DAC/18/CEX-BRKT,MIR (T8.1/250,-) 6 fps (40% MAG)

MAG (BB) _____, MAG % _____
 UTILITY PWR - ON

MSFN CMDS:
 DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

MSFN ENABLES MSFN S-BAND RELAY

H_2 AND O_2 FUEL CELL PURGE
 WASTE WATER DUMP
 URINE DUMP

P27 UPDATE

PURP	CSM (L/O)V	LM(INS+5)V	
GET	• •	• •	
304	01	INDEX	INDEX
02			
03			
04			
05			
06			
07			
10			
11			
12			
13			
14			
15			
16			
17			
20			
21			
22			
23			
24			

LM FLIGHT PLAN

MCC-H

1424 CST

CDR

LMP

NOTES

170:30

(22112)

:35

VERIFY GUIDANCE
CONFIGURATION

CONFIGURE CB'S FOR L/O PREP

-1:15

CONFIGURE CB'S FOR L/O PREP

AGS STATUS - OPERATE

:40

CONFIGURE RR

170:45

M
S
F
N

V63 RR SELF TEST (IF REQD)

AGS GYRO CALIBRATION

-1:00

:50

RATE GYRO TEST

LGC CLOCK SYNC
CONFIGURE COMM

CSM REV 50

:55

(12102)

V48 (12102)
RCS CHECKOUT

-0:50

171:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	170:30 - 171:00	8/49-50	3-264

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

170:30 -
(11102)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

CM/EL/80/CEX (FB.1/250, FOCUS) 10 FR

MAG (QQ) _____, FR # _____

CM4/TY-BRKT
(f44,PEAK,-,150MM)

TERMINATE WASTE WATER DUMP AT 10%
 H_2 PURGE LINE HTR'S - OFF

DON PGA WITHOUT HELMET AND GLOVES

STOW RESCUE Book & a/c c/l

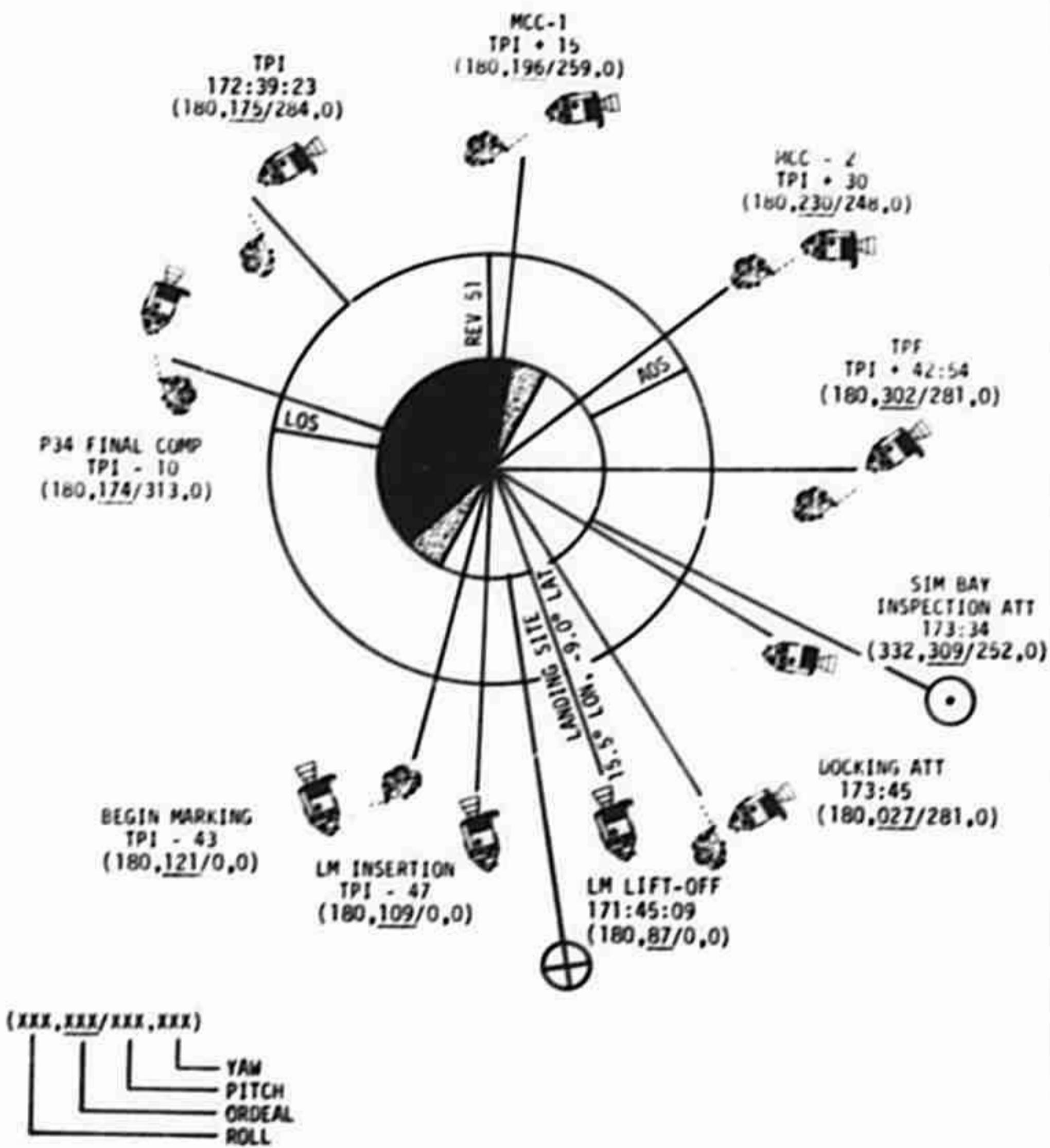
170:40 -

170:50 -

RGV 50

171:00 -

EAT PERIOD



LM FLIGHT PLAN

CDR

LMP

NOTES

MCC-H

1454 CST

UPLINK TO LM
ZERO POS/NEG CELLS
CSM S.V. (L/0)
(IF REQ)
RLS (IF REQ)

UPDATE TO LM
AGS K-FACTOR
AGS 047 & 053
LGC GYRO COMP
(IF REQ)
PIPA BIAS (IF REQ)

171:00
(12102)

:05

P57 LUNAR SURFACE ALIGN
OPTION 4 LANDING SITE
A/T 3 - GRAVITY AND CELESTIAL BODY
(LIFT-OFF)

-0:40

:10

POSITION RR ANT
LOAD AGS 047,053
BATS 5&6-ON, 1&3-OFF/RESET
SET CAMERA: LM3/DAC

MSFN

LOAD DAP, LM WT

P12 POWER ASCENT

171:15

AGS LUNAR ALIGN

-0:30

:20

PRELAUNCH SWITCH CHECKS

PRELAUNCH SWITCH CHECKS

:25

DON HELMET & GLOVES

DON HELMET & GLOVES

-0:20

171:30

V47 SET AGS BIAS
LIFT-OFF COMM, RECORDER-ON

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	171:00 - 171:30	8/50	3-266

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

171:00
(11102)
(X1111)SIM EXP STATUS
(*0000)
(01214)

EAT PERIOD

171:10

ACQ MSFN HGA P -76, Y 258

MSFN CMDS:
DSE DUMP

PRESSURIZE CABIN TO 5.5 PSIA

VHF AM T/R - OFF (PNL 9)

VHF AM B - DUPLEX

VHF AM A - OFF (CTR) (VERIFY)

VHF RANGING - ON (UP) (DSE VOICE USE MARGINAL)

VHF ANT - RIGHT (VERIFY)

EXT LIGHTS RUN/EVA - ON (UP)

EXT LIGHTS RNDZ - RNDZ

RNDZ XPNDR - PWR

- IF VHF VOICE REQ:
- VHF AM T/R-T/R (PNL 9)

171:20

LOAD CSM AND LM WT

V49 MNVR TO P20 ATT (171:30)

(180,0,0) HGA P 7, Y 346

171:30

		DIRECT ASCENT RNDZ PAD UPDATE (IF REQ)		
GETI	HRS	+ 0 0	+ 0 0	
LIFT-OFF	MIN	+ 0 0 0	+ 0 0 0	
	SEC	+ 0	+ 0	
GETI	HRS	+ 0 0	+ 0 0	
TPI	MIN	+ 0 0 0	+ 0 0 0	
N37	SEC	+ 0	+ 0	

CSM WT	+			
LM WT	+	0	5	9 0 0

		COELLIPTIC RNDZ PAD UPDATE (IF REQ)		
GETI	HRS	+ 0 0	+ 0 0	
LIFT-OFF	MIN	+ 0 0 0	+ 0 0 0	
	SEC	+ 0	+ 0	
GETI	HRS	+ 0 0	+ 0 0	
CSI	MIN	+ 0 0 0	+ 0 0 0	
N11	SEC	+ 0	+ 0	
GETI	HRS	+ 0 0	+ 0 0	
TPI	MIN	+ 0 0 0	+ 0 0 0	
N37	SEC	+ 0	+ 0	

LM FLIGHT PLAN

MCC-H

1524 CST

CDR

LMP

NOTES

GUIDANCE RECOMMENDATION FOR ASCENT

171:30
(12102)BAT 2, 4 - OFF/RESET
DES BATS - DEAD FACE

VERIFY CB STATUS

VERIFY CB STATUS

:35

APS PRESSURIZATION

-0:10

GO/NO-GO FOR LIFT-OFF

:40

CHECK APS BURN CARD

CHECK APS,RCS,EPS,ECS

LM TIMELINE BOOK

171:45

X LM LUNAR LIFT-OFF

DAC - ON

TIG: 171:45:08.6
 BT: 7MIN 14.3SEC
 Δ VT: 6047.9 FPS
 ULLAGE: NONE
 ORBIT: 45.0x9.0 NM

:50

DAC - OFF

UPDATE TO LM
TWEAK OR BAILOUT
INSTRUCTION
(IF REQD)

:55

LUNAR ORBIT INSERTION

TRIM X RESIDUALS TO <2 FPS

171:52:22.9

P20 RENDEZVOUS NAVIGATION

TWEAK BURN (IF REQD)

173:55

P34 TARGET TPI
RENDEZVOUS RADAR TRACKING

EXTERIOR LTG - TRACK

173:57

BAILOUT BURN (IF REQD)

172:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	171:30 - 172:00	8/50	3-268

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1524 CST

171:30
 GDC ALIGN
 (11102)
 (X1111)

PRE-SPS BURN SIM PREP (CUE CARD)

SIM EXP STATUS
 (*0000)
 (01214)

MSFN UPDATE:
 GO/NO-GO FOR LM LIFT-OFF

171:40

M
S
F
N

LM LIFT-OFF

171:45:08.6

P34 (BYPASS MNVR)
 V88; CMC MODE - HOLD
 SET N79 = +005.00

171:50

VHF RNG-RESET

LM INSERTION

171:52:22.9

-47

156.29
-449.5

-43

V87
 VERIFY VHF VOICE

123.67
-412.8
172:00

EVENT	CONTINGENCY MARKING SCHEDULES																
	SXT FROZEN (USABLE)*				TRACKER LIGHT FAILURE				SXT FAILURE (UNUSABLE)				VHF FAILURE				
P34	-50	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI	VHF	SAT	COAS	WRI	VHF	SXT	COAS	WRI
INSERTION						TWEAK AUTO				AUTO							
	-40																
	-30																
	-20																
	-10																
FINAL COMP																	
TPI	0																
P35																	
	10																
FINAL COMP																	
MCC-1																	
P35																	
	20																
FINAL COMP																	
MCC-2	30																

- *(1) SXT MARKS ARE TAKEN BY MANEUVERING SPACECRAFT
- (2) TO USE COAS VARIANCE (MUST BE DONE PRIOR TO EACH MARKING PERIOD)
- V25 N7E, 76E, 20000E, DE
- V21 N1E, 301E, 37777E

171:55:23(INS+3) TWEAK
 171:57:23(INS+5) LM B/O
 172:04:23(INS+12) CSM B/O

P34 INPUT			
37	LM GETI-TPI		
55	INTEG DPT +00000	ELEVATION \$ +000.00	TRANSFER \$ +130.00

MCC-H

LM FLIGHT PLAN

CDR

LMP

NOTES

1554 CST

172:00
(12102)
(12012)

:05

V48 (12012) & LM WT

:10

EXTERIOR LTG - TRACK

172:15

MSFN

:20

CONFIGURE S-BD FOR LOS
PCM - HI

:25

172:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) <small>CHANGES A</small>	3/27/72 3/6/72 (P/I)	172:00 - 172:30	8/50	3-270

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1554 CST

172:00
 (11102)
 (X1111)
 -38
 123.67
 -412.8
 IF UPLINK REQ:
 P00
 MSFN UPLINK:
 LM S.V.
 P34
 VERIFY LM TRACKER LT-ON

SIM EXP STATUS
 (*0000)
 (31000)

BEFORE STEADY STATE
 PRE-TPI: N49 > (+00200,+00120) REJECT/REPEAT
 POST-TPI:N49 > (+00080,+00050) REJECT/REPEAT
AFTER STEADY STATE
 ANYTIME: N49 > (+00030,+00020) REJECT/REPEAT

172:10 CMC MODE - AUTO

MSFN

71.72
 -279.7

MSFN CMDS:
 DSE RECORD

VHF AM T/R-T/R (PNL 9)
 VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)
 MSFN DISABLES MSFN S-BAND RELAY

41.46
 -133.7
 -10
 172:30

P34 FINAL COMP

P30 MANEUVER

N/A SET STARS	C	S	M	B	/	O	PURPOSE
	S	P	S/G	& N			PROP/GUID
R ALIGN	N	/	A				WT N47
P ALIGN	N	/	A				P TRIM N48
Y ALIGN	N	/	A				Y TRIM
ULLAGE							HRS GETI
4 JET, 11 SEC							MIN N33
							SEC
							ΔV_x N81
							ΔV_y
							ΔV_z
AVC	X	X	X				R
	X	X	X				P
	X	X	X				Y
	*			N	/	A	H _A N44
				N	/	A	H _P

- IF LM BAILOUT REQ:
- COPY P76 DATA FROM LM
-
- 33 : : .
- 84 . . .
- GO TO RESCUE BOOK PG 4

- IF CSM BAILOUT REQ:
-
- MSFN UPDATE:
- CSM BAILOUT P30 PAD
- P30
- P40; SET UP EMS
- SPS BURN CUE CARD
- CSM BAILOUT BURN
- GO TO RESCUE BOOK PG 4

P34 RECYCLE

55	INTEG OPT +00000	ELEVATION	TRANSFER \$ +130.00
58	PERILUNE ALT	TPI ΔV	TPF ΔV
81	TPI ΔV -LV	*	*
84	LM TPI ΔV -LV	*	*

LM FLIGHT PLAN

MCC-H

1624 CST

CDR

LMP

NOTES

172:30
(12012)

P42 APS THRUSTING

LOAD AGS TPI EXTERNAL ΔV

:35

MANUAL ULLAGE

TPI

NULL RESIDUALS

P35 TARGET MCC-1

RENDEZVOUS RADAR TRACKING

TIG: 172:39:12.9
BT: 2.5 SEC
ΔVT: 72.1 FPS
ULLAGE: 4 JET 10 SEC
ORBIT: 61.9x44.0 NM

:40

172:45

FINAL MCC-1 COMPUTATION

:50

REV 51

P41 RCS THRUSTING

:55

MCC-1

NULL RESIDUALS

P35 TARGET MCC-2

RENDEZVOUS RADAR TRACKING

LOAD AGS MCC-1 EXTERNAL ΔV

TIG: 172:54:22.9
ΔVT: NOM ZERO

173:00

EXTERIOR LTG - OFF

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	172:30 - 173:00	8/50-51	3-272

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1624 CST

172:30 (11102) (X1111) -8 41.46 -133.7	CYCLE CMC MODE - FREE/AUTO P40 (22°)(180,153/284,0)	SIM EXP STATUS (*0000) (31000)
-6	COMPARE SOLUTIONS SPS CHECKLIST	COMPARISON LIMITS: VGX=3, VGY=7, VGZ=9 (LM VGX + 1.0, LM VGZ -2.0) PRIORITIES: LGC,AGS,CMC VHF/RR COMPARISON LIMIT: R $\Delta R = T00 + 0.5 \ (\Delta R \geq 1.0) \text{ NM}$
0	TPI	172:39:22.9 LM +71.5,+0.2,+9.4 CSM -71.7,-0.2,-6.8 180,175/284,0
172:40	P76	
+3	P35(TRIM)(180,176/278,0)	
25.06 -123.2		
172:50 2EY 51 +12	P35 FINAL COMP CYCLE CMC MODE - FREE/AUTO P41 MCC-1	172:54:22.9 LM +0.0,+0.0,+0.0 CSM +1.0,+0.0,+0.0 180,196/259,0
+15	P76	
+18	P35 (TRIM)(180,197/254,0)	
10.04 -75.8 173:00		

GROUND TPI FOR LM

			ΔV_X
			ΔV_Y
			ΔV_Z

P34 FINAL COMP

	INTEG OPT	ELEVATION	TRANSFER
55	+00000	*	+130.00
58	PERILUNE ALT	TPI AV	TPF AV
81	TPI AV-LV	*	*
84	LM TPI AV-LV	*	*
84	LM TPI AV-LV	*	*
P76		*	*

P35 FINAL COMP

81	MCC1 AV-LV		
84	LM MCC1 AV-LV	*	*
84	LM MCC1 AV-LV	*	*
P76		*	*

- • • • • • • • • • • • • • •
- IF CSM ACTIVE & N58 TPF AV > 55 FPS
- GO TO PRE-BRAKING SPS BURN PROCEDURES
- (SEE RESCUE BOOK PG 38)
- • • • • • • • • • • • • • •

LM FLIGHT PLAN

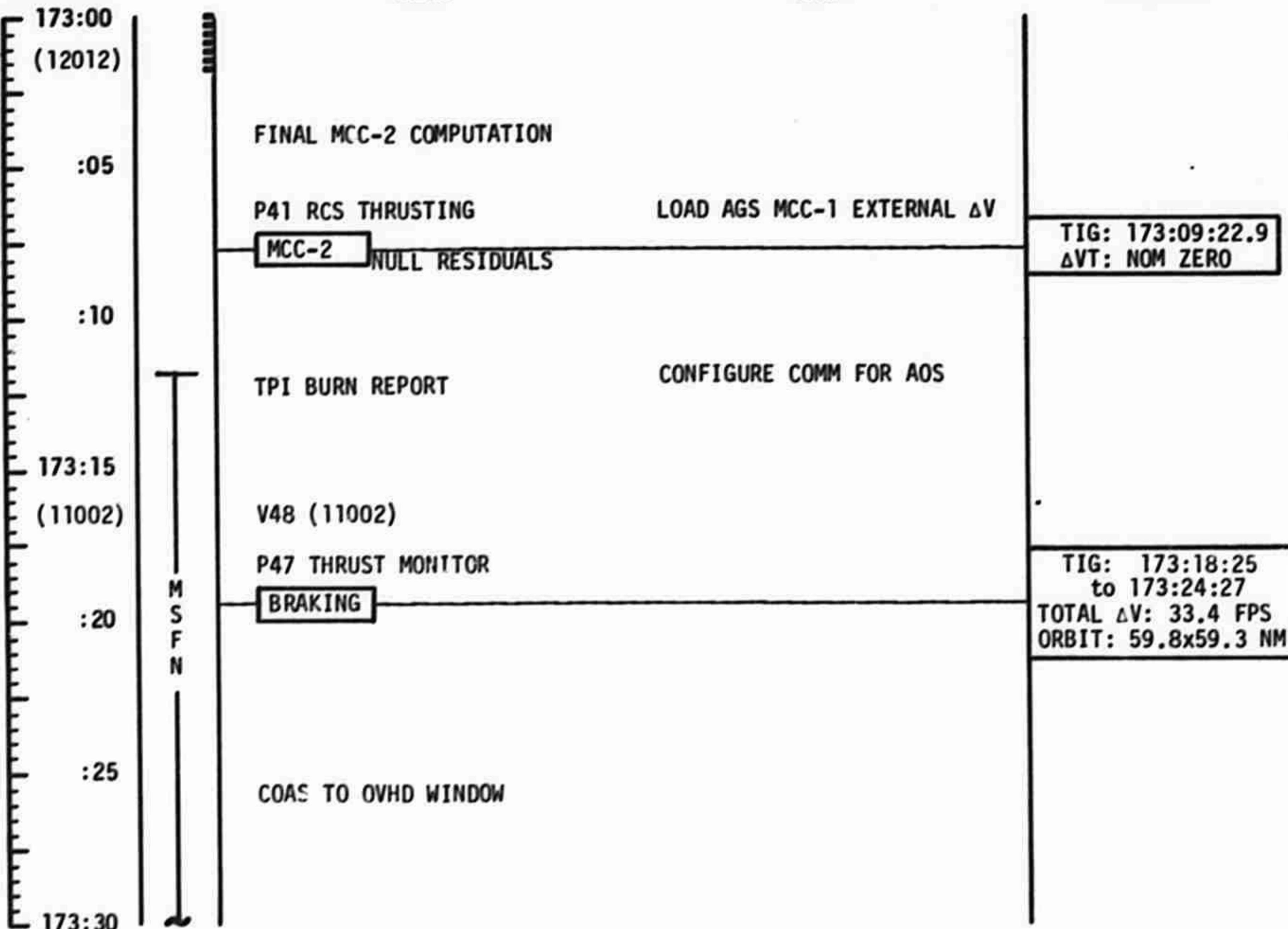
MCC-H

1654 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	173:00 - 173:30	8/51	3-274

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1654 CST

173:00 (11102) (X1111) 10.04 -75.8	SIM EXP STATUS (*0000) (31000)
*27	P35 FINAL COMP
CYCLE CMC MODE - FREE/AUTO	
P41	173:09:22.9
MCC-2	LM +0.0,+0.0,+0.0
	CSM +0.0,+0.0,-3.0
	180,230/248,0)
*30	P76
173:10	P79;P00;V49(180,281,0)
ACQ MSFN HGA: P <u>-64</u> , Y <u>324</u> (TRACK - REACQ)	
MSFN CRDS:	
DSE DUMP	
PERFORM PRE-DOCK CHECKLIST	
IF CSM ACTIVE:	
<input checked="" type="checkbox"/> T47 AT R=1.25 NM	
SEC PRPLNT FUEL PRESS (4) - OPEN	
V83E	
N83E	
KEY REL	
UTILITY PWR - ON (VERIFY)	
TV - ON	
DAC - ON	
LM PHOTOS WITH DAC/TV	
TPF	173:22:16.5
	LM 30.9 (TOTAL)
	CSM 32.7 (TOTAL)
	180,302/281,0
EWS MODE - STBY	
EWS FUNC - OFF	
EXT LIGHT RNDZ - OFF	
LM STATION KEEP	
DAC/TV - OFF	
V49 MNVR TO SIM BAY INSPECTION ATTITUDE (173:34)	
(332,252,0) OMNI D	
173:30	

P35 FINAL COMP			
81	MCC2 ΔV-LV		
84	LM MCC2 ΔV-LV	*	*
84	LM MCC2 ΔV-LV	*	*

PRE-DOCK CHECKLIST

MAN ATT (3) RATE CMD (VERIFY)	CB DOCK PROBE (2) - CLOSED
LIMIT CYCLE - OFF (VERIFY)	PROBE RETRACT (2) - OFF (VERIFY)
ATT DB - MIN	PROBE EXTD/REL - RETRACT
RATE - LOW (VERIFY)	PROBE EXTD/REL TB (2) - GRAY (VERIFY)
TRANS CONTR PWR - ON (UP)	(IF TB NOT GRAY, GO TO PG S/2-13,E)
ROT CONTR PWR DIRECT (BOTH) - MNA/MNB	CB SECS LOGIC (2) - CLOSED (VERIFY)
SC CONT - CMC (VERIFY)	CB SECS ARM (2) - CLOSED
AUTO RCS SEL (16) - MNA/MNB	EXT LIGHTS RUN/EVA - ON (UP) (VERIFY)
	COAS PWR - ON (UP) (VERIFY)

BRAKING GATES			
R.NM	R.FPS	RETICLE ANG.DEG	R.FT
.1.50	45	.08	9000
1.00	30	.13	6000
.50	20	.26	3000
.25	10	.54	1500
.08	5	1.60	500
.05		2.70	300
.03		4.00	200
.02		8.50	100

LM FLIGHT PLAN

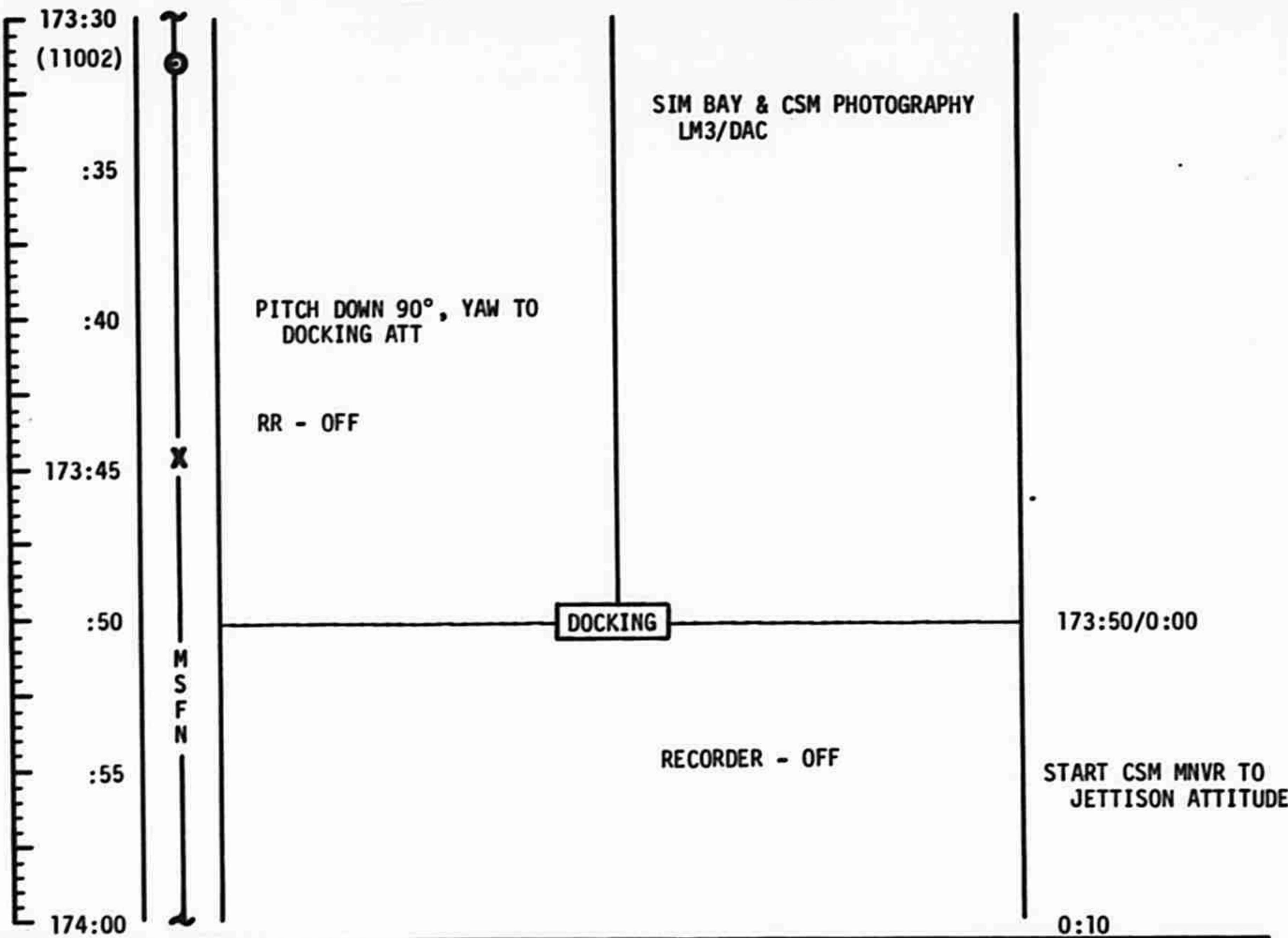
MCC-H

1724 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	173:30 - 174:00	8/51	3-276

FLIGHT PLANNING BRANCH

1724 CST

CSM FLIGHT PLAN

173:30
(11102)
(x1111)SIM EXP STATUS
(*0000)
(31000)

PERFORM 360° ROLL AT 2°/SEC

173:40

V49 MNVR TO DOCKING ATT (173:45)
(180,281,0) ACQ MSFN HGA P -64, Y 324CUE MSFN FOR LOGIC ARM
SECS LOGIC (BOTH) - ON (UP)
MSFN GO FOR PYRO ARM
SECS PYRO ARM (2) - ON (UP)

P47

DAC/TV - ON

T TRANSLATE TO CAPTURE LATCH
V PERFORM DOCKING CHECKLIST

DOCKING

173:50

DAC/TV - OFF

POO

V48 (61111)

(x1111)

CMC MODE - AUTO

RNDZ XPNDR - OFF

V49 MNVR TO LM JETT ATT (174:10)
(350,034,020) HGA P -38, Y 350

174:00

POST - SPS BURN SIM PREP (CUE CARD)

DOCKING CHECKLIST

AT CAPTURE

PROBE EXTD/REL TB (2) - BP (VERIFY)
 (IF TB NOT BP, GO TO PG 5/2-11, A)
 REPORT CAPTURE TO LM
 SC CONT - CMC (VERIFY)
 CMC MODE - FREE
 ALLOW PROBE TO DAMP SC MOTION (10 SEC)
 WHEN WITHIN +3° OF DOCKING ATTITUDE
 PROBE RETRACT SEC - 1 (PRIM - 2 IF REQD)

AT DOCK LATCH

PROBE EXTD/REL TB (2) - GRAY

AT HARD DOCK

SECS PYRO ARM (2) - SAFE	EXT LIGHTS (2) - OFF
SECS LOGIC (BOTH) - OFF	COAS PWR - OFF
CB SECS ARM (2) - OPEN	AUTO RCS SEL: ROLL (4) - OFF
CB DOCK PROBE (2) - OPEN	TRANS CONTR PWR - OFF
THC - LOCKED	ROT CONTR PWR DIRECT (BOTH) - OFF
RHC - LOCKED	VHF RANGING - OFF
BMAG MODE (3) - RATE 2 (VERIFY)	
PROBE EXTD/REL - OFF	
PROBE RETRACT (2) - OFF	

MCC-H

1754 CST

LM FLIGHT PLAN

CDR

LMP

NOTES

		PREP FOR TRANSFER	0:10
		VERIFY TUNNEL PRESSURIZED FROM CSM	
		OVHD DUMP VALVE - OPEN	
		DOFF HELMETS & GLOVES	
		WHEN TUNNEL/LM PRESSURES EQUAL, OVHD DUMP VALVE - AUTO	
		VERIFY PRESS REGS A&B - EGRESS	
		VERIFY JETT ATT	0:20
		CONFIGURE S-BAND FOR JETTISON	
		OPEN HATCH	
		RECEIVE FROM CMP:	
		PROBE	
		DROGUE	
		VACUUM CLEANER	0:30
		LM TO CM TRANSFER LIST	
		VACUUM PGA'S	
		DISCONNECT DSEA & PLACE IN PURSE	
		TAPE RECORDER OFF	
	174:30	TRANSFER PURSE & RECEIVE DECONTAMINATION BAGS & JETT BAGS FROM CMP	0:40
		UNSTOW, VACUUM, WET WIPE AND TRANSFER:	
		16MM & 70MM FILM BAGS	0:50
		OPS	
		FLIGHT DATA FILE	
		LUNAR SURFACE EXPERIMENTS, EQUIPMENT AND SAMPLES	
	:40		
	:50		1:00
	175:00		1:10

REV 52

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	174:00 - 175:00		3-278

FLIGHT PLANNING BRANCH

1754 CST

CSM FLIGHT PLAN

174:00
(61111)
(X1111)

STOW OPTICS

SIM EXP STATUS
(*0000)
(01214)174:30
(61111)
(X1111)

RECEIVE LEVA BAGS

SIM EXP STATUS
(*0000)
(01214)

PREPARE COUCHES: CDR - 0°, CMP - 0°, LMP - 180°
 REMOVE PROBE STRAPS (RS)
 CDR - VERIFY FWD DUMP VLV - AUTO
 CABIN FANS - ON (UP)

CM/LM PRESSURE EQUALIZATION (LOD)(DECAL)

174:10

M
S
F
N
TUNNEL LIGHTS - ON (UP)
TUNNEL HATCH REMOVAL (DECAL)

174:40

RECEIVE ITEMS FROM LM AND STOW
(LM TO CM TRANSFER LIST)

VERIFY DOCKING LATCHES ENGAGED (AT LEAST 3, 120° APART)

PROBE REMOVAL (CM SIDE)(DECAL)

DROGUE REMOVAL (DECAL)

TRANSFER TO CDR AT HIS REQUEST:
 PROBE
 DROGUE
 VACUUM CLEANER (ASSEMBLED)
 LM TO CM TRANSFER LIST

174:20

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

REV 52

174:50

174:30

175:00

MCC-H

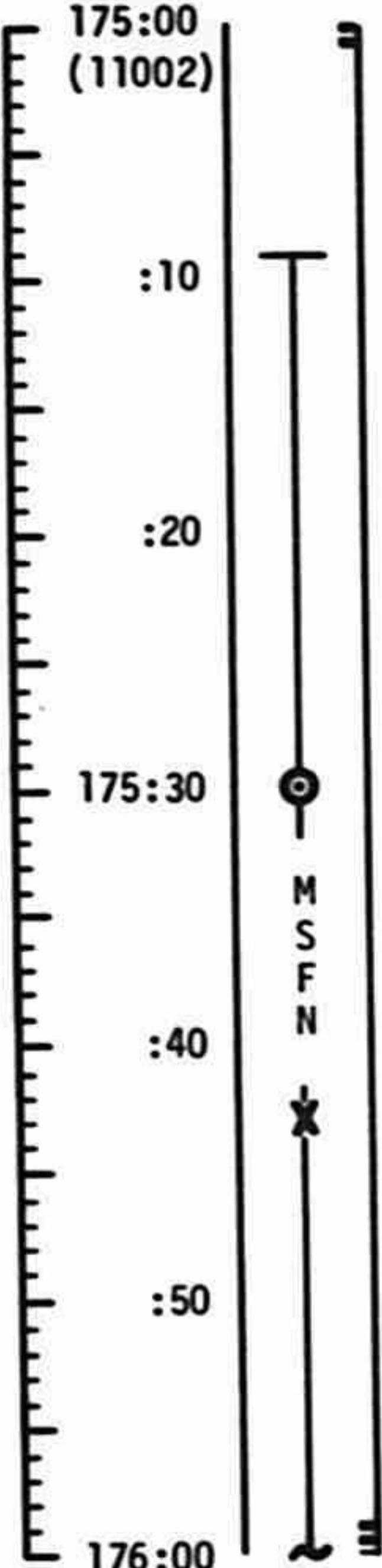
LM FLIGHT PLAN

CDR

LMP

NOTES

1854 CST

175:00
(11002)

1:10
1:20
1:30
1:40
1:50
2:00
2:10

UPLINK TO LM
LM S.V. (TIG-10)
P30 TARGET LOAD
P99 LM DEORBIT

UPDATE TO LM
DAP LOAD (WTS)
DEORBIT BURN PAD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	175:00 - 176:00		3-280

FLIGHT PLANNING BRANCH

1854 CST

CSM FLIGHT PLAN

175:00
 (61111)
 (X1111)

SIM EXP STATUS
 (*0000)
 (01214)

175:30
 (61111)
 (X1111)

SIM EXP STATUS
 (*0000)
 (01214)

175:10

ACQ MSFN HGA: P -38, Y 350

MSFN CMDS:
 DSE DUMP

175:20

M
S
F
N

175:30

175:40

TRANSFER B5, B6 CONTAINERS TO LM

175:50

MSFN UPDATE:
 DAP LOAD-UPDATE WEIGHTS
 LM JETTISON PAD (176:12)

V48 LOAD CSM & LM WEIGHTS

CSM WT	+				
LM WT	+				

176:00

LM FLIGHT PLAN

MCC-H

1954 CST

176:00

(12021)

CDR

 V48 (12021)
 P30 TARGET PGNS

LMP

CONFIGURE AGS

NOTES

2:10

CONTINUE EQUIP & SAMPLE TRANSFER (AS REQD)

2:20

 M
S
F
N

 GO/NO-GO FOR LM
 CLOSEOUT

176:30

CONFIGURE LM FOR JETTISON

2:40

:40

CONFIGURE VHF FOR CLOSEOUT

2:30

177:00

IVT TO CSM

3:00

CLOSE HATCH, IVT TO CSM

LM CLOSEOUT

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL e(4/16)	3/27/72 - 3/6/72 (P4I)	176:00 - 177:00	8/52-53	3-282

FLIGHT PLANNING BRANCH

1954 CST

CSM FLIGHT PLAN

176:00 (61111) (X1111)	MSFN UPLINK: CSM S.V. (CSM SEP -10) LM S.V. (TIG LM DEORBIT -10)	SIM EXP STATUS (*0000) (01214)	176:30 (61101) (X1111)	SIM EXP STATUS (*0000) (01214)
(61101) (X1111)	CYCLE CMC MODE - FREE/AUTO V48 (61101) (X1111)			
V49 MNVR TO LM JETTISON PAD ATT (176:12) HGA P -38, Y 350	CONTINUE EQUIP & SAMPLE TRANSFER			
176:10			176:40	TRANSFER CM JETTISON ITEMS TO LM
				WARNING NO URINE/FECES ALL OPENED FOOD MUST BE TREATED AND STORED IN BETA BAG
			REV 53	
			176:50	VHF AM B - OFF (CTR) CONFIGURE CAMERA FOR LM JETTISON PHOTOS CM2/DAC/18/CEX-BRKT,MIR (T8,1/250,7) 12 fps (50% MAG) MAG (DD) _____, MAG # _____ UTILITY PWR - ON
				LMP - CLOSE LM HATCH DIRECT O ₂ VLV - CLOSED (CW) HATCH INSTALLATION (DECAL) HATCH INTEGRITY CHECK (DECAL)
176:30			177:00	

CSM FLIGHT PLAN

2054 CST

177:00
(61101)
(X1111)SIM EXP STATUS
(*0000)
(01214)ACQ MSFN HGA: P -38, Y 350

177:10

MSFN CMDS:
DSE DUMP
DATA SYS - ONP30, N33: LM JETTISON TIG +5 MIN
N81 (+2.0,+0.0,+0.0)LM PWR - OFF (VERIFY)
cb SECS ARM (2) - CLOSE
CUE MSFN FOR LOGIC ARMSECS LOGIC (2) - ON (UP)
DON HELMETS & GLOVESREPORT: LM/OM AP
SUIT CKT INTEGRITY CHECK (DECAL)

177:20

LOAD ΔV IN EMS TO +100.0
CHECK NULL BIAS
GDC ALIGNMSFN UPDATE:
GO/NO-GO FOR PYRO ARM(10101)
(X1111)PRE-JETTISON CHECKLIST
V48 (10101)
(X1111)

SECS PYRO ARM (2) - ARM

177:30

P47 (JETT -1 MIN)
EMS MODE - NORMAL (JETT -30 SECS)
DAC - ON (JETT -25 SECS)

PRE-JETTISON CHECKLIST

BMAG MODE (3) - ATT 1/RATE 2
ATT DB - MIN
~~665 RATE - LOW SC CONT - SCS~~
EMS FUNC - ΔV
THC PWR - ON
RHC PWR DIR - MVA/MVB
THC - ARMED
RHC - ARMED
cb CSM/LM FINAL SEP (2) - CLOSE

2124 CST

CSM FLIGHT PLAN

177:30	(10101) (X1111)	LM JETTISON : : .	SIM EXP STATUS (*0000) (01214)
			177:31:15 (350,090/034,020)
		POO DAC - OFF PRE-SEPARATION CHECKLIST EMS MODE - NORMAL (SEP -30 SECS)	
		CSM SEPARATION : : .	TIG: 177:36:15 BT: 13.2 SECS AVT: 2 FPS ORBIT: 61.7 x 59.5 NM
177:40		POO Hold For MSFN EMS FUNC - OFF THC PWR - OFF RHC PWR DIR - OFF THC LOCKED RHC LOCKED ROLL (4) - OFF	
	X	MSFN UPDATE: MAP CAM PHOTO PAD (178:55) PAN CAM PHOTO PAD (179:11) TEI 62 PAD	
	M S F N	DOFF PGA'S, HELMETS & GLOVES ZIP SUITS & INSTALL ELECTRICAL COVERS PRIOR TO STOWING (PGA BAG) CDR & LMP PGA ELECTRICAL COVERS IN-PURGE CDR & LMP INSTALL LCG PLUGS IN-PURGE INSTALL NECK RING COVERS CDR15 & LMP15 IN-PURGE STOW UCTAS (PGA BAG) TRANSFER PRD'S TO CMG'S CDR & CMP DOFF BIOMED HARNESS	
177:50		MSFN UPLINK: CSM S.V. & V66	
	V44	V44 (SET LUNAR SURFACE FLAG)	
		VENT HATCH N₂	
178:00			

PRE-SEPARATION CHECKLIST

EMS MODE - STBY
SC CONT - CMC
BMAG MODE (3) - RATE 2
P41 (BYPASS MNVR)
AUTO RCS SEL (16) - MNA/MNB
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
⊕ SECS ARM (2) - OPEN
⊕ CSM/LM FINAL SEP (2) - OPEN

CSM FLIGHT PLAN

178:00
(10101)
(x1111)

SIM EXP STATUS
(-0000)
(01214)

178:30 -

SIM EXP STATUS
(*0000)
(01214)

178-10

MSFN CMDS:
RSE RECORD

178:20

VERIFY DSE TAPE MOTION (HSR/RCD/FWD/CMD RESET)

WIPE EXCESS MOISTURE FROM TUNNEL AREA

L10H CANISTER CHANGE:
(15 INTO B, STOW 12 IN A3)

178:3

10

P20 OPT 5 (+X FWD SIM ATT)(178:50)
N79 (+000.50)
SET HGA P 10, Y 0 FOR AOS ACQ

178:40 -

REV 54

SIM BASIC CONFIG (CUE CARD)
MC/LA COVER - OPEN
AP/XR COVER - OPEN
MS - DEPLOY TO 8.4 FEET (1 MIN 01 SEC)

GR - DPLY TO 4 FEET (33 SECS)
MC - EXTD
LA - ON
MS: EXP - ON
ION SOURCE - STBY
XR - ON

MAP CAMERA PHOTO PAD

T-START: : : :

T-STOP: : :

(143.7°E TO 38.7°W)

(143.7°E TO 38.7°W)

IMAGE MTN - OFF/ON
MC - ON (T START)
IMAGE MTN - INCR (SP)/ON

2254 CST

CSM FLIGHT PLAN

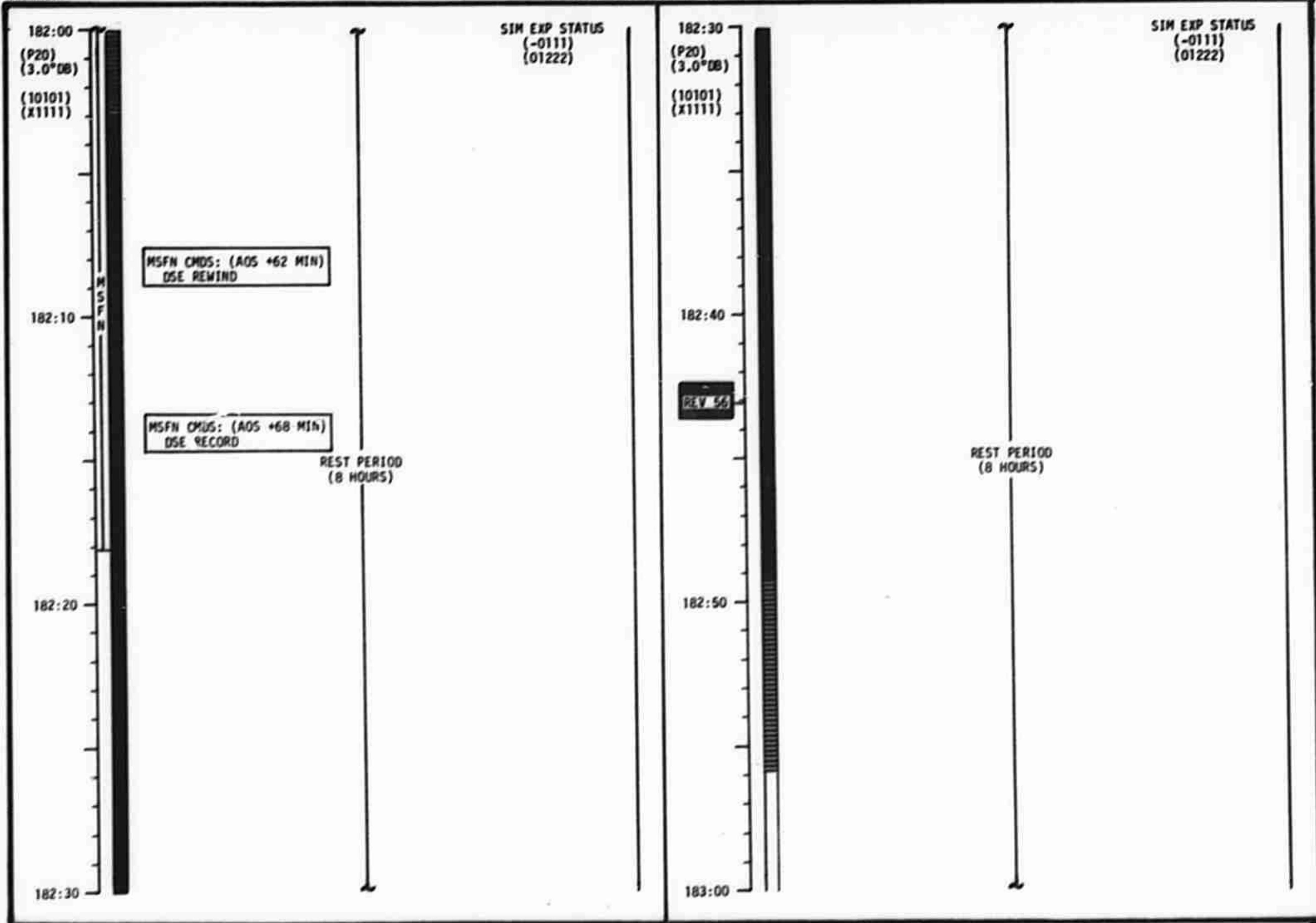
179:00 (P20) (0.5°DB) (10101) (X1111)	SIM EXP STATUS (+1221) (02232)	179:30 (P20) (0.5°DB) (10101) (X1111)	P20 OPT 5 (LM IMPACT AT) (179:35) N78 (+36.58) (+04.60) (+202.81) N79 (+000.50) (142, <u>033/324</u> , 000)	SIM EXP STATUS (+1221) (02232)
ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW		M S F N	PC: STBY MONO PWR V/H OVRD - LO ALT	
MSFN CMDS: (AOS +2 MIN) DSE (STOP/REWIND)			PC - OPR (T START)	LM LUNAR IMPACT GET: 179:39:29 LAT: 9.50°S LONG: 14.98°E
PC: STBY STEREO PWR	PAN CAMERA PHOTO PAD T-START: _____:_____ T-STOP: _____:_____ (97.2°E TO 50.000 59.2°E)		PC - STBY (T STOP) V/H OVRD - OFF	
PC - OPR (T START)	EAT PERIOD		PC - OFF (MSFN CUE) P20 OPTS (+X FWD SIM ALT) (179:47) N79 (+000.50)	
MSFN CUE: (~AOS +7 MIN) HGA AUTO			GR: SHIELD - OFF IMAGE MTN - INCR (BP +4 STEPS)/ON	EAT PERIOD
MSFN CMDS: (AOS +9 MIN) DSE PLAYBACK		LM DEORBIT BURN TIG: 179:16:29 BT: 1 MIN 35.6 SECS ΔV: 229.6 FPS		
MSFN UPDATE: PAN CAMERA PHOTO PAD (179:21)				
PAN CAMERA PHOTO PAD T-START: _____:_____ T-STOP: _____:_____ (LM IMPACT ± 14 MIN 30 SEC)			GR: SHIELD - ON (CTR)	
PC - STBY (T STOP)			MC - OFF (T STOP) WAIT 30 SECS	
PC - OFF (MSFN CUE)			MC - STBY IMAGE MTN - OFF LA - OFF	
179:30		180:00		

CSM FLIGHT PLAN

180:00 (P20) (0.5°DB) (10101) (X11111)	MC - RETR MS: ION SOURCE - ON GR - DPLY MS - DPLY MC/LA COVER - CLOSE	SIM EXP STATUS (+1221) (01232)	180:30 (10101) (X11111)	SIM EXP STATUS (*0111) (01222)
180:10	MSFN CMDS: (ADS +61 MIN) DSE REWIND CMC MODE - FREE PS2 (OPTION 3) (LIFT OFF ORIENT) REPORT: <u>GYRO TORQUING ANGLES</u>	P52 IMU REALIGN N71: _____ N05: ____ * ____ N93: X ____ * _____ Y ____ * _____ Z ____ * _____ GET _____ * _____	180:40	GUM NEBULA PHOTO SEQ A, STEPS 4 & 5
(10101) (X11111)	P20, CMC MODE - AUTO GDC ALIGN MSFN CMDS: (ADS +68 MIN) DSE RECORD CSM EXP/EVA CHECKLIST GUM NEBULA PHOTO SEQ A, P A 66 X/2-7 MAG (ZZ) POO: V49 MNVR TO GUM NEBULA PT. 3 (180:24) (126,159,302) VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)	REV 55	180:50 (P20) (3.0°DB)	P20 OPT 5 (-X FWD SIM ATT)(181:05) N79 (+003.00) SET HGA P 0, Y 170 FOR AOS ACQ
180:20			181:00	
180:30				

CSM FLIGHT PLAN

0154 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-290

CSM FLIGHT PLAN

0254 CST

183:00

(P20)
(3.0°DB){10101}
{X1111}SIM EXP STATUS
(-0111)
(01222)

183:30

(P20)
(3.0°DB){10101}
{X1111}SIM EXP STATUS
(-0111)
(01222)

183:10

MS
SF
NMSFN CMDS: (AOS +10 MIN)
DSE REWINDREST PERIOD
(8 HOURS)

183:40

MS
SF
NREST PERIOD
(8 HOURS)

183:20

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACK

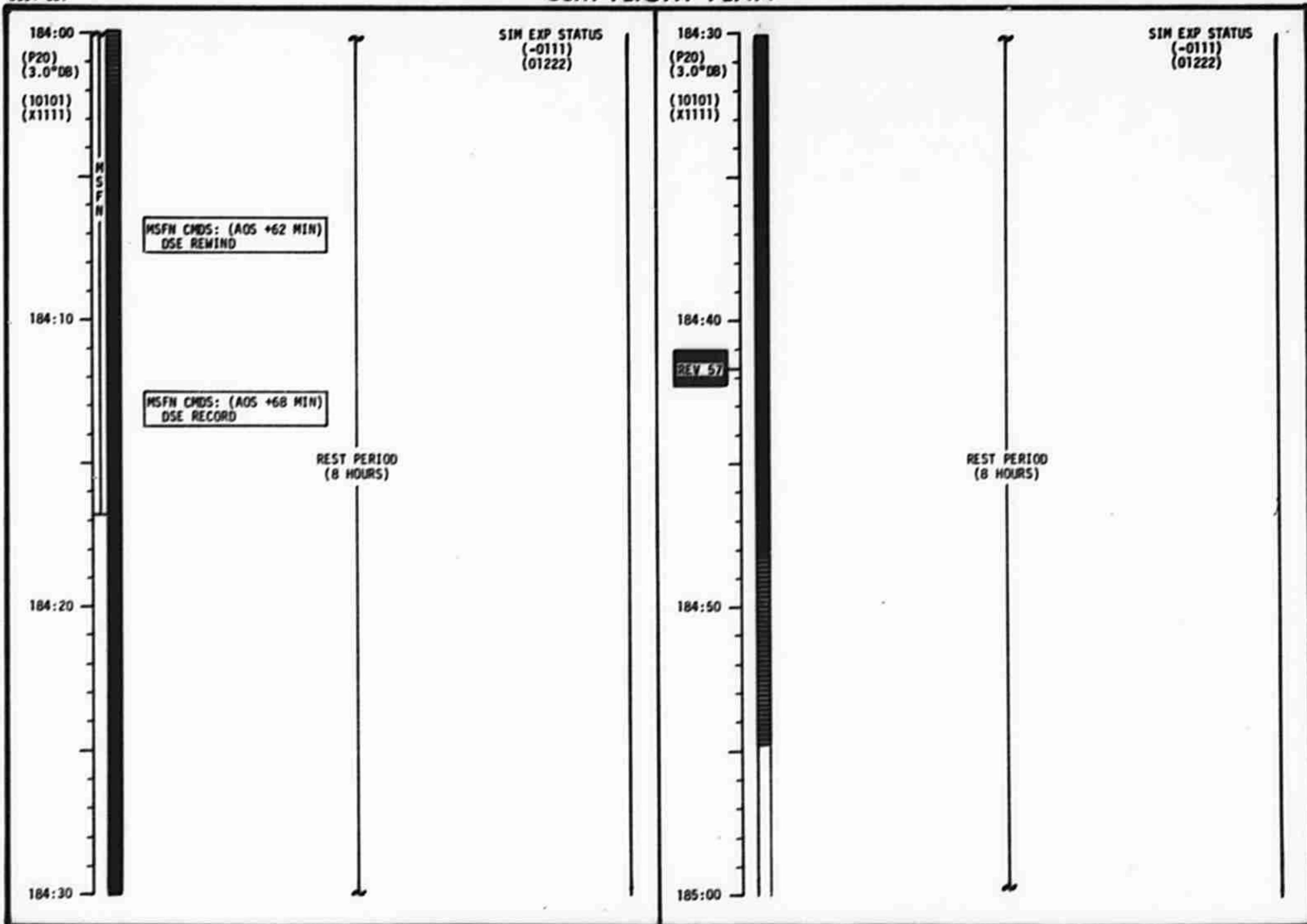
183:50

MS
SF
N

183:30

184:00

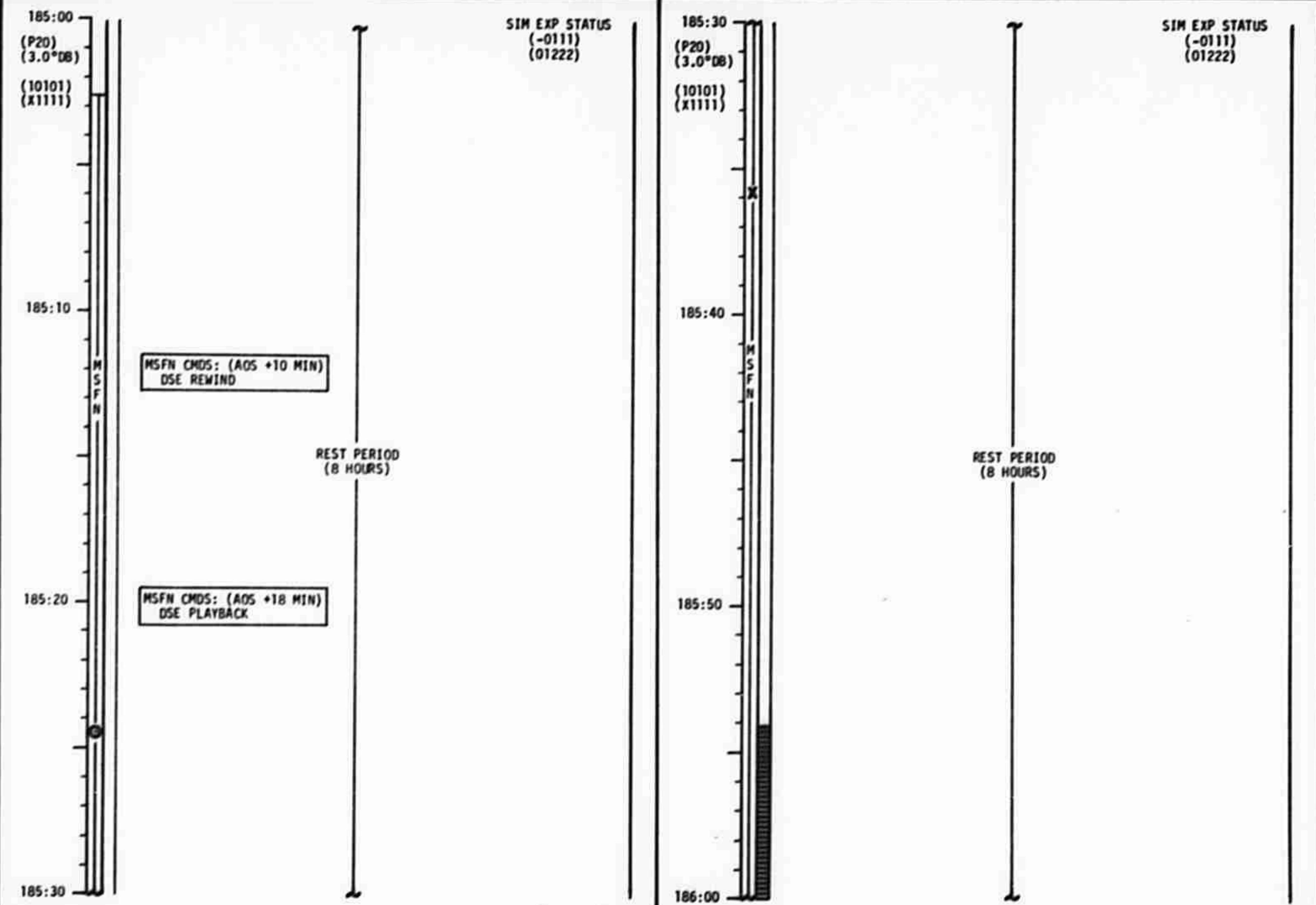
CSM FLIGHT PLAN



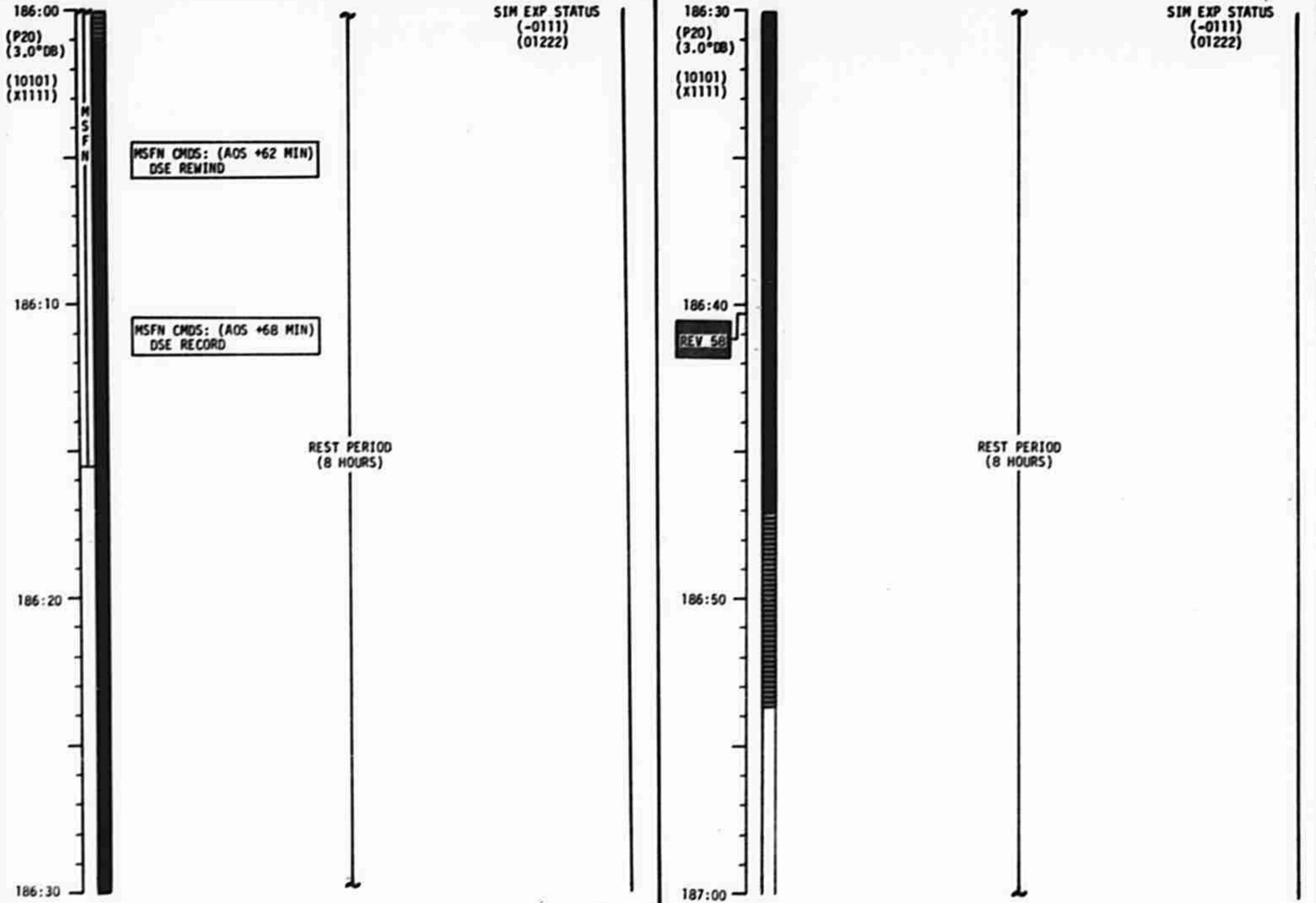
MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-292

0454 CST

CSM FLIGHT PLAN



CSM FLIGHT PLAN



CSM FLIGHT PLAN

0654 CST

187:00
(P20)
(3.0°DB){10101}
{X1111}SIM EXP STATUS
(-0111)
(01222)187:30
(P20)
(3.0°DB){10101}
{X1111}SIM EXP STATUS
(-0111)
(01222)

187:10

MSFN CMDS: (AOS +10 MIN)
DSE REWINDM
S
F
NREST PERIOD
(8 HOURS)

187:20

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACKS
E
C
D
B
A

187:40

M
S
F
NREST PERIOD
(8 HOURS)

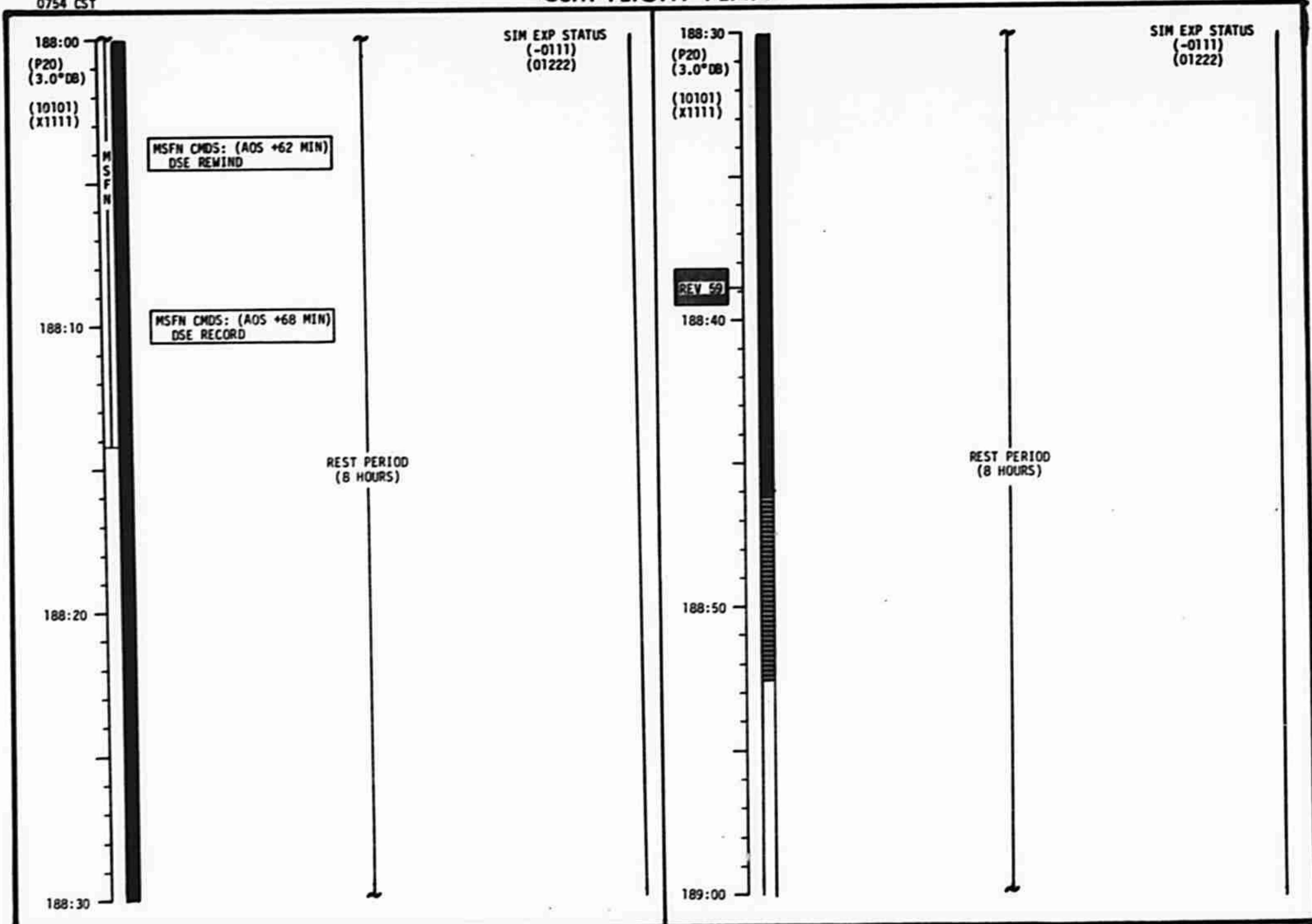
187:50

S
E
C
D
B
A

188:00

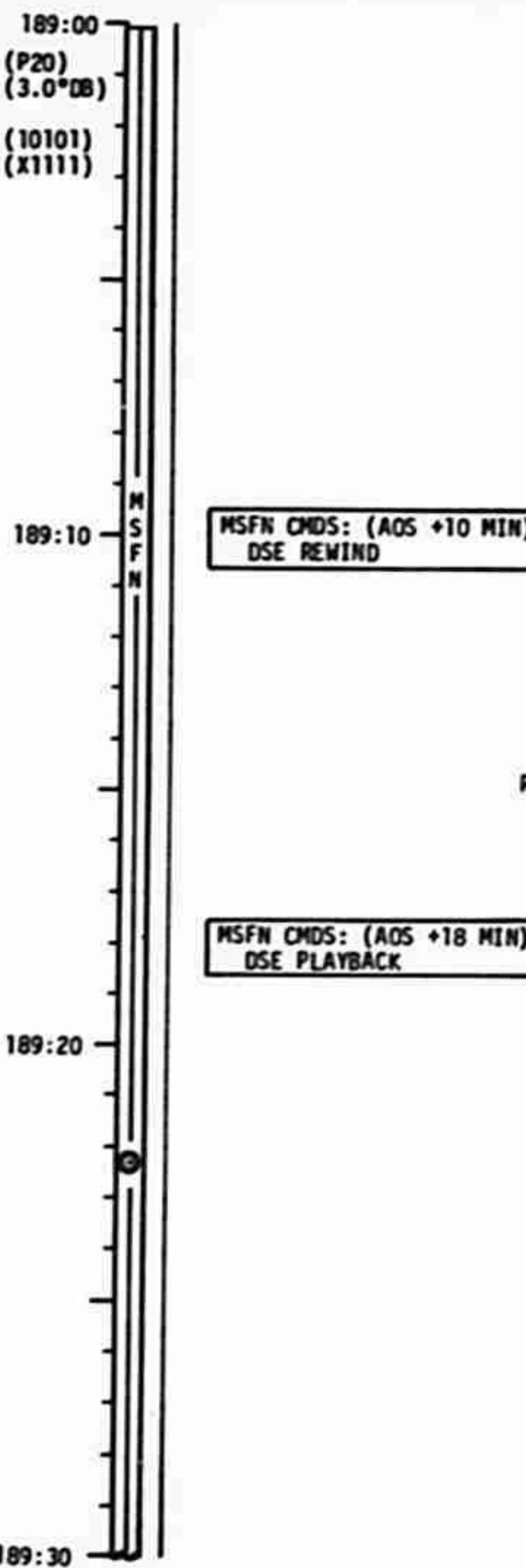
0754 CST

CSM FLIGHT PLAN



0854 CST

CSM FLIGHT PLAN

SIM EXP STATUS
 {-0111}
 {01222}189:30
 (P20)
 (3.0°DB)
 (10101)
 (X1111)

CSM SYSTEMS CHECKLIST
 POST-SLEEP CHECKLIST PAGE S/1-29
 LOGIC PWR (2) - DPLY/RETR
 MANUALLY ROLL CM 40°

SIM EXP STATUS
 {-0111}
 {01222}

(P20)
 (0.5°DB)
 P20 OPT 5 (+X FWD SIM ATT)(189:51)
 N79 (+000.50)
 HGA P -23, Y 222

189:40

MSFN UPDATE:
 MAP CAMERA PHOTO PAD

MAP CAMERA PHOTO PAD

T-START: _____ : _____ : _____
 T-STOP: _____ : _____ : _____
 (42.8°W TO 44.8°W)(1 REV)

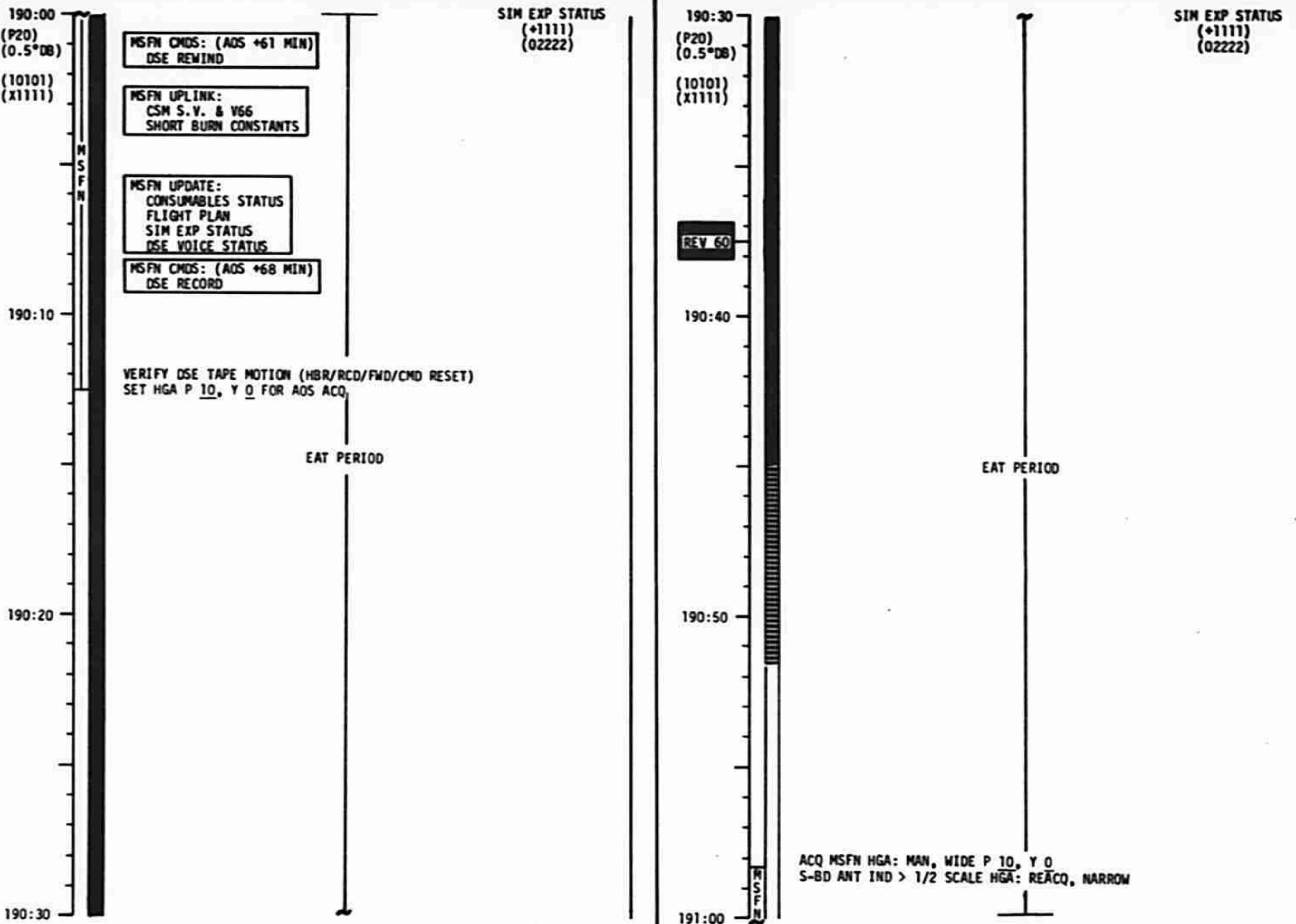
MC/LA COVER - OPEN
 MC - EXTD

GR: SHIELD - OFF

LA - ON
 IMAGE MTN - ON
 MC - ON (T START)
 IMAGE MTN - INCR (BP)/ON

GR: SHIELD - ON (CTR)
 L10H CANISTER CHANGE
 (16 INTO A, STOW 13 IN A3)

CSM FLIGHT PLAN



1054 CST

CSM FLIGHT PLAN

191:00
 (P20)
 (0.5°DB)
 (10101)
 (X1111)

MSFN CMDS: (AOS +2 MIN)
 DSE (STOP/REWIND)
 CDR DON BIOMED HARNESS
 LMP DOFF BIOMED HARNESS

SIM EXP STATUS
 (+1111)
 (02222)

MSFN CUE: (AOS +7 MIN)
 HGA AUTO

MSFN CMDS: (AOS +9 MIN)
 DSE PLAYBACK

PREPARE FOR ORBITAL SCIENCE VISUALS

191:10
 CONFIGURE CAMERA: (ORBITAL SCIENCE)
 CM4/EL/250/CEX-IVL (f5.6,1/125,-) 37 FR
 MAG (QO) ___, FR # ___

MSFN UPLINK:
 LIFT-OFF TIME (IF REQD)
 LOPC-2 TGT LOAD
 DESIRED ORIENT (LOPC-2)

MSFN UPDATE: 192:05
 LOPC-2 PAD (498+45)
 TEI 65 PAD

T EPHEM UPDATE	
OID	LOAD B
03	-----
04	-----
05	-----

191:20
 SYNCHRONIZE MISSION TIMER
 TO CMC CLOCK (IF REQD)
 VOSNOTE, 1706E (T EPHEM VERIFICATION)
 BY MSFN; COPY ON MSFN CUE FROM DSKY)
 PC: MODE - STBY
 PWR - ON

NOTE: LIFT-OFF TIME WILL BE
 UPDATED IF THE TIME
 OF REV 66 MERIDIAN
 CROSSING DIFFERS MORE
 THAN + 2 MIN FROM
 202:29:12.6

PC: PWR - OFF (MSFN CUE)
 O_2 HEATERS 3 - AUTO
 O_2 HEATERS 1&2 - OFF

ORBITAL SCIENCE VISUALS
 LANDING SITE (V9 - C10) CMS

MISSION
 APOLLO 16

EDITION
 4/16 (4/16)

DATE
 3/6/72 4/7/72

PAGE
 3-299

191:30
 (P20)
 (0.5°DB)
 (10101)
 (X1111)

SIM EXP STATUS
 (+1111)
 (02222)

MS: ION SOURCE - OFF
 EXP - STBY
 CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
 GR - RETR

IMAGE MTN - INCR (BP +4 STEPS)/ON

MS - RETR

ORBITAL SCIENCE PHOTOS

PARRY (P22-C12,C13)
 CM4 (f5.6,1/125,-) 37 FR

**SIEB IMPACT & TECTONIC
 MOVEMENT**

RECORD FR # ___

191:50
 (10101)
 (X1111)

MC - OFF (T STOP)
 POO
 V49 MNVR TO P52 ATT (192:03)
 (178,330,316) HGA P -28, Y 299
 MC - STBY
 IMAGE MTN - OFF
 LA - OFF
 XR - STBY
 MC - RETR

AP/XR COVER - CLOSE
 MC/LA COVER - CLOSE
 ENABLE ALL JETS

192:00

CSM FLIGHT PLAN

192:00	(10101) (X1111)	MSFN CMDS: (AOS +61 MIN) DSE REWIND
	M S F N	
		P52 (OPTION 3) (LDG SITE ORIENT)
		REPORT: GYRO TORQUING ANGLES
		MSFN CMDS: (AOS +68 MIN) DSE RECORD
		P52 (OPTION 1) (LOPC-2 ORIENT)
192:10		GDC ALIGN VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)
		P30 VERIFY LOPC-2 TIG AND ΔV'S CONFIGURE FOR URINE DUMP V49 MNVR TO LOPC-2 BURN PAD ATT (192:23) SET HGA P -28, Y 254 FOR AOS ACQ
192:20		SXT STAR CHECK O ₂ FUEL CELL PURGE WASTE WATER DUMP URINE DUMP
192:30		

SIM EXP STATUS
(*0000)
(01214)

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____

P30 MANEUVER

SET STARS	L	O	P	C	-	2	PURPOSE
	S	P	S	X	G	N	
R ALIGN	+						WT N47
P ALIGN		0	0				P TRIM N48
Y ALIGN		0	0				Y TRIM
ULLAGE	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
							ΔV _X N81
							ΔV _Y
							ΔV _Z
	X	X	X				R (000)
	X	X	X				P (000)
	X	X	X				Y (000)
	+						H _A N44
							H _P
	+						ΔVT
	X	Δ	X				BT
	X						ΔVC
	X	X	X	X			SXTS
	+				0		SFT
	+				0	0	TRN
	X	X	X				BSS
	X	X					SPA
	X	X	X				SXP

1224 CST

CSM FLIGHT PLAN

192:30
(10101)
(x1111)SIM EXP STATUS
(*0000)
(01214)

REV 61

TERMINATE WASTE WATER DUMP AT 10%

192:40

192:50

SET DET COUNTING UP TO LOPC-2
SECURE EQUIPMENT FOR LOPC-2
PRE-SPS BURN SIM PREP (CUE CARD)

ACQ MSFN HGA: P -28, Y 254

MSFN CMDS:
DSE DUMP

193:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-301

CSM FLIGHT PLAN

194:00
 (P20)
 (3.0°DB)
 (10101)
 (X1111)

CMC MODE - FREE
 P52 (OPTION 3)
 (LIFT-OFF ORIENT)

SIM EXP STATUS
 (-0111)
 (01232)

REPORT: GYRO TORQUING ANGLES

P20; CMC MODE - AUTO
 GDC ALIGN

MS: ION SOURCE - ON

MSFN CMDS:
 DSE RECORD

194:10
 VERIFY DSE TAPE MOTION (HBR/RCD/FND/CMD RESET)
 SET HGA P 0, Y 170 FOR AOS ACQ

P52 IMU REALIGN

N71: _____
 N05: _____
 N93:
 X _____
 Y _____
 Z _____
 GET _____

194:20
 EAT PERIOD

194:30
 (P20)
 (3.0°DB)
 (10101)
 (X1111)

REV 62

SIM EXP STATUS
 (-0111)
 (01222)

194:40

GR: SHIELD - OFF
 EAT PERIOD

194:50

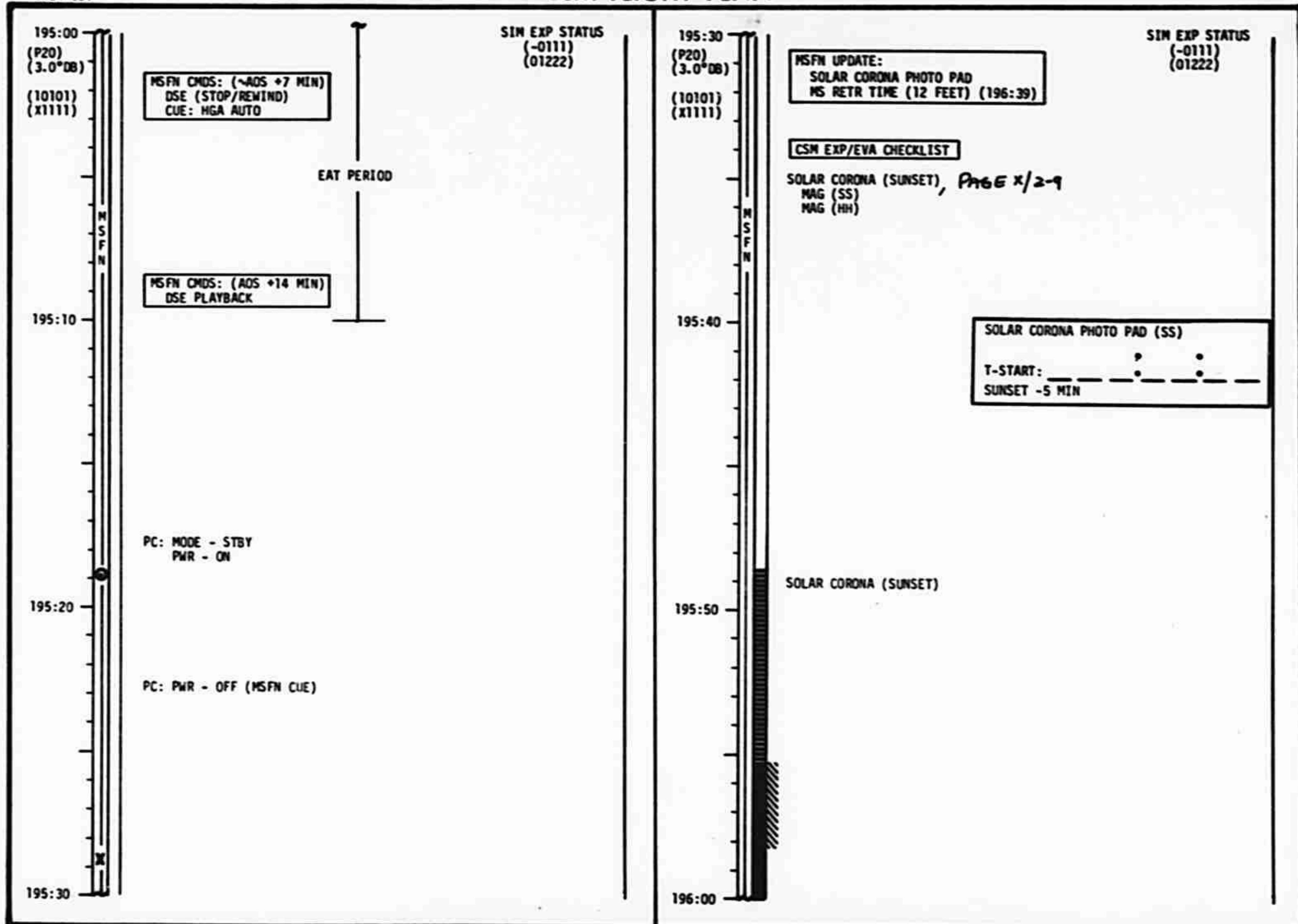
GR: SHIELD - ON (CTR)
 ACQ MSFN HGA: MAN, WIDE P 0, Y 170
 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

195:00

194:30

1454 CST

CSM FLIGHT PLAN



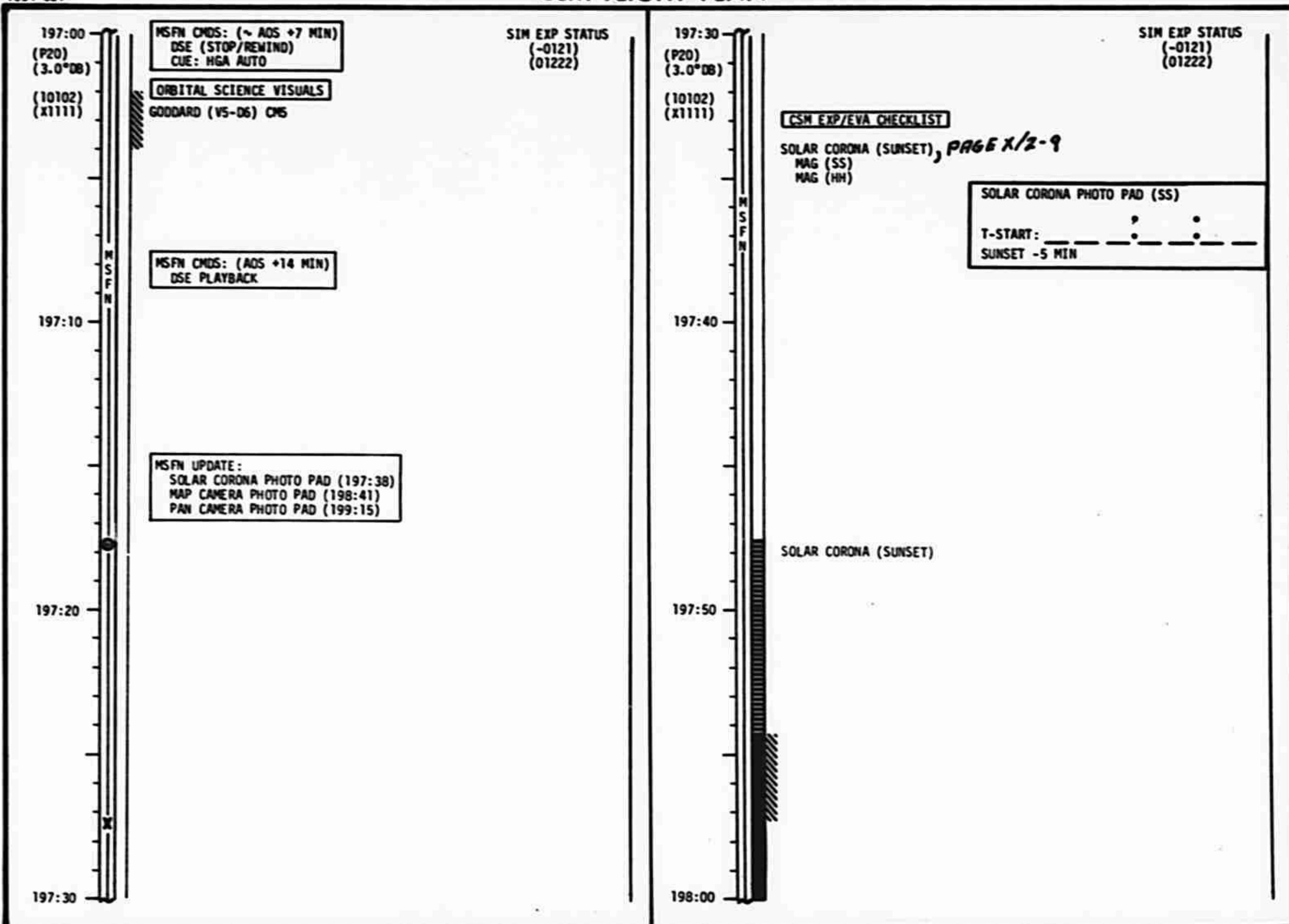
MISSION	EDITION	DATE	PAGE
APOLLO 16	COMMANDER FINALE (4/16)	2407/2024/6/720 (MT)	3-304

CSM FLIGHT PLAN

1554 CST

	SIM EXP STATUS (-0111) (01222)	SIM EXP STATUS (*0111) (01222)
196:00 (P20) (3.0°DB) (10101) (X1111) M S F N	MSFN CMDS: (ADS +66 MIN) DSE REWIND	196:30 (10102) (X1111) REV 63 (P20) (3.0°DB)
(10102) (X1111) V48 (10102) (X1111) CMC MODE - FREE POO CMC MODE - AUTO V49 MNVR TO GUM NEBULA POINT #2 (196:13) (245,230,307) <u>CONFIGURE DSE</u> (HBR/RCD/FWD/CMD RESET)(ADS +73 MIN)		P20 OPT 5 (-X FWD SIM ATT) 196:48 N79 (+003.00) SET HGA P 85, Y 170 FOR ADS ACQ O MS - RETR TO 12 FEET (1 MIN 35 SEC)
196:10 CSM EXP/EVA CHECKLIST GUM NEBULA PHOTO SEQ B, PM6-E x2-9 MAG(ZZ)		196:40 CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM3/EL/250/VHBM (f5.6,1/125,-) 6 FR MAG (SS) ____ FR # ____
196:20 GUM NEBULA PHOTO SEQ B, STEPS 4 & 5		196:50 TERMINATOR PHOTOS VETCHINKIN (PS-D4) CM3 PLAINS TO THE SOUTH RECORD FR # PREPARE FOR ORBITAL SCIENCE VISUALS ACQ MSFN HGA: WIDE P O, Y 170 S-60 ANT IND > 1/2 SCALE HGA: REACQ, NARROW
196:30	M S F N	197:00

CSM FLIGHT PLAN



1754 CST

CSM FLIGHT PLAN

198:00
(P20)
(3.0°DB)MSFN CMDS: (AOS +66 MIN)
DSE REWINDCMC MODE - FREE
POO
CMC MODE - AUTOV49 MNVR TO DEEP SPACE MEASUREMENT/P52 ATT (198:10)
(322.155.003)CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

198:10

**PHOTO "VH8W" EACH JET
MIN IMPULSE - TAPE SOUNDS TOO.**

198:20

PREPARE FOR ORBITAL SCIENCE VISUALS

198:30

SIM EXP STATUS
(-0121)
(01222)198:30
(10102)
(X1111)

REV 64

(P20)
(0.5°DB)P52 (OPTION 3)
(LIFT-OFF ORIENT)SIM EXP STATUS
(*0121)
(01222)

P52 IMU REALIGN

N71: _____

N05: _____ •

N93:

X _____ • _____

Y _____ • _____

Z _____ • _____.

GET _____ • _____

GDC ALIGN
P20 OPT 5 (+X FWD SIM ATT)(198:45)
N79 (+000.50)
SET HGA P 10, Y 0 FOR AOS ACQMC/LA COVER - OPEN
MC - EXTD
LA - ON
IMAGE MTN - ON
MS - RETR TO 8.4 FEET (26 SECS)

MAP CAMERA PHOTO PAD

T-START: _____ : _____ : _____

T-STOP: _____ : _____ : _____

(133.8°E TO 49.7°W) (1-1/2 REV)

KING (V4-D4) CM3

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROWMSFN CMDS: (~ AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

199:00

CSM FLIGHT PLAN

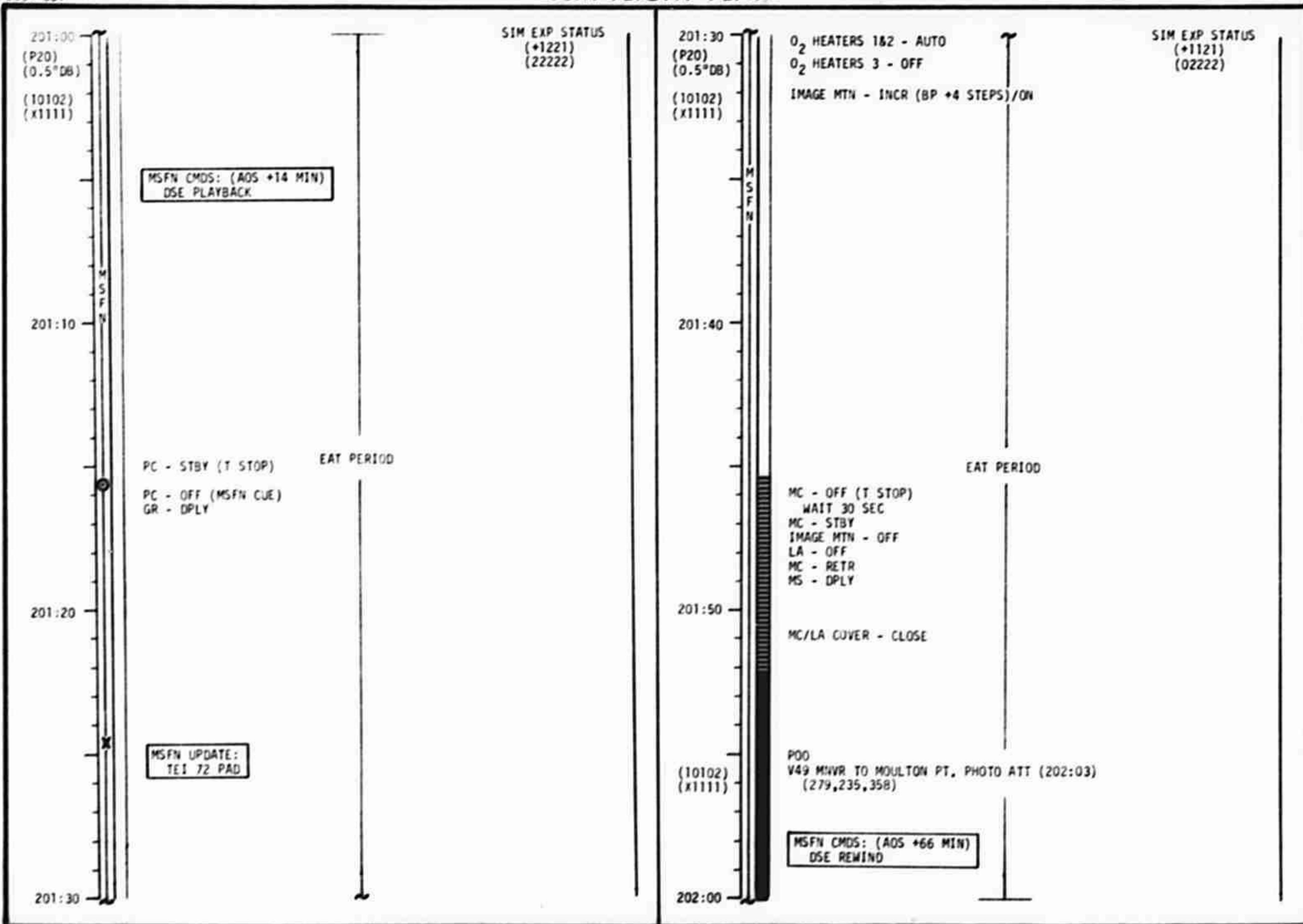
199:00 (P20) (0.5°DB) (10102) (X1111)	REPORT: GYRO TORQUING ANGLES (FROM P52 AT 198:33) PREPARE FOR ORBITAL SCIENCE VISUALS	SIM EXP STATUS (+1121) (02222)	199:30 (P20) (0.5°DB) (10102) (X1111)	GR: SHIELD - OFF IMAGE MTN - INCR (BP +4 STEPS)/ON	SIM EXP STATUS (+1221) (22222)
	MSFN CMDS: (AOS +14 MIN) DSE PLAYBACK				
199:10	MSFN UPDATE: SOLAR CORONA PHOTO PAD (200:33) MS RETR TO 5 FEET (200:40) PAN CAMERA PHOTO PAD (200:41)		199:40	GR: SHIELD - ON (CTR)	
	GR - RETR TO 7.5 FEET (2 MIN 26 SEC)			PC - STBY (T STOP)	
	PC: STBY STEREO PWR	PAN CAMERA PHOTO PAD T-START: ____ :____ :____ T-STOP: ____ :____ :____ (45.2°E TO 37.2°W)		PC - OFF (MSFN CUE)	
	PC - DPR (T START)		199:50		
	ORBITAL SCIENCE VISUALS				
	ISIDORUS/CAPELLA (VB-D9) CM3				
199:20					
199:30			200:00	MSFN CMDS: (AOS +66 MIN) DSE REWIND	

CSM FLIGHT PLAN

1954 CST

200:00 (P20) (0.5°DB) (10102) (x1111)	M S F N	SIM EXP STATUS (*1221) (02222)	200:30 REV 65 (P20) (0.5°DB) (10102) (x1111)	SOLAR CORONA (SUNRISE)	SIM EXP STATUS (*1221) (02222)
<u>CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)</u>					
200:10			200:40	IMAGE MTN - INCR (BP)/ON MS - RETR TO 5 FEET (24 SECs)	PAN CAMERA PHOTO PAD
				PC: STBY • MONO • PWR	T-START: _____ : _____ ; STEREO : _____ : _____ ; T-STOP: _____ : _____ ; (131.8°E TO 43.2°E)
		CSM EXP/EVA CHECKLIST		PC - OPR (T START)	
		SOLAR CORONA (SUNRISE) PAGE X/2-11 MAG (TT) MAG (HH)		PC - STEREO (T START +2:00 MIN)	
200:20			200:50	ACQ MSFN HGA: MAN, WIDE P 10, Y 0 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW	
				M S F N	CMP DON BIOMED HARNESS CDR DOFF BIOMED HARNESS
200:30			201:00		MSFN CMDS: (~ AOS +7 MIN) DSE (STOP/REWIND) CUE: HGA AUTO

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-310

CSM FLIGHT PLAN

2154 CST

202:00
(10102)
(X1111)LION CANISTER CHANGE:
(17 INTO B, STOW 15 IN A3)

CSM EXP/EVA CHECKLIST

GEGENSCHEIN PASS #2, PAGE X/2-3
MAG (ZZ)CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

GEGENSCHEIN PASS #2 (MOULTON PT)

202:10

V49 MNVR TO ANTI-SOLAR PT. PHOTO ATT (202:15)
(279,225,356)

202:20

GEGENSCHEIN PASS #2 (ANTI-SOLAR PT)

REV 66
202:30SIM EXP STATUS
(*0111)
(01222)202:30
(10102)
(X1111)SIM EXP STATUS
(*0111)
(01222)V49 MNVR TO BISTATIC RADAR ATT (202:43)
(242,242,000)
CONFIGURE COMM FOR S-BAND AND VHF BISTATIC RADAR TESTVHF AM T/R (3) - RCV (VERIFY)
VHF AM A - OFF (VERIFY)
VHF AM B - DUPLEX (VERIFY)
VHF RNG - RNG (DSE VOICE USE MARGINAL)
VHF ANT - RIGHT
S-BD MODE RANGING - OFF
S-BD AUX TAPE - OFF (VERIFY)
S-BD ANT - HI GAIN/MAN/WIDE
HGA P -21, Y 150
VERIFY DSE (LBR/RCD/FWD/CMD RESET)

P20 OPT 2

N78 (+270.00)
(-065.25)
N79 (-0.0830)
(+000.50)
N34 (+00202)
(+00048)
(+000.00)*LOAD DURING MNVR*

START AUTO PITCH RATE (242,208/242,000)

202:50

203:00

M
S
F
NM
S
F
NNOTE:
DURING BISTATIC RADAR
TEST, MSFN HAS NO TLM
FROM 203:00 TO 203:27
AND NO VOICE CAPABILITY
S-BD & VHF RUN
CONCURRENTLY UNTIL
203:27, VHF CONTINUES
UNTIL 211:49BISTATIC
RADAR TEST
(S-BD & VHF)

CSM FLIGHT PLAN

203:00
 (P20)
 (-0.0830)
 (0.5°DB)
 (10102)
 (X1111)

Do Presleep Checklist Except:

1. Comm Config.
2. No Talking to Ground
3. Cycle H₂ Fans
4. E Memory Dump

M
S
F
N

DISCONTINUE S-BD BI STATIC RADAR TEST
 S-BD MODE RANGING - RANGING
 HGA P O. Y 317
 P20 OPT 5 (-X FWD SIM ATT)(203:35)
 N79 (+003.00)
 SET HGA P O. Y 170 FOR AOS ACQ

(P20)
 (3.0°DB)
 203:30

SIM EXP STATUS
 (+0111)
 (01222)

BI STATIC
 RADAR TEST
 (S-BD & VHF)

BI STATIC
 RADAR TEST
 (VHF)

203:30
 (P20)
 (3.0°DB)
 (10102)
 (X1111)

(10101)
 (X1111)

203:40

POM BIT RATE - HIGH

203:50

204:00

SIM EXP STATUS
 (-0111)
 (01222)

ONBOARD READOUT

BAT C

PYRO BAT A

PYRO BAT B

RCS A

B

C

D

DC IND SEL - MNA OR B

BI STATIC
 RADAR TEST
 (VHF)

REST PERIOD
 (7.8 HOURS)

CSM SYSTEMS CHECKLIST
 PRE-SLEEP CHECKLIST PAGE S/1-29
 EXCEPT VHF
 LOGIC PWR (2) - OFF

MSFN CMDS:
 DSE DUMP

V48 (10101)
 (X1111)

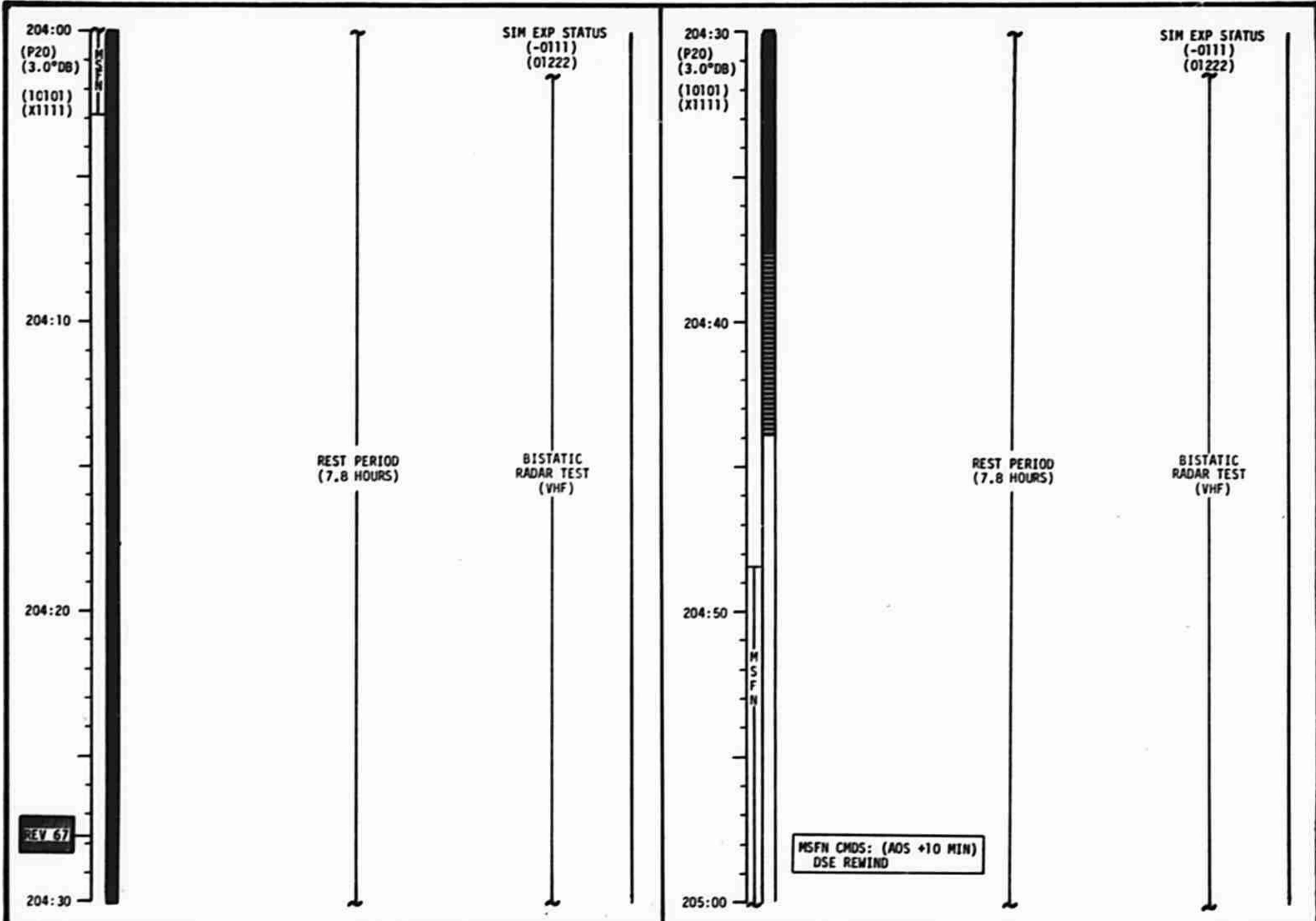
MSFN UPLINKS:
 JET-ON MONITOR LOADS

FILM MASS REQD FOR NEXT DAY:
 EL: CEX-PP, NN & RR, UV-00
 NK: VH8W-X

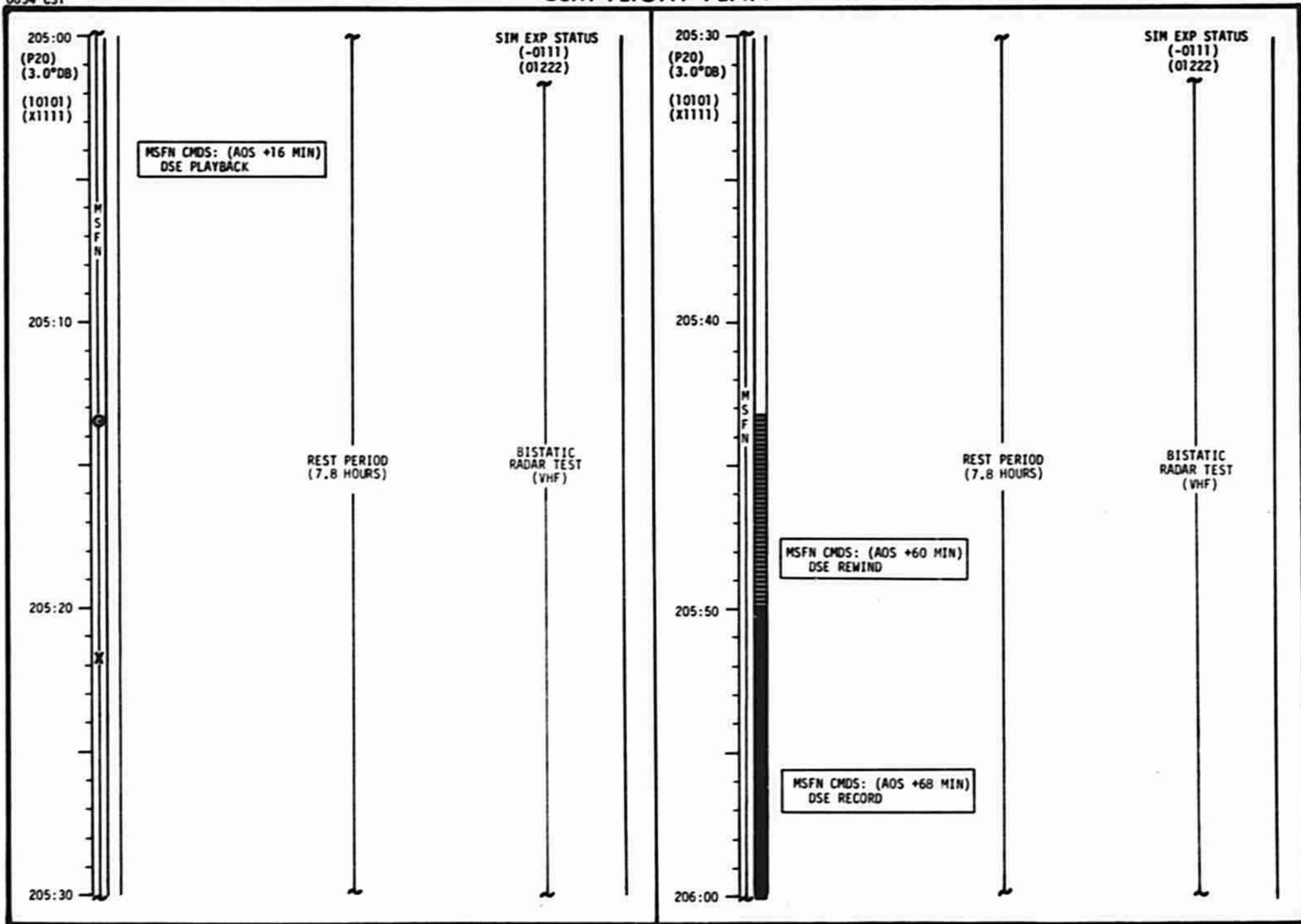
MSFN CMDS: (AOS +68 MIN)
 DSE RECORD

CSM FLIGHT PLAN

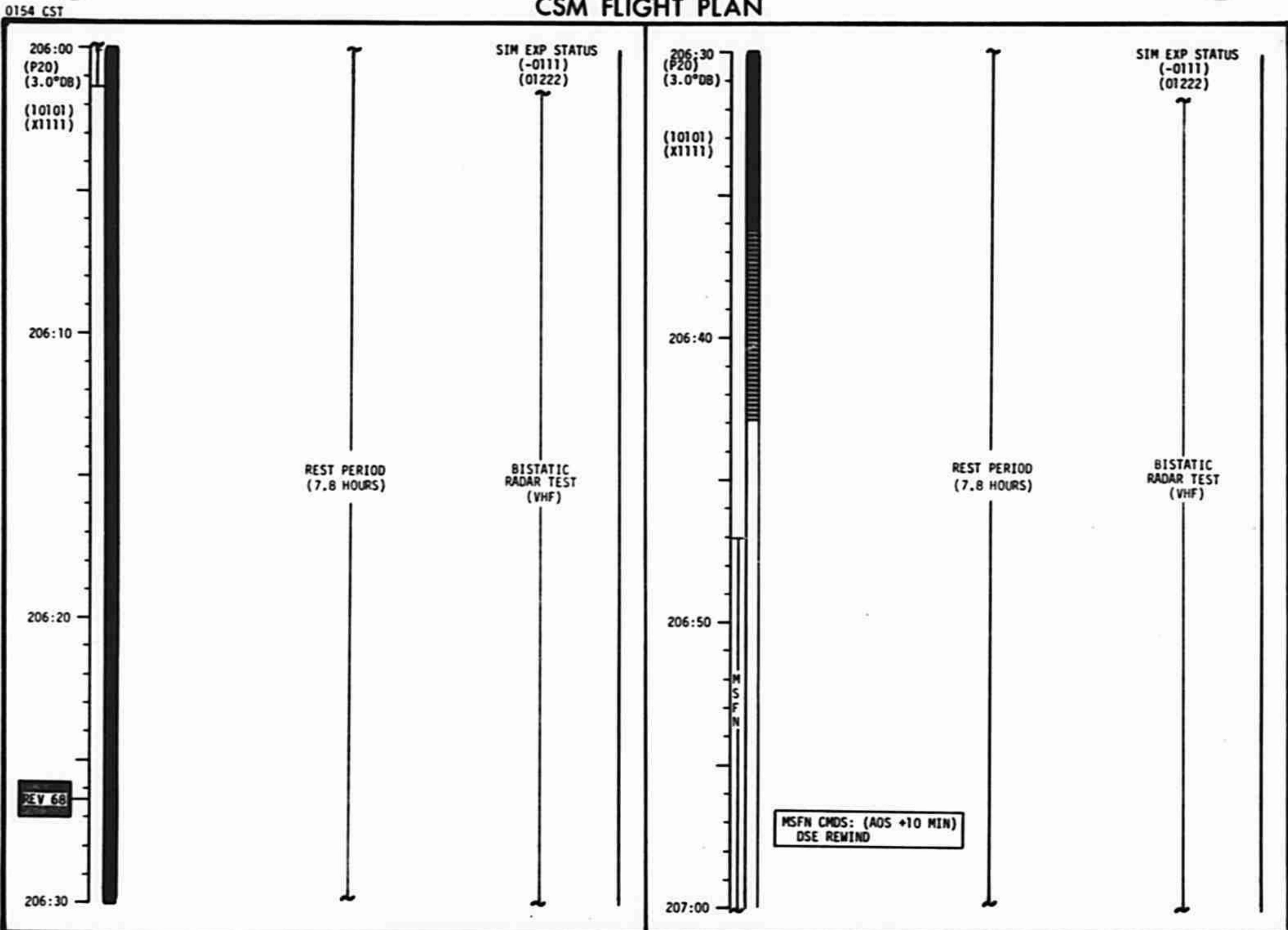
2354 CST



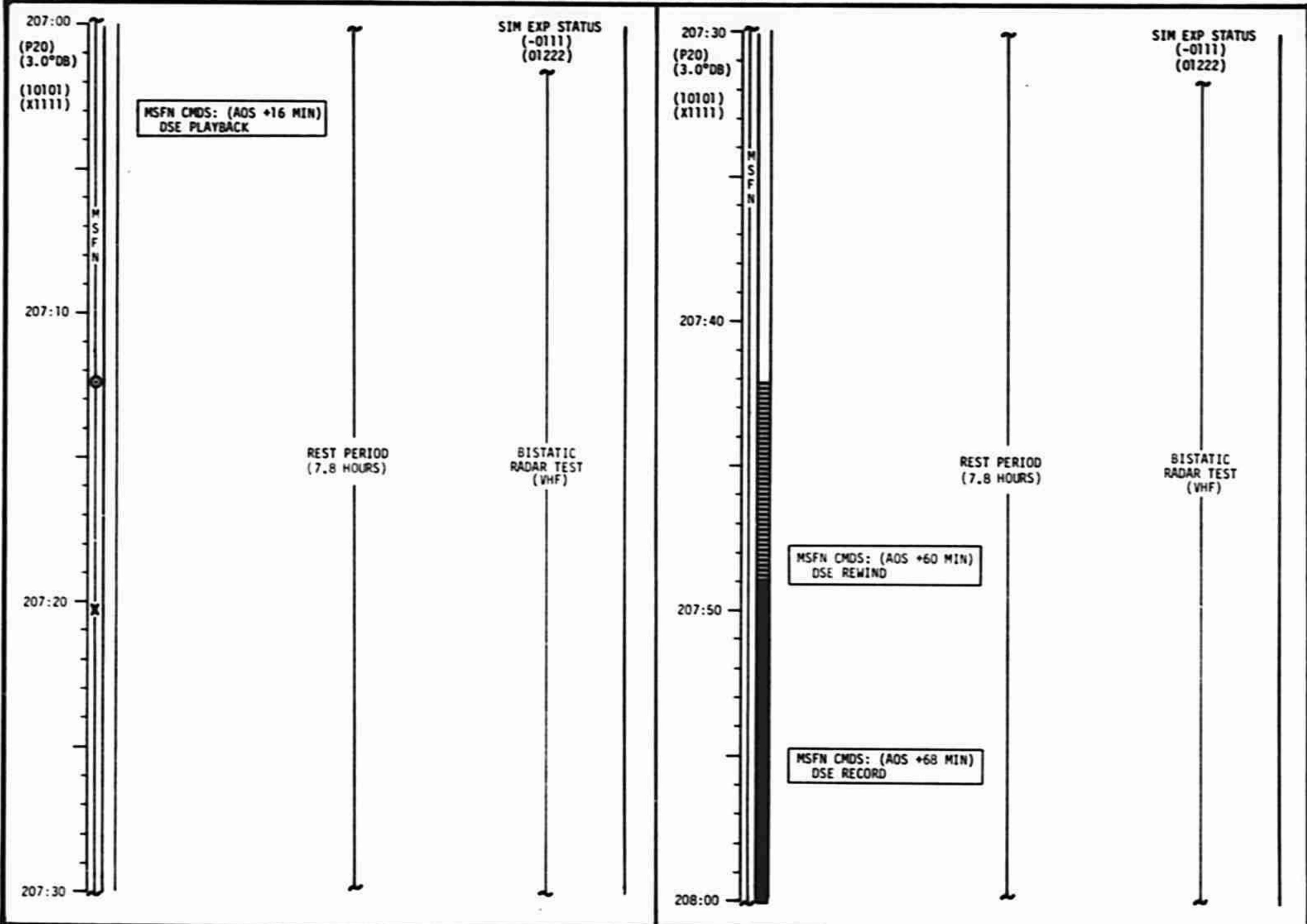
CSM FLIGHT PLAN



CSM FLIGHT PLAN

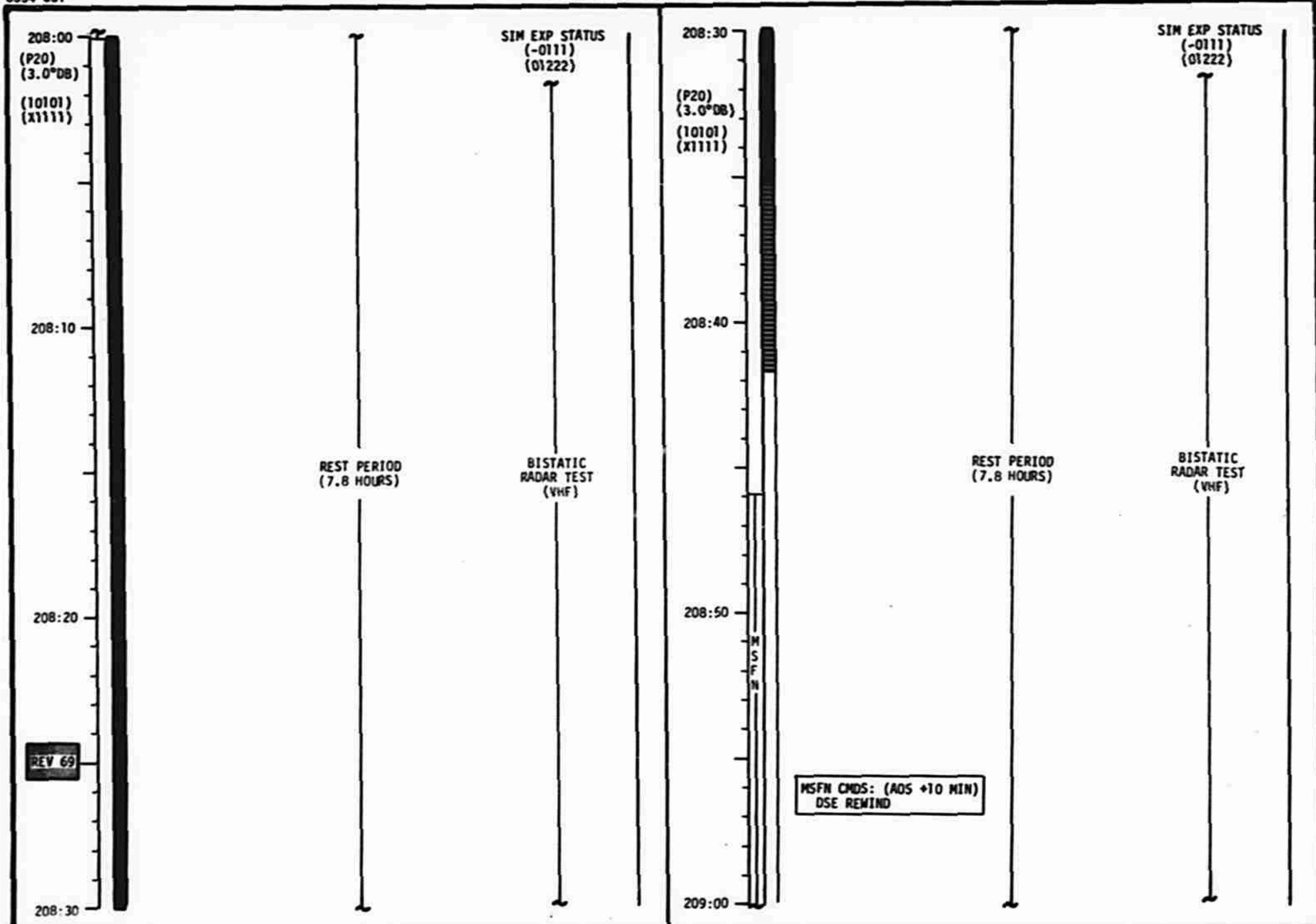


CSM FLIGHT PLAN

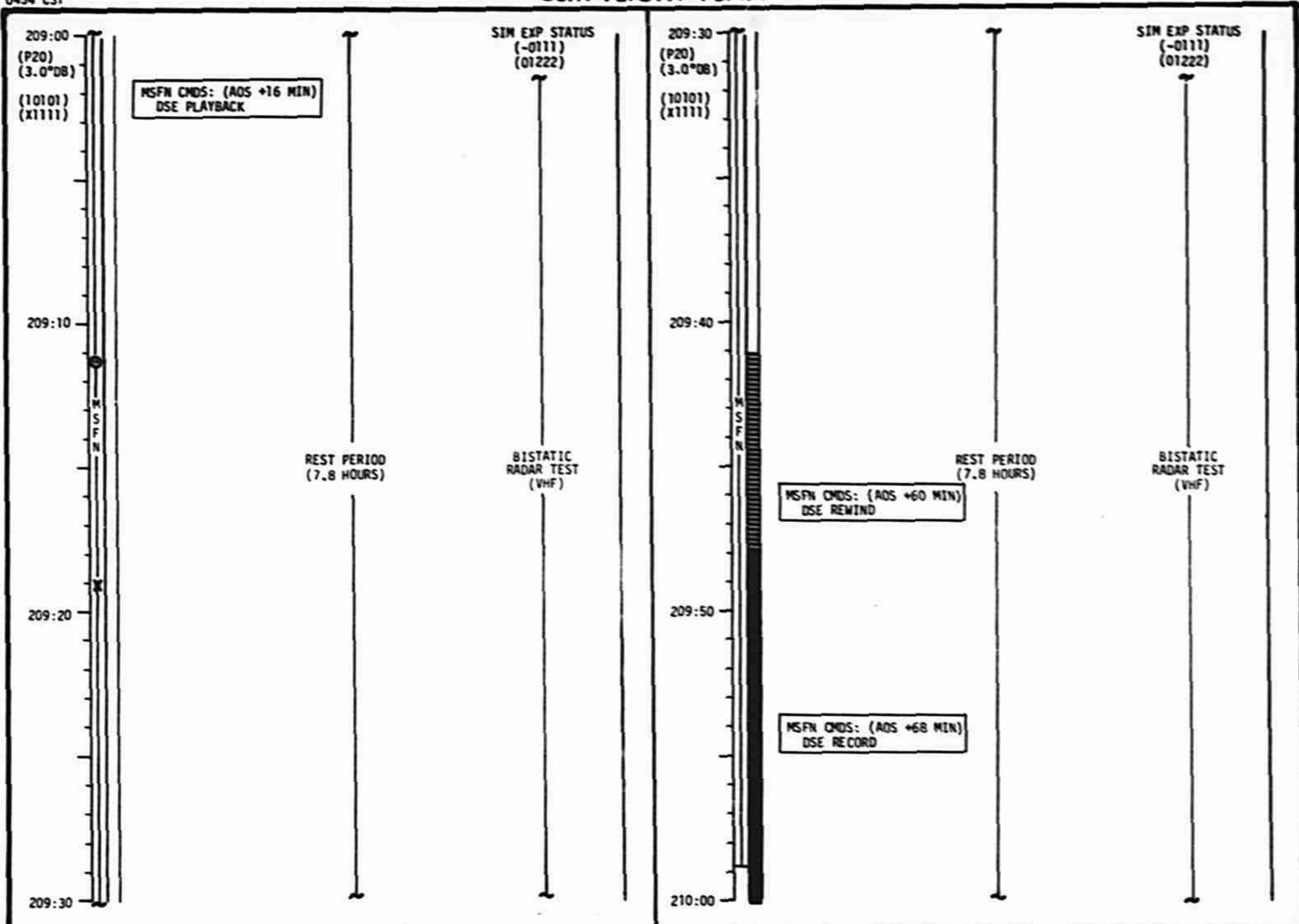


CSM FLIGHT PLAN

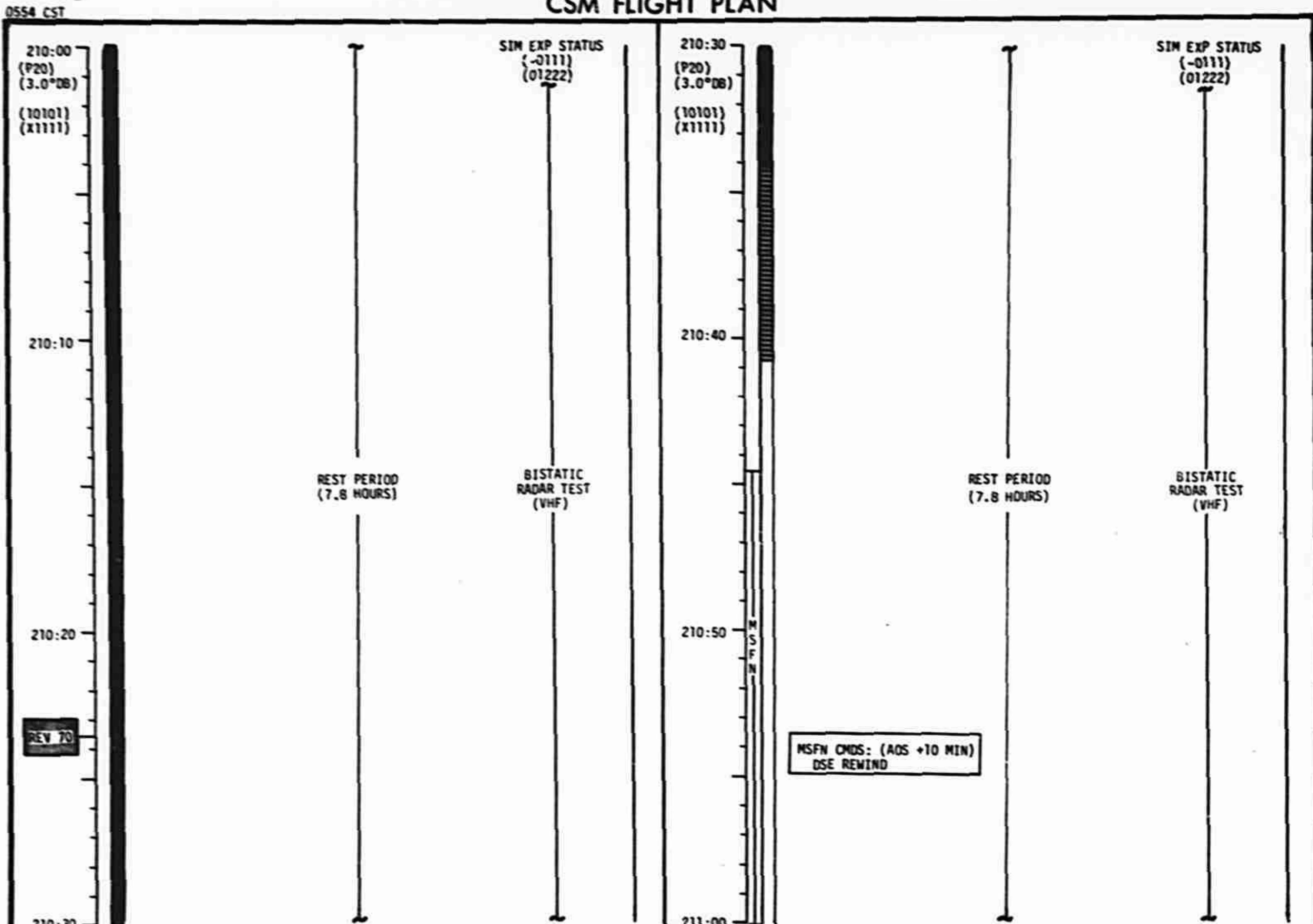
0354 CST



CSM FLIGHT PLAN

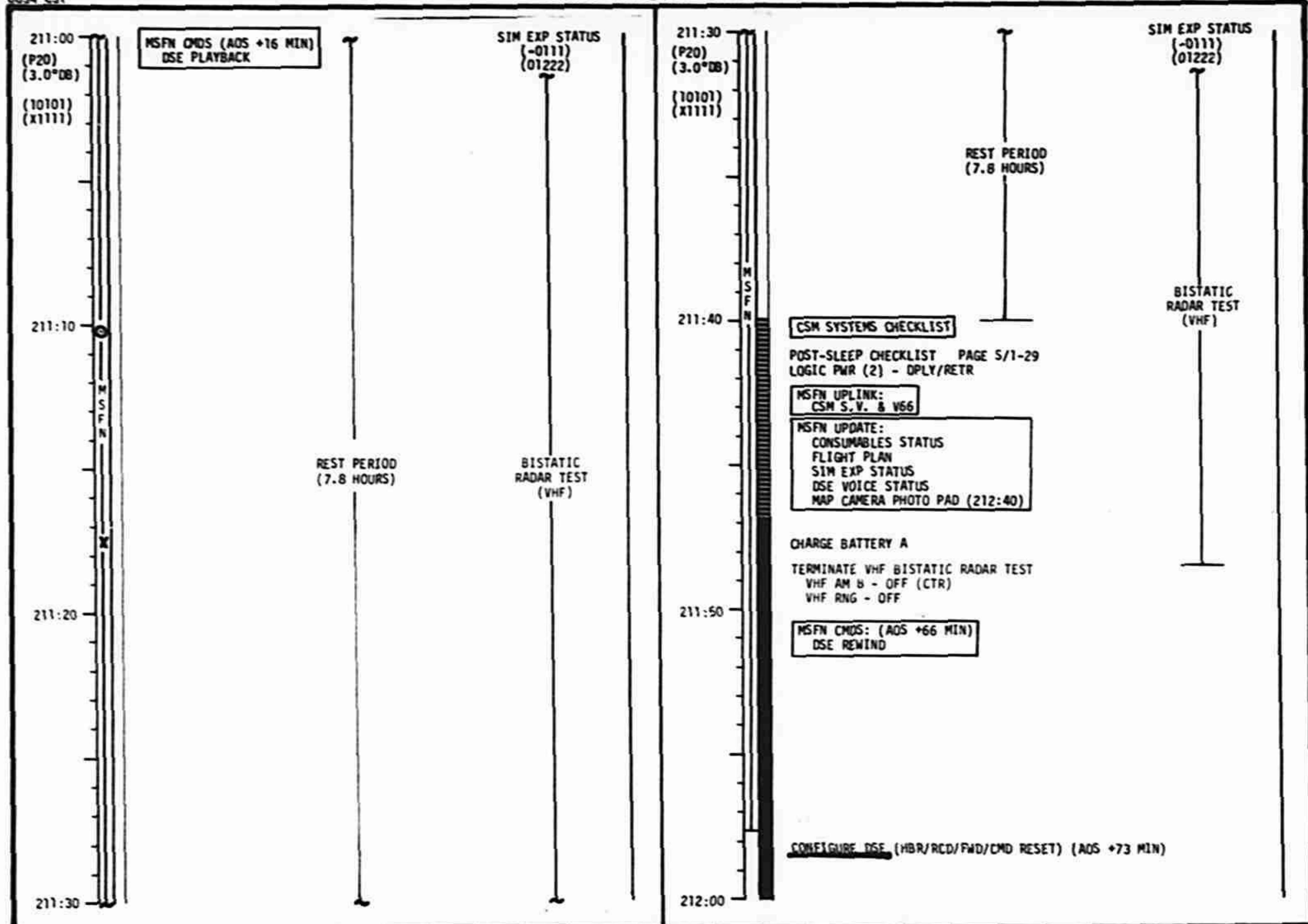


CSM FLIGHT PLAN



CSM FLIGHT PLAN

0654 CST



CSM FLIGHT PLAN

0754 CST

212:00
(P20)
(3.0°DB)

GR: SHIELD - OFF

(10101)
(X11111)SIM EXP STATUS
(-0111)
(01222)212:30
(P20)
(0.5°DB)
(10101)
(X11111)CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM1/EL/250/CEX-IVL (f5.6,1/125,-) 45 FRSIM EXP STATUS
(*0111)
(01222)MAG (PP) _____ FR # _____
MC/LA COVER - OPEN
MC - EXTDMAG (NN) _____ FR # _____
TEMP STOW MAG (NN)

212:10

GR: SHIELD - ON (CTR)
CMC MODE - FREE
PS2 (OPTION 3)
(LIFT-OFF ORIENT)

PS2 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____

GDC ALIGN
P20 OPT 5 (40° SOUTH OBLIQUE PHOTO ATT)(212:37)

N78 {+270.00}

{+087.75}

{+180.00}

N79 {+000.50}

(185,000/052,359)

CMC MODE - AUTO

SET HGA P 15, Y 340 FOR AOS ACQ

PLAN THE PHOTO PASS

(P20)
(0.5°DB)

REV 71

212:30

LMP DON BIOMED HARNESS
CMP DOFF BIOMED HARNESS

MISSION

APOLLO 16

EDITION

C. FINAL (4/16)

DATE

316172 9/10/72

PAGE

3-321

212:40

ORBITAL SCIENCE PHOTOS

FLEMING (P9-D4,05)
CM1 (f5.6,1/125,-) 45 FR

IMAGE MTN - ON

T-START

CHANGE SHUTTER TO 1/250

IMAGE MTN - INCR (BP+1 STEP)

<(BP+3 STEP)

MAP CAMERA PHOTO PAD

T-START: _____

T-STOP: _____

(126.7°E TO 55.8°W)

ACQ MSFN HGA: MAN, WIDE P 15, Y 340
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROWRECORD FR # _____
CHANGE TO MAG(NN)MSFN CMDS: (~ AOS +4 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

IMAGE MTN - INCR (BP+1 STEP), 100

AL-BIRUNI (P11-D6,07)

CM1 (f8,1/250,00) 33FR

SWIRLS CRATER, SWIRLS

212:50

RECORD FR # _____

MSFN CMDS: (AOS +11 MIN)
DSE PLAYBACKREPORT: GYRO TORQUING ANGLES
(FROM PS2 AT 212:11)MSFN UPDATE:
TEI 74 PAD

213:00

CSM FLIGHT PLAN

0854 CST

213:00 (P20) (0.5°DB) (10101) (X1111)	IMAGE MTN - INCR (OP) OFF	SIM EXP STATUS (*1111) (04222)	213:30 (P20) (0.5°DB) (10101) (X1111)	SIM EXP STATUS (*1111) (04222)
	PC: MODE - STBY PWR - ON			
213:10	PC: PWR - OFF (MSFN CUE)		213:40 MC - OFF (T STOP) WAIT 30 SECS MC - STBY IMAGE MTN - OFF MSFN	
	EAT PERIOD		MSFN COVER - CLOSE	EAT PERIOD
213:20 MSFN	IMAGE MTN - INCR (OP +4 STEPS) OFF		(10102) (X1111) V48 (10102)(X1111) CSM EXP/EVA CHECKLIST GALACTIC PHOTO SEQ 1, PAGE 5 X 2-6 MAG (X) POO: V49 MNVR TO GALACTIC PHOTO ATTITUDE (213:55) (098,177,050) OMNI D NOTE: DO NOT START PHOTO SEQUENCE UNTIL 213:56	MSFN CMDS: (AOS +66 MIN) DSE REWIND
213:30			213:50 CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)	
			214:00	

MISSION	EDITION	DATE 4/17/72	PAGE
APOLLO 16	CHANGEMATE (4/16)	3/20/72 (P.9)	3-322

CHANGE X-SEC

CSM FLIGHT PLAN

0954 CST

214:00
(10102)
(x1111)

GALACTIC PHOTO SEQ 1

SIM EXP STATUS
~~+011111~~(#1111)
(01222)

214:10

SKYLAB CONTAMINATION ORBIT SEQUENCE, PAGE X/2-26
MAG (X)
V49 MNVR TO SKYLAB CONTAMINATION PHOTO ATT 214:24
(302,071,310) MNVR TIME ~ 5MIN 45SECSTUDY THE PHOTO TRG & CONFIGURE THE EL
LOAD N78 FOR MNVR AT 214:40NOTE: DO NOT START PHOTO SEQUENCE
UNTIL 214:29

214:20

REV 72

SKYLAB CONTAMINATION ORBIT SEQUENCE

214:30

214:30
(10102)
(x1111)SIM EXP STATUS
~~+011111~~(#1111)
(01222){P20}
(0.5°DB)P20 OPT 5 (10° SOUTH OBLIQUE PHOTO ATT) (214:~~19~~¹⁹) MNVR TIME
N78 (+090.00)
(+062.25)
(+180.00)
N79 (+000.50)
(154.000/030.358)
S/2
ACQ MSFN ~~MAP~~ ~~MAP~~ HGA:P-62 , Y~~283~~
S-BO ANT SWB > 1/2 SCALE, HGA, REAO, NARROWCONFIGURE CAMERA: (ORBITAL SCIENCE)
CM5/EL/250/CEX-IVL ~~MAP~~ (511,1/250,00)/36 FR
MAG (N/A) FR #ORBITAL SCIENCE PHOTOS
AL-BIRUNI (P11-06,07)
SM1 (18,1/250,-) 33 FR

SWARAS GRANDE, SWARAS

214:50

MSFN CMDS: (AOS +9 MIN)
DSE (STOP/REWIND)
EVE: HGA AUTORECORD FR #
CHANGE TO MAG (RA)MSFN UPDATE:
MAP CAMERA PHOTO PAD (215:30)
PAN CAMERA PHOTO PAD (215:35)
SHAPE MNVR PAD (216:15)

215:00

MSFN CMDS: (AOS +17 MIN)
DSE PLAYBACK

CSM FLIGHT PLAN

215:00
 (P20)
 (0.5°DB)
 (10102)
 (x1111)

LIOH CANISTER CHANGE
 (18 INTO A, STOW 16 IN A3)

MSFN UPLINK:
 SHAPE TGT LOAD
 CSM S.V. & V66

SIM EXP STATUS
~~(00111)(01111)~~
 (01222)

215:30
 (P20)
 (0.5°DB)
 (10102)
 (x1111)

MC - ON (T START)
 PC - ON (T START)
 IMAGE MTN - INCR (BP +4 STEPS)/ON

SIM EXP STATUS
 (*1001)
 (13212)

215:10
 DESCARTES (P15-D10,D11)
 CMS (f11,1/250,-) 20 FR

VOGEL/LASSELL (P17-D11,D12)
 CMS (f8,1/250,-) 44 FR
 MS: ION SOURCE - OFF
 EXP - STBY

CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM

GR - RETR

~~LA/COVER~~ OPEN

215:20
 MS - ENTD

MS - RETR
 PC: STBY
 STEREO
 PWR

LA - ON

BULLIAUDUS/GASSENDI (P23-D12,D13)
 CMS (f5,6,1/250,-) 62 FR

IMAGE MTN - ON

CHANGE SHUTTER TO 1/125

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE 4 (4/16)	3427172-10/172	3-324

215:30
 (P20)
 (0.5°DB)
 (10102)
 (x1111)

HANSTEEN (P26-D14)
 CMS (f5,6,1/250,-) 10 FR

PC - STBY (T STOP)
 MC - OFF (T STOP)
 WAIT 30 SECS
 MC - STBY
 IMAGE MTN - OFF
 LA - OFF
 MC - RETR
 XR - STBY
 PC - OFF (MSFN CUE)
 MC/LA COVER - CLOSE
 AP/XR COVER - CLOSE
 RECORD FR # _____

MAP CAMERA PHOTO PAD

T-START: _____ : _____ : _____
 T-STOP: _____ : _____ : _____
 (35.8°W TO 56.8°W)

PAN CAMERA PHOTO PAD

T-START: _____ : _____ : _____
 T-STOP: _____ : _____ : _____
 (35.8°W TO 55.8°W)

MSFN CMDS:
 DSE REWIND

H₂ PURGE LINE HEATERS - ON

CONFIGURE FOR URINE DUMP

MSFN CMDS:
 DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

CMC MODE - FREE

1154 CST

CSM FLIGHT PLAN

216:00
(P20)
(0.5°06)P52 (OPTION 3)
(LIFT-OFF ORIENT)(10102)
(X1111)SIM EXP STATUS
(*0000)
(01214)P20; CMC MODE - AUTO
GDC ALIGNH₂ & O₂ FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP216:10
P30; VERIFY SHAPE BURN TIG
AND ΔV'SH₂ PURGE LINE HEATERS - OFF

TERMINATE WASTE WATER DUMP AT 10%

REV 73
216:20(10102)
(X1111)ENABLE ALL JETS
POO; Y49 MNVR TO SHAPE BURN PAD ATT (216:28)
SET HGA P -42, Y 24 FOR AOS ACQ

216:30

P52 IMU REALIGN

N71: _____

N05: _____ • _____

N93:

X _____ • _____

Y _____ • _____

Z _____ • _____

GET _____ • _____

MISSION

EDITION

DATE

PAGE

APOLLO 16

CHANGE A (4/16)

P30 MANEUVER

SET STARS	S	H	A	P	E	PURPOSE
	S	P	S/G	&	N	
R ALIGN	+					WT N47
P ALIGN		0	0		•	P TRIM N48
Y ALIGN		0	0		•	Y TRIM
	+	0	0	0		HRS GETI
	+	0	0	0		MIN N33
	+	0				SEC
ULLAGE						ΔV _X N81
						ΔV _Y
						ΔV _Z
	X	X	X			R (003)
	X	X	X			P (058)
	X	X	X			Y (357)
	+					H _A N44
						H _P
	+					ΔVT
HORIZON/WINDOW	X	X	X		•	BT
	X					ΔVC
	X	X	X	X		SXTS
	+				0	SFT
	+			•	0	TRN
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP

CSM FLIGHT PLAN

1224 CST

216:30
 (10102)
 (x1111) PRE-SPS BURN SIM PREP (CUE CARD)

SIM EXP STATUS
 (*0000)
 (01214)

V45 (RESET LUNAR SURFACE FLAG)
 SET DET COUNTING UP TO SHAPE BURN
 (PAO)
 (0.5°DB) P40 (TRIM)

216:40
 ACQ MSFN HGA: P -42, Y 24
 REPORT: GYRO TORQUING ANGLES
 (FROM P52 AT 216:00)

CSM SHAPE TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	TRIM X, Y, AND Z TO 0.2 FPS. IF (-) V _{gy} OR (+) V _{gz} ROLL AND USE -Z THRUSTERS

MSFN UPDATE:
 GO/NO-GO FOR CSM SHAPE

CSM SHAPE (003,050/058,357)

TIG: 216:49:12
 BT: 02.2 SECS
 LVT: 38.0 FPS
 ULLAGE: 2 JET 17 SEC
 ORBIT: 85 x 55 NM

216:50
 (10102)
 (x1111) P00
 V66 SET CSM S.V. INTO LM S.V.
 REPORT: BURN STATUS

MSFN DSE DUMP

POST-SPS BURN SIM PREP (CUE CARD)

BURN STATUS REPORT			
X	X	X	ATIG
X	X	X	BT
X	X	X	V _{gx}
			TRIM
X	X	X	R
X	X	X	P
X	X	X	Y
X	X	X	V _{gy}
X	X	X	V _{gz}
X	X	X	S _v _c
X	X	X	FUEL
X	X	X	OX
X	X	X	UNBAL

CSM FLIGHT PLAN

1254 CST

217:00
(10102)
(x1111)SIM EXP STATUS
(*0000)
(01214)217:30
(10102)
(x1111)SIM EXP STATUS
(*0000)
(01214)M
S
F
NMSFN UPDATE:
SUBSAT LAUNCH PAD (217:38)MSFN UPLINK:
LM S.V. (CSM S.V. & SUBSAT LAUNCH ΔV)

217:10

*The Subsat State Vector
is Actually Uplinked*

X

217:20

217:40

V49 MNVR TO SUBSAT LAUNCH PAD ATT (217:47)
HGA P 15, Y 232
SUBSAT LAUNCH PROCEDURES, PAGE X/1-8

CSM EXP/EVA CHECKLIST

SUBSAT LAUNCH PAD

GET: _____ : _____
R (088) , P (247) , Y (000)

217:30

217:50

MSFN CMDS:
DSE RECORDMSFN UPDATE:
GO/NO-GO FOR SUBSAT LAUNCH

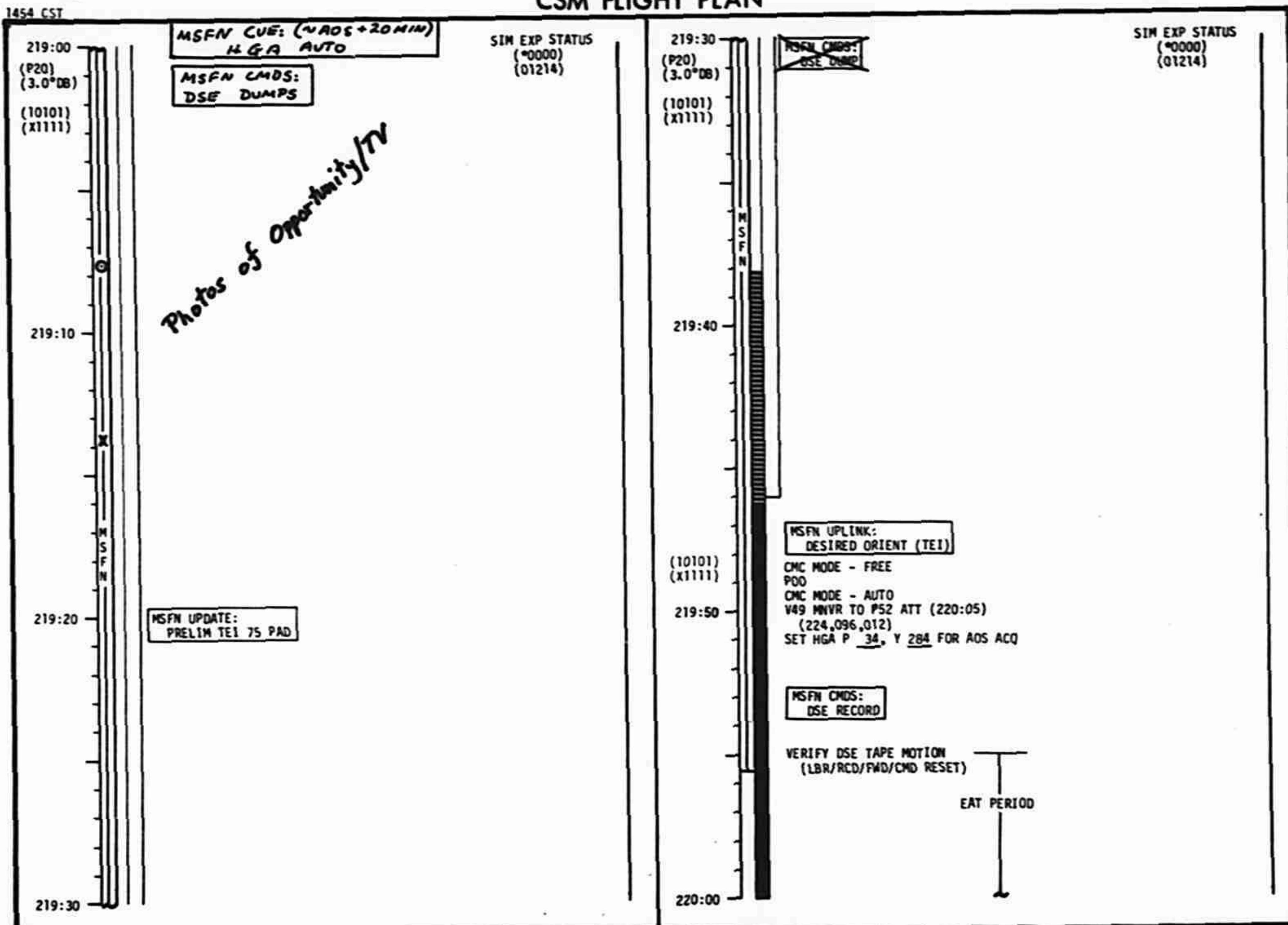
VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

218:00

CSM FLIGHT PLAN

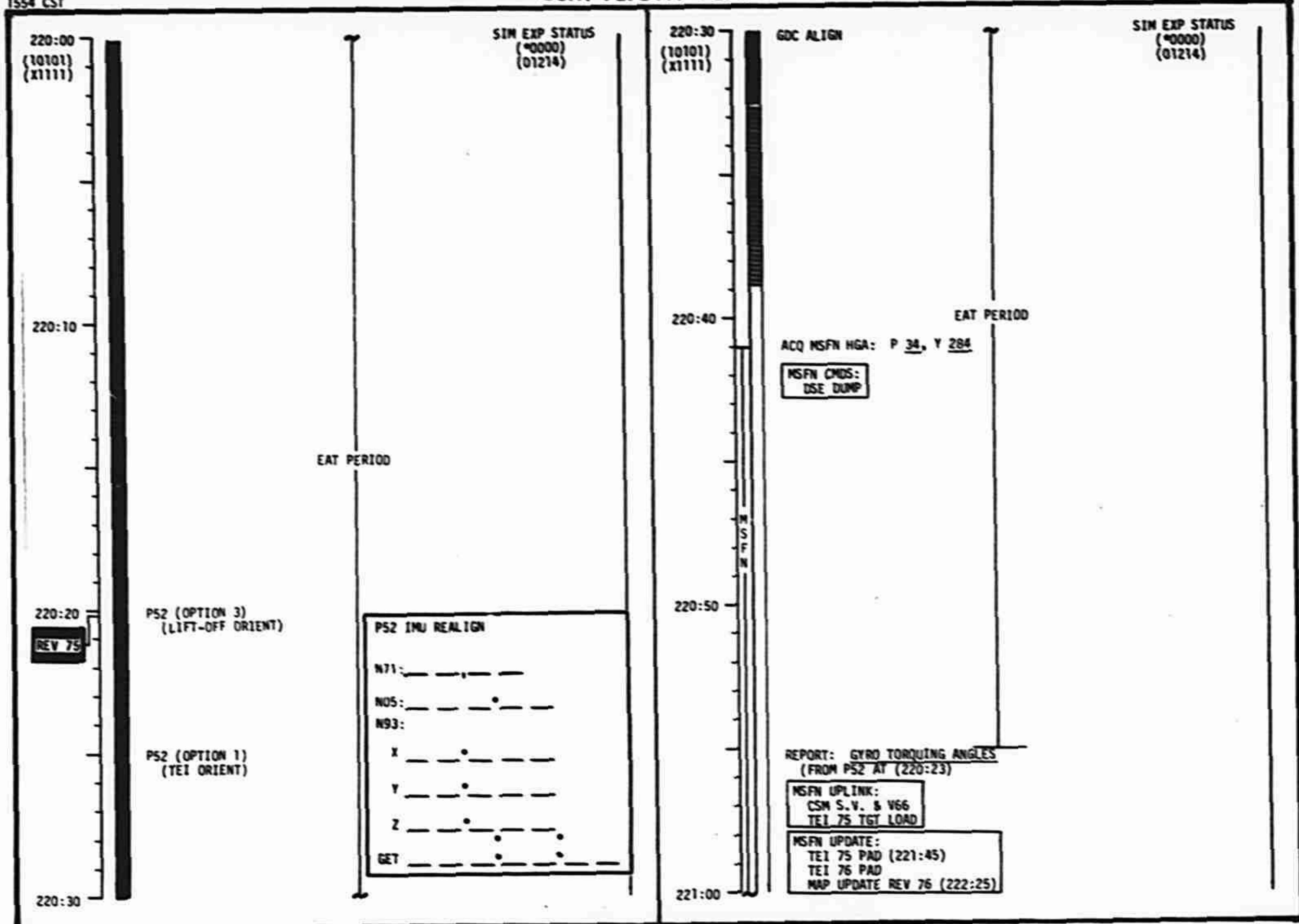
218:00 (10102) (x1111)	SIM EXP STATUS (*0000) (01214)	218:30 (P20) (3.0°DB) (10101) (x1111)	SIM EXP STATUS (*0000) (01214)
	SUBSAT LAUNCH 218:02:08 (ΔVX = +1.04, ΔVY = +4.13, ΔVZ = -0.11) <u>CONFIGURE DSE</u> (LBR/RCD/FWD/CMD RESET)		TAKE SXT MARKS - 1/MIN
218:10 (10101) (x1111) (P20) (3.0°DB)	V48 (10101)(x1111) P20 OPT 4 (SUBSAT TRACKING) (218:27) N78 (+000.00) (-035.00) (+015.00) N79 (+003.00) (304.170/253.055) SET OMNI RA FOR AOS ACQ		ACQ MSFN OMNI RA REPORT: <u>SUBSAT LAUNCH</u>
218:20 REV 74		218:40 MSFN	ACQ MSFN HGA: MAN, WIDE P-15, Y 145 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW
218:30		218:50	
		219:00	

CSM FLIGHT PLAN



CSM FLIGHT PLAN

1554 CST



CSM FLIGHT PLAN

1654 CST

221:00
(10101)
(X1111)SIM EXP STATUS
(0000)
(01214)M
S
F
N**CSM SYSTEMS CHECKLIST**

221:10 CONTAMINATION CONTROL S/1-19

CREW OPTION

CBMS OPERATIONAL CHECKS S/1-20

CM RCS MONITORING CHECK S/1-1

SM RCS MONITORING CHECK S/1-1

221:20 SPS MONITORING CHECK S/1-1

221:30

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-331

CSM FLIGHT PLAN

1724 CST

221:30 P30; VERIFY TEI TIG AND ΔV'S
 (10101)
 (X1111) V49 MNVR TO TEI PAD BURN ATT (221:45)
OMNI C

SIM EXP STATUS
 (*0000)
 (01214)

221:40

MSFN UPDATE:
 GO/NO-GO FOR TEI

221:50

SXT STAR CHECK

(P40)
 (0.5°DB)

P40 (TRIM)

MSFN CMDS:
 DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

222:00

P30 MANEUVER

	T	E	I			PURPOSE
	S	P	S	G & N		PROP/GUID
SET STARS	+					WT N47
R ALIGN		0	0			P TRIM N48
P ALIGN		0	0			V TRIM
Y ALIGN	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0				SEC
ULLAGE						ΔV _X N81
						ΔV _Y
						ΔV _Z
	X	X	X			R (180)
	X	X	X			P (000)
	X	X	X			Y (000)
	+					H _A N44
	+					H _P
	+					ΔVT
	X	X	X			BT
	X					ΔVC
HORIZON/WINDOW						SXTS
	X	X	X	X		SFT
	+			0		TRN
	+			0	0	
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP
OTHER		0				LAT N61
						LONG
	+					RTGO EMS
	+					VTO
						GET 0.05G

CSM FLIGHT PLAN

1754 CST

222:00 PRE-SPS BURN SIM PREP (CUE CARD) SIM EXP STATUS
 (P40) (0.5°DB) (0000)
 (10101) (X1111) (01214)

SCS RELIGHT IF $\Delta V_C > 50$ OR > 5 SEC
DO NOT TRIM SCS BURN
IF BURN INTERRUPTED DO NOT TRIM
 \sim RCS ΔV PRE TEI \sim 120 fps
POST TEI \sim 160 fps
FOR NOMINAL TEI MODE II STARTS
 $\sim \Delta V_M = 1700$ fps ~ 80 SEC
SCS CUTOFF = BT + 2

222:10

TEI BURN TABLE				
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME		RESIDUALS
		UNDERBURN	OVERBURN	
10°/SEC COMPLETE	+10° COMPLETE	FOR GBN C/O > 3 SEC EARLY & $\Delta V_C > 50$ FPS SWITCH TO SCS AUTO & RESTART SPS	BT +2 SEC 8 $\Delta V_C = -40$ FPS	TRIM X AND Z AXES TO 0.2 FPS. IF (+) V _{gx} ROLL 90° CW USE (+) Y THRUSTERS
SINGLE BANK BURN TIME				
* 2 MIN 36 SEC *				

BURN STATUS REPORT

222:20

TEI (180,000,000)	TIG: 222:20:33
REV 76	BT: 2 MIN 30.5 SECS
	LVT: 3212.2 FPS
	ULLAGE: 2 JET, 17 SEC
	ORBIT: N/A

(10101) (X1111) P00
 V66 SET CSM S.V. INTO LM S.V.
 P20 OPT 5 (PC & MC PHOTO ATT)(222:30)
 N78 (+090.00)
 (-052.25)
 (-140.00)

(P20) (0.5°DB) N79 (+000.50)
 (135.320,314) OMNI C

POST SPS BURN SIM PREP (CUE CARD)

MAP UPDATE REV 76

LOS:	—	•	•
180°:	—	•	•
AOS WITH TEI:	—	•	•
AOS WITHOUT TEI:	—	•	•

CSM FLIGHT PLAN

1824 CST

222:30
 (P20)
 (0.5°06')
 (10101)
 (X1111)
 ACQ MSFN OMNI C
 INHIBIT ALL JETS EXCEPT: A1&C2 OR B2&D1,A3,C4,B3,D4
 PCM BIT RATE - HIGH
 MC/LA COVER OPEN
 MC - EXTD
 PC - STBY
 MONO
 PWF
 MC - ON
 PC - OFF
 IMAGE MTN - INCR (BP +3 STEPS)/OFF (FOR RATE CONTROL)
 REPORT: BURN STATUS
 ACQ MSFN HGA P -45, Y 321
 S-BD ANT 110 - 1/2 SCALE, ROT: REACQ, NARROW
 MSFN UPLINK:
 DESIRED ORIENT (PTC)

222:40
 (11101)
 (X1111)
 V48 (11101)
 (X1111)
 MSFN CMDS:
 DSE DUMP
 GR - DPLY
 TS - DPLY
 MS: EXP - 00
 IM SOURCE - STBY

222:50
 PC - OFF
 MC - STBY
 MC - RETR
USE NOMINAL TURNOFF PROCEDURE
NOTE: PC AND MC FILM SHOULD BE EXPENDED AT THIS TIME. CUE MSFN FOR STOP TIMES.

POD: V49 MNVR TO MOON UV PHOTO/P52 ATT (223:06)
 (197,173,064) HGA P -82, Y 305

MC/LA COVER - CLOSE

223:00

FLIGHT PLAN

MCC-H

1854 CST

NOTES

223:00
 (11101)
 (X1111)

CSM EXP/EVA CHECKLIST
 MOON UV PHOTOGRAPHY, PAGE X/2-19
 MAG (OO)
 MAG (RR)

SIM EXP STATUS
 (*0110)
 (01234)

:10

:20

223:30

M
S
F
N

MS: ION SOURCE - ON
 XR - ON
 LIMIT CYCLE - ON
 ATT DEADBAND - MIN
 RATE - LOW
 BMAG (3) - ATT 1/RATE 2
 SCS CONT - SCS
 P52 (OPTION 3)
 (TEI ORIENT)

STARS _____
 SA _____
 TA _____

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____

:40

REPORT: GYRO TORQUING ANGLES
 P52 (OPTION 1)
 (PTC ORIENT.)
 GDC ALIGN
 SC CONT - CMC
 BMAG (3) - RATE 2

224:00

CDR DON BIOMED HARNESS
 LMP DOFF BIOMED HARNESS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-335

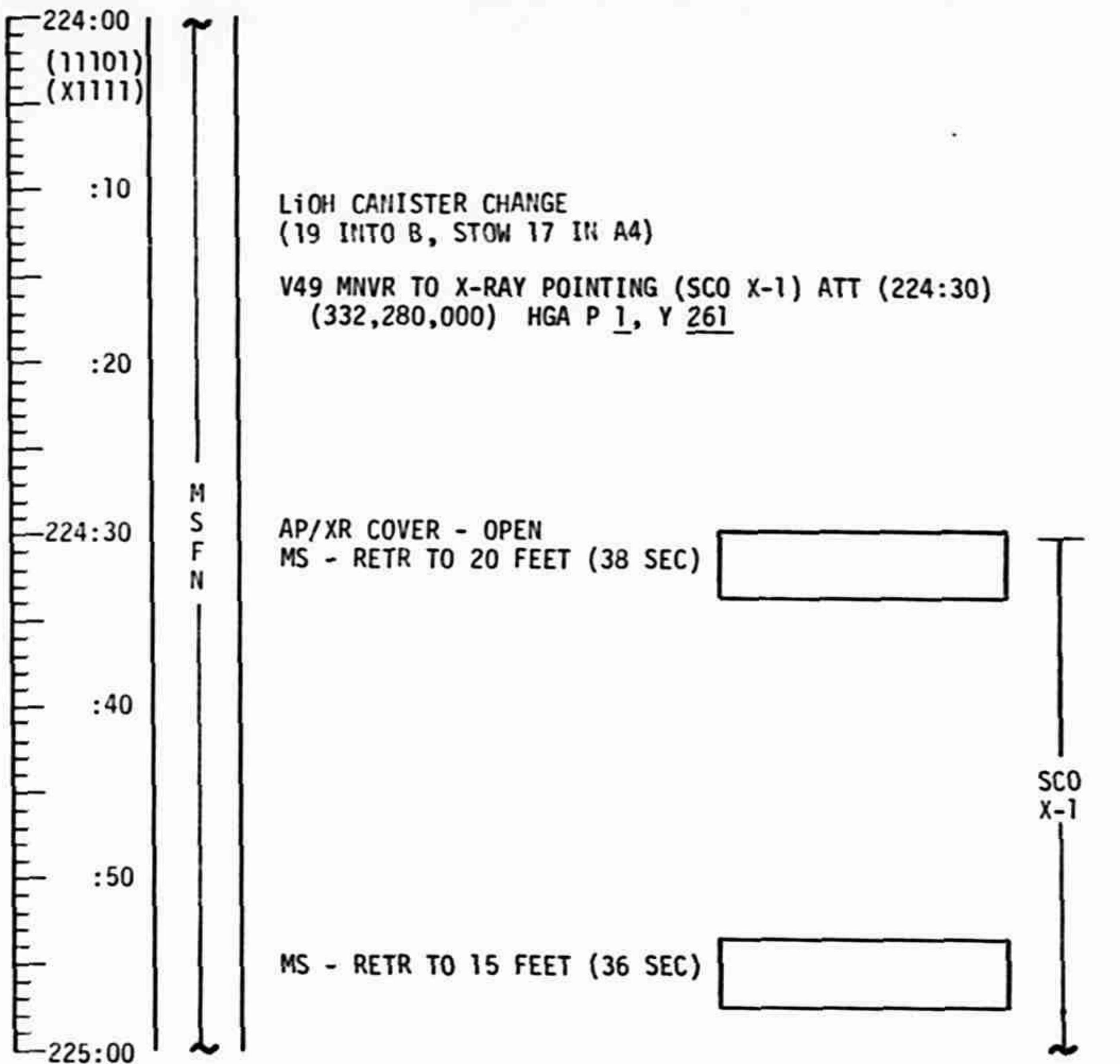
FLIGHT PLAN

MCC-H

1954 CST

NOTES

UPDATE TO CSM
MS BOOM RETR
TIMES (20,15,10 & 5
FEET)



SIM EXP STATUS
(*0111)
(01222)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-336

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2054 CST

225:00
(11101)
(x1111)

:10

:20

MS - RETR TO 10 FEET (36 SEC)



225:30

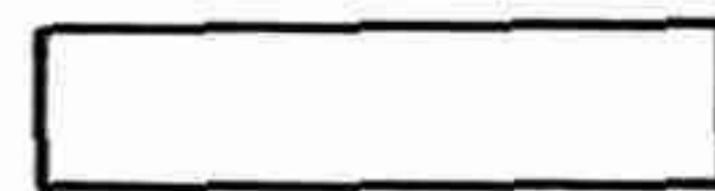
M
S
F
N

EAT PERIOD

SCO
X-1

:40

MS - RETR TO 5 FEET (36 SEC)



:50

226:00

NOTES

SIM EXP STATUS
(*0121)
(01222)
EARTH DISTANCE
~ 210,100 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-337

FLIGHT PLAN

MCC-H

2154 CST

NOTES

226:00
(11101)
(X1111)

SIM EXP STATUS
(*0121)
(01222)

:10

MS - DPLY
PRE-EVA HOUSEKEEPING

SCO
X-1

:20

GR: SHIELD - OFF

226:30

M
S
F
N

:40

XR - STBY
AP/XR COVER - CLOSE

:50

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
 COMM: HGA REACQ MODE P -40, Y 90
 V49 MNVR TO PTC ATTITUDE
 (N20,270,000)
 P20 OPT 2, X-AXIS
 N78 (0,0,0)
 N79 (-0.4200, +000.50)
 N34 (0,0,0)

QUAD D, A3, AND C4
 WILL BE USED FOR
 PTC RATE DAMPING,
 B2 & D2 FOR PTC
 SPINUP

DAP LOAD STATUS
(11101)(X1111)

227:00

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	226:00 - 227:00	10/TEC	3-338

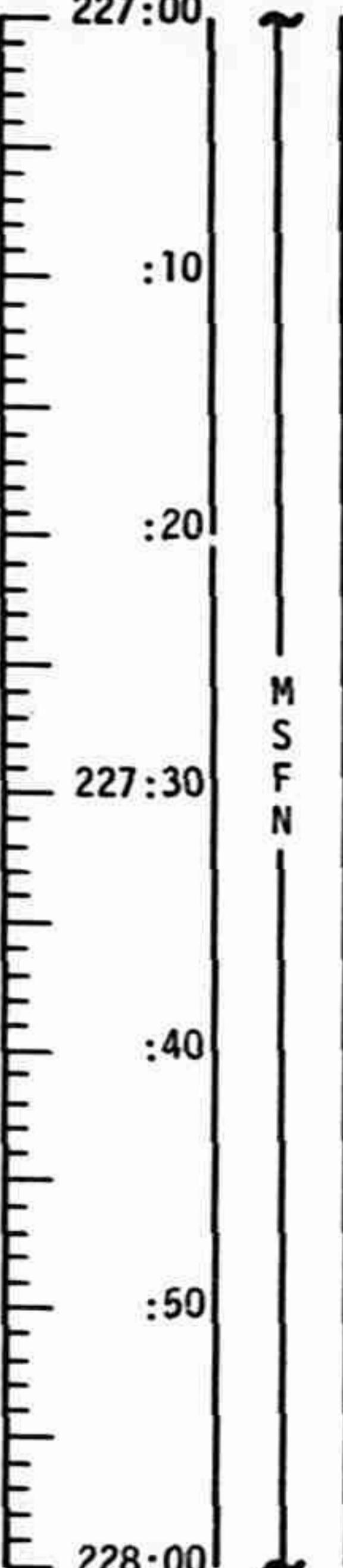
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2254 CST

227:00



CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST

COMM - HGA

GR: SHIELD - ON (CTR)
LOGIC PWR (2) - OFF

PAGE S/1-29

NOTES

SIM EXP STATUS

(*0110)

(01124)

DAP LOAD STATUS

(11101)(X1111)

M
S
F
N

PTC

REST PERIOD
(8.5 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	0.5 FINAL (4/16)	3/6/72 4/7/72	227:00 - 228:00	10/TEC	3-339

FLIGHT PLAN

MCC-H

2354 CST

228:00

:20

:40

229:00

:20

:40

230:00

M
S
F
NREST PERIOD
(8.5 HOURS)

PTC

SIM EXP STATUS
(*0110)
(01224)DAP LOAD STATUS
(11101)(X1111)

NOTES

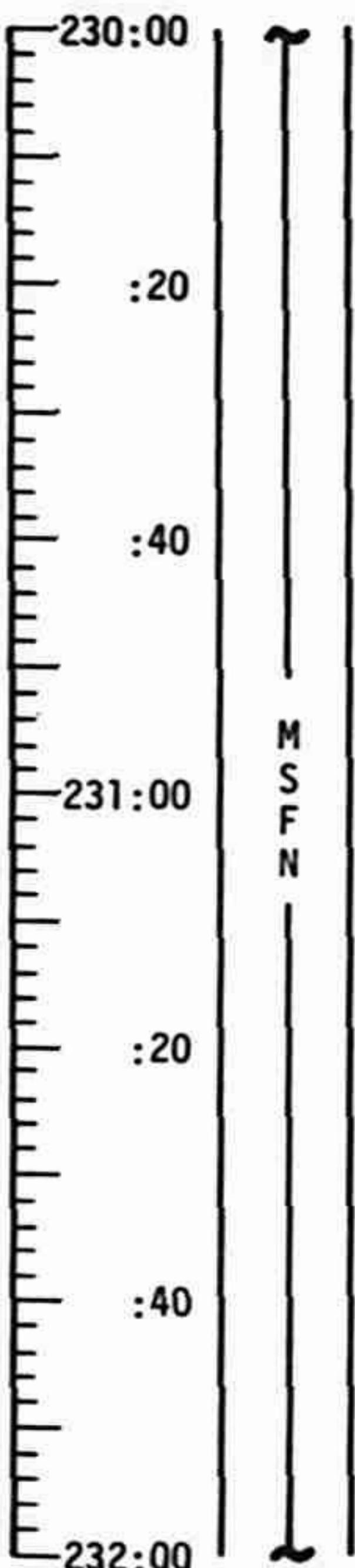
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	228:00 - 230:00	10/TEC	3-340

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0154 CST



NOTES

SIM EXP STATUS
(*0110)
(01224)

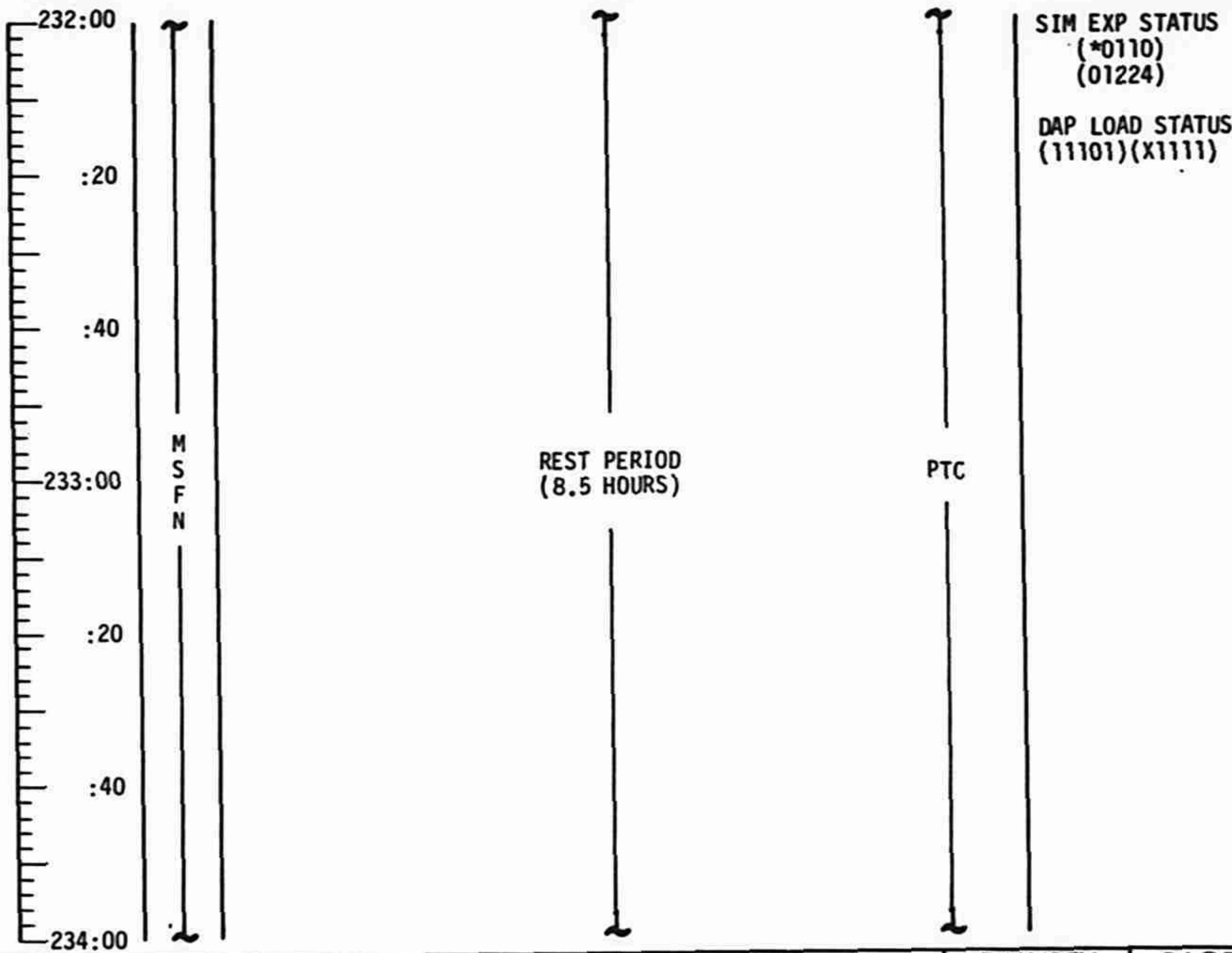
DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	230:00 - 232:00	10/TEC	3-341

FLIGHT PLAN

MCC-H

0354 CST



NOTES

SIM EXP STATUS
(*0110)
(01224)

DAP LOAD STATUS
(11101)(X1111)

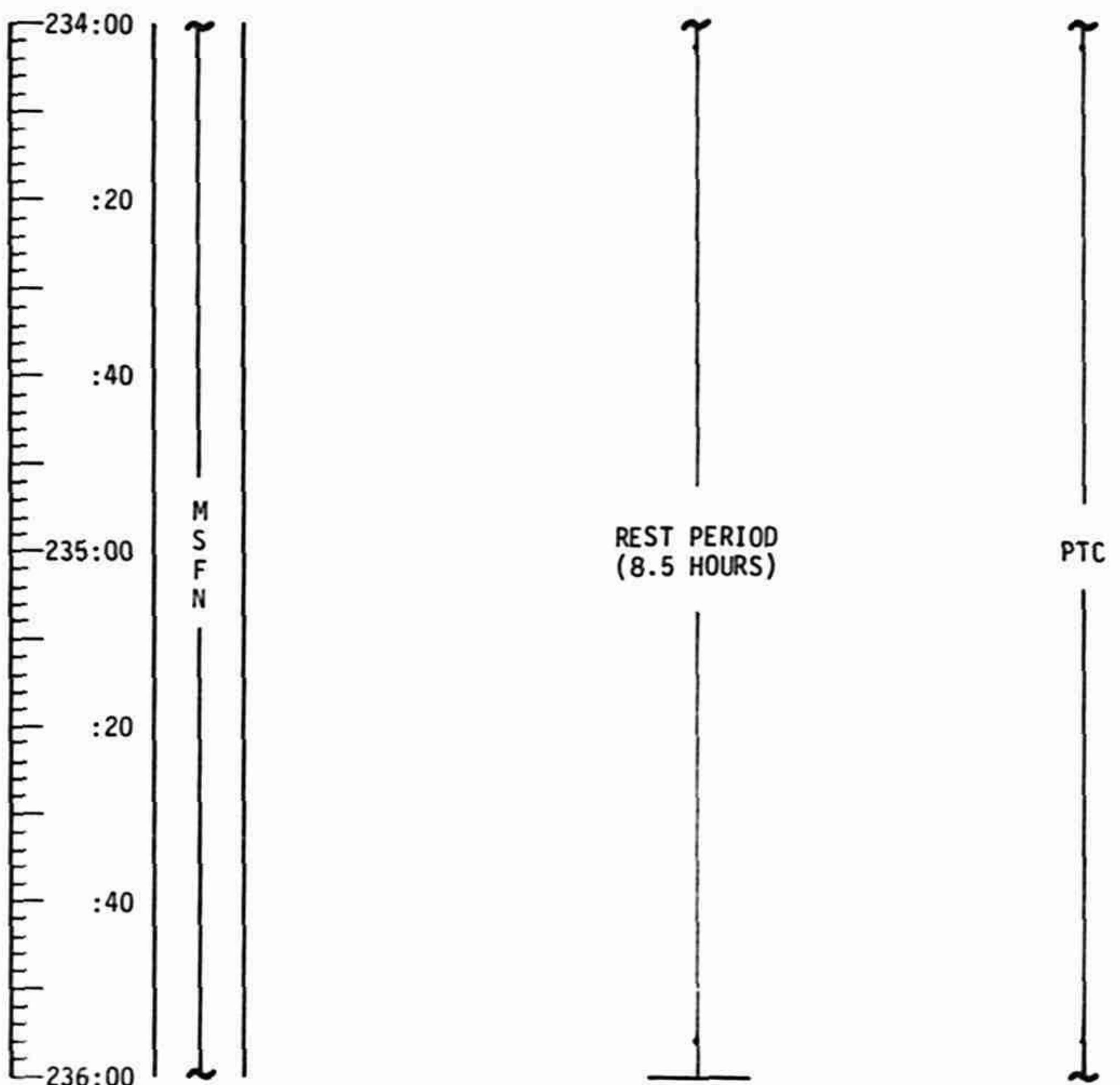
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	232:00 - 234:00	10/TEC	3-342

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0554 CST



NOTES

SIM EXP STATUS
(*0110)
(01224)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	234:00 - 236:00	10/TEC	3-343

FLIGHT PLAN

MCC-H

0754 CST

NOTES

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN
SIM EXP STATUS
DSE VOICE STATUS

236:00

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - DPLY/RETR
GR - RETR

:10

PTC

:20

M
S
F
N
CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION
PAGE G/8-3

236:30

:40

:50

237:00

V49 MNVR TO THERMAL ATTITUDE (237:00)
(145,213,340) HGA P -15, Y 50 REACQ, NARROW

EAT PERIOD

GR: SHIELD - OFF

SIM EXP STATUS
(*0110)
(01224)

DAP LOAD STATUS
(11101)(X1111)

EARTH DISTANCE
~ 187,800 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	236:00 - 237:00	10-11/TEC	3-344

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0854 CST

UPDATE TO CSM
GR BOOM DPLY
TIME (2 FEET)

237:00
(11101)
(X1111)

:10

GR: DPLY 2 FEET (21 SEC)

EAT PERIOD

UPDATE TO CSM
GO/NO-GO FOR MCC-5

:20

GR: SHIELD - ON (CTR)

237:30

M
S
F
N

P52 (OPTION 3)
(PTC ORIENT)

:40

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

(11101)

(X1111)

:50

CSM EXP/EVA CHECKLIST

CORONA WINDOW CALIBRATION, PAGE X/2-13
V49 MNVR TO CORONA WINDOW CAL ATT (238:03)
(089,359,004) HGA P -57, Y 191
MAG (TT)

238:00

NOTES

SIM EXP STATUS
(*0010)
(01124)

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____:_____

CAN DO MNVR EARLIER

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	237:00 - 238:00	11/TEC	3-345

FLIGHT PLAN

MCC.H

0954 CST

NOTES

UPLINK TO CSM
CSM S.V. & V66
MCC-5 TGT LOAD
(IF REQUIRED)
UPDATE TO CSM
MCC-5 MNVR PAD
(IF REQUIRED)

238:00
 (11101)
 (X1111)
 :10
 :20
 238:30
 :40
 :50
 239:00

~ ~ |||
 M S F N
 ~ ~ |||

V49 MNVR TO SKYLAB CONTAMINATION PHOTO ATT (238:18)
 (043,229,004) HGA P -66, Y 296
 MAG (X)
 SKYLAB CONTAMINATION SEQ A, PAGE X/2-28

CONFIGURE FOR URINE DUMP
 VERIFY REPRESS PKG O₂ PRESSURE-865-⁹³⁵₈₆₅ PSI
 MS: ION SOURCE - OFF
 EXP - STBY
 CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
 GR - RETR
 MS - RETR
 *P30 EXTERNAL ΔV
 *V49 MNVR TO PAD BURN ATTITUDE
 LiOH CANISTER CHANGE
 (20 INTO A, STOW 18 IN A4)

*SXT STAR CHECK

SIM EXP STATUS
 (*0210)
 (01224)

*PERFORM IF MCC-5
 IS REQUIRED

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72 4/7/72	238:00 - 239:00	11/TEC	3-346

FLIGHT PLANNING BRANCH

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APOLLO 16

FINAL (4/16)

3/6/72

3-347

FLIGHT PLAN

MCC-5
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	+10° COMPLETE	BT + 1 SEC AND $V_C = 0$	TRIM X AXIS ONLY TO 0.2 FPS
IP CONTROL	10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC AND $V_C = 0$	TRIM X & Z AXIS TO 0.2 FPS

APOLLO 16

FINAL (4/16)

3/6/72

3-348

FLIGHT PLAN

MCC-H

1054 CST

239:00

(11101)
(X11111)

O₂ FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

:10

PRE-SPS BURN SIM PREP (CUE CARD) EXCEPT PC REMAINS OFF
ENABLE ALL JETS
*P40 SPS THRUSTING OR
*P41 RCS THRUSTING

NOTES
SIM EXP STATUS
(*0000)
(01214)

*PERFORM IF MCC-5
IS REQUIRED

:20

*SET UP TAPE FOR RCS SOUNDS DURING MCC - IF
NO MCC-5 TRY 270:00 DURING CONTAMINATION FIRING*

TIG: 239:21
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NOM ZERO

M
S
F
N

*V66 SET CSM S.V. INTO LM S.V.

*REPORT: BURN STATUS

MC - OFF

V49 MNVR TO THERMAL ATTITUDE (239:40)
(145,213,340) HGA P -15, Y 50 REACQ, NARROW

239:30
:40

CHARGE BATTERY B

CSM EXP/EVA CHECKLIST

CM EVA PREP
CABIN PREP FOR EVA

PAGE X/3-1

:50

240:00

BURN STATUS REPORT			
X	X		ATIG
X	X		BT
			V _{gx}
			TRIM
X	X	X	R
X	X	X	P
X	X	X	Y
			V _{gy}
			V _{gz}
			ΔV _c
X	X	X	FUEL
X	X	X	OX
X	X	X	UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	239:00 - 240:00	11/TEC	3-349

FLIGHT PLAN

MCC-H

1154 CST

NOTES

240:00
 (11101)
 (x1111)

:10

:20

240:30

M S F N

TV AND DAC PREP
MAG (FF)

EVA EQUIPMENT PREP

PGA DONNING
CMP & LMP DON BIOMED HARNESSSES

241:00

SIM EXP STATUS
 (*0000)
 (00000)
 EARTH DISTANCE
 ~ 181,400

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	240:00 - 241:00	11/TEC	3-350

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1254 CST

NOTES

SIM EXP STATUS
(*0000)
(00000)

MSFN CMDS:
DATA SYS-OFF

UPDATE TO CSM
GO/NO-GO FOR
CABIN DEPRESS

241:00
~
(11101)
(X1111)

V49 MNVR TO EVA ATT (241:15)
(039,043,038) HGA P -1, Y 221

PRESS GAGE STATIC CHECK

:10

COMM CHECK
S-BAND AUX TV - TV
V48 (10101)(10011)
LOAD MEED ATT (072,051,037) IN N22
SYSTEMS PREP FOR DEPRESS
INHIBIT ALL JETS EXCEPT:
C1, C2, C3, C4, D3, & D4 AT CONCLUSION OF MNVR
O₂ HEATERS 1, 2 & 3 (3) - AUTO

:20

M
S
F
N

241:30

CMP EVA EQUIP DONNING

:40

OPS DONNING

:50

CDR/LMP INTEGRITY CHECK
CMP HELMET/GLOVE DONNING
EVA WARNING TONE CHECK
CMP INTEGRITY CHECK

CABIN DEPRESS
GO/NO-GO FOR CABIN DEPRESS

242:00

HATCH OPENING

T
V

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	241:00 - 242:00	11/TEC	3-351

FLIGHT PLAN

MCC-H

1354 CST

NOTES

242:00

SIM EXP STATUS
(*0000)
(00000)(10101)
(10011)EVA OPERATIONS

CMP EGRESS

:10

INSTALL TV/DAC, ADJUST

:20

RETRIEVE PAN CAMERA CASSETTE

M
S
T
F
V
NREST
RETRIEVE MAPPING CAMERA CASSETTE

242:30

REST

REMOVE TV/DAC & INGRESS
V49 MNVR TO MEED ATT (242:44)
(072,051,037) HGA P -24, Y 220
DEPLOY MEED ON POLE
ACTIVATE EXP, GIVE MARK

:50

DEACTIVATE EXP, GIVE MARK

243:00

REMOVE MEED AND POLE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	242:00 - 243:00	11/TEC	3-352

FLIGHT PLANNING BRANCH

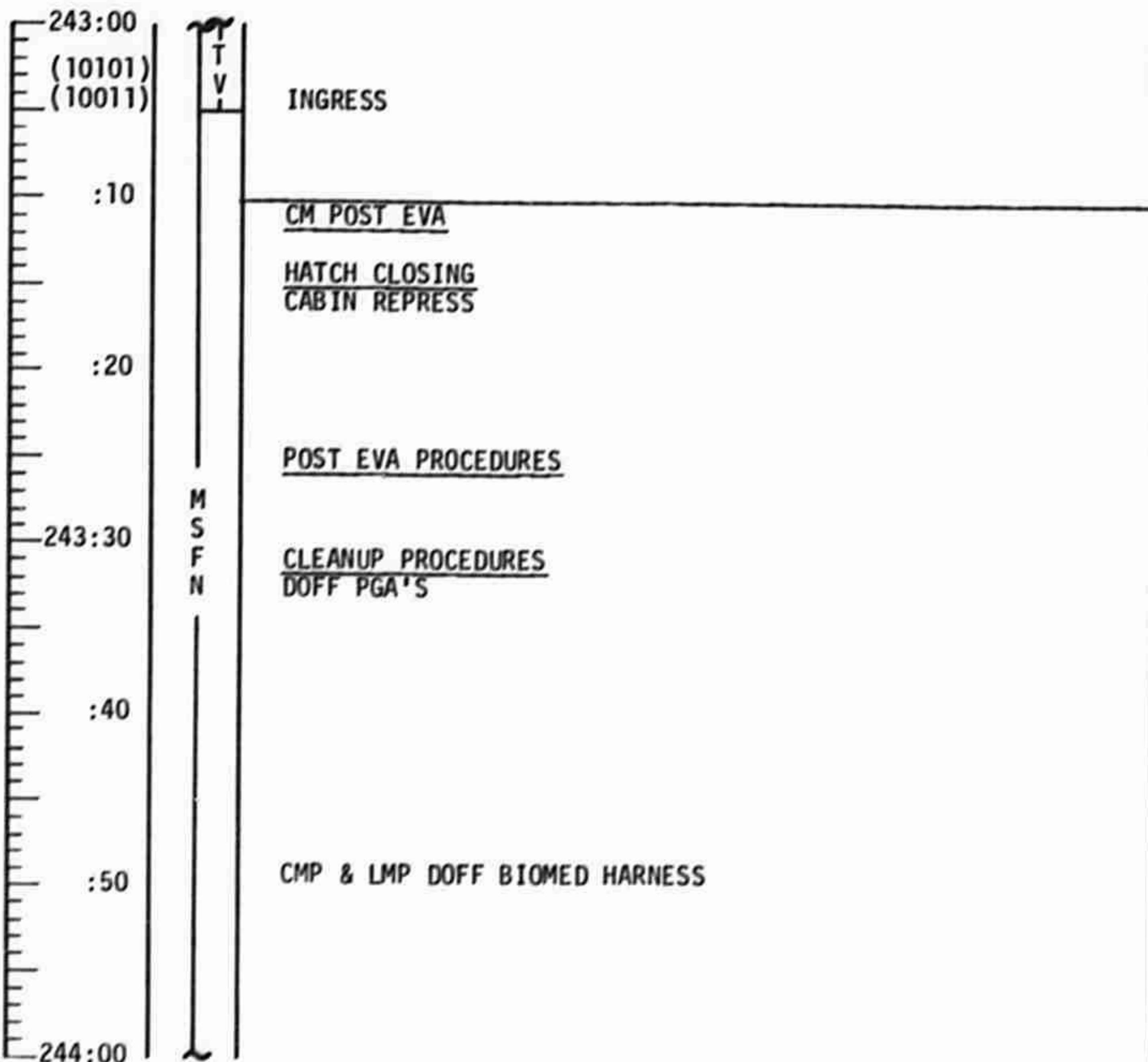
FLIGHT PLAN

MCC-H

1454 CST

NOTES

SIM EXP STATUS
(*0000)
(00000)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	243:00 - 244:00	11/TEC	3-353

MCC-H

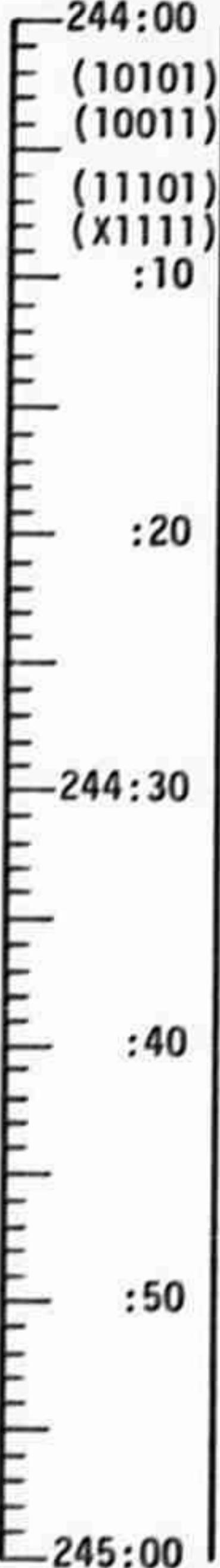
1554 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0000)
(00000)

MSFN CMDS:
DATA SYS-ON



ENABLE ALL JETS
V48 (11101)(X1111)
V49 MNVR TO THERMAL ATT (244:22)
(175,283,340) OMNI D
STOW EQUIPMENT

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	244:00 - 245:00	11/TEC	3-354

FLIGHT PLANNING BRANCH

MCC-H

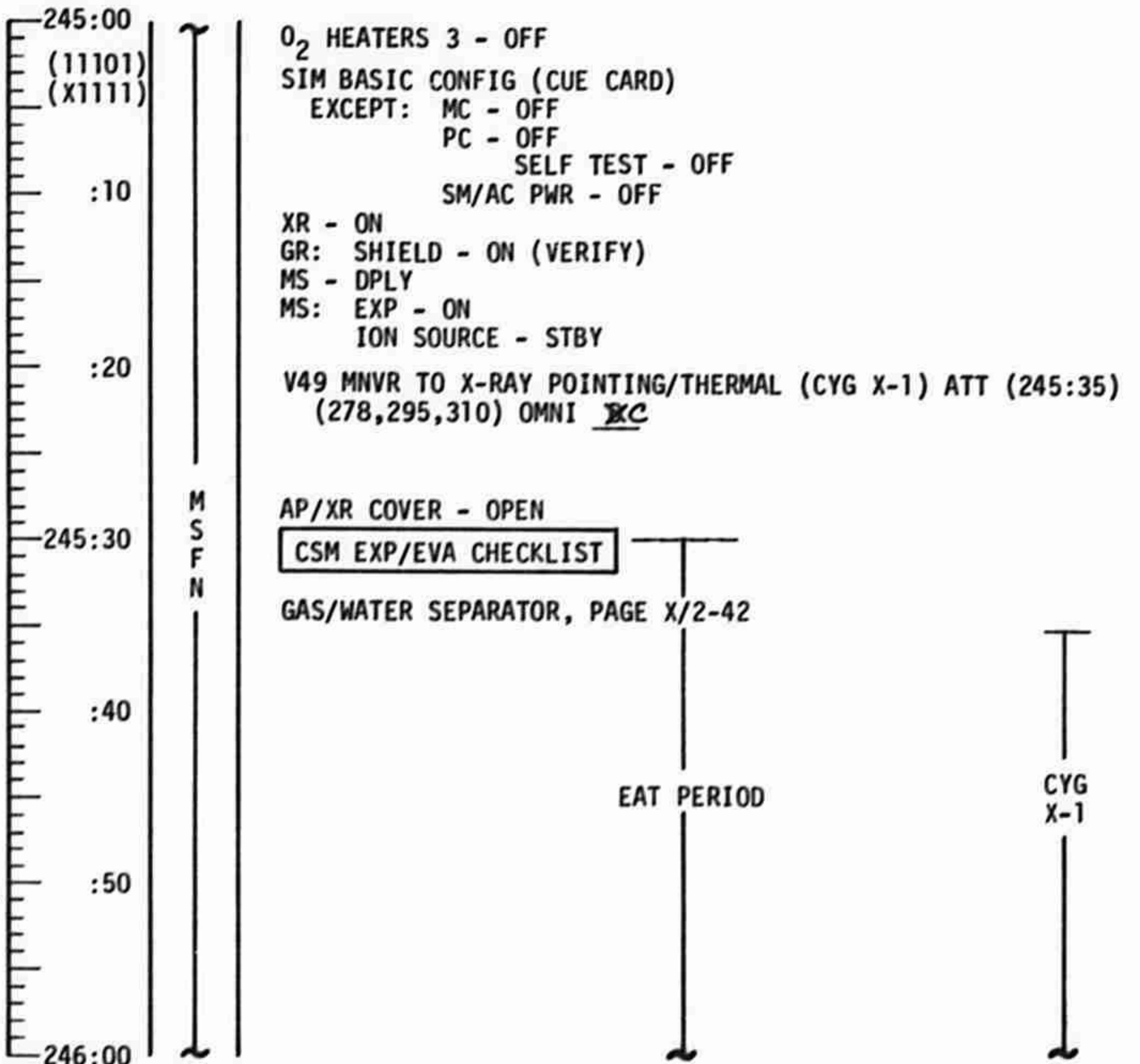
1654 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0000)
(00000)

EARTH DISTANCE
~ 168,274 NM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE ^b (4/16)	3/27/72 4/7/72	245:00 - 246:00	11/TEC	3-355

MCC-H

1754 CST

FLIGHT PLAN

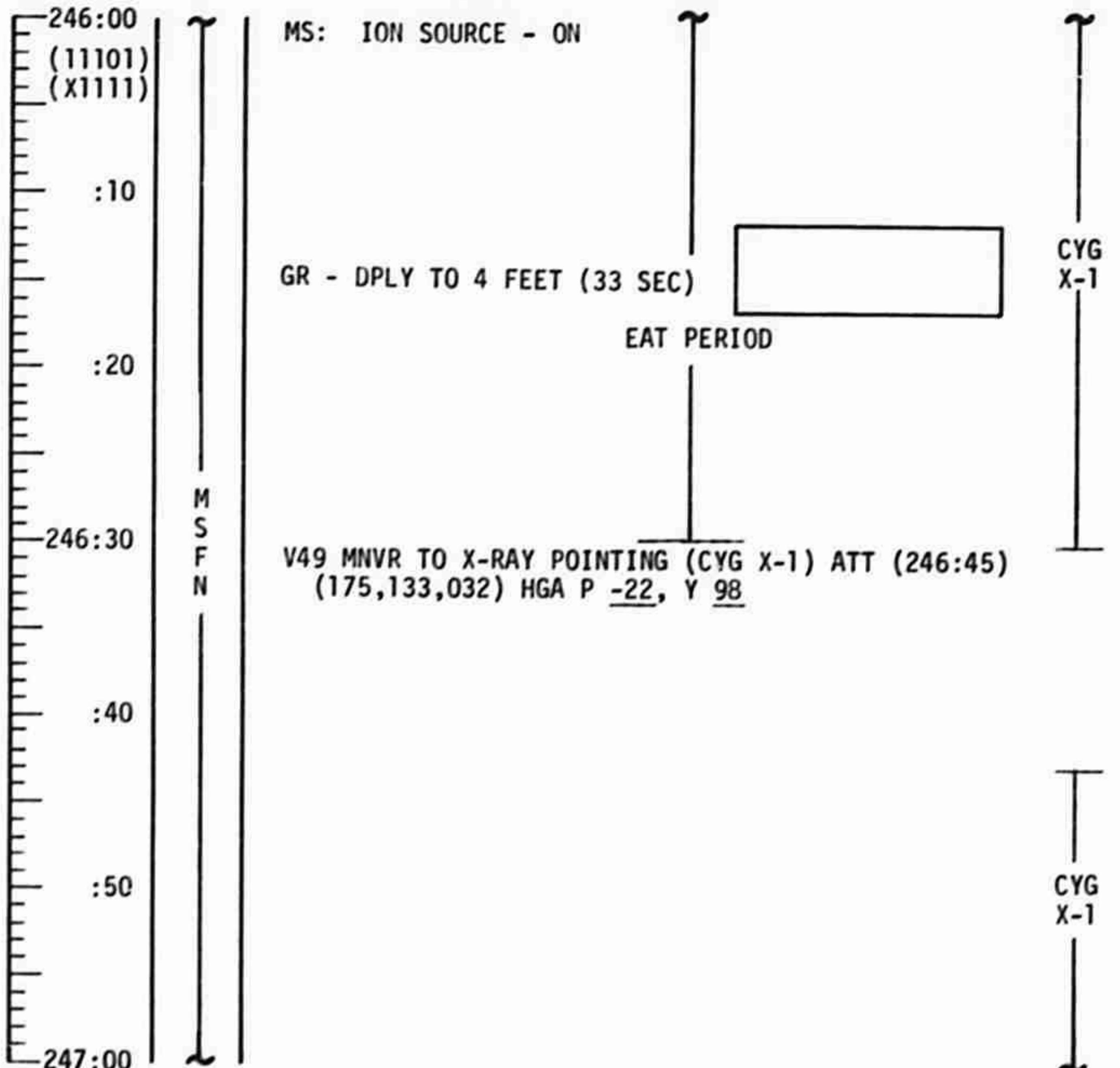
NOTES

SIM EXP STATUS
(*0011)
(00232)

UPDATE TO CSM
GR BOOM DPLY
TIME (4 FEET)

MSFN CMDS:
DSE STOP/REWIND

MSFN CMDS:
DSE DUMP



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	246:00 - 247:00	11/TEC	3-356

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1854 CST

247:00

(11101)

(X1111)

:10

:20

247:30

:40

:50

248:00

M
S
F
N

CYG
X-1

NOTES

SIM EXP STATUS
(*0211)
(00222)

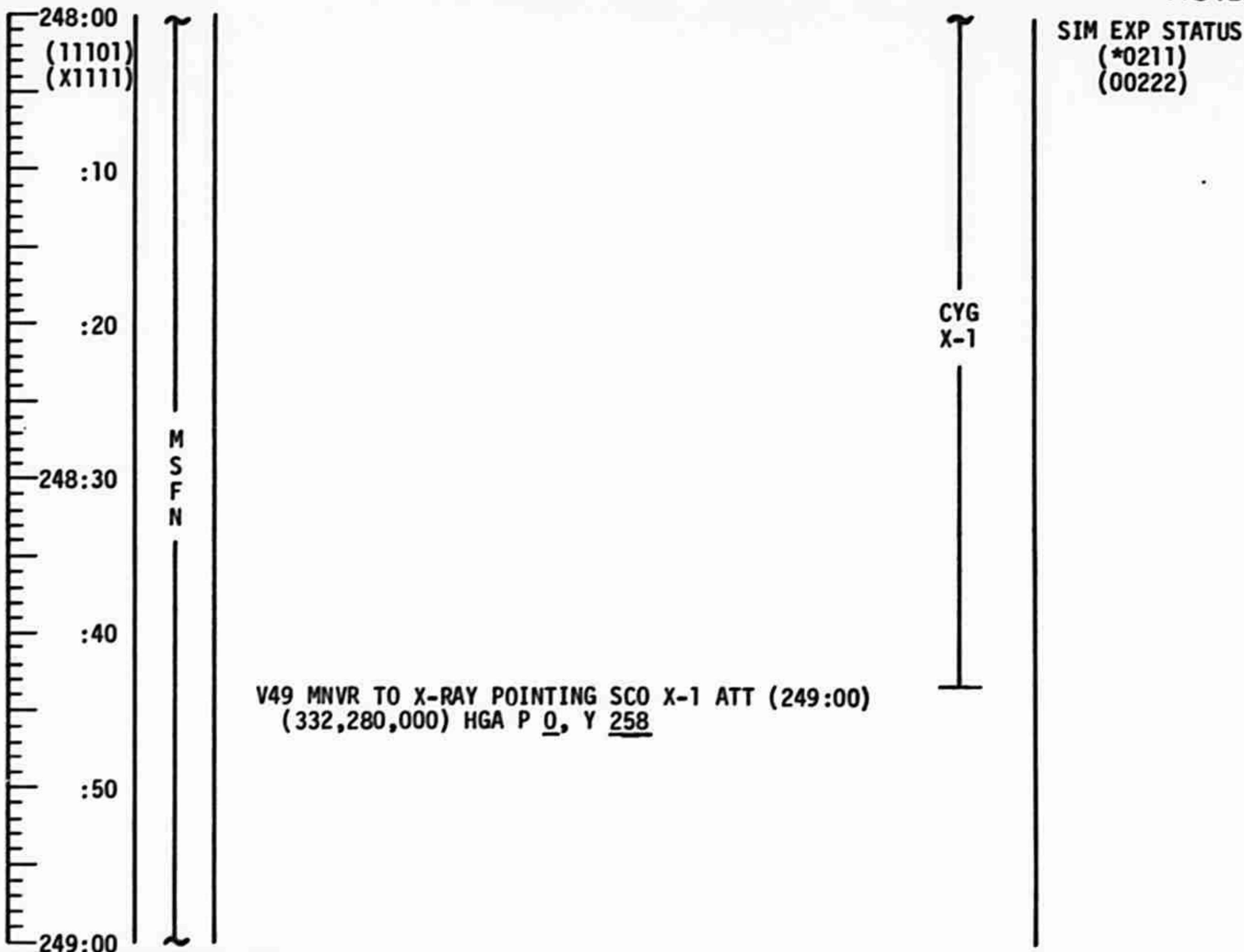
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	247:00 - 248:00	11/TEC	3-357

MCC-H

1954 CST

FLIGHT PLAN

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	248:00 - 249:00	11/TEC	3-358

FLIGHT PLANNING BRANCH

MCC-H

2054 CST

FLIGHT PLAN

UPDATE TO CSM
GR BOOM DPLY
TIME (8 FEET)

249:00
(11101)
(X1111)

GR: SHIELD - OFF

:10

GR - RETR then DPLY TO 8 FEET (57 SEC)

:20

M
S
F
N

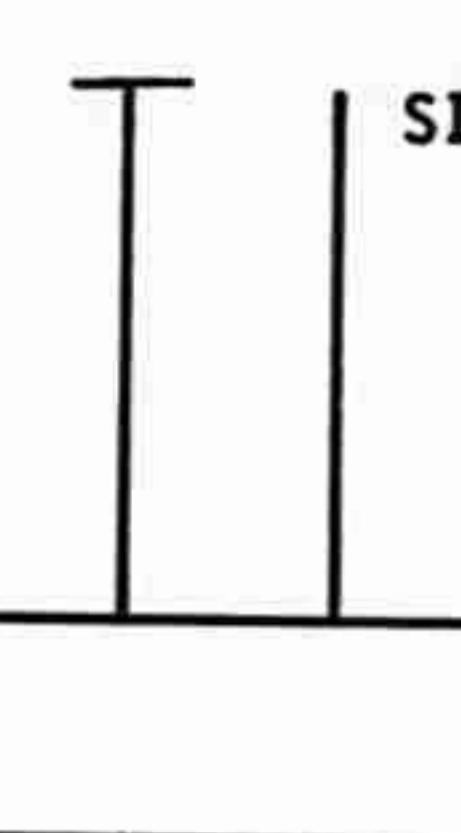
GR: SHIELD - ON (CTR)

249:30

:40

:50

250:00



NOTES
SIM EXP STATUS
(*0211)
(00222)

SCO
X-1EARTH DISTANCE
~ 156,631

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	249:00 - 250:00	11/TEC	3-359

MCC-H

2154 CST

FLIGHT PLAN

NOTES

250:00
 (11101)
 (X1111)

P52 (OPTION 3)
 (PTC ORIENT)

:10

REPORT: GYRO TORQUING ANGLES
 GDC ALIGN

:20

CSM SYSTEMS CHECKLIST

250:30

M
S
F
N

CONTAMINATION CONTROL

PAGE S/1-19

:40

:50

251:00

EAT PERIOD

SIM EXP STATUS
 (*0211)
 (00222)

P52 IMU REALIGN

N71: ____,-____

N05: ____-____.____

N93:

X ____-____.____

Y ____-____.____

Z ____-____.____

GET ____-____:____-____

SCO
X-1

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	250:00 - 251:00	11/TEC	3-360

FLIGHT PLANNING BRANCH

MCC-H

2254 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0211)
(00222)

UPDATE TO CSM
GR BOOM DPLY
TIME (6 FEET)

251:00
(11101)
(X1111)

:10

EAT PERIOD

:20

M
S
F
N

XR - STBY
AP/XR COVER - CLOSE
CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM: HGA REACQ MODE P -40, Y 90

V49 MNVR TO PTC ATTITUDE

(N20,270,000)

P20 OPT 2, X-AXIS

N78 (0,0,0)

N79 (-0.4200, +000.50)

N34 (0,0,0)

GR RETR then DPLY TO 6 FEET (45 SEC)

GR: GAINSTEP - ON (UP) 4 STEPS (STEP 7)/SHIELD-ON (CTR)

:40

:50

252:00

QUAD D, A3, AND
C4 WILL BE USED
FOR PTC RATE
DAMPING, B2 & D2
FOR PTC SPINUP

SCO
X-1

DAP LOAD STATUS
(11101)(X1111)

PTC

EARTH DISTANCE
~ 151,800 NM

CDR DOFF BIOMED HARNESS
LMP DON BIOMED HARNESS
LIOP CANISTER CHANGE
(21 INTO B, STOW 19 INTO A4)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	251:00 - 252:00	11/TEC	3-361

MCC-H

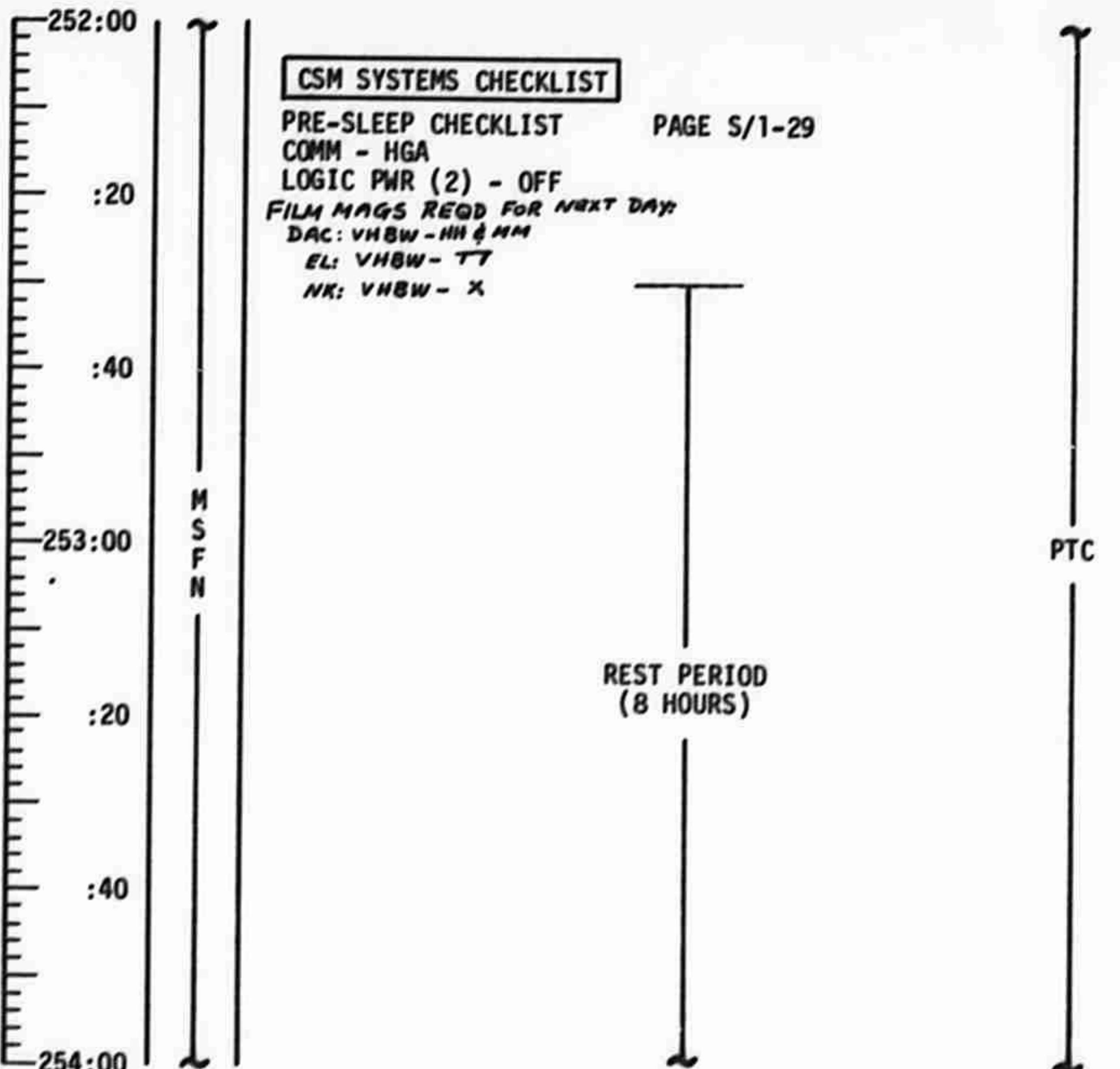
2354 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)



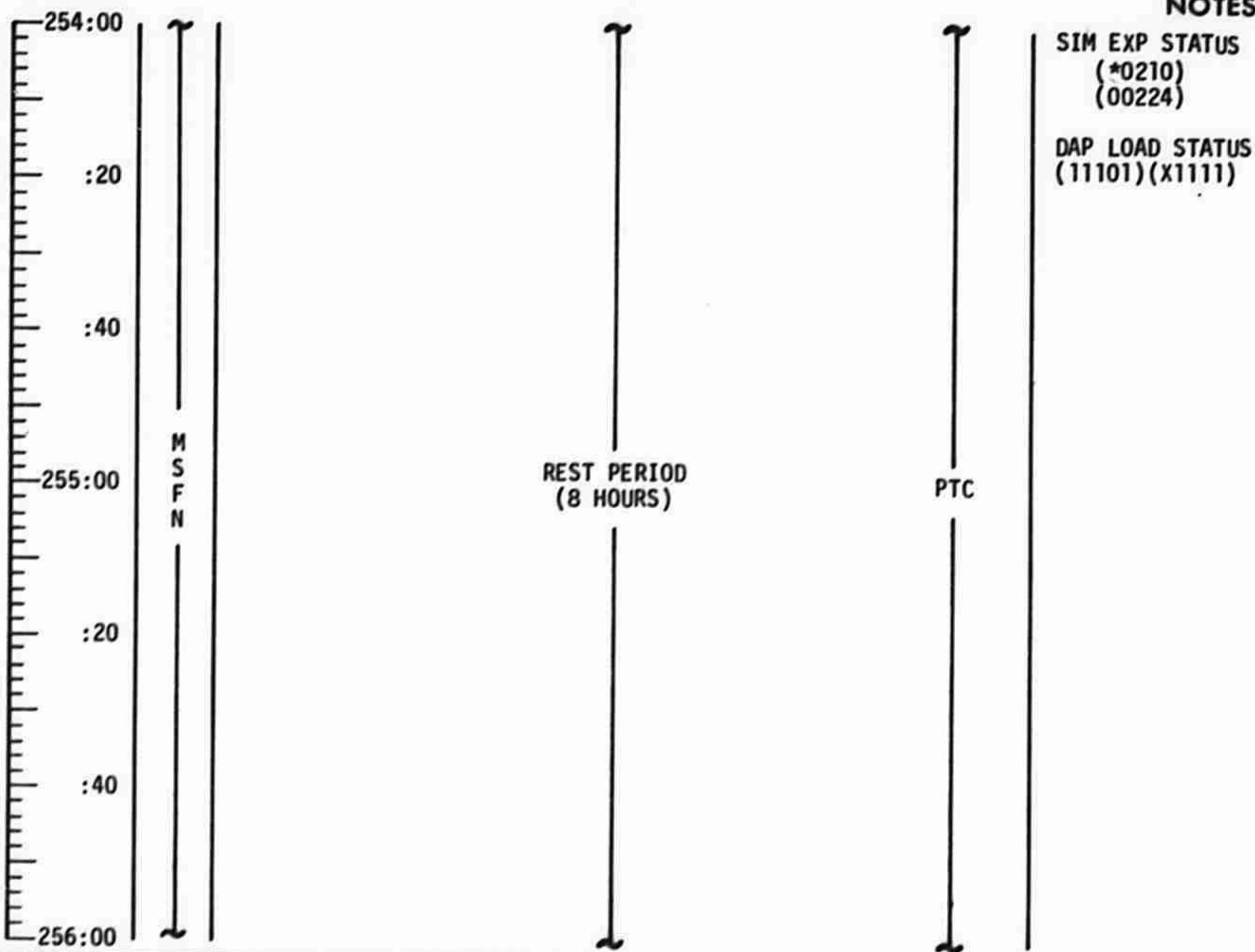
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) <i>Chg 3.</i>	3/6/72 4/7/72	252:00 - 254:00	11/TEC	3-362

FLIGHT PLANNING BRANCH

MCC-H

0154 CST

FLIGHT PLAN



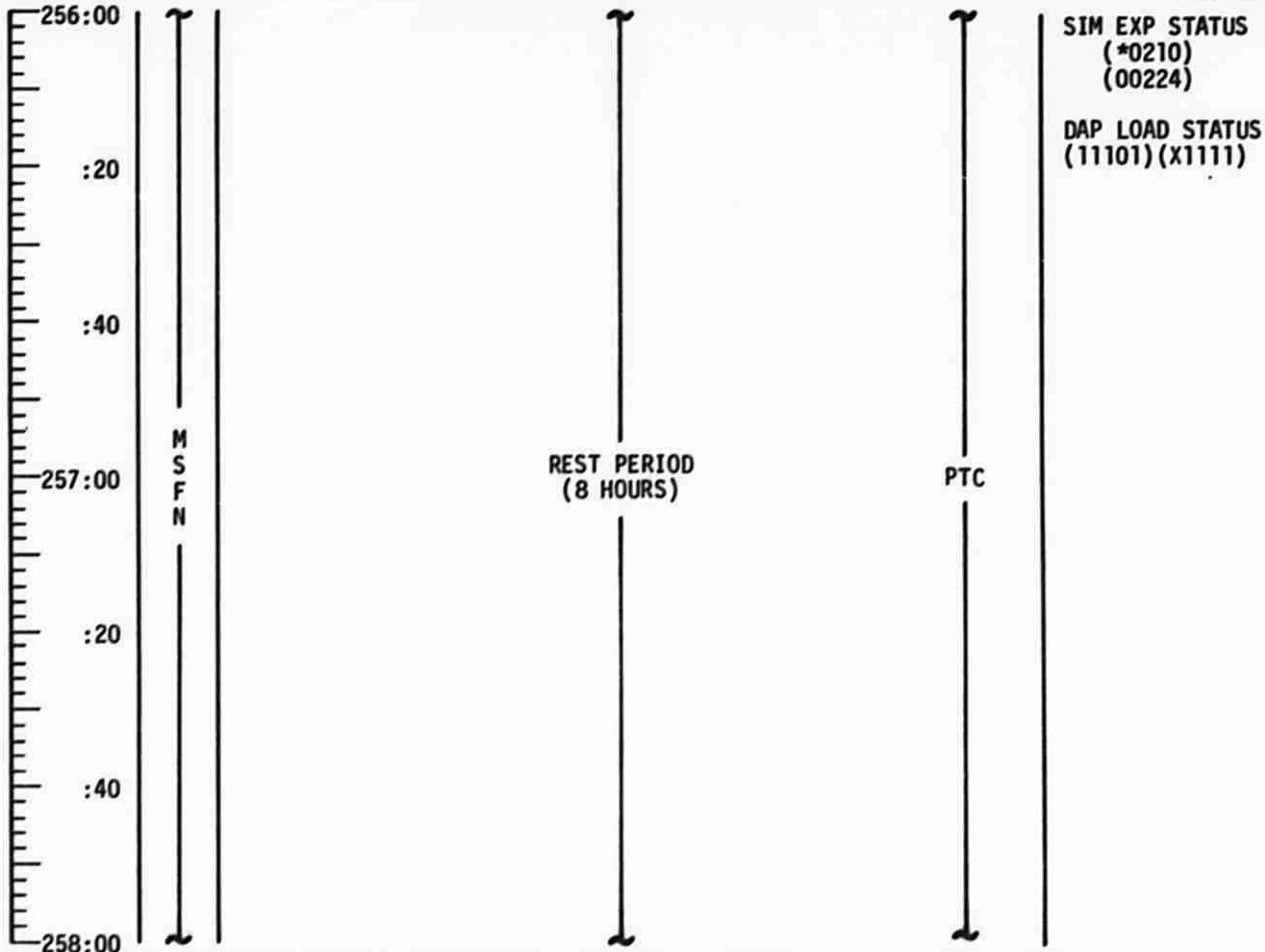
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	254:00 - 256:00	11/TEC	3-363

MCC-H

0354 CST

FLIGHT PLAN

NOTES



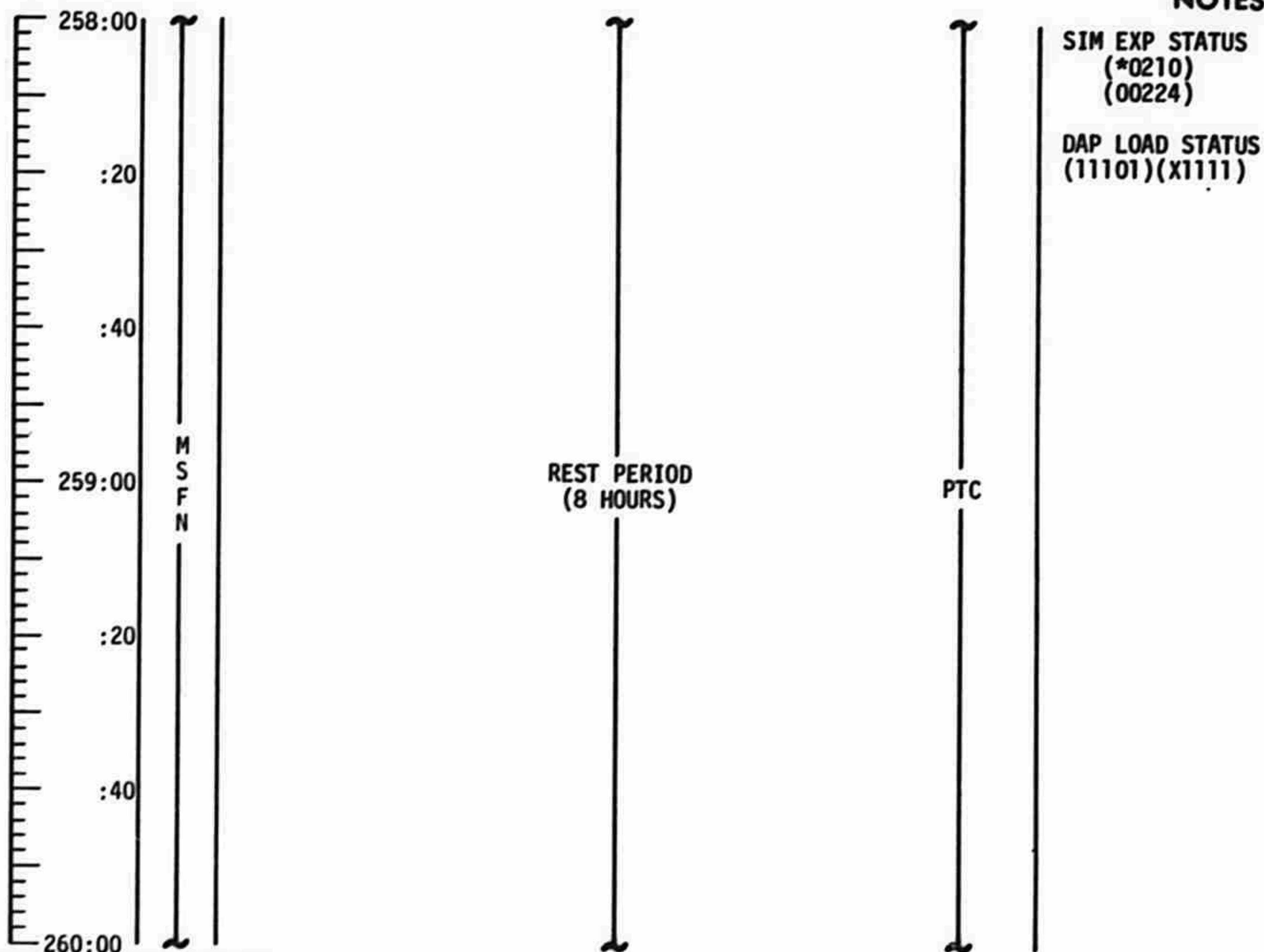
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	256:00 - 258:00	11/TEC	3-364

FLIGHT PLANNING BRANCH

MCC-H

0554 CST

FLIGHT PLAN



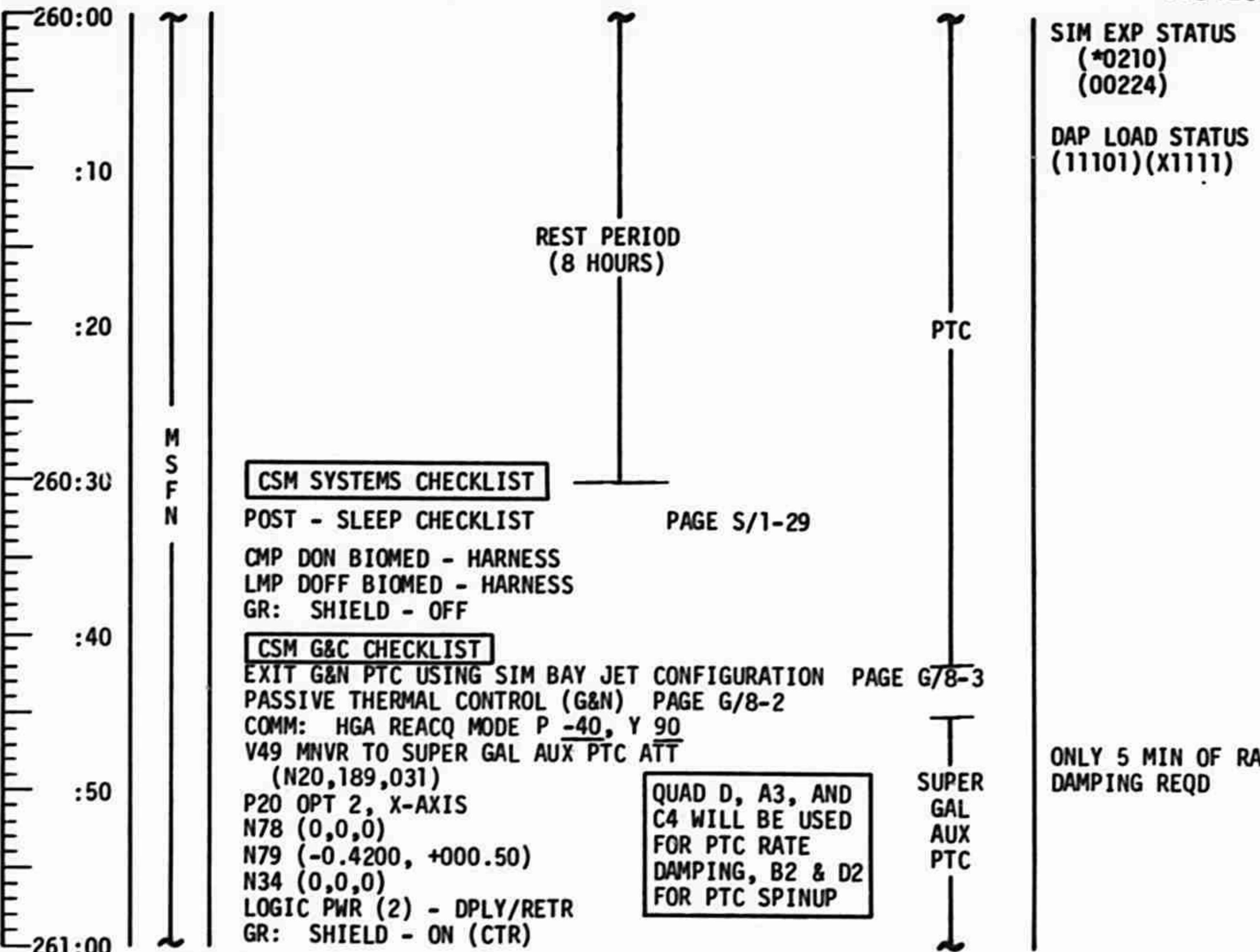
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	258:00 - 260:00	11/TEC	3-365

MCC-H

0754 CST

FLIGHT PLAN

NOTES

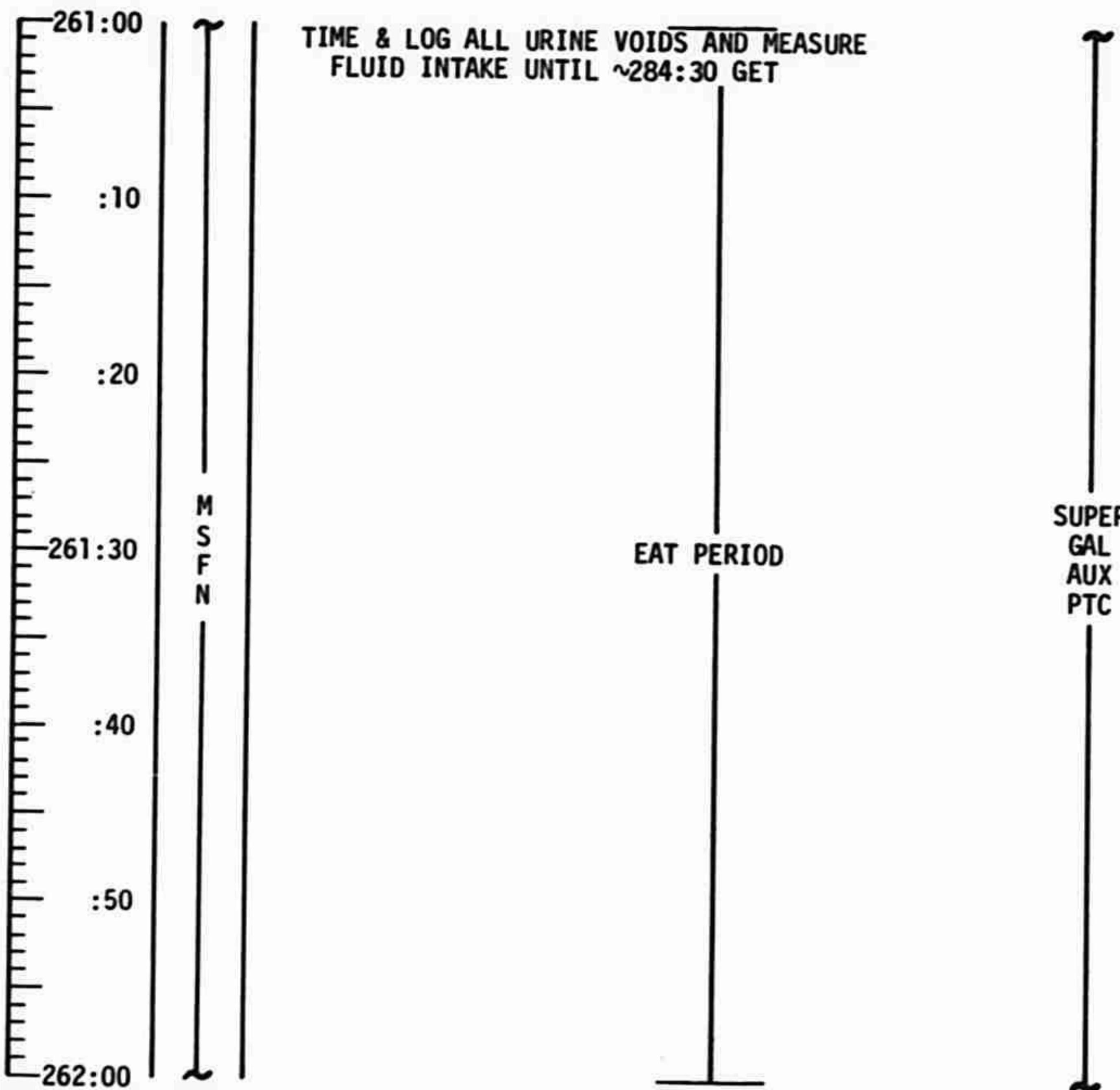


FLIGHT PLANNING BRANCH

MCC-H

0854 CST

FLIGHT PLAN



NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

EARTH DISTANCE
~ 128,254 NM

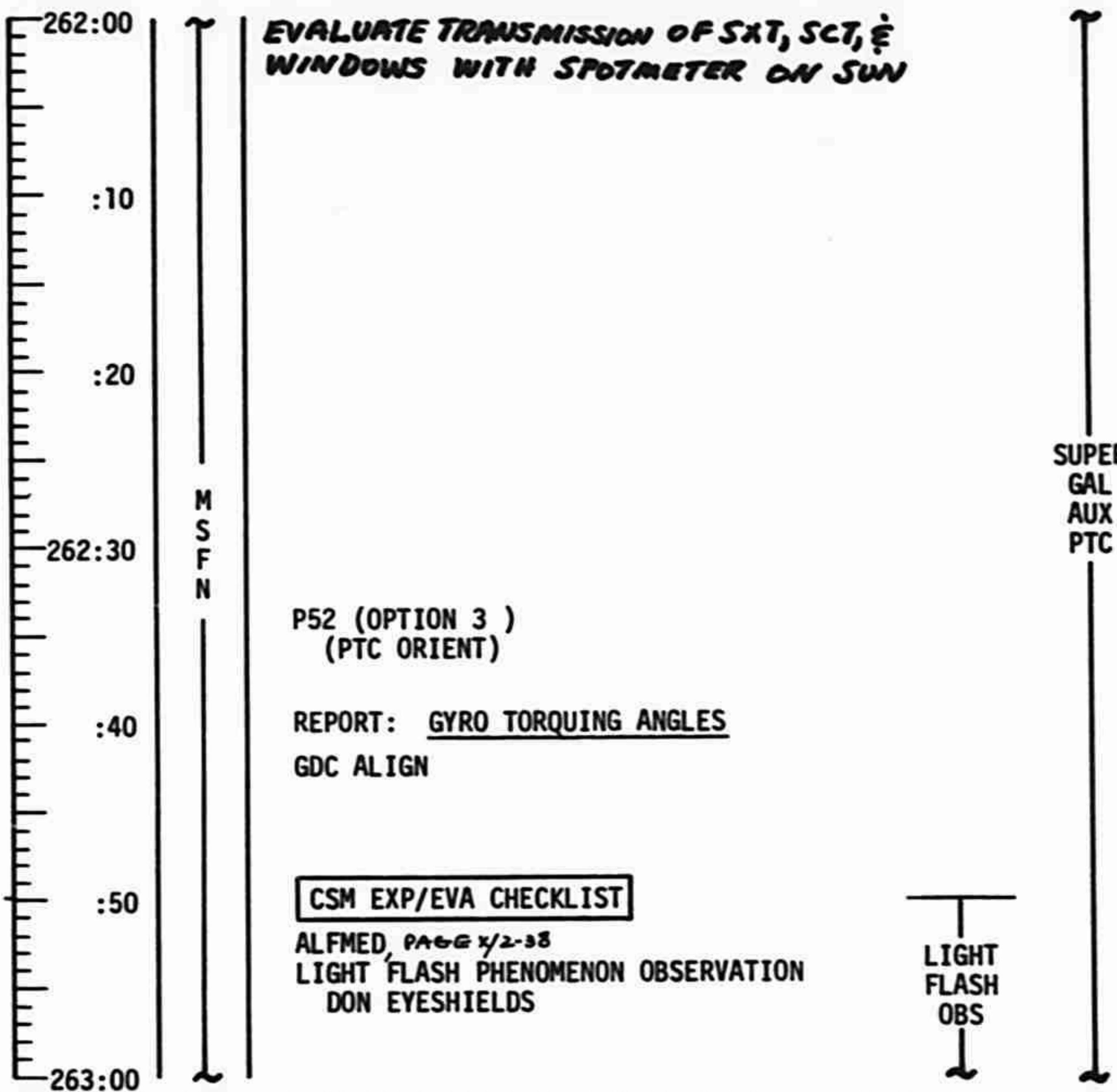
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	261:00 - 262:00	12/TEC	3-367

MCC-H

0954 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0210)
(00224)DAP LOAD STATUS
(11101)(X1111)

P52	IMU REALIGN
N71:	— — • — —
N05:	— — — — —
N93:	
X	— — — — —
Y	— — — — —
Z	— — — — —
GET	— — — : — : —

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72 (P41)	262:00 - 263:00	12/TEC	3-368

CHANGE A

FLIGHT PLANNING BRANCH

MCC-H

FLIGHT PLAN

1054 CST

263:00

:10

:20

263:30

:40

:50

264:00

M S F N

LIGHT
FLASH
OBSSUPER
GAL
AUX
PTCEARTH DISTANCE
~ 119,681 NM

NOTES

SIM EXP STATUS
(*0210)
(00224)DAP LOAD STATUS
(11101)(X1111)

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3

MSPN CMDS:
DSE STOP/REWIND

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/28/72 (P4I)	263:00 - 264:00	12/TEC	3-369

CHARGE A

FLIGHT PLANNING BRANCH

MCC-H

1154 CST

FLIGHT PLAN

NOTES

264:00

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
 COMM HGA REACQ MODE P -40, Y 90
 V49 MNVR TO ECLIPSTIC AUX PTC ATTITUDE
 (N20,128,042)

P20 OPT 2, X-AXIS
 N78 (0,0,0)
 N79 (-0.4200, +000.50)
 N34 (0,0,0)
 CONFIGURE FOR URINE DUMP

QUAD D, A3, AND
 C4 WILL BE USED
 FOR PTC RATE
 DAMPING, B2 & D2
 FOR PTC SPINUP

:10

LiOH CANISTER CHANGE
 (22 INTO A, STOW 20 IN A4)

:20

H₂ PURGE LINE HEATER - ON

264:30

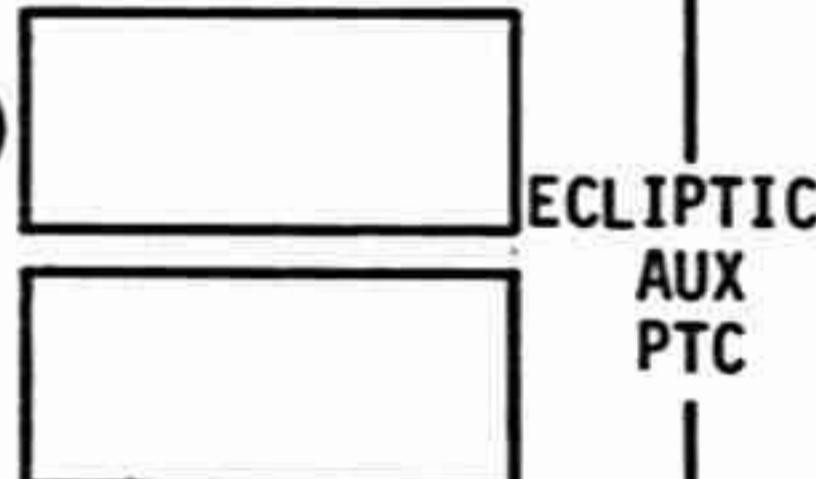
M
S
F
N

PURGE O₂ FUEL CELL 1

MS - RETR TO 12 FEET (1 MIN 35 SEC)
 PURGE O₂ FUEL CELL 2

:40

MS - RETR TO 6 FEET (43 SEC)
 PURGE O₂ FUEL CELL 3



:50

MS - DPLY
 H₂ FUEL CELL PURGE

URINE DUMP

WASTE WATER DUMP TO PERCENTAGE SPECIFIED BY MSFN

265:00

H₂ PURGE LINE HEATER - OFF

SIM EXP STATUS
 (*0210)
 (00224)

DAP LOAD STATUS
 (11101)(X1111)

ONLY 5 MIN OF RATE
 DAMPING REQUIRED

UPDATE TO CSM
 WASTE WATER
 DUMP LEVEL
 MS RETR TIME
 (12 & 6 FEET)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	264:00 - 265:00	12/TEC	3-370

FLIGHT PLANNING BRANCH

MCC-H

1254 CST

FLIGHT PLAN

265:00

:10

:20

265:30

:40

:50

266:00

M
S
F
N

CREW EXERCISE PERIOD

ECLIPTIC
AUX
PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)DAP LOAD STATUS
(11101)(X1111)

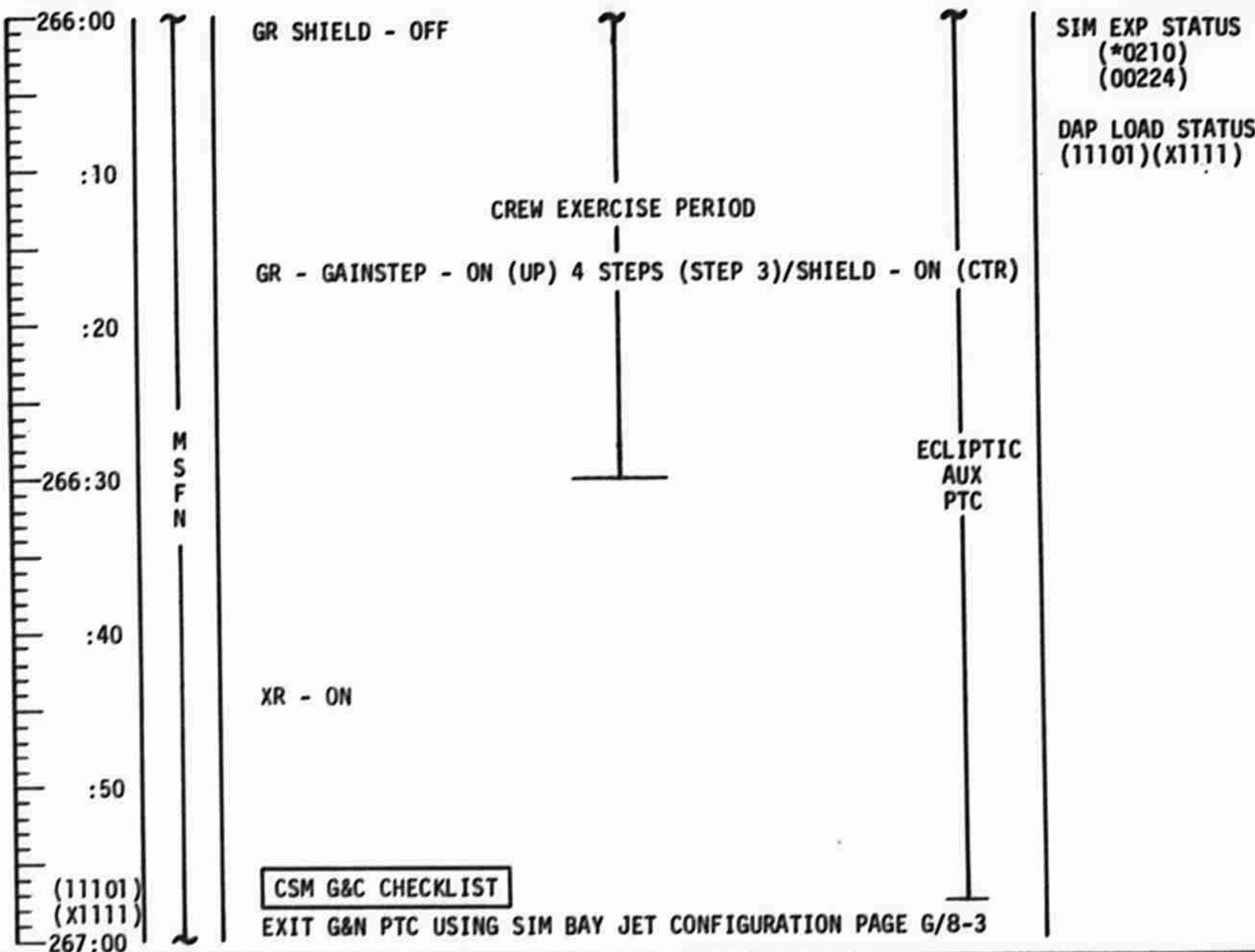
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	265:00 - 266:00	12/TEC	3-371

MCC-H

FLIGHT PLAN

1354 CST

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	266:00 - 267:00	12/TEC	3-372

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1454 CST

NOTES

267:00
(11101)
(X1111)

V49 MNVR TO X-RAY POINTING ATT (SCO X-1)(267:15)
(332,280,000) HGA P 1, Y 261

SIM EXP STATUS
(*0210)
(00222)

MSFN CMDS:
DSE DUMP

:10

AP/XR COVER OPEN

:20

M
S
F
N

267:30

EAT PERIOD

:40

SCO
X-1

:50

EARTH DISTANCE
~ 107,534 NM

268:00

CHANGE A

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72 (P61)	267:00 - 268:00	12/TEC	3-373

FLIGHT PLAN

MCC-H

1554 CST

NOTES

268:00
(11101)
(X1111)

GR: GAINSTEP - ON (UP) 4 STEPS (STEP 7)/SHIELD-ON (CTR)
P52 (OPTION 3)
(PTC ORIENT)

SIM EXP STATUS
(*0211)
(00222)

UPDATE TO CSM
ENTRY PAD

UPLINK TO CSM
CSM S.V. & V66

EI -22 HR

:10

MS - RETR
REPORT: GYRO TORQUING ANGLES
GDC ALIGN

:20

M
S
F
N

268:30

CHARGE BATTERY A

SCO
X-1

:40

MS - DPLY

:50

IF MCC-6 REQUIRED,
PERFORM AT 268:23

P52 IMU REALIGN

N71: ____,-____

N05: ____-____-

N93:

X ____-____-

Y ____-____-

Z ____-____-

GET ____-____:____-____

269:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	268:00 - 269:00	12/TEC	3-374

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

NOTES

SIM EXP STATUS
(*0211)
(00222)

UPDATE TO CSM
MS BOOM RETR
TIME (15 FEET)

269:00
(11101)
(X1111)

:10

ENTRY CHECKLIST

:20

EMS ENTRY CHECK PAGE E/1-3

GR: SHIELD - OFF
AP/XR COVER - CLOSE
XR - STBY
V49 MNVR TO THERMAL ATT (269:40)
(175,283,340) OMNI D

269:30

M
S
F
N

GR: SHIELD - ON (CTR)

:40

MS - RETR TO 15 FEET (1 MIN 14 SEC)

:50

ENABLE ALL JETS

P47 ↗ MAN ATT(3) - ACCEL CMD

270:00

SCO
X-1

MSFN CMDS:
DSE RECORD HBR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	269:00 - 270:00	12/TEC	3-375

MCC-H

1754 CST

FLIGHT PLAN

NOTES

		TRANSLATE -Y FOR \leq 1 SEC (FIRES RCS JETS C1 & A2)	
		POO	
		WAIT 5 MINS	
		YAW LEFT FOR \leq 1 SEC (FIRES RCS JETS B4 & D4)	
		INHIBIT ALL JETS EXCEPT A1&C2 OR D1&B2,A3,C4,B3,D4	
270:00			
(11101)			
(X1111)			
:10		TIME CALIBRATION ON TAPE RECORDER	
		CMC MODE - FREE	
		MAN ATT(3) - RATE CMD	
		CMC MODE - AUTO	
:20			
270:30	M S F N	MS: ION SOURCE - STBY	
:40		MS: ION SOURCE - ON	
		MS - DPLY	
		CSM EXP/EVA CHECKLIST	
		SKYLAB CONTAMINATION SEQ B, PAGE X/2-29	
		MAG (X)	
		V49 MNVR TO SKYLAB CONTAMINATION ATT (271:00)	
		(042,229,004) HGA P <u>-72</u> , Y <u>304</u>	
:50			
271:00		MC/LA COVER - OPEN	

SIM EXP STATUS
(*0220)
(00224)MSFN CMDS:
DSE DUMP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	270:00 - 271:00	12/TEC	3-376

FLIGHT PLANNING BRANCH

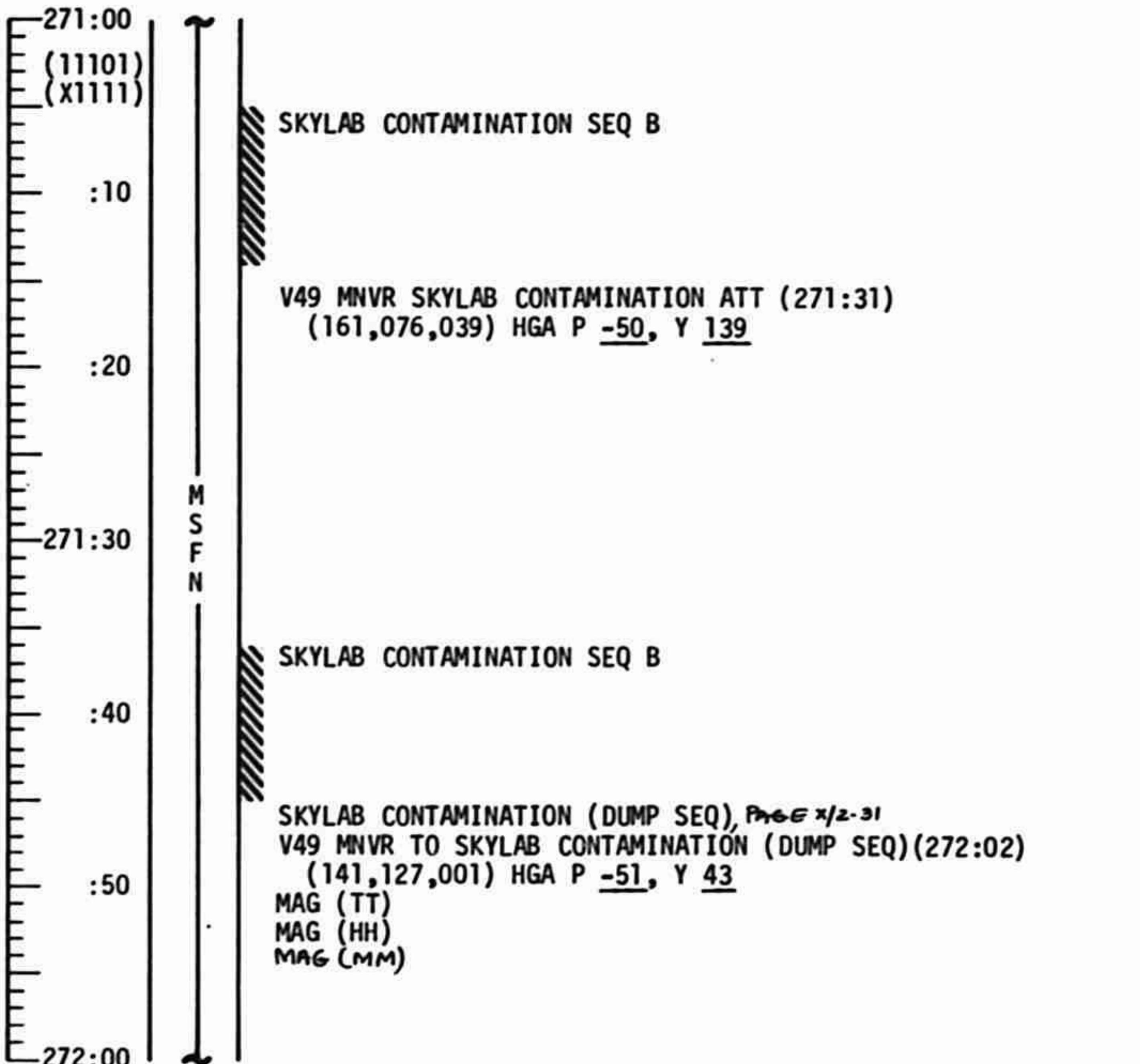
MCC-H

1854 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
 (*2210)
 (00224)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/6/72 (P/I)	271:00 - 272:00	12/TEC	3-377

CHANGE A

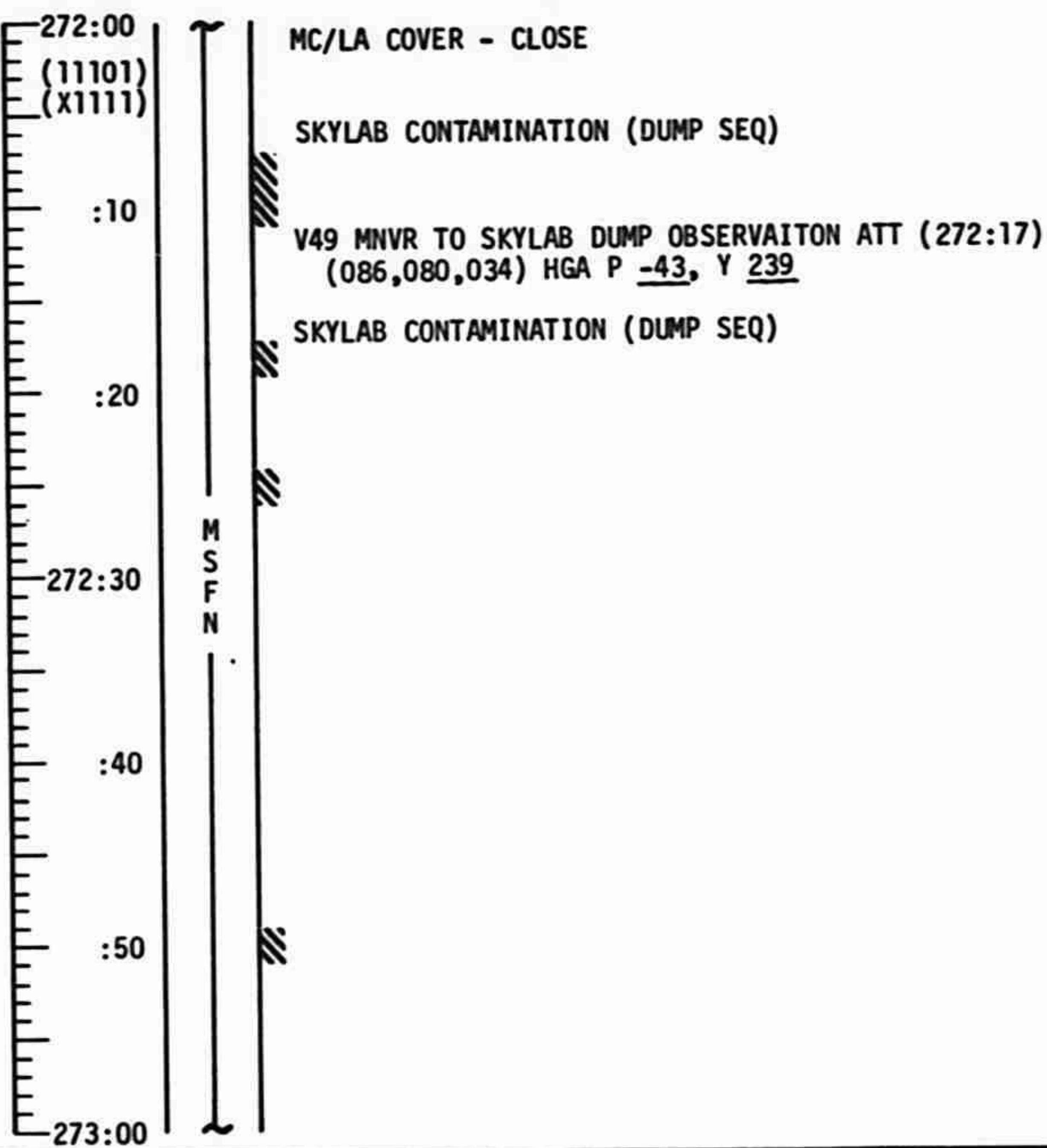
FLIGHT PLANNING BRANCH

MCC.H

1954 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*2210)
(00224)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	272:00 - 273:00	12/TEC	3-378

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2054 CST

NOTES

 273:00
 (11101)
 (X1111)

 XR - ON
 START ON ENTRY STOWAGE

 SIM EXP STATUS
 (*0210)
 (00224)

:10

 GR: SHIELD - OFF
 V49 MNVR TO X-RAY POINTING/THERMAL ATTITUDE (CYG X-1)(273:30)
 (278,295,310) OMNI BC

:20

MSFN

 AP/XR COVER - OPEN
 GR: SHIELD - ON (CTR)
CYG
X-1

273:30

:40

 CDR DON BIOMED HARNESS
 CMP DOFF BIOMED HARNESS

:50

 REPORT: CM RCS INJECTOR VALVE TEMPS
 (SYS TEST METER 5C, 5D, 6A, 6B, 6C, 6D)

CM RCS INJECTOR TEMP	
5C	5D
6A	6B
6C	6D

 LiOH CANISTER CHANGE
 (23 INTO B, STOW 21 IN A5)

274:00

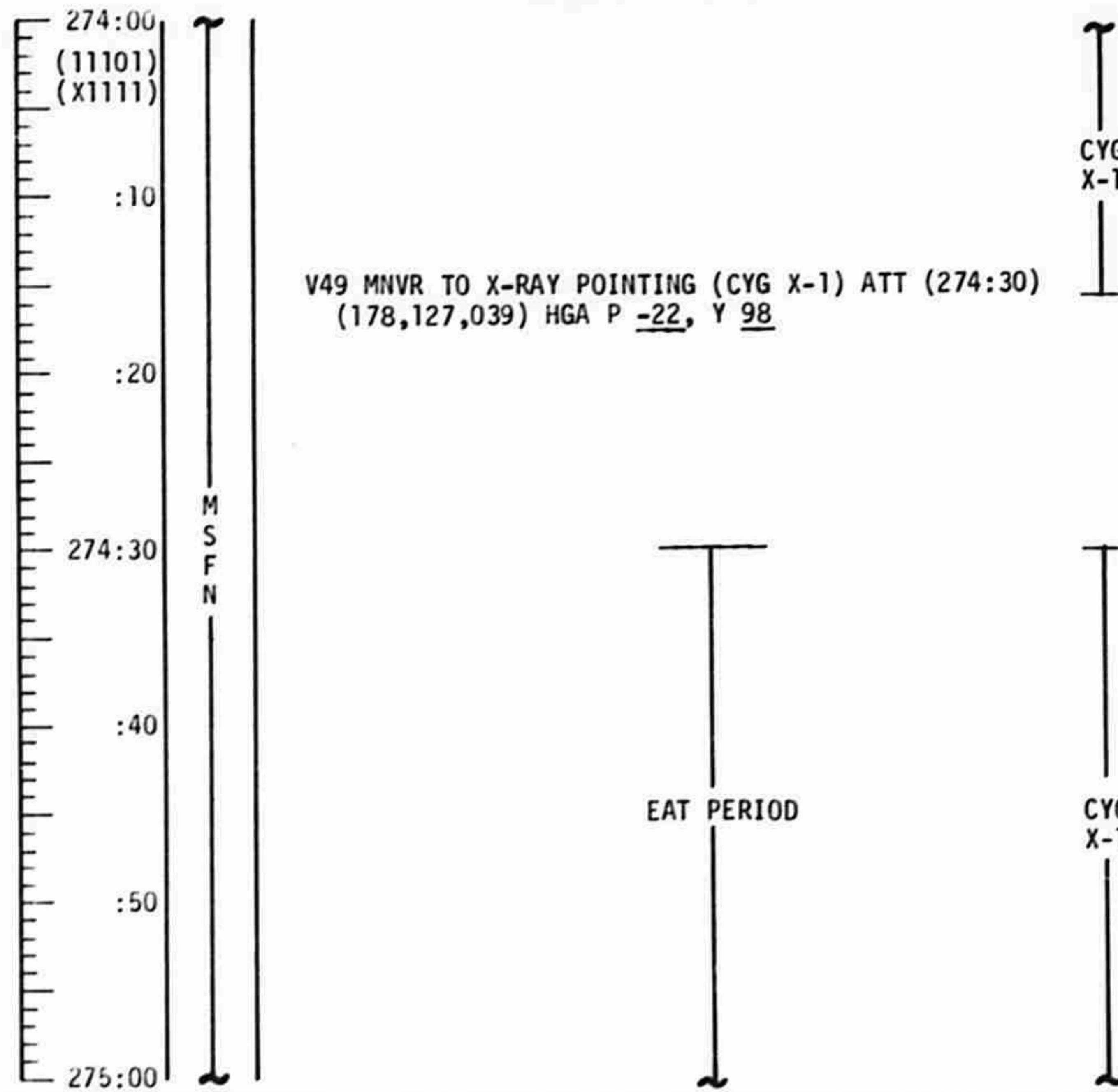
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72 11/7/72	273:00 - 274:00	12/TEC	3-379

MCC-H

2154 CST

FLIGHT PLAN

NOTES



SIM EXP STATUS
(*0211)
(00222)
EARTH DISTANCE
~ 87,373 NM

MSFN CMD:
DSE DUMP

UPLINK TO CSM:
CSM S.V. & V66

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	274:00 - 275:00	12/TEC	3-380

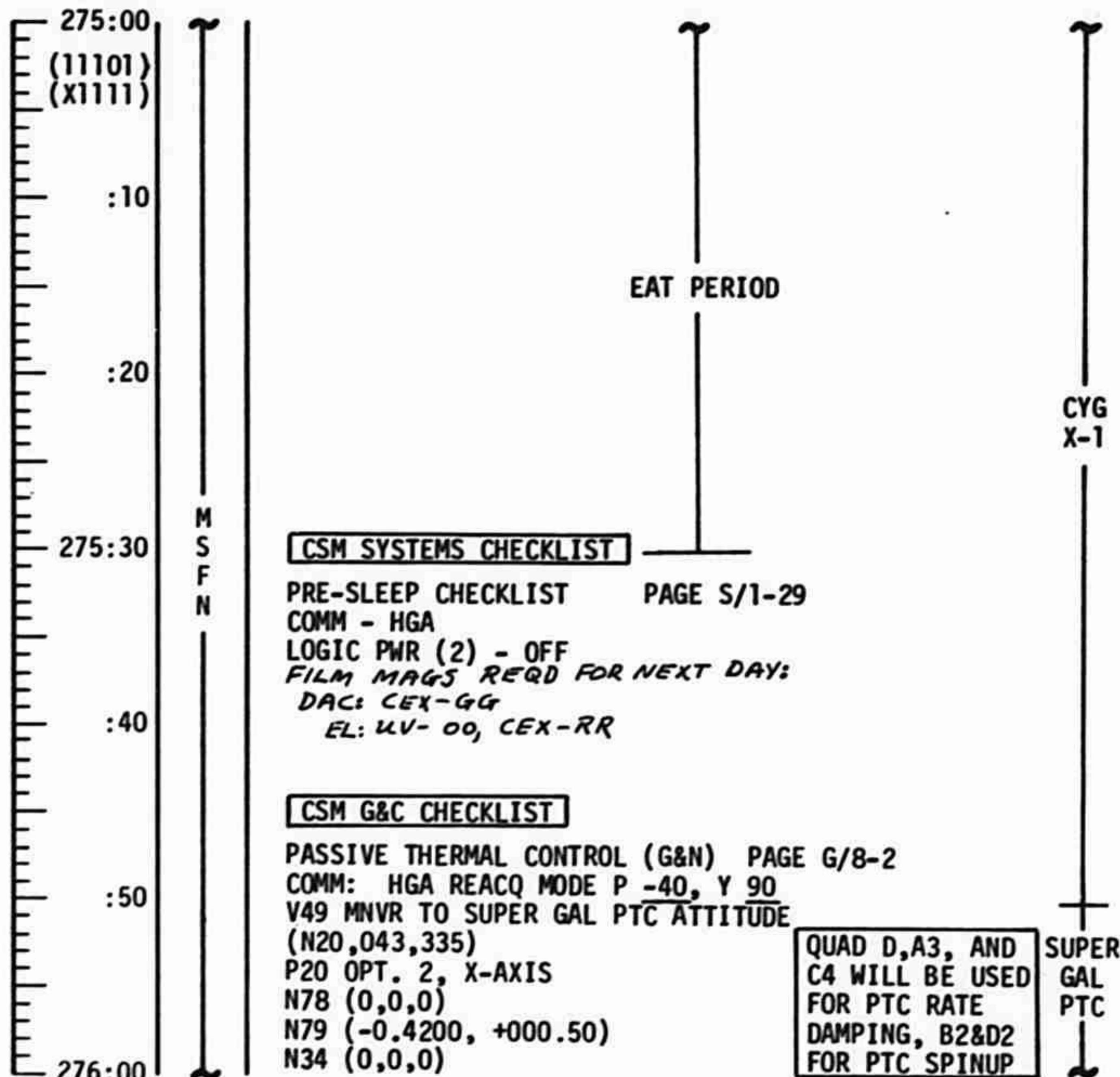
FLIGHT PLANNING BRANCH

MCC-H

FLIGHT PLAN

2254 CST

NOTES

SIM EXP STATUS
(*0211)
(00222)DAP LOAD STATUS
(11101)(X1111)

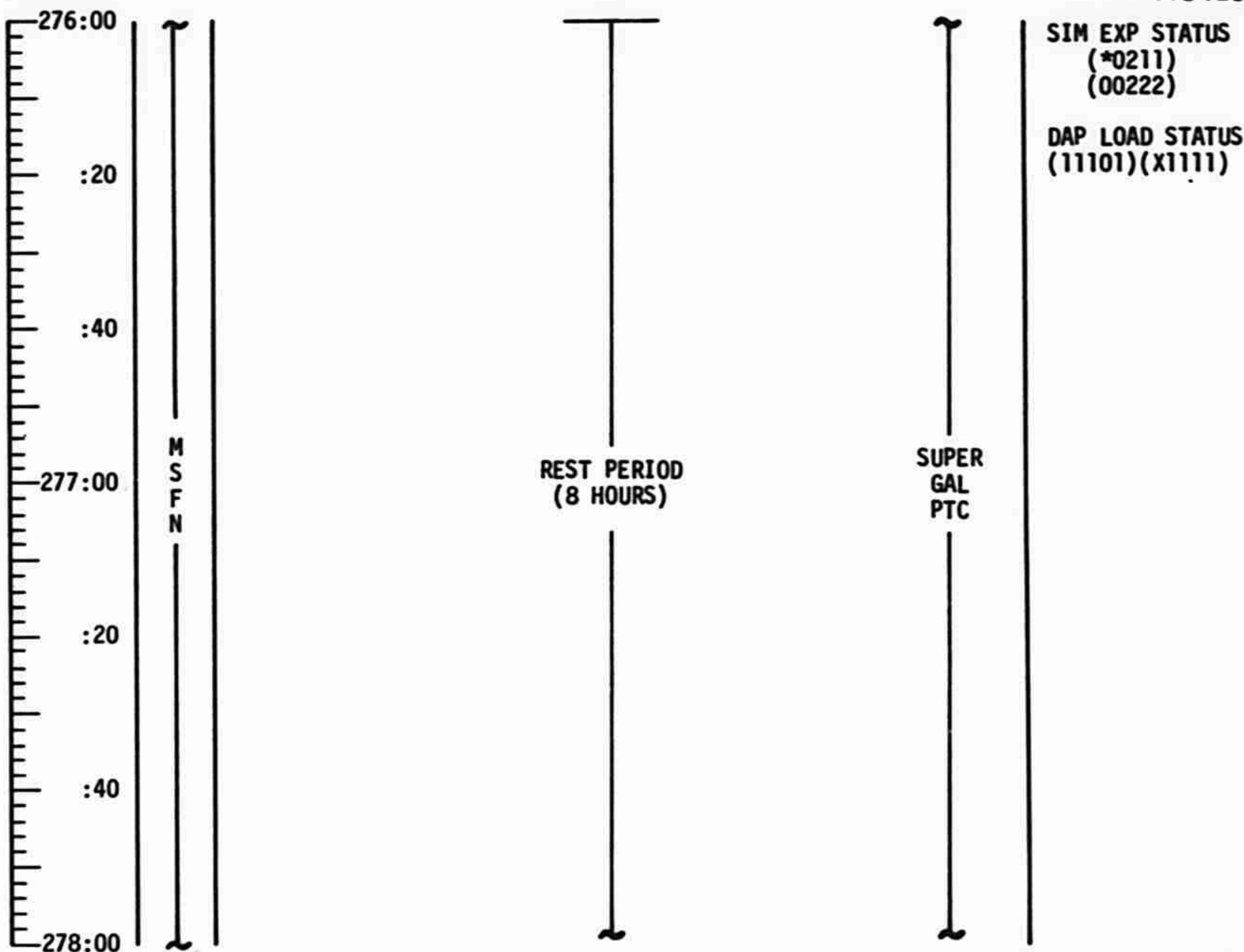
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	Ch 3 FINAL (4/16)	3/6/72 4/7/72	275:00 - 276:00	12/TEC	3-381

MCC.H

2354 CST

FLIGHT PLAN

NOTES

SIM EXP STATUS
(*0211)
(00222)DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	276:00 - 278:00	12/TEC	3-382

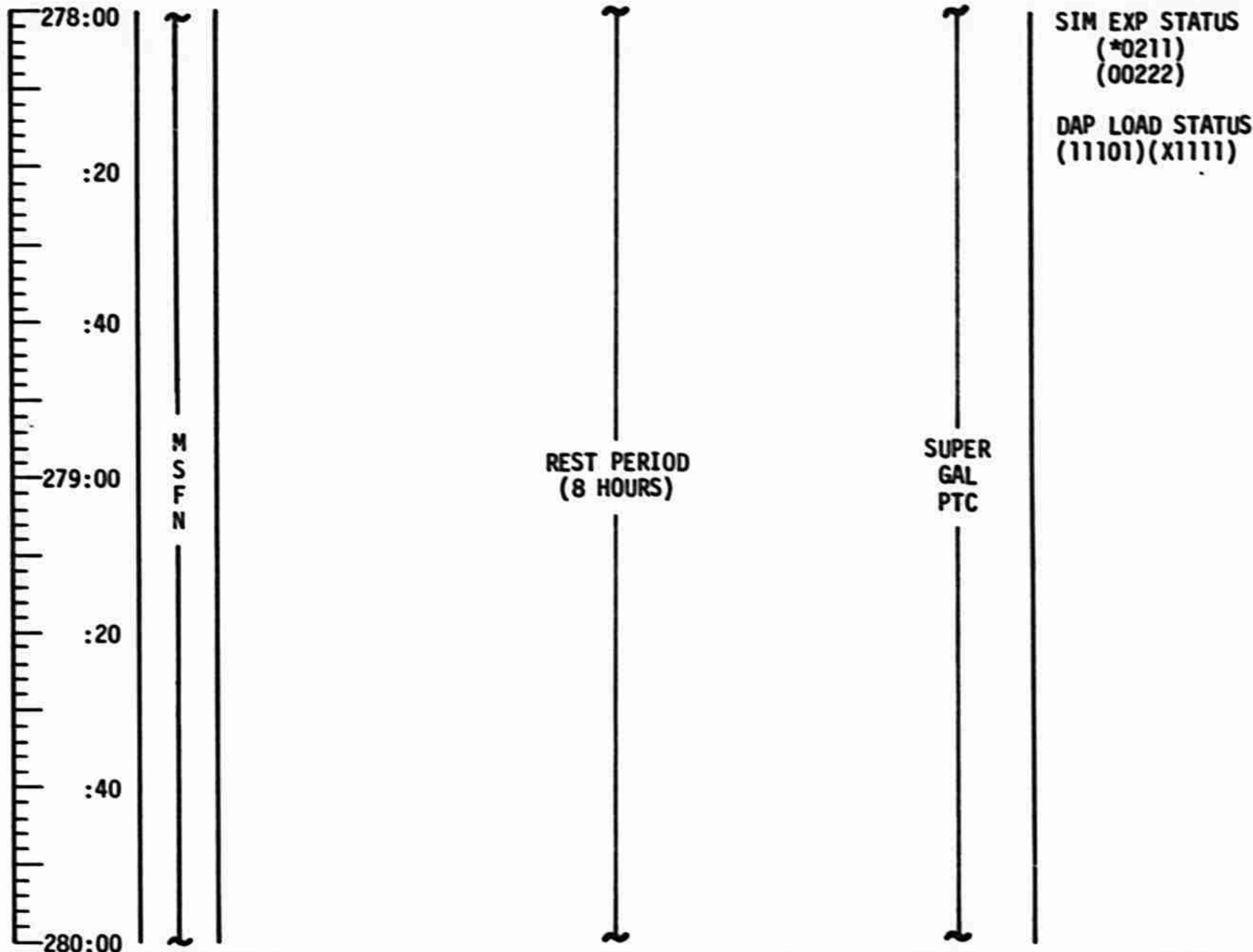
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0154 CST

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	278:00 - 280:00	12/TEC	3-383

FLIGHT PLAN

MCC-H

0354 CST

280:00 :20 :40
281:00 :20 :40
282:00

M
S
F
N

REST PERIOD
(8 HOURS)

SUPER
GAL
PTC

NOTES
SIM EXP STATUS
(*0211)
(00222)
DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	280:00 - 282:00	12/TEC	3-384

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0554 CST

282:00

:20

:40

283:00

:20

:40

284:00

M
S
F
N

REST PERIOD
(8 HOURS)

SUPER
GAL
PTC

NOTES
SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	282:00 - 284:00	12-13/TEC	3-385

FLIGHT PLAN

MCC-H

0754 CST

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN
MS BOOM RETR
TIME (15 FEET)

EI -6 HR

MSFN CMDS:
DSG RECORD HBR

284:00

:10

:20

284:30
(11102)
(01111)

:40

:50

285:00

M
S
F
N

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - DPLY/RETR

MS - RETR TO 15 FEET (1 MIN 14 SEC)

REPORT: CM INJECTOR VALVE TEMPS
(SYS TEST METER 5C,5D,6A,6B,6C,6D)

CMP & LMP DON BIOMED HARNESS

LiOH CANISTER CHANGE
(24 INTO A, STOW 22 IN A5)
UPDATE STOWAGE LIST & TAPE TO LEB
V48 (11102)(01111)

CSM G&N CHECKLIST

EXIT G&N PTC (COUPLED JETS) PAGE G/8-3
V49 MNVR TO GAL ANTI CENTER POINT ATT (284:45)
(339,084,359) OMNI C

TERMINATE TIMING VOIDS AND MEASURING FLUID INTAKE

EAT PERIOD

SUPER
GAL
PTC

GAL
ANTI
CENTER
POINT

NOTES
SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

CM RCS INJECTOR TEMP

5C	5D
6A	6B
6C	6D

EARTH DISTANCE
~39,600 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 (P4I)	284:00 - 285:00	13/TEC	3-386

CHANGES

FLIGHT PLANNING BRANCH

MCC-H

0854 CST

FLIGHT PLAN

NOTES

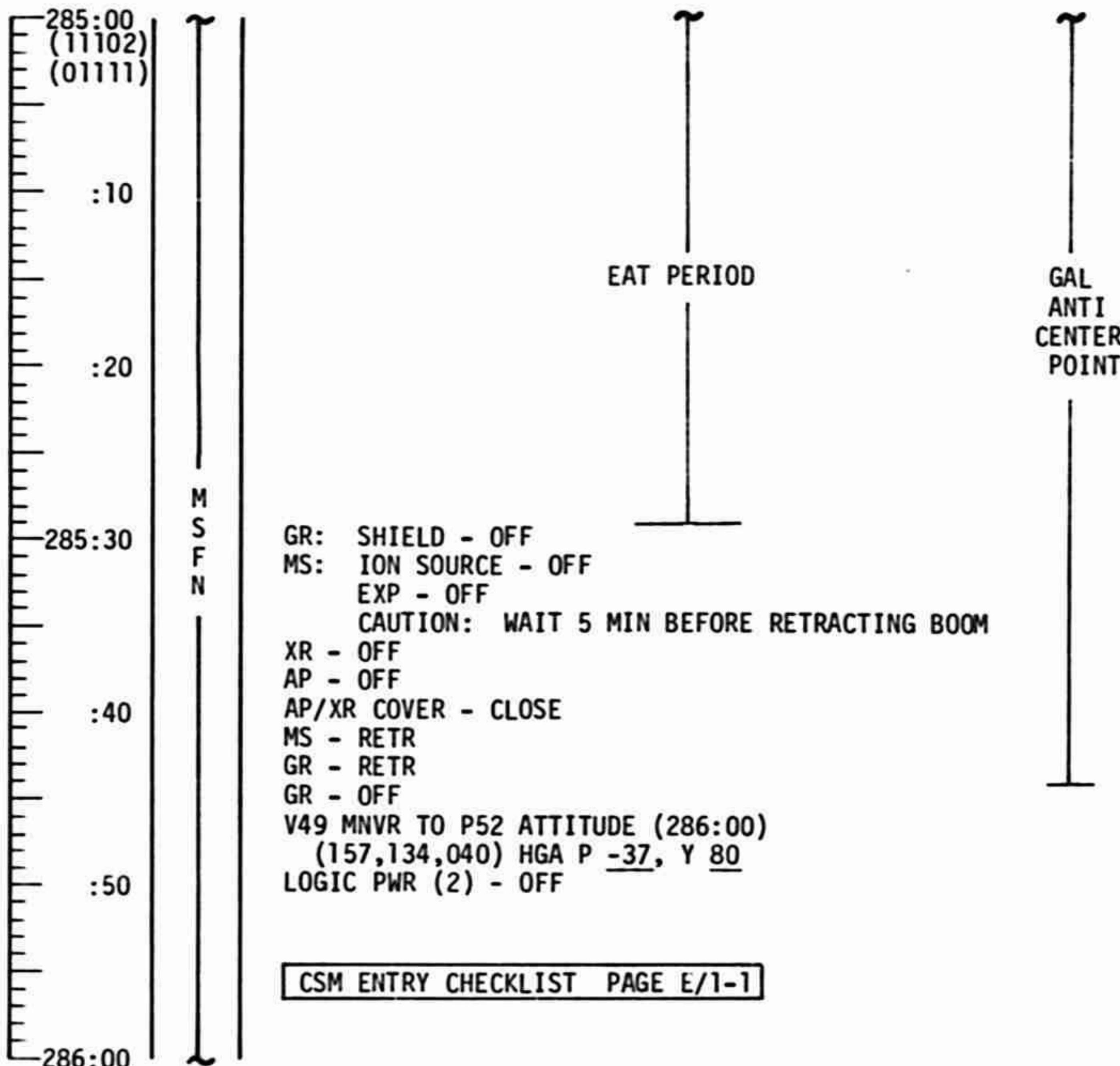
SIM EXP STATUS
(*0221)
(00222)

EI -5 HR

MSFN CMDS:
DSE STOP/REWIND

UPDATE TO CSM
GO/NO-GO FOR MCC-7
MCC-7 MNVR PAD
ENTRY PAD

UPLINK TO CSM
CSM S.V. & V66
MCC-7 TGT LOAD
DESIRED ORIENT
(ENTRY)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	285:00 - 286:00	13/TEC	3-387

FLIGHT PLAN

MCC-H

0954 CST

NOTES

MSFN CMDS:
DSE DUMP

	286:00	LIMIT CYCLE - ON ATT DEADBAND - MIN RATE - LOW BMAG (3) - ATT 1/RATE 2 SC CONT - SCS P52 (OPTION 3) (PTC ORIENT) REPORT: <u>GYRO TORQUING ANGLES</u> P52 (OPTION 1) (ENTRY ORIENT) GDC ALIGN SC CONT - CMC BMAG (3) - RATE 2 ECS CKS EPS CKS SPS CK RCS CKS C&W SYS CK	STARS _____, _____ SA _____, _____ TA _____, _____
EI -4 HR	:10		
	:20		
	286:30	M S F N	
	:40	*P30 EXTERNAL ΔV *V49 MNVR TO PAD BURN ATT	*PERFORMED IF MCC-7 IS REQUIRED
	:50		
	287:00	DATA SYS - OFF	

P52 IMU REALIGN
 N71: _____, _____
 N05: _____, _____
 N93:
 X _____, _____
 Y _____, _____
 Z _____, _____
 GET _____, _____, _____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	286:00 - 287:00	13/TEC	3-388

FLIGHT PLANNING BRANCH

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APOLLO 16

FINAL (4/16)

3/6/72

3-389

FLIGHT PLAN

MCC-7
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	+10° COMPLETE	BT + 1 SEC AND $C_C = 0$	TRIM X AXIS ONLY TO 0.2 FPS

APOLLO 16

FINAL (4/16)

3/6/72

3-390

MCC-H

1054 CST

FLIGHT PLAN

NOTES

287:00
(11102)
(01111)

*SXT STAR CHECK

:10

*P40 SPS THRUSTING OR
*P41 RCS THRUSTING

:20

MCC-7

TIG: 287:23
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NOM ZERO

*PERFORMED IF MCC-7
IS REQUIRED

287:30

M
S
F
N

*V66 SET CSM S.V. INTO LM S.V.
*REPORT: BURN STATUS

CSM EXP/EVA CHECKLIST

:40

V49 MNVR TO EARTH UV PHOTO ATT (287:50)
(299,338,001) OMNI D
EARTH UV PHOTOGRAPHY SEQ B, PAGE x/2-17
MAG (OO)
MAG (RR)

:50

LOOK FOR NOCTILUCENT CLOUDS

288:00

BURN STATUS REPORT

X X	ATIG
X X	BT
	V _{gx}
	TRIM
X X X	R
X X X	P
X X X	Y
	V _{gx}
	V _{gy}
	V _{gz}
	ΔV _c
X X X	FUEL
X X X	OX
X X X	UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72 3/6/72e (P&I)	287:00 - 288:00	13/TEC	3-391

CHANGE A

FLIGHT PLANNING BRANCH

MCC-H

1154 CST

FLIGHT PLAN

NOTES

EARTH DISTANCE
~20,900 NM

EI -2 HR
UPDATE TO CSM
GO/NO-GO FOR PYRO
ARM SEQUENCE

288:00
(11102)
(01111)

:10

REMOVE AND STOW CABIN FAN FILTER (U2)

:20

STOW FLIGHT PLAN

CSM ENTRY CHECKLISTLOGIC SEQUENCE CHECK PAGE E/1-2
GO/NO-GO FOR PYRO ARM (CUE MSFN)

288:30

MSFN

:40

P52 (OPTION 3)
(ENTRY ORIENT)

PAGE E/1-2

:50

REPORT: GYRO TORQUING ANGLES
GDC ALIGN PAGE E/1-3

289:00

P52 IMU REALIGN

N71: ____,-,____

N05: ____,-,____

N93:

X ____,-,____

Y ____,-,____

Z ____,-,____

GET ____,:____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	288:00 - 289:00	13/TEC	3-392

FLIGHT PLANNING BRANCH

MCC-H

1254 CST

FLIGHT PLAN

NOTES

289:00
(11102)
(01111)

:10

V49 MNVR TO HORIZON CHECK ATTITUDE
BORESIGHT & SXT STAR CHECK

EMS ENTRY CHECK PAGE E/1-3
PRI AND SEC WATER EVAP ACTIVATION PAGE E/1-4
CONFIGURE CAMERA EQUIP FOR FIREBALL AND CHUTES PHOTOS
CM RCS PREHEAT (IF REQD)
FINAL STOWAGE PAGE E/1-5

:20

CONFIGURE FOR VHF A SIMPLEX VOICE CHECK

289:30

MSFN

TERMINATE RCS PREHEAT PAGE E/1-5
CM RCS ACTIVATION PAGE E/1-6
GO/NO-GO FOR PYRO ARM (CUE MSFN)
LOGIC ON
CONFIGURE DSE: (STOP/CMD RESET/REWIND)
SET DET (UP, TO EI) PAGE E/2-1
EMS INITIALIZATION

:40

RSI ALIGNMENT
CM RCS CHECK

:50

CONFIGURE DSE: (HBR/RCD/FWD/CMD RESET)

290:00

SEPARATION CHECKLIST PAGE E/2-2

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	289:00 - 290:00	13/TEC	3-393

MCC-H

1354 CST

FLIGHT PLAN

NOTES

290:00
(11102)
(01111)

:10

(ENTRY
DAP)
:20

290:30

:40

:50

291:00

M
S
F
N

P61 ENTRY PREP PAGE E/2-2
P62 CM/SM SEP & PRE-ENTRY MMVR
SECS PYRO ARM

CM/SM SEP 290:07

EI 290:22:45

SPLASHDOWN 290:36:03

TRAJECTORY EVENTS		TIME FROM 400K FT
		MIN:SEC
400K FT (GET 290:22:45)		00:00
ENTRY S-BAND BLACKOUT		00:17
0.05G		00:28
KA-INITIATE CONSTANT DRAG		00:52
RDOT = -700 FPS		01:18
PEAK G		01:22
SUBCIRCULAR VELOCITY		02:02
P64 TO P67		02:06
EXIT S-BAND BLACKOUT		03:33
GUIDANCE TERMINATION		06:50
DROGUE DEPLOYMENT		07:49
MAIN DEPLOYMENT		08:31
SPLASHDOWN		13:18

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	290:00 - 291:00	13/TEC-EI	3-394

FLIGHT PLANNING BRANCH

SECTION 4 - CONSUMABLES



SECTION IV

Mission profile dependent
3/1/72 Basic

THE SPS ANALYSIS ASSUMPTIONS

FOR THE SPS PROPELLANT ANALYSIS

1. All spacecraft weights and the sequential consumables losses were taken from the Spacecraft Operational Data Book, Amendment 114.
2. The engine I_{sp} assumed for this analysis is 314.9 seconds.
3. The 3σ dispersions are the RSS of the penalties imposed on the SPS margin by 3σ dispersions in propellant loading, mixture ratio, engine I_{sp} , maneuver ΔV , spacecraft weight, and consumable weight losses.
4. The CSM/LM weights for the J-missions have increased to an extent that, for some launch dates, the S-IVB will not have sufficient propellant reserves to compensate for a 3σ engine. Thus, in order to have a combined 3σ confidence level for the S-IVB and SPS, the S-IVB ΔV deficit is covered in the SPS propellant budget.
5. The ground rule for a contingency allowance is to budget for either an LM rescue or for a maneuver to avoid adverse weather conditions at entry, whichever produces the least SPS margin. The ΔV for the LM rescue allowance and the weather avoidance allowance is 600 ft/sec and 300 ft/sec, respectively. For this mission, the weather avoidance allowance produces the least SPS margin.

3/27/72

Mission profile dependent
3/1/72 Basic

APOLLO 16 SPS PROPELLANT SUMMARY

[APRIL 16, 1972, LAUNCH DATE; 72° LAUNCH AZIMUTH]

Item	Required, lb	Remaining, lb
Expected loading		40 796.0
Trapped and unavailable	441.4	40 354.6
Outage	59.8	40 294.8
Unbalance meter	100.0	40 194.8
Available for ΔV		40 194.8
Required for ΔV		
LOI (2807.0 fps)	24 788.4	15 406.4
DOI (206.1 fps)	1 576.6	13 829.8
CIRC (99.6 fps)	396.9	13 432.9
LOPC-1 (158.7 fps)	613.2	12 819.7
LOPC-2 (282.5 fps)	1 064.7	11 755.0
SHAPE (40.0 fps)	160.5	11 594.5
TEI (3212.2 fps)	9 999.2	1 595.3
Nominal remaining		1 595.3
Dispersions		
TLMC (23 fps)	262.2	1 333.1
-3σ performance	363.6	969.5
S-IVB ΔV deficit	0.0	969.5
Margin above 3σ*		969.5
Available for contingencies		969.5

* 969.5 lb is equivalent to 365 fps end-of-mission reserve.

3/27/72

4-3

Mission profile dependent

12/7/71 Basic

Ground Rules and Assumptions

1. Following transposition and docking, the S-IVB performs the evasive maneuver.
2. Two midcourse corrections (translunar) are executed as SPS burns with one MCC followed by an RCS trim.
3. One midcourse correction (transearth) is executed as an RCS burn of 5 fps.
4. Quad management is to be determined during the mission.
5. Single jet RCS control during SIM exps.
6. Couple jet RCS control during SIM off periods (major burns).
7. All maneuvering at low rate ($0.2^\circ/\text{sec}$) both docked and undocked.
8. Attitude hold deadband during SIM photography and major burns - 0.5° .
9. Attitude hold deadband at other times - 3.0° (except for 2° deadband test).
10. Lunar orbit usage SIM photography 1.0 lb/hr
 Rest periods 0.1 lb/hr
 Other 0.5 lb/hr
11. Nominal ullages.
12. Redlines have been defined by the Flight Control Division as an aid in assuring that mission rules are not violated during the mission. They are subject to review during the mission as mission phases are completed and systems capabilities are evaluated. In the event the rescue redline is violated prior to rendezvous, lunar orbit photography activities can be curtailed to conserve propellant. The lunar orbit redline includes a nominal transearth coast phase (with all navigational sightings) plus a 3 sigma G&N TEI cutoff error MCC. If a rescue is required and the lunar orbit redline is violated prior to the nominal TEI, TEI can be performed early and navigational sighting activity curtailed during the transearth phase. The rescue redline is based on the minimized activity during the transearth phase.

3/27/72

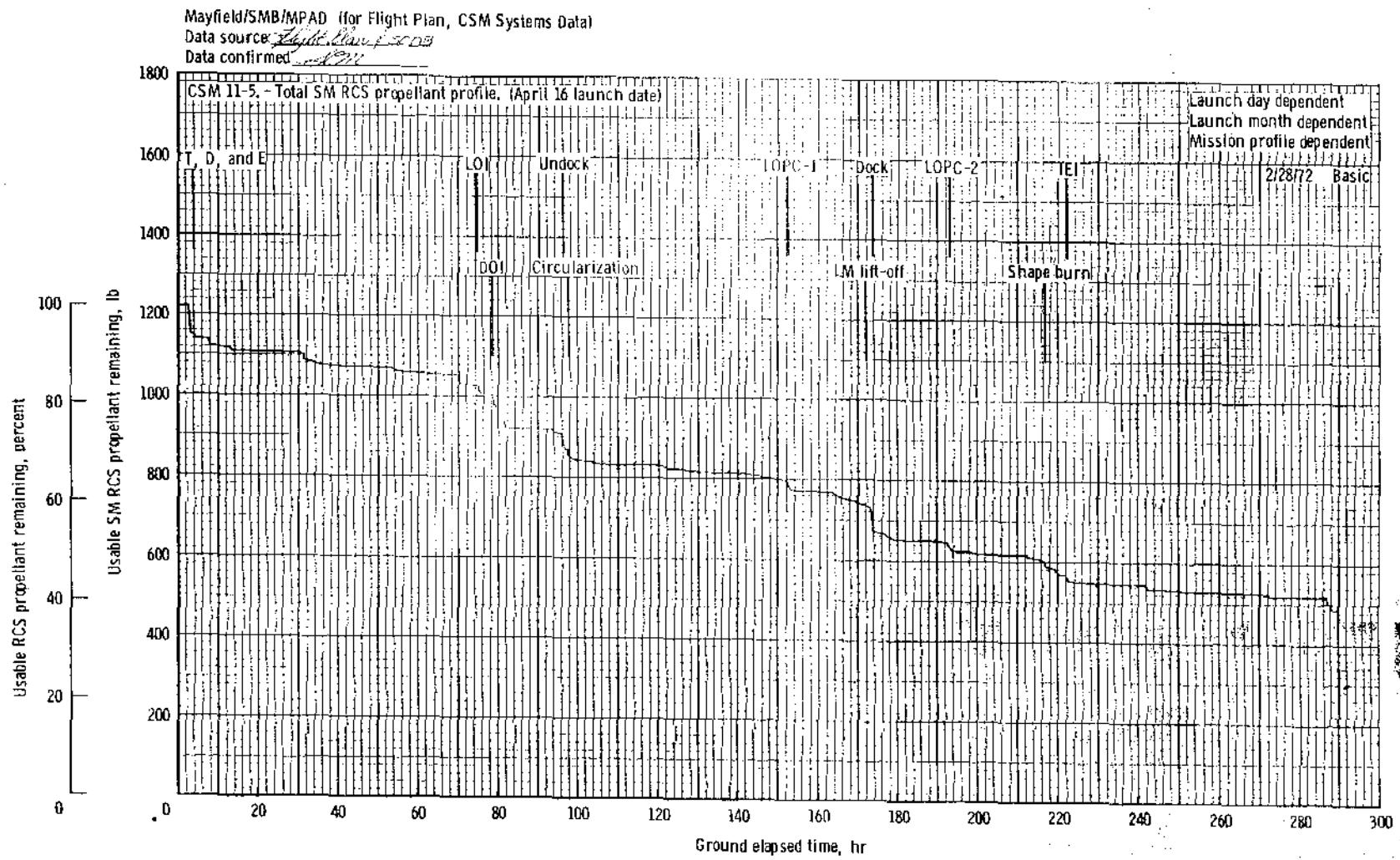
Mission profile dependent
3/1/72 Basic

APOLLO 16 SM RCS ANALYSIS

Item	Required, lb	Remaining, lb
Expected loading	- -	1342.4
Initial outage M/R	15.6	- -
Total trapped	26.4	- -
Gaging inaccuracy*	80.4	- -
Deliverable		1220.0
Nominal usage		
Translunar coast	200	- -
Lunar orbit	468	- -
Transearth coast	92	- -
Total	760	- -
Nominal remaining usable		460.0

*This gaging inaccuracy allows for a 6 percent of total loaded uncertainty. The final consumables analysis will show an increase in deliverable propellant of 22 lb. See Volume I of the SODB for a discussion on gaging inaccuracies.

3/27/72

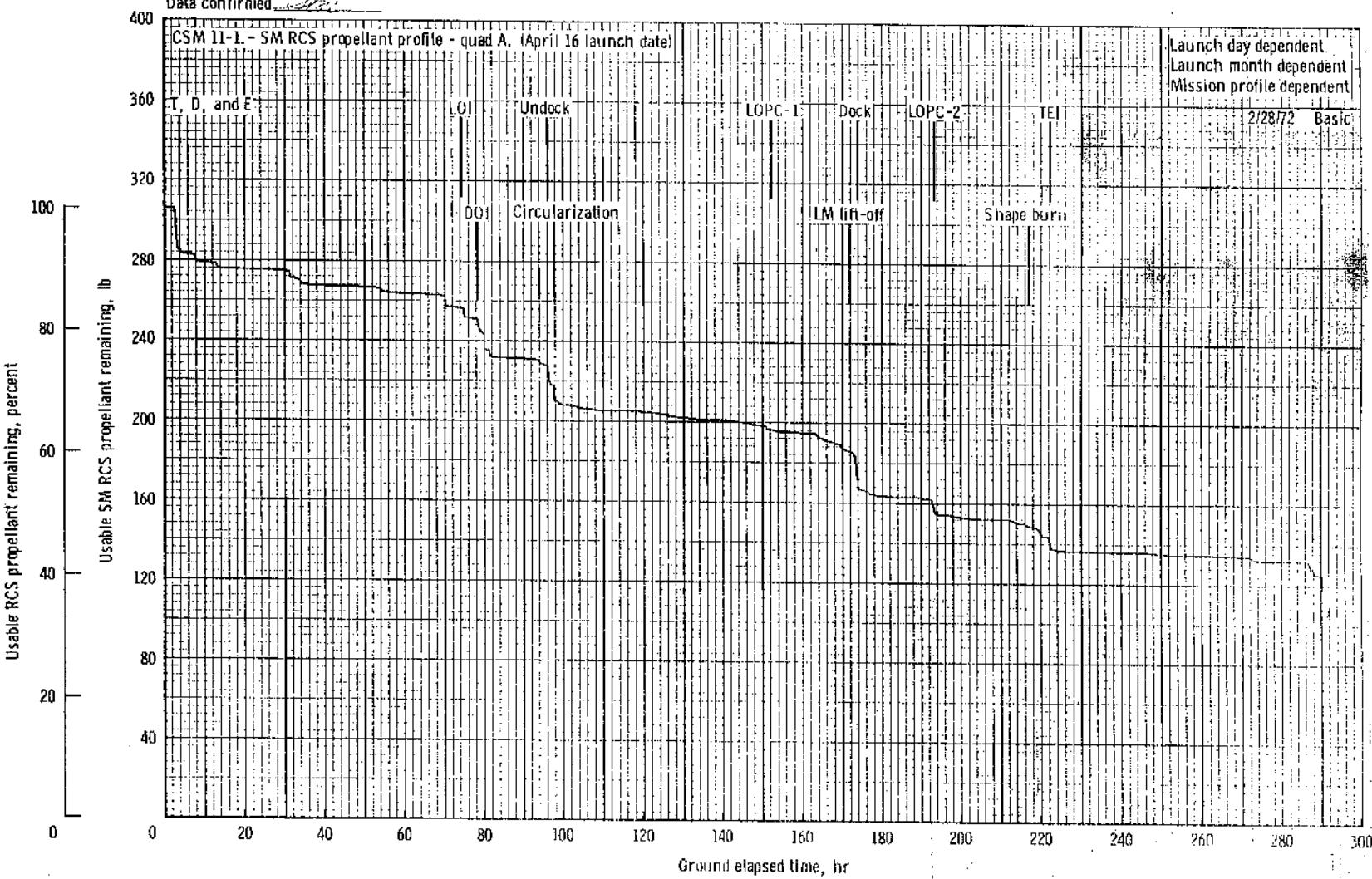


4-5

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source *Flight Plan & SCDB*

Data confirmed *[initials]*



SM RCS propellant profile - quad A.

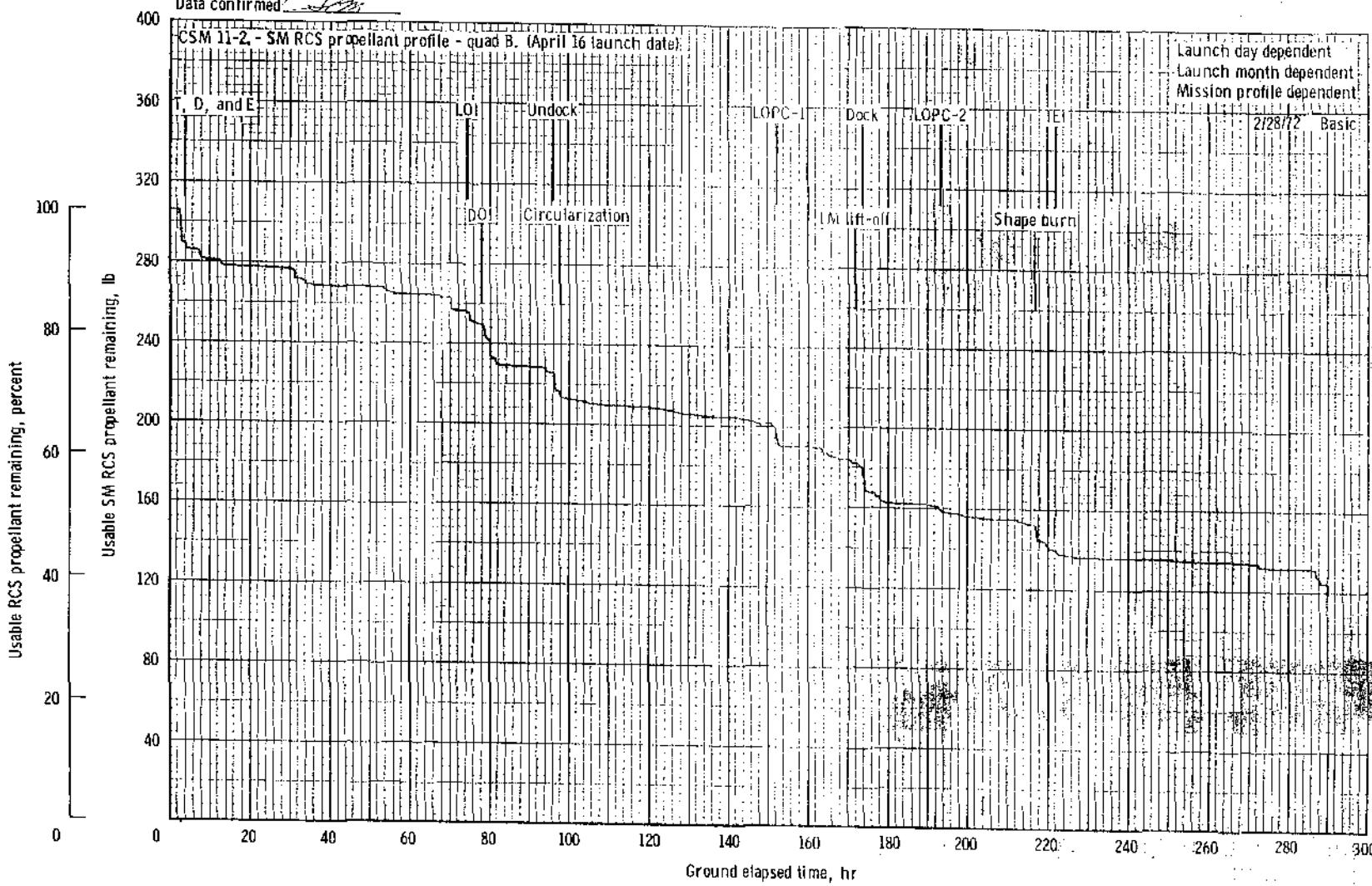
3/27/72

4-7

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source: ~~Flight Plan E SCUB~~

Data confirmed: CSB

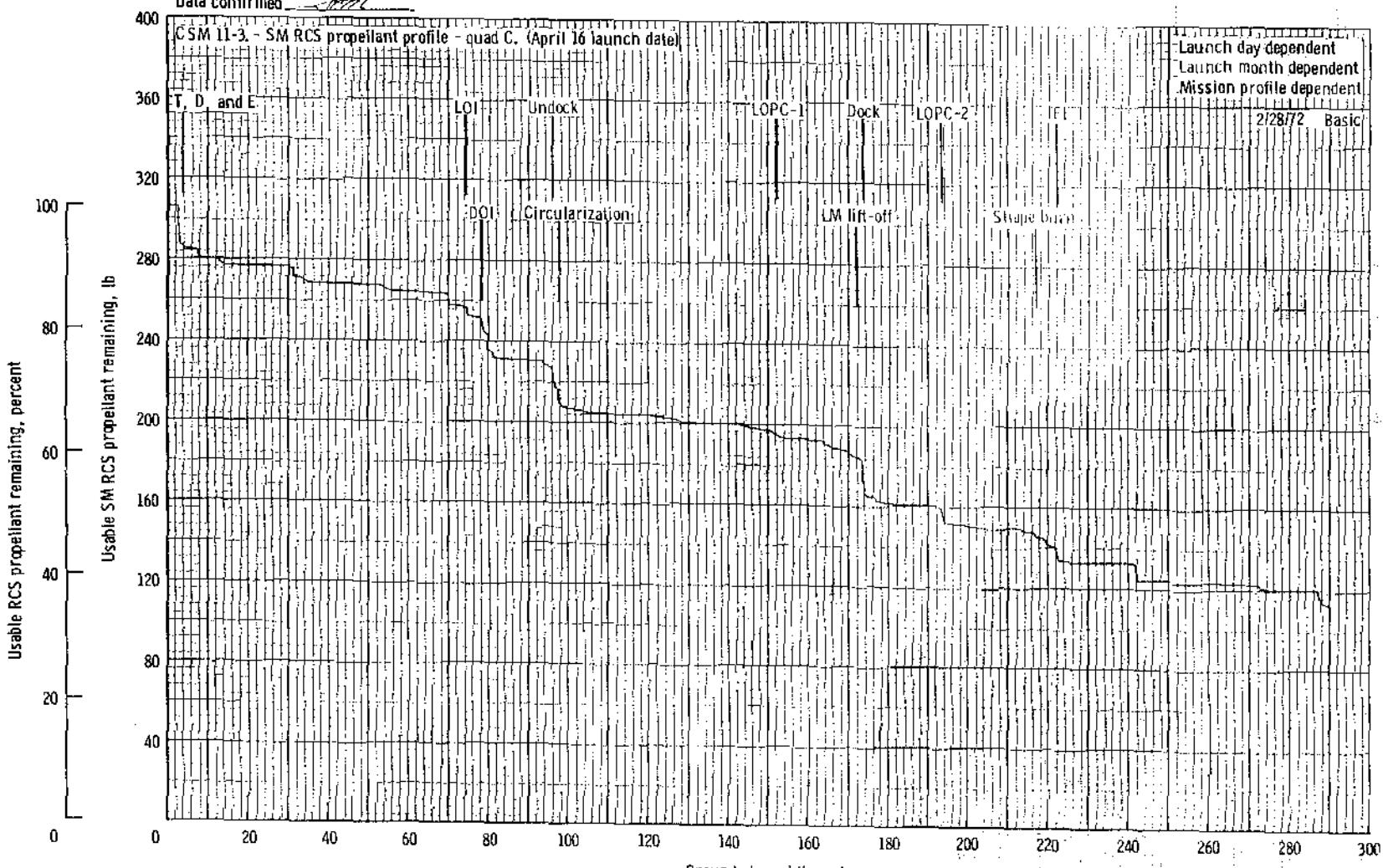


SM RCS propellant profile - quad B.

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source Flight Plan - SODP

Data confirmed 0772



SM RCS propellant profile - quad C.

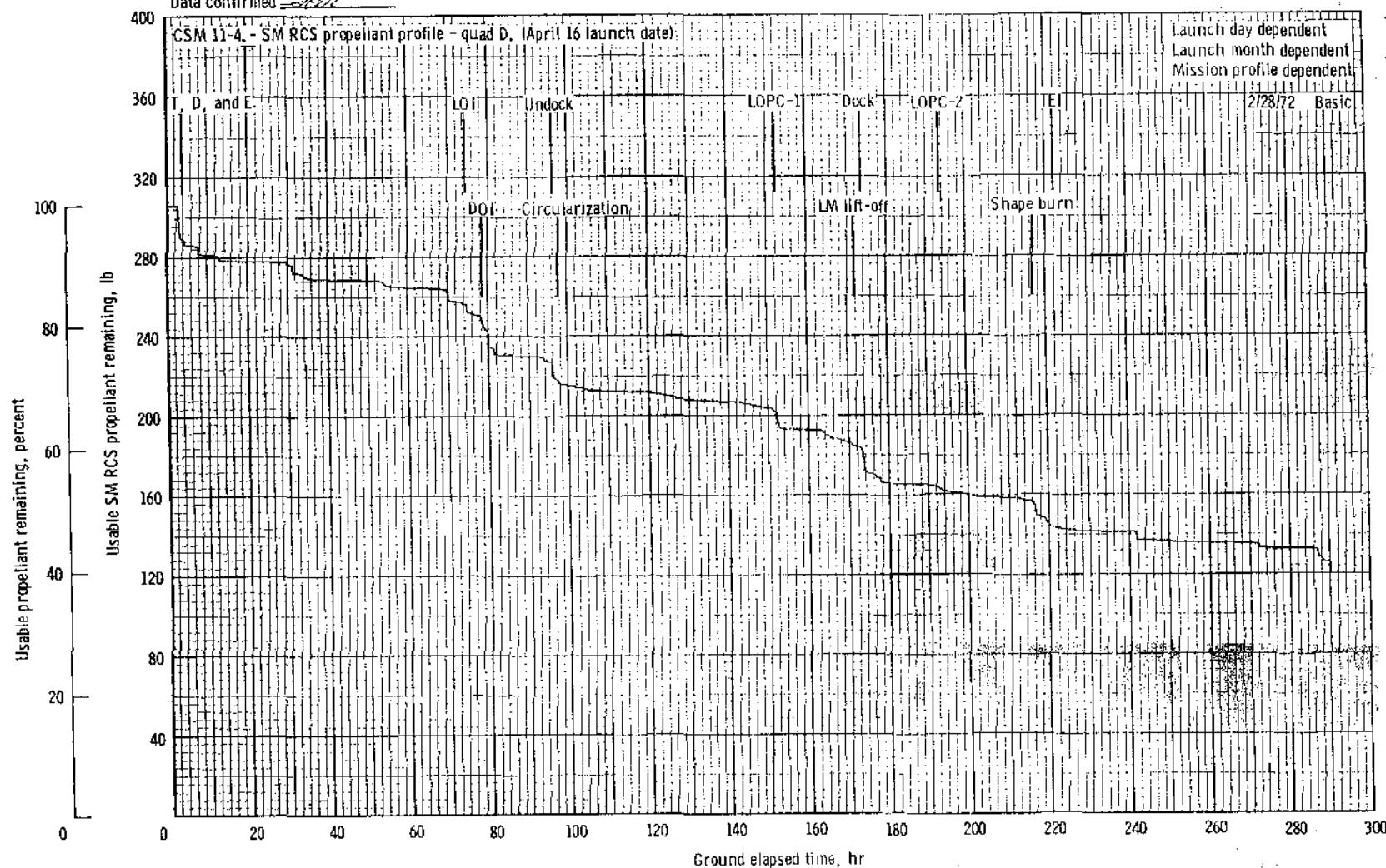
3/27/72

4-8

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source Flight Plan FSDP

Data confirmed 4/19/72



SM RCS propellant profile - quad D.

4-10

3/27/72

Mission profile dependent
3/8/72 Basic

CM RCS PROPELLANT SUMMARY

Item	Propellant required, lb	Propellant remaining, lb
Loaded	--	238.2
Trapped	36.4	196.8
Available for mission planning . . .	--	196.8
Nominal usage*	59.3	137.5
Nominal remaining	--	137.5

*CM RCS propellant usage is for dual ring operation
with DAP control

3/27/72

4-71

Mission profile dependent

12/13/71 Basic

GROUND RULES AND ASSUMPTIONS FOR THE CSM CRYOGENICS

1. Three O_2 and H_2 tanks are available.
2. Fuel cell purging is included in the EPS requirements.
3. No cryogenic venting was assumed in flight.
4. The EPS hydrogen consumption rate (\dot{H}_2) (lb/hr) = $0.00257 \times I_{fc}$ when I_{fc} is the total fuel cell current.
5. The EPS oxygen consumption rate (\dot{O}_2) (lb/hr) = $7.936 \times \dot{H}_2$.
6. No allowance for the SM enhancement battery is assumed.

Mission profile dependent
3/1/72 Basic

7. The following tank depletion schedules are being used:

CRYO MANAGEMENT SCHEDULE

GET (hrs:min)	Tank numbers				
	Oxygen htrs ^a		H_2 tank 1, 2 htrs, tank 3 fan		
	Auto	Off	Auto	Manual	Off
0:00	1, 2	3	1, 2	3	
3:12	1, 2, 3				
4:12	1, 2	3			
14:30	3	1, 2	1, 2, 3		
23:06			3		1, 2
31:30	1, 2, 3				
32:42	3	1, 2			
^a 70:00	1, 2	3	1, 2		3
93:48	3	1, 2			
107:24	1, 2	3			
191:30	3	1, 2			
201:30	1, 2	3			
241:54	1, 2, 3				
243:18	1, 2	3			

^aSwitch to 100-watt heaters in O_2 tanks 1, 2, and 3 at this time.

The CSM consumables summary (table 5-I) shows that a significant H_2 and O_2 margin exists at the end of the mission. This is reflected in the H_2 and O_2 usage profiles shown in figures 5-1 and 5-2. However, these curves do not include dispersions.

In summary, the nominal mission requirements can be satisfied with the existent consumables.

3/27/72

4-13

Mission profile dependent
3/1/72 Basic

APOLLO 16 CRYOGENIC SUMMARY

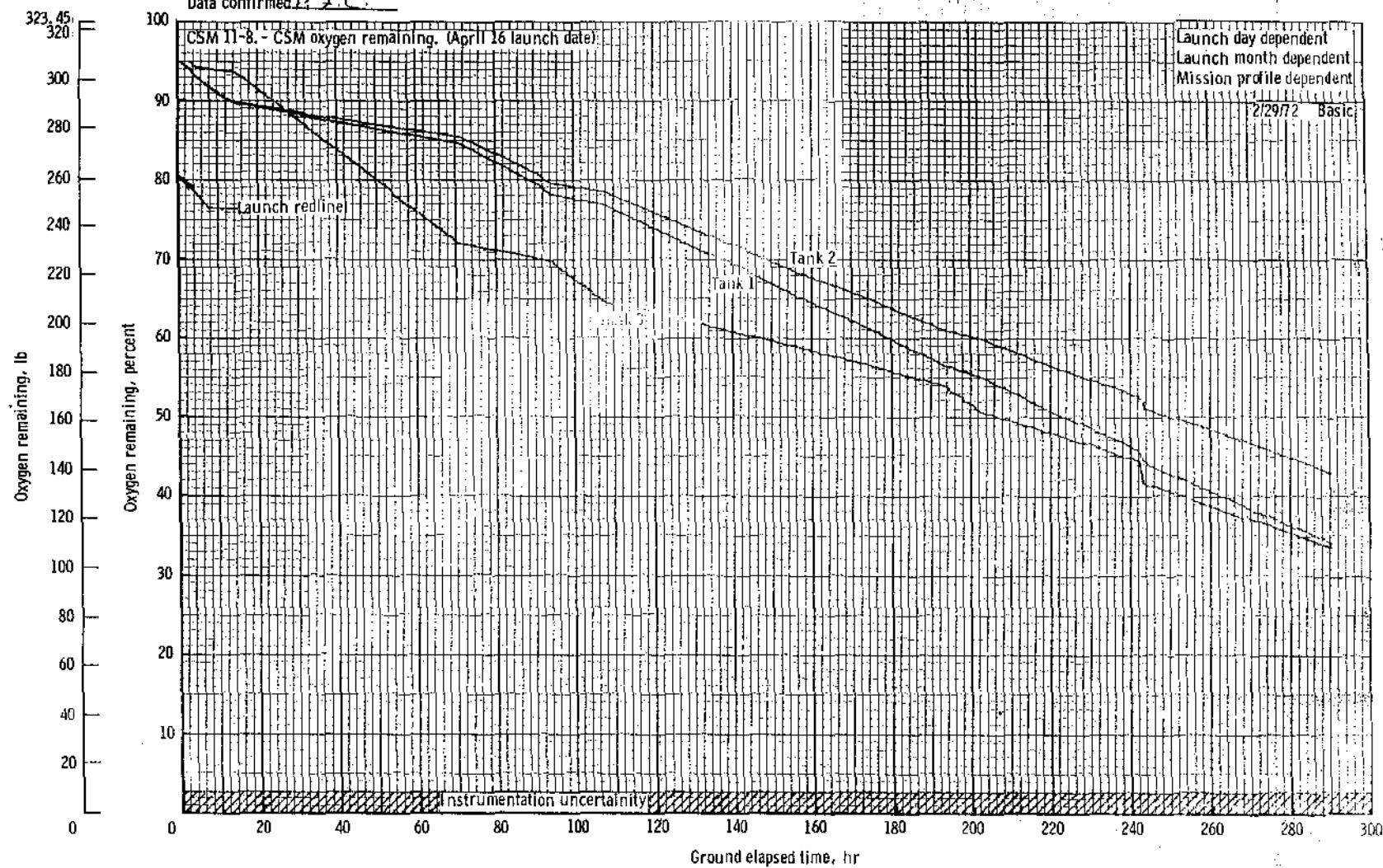
	H ₂ lbs	O ₂ lbs
PLANNING ALLOWANCE		
TOTAL LOADED	87.9	990.3
LESS RESIDUAL	3.5	19.8
LESS INSTRUMENTATION ERROR	2.3	26.0
AVAILABLE FOR MISSION PLANNING	82.1	944.5
PRELAUNCH REQUIREMENT*	3.8	48.3
FLIGHT REQUIREMENT		
EPS (INCLUDING FUEL CELL PURGE)	59.3	470.9
ECS (INCLUDING CABIN PURGE + EVA)	--	83.7
LM PRESSURIZATION	--	11.1
	59.3	565.7
NOMINAL RESERVES		
EPS UNCERTAINTY (2.5%)	1.5	11.8
ECS UNCERTAINTY (.08#/HR)	--	23.2
	1.5	35.0
TOTAL REQUIREMENT	64.6	649.0
MARGIN T = 0 (FILL/LAUNCH)	17.5	295.5

*Supplied by KSC.

Cantin/SMB/MPAD (for Flight Plan)

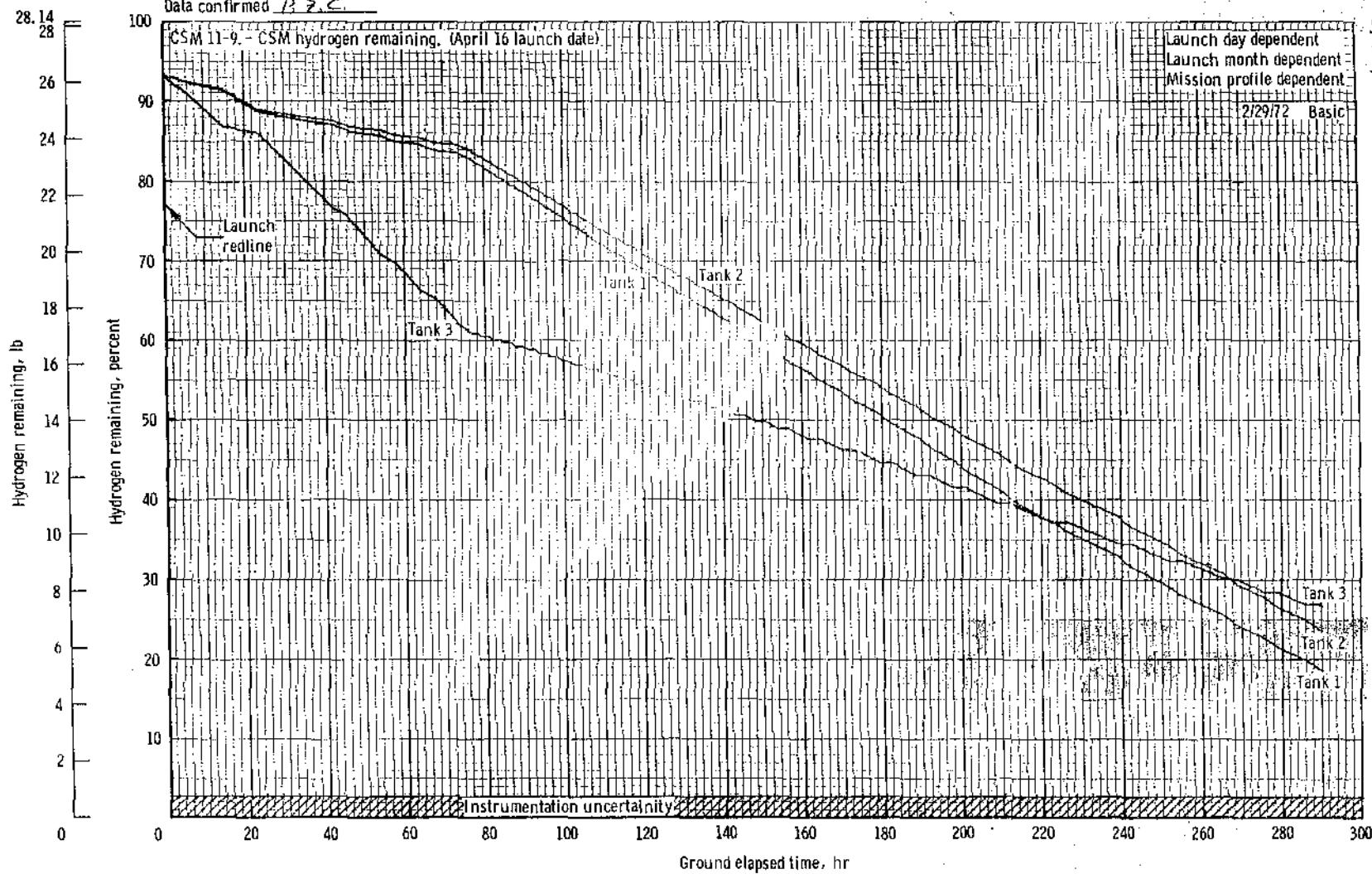
Data source 50DB, 3 Oct 71

Data confirmed A, 2 C.



CSM oxygen remaining.

Cantin/SMB/MPAD (for Flight Plan)
Data source ~~SDB~~ ~~7th Plan~~
Data confirmed ~~A.P.C.~~



3/27/72

Mission profile dependent
3/1/72 Basic

ASSUMPTIONS FOR THE DPS ANALYSIS

The propellant loading is based on the optimization of the fuel and oxidizer balance that was computed from the LM-11 engine data. The ΔV requirements were coordinated with the Landing Analysis Branch. The ΔV requirement for lunar descent differs from that in the operational trajectory because of differences in the inert vehicle weight.

The 3σ dispersions represent total propellant cost based on 3σ uncertainties in propellant loading, trapped propellant, specific impulse, ΔV , separation weight, non- ΔV consumables weight, mixture ratio, and physical location of the low level sensor.

A flying time of 2 minutes and 30 seconds below low gate will be called a nominal requirement.

The following data were used:

- a. The separation weight is $36\ 624.4 \pm 39.3$ pounds.
- b. Integrated average I_{sp} is 305.9 ± 1.8 seconds.
- c. Mixture ratio is $1.595 \pm .012$.
- d. Non- ΔV consumables from separation to PDI are 90.5 pounds.

3/27/72

4-17

Mission profile dependent
3/1/72 Basic

DPS PROPELLANT SUMMARY

Item	Total propellant, lb	Hover time, sec.
Loaded	19 559.1	--
Trapped and unavailable	-124.7	--
Outage	-16.6	--
Available for ΔV	19 417.8	--
Required for ΔV (150-sec flying time from low gate, $\Delta V = 7057.7$ fps)	-18 726.1	--
Remaining	691.6	74
Dispersion (-3 σ)	-278.9	--
Pad	412.7	44
Operational allowances		
Low-level (5 sec, 26.5 fps)	-47.3	--
Abort reserve (20 sec, 106 fps)	-187.9	--
Margin (hover time before abort decision point)	180.5	19

3/27/72

Mission profile dependent
3/1/72 Basic

ASSUMPTIONS FOR THE APS ANALYSIS

The propellant loading is based on the optimization of the fuel and oxidizer balance that was computed from the LM-11 engine data. The ΔV requirements were coordinated with the Landing Analysis Branch. The ΔV requirement for the lunar ascent differs from that in the Operational Trajectory because of differences in the inert vehicle weight.

The APS analysis accounts for an APS TPI, engine valve-pair malfunction, and balanced couples. A touchdown abort was not considered because the nominal lift-off weight is heavier than the abort weight. The following data were used.

- a. $I_{sp} = 309.5 \pm 3.5$ seconds.
- b. Mixture ratio = $1.597 \pm .027$.
- c. Lift-off weight = $10\ 892.2 \pm 38.7$ pounds.

3/27/72

4-19

Mission profile dependent

3/1/72 Basic

APS PROPELLANT SUMMARY

Item	Total propellant, lb
Loaded	5242.5
Trapped and unavailable	-51.9
Outage	-11.9
Available for ΔV	5178.7
Required for Ascent (6048.1 fps)	-4958.9
Remaining	219.8
Required for APS TPI ^a (52.8 fps)	-31.4
Remaining	188.4
Dispersions (-3 σ)	-67.6
Pad	120.8
Operational allowances	
Engine valve-pair malfunction ($\Delta MR = +.01$ or $-.018$)	-20.9
Balanced couples on	-41.4
Half-degree out of plane (18 fps)	-10.7
Margin	47.9

^aThe total TPI ΔV is 74.8 fps. It is assumed that 22 fps is obtained by a 10-sec, 4-jet ullage.

4-20

3/27/72

Mission profile dependent
12/7/71 Basic

ASSUMPTIONS AND GROUND RULES FOR THE LM RCS ANALYSIS

1. Data for the LM RCS engine performance and propellant requirements were obtained from the SODB, Volume II, and from postflight analyses of Apollo 9-15 missions.
2. The analysis assumes an insertion trim or RCS tweak burn (nominally zero) of 30 fps.
3. It is assumed there will be a 10-fps RCS trim following the APS TPI maneuver.

3/27/72

4-21

Mission profile dependent
3/1/72 Basic

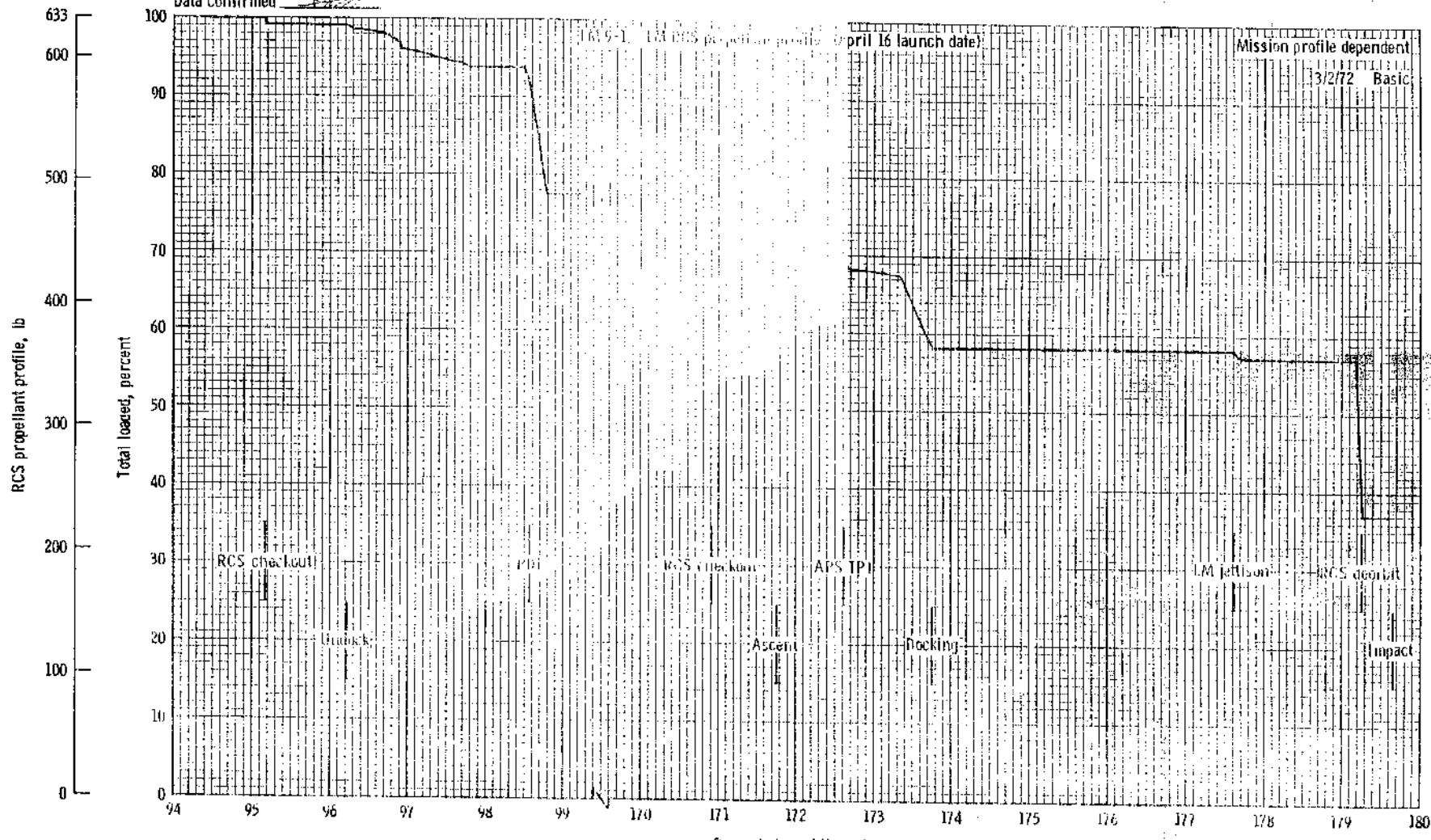
LM RCS PROPELLANT LOADING AND USAGE SUMMARY

Item	Required, lb	Remaining, lb
Loaded		631.2
Trapped	38.0	593.2
Gaging inaccuracy and loading tolerance	43.5	549.7
Mixture ratio uncertainty	17.0	532.7
Usable		532.7
Nominal usage through lunar landing	141.6	391.1
Nominal usage from landing through docking	123.7	267.4
Nominal usage from docking through impact	138.7	128.7
Usable propellant remaining		128.7

Mayfield/SMB/MPAD (for LM Systems)

Data source ~~Stephens~~ 1968

Data confirmed ~~Stephens~~



LM RCS propellant profile.

Mission profile dependent
11/24/71 Basic

ASSUMPTIONS FOR THE LM EPS ANALYSIS

- a. Energy available from the descent batteries is 2075 A-h and from the ascent batteries is 592 A-h.
- b. Energy unusables caused by lack of continuous MSFN coverage for the descent and ascent stages are zero.
- c. Energy unusables caused by TM inaccuracies for the descent and ascent stages were 72 and 17 A-h, respectively. The new descent battery current measurement uncertainty of 0.5 amperes per battery was used.
- d. Energy unusables caused by checklist deviations (dispersion) for the descent and ascent stages were 33 and 6 A-h, respectively. This dispersion is obtained by calculating 2 percent of the energy used.
- e. No energy was budgeted for the PGNCS power uncertainty.
- f. In accordance with the Flight Plan, the PGNCS was in standby mode from surface powerdown until 2.83 hours before powerup.
- g. The RCS heaters were assumed to have a 100 percent duty cycle for 15 minutes after initial activation and then to decrease to a 7 percent duty cycle until undocking. From undocking until lunar surface powerdown, the heaters were assumed to cycle at 0 percent, but, from surface powerdown until lunar lift-off, the duty cycle was assumed to be 4.5 percent.
- h. The MESA heater power requirements were established by GAEC thermal analysis. From circuit breaker activation to touchdown the heater was assumed to be on 35 percent of the time in the low mode (two 25 watt heaters). From touchdown to the start of the open thermal blanket period of EVA-1 the duty cycle was 20 percent in the high mode (six 25 watt heaters). The duty cycle was 55 percent (high mode) during the open blanket period. At the end of the open blanket period the duty cycle decreased to 29 percent. At the start of EVA-2 the MESA heaters were turned off for the remainder of the mission.
- i. The invertor was operated throughout the mission.
- j. The CDR and LMP forward window heaters were assumed not to be needed.

4-24

3/27/72

Mission profile dependent
11/24/71 Basic

ASSUMPTIONS FOR THE LM EPS ANALYSIS - Concluded

k. TV power is supplied by the LM during the first hour of EVA-1. For the remainder of EVA-1 and the other EVA's, the TV will be powered by the Lunar communications relay unit (LCRU).

l. The liquid cooled garment pump was operated before each EVA for 17 minutes.

m. The S-band power amplifier was cycled as dictated by the timeline.

n. The portable utility lights were assumed to be off throughout the mission.

o. In accordance with the Flight Plan, the floodlights were turned off at surface power down, and on again at power up. The overhead and forward floodlights were not used.

p. The short ($M=1$) rendezvous was considered nominal.

q. At the beginning of the analysis, it was assumed that a total of 10 A-h had been used from the descent batteries between the period starting 30 minutes before launch and ending at the conclusion of transposition and docking.

3/27/72

4-25

Mission profile dependent
11/24/71 Basic

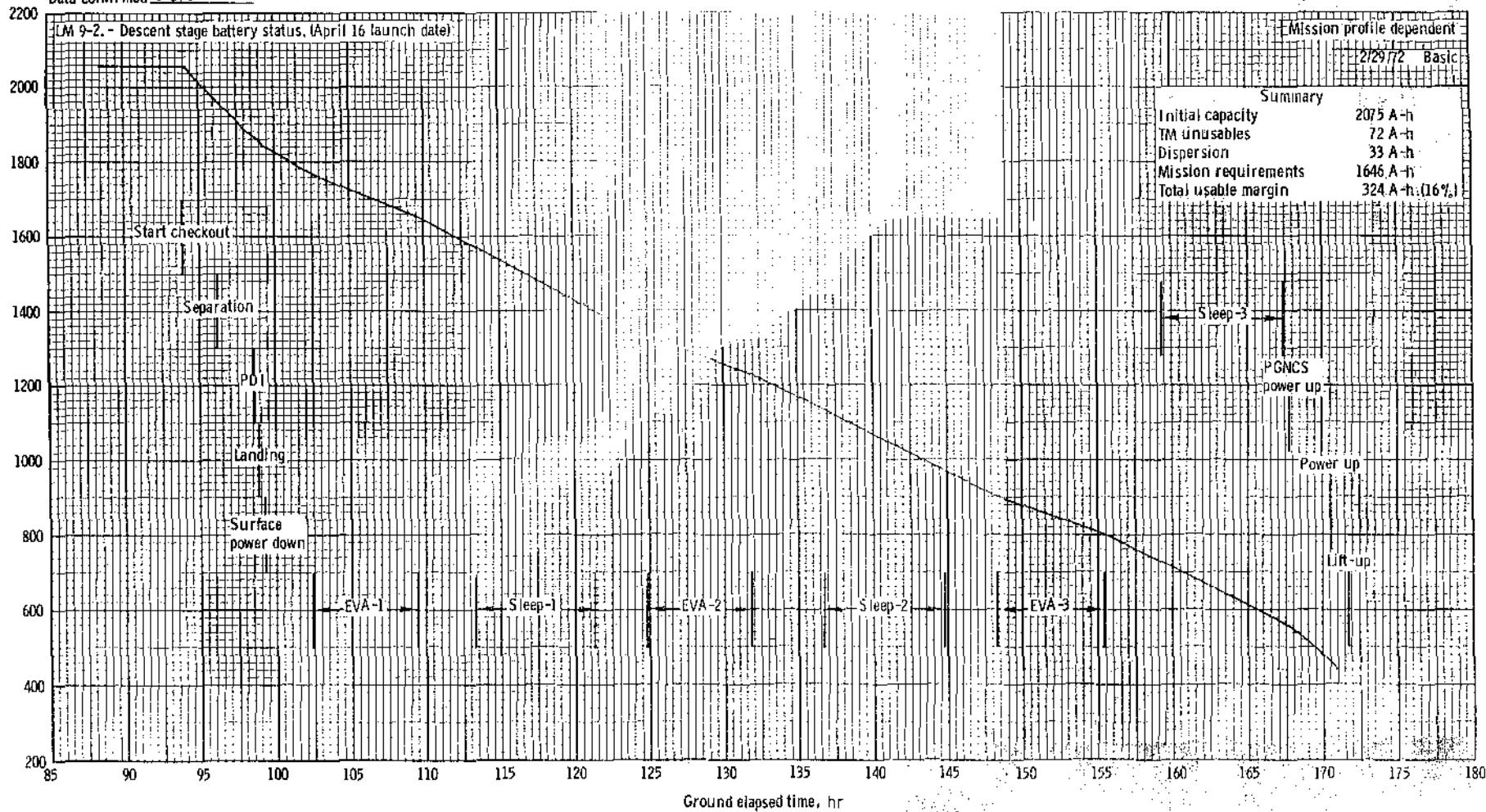
DESCENT STAGE EPS SUMMARY

Item	A-h required	A-h remaining
Initial capacity	--	2075
Total unusables	105	1970
Required through touchdown	214	1756
Required for surface stay	1432	324
Total usable margin	--	324

ASCENT STAGE EPS SUMMARY

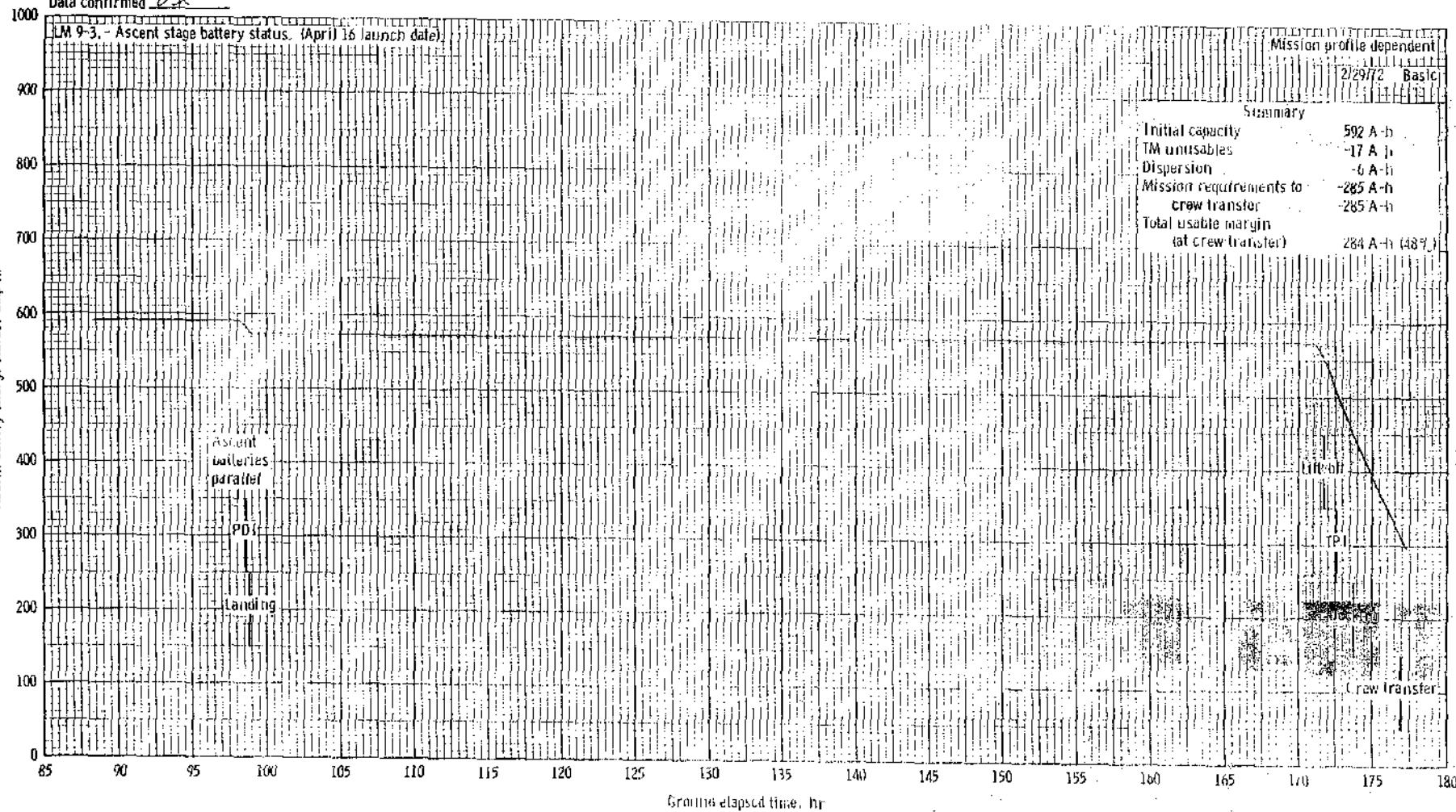
Item	A-h required	A-h remaining
Initial capacity	--	592
Total unusables	23	569
Required through docking	145	424
Required from docking through crew transfer	140	284
Total usable margin	387	284

Ritchey/SMB/MPAD (for LM Systems)
 Data source Initial Flight Plan
 Data confirmed VSR



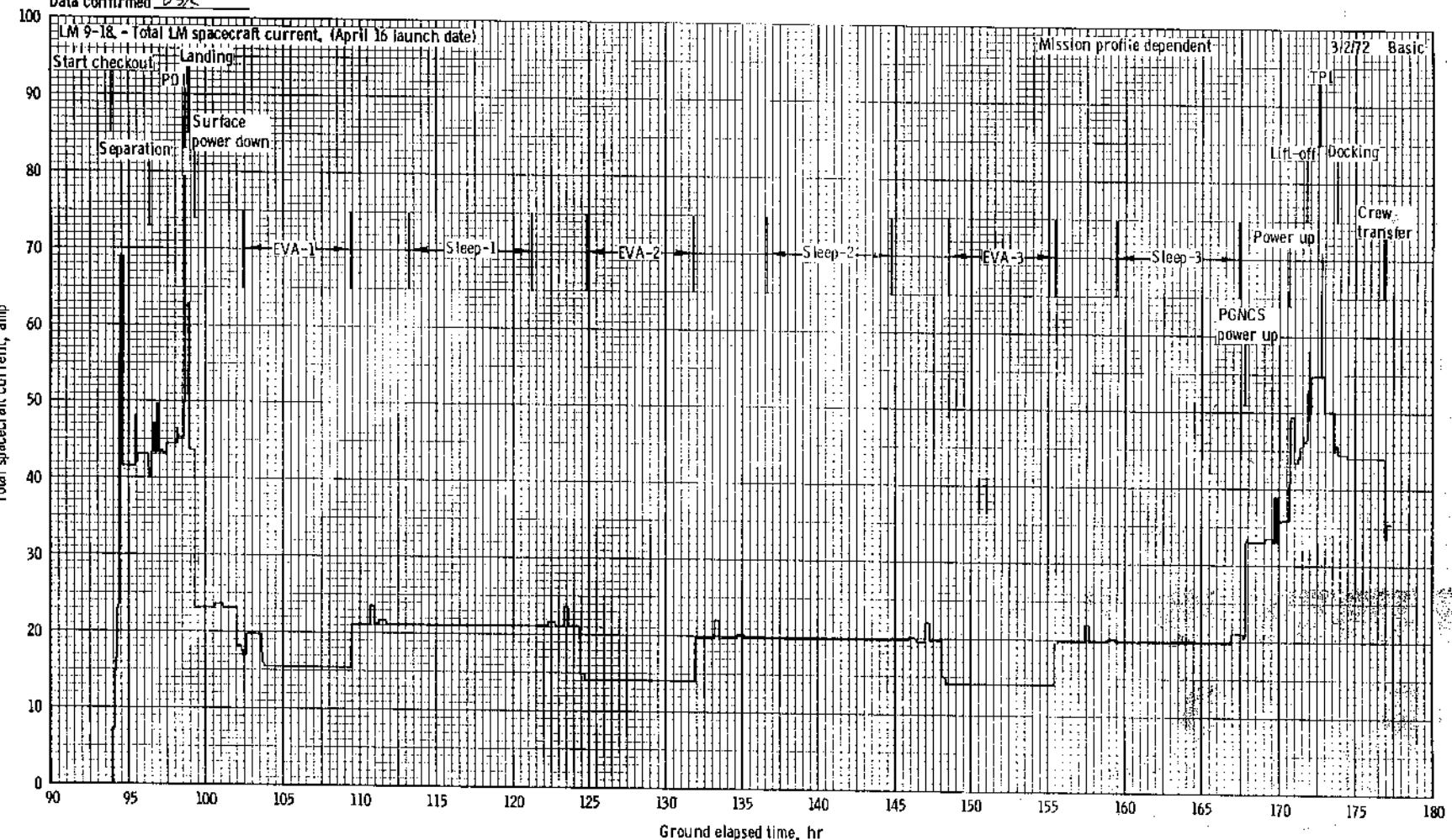
Apollo 16 descent electrical energy remaining.

Ritchey/SMB/MPAD (for LM Systems)
Data source Launch Flight Plan
Data confirmed VSE



Apollo 16 ascent electrical energy remaining:

Ritchey/SMB/MPAD (for LM Systems)
Data source Launch Flight plan
Data confirmed VGR



Apollo 16 total LM spacecraft current,

Mission profile dependent

12/7/71 Basic

LM ECS Assumptions

- a. The oxygen analyses were calculated using a cabin leak rate of 0.06 lb/hr based on previous Apollo postflight analyses.
- b. Metabolic rates were varied using the final flight plan and table 4.3-II of SODB Vol. II.
- c. Metabolic oxygen consumed was calculated by $(1.643 \times 10^{-4} \times \text{lb/Btu})$ (metabolic rate, Btu/hr).
- d. The cabin regulator check and the suit integrity check were assumed to require 0.5 pound of oxygen.
- e. The cabin was pressurized five times with 5.5 pounds required for each pressurization except the last one which required 5.8 pounds.
- f. The dispersion in the oxygen profile was calculated as 5 percent of the nominal oxygen requirement.
- g. The PLSS refills required 47.2 pounds of water and 5.4 pounds of oxygen.
- h. The sublimator fill required 2.23 pounds.
- i. The drink bags required 12.0 pounds of water.
- j. Water lost through crew micturition was 0.11 lb/hr per man.
- k. Water required for thermal control was calculated by dividing the total spacecraft heat load by 1040 Btu/lb.
 - l. The dispersion in the water profile was calculated as 5 percent of the nominal usage.
- m. The descent oxygen tanks were loaded to 2610.0 psi at 70.0°F.

3/27/72

Mission profile dependent

12/7/71 Basic

LM ECS SUMMARY

(a) Water

Description	Descent, 1b	Ascent, 1b
Loaded	406.0	85.0
Sampling	11.0	0
Residual	13.3	1.7
Telemetry uncertainty	8.9	7.5
Loading uncertainty	3.0	1.8
Available for mission	369.8	74.0
Required to lunar landing	32.2	0
Required to lunar lift-off	298.6	0
Required to LM/CSM docking	0	16.4
Required to LM close-out	0	16.2
Required to Lunar impact	0	9.6
Remaining in tanks	39.0	31.8
Dispersion	16.5	2.1
Margin	22.5	29.7

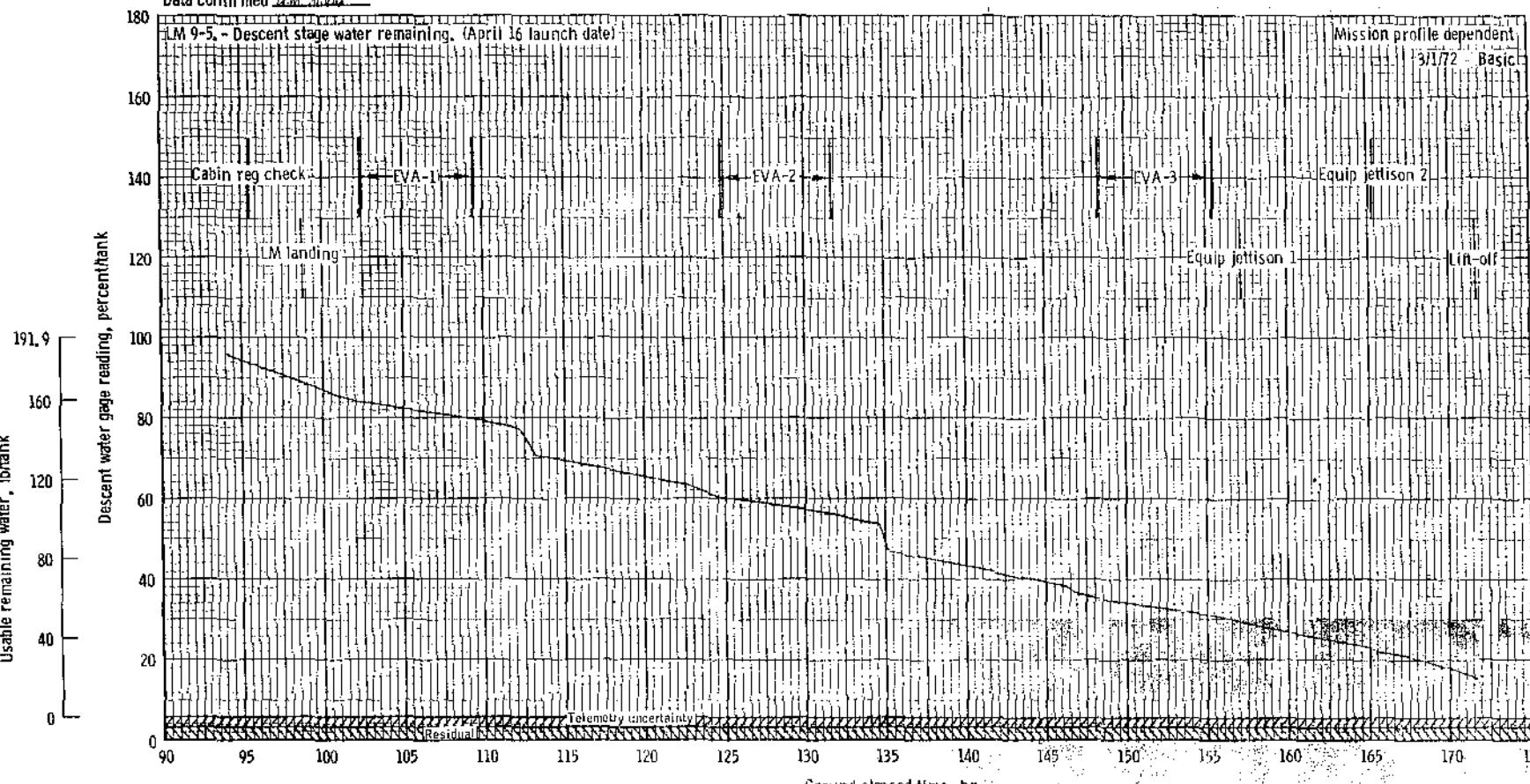
(b) Oxygen

Description	Descent, 1b	Ascent 1, 1b	Ascent 2, 1b
Loaded	93.8	2.4	2.4
Residual	1.6	0.1	0.1
Loading uncertainty	1.7	0.1	0.1
Available for mission	90.5	2.2	2.2
Required to Lunar landing	1.7	0	0
Required to lunar lift-off	45.1	0	0
Required to LM/CSM docking	0	0.5	0
Required to LM close-out	0	0.1	0
Remaining in tank	43.7	1.6	2.2
Dispersion	2.3	0.1	0
Margin	41.4	1.5	2.2

3/27/72

4-31

Swalin/SMB/MPAD (for LM Systems)

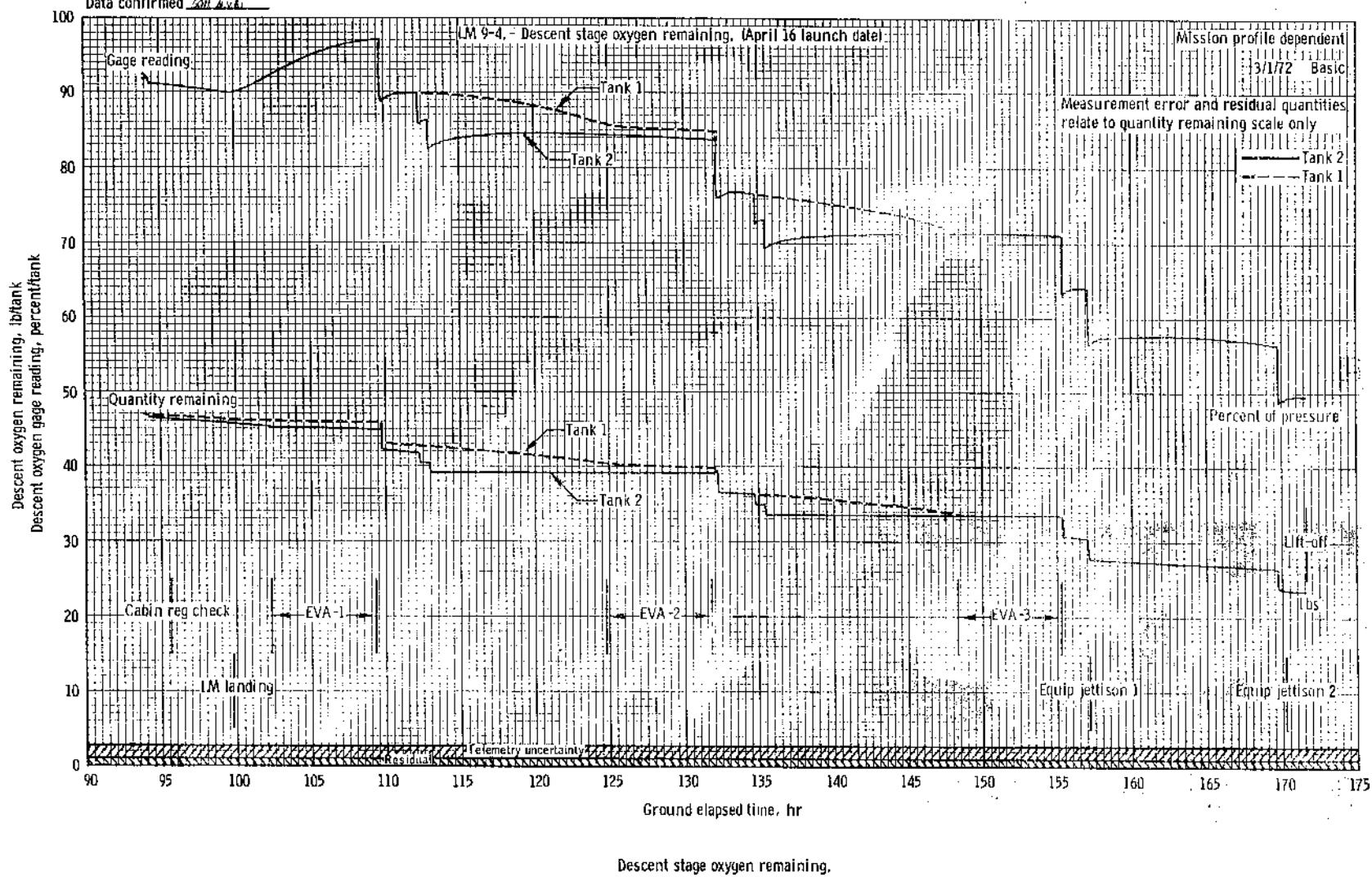
Data source FLIGHT PLANData confirmed In flight

Descent stage water remaining.

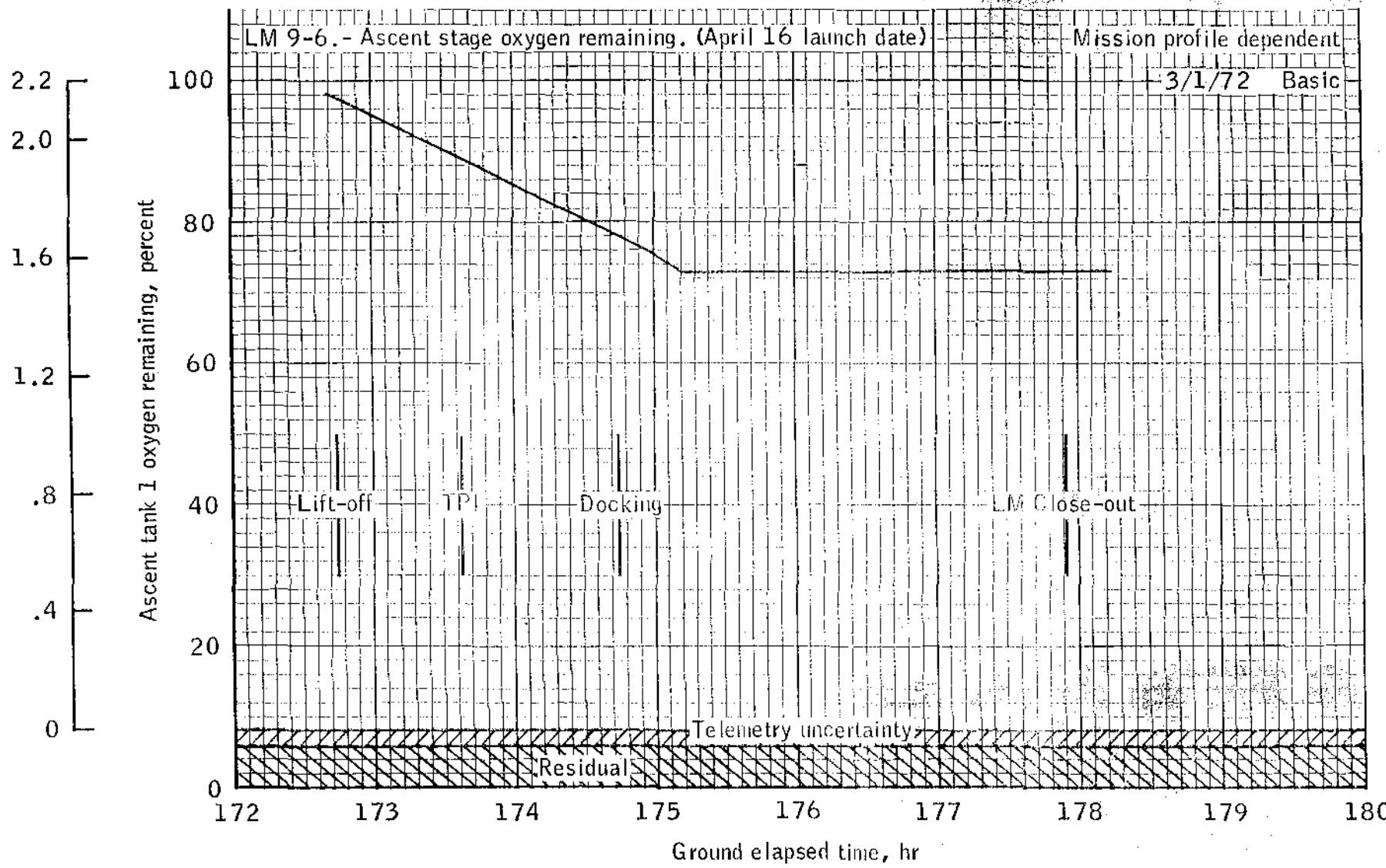
Swalin/SMB/MPAO (for LM Systems)

Data source Flight Plan & SOW

Data confirmed Bill Swalin



Usable remaining oxygen, lb



Ascent tank 1 oxygen remaining.

3/27/72

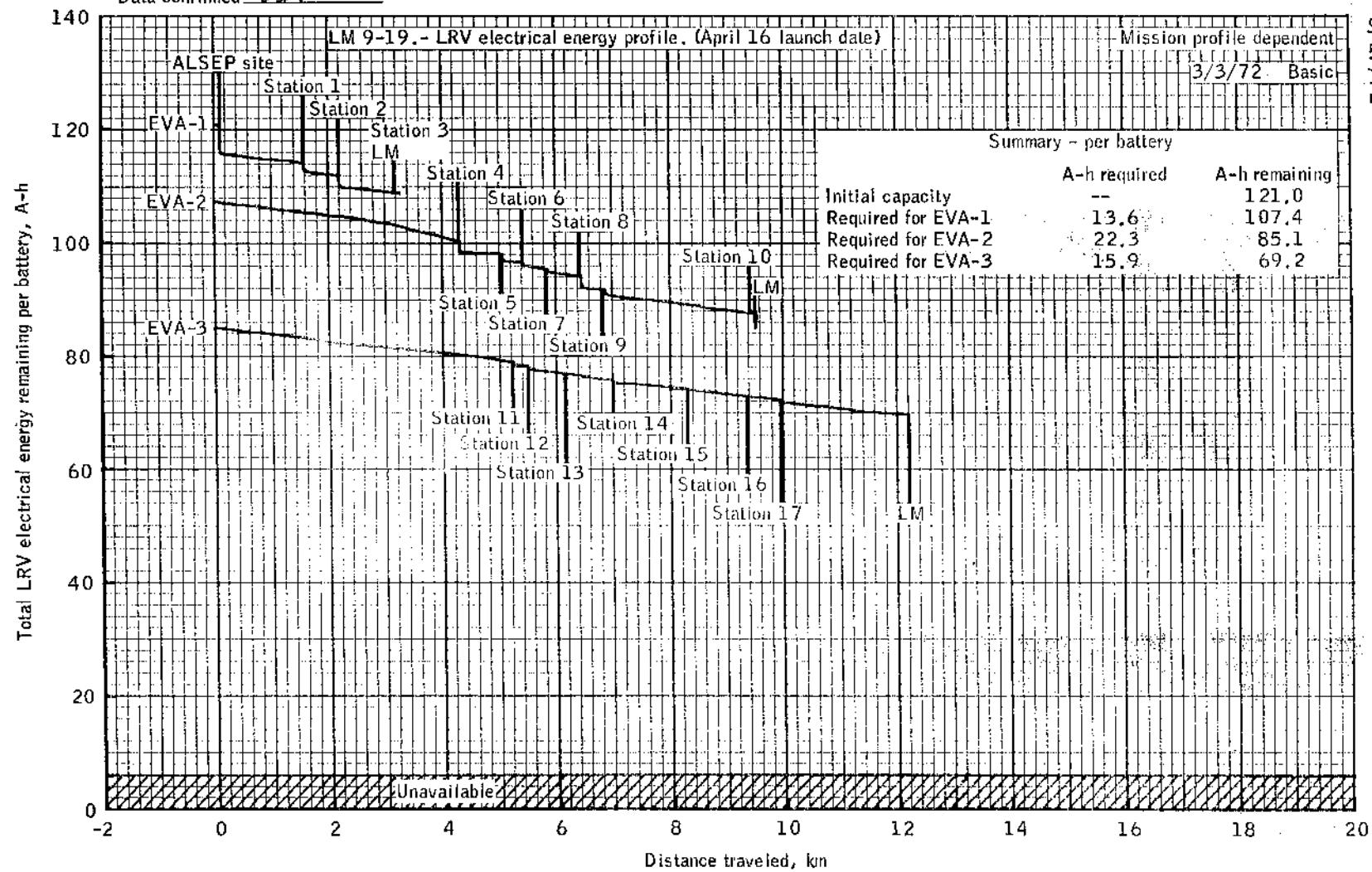
Mission profile dependent

3/3/72 Basic

ASSUMPTIONS FOR THE LRV EPS ANALYSIS

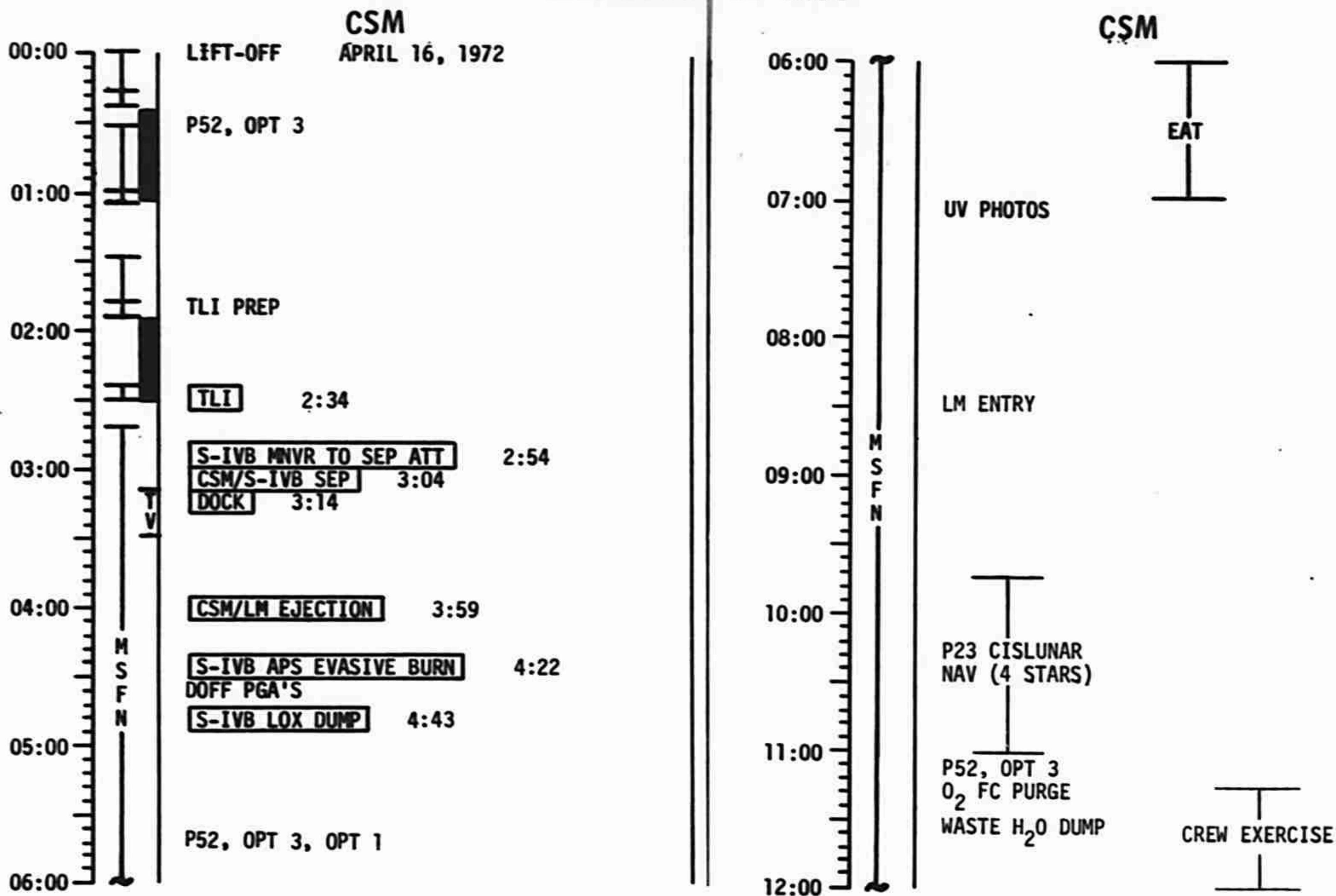
- a. The energy available from each of the two batteries is 121 A-h.
- b. No unusables or uncertainties are considered in the budget.
There is no way to establish a prediction uncertainty at this time.
- c. Slopes were derived from the Apollo 16 landing site form line map.
- d. Terrain types and stop times were derived from the traverse data package.
- e. The MSFC soil model L-3 was used.
- f. The vehicle speed was 8 km/hr except where mobility conditions dictated lower speeds.
- g. The traction drive system was off during stops longer than 5 minutes.
- h. The navigation and caution systems were operated throughout each traverse.
 - i. Electrical power required by the LCRU during EVA-1 and EVA-2 was supplied by LRV batteries. While driving, the LCRU was in the PM1/WB mode. During all station stops (EVA-1 and -2), except station 3, the LCRU mode of operation was FM/TV.
 - j. The vehicle weight was 1470 pounds.
 - k. A wander factor of 1.1 is included in the analysis.
 - l. The distance traveled is the map or straight line distance between points.
 - m. Clean battery radiators were assumed for all cool-down periods.

Ritchey/SMB/MPAD (for LM Systems)
Data source Traverse Plan 17 Feb 72
Data confirmed USA



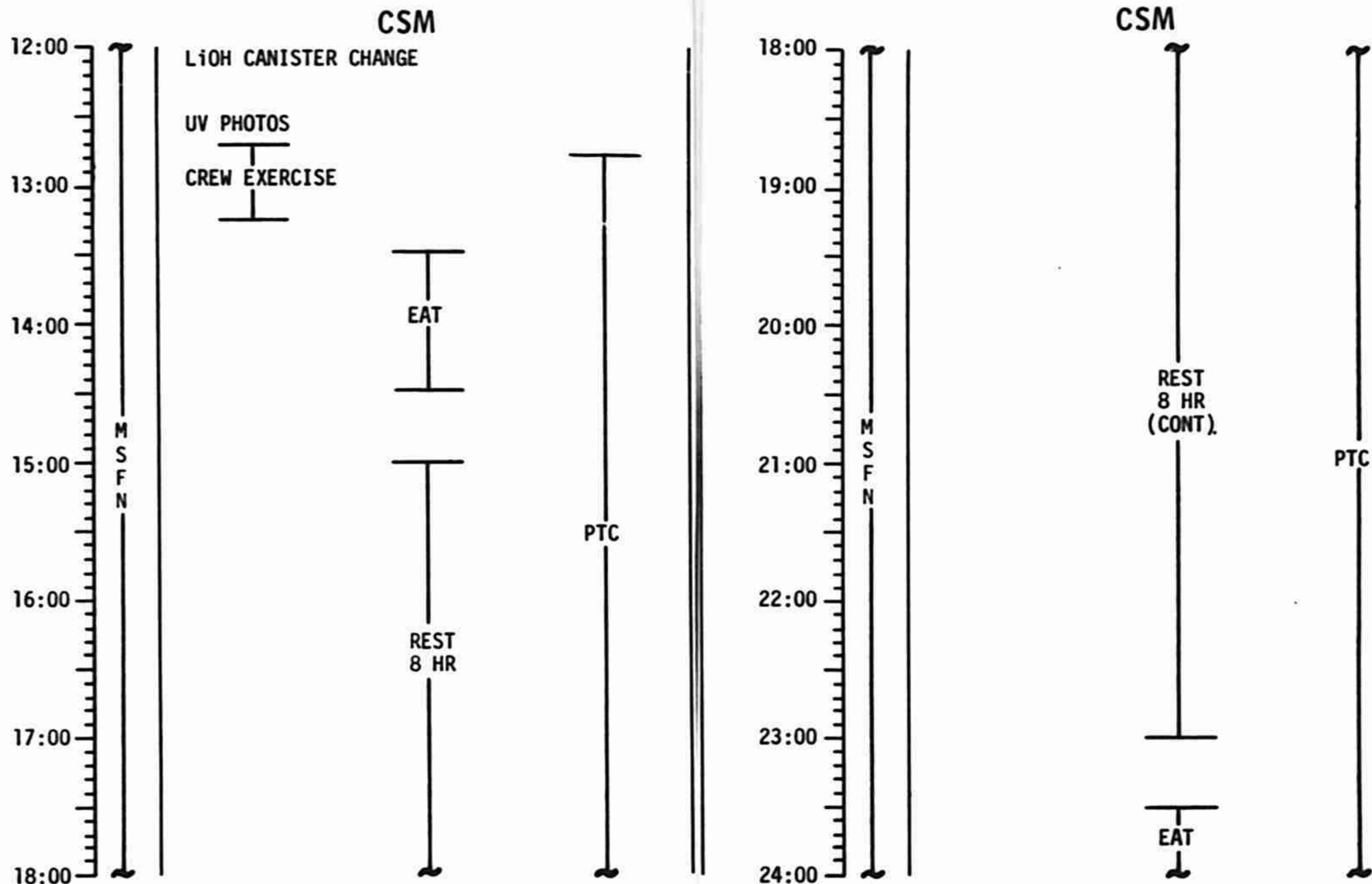
LRV electrical energy profile.

FLIGHT PLAN



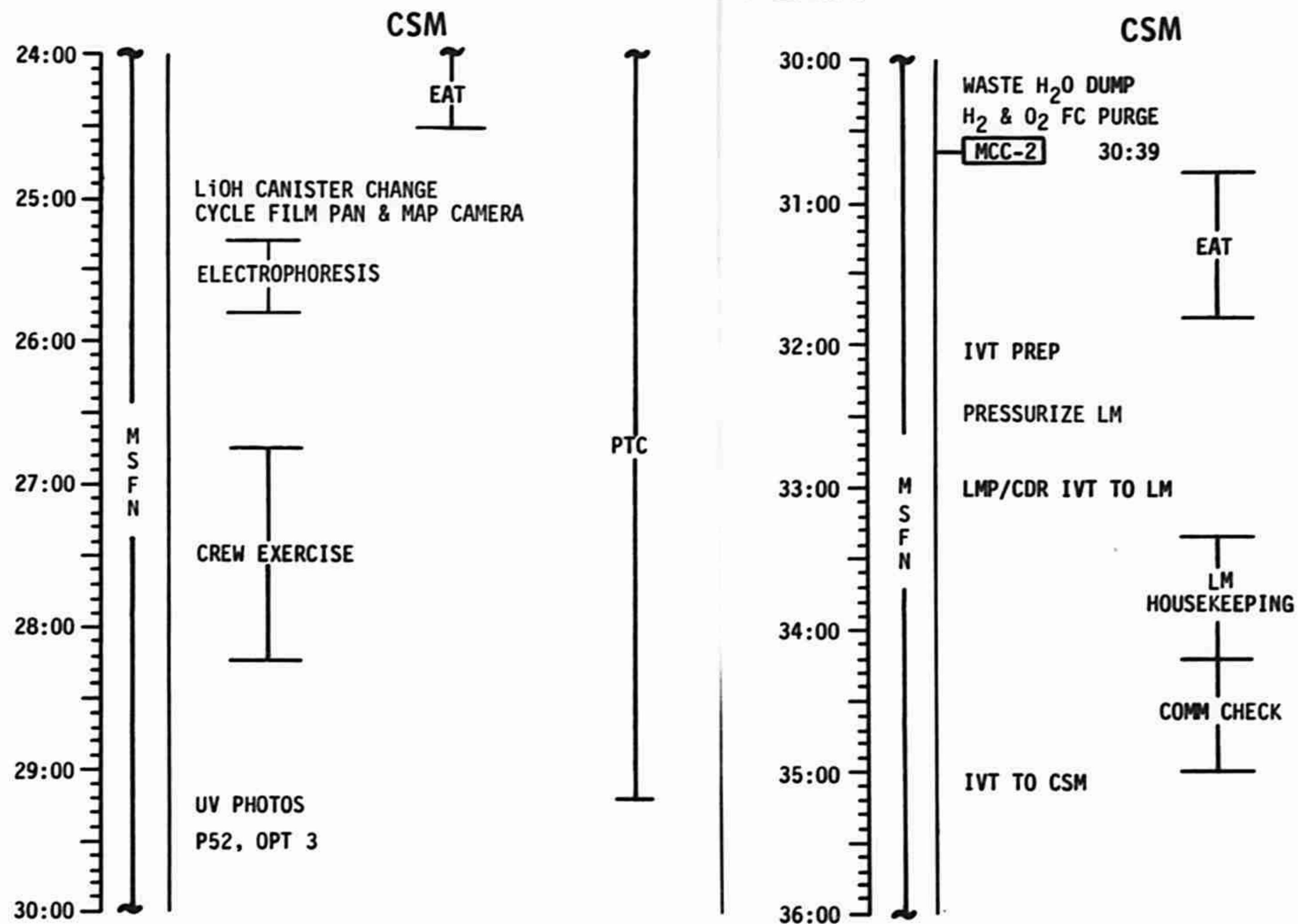
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	00:00 - 12:00	1/E0-TLC	5-1

FLIGHT PLAN



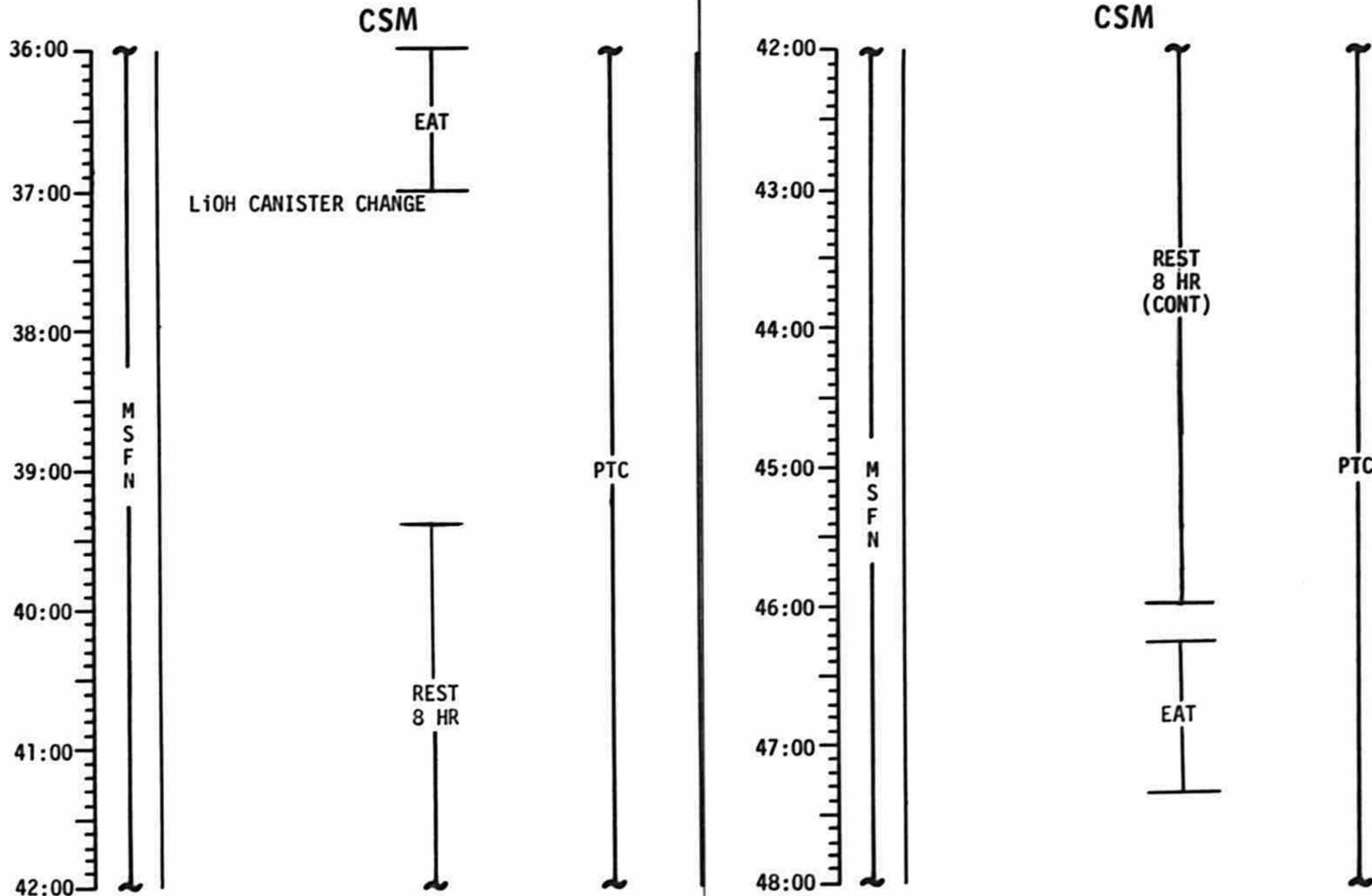
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	12:00 - 24:00	1-2/TLC	5-2

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	24:00 - 36:00	2/TLC	5-3

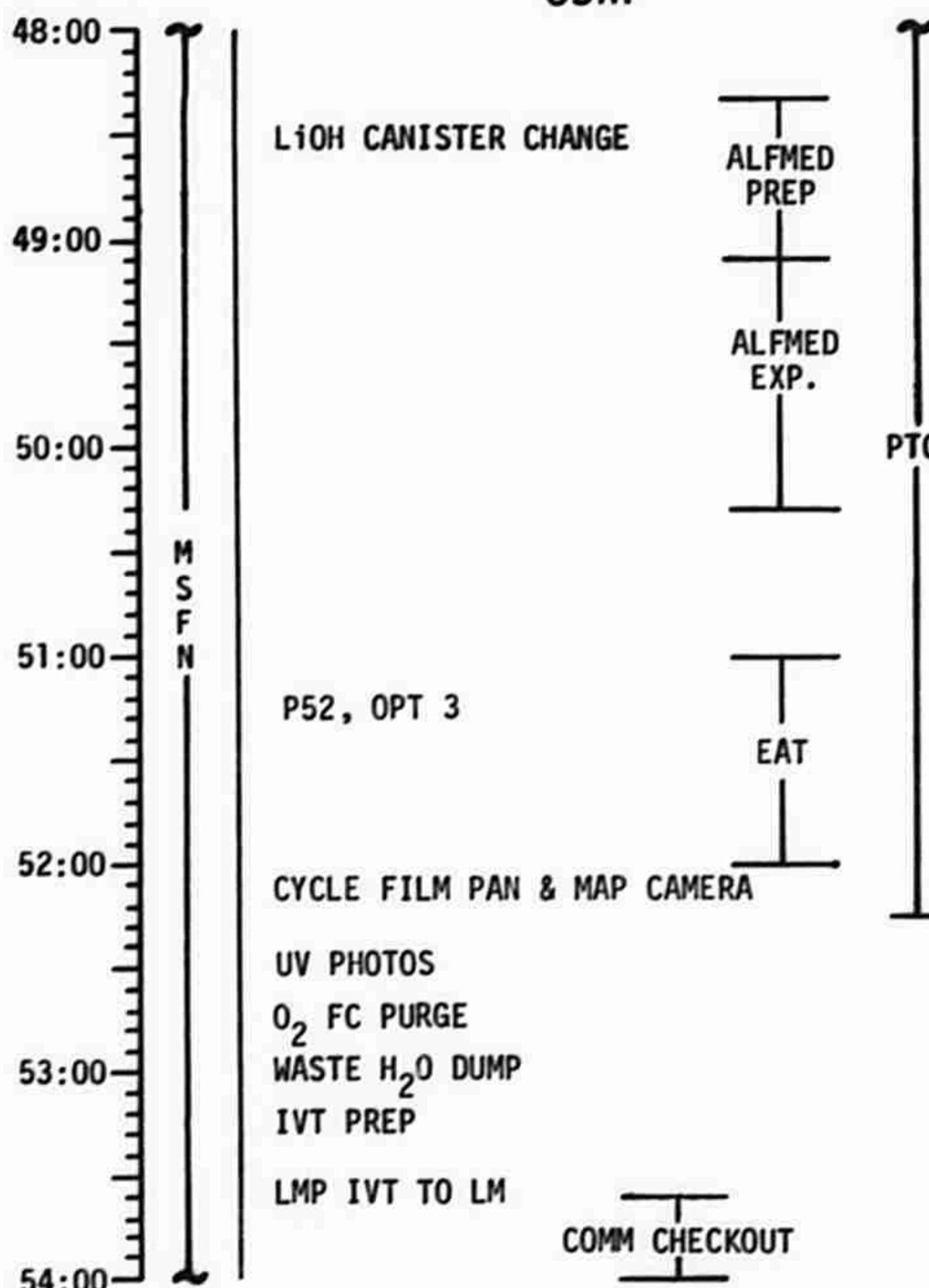
FLIGHT PLAN



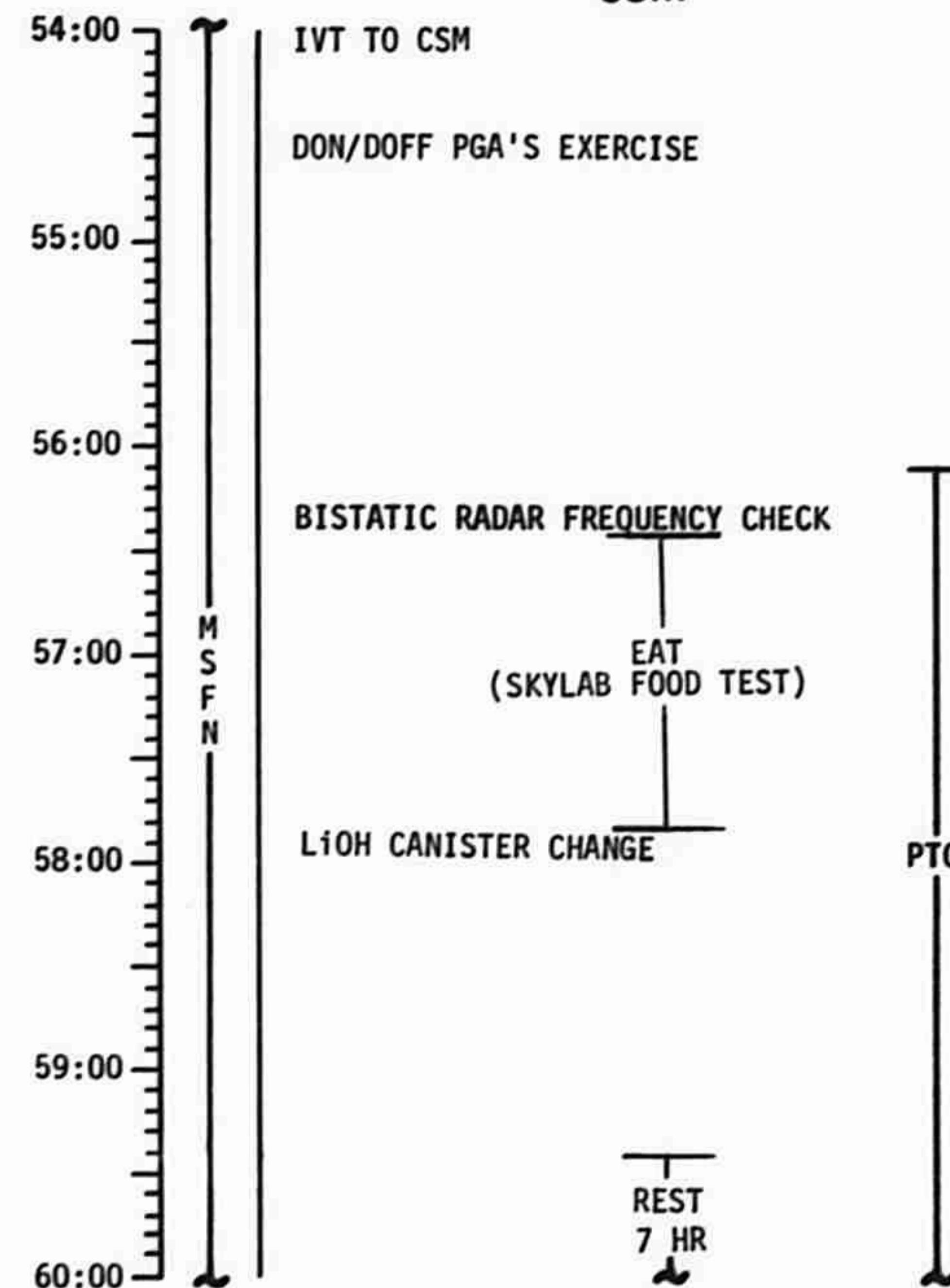
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	36:00 - 48:00	2-3/TLC.	5-4

FLIGHT PLAN

CSM



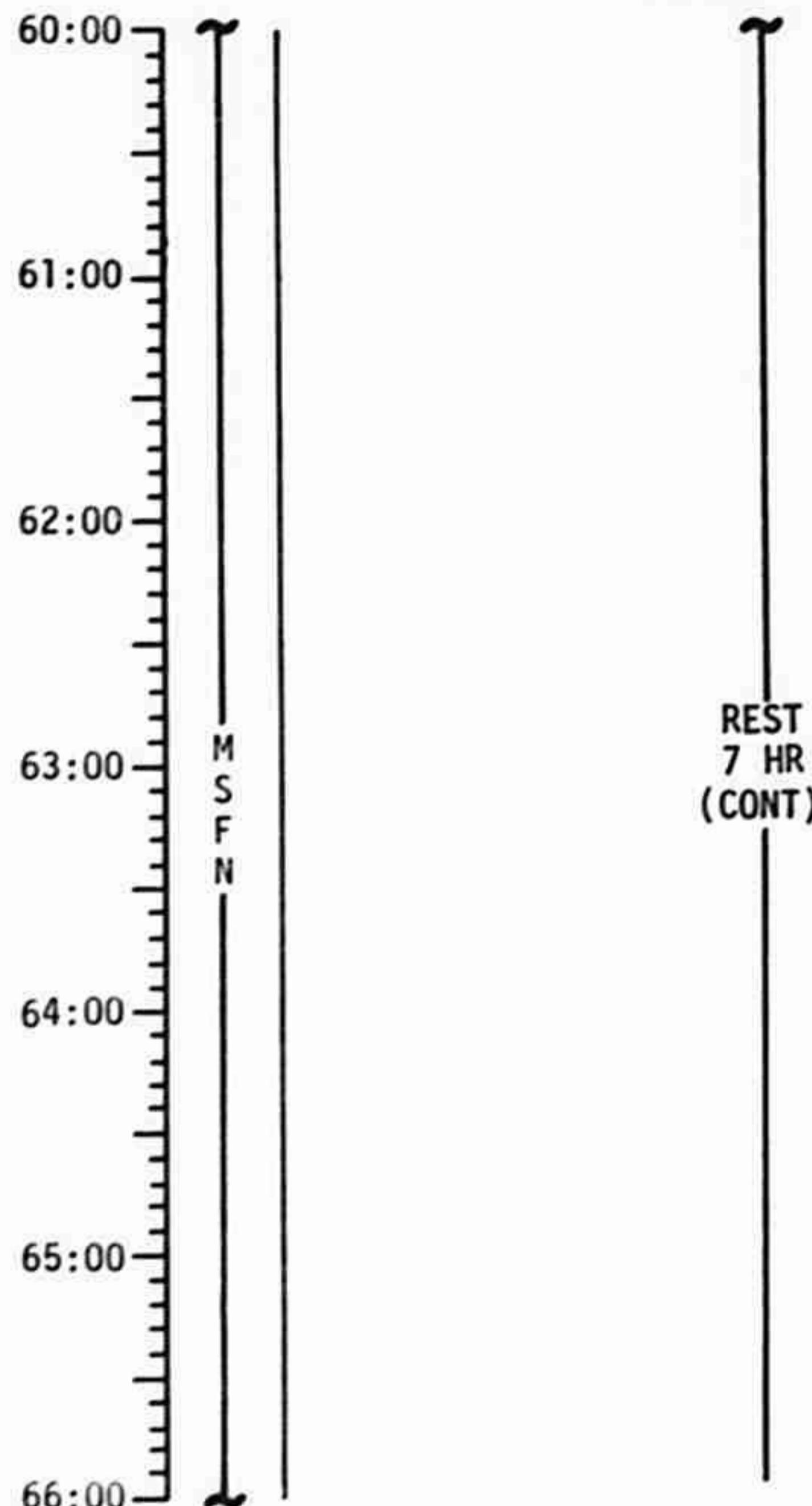
CSM



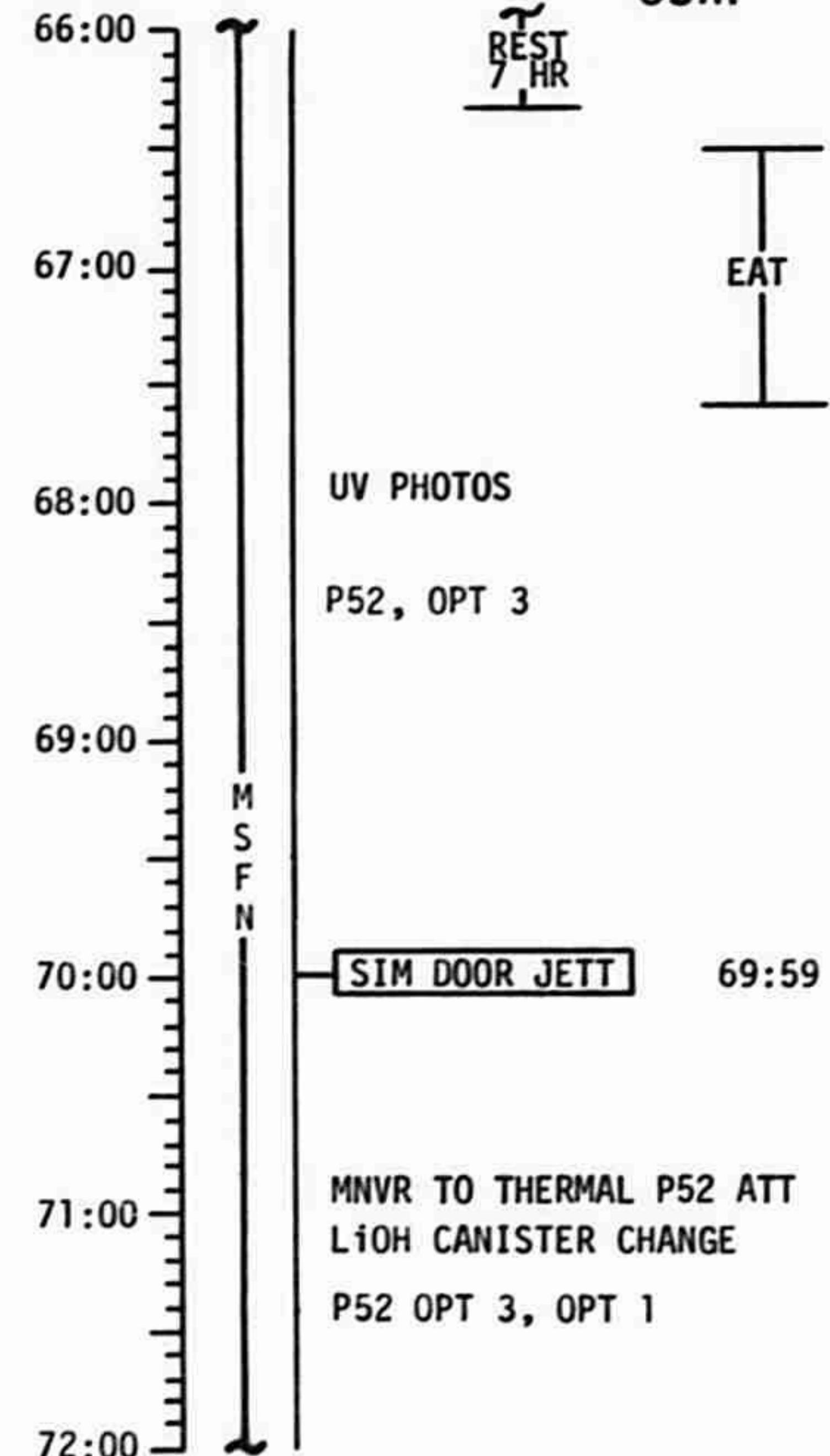
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	48:00 - 60:00	3/TLC	5-5

FLIGHT PLAN

CSM



CSM



T

PTC

T

AP

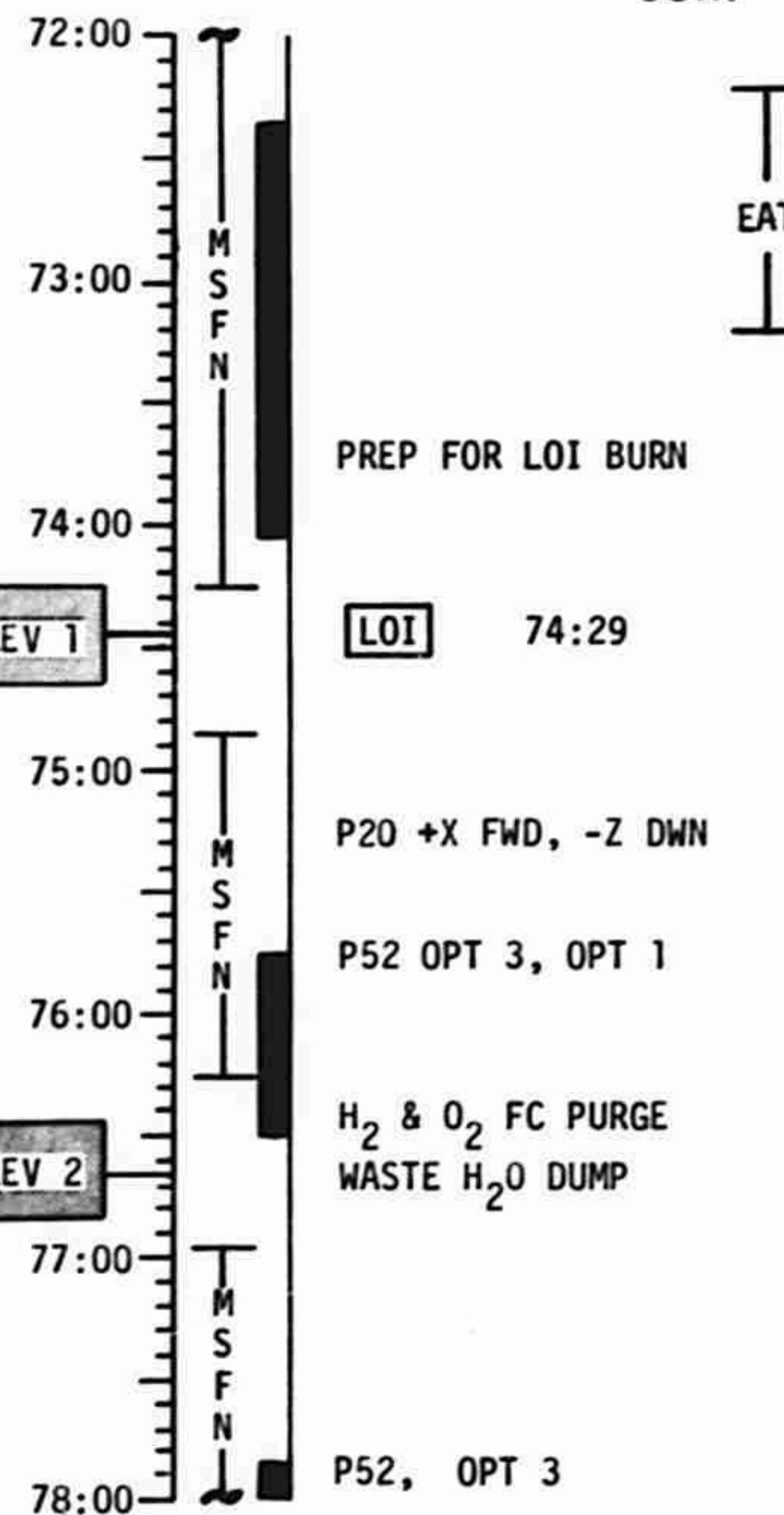
GR

AP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	60:00 - 72:00	3-4/TLC	5-6

FLIGHT PLAN

CSM

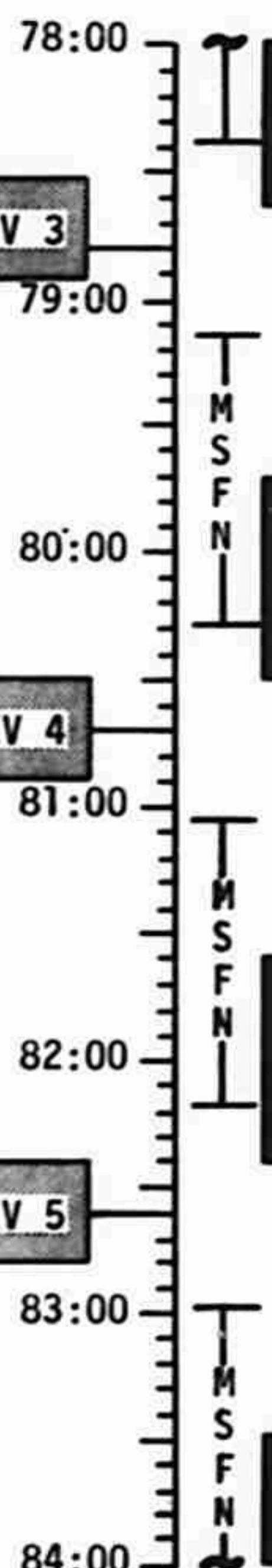


GR AP

GR AP

GR AP

GR AP



PREP FOR DOI BURN

DOI

78:36

P24 LDMK TRK

P20 +X FWD
SOLAR MONITOR DOOR/
TIE DOWN RELEASE

P20 -X FWD

LiOH CANISTER CHANGE

REST 9 HR

GR AP

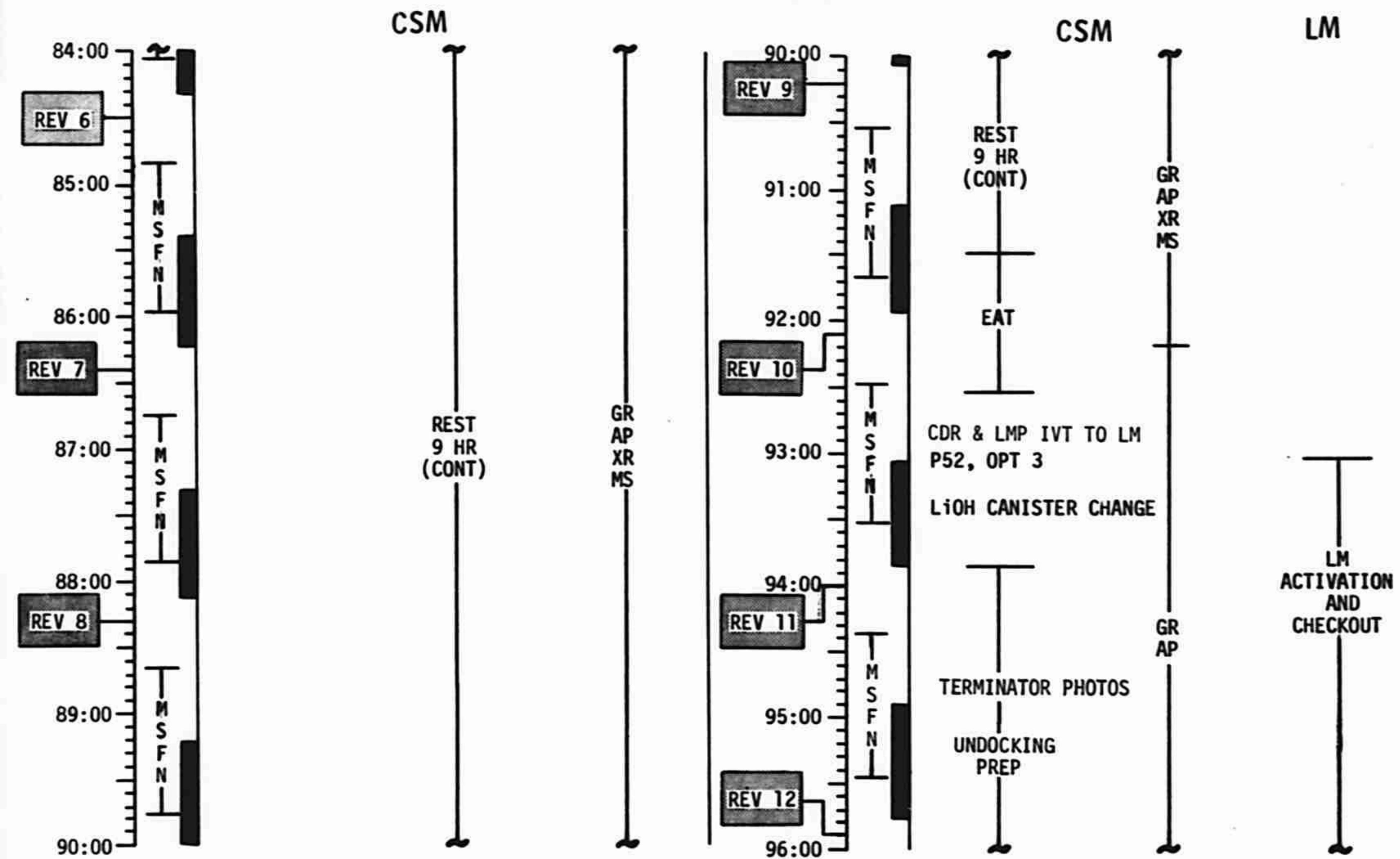
GR AP
GR AP
XR LA MS

GR AP
XR MS

14

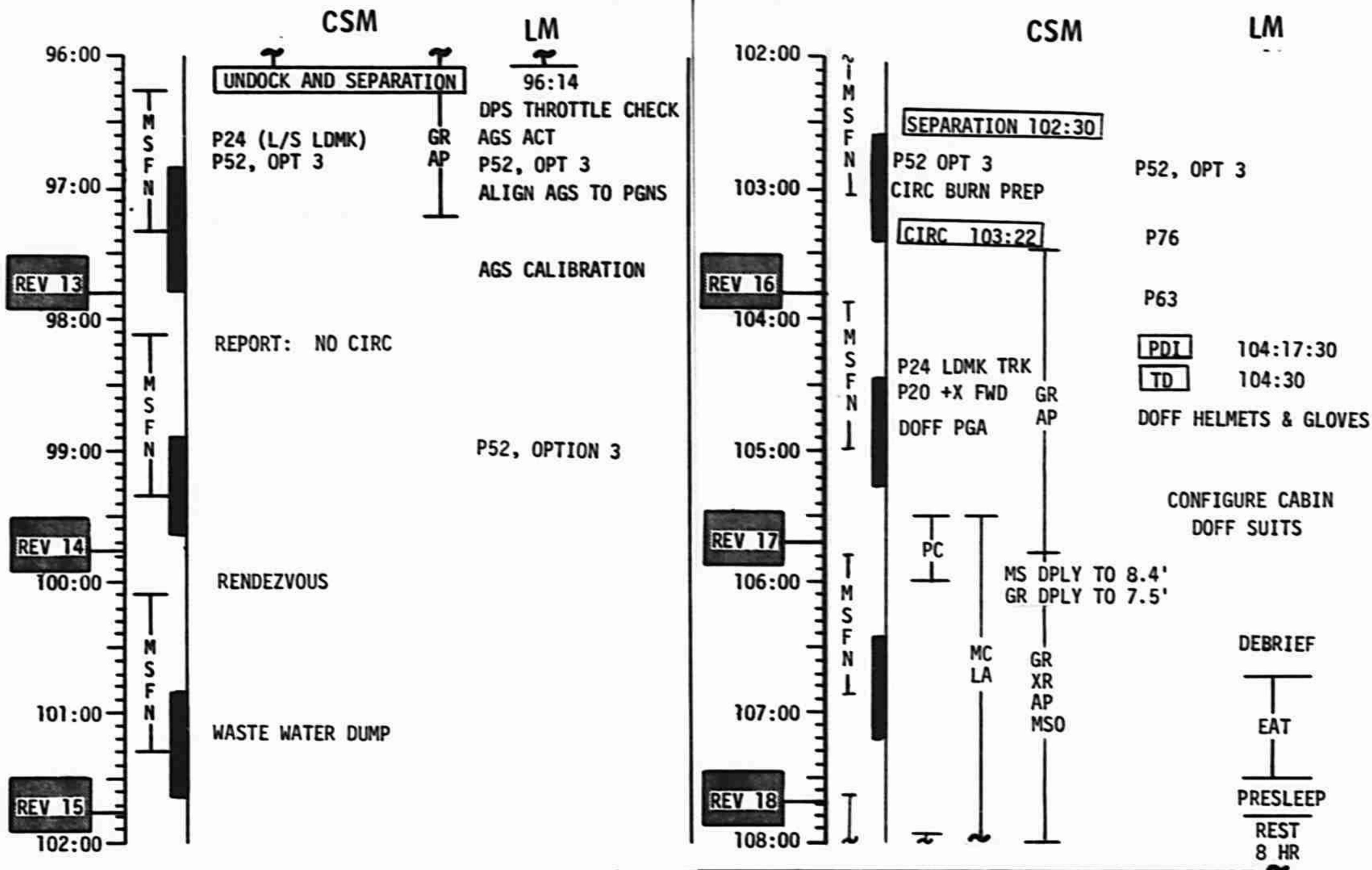
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	72:00 - 84:00	4/1-5	5-7

FLIGHT PLAN



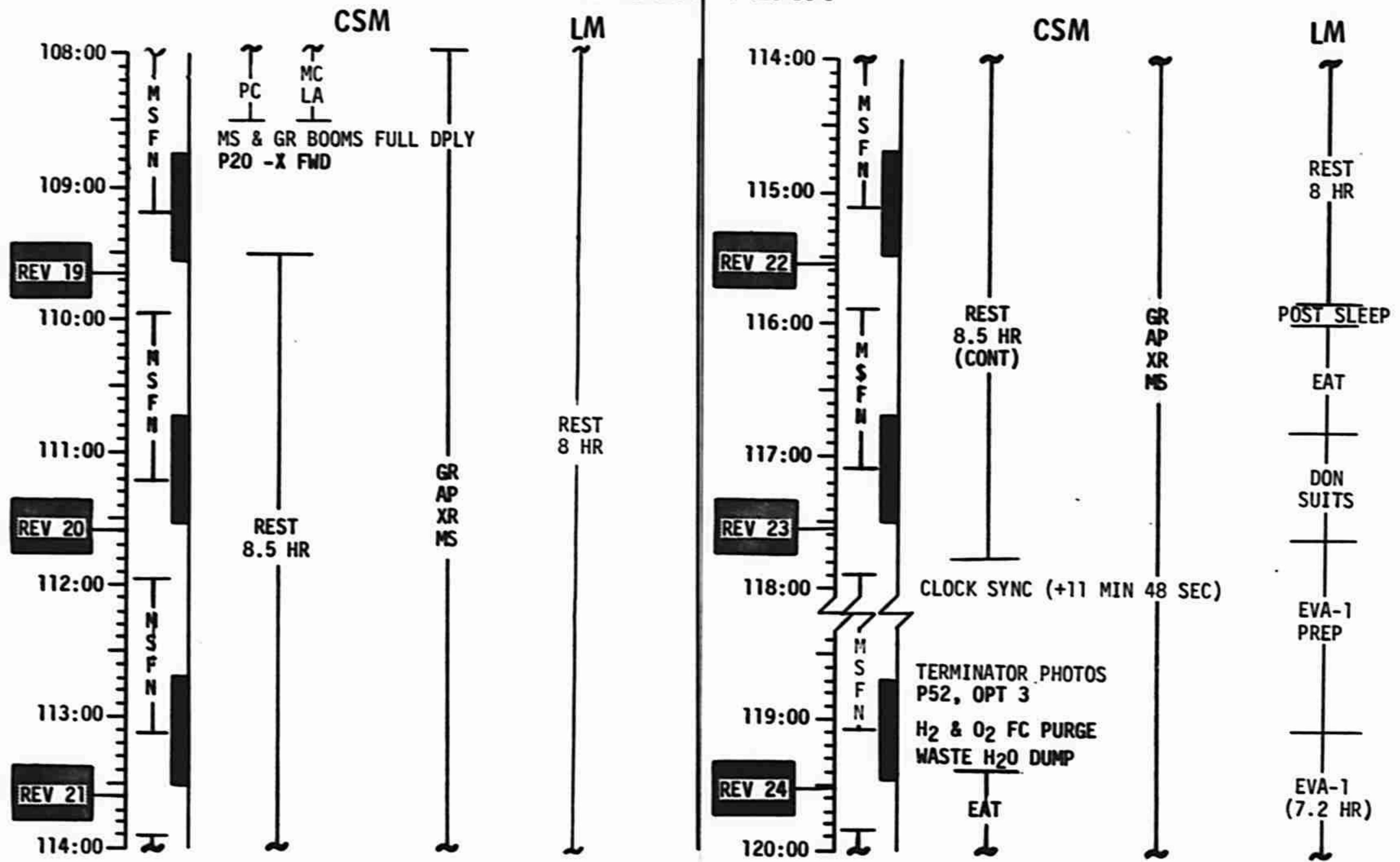
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	84:00 - 96:00	5/6-12	5-8

FLIGHT PLAN



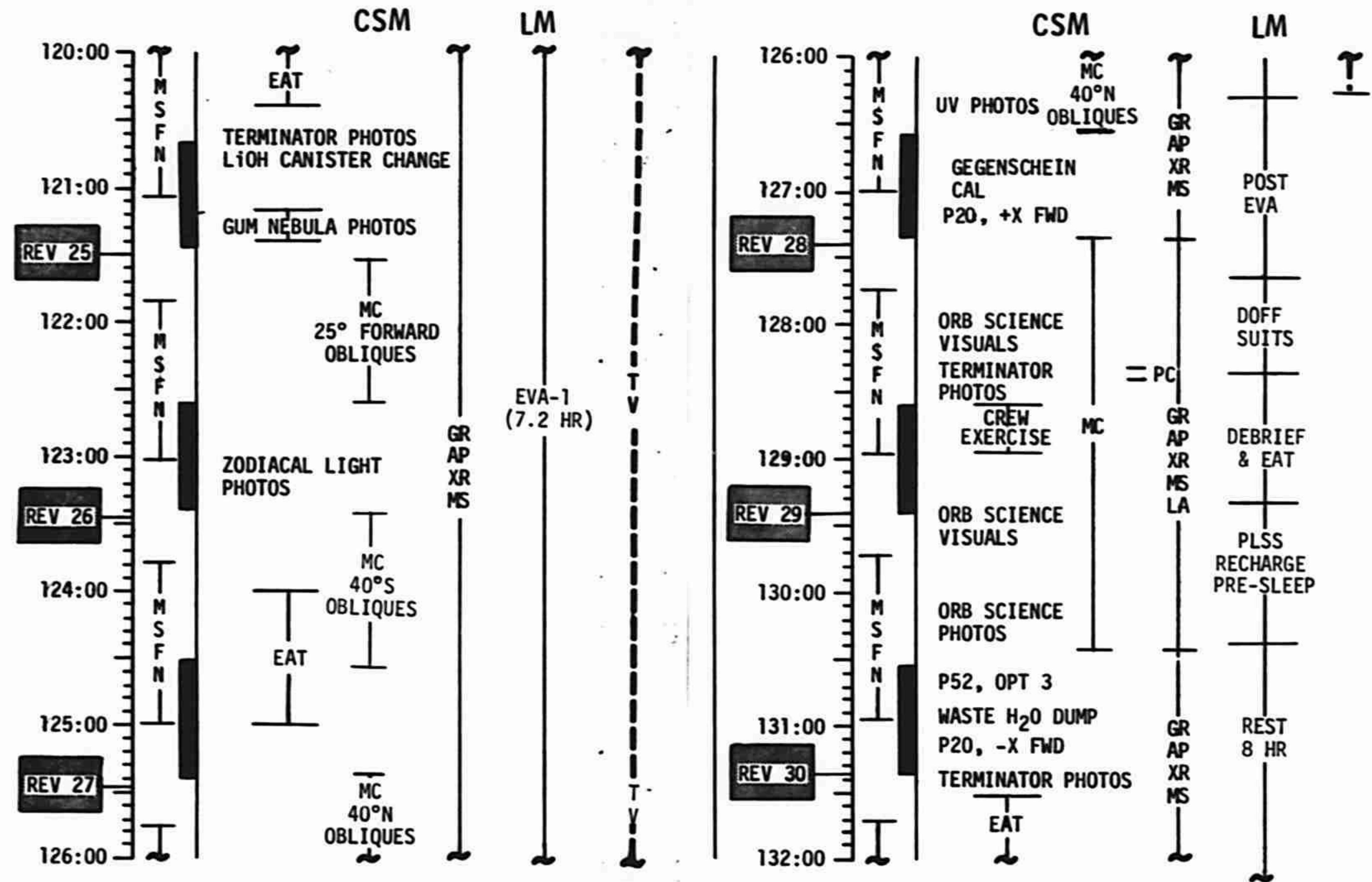
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:00 - 108:00	5/12-18	5-9

FLIGHT PLAN



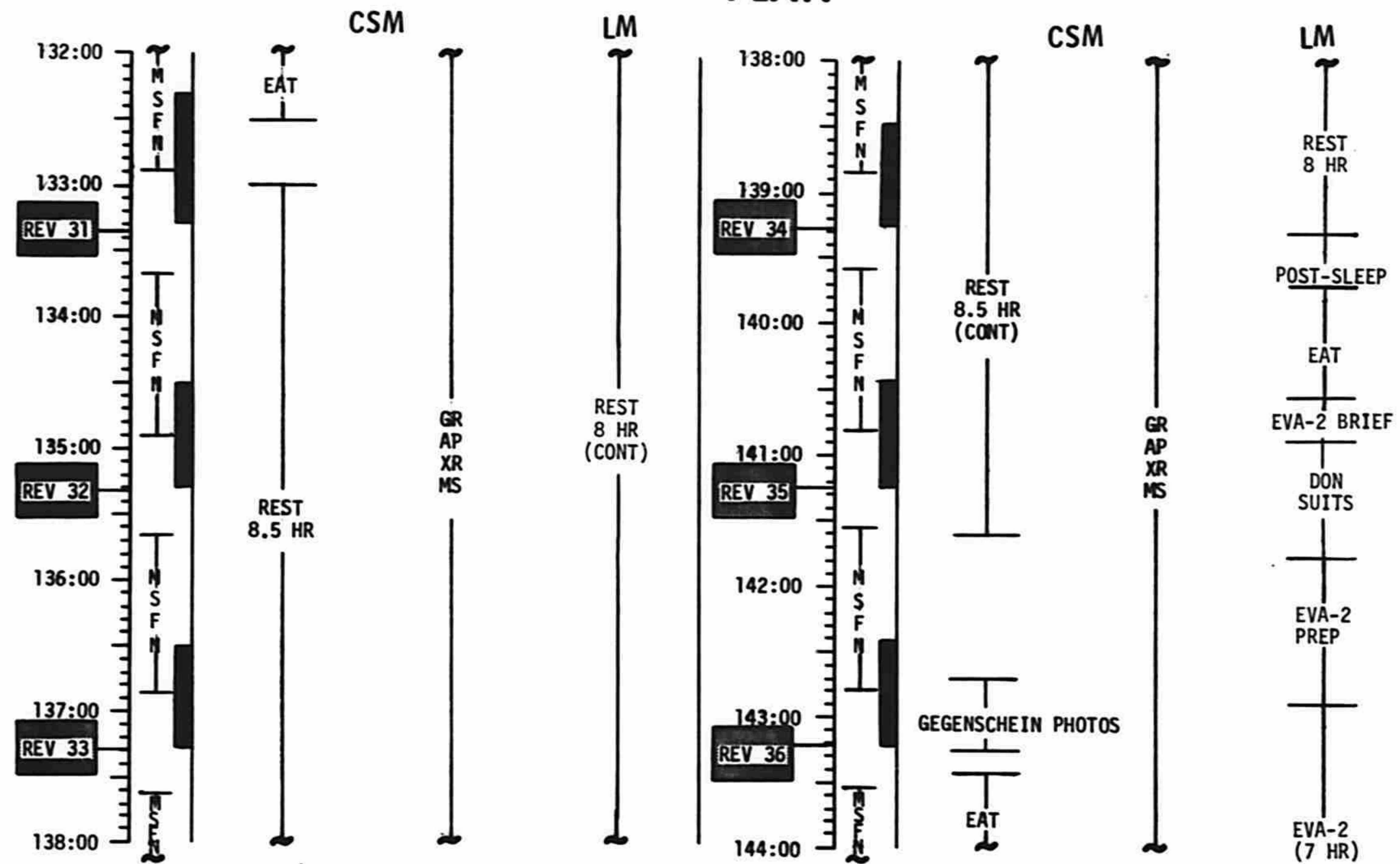
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	108:00 - 120:00	5-6/18-24	5-10

FLIGHT PLAN



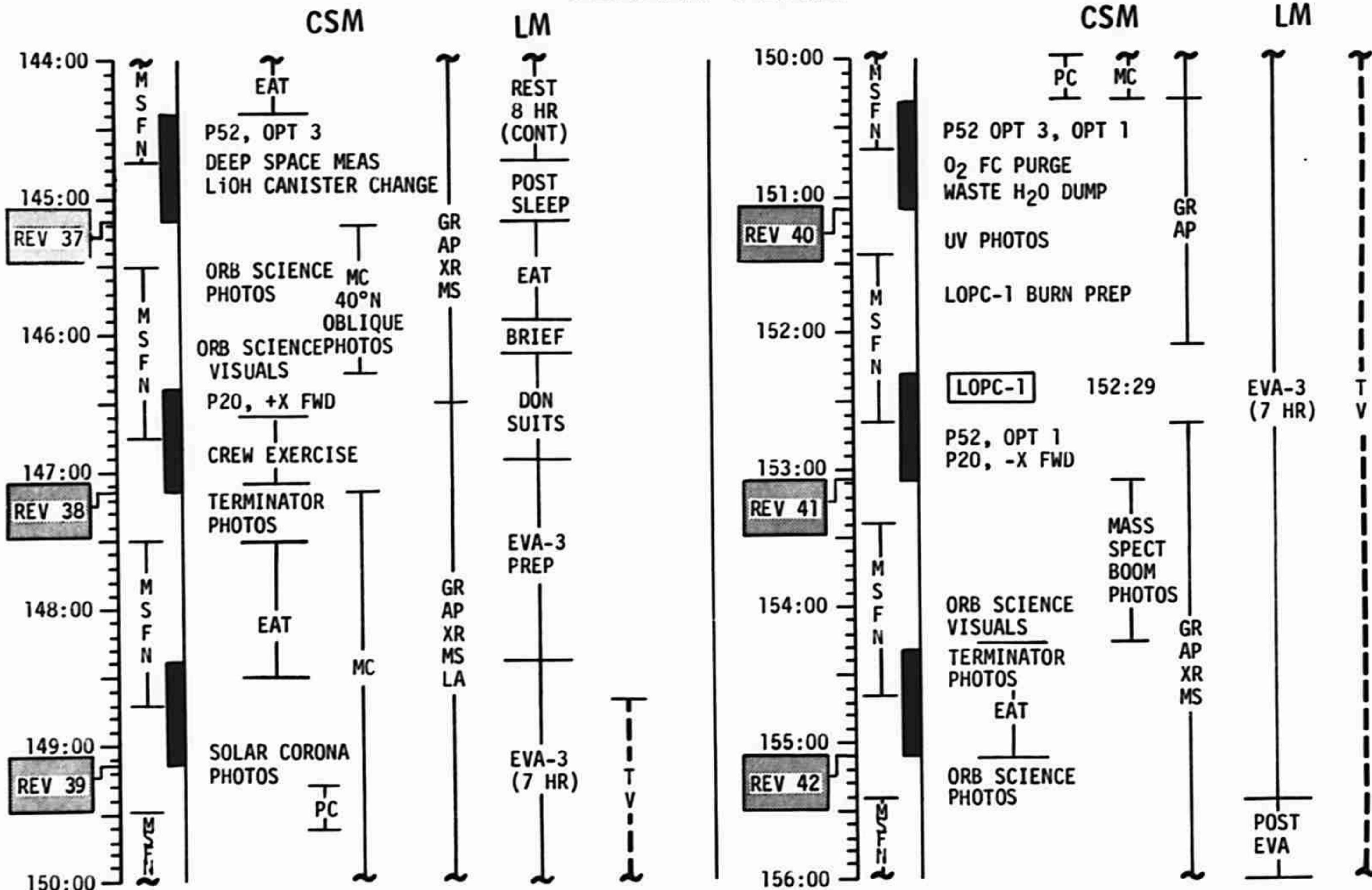
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	120:00 - 132:00	6/24-30	5-11

FLIGHT PLAN



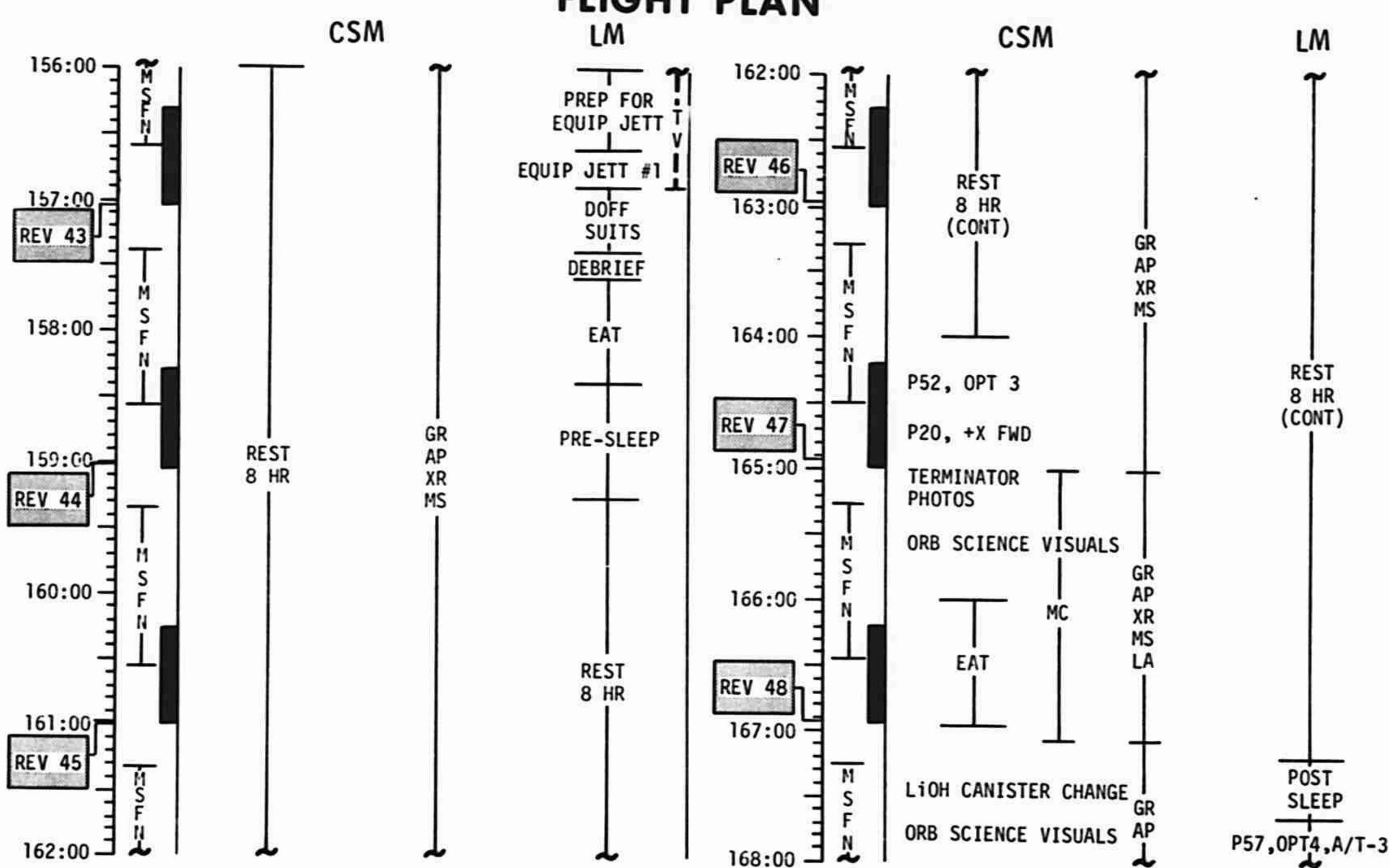
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	132:00 - 144:00	6-7/30-36	5-12

FLIGHT PLAN



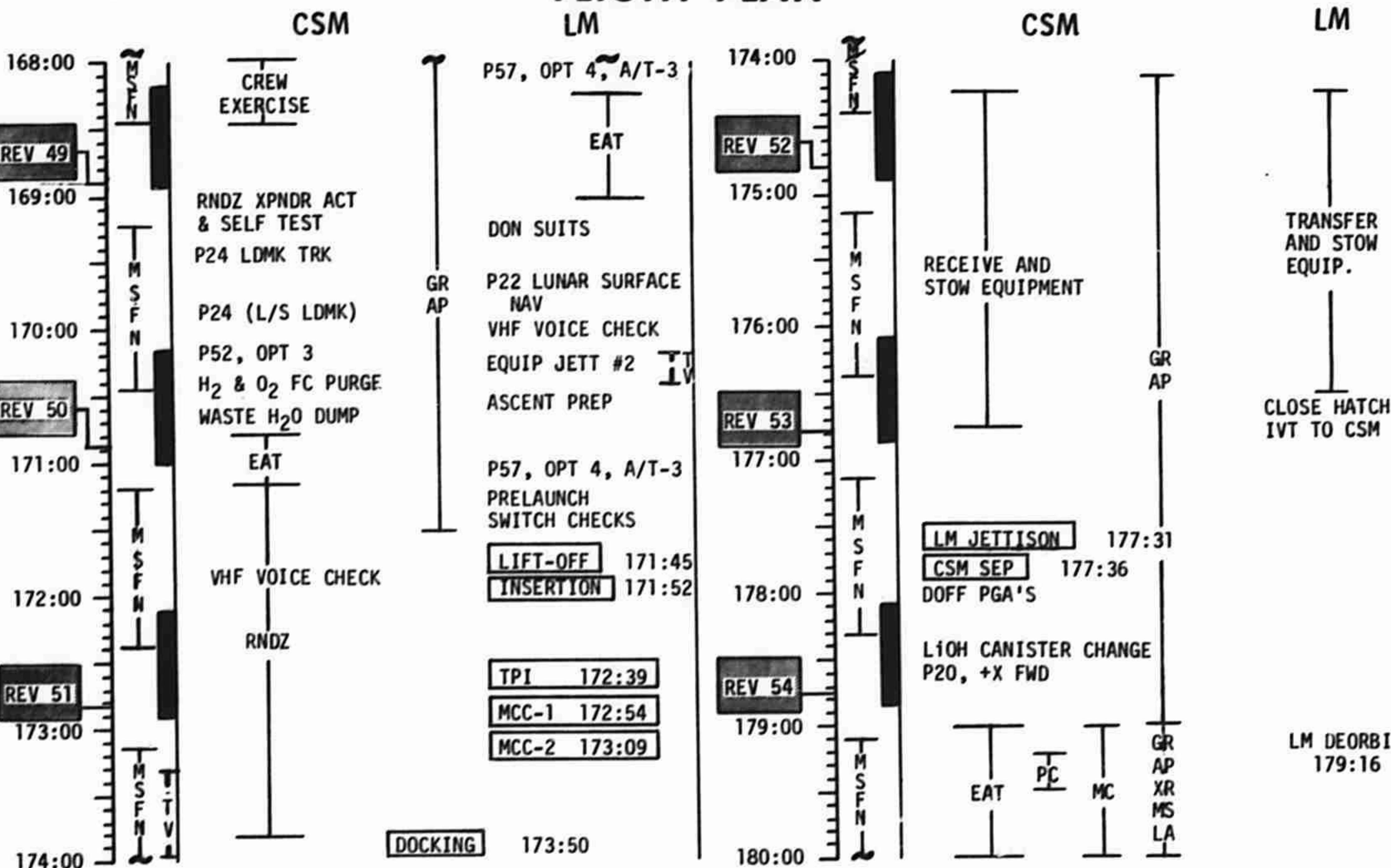
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	144:00 - 156:00	7/36-42	5-13

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	156:00 - 168:00	8/42-48	5-14

FLIGHT PLAN

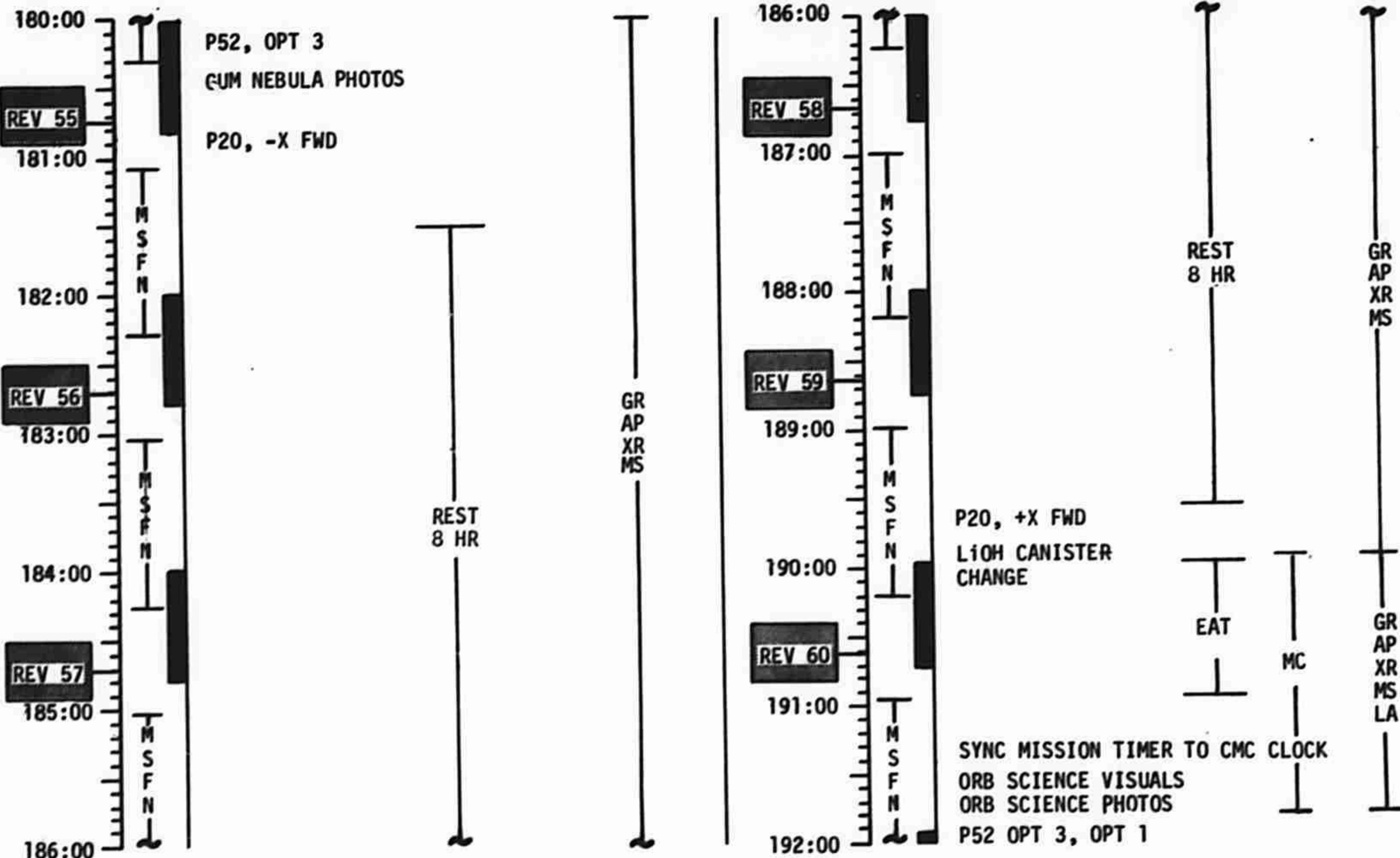


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	168:00 - 180:00	8/48-54	5-15

FLIGHT PLAN

CSM

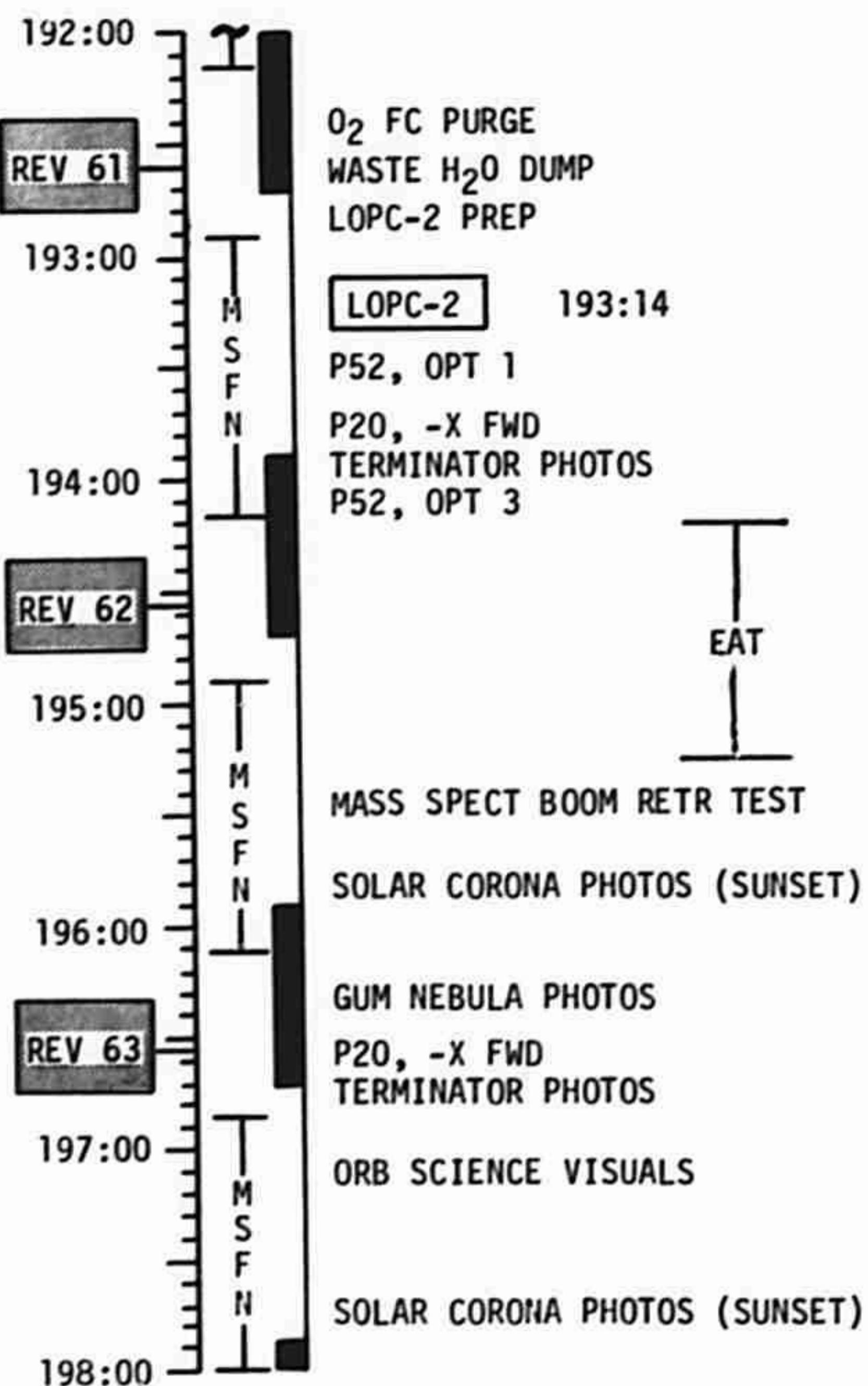
CSM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	180:00 - 192:00	8-9/54-60	5-16

FLIGHT PLAN

CSM



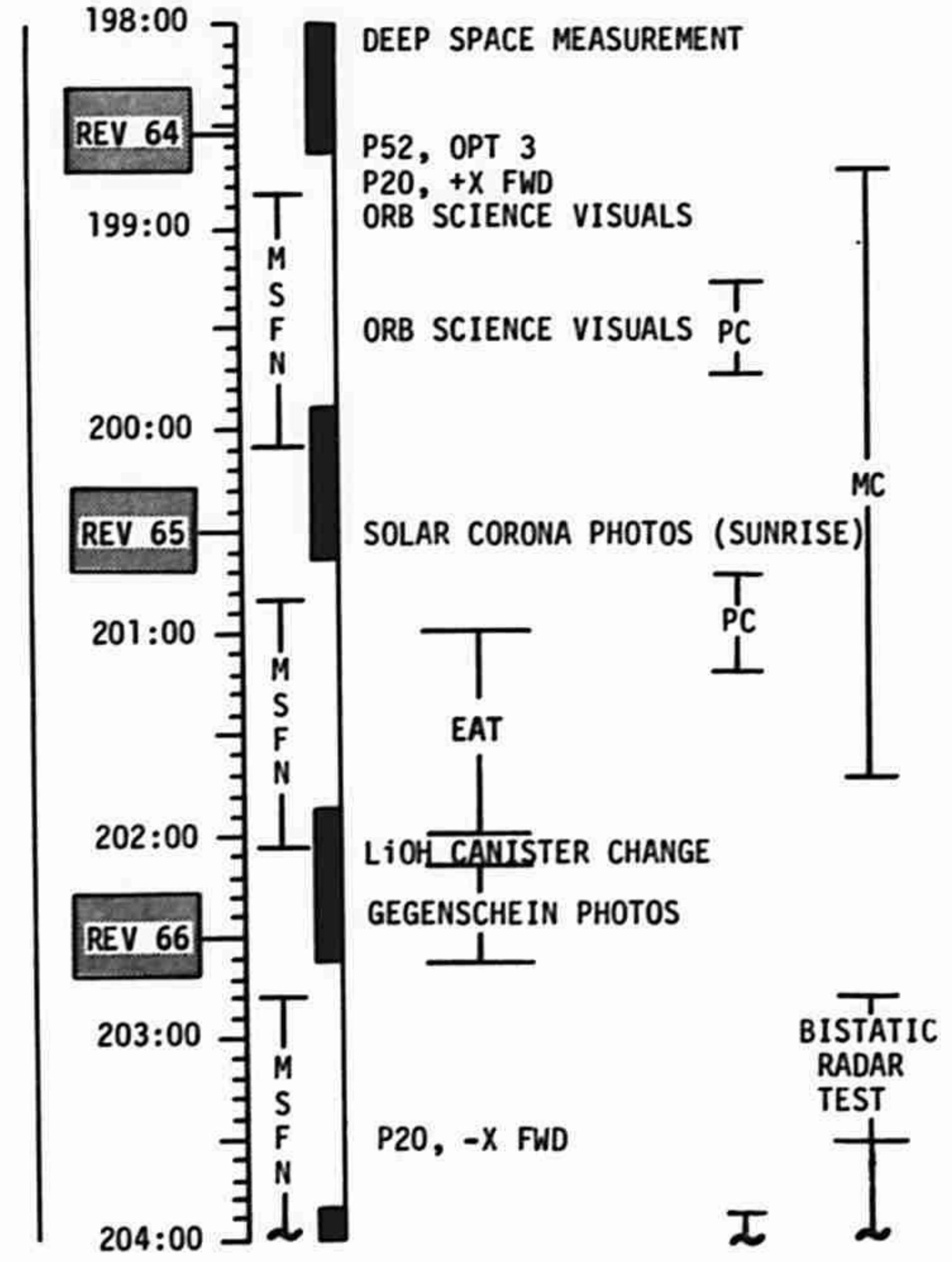
GR AP

GR AP
XR
MS

M
S
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N

FLIGHT PLANNING BRANCH

CSM



GR
AP
XR
MS
LA

GR
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MS

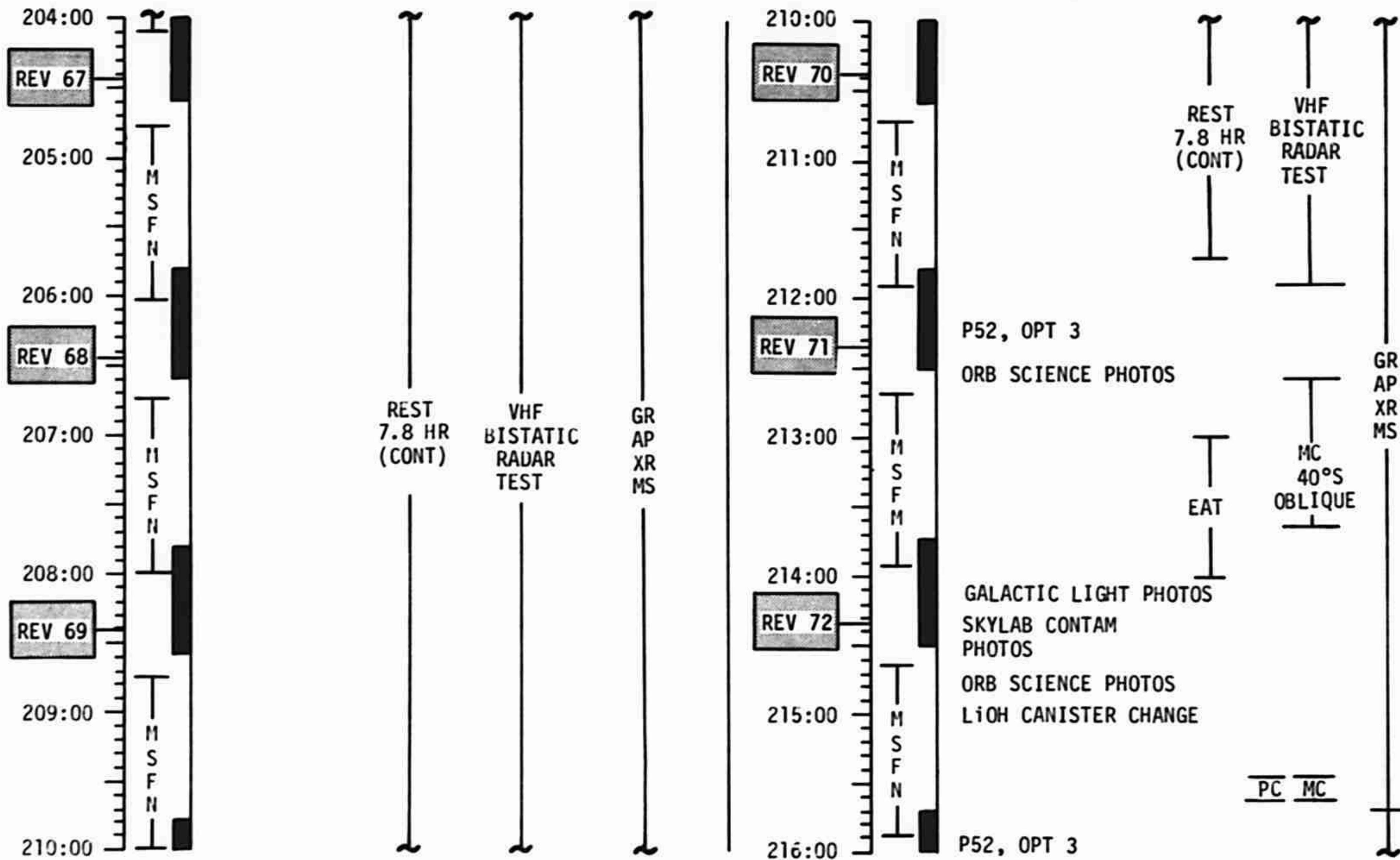
M
S
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N

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
Apollo 16	Change A (4/16)	3/27/72	192:00 - 204:00	9/60-66	5-17

FLIGHT PLAN

CSM

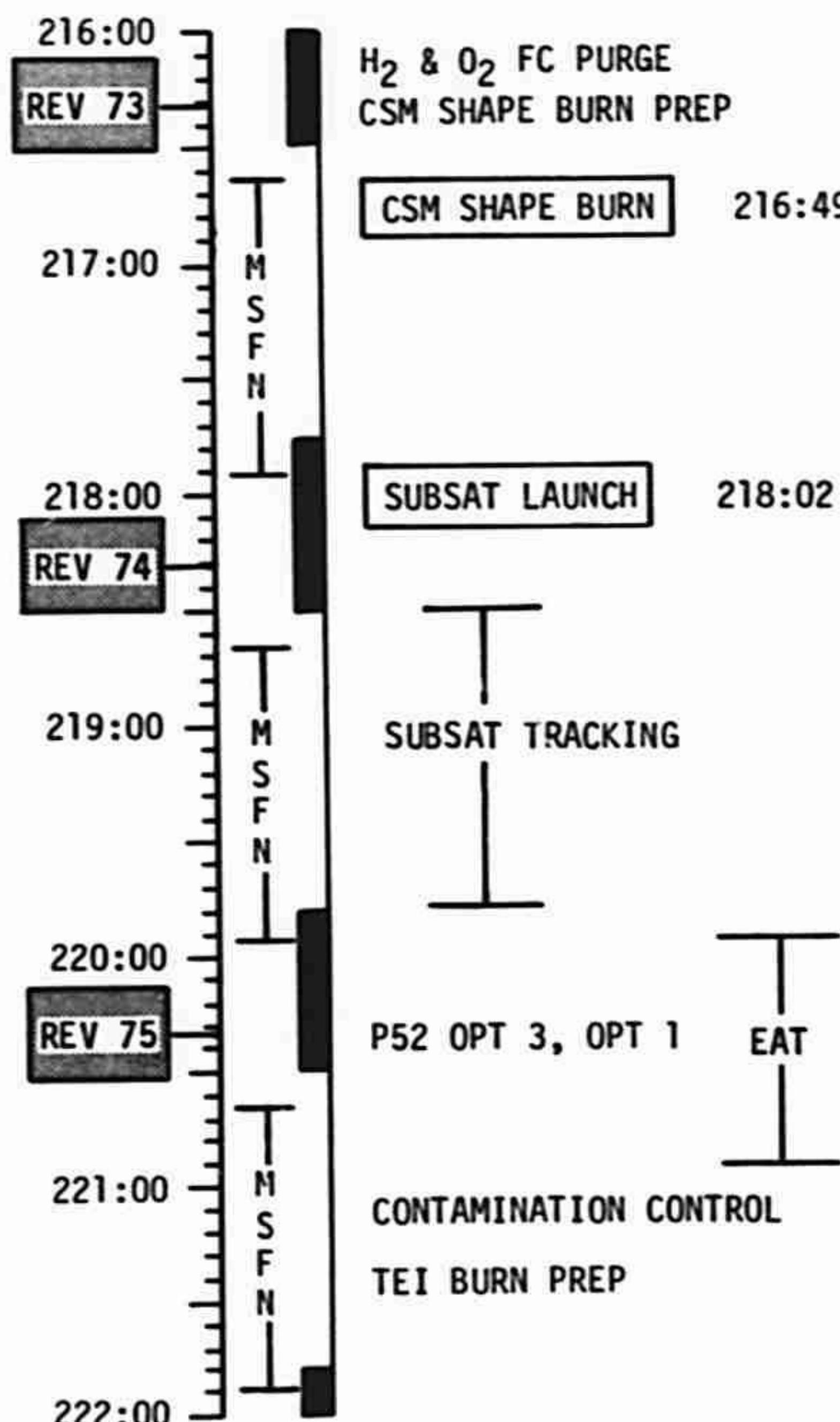
CSM



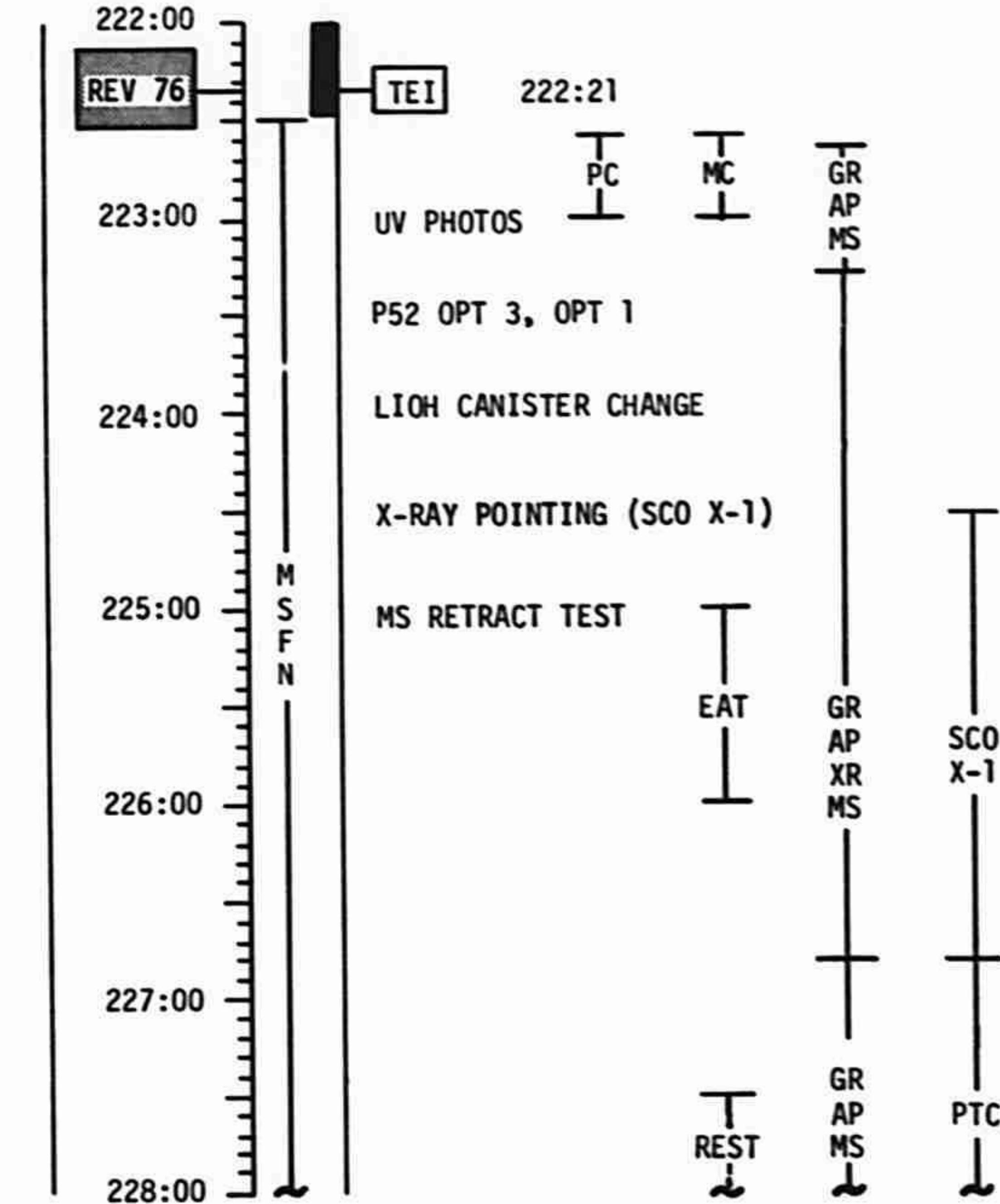
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	204:00 - 216:00	10/67-72	5-18

FLIGHT PLAN

CSM



T
GR
AP

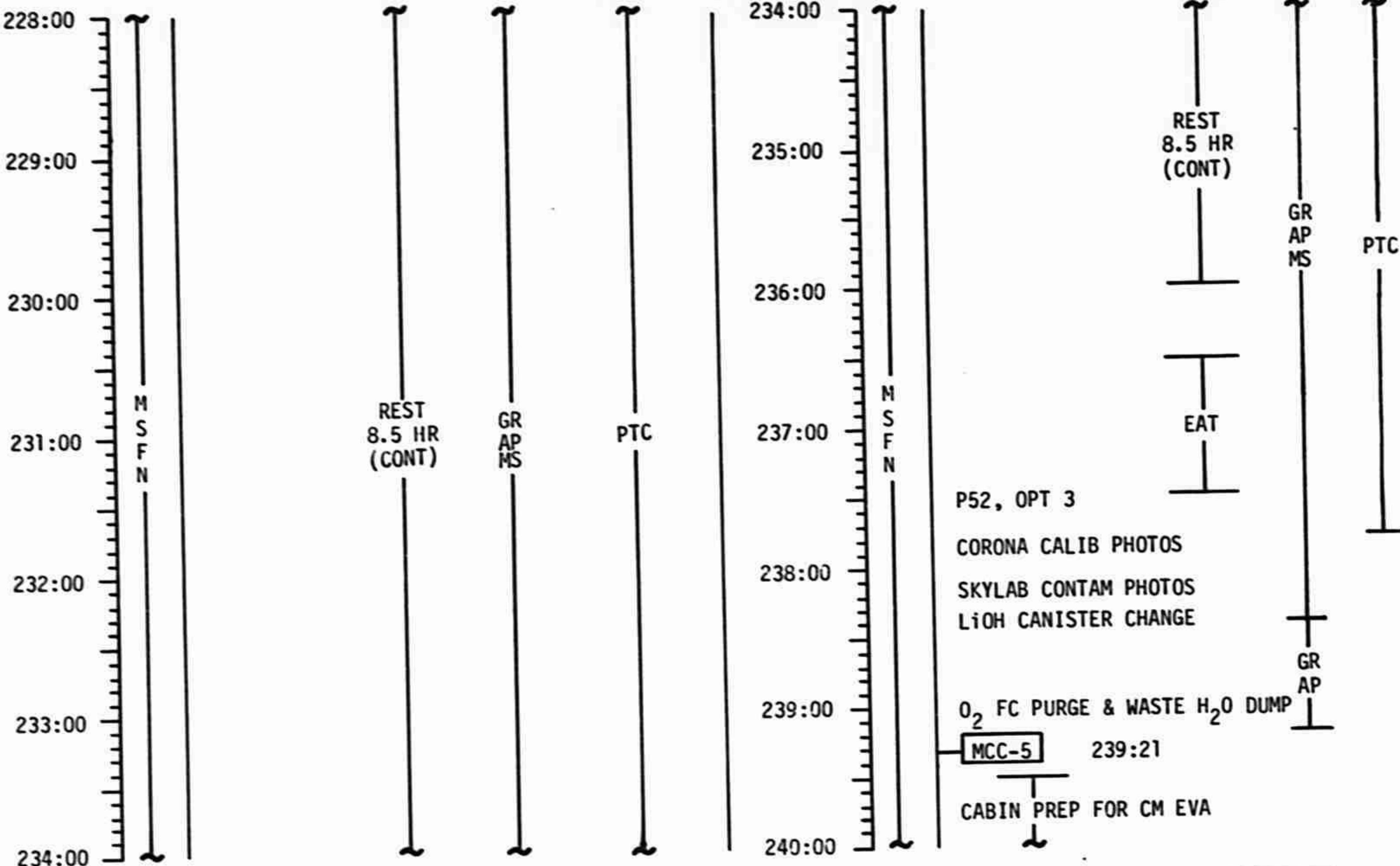


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	216:00 - 228:00	10/72-TEC	5-19

FLIGHT PLAN

CSM

CSM

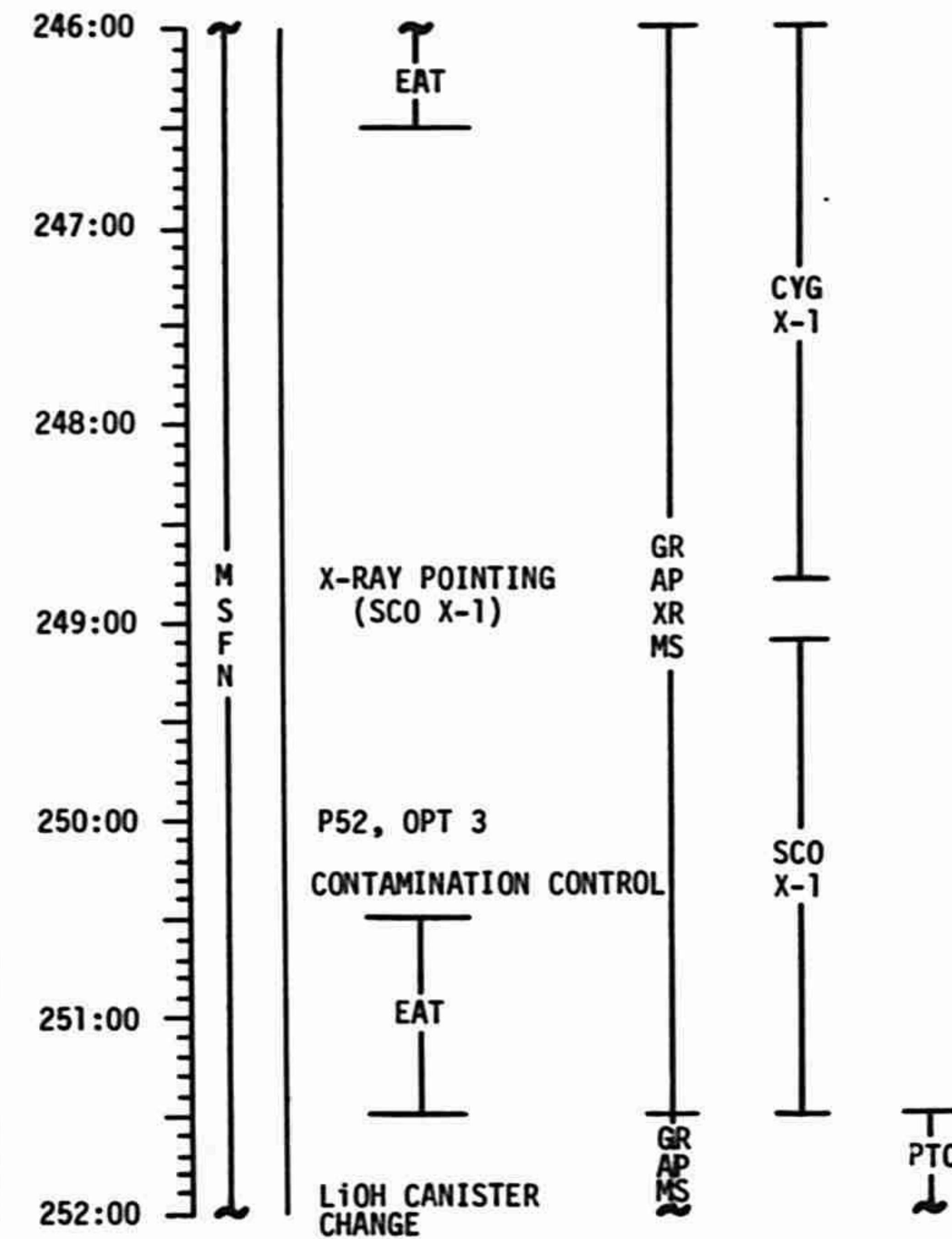
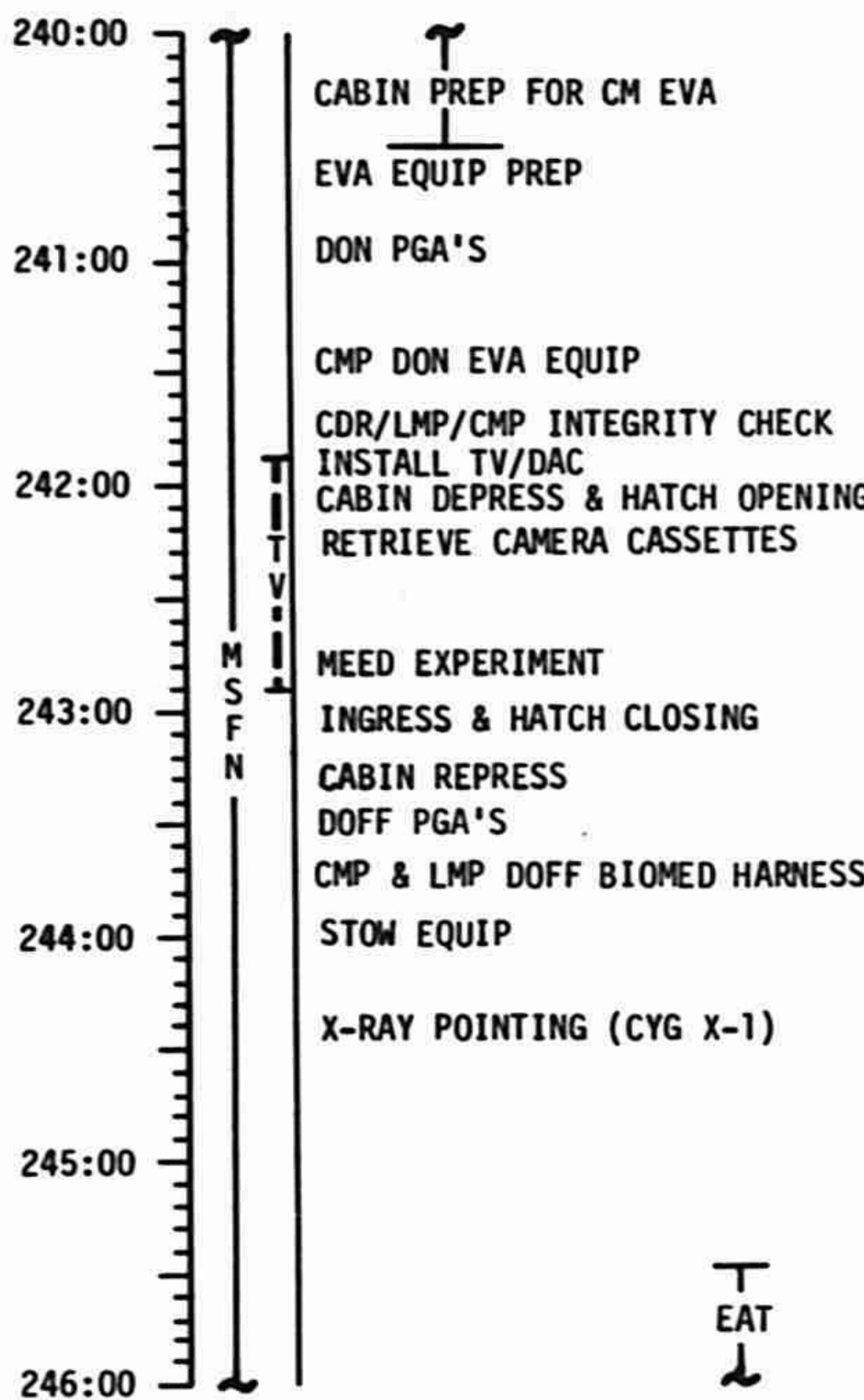


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	228:00 - 240:00	11/TEC	5-20

FLIGHT PLAN

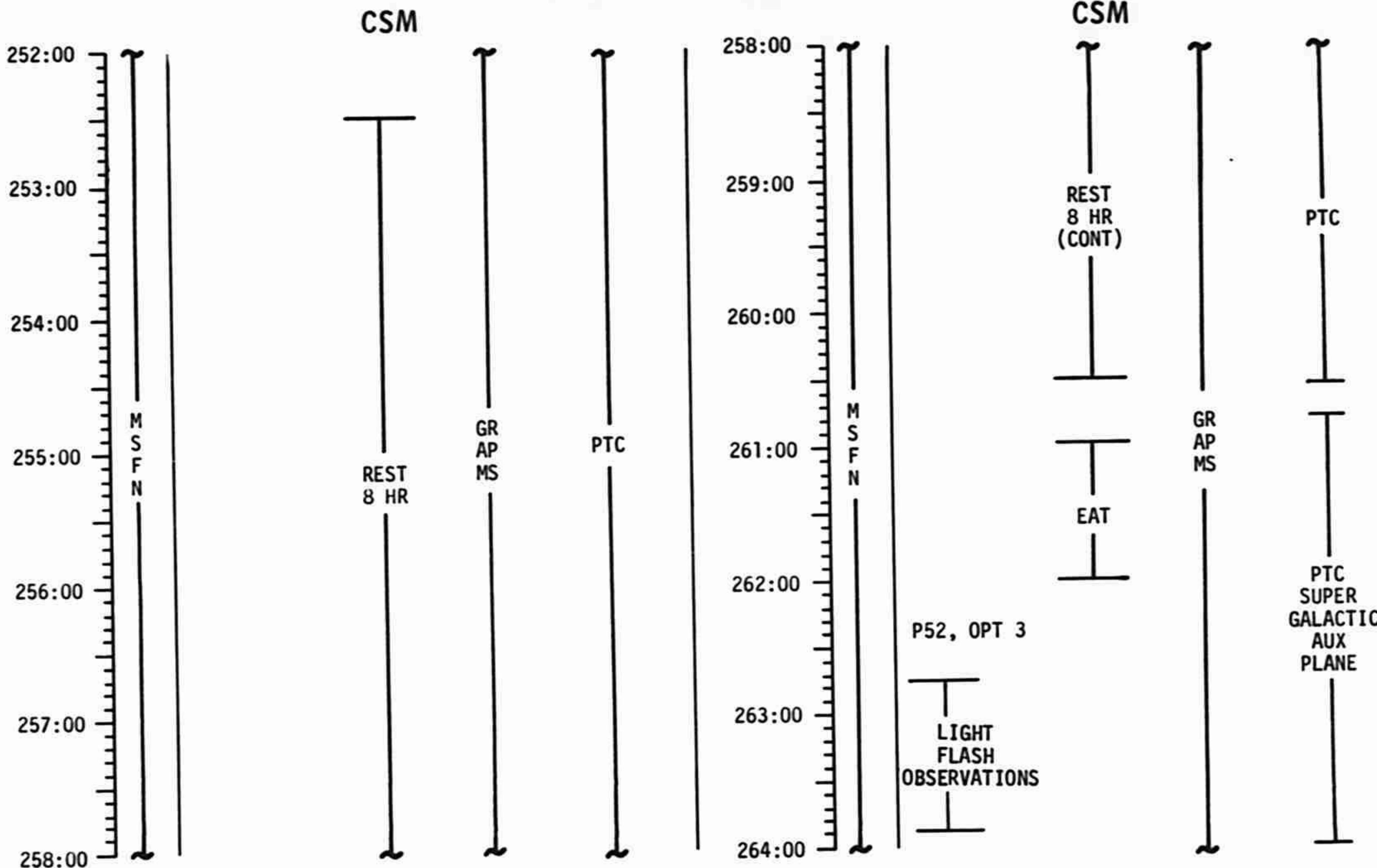
CSM

CSM



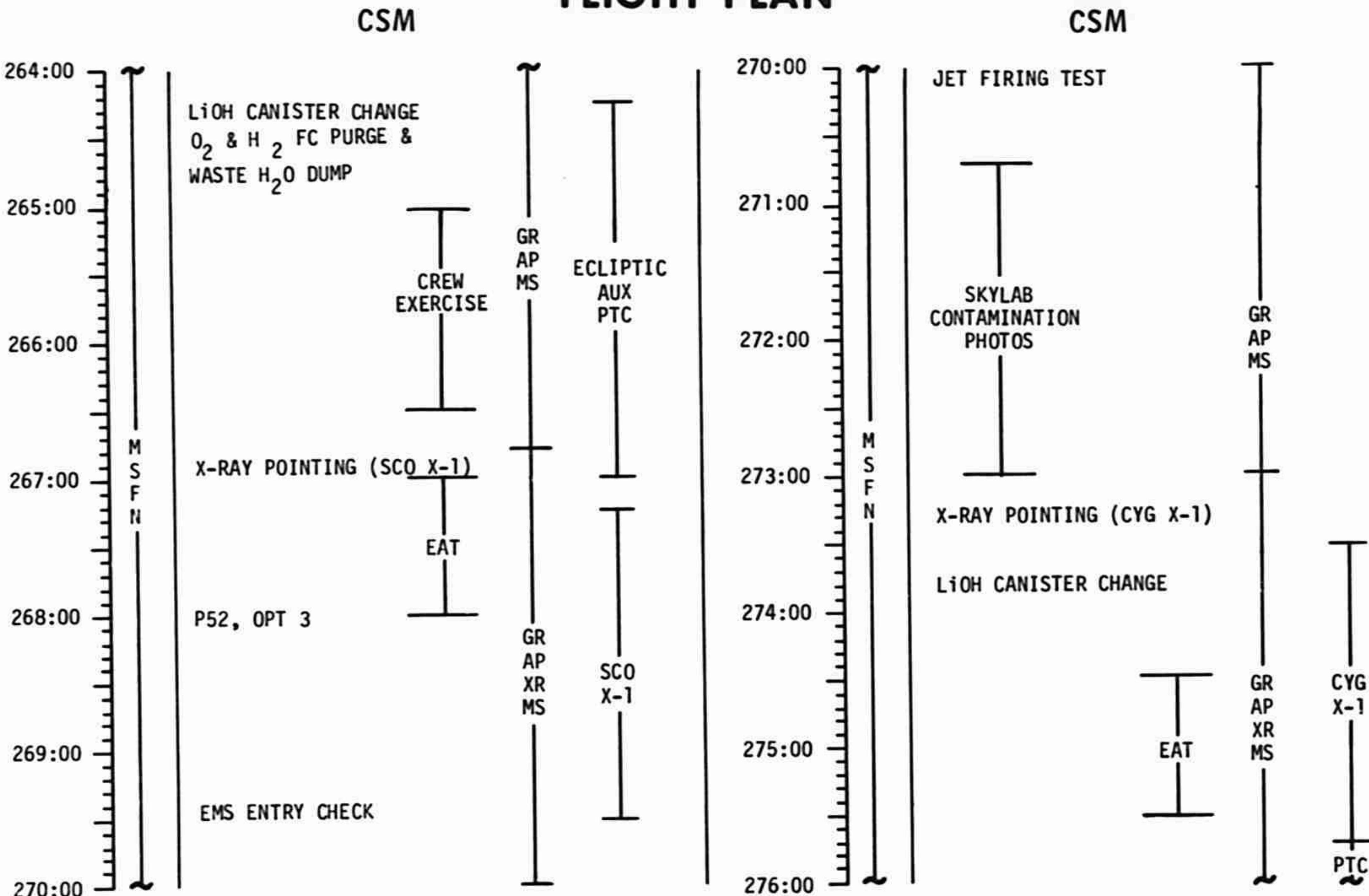
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	240:00 - 252:00	11/TEC	5-21

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	252:00 - 264:00	11-12/TEC	5-22

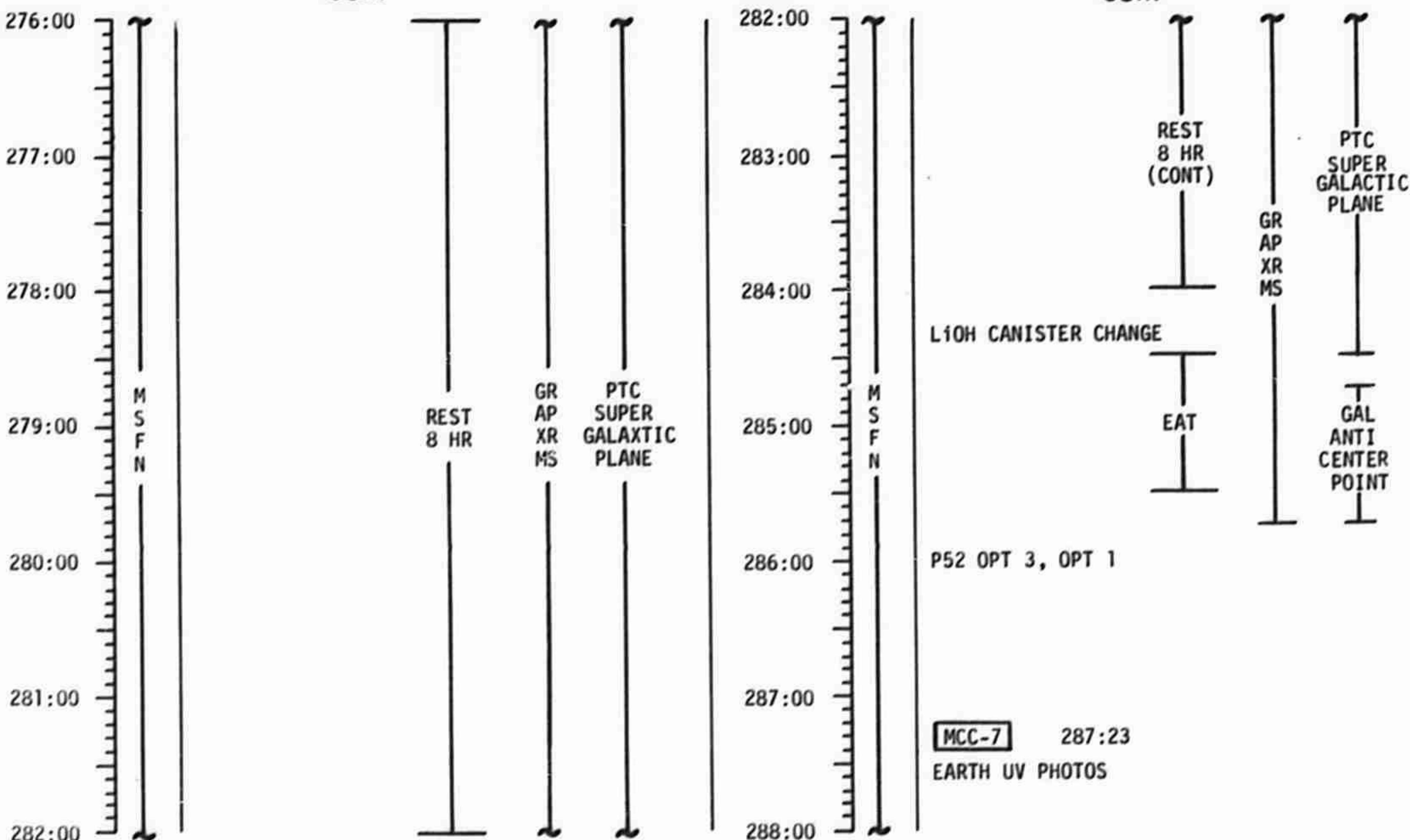
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	264:00 - 276:00	12/TEC	5-23

FLIGHT PLAN

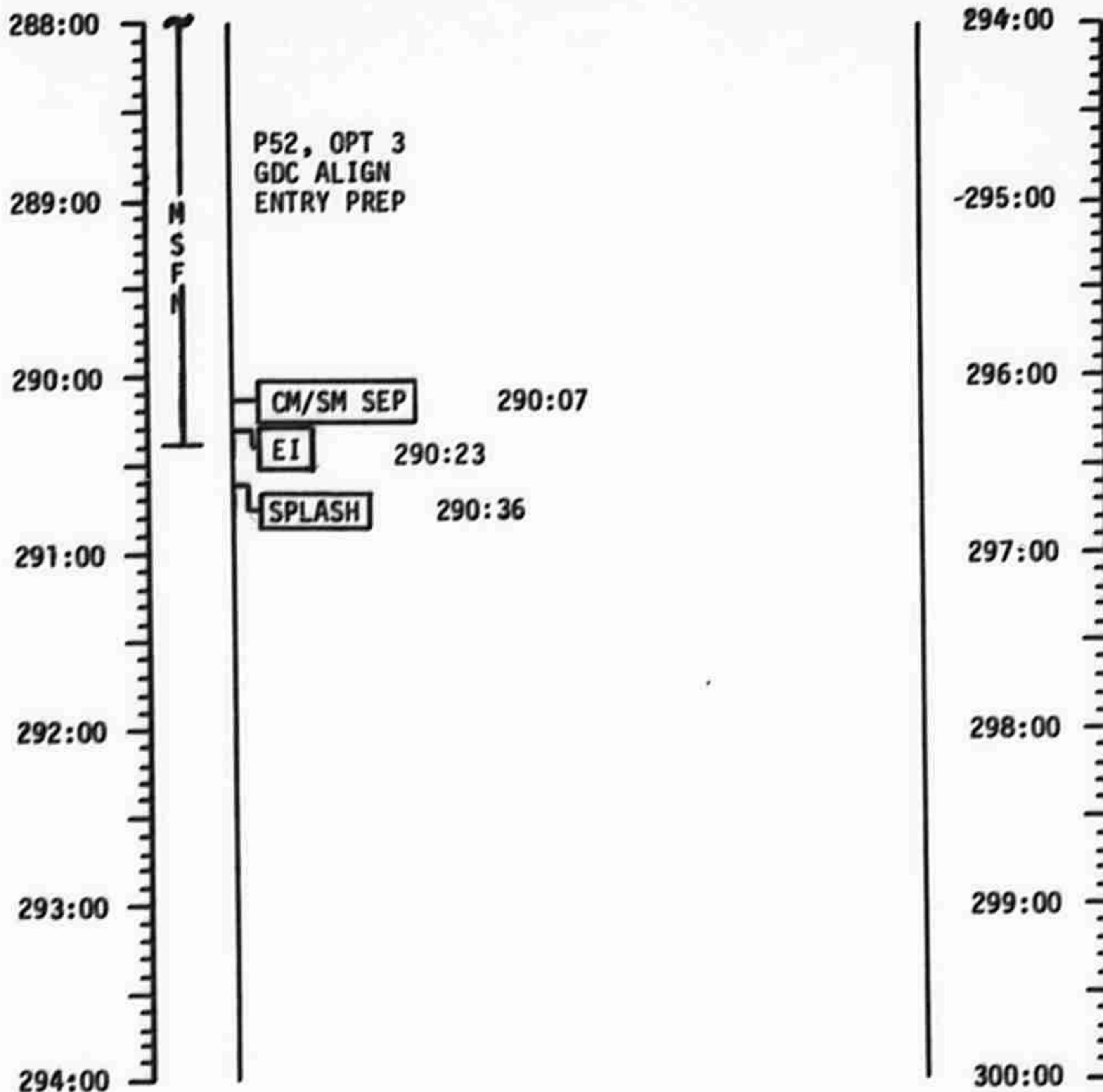
CSM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	276:00 - 288:00	13/TEC	5-24

FLIGHT PLAN

CSM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	288:00 - 300:00	13/TEC-ENTRY	5-25

EARTH ORBIT ALTERNATE MISSION

Assumptions

- 1) A SAFE insertion orbit has been achieved by the S-IVB.
- 2) A systems failure has resulted in a NO/GO for TLI.

Constraints

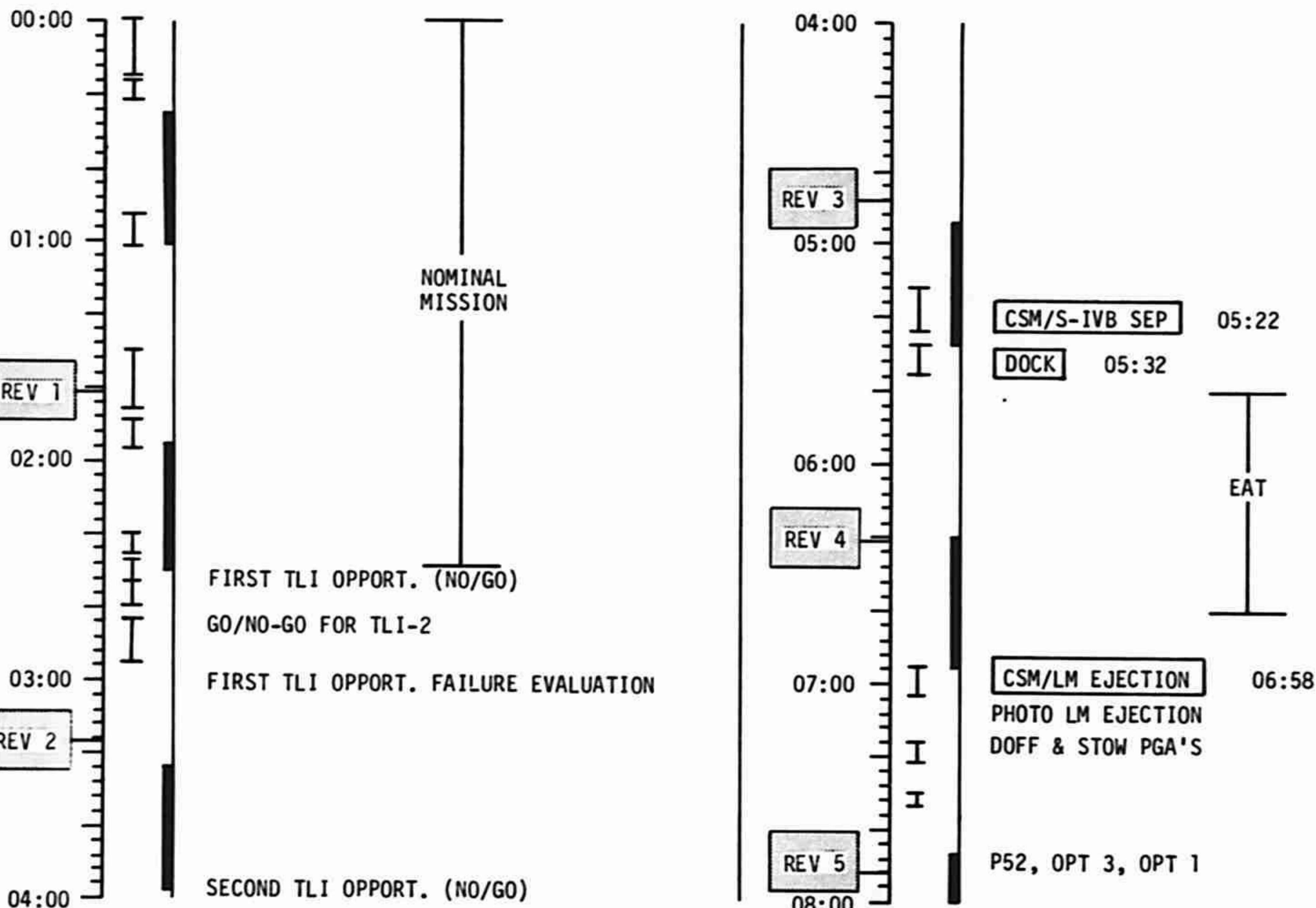
- 1) Maintain SM-RCS deorbit capability.
- 2) Photography over U.S.
- 3) LM to be jettisoned for water impact.

Sequence of Events

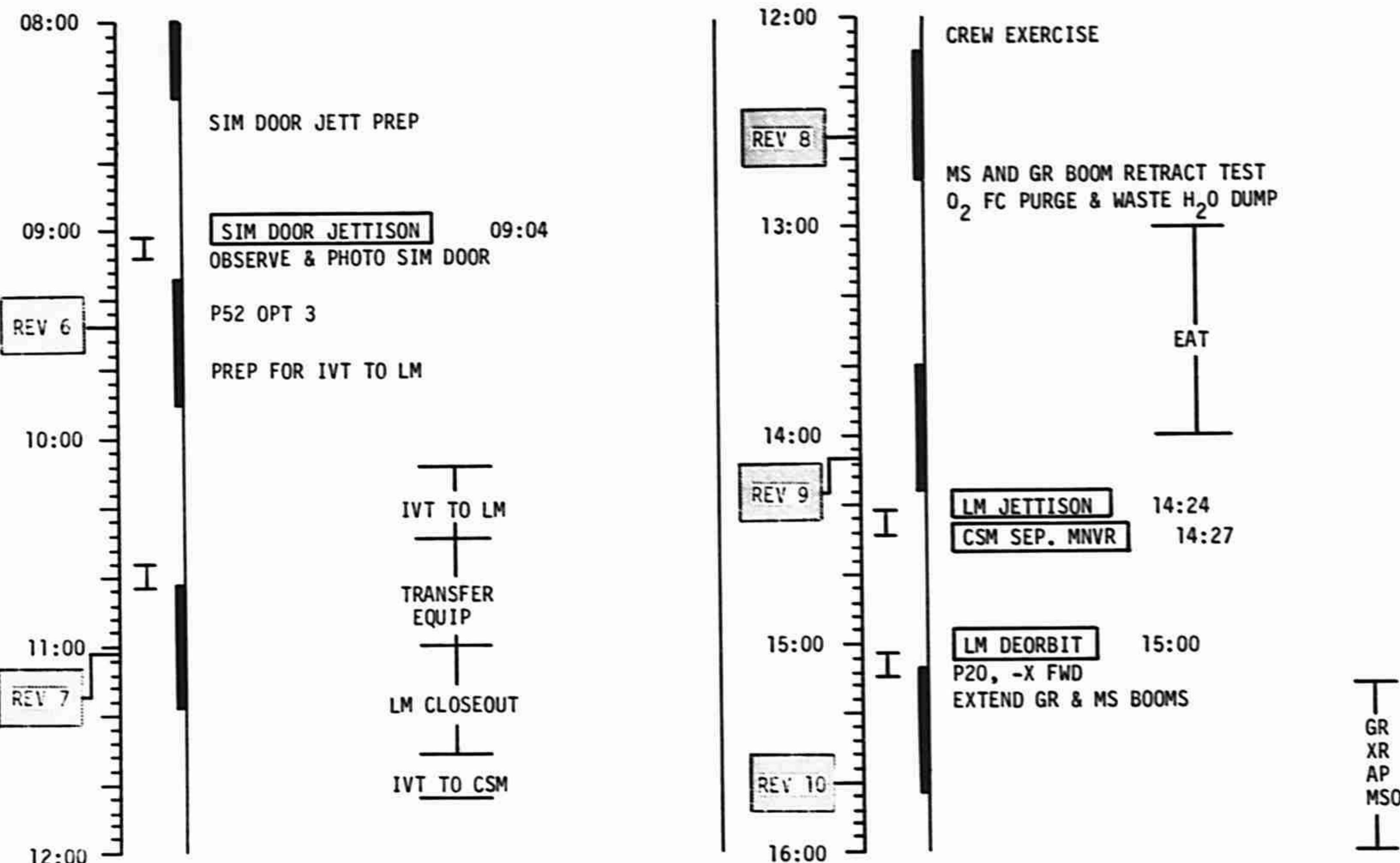
This alternate mission is initiated by a systems failure which will not allow TLI. The alternate mission timeline is entered at the nominal time of TLI and allows for a failure checkout period followed by a possible second TLI opportunity. If the second TLI is not performed, the CSM executes T.D.&E and prepares the LM for an ocean impact. The CSM executes five SPS burns to position itself for photographic coverage over the U.S. with an inclination of forty-five degrees. All the sim bay experiments are activated, the sub-satellite is jettisoned, and an EVA is planned to retrieve the film canisters. The mission is open-ended but for flight planning purposes, a six and one-half day mission is planned.

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FLIGHT PLAN



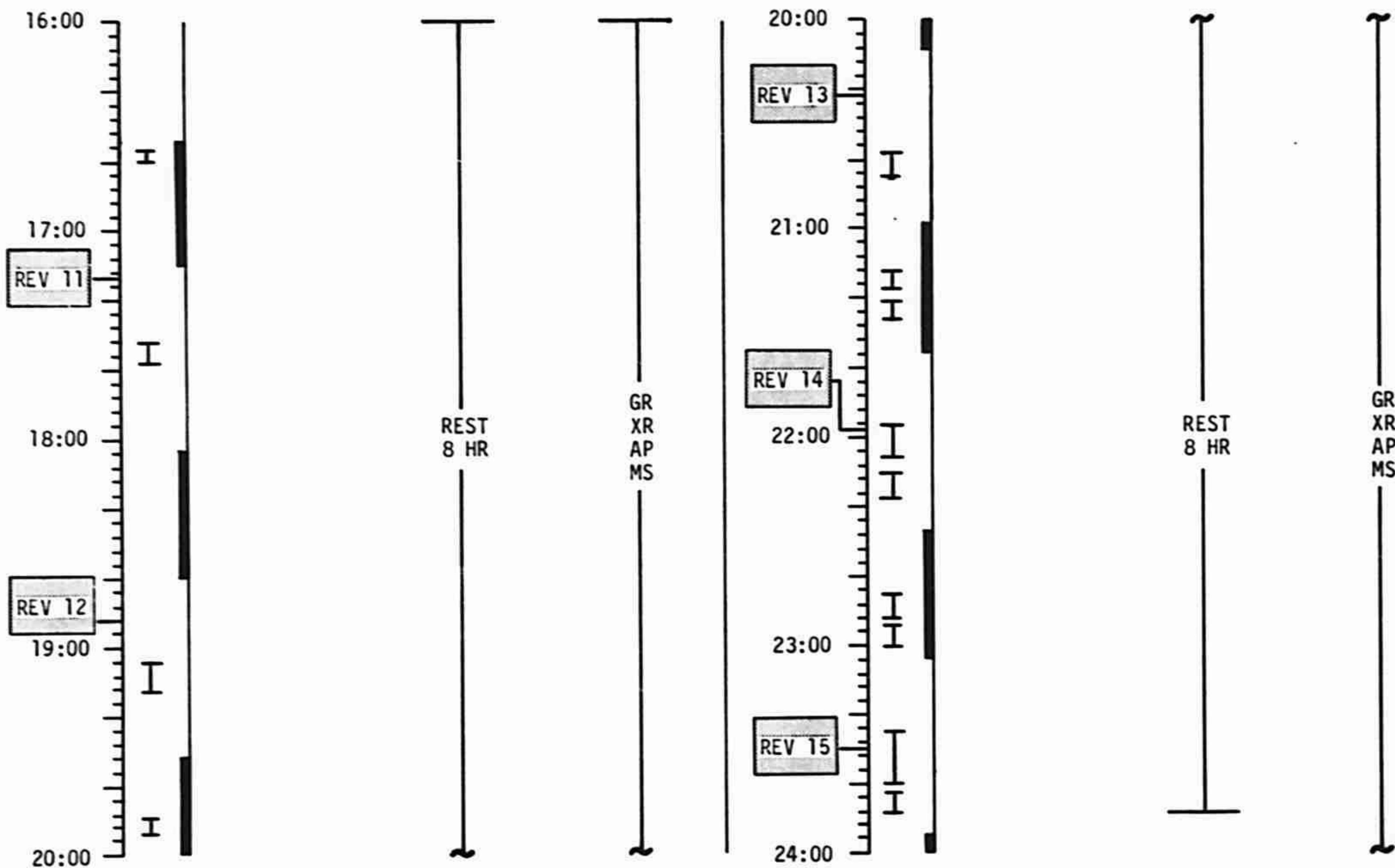
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	00:00 - 08:00	1/1-5	6-3



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	08:00 - 16:00	1/5-10	6-4

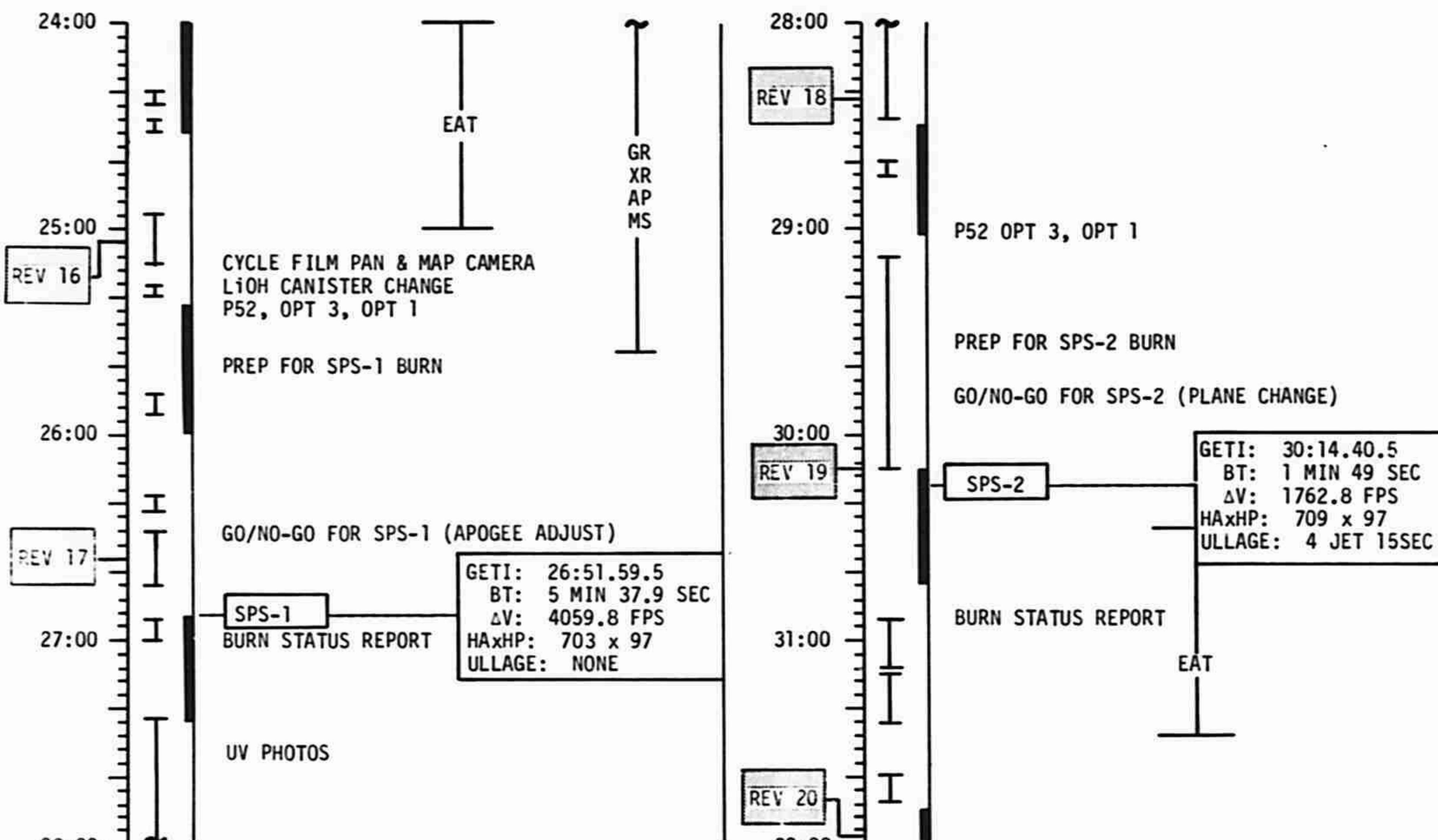
EARTH ALTERNATE

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	16:00 - 24:00	1/10-15	6-5

FLIGHT PLAN



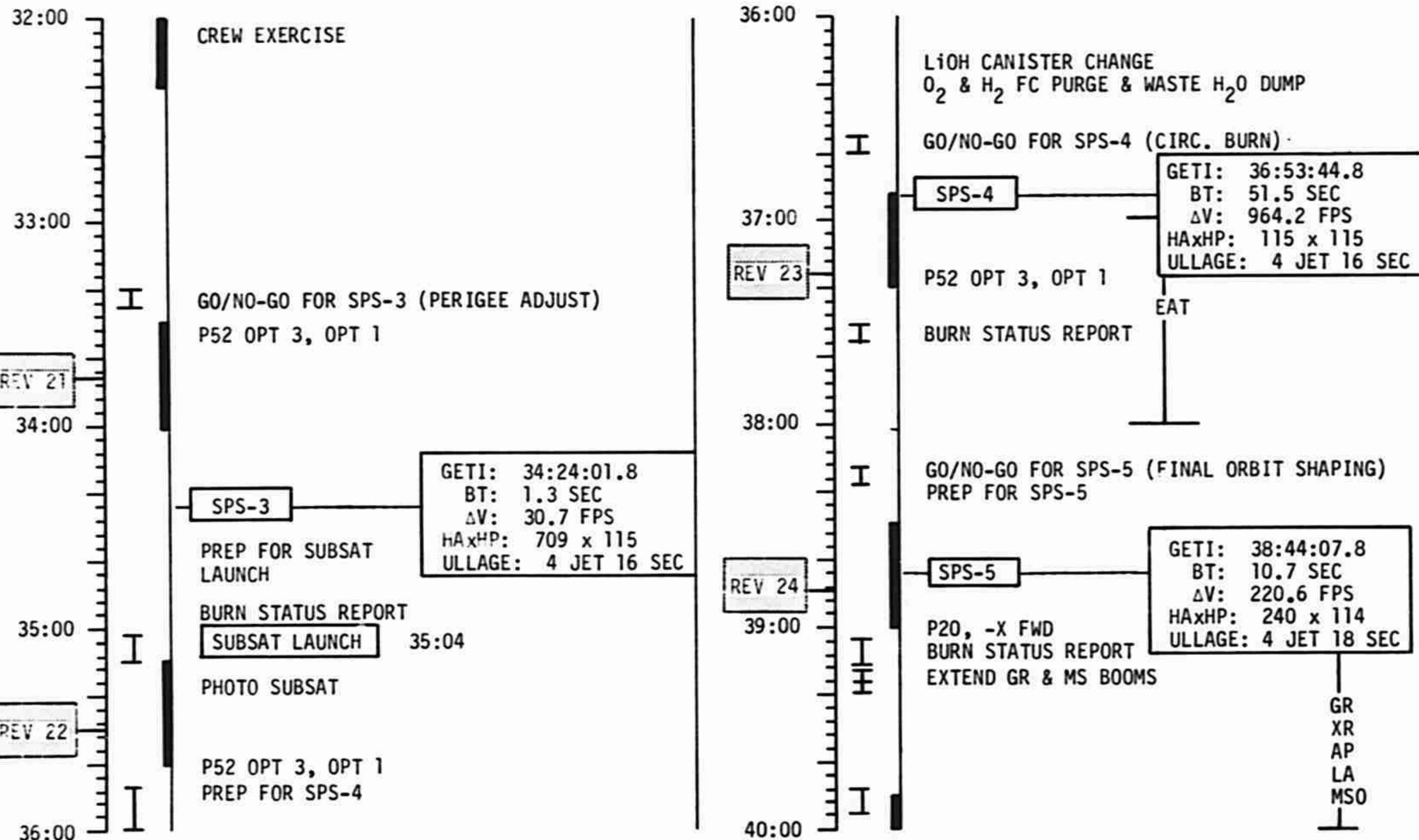
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	24:00 - 32:00	2/15-20	6-6

FEB 20 1972 (ver 6.0)

FLIGHT PLANNING BRANCH

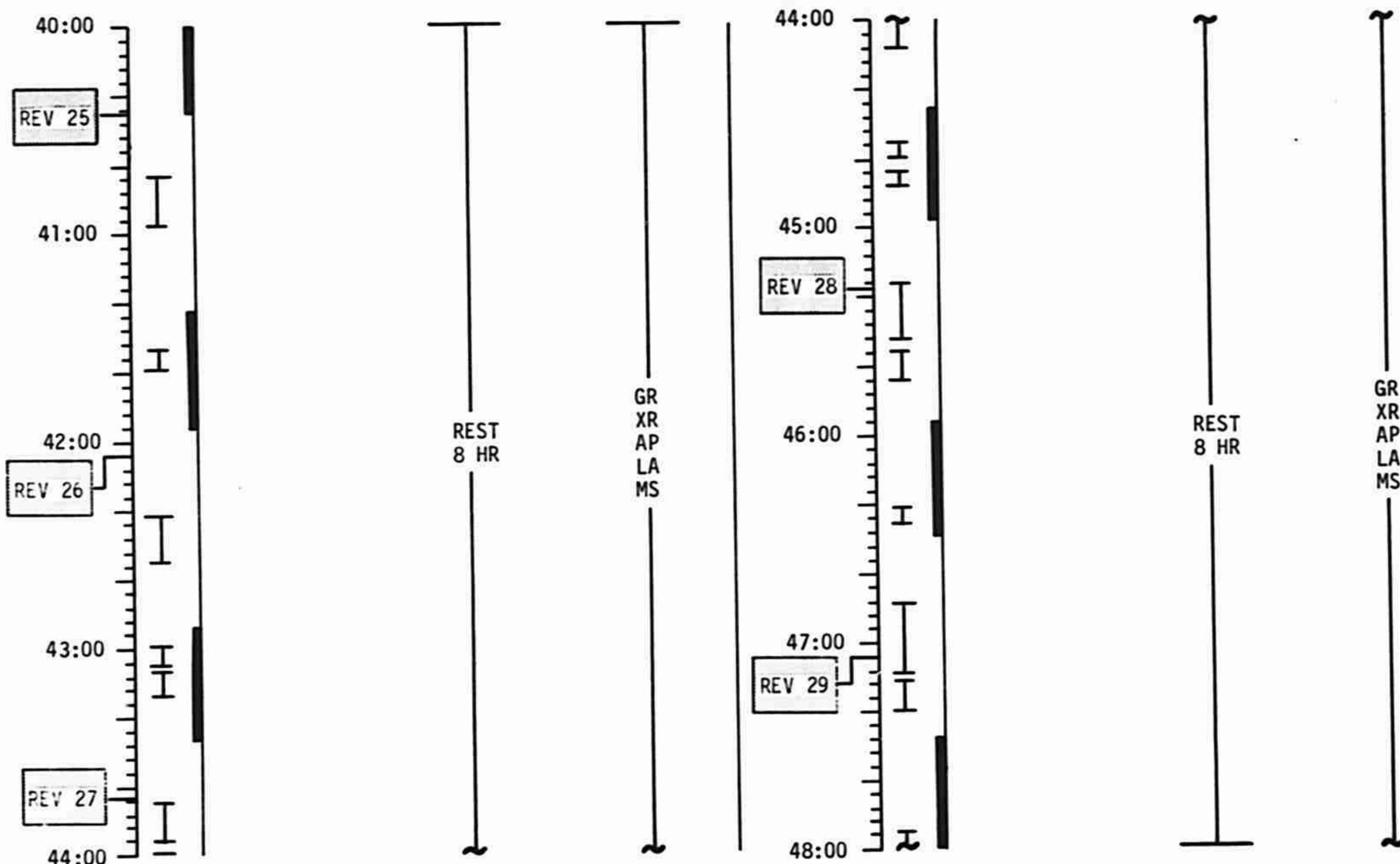
EARTH ALTERNATE

FLIGHT PLAN



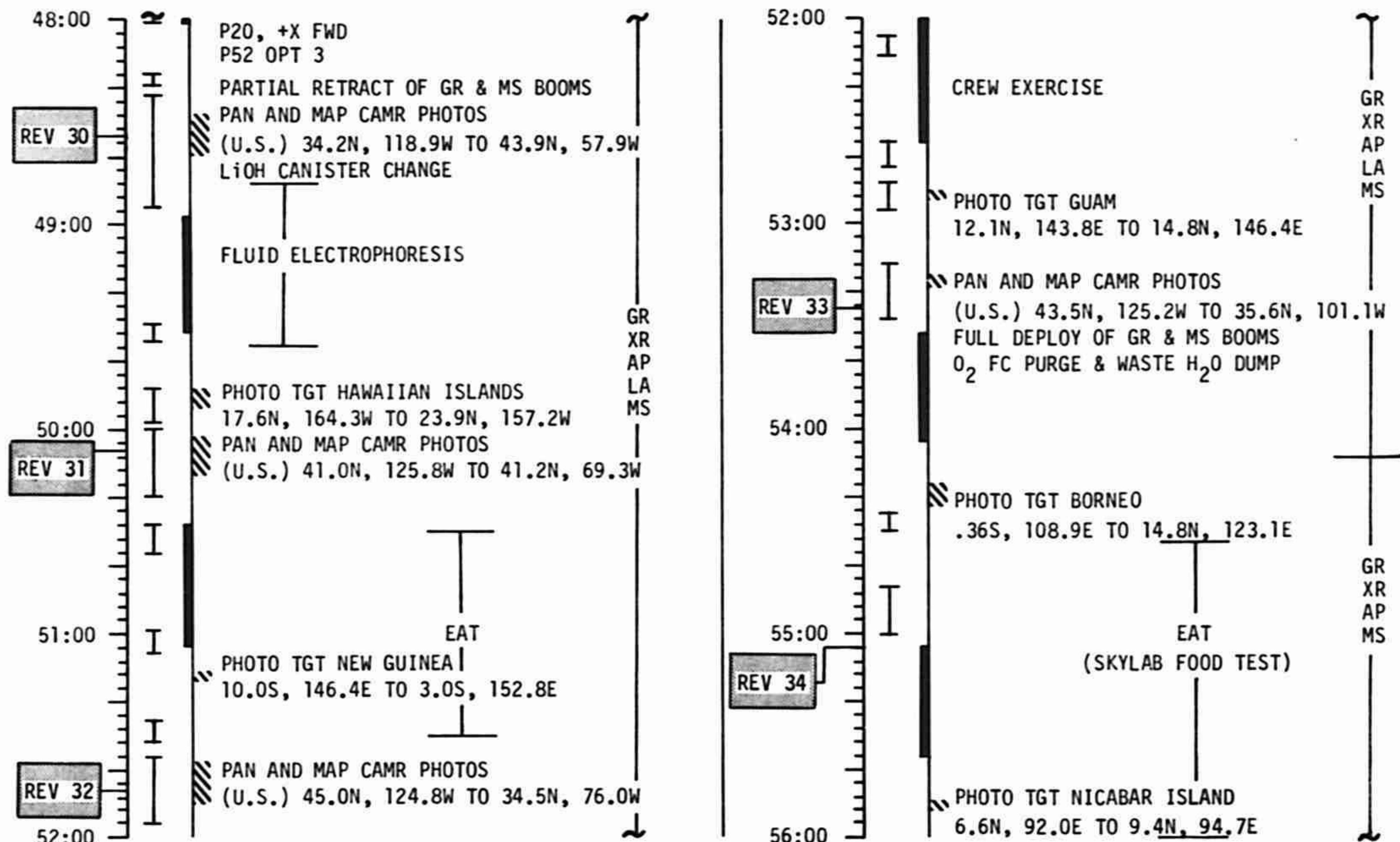
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	32:00 - 40:00	2/20-24	6-7

FLIGHT PLAN



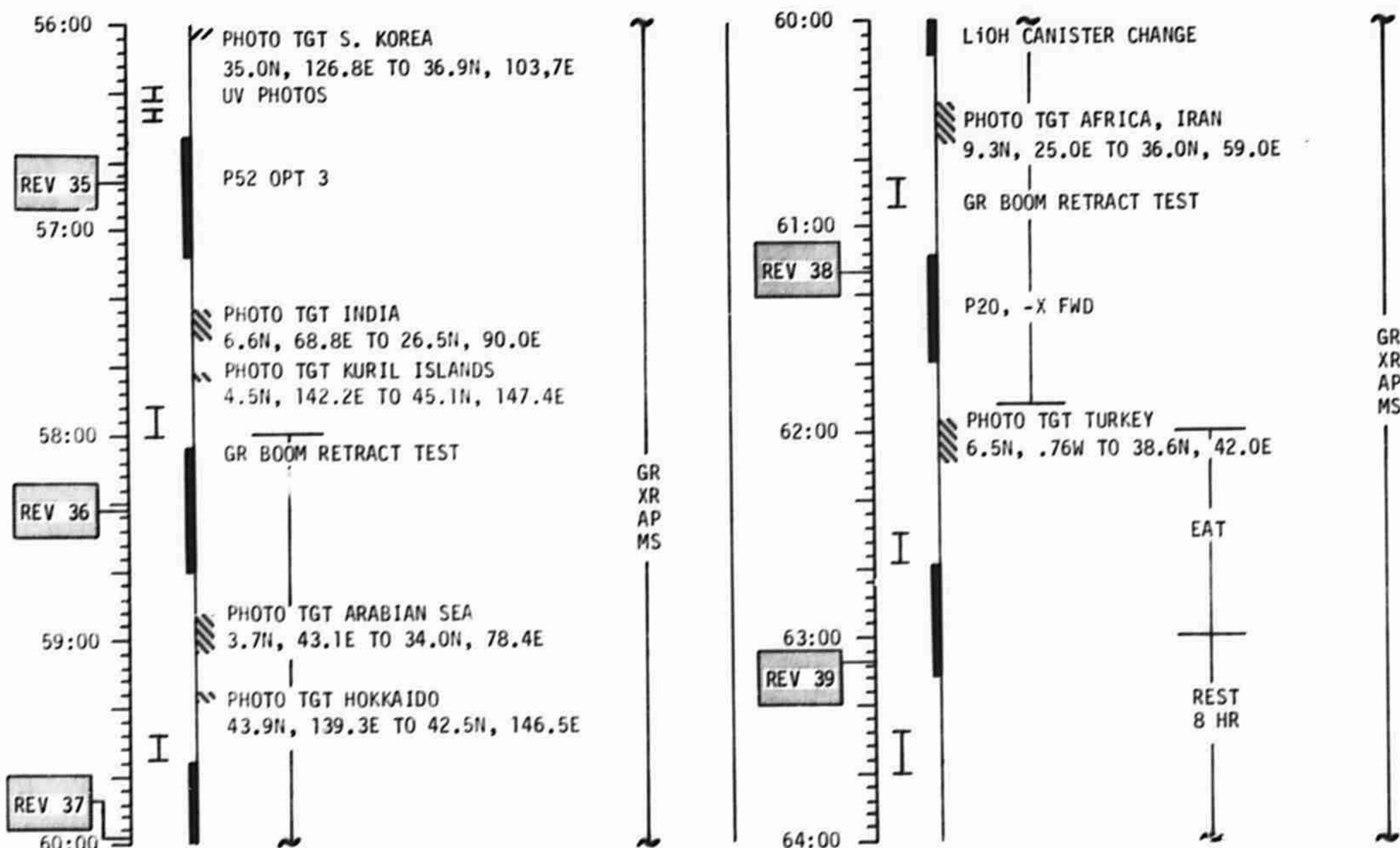
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	40:00 - 48:00	2/24-29	6-8

FLIGHT PLAN



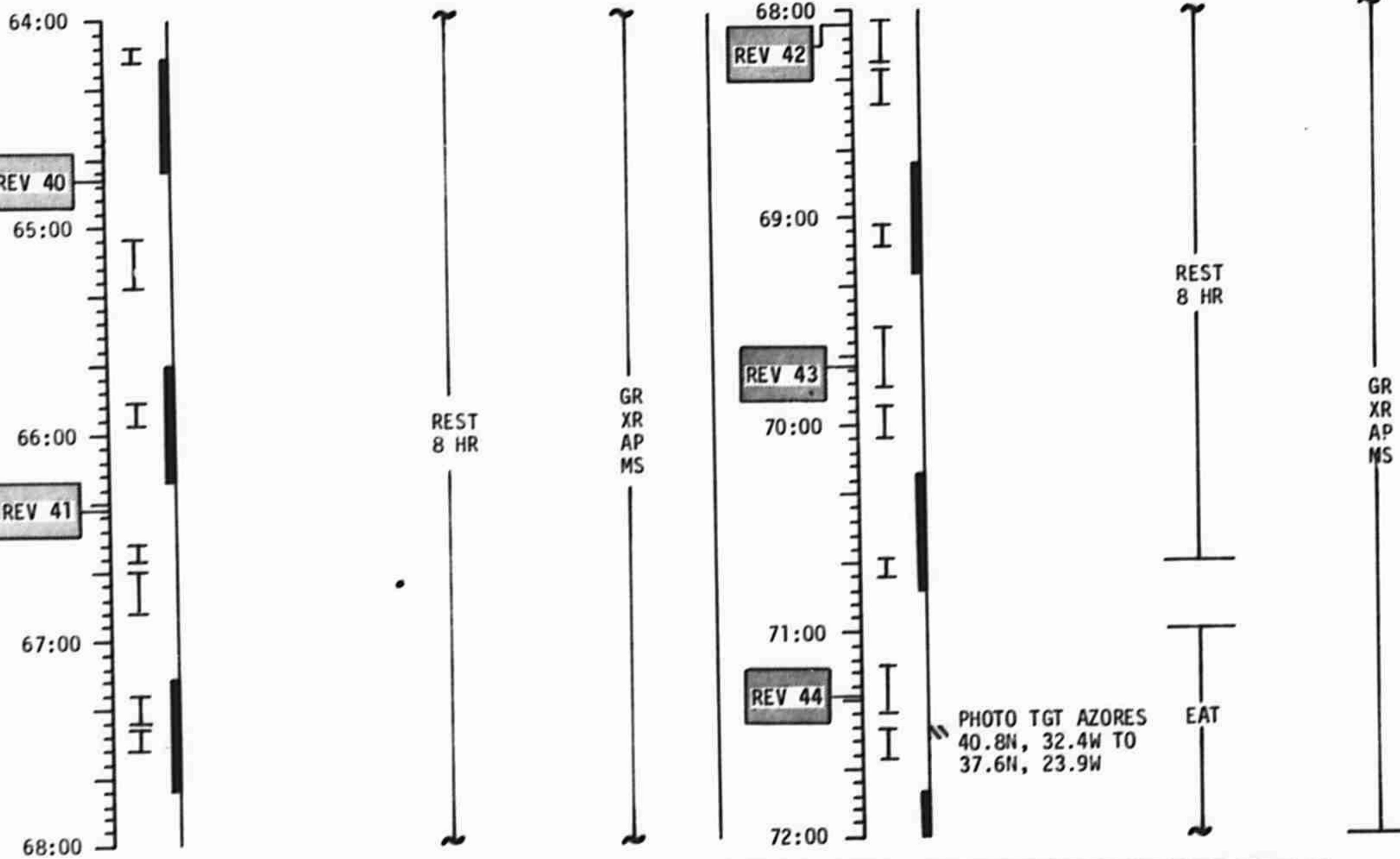
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	48:00 - 56:00	2/29-34	6-9

FLIGHT PLAN



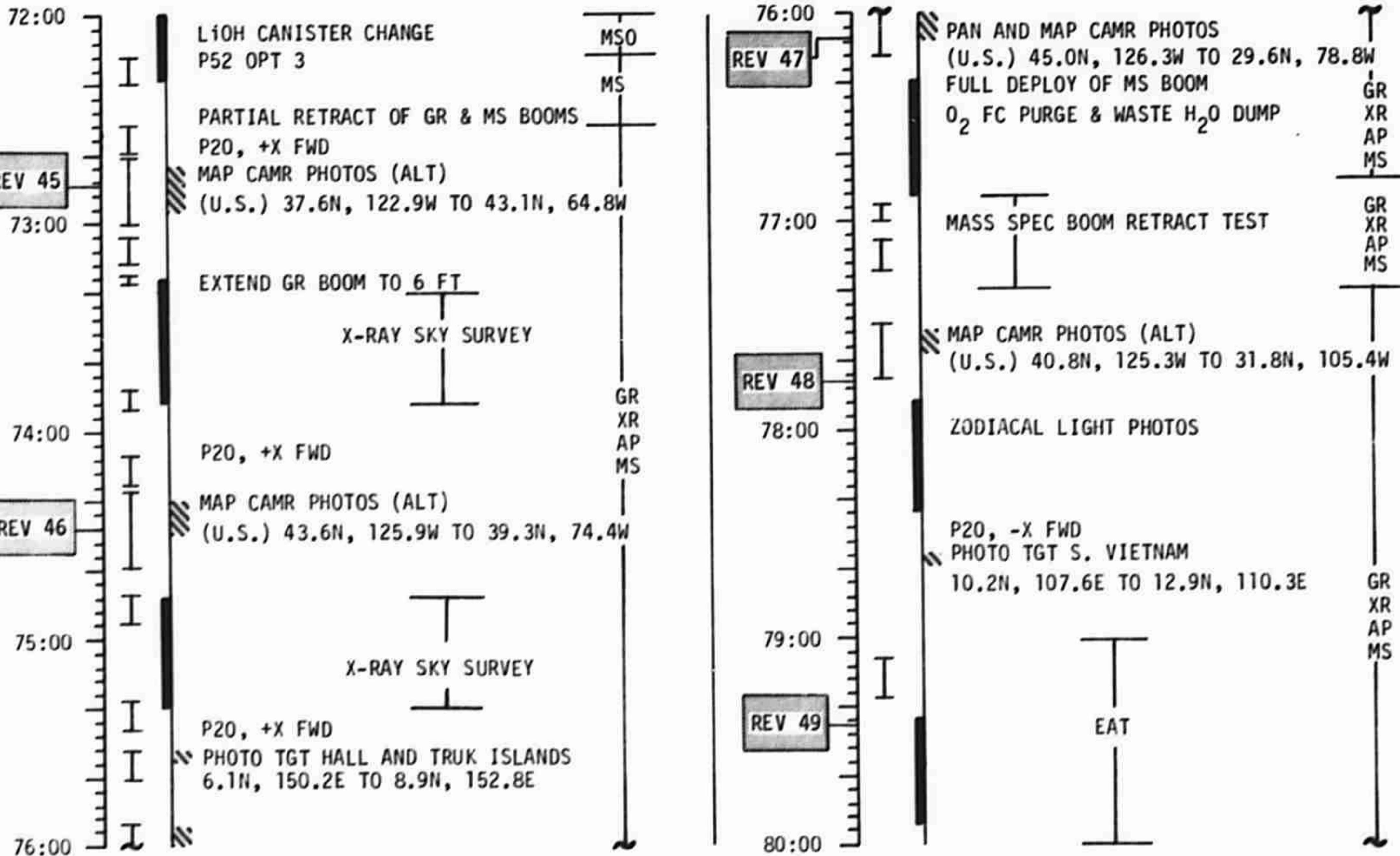
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	56:00 - 64:00	2/34-39	6-10

FLIGHT PLAN



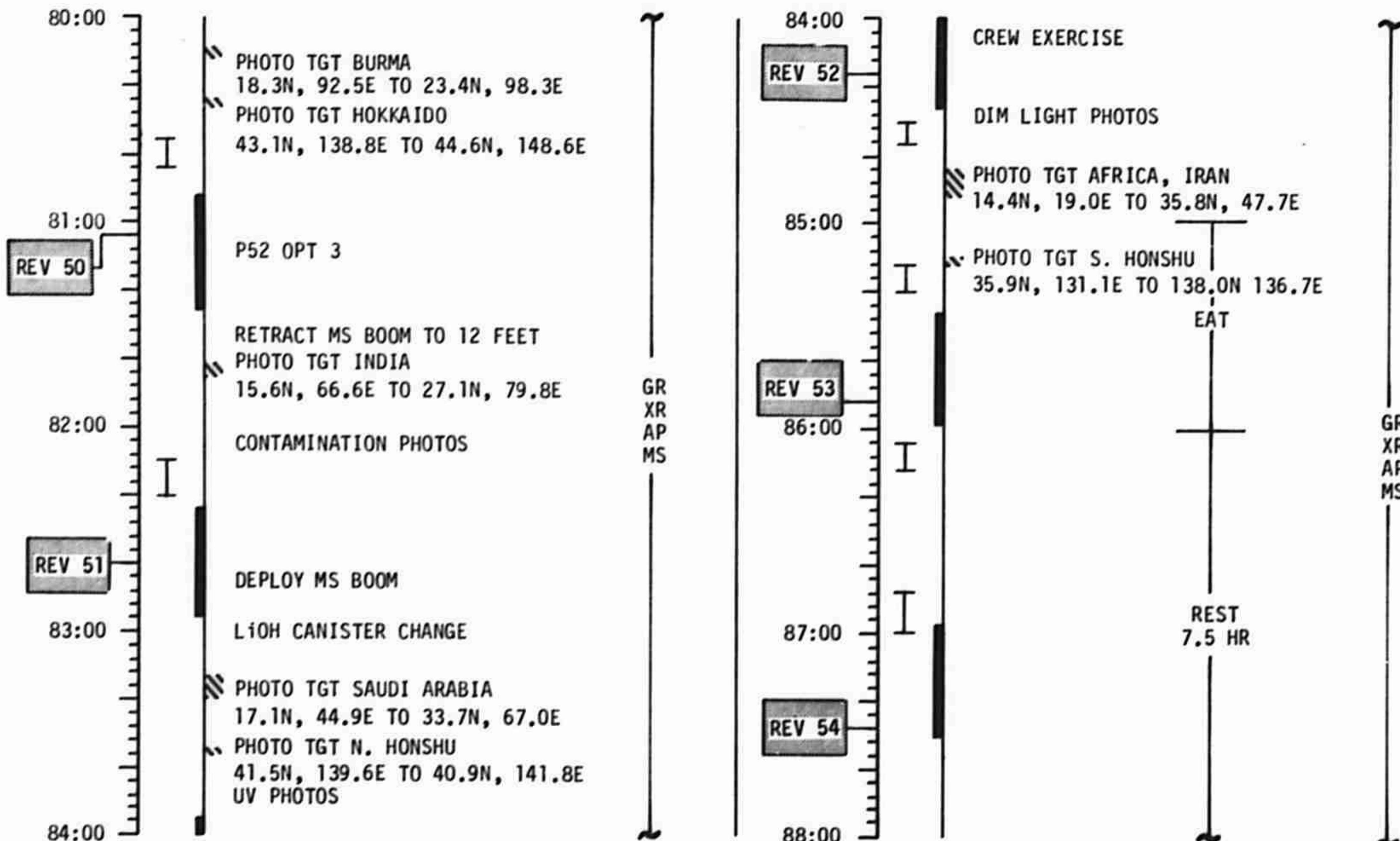
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	64:00 - 72:00	2/39-44	6-11

FLIGHT PLAN



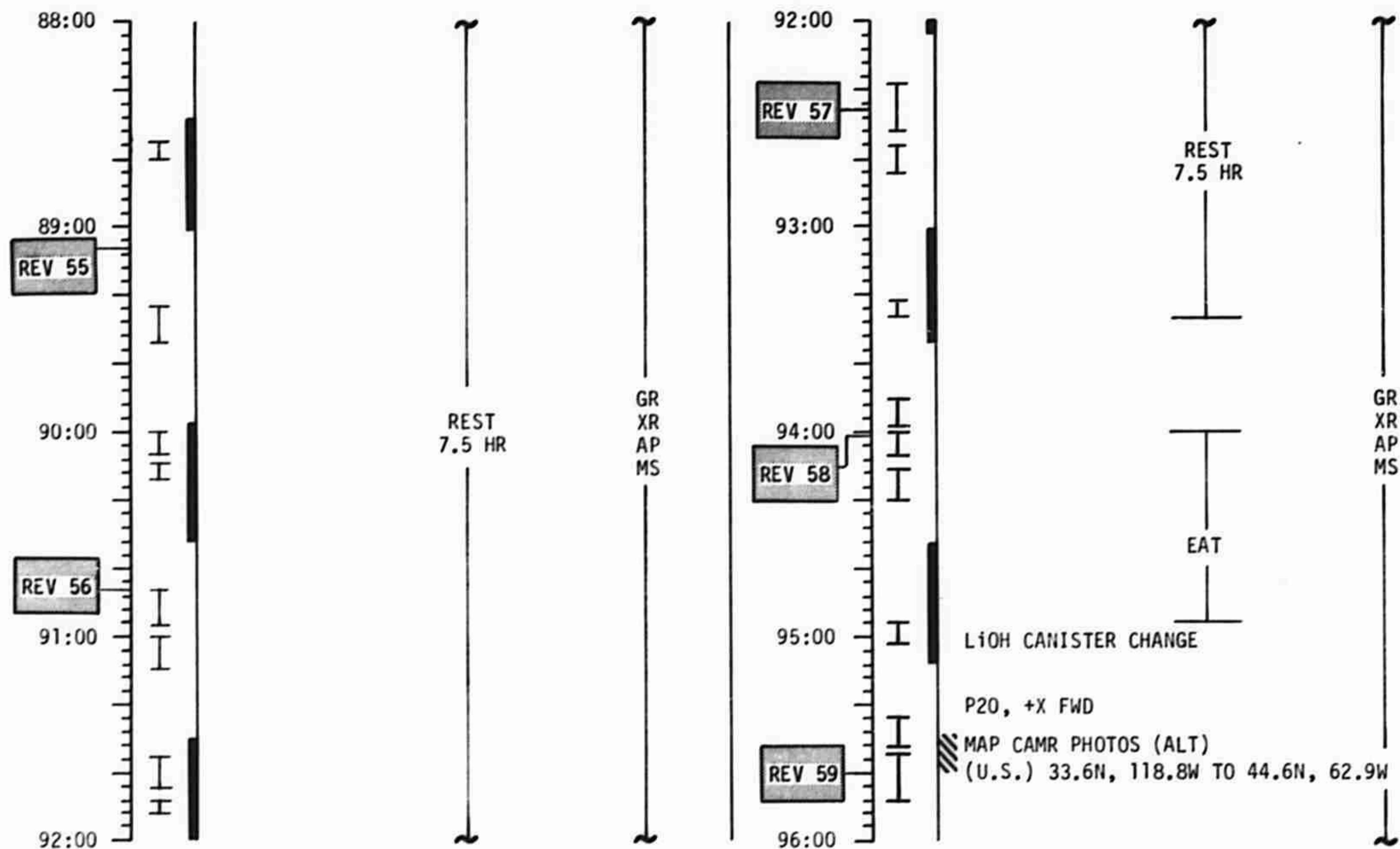
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	72:00 - 80:00	3/44-49	6-12

FLIGHT PLAN



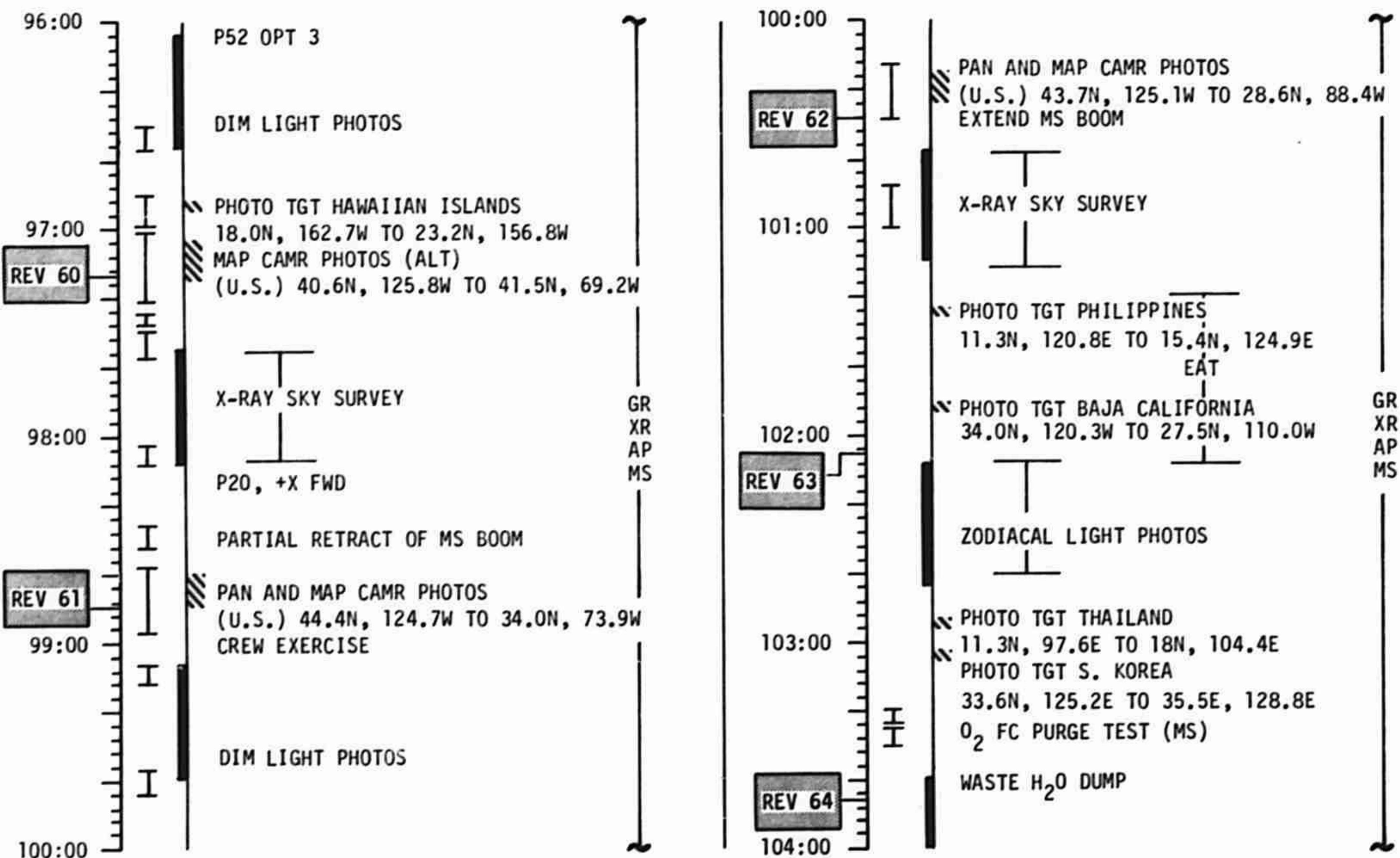
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	80:00 - 88:00	3/49-54	6-13

FLIGHT PLAN

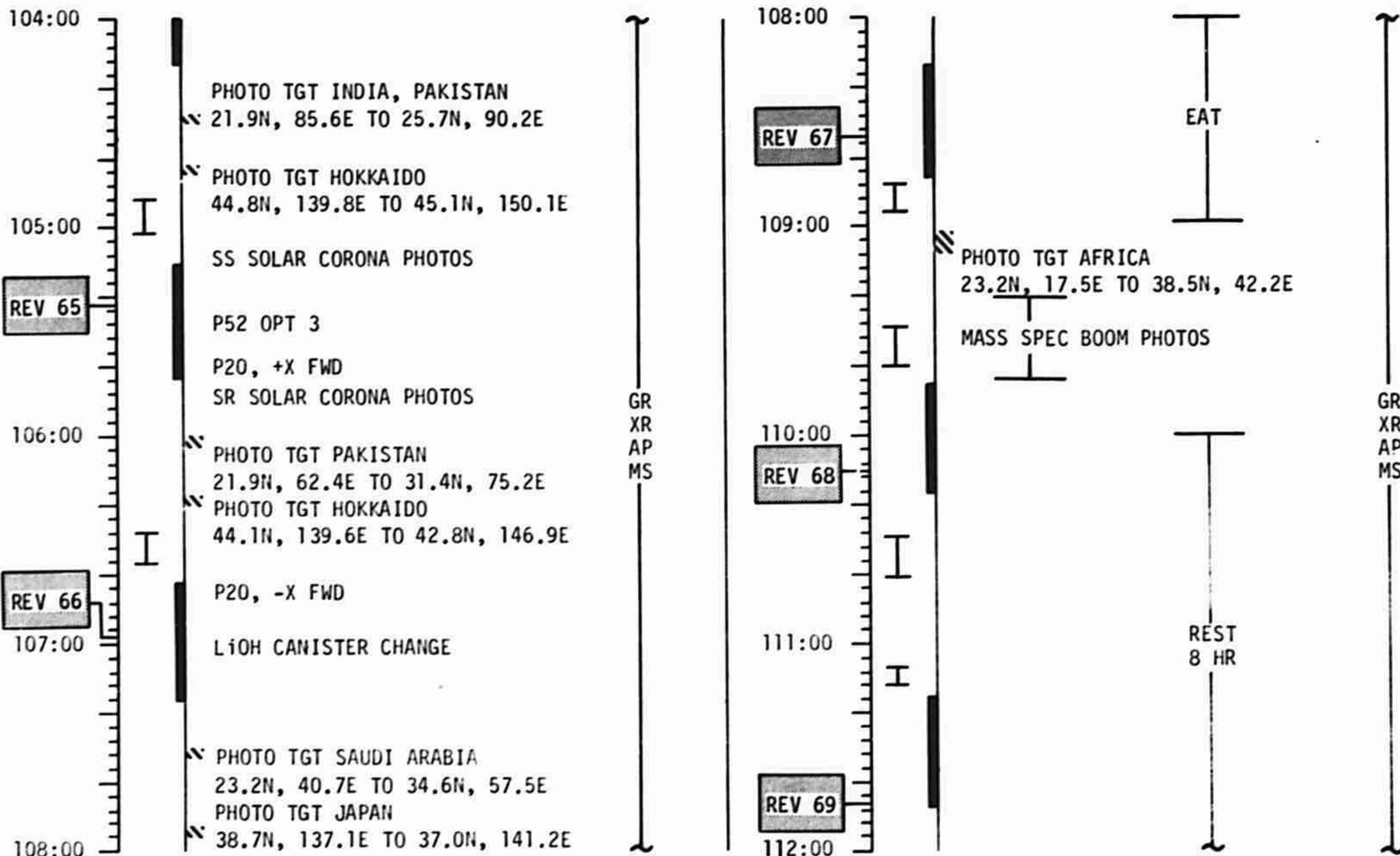


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	88:00 - 96:00	3-4/54-59	6-14

FLIGHT PLAN

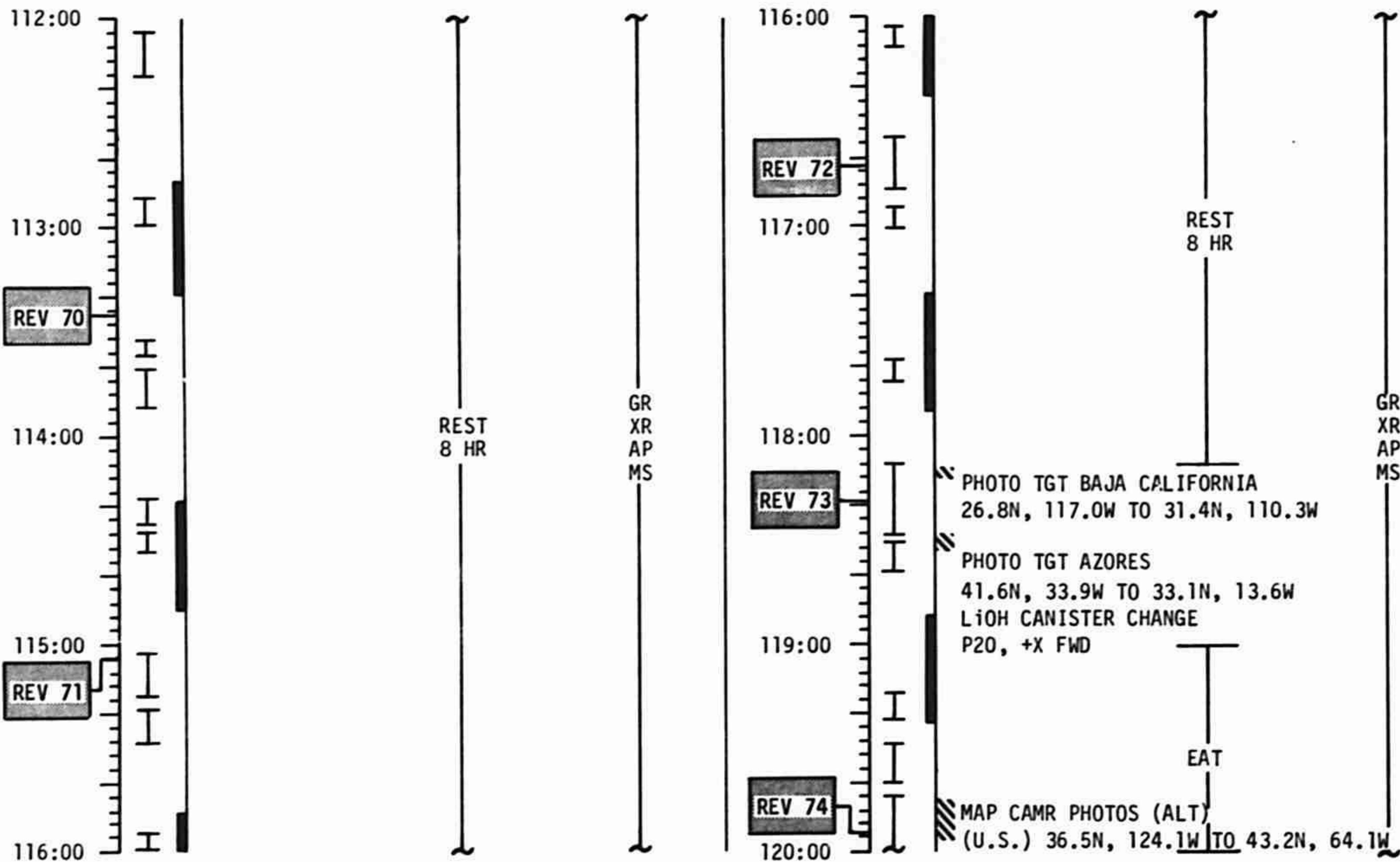


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 104:00	4/59-64	6-15



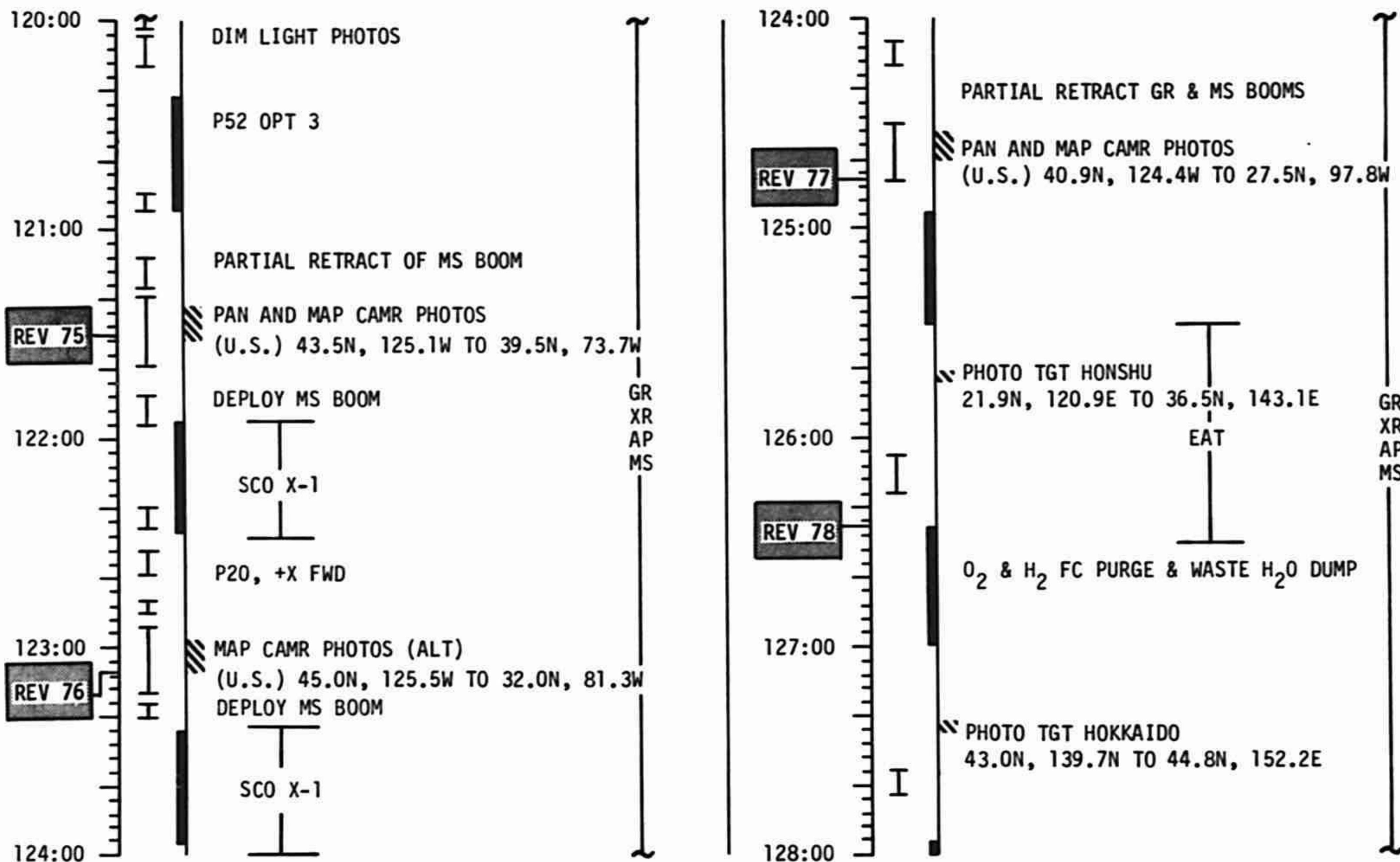
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	104:00 - 112:00	4/64-69	6-16

FLIGHT PLAN



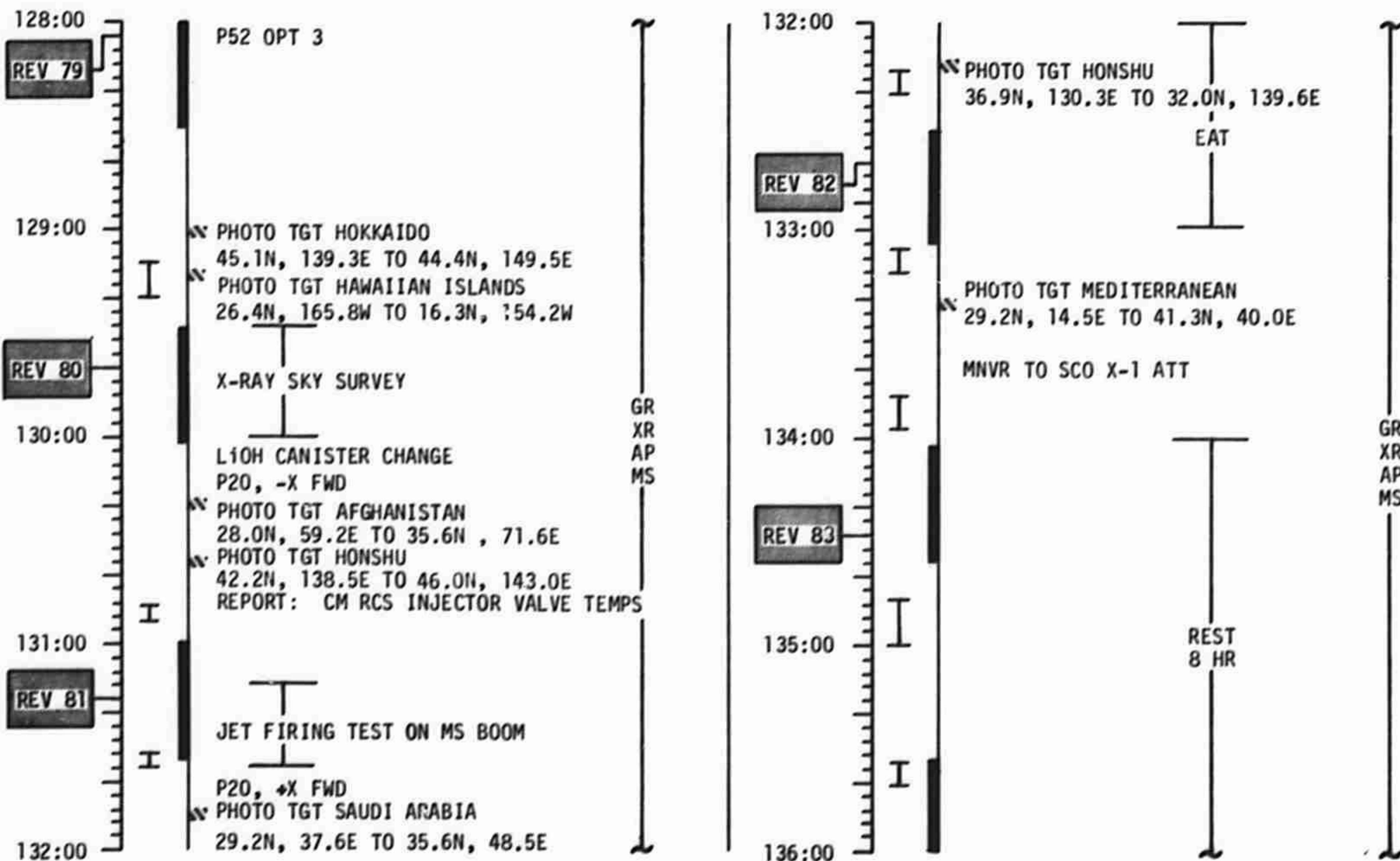
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	112:00 - 120:00	4-5/69-74	6-17

FLIGHT PLAN



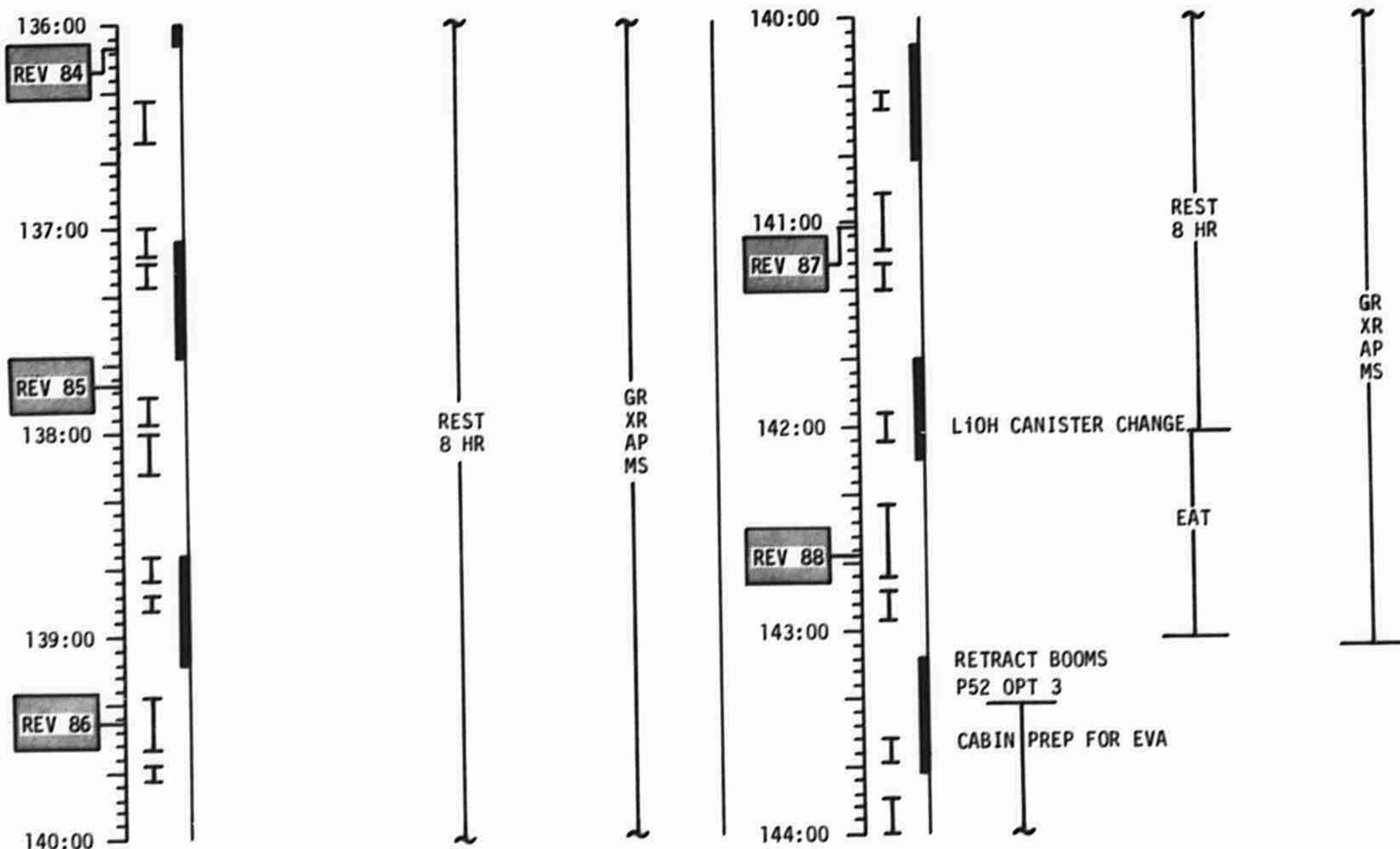
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 128:00	5/74-78	6-18

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	128:00 - 136:00	5/78-83	6-19

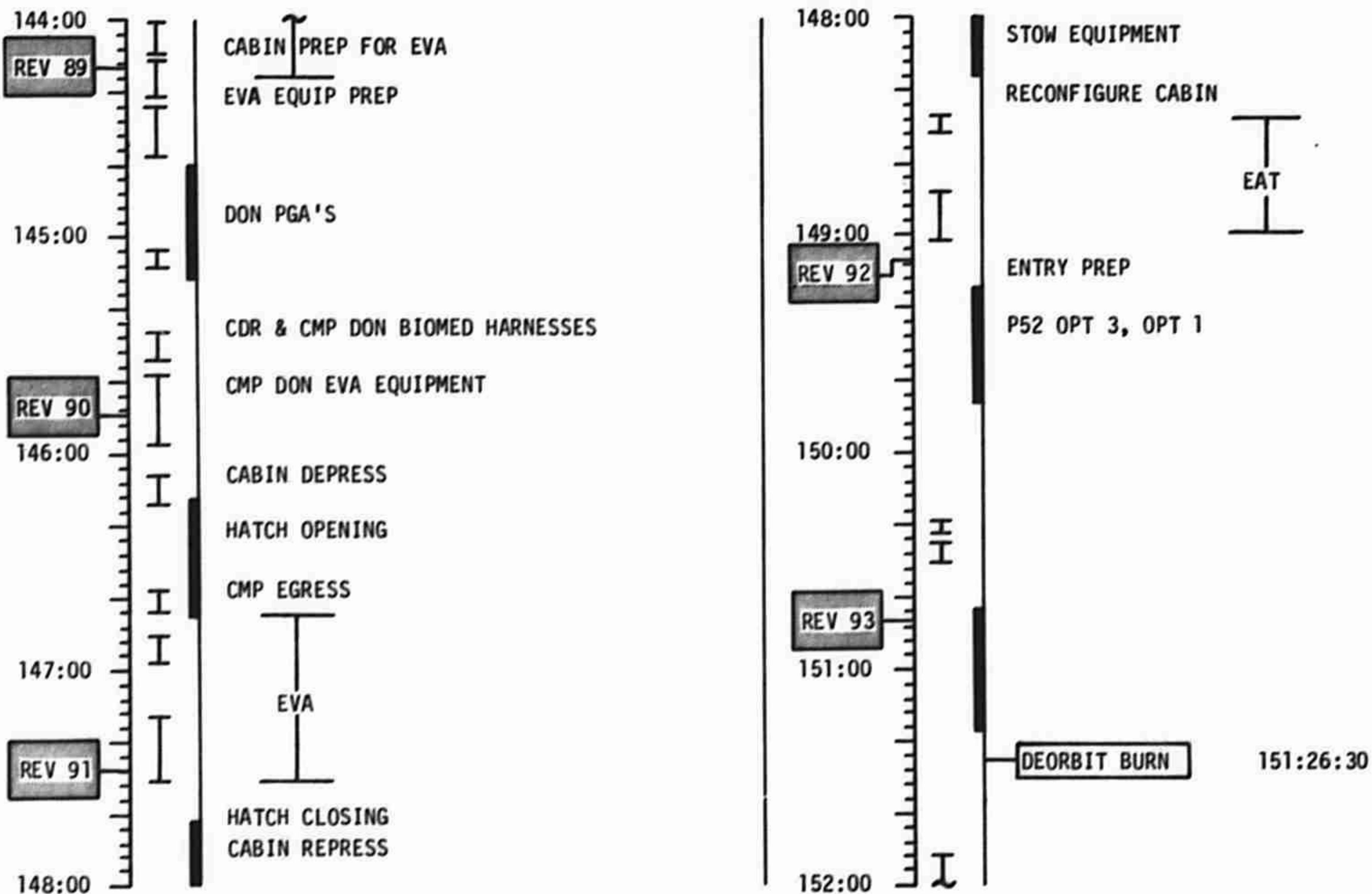
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	136:00 - 144:00	5-6/83-88	6-20

EARTH ALTERNATE

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 152:00	6/88-93	6-21

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CSM ONLY ALTERNATE MISSION

Assumptions

- 1) A nominal TLI Burn has been achieved by the S-IVB.
- 2) A systems failure during T.D.&E or a LM Jettison during TLC has resulted in a CSM-Only Alternate Mission.

Constraints

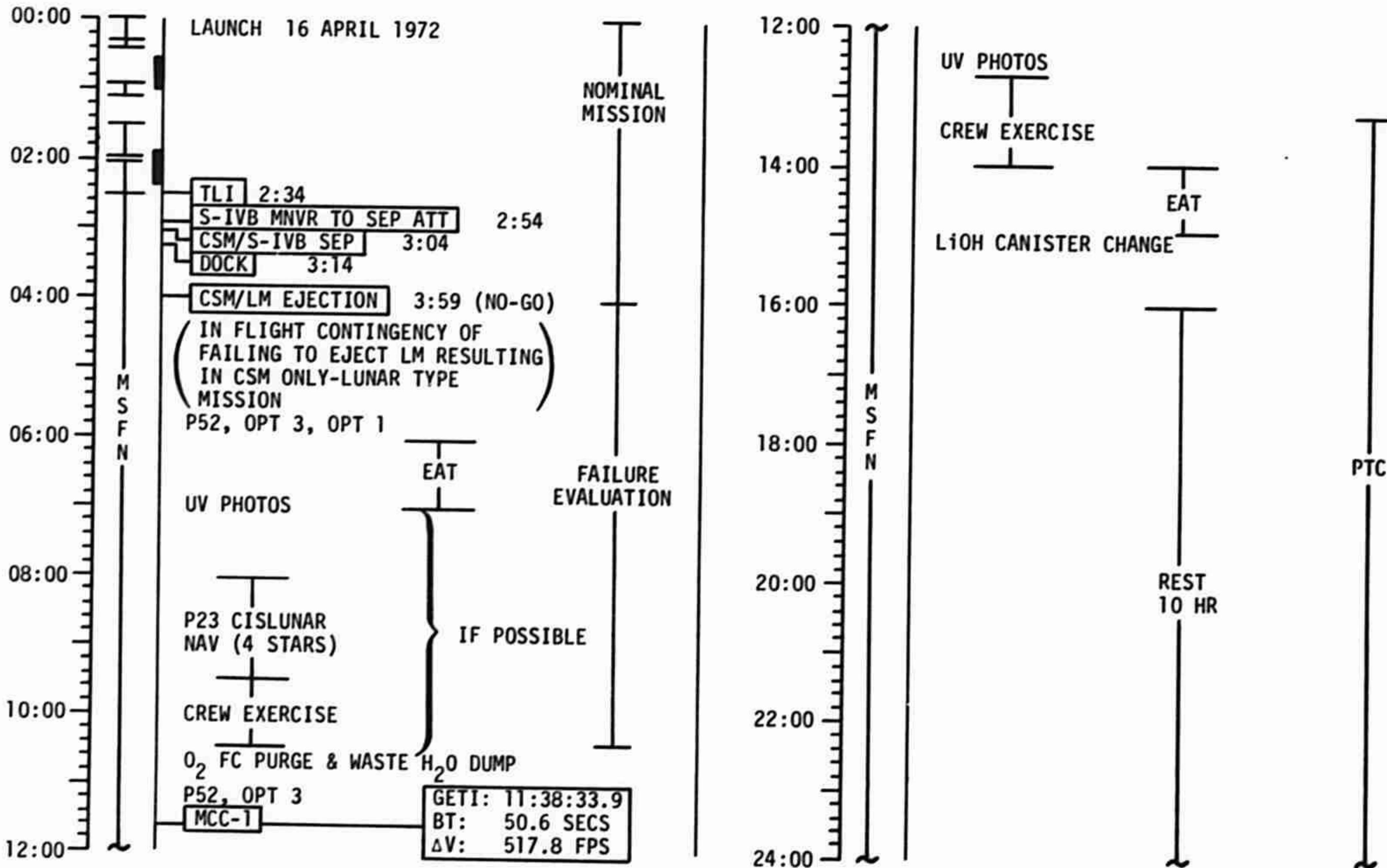
- 1) SPS midcourse burn to return to a free return trajectory.
- 2) Adherence to the nominal flight plan as much as possible.
- 3) Maximize inclination in lunar orbit within SPS limits.
- 4) Maintain any rev TEI Capability.
- 5) Obtain sim bay experiments data.

Sequence of Events

This alternate mission is initiated by a failure to eject the LM at T.D.&E or a LM Jettison during TLC. An SPS midcourse will be performed to return to a free return trajectory. The CSM will perform an LOI and Circularization Burn sequence with an inclination of approximately twenty degrees. Six days are planned in lunar orbit operating all the sim bay equipment and expending all the pan and mapping camera film. The shaping burn, sub-satellite jettison, and the TEI burn will follow a sequence similar to the nominal mission.

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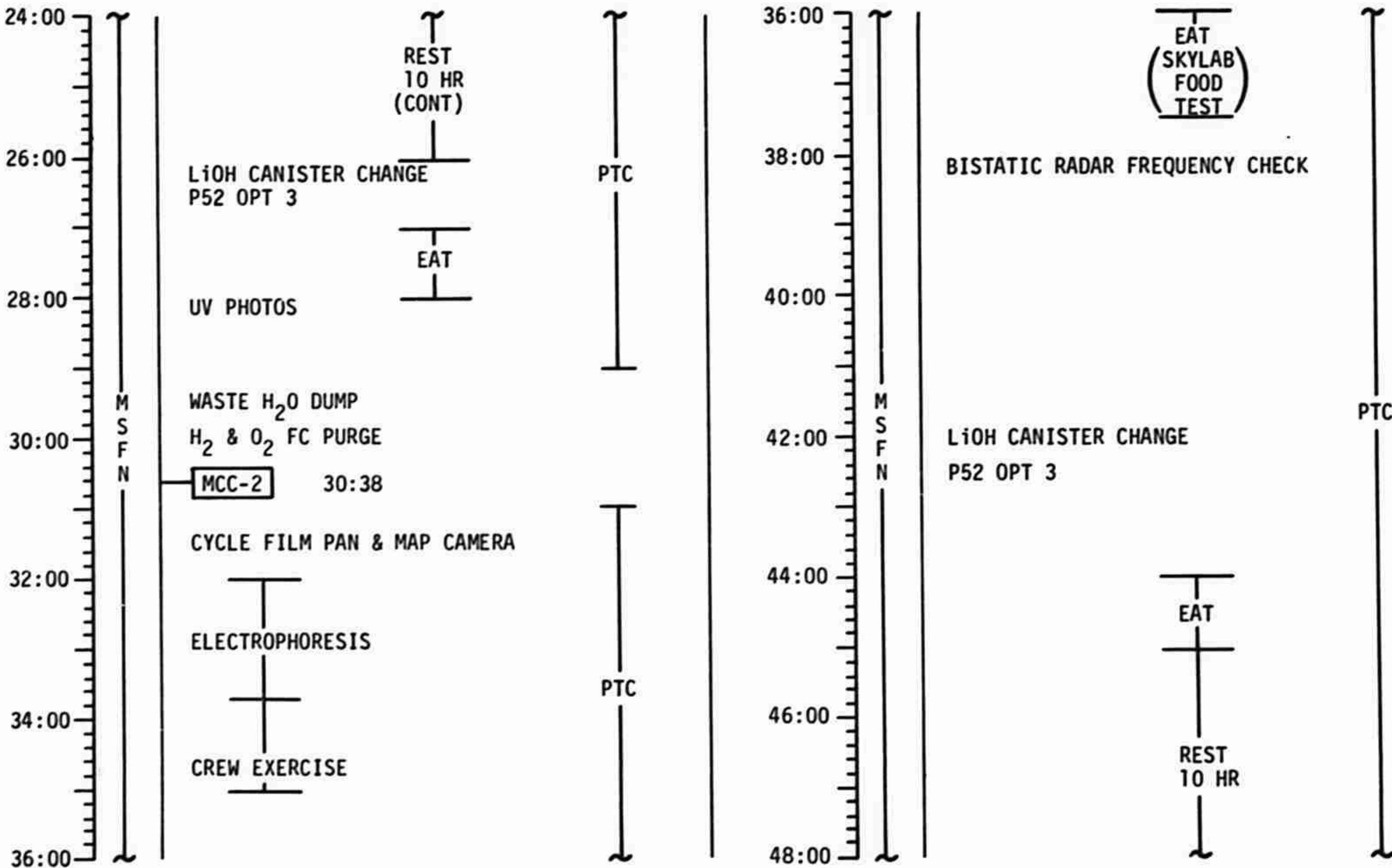
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	00:00 - 24:00	1/TLC	6-25

CSM ONLY ALTERNATE

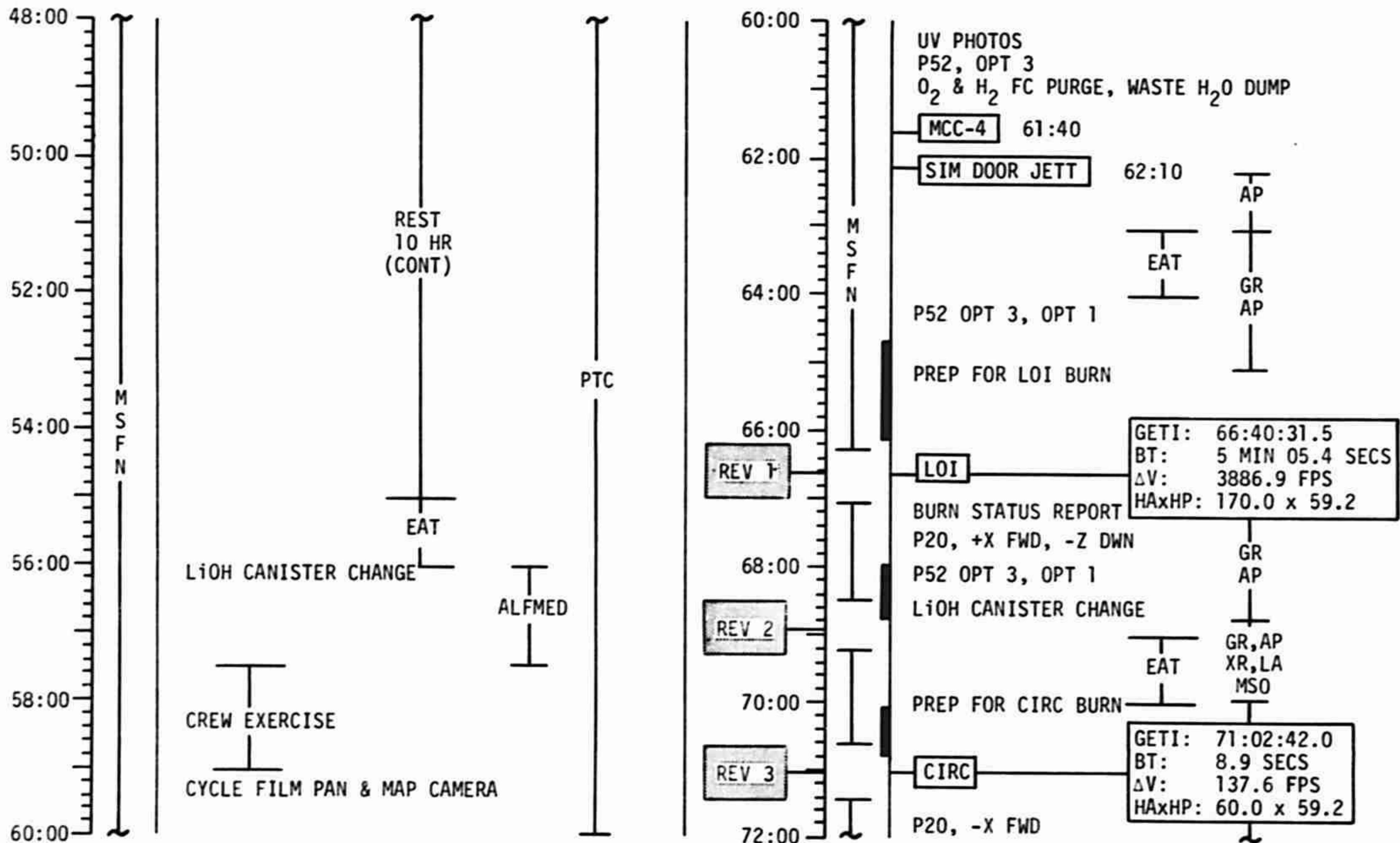
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	24:00 - 48:00	2/TLC	6-26

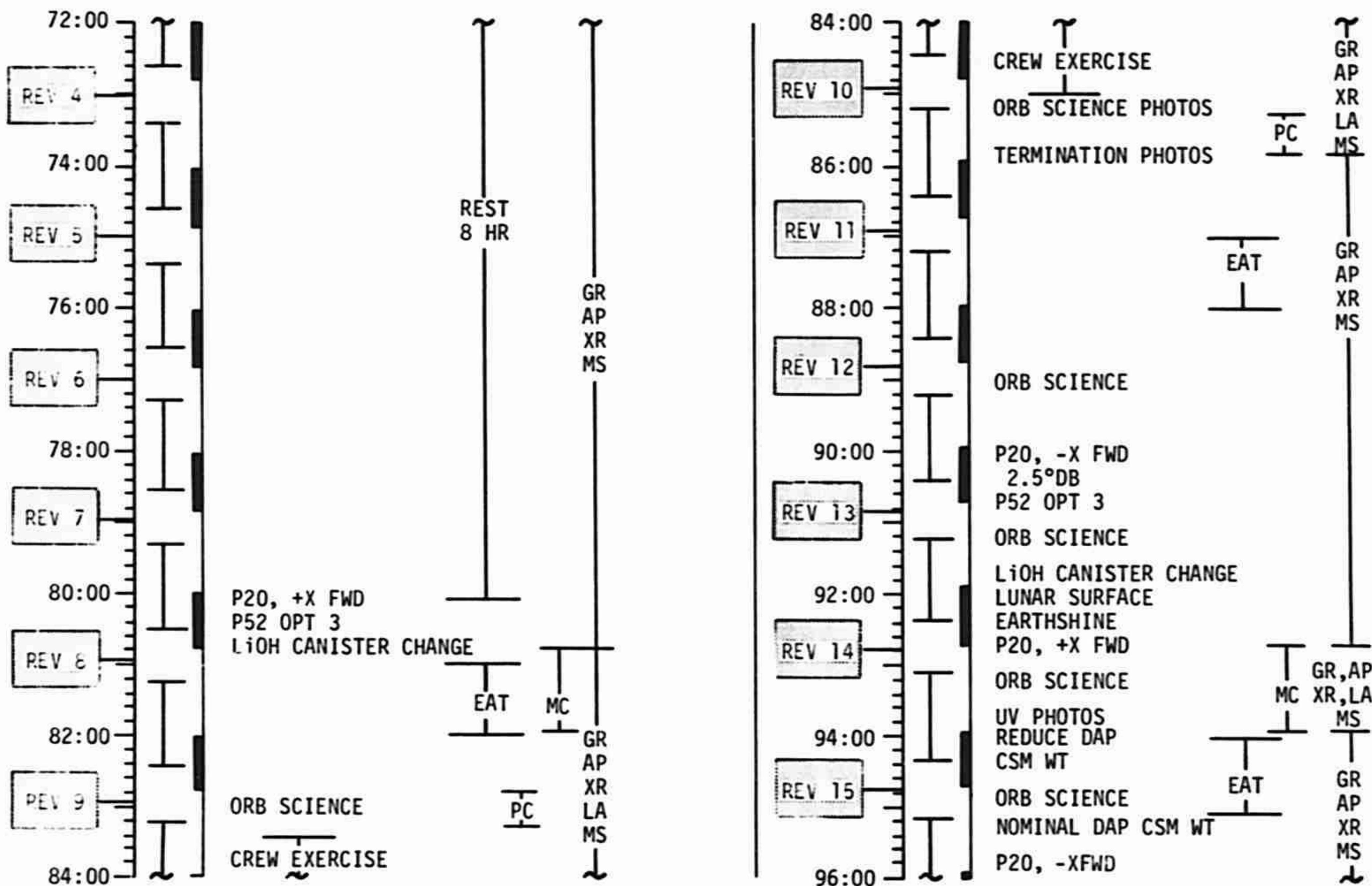
CSM ONLY ALTERNATE

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	48:00 - 72:00	3/1-3	6-27

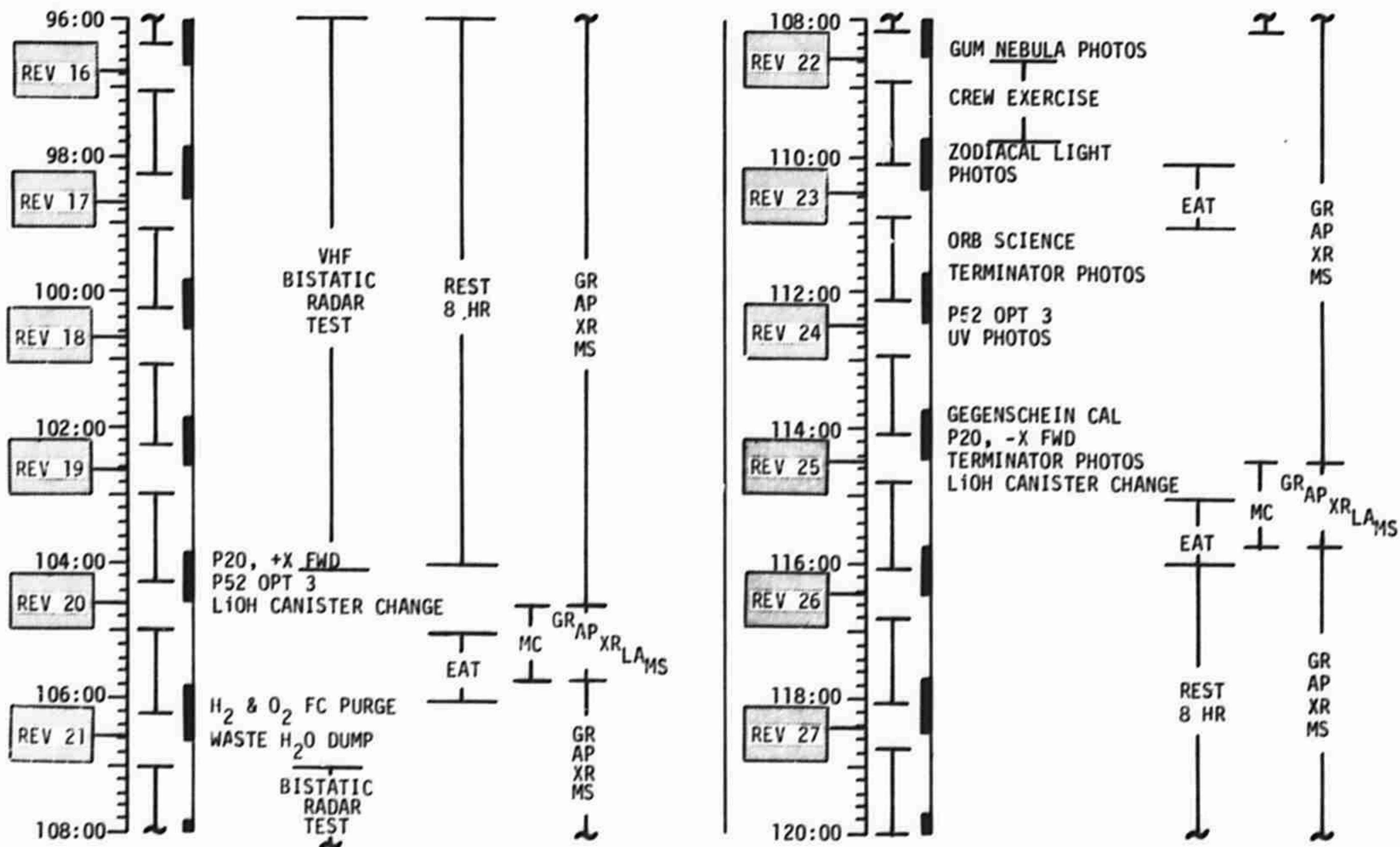
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	72:00 - 96:00	4/3-15	6-28

CSM ONLY ALTERNATE

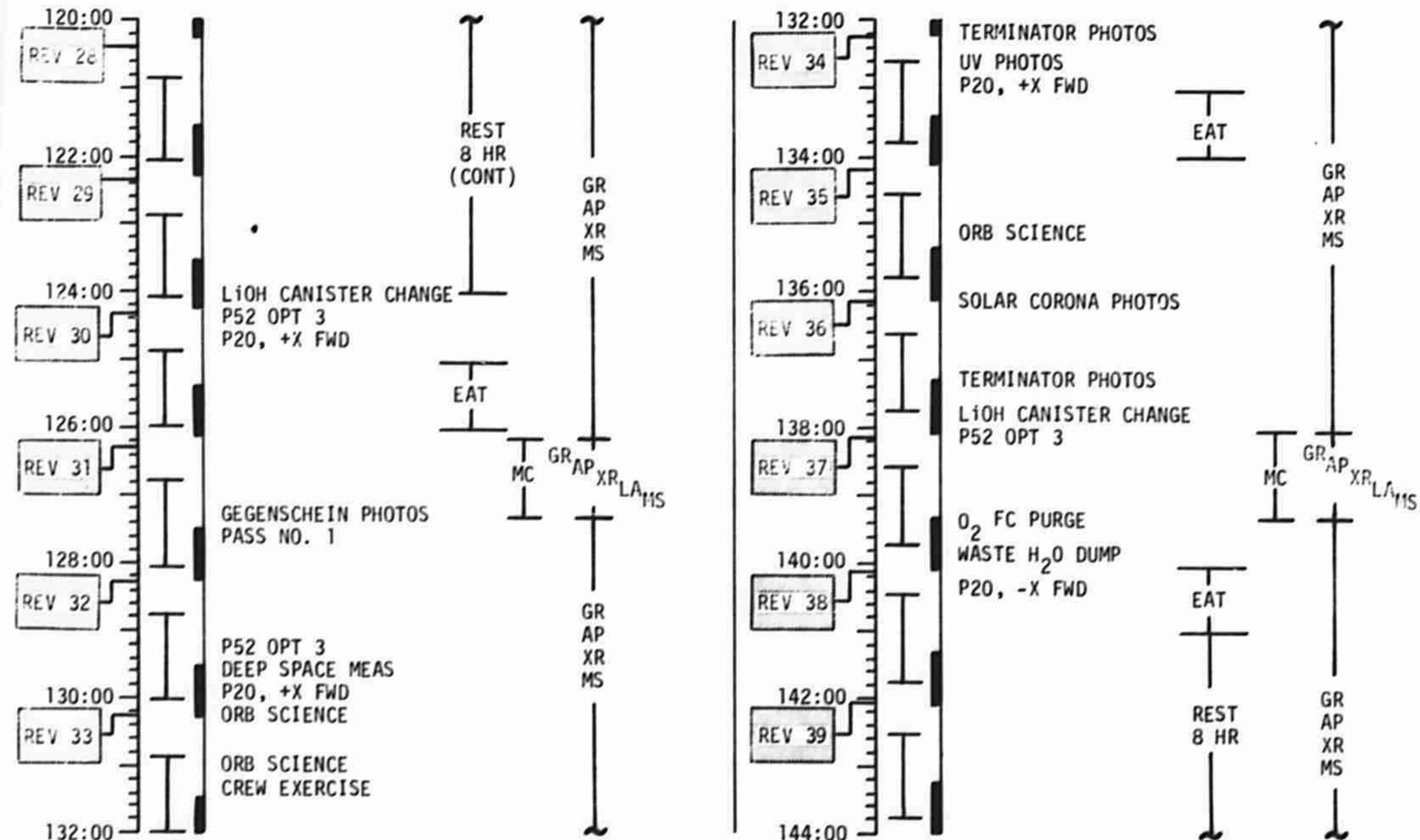
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 120:00	5/15-27	6-29

CSM ONLY ALTERNATE

FLIGHT PLAN

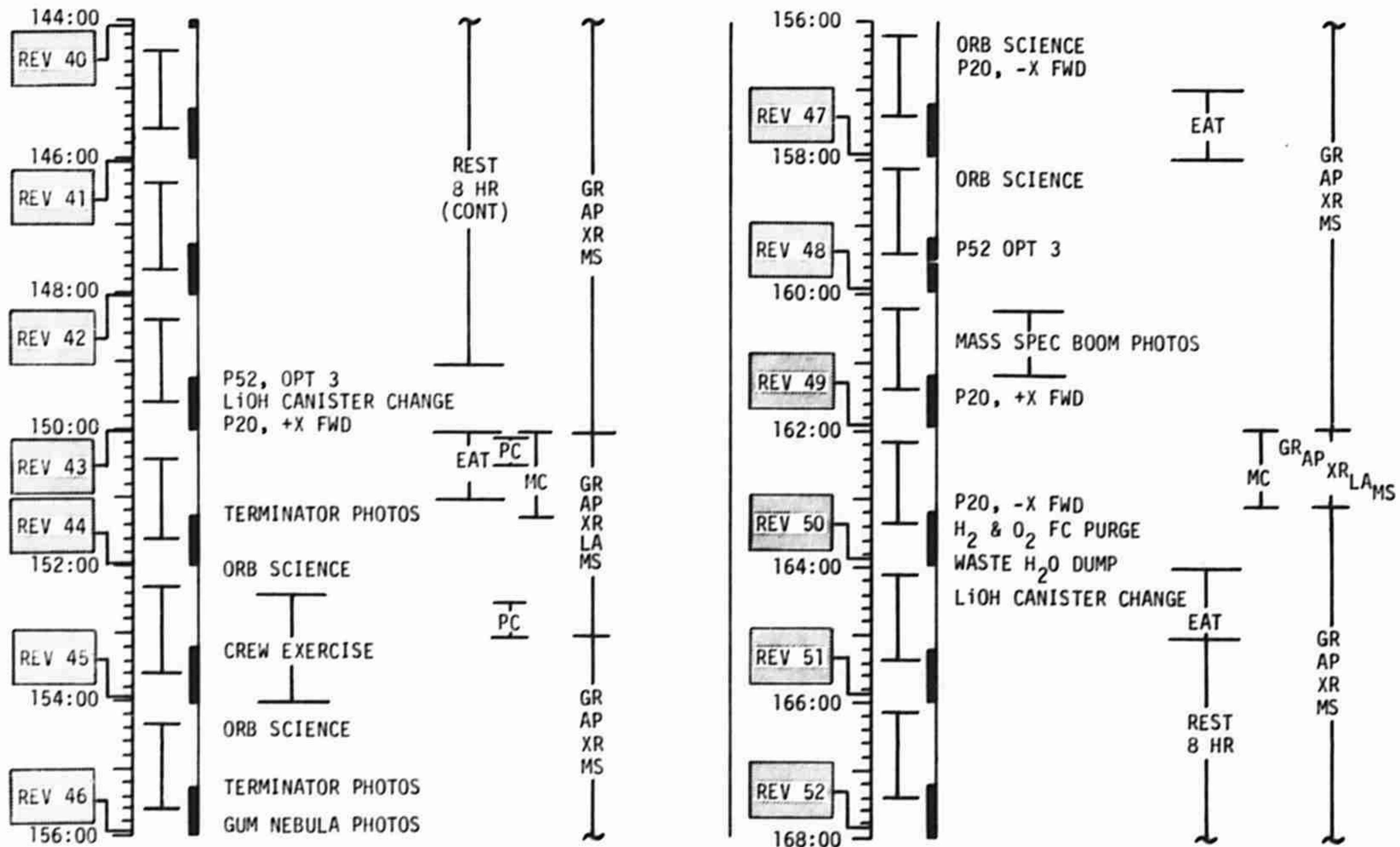


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 144:00	6/27-39	6-30

APOLLO 16 FLIGHT PLAN

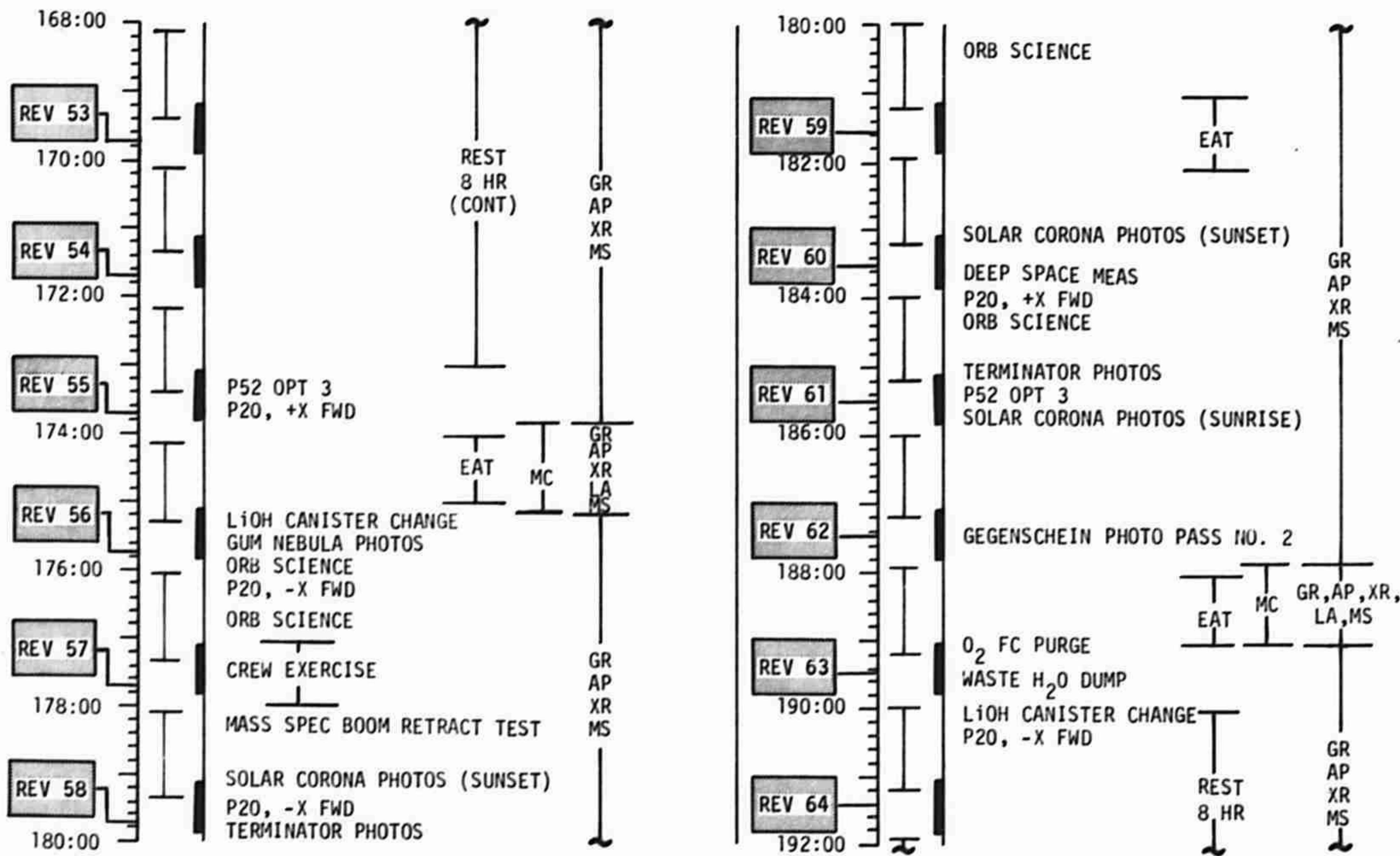
FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 168:00	7/40-52	6-31

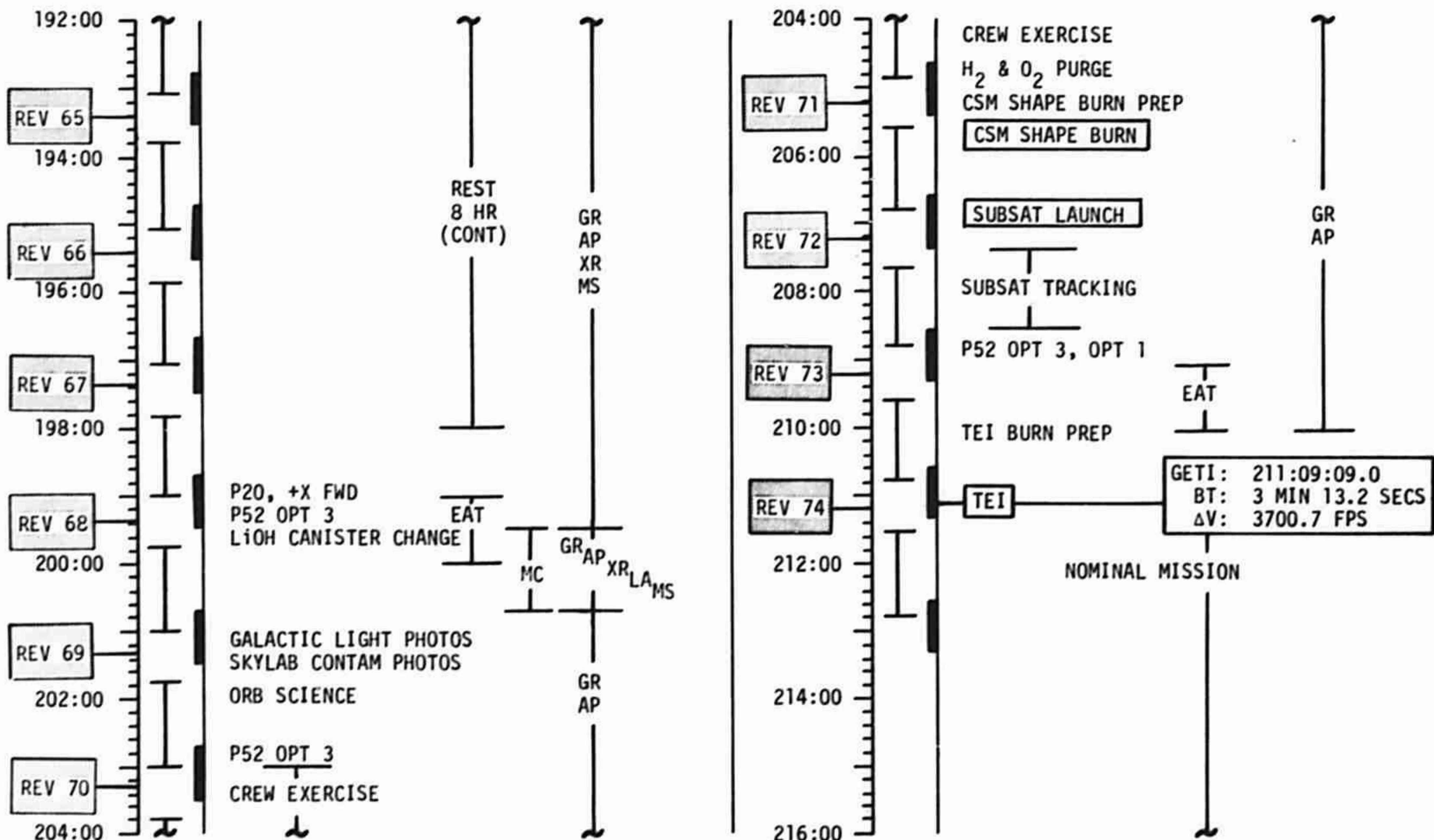
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	168:00 - 192:00	8/52-64	6-32

CSM ONLY ALTERNATE

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	192:00 - 216:00	9/64-TEC	6-33

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CSM/LM ALTERNATE MISSION POST LOI (GOOD DPS)

Assumptions

- 1) Nominal LOI and DOI Burns have been achieved by the SPS.
- 2) A systems failure while in lunar orbit has resulted in a NO/GO for landing.

Constraints

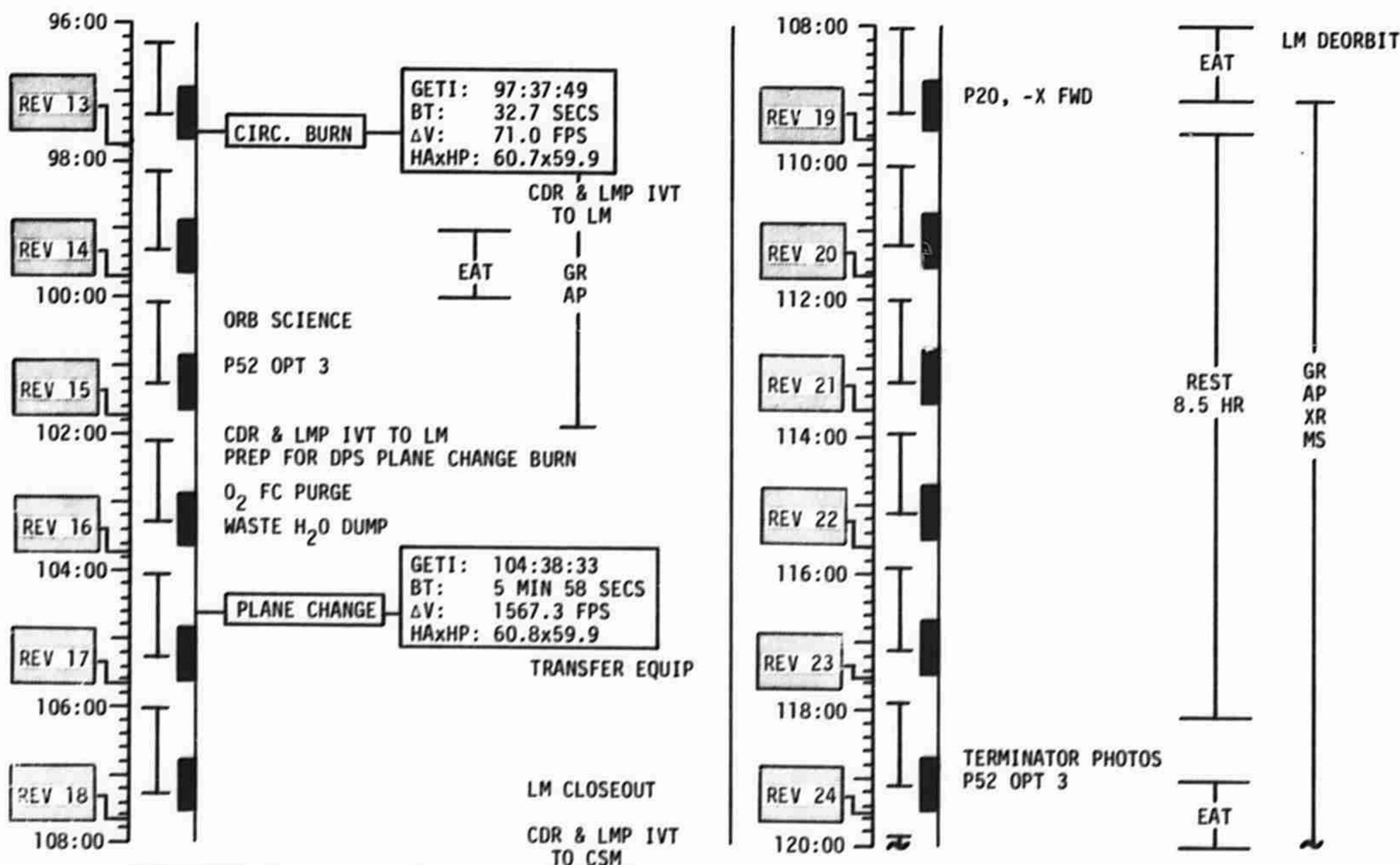
- 1) DPS Circularization Burn at approximately nominal Circularization burn time.
- 2) DPS Plane Change Burn to match LPO ground track with CSM only alternate Mission (20° inclination).
- 3) LM Jettison to Lunar impact.
- 4) Adhere to nominal flight plan as much as possible.
- 5) Obtain sim bay experiments data.
- 6) SPS TEI

Sequence of Events

This alternate Mission is initiated by a systems failure other than the DPS which will not allow a landing mission. The nominal mission is followed through DOI with a Circularization burn performed by the DPS at approximately the same time as the nominal Circularization burn. A DPS plane change burn is performed to make the LPO ground track approximately the same as the CSM only alternate mission with an inclination of twenty degrees. Six days are planned in lunar orbit operating all the sim bay experiments, with the shaping burn, sub-satellite jettison and the TEI burn following a sequence similar to the nominal mission.

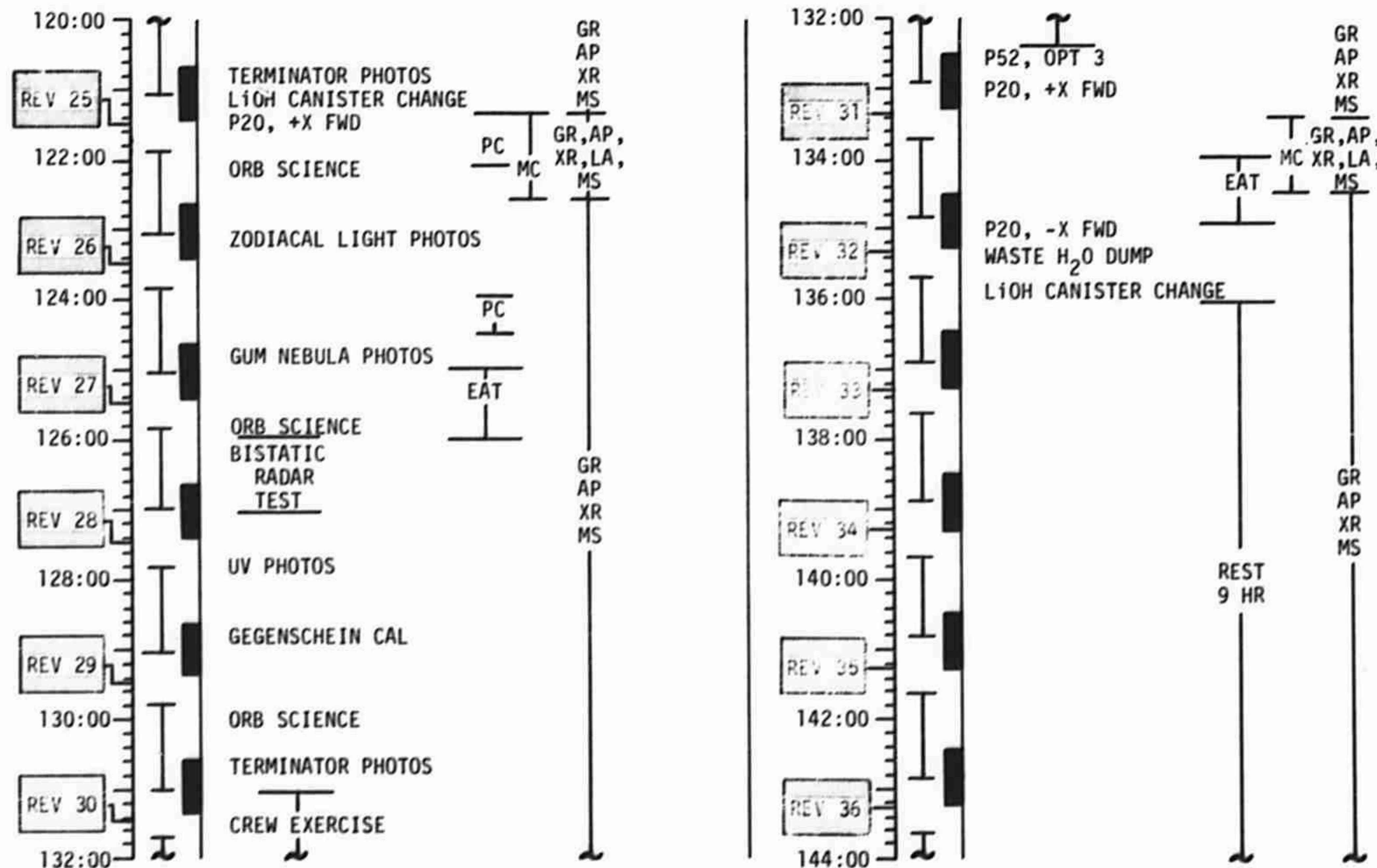
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FLIGHT PLAN



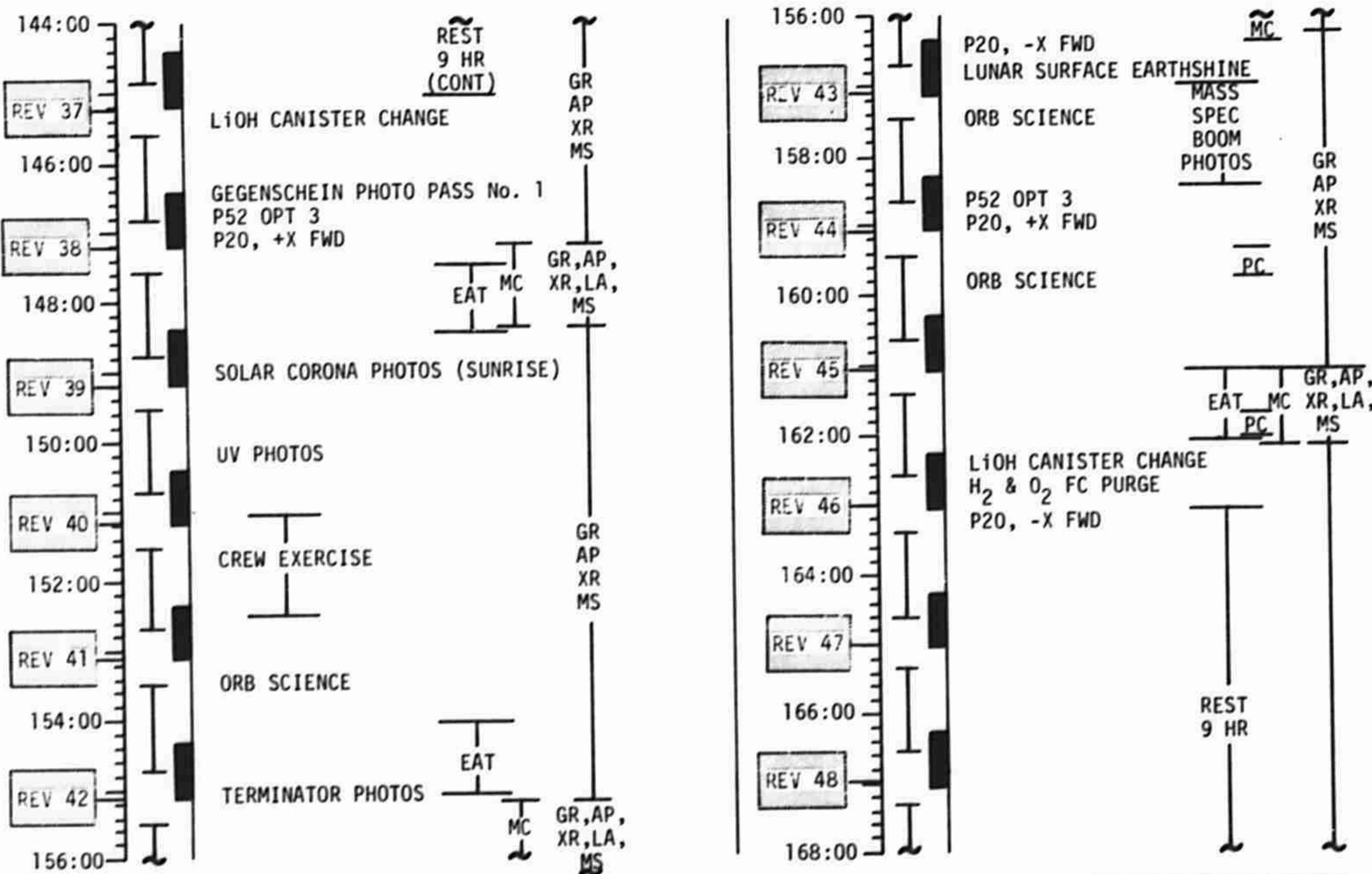
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 120:00	5/12-24	6-37

FLIGHT PLAN



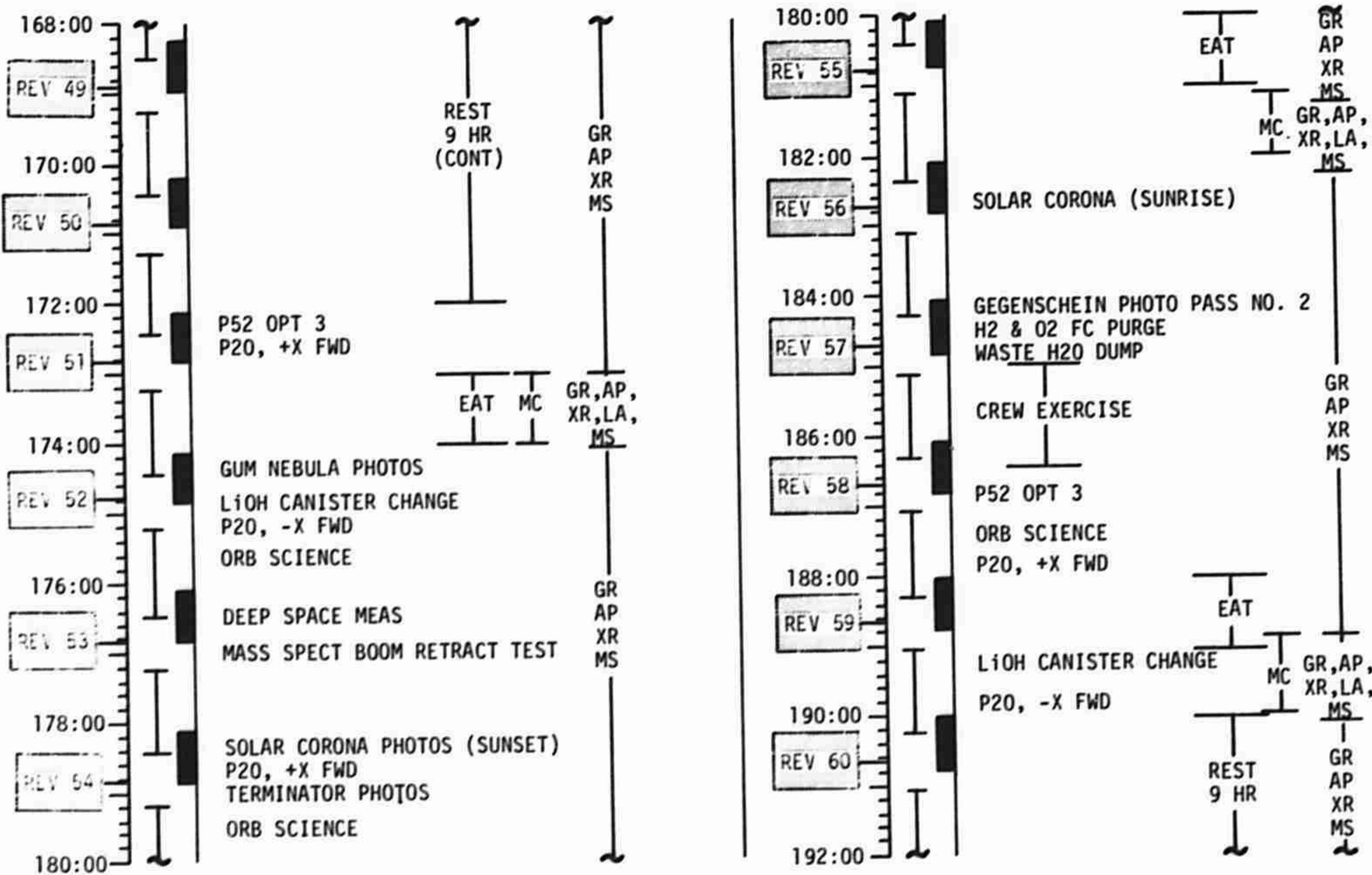
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 144:00	6/24-36	6-38

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 168:00	7/36-48	6-39

FLIGHT PLAN

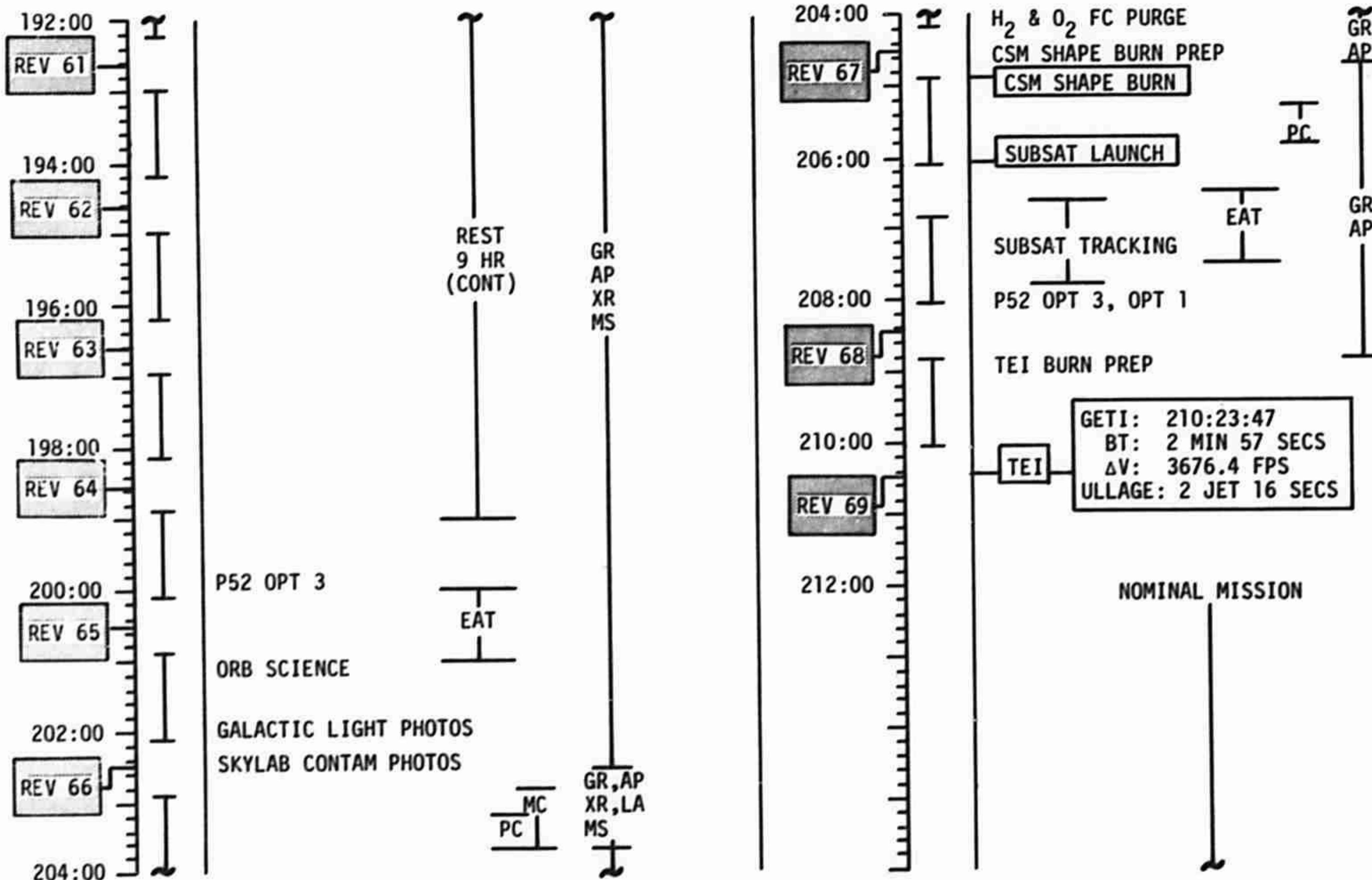


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	168:00 - 192:00	8/48-60	6-40

CSM/LM ALTERNATE

FLIGHT PLAN

POST-LOI (GOOD DPS)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	192:00 -	9/69-TEC	6-41

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CSM/LM ALTERNATE MISSION - BAD DPS

Assumptions

- 1) Nominal LOI and DOI Burns have been achieved by the SPS.
- 2) A systems failure while in lunar orbit has resulted in a NO/GO for landing.

Constraints

- 1) Jettison LM to a lunar impact.
- 2) Circularize to a 60 nm orbit.
- 3) Adhere to the nominal flight plan as much as possible.
- 4) Obtain sim bay experiments data.

Sequence of Events

This alternate mission is initiated by a systems failure with the DPS which will not allow a landing mission. The LM is jettisoned and the CSM Circularizes at approximately the nominal time; at which time the nominal flight plan will be followed.

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