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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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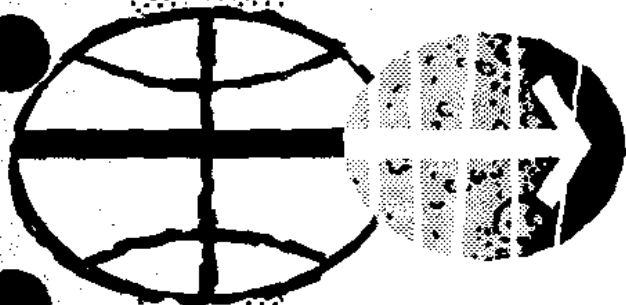
# CHANGE A FLIGHT PLAN

PREPARED BY

FLIGHT PLANNING BRANCH  
CREW PROCEDURES DIVISION

MANNED SPACECRAFT CENTER  
HOUSTON, TEXAS

MARCH 27, 1972



APOLLO 16

APRIL 16, 1972

FLIGHT PLAN

CHANGE A

MARCH 27, 1972

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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)

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BW	black and white (Film 3400)
BWD	backward
BWL	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
CPLEE	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

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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	discriminator
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

## 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

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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 <sub>2</sub>	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 <sub>2</sub> 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
LBR	low bit rate (TLM)
LB or lb	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

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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)

## ABBREVIATIONS (CONT)

MS	mass spectrometer
MSFN	Manned Space Flight Network
MSO	mass spectrometer outgasing
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

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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

## 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

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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 <sub>IMU</sub>	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	XPNDR transponder
Y	yaw
YDOT	rate of change along the Y-axis
ZDOT	rate of change along the Z-axis
ZPN	impedance pneumogram
$\Delta H$	altitude change (difference)
$\Delta P$	pressure change (difference)
$\Delta R$	position change (difference)
$\Delta V$	velocity change (difference)
$\Delta VC$	velocity change at engine cutoff
$\Delta VT$	velocity change loaded pre-burn
#	frame number(s) (for camera data)
$\emptyset$	latitude
$\lambda$	longitude

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### PHOTOGRAPHIC NOMENCLATURE

AAA/BBB/CCC/DDD - EEE, EEE, (fGG, HHH, III) JJ fps or JJ 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, $\infty$ ) 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, $\infty$ ) 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.

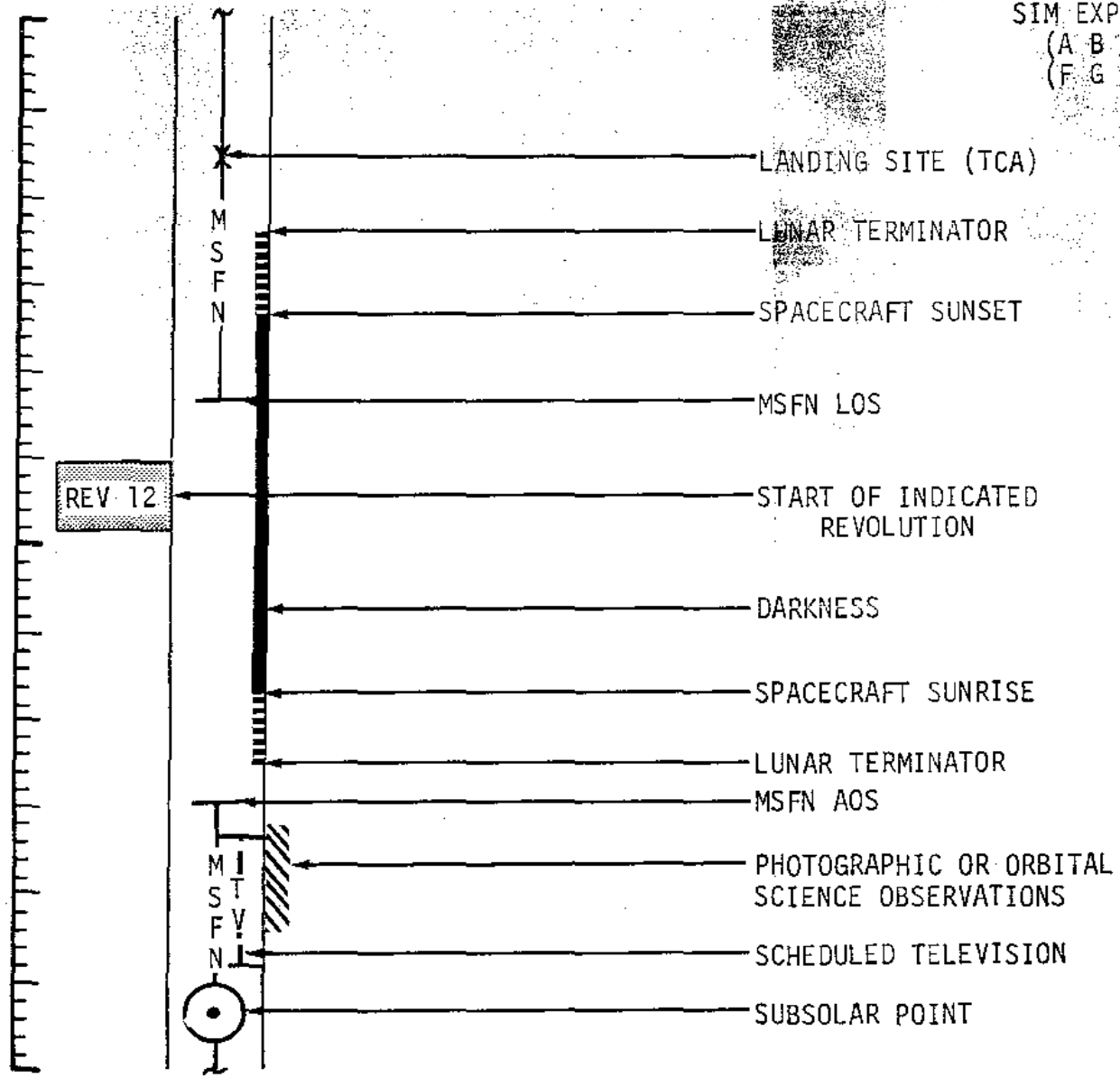
NIKON (NK) Two positions

parallel to +X axis

+X axis +30°

SYMBOL NOMENCLATURE

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



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 - -X FWD * NON SIM	0 CLOSED 1 OPEN/EXTD 2 OPEN/RETR	0 RETR 1 DPLY 2 PARTIAL	0 RETR 1 DPLY 2 PARTIAL	0 CLOSED 1 OPEN
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 1 STBY 2 ON 3 BOOST	0 OFF/OFF 1 STBY/OFF 2 ON/ON 3 STBY/ON 4 ON/OFF 5 ON (IMC OFF)/OFF	0 OFF 1 ON/OFF 2 ON/ON	0 OFF/OFF 1 STBY/OFF 2 ON/ON 3 ON/STBY 4 STBY/STBY	0 OFF/OFF 1 OFF/STBY 2 ON/ON 3 OFF/ON 4 ON/STBY

## SIM EXP STATUS

(ABCDE)

(FGHIJ)

SECTION 1 - FLIGHT PLAN NOTES

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T-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<sub>2</sub> 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<sub>2</sub> and 40% N<sub>2</sub>. 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<sub>2</sub> 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 FDAI, at launch, will display roll 162° (launch azimuth +90°), 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  $90^\circ$  or  $270^\circ$ .
- (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  $0^\circ$ , pitch  $0^\circ$ , and yaw  $0^\circ$ , except roll  $180^\circ$  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  $0^\circ$ , pitch  $0^\circ$ , and yaw  $0^\circ$ .
- (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  $0^\circ$ , pitch  $0^\circ$ , and yaw  $0^\circ$  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  $0^\circ$ , pitch  $180^\circ$ , and yaw  $0^\circ$ .

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 posi-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.

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#### F. Propulsion Systems

1. In order to conserve SM RCS, the SPS engine is used to "back-up" all LM rendezvous burns requiring a  $\Delta V$  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, Udata)
  - (b) Downlink Mode 2 (Voice, TLM-HBR, 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 O<sub>2</sub> 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 O<sub>2</sub> in order to enrich the LM atmosphere. CSM O<sub>2</sub> is used to repressurize the LM for the second and third entries.
2. LM O<sub>2</sub> 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.

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1-9

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.



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		
TRANSLUNAR COAST							15:58	31:14
	24:03	38:34						
					33:06	42:25		
							40:36	55:24
LOI (74:29)					57:10	66:39		
	74:50	76:15					54:50	74:18
TEI (220:20)	222:31	233:29						
							222:31	225:57
					227:57	240:34		
TRANSEARTH COAST							239:02	249:46
	246:31	257:20						
					251:52	264:48		
							253:23	273:29
EI (290:23)	270:58	280:59						
					275:48	290:18		

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



TABLE 2-4  
(4/16)

APOLLO 16 TV SCHEDULE

2-6

<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 <sub>2</sub> FUEL CELL PURGE		WASTE H <sub>2</sub> O DUMP		URINE DUMP		H <sub>2</sub> 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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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 ΔT (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



(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

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TABLE 2-9

2-11

(4/16)

## CSM BURN/EVENT SCHEDULE

BURN/ EVENT	GET I(HR:MIN)/ BURN TIME	$\Delta$ VT (FPS)	ULLAGE BT	REFSMMAT	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 52.5	APR 19 1423
DOI SPS	78:35:30.3 24.1SEC	206.0	4 JETS 15 SEC	LDG SITE	52.6 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

## CSM BURN/EVENT SCHEDULE

BURN/ EVENT	GET I (HR:MIN)/ BURN TIME	$\Delta$ VT (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

2-13

(4/16)

APOLLO 16 DSEA

ACTIVITY	MODE	GET (HR:MIN)	RECORD TIME X DUTY CYCLE = TAPE USED (HR:MIN)	ACCUM. TAPE USED (HR:MIN)
COMM ACTIVATION	ICS/PTT	94:20	4:04 x 100%	
PDI PREP	VOX	98:24	= 4:04	4:04
PDI PREP	VOX	98:24	0:30 x 63%	
POST TOUCHDOWN (T2)	OFF	98:54	= 0:18.9	4:23
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.

## LM BURN/EVENT SCHEDULE

BURN/ EVENT	GETI (HR:MIN)/ BURN TIME	$\Delta V T$ (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 1633
BRAKING GATES	173:18:25.4 TO 173:24:27.2	33.4	-- --	-- --	59.8 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

2-15

(4/16)

## APOLLO 16 RETURN TO EARTH BLOCK DATA SCHEDULE

<u>DATA</u>	<u>GET UPDATE (HR:MIN)</u>	<u>GETI* (HR:MIN)</u>	<u>PAD TYPE</u>
TLI+90	1:30	4:07	COMPLETE P-30
LO+8	1:30	8:00	P37
LO+15	5:55	15:00	P37
LO+25	13:30	25:00	P37
LO+35	13:30	35:00	P37
LO+45	13:30	45:00	P37
LO+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.

## 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°34'W)
2. Pass FLYBY early if pericyynthion 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.



(4/16)

## CRYO MANAGEMENT SCHEDULE

GET HRS:MIN	O <sub>2</sub> HTRS 1,2,&3		H <sub>2</sub> HTRS 1&2		H <sub>2</sub> 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
<b>CSM</b>				
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>AA</u> CAPACITY: 100%				
3:13	TL	UNDOCK S4BLM	30%	70%
3:59	TL	LM EJECTION	70%	00%
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>BB</u> 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	RENDEZVOUS	40%	40%
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>CC</u> CAPACITY: 100%				
96:14	12	UNDOCKING	100%	00%
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>DD</u> CAPACITY: 100%				
177:31	53	LM JETT	50%	50%
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>EE</u> CAPACITY: 100%				
UNSCHEDULED				
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>FF</u> CAPACITY: 100%				
241:55	TE	EVA	100%	00%

GET	REV	TARGET	FILM USED	FILM REMAINING
<b>CSM</b>				
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>GG</u> CAPACITY: 100%				
290:23	E	ENTRY	50%	50%
290:31	E	CHUTES	50%	00%
CAMERA: DAC      FILM: VIIBW      MAGAZINE: <u>HH</u> 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: <u>II</u> CAPACITY: 100%				
153:06	41	MASS SPECT.	76%	24%
CAMERA: DAC      FILM: CIN      MAGAZINE: <u>JJ</u> CAPACITY: 100%				
05:05	TL	SC INT (OPT)	87%	13%
50:05	TL	SKYLAB FOOD	1%	12%
CAMERA: DAC      FILM: CEX      MAGAZINE: <u>KK</u> CAPACITY: 100%				
UNSCHEDULED				
CAMERA: DAC      FILM: BW 164      MAGAZINE: <u>LL</u> CAPACITY: 100%				
UNSCHEDULED				

3/27/72

TABLE 2-15

# APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
<b>CSM</b>				
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
58:00	TL	MOON A	8 FR	70 FR
58:00	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
<b>CSM</b>				
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 BULLIARDU	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	85 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: UU	CAPACITY: 160 FR	
25:00	TE	ELECTROPHOR	160 FR	00 FR
CAMERA:NK	FILM: CIN	MAGAZINE: VV	CAPACITY: 70 FR	
47:00	TL	ALFMED	6 FR	64 FR
CAMERA:NK	FILM: VHBW	MAGAZINE: MW	CAPACITY: 50 FR	
UNSCHEDULED (BACKUP DIM LIGHT PHOTOGRAPHY)				
CAMERA:NK	FILM: VHBW	MAGAZINE: XX	CAPACITY: 50 FR	
102:52	14	EARTHSHINE	22 FR	28 FR
121:10	24	GUM NEB PT 1	6 FR	22 FR
CAMERA:NK	FILM: VHBW	MAGAZINE: YY	CAPACITY: 50 FR	
123:10	25	ZODIACAL	42 FR	8 FR
CAMERA:NK	FILM: VHBW	MAGAZINE: ZZ	CAPACITY: 50 FR	
127:03	27	GEGENSCHN	4 FR	46 FR
142:27	35	GEGENSCHN	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	GEGENSCHN	3 FR	22 FR
202:23	65	GEGENSCHN	4 FR	18 FR
CAMERA:EL	FILM: CLX	MAGAZINE: V	CAPACITY: 160 FR	
UNSCHEDULED				

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:NK	FILM: VHBW	MAGAZINE: W	CAPACITY: 50 FR	
CALIBRATION				
CAMERA:NK	FILM: VHBW	MAGAZINE: X	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: Y	CAPACITY: 50 FR	
CALIBRATION				
CAMERA:NK	FILM: CIN	MAGAZINE: Z	CAPACITY: 70 FR	
UNSCHEDULED				

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TABLE 2-15

# APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
LM				
CAMERA: DCL	FILM: HCEX	MAGAZINE: <u>A</u>	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: <u>B</u>	CAPACITY: 160 FR	
(102:25)	LS	EVA-1	47 FR	113 FR
CAMERA: DCC	FILM: HCEX	MAGAZINE: <u>C</u>	CAPACITY: 160 FR	
(102:25)	LS	EVA-1	UNSCHEDULED	--
(124:50)	LS	EVA-2	105 FR	55 FR
CAMERA: DCC	FILM: HCEX	MAGAZINE: <u>D</u>	CAPACITY: 160 FR	
(124:50)	LS	EVA-2	UNSCHEDULED	--
CAMERA: DCC	FILM: HCEX	MAGAZINE: <u>E</u>	CAPACITY: 160 FR	
(148:25)	LS	EVA-3	97 FR	63 FR
CAMERA: DCC	FILM: HCEX	MAGAZINE: <u>F</u>	CAPACITY: 160 FR	
(148:25)	LS	EVA-3	UNSCHEDULED	--
CAMERA: DCL	FILM: HBW	MAGAZINE: <u>G</u>	CAPACITY: 170 FR	
(102:25)	LS	EVA-1	63 FR	107 FR
CAMERA: DCL	FILM: HBW	MAGAZINE: <u>H</u>	CAPACITY: 170 FR	
(124:50)	LS	EVA-2	126 FR	44 FR
CAMERA: DCL	FILM: HBW	MAGAZINE: <u>I</u>	CAPACITY: 170 FR	
(124:50)	LS	EVA-2	74 FR	96 FR
CAMERA: DCL	FILM: HBW	MAGAZINE: <u>J</u>	CAPACITY: 170 FR	
(148:25)	LS	EVA-3 (POL)	132 FR	38 FR
CAMERA: DCL	FILM: HBW	MAGAZINE: <u>K</u>	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: <u>L</u>	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: <u>M</u>	CAPACITY: 170 FR	
(148:25)	LS	EVA-3	100 FR	70 FR
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>N</u>	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: <u>O</u>	CAPACITY: 100%	
171:43	50	ASCENT	75%	25%
173:35	51	CSM & SIM BAY	25%	0%
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>P</u>	CAPACITY: 100%	
108:35	LS	GRAN PRIX	100%	0%
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>Q</u>	CAPACITY: 100%	
125:50	LS	EVA-2	100%	0%
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>R</u>	CAPACITY: 100%	
127:13	LS	EVA-2	24%	76%
149:10	LS	EVA-3	76%	0%
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>S</u>	CAPACITY: 100%	
152:48	LS	EVA-3	100%	0%
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>T</u>	CAPACITY: 100%	
155:00	LS	GRAN PRIX	100%	0%
CAMERA: DAC	FILM: CEX	MAGAZINE: <u>U</u>	CAPACITY: 100%	
154:30	LS	EVA-3	100%	0%

TABLE 2-15

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# FLIGHT PLAN

MCC-H

1154 CST

NOTES

00:00  
(31102)  
(01111)

T  
M  
S  
F  
N

LIFT-OFF APRIL 16, 1972

**CSM LAUNCH CHECKLIST**

BOOST PAGE L/2-7

:10

SECO

INSERTION AND SYSTEM CHECKS PAGE L/2-11

:20

T  
C  
Y  
I

00:30

P52 IMU REFSMMAT REALIGN CHECK PAGE L/2-17

:40

GDC ALIGN

:50

T  
C  
R  
O

REPORT: GYRO TORQUING ANGLES

01:00

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	__ : __

UPDATE TO CSM  
Z TORQUING ANGLE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	00:00 - 01:00	1/LAUNCH-E.0	3-1

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1254 CST

NOTES

01:00  
(31102)  
(01111)

MSFN

:10

:20

01:30

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

:50

CYI

**WATCH FIRES & SIGNS OF AFRICA**

02:00

DUMP DSE  
UPDATE TO CSM  
TLI PAD  
TLI +90 MIN ABORT  
PAD  
P37 (L/O+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

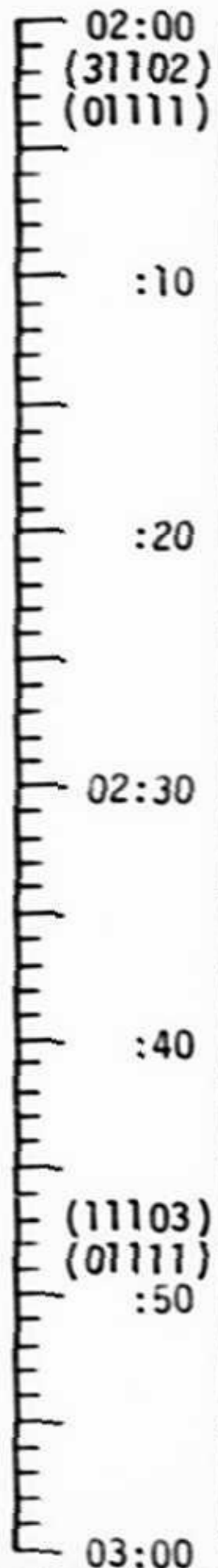
ROLL RATES	P OR Y RATES	P OR Y ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
>20°/SEC TERMINATE	>10°/SEC TERMINATE	+45° TERMINATE	$V_i$ = PAD VALUE + 2 SEC	NO TRIM

# FLIGHT PLAN

MCC-H

1354 CST

NOTES



GO/NO-GO FOR TLI

GO/NO-GO FOR T&D

T  
 ARIA  
 CRO  
 ARIA  
 M  
 S  
 F  
 N

TLI PREPARATION PAGE L/2-27

TLI, NOMINAL & MANUAL PAGE L/2-28

TB6 02:23:57.1

GO/NO-GO FOR TLI

TLI

P00

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

*Moon is out of Window #2  
 CM 2/EL/250/CX/Ring Sight  
 (55.6, 1/250, ∞)*

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)

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

(359,146,319) OMNI C  
 GO/NO-GO FOR TRANSPOSITION AND DOCKING  
 CSM SEPARATION PREP PAGE L/3-1

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

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

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

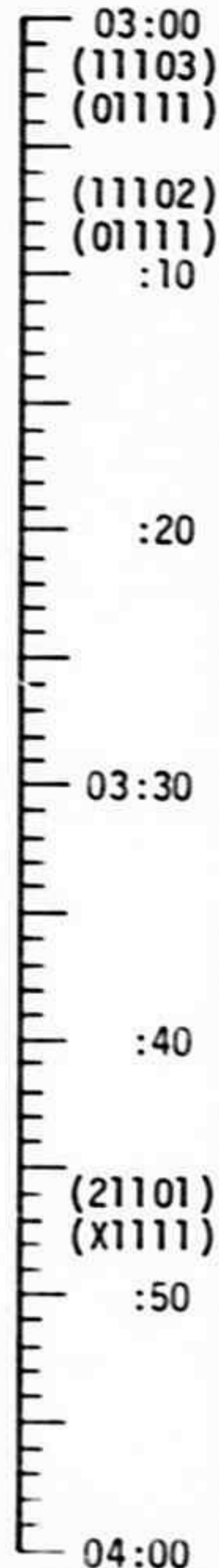
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1454 CST

NOTES



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**

CM/LM PRESSURE EQUALIZATION (DECAL) PAGE L/3-5  
TUNNEL HATCH REMOVAL (DECAL)  
DOCKING LATCH VERIFICATION (DECAL)  
LM UMBILICAL CONNECTIONS (DECAL)  
HATCH INSTALLATION (DECAL)  
PRE LM SEP & EJECTION

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

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

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

**CSM/LM EJECTION**

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

T&D MNVR  
+X FOR 3 SEC (ΔV ~0.5 FPS)  
AFTER 15 SEC PITCH UP AT  
0.5°/SEC. V49 AUTO MNVR  
TO DOCKING ATT. NULL  
TRANSLATION AND RATES,  
+X FOR 4 SEC (ΔV ~0.7 FPS)

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

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.

DUMP DSE

GO/NO-GO FOR  
PYRO ARM AND  
CSM/LM EJECTION

TLI CUTOFF +  
1 HR 20 MIN

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

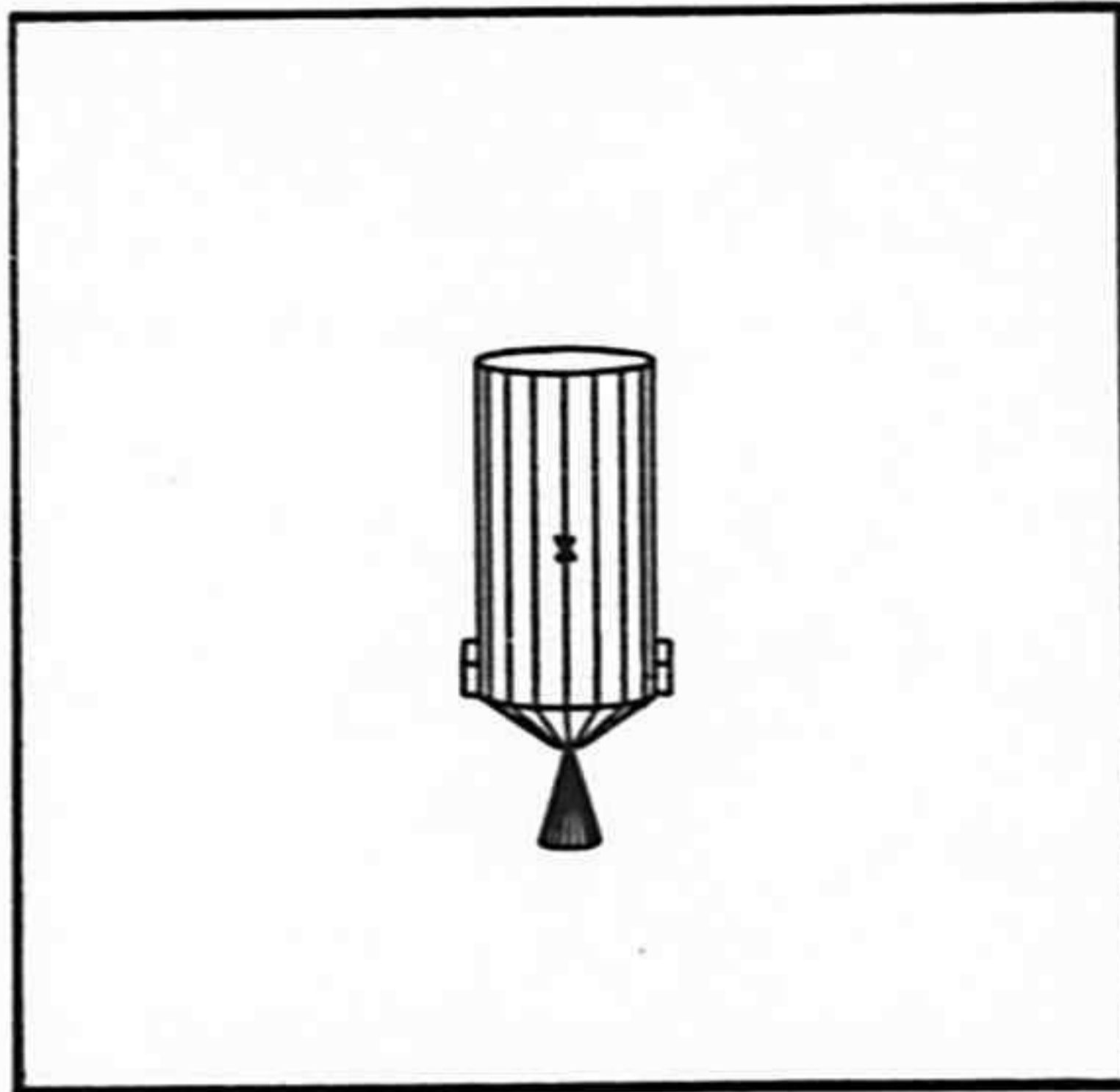
FLIGHT PLANNING BRANCH

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# FLIGHT PLAN

GET 04:20

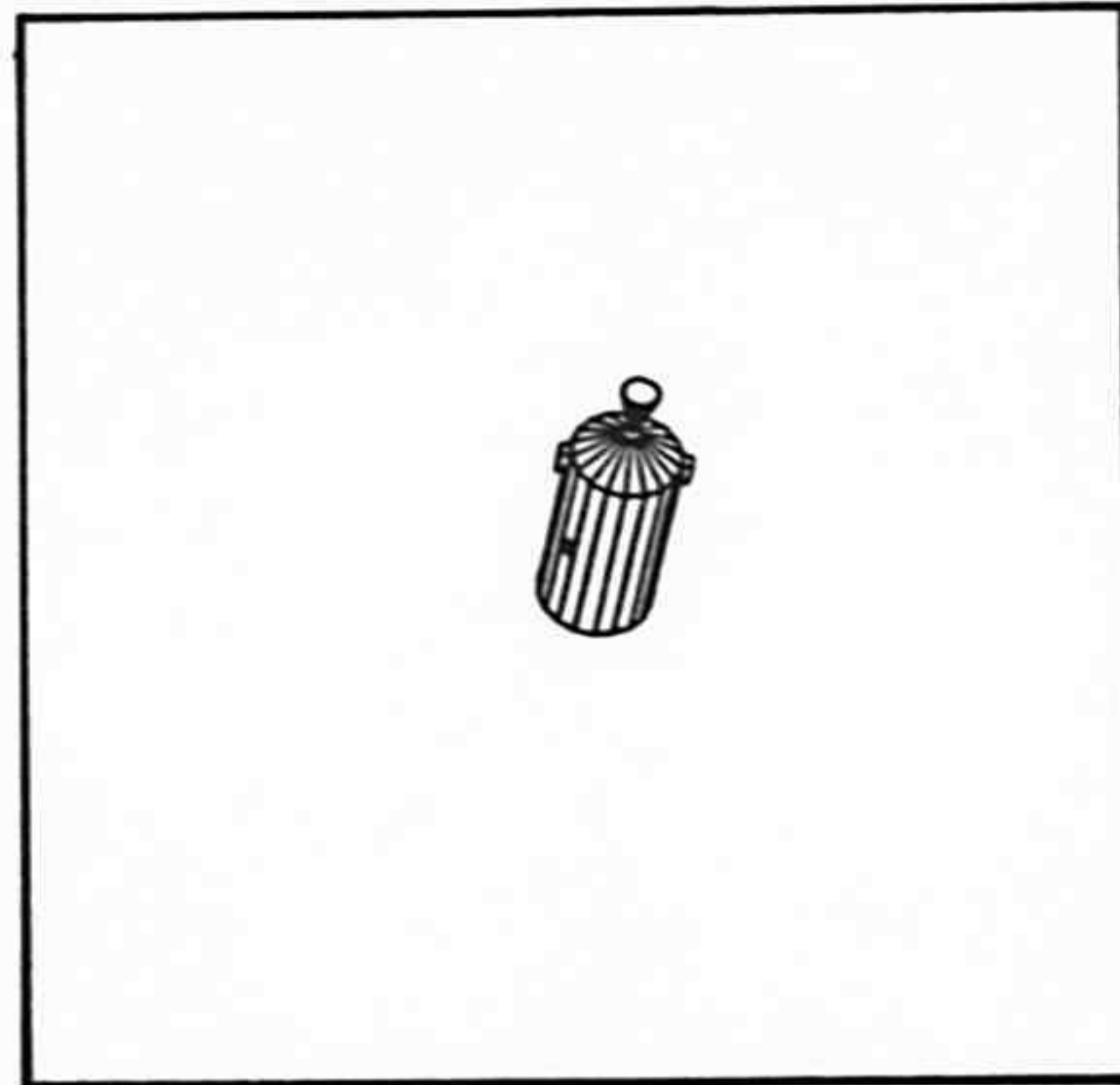
FOV 5°



S-IVB APS EVASIVE INITIATION

GET 04:41

FOV 1°



S-IVB LOX DUMP INITIATION

# FLIGHT PLAN

MCC-H

1554 CST

## NOTES

04:00  
(21101)  
(X1111)

:10

:20

04:30

:40

:50

05:00

M  
S  
F  
N

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

REPORT: GO FOR S-IVB YAW MNVR

VISUALLY INSPECT S-IVB/IU THERMAL SHROUD

*CM3/EL/250/CEX*

*(58, 1/250, 00)*

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

S-IVB YAW MNVR 04:12:20

(GROUND COMMAND)

REPORT: GO FOR S-IVB EVASIVE BURN

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

S-IVB CONTINUOUS H<sub>2</sub> VENT - ON 04:39

S-IVB LOX DUMP 04:43

INSTALL CABIN FAN FILTER (U2)

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

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1654 CST

NOTES

05:00  
(21101)  
(X1111)

:10

:20

05:30

:40

:50

06:00

M  
S  
F  
N

FILM MAGS REQD FOR REST OF DAY:  
DAC: CIN-JJ  
EL: UV-00, CEX-NN

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

STARS \_\_\_\_\_,  
SA \_\_\_\_\_,  
TA \_\_\_\_\_,

REPORT: GYRO TORQUING ANGLES

P52 (OPTION 1)  
(PTC ORIENT)

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

VHF A SIMPLEX - OFF  
WASTE STOWAGE VENT VALVE - VENT (VERIFY)

SC INTERIOR PHOTOGRAPHY AT CREW OPTION  
CM/DAC/10/CIN- SPOT  
(T2.8,1/60,3) 6 fps  
(87% MAG)  
MAG (JJ) \_\_\_\_\_, FR # \_\_\_\_\_

S-IVB APS MCC-1  
GET ~05:30  
 $\Delta V$  ~30 FPS

P52	IMU REALIGN
N71:	_____
N05:	_____
N93:	
X	_____
Y	_____
Z	_____
GET	_____ : _____ : _____

P37 PAD ASSUMES  
NO MCC-1

UPLINK TO CSM  
DESIRED ORIENT (PTC)  
ZERO TRUNNION BIAS

UPDATE TO CSM  
P37 PAD (L/O+15)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) <i>CHGA</i>	<del>3/6/72</del> 4/7/72	05:00 - 06:00	1/TLC	3-10

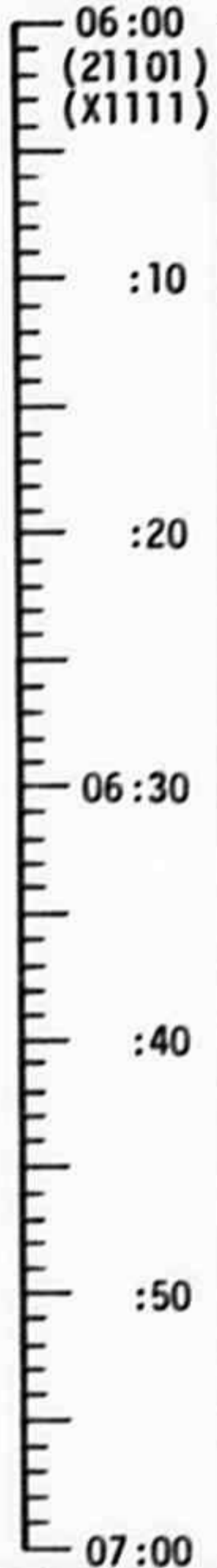
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1754 CST

NOTES



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

FLIGHT PLANNING BRANCH



# FLIGHT PLAN

MCC-H

1854 CST

NOTES

07:00  
(21101)  
(X1111)

:10

:20

07:30

:40

:50

08:00



**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 (00)  
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	<del>FINAL</del> (4/16) CHANGE A	<del>3/27/72-3/6/72</del>	07:00 - 08:00	1/TLC	3-12

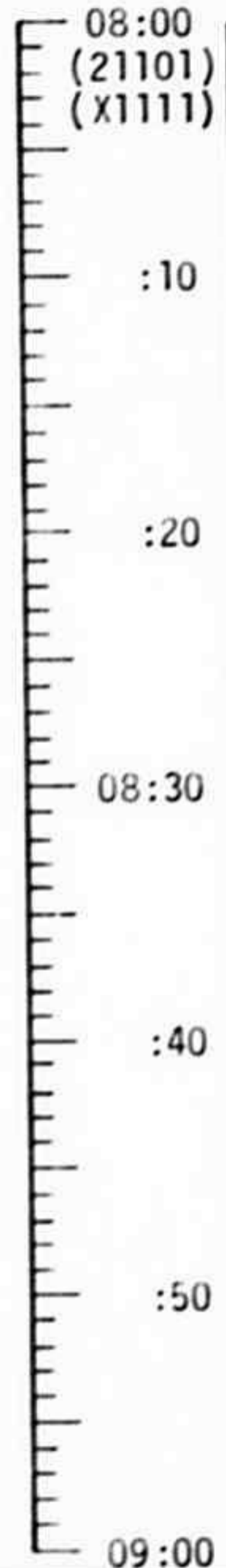
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1954 CST

NOTES



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

P23 CISLUNAR NAVIGATION  
 OPTICS CALIBRATION STAR N70 (00042)  
 P00

V49 MNVR TO SIGHTING ATTITUDE (08:20)  
 (174,288,320) HGA P -58, Y 350  
 V67 (+80000) (+00070) (+00003)

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

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

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

EARTH DISTANCE  
 ~38,900 NM

42 PEACOCK

LOAD W MATRIX

173 GAMMA LUPI  
 (EFH)

235 PI SAGITTARII  
 (ENH)

214 ZETA SAGITTARII  
 (ENH)

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

FLIGHT PLANNING BRANCH

MCC-H

2054 CST

# FLIGHT PLAN

NOTES

09:00  
(21101)  
(X1111)

:10

:20

09:30

(21111)  
(X1111)

:40

:50

10:00

M  
S  
F  
H

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

**INSTALL AND EVALUATE POLAROID  
FILTER ON LAST P23**

**LOOK AT DARK PORTION OF EARTH IN SXT- REFLECTION!**

P00

V49 MNVR TO OPTICS CALIBRATION ATTITUDE (9:30)

(157,246,330) HGA P -85, Y 153

P23 CISLUNAR NAVIGATION

OPTICS CALIBRATION STAR N70 (00042)

**READ & NOTE TPAC Values vs. N91**

**CHECK TPAC DRIFTS in CMC & MANUAL**

OMNI B

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

V49 MNVR TO THERMAL ATTITUDE (9:40)

(033,246,330) OMNI C

V48 (21111)

(X1111)

INFLIGHT EXERCISER (A-8 SECTION !)

\* **CSM G&C CHECKLIST**

\*EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5

\*REPORT: BIAS

CREW EXERCISE PERIOD

204 SABIK  
(EFH)

42 PEACOCK

S-IVB APS MCC-2  
GET ~09:30  
ΔV NOM. ZERO

\*PERFORM IF MCC-1  
IS REQUIRED

UPDATE TO CSM  
GO/NO-GO FOR MCC-1

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

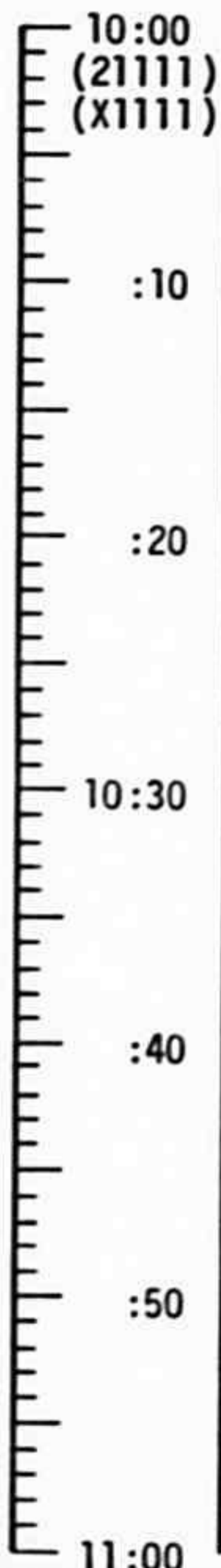
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2154 CST

NOTES



M  
S  
F  
N

CREW EXERCISE PERIOD

P52 (OPTION 3)  
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES  
GDC ALIGN

EARTH DISTANCE  
~ 51,400 NM

P52	IMU REALIGN
N71:	___.'___
N05:	___.'___
N93:	
X	___.'___
Y	___.'___
Z	___.'___
GET	___.'___

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

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

FLIGHT PLANNING BRANCH

MCC-1  
 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

2254 CST

NOTES



WASTE STOWAGE VENT VLV - CLOSE (8 HOURS FROM VENT)  
 \*P30 EXTERNAL  $\Delta V$   
 \*CYCLE CMC MODE - FREE/AUTO  
 \*V48 (2110!)(X1111)  
 \*V49 MNVR TO PAD BURN ATTITUDE  
 \*IF SPS MIDCOURSE REQUIRED:  
 \* PRE SPS BURN SIM PREP (CUE CARD)  
 \*SXT STAR CHECK  
 \*P40 SPS THRUSTING OR P41 RCS THRUSTING  
 O<sub>2</sub> FUEL CELL PURGE  
 WASTE WATER DUMP

\*PERFORM IF MCC-1 IS REQUIRED

TLI CUTOFF +9 HR

MCC-1

TIG: 11:39  
 BT: NOM ZERO  
 $\Delta VT$ : NOM ZERO  
 ULLAGE: NONE

\*V66 SET CSM S.V. INTO LM S.V.  
 \*REPORT: BURN STATUS  
 \*IF SPS MIDCOURSE PERFORMED:  
 \* PC - OFF  
 \* MC - OFF  
 \* SM/AC PWR - OFF

BURN STATUS REPORT				
X	X		●	$\Delta TIG$
X	X		●	BT
			●	V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
			●	V <sub>gx</sub>
			●	V <sub>gy</sub>
			●	V <sub>gz</sub>
			●	$\Delta V_c$
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	11:00 - 12:00	1/TLC	3-17

FLIGHT PLANNING BRANCH

MCC-H

2354 CST

# FLIGHT PLAN

## NOTES



M  
S  
F  
N

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

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

**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 (00)  
 MAG (NN)

V48 (21111)  
 (X1111)

CREW EXERCISE PERIOD

EARTH DISTANCE  
 ~ 58,100 NM

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

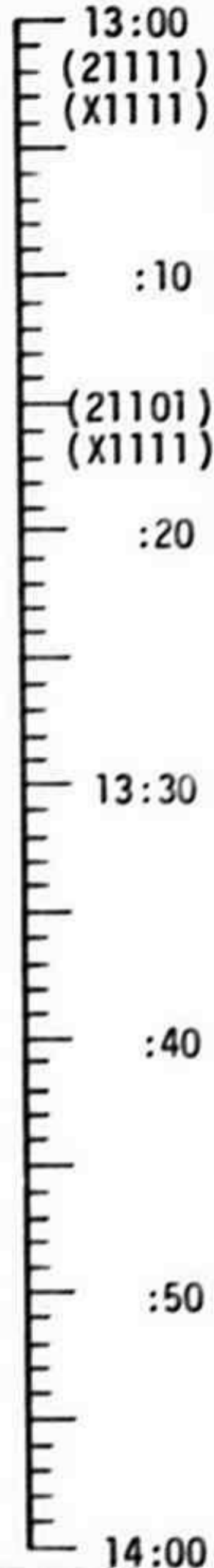
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0054 CST

NOTES



UPDATE TO CSM  
QUADS TO ENABLE  
FOR PTC SPINUP

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

M  
S  
F  
N

CREW EXERCISE PERIOD

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

**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)

EAT PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

FLIGHT PLANNING BRANCH

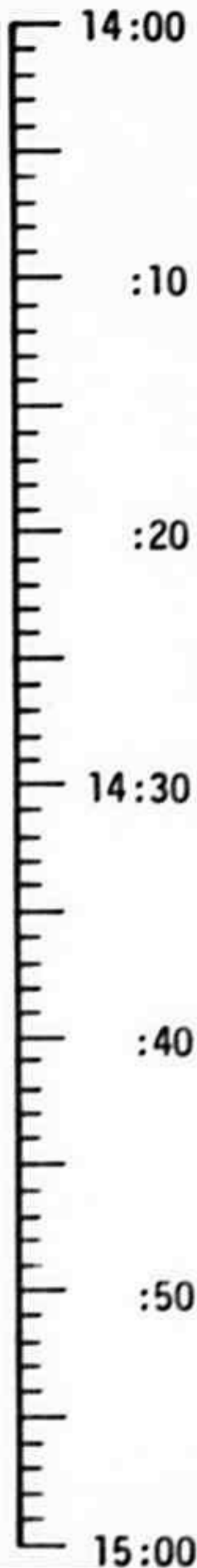


MCC-H

0154 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

EAT PERIOD

**CSM SYSTEMS CHECKLIST**

- PRE-SLEEP CHECKLIST PAGE S/1-29
- COMM - OMNI
- CDR & CMP DOFF BIOMED HARNESS
- H<sub>2</sub> HEATERS 1&2 - AUTO (VERIFY)
- H<sub>2</sub> FANS 3 - AUTO
- O<sub>2</sub> HEATERS 1&2 - OFF
- O<sub>2</sub> HEATERS 3 - AUTO

FILM MAGS REQD FOR NEXT DAY:  
 EL: HBW- UU, UV- OO, CEX- NN

PTC

DAP LOAD STATUS  
(21101)(X1111)

EARTH DISTANCE  
~68,400 NM

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

FLIGHT PLANNING BRANCH

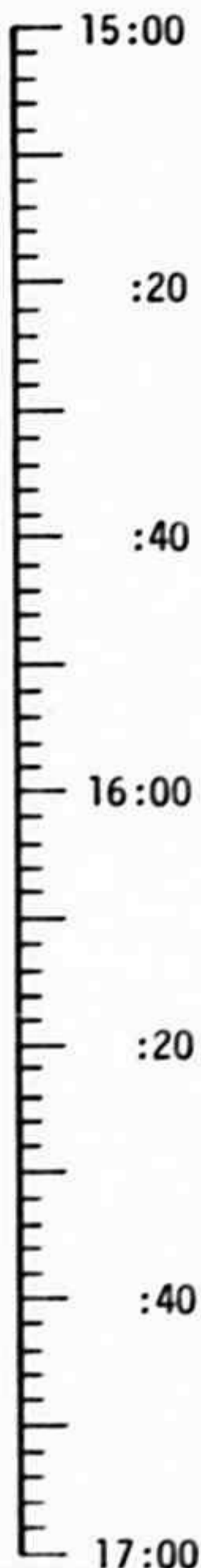
# FLIGHT PLAN

MCC-H

0254 CST

## NOTES

DAP LOAD STATUS  
(21101) (X1111)



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

FLIGHT PLANNING BRANCH

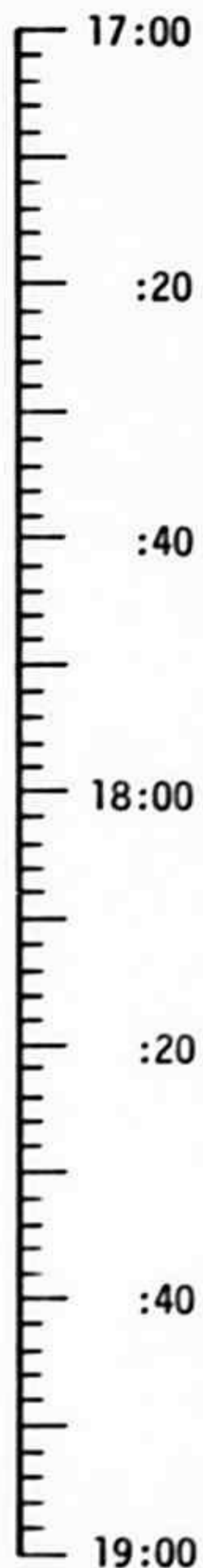
# FLIGHT PLAN

MCC-H

0454 CST

NOTES

DAP LOAD STATUS  
(21101) (X1111)



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

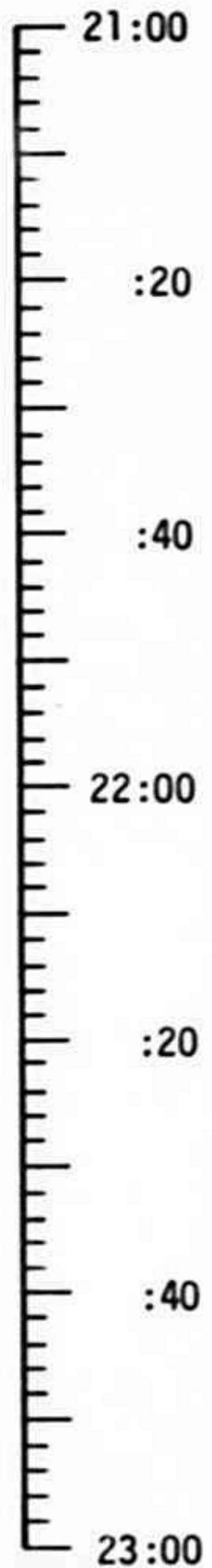
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0854 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

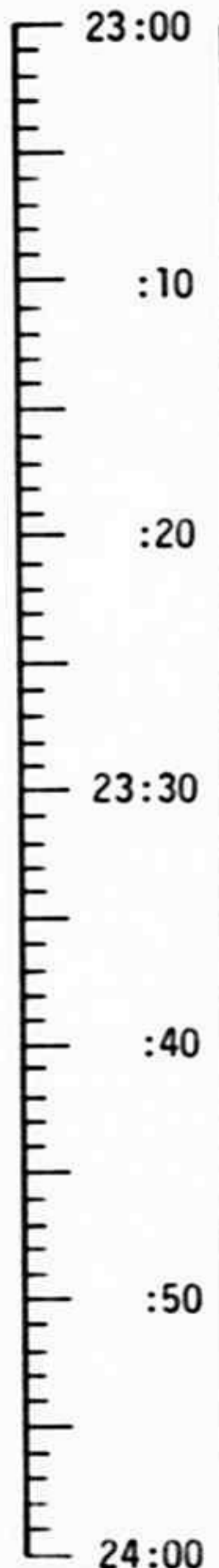
# FLIGHT PLAN

MCC-H

1054 CST

## NOTES

UPDATE TO CSM  
CONSUMABLES STATUS  
FLIGHT PLAN



**CSM SYSTEMS CHECKLIST**

POST-SLEEP CHECKLIST PAGE S/1-29  
CHARGE BATTERY A  
H<sub>2</sub> HEATERS 1&2 - OFF

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)



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

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

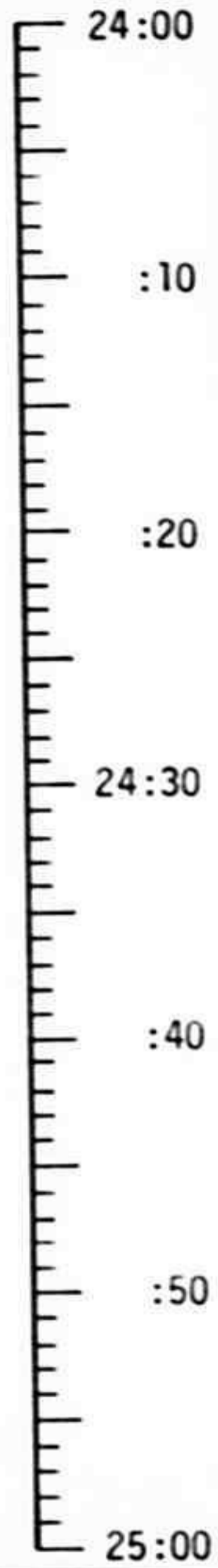
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	23:00 - 24:00	2/TLC	3-25

# FLIGHT PLAN

MCC-H

1154 CST

NOTES



M  
S  
F  
N

EAT PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

LiOH CANISTER CHANGE  
(4 INTO B, STOW 2 INTO B5)

ACQ MSFN, HGA: REACQ, NARROW (CUE MSFN FOR PITCH AND YAW ANGLES)  
REPORT: LM/CM ΔP

CSM EXP/EVA CHECKLIST

PC AND MC FILM CYCLING, PAGE X/1-17

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

CDR DON BIOMED HARNESS  
LMP DOFF BIOMED HARNESS

UPDATE TO CSM  
HGA ANGLES FOR  
FILM CYCLE

MSFN CMD  
DATA SYS - OFF

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

CHANGE A

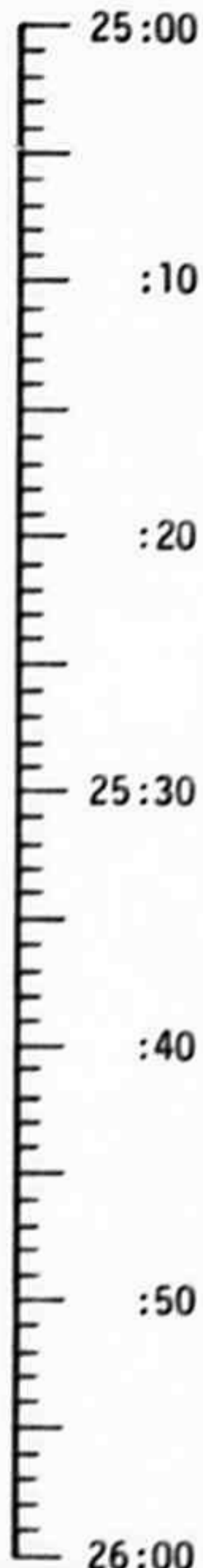
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1254 CST

NOTES



M  
S  
F  
N

**CSM EXP/EVA CHECKLIST**

ELECTROPHORESIS, PAGE X/2-36  
MAG (UU)

ELECTROPHORESIS

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

FLIGHT PLANNING BRANCH

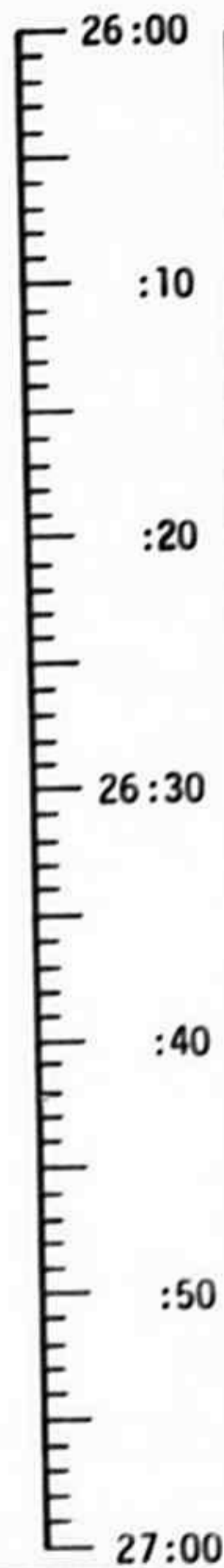


# FLIGHT PLAN

MCC-H

1354 CST

NOTES



MSFN

ELECTROPHORESIS

PTC

CREW EXERCISE PERIOD

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

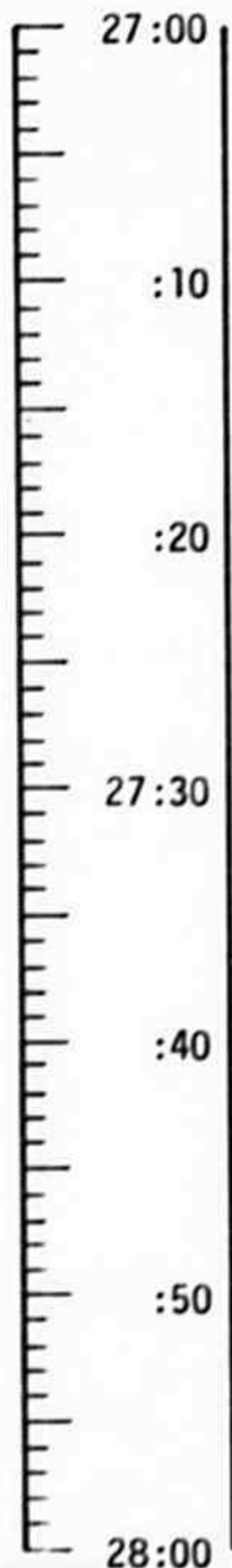
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1454 CST

NOTES



M  
S  
F  
N

CREW EXERCISE PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1554 CST

NOTES



M  
S  
F  
H

CREW EXERCISE PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

UPDATE TO CSM  
GO/NO-GO FOR MCC-2

\* CSM G&C CHECKLIST

\*EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5

\*REPORT: BIAS

*MEASURE SPEED REPEATABILITY OF TAPE  
RECORDER & PREPARE ZODIACAL LIGHT & S.R.  
SOLAR CORONA TAPES*

\*PERFORMED IF MCC-2  
IS REQUIRED

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

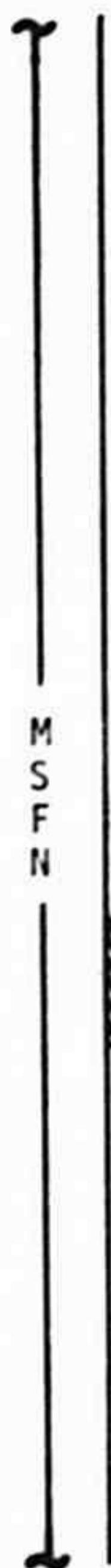
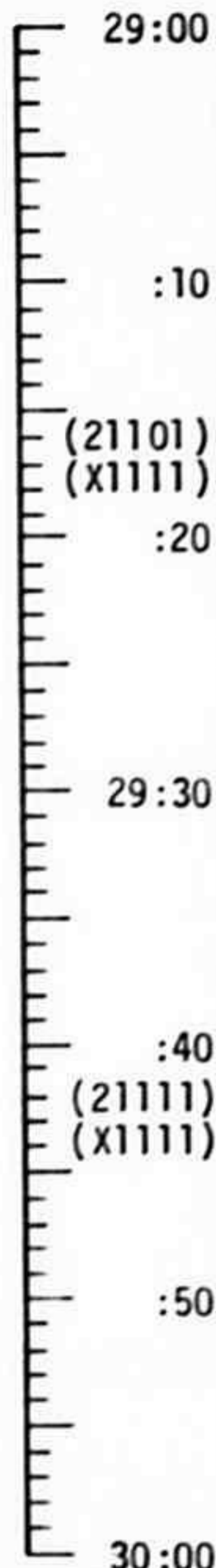
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1654 CST

NOTES



**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 (00)  
 MAG (NN)

V48(21111)  
 (X1111)  
 P52 (OPTION 3)  
 (PTC ORIENT)

REPORT: GYRO TORQUING ANGLES  
 GDC ALIGN



DAP LOAD STATUS  
 (21101)(X1111)

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

EARTH DISTANCE  
 ~ 117,600 NM

UPLINK TO CSM  
 CSM S.V. & V66  
 MCC-2 TGT LOAD

UPDATE TO CSM  
 MCC-2 MNVR PAD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	<del>FINAL</del> (4/16) <i>CHANGE A</i>	<del>3/27/72</del> 3/6/72	29:00 - 30:00	2/TLC	3-31

FLIGHT PLANNING BRANCH

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

## NOTES

\*PERFORM IF MCC-2  
IS REQUIRED



H<sub>2</sub> 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<sub>2</sub> & O<sub>2</sub> FUEL CELL PURGE

H<sub>2</sub> PURGE LINE HEATERS - OFF

MCC-2

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

- \*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 > 2.7 PSID.

TLI CUTOFF +28 HR

BURN STATUS REPORT				
X	X		●	ΔTIG
X	X		●	BT
			●	V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
			●	V <sub>gx</sub>
			●	V <sub>gy</sub>
			●	V <sub>gz</sub>
			●	ΔV <sub>c</sub>
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	30:00 - 31:00	2/TLC	3-33

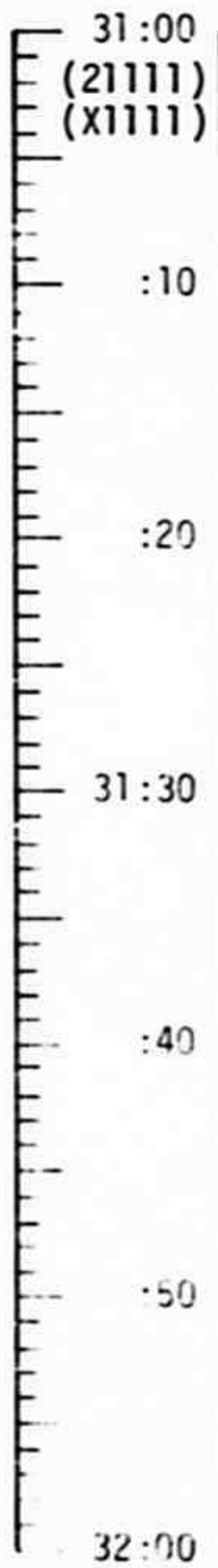
FLIGHT PLANNING BRANCH

MCC-H

1854 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

EVALUATE FOOD TEMPERATURE

EAT PERIOD

O<sub>2</sub> HEATERS 1,2,3 - AUTO

EARTH DISTANCE  
~ 122,800 NM

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

MCC-H

1954 CST

## FLIGHT PLAN

NOTES

32:00  
(21111)  
(X1111)

:10

:20

32:30

:40

:50

33:00

M  
S  
F  
N

PREPARE ITEMS PER CSM TO LM TRANSFER LIST

DIRECT O<sub>2</sub> 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

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)  
O<sub>2</sub> HEATERS 1,2 - OFF  
O<sub>2</sub> HEATERS 3 - AUTO

## CSM TO LM TRANSFER LIST (TLC)

CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG	TEMP STOW
ICG	SCISSORS (1)	DATA FILE
CCU CABLE ON CREW	CWG ELECT ADAPT W/CAP (2)	ON CREW
R5	COMM CARR (2)	ON CREW
R5	INFLIGHT STRAPS (4)	ON CDR'S UMBIL
R13	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- <del>L,K,M</del> 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 (O) 1-WINDOW SEQ CAMR (N)
R3	LM ACTIVATION C/L (2)	DATA FILE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE <del>X8</del> (4/16)	<del>3/27/72</del> 4/7/72	32:00 - 33:00	2/TLC	3-35

FLIGHT PLANNING BRANCH



# FLIGHT PLAN

CSM

LM

MCC-H

2054 CST

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

M S F N	33:00 (21111) (X1111)	<b>CDR</b>	<b>LMP</b>
		<b>LM ACTIVATION CHECKLIST PAGE 1-3</b>	
	:10	IVT TO LM	IVT TO LM  ENTRY STATUS CHECK
	:20	HOUSEKEEPING	
	33:30	<b>FABRICATE FLOOD LIGHT SHADES ADD TAPE TO TUNNEL DECALS</b>	
	:40	<b>EVALUATE FLUID BEHAVIOR</b>	
	:50		
	34:00		

UPDATE TO CSM  
 LOI -5 HR FLYBY

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**

**LM**

**MCC-H**

2154 CST

**CDR**

**LMP**

34:00  
(21111)  
(X1111)

HOUSEKEEPING

:10

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

COMM ACTIVATION

:20

SYS TEST - 7D  
SYS TEST IND = 0 VOLTS

M  
S  
F  
N

34:30

S-BAND/VHF SIMPLEX VOICE TEST

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

:40

OPS CHECKOUT

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

:50

COMM DEACTIVATION

LMP & CDR IVT TO CSM PAGE 1-21

35:00

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)

:10

:20

35:30

:40  
 (21101)  
 (X1111)

:50

36:00

↑

M  
S  
F  
N

↓

CLOSE LM HATCH  
 INSTALL DROGUE (DECAL)  
 INSTALL PROBE (DECAL)  
 HATCH INSTALLATION (DECAL)  
 LM TUNNEL VENT VALVE - LM/CM ΔP  
 TUNNEL LIGHTS - OFF

CYCLE CMC MODE - FREE/AUTO  
 V48 (21101)(X1111)  
 OMNI B  
 SECURE HGA: MAN, WIDE HGA P -52, Y 270

**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)

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 SPINUP

DAP LOAD STATUS  
 (21101)(X1111)

↓

PTC

↓

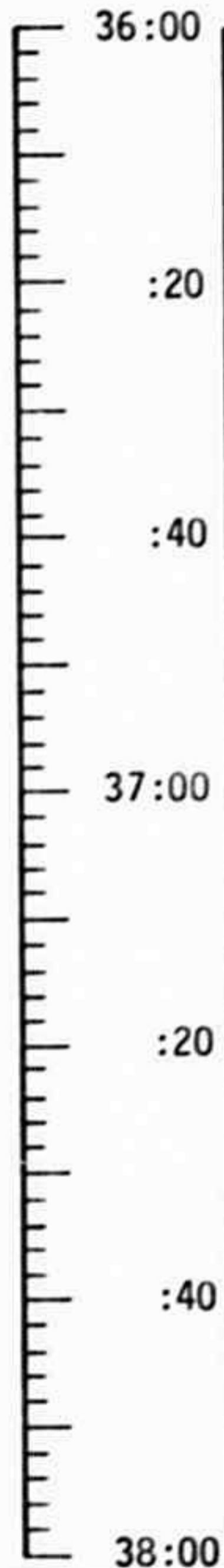
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	35:00 - 36:00	2/TLC	3-38

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2354 CST



M  
S  
F  
N

EAT PERIOD

LiOH CANISTER CHANGE  
(5 INTO A, STOW 3 INTO B5)

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST  
COMM-OMNI

CMP DON BIOMED HARNESS  
CDR DOFF BIOMED HARNESS

PAGE S/1-29  
FILM MAGS REQD FOR NEXT DAY:  
DAC: CIN-JJ  
EL: 2LV-00, CEX-NN  
NK: CIN-VV

REST PERIOD  
(8 HOURS)

PTC

## NOTES

DAP LOAD STATUS  
(21101)(X1111)  
EARTH DISTANCE  
~ 132,500 NM

### 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) <i>chg. 8.</i>	<del>3/6/72</del> 4/7/72	36:00 - 38:00	2/TLC	3-39

FLIGHT PLANNING BRANCH

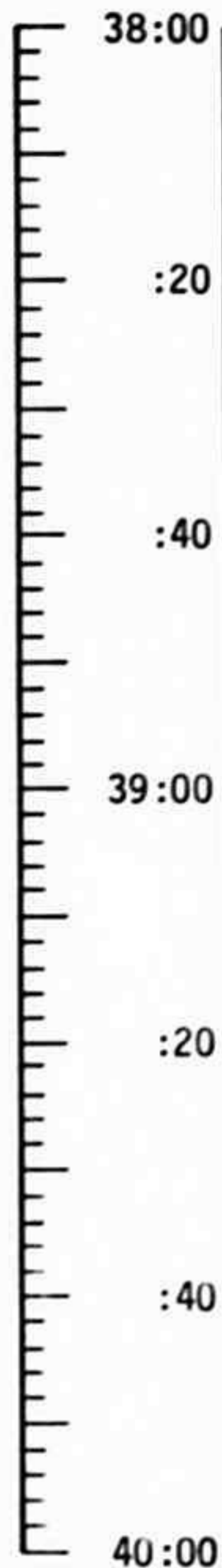
MCC-H

0154 CST

# FLIGHT PLAN

NOTES

DAP LOAD STATUS  
(21101)(X1111)



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

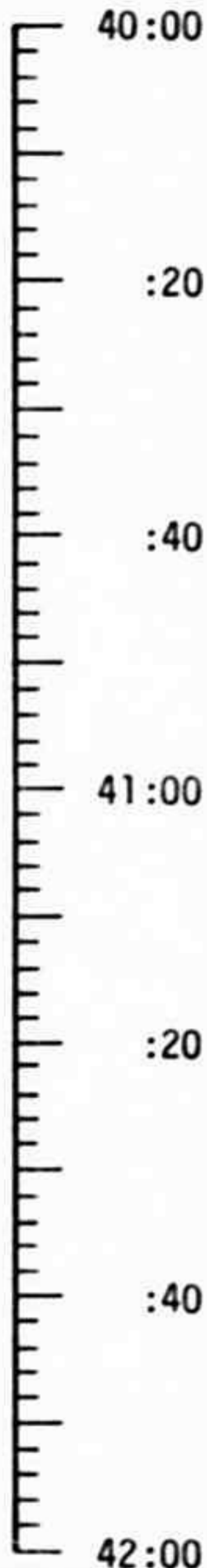
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0354 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

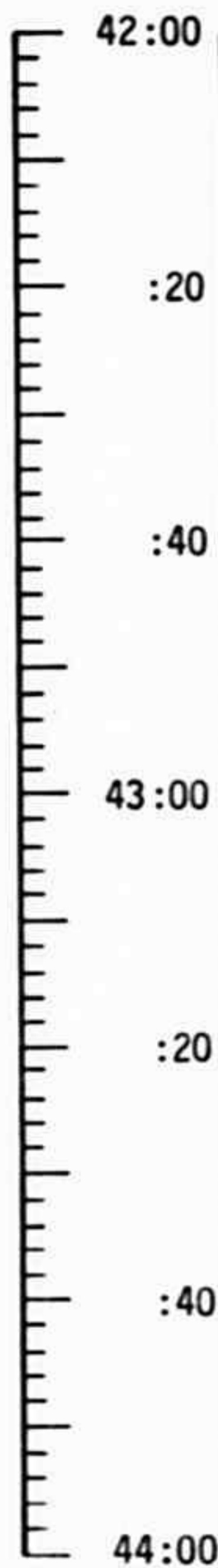
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0554 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

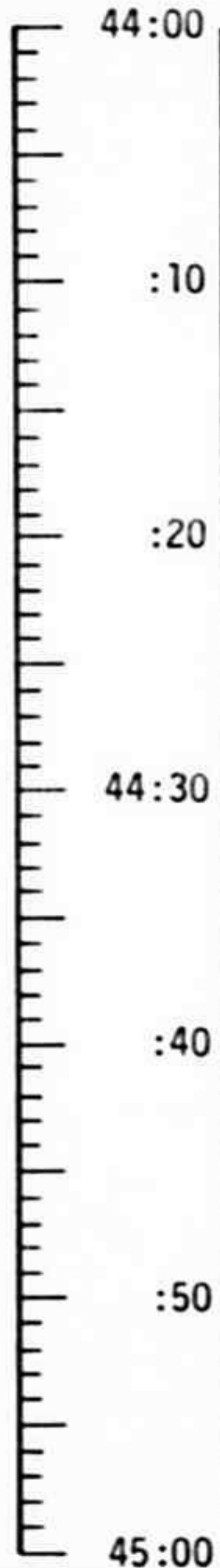
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0754 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

FLIGHT PLANNING BRANCH



# FLIGHT PLAN

MCC-H

0854 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

**CSM SYSTEMS CHECKLIST**  
POST-SLEEP CHECKLIST      PAGE S/1-29

PTC

TERMINATE URINE COLLECTION PERIOD:  
 UNSTOW OVERBAGS (A6)  
 INSERT EACH SAMPLE BAG IN AN OVERBAG & STOW (A6)  
 IF BAGS WILL NOT FIT, MANUALLY AGITATE BAGS TO  
 INSURE HOMOGENEITY AND DUMP PART OF URINE OVERBOARD  
 PER URINE DUMP MODE      PAGE S/1-12  
 G. URINE STOWAGE BAG (DUMP)

URINE COLLECTION ENDS  
WITH FIRST VOID AFTER  
WAKEUP.

LMP DON BIOMED HARNESS  
CMP DOFF BIOMED HARNESS

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

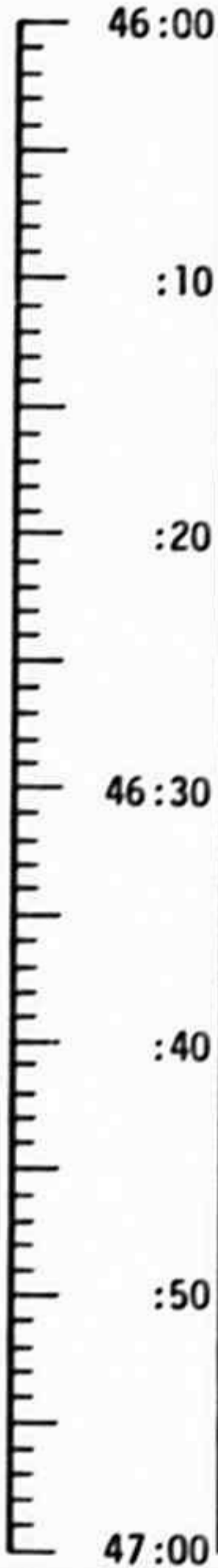
# FLIGHT PLAN

MCC-H

0954 CST

## NOTES

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



M  
S  
F  
N

EAT PERIOD

PTC

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

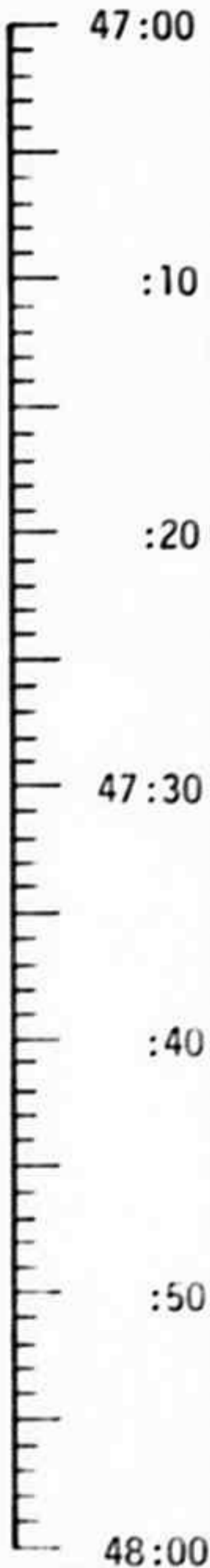
# FLIGHT PLAN

MCC-H

1054 CST

NOTES

MSFN CMDS:  
DSE RECORD



M  
S  
F  
N

**CSM EXP/EVA CHECKLIST**

ALFMED, PAGE X/2-38  
MAG (VV)

ALFMED

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

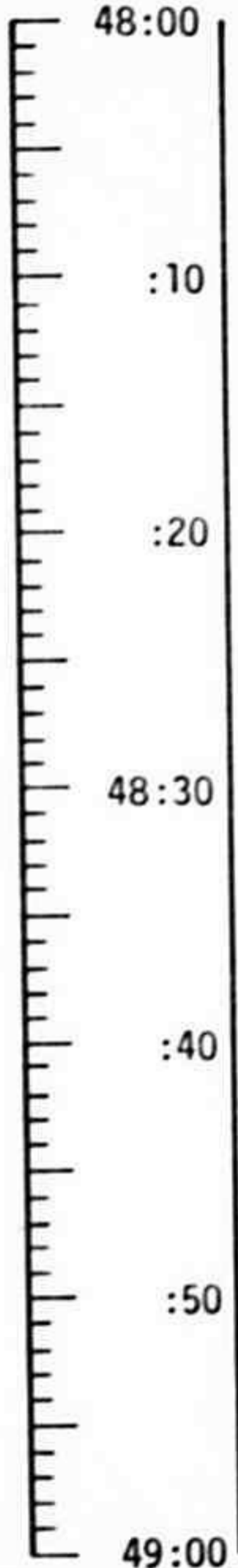
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1154 CST

NOTES



MSFN

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

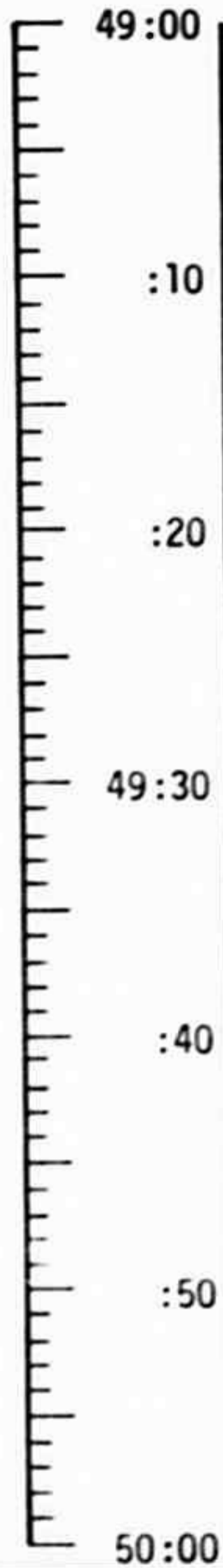
FLIGHT PLANNING BRANCH

MCC-H

1254 CST

# FLIGHT PLAN

## NOTES



M  
S  
F  
N

P52 (OPTION 3)  
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES  
GDC ALIGN

CREW EXERCISE PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

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	49:00 - 50:00	3/TLC	3-48

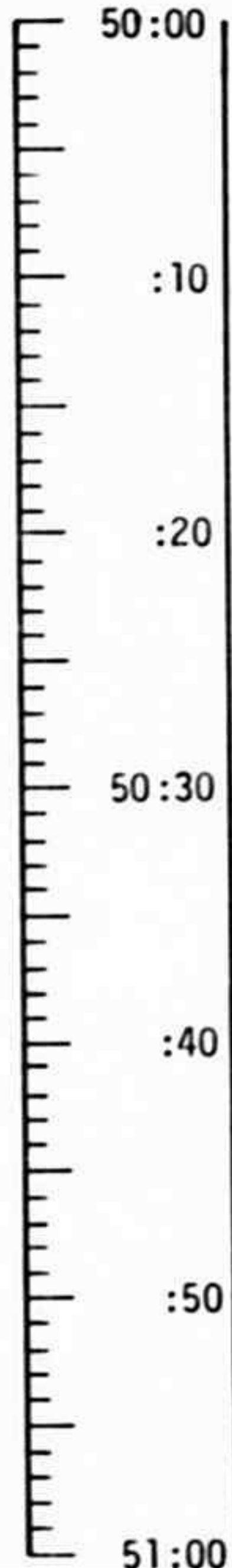
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1354 CST

NOTES



M  
S  
F  
N

**CSM EXP/EVA CHECKLIST**

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

EAT PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

CHANGE A

FLIGHT PLANNING BRANCH

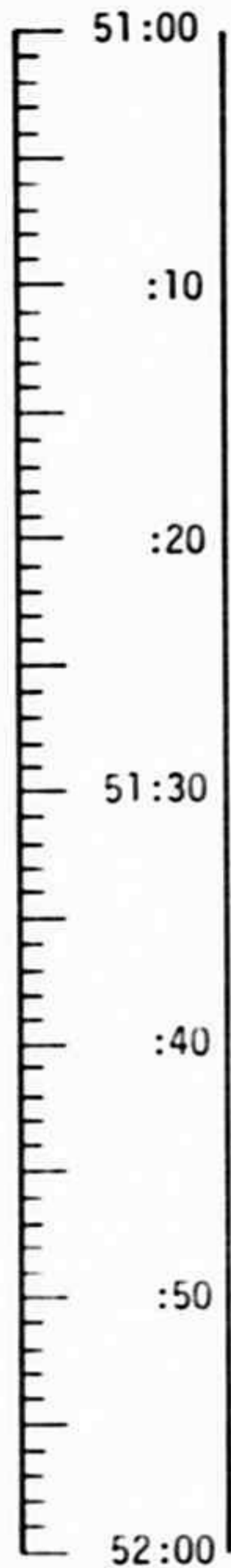
# FLIGHT PLAN

MCC-H

1454 CST

NOTES

UPLINK TO CSM  
CSM S.V. & V66



MSFN

EAT PERIOD

EVALUATE TRANSMISSION OF SXT, SCT, & WINDOWS WITH SPOTMETER ON SUN

PTC

DAP LOAD STATUS  
(21101)(X1111)

IF MCC-3 IS REQD,  
UPLINK TGT LOAD  
UPDATE MNVR PAD

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

ACQ MSFN, HGA: REACQ, NARROW (CUE MSFN FOR PITCH AND YAW ANGLES)

**CSM EXP/EVA CHECKLIST**

PC AND MC FILM CYCLING, PAGE X/1-17  
MC TO STBY MODE, PAGE X/1-15

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

CHANGE A

FLIGHT PLANNING BRANCH

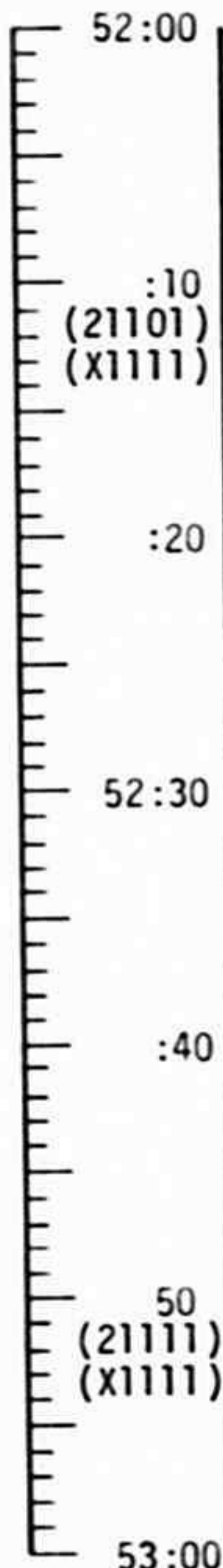
# FLIGHT PLAN

MCC-H

1554 CST

NOTES

MSFN CMD  
DATA SYS - OFF



M  
S  
F  
N

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

**CSM G&C CHECKLIST**

EXIT G&N PTC PAGE G/8-3

**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 (00)  
MAG (NN)

PTC

DAP LOAD STATUS  
(21101)(X1111)

LOI -22 HOURS

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

V48 (21111)  
(X1111)

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

FLIGHT PLANNING BRANCH



MCC-H

1654 CST

# FLIGHT PLAN

NOTES

53:00  
(21111)  
(X1111)

:10

:20

53:30

:40

:50

54:00

M  
S  
F  
N

O<sub>2</sub> FUEL CELL PURGE  
WASTE H<sub>2</sub>O DUMP

REPORT: LM/CM ΔP

IF ΔP > 2.4 PSID:

O<sub>2</sub> HEATERS 1&2 - AUTO

PRESSURIZE CSM TO 5.7 PSIA

COUCHES: CDR - 0°, CMP - 0°, LMP - 180°

V49 MNVR TO LM CHECKOUT ATTITUDE (53:45)  
(341,088,000) HGA P -30, Y 270

TUNNEL LIGHTS - ON

EQUALIZE CM/LM PRESSURE (DECAL)

TUNNEL HATCH REMOVAL (DECAL)

PROBE REMOVAL (DECAL)

DROGUE REMOVAL (DECAL)

REPORT: DOCKING TUNNEL INDEX ANGLE

O<sub>2</sub> HEATERS 1&2 - OFF (VERIFY)

CSM

LM

OPEN LM HATCH

**LM ACTIVATION CHECKLIST**

IVT TO LM PAGE 2-1

(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

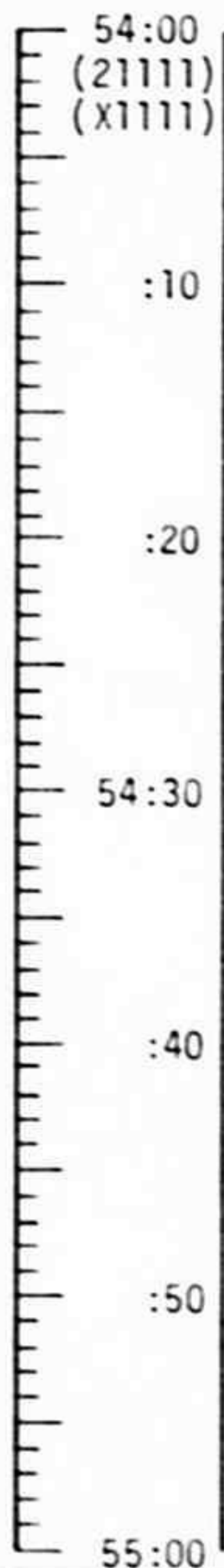
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1754 CST

NOTES



M  
S  
F  
N

CSM

SYS TEST - 70  
 SYS TEST IND = 0 VOLTS  
 PERFORM COMM CHECKS  
 WITH LM

LM

COMM ACTIVATION

(AT LM REQUEST)  
 LM PWR - ON  
 REPORT: GET \_\_\_:\_\_\_:\_\_\_  
 SYS TEST - 70  
 SYS TEST  
 IND = 0.5-3.2 VOLTS

COMM DEACTIVATION

IVT TO CSM

LMP DON PGA WITHOUT  
 HELMET AND GLOVES

*Photo A7LB Suit Donning  
 DAC, CIN, 10mm Lens*

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

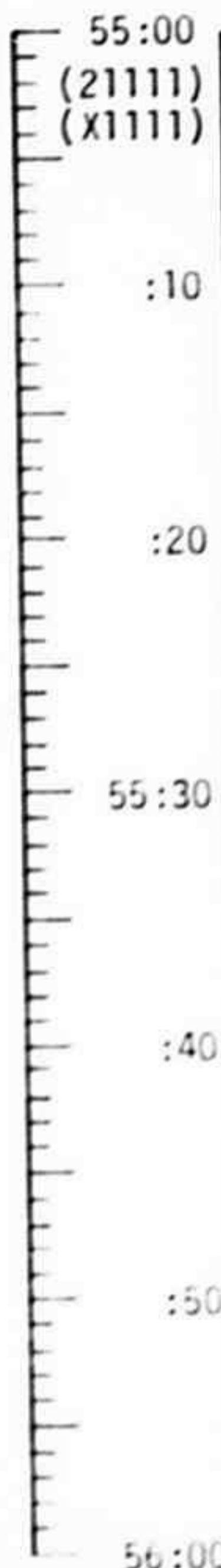
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC.H

1854 CST

NOTES



M  
S  
F  
N

CDR DON PGA WITHOUT HELMET AND GLOVES

CMF DON PGA WITHOUT HELMET AND GLOVES

LMP & CDR IVT TO LM  
ZIP PGA'S

LMP & CDR IVT CSM  
CLOSE LM HATCH  
INSTALL DROGUE (DECAL)  
INSTALL PROBE (DECAL)  
HATCH INSTALLATION (DECAL)  
LM TUNNEL VENT VALVE - LM/CM ΔP  
TUNNEL LIGHTS - OFF

DOFF PGA'S

STOW PGA'S WITH URINE BAG ON TOP (PGA BAG)

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

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)

S-170 BISTATIC RADAR FREQUENCY CHECK

VHF AM B - DUPLEX

VHF RNG - RNG

VHF ANT - LEFT (VERIFY)

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

DAP LOAD STATUS  
(21101)(X1111)

S-BAND UPLINK OFF  
MEASURE DOWNLINK  
FREQUENCY

56:30

M  
S  
F  
H

PTC

:40

EAT PERIOD

:50

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 PLANNING BRANCH

MCC-H

2054 CST

# FLIGHT PLAN

## NOTES

57:00  
:10  
:20  
57:30  
:40  
:50  
58:00

M  
S  
F  
N

EAT PERIOD

LiOH CANISTER CHANGE  
(7 INTO A, STOW 5 INTO B6)

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST PAGE S/1-29  
COMM - OMNI  
SECURE HGA: MAN, WIDE HGA P -52, Y 270

FILM MAGS REQD FOR NEXT DAY:  
DAC: CEX - BB  
EL: UV - 00, CEX - NN

PTC

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

EARTH DISTANCE  
~176,400 NM

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

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2154 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

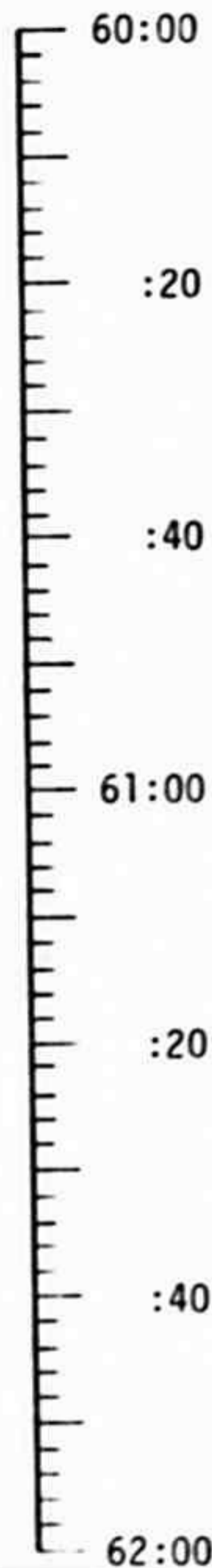
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2354 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

DAP LOAD STATUS  
(21101)(X1111)

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

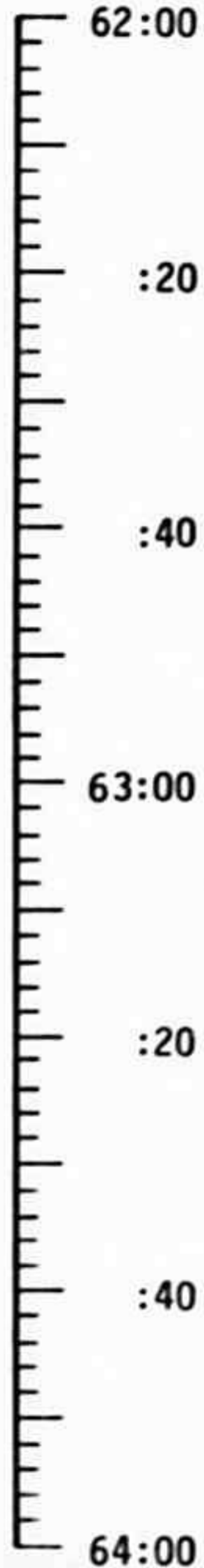
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0154 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

0354 CST

# FLIGHT PLAN

NOTES

DAP LOAD STATUS  
(21101)(X1111)



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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

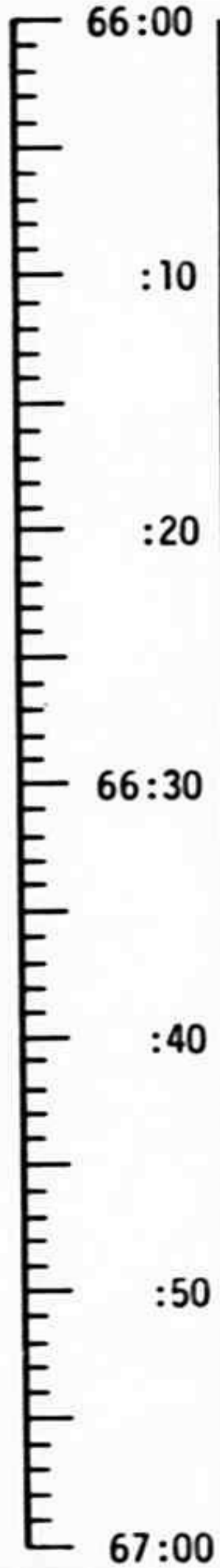
# FLIGHT PLAN

MCC-H

0554 CST

NOTES

UPDATE TO CSM  
CONSUMABLES STATUS  
FLIGHT PLAN



M  
S  
F  
N

**CSM SYSTEMS CHECKLIST**

POST-SLEEP CHECKLIST PAGE S/1-29

REPORT: LM/CM ΔP  
IF ΔP > 2.4 PSID:  
O<sub>2</sub> HEATERS 1&2 - AUTO  
PRESSURIZE CSM TO 5.7 PSIA

TERMINATE TIMING VOIDS AND MEASURING FLUID INTAKE

EAT PERIOD

PTC

DAP LOAD STATUS  
(21101)(X1111)

EARTH DISTANCE  
~189,400 NM

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

FLIGHT PLANNING BRANCH

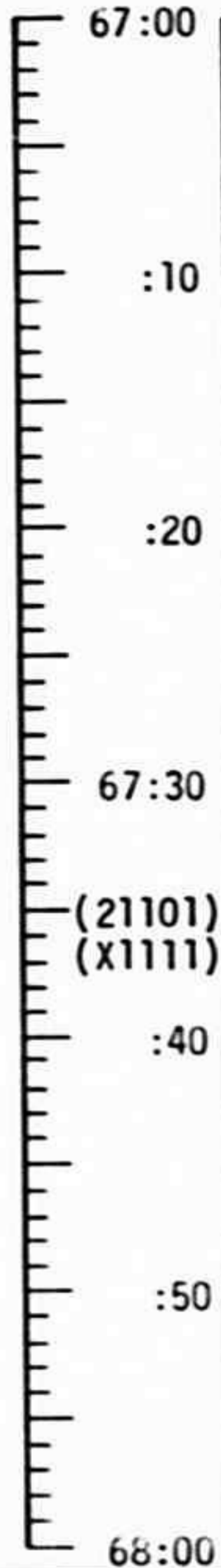
# FLIGHT PLAN

MCC-H

0654 CST

NOTES

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



M  
S  
F  
N

~~ADD RULED MEASURE  
TO BACK OF STAR CHART  
IN CM~~

~~EVAL RELEASING  
OBJECTS WITH REPEATABLE  
I.C.'S~~

EAT PERIOD

PTC

**CSM G&C CHECKLIST**

\*EMS ΔV TEST & NULL BIAS CHECK  
\*REPORT: BIAS  
EXIT G&N PTC

PAGE G/2-5

PAGE G/8-3

CM/LM PRESSURE EQUALIZATION (DECAL)  
PRESSURE EQUAL VALVE - CLOSED  
O<sub>2</sub> HEATERS 1&2 - OFF (VERIFY)  
CMP DON, CDR DOFF BIOMED HARNESS

**CSM EXP/EVA CHECKLIST**

V49 MNVR TO MOON UV PHOTO ATT (68:00)  
(144,233,000) HGA P -62, Y 157  
MOON UV PHOTOGRAPHY, PAGE X/2-19  
MAG (OO)  
MAG (NN)

DAP LOAD STATUS  
(21101)(X1111)

\*PERFORM IF MCC-4  
IS REQUIRED

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

FLIGHT PLANNING BRANCH

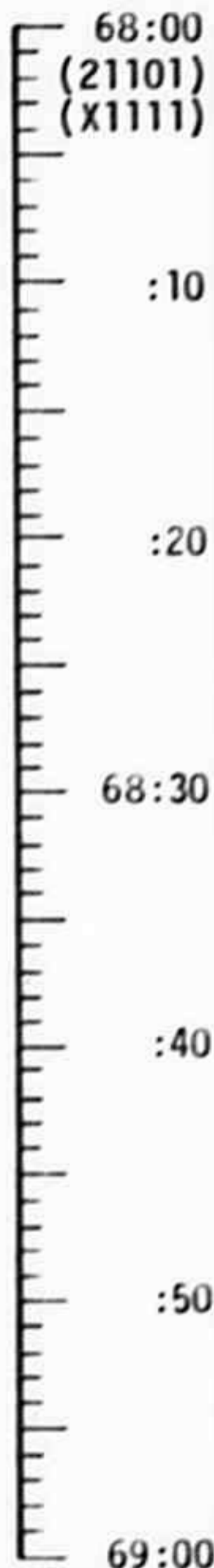
# FLIGHT PLAN

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



M  
S  
F  
N



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

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

**PUT VELCRO ON EL SHUTTER SPEED**

REPORT: GYRO TORQUING ANGLES  
GDC ALIGN

- \*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

FLIGHT PLANNING BRANCH

MCC-4  
BURN TABLE  
*NO MANUAL START OR RESTART*

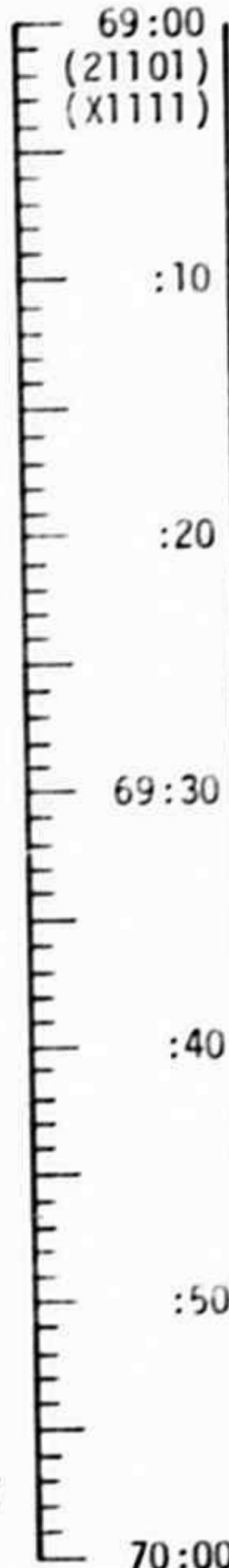
P OR Y RATE	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC	TRIM ONLY X AXIS TO 0.2 FPS

# FLIGHT PLAN

MCC-H

0854 CST

NOTES



M  
S  
F  
N

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

**MCC-4**

TIG: 69:29  
BT: NOM ZERO  
ΔVT: NOM ZERO  
ULLAGE: NONE

\*V66 SET CSM S.V. INTO LM S.V.  
\*REPORT: BURN STATUS  
V49 MNVR TO SIM DOOR JETTISON ATTITUDE (69:49)  
(353,042,000) HGA P -25, Y 307

**CSM EXP/EVA CHECKLIST**

SIM DOOR JETTISON, PAGE X/1-7

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

**SIM DOOR JETTISON 69:59**

\*PERFORM IF MCC-4 IS REQUIRED

BURN STATUS REPORT					
X	X		●		ΔTIG
X	X		●		BT
					V <sub>gx</sub>
				●	
					TRIM
X	X	X			R
X	X	X			P
X	X	X			Y
					V <sub>gx</sub>
				●	V <sub>gy</sub>
				●	V <sub>gz</sub>
				●	ΔV <sub>c</sub>
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

LOI -5 HR

69:30

MSFN CMD  
DATA SYS-ON  
DSE RECORD

:40

MSFN UPDATE  
GO/NO-GO FOR  
SIM DOOR JETT

:50

70:00

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

CHANGE A

FLIGHT PLANNING BRANCH

MCC-H

0954 CST

# FLIGHT PLAN

NOTES

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

UPDATE TO CSM  
LOI MNVR PAD  
(PRELIMINARY)



M  
S  
F  
N

V49 MNVR TO P52 ATTITUDE (70:15)  
(324,094,316) HGA P -17, Y 296

H<sub>2</sub> HEATERS 1 & 2 - AUTO

H<sub>2</sub> FANS 3 - OFF

cb O<sub>2</sub> TK 50W HTRS (3) - OPEN

O<sub>2</sub> HEATERS 1 & 2 - AUTO

O<sub>2</sub> HEATER 3 - OFF

REPORT: LM/CM ΔP

IF ΔP < 0.2 PSID, PRESSURE EQUAL VALVE - OPEN

IF ΔP > 0.2 PSID, PERFORM CM/LM PRESSURE EQUALIZATION (DECAL)

CHECK MISSION TIMER AGAINST CMC CLOCK

**CSM G&C CHECKLIST**

EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5

REPORT: BIAS

SIM EXP STATUS  
(\*0000)  
(31014)

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

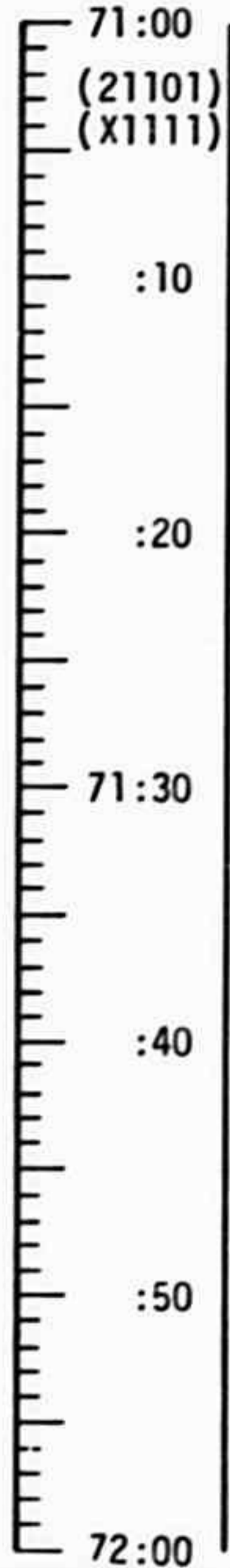
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1054 CST

## NOTES



M  
S  
F  
N

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

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

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

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

STARS \_\_\_\_\_,  
 SA \_\_\_\_\_,  
 TA \_\_\_\_\_,

SIM EXP STATUS  
 (\*0000)  
 (31014)

<b>P52 IMU REALIGN</b>	
N71:	____, ____
N05:	____. ____
N93:	
X	____. ____
Y	____. ____
Z	____. ____
GET	____: ____: ____

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

FLIGHT PLANNING BRANCH



# FLIGHT PLAN

MCC-H

1154 CST

NOTES



72:00  
(21101)  
(X1111)

:10

:20

72:30

:40

:50

73:00

M  
S  
F  
N

GR: SHIELD - OFF

GR: SHIELD - ON

EAT PERIOD

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

SET STARS	L	O	I			PURPOSE
	S	P	S/G	&	N	PROP/GUID
	+					WT N47
R ALIGN _____		0	0	•		P TRIM N48
P ALIGN _____		0	0	•		Y TRIM
Y ALIGN _____	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0		•		SEC
ULLAGE _____					•	$\Delta V_x$ N81
_____					•	$\Delta V_y$
_____					•	$\Delta V_z$
_____	X	X	X			R (000)
_____	X	X	X			P (000)
_____	X	X	X			Y (000)
	+				•	H <sub>A</sub> N44
					•	H <sub>P</sub>
	+				•	$\Delta V_T$
HORIZON/WINDOW _____	X	X	X	•		BT
_____	X				•	$\Delta V_C$
_____	X	X	X	X		SXTS
_____	+			•	0	SFT
_____	+		•	0	0	TRN
	X	X	X			BSS
	X	X			•	SPA
	X	X			•	SXP

# FLIGHT PLAN

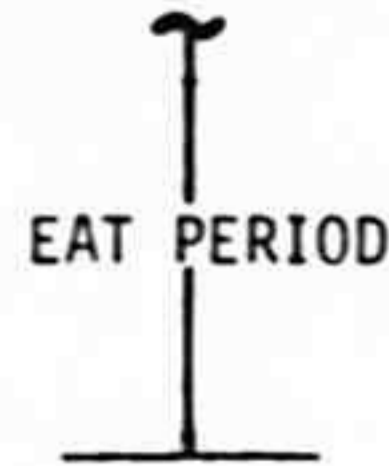
MCC-H

1254 CST

## NOTES



M  
S  
F  
N



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)

PRE-SPS BURN SIM PREP (CUE CARD)

P30 EXTERNAL ΔV

V49 MNVR TO PAD BURN ATTITUDE (73:50)

OMNI D

SXT STAR CHECK

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.

MAP UPDATE	<u>1</u>
LOS:	_ _ _ : _ _ : _ _
180°:	_ _ _ : _ _ : _ _
AOS WITH LOI:	_ _ _ : _ _ : _ _
AOS WITHOUT LOI:	_ _ _ : _ _ : _ _

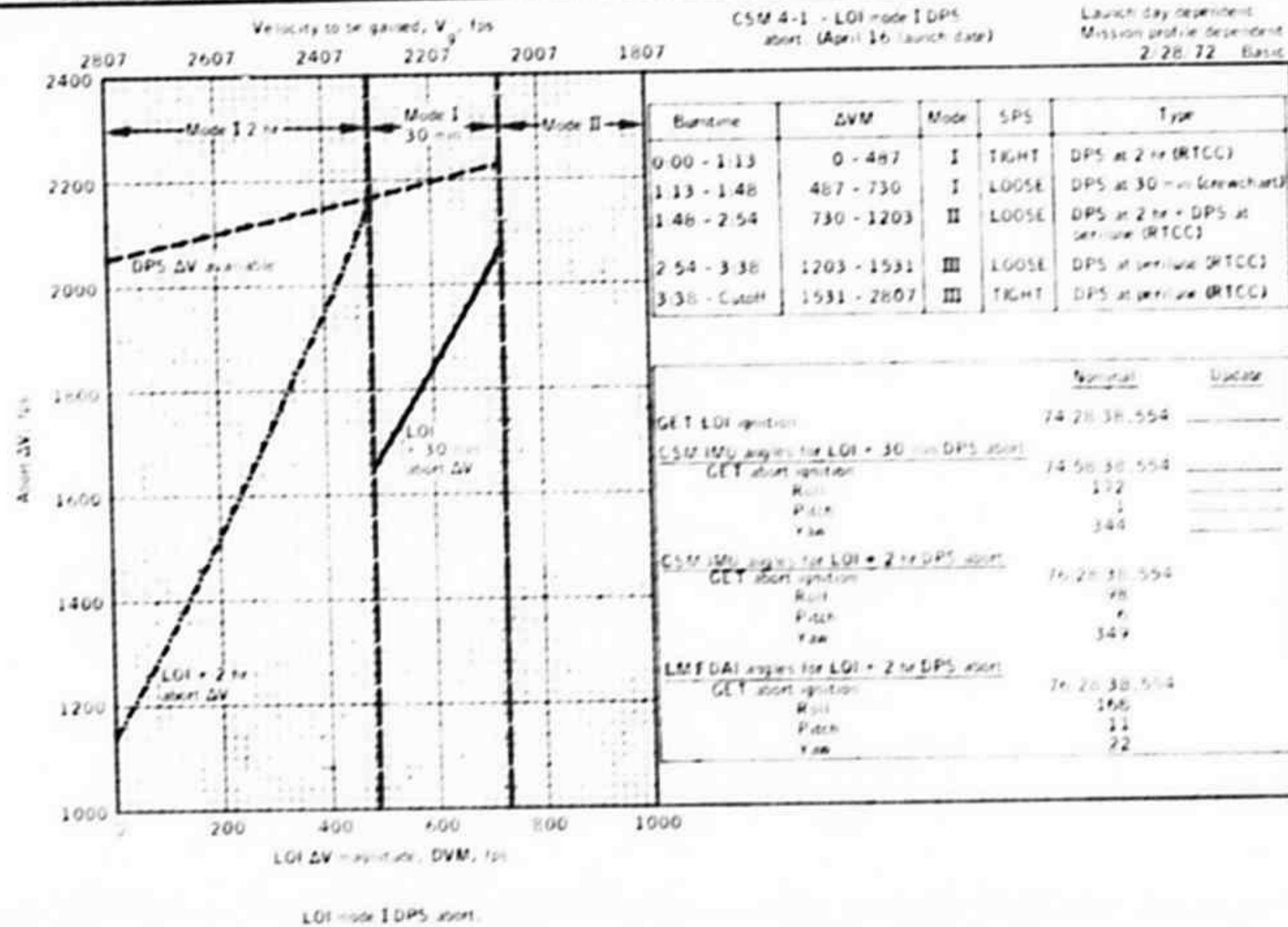
UPDATE TO CSM  
 LOI MNVR PAD  
 MAP UPDATE REV 1

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

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



# FLIGHT PLAN

MCC-H

1354 CST

## NOTES

SIM EXP STATUS  
(\*0000)

(31000)

S-IVB LUNAR IMPACT

GET: 74:30:08

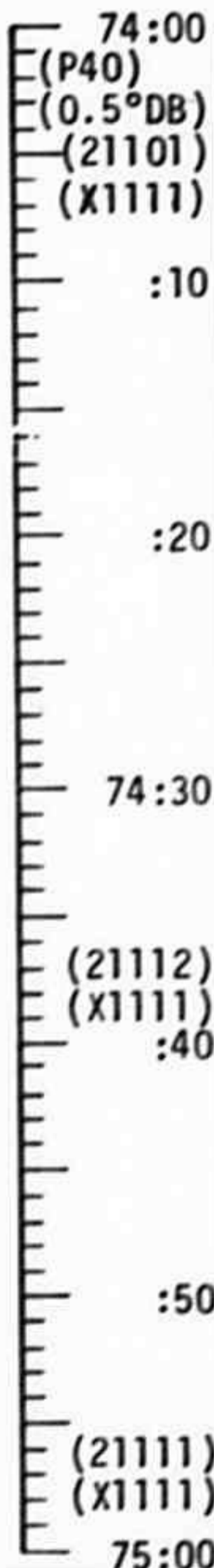
LAT: 2.28°S

LONG: 31.79°W

PREDICTED LOI SINGLE  
BANK BURN TIME:

6 MIN 29 SEC

RECORD VG IMU DATA  
GO/NO-GO FOR LOI



M  
S  
F  
N

P40 SPS THRUSTING

GO/NO-GO FOR LOI

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

LOI

TIG: 74:28:38.5  
BT: 6 MIN 15 SEC  
ΔVT: 2807.0 FPS  
ULLAGE: NONE  
ORBIT: 170.6 x 58.5 NM

P00  
V66 SET CSM S.V. INTO LM S.V.  
V48 (21112)(X1111)  
V49 MNVR TO COMM ATT (74:49)  
(176,046,007)

POST-SPS BURN SIM PREP (CUE CARD)

ACQ MSFN HGA P -57, Y 346

PC: MODE - STBY  
PWR - ON

REPORT: BURN STATUS  
V48 (21111)(X1111)  
PC: PWR - OFF (MSFN CUE)

M  
S  
F  
N

MSFN CMDS:  
DUMP DSE

BURN STATUS REPORT					
X	X		•		ΔTIG
X	X		•		BT
				•	V <sub>gx</sub>
TRIM					
X	X	X			R
X	X	X			P
X	X	X			Y
				•	V <sub>gx</sub>
				•	V <sub>gy</sub>
				•	V <sub>gz</sub>
				•	ΔV <sub>c</sub>
X	X	X			FUEL
X	X	X			OX
X	X	X			UNBAL

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

# CSM FLIGHT PLAN

SIM EXP STATUS  
(\*0000)  
(01214)

75:30  
(P20)  
(3.0°DB)  
(21111)  
(X1111)

MSFN UPLINK:  
DESIRED ORIENT (LDG SITE)

SIM EXP STATUS  
(\*0000)  
(01214)

GR: SHIELD - OFF

GR: SHIELD - ON (CTR)

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

REPORT: GYRO TORQUING ANGLES

P52 (OPTION 1)  
(LDG SITE ORIENT)

P20, CMC MODE - AUTO  
GDC ALIGN

CONFIGURE FOR URINE DUMP

P52 IMU REALIGN

N71:                    

N05:                    

N93:

X                    

Y                    

Z                    

GET                    

75:00

(21111)  
(X1111)

75:10

75:20

(P20)  
(3.0°DB)

75:30

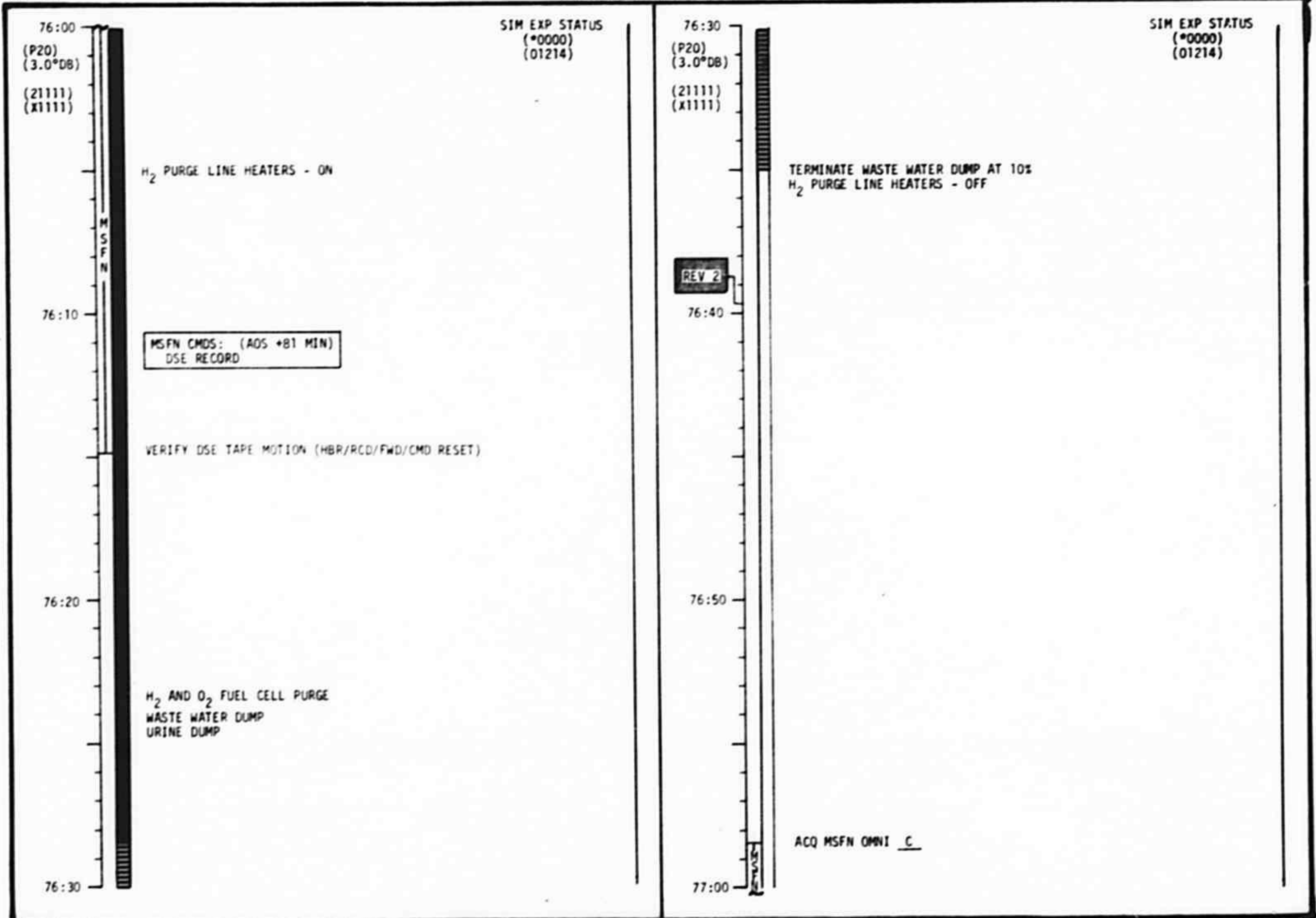
V44 (SET LUNAR SURFACE FLAG)  
CYCLE CMC MODE - FREE/AUTO  
P20 OPT 5 (+X FWD, -Z INT) (75:23)  
N78 (+090.00)  
    (+090.00)  
    (+180.00)  
N79 (+003.00)  
    [176.000/046.007]

NOTE: PRO ON ~~N70~~ N70.  
AT 75:23 TO  
INSURE P20  
ATT = INERTIAL ATT.

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

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHG. B FINAL (4/16)	3/6/72 1/1/72	3-74

# CSM FLIGHT PLAN



SIM EXP STATUS  
 (\*0000)  
 (01214)

SIM EXP STATUS  
 (\*0000)  
 (01214)

76:00  
 (P20)  
 (3.0°DB)  
 (21111)  
 (X1111)

76:30  
 (P20)  
 (3.0°DB)  
 (21111)  
 (X1111)

H<sub>2</sub> PURGE LINE HEATERS - ON

TERMINATE WASTE WATER DUMP AT 10%  
 H<sub>2</sub> PURGE LINE HEATERS - OFF

MSFN CMDS: (AOS +81 MIN)  
 DSE RECORD

REV 2

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

H<sub>2</sub> AND O<sub>2</sub> FUEL CELL PURGE  
 WASTE WATER DUMP  
 URINE DUMP

ACQ MSFN OMNI C

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-75



# CSM FLIGHT PLAN

77:00  
(P20)  
(3.0°DB)  
(21111)  
(X1111)

MSFN CMDS: (AOS +2 MIN)  
DSE REWIND

SIM EXP STATUS  
(\*0000)  
(01214)

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

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

PC: MODE - STBY  
PWR - ON

PC PWR - OFF (MSFN CUE)

77:10

77:20

77:30

77:30  
(P20)  
(3.0°DB)  
(21111)  
(X1111)

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

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

SIM EXP STATUS  
(\*0000)  
(01214)

**Descartes**  
**CM 9/EL/250/VHBN**  
**(±5.6, 1/800, ∞) 6FR**  
**MAG 55**

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

77:40

77:50

(21111)  
(X1111)

78:00

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  
CM RCS MONITORING CHECK PAGE S/1-1  
ECS MONITORING CHECK PAGE S/1-5

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-76

# CSM FLIGHT PLAN

SIM EXP STATUS  
(\*0000)  
(01214)

78:00  
(21111)  
(x1111)

(21101)  
(x1111)

78:10

78:20

(P40)  
(0.5"DB)

78:30

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

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)

## P30 MANEUVER

SET STARS	DOI					PURPOSE	
	S	P	S/G	&	N	PROP/GUID	
	.					WT	N47
R ALIGN		0	0	.		P TRIM	N48
P ALIGN		0	0	.		Y TRIM	
Y ALIGN	.	0	0			HRS	GETI
	.	0	0	0		MIN	N33
	.	0		.		SEC	
ULLAGE				.		ΔV <sub>X</sub>	N81
				.		ΔV <sub>Y</sub>	
				.		ΔV <sub>Z</sub>	
	X	X	X			R	(000)
	X	X	X			P	(282)
	X	X	X			Y	(359)
	.			.		H <sub>A</sub>	N44
				.		H <sub>P</sub>	
	.			.		ΔVT	
HORIZON/WINDOW	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	
OTHER		0		.		LAT	N61
				.		LONG	
	.			.		RTGO	EMS
	.			.		VTD	
			.	.		GET	0.05G

# CSM FLIGHT PLAN

SIM EXP STATUS  
(•0000)  
(31000)

NOTE: DOI WILL BE PERFORMED ON BANK A ONLY

DOI (000,180/282,359)	TIG: 78:35:30.3
	BT: 24.1 SEC
	ΔVT: 206.0 FPS
	ULLAGE: 4 JET, 15 SEC
	ORBIT: 58.6 x 10.8

P00  
V66 SET CSM S.V. INTO LM S.V.

78:40 DELAY POST SPS BURN SIM PREP UNTIL 79:42

V49 MWR TO BAILOUT BURN ATTITUDE (79:10)  
(000,040,000)  
SET HGA P -58, Y 15 FOR ADS ACQ

PEV 3

78:50 UNSTOW AND STUDY LDMX BOOK

## 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			ΔTIG
X	X			BT
				V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
				V <sub>gy</sub>
				V <sub>gz</sub>
				ΔV <sub>C</sub>
X				FUEL
X				OX
X				UNBAL

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

# CSM FLIGHT PLAN

79:00  
(21101)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(31000)

MAP UPDATE REV 3

LOS : \_\_\_\_\_

180°: \_\_\_\_\_

AOS : \_\_\_\_\_

79:10

ACQ MSFN HGA P -58, Y 15

MSFN CMDS:  
DSE STOP

REPORT: BURN STATUS

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  
ΔVC: 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

V49 MVNR TO LDMK OBS ATT (79:35)(IF NO BAILOUT REQD)  
(015,292,000) OMNI D  
LOAD N89 (J-2 OBS)

79:30

79:30  
(21101)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(31000)

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

LDMK **J-2 OBS**

T HOR: \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_

TCA -20 SEC: \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_

LAT: -08.917  
LONG/2: +12.241  
ALT: +000.00

LDMK ACQUISITION  
(TGT IN FOV ~1 MIN)

TCA  
**R (s N89 = -09.000,**  
V48 (21101)(X1111) **+07.745**

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

79:40

79:50

CMP DOFF BIOMED HARNESS  
LMP DON BIOMED HARNESS

CSM EXP/EVA CHECKLIST

SOLAR MONITOR DOOR/EXP TIEDOWN RELEASE, PAGE X/1-7

80:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-79

# CSM FLIGHT PLAN

80:00  
(P20)  
(0.5°DB)  
(21101)  
(X1111)

MC/LA COVER - OPEN  
AP/XR COVER - OPEN  
MC - EXT  
GR - DPLY (BP +2 SEC ONLY) then OFF (CTR)  
GR - RETR  
MS - DPLY (BP +2 SEC ONLY) then OFF (CTR)  
MS - RETR  
XR - ON

SIM EXP STATUS  
(+0000)  
(01214)  
CAUTION: DO NOT EXCEED  
12 SEC WITH  
SWITCH IN  
DEPLOY POSITION

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 CMDS: (AOS +61 MIN)  
DSE RECORD

80:10

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

EAT PERIOD

80:20

80:30

80:30  
(P20)  
(0.5°DB)  
(21101)  
(X1111)

SIM EXP STATUS  
(+1021)  
(03232)

MAP CAMERA PHOTO PAD  
T-START: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
T-STOP: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
(167.3°W TO 168.0°E)

PC: STBY  
STEREO  
PWR

IMAGE MTN - ON  
MC - ON (T START)  
PC - OPR (T START)  
IMAGE MTN - INCR (BP +1 STEP)/ON

PAN CAMERA PHOTO PAD  
T-START: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
T-STOP: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
(167.3°W TO 168.0°E)

IMAGE MTN - INCR (BP +2 STEPS)/ON

EAT PERIOD

PC - STBY (T STOP)  
MC - OFF (T STOP)  
WAIT 30 SEC  
MC - STBY  
LA - OFF  
IMAGE MTN - OFF  
MC - RETR  
MANUALLY ROLL CW 40°

80:40

REV 4

80:50  
(P20)  
(2.0°DB)

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

MC/LA COVER - CLOSE  
MS - DPLY  
GR - DPLY

81:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-80

# CSM FLIGHT PLAN

81:00  
(P20)  
(2.0°DB)  
2  
(21101)  
(X1111)

**LOOK FOR BOOMS AT FULL DEPLOYMENT**

SIM EXP STATUS (-0111) (11232)

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

EAT PERIOD

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

MSFN CUE: (AOS +4 MIN) HGA AUTO

MS: ION SOURCE - ON  
MULT - LOW (VERIFY)  
DSCRM - LOW (VERIFY)

MSFN COMDS: (AOS +5 MIN) DSE PLAYBACK

GR: SHIELD - OFF  
MS: MULT - HIGH

PC: PWR - OFF (MSFN CUE)

81:10

81:20 MS: DSCRM - HIGH

GR: GAINSTEP - ON(UP) 6 STEPS (STEP 1)/SHIELD - ON (CTR)  
MS: MULT - LOW

81:30 MS: DSCRM - LOW

81:30  
(P20)  
(2.0°DB)  
2  
(21101)  
(X1111)

SIM EXP STATUS (-0111) (01222)

NOTE: LIFT-OFF TIME WILL BE UPDATED IF THE TIME OF REV 26 MERIDIAN CROSSING DIFFERS MORE THAN +2 MIN FROM 123:28:33.1

MSFN UPDATE:  
TRAJECTORY STATUS  
REFSMAT 00 TIME (IF REQD)  
TEI 12 AND TEI 19  
LM DAP LOAD (COPY ON PAGE 1 IN THE LM DATA CARD BOOK)

MSFN UPLINK:  
SHORT BURN CONSTANTS  
CSM S.V. AND V66  
LIFT-OFF TIME (IF REQD)  
DESIRED ORIENT (LDG SITE) (IF REQD)

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

CMC MODE - FREE  
P52 (OPTION 3) (LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

P52 (OPTION 1)(IF REQD) (LDG SITE ORIENT)

81:40

81:50 P20, CMC MODE - AUTO  
GDC ALIGN

L10H CANISTER CHANGE (9 INTO A, STOW 7 IN B6)

MSFN UPLINK:  
JET-ON MONITOR LOADS

MSFN COMDS: (AOS +54 MIN) DSE REWIND

82:00 PRESSURE EQUALIZATION VALVE - CLOSE

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

REFSMAT 00 TIME				
+	0	0		HRS
+	0	0	0	MIN
+	0			SEC

P52 IMU REALIGN

N71: ---, ---

N05: ---, ---

N93: ---, ---

X ---, ---

Y ---, ---

Z ---, ---

GET ---, ---

# CSM FLIGHT PLAN

SIM EXP STATUS  
(-0111)  
(01222)

82:00  
(P20)  
(27.0°DB)  
**2**  
(21101)  
(X1111)

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST PAGE 5/1-29

LOGIC PWR (2) - OFF

MSFN CMDS: (AOS +61 MIN)  
DSE RECORD

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	_____

82:30  
(P20)  
(27.0°DB)  
**2**  
(21101)  
(X1111)

**REV 5**

82:40

82:50

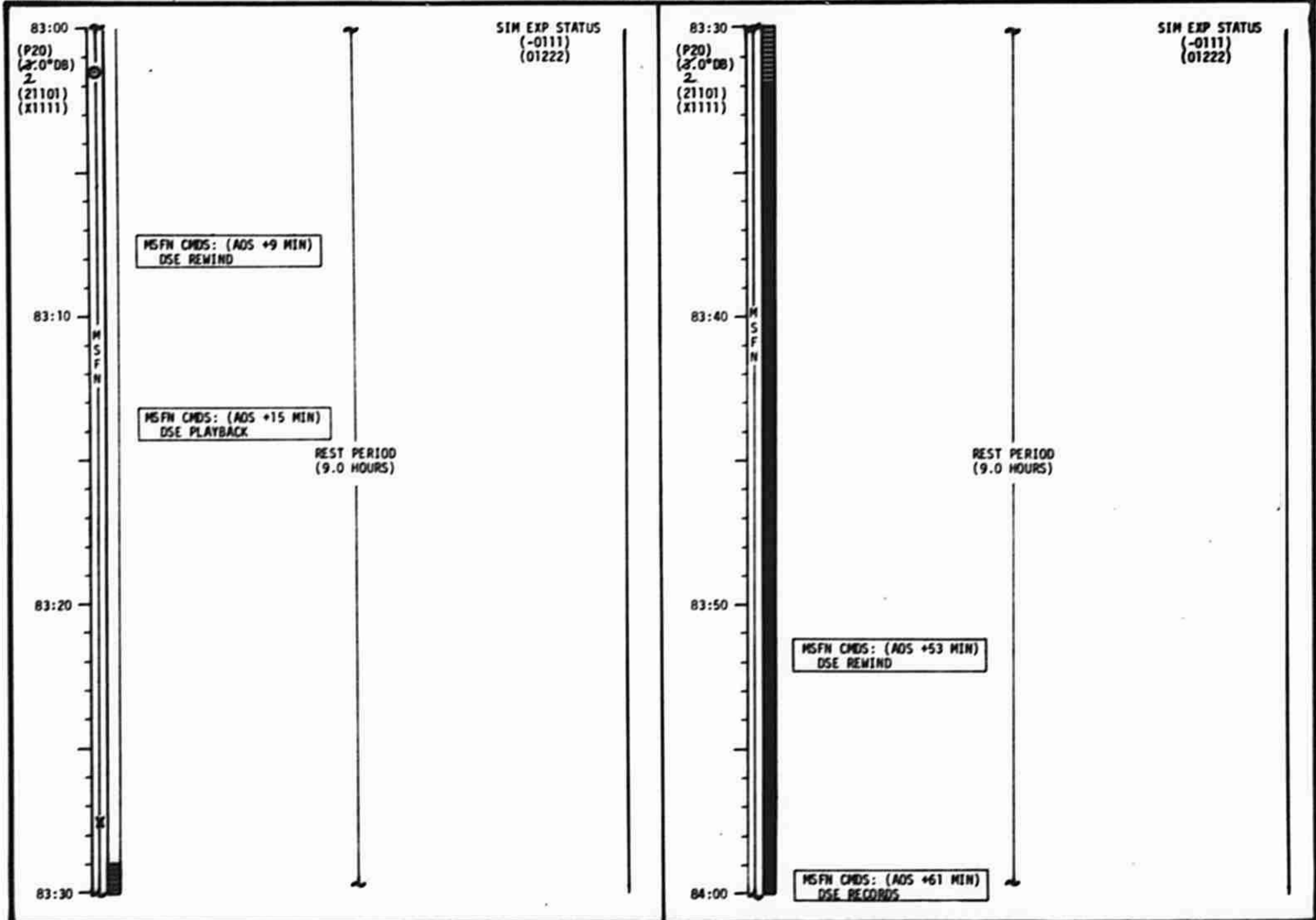
83:00

REST PERIOD  
(9.0 HOURS)

FILM MAGS REQD FOR NEXT DAY!  
DAC: CEX-BB & CC  
EL: CEX-NN & PP, UV-00, VHBW-SS  
NK: VHBW-XX

MISSION	EDITION	DATE	PAGE
APOLLO 16	<b>B</b> CHANGE A <del>4/16</del> (4/16)	5/10/72 4/7/72	3-82

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A-FINAL (4/16)	3/27/72 3/16/72	3-83



# CSM FLIGHT PLAN

84:00  
 (P20)  
 (2.0°DB)  
 2  
 (21101)  
 (X1111)

84:10

84:20

84:30

M  
S  
F  
N

REST PERIOD  
(9.0 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

84:30  
 (P20)  
 (2.0°DB)  
 2  
 (21101)  
 (X1111)

84:40

84:50

85:00

REV 6

M  
S  
F  
N

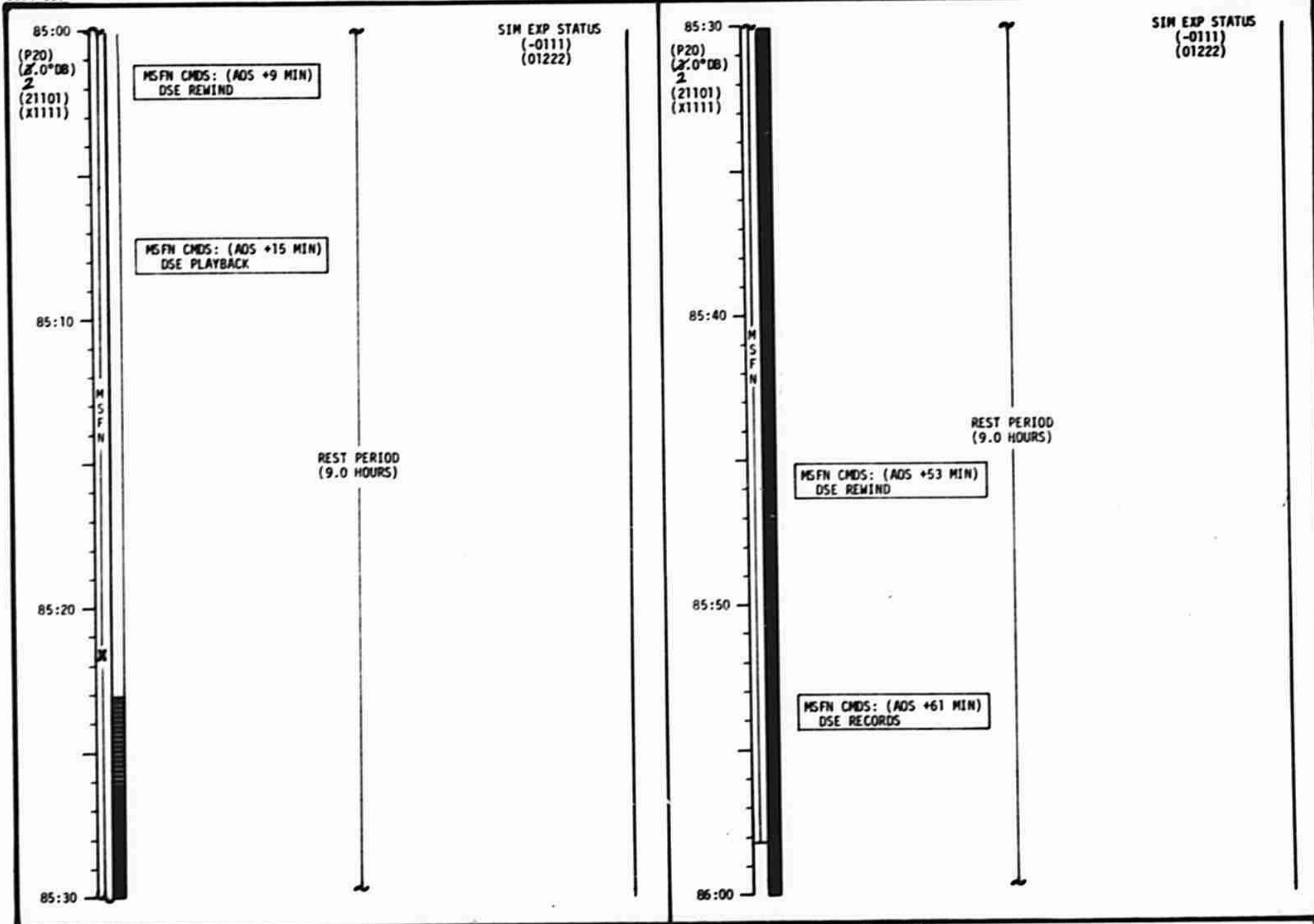
REST PERIOD  
(9.0 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/27/72 3/6/72	3-84

# CSM FLIGHT PLAN

0054 CST



SIM EXP STATUS  
(-0111)  
(01222)

SIM EXP STATUS  
(-0111)  
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/27/72-216172	3-85

# CSM FLIGHT PLAN

86:00  
 (P20)  
 (2.0°DB)  
 2  
 (21101)  
 (X1111)

86:10

86:20

86:30

REV 7

SIM EXP STATUS  
 (-0111)  
 (01222)

REST PERIOD  
 (9.0 HOURS)

86:30  
 (P20)  
 (2.0°DB)  
 2  
 (21101)  
 (X1111)

86:40

86:50

87:00

M  
S  
F  
N

MSFN CMDS: (AOS +9 MIN)  
 DSE REWIND

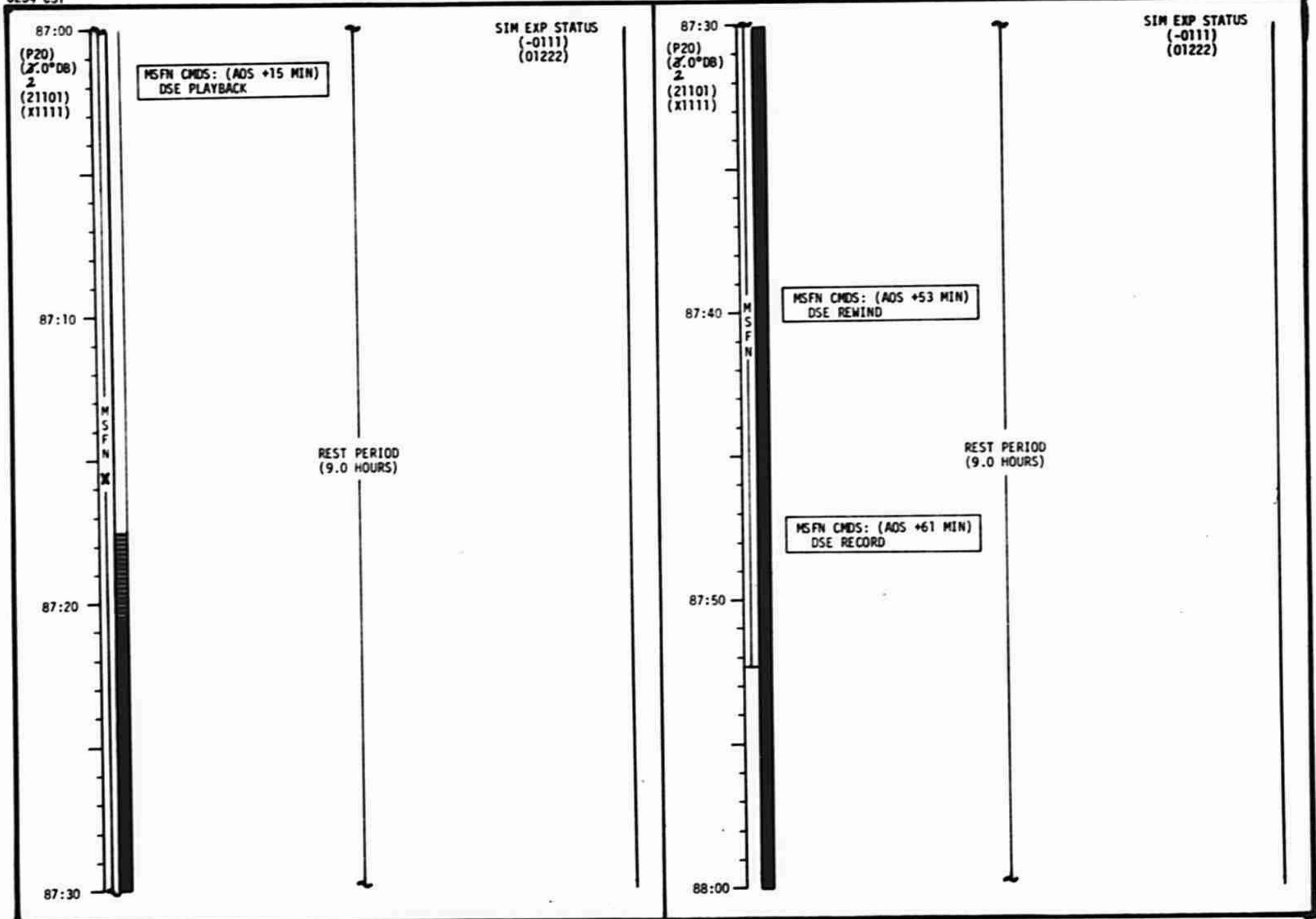
SIM EXP STATUS  
 (-0111)  
 (01222)

REST PERIOD  
 (9.0 HOURS)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE FINAL (4/16)	3/27/72 316172	3-86

# CSM FLIGHT PLAN

0254 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/27/72-316-72	3-87

# CSM FLIGHT PLAN

SIM EXP STATUS  
(-0111)  
(01222)

SIM EXP STATUS  
(-0111)  
(01222)

88:00  
(P20)  
(7.0°DB)  
2  
(21101)  
(X1111)

88:30  
(P20)  
(7.0°DB)  
2  
(21101)  
(X1111)

REST PERIOD  
(9.0 HOURS)

REST PERIOD  
(9.0 HOURS)

REV 8

88:20

88:40

MSFN CMDS: (AOS +9 MIN)  
DSE REWIND

88:50  
M  
S  
F  
N

MSFN CMDS: (AOS +15 MIN)  
DSE PLAYBACK

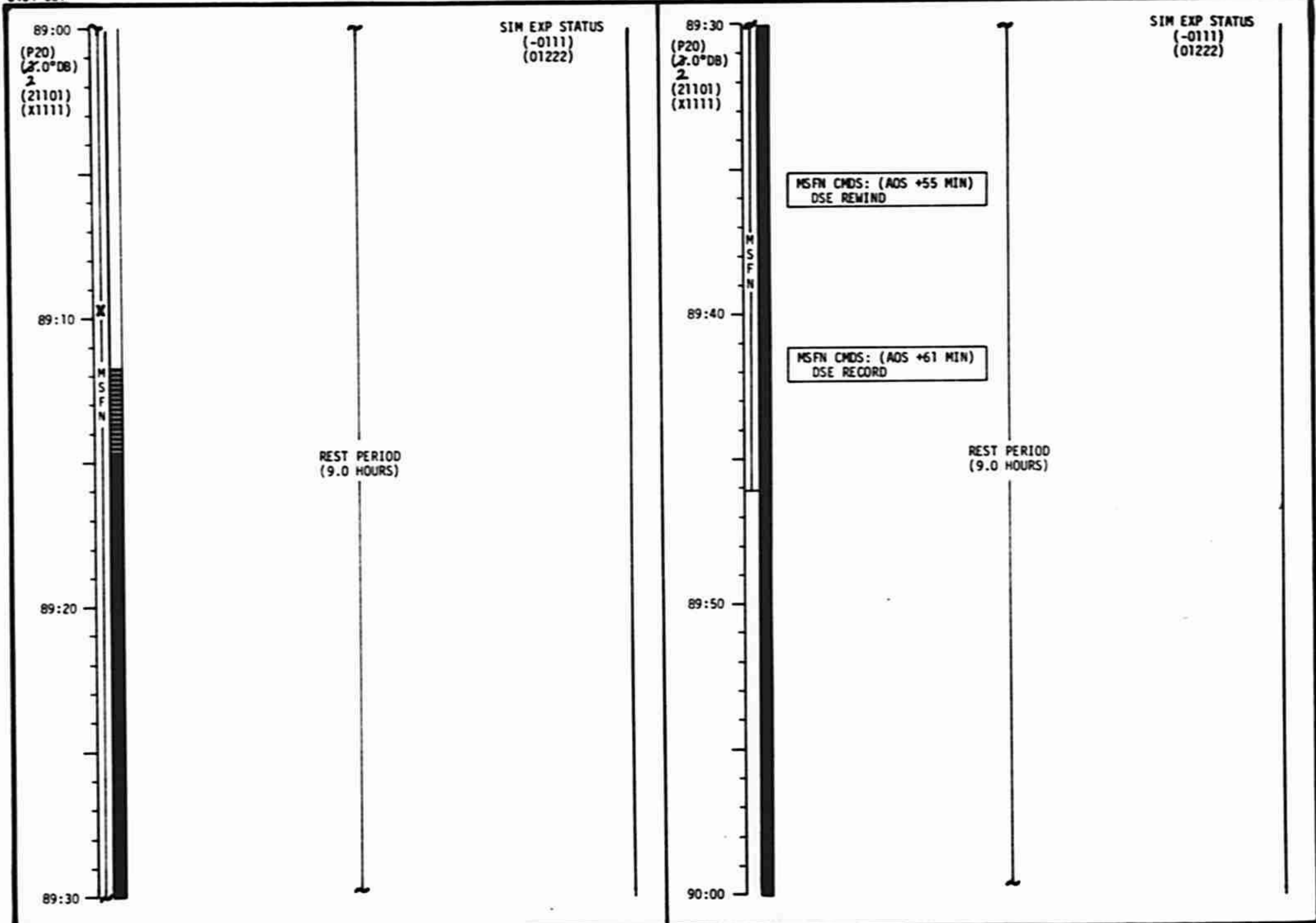
88:30

89:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/27/72-3/6/72	3-88

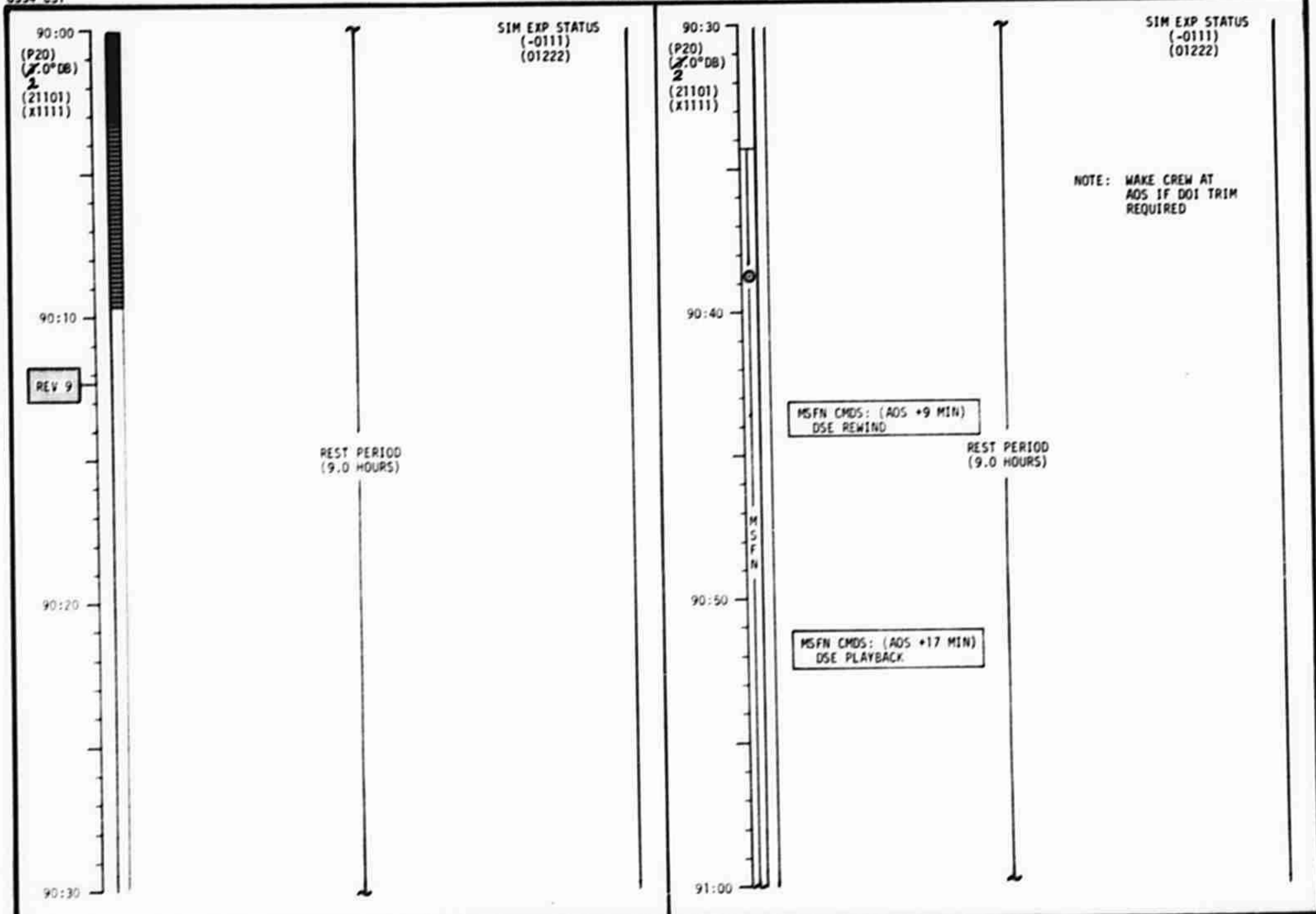
# CSM FLIGHT PLAN

0454 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/27/72 216+72	3-89

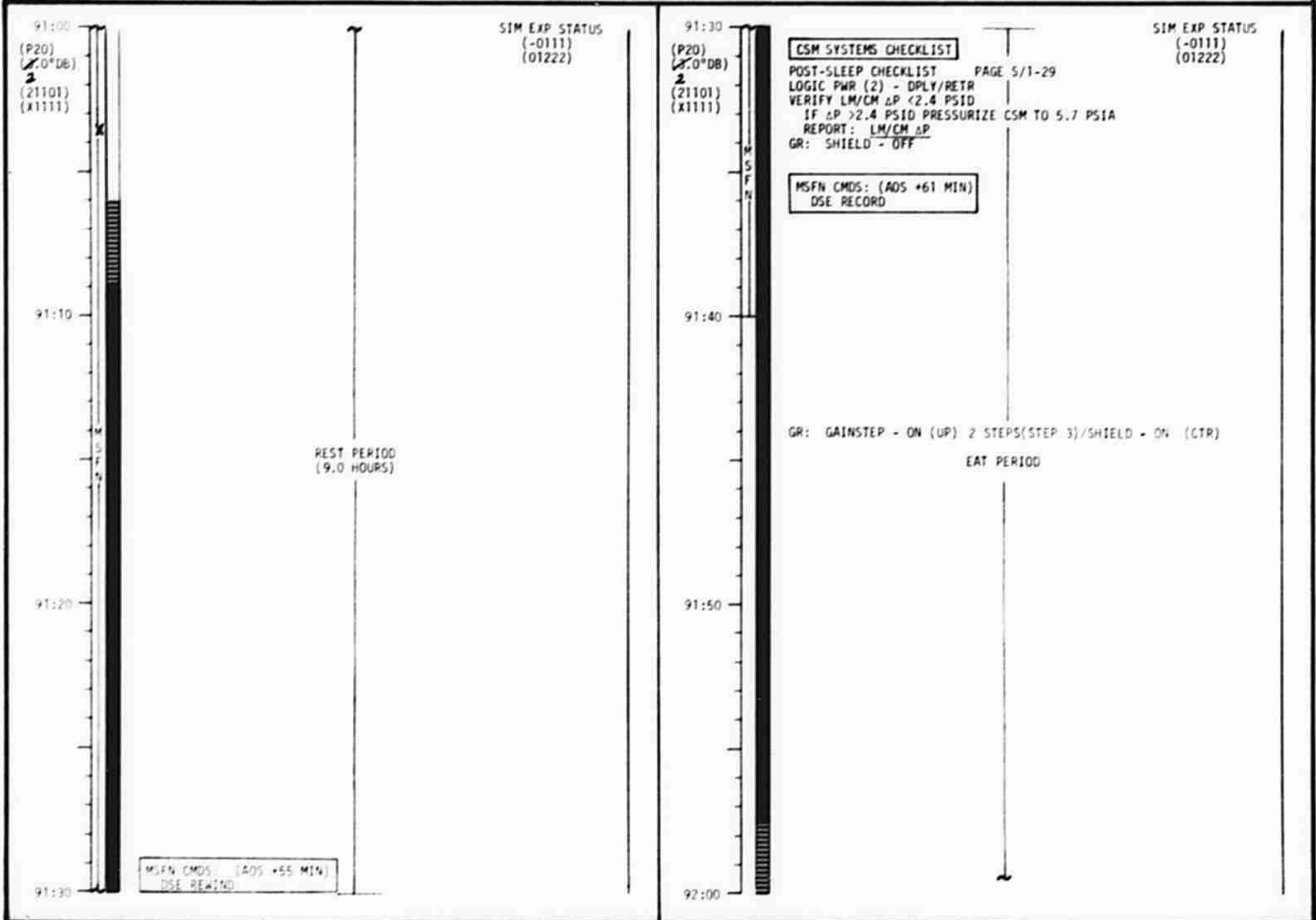
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/27/72 216172	3-90

0654 CST

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A <del>4/16</del> (4/16)	3/27/72 <del>4/6/72</del>	3-91



## CSM FLIGHT PLAN

92:00  
 (P20)  
 (210°DB)  
 2  
 (21101)  
 (X1111)

REV 10

92:10

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

92:20

MS - RETR  
 GR - RETR

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

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

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

92:30

SIM EXP STATUS  
 (-0111)  
 (01222)

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

# CSM FLIGHT PLAN

0824 CST

92:30  
(P20)  
(2.0°DB)  
92:40  
92:50  
93:00

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

CDR: FILL DRINK BAG - EVAC, INSTALL

PREPARE COUCHES: CDR -0°, CMP -0°, LMP -180°  
REMOVE PROBE STRAPS (RS)  
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

SIM EXP STATUS  
(-0000)  
(01214)

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	SUNGLASSES 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 CWG 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)	

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-93

# LM FLIGHT PLAN

MCC-H

0854 CST

CDR

LMP

NOTES

93:00  
:10  
:20  
93:30  
:40  
:50  
94:00

M  
S  
F  
N

LM ACTIVATION CHECKLIST PAGE 3-1

IVT TO LM  
TRANSFER HELMETS &  
GLOVES

ZIP LMP SUIT  
ATTACH RESTRAINTS

IVT TO LM  
OPEN HATCH  
VERIFY DOCKING ANGLE  
TRANSFER POWER  
LIGHTS ON  
DES O<sub>2</sub> AND H<sub>2</sub>O - 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

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-95

TIME	MSFN	COMMANDS	SIM EXP STATUS
93:00	(21111) (X1111)	V48 (21111) (X1111) V45 (RESET LUNAR SURFACE FLAG) P00 P52 (OPTION 3) (LDG SITE ORIENT) REPORT: <u>GYRO TORQUING ANGLES</u> GDC ALIGN	(-0000) (01214)
93:10		CDR DON BIOMED HARNESS, LCG AND PGA WITHOUT HELMET AND GLOVES  <b>P52 IMU REALIGN</b> N71: _____ N05: _____ N93: _____ X _____ Y _____ Z _____ GET _____  MSFN CMDS: DATA SYS - OFF	
93:20		V49 MNVR TO UNDOCK ATT (93:35) (000,104,000) SET HGA P -63, Y 159 FOR AOS ACQ  CMP DON BIOMED HARNESS, PGA WITHOUT HELMET AND GLOVES  LIQH CANISTER CHANGE (10 INTO B, STOW 8 IN B6)	
93:30			
93:30	(21111) (X1111)	VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)  CONFIGURE CAMERA: (UNDOCKING PHOTOS) CM2/DAC/18/CEX-BRKT,MIR (T8,1/250,7) 12 fps (100% MAG)  MAG (CC) _____, MAG # _____ UTILITY PWR - ON CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM3/EL/250/VH BW (f11,1/250,-)6 FR  MAG (SS) _____, FR # _____  CDR & LMP IVT TO LM  O <sub>2</sub> HEATERS 1 & 2 - OFF O <sub>2</sub> HEATERS 3 - AUTO	(*0000) (01214)
93:40			
93:50		AT LMP REQUEST: LM PWR - RESET/OFF GET _____:_____:_____ (RECORD) SYS TEST - 7D SYS TEST ind - 0 volts	
94:00			

# LM FLIGHT PLAN

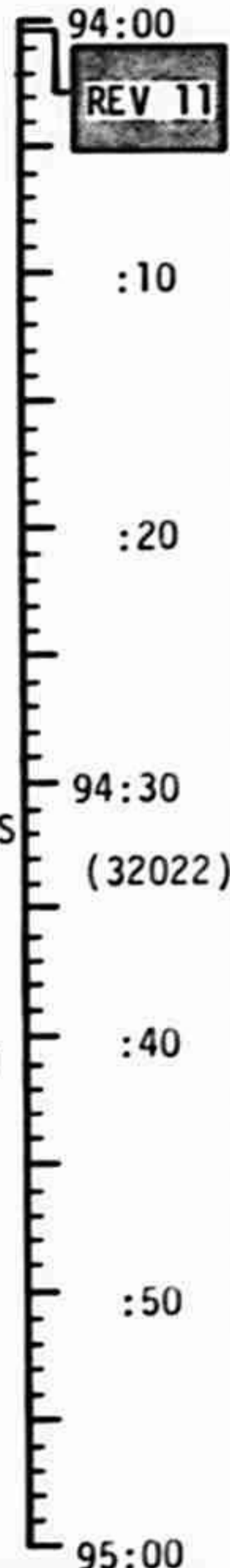
MCC-H

0954 CST

CDR

LMP

NOTES



UPDATE TO LM  
AGS ABORT CONSTANTS

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

MISSION TIMER ACTIVATION	EPS ACTIVATION CONNECT TO LM COMM CONFIGURE S-BAND
CONNECT TO LM ECS CB ACTIVATION ACTIVATE RCS HEATERS	PRIMARY GLYCOL LOOP ACT CAUTION/WARNING CHECKOUT ECS ACTIVATION & CHECKOUT 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  V48 (32022) E-MEMORY DUMP DEPLOY LDG GEAR	PRIM S-BAND VOICE CHECK SEC S-BAND VOICE CHECK STEERABLE ANTENNA ACTIVATION BIOMED - RIGHT
DOCKED IMU COARSE ALIGN	SUIT FAN/H <sub>2</sub> O SEP CHECK GLYCOL PUMP CHECK
V06 N20	ASCENT BATTERY ACTIVATION AND CHECKOUT

-2:00

-1:30

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

SIM EXP STATUS  
(\*0000)  
(01214)

94:30  
(21111)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(01214)

94:00  
REV 11  
(21111)  
(X1111)  
  
94:10  
  
94:20  
  
94:30

AT CDR REQUEST:  
MARK TO LM FOR LM MISSION TIMER SYNC

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 to (2) - bp (VERIFY)  
CB DOCKING PROBE (2) - OPEN  
PROBE EXTD/REL - OFF  
VERIFY PROBE EXTEND LATCH  
ENGAGED INDICATOR (RED)  
NOT VISIBLE

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

LM CLOCK SYNC:  
V16N65E  
ON CDR MARK - V06N65E

LM T EPHEM UPDATE:  
V05N01E, 1706E (T EPHEM)

MSFN CMDS:  
DSE DUMP

MSFN UPLINK:  
CSM S.V. AND V66

LM LANDING GEAR DEPLOY

MSFN UPDATE:  
DAP DATA (95:54)  
UNDOCK/SEP PAD COPY AT (96:25)  
P24 TRK PAD: (L/S LDMK 16-X)(96:55)

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

TERMINATOR PHOTOS - IF TIME PERMITS

DESCARTES (P16-A10) CM3  
**CM3 (\$11, 1/250,00) 6FR**  
**FR**

V06 N20

DON HELMET AND GLOVES

95:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-97

# LM FLIGHT PLAN

MCC-H

1054 CST

CDR

LMP

NOTES

UPDATE TO LM  
PIPA BIAS (IF REQD)

GO/NO-GO FOR  
UNDOCKING AND  
SEPARATION

95:00 (32022)		M S F N		P52 IMU REALIGN OPTION 3, REFSMMAT LDG SITE ORIENT (CURSOR/SPIRAL TECHNIQUE) V06 N20	
:10				RCS PRESSURIZATION & CHECKOUT	
:20				RR ACTIVATION & SELF TEST	-1:00
95:30				VERIFY PROBE & DROGUE INSTALLATION CLOSE & SECURE HATCH VHF B XMTR-DATA PCM-LO	
:40				DON HELMETS & GLOVES	
:50				ARS/PGA INTEGRITY CHECK CABIN REGULATOR CHECK	-0:30
96:00				RATE GYRO TEST	
				UNDOCKING PREPARATION CONFIGURE CB'S FOR UNDOCKING	MOUNT CAMERA ON WINDOW BAR

REV 12

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





MCC-H

1154 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

**LM TIMELINE BOOK**



VERIFY UNDOCKING ATTITUDE

V48 (22012)  
V06N20

P47 THRUST MONITOR

**CSM/LM UNDOCKING AND SEPARATION**

96:13:31

YAW LEFT 60°, PITCH UP 90°

SEPARATION PHOTOGRAPHY  
LM3/DAC & DC

DOFF HELMET & GLOVES  
REPORT: V06N20 ANGLES & GET

DOFF HELMET & GLOVES  
VHF B XMTR-OFF, BIOMED-LEFT  
PCM-HI

DPS THROTTLE CHECK

CONFIGURE CAMERAS FOR  
CABIN PHOTOS  
LM/DAC & DC

DPS PRESS & CHECKOUT

LM CABIN PHOTOS  
AGS ACTIVATION

LOAD AGS ABORT CONSTANTS

M  
S  
F  
N

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

# CSM FLIGHT PLAN

96:00  
(21101)  
(X1111)

PERFORM UNDOCKING SWITCH CONFIGURATION

SIM EXP STATUS  
(\*0000)  
(01214)

**UNDOCKING SWITCH CONFIGURATION**

ATT DB - MIN  
RATE - LOW  
RHC PWR NORM - AC/DC  
RHC PWR DIR - MNA/MNB  
AUTO RCS (12) - MNA/MNB  
CB DOCKING PROBE (2) - CLOSED  
DSE (HBR/RCD/FWD/CMD RESET)

VO6N20E (AT LM REQUEST)  
P41 (TRIM)  
BMAG (3) - ATT 1/RATE 2  
SC CONT - SCS  
V48 (11101)  
(X1111)  
RHC & THC - ARMED

NOTE: UNDOCKING MAY OCCUR:  
1. FROM 45 MIN EARLY TO 8 MIN LATE ON THE NOMINAL INERTIAL (IMU) ATTITUDE  
2. FROM TIG TO 8 MIN LATE ON THE NOMINAL INERTIAL (IMU) ATTITUDE OR THE NOMINAL LOCAL VERTICAL (ORDEAL) ATTITUDE  
3. FROM 8 MIN LATE TO 40 MIN LATE ON THE NOMINAL LOCAL VERTICAL (ORDEAL) ATTITUDE

UNDOCKING CHECKLIST

UNDOCK/SEPARATION (000,090/104,000)	TIG: 96:13:30.8
	BT: 3.4 SEC
	ΔVT: 1.0 FPS
	ULLAGE: N/A
	ORBIT: 60.5 x 8.9

DAC - OFF  
RECORD MAG # \_\_\_\_\_ FR # \_\_\_\_\_  
ACQ MSFN HGA F-63, Y 159

MSFN CMDS:  
DSE DUMP

**NOTE: WILL LOSE LOCK UNTIL MNRV IS COMPLETED**

V49 MNRV TO LOW ALT LDMK TRX PAD ATT (96:34)  
OMNI C

MONITOR S-BAND

MSFN UPDATE:  
P24 T2 TIME (IF RECD)

CONFIGURE CAMERA: (LDMK TRX)  
CM/DAC/SXT/CEX (EXP-PAD) 1 fps (31 MAG)

MAG (BB) \_\_\_\_\_, MAG # \_\_\_\_\_  
UTILITY PWR - ON

(11101)  
(X1111)  
96:10

96:20

96:30

**UNDOCKING CHECKLIST**

DAC - ON  
59:30 EMS MODE - NORM  
THC PWR - ON

00:00 PROBE EXT/REL - EXT/REL (MDM)  
VERIFY PROBE EXTENDED, LM ATTACHED  
ALLOW MOTION TO DAMP (5 SEC)  
PROBE EXT/REL - EXT/REL (HOLD) (< 20 SEC)  
AFTER 2 SEC XLATE (4 JET) AFT  
FOR ~ 3 SEC (VGX to + 2.0)  
AFTER PROBE/DROGUE DISENGAGED,  
PROBE EXT/REL - OFF  
CB DOCKING PROBE (2) - OPEN  
THC & RHC - LOCKED  
THC PWR - OFF  
POO  
SC CONT - CMC  
ATT DB - MAX  
ΔV CG - CSM  
BMAG (3) - RATE 2  
RHC PWR DIR - OFF  
EMS FUNC - ΔV SET/VHF RNG  
EMS MODE - VHF RNG  
AT ADS:  
VHF ANT - LEFT  
VHF AM A - OFF  
VHF AM B - DUPLEX  
VHF RNG - RNG (DSE VOICE USE MARGINAL)  
VHF AM RCV ONLY - OFF

**P30 MANEUVER**

SET STARS	C	S	M	S	E	P	PURPOSE
	R	C	S	G	&	N	PROP/GUID
	+			N	/	A	WT N47
P ALIGN		0	0	N	/	A	P TRIM N48
P ALIGN		0	0	N	/	A	Y TRIM
Y ALIGN	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE	+	0	0	0	0	0	ΔV <sub>X</sub> N81
	+	0	0	0	0	0	ΔV <sub>Y</sub>
	-	0	0	0	1	0	ΔV <sub>Z</sub>
	X	X	X				R (000)
	X	X	X				P (104)
	X	X	X				Y (000)

# LM FLIGHT PLAN

MCC-H

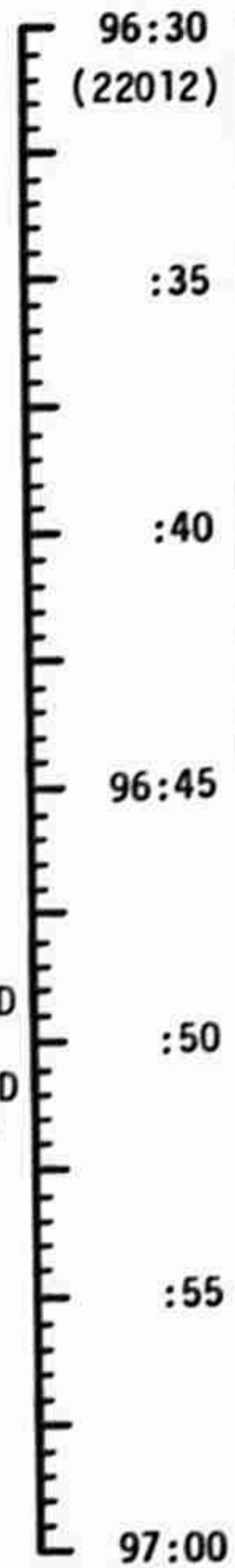
1224 CST

CDR

LMP

NOTES

UPDATE TO LM  
AGS K-FACTOR  
REV 12 LS TCA



M  
S  
F  
N

X

LANDING RADAR CHECKOUT

V47 AGS INITIALIZATION  
ALIGN AGS TO PGNS

MNVR TO RR CHECK ATT

AGS CONTROL CHECK

CONFIGURE CAMERAS FOR TCA  
LM3/DAC  
LM/DC

PHOTOGRAPH LDG SITE

RENDEZVOUS RADAR CHECKOUT  
VHF/RR RNG COMPARE

P52 IMU REALIGN  
OPTION 3, REFSMMAT  
(LDG SITE ORIENT)

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

# CSM FLIGHT PLAN

SIM EXP STATUS  
(0000)  
(01214)

96:30  
(11101)  
(X1111)

(11102)  
(X1111)

(P20)  
(-2.000)  
(0.5°DB)  
96:40

(11102)  
(X1111)

96:50

97:00

RR XPNDR - PWR

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

MSFN OMS:  
DSE RECORD

P24 (L/S LDMK 16-X)  
OPT ZERO - OFF  
OPT MODE - CMD  
OPT TEL TRUN - SLAVE TO SXT  
OPT COUPLING - RSLV  
OPT SPEED - HI  
0:00 - T1 (HORIZON) DET - RESET/START  
DAC - ON

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 ~~000~~ 002  
VHF RNG - RESET, COMPARE RR AND VHF RANGE  
ACQ MSFN HGA P ~~-66~~, Y ~~416~~ 92  
RECORD MAG : \_\_\_\_\_, REMOVE & STOW DAC

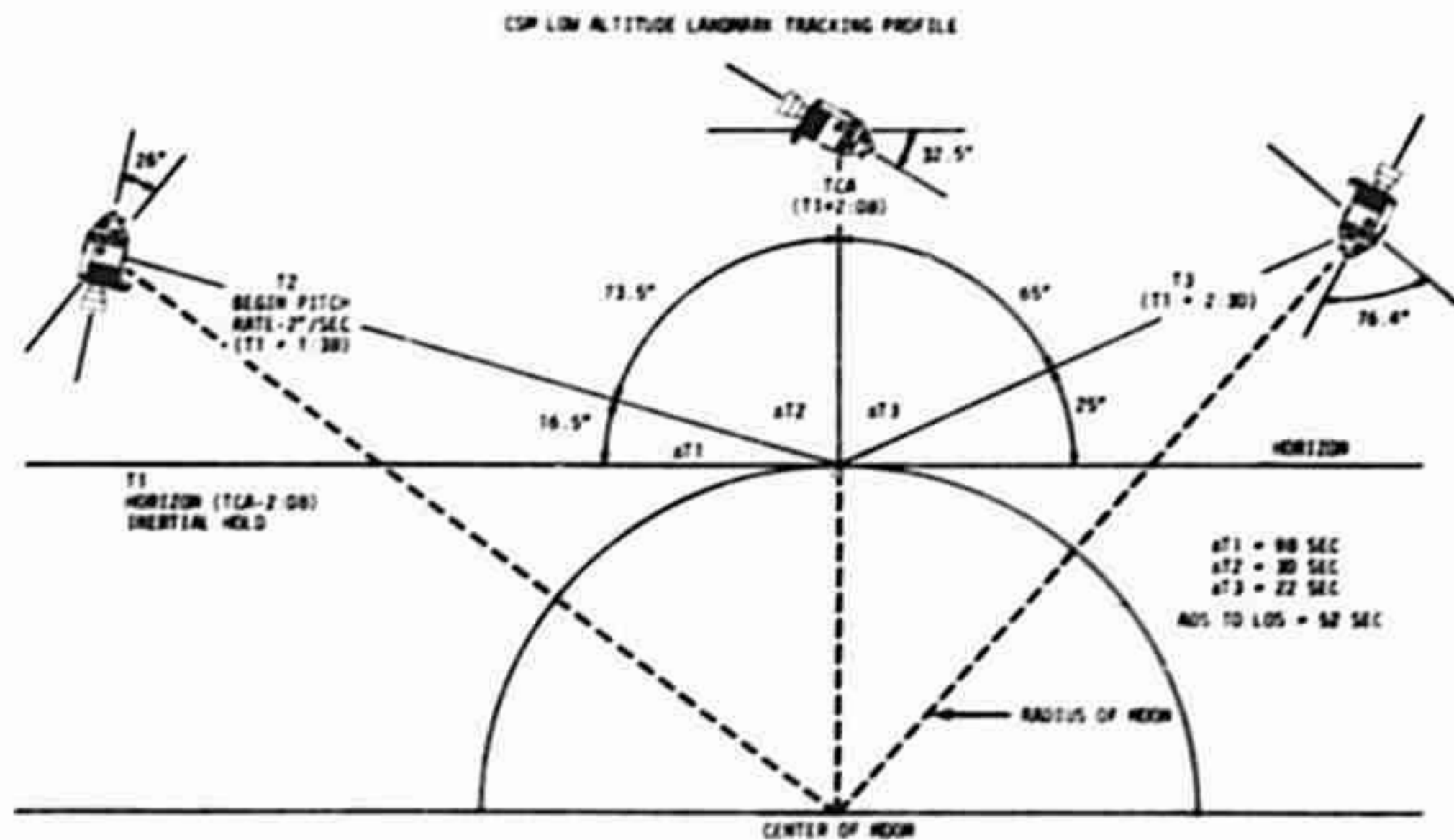
MSFN OMS:  
DSE DUMP

P00  
P52 (OPTION 3)  
(LDG SITE ORIENT) **BACKUP STARS 45 & 49**  
REPORT: GYRO TORQUING ANGLES

GDC ALIGN  
V49 MNVR TO COAS CALIB ATT (97:01)  
(060,251,354) HGA P 37, Y 257

P52 IMU REALIGN

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



P24 LDMK TRACKING ( 1/60 )

TOT: \_\_\_\_\_

T<sub>1</sub> \_\_\_\_\_

T<sub>2</sub> \_\_\_\_\_ (96:45:15.7)

TCA \_\_\_\_\_

T<sub>3</sub> \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °(T2 ACQ)  
(015) (296) (000)

H or S M' \_\_\_\_\_ / SA \_\_\_\_\_ TA \_\_\_\_\_ (T2 ACQ)

NOB	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

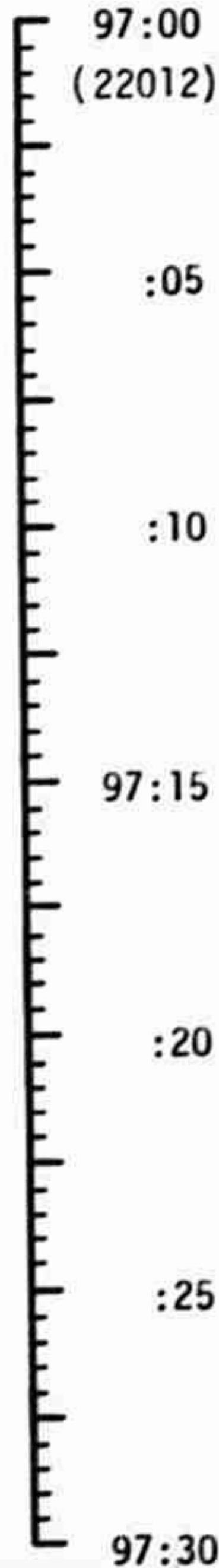
1254 CST

CDR

LMP

NOTES

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



M  
S  
F  
N

COAS CALIBRATION

LPD CALIBRATION

V47 AGS INITIALIZATION  
ALIGN AGS TO PGNS

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

MNVR TO AGS CAL ATT

VHF B XMTR-DATA, PCM-LO

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

97:00  
(11102)  
(X1111)

MSFN

97:10

(10101)  
(X1111)

(P40)  
(0.5°DB)

97:20

97:30

P52 (COAS CALIB)  
USE 26 (SPICA)

SIM EXP STATUS  
(\*0000)  
(01214)

COAS CALIB - N92

SHAFT:                              

TRUN:                              

MSFN UPDATE:  
CIRC PAD  
PADS E-N (98:15)  
PIPA BIAS (IF REQD)

MSFN UPLINK:  
CSM S.V. (CIRC-10)  
CIRC TARGET LOAD

P30; VERIFY CIRC TIG AND ΔV'S  
V49 MNVR TO CIRC BURN PAD ATT (97:17)  
HGA P -29, Y 171

GDC ALIGN  
VERIFY ORDEAL  
ALT SET = 50 NM

PRE-SPS BURN SIM PREP (CUE CARD)  
V48 (10101)  
(X1111)  
SET DET COUNTING UP TO CIRC

P40 (TRIM)

MSFN UPDATE:  
GO/NO-GO FOR CIRC

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/RCO/FWD/CMD RESET)

## P30 MANEUVER

SET STARS	C	I	R	C	PURPOSE
	S	P	S/G	& N	
	*				WT N47
R ALIGN		0	0		P TRIM N48
P ALIGN		0	0		Y TRIM
Y ALIGN	*	0	0		HRS GETI
	*	0	0	0	MIN N33
	*	0			SEC
ULLAGE					ΔV <sub>X</sub> N81
					ΔV <sub>Y</sub>
					ΔV <sub>Z</sub>
	X	X	X		R (000)
	X	X	X		P (141)
	X	X	X		Y (358)
	*				H <sub>A</sub> N44
					H <sub>P</sub>
	*				ΔVT
HORIZON/WINDOW	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)

:35

:40

97:45

REV 13

:50

:55  
(22112)

98:00



AGS CALIBRATION

P76 UPDATE CSM S.V.

V47 INITIALIZE AGS

CSM CIRC 97:42

P63 IGNITION ALGORITHM  
TEST  
MNVR TO PDI ATT

CHECK ECS, RCS, EPS, APS

V48 (22112)

CAMERA PREP FOR PDI  
LM3/DAC  
CAMERA PREP FOR EARTHRISE  
LM/DC

PRE-PDI ECS CHECK

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

**CIRC REQUIRES - CAC**  
**ISS**  
**O-DAC**  
**4 SERVO LOOPS**  
**1 DSKY**  
**2 BANKS**  
**7 of 8 ROLL THRUSTERS**  
**3 of 4 P<sub>Y</sub> THRUSTERS**

97:30  
 (P40)  
 (0.5°DB)  
 (10101)  
 (X1111)  
 97:40  
 (10101)  
 (X1111)  
 97:50  
 98:00

SIM EXP STATUS  
 (\*0000)  
 (31000)

**MANUAL START** CIRC BURN TABLE **RESTART WITH  $\Delta V_{60} > 20 \text{ FPS}$**

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

*If (-) V<sub>gy</sub> or (+) V<sub>gz</sub>,  
 ROLL is USE - 2  
 Thrusters*

CSM CIRCULARIZATION (000,047/141,358)	TIG: 97:41:44.5 BT: 5.9 SEC $\Delta V_T$ : 99.6 FPS ULLAGE: 2 JET, 16 SEC ORBIT: 68.2 x 51.8
---------------------------------------	--

POO VOICE P76 BURN DATA TO LM  
 V62

V49 MNVR TO LDMK TRX ATT EXCEPT IN ROLL (98:00)  
 (060,276,000)  
 SET HGA P 39, Y 288 FOR ADS ACQ

REV 13

UNSTOW CSM RESCUE BOOK  
 POST SPS BURN SIM PREP (CUE CARD)

BURN STATUS REPORT

X	X				ATIG
X	X				BT
					V <sub>GX</sub>
TRIM					
X	X	X			R
X	X	X			P
X	X	X			Y
					V <sub>GX</sub>
					V <sub>GY</sub>
					V <sub>GZ</sub>
					$\Delta V_C$
X					FUEL
X					OX
X					UNBAL



# LM FLIGHT PLAN

**MCC-H**

1354 CST

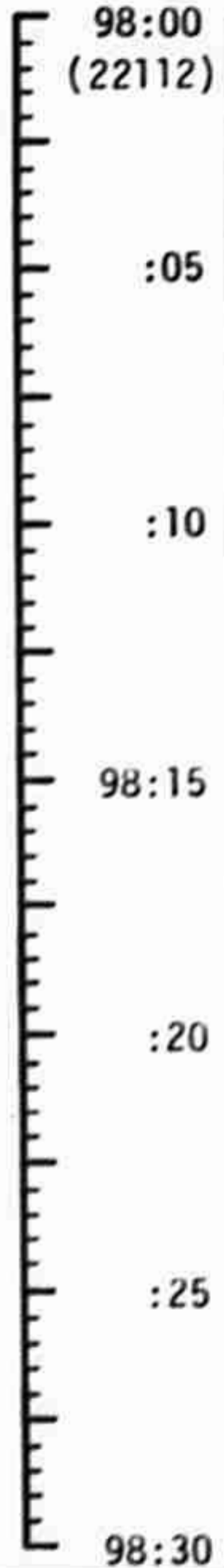
**CDR**

**LMP**

**NOTES**

UPLINK TO LM  
LM S.V. (PDI - 10)  
RLS-2  
UPDATE TO LM  
AGS RLS  
LPD BIAS

UPDATE TO LM  
N69 BACKUP RLS



DON HELMET & GLOVES  
PRE-PDI SWITCH CHECK

DON HELMET & GLOVES  
PRE-PDI SWITCH CHECK

BATS 5 & 6 NORM FEED-ON

REPORT: AGS CAL NO.  
ED BAT VOLTS  
ASC BATS ON TIME

PCM-HI  
VHF B XMTR - OFF  
VHF A XMTR - VOICE/RNG

P63 POWERED DESCENT  
INITIATION

V47 AGS INITIALIZATION  
TARGET AGS FOR ABORT

AUDIO MODE - VOX

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: (LDMK TRK)  
CM/DAC/SXT/CEX (EXP-PAD) 1 fps (3.8% MAG)

MAG (BB) \_\_\_\_\_ MAG : \_\_\_\_\_  
UTILITY POWER - ON

GDC 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 (LDMK TRK ATT) (98:34)

N78 (+000.00)  
(-068.00)  
(+000.00)

N79 (+000.50)  
(000.338/276.000) OMNI D

(P20)  
(0.5°DB)

98:30

MSFN UPDATE:  
GO/NO-GO FOR PDI

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

PURPOSE		PDI <sub>1</sub> ABORT LATE PAD			
K	GETI TPI N37	HRS	+ 0 0		
		MIN	+ 0 0 0		
		SEC	+ 0		

PURPOSE		T 2-1 ABORT PAD			
L	GETI T2	HRS	+ 0 0		
		MIN	+ 0 0 0		
		SEC	+ 0		
M	GETI TPI N37	HRS	+ 0 0		
		MIN	+ 0 0 0		
		SEC	+ 0		

PURPOSE		PDI <sub>1</sub> PAD			
I	GETI PDI N33	HRS	+ 0 0		
		MIN	+ 0 0 0		
		SEC	+ 0		

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

PURPOSE		PDI <sub>1</sub> ABORT EARLY PAD			
J	GETI TPI N37	HRS	+ 0 0		
		MIN	+ 0 0 0		
		SEC	+ 0		

# LM FLIGHT PLAN

MCC-H

1424 CST

CDR

LMP

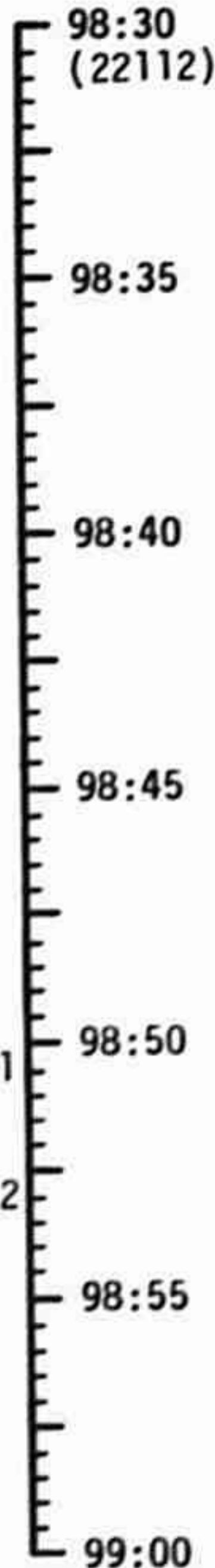
NOTES

GO/NO-GO FOR PDI

UPDATE TO LM  
N69 NOMINAL  
N69 DOWN TRACK &  
CROSS TRACK  
N69 RADIAL

STAY/NO-STAY FOR T1

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



M S F N

MASTER ARM-ON  
ENGINE ARM-DES

VHF COMM CHECK WITH CSM

PDI

MASTER ARM - OFF  
V21N69  
YAW TO FACE UP

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

V24N69

V23N69  
PITCH OVER AT P64

AGS ALT UPDATE @ 14K FEET  
DAC ON FOR LANDING

P66

LM LUNAR TOUCHDOWN

98:46:42

ENG STOP, ENG ARM-OFF

DAC-OFF  
STORE AGS LUNAR AZIMUTH  
UPDATE & ALIGN AGS

T1 STAY/NO-STAY  
P12 POWERED ASCENT

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

TAPE RECORDER-OFF

LUNAR SURFACE CHECKLIST PAGE 1-1

VENT DPS PROPELLENTS

BATS 5 & 6 - OFF/RESET  
INVERTER - 2

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

# CSM FLIGHT PLAN

98:30  
 (P20)  
 (0.5°DB)  
 (10101)  
 (X1111)  
 98:40  
 (10111)  
 (X1111)  
 98:50  
 99:00

**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 POD (98:34:41)

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

MSFN CMDS:  
 DSE RECORD

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

POD

V48 (10111)  
 (X1111)

V49 MNVR TO P52 ATT (98:58)  
 (140,296,000) HGA P -31, Y 310

LM TOUCHDOWN (98:46:42)

CONFIRM STAY/NO STAY FOR T1

VHF AM A - OFF (CTR)  
 VHF RCV ONLY - OFF  
 CONFIRM STAY/NO STAY FOR T2  
 RNDZ XPDR - OFF  
 V44 (SET LUNAR SURFACE FLAG)

MSFN CMDS:  
 DSE DUMP

P52 (OPTION 3)  
 (LDG SITE ORIENT)

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

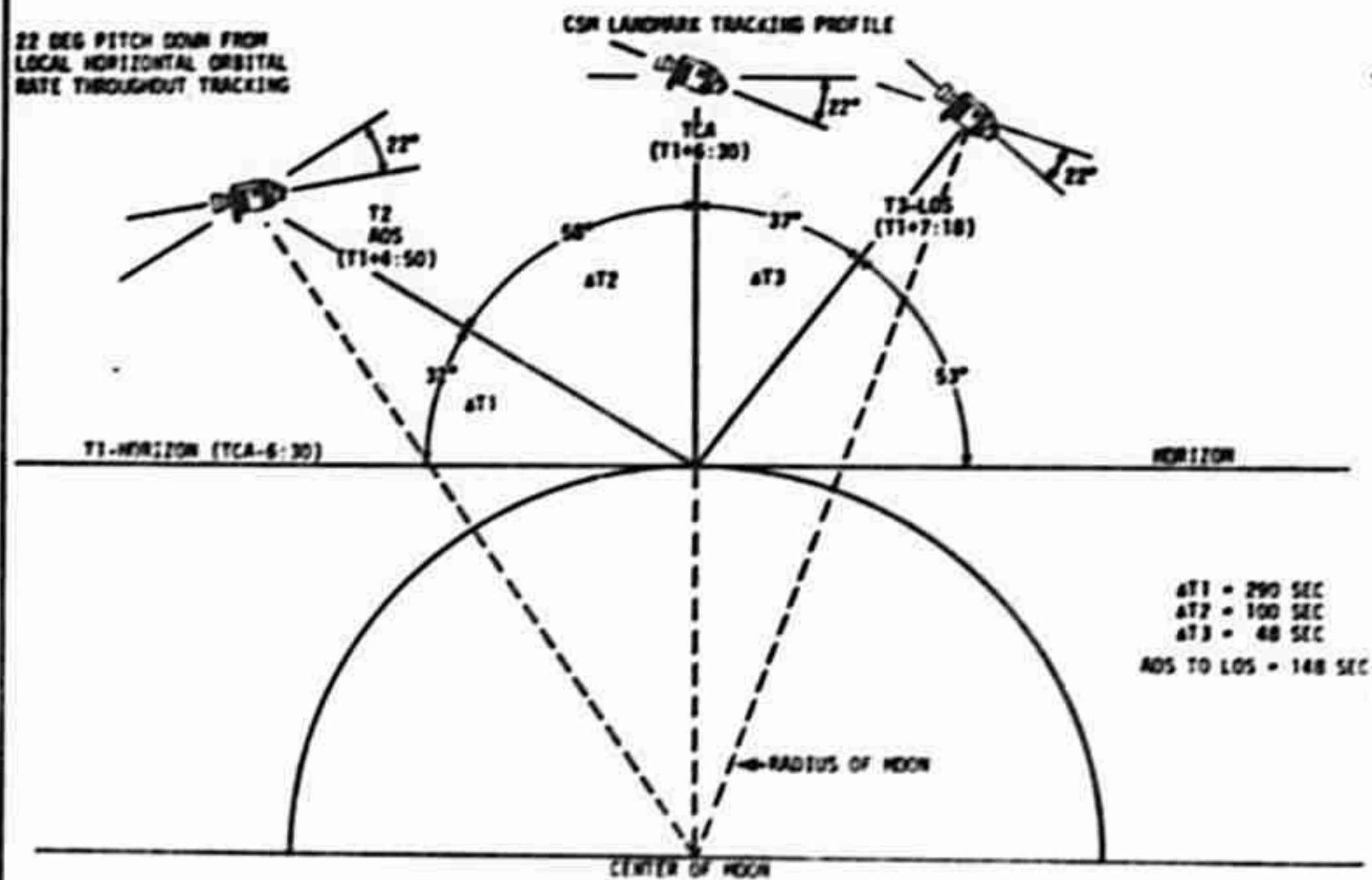
N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_



P24 LDMK TRACKING  
 TGT: 16-3 (1/60)

T1 \_\_\_\_\_

T2 \_\_\_\_\_

TCA \_\_\_\_\_

T3 \_\_\_\_\_

R \_\_\_\_\_ \*P \_\_\_\_\_ \*Y \_\_\_\_\_ (T2 ACQ)

N or S NH \_\_\_\_\_ / SA \_\_\_\_\_ TA \_\_\_\_\_ (T2 ACQ)

N89  
 LAT -09.000  
 LONG/2 +07.745  
 ALT -000.14

# LM FLIGHT PLAN

MCC-H

1454 CST

NOTES

99:00  
(22112)  
:  
:10  
:  
:20  
:  
99:30  
:  
:40  
:  
:50  
100:00

M  
S  
F  
N

**CDR**  
DOFF HELMET, GLOVES  
& RESTRAINTS  
CLOSE WINDOW SHADES

**LMP**  
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  
  
BATS 2,1 - OFF/RESET  
BAT L (LMP) - ON  
CHECK BUS VOLTS  
BIOMED - RIGHT

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

CSM REV 14

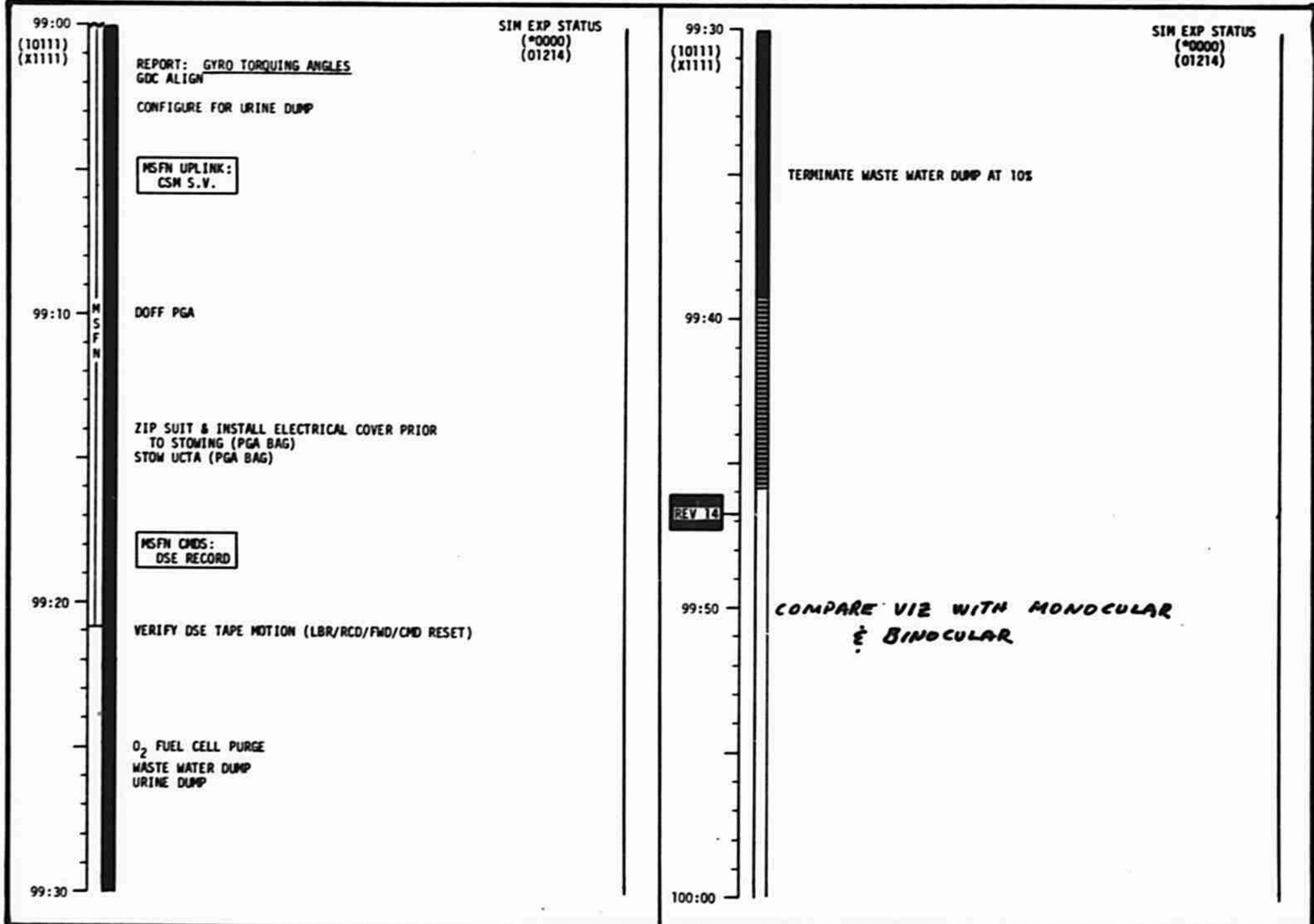
STAY/NO-STAY FOR T3

UPDATE TO LM  
L/O TIMES FOR  
REVS 15 - 19

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

# CSM FLIGHT PLAN



SIM EXP STATUS  
(\*0000)  
(01214)

SIM EXP STATUS  
(\*0000)  
(01214)

REV 14

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-113

# LM FLIGHT PLAN

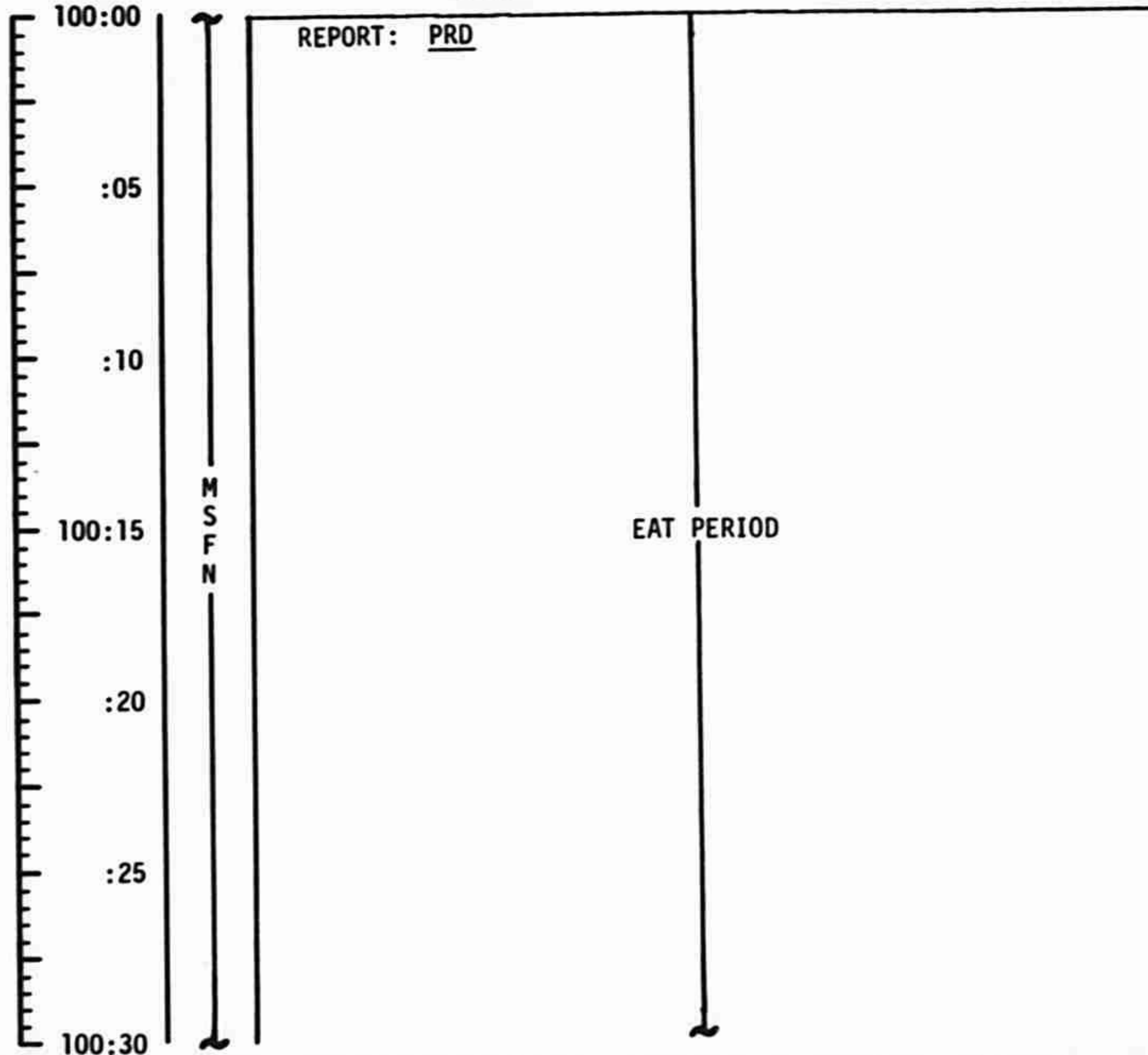
MCC-H

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  
(\*0000)  
(01214)

ACQ MSFN HGA P -31, Y 310

MSFN UPDATE:  
P24 LM VISUAL (100:55)  
SIM EXP STATUS  
DSE VOICE STATUS

MSFN CMDS:  
DSE DUMP

100:10

(P20)  
(0.5°DB)

M  
S  
F  
N

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

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-115



# LM FLIGHT PLAN

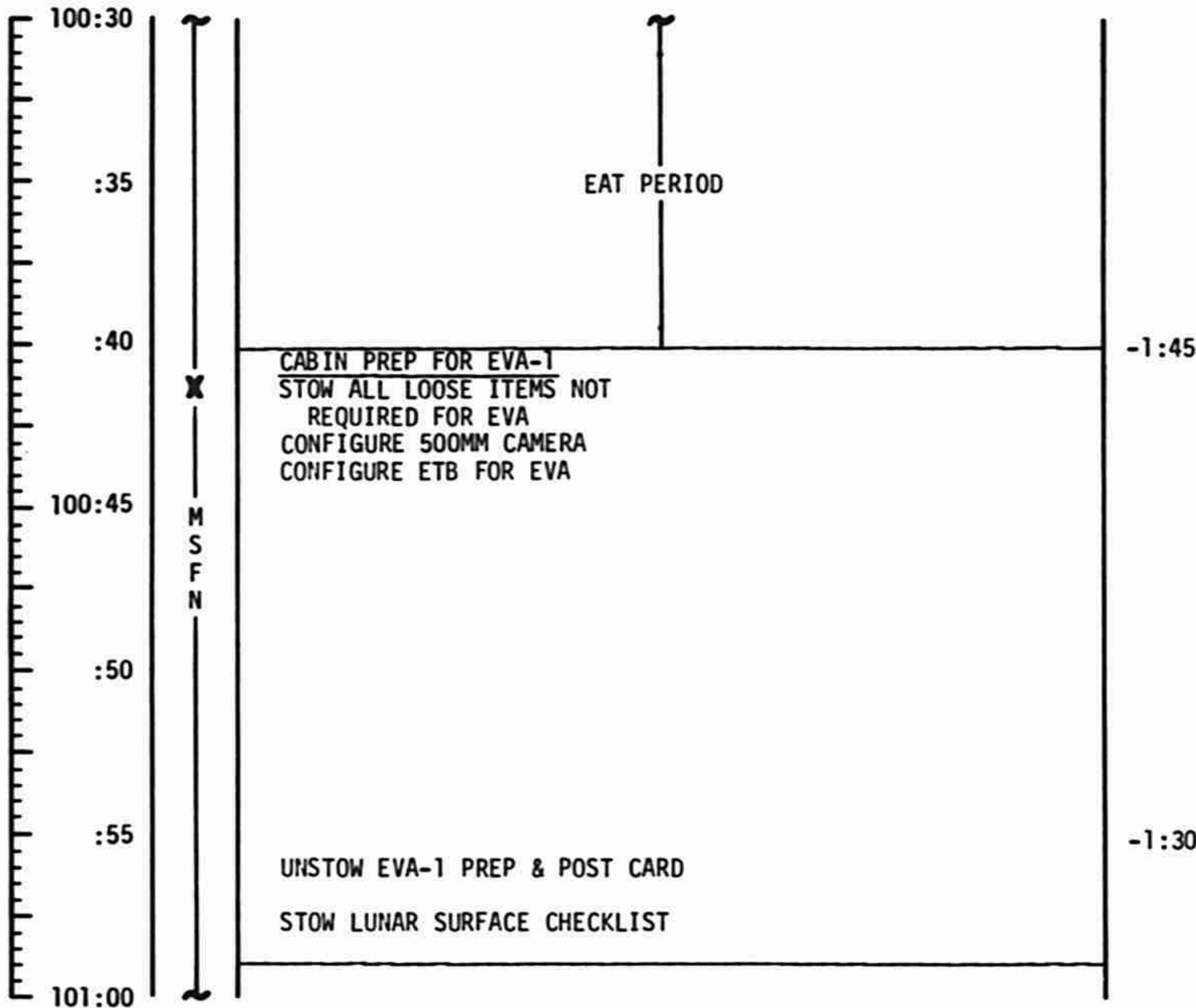
MCC-H

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



MCC-H

1654 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

101:00  
:10  
:20  
101:30  
:40  
:50  
102:00

M  
S  
F  
N

EQUIPMENT PREP FOR EVA-1  
 EMPTY UCTA'S  
 CHECK PGA ZIPPERS  
 CDR, THEN LMP DON BOOTS

-1:20

CHECK & RESTOW OPS

INSTALL ISS

-1:10

APPLY ANTI-FOG TO LEVA'S

STOW HELMET BAG

STOW ETB  
 UNLOCK FWD HATCH HANDLE

-1:00

PLSS DONNING  
 CONFIGURE LMP PLSS  
 ATTACH OPS TO PLSS  
 LMP DON PLSS/OPS  
 CONNECT RCU

-0:50

CDR REPEAT PLSS DONNING

-0:40 CSM REV 15

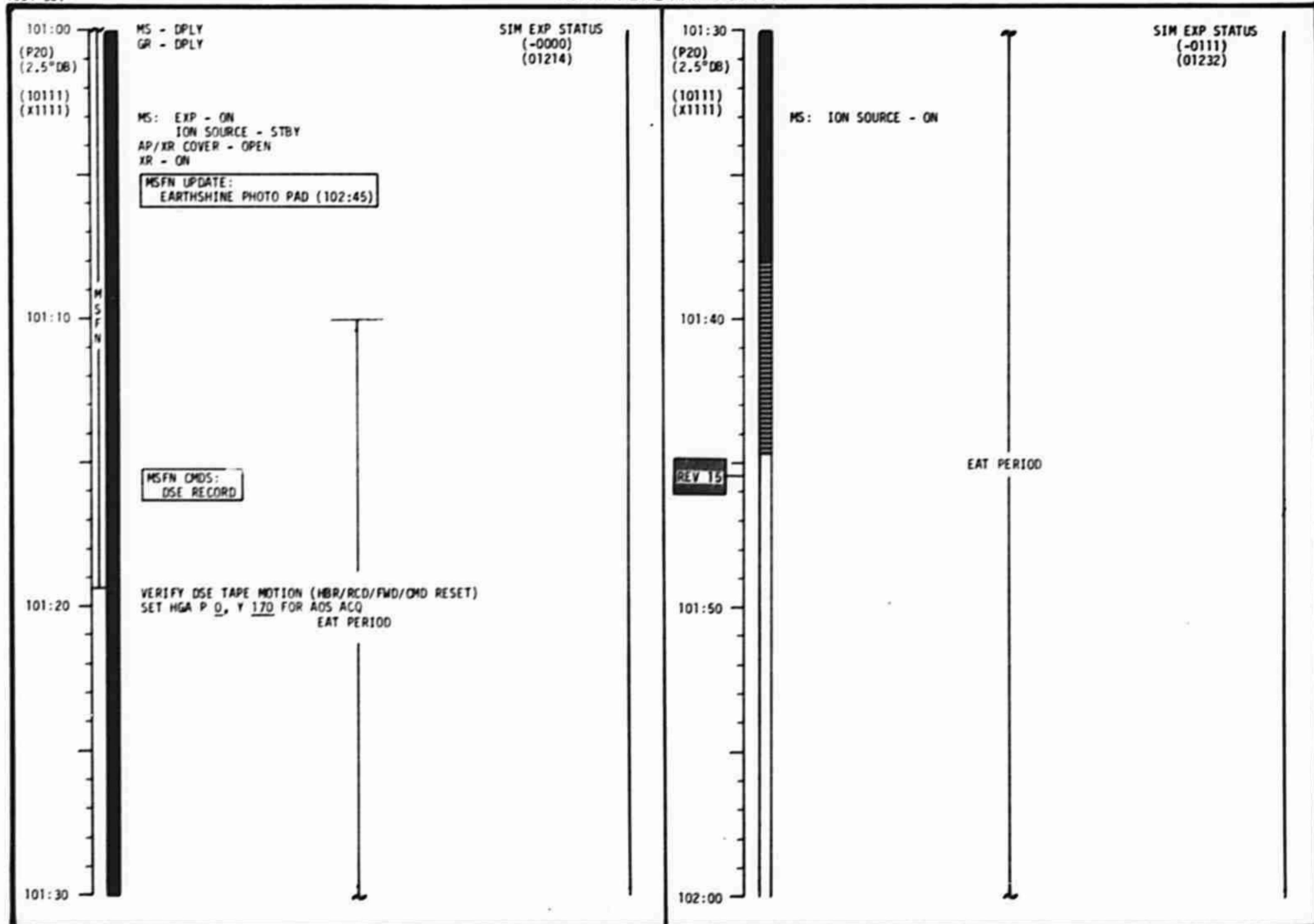
PLSS COMM CHECK  
 VERIFY POWERDOWN CB CONFIGURATION  
 CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON  
 COMM & TM CHECK, REPORT: PLSS O<sub>2</sub> QUANTITY  
 FINAL SYSTEMS PREP

-0:30

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-119

# LM FLIGHT PLAN

MCC-H

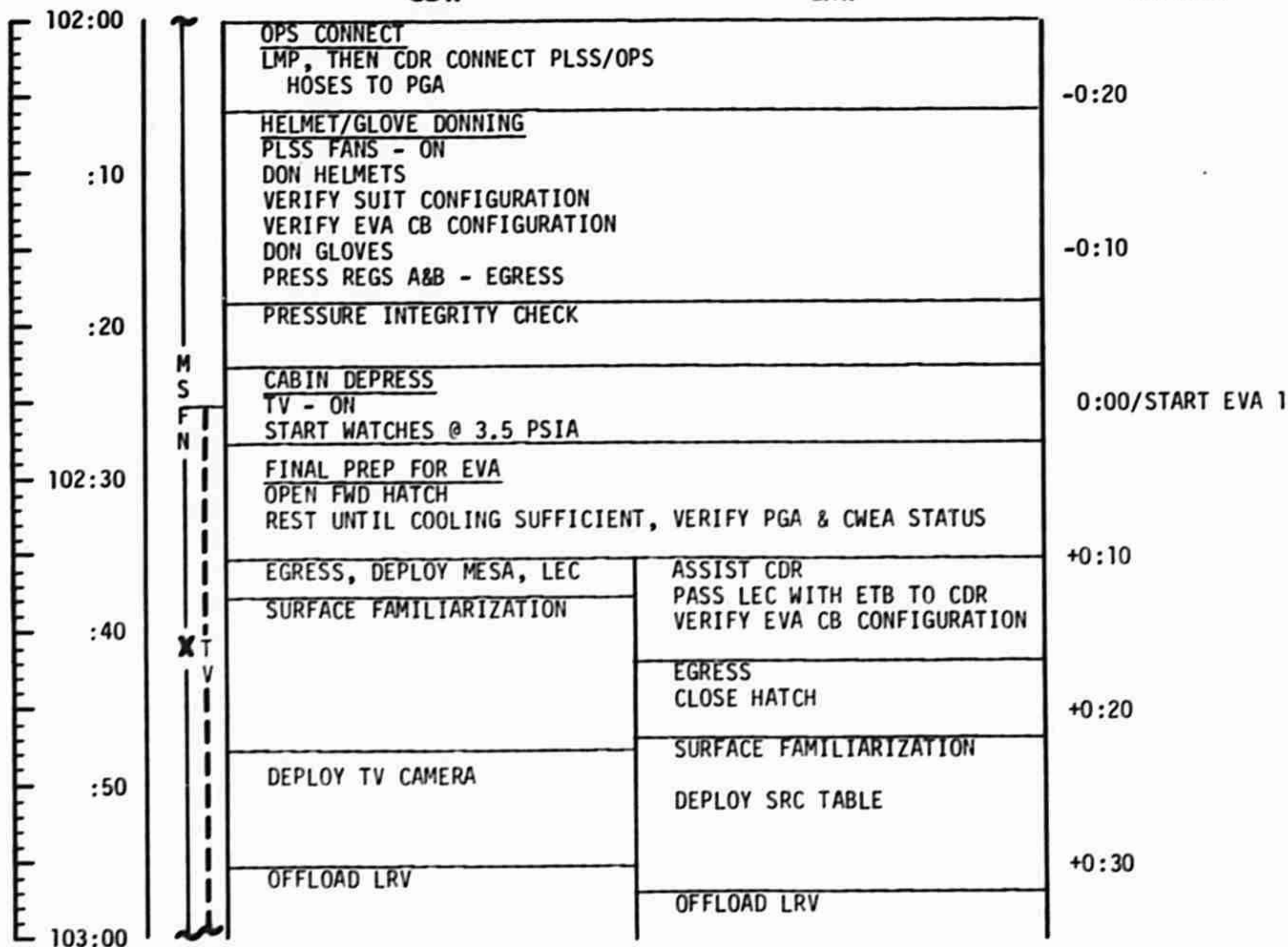
1754 CST

CDR

LMP

NOTES

GO/NO-GO FOR  
CABIN DEPRESS

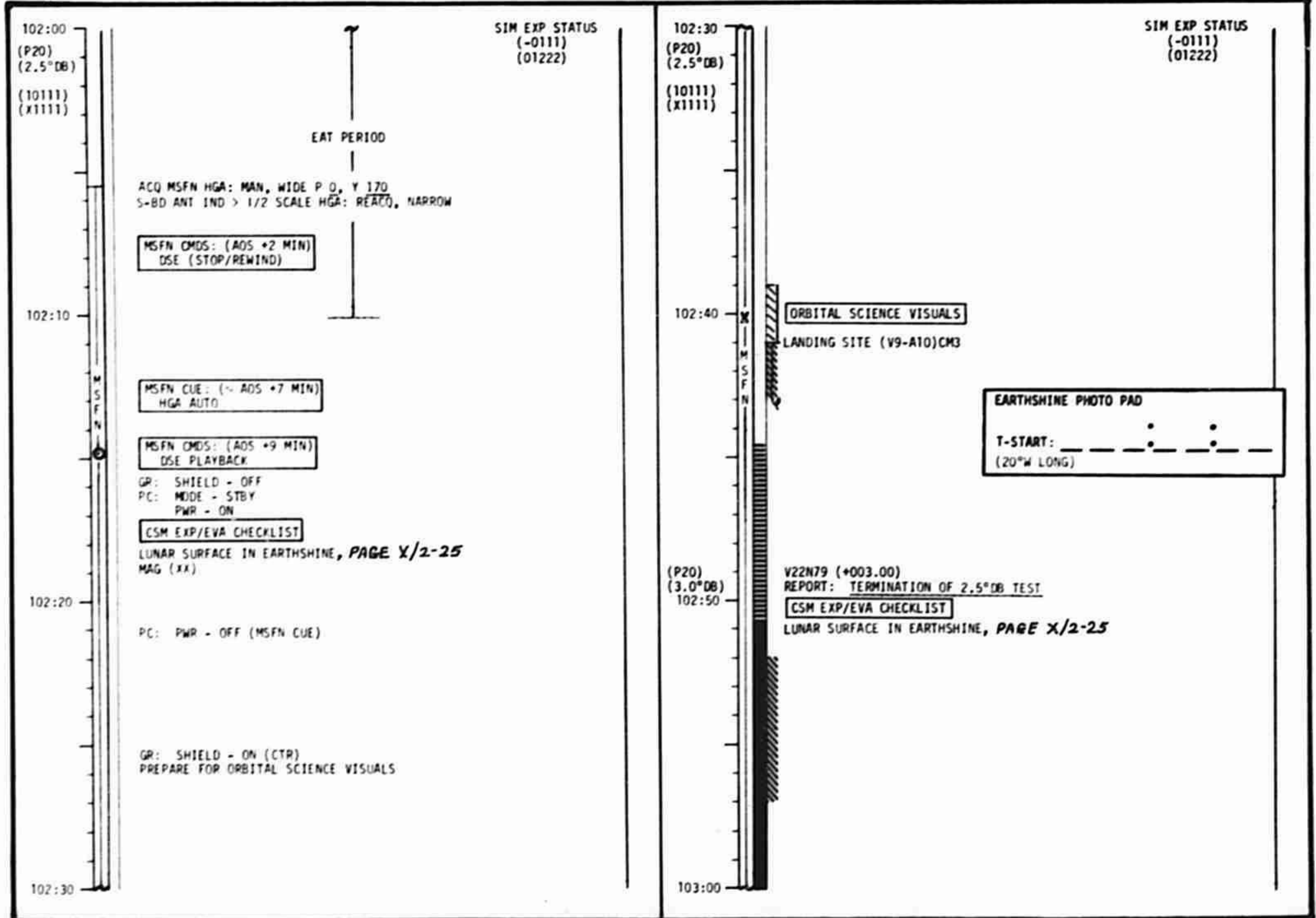


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	102:00 - 103:00	5/15	3-120

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

1754 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	8/27/72 316172	3-121

MCC-H

1854 CST

# LM FLIGHT PLAN

CDR

LMP

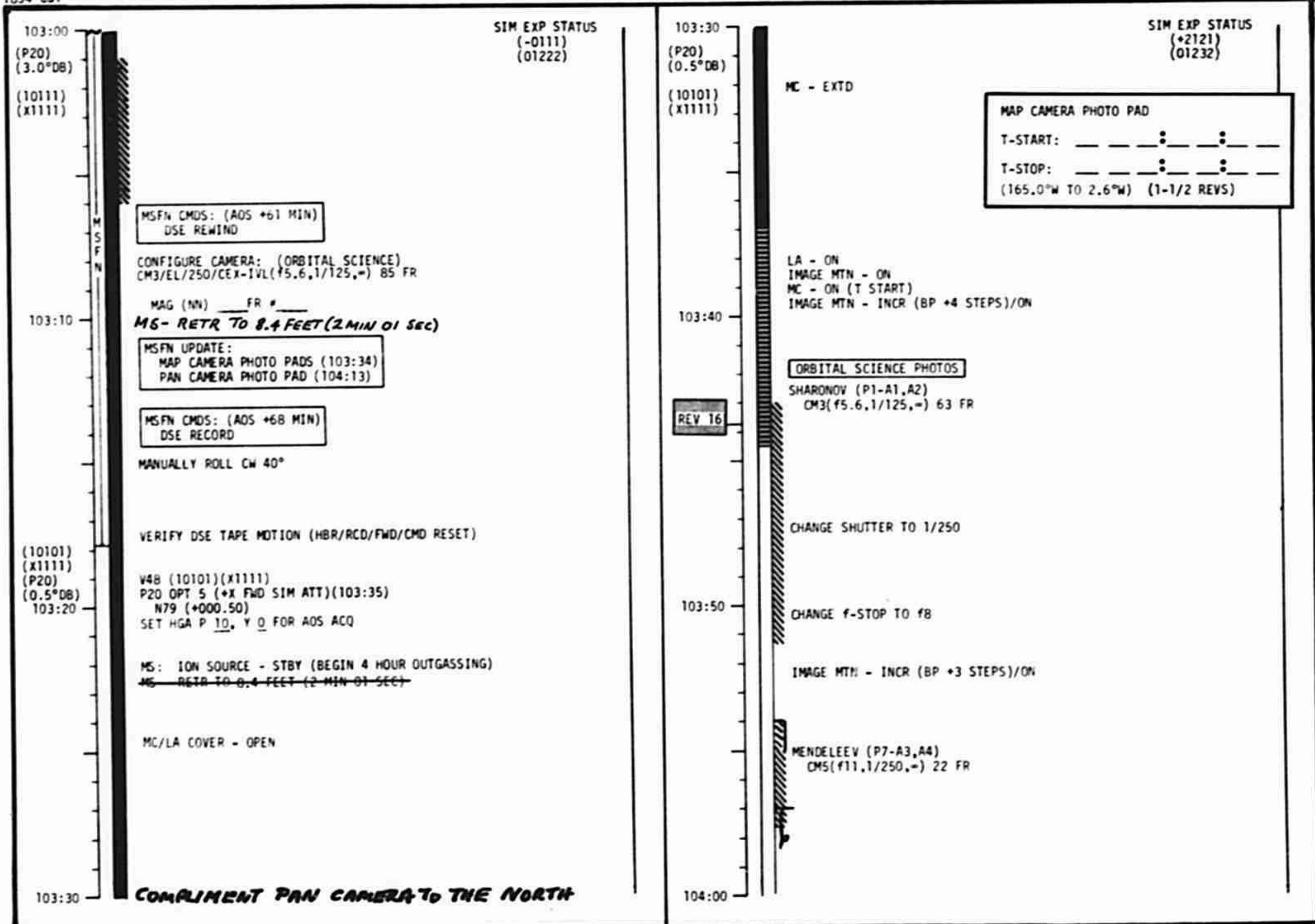
NOTES

103:00	TV	SET UP LRV	SET UP LRV	+0:40
:10		CHECK OUT LRV	LM INSPECTION & PANS	
:20	M S F N	OFFLOAD FAR UV CAMERA DEPLOY & INITIALIZE CAMERA	LOAD LRV	+0:50
103:30		LOAD LRV	MOVE TV TO LRV	+1:00
:40	TV	CONNECT LCRU	INGRESS LM SWITCH TO LOW POWER EGRESS LM CLOSE HATCH	CSM REV 16 +1:20
:50		DEPLOY FLAG	DEPLOY FLAG	
104:00		ALSEP PREP	ALSEP PREP	+1:30

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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE # FINAL (4/16)	1/10/72 3/23/72 316172	3-123



# LM FLIGHT PLAN

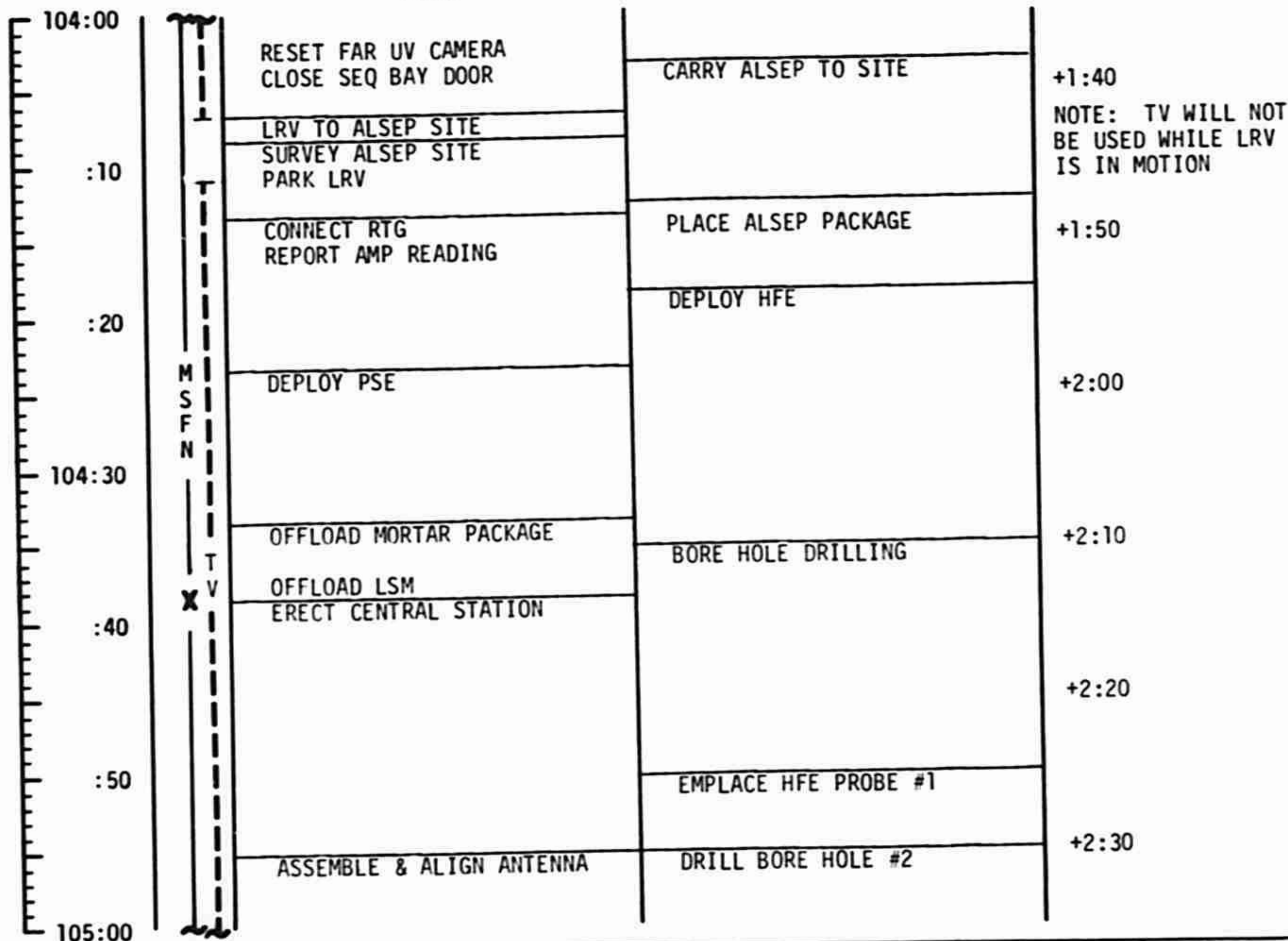
MCC-H

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

# CSM FLIGHT PLAN

1954 CST

104:00  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

MSFN

104:10

104:20

104:30

RECORD FR #

SIM EXP STATUS  
(+1121)  
(02232)

ACQ MSFN: MAN WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

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

GR - RETR TO 7.5 FEET (2 MIN 26 SEC)

PC: STBY  
STEREO  
PWR

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

PAN CAMERA PHOTO PAD

T-START: \_\_\_\_\_

T-STOP: \_\_\_\_\_

(85.2°E TO 7.2°E)

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

PC - OPR (T START)

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

MSFN UPDATE  
UV PHOTO PAD (104:33)

CSM EXP/EVA CHECKLIST

LUNAR MARIA UV PHOTOGRAPHY, PAGE X/2-22  
MAG (00)

104:30  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

MSFN

104:40

104:50

105:00

SIM EXP STATUS  
(+1221)  
(22232)

LUNAR MARIA UV PHOTOGRAPHY

UV PHOTO PAD

T-START: \_\_\_\_\_  
(38°E)

IMAGE MTN - INCR (BP)/ON

PC - STBY (T STOP)

PC - OFF (MSFN CUE)

V48, RECORD CSM WT.

+						WT	N47
---	--	--	--	--	--	----	-----

LOAD INTO DAP 80% CSM WT

+	3	1	1	4	6	WT(80%)	N47
---	---	---	---	---	---	---------	-----

REPORT: INITIATION OF P20 WITH REDUCED DAP WT.

*REINER 8  
EARTHSHINE  
+  
CMO/NK/SS/DROW  
(3.2, 1/0, ∞)  
MAG XX*

MSFN UPDATE:  
PAN CAMERA PHOTO PAD (105:43)

# LM FLIGHT PLAN

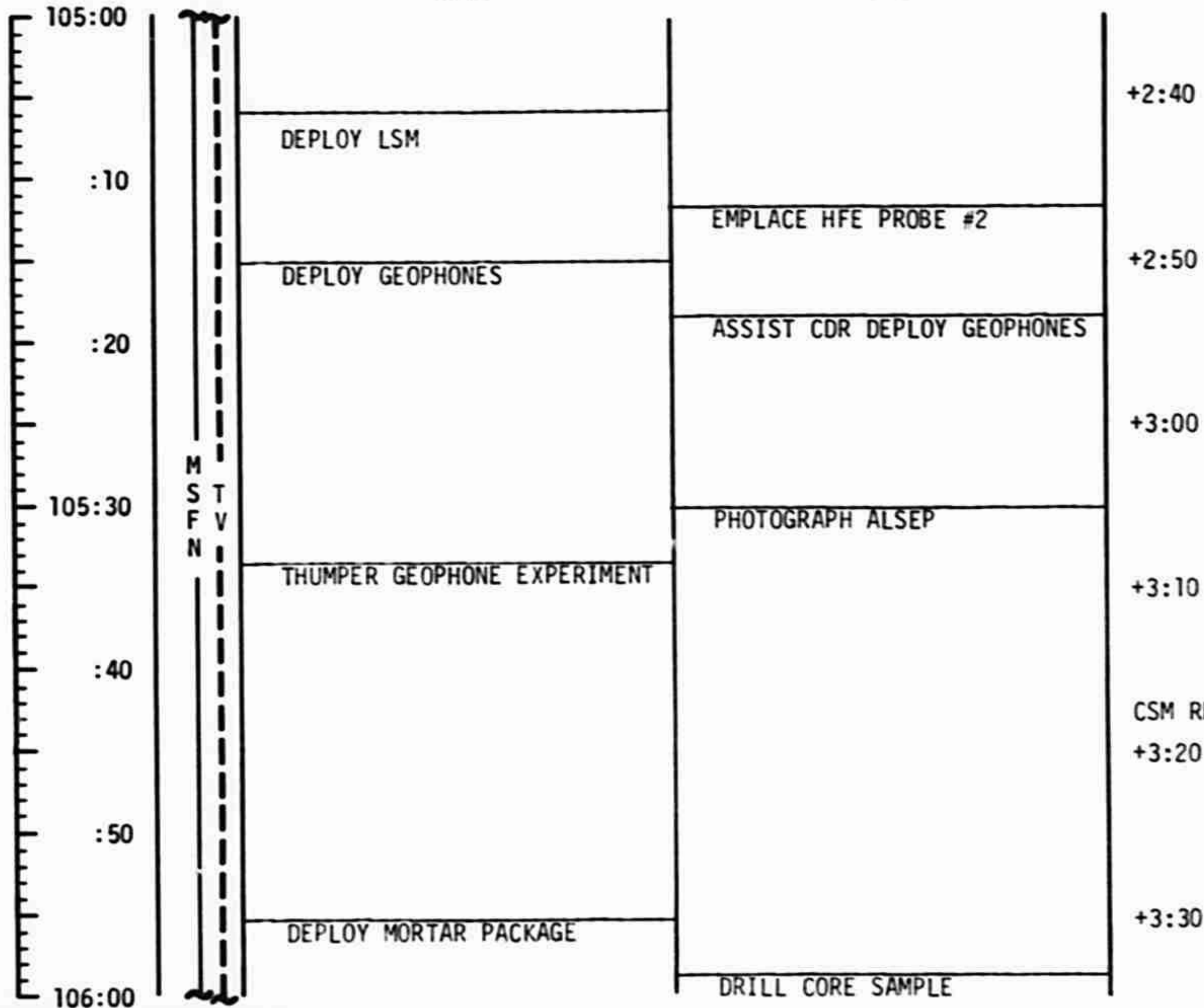
MCC-H

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

# CSM FLIGHT PLAN

105:00  
 (P20)  
 (0.5°DB)  
 (10101)  
 (X1111)

MSFN

105:10

105:20

105:30

SIM EXP STATUS  
 (+1221)  
 (02232)

MSFN CMDS: (ADS +61 MIN)  
 DSE REWIND

MSFN CMDS: (ADS +68 MIN)  
 DSE RECORD

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

PREPARE FOR ORBITAL SCIENCE VISUALS

105:30  
 (P20)  
 (0.5°DB)  
 (10101)  
 (X1111)

105:40

105:50

106:00

SIM EXP STATUS  
 (+1221)  
 (02232)

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

REV 17

PC: STBY  
 STEREO  
 PWR

PC - OPR (T START)

PAN CAMERA PHOTO PAD  
 T-START: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
 T-STOP: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
 (170°E TO 83.2°E)

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

ORBITAL SCIENCE VISUALS

MENDELEEV (V3 - A3) CM3

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE FINAL (4/16)	3/27/72 216+72	3-127

# LM FLIGHT PLAN

MCC-H

2154 CST

CDR

LMP

NOTES

106:00				
:10	T V	ASSIST LMP RECOVER CORE	RECOVER DRILL CORE	+3:40
:20	M S F L	CONFIGURE FOR GEOLOGY TRAVERSE	CONFIGURE FOR GEOLOGY TRAVERSE	+3:50
106:30	N	TRAVERSE TO STATION #1		+4:00
:40	X	STATION #1 SITE DESCRIPTION RAKE/SOIL SAMPLE	PANORAMA SITE DESCRIPTION RAKE/SOIL SAMPLE	+4:10
:50	T V	SAMPLING		+4:20
107:00				+4:30

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

**SIM EXP STATUS**  
(+1221)  
(22232)

106:00  
(P20)  
(0.5°DB)

(10101)  
(X1111)

106:10

106:20

106:30

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)

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

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

PC - STBY (T STOP)

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 # \_\_\_

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

ORBITAL SCIENCE PHOTOS

CROZIER (P12 - A8,A9)  
CMS (f8,1/250,-) 33 FR

**SIM EXP STATUS**  
(+1111)  
(02232)

106:30  
(P20)  
(0.5°DB)

(10101)  
(X1111)

106:40

106:50

107:00

IMAGE MTN - INCR (BP)/ON

DESCARTES (P14 - A10)  
CMS (f5.6,1/125,-) 20 FR

RECORD FR # \_\_\_\_\_

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

V48, LOAD DAP: INITIAL CSM WT. (104:43)  
REPORT: TERMINATION OF P20 WITH REDUCED DAP WT.

GR: SHIELD - OFF

CMC MODE - FREE  
P52 (OPTION 3)  
(LDG SITE ORIENT)

REPORT GYRO TORQUING ANGLES

P20, CMC MODE - AUTO  
GDC ALIGN

**P52 IMU REALIGN**

N71: \_\_\_ . \_\_\_

N05: \_\_\_ . \_\_\_

N93: \_\_\_ . \_\_\_

X \_\_\_ . \_\_\_

Y \_\_\_ . \_\_\_

Z \_\_\_ . \_\_\_

GET \_\_\_ . \_\_\_

# LM FLIGHT PLAN

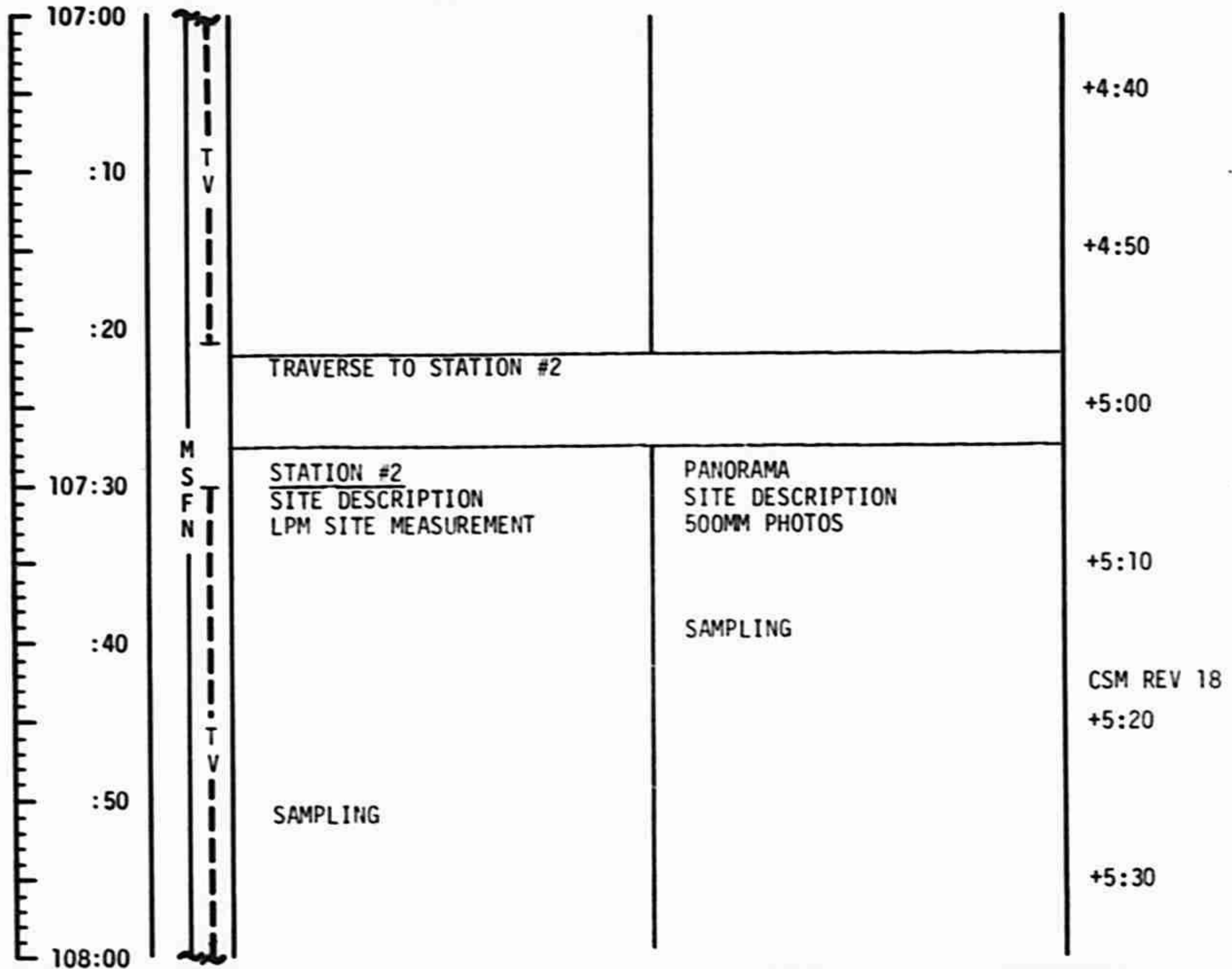
MCC-H

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

107:00  
(P20)  
(0.5°DB)

(10101)  
(X1111)

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

SIM EXP STATUS  
(+1111)  
(03232)

MSFN CMDS: (AOS +61 MIN)  
DSE REWIND

GR: SHIELD - ON (CTR)

MSFN UPDATE:  
MAP CAMERA PHOTO PAD (107:48)

107:10

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

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

107:20

O<sub>2</sub> HEATERS 1&2 - AUTO  
O<sub>2</sub> HEATERS 3 - OFF

107:30

107:30  
(P20)  
(0.5°DB)

(10101)  
(X1111)

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 ACQ

SIM EXP STATUS  
(+1111)  
(03222)

107:40

REV 18

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

EAT PERIOD

MAP CAMERA PHOTO PAD

T-START: \_\_\_\_\_ : \_\_\_\_\_

T-STOP: \_\_\_\_\_ : \_\_\_\_\_

(178.9°E TO 1.6°W)

107:50

108:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/23/72-3/16/72	3-131



# LM FLIGHT PLAN

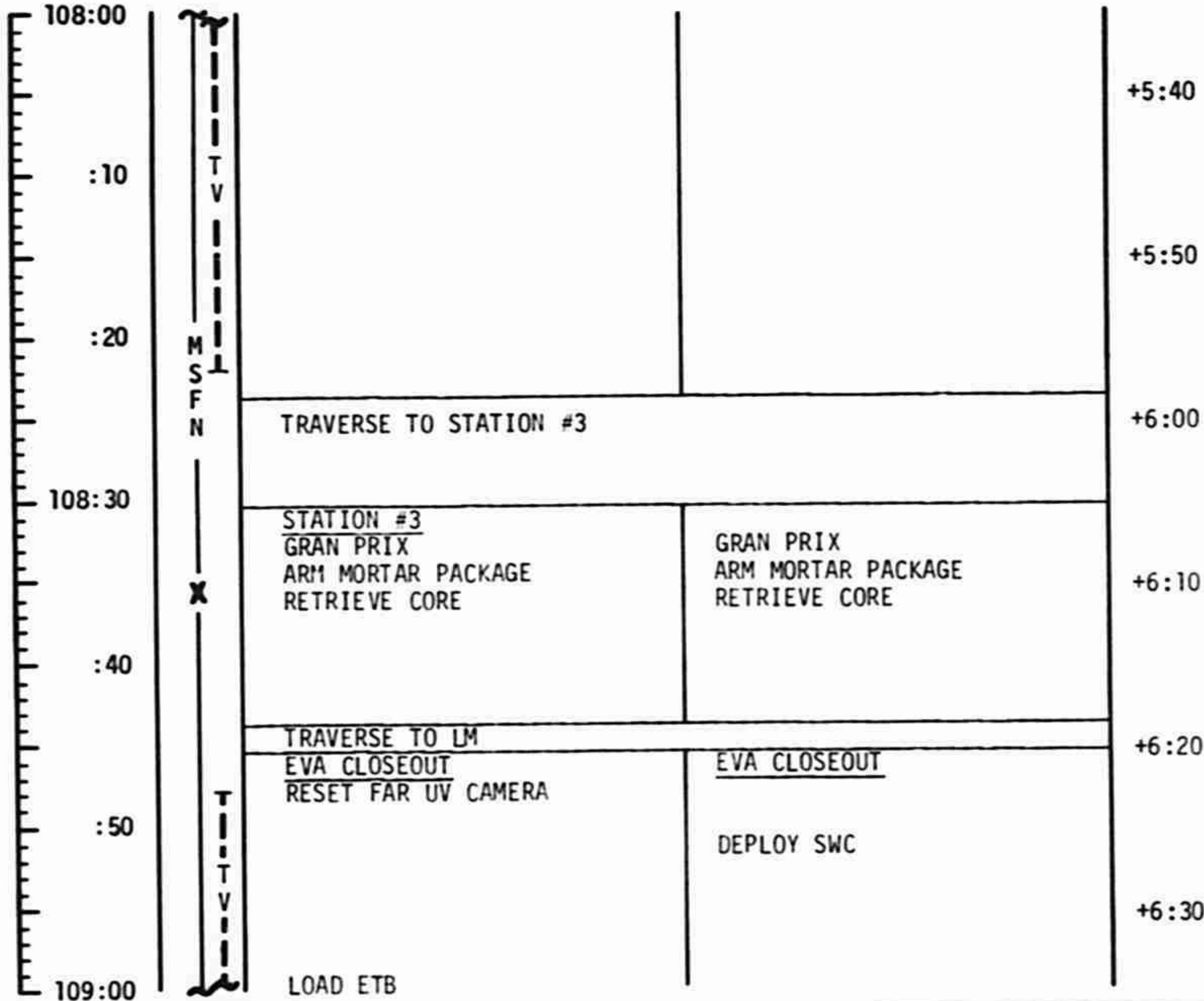
MCC-H

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)  
(10101)  
(x1111)

ACQ MSFN HGA: MAN, WIDE P 10, Y 350  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

SIM EXP STATUS  
(•1111)  
(04222)

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

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

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

EAT PERIOD

MSFN

108:10

108:20

108:30

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

108:40

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 5/1-29  
LOGIC PWR (2) - OFF  
VHF AM T/R - RCY (PNL 9)  
VHF AM A - DUPLEX

MSFN UPDATE:  
TEI 26

MSFN UPLINK:  
JET-ON MONITOR LOADS

109:00

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

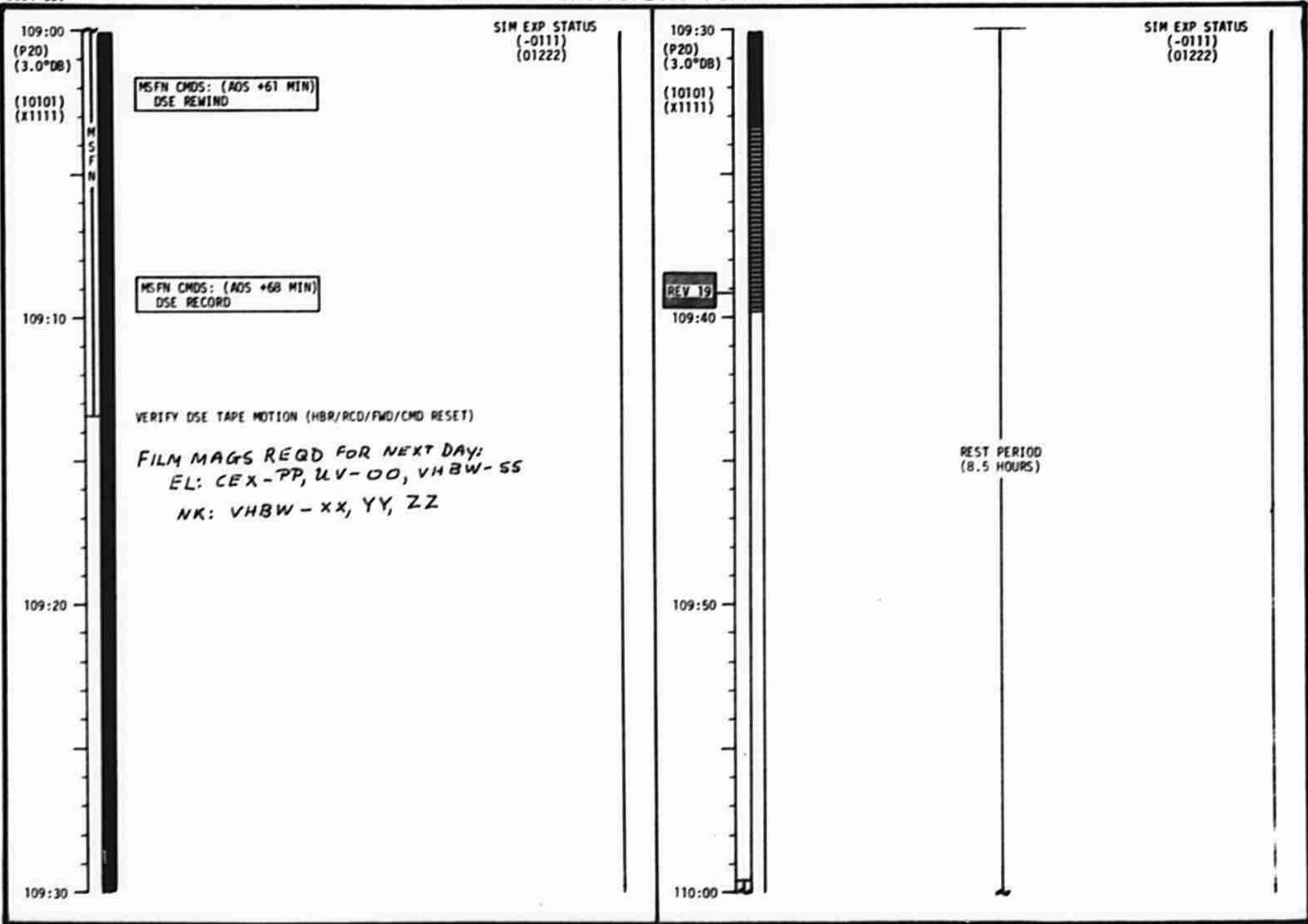
NOTES

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

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg. B. 4/16	216772 4/7/72	3-135

MCC-H

0154 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

110:00  
:10  
:20  
110:30  
:40  
:50  
111:00

M  
S  
F  
N

X

LMP, THEN CDR DOFF PLSS/OPS  
REPORT: OPS PRESSURE

CHANGE PLSS LiOH CARTRIDGES & BATTERIES

STOW OPS'S & PLSS'S

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

WEIGH SRC & COLLECTION BAGS, REPORT: WEIGHTS  
STOW SCALE, SRC &  
COLLECTION BAGS  
VERIFY POWERDOWN CB  
CONFIGURATION

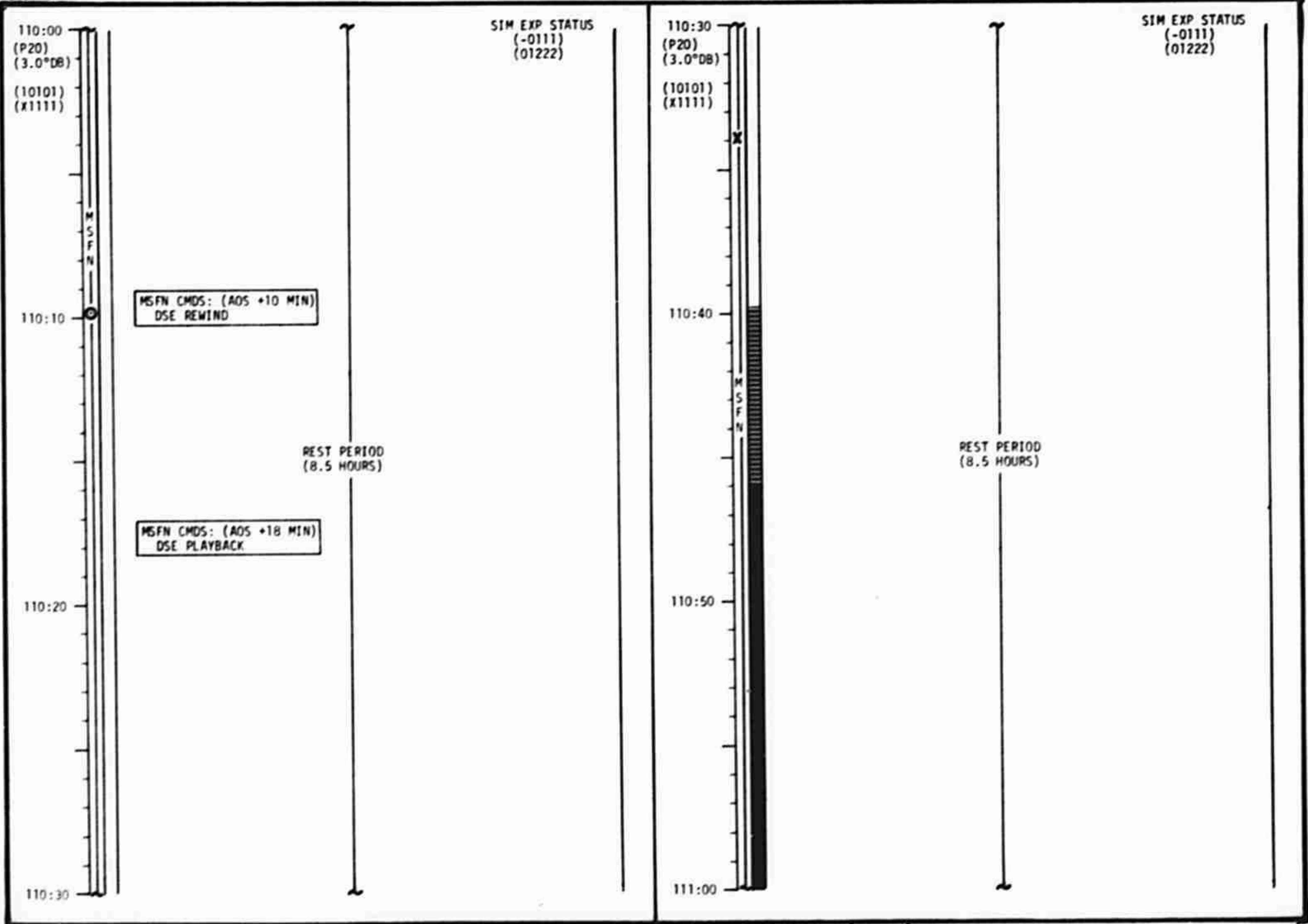
DOFF SUITS  
CDR, THEN LMP DOFF PGA, BIOMED - OFF  
DON ICG

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

# CSM FLIGHT PLAN

0154 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-137

# LM FLIGHT PLAN

MCC-H

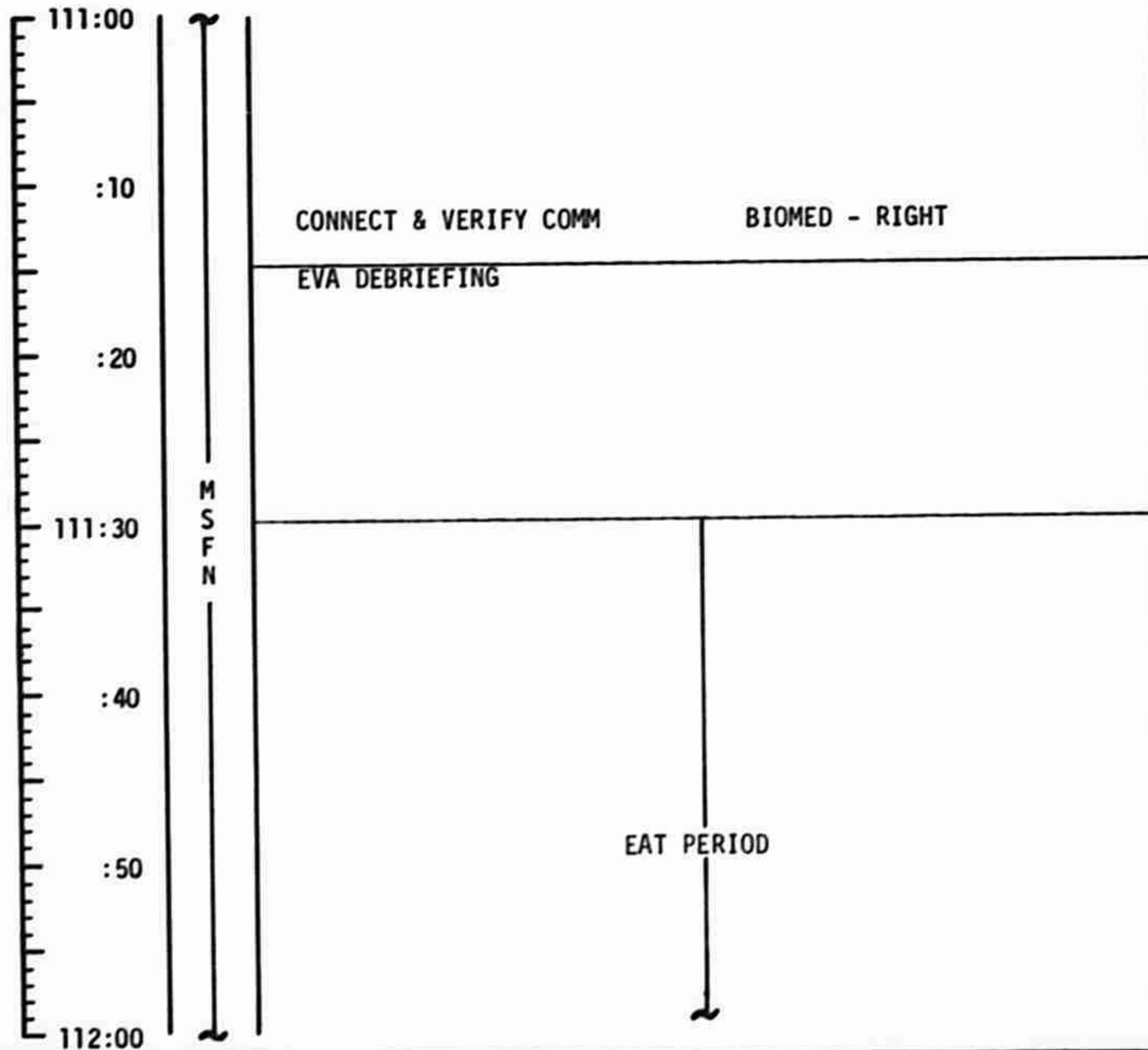
0254 CST

CDR

LMP

NOTES

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



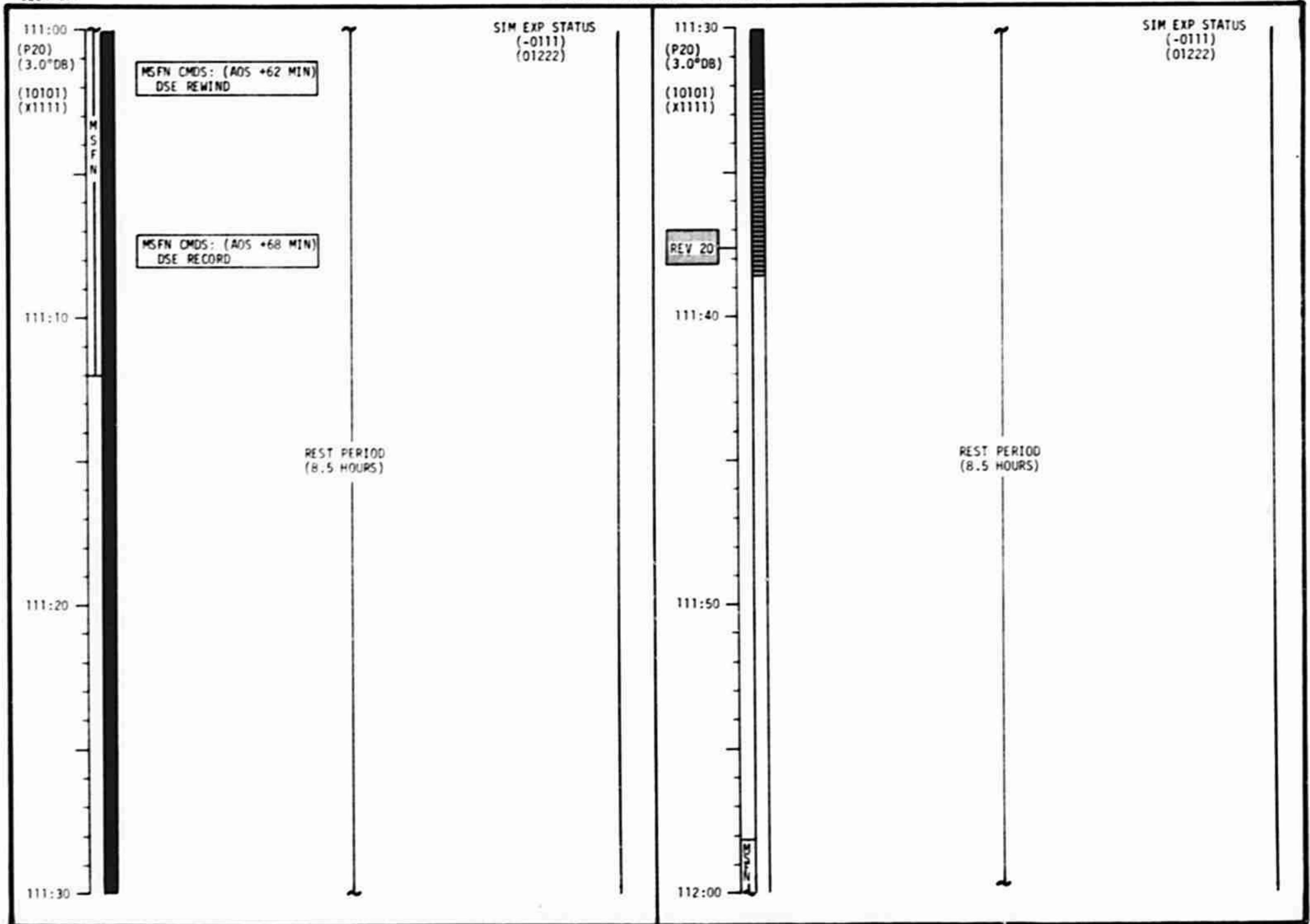
GDS 210 LOS

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

# CSM FLIGHT PLAN



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



MCC-H

0354 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

112:00  
:10  
:20  
112:30  
:40  
:50  
113:00

M  
S  
F  
N  
  
X

EAT PERIOD

PLSS RECHARGE  
CONNECT LM O<sub>2</sub> HOSE TO CDR PLSS AND FILL

CONNECT LM H<sub>2</sub>O HOSE TO CDR PLSS AND FILL

DISCONNECT & STOW CDR PLSS  
CONNECT LM O<sub>2</sub> HOSE TO LMP PLSS AND FILL

CONNECT LM H<sub>2</sub>O HOSE TO LMP PLSS AND FILL  
DISCONNECT & STOW LMP PLSS  
OPEN LM DES H<sub>2</sub>O VALVE

PRE-SLEEP  
CONFIGURE ECS FOR SLEEP

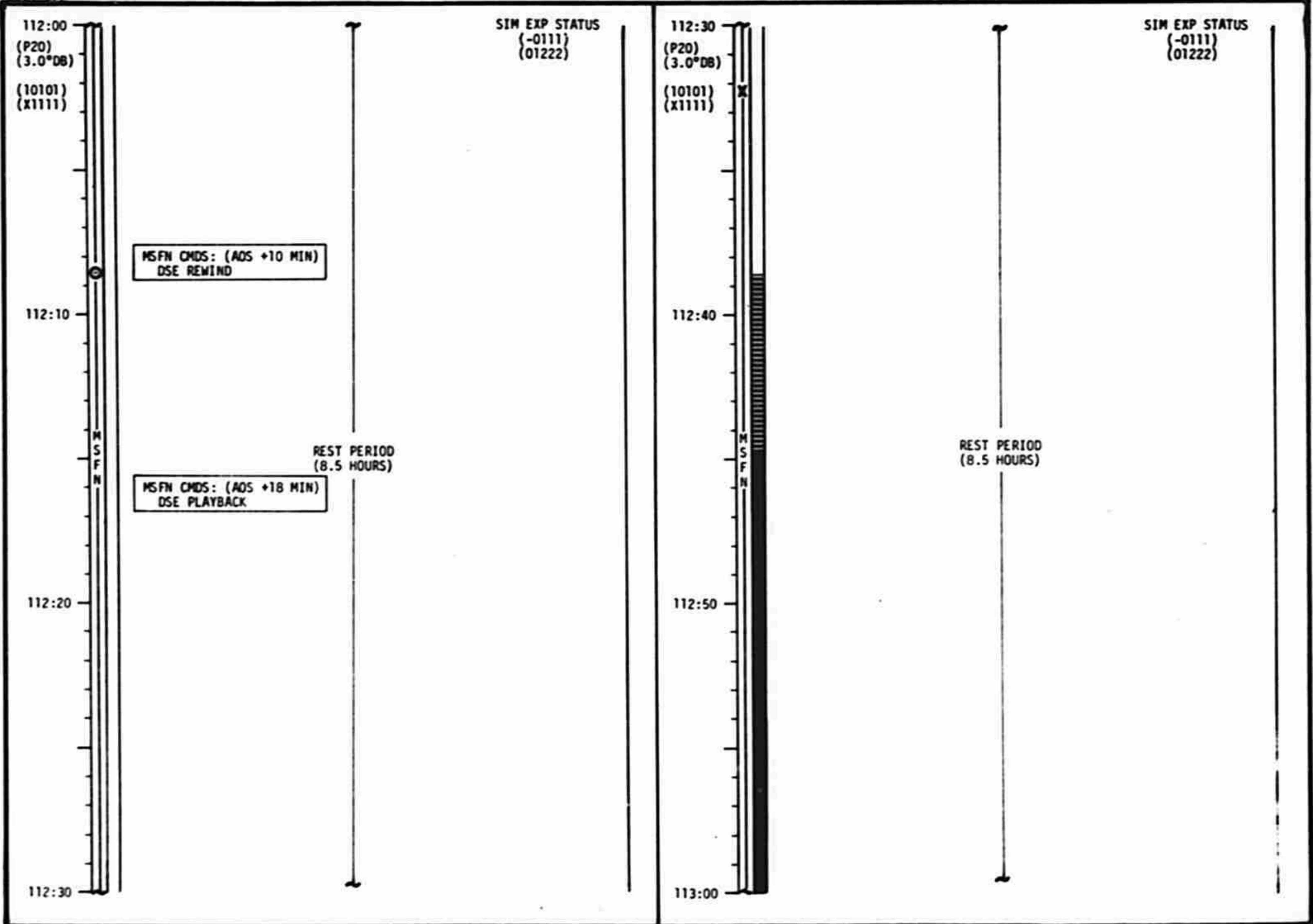
CONFIGURE SLEEP STATIONS FOR SLEEP

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-141

# LM FLIGHT PLAN

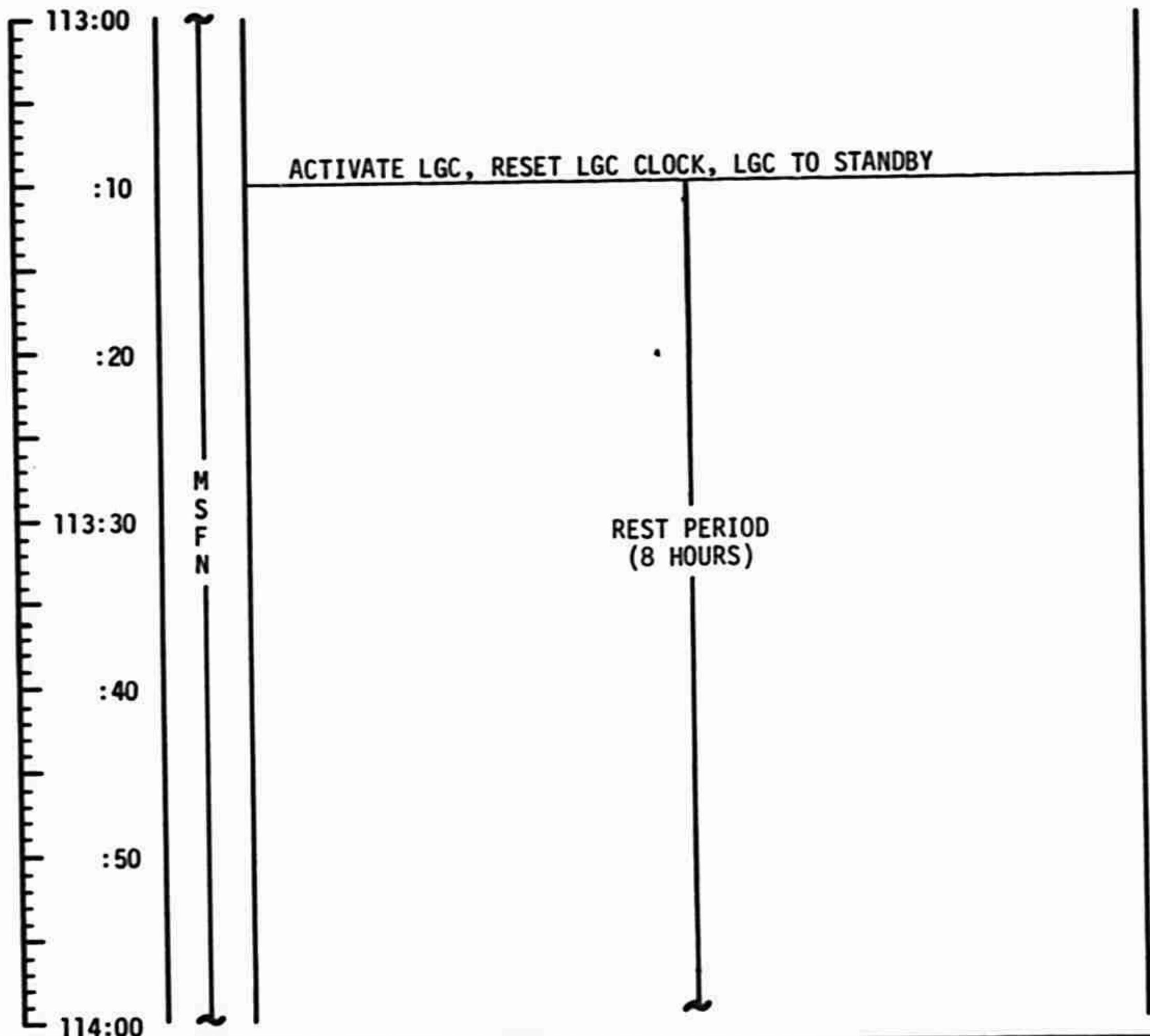
MCC-H

0454 CST

CDR

LMP

NOTES



CSM REV 21

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



MCC-H

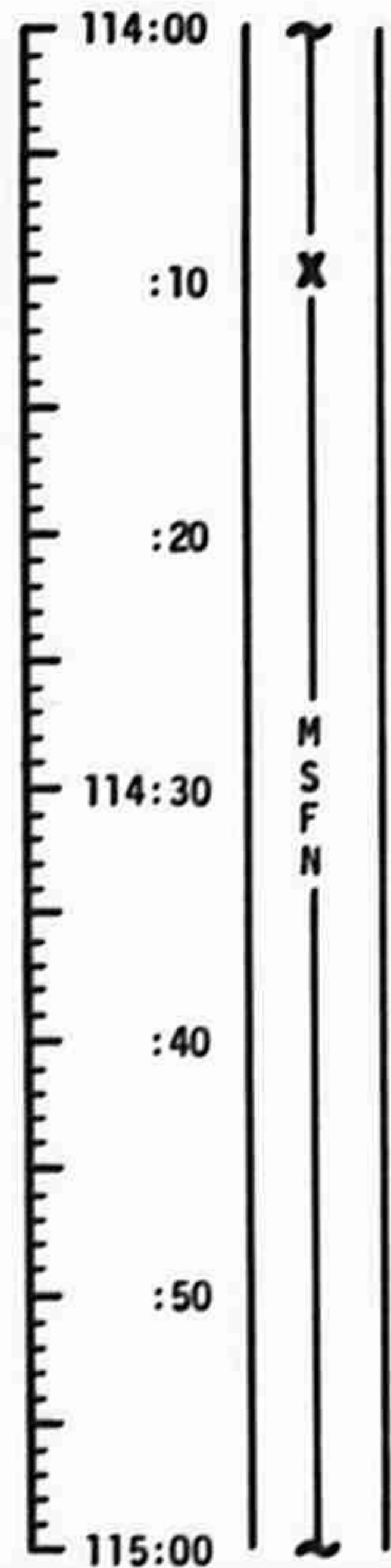
0554 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

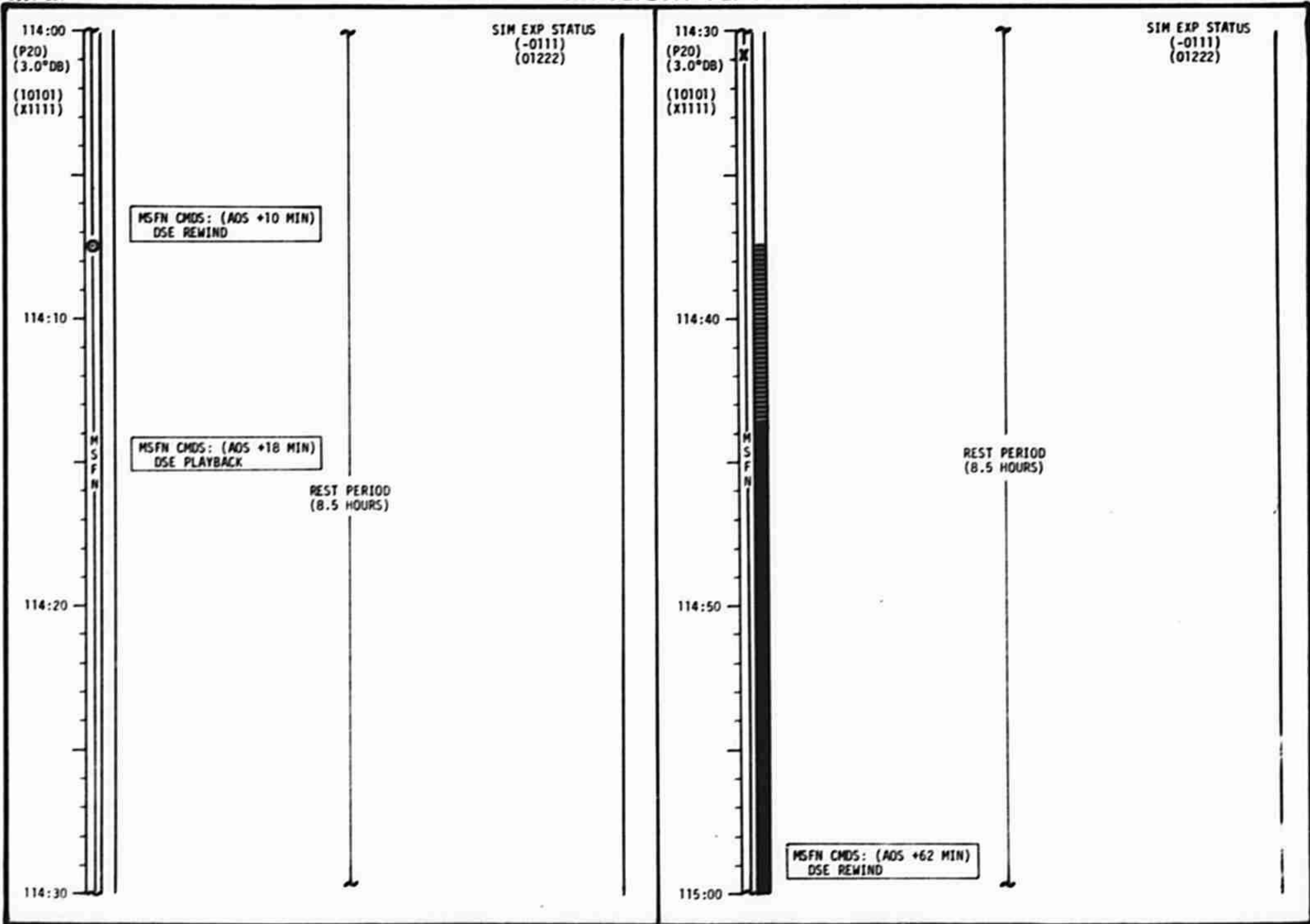


REST PERIOD  
(8 HOURS)

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-145

# LM FLIGHT PLAN

MCC-H

0654 CST

CDR

LMP

NOTES

115:00  
:10  
:20  
115:30  
:40  
:50  
116:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

CSM REV 22

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

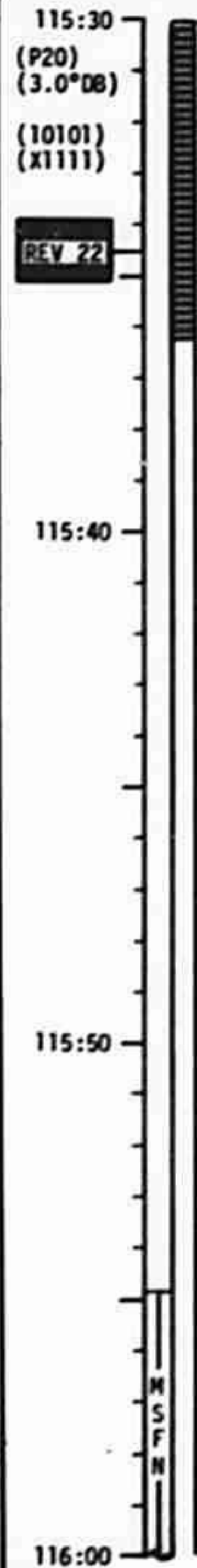
# CSM FLIGHT PLAN



MSFN CMDS: (ADS +68 MIN)  
DSE RECORD

SIM EXP STATUS  
(-0111)  
(01222)

REST PERIOD  
(8.5 HOURS)



SIM EXP STATUS  
(-0111)  
(01222)

REST PERIOD  
(8.5 HOURS)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-147



MCC-H

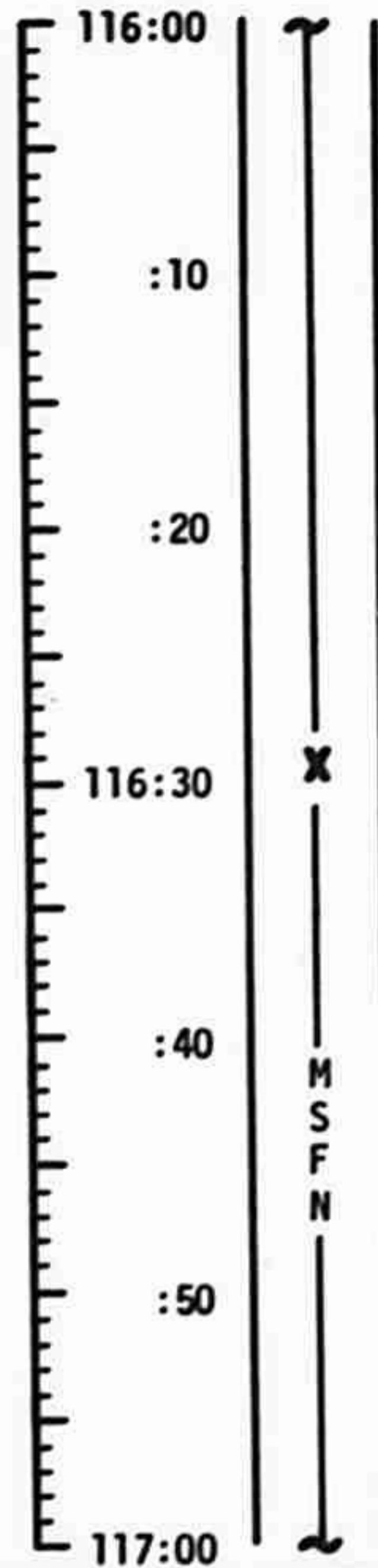
0754 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

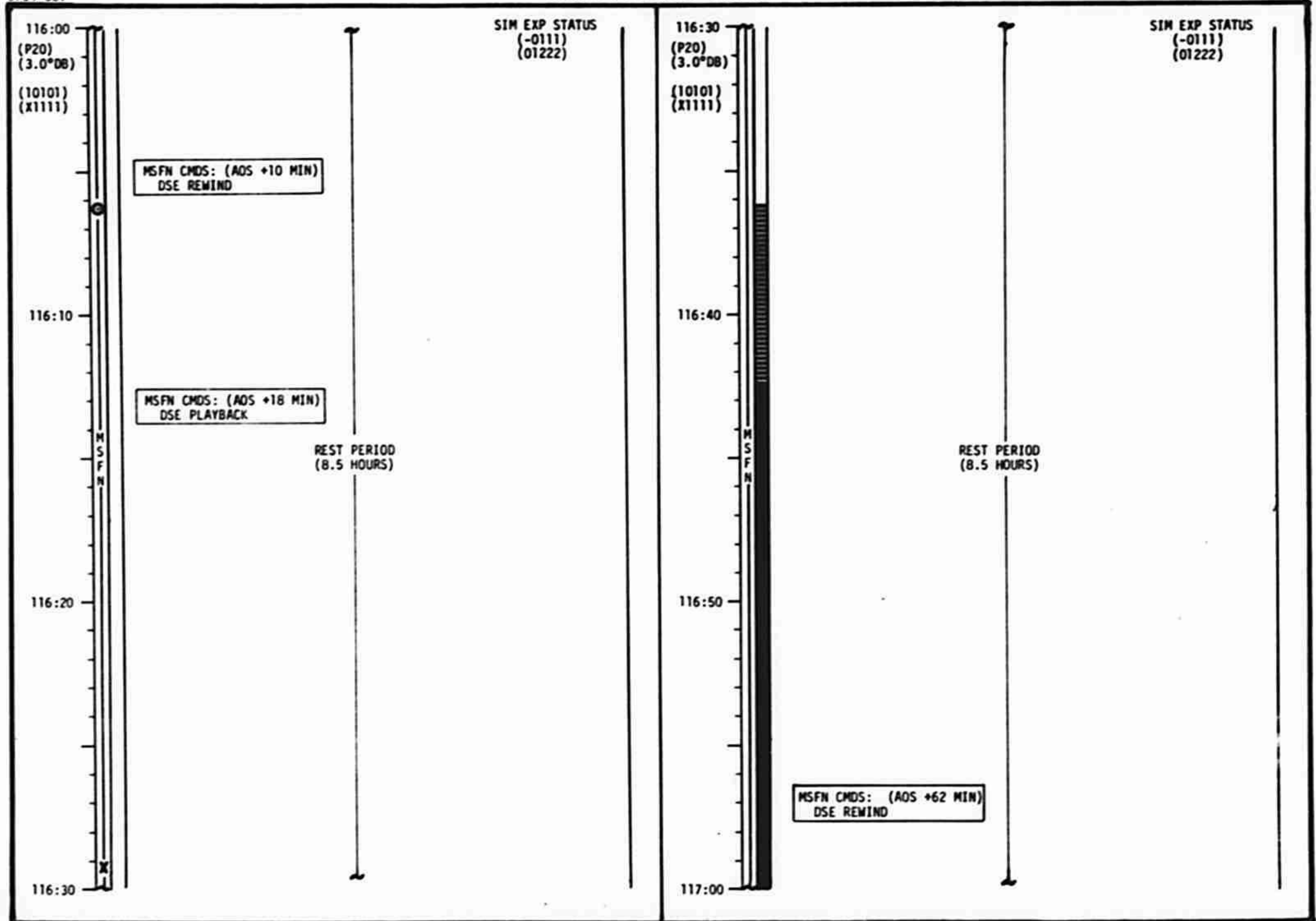


REST PERIOD  
(8 HOURS)

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-149

# LM FLIGHT PLAN

MCC-H

0854 CST

CDR

LMP

NOTES

117:00  
:10  
:20  
117:30  
:40  
:50  
118:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

CSM REV 23

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

# CSM FLIGHT PLAN

117:00  
 (P20)  
 (3.0°DB)  
 (10101)  
 (X1111)  
 M  
 S  
 F  
 N  
 117:10  
 117:20  
 117:30

MSFN CMDS: (AOS +68 MIN)  
 DSE RECORD

SIM EXP STATUS  
 (-0111)  
 (01222)

REST PERIOD  
 (8.5 HOURS)

117:30  
 (P20)  
 (3.0°DB)  
 (10101)  
 (X1111)  
 REV 23  
 117:40  
 117:50  
 M  
 S  
 F  
 N  
 118:00

SIM EXP STATUS  
 (-0111)  
 (01222)

REST PERIOD  
 (8.5 HOURS)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-151

MCC-H

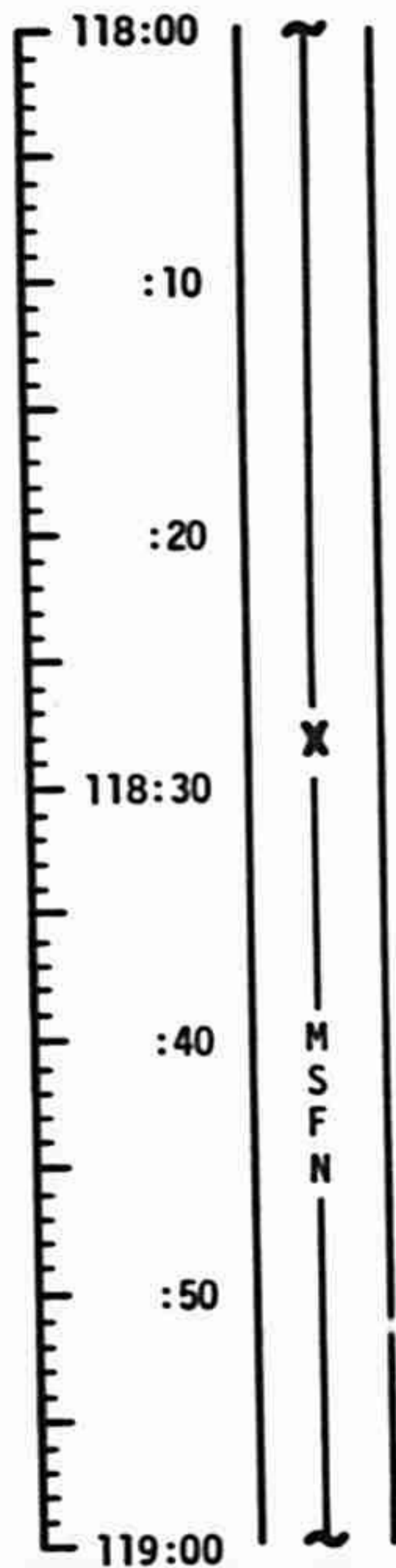
0954 CST

# 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

118:00 (P20) (3.0°DB) (10101) (X1111)

**CSM SYSTEMS CHECKLIST**

POST-SLEEP CHECKLIST PAGE 5/1-29  
REPORT: CDR & LMP FOOD  
LOGIC PWR (2) - DPLY/RETR

MSFN CMDS: (AOS +10 MIN)  
DSE REWIND

MSFN UPDATE:  
CONSUMABLES STATUS  
FLIGHT PLAN  
SIM EXP STATUS  
DSE VOICE STATUS

MS: ION SOURCE - STBY (CALIBRATION DATA)  
PC: MODE - STBY  
PWR - ON

MSFN UPLINK:  
CSM S.V.

MSFN CMDS: (AOS +18 MIN)  
DSE PLAYBACK

PC: PWR - OFF (MSFN CUE)

GR: SHIELD - OFF

MS: ION SOURCE - ON

GR: SHIELD - ON (CTR)

CONFIGURE CAMERA (TERMINATOR PHOTOS)  
CM3/EL/250/VHBW (f5.6, 1/125, -) 6 FR  
MAG (SS) \_\_\_\_\_, FR # \_\_\_\_\_

SIM EXP STATUS (-0111) (01222)

118:30 (P20) (3.0°DB) (10101) (X1111)

**TERMINATOR PHOTOS**

DAVY RILLE (P20 - B11) CM3  
**CRATER CHAIN INCLUDING HIGHLAND  
CM3 (f5.6, 1/125, 00) 6 FR**  
RECORD FR # \_\_\_\_\_

118:40

CMC MODE - FREE  
P52 (OPTION 3)  
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

V22N79 (+005.00)  
(DAP DEADBAND TEST RUNS FROM 118:46 TO 120:42)

P20 - CMC MODE - AUTO  
GDC ALIGN

118:50

H<sub>2</sub> PURGE LINE HEATERS - ON

CHARGE BATTERY B

MSFN CMDS: (AOS +61 MIN)  
DSE REWIND

119:00

CONFIGURE FOR URINE DUMP

SIM EXP STATUS (-0111) (01222)

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

MISSION	EDITION	DATE	PAGE
APOLLO 16	CRANE A FINAL (4/16)	3/27/72 3/6/72	3-153

MCC-H

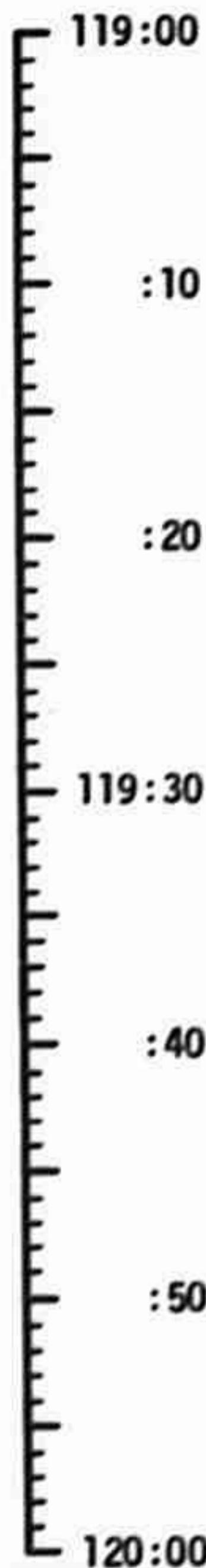
1054 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES



M  
S  
F  
N

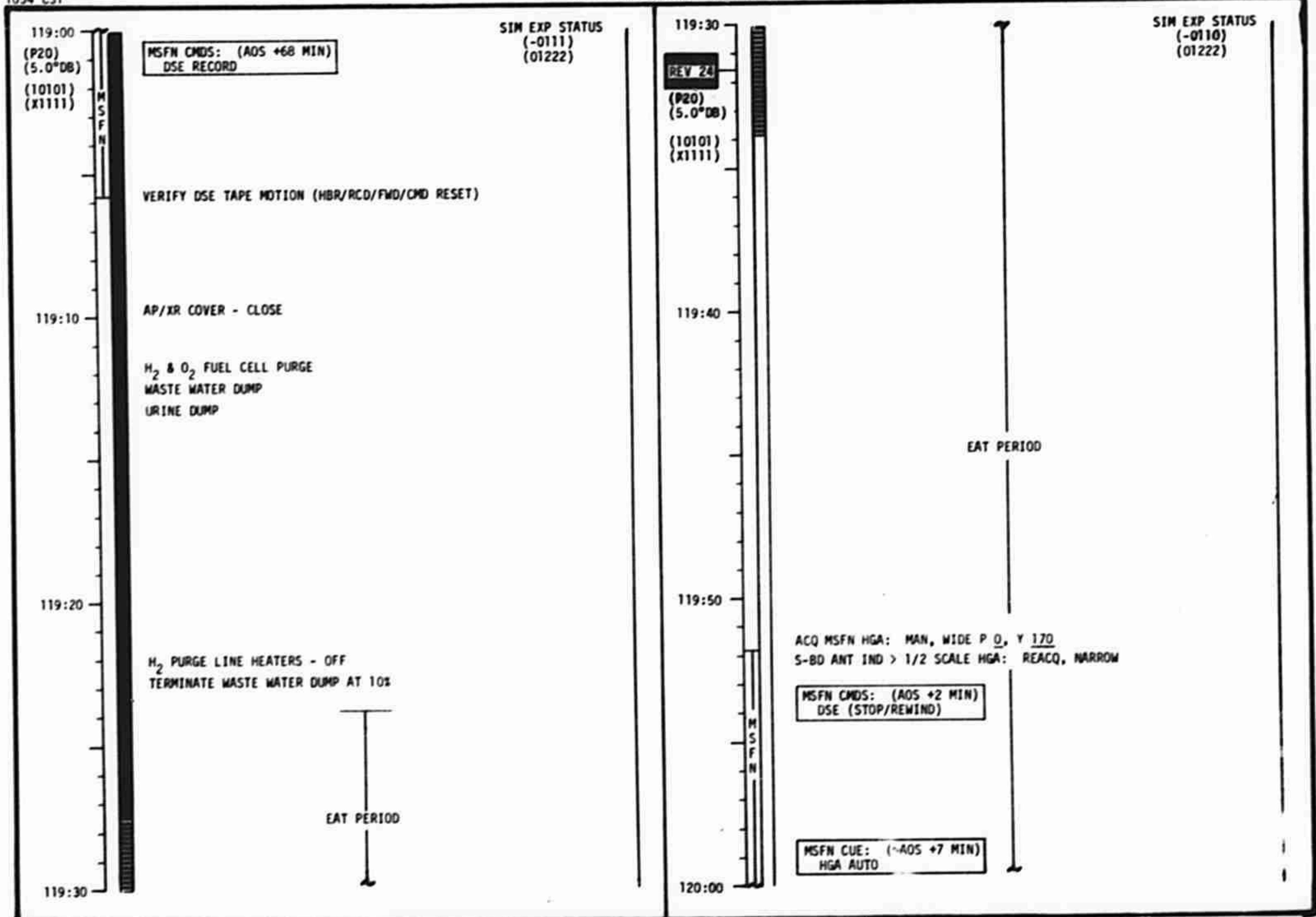
REST PERIOD  
(8 HOURS)

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-155



# LM FLIGHT PLAN

MCC-H

1154 CST

CDR

LMP

NOTES

120:00  
:10  
:20  
120:30  
:40  
:50  
121:00

X  
M  
S  
F  
N

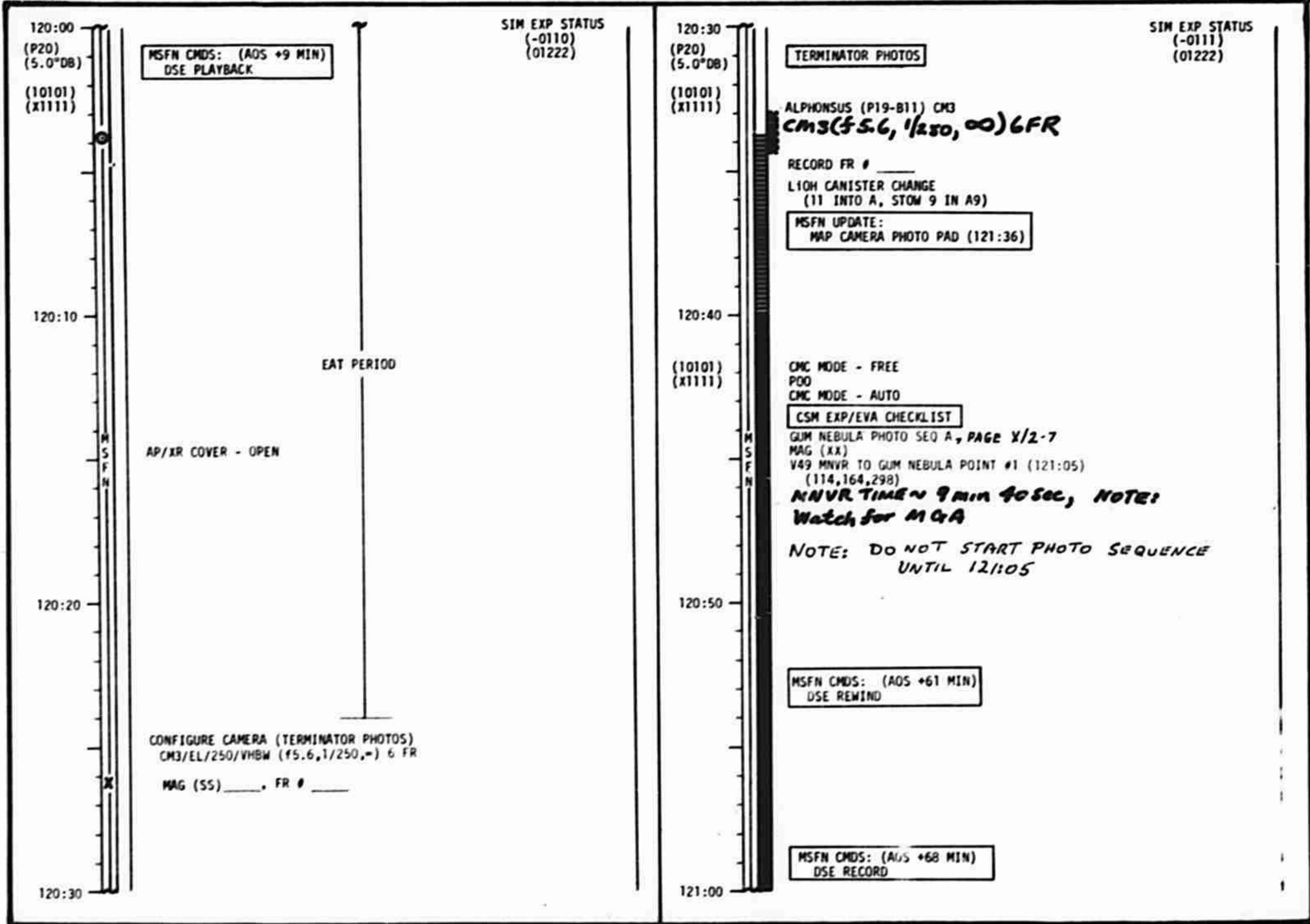
REST PERIOD  
(8 HOURS)

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

1154 CST

# CSM FLIGHT PLAN



SIM EXP STATUS (-0110) (01222)

SIM EXP STATUS (-0111) (01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE # 5 - FINAL (4/16)	3/27/72-3/16/72-1/7/72	3-157

# LM FLIGHT PLAN

MCC-H

1254 CST

CDR

LMP

NOTES

121:00  
:10  
:20  
121:30  
:40  
:50  
122:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

POST SLEEP  
STOW HAMMOCKS  
CREW STATUS (FOOD, MEDICATION, SLEEP)

~~CHANGE LiOH CANISTER~~

ACTIVATE LGC, RESET LGC CLOCK,  
LGC TO STANDBY  
CHECK LCG'S  
INSTALL ISS  
PLSS O<sub>2</sub> TOP OFF

EAT PERIOD

CSM REV 25

STAY/NO-STAY FOR  
EVA-2

UPDATE TO LM  
LIFT-OFF TIMES FOR  
REVS 25-31

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

121:00  
(10101)  
(X1111)

MSFN

SIM EXP STATUS  
(\*0111)  
(01222)

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

**LOAD N78 FOR MNVR AT 121:25**

121:10

GUM NEBULA PHOTO SEQ A STEPS 485

121:20

(10102)  
(X1111)

V48 (10102)  
(X1111)

**VERY TIGHT; MNVR TIME ~ 4 MIN 45 SEC  
AT 0.5 DEG/SEC**

(P20)  
(0.5°DB)

P20 OPT 5 (25° FORWARD OBLIQUE PHOTO ATT)(121:33)

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 - EXT D

121:30

121:30  
REV 25

(P20)  
(0.5°DB)

(10102)  
(X1111)

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)

121:40

(10101)  
(X1111)

V48 (10101)  
(X1111)

121:50

ACQ MSFN OMNI D

122:00

MSFN

SIM EXP STATUS  
(\*1111)  
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-159

# LM FLIGHT PLAN

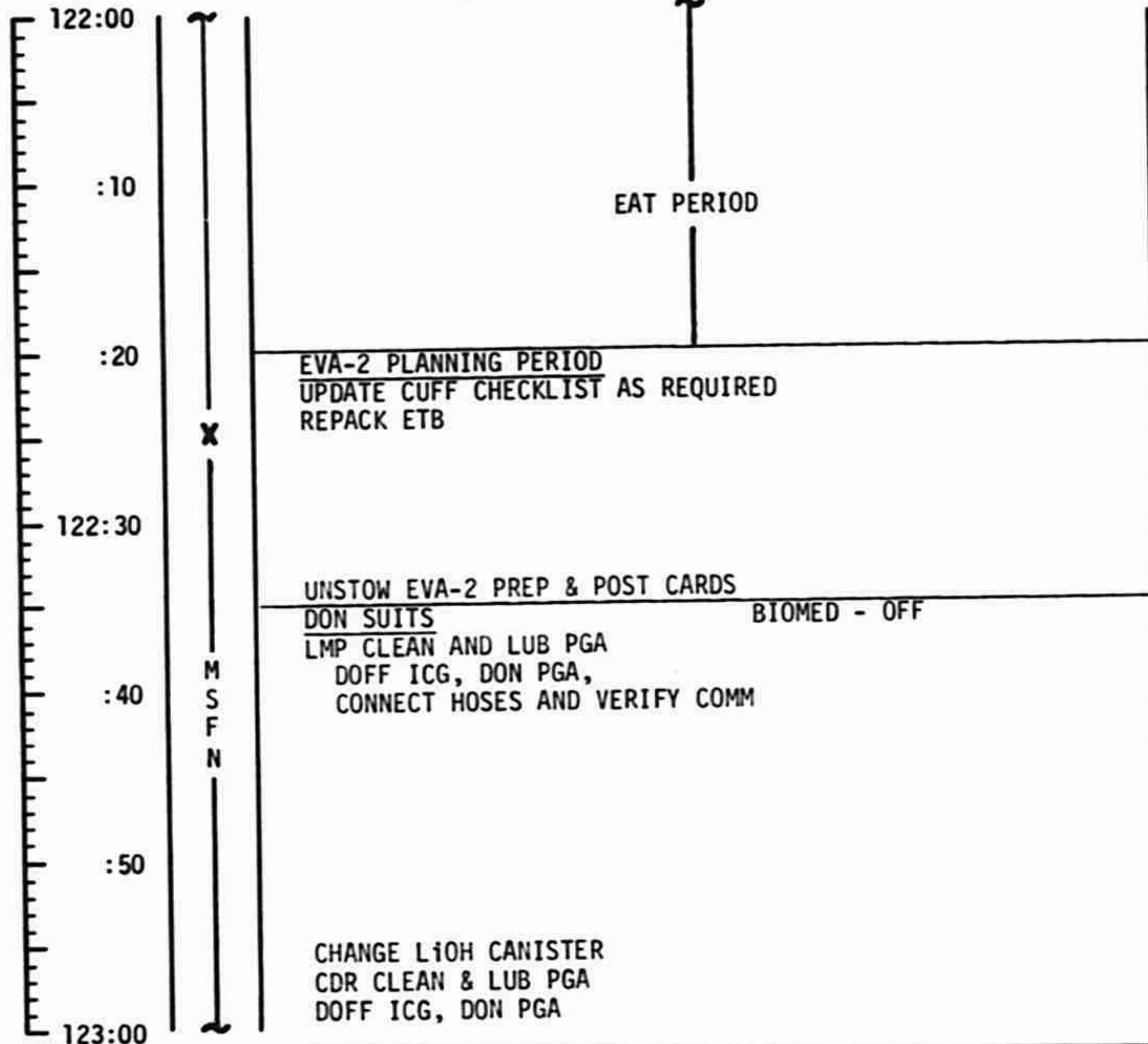
MCC-H

1354 CST

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

# 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)

MSFN CMDS: (AOS +17 MIN)  
DSE (STOP/REWIND)  
CUE: HGA AUTO

MSFN UPDATE:  
ZODIACAL LIGHT PHOTO PAD (123:12)  
MAP CAMERA PHOTO PAD (125:33)  
TEI 32 PAD

MSFN CMDS: (AOS +25 MIN)  
DSE PLAYBACK

122:10

MSFN

122:20

122:30

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)

122:40

*Prepare ZODIACAL LIGHT TAPE  
& CHECK BATTERIES*

MSFN

122:50

CSM EXP/EVA CHECKLIST  
ZODIACAL LIGHT, PAGE X/2-14  
MAG (YY)

MSFN CMDS: (AOS +66 MIN)  
DSE REWIND

123:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-161

MCC-H

1454 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

123:00  
:10  
:20  
123:30  
:40  
:50  
124:00

M  
S  
F  
N

CONNECT HOSES & VERIFY COMM

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

-1:30

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

CSM REV 26

-1:20

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

GDS 210 AOS

-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





# LM FLIGHT PLAN

MCC-H

1554 CST

CDR

LMP

NOTES

124:00  
:10  
:20  
124:30  
:40  
:50  
125:00

M  
S  
F  
N

PLSS DONNING  
CONFIGURE LMP PLSS  
ATTACH OPS TO PLSS  
LMP DON PLSS/OPS  
CONNECT RCU

CDR REPEAT PLSS DONNING

PLSS COMM CHECK  
VERIFY POWERDOWN CB CONFIGURATION  
CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON  
COMM & TM CHECK, REPORT PLSS O<sub>2</sub> QUANTITY TO MCC-H  
FINAL SYSTEMS PREP

OPS CONNECT  
LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA

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

-0:50  
-0:40  
-0:30  
-0:20  
-0:10  
0:00/START EVA-2  
+0:10

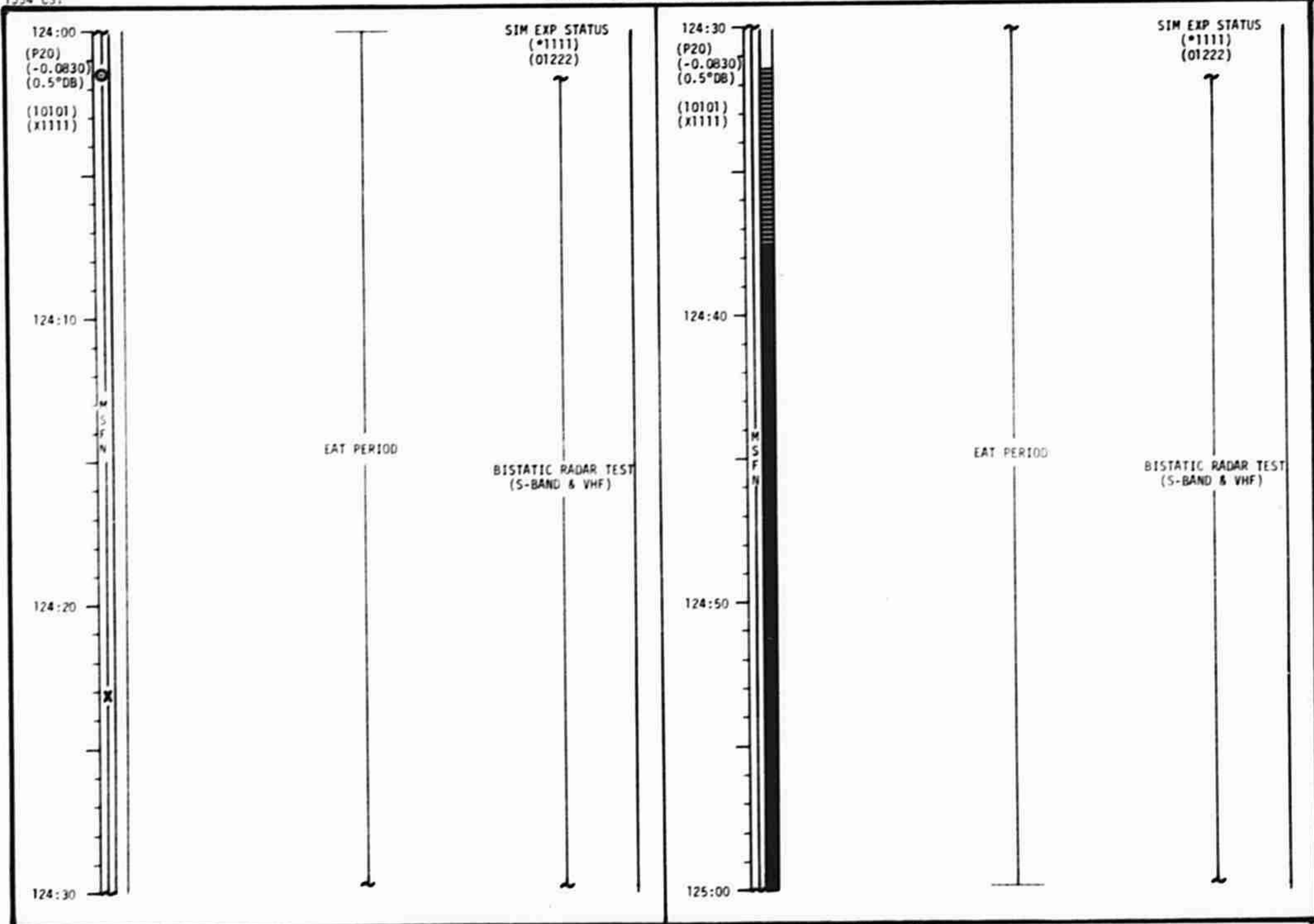
GO/NO-GO FOR  
CABIN DEPRESS

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-165

# LM FLIGHT PLAN

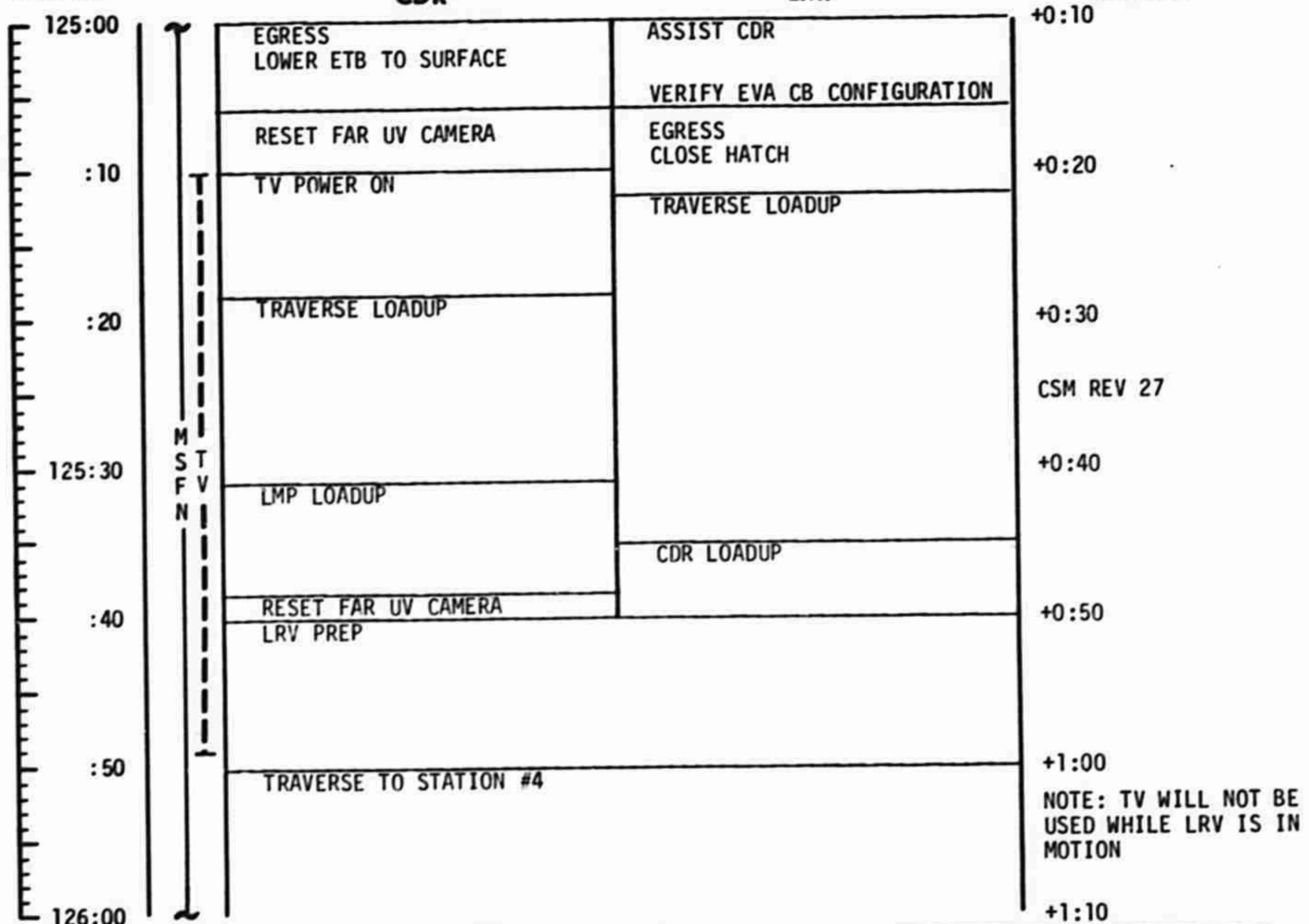
MCC-H

1654 CST

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	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)

(10101)  
(X1111)

(10101)  
(X1111)

125:10

(P20)  
(0.5°DB)

125:20

125:30

SIM EXP STATUS  
(\*1111)  
(01222)

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

P00

P52 (OPTION 3)  
(LOG SITE ORIENT)

GDC ALIGN

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 (PNT) D FOR AOS ACQ

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

CONFIGURE DSE HBR

125:30  
(P20)  
(0.5°DB)

(10101)  
(X1111)

125:40

125:50

126:00

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: \_\_\_\_\_

(169.9°E TO 10.6°W)

ACQ MSFN OMNI D

ACQ MSFN HGA: MAN. WIDE P  $\frac{10}{1}$  Y  $\frac{0}{1}$   
S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW

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

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

REV 27

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE FINAL (4/16)	3/27/72	3-167

# LM FLIGHT PLAN

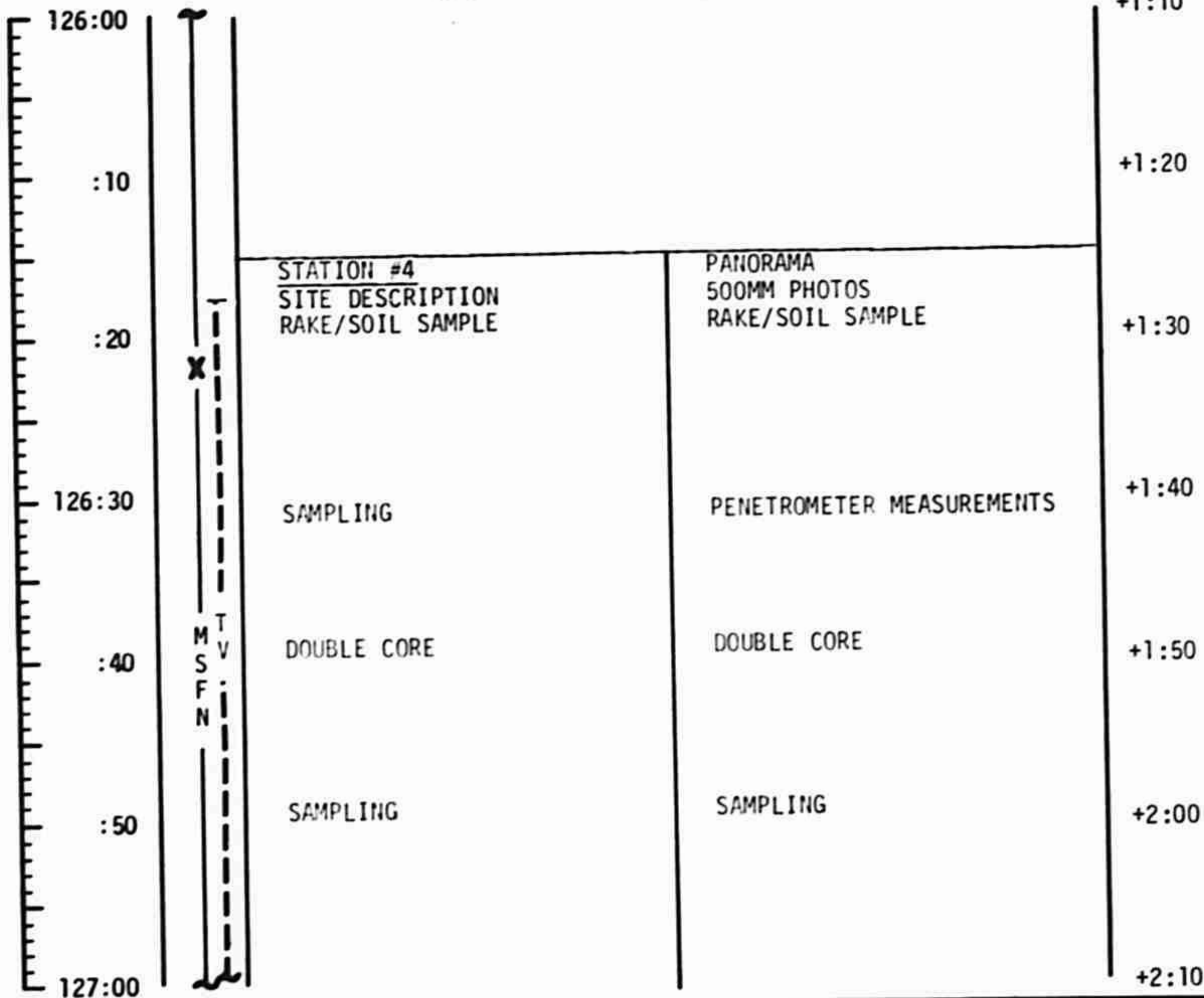
MCC-H

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

1754 CST

# CSM FLIGHT PLAN

126:00  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

126:10

MSFN

126:20

X

126:30

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)

SIM EXP STATUS  
(\*1111)  
(04222)

MSFN CMDS: (AOS +17 MIN)  
DSE PLAYBACK

CSM EXP/EVA CHECKLIST

LUNAR TERRA UV PHOTOGRAPHY, PAGE X/2-21  
MAG (00)

LUNAR TERRA UV PHOTOGRAPHY (DESCARTES)

UV PHOTO PAD

T-START: \_\_\_\_\_

(L/S - 2 MIN)

126:30  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

126:40  
(10101)  
(X1111)

126:50

127:00

MC - OFF (T STOP)  
WAIT 30 SEC  
MC - STBY  
IMAGE MTN - OFF  
GR: SHIELD - OFF

SIM EXP STATUS  
(\*1111)  
(04222)

CSM EXP/EVA CHECKLIST

GEGENSCHWEIN CALIBRATION, PAGE X/2-5  
MAG (ZZ)  
POO  
V49 MVVR TO GEGENSCHWEIN CALIBRATION ATT (126:58)  
(297,210,000) OMNI D  
**NOTE: DO NOT START PHOTO SEQUENCE UNTIL 126:53**

GR: SHIELD - ON (CTR)  
**MS-RETR TO 8.4 FEET (2 MIN 01 SEC)**

MSFN CMDS: (AOS +66 MIN)  
DSE REWIND

# LM FLIGHT PLAN

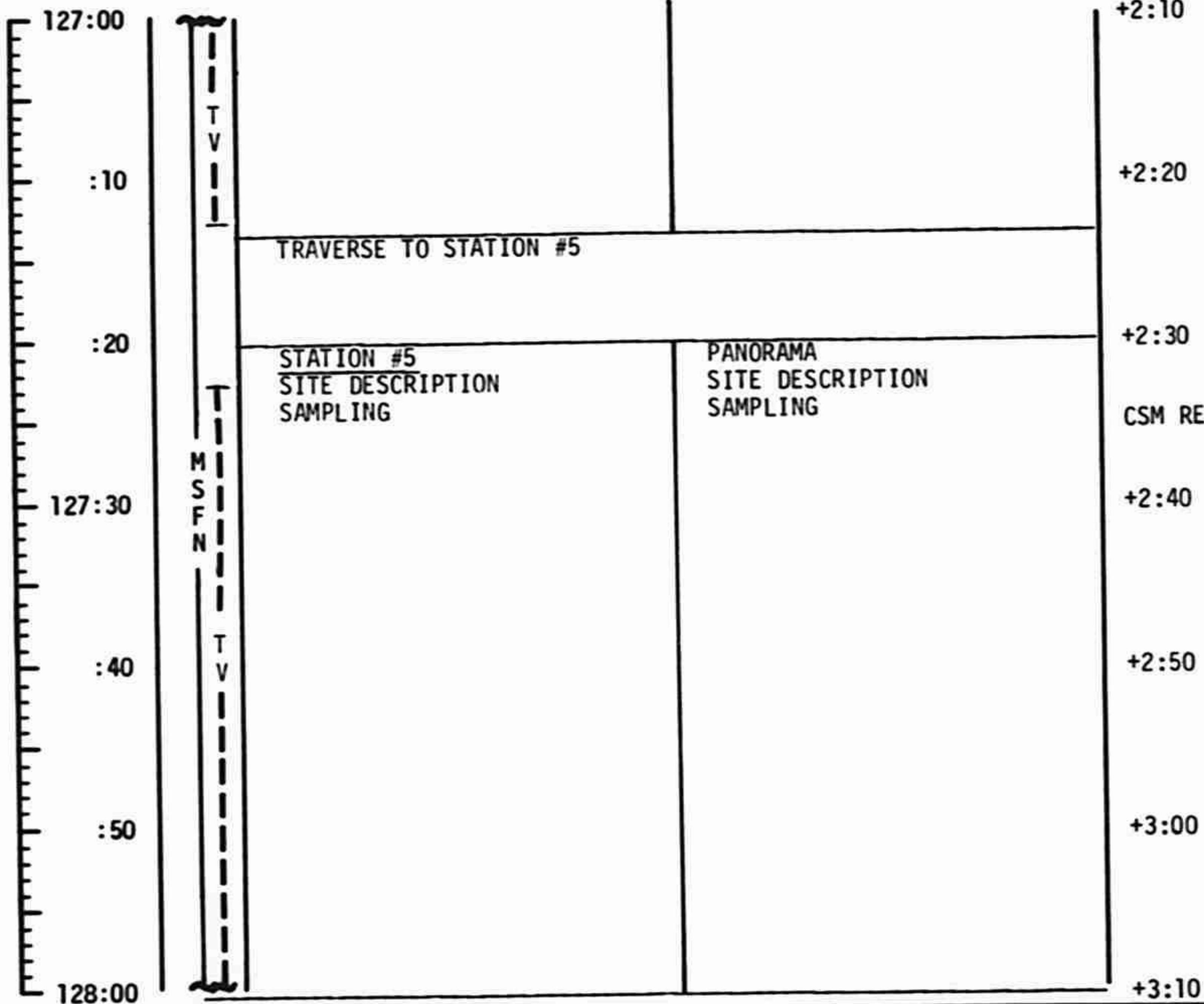
MCC-H

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)

127:10  
(P20)  
(0.5°DB)

127:20

127:30

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN) ~~(+1111)~~ **(+1121)**  
SIM EXP STATUS (01222)

GEGENSCHN CALIBRATION

P20 OPT 5 (+X FWD SIM ATT) (127:29)  
N79 (+000.50)

GR - RETR  
~~GR - RETR TO 6.2 FEET (2 MIN 07 SEC)~~

GR - DPLY TO 15 INCHES (17 SEC)

MAP CAMERA PHOTO PAD	
T-START: _____	_____
T-STOP: _____	_____
(169.9°E TO 13.6°W) (1-1/2 REVS)	

REV 28

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

127:30  
(P20)  
(0.5°DB)

(10101)  
(X1111)

127:40

127:50

MSFN

128:00

SIM EXP STATUS  
(+1221)  
(02222)

ACQ MSFN HGA: MAN, WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACO, NARROW

PREPARE FOR ORBITAL SCIENCE VISUALS  
**KAPTEYN (V6)**

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

ORBITAL SCIENCE VISUALS **AT 128:01**

MSFN CMDS: (AOS +14 MIN)  
DSE PLAYBACK

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg. C <del>FINAL</del> (4/16)	216492 9/10/72	3-171



MCC-H

1954 CST

# LM FLIGHT PLAN

CDR

LMP

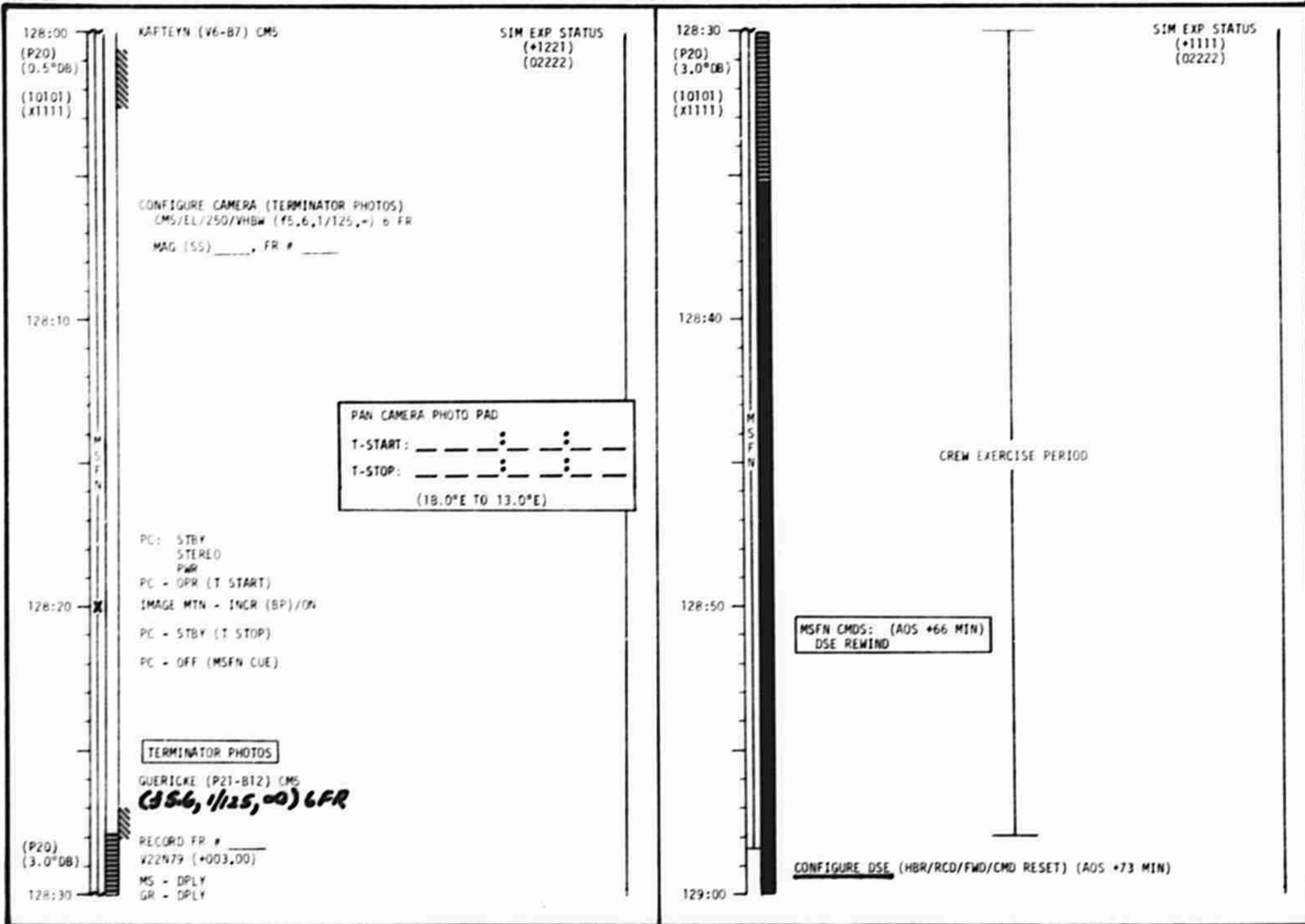
NOTES

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-173

# LM FLIGHT PLAN

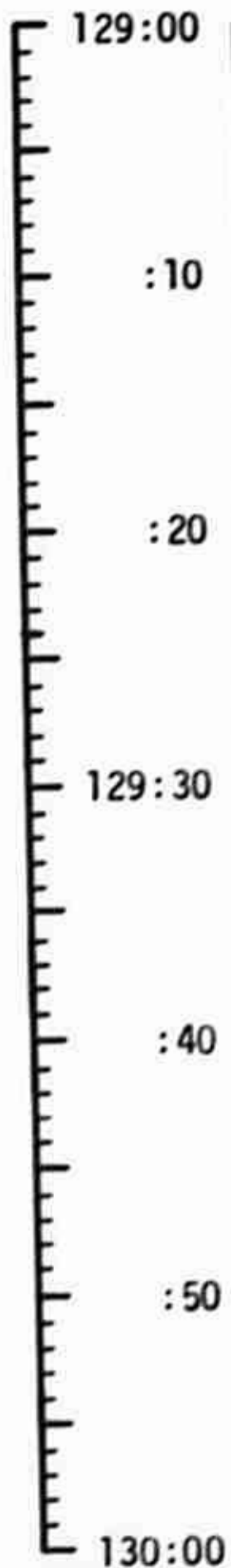
MCC-H

2054 CST

CDR

LMP

NOTES



SAMPLING (INCLUDING  
BOULDER OPERATIONS)

SAMPLING (INCLUDING  
BOULDER OPERATIONS)

+4:10

+4:20

+4:30

CSM REV 29

+4:40

+4:50

TRAVERSE TO STATION #9

STATION #9  
CSVC

PANORAMA  
CSVC

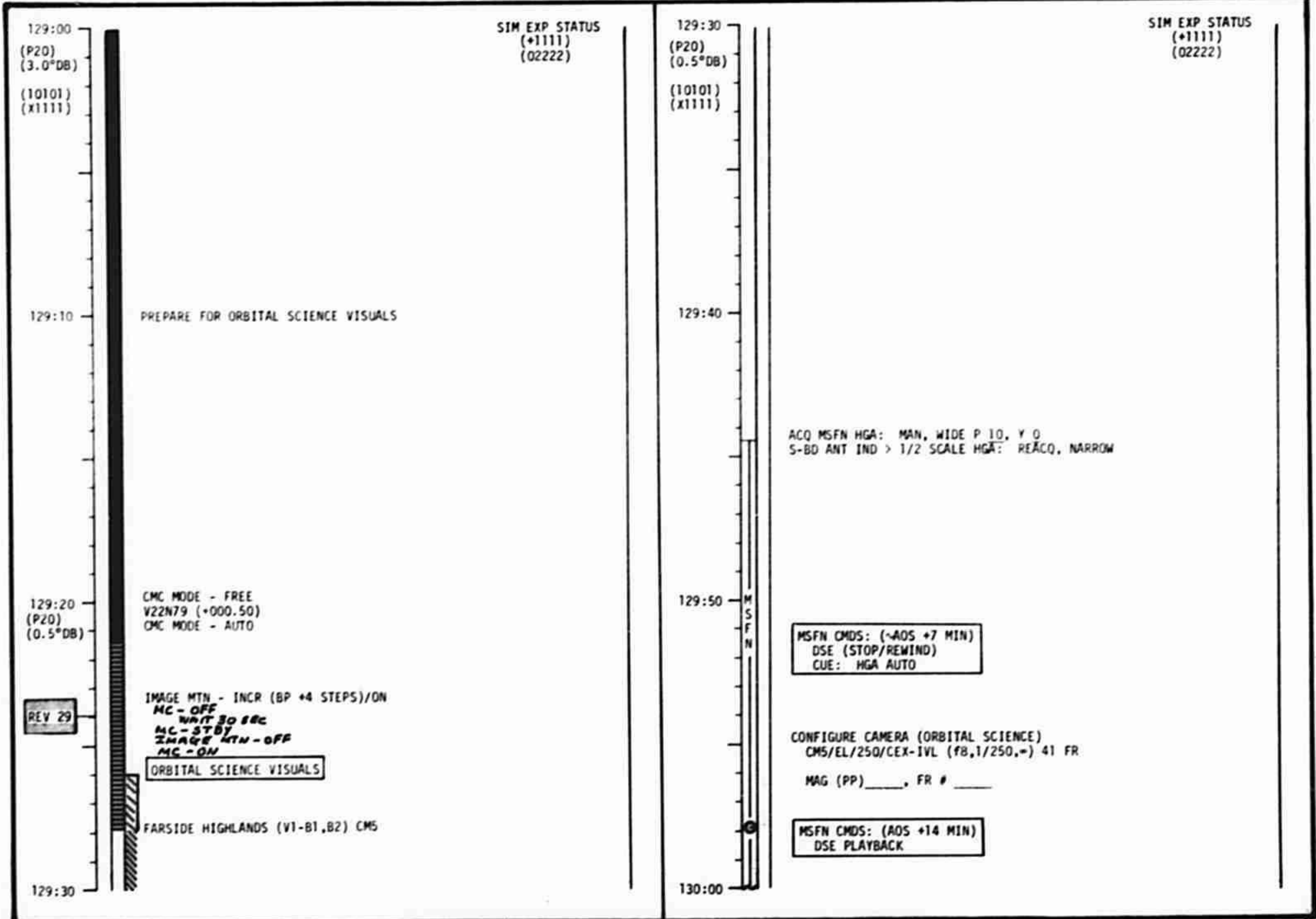
+5:00

+5:10

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



SIM EXP STATUS  
(+1111)  
(02222)

SIM EXP STATUS  
(+1111)  
(02222)

129:00  
(P20)  
(3.0°DB)  
  
(10101)  
(x1111)

129:30  
(P20)  
(0.5°DB)  
  
(10101)  
(x1111)

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

REV 29

IMAGE MTN - INCR (BP +4 STEPS)/ON  
MC - OFF  
WAIT 30 SEC  
MC - STBY  
IMAGE MTN - OFF  
MC - ON

ORBITAL SCIENCE VISUALS

FARSIDE HIGHLANDS (V1-B1,B2) CM5

129:30

ACQ MSFN HGA: MAN, WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

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

CONFIGURE CAMERA (ORBITAL SCIENCE)  
CM5/EL/250/CEX-IVL (f8,1/250,=) 41 FR

MAG (PP) \_\_\_\_, FR # \_\_\_\_

MSFN CMDS: (AOS +14 MIN)  
DSE PLAYBACK

130:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE # 4 FINAL (4/16)	3/29/72 216172 11/10/72	3-175

# LM FLIGHT PLAN

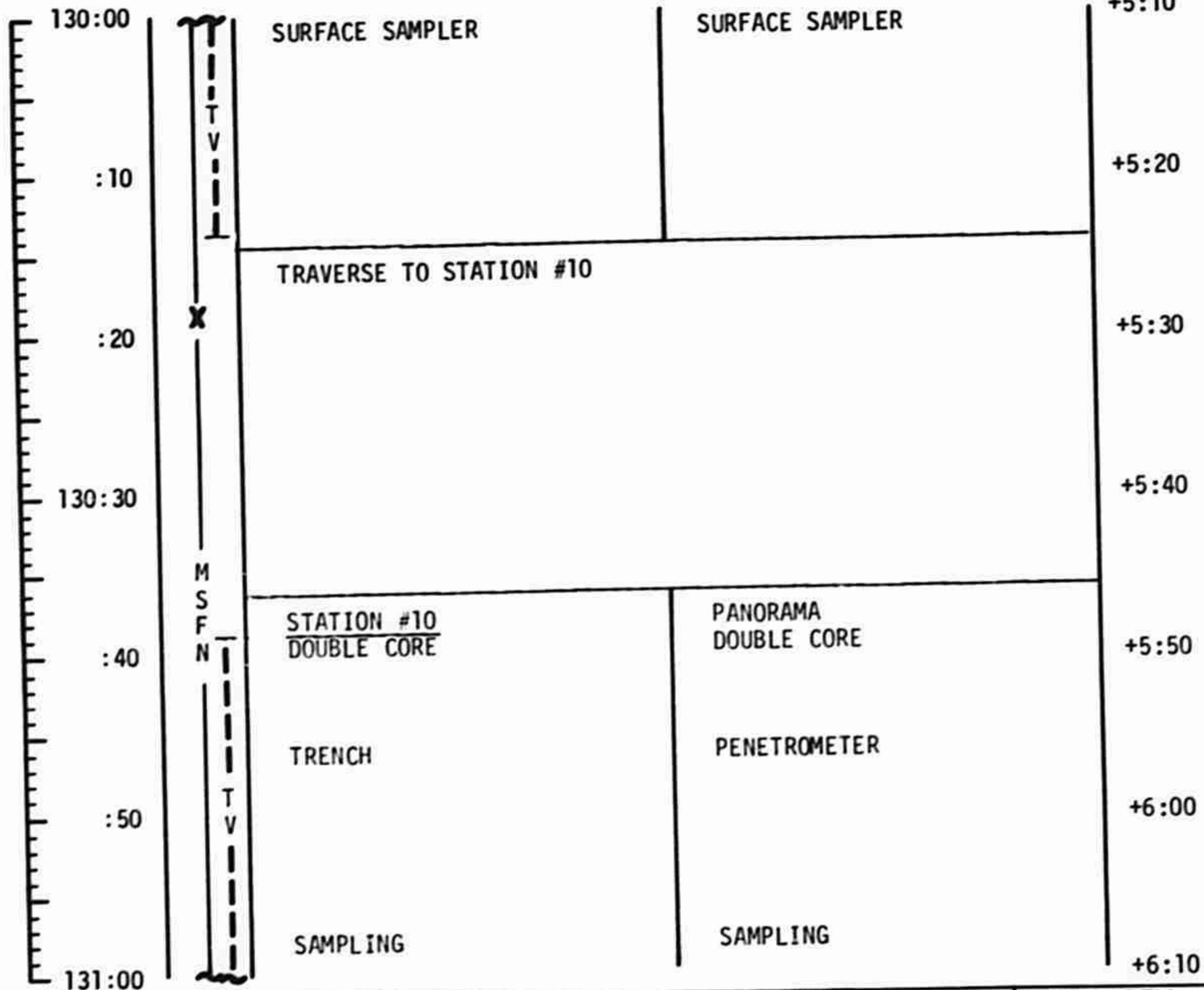
MCC-H

2154 CST

CDR

LMP

NOTES



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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

<p>130:00 <b>Prepare for Photo Strip</b> (P20) (0.5°DB) (10101) (X1111)</p> <p>CONFIGURE FOR URINE DUMP</p> <p>GR: SHIELD - OFF</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;"> <p>ORBITAL SCIENCE PHOTOS</p> <p>CATHARINA (P13-B9.B10)</p> <p>CMS (FB.1/250,-) 41 FR</p> </div> <p>130:10</p> <p style="text-align: center;">M S F N</p> <p>130:20</p> <p>RECORD FR # IMAGE MTN - INCR (BP) <del>OFF</del></p> <p>GR: SHIELD - ON (CTR)</p> <p>130:30</p> <p>MC - OFF (T STOP) WAIT 30 SEC MC - STBY <del>IMAGE MTN - OFF</del> LA - OFF</p>	<p style="text-align: right;">SIM EXP STATUS (+1111) (02222)</p> <p>130:30 (P20) (0.5°DB) (10101) (X1111)</p> <p>MC - RETR</p> <p>AP/XR COVER - CLOSE MC/LA COVER - CLOSE</p> <p>(P20) (3.0°DB) 130:40</p> <p>V22 N79 (+003.00)</p> <p>CMC MODE - FREE P52 (OPTION 3) (LDG SITE ORIENT)</p> <p>REPORT: <u>GYRO TORQUING ANGLES</u></p> <p>P20, CMC MODE - AUTO GDC ALIGN</p> <p>130:50</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;"> <p>MSFN CMDS: (AOS +66 MIN) DSE REWIND</p> </div> <p>131:00</p> <p>CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)</p> <p>WASTE WATER DUMP URINE DUMP</p> <div style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p style="text-align: center;">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> </div> <p style="text-align: right;">SIM EXP STATUS (+1111) (01222)</p>
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MISSION	EDITION	DATE	PAGE
APOLLO 16	C <sub>1</sub> C FINE (4/16)	2672 9/10/72	3-177

MCC-H

2254 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

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

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

SIM EXP STATUS  
(+0110)  
(01222)

131:00  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

MANUALLY ROLL CCW 40°

P20 OPT 5 (-X FWD SIM ATT)(13):26  
SET HGA P O. Y 170 FOR AOS ACU *N79(+003.00)*

131:10

TERMINATE WASTE WATER DUMP AT 10%

CONFIGURE CAMERA (TERMINATOR PHOTOS)  
CMS/EL/250/VHBW (f5.6, 1/125, =) 6 FR  
MAG (SQ) \_\_\_\_\_ FR # \_\_\_\_\_

131:20

**REV 30**

**FLOOR OR**  
TERMINATOR PHOTOS  
SPENCER JONES (P2-B2) CMS

RECORD FR # \_\_\_\_\_  
AP/XR COVER - OPEN

131:30

SIM EXP STATUS  
(-0111)  
(01222)

131:30  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

131:40

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

EAT PERIOD

MSFN  
131:50

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

PC: MODE - STBY  
PWR - ON

MSFN CMDS: (AOS +14 MIN)  
DSE PLAYBACK

132:00

PC: PWR - OFF (MSFN CUE)

MISSION	EDITION	DATE	PAGE
APOLLO 16	<del>CHARLES</del> <sup>ORIGINAL (+0110)</sup>	<del>4/7/72</del> <sup>4/6/72</sup>	3-179



MCC-H

2354 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

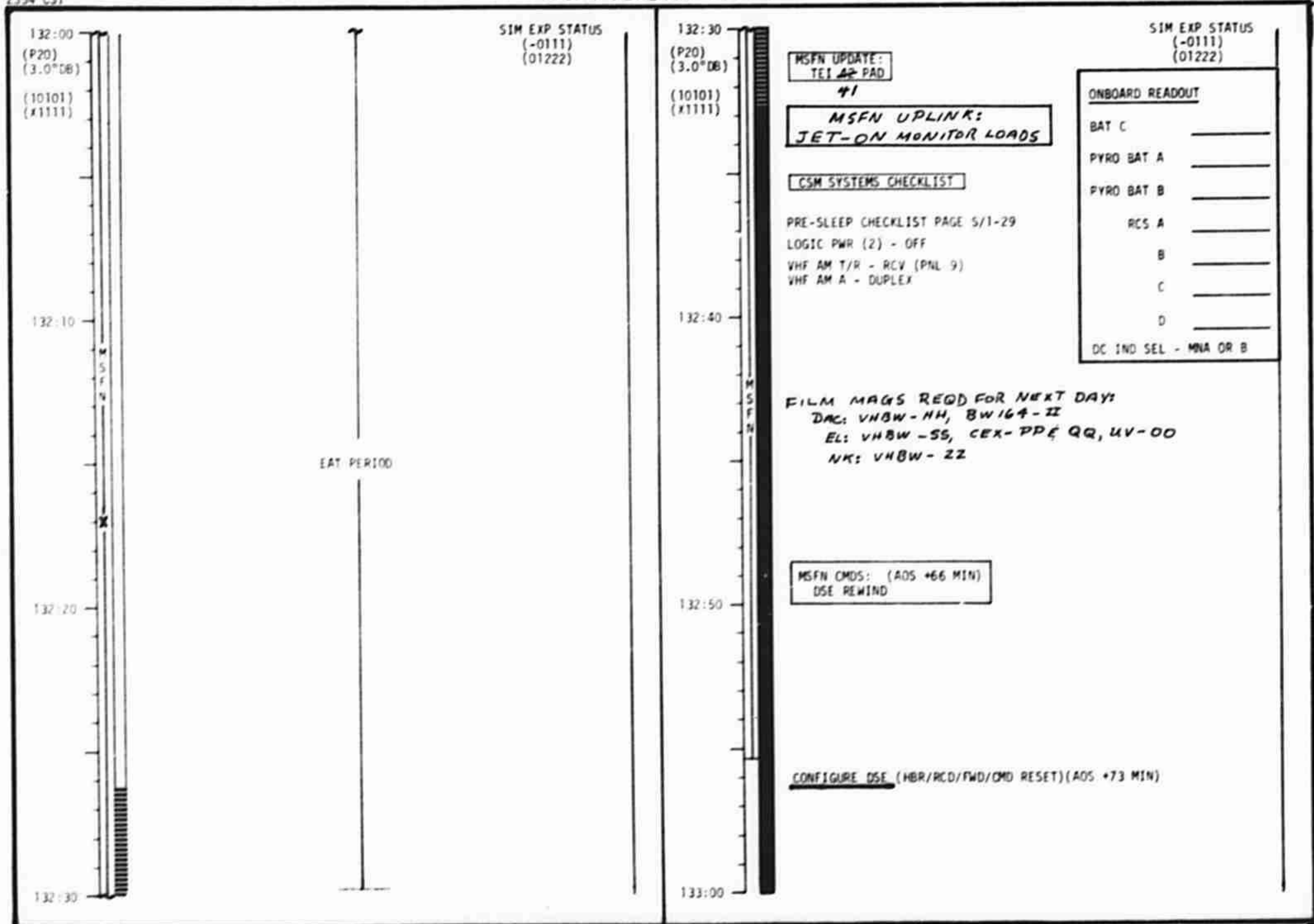
132:00	X M S F N	CONFIGURE AND CONNECT TO LM COMM BIOMED - RIGHT
:10		PLSS O <sub>2</sub> INITIAL RECHARGE CONNECT LM O <sub>2</sub> HOSE TO LMP PLSS AND FILL CONNECT LM O <sub>2</sub> HOSE TO CDR PLSS AND FILL
:20		DISCONNECT & STOW LM O <sub>2</sub> HOSE
132:30		PLSS/OPS DOFFING DISCONNECT OPS & RCU 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
133:00		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

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



SIM EXP STATUS  
(-0111)  
(01222)

132:30  
(P20)  
(3.0"DB)  
  
(10101)  
(X1111)

MSFN UPDATE:  
TEI ~~42~~ PAD  
41

**MSFN UPLINK:  
JET-ON MONITOR LOADS**

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE 5/1-29  
LOGIC PWR (2) - OFF  
VHF AM T/R - RCY (PNL 9)  
VHF AM A - DUPLEX

132:40

FILM MAGS REQD FOR NEXT DAY:  
DAC: VHBW-NH, BW164-II  
EL: VHBW-SS, CEX-PPQ, UV-00  
NK: VHBW-ZZ

MSFN CMDs: (AOS +66 MIN)  
DSE REWIND

132:50

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

133:00

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	

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGES FINAL (4/16)	3/07/72 016172 4/7/72	3-181

MCC-H

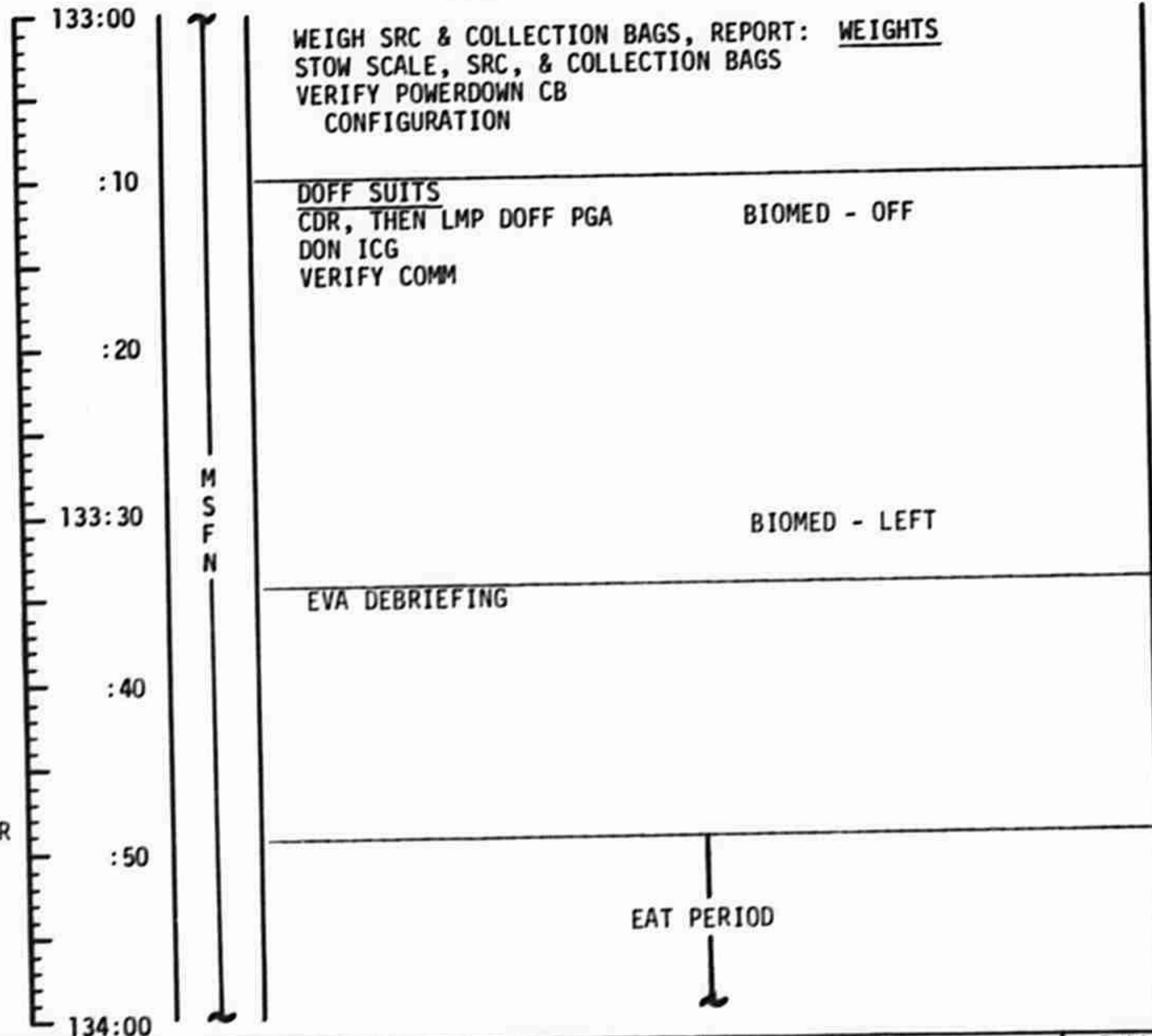
0054 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES



CSM REV 31

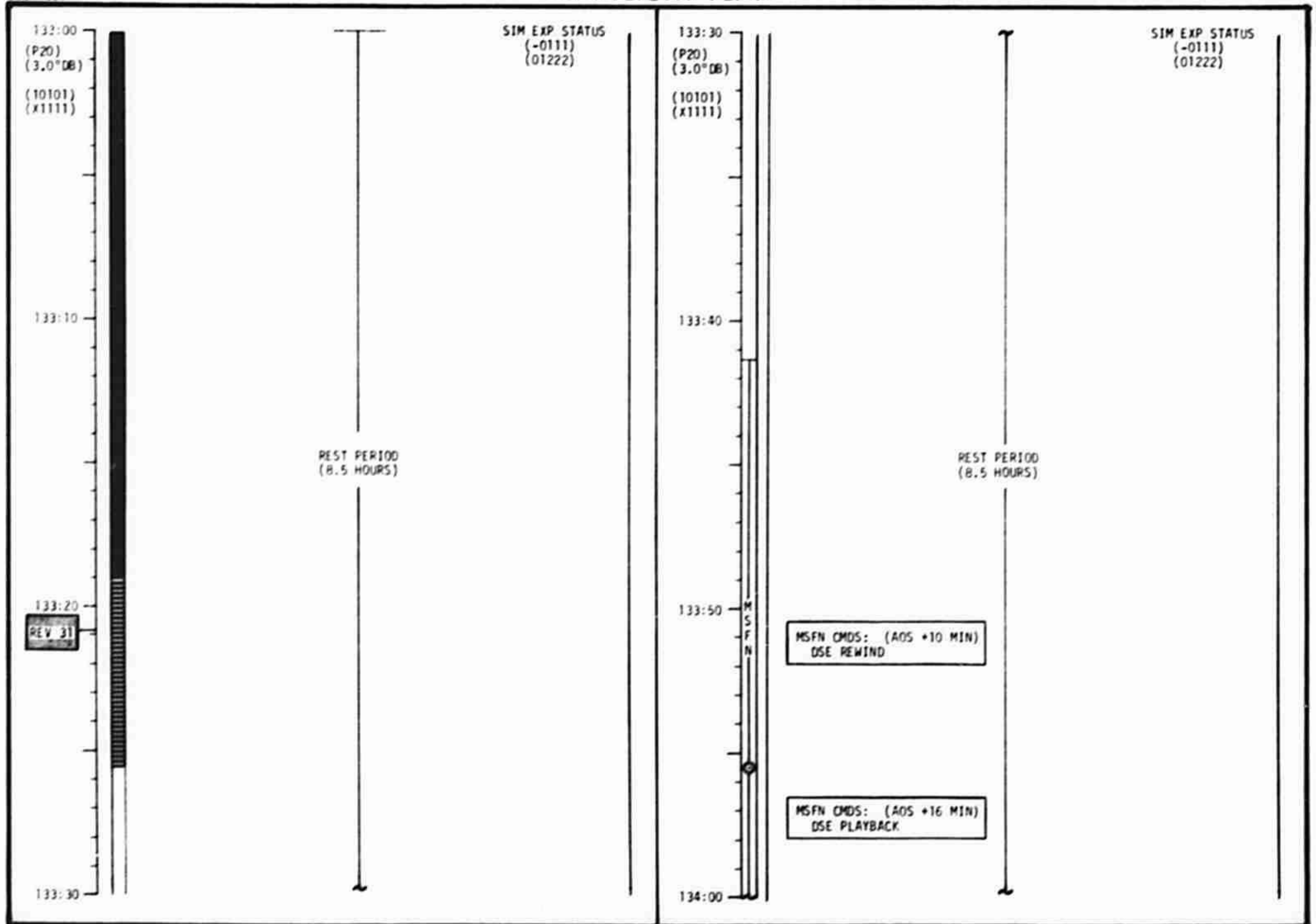
UPDATE TO LM  
LIFT-OFF TIMES FOR  
REVS 32-36

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

0054 CST



132:00  
(P20)  
(3.0"DB)  
  
(10101)  
(X1111)

133:10

133:20

REV 31

133:30

REST PERIOD  
(8.5 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

133:30  
(P20)  
(3.0"DB)  
  
(10101)  
(X1111)

133:40

133:50

134:00

M  
S  
F  
N

MSFN CMDS: (AOS +10 MIN)  
DSE REWIND

MSFN CMDS: (AOS +16 MIN)  
DSE PLAYBACK

REST PERIOD  
(8.5 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-183

MCC-H

0154 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

134:00

:10

:20

134:30

:40

:50

135:00

X

M  
S  
F  
N

EAT PERIOD

PLSS RECHARGE  
CONNECT LM O<sub>2</sub> HOSE TO CDR PLSS AND FILL

CONNECT LM H<sub>2</sub>O HOSE TO CDR PLSS AND FILL

DISCONNECT & STOW CDR PLSS  
CONNECT LM O<sub>2</sub> HOSE TO LMP PLSS AND FILL

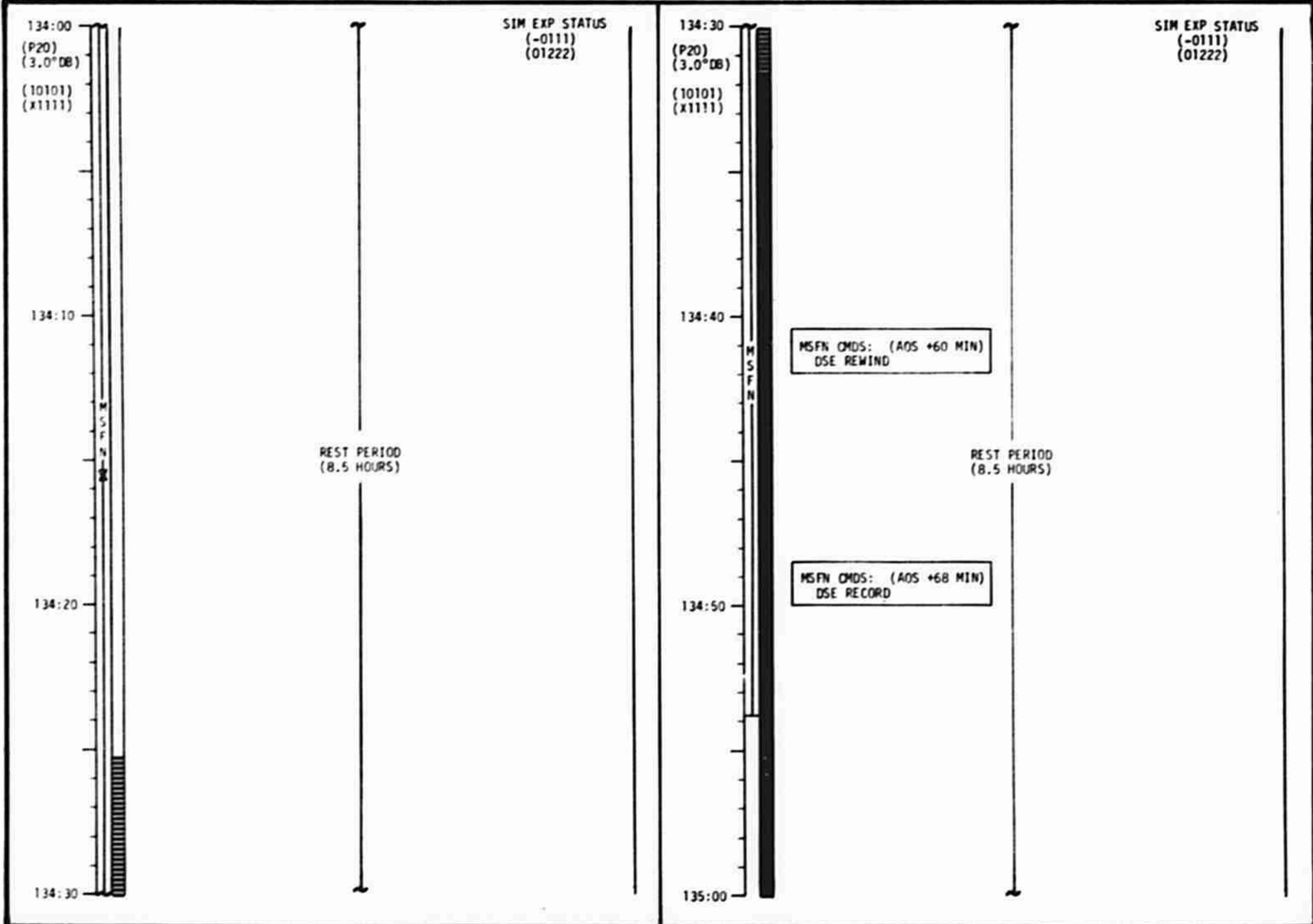
GDS 210 LOS

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

0154 CST

# CSM FLIGHT PLAN



134:00  
(P20)  
(3.0"DB)  
(10101)  
(x1111)

SIM EXP STATUS  
(-0111)  
(01222)

134:30  
(P20)  
(3.0"DB)  
(10101)  
(x1111)

SIM EXP STATUS  
(-0111)  
(01222)

134:10

134:40

MSFN CMDS: (AOS +60 MIN)  
DSE REWIND

REST PERIOD  
(8.5 HOURS)

REST PERIOD  
(8.5 HOURS)

134:20

134:50

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

134:30

135:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-185

# LM FLIGHT PLAN

MCC-H

0254 CST

CDR

LMP

NOTES

135:00  
:10  
:20  
135:30  
:40  
:50  
136:00

M  
S  
F  
N

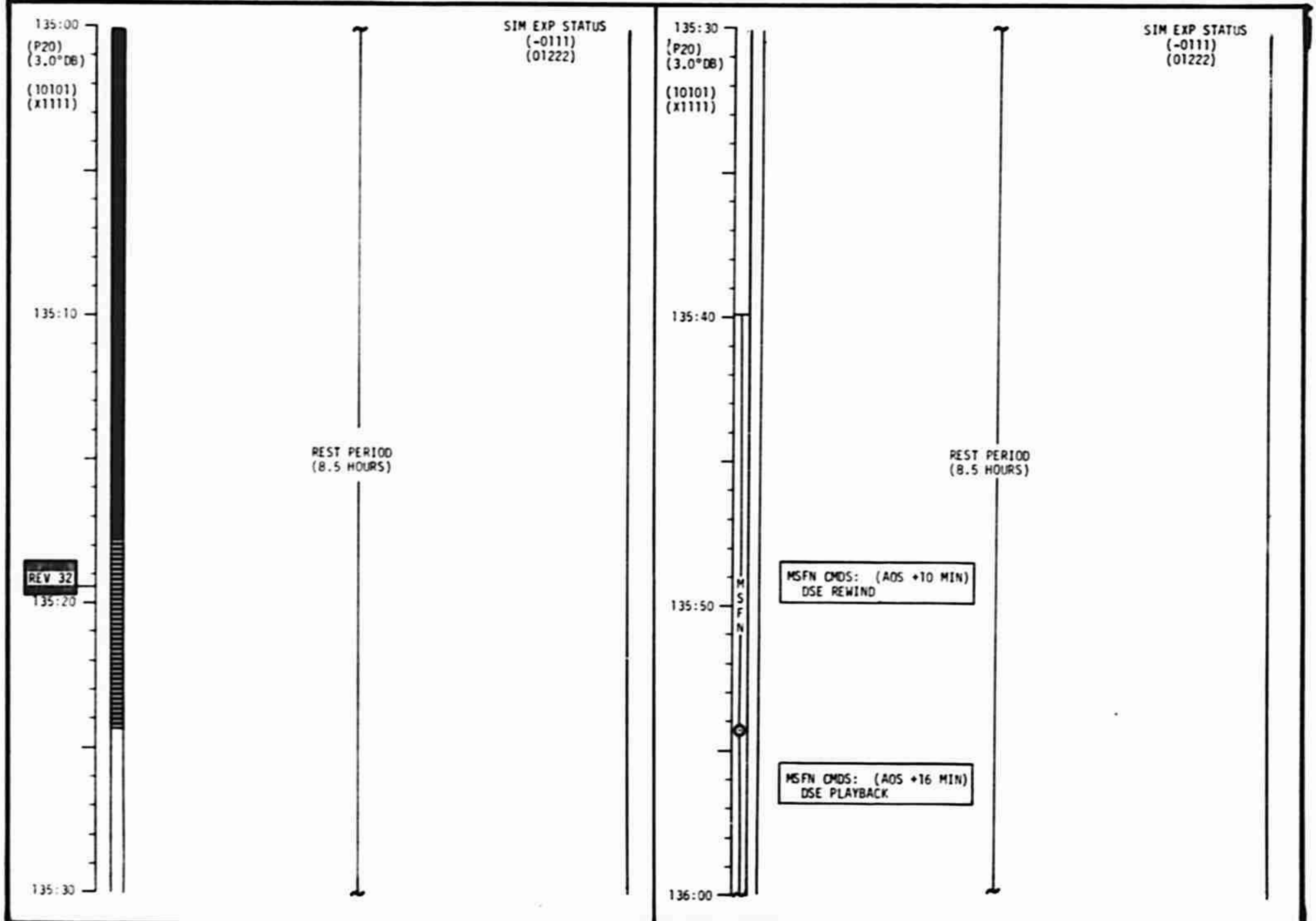
CONNECT LM H<sub>2</sub>O HOSE TO LMP PLSS AND FILL  
DISCONNECT & STOW LMP PLSS  
OPEN DES H<sub>2</sub>O VALVE  
MCC-H CONFERENCE

CSM REV 32

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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-187



# LM FLIGHT PLAN

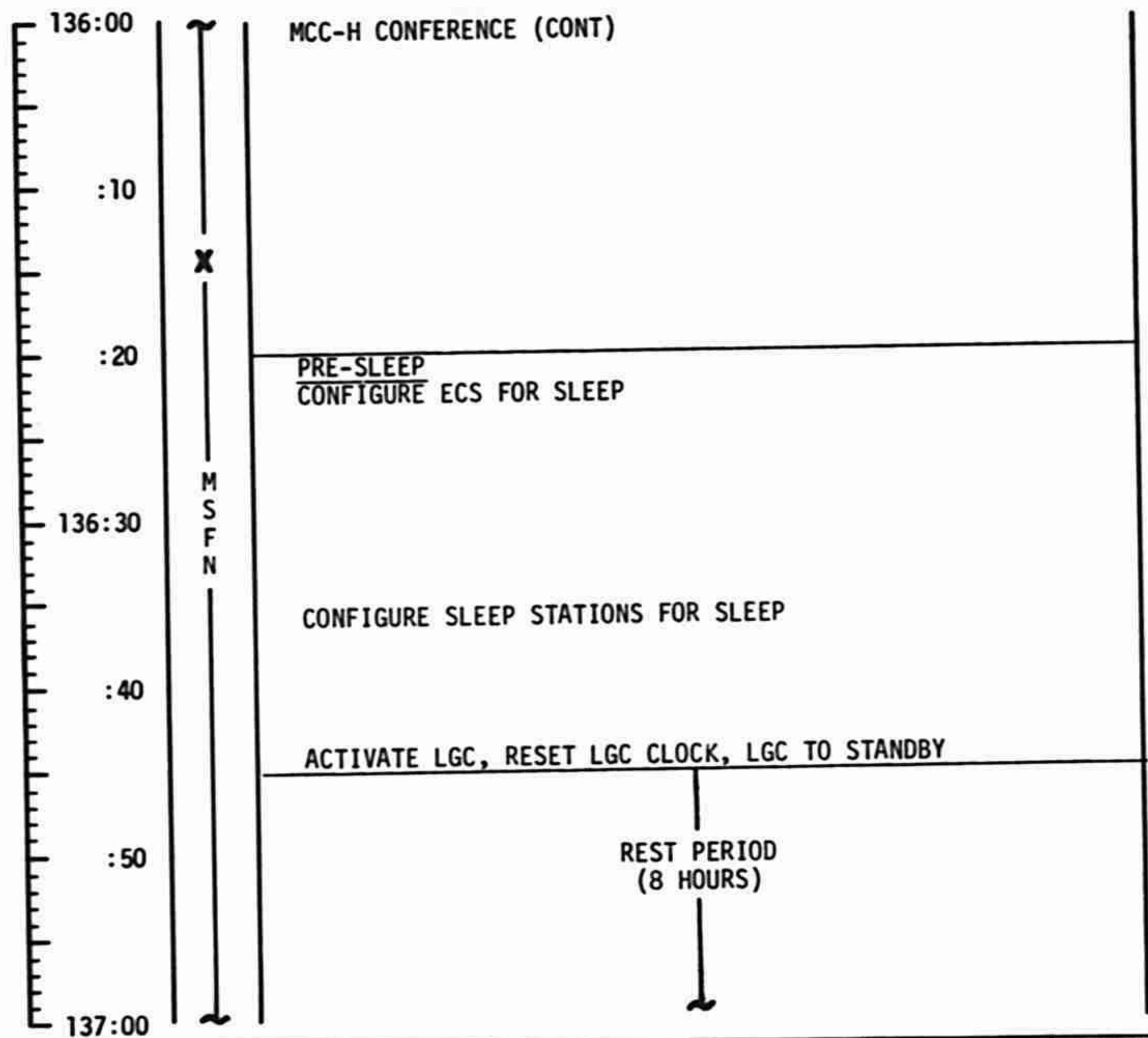
MCC-H

0354 CST

CDR

LMP

NOTES

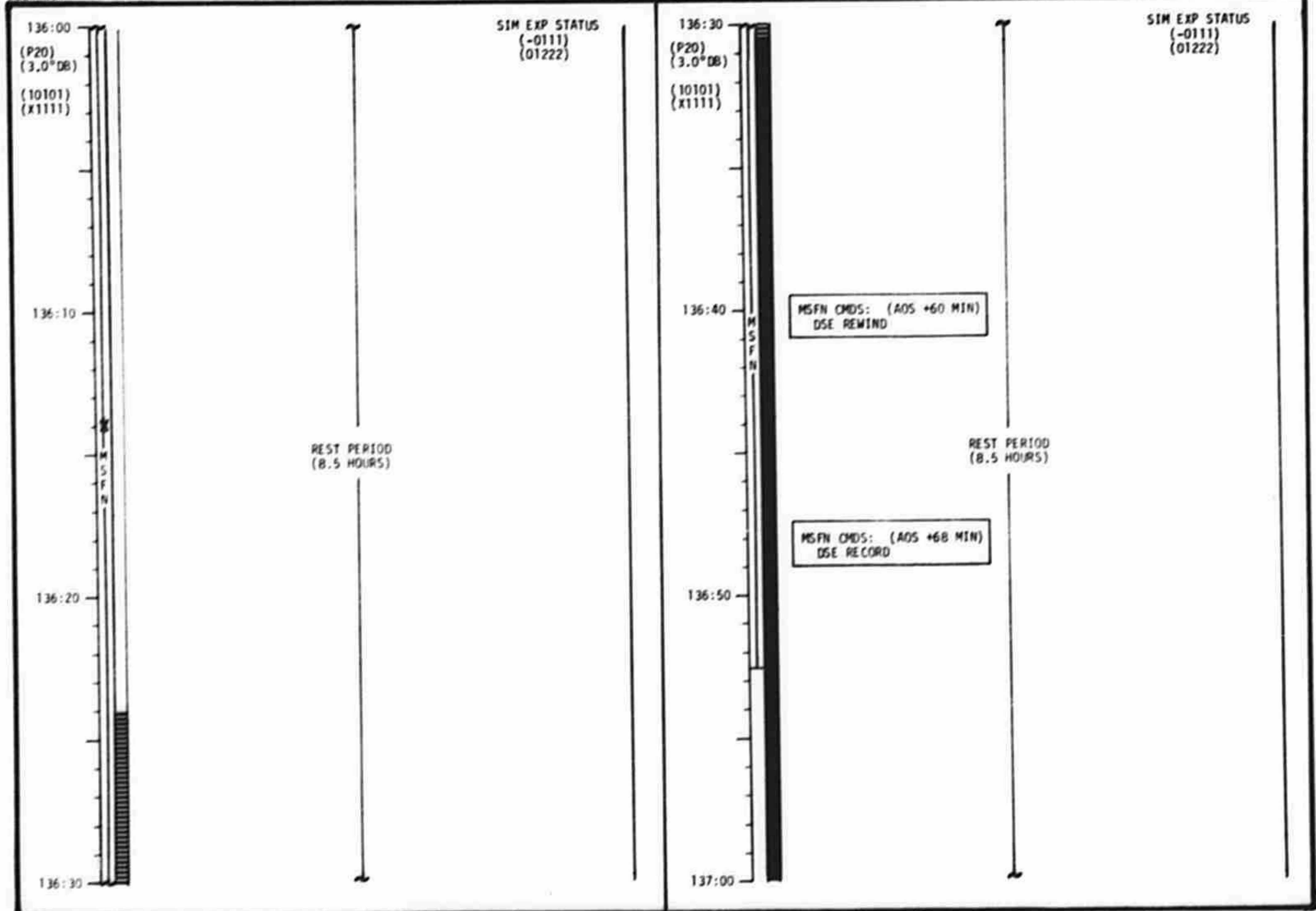


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	136:00 - 137:00	6/32	3-188

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

0354 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-189

# LM FLIGHT PLAN

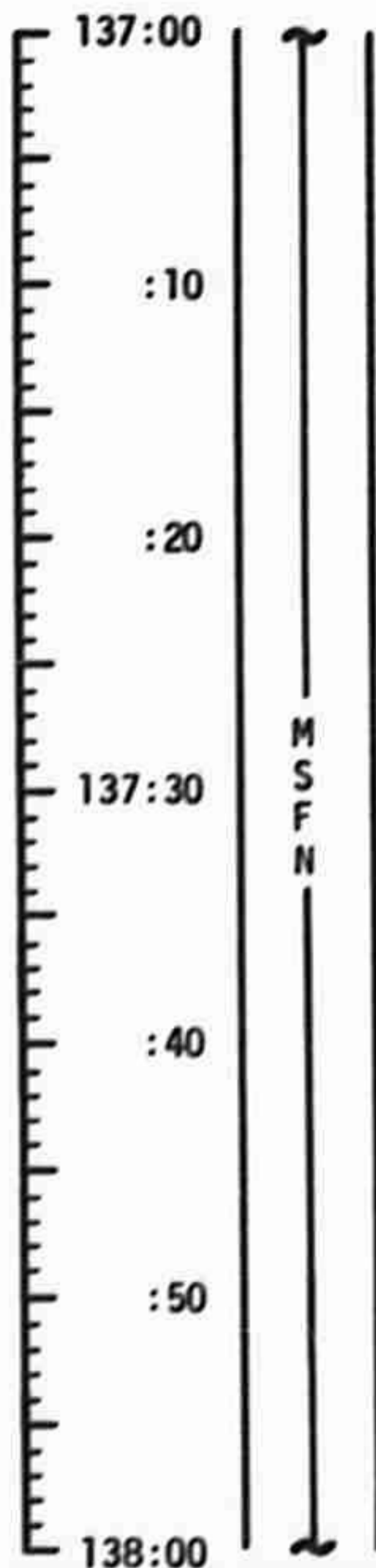
MCC-H

0454 CST

CDR

LMP

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

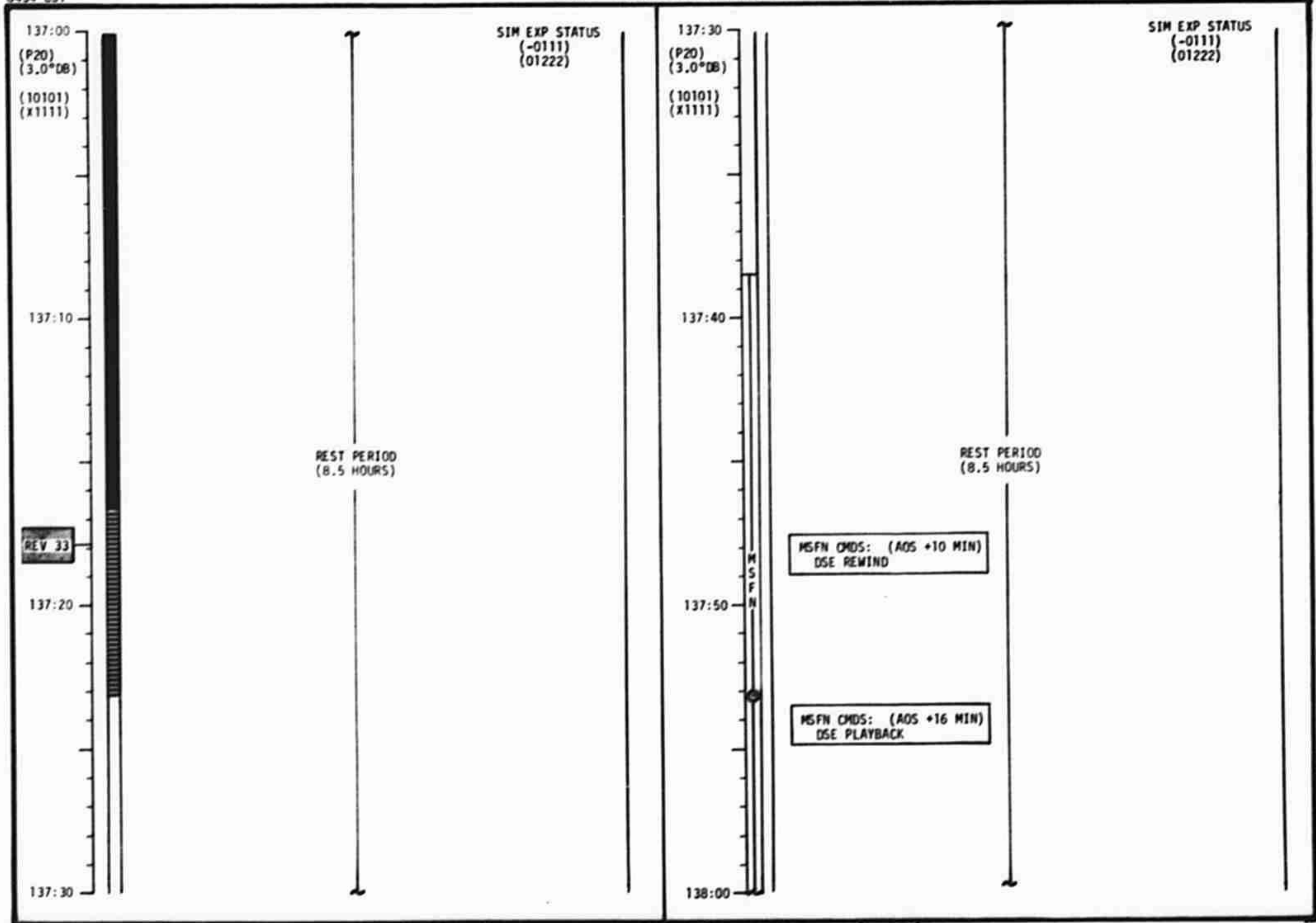
CSM REV 33

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



SIM EXP STATUS  
(-0111)  
(01222)

SIM EXP STATUS  
(-0111)  
(01222)

REST PERIOD  
(8.5 HOURS)

REST PERIOD  
(8.5 HOURS)

MSFN CMDS: (AOS +10 MIN)  
DSE REWIND

MSFN CMDS: (AOS +16 MIN)  
DSE PLAYBACK

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-191

# LM FLIGHT PLAN

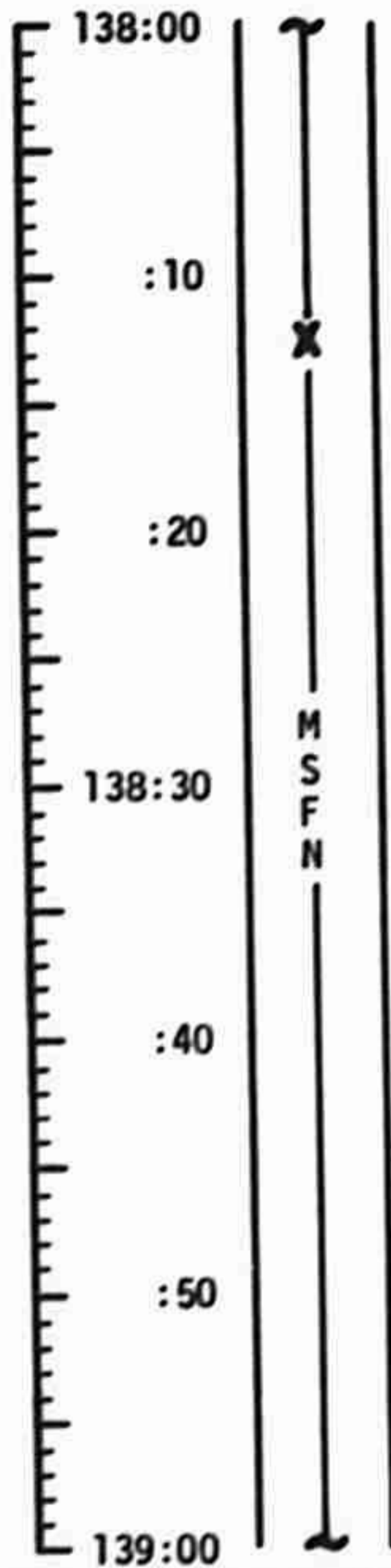
MCC-H

0554 CST

CDR

LMP

NOTES



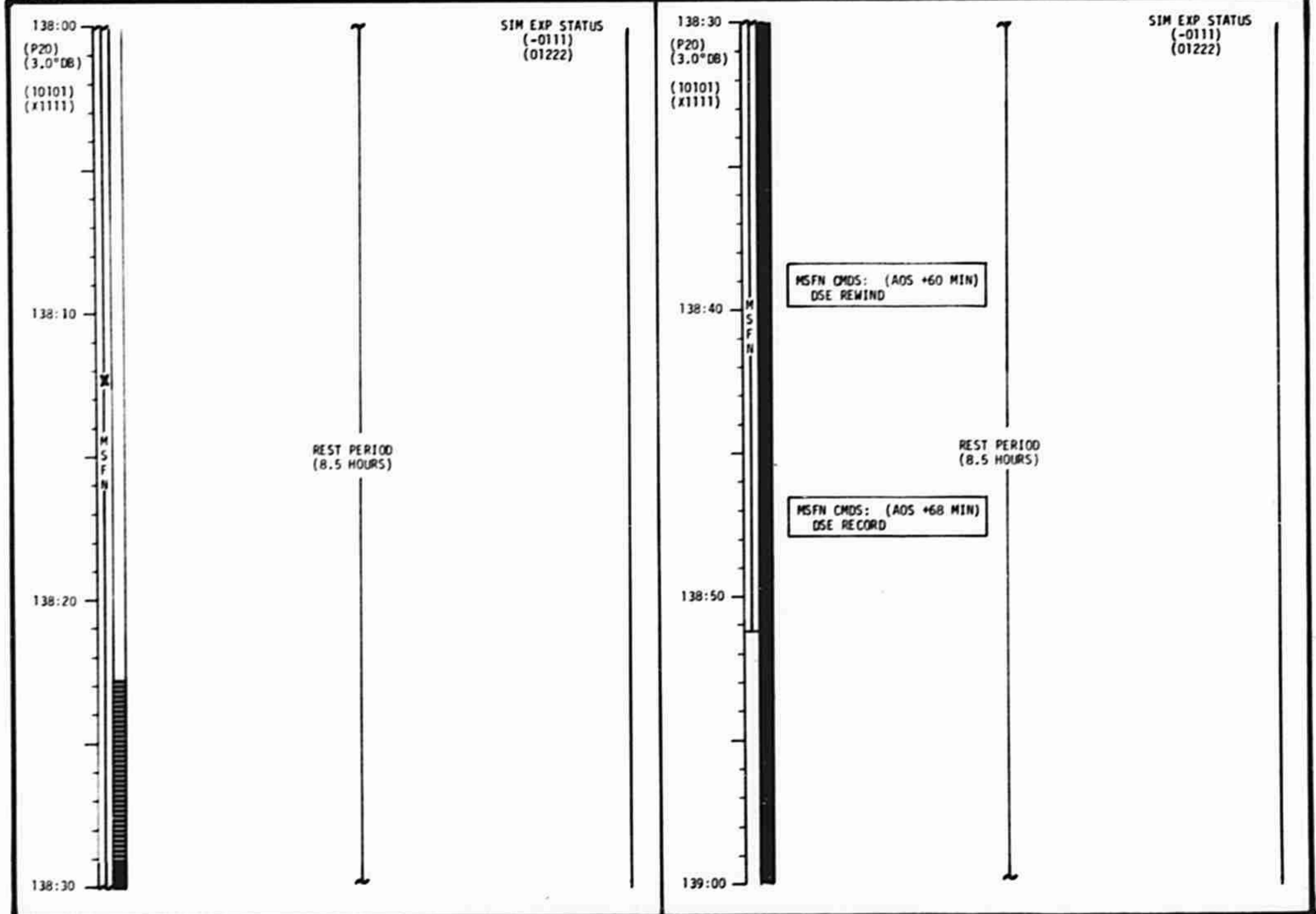
REST PERIOD  
(8 HOURS)

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



138:00

(P20)  
(3.0°DB)

(10101)  
(X1111)

138:10

138:20

138:30

REST PERIOD  
(8.5 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

138:30

(P20)  
(3.0°DB)

(10101)  
(X1111)

138:40

138:50

139:00

M  
S  
F  
N

MSFN CMDS: (AOS +60 MIN)  
DSE REWIND

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

REST PERIOD  
(8.5 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-193

# LM FLIGHT PLAN

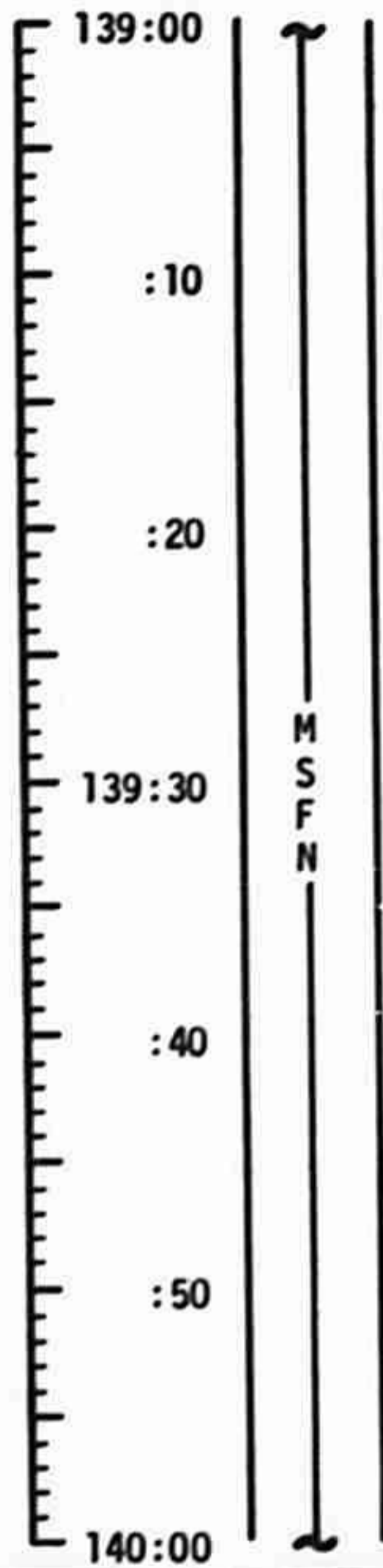
MCC-H

0654 CST

CDR

LMP

NOTES



REST PERIOD  
(8 HOURS)

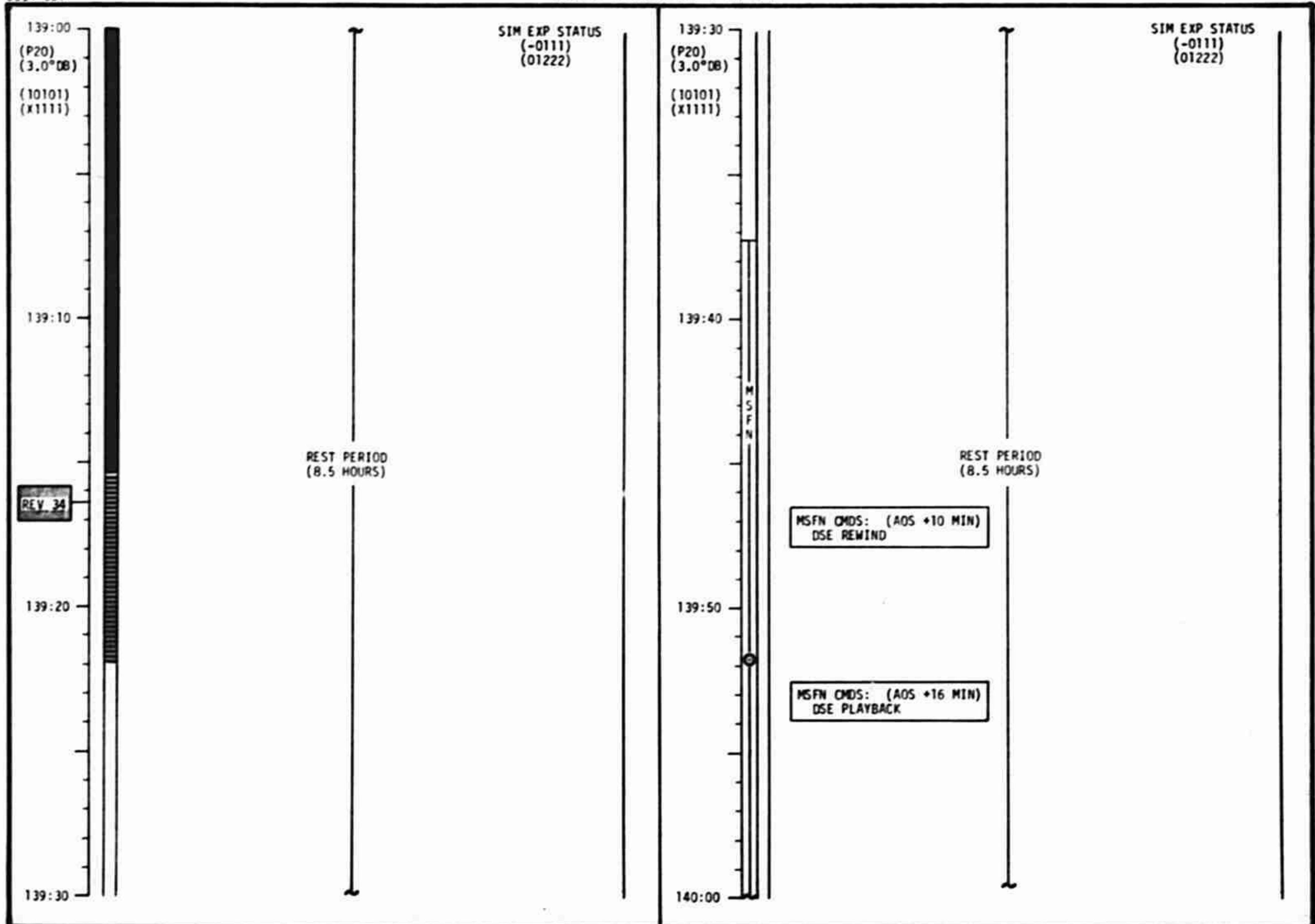
CSM REV 34

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

# CSM FLIGHT PLAN

0654 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-195



MCC-H

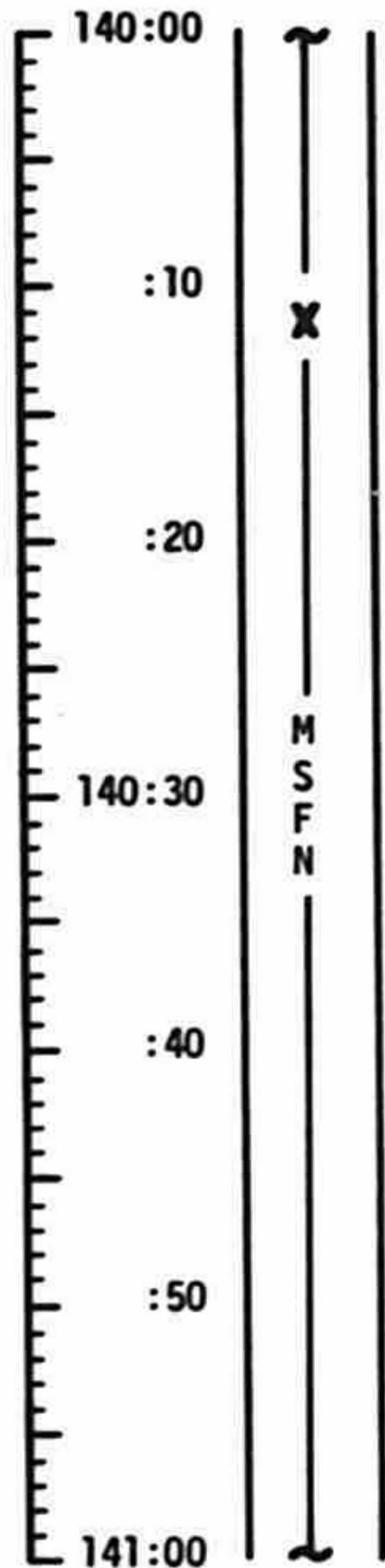
0754 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

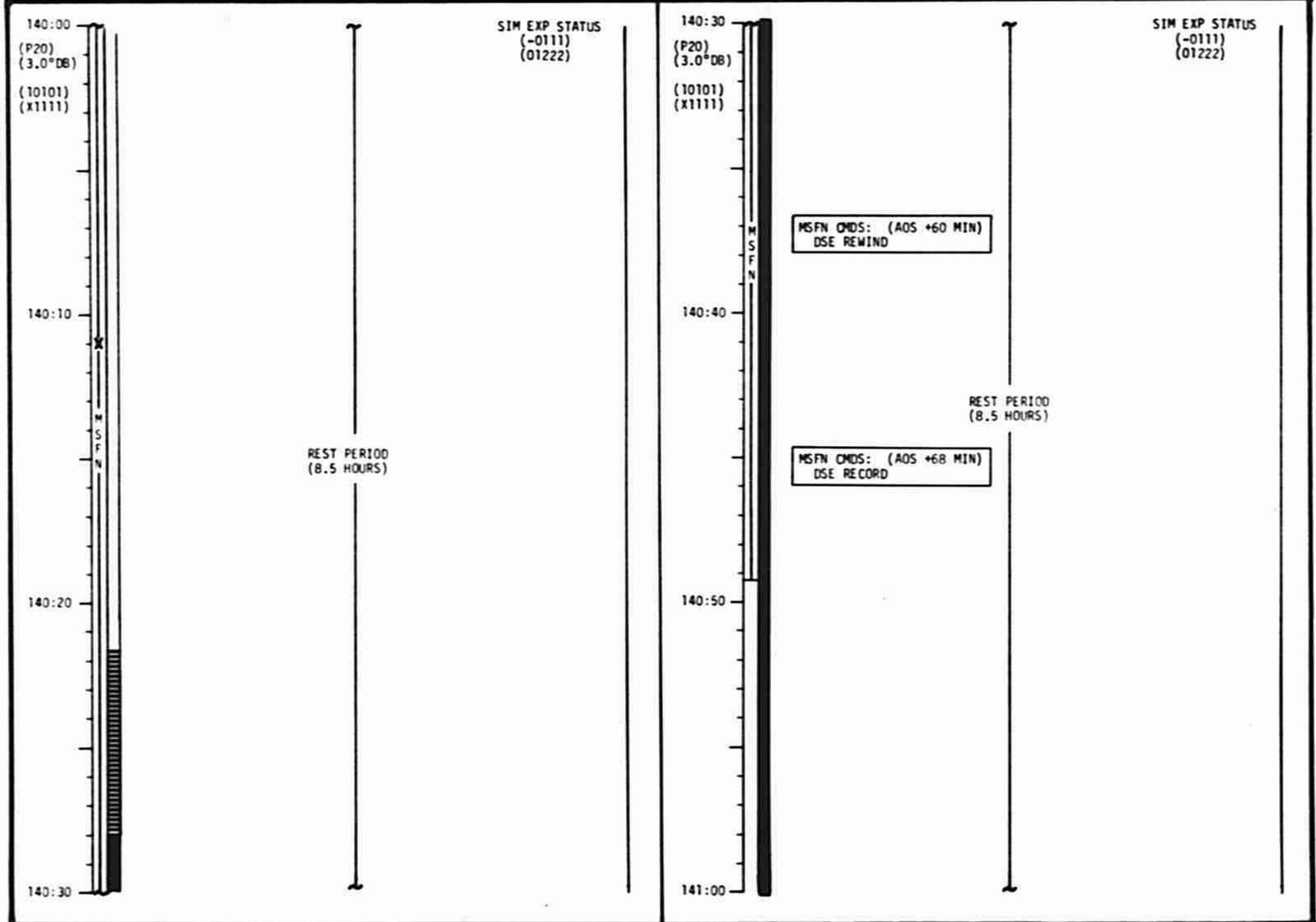


REST PERIOD  
(8 HOURS)

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-197

MCC-H

0854 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

141:00  
:10  
:20  
141:30  
:40  
:50  
142:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

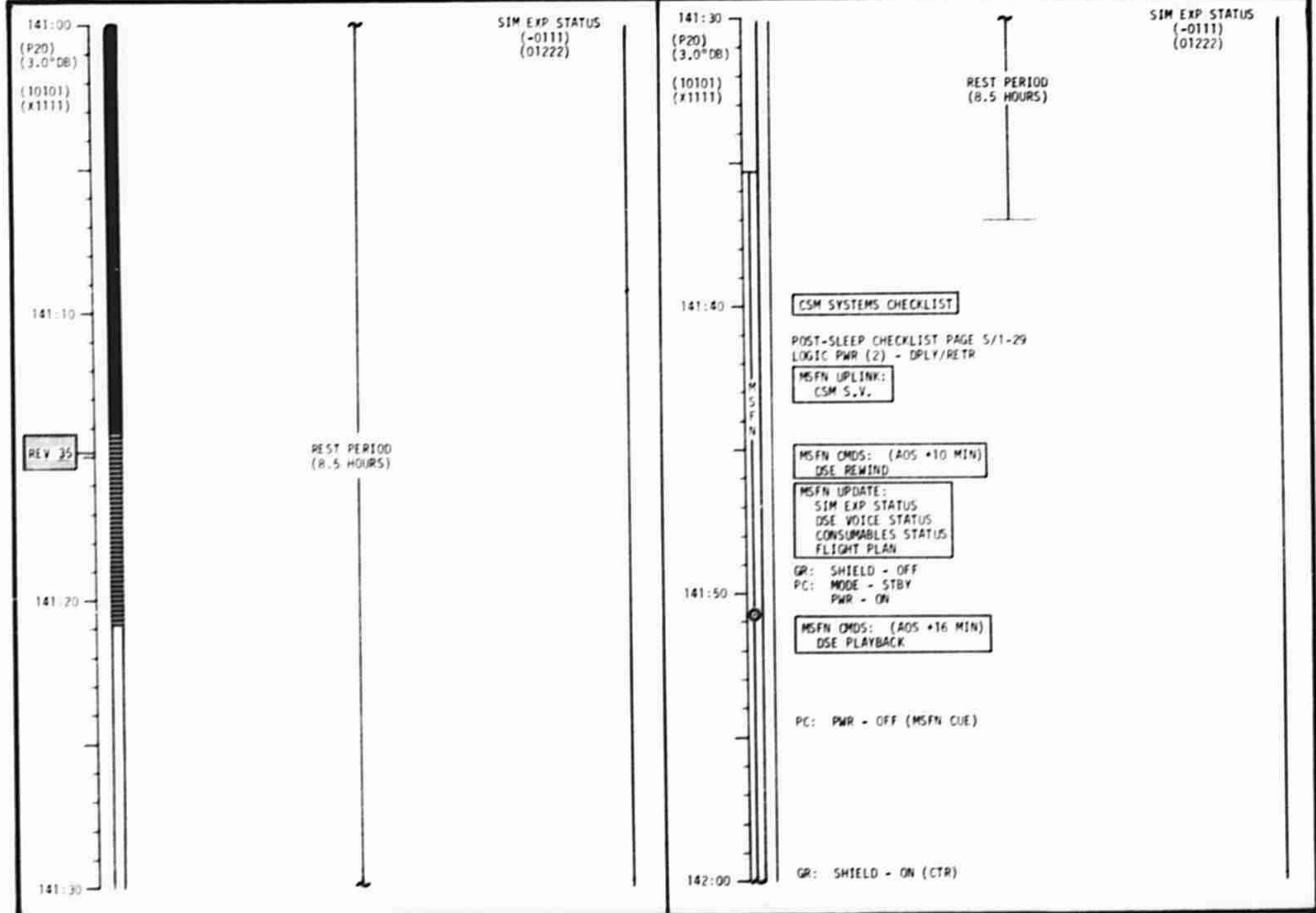
CSM REV 35

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

0854 CST



141:00  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

SIM EXP STATUS  
(-0111)  
(01222)

141:30  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

SIM EXP STATUS  
(-0111)  
(01222)

REV 35

REST PERIOD  
(8.5 HOURS)

REST PERIOD  
(8.5 HOURS)

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE 5/1-29  
LOGIC PWR (2) - DPLY/RETR

MSFN UPLINK:  
CSM S.V.

MSFN CMDS: (AOS +10 MIN)  
DSE REWIND

MSFN UPDATE:  
SIM EXP STATUS  
DSE VOICE STATUS  
CONSUMABLES STATUS  
FLIGHT PLAN

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

MSFN CMDS: (AOS +16 MIN)  
DSE PLAYBACK

PC: PWR - OFF (MSFN CUE)

GR: SHIELD - ON (CTR)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-199

MCC-H

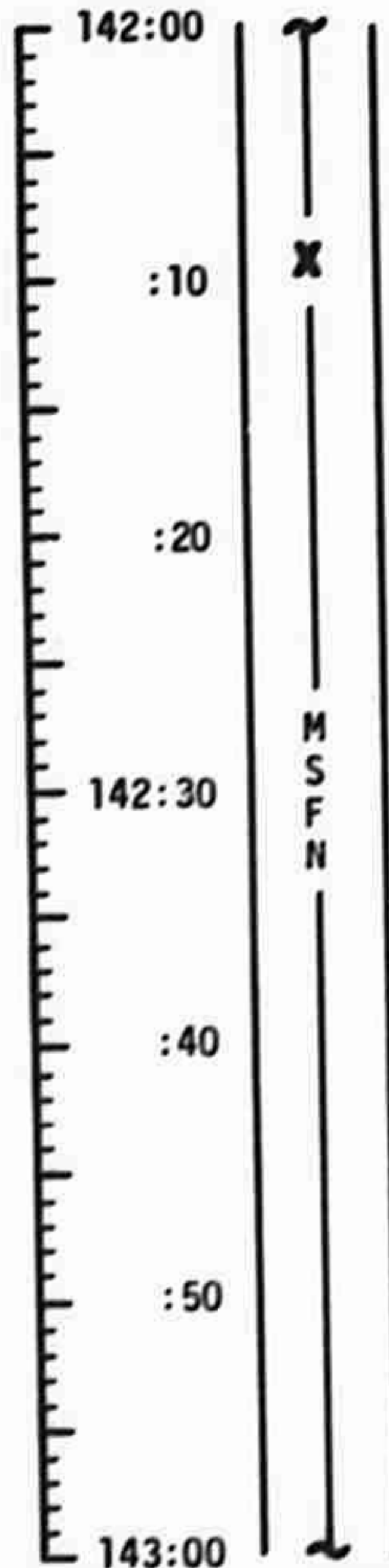
0954 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES



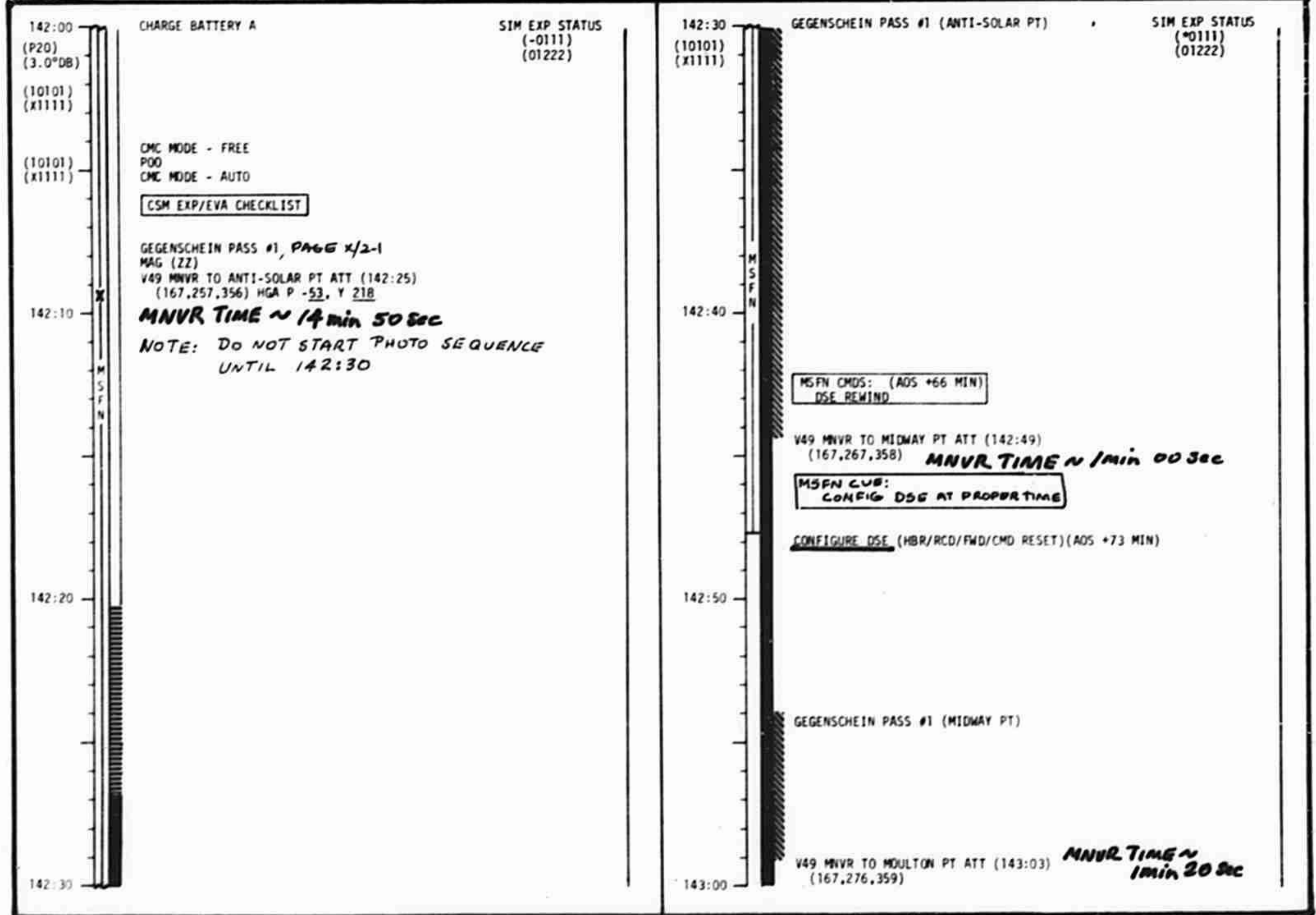
REST PERIOD  
(8 HOURS)

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

0954 CST



MISSION	8 EDITION	DATE	PAGE
APOLLO 16	CHANGE # FINAL (4/16)	4/7/72 30772-16-172 (PL3)	3-201

# LM FLIGHT PLAN

MCC-H

1054 CST

CDR

LMP

NOTES

143:00  
:10  
:20  
143:30  
:40  
:50  
144:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

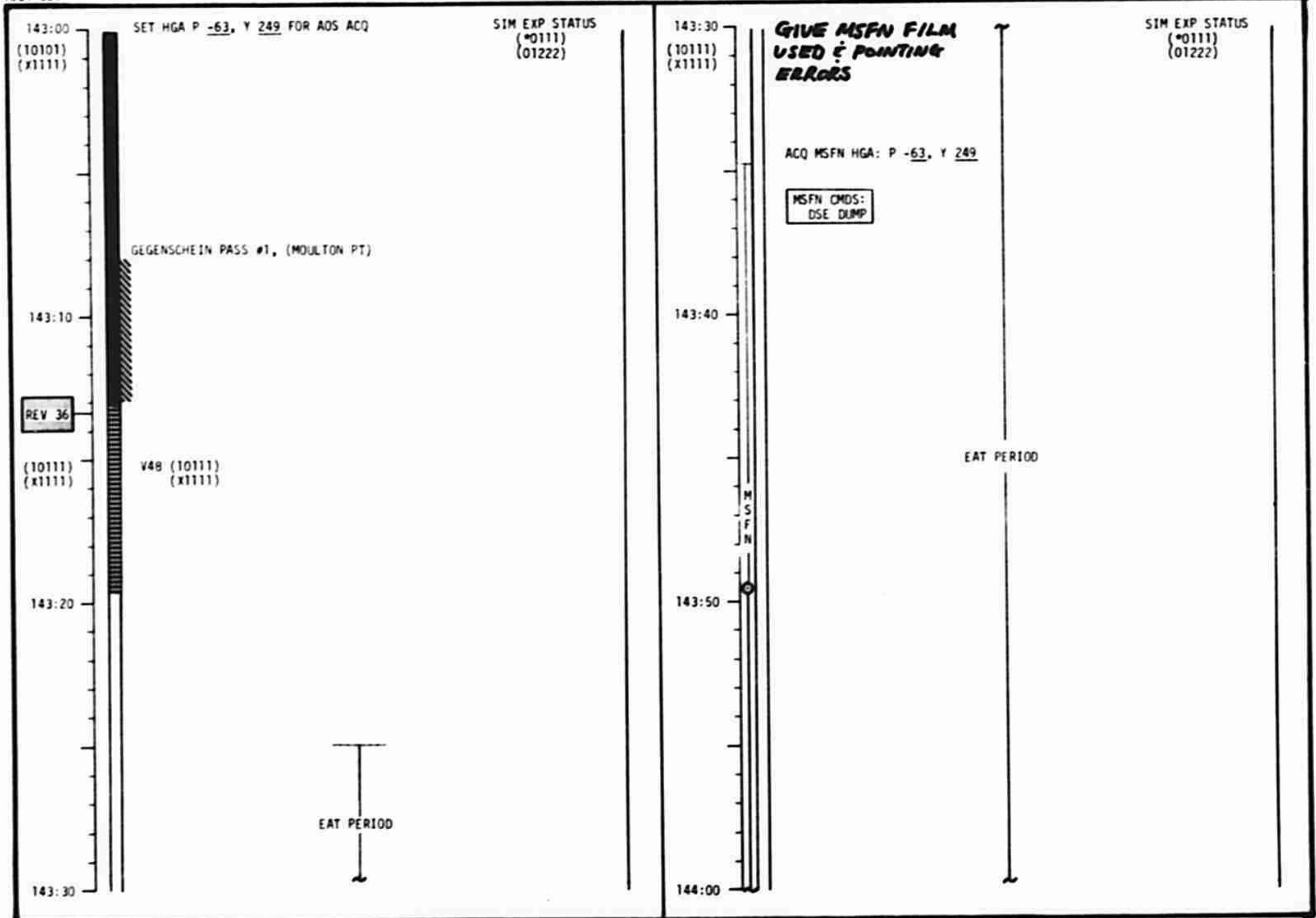
CSM REV 36

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-203



# LM FLIGHT PLAN

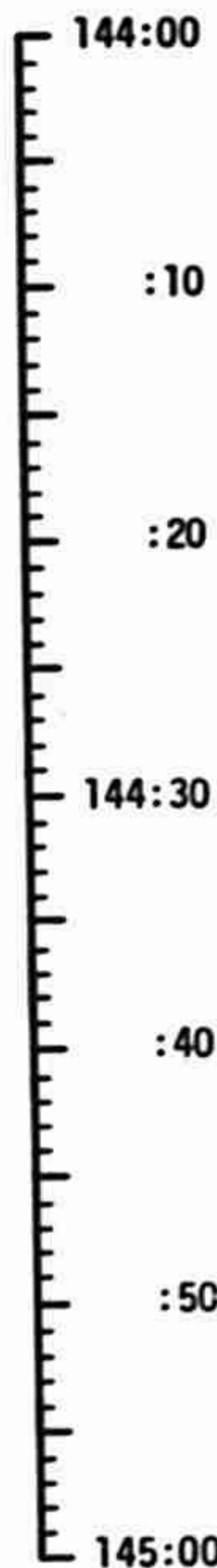
MCC-H

1154 CST

CDR

LMP

NOTES



X  
M  
S  
F  
N

REST PERIOD  
(8 HOURS)

POST-SLEEP  
ACTIVATE LGC, RESET LGC CLOCK, LGC TO STANDBY  
  
STOW HAMMOCKS

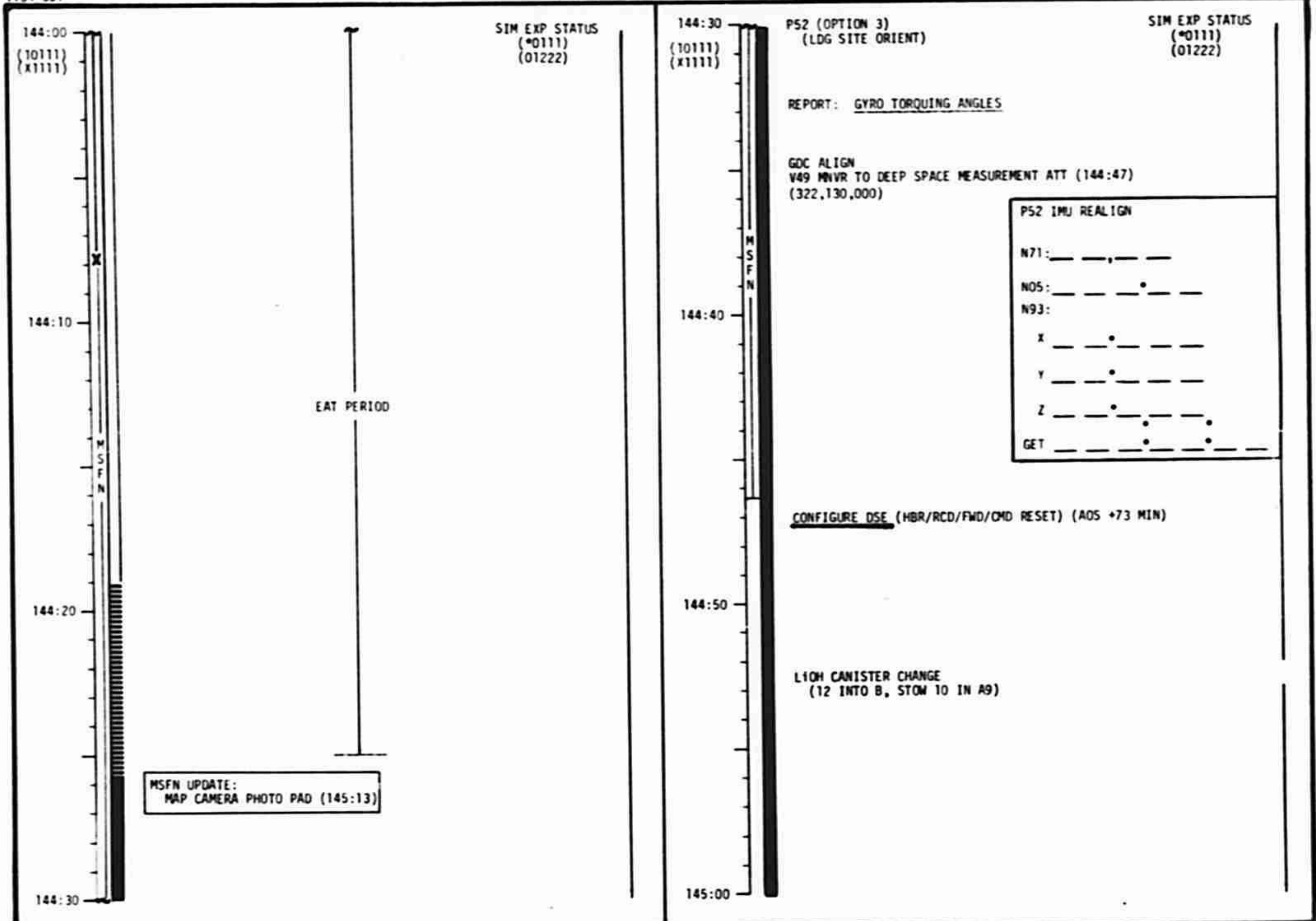
STAY/NO-STAY FOR  
EVA-3

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-205

# LM FLIGHT PLAN

MCC-H

1254 CST

CDR

LMP

NOTES

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

145:00  
:10  
:20  
145:30  
:40  
:50  
146:00

M  
S  
F  
N

CREW STATUS (FOOD, MEDICATION, SLEEP)

PLSS O<sub>2</sub> TOP OFF

EAT PERIOD

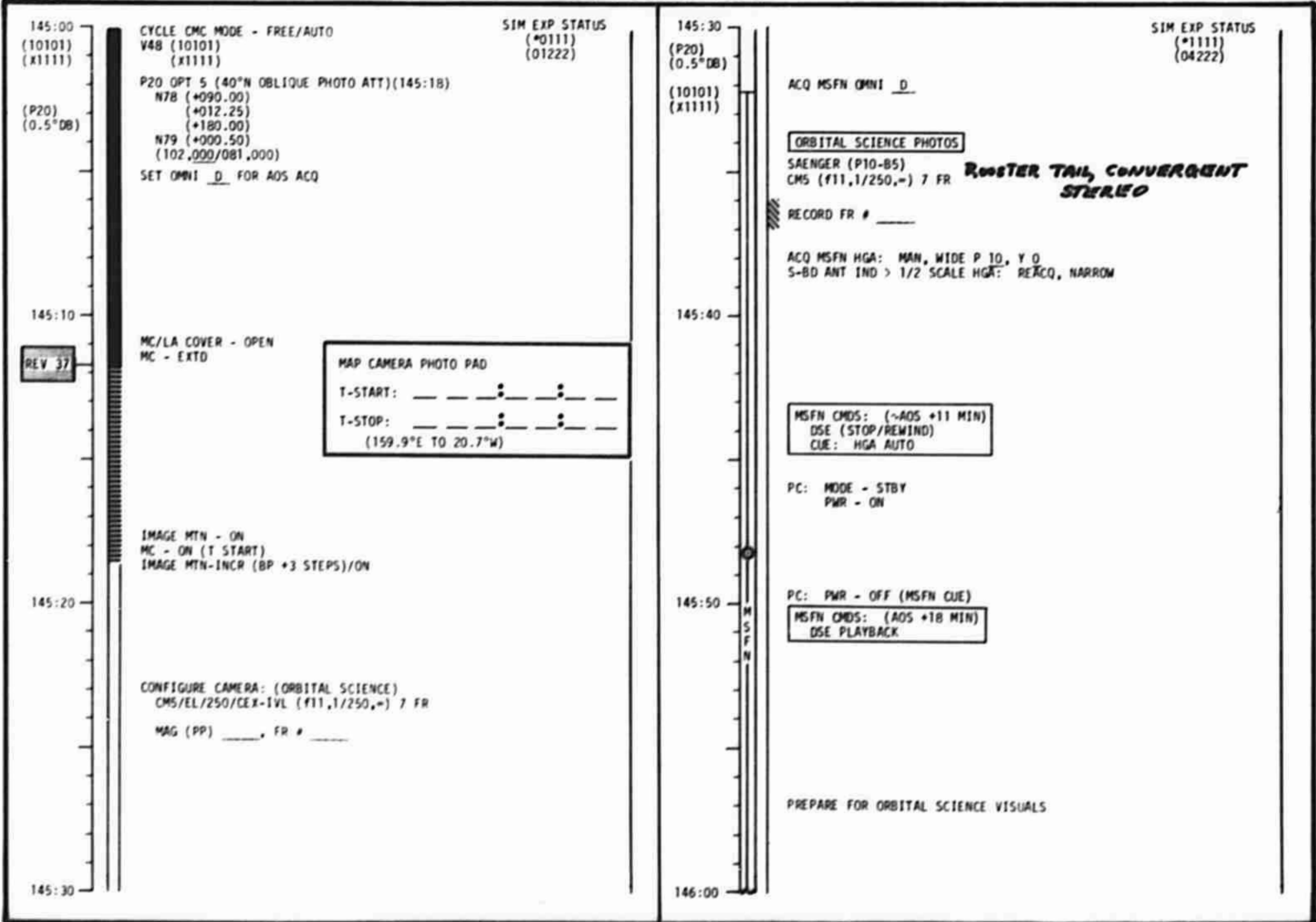
EVA-3 PLANNING PERIOD  
UPDATE CUFF CHECKLIST AS REQD

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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-207

MCC-H

1354 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

<p>146:00</p> <p>:10</p> <p>:20</p> <p>146:30</p> <p>:40</p> <p>:50</p> <p>147:00</p>	<p>X</p> <p>M S F N</p>	<p>REPACK ETB FOR EVA-3</p> <hr/> <p>UNSTOW EVA-3 PREP &amp; POST CARD</p> <p><u>DON SUITS</u> BIOMED - OFF</p> <p>LMP, THEN CDR CLEAN &amp; LUB PGA'S, FILL DRINK BAG, DOFF ICG, DON PGA CONNECT HOSES AND VERIFY COMM</p> <hr/> <p>BIOMED - RIGHT BATS 1,2 &amp; LUNAR BAT (CDR)- ON BATS 3,4 &amp; LUNAR BAT (LMP)- OFF/RESET</p>
---	-------------------------------------	--

-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

SIM EXP STATUS  
(+1111)  
(04222)

146:00  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

ORBITAL SCIENCE VISUALS

ALPHONSUS (V10-B11) CM5

146:10

GR: SHIELD - OFF

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

146:20

(P20)  
(3.0°DB)

P20 OPT 5 (+X FWD SIM ATT)(146:26)  
N79 (+003.00)

MSFN UPDATE:  
MAP CAMERA PHOTO PAD (147:17)  
SOLAR CORONA PHOTO PAD (149:05)  
PAN CAMERA PHOTO PAD (149:24)

GR: GAINSTEP - ON (UP) 4 STEPS(STEP 7)/SHIELD - ON (CTR)  
LA - ON

146:30

SIM EXP STATUS  
(+1111)  
(03222)

146:30  
(P20)  
(3.0°DB)  
(10101)  
(X1111)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)  
CM5/EL/250/VHBM (F5.6,1/125,-) 6 FR

MAG (SS) \_\_\_\_\_, FR # \_\_\_\_\_

**SET TIMER FOR END OF EXERCISE PERIOD**

MSFN CMDS: (AOS +66 MIN)  
DSE REWIND

146:40

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

CREW EXERCISE PERIOD

146:50

147:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-209

MCC-H

1454 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

147:00	M S F N	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 DOWNING CONFIGURE LMP PLSS ATTACH OPS TO PLSS CONNECT RCU	-1:00
:40		CDR REPEAT PLSS DOWNING	-0:50
:50		PLSS COMM CHECK VERIFY POWERDOWN CB CONFIGURATION CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON COMM & TM CHECK, REPORT: <u>PLSS O<sub>2</sub> QUANTITY</u> FINAL SYSTEMS PREP	-0:40
148:00			-0:30

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 CS1

147:00  
(P20)  
(3.0°DB)  
(10101)  
(X1111)

147:10  
REV 38

147:20

147:30

SIM EXP STATUS  
(+1111)  
(03222)

CREW EXERCISE PERIOD

CMC MODE - FREE  
V22N79 (+000.50)  
CMC MODE - AUTO

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

TERMINATOR PHOTOS  
MILLS (P4-B2) CMS

**FLAT AREA  
BETWEEN CRATERS  
(65.6, 1/25, 00) 6FR**

RECORD FR # \_\_\_\_\_

MAP CAMERA PHOTO PAD

T-START: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

T-STOP: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

(174.9°E TO 23.7°W) (1-1/2 REVS)

147:30  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

147:40

147:50

148:00

SIM EXP STATUS  
(+1111)  
(02222)

ACQ MSFN HGA: MAN. WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACQ. NARROW

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

MSFN CMDS: (AOS +14 MIN)  
DSE PLAYBACK

EAT PERIOD

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-211



# LM FLIGHT PLAN

MCC-H

1554 CST

CDR

LMP

NOTES

GO/NO-GO FOR CABIN  
DEPRESS

148:00  
:10  
:20  
148:30  
:40  
:50  
149:00

X  
M  
S  
F  
N  
T  
I  
V

OPS CONNECT LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA	
HELMET/GLOVE DONNING PLSS FANS - ON DON HELMETS & LEVA'S VERIFY EVA CB CONFIGURATION DON GLOVES PRESS REGS A&B - EGRESS	
PRESSURE INTEGRITY CHECK	
CABIN DEPRESS START WATCH AT 3.5 PSIA	
FINAL PREP FOR EVA PARTIALLY OPEN FWD HATCH FINAL PREP FOR EGRESS OPEN HATCH	
EGRESS LOWER ETB TO SURFACE	ASSIST CDR VERIFY EVA CB CONFIGURATION
RESET FAR UV CAMERA TV POWER ON	EGRESS CLOSE HATCH UNPACK ETB
PLSS LOADUP	PLSS LOADUP

-0:20  
GDS 210 AOS

-0:10

0:00/START EVA-3

+0:10

+0:20  
NOTE: TV WILL NOT BE  
USED WHILE LRV IS IN  
MOTION

+0:30

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)

148:10

148:20

148:30

SIM EXP STATUS  
(+1111)  
(02222)

IMAGE MTN - INCR (BP)/ON

EAT PERIOD

GR: SHIELD - OFF

GR: GAINSTEP - ON (UP) 4 STEPS (STEP 3)/SHIELD - ON (CTR)  
MS - RETR TO 0.9 FEET (2 MIN 01 SEC)  
*Obtain Sunrise Solar Corona Tape & check Batteries*

148:30  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

148:30  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

148:40

148:50

149:00

SIM EXP STATUS  
(+1111)(+1121)  
(02222)

MSFN CDS: (AOS +66 MIN)  
DSE REWIND

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

CSM EXP/EVA CHECKLIST

**WATCH FOR PAN CAMERA AT COMPLETION OF THE PASS**

SOLAR CORONA (SUNRISE), PAGE X/2-11  
MAG (HH)  
MAG (SS)

149:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE #1148 (4/16)	10/17/72 210700Z (P2)	3-213

# LM FLIGHT PLAN

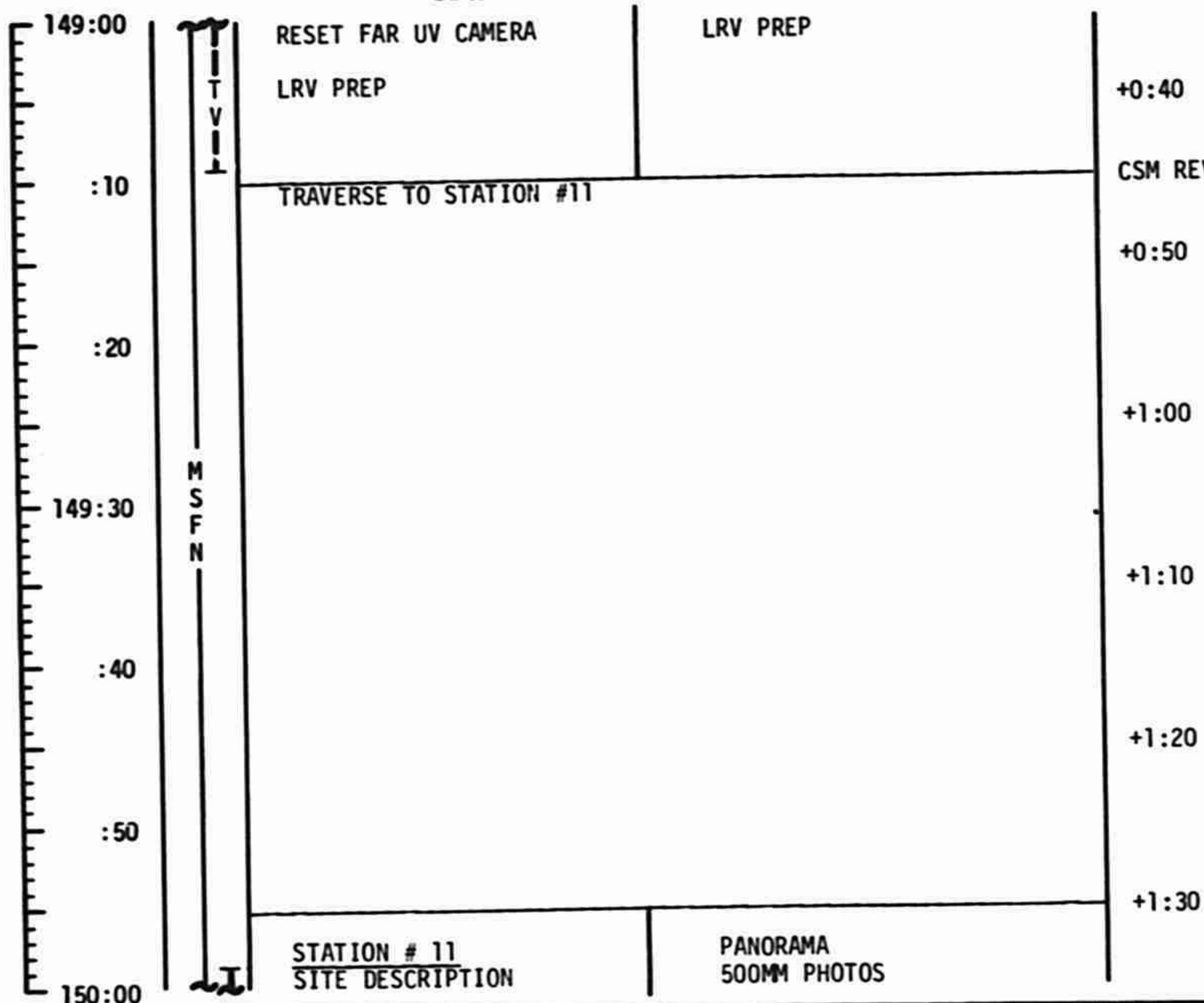
MCC-H

1654 CST

CDR

LMP

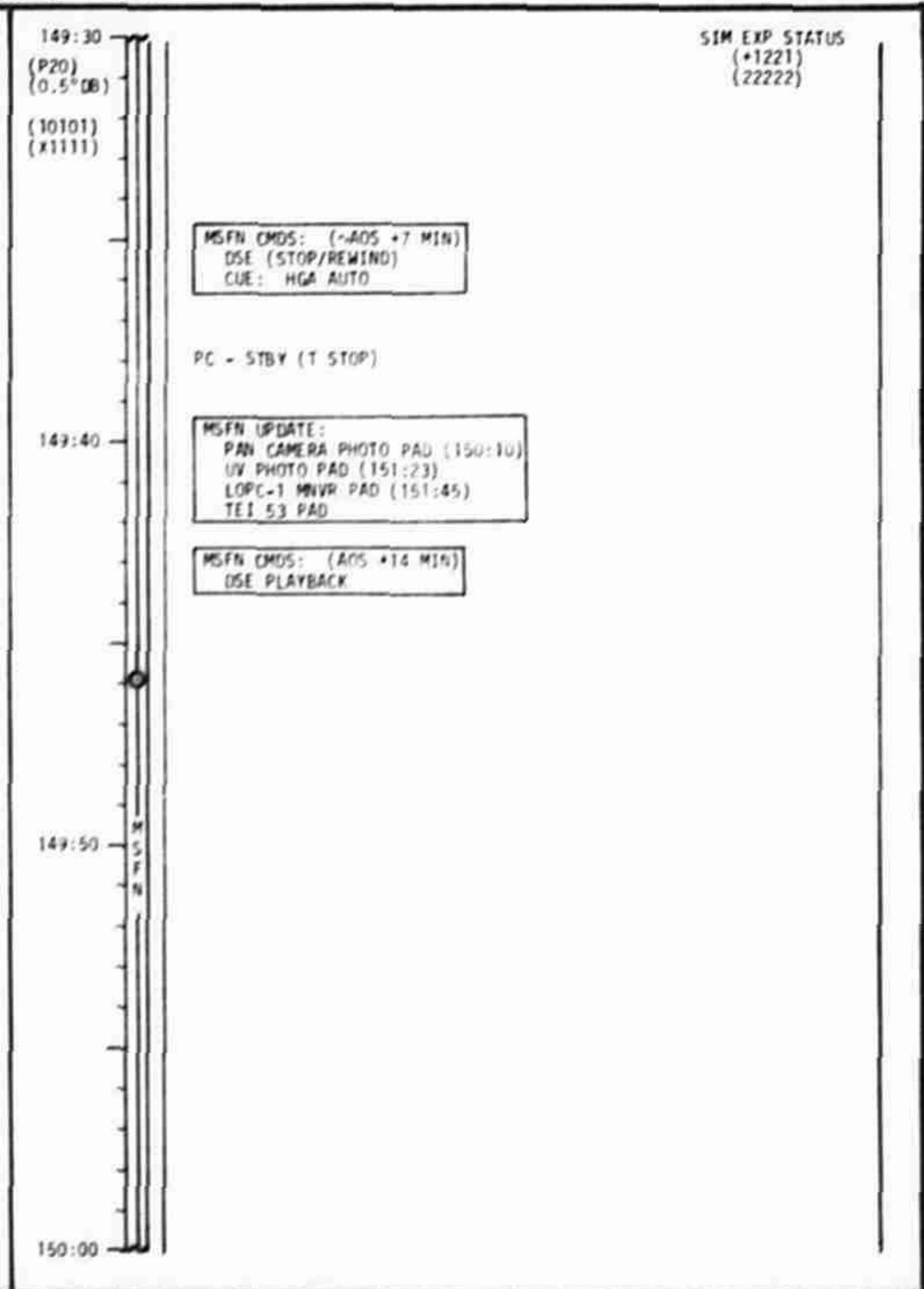
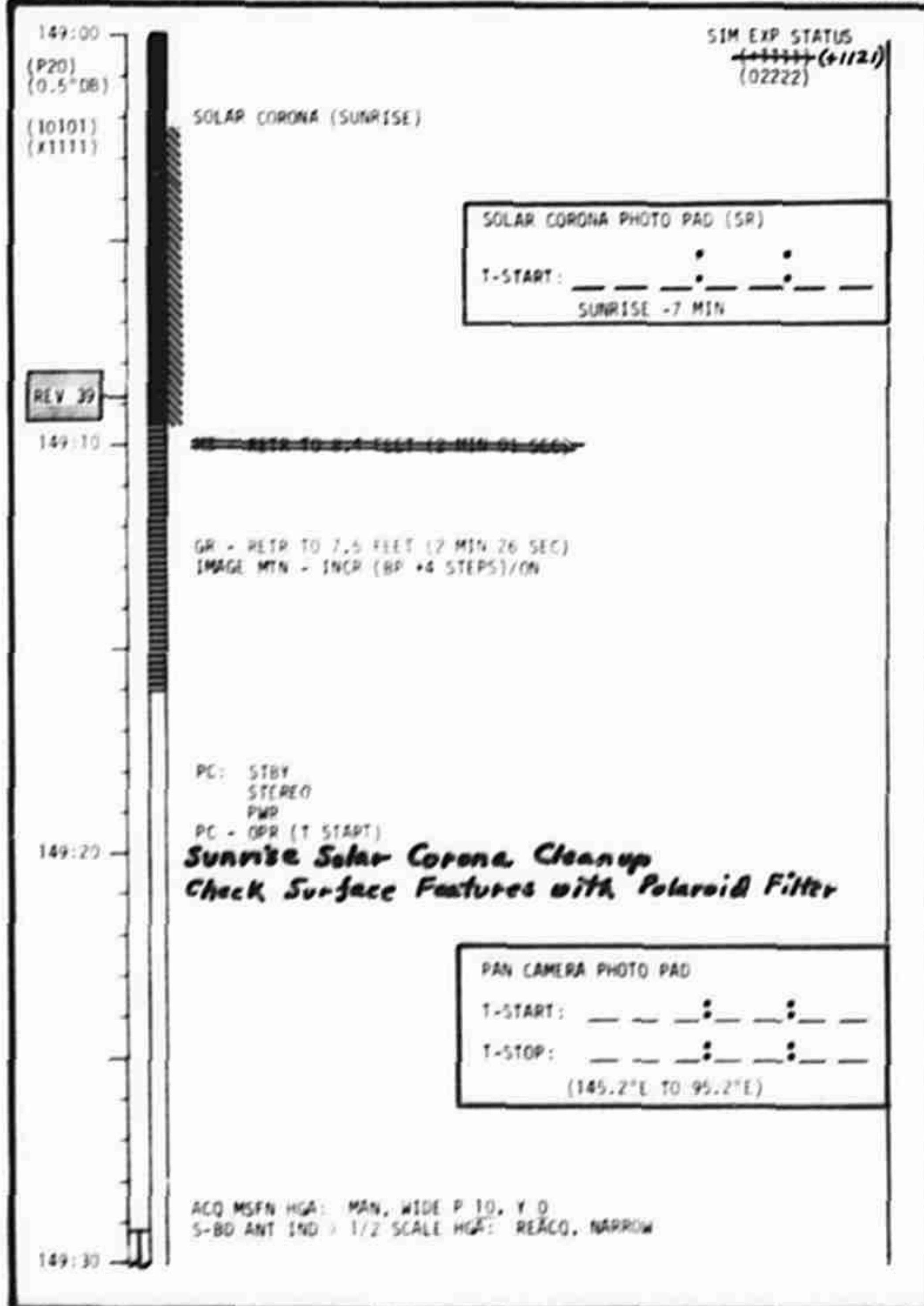
NOTES



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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	Clg C, 44124 (4/16)	<del>4/17/72</del> 1/10/72	3-215

# LM FLIGHT PLAN

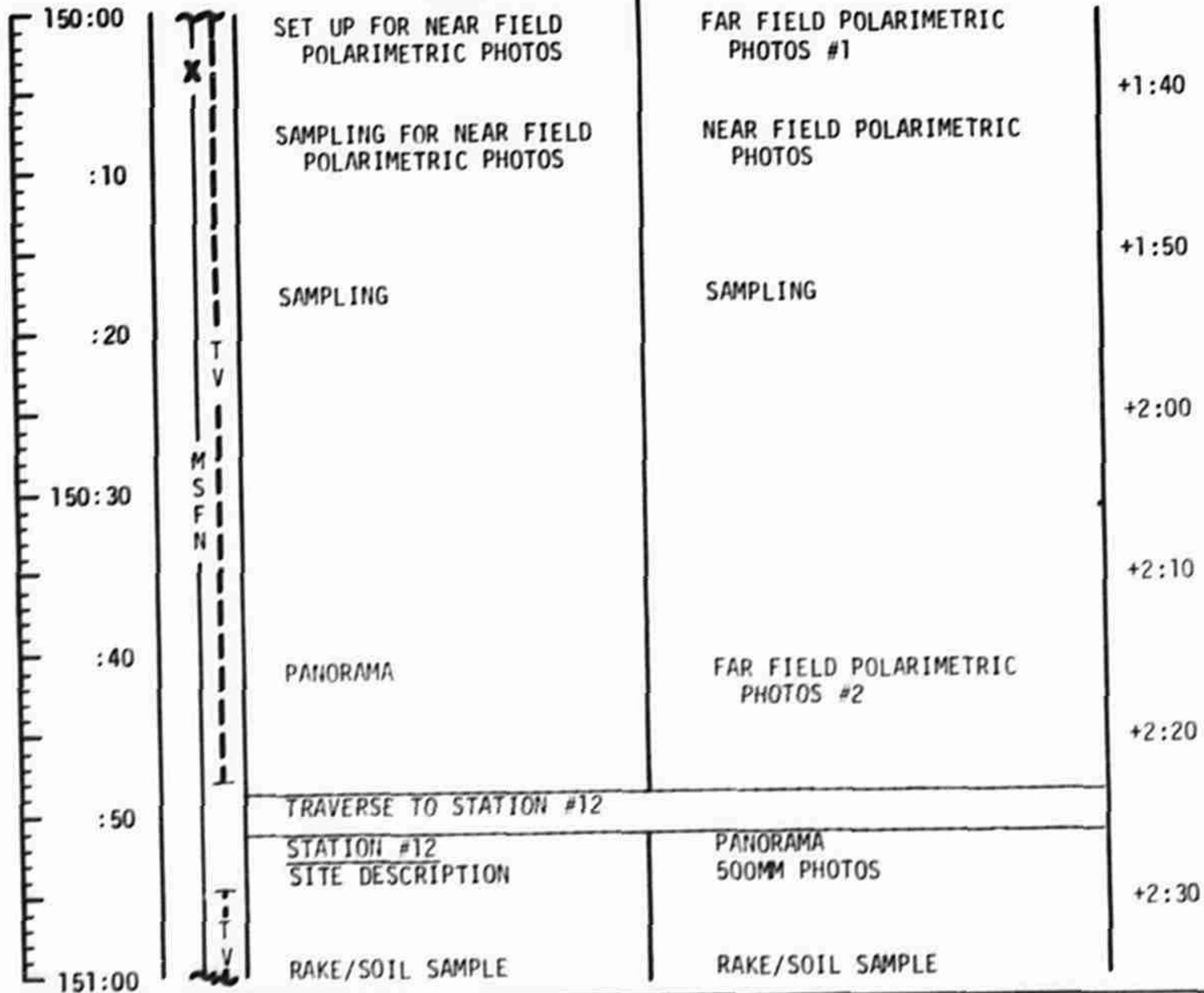
MCC-H

1754 CST

CDR

LMP

NOTES



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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

1754 CST

<p>150:00 (P20) (0.5°DB) (10101) (X1111)</p> <p>PC: STBY STEREO PWR (VERIFY) PC - OPR (T START) IMAGE MTN - INCR (BP)/ON</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">PAN CAMERA PHOTO PAD</p> <p>T-START:       :       :</p> <p>T-MONO:       :       :</p> <p>T-STOP:       :       :</p> <p style="text-align: center;">(18.0°E TO 22.7°W)</p> </div> <p style="margin-top: 10px;"><i>Check Surface Features with Polaroid Filter Re R Mare by Lassell</i></p> <p>PC - MONO (T STOP -2:00)</p> <p>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</p> <p>MC - RETR LA - OFF XR - STBY GR - RETR</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>MSFN UPLINK: CSM S.V. LOPC-1 TGT LOAD DESIRED ORIENT (LOPC-1)</p> </div> <p>MS - RETR MC/LA COVER - CLOSE AP/XR COVER - CLOSE POD, ENABLE ALL JETS V49 MVR TO P52 ATT (150:32) (142,250,042) HGA P -14, Y 250</p> <p>CONFIGURE FOR URINE DUMP</p> <p>150:30</p>	<p style="text-align: right;">SIM EXP STATUS (*1221) (12222)</p> <p>150:30 (10101) (X1111)</p> <p>P52 (OPTION 3) (LOG SITE ORIENT)</p> <p>REPORT: GYRO TORQUING           ANGLES</p> <p>P52 (OPTION 1) (LOPC-1 ORIENT)</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>MSFN CMDS: (AOS +66 MIN) DSE REWIND</p> </div> <p>GDC ALIGN</p> <p style="margin-top: 20px;"><u>CONFIGURE DSE</u> (LBR/RCD/FWD/OMD RESET) (AOS +73 MIN)</p> <p>O<sub>2</sub> FUEL CELL PURGE WASTE WATER DUMP URINE DUMP</p> <p style="margin-top: 20px;">TERMINATE WASTE WATER DUMP AT 10X</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">P52 IMU REALIGN</p> <p>N71:    - - - - -</p> <p>N05:    - - - - -</p> <p>N92:    - - - - -</p> <p>      X    - - - - -</p> <p>      Y    - - - - -</p> <p>      Z    - - - - -</p> <p>      GET - - - - -</p> </div> <p style="text-align: right;">SIM EXP STATUS (*0000) (01214)</p> <p>151:00</p>
--	--

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-217

# LM FLIGHT PLAN

MCC-H

1854 CST

CDR

LMP

NOTES



SAMPLING

SAMPLING

+2:40  
CSM REV 40

+2:50

+3:00

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

1854 CST

# CSM FLIGHT PLAN

SIM EXP STATUS  
(\*0000)  
(01214)

### CSM EXP/EVA CHECKLIST

LUNAR HORIZON AND EARTH UV PHOTO, *PAGE 1/2-23*

MAG (OO)

MAG (PP)

V49 MNVR TO LUNAR HORIZON/EARTH PHOTO ATT (151:20)  
(189,000,341)

SET OMNI D FOR AOS ACQ

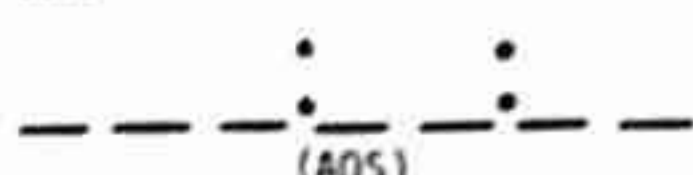
REV 40

151:10

151:20

151:30

UV PHOTO PAD

T-START:   
(AOS)

ACQ MSFN OMNI D  
LUNAR HORIZON AND EARTH UV PHOTO

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE INITIAL (4/16)	3/27/72 37672-e (161)	3-219



# LM FLIGHT PLAN

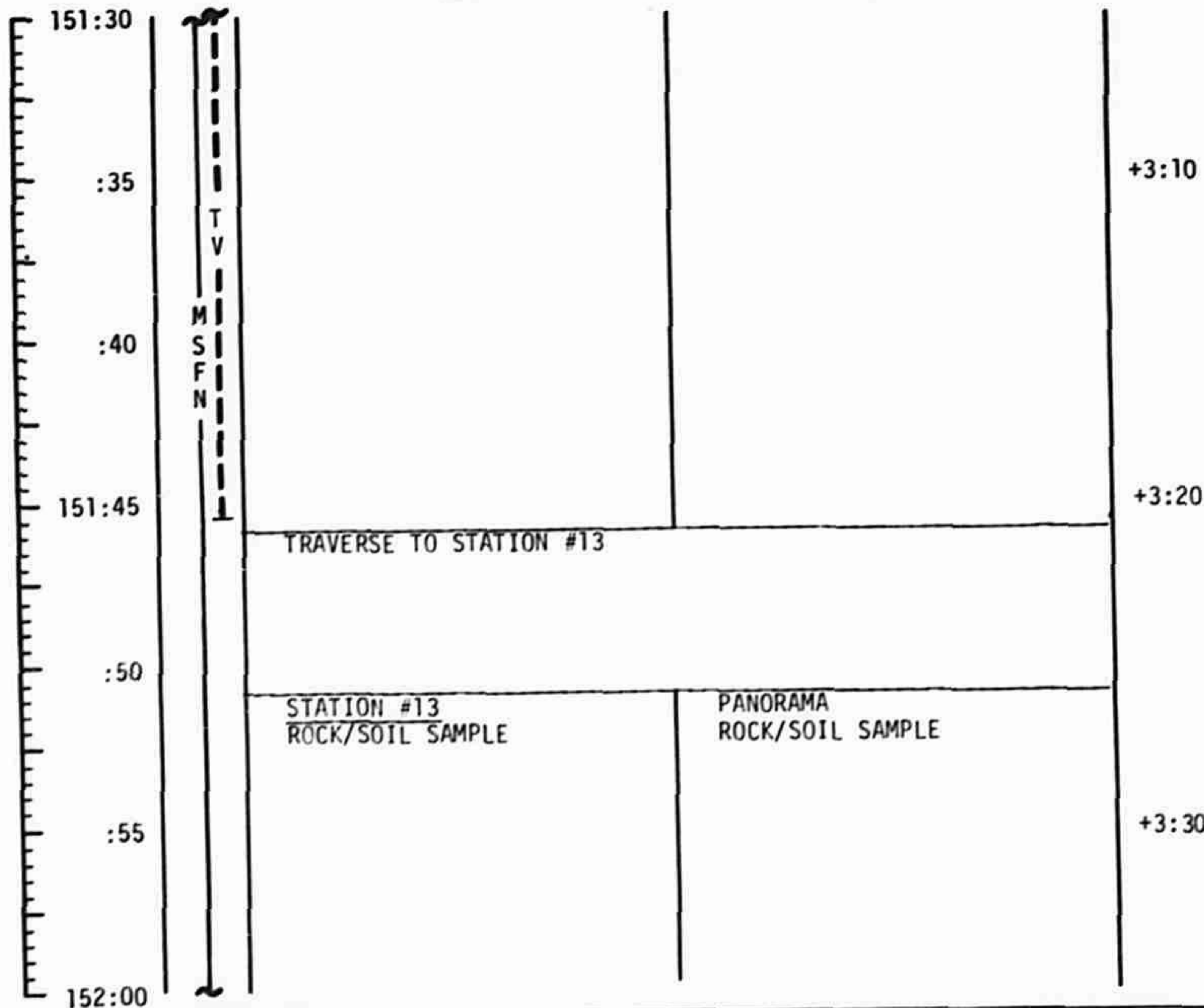
MCC-H

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

# CSM FLIGHT PLAN

SIM EXP STATUS  
 (\*0000)  
 (01214)

151:30  
 (10101)  
 (X1111)

MSFN  
 SFN

151:40

151:50

152:00

P30 VERIFY LOPC-1 TIG AND ΔVs

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

MSFN CMDS:  
 DSE DUMP

P30 MANEUVER

SET STARS	L	O	P	C	-	I	PURPOSE
	S	P	S/G	&	N	PROP/GUID	
	•						WT N47
R ALIGN		0	0		•		P TRIM N48
P ALIGN		0	0		•		Y TRIM
Y ALIGN	•	0	0				HRS GET1
	•	0	0	0			MIN N33
	•	0			•		SEC
ULLAGE						•	ΔV <sub>X</sub> N81
						•	ΔV <sub>Y</sub>
						•	ΔV <sub>Z</sub>
	X	X	X				R (000)
	X	X	X				P (000)
	X	X	X				Y (000)
	•					•	H <sub>A</sub> N44
						•	H <sub>P</sub>
	•					•	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

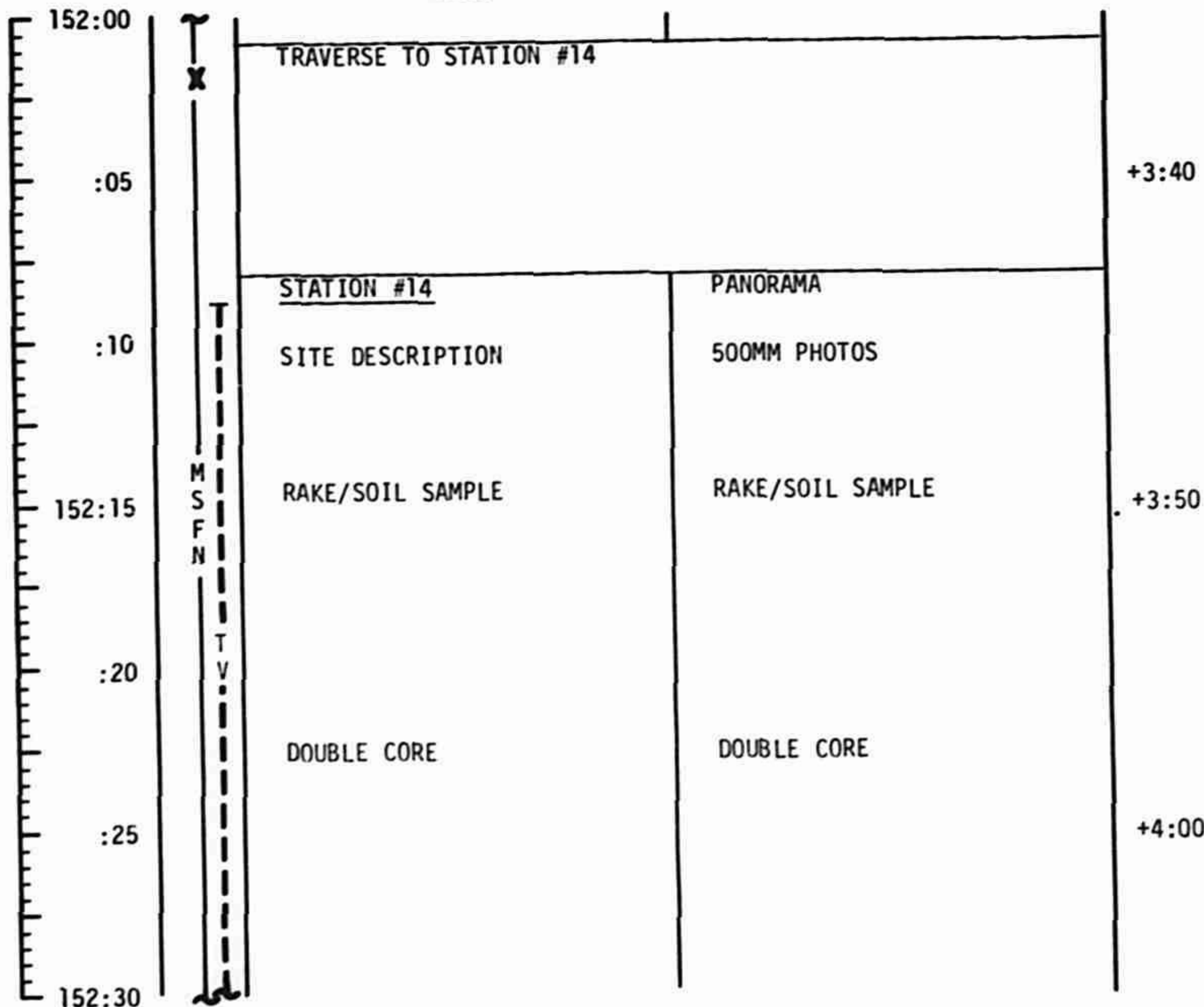
MCC-H

1954 CST

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

# CSM FLIGHT PLAN

1954 CST

SIM EXP STATUS  
(\*0000)  
(01214)

152:00  
(10101)  
(x1111)

PRE SPS BURN SIM PREP (CUE CARD)

SET DET COUNTING UP TO LOPC-1

152:10

SECURE EQUIPMENT FOR LOPC-1

(P40)  
(0.5"NB)

P40 (TRIM)

152:20

SXT STAR CHECK

## SINGLE BANK

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

LOPC-1 (000,000,000)

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

(10101)  
(x1111)

152:30

LOPC-1 BURN TABLE			
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	TRIM $V_{gy}$ TO 0.2 FPS IF $-V_{gy}$ ROLL 90° CCW AND USE -2 THRUSTERS

BURN STATUS REPORT				
X	X			ΔTIG
X	X			BT
				$V_{gx}$
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
				$V_{gx}$
				$V_{gy}$
				$V_{gz}$
				ΔV <sub>c</sub>
X				FUEL
X				OX
X				UNBAL

# LM FLIGHT PLAN

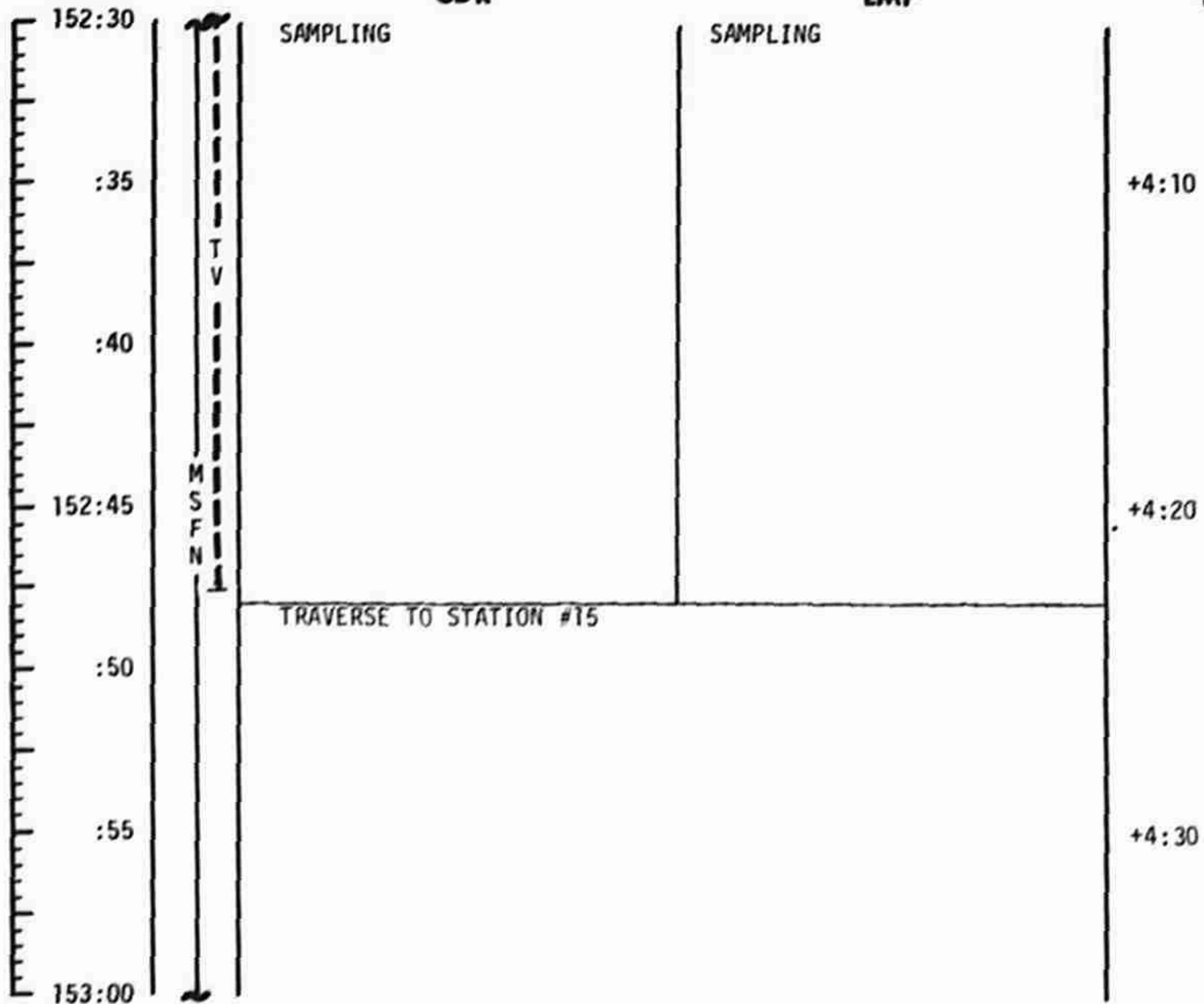
MCC-H

2024 CST

CDR

LMP

NOTES



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/OMD 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(15.6,1/250,-) 1 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 :10 :20 153:30 :40 :50 154:00	M S F N T V X	STATION #15 LPM MEASUREMENT	PANORAMA ROCK/SOIL SAMPLE
		TRAVERSE TO STATION #16	
		STATION #16 LPM MEASUREMENT	PANORAMA ROCK/SOIL SAMPLE
		TRAVERSE TO STATION #17	
		STATION #17 SITE DESCRIPTION RAKE/SOIL SAMPLE	PANORAMA SITE DESCRIPTION RAKE/SOIL SAMPLE
		LPM MEASUREMENT	SAMPLING
		SAMPLING	

+4:40

CSM REV 41

+4:50

+5:00

+5:10

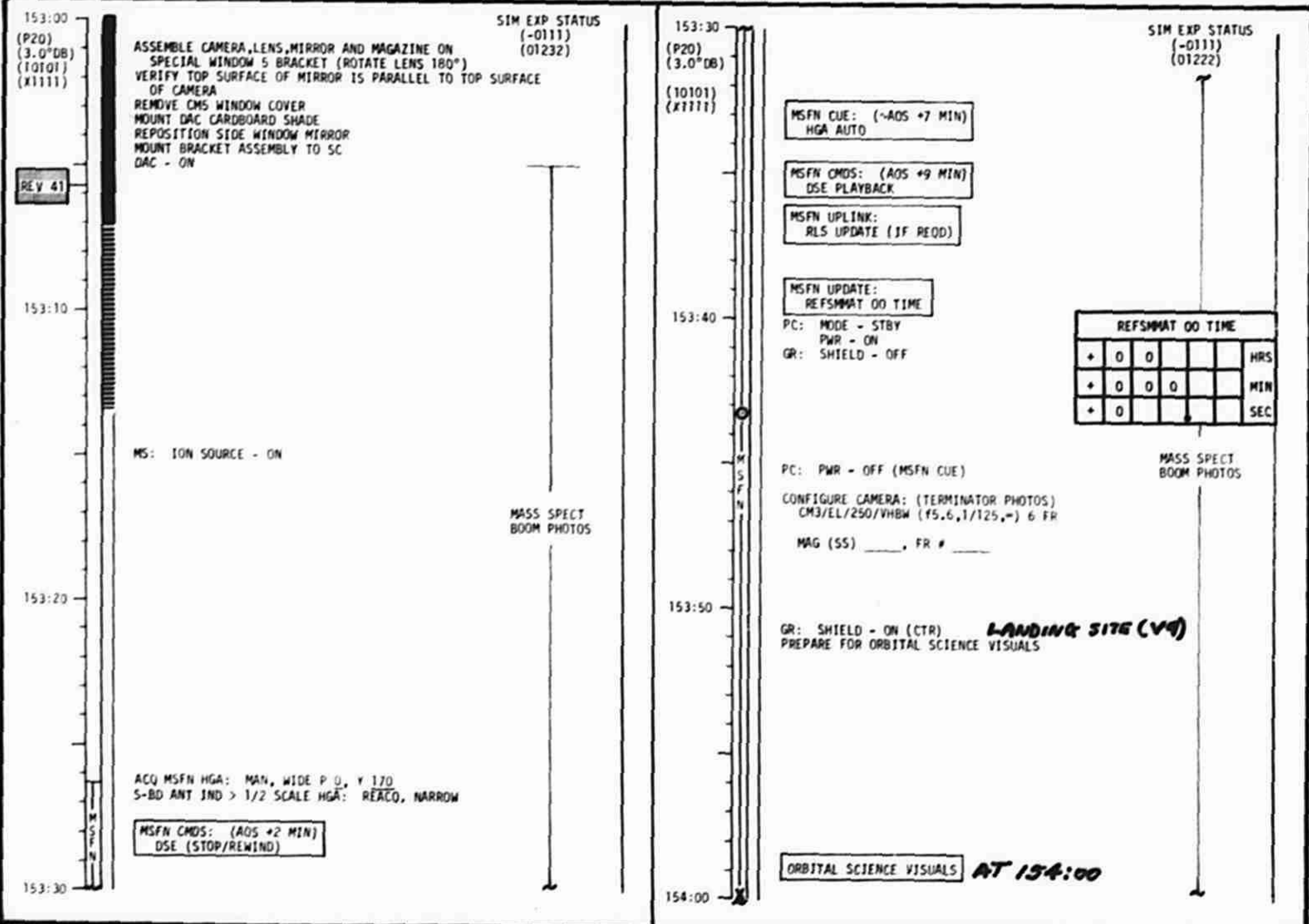
+5:20

+5:30

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



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

REV 41

153:10

153:20

153:30

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

SIM EXP STATUS  
(-0111)  
(01232)

MS: ION SOURCE - ON

MASS SPECT  
BOOM PHOTOS

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

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

153:30  
(P20)  
(3.0°DB)  
(10101)  
(X1111)

153:40

153:50

154:00

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

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

MSFN UPLINK:  
RLS UPDATE (IF REQD)

MSFN UPDATE:  
REFSMAT OO TIME

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

PC: PWR - OFF (MSFN CUE)

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

MAG (SS) \_\_\_\_\_, FR # \_\_\_\_\_

GR: SHIELD - ON (CTR) **LANDING SITE (V9)**  
PREPARE FOR ORBITAL SCIENCE VISUALS

ORBITAL SCIENCE VISUALS **AT 154:00**

SIM EXP STATUS  
(-0111)  
(01222)

REFSMAT OO TIME				
+	0	0		HRS
+	0	0	0	MIN
+	0			SEC

MASS SPECT  
BOOM PHOTOS

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-227



# LM FLIGHT PLAN

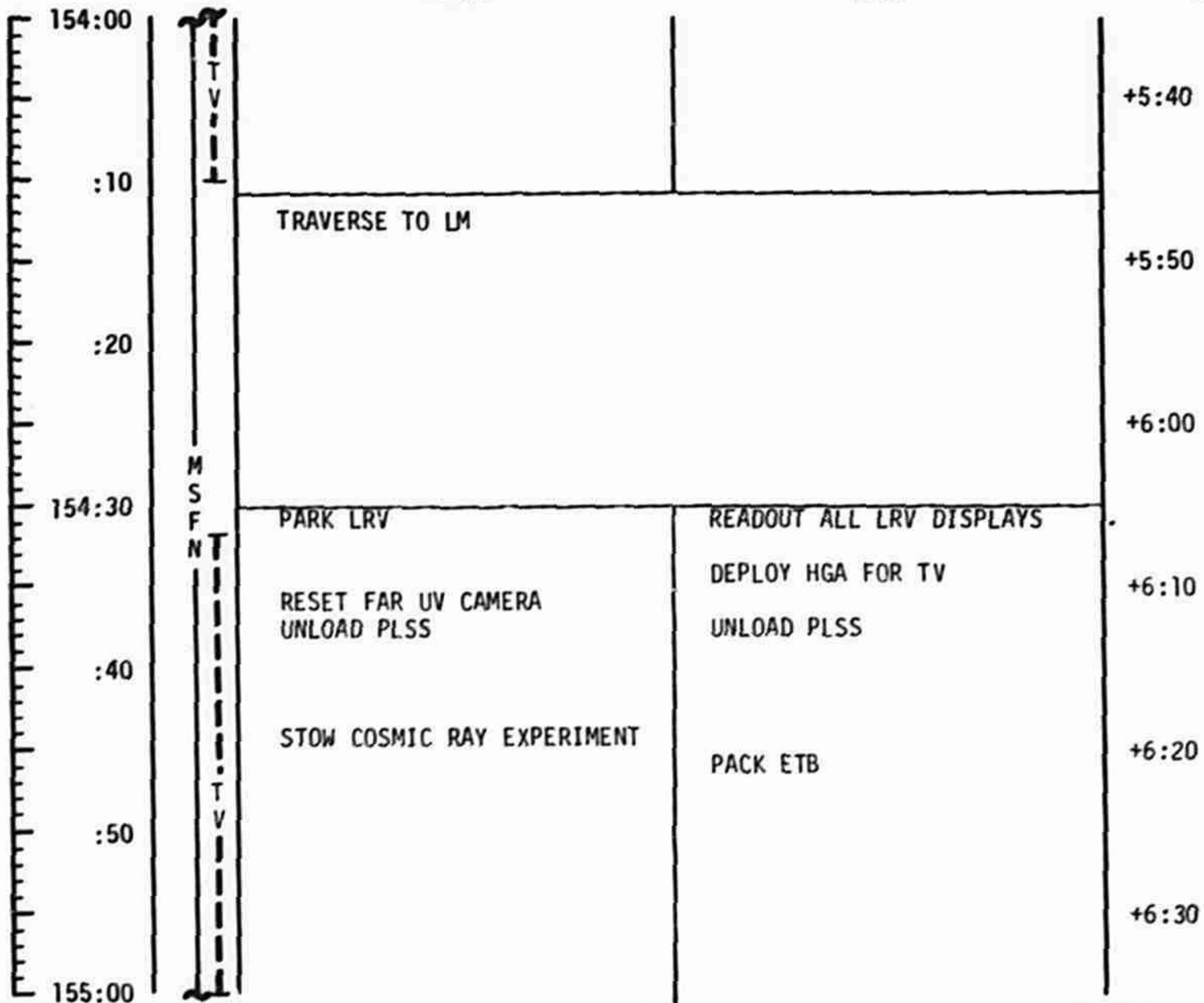
MCC-H

2154 CST

CDR

LMP

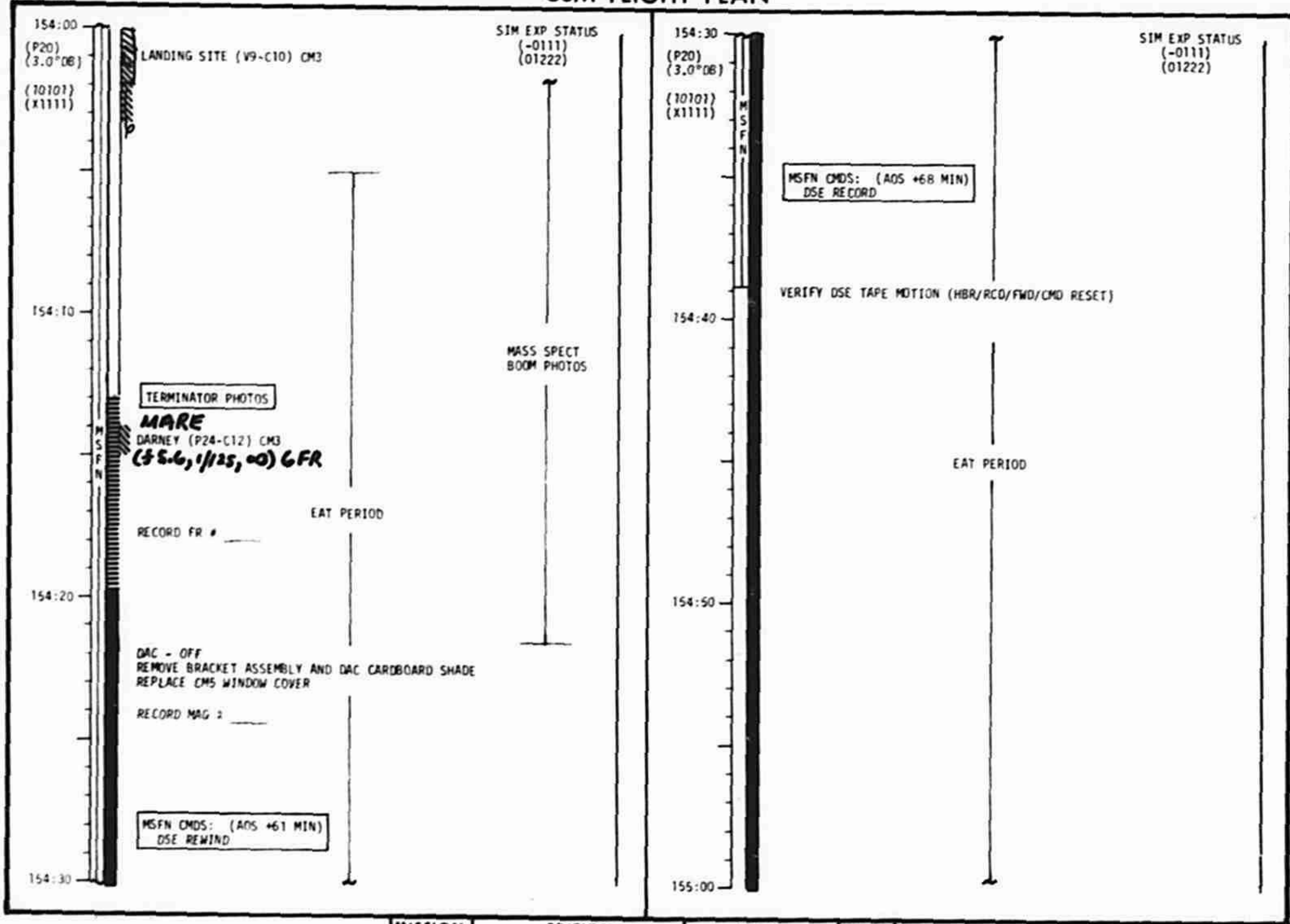
NOTES



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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CONCEPTUAL (4/16)	3/27/72 3/6/72 (P29)	3-229

MCC-H

2254 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

155:00	M S F N	LRV GRAN PRIX	FILM GRAN PRIX	CSM REV 42
:10		PARK & CONFIGURE LRV FOR MCC-H CONTROL	RETRIEVE SWC	+6:40
:20		CLEAN EMU'S RESET FAR UV CAMERA TRANSFER ETB INGRESS LM	CLEAN 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
155:30		VERIFY EVA CB CONFIGURATION DOFF GLOVES, STOW ON COMM PANELS TRANSFER TO LM ECS HOSES CONNECT TO LM COMM		
:40			BIOMED - LEFT	
		PLSS/OPS DOFFING DISCONNECT OPS & RCU FROM PLSS		
:50		LMP, THEN CDR DOFF PLSS/OPS REPORT: <u>OPS PRESSURE</u>		
156:00		STOW OPS'S		

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

SIM EXP STATUS  
(-0111)  
(01222)

155:00  
(P20)  
(3.0°DB)  
(10101)  
(X1111)  
REV 42  
155:10  
155:20  
155:30

EAT PERIOD

CONFIGURE CAMERA: (ORBITAL SCIENCE)  
CMS/EL/250/CEX-1VL (f5.6,1/250,-) 80 FR

MAG (00) \_\_\_\_\_ FR # \_\_\_\_\_

ORBITAL SCIENCE PHOTOS

KOHLSCHUETTER (P5-C2,C3)  
CMS (f5.6,1/250,-) 80 FR

CHANGE TO f8

RECORD FR # \_\_\_\_\_

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)

155:30  
(P20)  
(3.0°DB)  
(10101)  
(X1111)  
155:40  
155:50  
156:00

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST PAGE S/1-29  
LOGIC PWR (2) - OFF

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

VHF AM T/R - RCV (PNL 9)  
VHF AM A - DUPLEX

**MSFN UPLINK:  
JET-ON MONITOR LOADS**

FILM MAGS REQD FOR NEXT DAY:  
DAC: CEX-8B6DD  
EL: VHBW-SS, CEX-QQ  
NR: VHBW-ZZ

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	

# LM FLIGHT PLAN

MCC-H

2354 CST

CDR

LMP

NOTES

156:00  
:10  
:20  
156:30  
:40  
:50  
157:00

GO/NO-GO FOR  
DEPRESS

M  
S  
F  
N

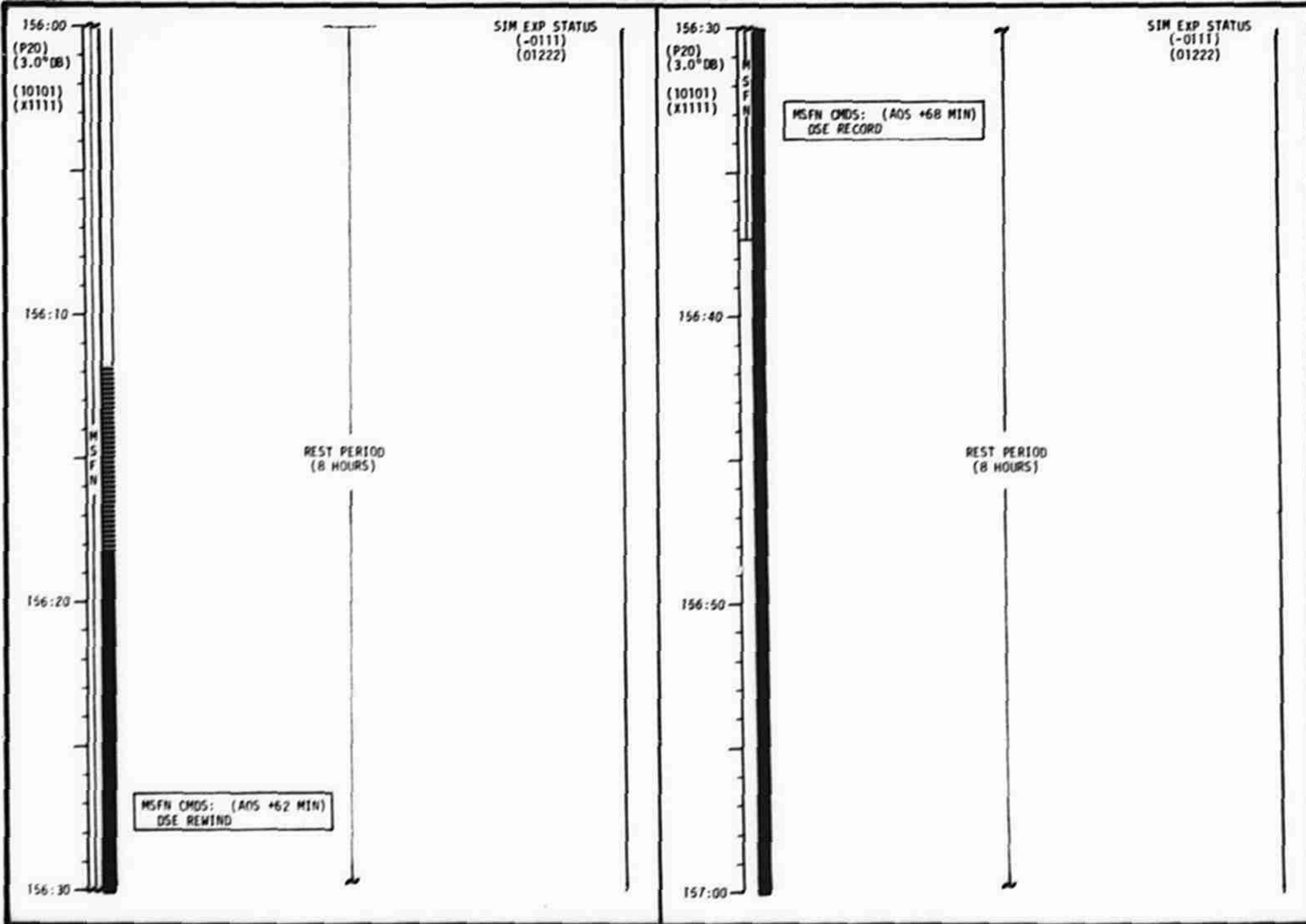
<p><u>PREP FOR EQUIPMENT JETTISON</u></p> <p>UNSTOW SCALE WEIGH BSLSS ROCK BAG &amp; COLLECTION BAGS, REPORT: <u>WEIGHTS</u> WEIGH ISA STOW SCALE &amp; BAGS UNLOCK FWD HATCH HANDLE REMOVE ISS WRAP &amp; TIE LUNAR BOOTS, ARMRESTS, RCU'S, YO-YO'S POSITION PLSS'S FOR JETTISON DON EV GLOVES AUDIO MODE - VOX</p>			
<p>PRESSURE INTEGRITY CHECK</p>			
<p>CABIN DEPRESS FOR JETTISON</p>			
<p>EQUIPMENT JETTISON</p>			
<p><u>CABIN REPRESS</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>VERIFY CABIN PRESS STABLE DOFF HELMETS &amp; GLOVES AUDIO MODE - ICS/PTT</p> </td> <td style="width: 50%; border: none;"> <p>BATS 3 &amp; 4 - ON LUNAR BAT - OFF/RESET CHECK BUS VOLTS</p> </td> </tr> </table>		<p>VERIFY CABIN PRESS STABLE DOFF HELMETS &amp; GLOVES AUDIO MODE - ICS/PTT</p>	<p>BATS 3 &amp; 4 - ON LUNAR BAT - OFF/RESET CHECK BUS VOLTS</p>
<p>VERIFY CABIN PRESS STABLE DOFF HELMETS &amp; GLOVES AUDIO MODE - ICS/PTT</p>	<p>BATS 3 &amp; 4 - ON LUNAR BAT - OFF/RESET CHECK BUS VOLTS</p>		
<p>POST EVA CABIN CLEANUP</p>			
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p><u>DOFF SUITS</u></p> <p>CDR DOFF PGA DON ICG CONNECT AND VERIFY COMM</p> </td> <td style="width: 50%; border: none;"> <p>BIOMED - OFF</p> </td> </tr> </table>		<p><u>DOFF SUITS</u></p> <p>CDR DOFF PGA DON ICG CONNECT AND VERIFY COMM</p>	<p>BIOMED - OFF</p>
<p><u>DOFF SUITS</u></p> <p>CDR DOFF PGA DON ICG CONNECT AND VERIFY COMM</p>	<p>BIOMED - OFF</p>		

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-233

# LM FLIGHT PLAN

MCC-H

0054 CST

CDR

LMP

NOTES

157:00  
:10  
:20  
157:30  
:40  
:50  
158:00

M  
S  
F  
N  
X

CHANGE LM L10H CANISTER  
LMP DOFF PGA  
DON ICG  
CONNECT & VERIFY COMM

BIOMED - RIGHT

EVA-3 DEBRIEFING

EAT PERIOD

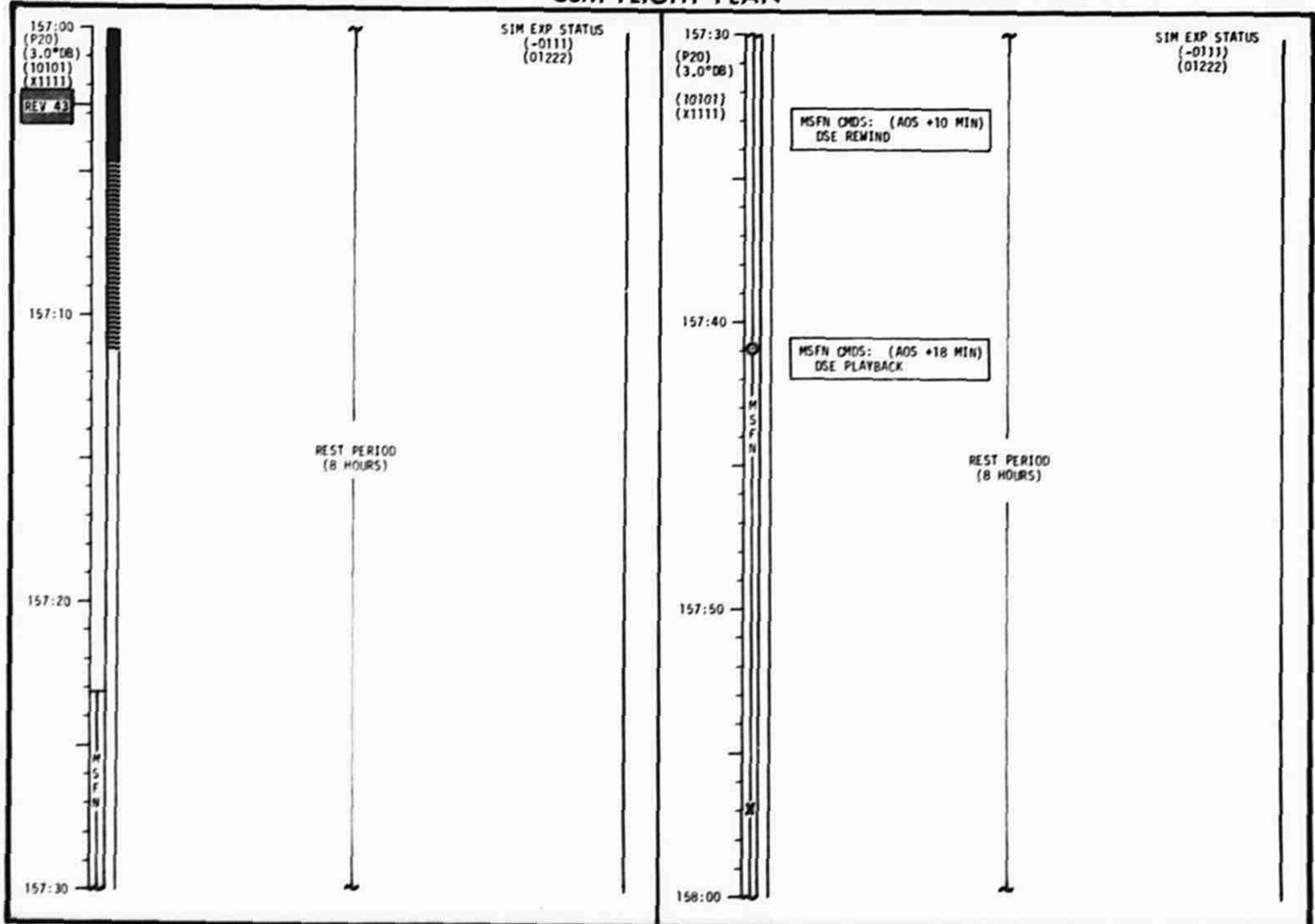
CSM REV 43

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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-235



# LM FLIGHT PLAN

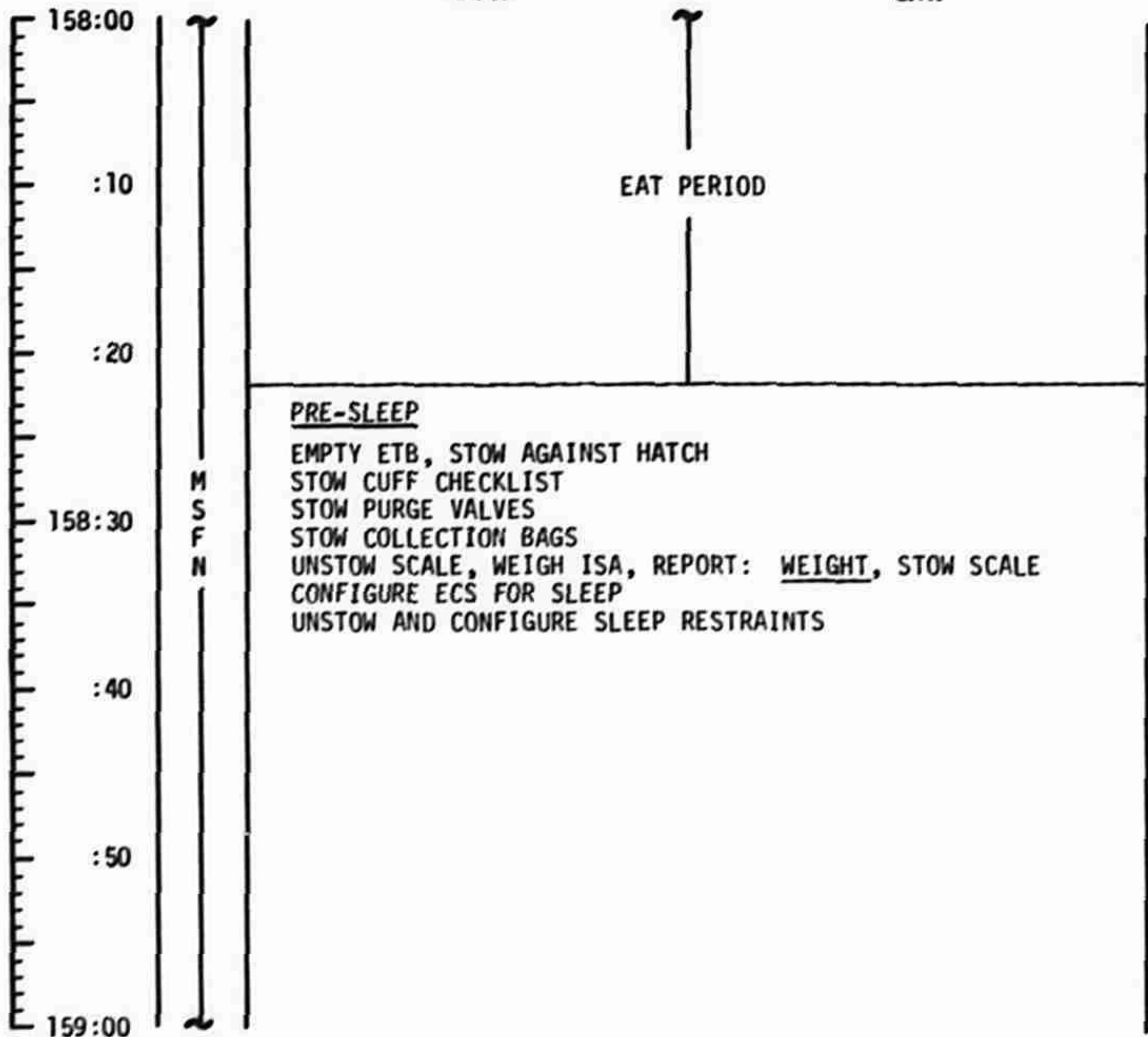
MCC-H

0154 CST

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

158:00  
 (P20)  
 (3.0°DB)  
 (10101)  
 (X1111)

158:10

158:20

158:30

SIM EXP STATUS  
 (-0111)  
 (01222)

158:30  
 (P20)  
 (3.0°DB)  
 (10101)  
 (X1111)

158:40

158:50

159:00

SIM EXP STATUS  
 (-0111)  
 (01222)

MSFN CMD5: (AOS +68 MIN)  
 DSE RECORD

REST PERIOD  
 (8 HOURS)

REST PERIOD  
 (8 HOURS)

MSFN CMD5: (AOS +62 MIN)  
 DSE REWIND

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-237

# LM FLIGHT PLAN

MCC-H

0254 CST

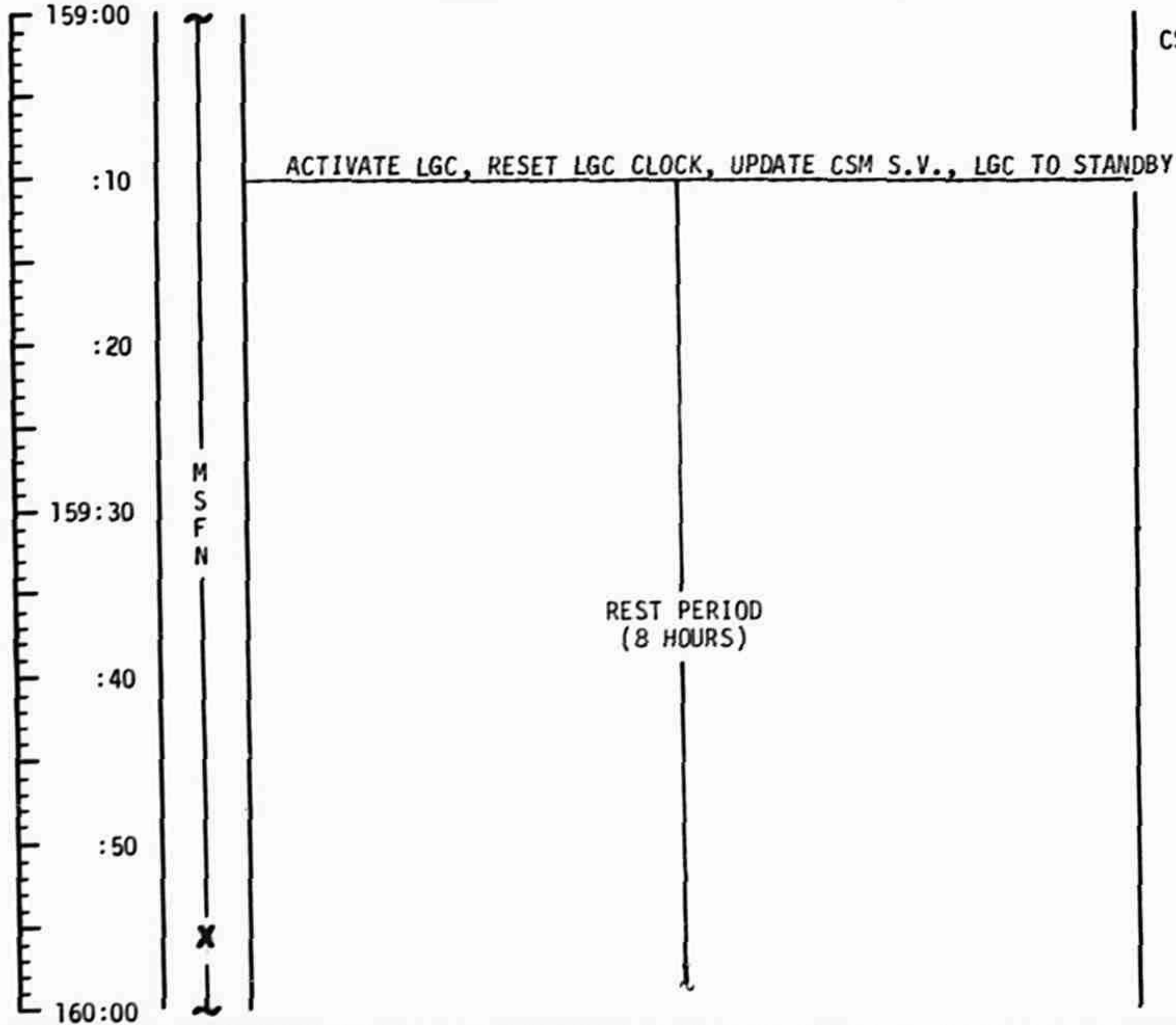
CDR

LMP

NOTES

CSM REV 44

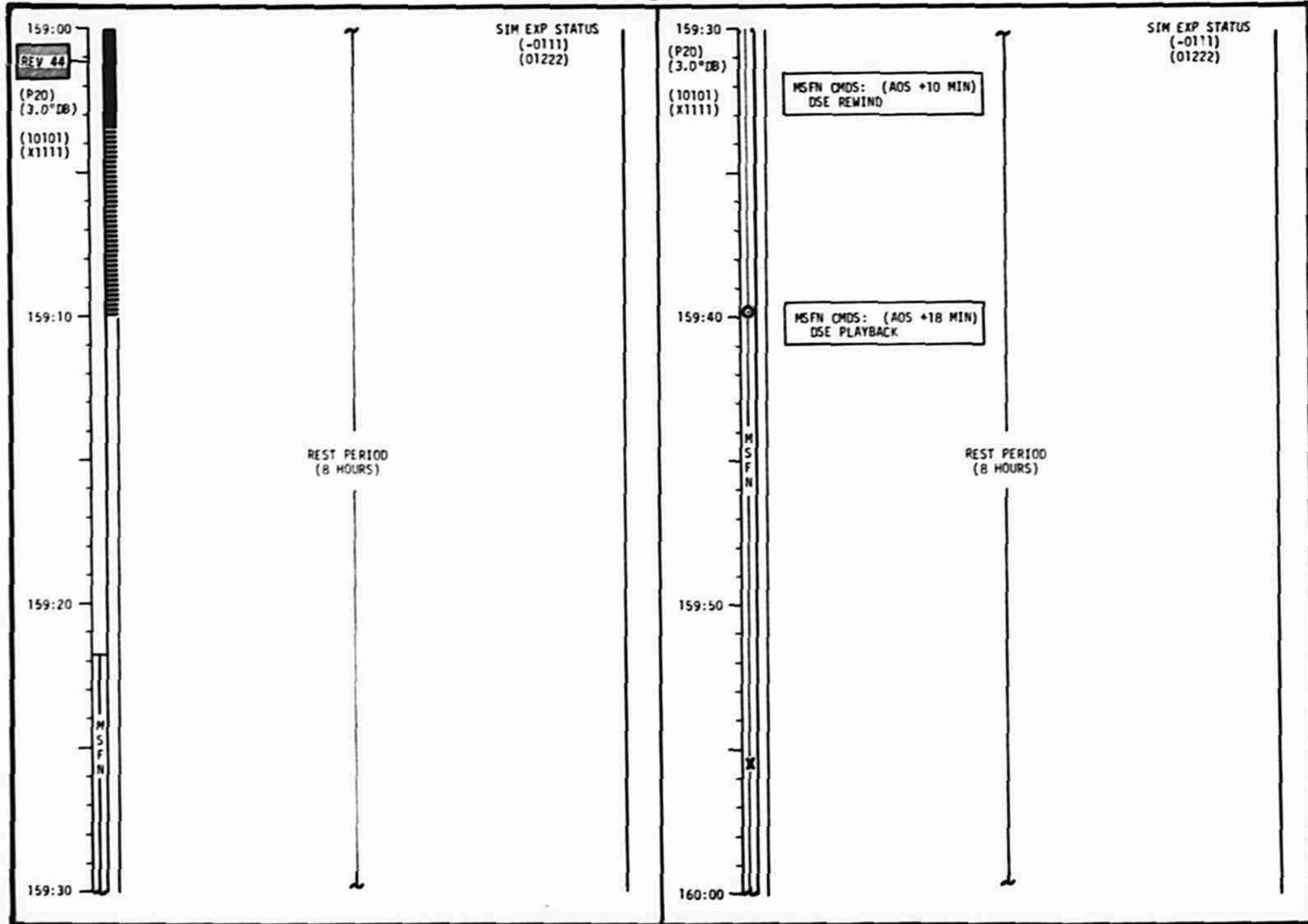
UPLINK TO LM  
CSM S.V.



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

# CSM FLIGHT PLAN



159:00  
**REV 44**  
 (P20)  
 (3.0"DB)  
 (10101)  
 (X1111)  
 159:10  
 159:20  
 159:30

SIM EXP STATUS  
 (-0111)  
 (01222)

REST PERIOD  
 (8 HOURS)

159:30  
 (P20)  
 (3.0"DB)  
 (10101)  
 (X1111)  
 159:40  
 159:50  
 160:00

SIM EXP STATUS  
 (-0111)  
 (01222)

MSFN CMDS: (AOS +10 MIN)  
 DSE REWIND

MSFN CMDS: (AOS +18 MIN)  
 DSE PLAYBACK

REST PERIOD  
 (8 HOURS)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-239

# LM FLIGHT PLAN

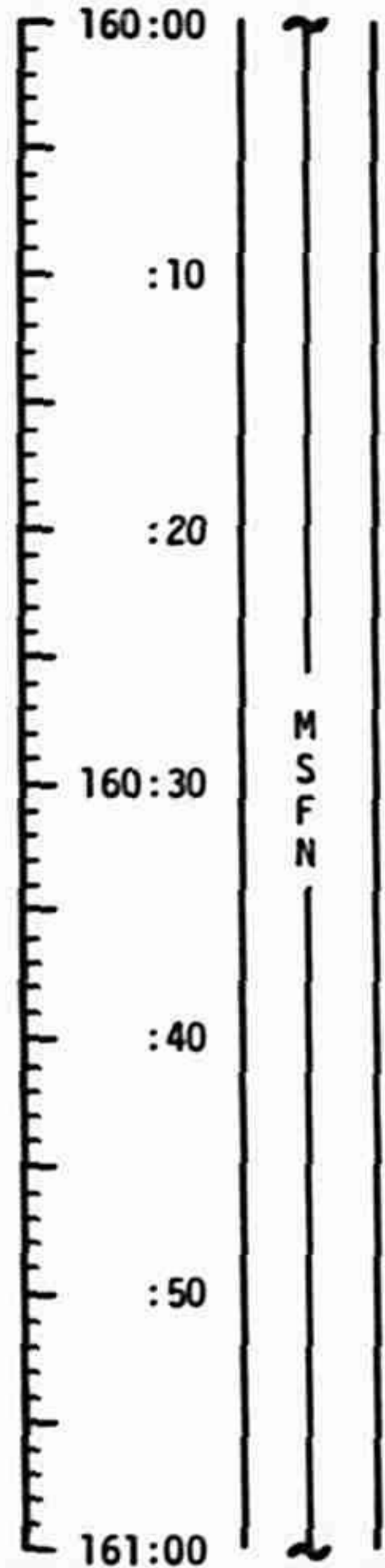
MCC-H

0354 CST

CDR

LMP

NOTES

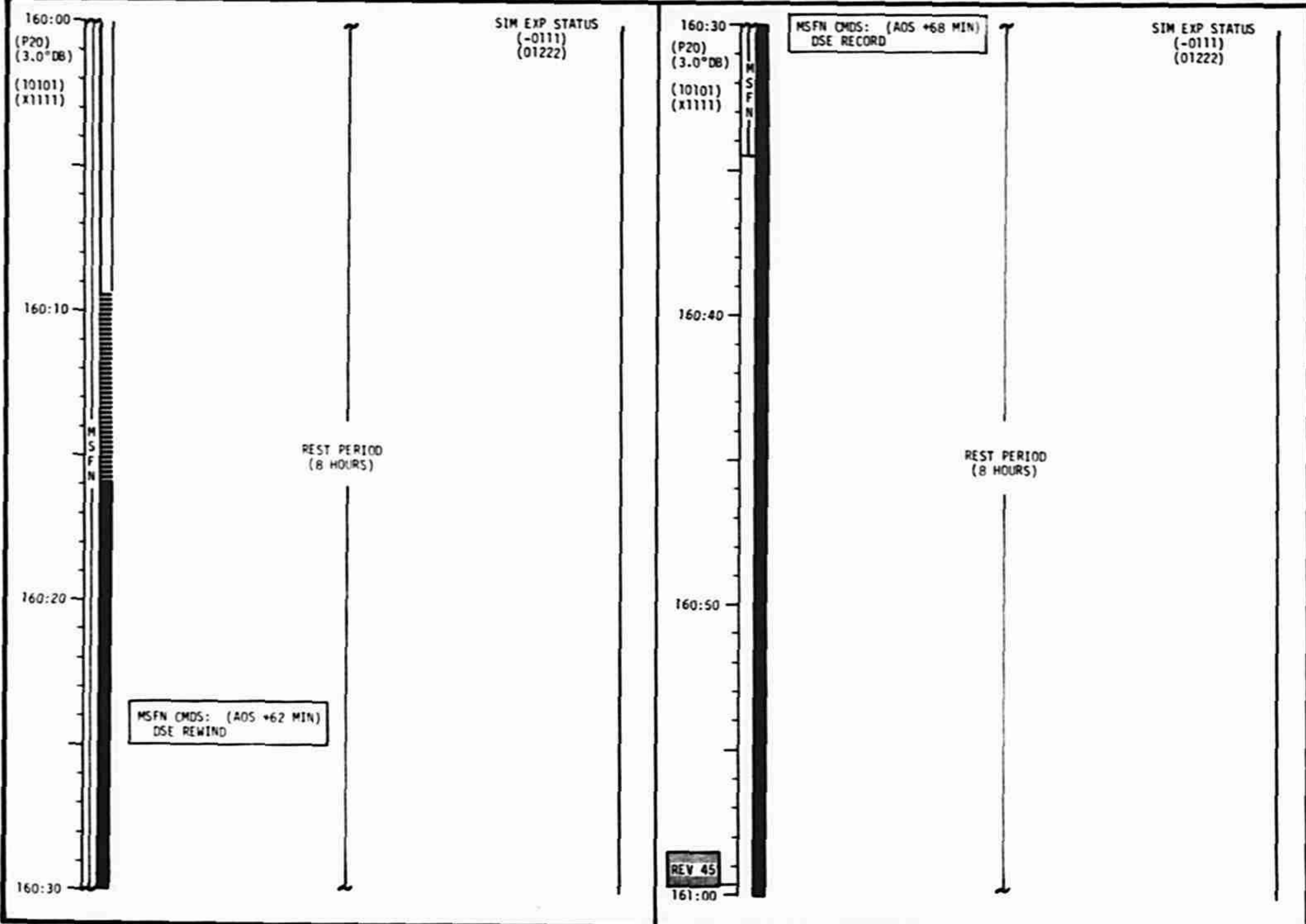


GDS 210 LOS

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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-241

# LM FLIGHT PLAN

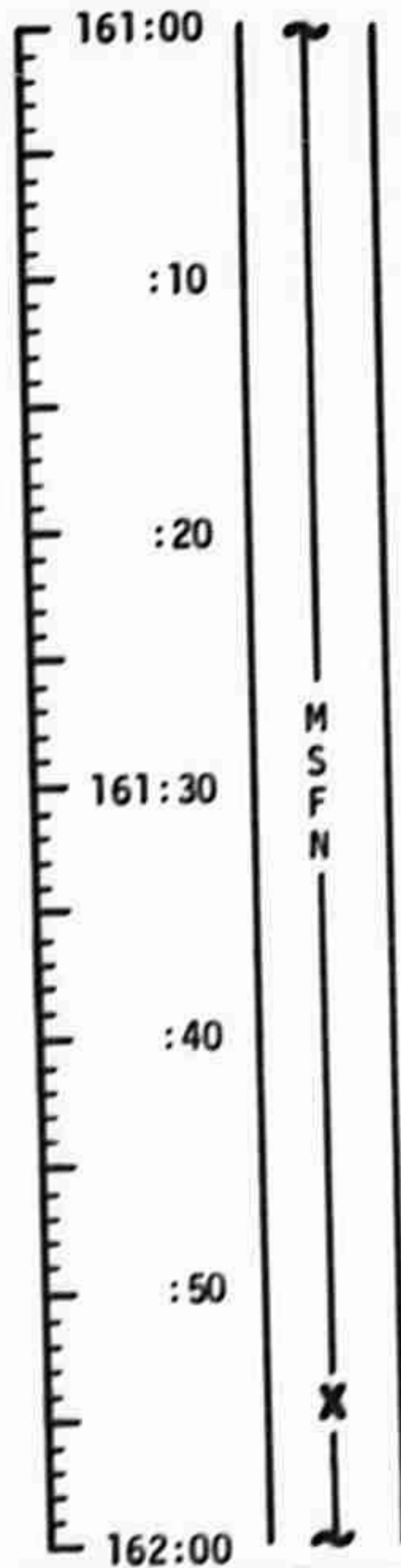
MCC-H

0454 CST

CDR

LMP

NOTES



REST PERIOD  
(8 HOURS)

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)  
(X1111)

161:10

161:20

161:30



REST PERIOD  
(8 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

161:30  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

MSFN CMDs: (AOS +10 MIN)  
DSE REWIND

MSFN CMDs: (AOS +18 MIN)  
DSE PLAYBACK

161:40

161:50

162:00

MSFN

X

REST PERIOD  
(8 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-243



# LM FLIGHT PLAN

MCC-H

0554 CST

CDR

LMP

NOTES

162:00  
:10  
:20  
162:30  
:40  
:50  
163:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

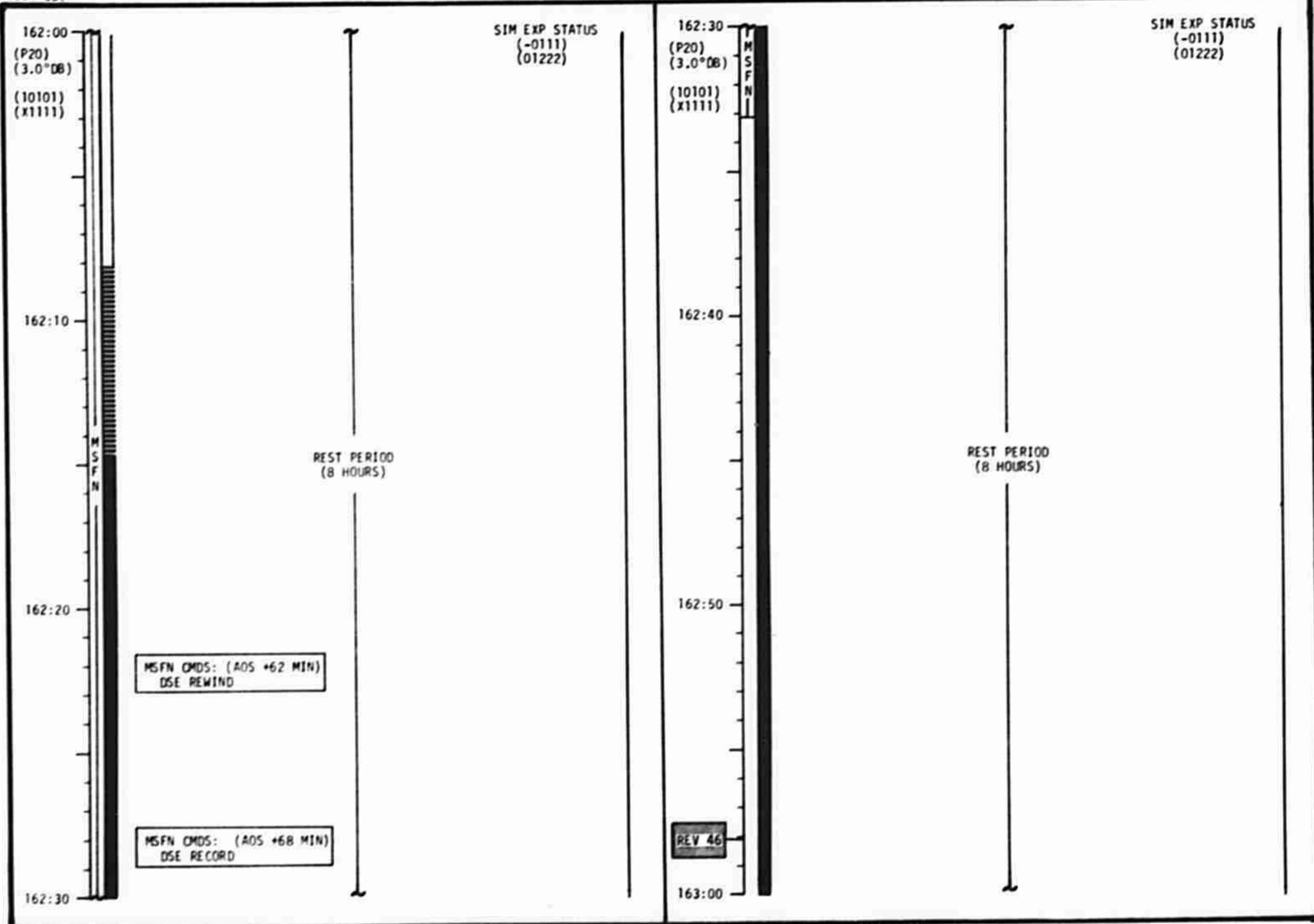
CSM REV 46

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-245

MCC-H

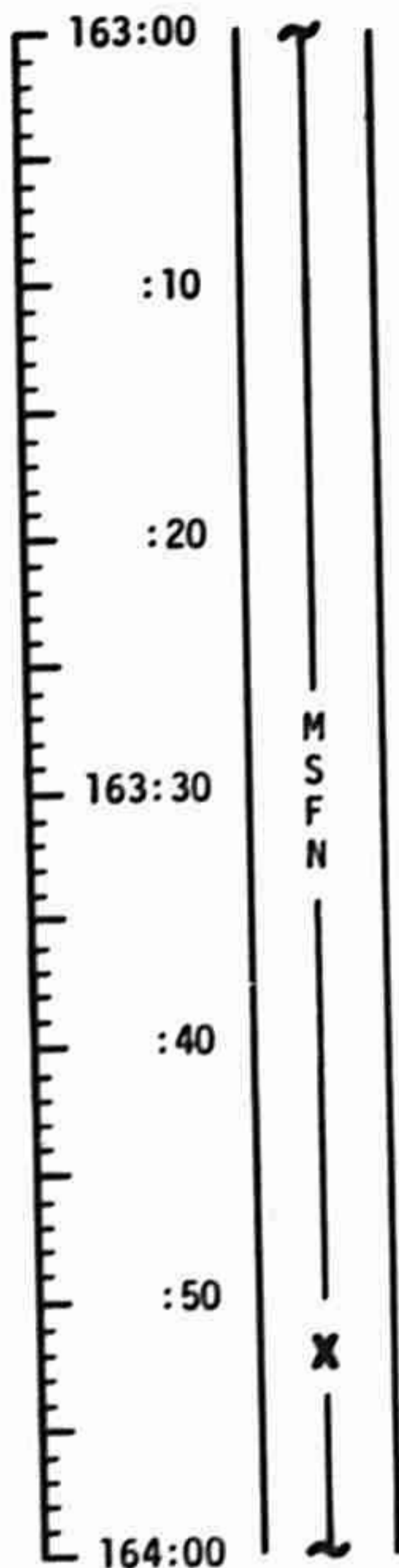
0654 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES



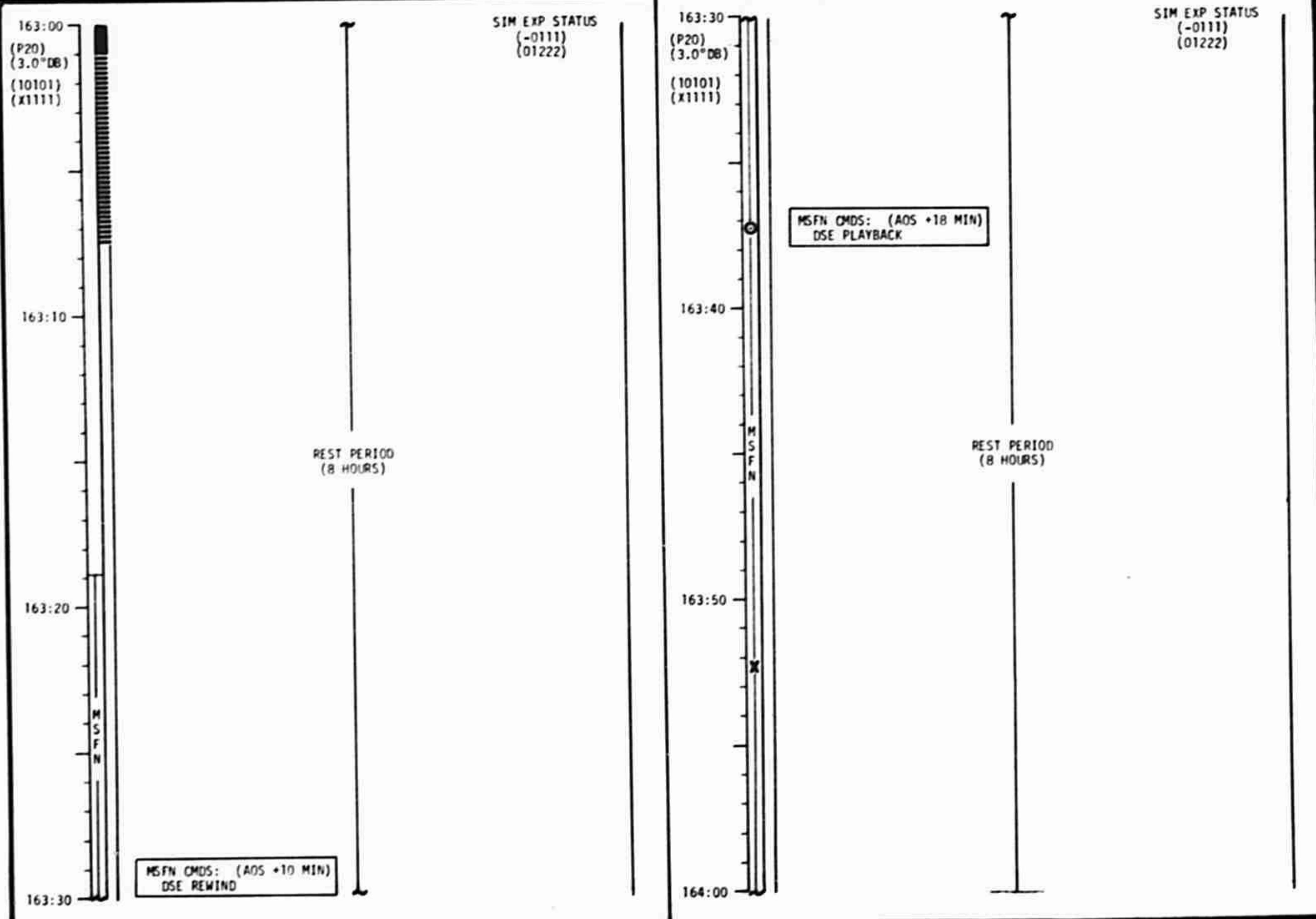
REST PERIOD  
(8 HOURS)

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

0654 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-247

# LM FLIGHT PLAN

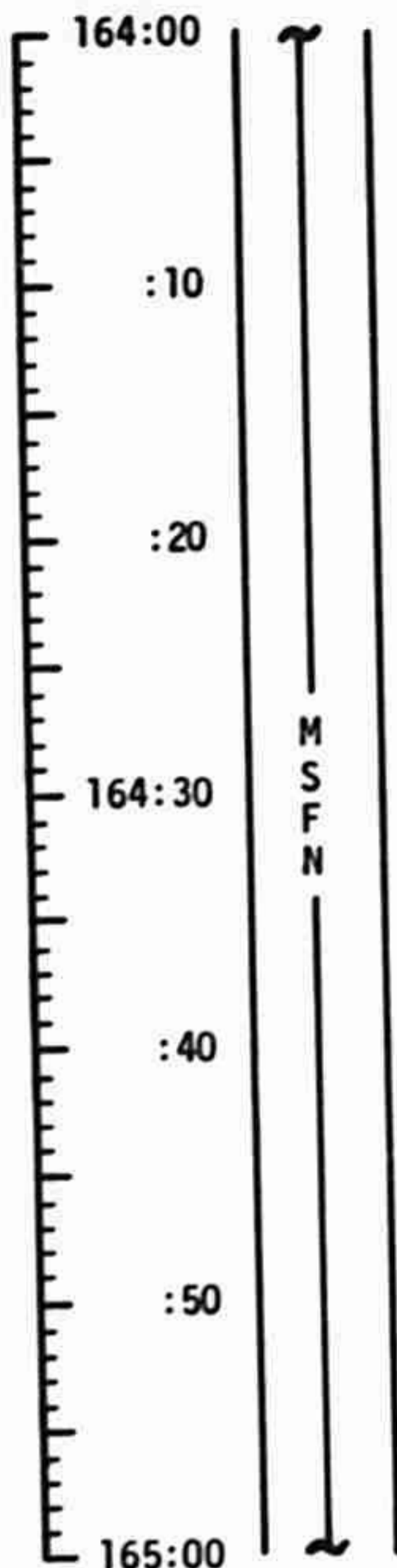
MCC-H

0754 CST

CDR

LMP

NOTES



REST PERIOD  
(8 HOURS)

CSM REV 47

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

164:00  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

164:10

164:20

164:30

**CSM SYSTEMS CHECKLIST**

POST-SLEEP CHECKLIST PAGE 5/1-29  
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.

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

GR: SHIELD - ON (CTR)

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

REPORT: GYRO TORQUING  
ANGLES

P20, CMC MODE - AUTO  
GDC ALIGN

MSFN CMDS: (AOS +62 MIN)  
DSE REWIND

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

SIM EXP STATUS  
(-0111)  
(01222)

164:30  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

164:40  
(P20)  
(0.5°DB)

164:50

165:00

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

MANUALLY ROLL CW 40°

P20 OPT 5 (+X FWD SIM BAY ATT)(165:00)  
N79 (+000.50)  
SET HGA P 10, Y 0 FOR AOS ACQ

CONFIGURE CAMERA: (TERMINATOR PHOTOS)  
CM5/EL/250/VHBW (f5.6,1/125,-) 6 FR  
MAG (SS) \_\_\_\_\_, FR # \_\_\_\_\_

MC/LA COVER - OPEN  
MC - EXTD

SIM EXP STATUS  
(-0111)  
(01222)

REV 47

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-249

# LM FLIGHT PLAN

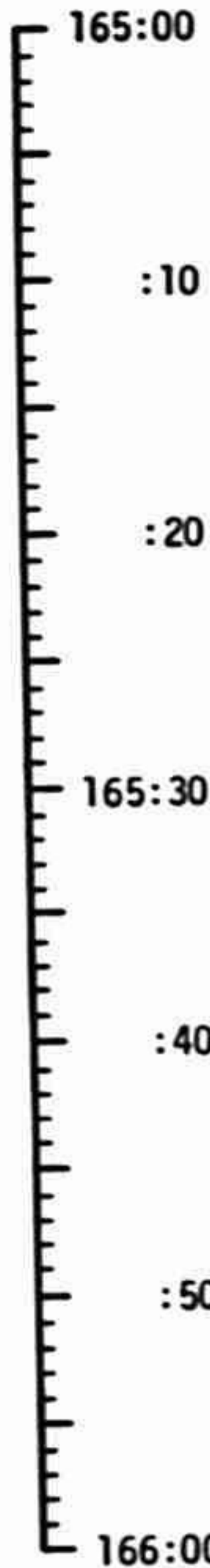
MCC-H

0854 CST

CDR

LMP

NOTES



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)  
(10101)  
(X1111)

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

**TERMINATOR PHOTOS**  
*(55.6, 4125, 00) 6FR*  
ST JOHN (P6-C3) CMS

MAP CAMERA PHOTO PAD  
T-START: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
T-STOP: \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
(165.9°E TO 148.8°E) (1 REV)

SIM EXP STATUS  
(+1111)  
(01222)

RECORD FR # \_\_\_\_\_

165:10

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

ACQ MSFN HGA: MAN, WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

PREPARE FOR ORBITAL SCIENCE VISUALS

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

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

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

MSFN UPDATE:  
MS RETR TIMES (20, 15, 10 & 5 FEET)

165:20

MSFN

165:30

165:30  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

PC: MODE - STBY  
PWR - ON  
MS - RETR TO 20 FEET (38 SEC)

SIM EXP STATUS  
(+1111)  
(02222)

PC: PWR - OFF (MSFN CUE)  
MS - RETR TO 15 FEET (36 SEC)

**ORBITAL SCIENCE VISUALS**

COLOMBO HIGHLANDS (V7-C8,C9) CMS

165:40

MSFN

165:50

IMAGE MTN - INCR (BP)/ON  
MS - RETR TO 10 FEET (36 SEC)

MS - RETR TO 5 FEET (36 SEC)

166:00

MS - DPLY

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-251



# LM FLIGHT PLAN

MCC-H

0954 CST

CDR

LMP

NOTES

166:00  
:10  
:20  
166:30  
:40  
:50  
167:00

M  
S  
F  
N

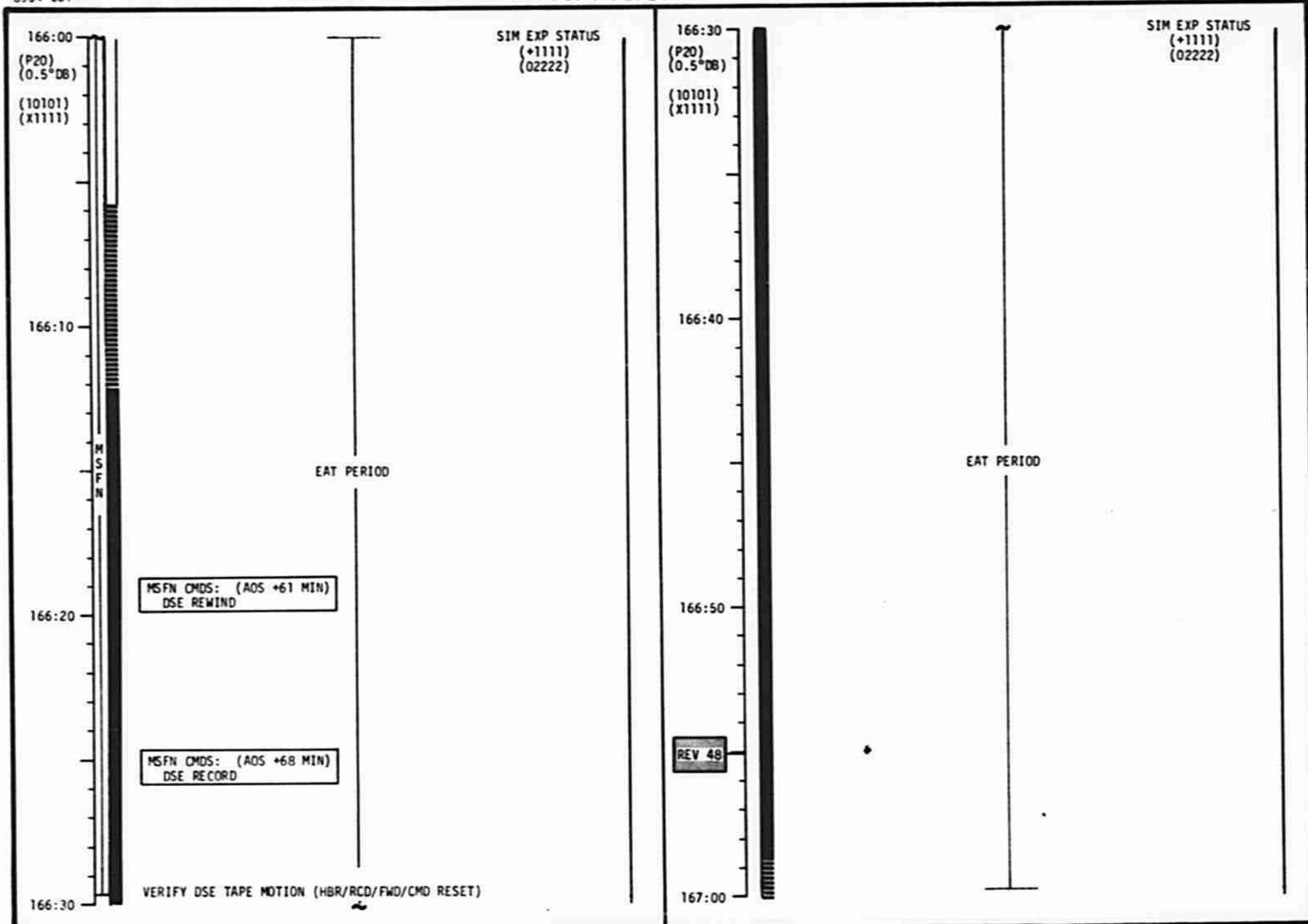
REST PERIOD  
(8 HOURS)

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



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-253

# LM FLIGHT PLAN

MCC-H

1054 CST

CDR

LMP

NOTES

167:00  
:10  
:20  
167:30  
:40  
(22112)  
:50  
168:00

M  
S  
F  
N  
  
X

↑  
REST PERIOD  
(8 HOURS)  
↓

POST-SLEEP  
RR OPR HTRS - ON  
AOT HTR - ON

STOW HAMMOCKS AND SLEEP RESTRAINTS

CREW STATUS REPORT (FOOD, MEDICATION, SLEEP)

PGNS TURN ON & SELF TEST  
E-MEMORY DUMP

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

-4:00

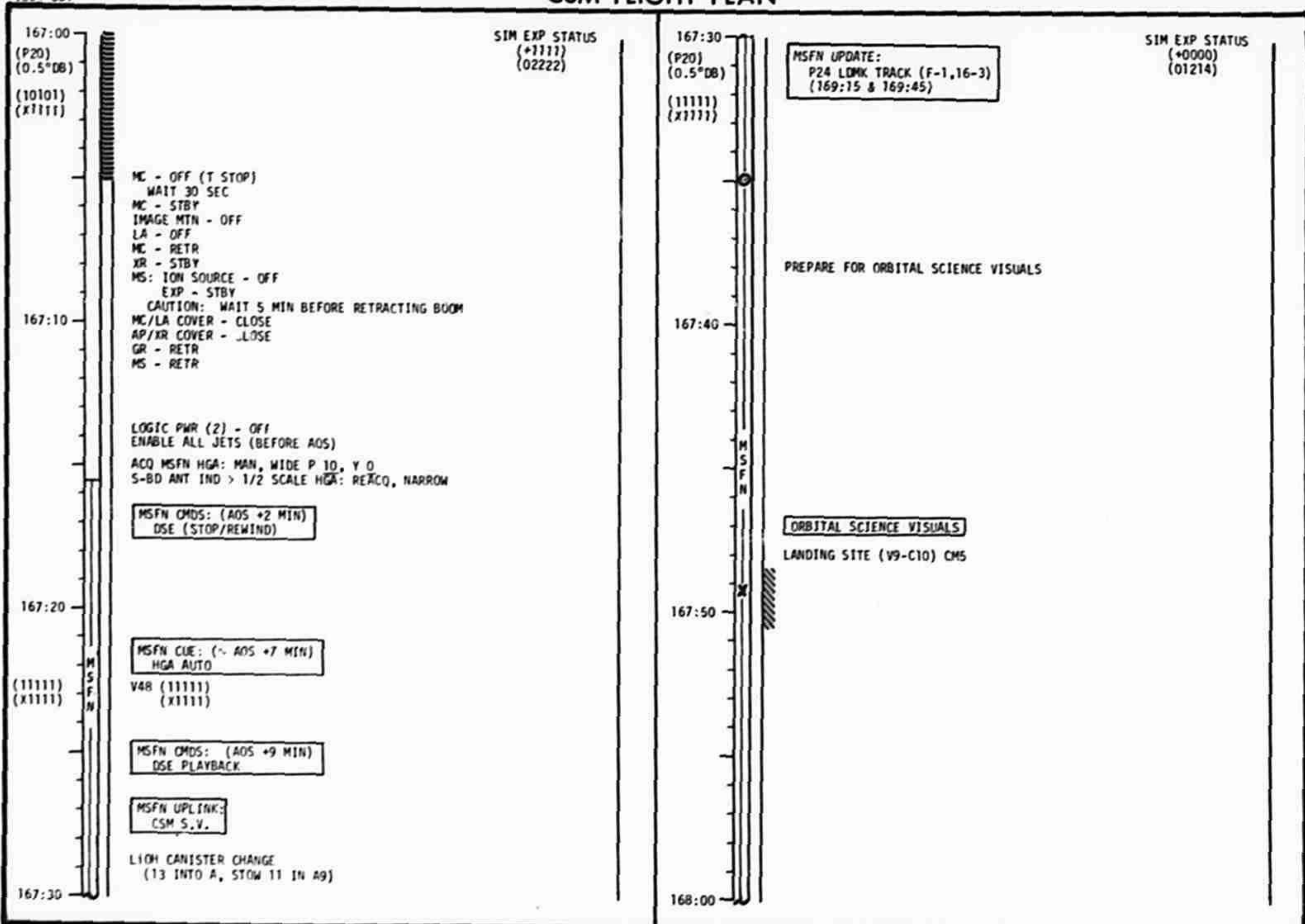
STAY/NO STAY FOR  
FINAL JETTISON

UPDATE TO LM  
P57 LIFT-OFF TIME  
P22 ACQ TIME  
UPLINK TO LM  
CSM S.V. (L/O)  
RLS

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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-255

# LM FLIGHT PLAN

MCC-H

1154 CST

CDR

LMP

NOTES

168:00  
(22112)

:10

:20

168:30

:40

:50

169:00

M  
S  
F  
N

EAT PERIOD

-3:00

CSM REV 49

DON SUITS  
LMP, then CDR CLEAN & LUB PGA'S

BIOMED - OFF

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)

168:10

MSFN  
N

CREW EXERCISE PERIOD

MSFN CMDS: (AOS +61 MIN)  
DSE REWIND  
DATA SYS - OFF

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

168:20

168:30

SIM EXP STATUS  
(+0000)  
(01214)

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

168:30  
(P20)  
(0.5°DB)  
  
(11111)  
(X1111)

168:40

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

168:50

CMC MODE - FREE  
P20 OPT 5 (LDMK TRK ATT)(169:15)  
N78 (+000.00)  
(-068.00)  
(+000.00)  
N79 (+000.50)  
(000,338/346,000) OMNI C  
CMC MODE - AUTO

REV 49

CONFIGURE CAMERA: (LDMK TRK)  
CM/DAC/SXT/CEX (EXP PAD) 1 fps (7.6% MAG)

MAG (BB) \_\_\_\_\_, MAG % \_\_\_\_\_  
UTILITY POWER - ON

169:00

SIM EXP STATUS  
(+0000)  
(01214)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-257

# LM FLIGHT PLAN

MCC-H

1254 CST

CDR

LMP

NOTES

169:00  
(22112)

:05

:10

169:15

:20

:25

169:30

M  
S  
F  
N

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

# CSM FLIGHT PLAN

SIM EXP STATUS  
(\*0000)  
(01214)

169:00  
(P20)  
(0.5°DB)  
(11111)  
(X1111)

169:10

169:20

169:30

M  
S  
F  
N

RNDZ XPNDR ACTIVATION AND SELF TEST (DECAL)

RNDZ XPNDR - HTR

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

ACQ MSFN OMNI C

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

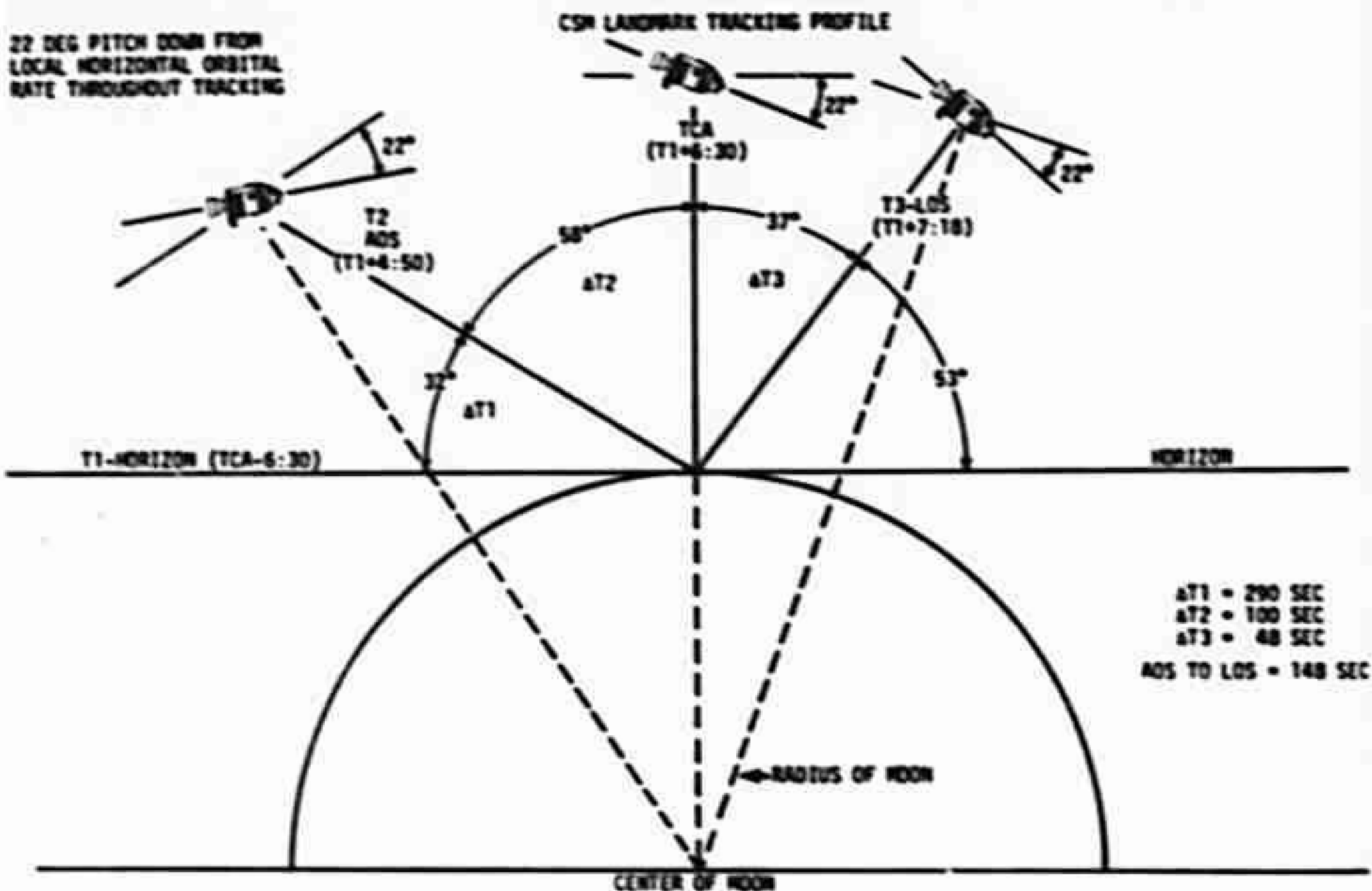
0:00 T1(HORIZON)DET - RESET/START

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



P24 LDMK TRACKING		( 1/250 )
TGT:	F-1	
T <sub>1</sub>	-----	-----
T <sub>2</sub>	-----	-----
TCA	-----	-----
T <sub>3</sub>	-----	-----
R	----- °P ----- °Y ----- °	(T2 ACQ)
N or S NH	----- / SA ----- TA -----	(T2 ACQ)
N89		
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

BIOMED - LEFT

VHF VOICE CHECK

169:45

RR - OFF  
TERMINATE P22

-2:00

M  
S  
F  
N  
X

: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

UPDATE TO LM  
ASCENT PADS  
CSI PAD  
LM DAP WTS

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



# LM FLIGHT PLAN

MCC-H

1354 CST

CDR

LMP

NOTES

170:00  
(22112)

:05

PRESSURE INTEGRITY CHECK

:10

CABIN DEPRESS FOR JETTISON

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

DUMP VALVE - OPEN, VERIFY SUIT PRESS

170:15

HATCH OPENING

JETTISON JETT BAG

CLOSE & LOCK FWD HATCH

:20

CABIN REPRESS

CABIN REPRESS - AUTO

VERIFY CABIN PRESS STABLE

DOFF HELMETS & GLOVES

AUDIO MODE - ICS/PTT

:25

CABIN CLEANUP FOR LAUNCH

SECURE OPS ON FLOOR

STOW LEVA BAGS & SECURE

INSTALL ISA

SECURE UTILITY LIGHTS

STOW ALL EVA DATA IN FLIGHT DATA FILE

170:30

-1:15

M  
S  
F  
N

GO/NO-GO FOR  
DEPRESS

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

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<sub>2</sub> PURGE LINE HEATERS - ON  
P52 (OPTION 3)  
(LIFT-OFF ORIENT)  
REPORT: GYRO TORQUING ANGLES

**P52 IMU REALIGN**

N71: \_\_\_\_\_  
N05: \_\_\_\_\_  
N93: \_\_\_\_\_  
X \_\_\_\_\_  
Y \_\_\_\_\_  
Z \_\_\_\_\_  
GET \_\_\_\_\_

P52 (COAS CALIB)  
USE STAR NO. 33

**COAS CALIB - N92**

SHAFT: \_\_\_\_\_  
TRUN: \_\_\_\_\_

170:20

POO  
GDC ALIGN

CONFIGURE CAMERAS: (DOCKING)  
CM2/DAC/18/CEX-BRKT,MIR (TB,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<sub>2</sub> AND O<sub>2</sub> FUEL CELL PURGE  
WASTE WATER DUMP  
URINE DUMP

170:30

## 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		

MCC-H

1424 CST

# LM FLIGHT PLAN

CDR

LMP

NOTES

170:30  
(22112)

:35

:40

170:45

:50

:55  
(12102)

171:00

M  
S  
F  
N

<p>VERIFY GUIDANCE CONFIGURATION</p> <p>CONFIGURE CB'S FOR L/O PREP</p> <p>CONFIGURE RR</p> <p>V63 RR SELF TEST (IF REQD)</p>	<p>CONFIGURE CB'S FOR L/O PREP</p> <p>AGS STATUS - OPERATE</p> <p>AGS GYRO CALIBRATION</p> <p>LOAD AGS ASCENT TARGETING</p>
<p>RATE GYRO TEST</p> <p>V48 (12102) RCS CHECKOUT</p>	<p>LGC CLOCK SYNC CONFIGURE COMM</p>

-1:15

-1:00

CSM REV 50

-0:50

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

SIM EXP STATUS  
(\*0000)  
(01214)

170:30  
(11102)  
(X1111)

CM/EL/80/CEX (f8,1/250,FOCUS) 10 FR

MAG (QQ) \_\_\_\_\_, FR # \_\_\_\_\_

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

TERMINATE WASTE WATER DUMP AT 10%  
H<sub>2</sub> PURGE LINE HTRS - OFF

DON PGA WITHOUT HELMET AND GLOVES

**STOW RESCUE BOOK & GEAR c/l**

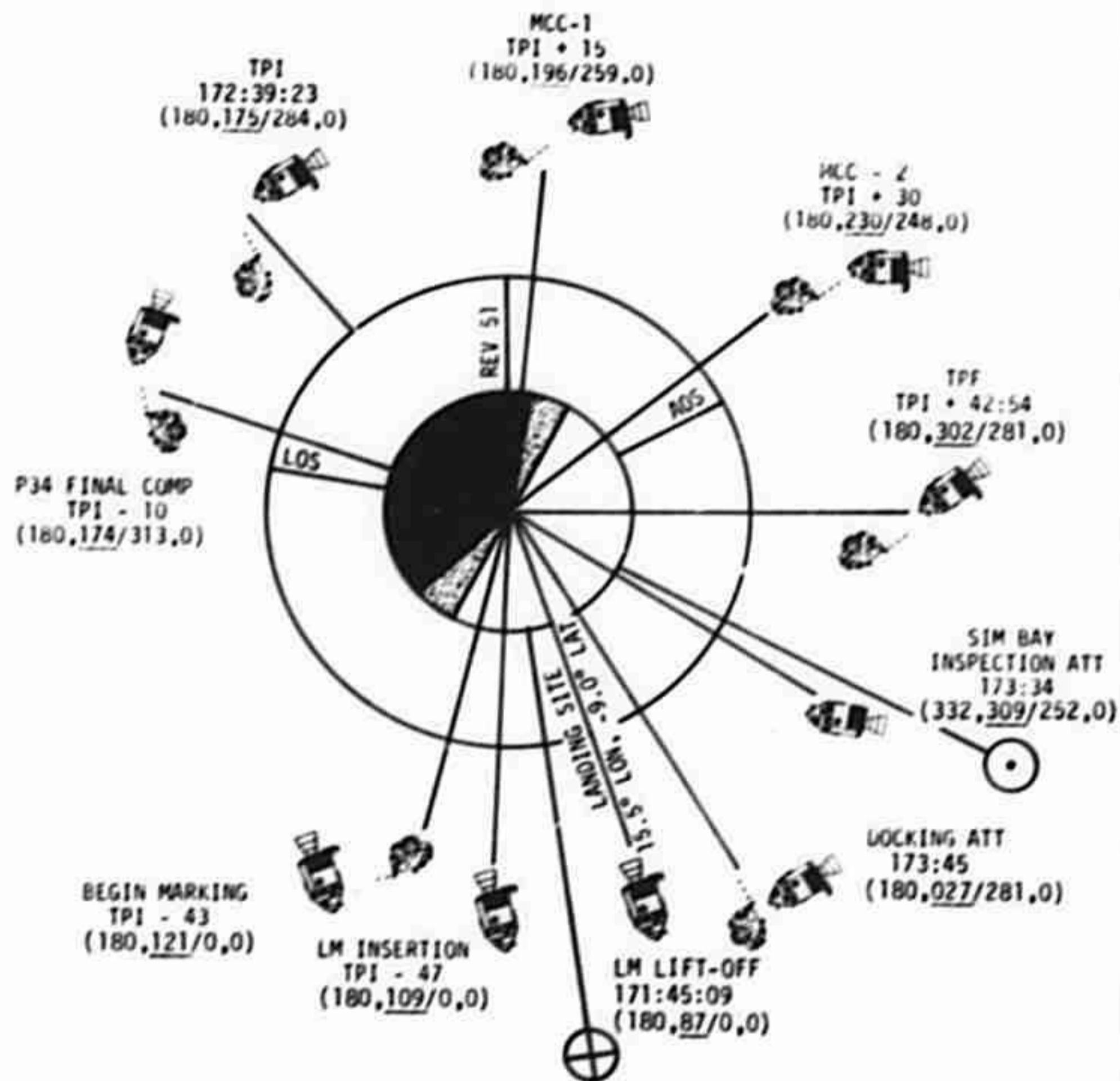
170:40

170:50

RGV 50

EAT PERIOD

171:00



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE APITAL (4/16)	3/27/72-216/72c (R/S)	3-265

# LM FLIGHT PLAN

**MCC-H**

1454 CST

**CDR**

**LMP**

**NOTES**

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

POSTION RR ANT

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

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

171:15

M  
S  
F  
N

LOAD DAP, LM WT  
P12 POWER ASCENT

-0:30

:20

PRELAUNCH SWITCH CHECKS

AGS LUNAR ALIGN  
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)

171:10

171:20

171:30

M  
S  
F  
N

EAT PERIOD

SIM EXP STATUS  
(\*0000)  
(01214)

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)  
.....

LOAD CSM AND LM WT

V49 MNVR TO P20 ATT (171:30)  
(180,0,0) HGA P 7, Y 346

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 RECOMMEN-  
DATION 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

M  
S  
T  
F  
V  
N  
X

LM LUNAR LIFT-OFF

DAC - ON

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

:50

DAC - OFF

UPDATE TO LM  
TWEAK OR BAILOUT  
INSTRUCTION  
(IF REQD)

LUNAR ORBIT INSERTION

171:52:22.9

TRIM X RESIDUALS TO <2 FPS

:55

P20 RENDEZVOUS NAVIGATION

TWEAK BURN (IF REQD)

173:55

P34 TARGET TPI  
RENDEZVOUS RADAR TRACKING

EXTERIOR LTG - TRACK

BAILOUT BURN (IF REQD)

173:57

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

171:30  
(11102)  
(x1111)

GDC ALIGN

SIM EXP STATUS  
(\*0000)  
(01214)

PRE-SPS BURN SIM PREP (CUE CARD)

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	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI
INSERTION																
FINAL COMP																
TPI P35																
FINAL COMP																
MCC-1 P35																
FINAL COMP																
MCC-2																

(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, 0E  
V21 N1E, 301E, 3777E

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 OPT +0000	ELEVATION † +000.00	TRANSFER † +130.00

# LM FLIGHT PLAN

MCC-H

1554 CST

CDR

LMP

NOTES

172:00  
(12102)  
(12012)

V48 (12012) & LM WT

:05

~~EXTERIOR LTG - TRACK~~

:10

172:15

M  
S  
F  
N

:20

:25

CONFIGURE S-BD FOR LOS  
PCM - HI

172:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) CHANGE A	3/27/72 3/6/72 (PI)	172:00 - 172:30	8/50	3-270

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

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

71.72  
-279.7

172:20

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
	+			N	/	A	WT N47
R ALIGN N / A		0	0	N	/	A	P TRIM N48
P ALIGN N / A		0	0	N	/	A	Y TRIM
Y ALIGN N / A	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE							$\Delta V_x$ N81
4 JET, 11 SEC							$\Delta V_y$
							$\Delta V_z$
	X	X	X				R
	X	X	X				P
	X	X	X				Y
$\Delta VC$	+			N	/	A	H <sub>A</sub> N44
				N	/	A	H <sub>P</sub>

• 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

	INTEG OPT	ELEVATION } }	TRANSFER } }
55	+00000	.	+130.00
58	PERILUNE ALT	TPI $\Delta V$	TPF $\Delta V$
81	TPI $\Delta V$ -LV	.	.
84	LM TPI $\Delta V$ -LV	.	.

# LM FLIGHT PLAN

MCC-H

1624 CST

CDR

LMP

NOTES

172:30  
(12012)

:35

:40

172:45

:50  
REV 51

:55

173:00

P42 APS THRUSTING

LOAD AGS TPI EXTERNAL  $\Delta V$

MANUAL ULLAGE

**TPI** NULL RESIDUALS  
P35 TARGET MCC-1  
RENDEZVOUS RADAR TRACKING

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

FINAL MCC-1 COMPUTATION

P41 RCS THRUSTING

LOAD AGS MCC-1 EXTERNAL  $\Delta V$

**MCC-1** NULL RESIDUALS  
P35 TARGET MCC-2  
RENDEZVOUS RADAR TRACKING

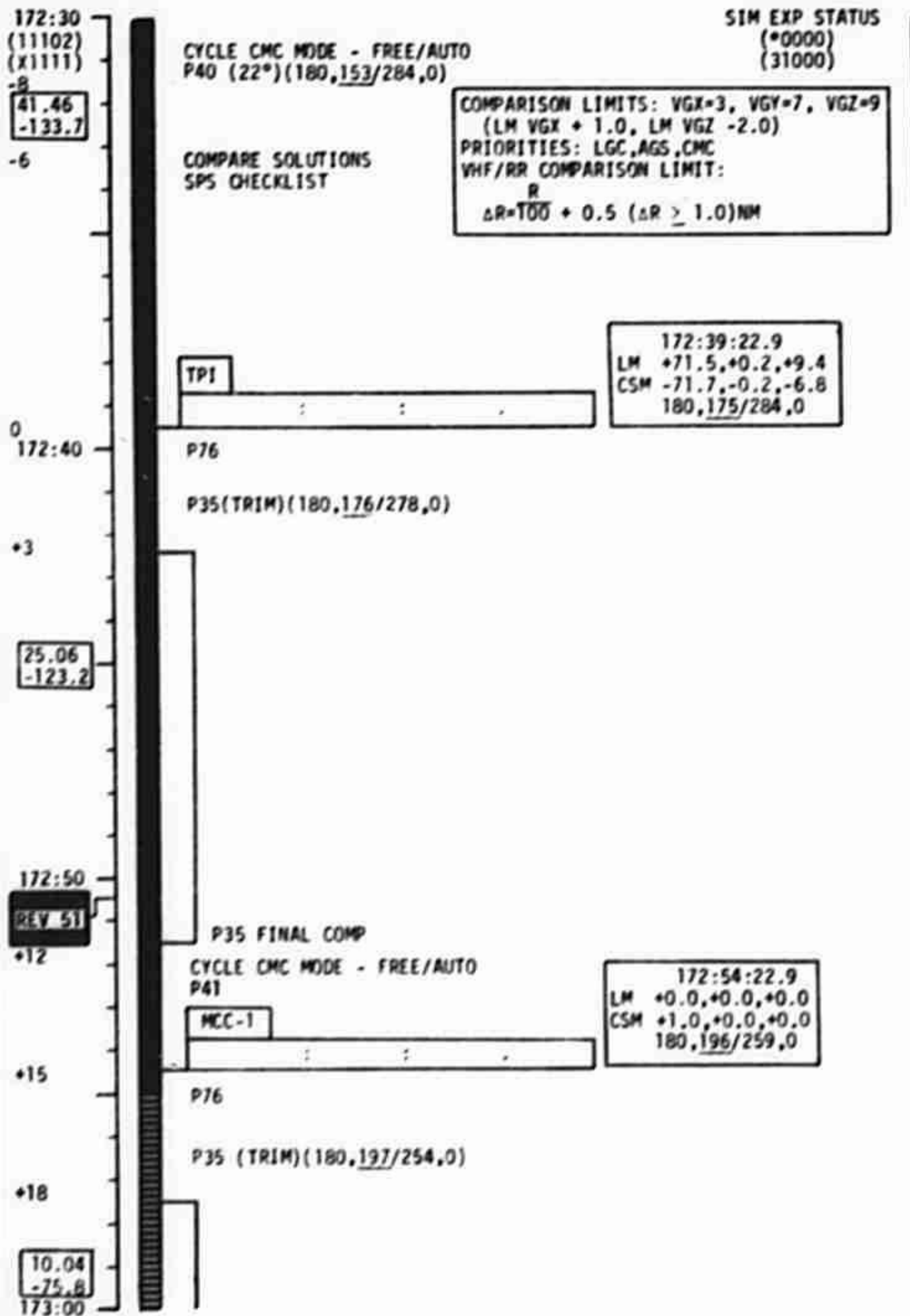
TIG: 172:54:22.9  
 $\Delta VT$ : NOM ZERO

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



### GROUND TPI FOR LM

					$\Delta V_X$
					$\Delta V_Y$
					$\Delta V_Z$

### P34 FINAL COMP

	INTEG OPT	ELEVATION $\delta$	TRANSFER $\delta$
55	+00000	.	+130.00
58	PERILUNE ALT	TPI $\Delta V$	TPF $\Delta V$
81	TPI $\Delta V$ -LV	.	.
84	LM TPI $\Delta V$ -LV	.	.
84	LM TPI $\Delta V$ -LV	.	.
P76	.	.	.

### P35 FINAL COMP

81	MCC1 $\Delta V$ -LV	.	.
84	LM MCC1 $\Delta V$ -LV	.	.
84	LM MCC1 $\Delta V$ -LV	.	.
P76	.	.	.

- • • • •
- IF CSM ACTIVE & NSB TPF  $\Delta V > 55$  FPS •
- GO TO PRE-BRAKING SPS BURN PROCEDURES •
- (SEE RESCUE BOOK PG 38) •
- • • • •

# LM FLIGHT PLAN

MCC-H

1654 CST

CDR

LMP

NOTES

173:00  
(12012)

:05

FINAL MCC-2 COMPUTATION

P41 RCS THRUSTING

LOAD AGS MCC-1 EXTERNAL  $\Delta V$

MCC-2

NULL RESIDUALS

TIG: 173:09:22.9  
 $\Delta VT$ : NOM ZERO

:10

TPI BURN REPORT

CONFIGURE COMM FOR AOS

173:15

(11002)

V48 (11002)

P47 THRUST MONITOR

BRAKING

TIG: 173:18:25  
to 173:24:27  
TOTAL  $\Delta V$ : 33.4 FPS  
ORBIT: 59.8x59.3 NM

:20

M  
S  
F  
N

:25

COAS TO OVHD WINDOW

173:30

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

SIM EXP STATUS  
(\*0000)  
(31000)

173:00  
(11102)  
(X1111)

10.04  
-75.8

+27

**P35 FINAL COMP**

CYCLE CMC MODE - FREE/AUTO

P41

MCC-2

173:09:22.9  
LM +0.0,+0.0,+0.0  
CSM +0.0,+0.0,-3.0  
180,230/248,0

+30

173:10

P76

P79;P00;V49(180,281,0)

ACQ MSFN HGA: P -64, Y 324 (TRACK - REACQ)

MSFN CHOS:  
DSE DUMP

PERFORM PRE-DOCK CHECKLIST

2.32  
-34.8

IF CSM ACTIVE:

P47 AT R=1.25 NM  
SEC PRPLNT FUEL PRESS (4) - OPEN  
VB3E  
NB3E  
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

EMS MODE - STBY  
EMS FUNC - OFF  
EXT LIGHT RNDZ - OFF

LM STATION KEEP

DAC/TV - OFF

V49 MVR 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		

P76

**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 EXT/REL - RETRACT
RATE - LOW (VERIFY)	PROBE EXT/REL TB (2) - GRAY (VERIFY)
TRANS CONTR PWR - ON (UP)	(IF TB NOT GRAY, GO TO PG 5/2-13,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

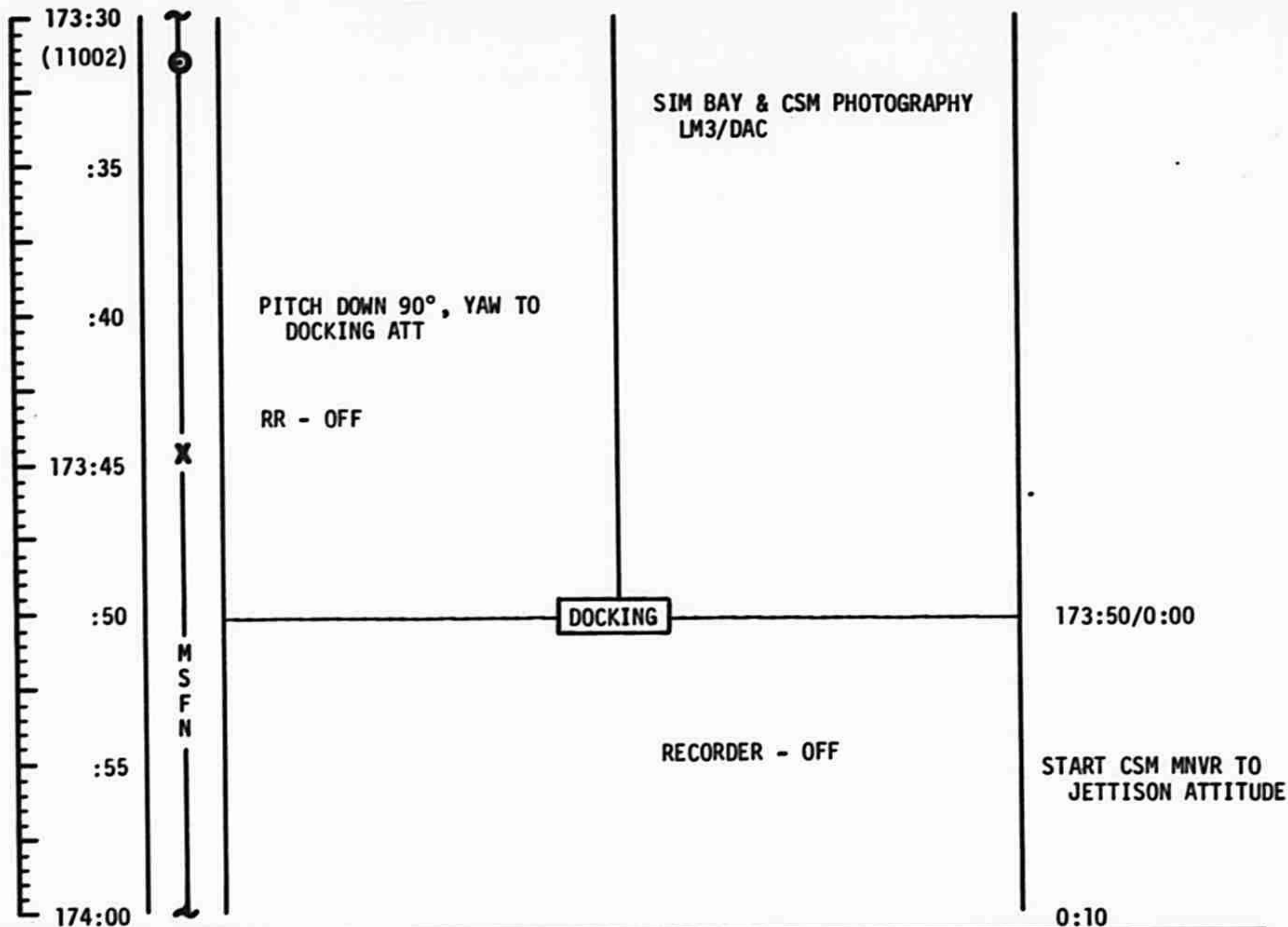
MCC-H

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

## 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 - ONT TRANSLATE TO CAPTURE LATCH  
V PERFORM DOCKING CHECKLIST

DOCKING

173:50

173:50:00

DAC/TV - OFF  
POD(61111)  
(x1111)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 EXT/REL TB (2) - BP (VERIFY)  
(IF TB NOT BP, GO TO PG S/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 REED)

## AT DOCK LATCH

PROBE EXT/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 EXT/REL - OFF	
PROBE RETRACT (2) - OFF	

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-277

# LM FLIGHT PLAN

MCC-H

1754 CST

CDR

LMP

NOTES

<p>174:00 (11002)</p> <p>:10</p> <p>:20</p> <p>174:30</p> <p>:40</p> <p>REV 52</p> <p>:50</p> <p>175:00</p>	<p>M S F N</p>	<p>PREP FOR TRANSFER                  VERIFY TUNNEL PRESSURIZED FROM CSM                  OVHD DUMP VALVE - OPEN                  DOFF HELMETS &amp; GLOVES                  WHEN TUNNEL/LM PRESSURES EQUAL, OVHD DUMP VALVE - AUTO                  VERIFY PRESS REGS A&amp;B - EGRESS                  VERIFY JETT ATT                  CONFIGURE S-BAND FOR JETTISON                  OPEN HATCH                  RECEIVE FROM CMP:                      PROBE                      DROGUE                      VACUUM CLEANER                      LM TO CM TRANSFER LIST                  VACUUM PGA'S                  DISCONNECT DSEA &amp; PLACE IN PURSE</p> <p>TRANSFER PURSE &amp; RECEIVE DECONTAMINATION BAGS &amp; JETT BAGS FROM CMP</p> <p>UNSTOW, VACUUM, WET WIPE AND TRANSFER:</p> <p>    16MM &amp; 70MM FILM BAGS                      OPS                      FLIGHT DATA FILE                      LUNAR SURFACE EXPERIMENTS, EQUIPMENT AND SAMPLES</p>	<p>0:10</p> <p>0:20</p> <p>0:30</p> <p>0:40</p> <p>0:50</p> <p>1:00</p> <p>1:10</p>
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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)

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)

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)

174:30

174:30

(61111)  
(X1111)

RECEIVE LEVA BAGS

SIM EXP STATUS  
(\*0000)  
(01214)

TRANSFER TO CDR:  
DECONTAMINATION BAGS

174:40

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

REV 52

174:50

175:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-279

# LM FLIGHT PLAN

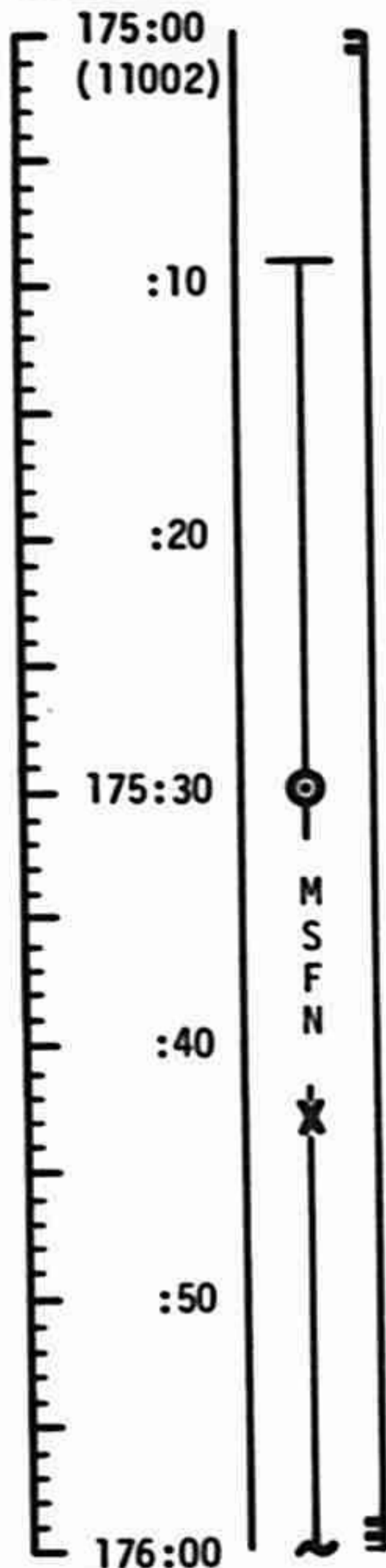
MCC-H

1854 CST

CDR

LMP

NOTES



UNSTOW SRC'S, VACUUM & TRANSFER TO CSM

RECEIVE B5 & B6 FROM CMP AND STOW IN SRC RACK  
TRANSFER VACUUM CLEANER TO CSM

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

UPDATE TO LM  
DAP LOAD (WTS)  
DEORBIT BURN PAD

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

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

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

SIM EXP STATUS  
(\*0000)  
(01214)

175:30  
(61111)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(01214)

175:00  
(61111)  
(X1111)

175:10

ACQ MSFN HGA: P -38, Y 350

MSFN CMDS:  
DSE DUMP

175:20

MSFN

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

176:00

CSM WT	+					
LM WT	+					

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-281

# LM FLIGHT PLAN

MCC-H

1954 CST

CDR

LMP

NOTES

176:00  
(12021)  
:10  
:20  
176:30  
:40  
REV 53  
:50  
177:00

M  
S  
F  
N

V48 (12021)  
P30 TARGET PGNS

CONFIGURE AGS

CONTINUE EQUIP & SAMPLE TRANSFER (AS REQD)

2:10

2:20

<sup>30</sup>  
~~2:20~~

2:40

<sup>50</sup>  
~~2:30~~

3:00

LM CLOSEOUT

CONFIGURE LM FOR JETTISON

CONFIGURE VHF FOR CLOSEOUT

IVT TO CSM

CLOSE HATCH, IVT TO CSM

GO/NO-GO FOR LM  
CLOSEOUT

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) <small>CHANGE</small>	3/27/72 3/6/72 (P4J)	176:00 - 177:00	8/52-53	3-282

FLIGHT PLANNING BRANCH

# CSM FLIGHT PLAN

176:00  
(61111)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(01214)

MSFN UPLINK:  
CSM S.V. (CSM SEP -10)  
LM S.V. (TIG LM DEORBIT -10)

(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

LM JETTISON PAD					
+	0	0			HRS
+	0	0	0		MIN
+	0				SEC
X	X	X			R ( 350 )N22
X	X	X			P ( 034 )
X	X	X			Y ( 020 )

MSFN CMDS:  
DSE RECORD

176:20

MSFN UPDATE:  
GO/NO-GO FOR LM CLOSEOUT

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

176:30

176:30  
(61101)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(01214)

176:40

TRANSFER ON 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 (TB,1/250,7) 12 fps (50% MAG)  
MAG (DD) \_\_\_\_\_, MAG % \_\_\_\_\_  
UTILITY PWR - ON

LMP - CLOSE LM HATCH  
DIRECT O<sub>2</sub> VLV - CLOSED (CM)  
HATCH INSTALLATION (DECAL)  
HATCH INTEGRITY CHECK (DECAL)

177:00



## CSM FLIGHT PLAN

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

MSFN CMDS: DSE DUMP DATA SYS - ON
---

177:10

P30, N33: LM JETTISON TIG +5 MIN  
NB1 (+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 & GLOVESM  
S  
F  
NREPORT: LM/CM ΔP  
SUIT CKT INTEGRITY CHECK (DECAL)

177:20

LOAD ΔV IN EMS TO +100.0  
CHECK NULL BIAS  
GDC ALIGN

MSFN 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
SGS RATE - <del>LOW</del> SC CONT - SCS
EMS FUNC - ΔV
THC PWR - ON
RHC PWR DIR - MNA/MB
THC - ARMED
RHC - ARMED
cb CSM/LM FINAL SEP (2) - CLOSE

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg. B. FINAL (4/16)	2161724/1/72	3-284

## CSM FLIGHT PLAN

177:30  
(10101)  
(x1111)SIM EXP STATUS  
(\*0000)  
(01214)

LM JETTISON

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  
ΔVT: 2 FPS  
ORBIT: 61.7 x 59.5 NMPOO **HOLD FOR MSFN**EMS FUNC - OFF  
THC PWR - OFF  
RHC PWR DIR - OFF  
THC LOCKED  
RHC LOCKED  
ROLL (4) - OFFMSFN UPDATE:  
MAP CAM PHOTO PAD (178:55)  
PAN CAM PHOTO PAD (179:11)  
TEI 62 PAD

177:40

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 ~~(CDR'S & LMP'S IN PURGE)~~  
STOW UCTAS (PGA BAG)  
TRANSFER PRD'S TO CWG'S  
CDR & CMP DOFF BIOMED HARNESSMSFN UPLINK:  
CSM S.V. & V66

177:50

V44 (SET LUNAR SURFACE FLAG)  
**VENT HATCH N<sub>2</sub>**

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  
cb SECS ARM (2) - OPEN  
cb CSM/LM FINAL SEP (2) - OPEN

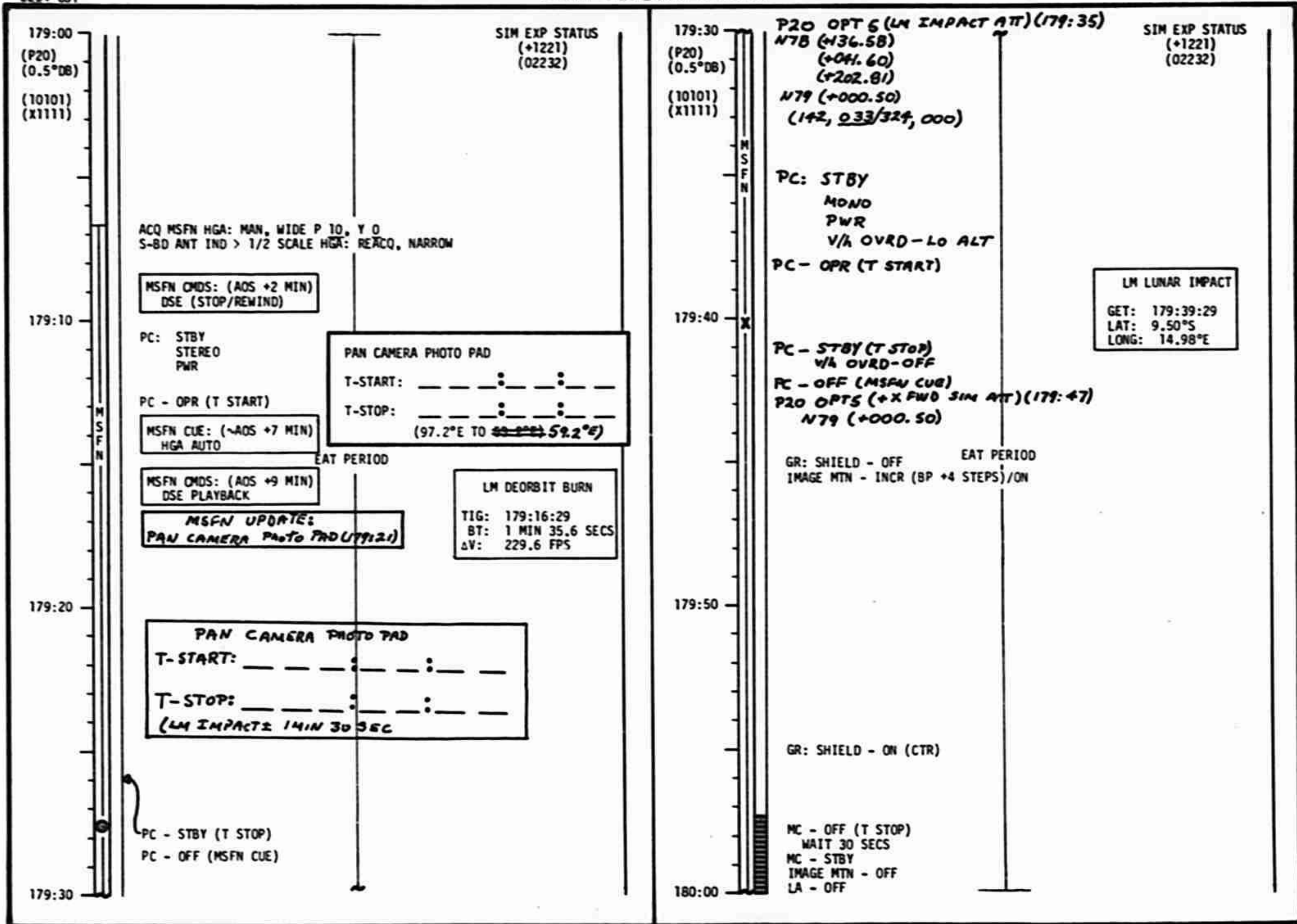
MISSION	EDITION	DATE	PAGE
APOLLO 16	<i>clg c.</i> FINAL (4/16)	<i>210117E-4/10/72</i>	3-285

# CSM FLIGHT PLAN

<p>178:00 (10101) (X1111)</p> <p style="text-align: center;">MSFN MSFN</p> <p>178:10</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;"> <p>MSFN CMDS: DSE RECORD</p> </div> <p>178:20</p> <p>VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)</p> <p>WIPE EXCESS MOISTURE FROM TUNNEL AREA</p> <p>L10H CANISTER CHANGE: (15 INTO B, STOW 12 IN A3)</p> <p>178:30</p>	<p style="text-align: right;">SIM EXP STATUS (*0000) (01214)</p> <p>178:30 (10101) (X1111)</p> <p>(P20) (0.5°DB)</p> <p>178:40</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;"> <p>REV 54</p> </div> <p>178:50</p> <p>P20 OPT 5 (+X FWD SIM ATT)(178:50) N79 (+000.50) SET HGA P <u>10</u>, Y <u>0</u> FOR AOS ACQ</p> <p>SIM BASIC CONFIG (CUE CARD) MC/LA COVER - OPEN AP/XR COVER - OPEN MS - DEPLY TO 8.4 FEET (1 MIN 01 SEC)</p> <p>GR - DPLY TO 4 FEET (33 SECS) MC - EXTD LA - ON MS: EXP - ON ION SOURCE - STBY XR - ON</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>MAP CAMERA PHOTO PAD</p> <p>T-START:    —  —  —  :  —  —  —  </p> <p>T-STOP:     —  —  —  :  —  —  —  </p> <p>(143.7°E TO 38.7°W)</p> </div> <p>IMAGE MTN - OFF ON MC - ON (T START) IMAGE MTN - INCR (BP)/ON</p> <p>179:00</p>
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MISSION	EDITION	DATE	PAGE
APOLLO 16	Cg B. FINAL (4/16)	3161724/7/72	3-286

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg. C. + HMC (4/16)	21677-9/10/72	3-287

# CSM FLIGHT PLAN

180:00  
(P20)  
(0.5°DB)  
(10101)  
(X1111)

MC - RETR  
MS: ION SOURCE - ON  
GR - DPLY  
MS - DPLY  
MC/LA COVER - CLOSE

SIM EXP STATUS  
(+1221)  
(01232)

MSFN

MSFN CMDS: (AOS +61 MIN)  
DSE REWIND

**P52 IMU REALIGN**

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

180:10

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

REPORT: GYRO TORQUING ANGLES

P20, CMC MODE - AUTO  
GDC ALIGN

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

CSM EXP/EVA CHECKLIST

GUM NEBULA PHOTO SEQ A, ~~PAGE~~ 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)

(10101)  
(X1111)

180:20

180:30

180:30  
(10101)  
(X1111)

SIM EXP STATUS  
(\*0111)  
(01222)

GUM NEBULA PHOTO SEQ A, STEPS 4 & 5

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

181:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Change A FINAL (4/16)	3/27/72 3/6/72 (P43)	3-288

# CSM FLIGHT PLAN

181:00  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

SIM EXP STATUS  
(-0111)  
(01222)

181:30  
(P20)  
(3.0°DB)  
  
(10101)  
(X1111)

SIM EXP STATUS  
(-0111)  
(01222)

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)

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST PAGE S/1-29  
LOGIC PWR (2) - OFF

*MSFN UPLINK:  
JET-ON MONITOR LOADS*

MSFN CMDS: (AOS +9 MIN)  
DSE PLAYBACK

**ONBOARD READOUT**

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

181:10

181:40

181:20

181:50

FILM MAGS REQD FOR NEXT DAYS  
DAC: VHBW-HH  
EL: CEX-QQ, VHBW-SS & TT  
NK: VHBW-ZZ

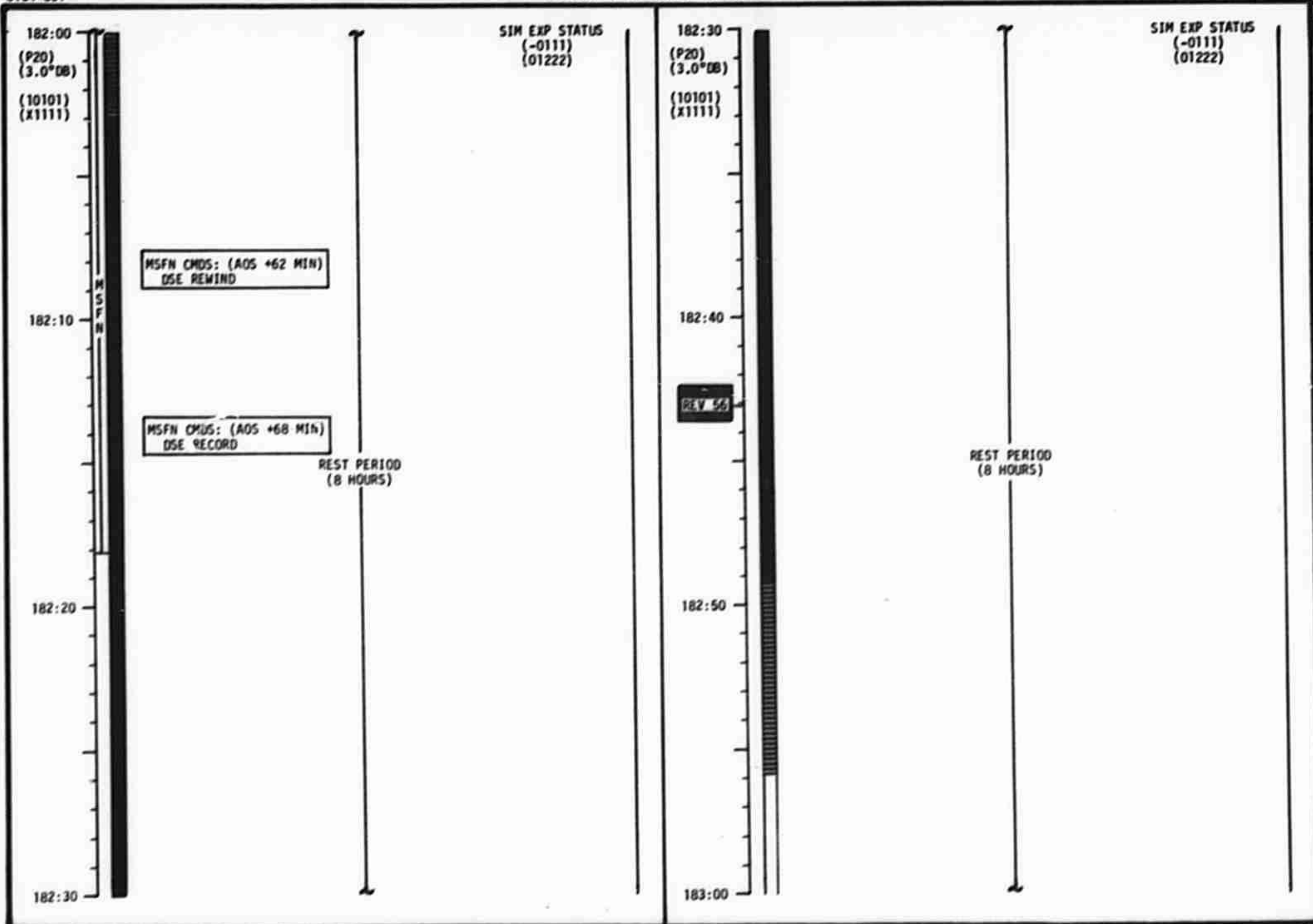
REST PERIOD  
(8 HOURS)

181:30

182:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Cy. B. FINAL (4/16)	21672 4/17/72	3-289

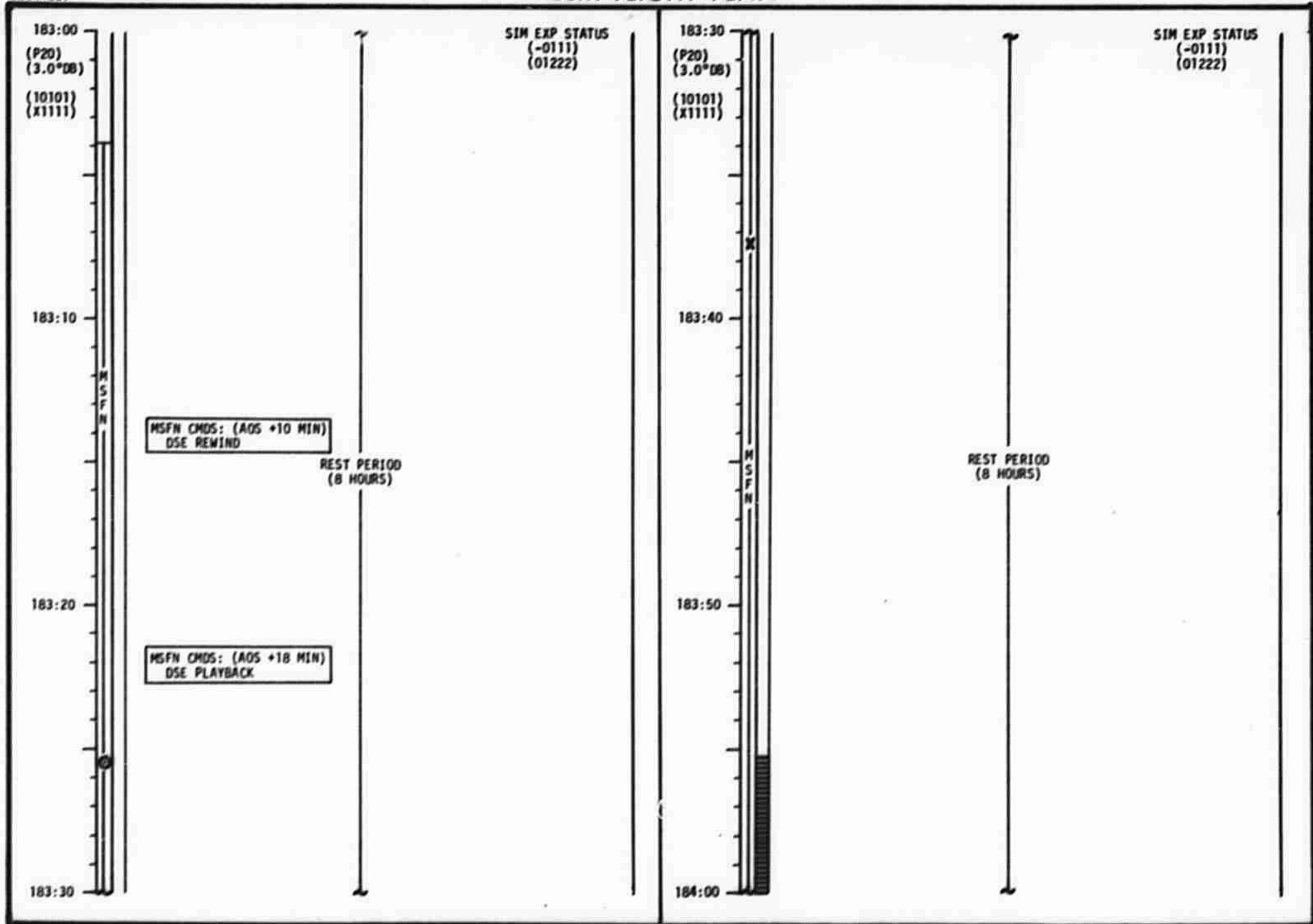
# CSM FLIGHT PLAN



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

0254 CST

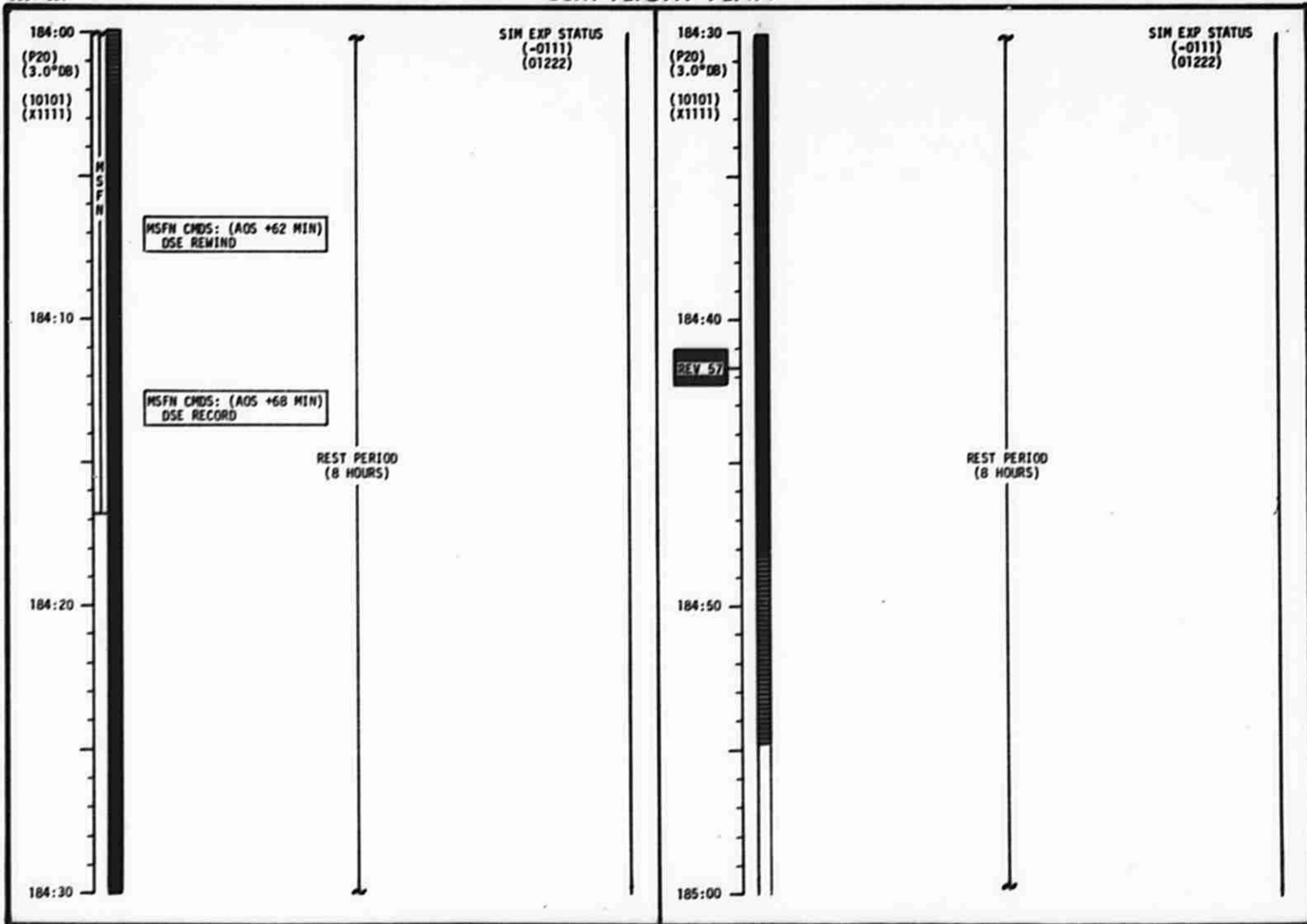
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-291

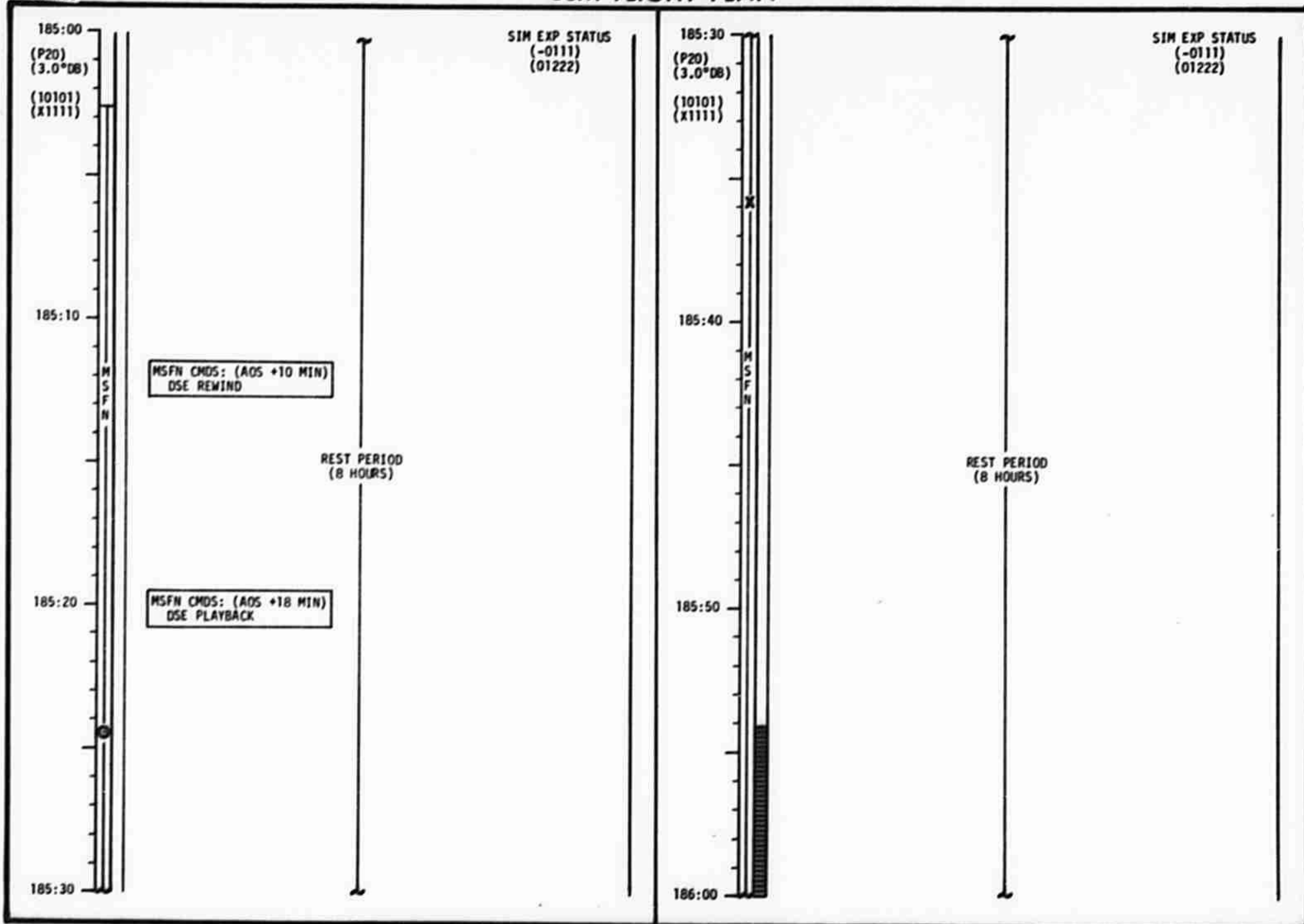


# CSM FLIGHT PLAN



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

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-293

# CSM FLIGHT PLAN

186:00  
 (P20)  
 (3.0°DB)  
 (10101)  
 (X1111)  
 MSFN  
 186:10  
 186:20  
 186:30

MSFN CMDS: (AOS +62 MIN)  
 DSE REMIND

MSFN CMDS: (AOS +68 MIN)  
 DSE RECORD

REST PERIOD  
 (8 HOURS)

SIM EXP STATUS  
 (-0111)  
 (01222)

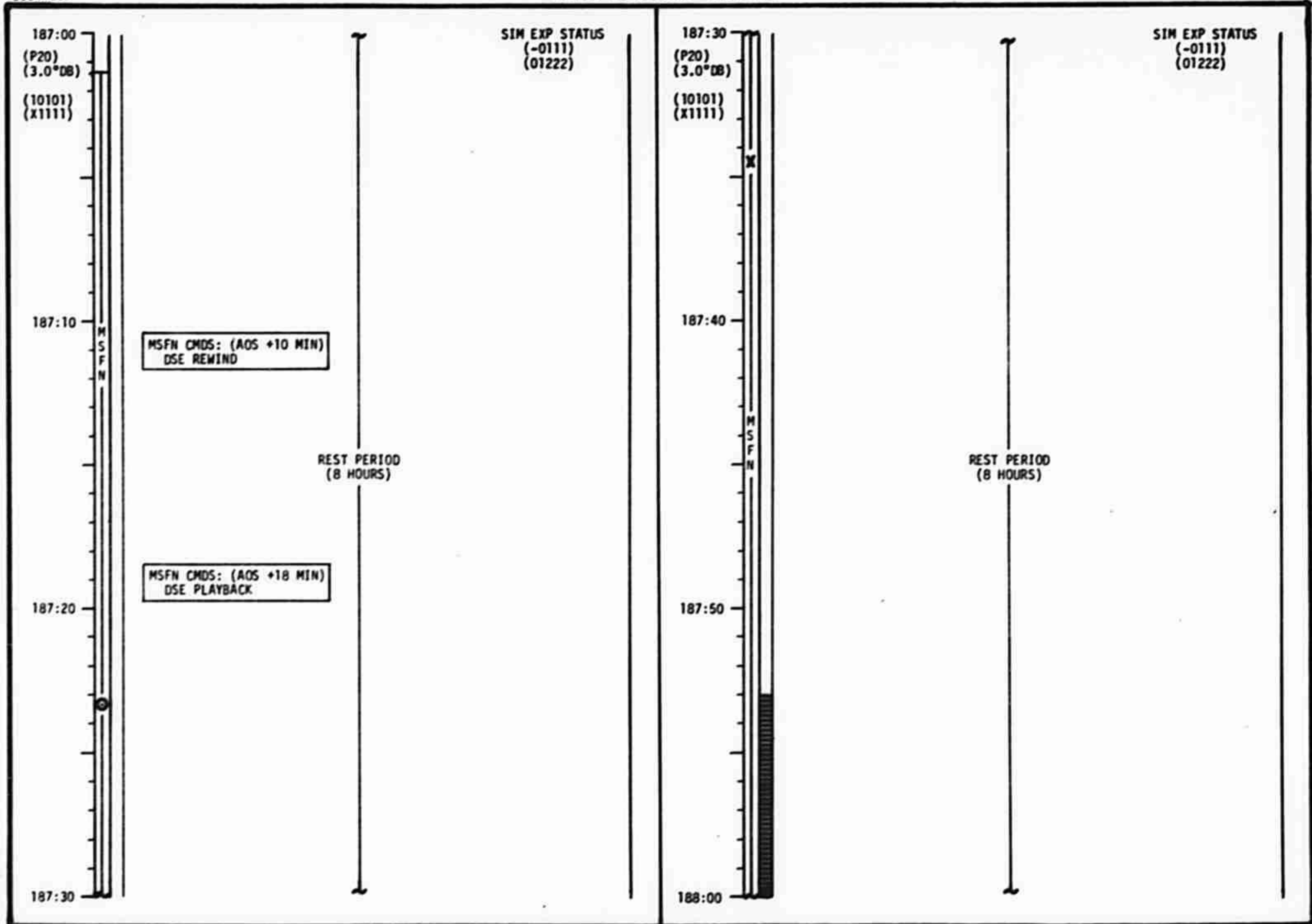
186:30  
 (P20)  
 (3.0°DB)  
 (10101)  
 (X1111)  
 186:40  
 REV 58  
 186:50  
 187:00

REST PERIOD  
 (8 HOURS)

SIM EXP STATUS  
 (-0111)  
 (01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-294

# CSM FLIGHT PLAN



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 REWIND

REST PERIOD  
 (8 HOURS)

187:20

MSFN CMDS: (AOS +18 MIN)  
 DSE PLAYBACK

187:40

REST PERIOD  
 (8 HOURS)

187:50

187:30

188:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-295

# CSM FLIGHT PLAN

0754 CST

188:00

(P20)  
(3.0°DB)

(10101)  
(X1111)

MSFN

MSFN CMDS: (AOS +62 MIN)  
DSE REMIND

188:10

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

188:20

188:30

REST PERIOD  
(8 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

188:30

(P20)  
(3.0°DB)

(10101)  
(X1111)

REV 59

188:40

188:50

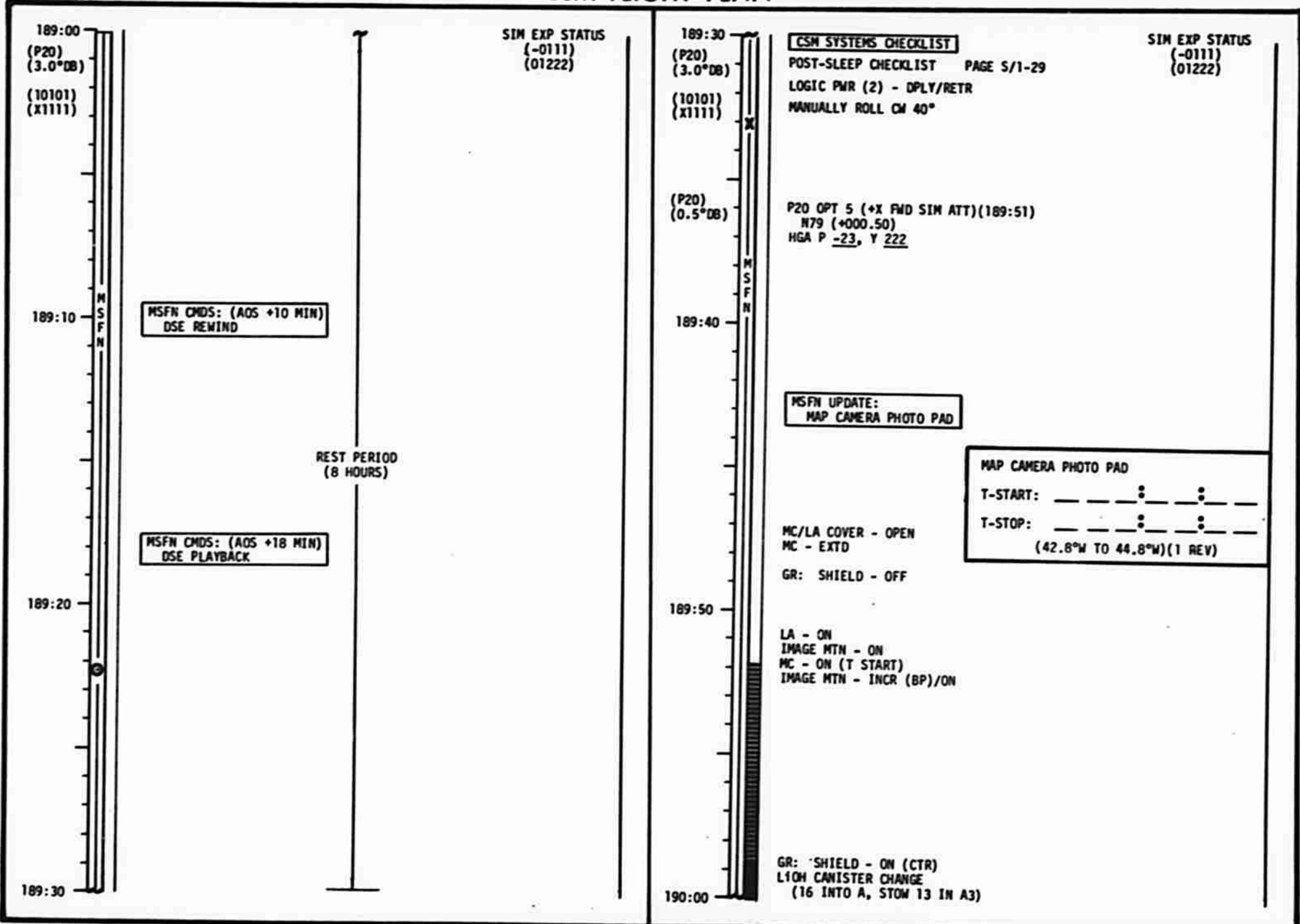
189:00

REST PERIOD  
(8 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

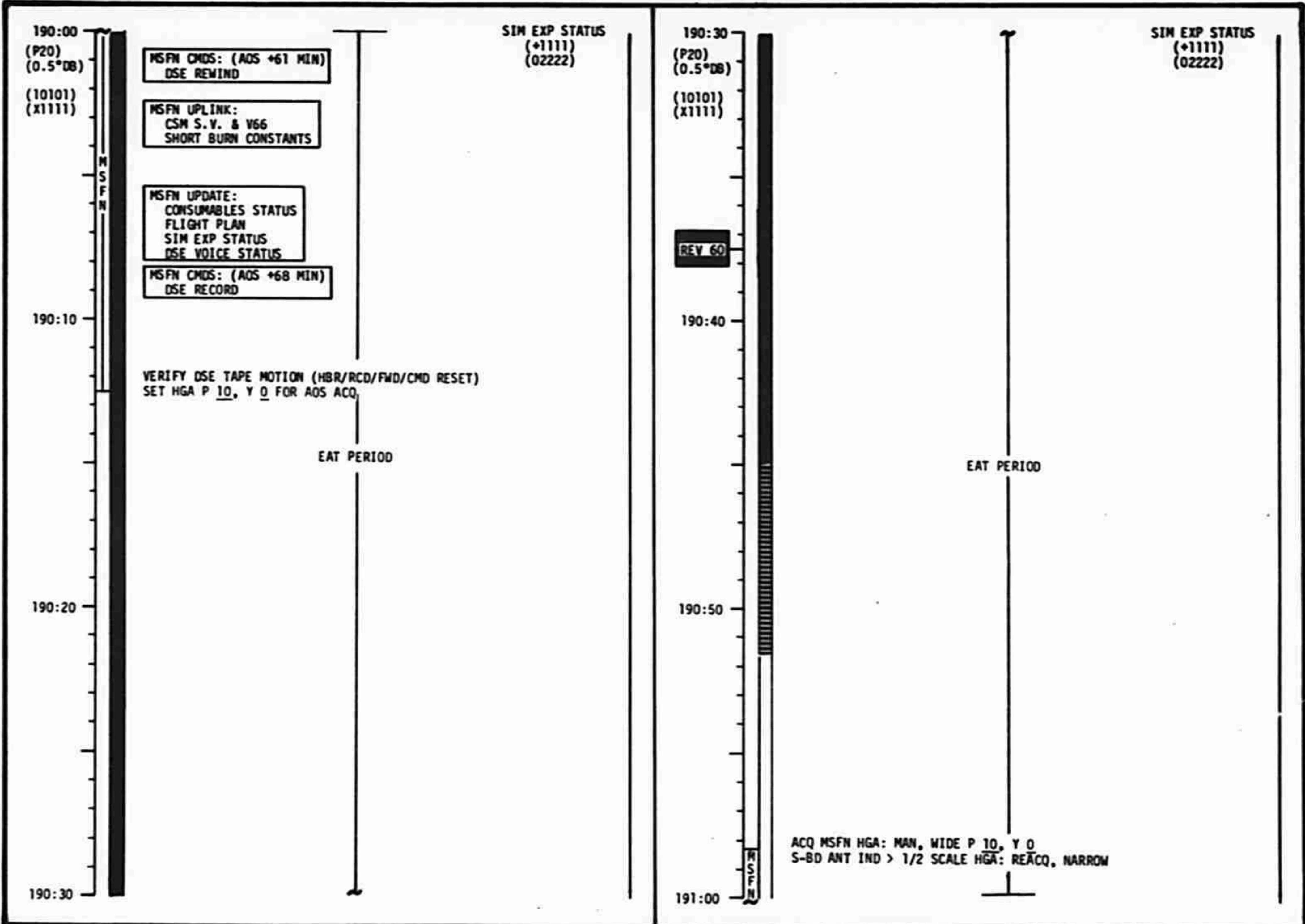
MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-296

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-297

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-298

# CSM FLIGHT PLAN

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

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

COR DON BIOMED HARNESS  
LMP DOFF BIOMED HARNESS

**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)  
CMA/EL/250/CEX-IVL (F5.6,1/125,-) 37 FR  
MAG (QQ) \_\_\_\_\_, FR # \_\_\_\_\_

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

**MSFN UPDATE: 192115  
LOPC-2 PAD (193445)  
TEI 65 PAD**

191:20

SYNCHRONIZE MISSION TIMER  
TO CMC CLOCK (IF REQD)  
VOSNOIE, 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

191:30

ORBITAL SCIENCE VISUALS  
LANDING SITE (V9 - C10) CMS

SIM EXP STATUS  
(+1111)  
(02222)

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**

191:40

PARRY (P22-C12,C13)  
CMA (F5.6,1/125,-) 37 FR **SIB 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

MISSION	EDITION	DATE	PAGE
APOLLO 16	Ag. 2 FINAL (4/16)	316172 4/7/72	3-299



# CSM FLIGHT PLAN

192:00  
(10101)  
(x1111)

MSFN CMDS: (AOS +61 MIN)  
DSE REMIND

SIM EXP STATUS  
(\*0000)  
(01214)

MSFN

P52 (OPTION 3)  
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

P52 (OPTION 1)  
(LOPC-2 ORIENT)

**P52 IMU REALIGN**

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

192:10

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

P30 VERIFY LOPC-2 TIG AND  $\Delta V$ '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<sub>2</sub> FUEL CELL PURGE  
WASTE WATER DUMP  
URINE DUMP

192:30

**P30 MANEUVER**

SET STARS	L	O	P	C	-	2	PURPOSE
	S	P	S	G	&	N	PROP/GUID
	+						WT N47
R ALIGN _____		0	0				P TRIM N48
P ALIGN _____		0	0				Y TRIM
Y ALIGN _____	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE _____							$\Delta V_x$ N81
							$\Delta V_y$
							$\Delta V_z$
	X	X	X				R (000)
	X	X	X				P (000)
	X	X	X				Y (000)
	+						H <sub>A</sub> N44
							H <sub>P</sub>
	+						$\Delta VT$
HORIZON/WINDOW _____	X	X	X				BT
	X						$\Delta VC$
	X	X	X	X			SXTS
	+					0	SFT
	+					0 0	TRN
	X	X	X				BSS
	X	X					SPA
	X	X	X				SXP

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-300

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

193:00  
(10101)  
(X1111)  
(P40)  
(0.5°DB)

193:10

(10101)  
(X1111)

193:20

193:30

P40 (TRIM)

SIM EXP STATUS  
(\*0000)  
(31000)

LOPC-2 BURN TABLE			
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC	±10°	BT + 1 SEC	TRIM V <sub>gy</sub> to 0.2 FPS IF -V <sub>gy</sub> ROLL 90° CCW AND USE -Z THRUSTERS
TERMINATE	TERMINATE		

MSFN UPDATE:  
GO/NO-GO FOR LOPC-2

LOPC-2 (000,000,000)

TIG: 193:13:46  
BT: 15.8 SECS  
ΔVT: 282.5 FPS  
ULLAGE: 2 JET, 16 SECS  
ORBIT: 62.9 x 57.9

P00  
V66 SET CSM S.V. INTO LM S.V.  
REPORT: BURN STATUS

MSFN UPLINK:  
DESIRED ORIENT (LIFT-OFF)

V49 MNVR TO P52 ATT (193:27)  
(052,324,036) HGA P -65, Y 182

MSFN CMDS:  
DSE DUMP

POST-SPS BURN SIM PREP (CUE CARD)  
P52 (OPTION 1)  
(GYRO TORQUE)

BURN STATUS REPORT				
X	X			TIG
X	X			BT
				V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
				V <sub>gx</sub>
				V <sub>gy</sub>
				V <sub>gz</sub>
				ΔV <sub>c</sub>
X				FUEL
X				OX
X				UNBAL

193:30  
(10101)  
(X1111)

(P20)  
(3.0°DB)

193:40

193:50

194:00

SIM EXP STATUS  
(\*0000)  
(01214)

GDC ALIGN  
INHIBIT ALL JETS EXCEPT: A1&C2 OR B2&D1,A3,C4,B3,D4

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

P20 OPT 5 (-X FWD SIM ATT)(193:48)  
N79 (+003.00)  
HGA P -46, Y 345

CONFIGURE CAMERA: (TERMINATOR PHOTOS)  
CM5/EL/250/VHBM (f5.6,1/125,-) 6 FR.  
MAG (SS) \_\_\_\_\_ FR # \_\_\_\_\_

CHARGE BATTERY B  
TERMINATOR PHOTOS

LETROVNE (P25-D13) CM5

**RIDGE IN MARE**

1354 CST

# 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)

MSFN

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/BCD/FWD/CMD RESET)  
SET HGA P 0, Y 170 FOR AOS ACQ

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

EAT PERIOD

194:20

194:30

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

SIM EXP STATUS  
(-0111)  
(01222)

REV 62

194:40

GR: SHIELD - OFF

EAT PERIOD

194:50

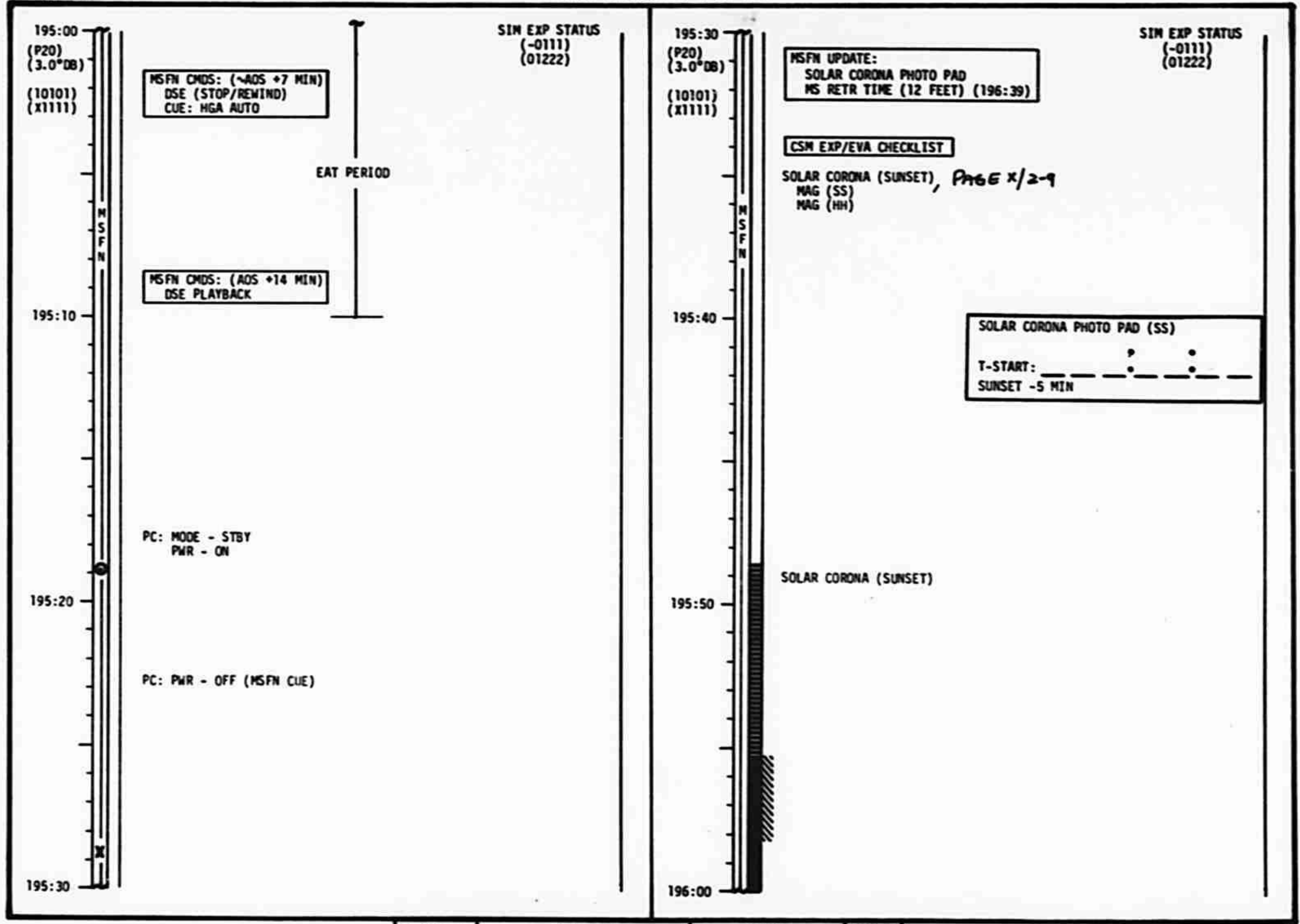
GR: SHIELD - ON (CTR)  
ACQ MSFN HGA: MAN, WIDE P 0, Y 170  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

195:00

MSFN

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-303

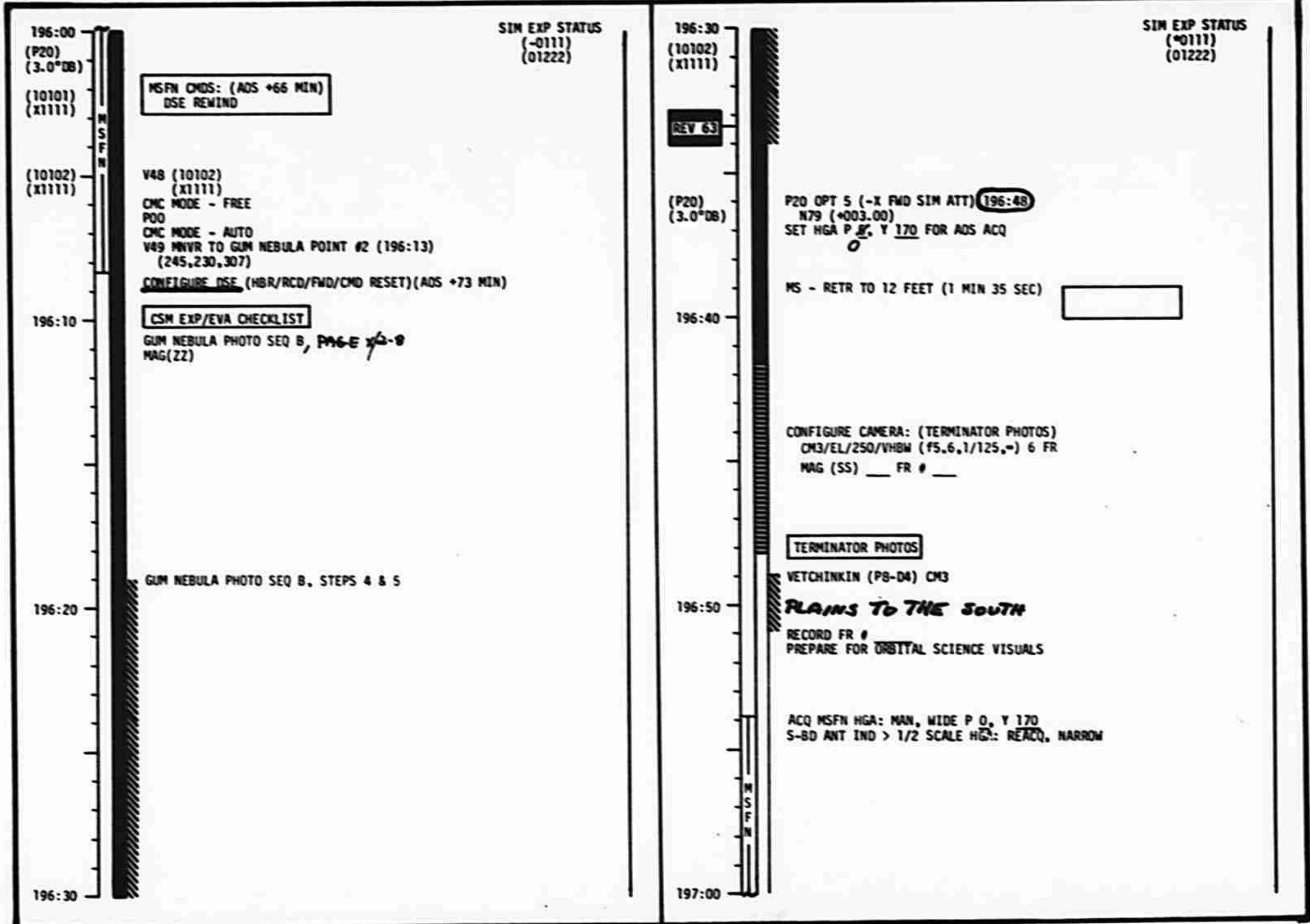
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE #1 FINAL (4/16)	2/17/72 161722 (MI)	3-304

# CSM FLIGHT PLAN

1554 CST



SIM EXP STATUS  
(-0111)  
(01222)

SIM EXP STATUS  
(-0111)  
(01222)

MSFN CMDS: (ADS +66 MIN)  
DSE REWIND

REV 63

V48 (10102) (X1111)  
CMC MODE - FREE  
POO  
CMC MODE - AUTO  
V49 MNVR TO GUM NEBULA POINT #2 (196:13)  
(245,230,307)  
CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(ADS +73 MIN)

P20 OPT 5 (-X FWD SIM ATT) 196:48  
N79 (+003.00)  
SET HGA P 0, Y 170 FOR ADS ACQ

CSM EXP/EVA CHECKLIST  
GUM NEBULA PHOTO SEQ B, PAGE 2-8  
MAG(22)

MS - RETR TO 12 FEET (1 MIN 35 SEC)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)  
CM3/EL/250/VHBM (f5.6, 1/125, -) 6 FR  
MAG (SS) \_\_\_ FR # \_\_\_

GUM NEBULA PHOTO SEQ B, STEPS 4 & 5

TERMINATOR PHOTOS

VETCHINKIN (P8-D4) CM3

**PLAINS TO THE SOUTH**

RECORD FR #  
PREPARE FOR ORBITAL SCIENCE VISUALS

ACQ MSFN HGA: MAN, WIDE P 0, Y 170  
S-8D ANT IND > 1/2 SCALE HG: REACQ, NARROW

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	4/7/72	3-305

# CSM FLIGHT PLAN

197:00  
 (P20)  
 (3.0°DB)  
 (10102)  
 (X1111)

MSFN

197:10

197:20

197:30

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

ORBITAL SCIENCE VISUALS  
 GODDARD (V5-D6) CMS

MSFN CMDS: (AOS +14 MIN)  
 DSE PLAYBACK

MSFN UPDATE:  
 SOLAR CORONA PHOTO PAD (197:38)  
 MAP CAMERA PHOTO PAD (198:41)  
 PAN CAMERA PHOTO PAD (199:15)

SIM EXP STATUS  
 (-0121)  
 (01222)

197:30  
 (P20)  
 (3.0°DB)  
 (10102)  
 (X1111)

MSFN

197:40

197:50

198:00

SIM EXP STATUS  
 (-0121)  
 (01222)

CSM EXP/EVA CHECKLIST

SOLAR CORONA (SUNSET), *PAGE X/2-9*  
 MAG (SS)  
 MAG (HH)

SOLAR CORONA PHOTO PAD (SS)  
 T-START: \_\_\_\_\_  
 SUNSET -5 MIN

SOLAR CORONA (SUNSET)

MISSION	EDITION	DATE	PAGE
APOLLO 16	<i>CHANGE</i> (4/16)	<i>9/10/72 3/27/72</i>	3-306

# CSM FLIGHT PLAN

198:00  
(P2C)  
(3.0°DB)

(10102)  
(X1111)

MSFN

198:10

198:20

198:30

MSFN CMDS: (AOS +66 MIN)  
DSE REWIND

SIM EXP STATUS  
(-0121)  
(01222)

CMC MODE - FREE  
P00  
CMC MODE - AUTO

V49 MNVR TO DEEP SPACE MEASUREMENT/P52 ATT (198:10)  
(322,155,003)

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

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

PREPARE FOR ORBITAL SCIENCE VISUALS

198:30  
(10102)  
(X1111)

REV 64

(P20)  
(0.5°DB)

198:40

198:50

199:00

MSFN

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 ACQ

MC/LA COVER - OPEN  
MC - EXT0  
LA - ON  
IMAGE MTN - ON  
MS - RETR TO 8.4 FEET (26 SECS)

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

ORBITAL SCIENCE VISUALS

KING (V4-D4) CM3

ACQ MSFN HGA: MAN, WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MAP CAMERA PHOTO PAD

T-START: \_\_\_\_\_

T-STOP: \_\_\_\_\_

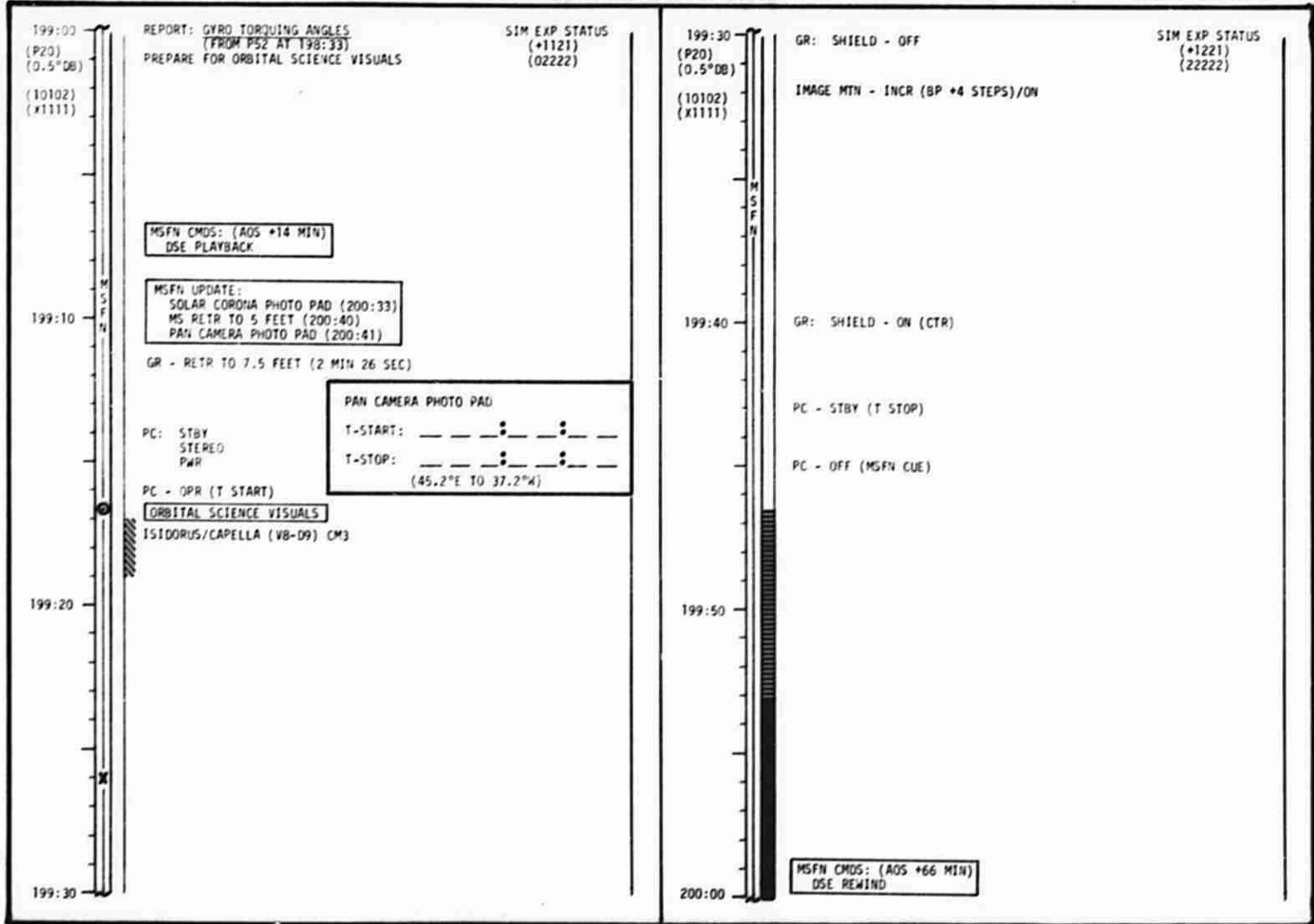
(133.8°E TO 49.7°W) (1-1/2 REVS)

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

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-307



# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-308

# CSM FLIGHT PLAN

SIM EXP STATUS  
(+1221)  
(02222)

SIM EXP STATUS  
(+1221)  
(02222)

200:00  
(P20)  
(0.5°DB)  
(10102)  
(X1111)  
MSFN  
200:10  
200:20  
200:30

200:30  
REV 65  
(P20)  
(0.5°DB)  
(10102)  
(X1111)  
MSFN  
200:40  
200:50  
201:00

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

**CSM EXP/EVA CHECKLIST**

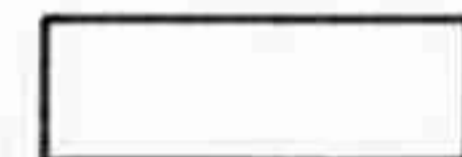
SOLAR CORONA (SUNRISE) PAGE X/2-11  
MAG (TT)  
MAG (HH)

SOLAR CORONA (SUNRISE)

SOLAR CORONA PHOTO PAD (SR)

T-START: \_\_\_\_\_  
SUNRISE -7 MIN

200:40  
IMAGE MTN - INCR (BP)/ON  
MS - RETR TO 5 FEET (24 SECS)



PAN CAMERA PHOTO PAD

T-START: \_\_\_\_\_  
~~T-START~~ STEREO: \_\_\_\_\_  
T-STOP: \_\_\_\_\_  
(131.8°E TO 43.2°E)

PC: STBY  
MONO  
PWR

PC - OPR (T START)

PC - STEREO (T START +2:00 MIN)

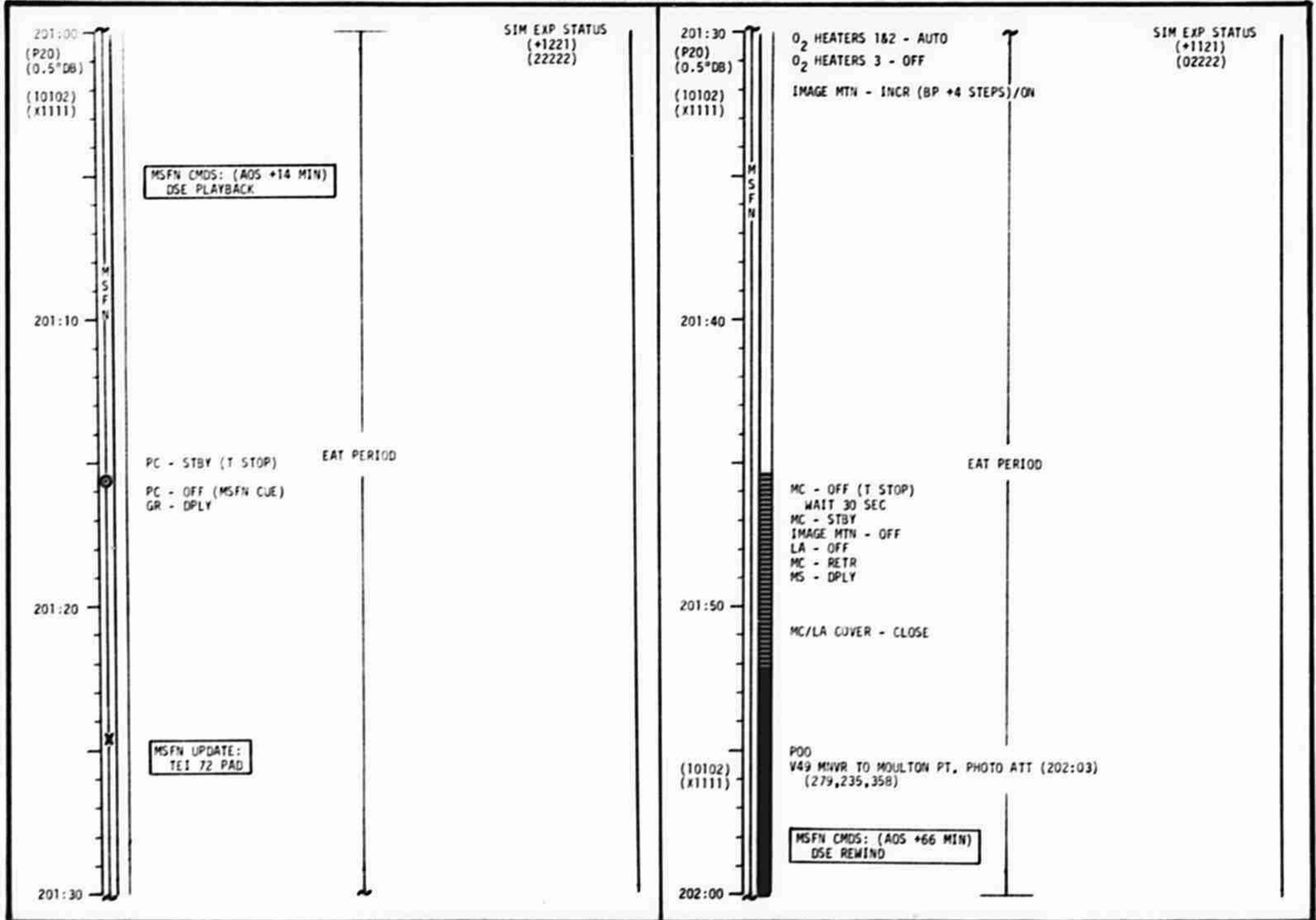
ACQ MSFN HGA: MAN, WIDE P 10, Y 0  
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

CMP DON BIOMED HARNESS  
COR DOFF BIOMED HARNESS

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

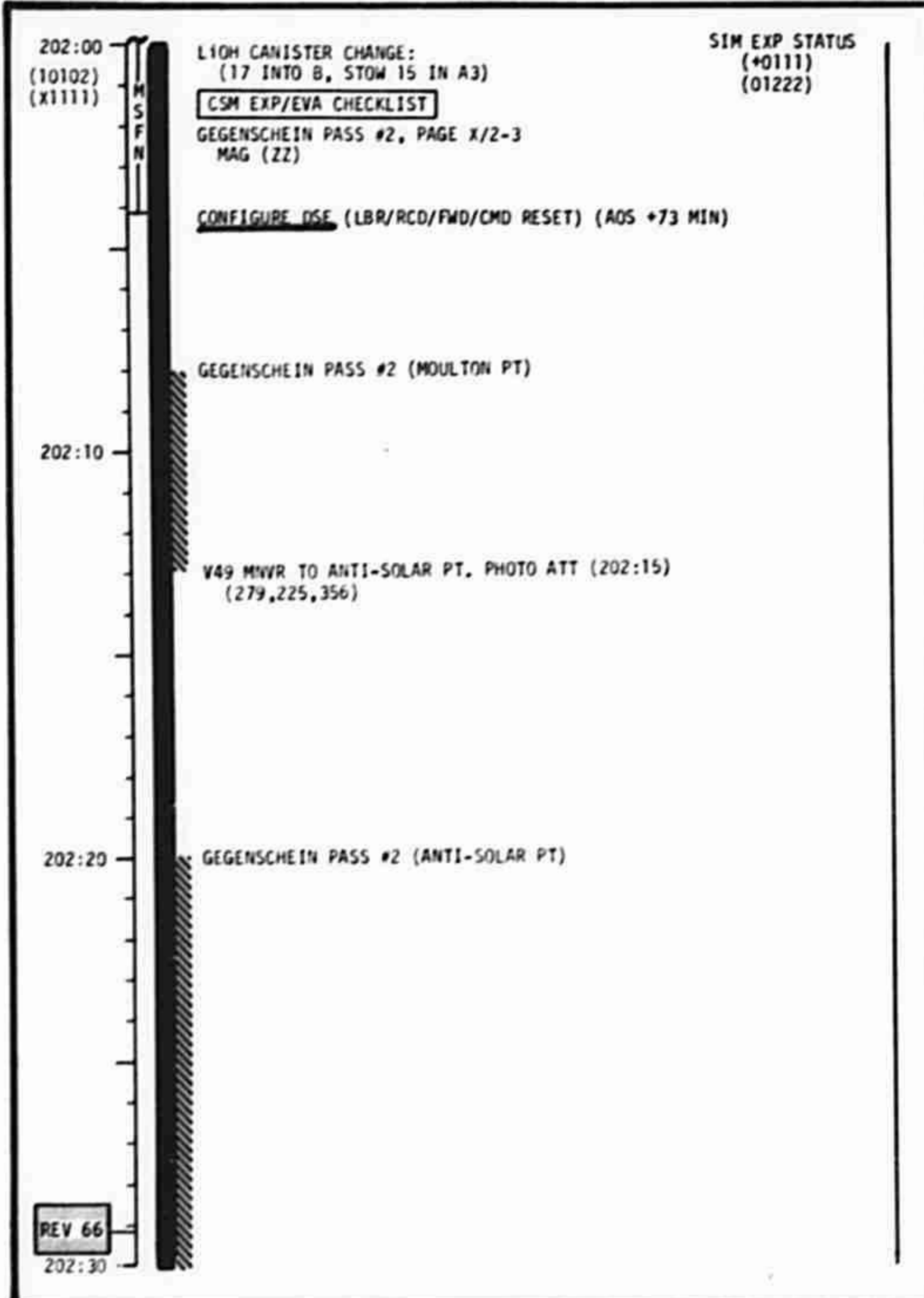
MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE 4/16	22770 1/17/72	3-309

# CSM FLIGHT PLAN

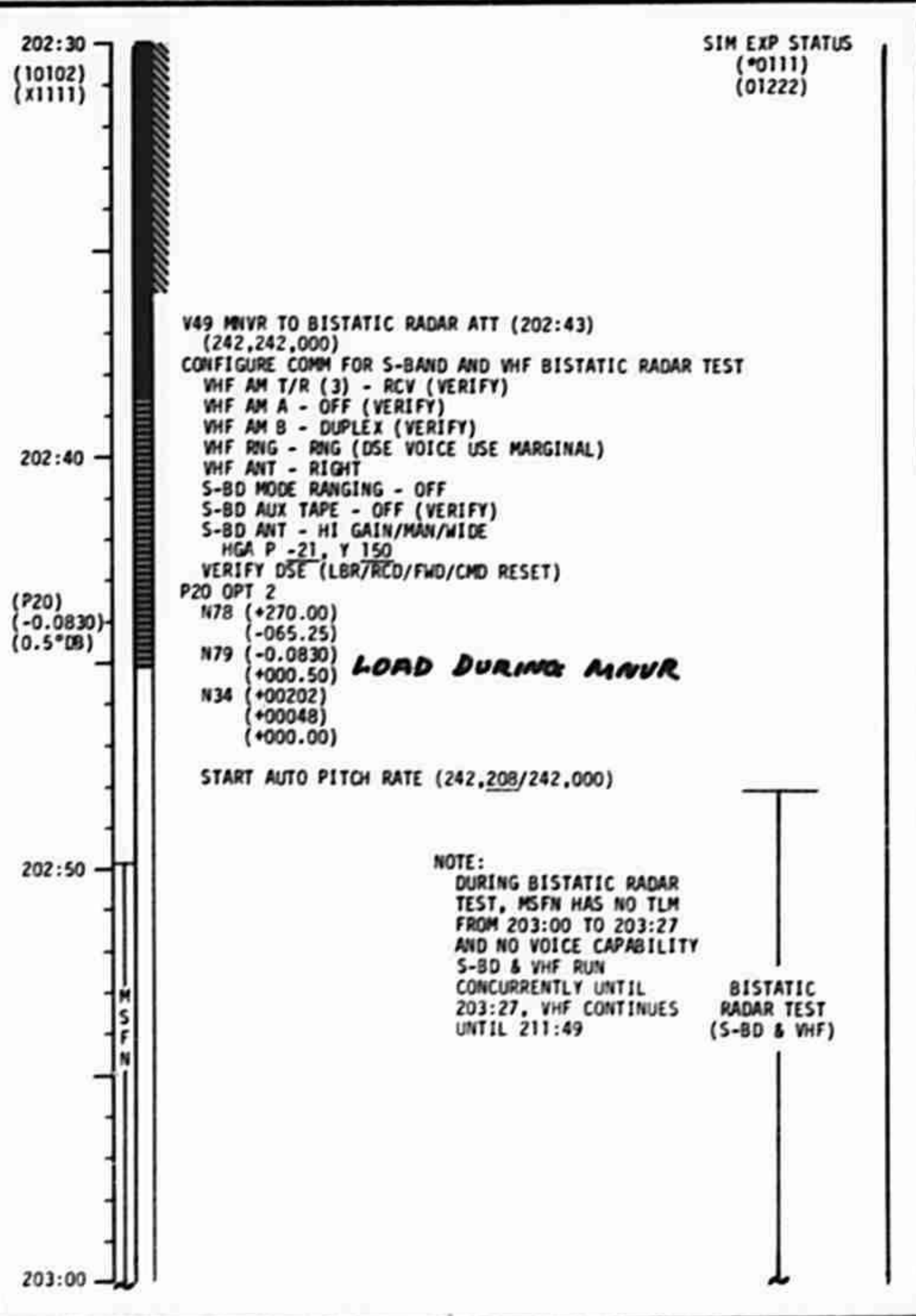


MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-310

# CSM FLIGHT PLAN



SIM EXP STATUS  
(\*0111)  
(01222)



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-311

# CSM FLIGHT PLAN

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

MSFN

203:10

203:20

(P20)  
(3.0°DB)

203:30

**Do Presleep Checklist Except:**

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

SIM EXP STATUS  
(\*0111)  
(01222)

BISTATIC RADAR TEST  
(S-BD & VHF)

BISTATIC RADAR TEST  
(VHF)

DISCONTINUE S-BD BISTATIC 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

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

MSFN

203:40

203:50

204:00

**CSM SYSTEMS CHECKLIST**

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

MSFN CMDS:  
DSE DUMP

V48 (10101)  
(X1111)

**MSFN UPLINK:  
JET-ON MONITOR LOADS**

PCM BIT RATE - HIGH

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

MSFN CMDS: (AOS +68 MIN)  
DSE RECORD

REST PERIOD  
(7.8 HOURS)

SIM EXP STATUS  
(-0111)  
(01222)

**ONBOARD READOUT**

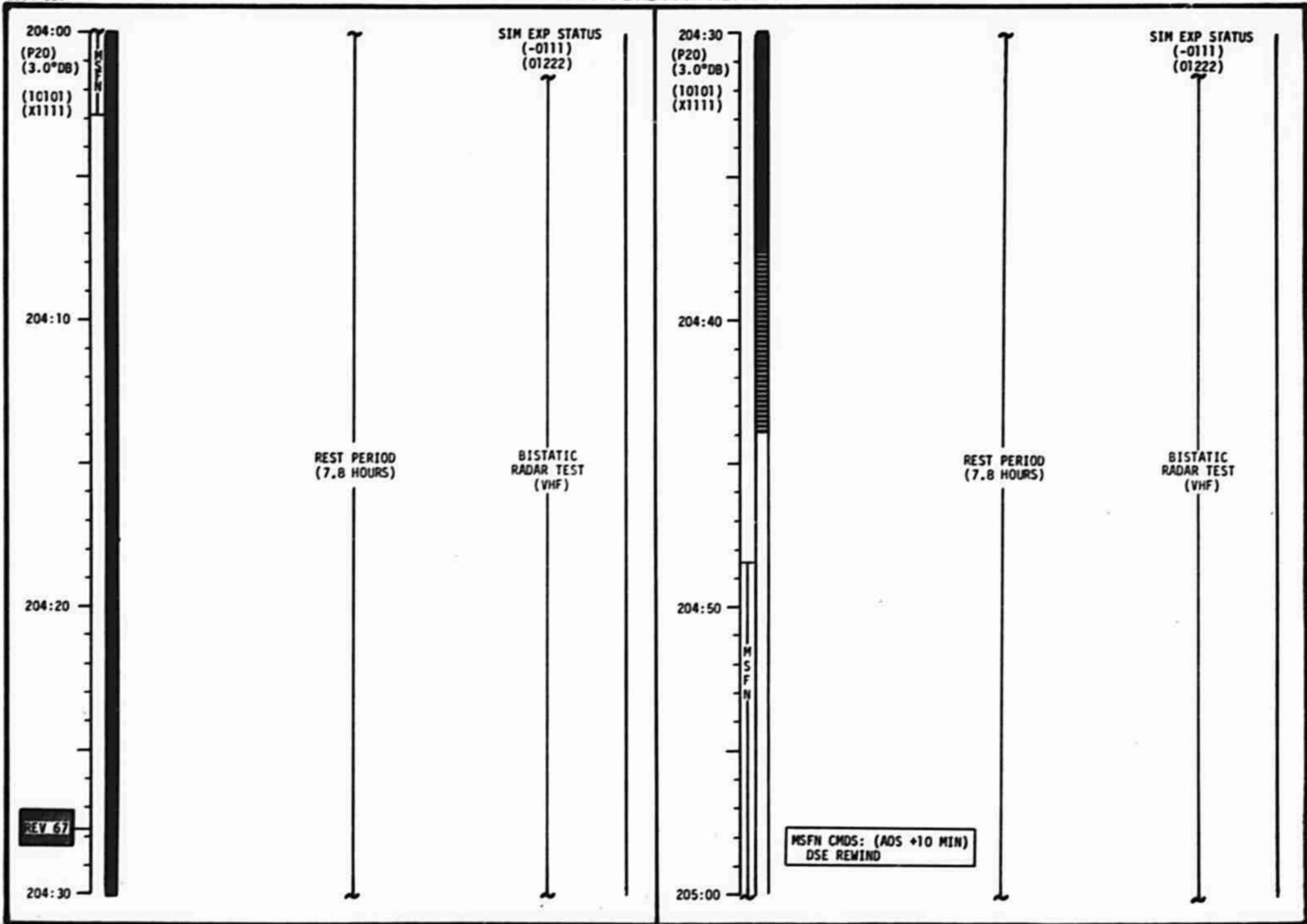
BAT C \_\_\_\_\_  
PYRO BAT A \_\_\_\_\_  
PYRO BAT B \_\_\_\_\_  
RCS A \_\_\_\_\_  
B \_\_\_\_\_  
C \_\_\_\_\_  
D \_\_\_\_\_  
DC IND SEL - MNA OR B

BISTATIC RADAR TEST  
(VHF)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE (4/16)	2/27/72 4/7/72	3-312

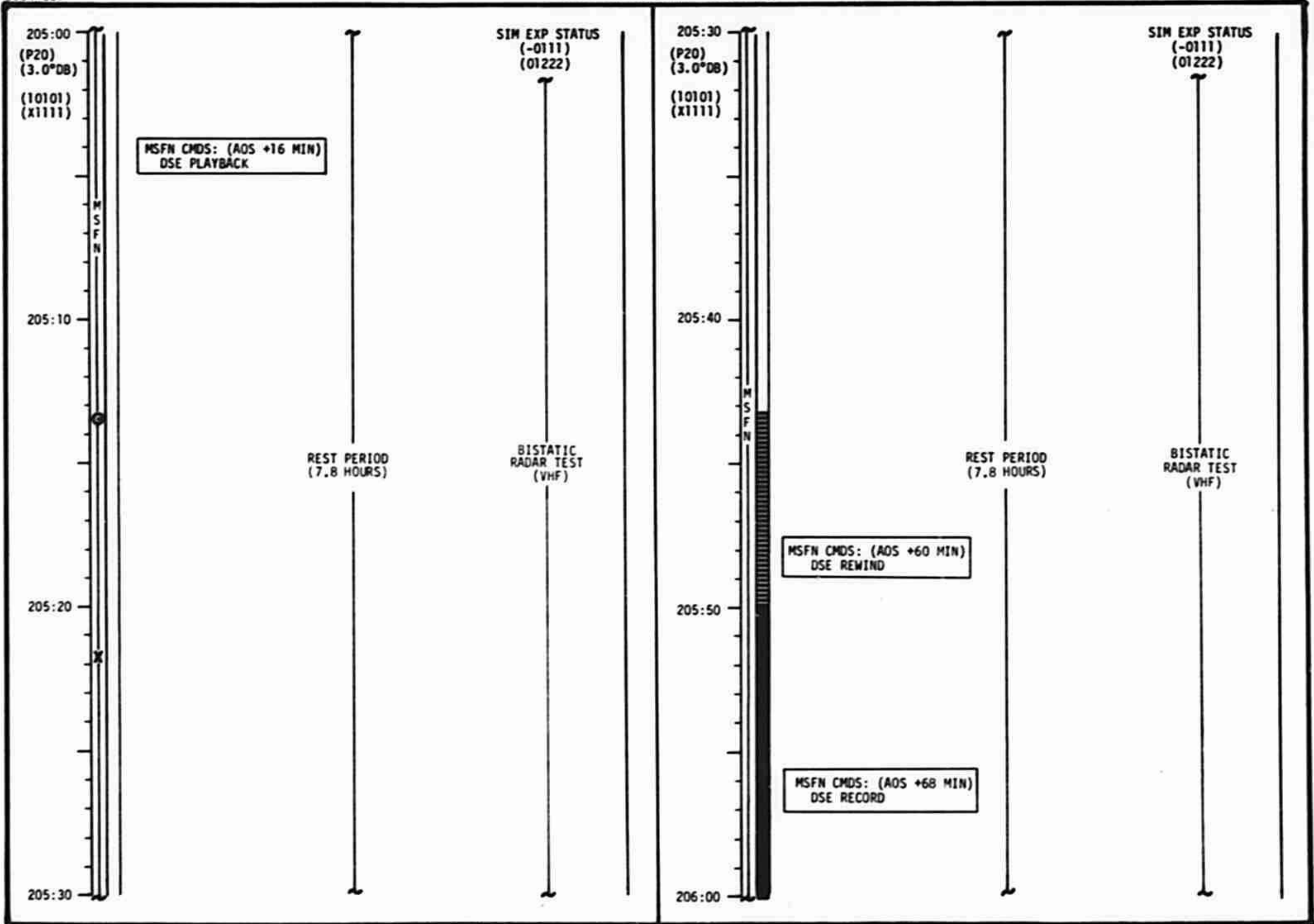
2354 CST

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-313

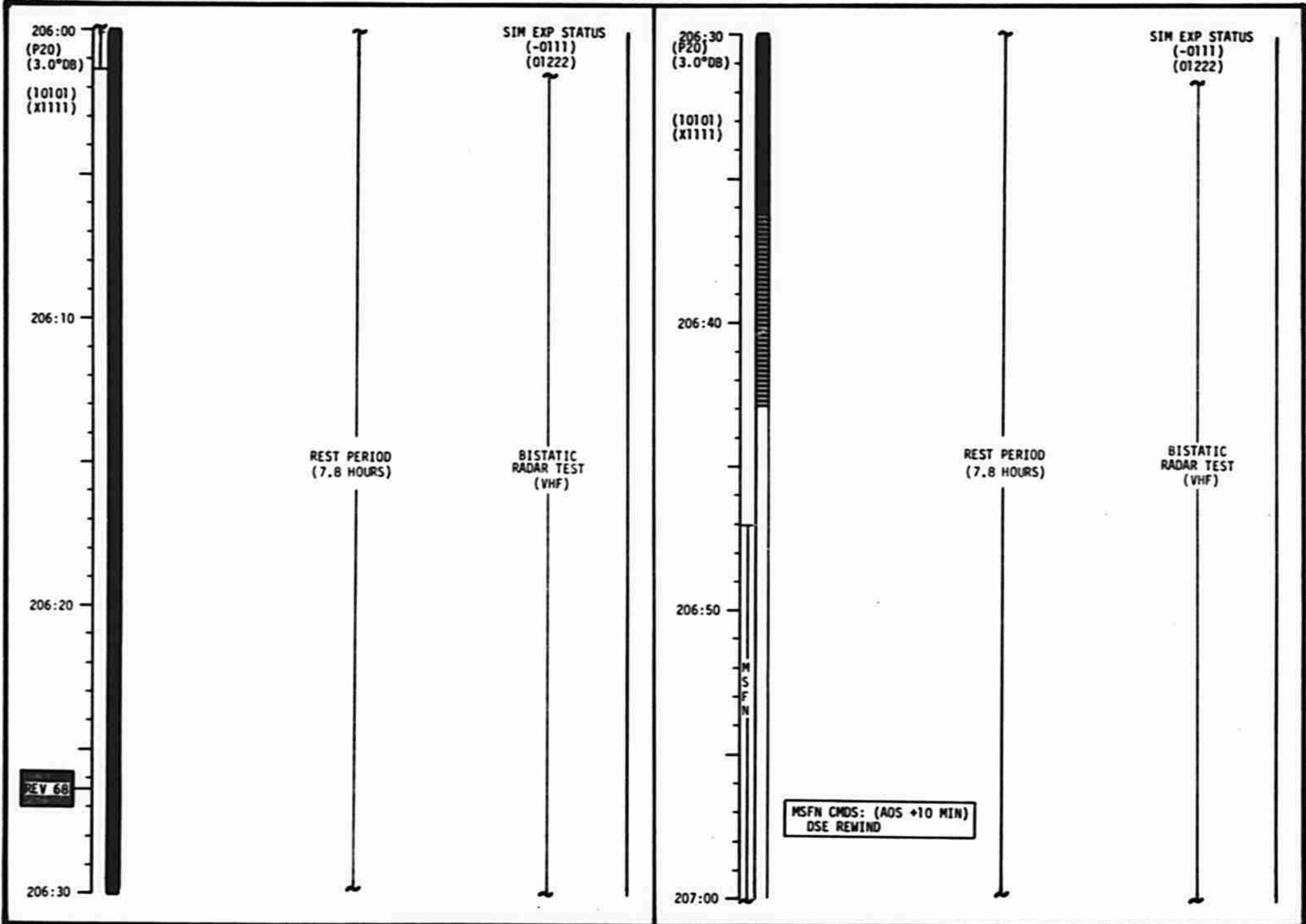
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-314

0154 CST

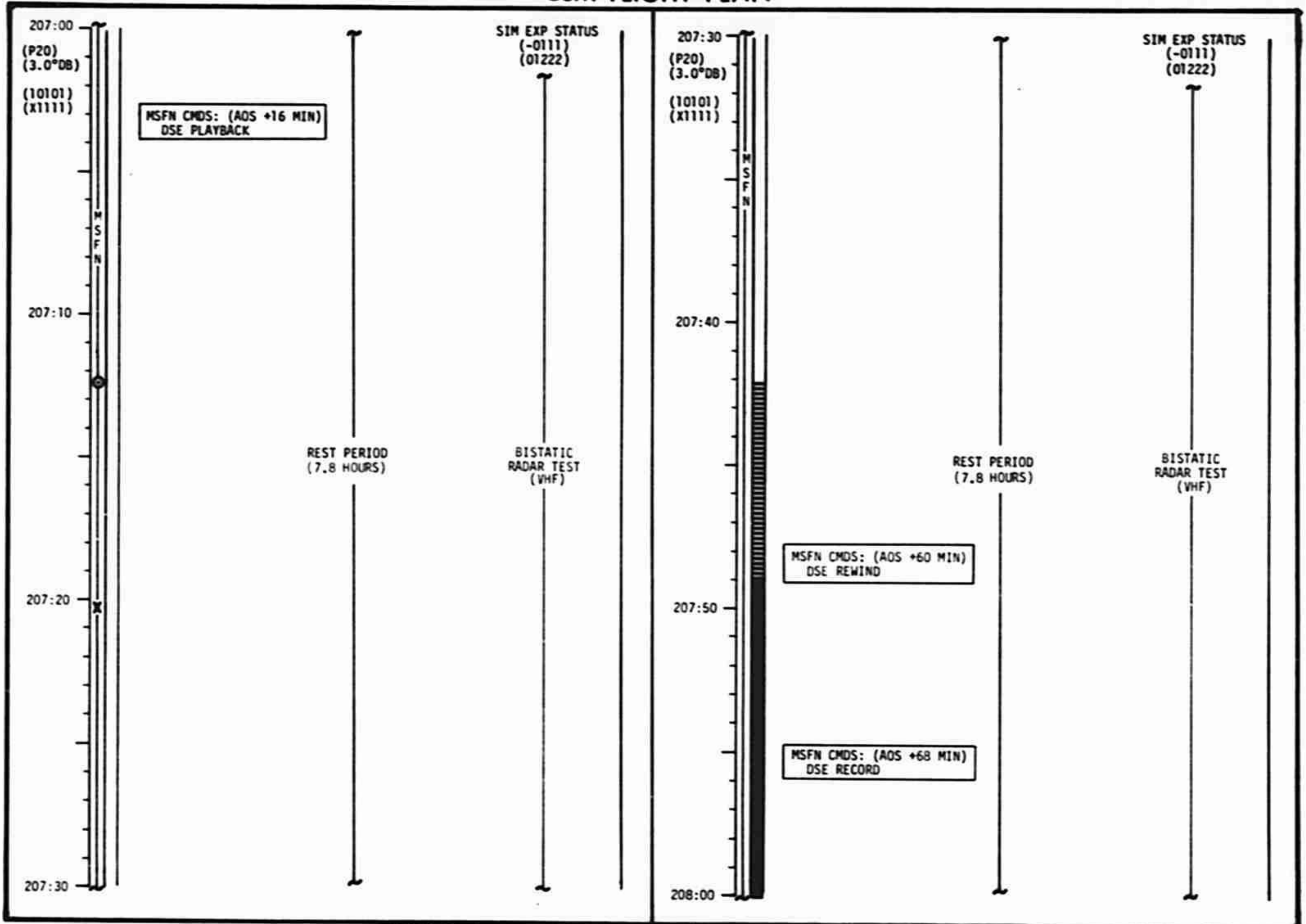
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-315



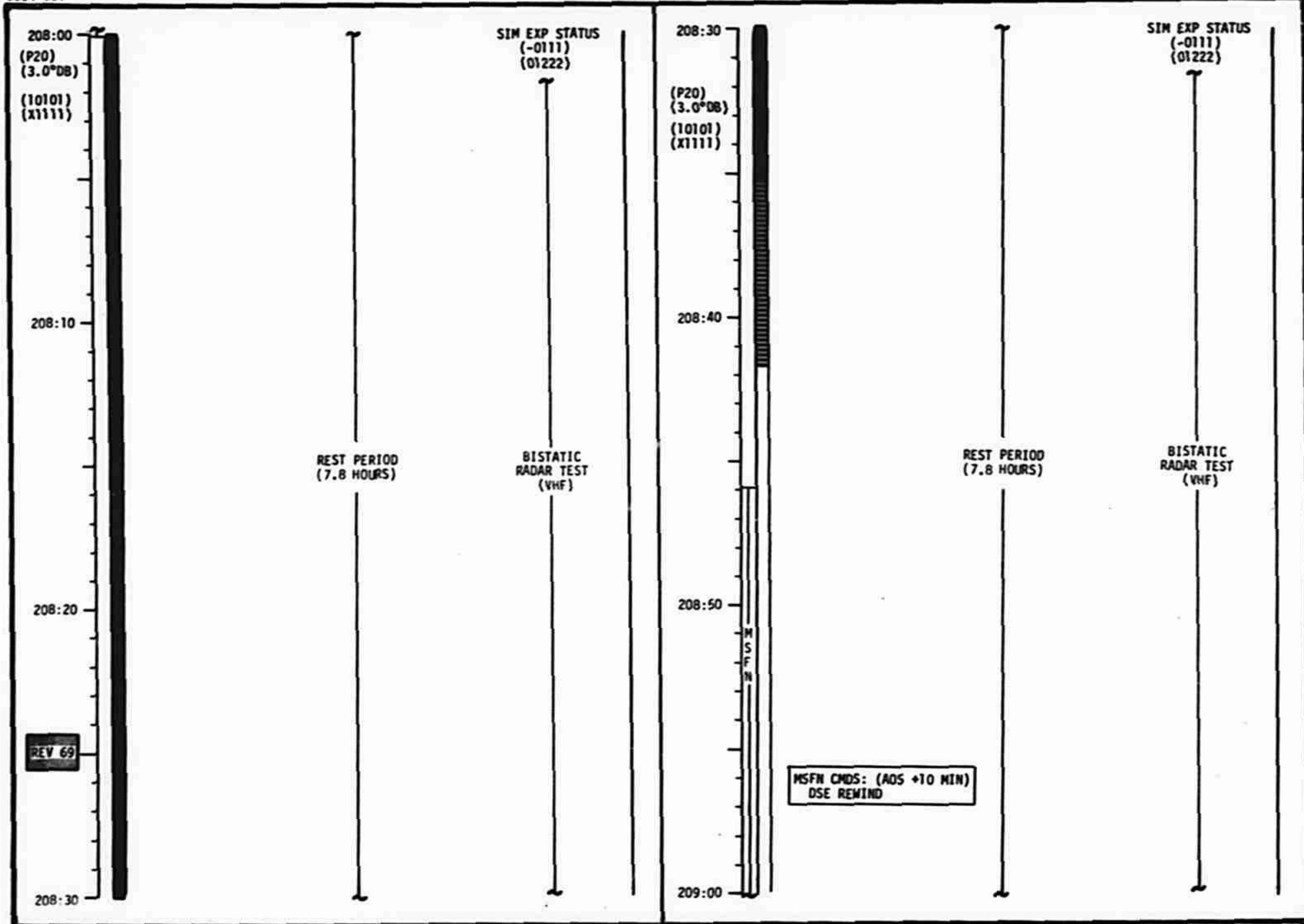
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-316

# CSM FLIGHT PLAN

0354 CST

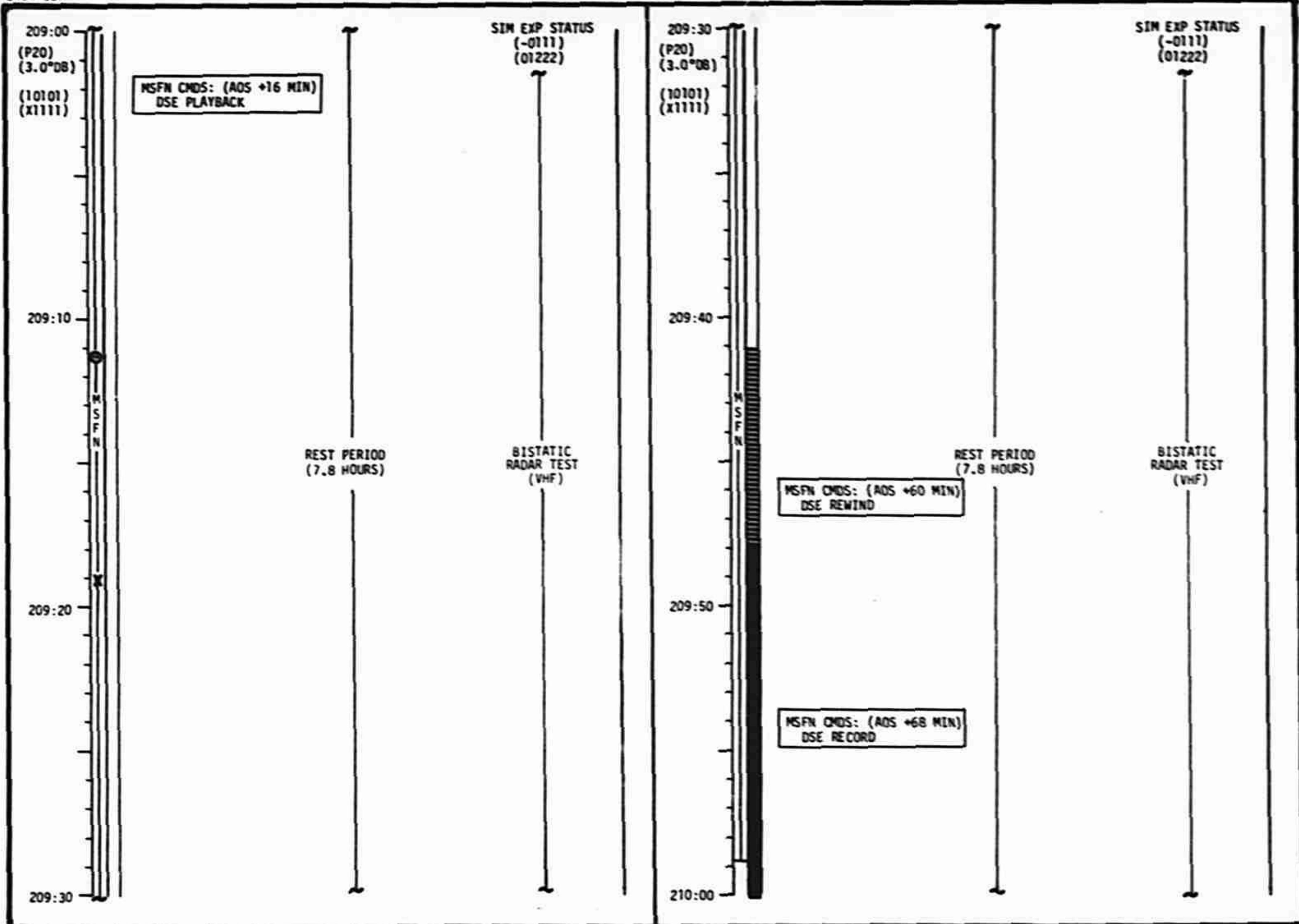


REV 69

MSFN CMDS: (AOS +10 MIN)  
DSE REWIND

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-317

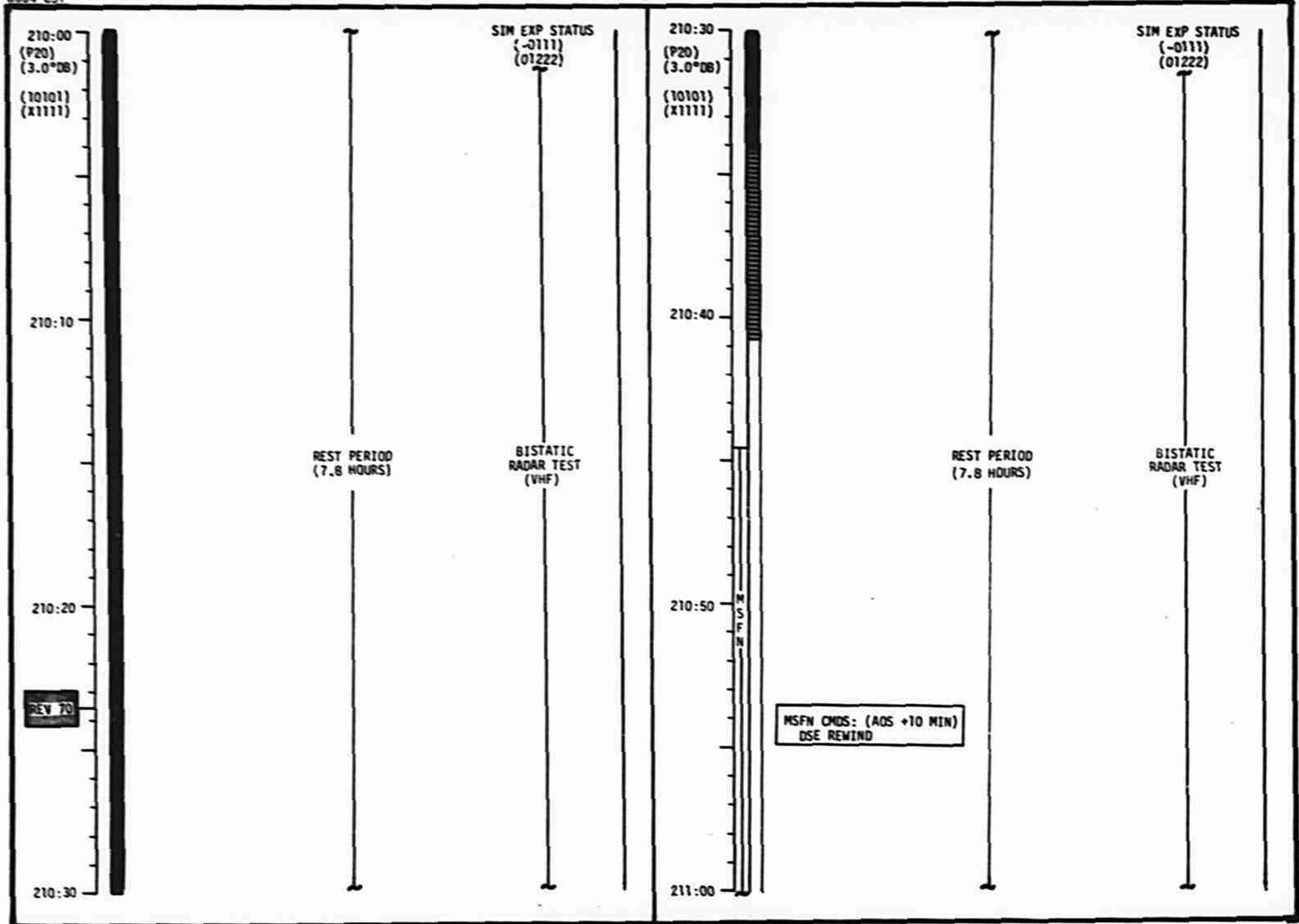
# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-318

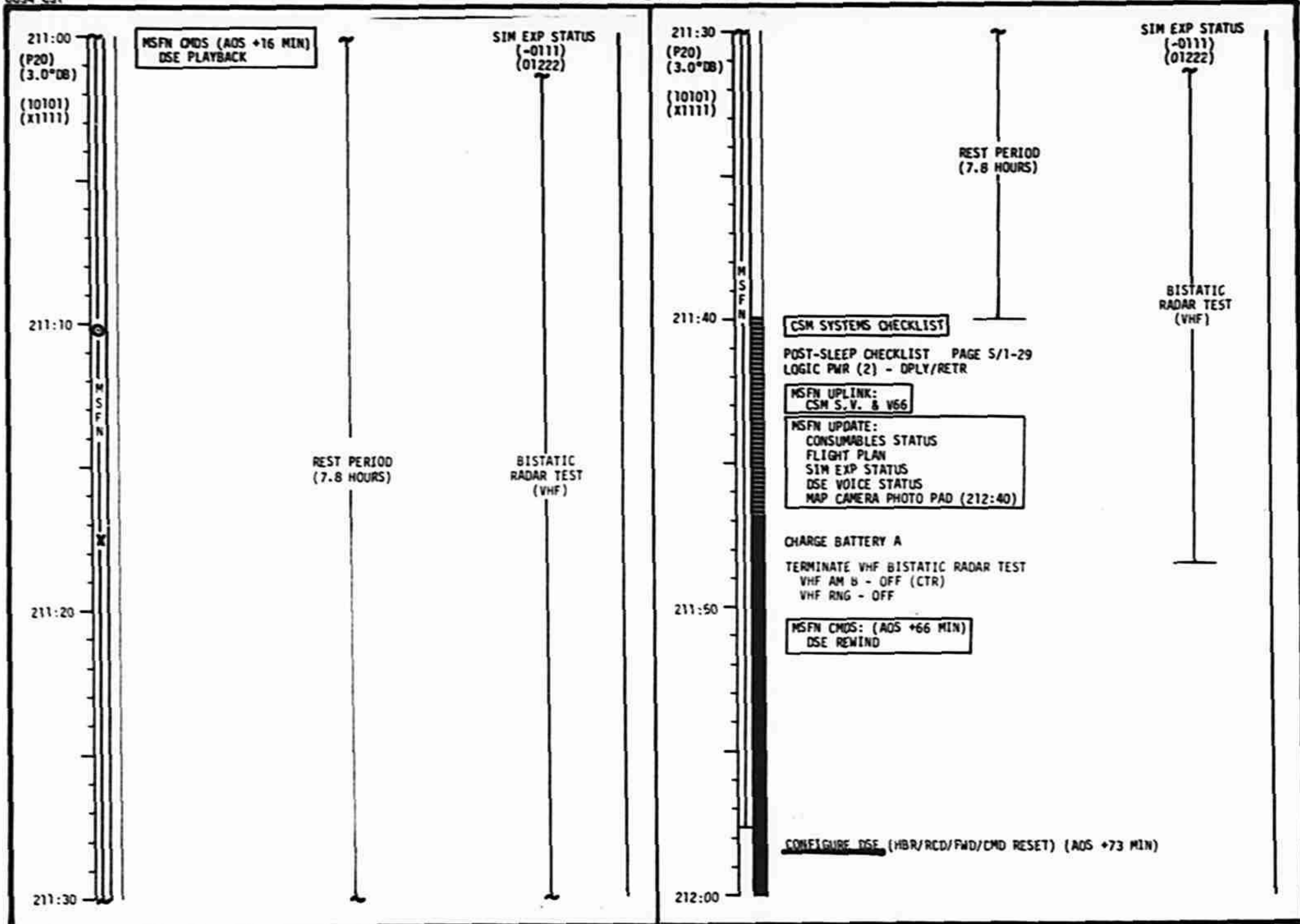
# CSM FLIGHT PLAN

0554 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-319

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-320

# CSM FLIGHT PLAN

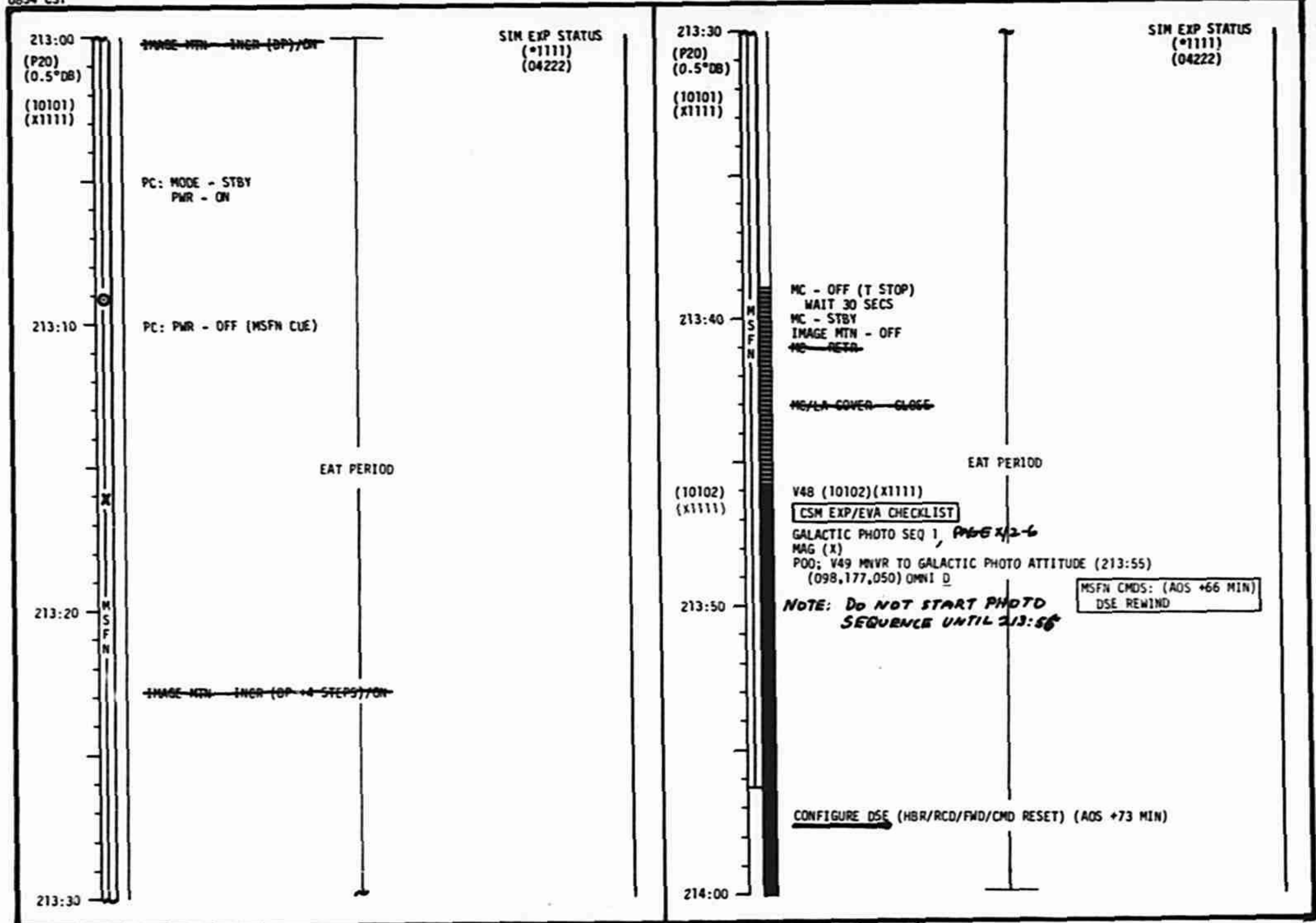
0754 CST

<p>212:00 (P20) (3.0°DB)  (10101) (X1111)</p> <p>212:10</p> <p>212:20</p> <p>212:30</p>	<p>GR: SHIELD - OFF</p> <p style="text-align: right;">SIM EXP STATUS (-0111) (01222)</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">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> </div> <p>GR: SHIELD - ON (CTR) CMC MODE - FREE P52 (OPTION 3) (LIFT-OFF ORIENT)</p> <p>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</p> <p style="font-size: 1.2em; font-weight: bold;">PLAN THE PHOTO PASS</p> <p>LMP DON BIOMED HARNESS CMP DOFF BIOMED HARNESS</p>	<p>212:30 (P20) (0.5°DB)  (10101) (X1111)</p> <p>212:40</p> <p>212:50</p> <p>213:00</p>	<p>CONFIGURE CAMERA: (ORBITAL SCIENCE) CM1/EL/250/CEX-IVL (f5.6,1/125,-) 45 FR</p> <p>MAG (PP) _____ FR # _____</p> <p>MC/LA COVER - OPEN MC - EXTD</p> <p>MAG (NN) _____ FR # _____ TEMP STOW MAG (NN) _____</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">ORBITAL SCIENCE PHOTOS</p> <p>FLEMING (P9-D4,05) CM1 (f5.6,1/125,-) 45 FR</p> <p>IMAGE MTN - ON <del>MC - ON (T START)</del> CHANGE SHUTTER TO 1/250 IMAGE MTN - INCR (BP)/ON <del>(BP+3 STAB)</del></p> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">MAP CAMERA PHOTO PAD</p> <p>T-START: _____</p> <p>T-STOP: _____</p> <p style="text-align: center;">(126.7°E TO 55.8°W)</p> </div> <p>ACQ MSFN HGA: MAN, WIDE P 15, Y 340 S-BD ANT IND &gt; 1/2 SCALE HGA: REACQ, NARROW</p> <p>RECORD FR # _____ CHANGE TO MAG (NN)</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>MSFN CMDS: (~ AOS +4 MIN) DSE (STOP/REWIND) CUE: HGA AUTO</p> </div> <p><del>IMAGE MTN - INCR (BP + 1 STAB) ON</del></p> <p>AL-BIRUNI (P11-D6, D7) CM1 (f5.6, 1/250, -) 33 FR     <b>SWIRLS CRATER, SWIRLS</b></p> <p>RECORD FR # _____</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>MSFN CMDS: (AOS +11 MIN) DSE PLAYBACK</p> </div> <p>REPORT: GYRO TORQUING ANGLES (FROM P52 AT 212:11)</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>MSFN UPDATE: TEI 74 PAD</p> </div>
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REV 71

MISSION	EDITION	DATE	PAGE
APOLLO 16	Clz C. FINAL (4/16)	21672 4/10/72	3-321

# CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	ORIGINAL (4/16)	4/16/72	3-322
	CHANGE REC	3/20/72 (P.9)	

# CSM FLIGHT PLAN

214:00  
(10102)  
(X1111)

GALACTIC PHOTO SEQ 1

SIM EXP STATUS  
~~(01111)~~ (X1111)  
(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 ~ 5 MIN 45 SEC**

**STUDY THE PHOTO TRG & CONFIGURE THE EL  
LOAD N78 ~~FOR~~ FOR MNVR AT 214:40**  
**NOTE: 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  
~~(01111)~~ (X1111)  
(01222)

(P20)  
(0.5° DB)

214:40

**P20 OPT 5 (10° SOUTH OBLIQUE PHOTO ATT) (214:35) MNVR TIME  
~ 7 MIN 47 SEC**

N78 (+090.00)  
(+062.25)  
(+180.00)  
N79 (+000.50)  
(154,000/030,358)

ACQ MSFN ~~MAN~~ ~~WIDE~~ ~~210~~ ~~Y-200~~ ~~HGA: P-62~~, ~~Y 203~~  
~~6-DB ANT IND~~ → 1/2 SCALE, HGA: REACQ, NARROW

CONFIGURE CAMERA: (ORBITAL SCIENCE)  
CMS/EL/250/CEX-IVL ~~(10,1250,)~~ ~~100~~ ~~100~~ (511, 1/250, 00) 136 FR  
MAG (M) \_\_\_\_\_ FR # \_\_\_\_\_

~~ORBITAL SCIENCE PHOTOS~~

~~AL DIRINI (P11 06,07)~~  
~~CHI (10,1/250, ) 33 FR~~ **SWISS CENTER, SWISS**

214:50

MSFN CMDS: (AOS +9 MIN)  
DSE (STOP/REWIND)  
~~CUE: HGA AUTO~~

~~RECORD FR~~  
~~CHANGE TO MAG (RR)~~

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

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE # (4/16)	4/10/72 2127-72 6/7/72	3-323



# CSM FLIGHT PLAN

SIM EXP STATUS

(~~10111~~) (11111)  
(01222)

215:00  
(P20)  
(0.5°DB)

L10H CANISTER CHANGE  
(18 INTO A, STOW 16 IN A3)

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

(10102)  
(X1111)

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  
~~MC/LA COVER - OPEN~~

215:20

~~MC - ENFD~~

MS - RETR  
PC: STBY  
STEREO  
PWR

LA - ON  
BULLIALDUS/GASSENDI (P23-D12,D13)  
CMS (f5.6,1/250,-) 62 FR

IMAGE MTN - ON

CHANGE SHUTTER TO 1/125

215:30

215:30

(P20)  
(0.5°DB)

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

(10102)  
(X1111)

HANSTEEN (P26-D14)  
CMS (f5.6,1/125,-) 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 # \_\_\_\_\_

MSFN CMDS:  
DSE REWIND

H<sub>2</sub> PURGE LINE HEATERS - ON

CONFIGURE FOR URINE DUMP

215:50

MSFN CMDS:  
DSE RECORD

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

216:00

CMC MODE - FREE

SIM EXP STATUS

(\*1001)  
(13212)

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)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE #4/16	217172-2/10/72	3-324

# CSM FLIGHT PLAN

216:00  
(P20)  
(0.5°08)  
  
(10102)  
(X1111)

P52 (OPTION 3)  
(LIFT-OFF ORIENT)

SIM EXP STATUS  
(\*0000)  
(01214)

P52 IMU REALIGN

N71: \_\_\_\_\_  
 NOS: \_\_\_\_\_  
 N93: \_\_\_\_\_  
 X \_\_\_\_\_  
 Y \_\_\_\_\_  
 Z \_\_\_\_\_  
 GET \_\_\_\_\_

P20; CMC MODE - AUTO  
GDC ALIGN

H<sub>2</sub> & O<sub>2</sub> FUEL CELL PURGE  
WASTE WATER DUMP  
URINE DUMP

216:10

P30; VERIFY SHAPE BURN TIG  
AND ΔV'S

H<sub>2</sub> PURGE LINE HEATERS - OFF

TERMINATE WASTE WATER DUMP AT 10%

REV 73

216:20

ENABLE ALL JETS  
POQ; V49 MIVR TO SHAPE BURN PAD ATT (216:28)  
SET HGA P -42, Y 24 FOR AOS ACQ

(10102)  
(X1111)

216:30

P30 MANEUVER

SET STARS	S	H	A	P	E	PURPOSE	
	S	P	S/G	&	N	PROP/GUID	
	+					WT	N47
R ALIGN		0	0			P TRIM	N48
P ALIGN		0	0			Y TRIM	
Y ALIGN	+	0	0			HRS	GETI
	+	0	0	0		MIN	N33
	+	0				SEC	
ULLAGE						ΔV <sub>X</sub>	N81
						ΔV <sub>Y</sub>	
						ΔV <sub>Z</sub>	
	X	X	X			R	(003)
	X	X	X			P	(058)
	X	X	X			Y	(357)
	+					H <sub>A</sub>	N44
						H <sub>P</sub>	
	+					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

216:30  
(10102)  
(x1111)

PRE-SPS BURN SIM PREP (CUE CARD)

SIM EXP STATUS  
(\*0000)  
(01214)

(P40)  
(0.5°DB)

V45 (RESET LUNAR SURFACE FLAG)

SET DET COUNTING UP TO SHAPE BURN

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 <sub>gy</sub> OR (+) V <sub>gz</sub> 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  
ΔVT: 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)

217:00

BURN STATUS REPORT				
X	X			ΔTIG
X	X			BT
				V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
				V <sub>gx</sub>
				V <sub>gy</sub>
				V <sub>gz</sub>
				ΔV <sub>c</sub>
X				FUEL
X				OX
X				UNBAL

# CSM FLIGHT PLAN

217:00  
(10102)  
(x1111)

MSFN

SIM EXP STATUS  
(\*0000)  
(01214)

MSFN UPDATE:  
SUBSAT LAUNCH PAD (217:38)

MSFN UPLINK:  
LM S.V. (CSM S.V. & SUBSAT LAUNCH ΔV)

*The Subsat State Vector  
is Actually Uplinked*

217:10

X

217:20

217:30

217:30  
(10102)  
(x1111)

MSFN

SIM EXP STATUS  
(\*0000)  
(01214)

SUBSAT LAUNCH PAD

GET:     .     .     .     .     .     .

R ( 088 ) P ( 247 ) Y ( 000 )

CSM EXP/EVA CHECKLIST

V49 MNVR TO SUBSAT LAUNCH PAD ATT (217:47)  
HGA P 15, Y 232  
SUBSAT LAUNCH PROCEDURES, PAGE X/1-8

217:40

217:50

MSFN OMS:  
DSE RECORD

MSFN UPDATE:  
GO/NO-GO FOR SUBSAT LAUNCH

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

218:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-327

# CSM FLIGHT PLAN

218:00  
(10102)  
(X1111)

SIM EXP STATUS  
(\*0000)  
(01214)

**SUBSAT LAUNCH 218:02:08**  
( $\Delta V_X = +1.04$ ,  $\Delta V_Y = +4.13$ ,  $\Delta V_Z = -0.11$ )

CONFIGURE DSE (LBR/RCD/FWD/CMD RESET)

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 JA FOR AOS ACQ

**REV 74**

218:20

218:30

218:30  
(P20)  
(3.0°DB)

SIM EXP STATUS  
(\*0000)  
(01214)

TAKE SXT MARKS - 1/MIN

(10101)  
(X1111)

218:40

ACQ MSFN OMNI JA  
REPORT: SUBSAT LAUNCH

MSFN

218:50

ACQ MSFN HGA: MAN, WIDE P-15, Y 145  
S-80 ANT IND > 1/2 SCALE HGA: REACQ, NARROW

219:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE <u>X</u> (4/16)	210772 4/7/72	3-328

# CSM FLIGHT PLAN

1454 CST

219:00  
(P20)  
(3.0°DB)  
(10101)  
(X1111)

219:10

219:20

219:30

**MSFN CUE: (NAOS+20MIN)  
HGA AUTO**

**MSFN CMDS:  
DSE DUMPS**

*Photos of Opportunity/TV*

**MSFN UPDATE:  
PRELIM TE1 75 PAD**

SIM EXP STATUS  
(\*0000)  
(01214)

219:30  
(P20)  
(3.0°DB)  
(10101)  
(X1111)

~~**MSFN CMDS:  
DSE DUMP**~~

SIM EXP STATUS  
(\*0000)  
(01214)

(10101)  
(X1111)

**MSFN UPLINK:  
DESIRED ORIENT (TE1)**

CMC MODE - FREE  
POO  
CMC MODE - AUTO  
V49 MNVR TO P52 ATT (220:05)  
(224,096,012)  
SET HGA P 34, Y 284 FOR AOS ACQ

**MSFN CMDS:  
DSE RECORD**

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

EAT PERIOD

MISSION	EDITION	DATE	PAGE
APOLLO 16	<i>AGB</i> FINAL (4/16)	3/6/72 4/7/72	3-329

# CSM FLIGHT PLAN

1554 CST

220:00  
(10101)  
(X1111)

220:10

220:20

REV 75

220:30

P52 (OPTION 3)  
(LIFT-OFF ORIENT)

P52 (OPTION 1)  
(TEI ORIENT)

EAT PERIOD

SIM EXP STATUS  
(\*0000)  
(01214)

P52 IMU REALIGN

N71: \_\_\_\_\_

N05: \_\_\_\_\_

N93: \_\_\_\_\_

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_

220:30  
(10101)  
(X1111)

220:40

220:50

221:00

GDC ALIGN

ACQ NSFN HGA: P 34, Y 284

NSFN CMDS:  
DSE DUMP

REPORT: GYRO TORQUING ANGLES  
(FROM P52 AT (220:23))

NSFN UPLINK:  
CSM S.V. & V66  
TEI 75 TGT LOAD

NSFN UPDATE:  
TEI 75 PAD (221:45)  
TEI 76 PAD  
MAP UPDATE REV 76 (222:25)

EAT PERIOD

SIM EXP STATUS  
(\*0000)  
(01214)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-330

# 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**

CMWS 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  
(10101)  
(X1111)

P30; VERIFY TEI TIG AND  $\Delta V$ 'S

SIM EXP STATUS  
(\*0000)  
(01214)

V49 MNR TO TEI PAD BURN ATT (221:45)  
OMNI C

221:40

MSFN

MSFN UPDATE:  
GO/NO-GO FOR TEI

221:50

SIX STAR CHECK

P40 (TRIM)

MSFN CMDS:  
DSE RECORD

(P40)  
(0.5°DB)

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

222:00

## P30 MANEUVER

SET STARS	T	E	I			PURPOSE
	S	P	S	G	& N	PROP/GUID
	+					WT N47
R ALIGN		0	0			P TRIM N48
P ALIGN		0	0			Y TRIM
Y ALIGN	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0				SEC
ULLAGE						$\Delta V_X$ N81
						$\Delta V_Y$
						$\Delta V_Z$
	X	X	X			R (180)
	X	X	X			P (000)
	X	X	X			Y (000)
	+					H <sub>A</sub> N44
						H <sub>P</sub>
	+					$\Delta VT$
HORIZON/WINDOW	X	X	X			BT
	X					$\Delta VC$
	X	X	X	X		SXTS
	+				0	SFT
	+				0 0	TRN
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP
OTHER		0				LAT N61
						LONG
	+					RTGO EMS
	+					V10
						GET 0.05G

# CSM FLIGHT PLAN

222:00  
 (P40)  
 (0.5°DB)  
 (10101)  
 (X1111)  
 222:10  
 222:20  
 (10101)  
 (X1111)  
 (P20)  
 (0.5°DB)  
 222:30

PRE-SPS BURN SIM PREP (CUE CARD) SIM EXP STATUS  
(\*0000)  
(01214)

**SCS RELIGHT IF ΔVC > 50 OR > 5 SEC**  
**DO NOT TRIM SCS BURN**  
**IF BURN INTERRUPTED DO NOT TRIM**  
 ~RCS ΔV PRE TEI ~120 FPS  
 POST TEI ~160 FPS  
**FOR NOMINAL TEI MODE II STARTS**  
 ~ΔV<sub>M</sub> = 1700 FPS ~80 SEC  
**SCS CUTOFF = BT + 2**

TEI BURN TABLE				
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME		RESIDUALS
		UNDERBURN	OVERBURN	
10°/SEC COMPLETE	±10° COMPLETE	FOR G&N C/O > 3 SEC EARLY & ΔV > +50 FPS SWITCH TO SCS AUTO & RESTART SPS	BT +2 SEC & ΔV <sub>C</sub> = -40 FPS	TRIM X AND Z AXES TO 0.2 FPS. IF (+) V <sub>gz</sub> ROLL 90° CW USE (+) Y THRUSTERS

\*SINGLE BANK BURN TIME\*  
 2 MIN 36 SEC

TEI (180,000,000)	TIG: 222:20:33
	BT: 2 MIN 30.5 SECS
	ΔVT: 3212.2 FPS
	ULLAGE: 2 JET, 17 SEC
	ORBIT: N/A

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)  
 N79 (+000.50)  
 (135.320,314) OMNI C

POST SPS BURN SIM PREP (CUE CARD)

BURN STATUS REPORT				
X	X			ΔTIG
X	X			BT
				V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
				V <sub>gx</sub>
				V <sub>gy</sub>
				V <sub>gz</sub>
				ΔV <sub>C</sub>
X				FUEL
X				OX
X				UNBAL

MAP UPDATE REV 76

LOS:	---	.	.	---
180°:	---	.	.	---
AOS WITH TEI:	---	.	.	---
AOS WITHOUT TEI:	---	.	.	---

## CSM FLIGHT PLAN

222:30 (P20) (0.5"DB) (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 - EXT0  
 PC - STBY  
 MODO  
 PWR  
 MC - ON  
 PC - OPR  
 IMAGE MTR - INCR (BP +3 STEPS)/OFF (FOR RATE CONTROL)  
 REPORT: BURD STATUS  
 ACQ MSFN HGA P 45 . Y 320  
 S-BD ANT INO - 172 SCALE, HGA: REACQ, NARROW

MSFN UPLINK:  
 DESIRED ORIENT (PTC)

222:40 (11101) (X1111)

V48 (11101) (X1111)

MSFN CMUS:  
 DSE DUMP

GP - DPLY  
 MS - DPLY

MS: EXP - ON  
 ION SOURCE - STBY

222:50

PC - OFF  
 MC - STBY  
 MC - RETR

**USE NOMINAL TURNOFF PROCEDURES**

NOTE: PC AND MC FILM SHOULD BE EXPENDED AT THIS TIME. CUE MSFN FOR STOP TIMES.

POO: V49 MNVR TO MOON UV PHOTO/P52 ATT (223:06)  
 (197,173,064) HGA P -82, Y 305

MC/LA COVER - CLOSE

223:00

SIM EXP STATUS  
 (\*0000)  
 (01214)

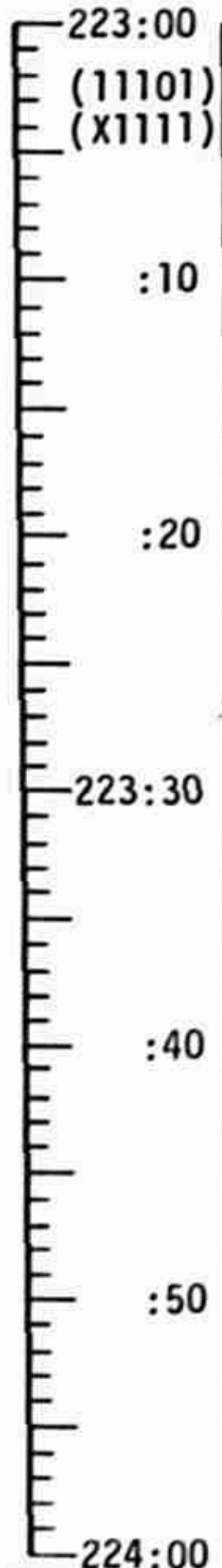
MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-334

# FLIGHT PLAN

MCC-H

1854 CST

NOTES



M  
S  
F  
N

**CSM EXP/EVA CHECKLIST**

MOON UV PHOTOGRAPHY, PAGE X/2-19  
MAG (OO)  
MAG (RR)

V49 MNVR TO THERMAL ATTITUDE (223:30)  
(214,200,299) HGA P -67, Y 63

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 \_\_\_\_\_,

REPORT: GYRO TORQUING ANGLES  
P52 (OPTION 1)  
(PTC ORIENT.)  
GDC ALIGN  
SC CONT - CMC  
BMAG (3) - RATE 2

CDR DON BIOMED HARNESS  
LMP DOFF BIOMED HARNESS

SIM EXP STATUS  
(\*0110)  
(01234)

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	223:00 - 224:00	10/TEC	3-335

# FLIGHT PLAN

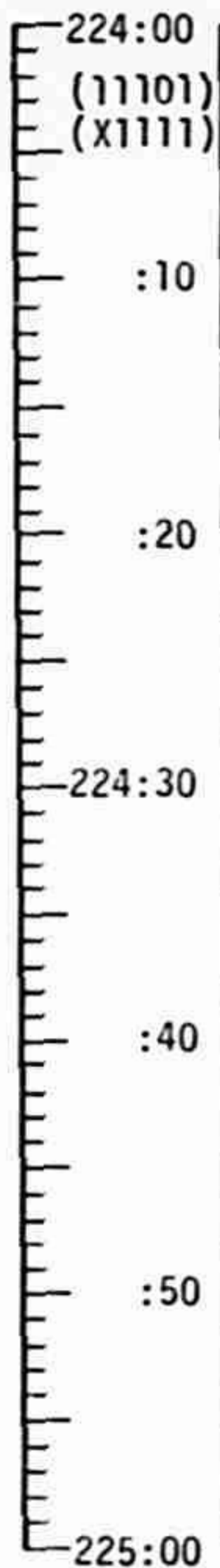
MCC-H

1954 CST

NOTES

UPDATE TO CSM  
MS BOOM RETR  
TIMES (20,15,10 & 5  
FEET)

SIM EXP STATUS  
(\*0111)  
(01222)



M  
S  
F  
N

LiOH CANISTER CHANGE  
(19 INTO B, STOW 17 IN A4)

V49 MNVR TO X-RAY POINTING (SCO X-1) ATT (224:30)  
(332,280,000) HGA P 1, Y 261

AP/XR COVER - OPEN  
MS - RETR TO 20 FEET (38 SEC)



SCO  
X-1

MS - RETR TO 15 FEET (36 SEC)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-336

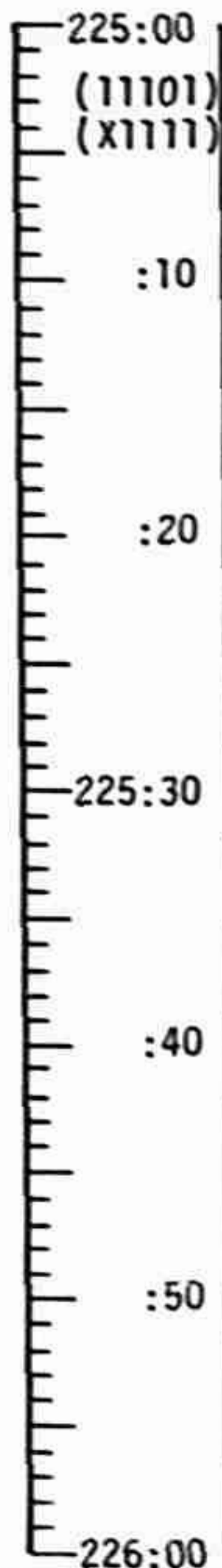
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2054 CST

NOTES



M  
S  
F  
N

MS - RETR TO 10 FEET (36 SEC)

EAT PERIOD

MS - RETR TO 5 FEET (36 SEC)

SCO  
X-1

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 PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2154 CST

NOTES

226:00  
(11101)  
(X1111)

:10

:20

226:30

:40

:50

227:00

M  
S  
F  
N

MS - DPLY  
PRE-EVA HOUSEKEEPING

GR: SHIELD - OFF

XR - STBY  
AP/XR COVER - CLOSE

**CSM G&C CHECKLIST**

PASSIVE THERMAL CONTROL (G&N)  
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)

PAGE G/8-2

QUAD D, A3, AND C4  
WILL BE USED FOR  
PTC RATE DAMPING,  
B2 & D2 FOR PTC  
SPINUP

SCO  
X-1

PTC

SIM EXP STATUS  
(\*0121)  
(01222)

DAP LOAD STATUS  
(11101)(X1111)

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

UPLINK TO CSM  
CSM S.V. & V66

# FLIGHT PLAN

MCC-H

2254 CST



M  
S  
F  
N

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST      PAGE S/1-29  
COMM - HGA

GR: SHIELD - ON (CTR)  
LOGIC PWR (2) - OFF

*FILM MAGS REQD FOR NEXT DAY:*

DAC: CEX-FF  
EL: VHBW-TT  
NK: VHBW-X



PTC

## NOTES

SIM EXP STATUS  
(\*0110)  
(01124)

DAP LOAD STATUS  
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	6. FINAL (4/16)	3/6/72 4/7/72	227:00 - 228:00	10/TEC	3-339

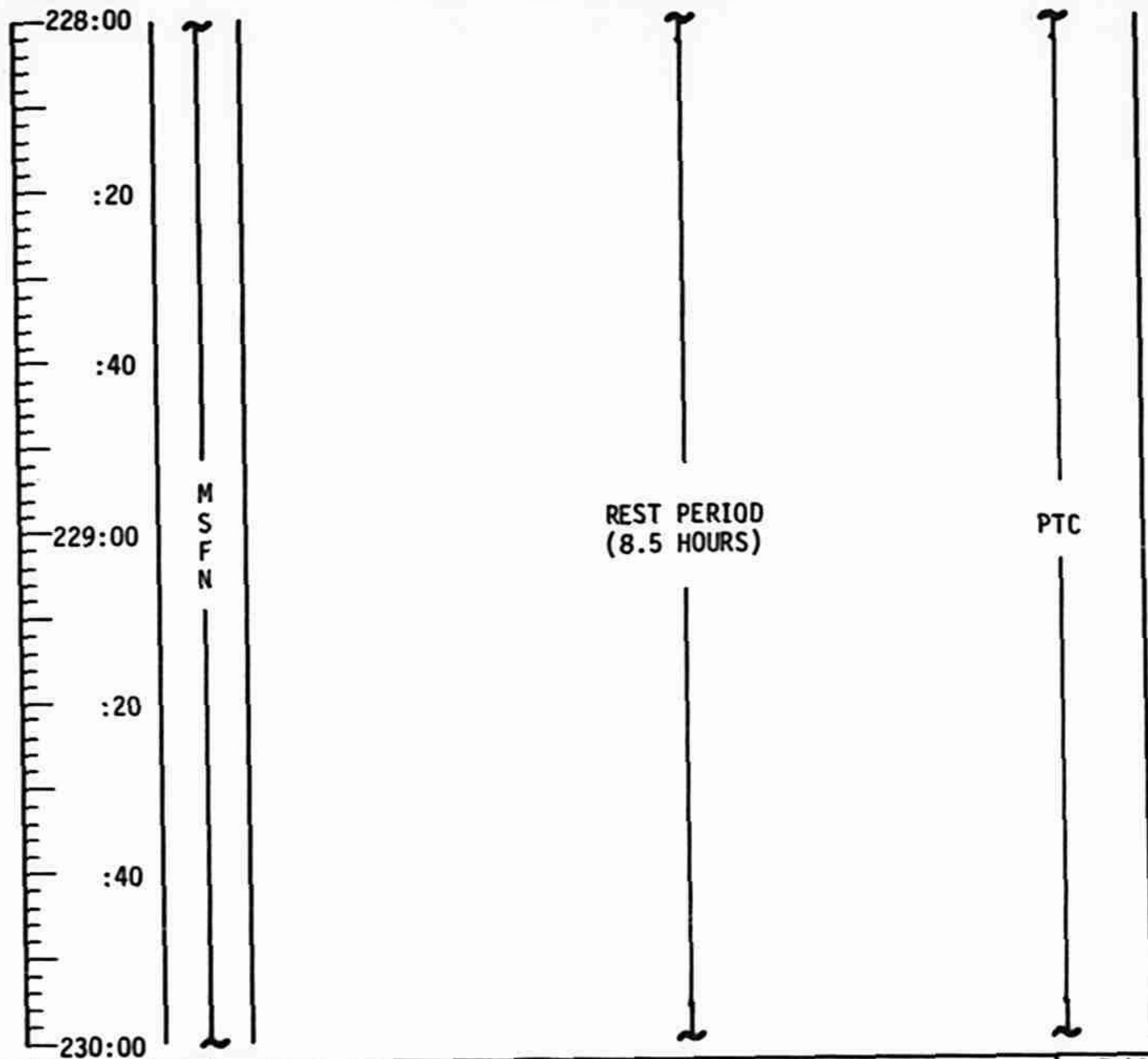


# FLIGHT PLAN

MCC-H

2354 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	228:00 - 230:00	10/TEC	3-340

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0154 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8.5 HOURS)

PTC

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 PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0354 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8.5 HOURS)

PTC

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



M  
S  
F  
N

REST PERIOD  
(8.5 HOURS)

PTC

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 PLANNING BRANCH

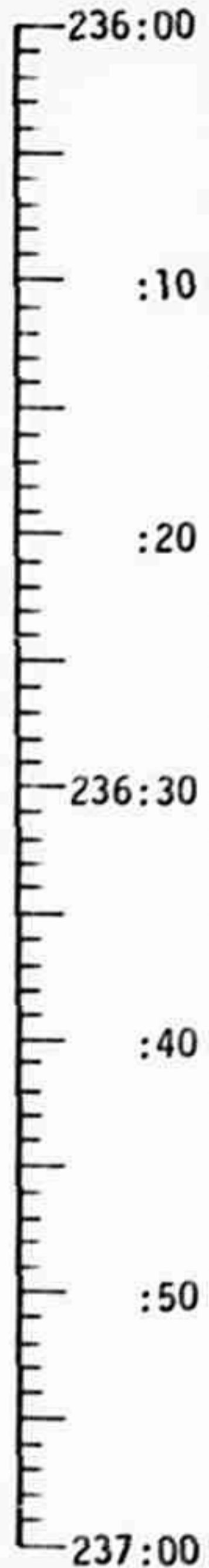
# FLIGHT PLAN

MCC-H

0754 CST

NOTES

UPDATE TO CSM  
CONSUMABLES STATUS  
FLIGHT PLAN  
SIM EXP STATUS  
DSE VOICE STATUS



M  
S  
F  
N

**CSM SYSTEMS CHECKLIST**

POST-SLEEP CHECKLIST PAGE S/1-29  
LOGIC PWR (2) - DPLY/RETR  
GR - RETR

**CSM G&C CHECKLIST**

EXIT G&N PTC USING SIM BAY JET CONFIGURATION  
PAGE G/8-3

V49 MNVR TO THERMAL ATTITUDE (237:00)  
(145,213,340) HGA P -15, Y 50 REACQ, NARROW

EAT PERIOD

GR: SHIELD - OFF

PTC

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

NOTES

UPDATE TO CSM  
GR BOOM DPLY  
TIME (2 FEET)

237:00  
(11101)  
(X1111)

SIM EXP STATUS  
(\*0010)  
(01124)

UPDATE TO CSM  
GO/NO-GO FOR MCC-5

:10

GR: DPLY 2 FEET (21 SEC)



EAT PERIOD

:20

GR: SHIELD - ON (CTR)

237:30

P52 (OPTION 3)  
(PTC ORIENT)

M  
S  
F  
N

P52 IMU REALIGN	
N71:	___'___
N05:	___'___
N93:	
X	___'___
Y	___'___
Z	___'___
GET	___:___:___

:40

REPORT: GYRO TORQUING ANGLES  
GDC ALIGN

(11101)  
(X1111)

CSM EXP/EVA CHECKLIST

:50

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)

*CAN DO MNVR EARLIER*

238:00

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 PLANNING BRANCH

# 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 O<sub>2</sub> PRESSURE-865-~~605~~<sup>935</sup> 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 <i>X</i> (4/16)	<del>3/27/72</del> 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

# FLIGHT PLAN

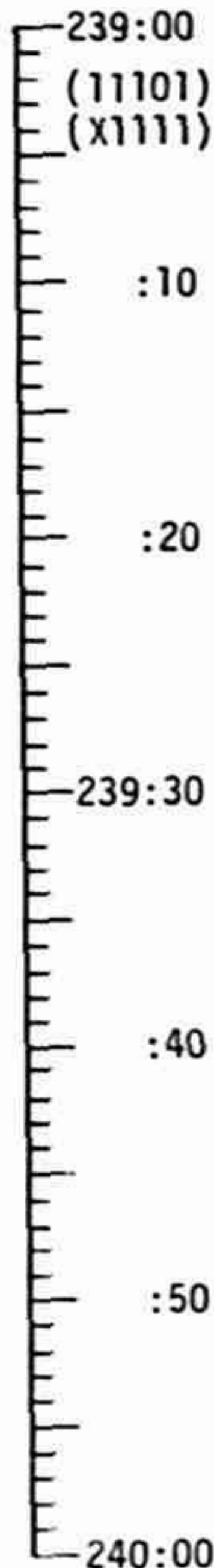
MCC-H

1054 CST

## NOTES

SIM EXP STATUS  
(\*0000)  
(01214)

\*PERFORM IF MCC-5  
IS REQUIRED



M  
S  
F  
N

O<sub>2</sub> FUEL CELL PURGE  
WASTE WATER DUMP  
URINE DUMP

PRE-SPS BURN SIM PREP (CUE CARD) EXCEPT PC REMAINS OFF  
ENABLE ALL JETS  
\*P40 SPS THRUSTING OR  
\*P41 RCS THRUSTING

**SET UP TAPE FOR RCS SOUNDS DURING MCC - IF  
NO MCC-5 TRY 270:00 DURING CONTAMINATION FIRING**

TIG: 239:21  
BT: NOM ZERO  
 $\Delta$ VT: NOM ZERO  
ULLAGE: NOM ZERO

MCC-5

\*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

CHARGE BATTERY B

CSM EXP/EVA CHECKLIST

CM EVA PREP PAGE X/3-1  
CABIN PREP FOR EVA

BURN STATUS REPORT				
X	X		●	$\Delta$ TIG
X	X		●	BT
			●	V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
			●	V <sub>gx</sub>
			●	V <sub>gy</sub>
			●	V <sub>gz</sub>
			●	$\Delta$ V <sub>c</sub>
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBAL

TEI +17 HR

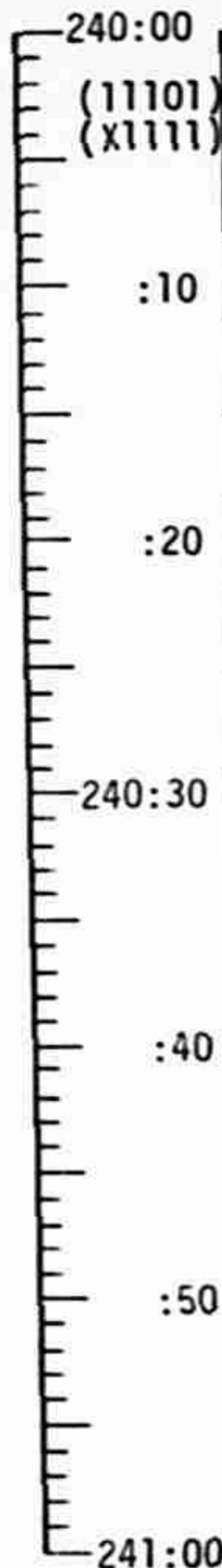
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	239:00 - 240:00	11/TEC	3-349

# FLIGHT PLAN

MCC-H

1154 CST

NOTES



(11101)  
(X1111)

M  
S  
F  
N

TV AND DAC PREP  
MAG (FF)

EVA EQUIPMENT PREP

PGA DONNING  
CMP & LMP DON BIOMED HARNESSSES

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

1354 CST

NOTES

242:00  
 (10101)  
 (10011)  
 :10  
 :20  
 242:30  
 :40  
 :50  
 243:00

M  
S  
T  
F  
V  
N

EVA OPERATIONS

CMP EGRESS

INSTALL TV/DAC, ADJUST

RETRIEVE PAN CAMERA CASSETTE

REST  
 RETRIEVE MAPPING CAMERA CASSETTE

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

DEACTIVATE EXP, GIVE MARK

REMOVE MEED AND POLE

SIM EXP STATUS  
 (\*0000)  
 (00000)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	242:00 - 243:00	11/TEC	3-352

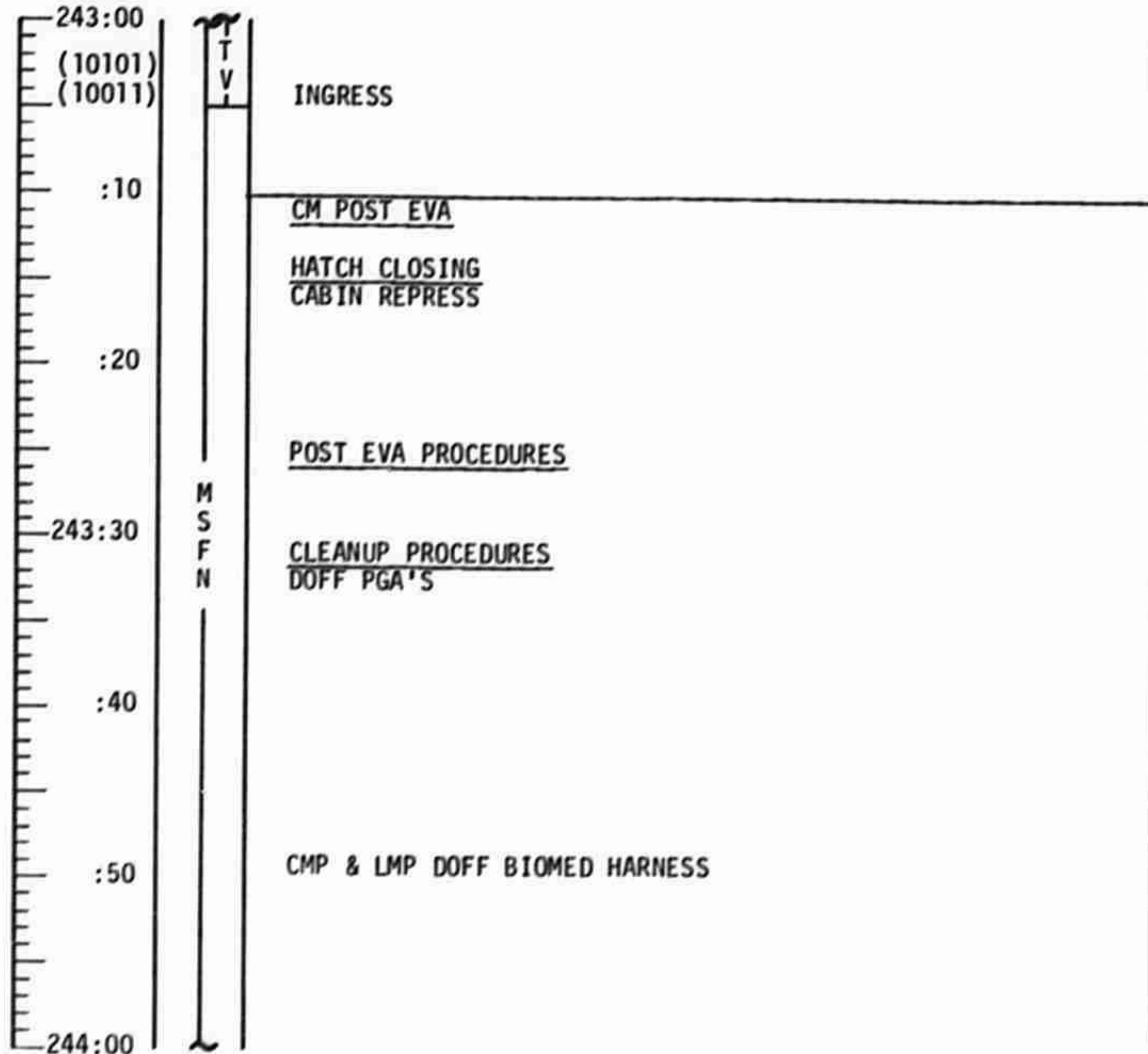
FLIGHT PLANNING BRANCH

# 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

FLIGHT PLANNING BRANCH

MCC-H

1554 CST

# FLIGHT PLAN

## NOTES

244:00  
 (10101)  
 (10011)  
 (11101)  
 (X1111)  
 :10  
 :20  
 244:30  
 :40  
 :50  
 245:00

M  
S  
F  
N

ENABLE ALL JETS  
 V48 (11101)(X1111)  
 V49 MNVR TO THERMAL ATT (244:22)  
 (175,283,340) OMNI D  
 STOW EQUIPMENT

SIM EXP STATUS  
 (\*0000)  
 (00000)

MSFN CMDS:  
 DATA SYS-ON

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

# FLIGHT PLAN

MCC-H

1654 CST

## NOTES



MSFN

O<sub>2</sub> HEATERS 3 - OFF  
 SIM BASIC CONFIG (CUE CARD)  
 EXCEPT: MC - OFF  
           PC - OFF  
           SELF TEST - OFF  
           SM/AC PWR - OFF

XR - ON  
 GR: SHIELD - ON (VERIFY)  
 MS - DPLY  
 MS: EXP - ON  
       ION SOURCE - STBY

V49 MNVR TO X-RAY POINTING/THERMAL (CYG X-1) ATT (245:35)  
 (278,295,310) OMNI XC

AP/XR COVER - OPEN

CSM EXP/EVA CHECKLIST

GAS/WATER SEPARATOR, PAGE X/2-42

EAT PERIOD

CYG  
X-1

SIM EXP STATUS  
 (\*0000)  
 (00000)  
 EARTH DISTANCE  
 ~ 168,274 NM

MSFN CMD:  
 DSE RECORD HBR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE # <sup>B</sup> (4/16)	<del>3/27/72</del> 4/17/72	245:00 - 246:00	11/TEC	3-355

FLIGHT PLANNING BRANCH



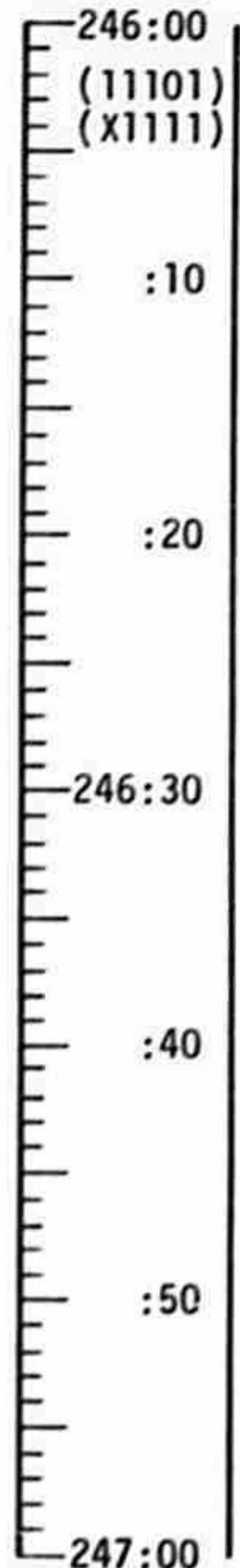
MCC-H

1754 CST

# FLIGHT PLAN

## NOTES

UPDATE TO CSM  
GR BOOM DPLY  
TIME ( 4 FEET)



M  
S  
F  
N

MS: ION SOURCE - ON

GR - DPLY TO 4 FEET (33 SEC)

EAT PERIOD

V49 MNVR TO X-RAY POINTING (CYG X-1) ATT (246:45)  
(175,133,032) HGA P -22, Y 98

SIM EXP STATUS  
(\*0011)  
(00232)

CYG  
X-1

CYG  
X-1

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

MSFN CMDS:  
DSE STOP/REWIND

MSFN CMDS:  
DSE DUMP

# FLIGHT PLAN

MCC-H

1854 CST

NOTES



M  
S  
F  
N

CYG  
X-1

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

FLIGHT PLANNING BRANCH

MCC-H

1954 CST

# FLIGHT PLAN

NOTES

248:00  
 (11101)  
 (X1111)

:10

:20

248:30

:40

:50

249:00

M  
S  
F  
N

CYG  
X-1

SIM EXP STATUS  
 (\*0211)  
 (00222)

V49 MNVR TO X-RAY POINTING SCO X-1 ATT (249:00)  
 (332,280,000) HGA P 0, Y 258

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

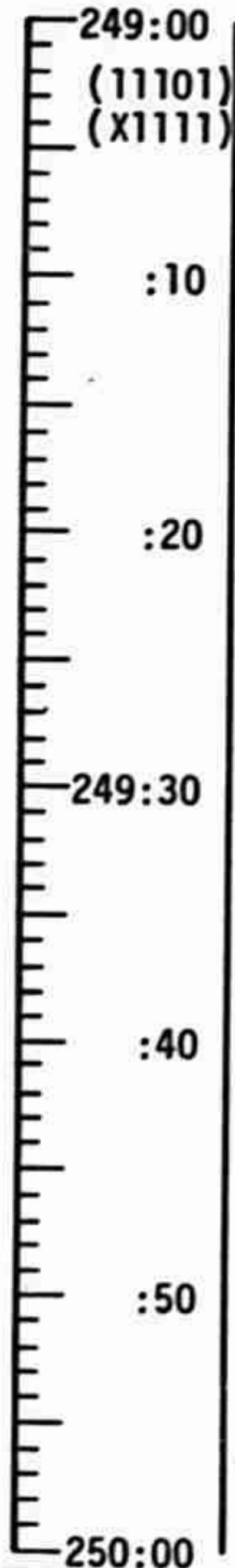
# FLIGHT PLAN

MCC-H

2054 CST

**NOTES**

UPDATE TO CSM  
GR BOOM DPLY  
TIME (8 FEET)



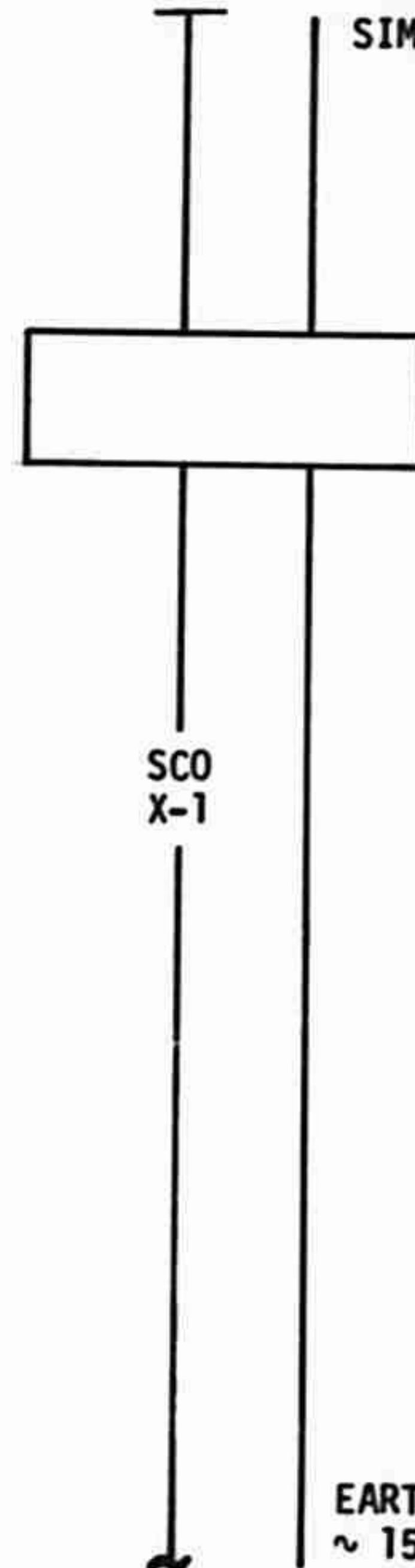
M  
S  
F  
N

GR: SHIELD - OFF

GR - RETR then DPLY TO 8 FEET (57 SEC)

GR: SHIELD - ON (CTR)

SIM EXP STATUS  
(\*0211)  
(00222)



EARTH 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

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

2154 CST

## NOTES

250:00  
 (11101)  
 (X1111)  
 :10  
 :20  
 250:30  
 :40  
 :50  
 251:00

M  
S  
F  
N

P52 (OPTION 3)  
 (PTC ORIENT)

REPORT: GYRO TORQUING ANGLES  
 GDC ALIGN

CSM SYSTEMS CHECKLIST

CONTAMINATION CONTROL

PAGE S/1-19

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

# FLIGHT PLAN

MCC-H

2254 CST

## NOTES



M  
S  
F  
N

EAT PERIOD

SCO  
X-1

SIM EXP STATUS  
(\*0211)  
(00222)

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)

QUAD D, A3, AND  
C4 WILL BE USED  
FOR PTC RATE  
DAMPING, B2 & D2  
FOR PTC SPINUP

PTC

DAP LOAD STATUS  
(11101)(X1111)

CDR DOFF BIOMED HARNESS  
LMP DON BIOMED HARNESS  
LiOH CANISTER CHANGE  
(21 INTO B, STOW 19 INTO A4)

EARTH DISTANCE  
~ 151,800 NM

UPDATE TO CSM  
GR BOOM DPLY  
TIME (6 FEET)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	251:00 - 252:00	11/TEC	3-361

FLIGHT PLANNING BRANCH

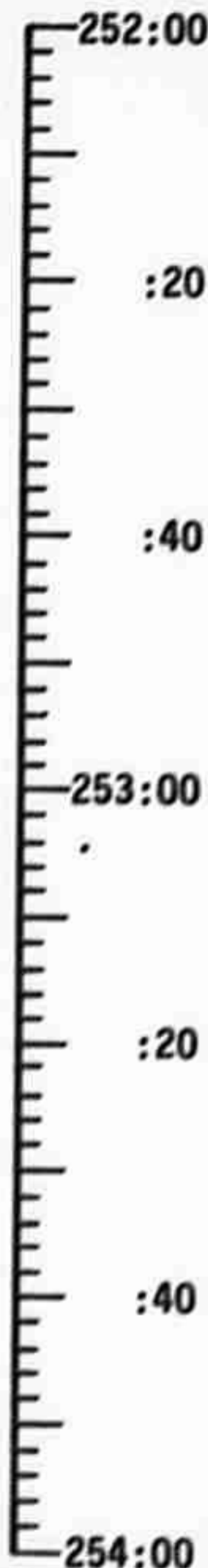
MCC-H

2354 CST

# FLIGHT PLAN

## NOTES

UPLINK TO CSM  
CSM S.V. & V66



M  
S  
F  
N

### CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE 5/1-29

COMM - HGA

LOGIC PWR (2) - OFF

FILM MAGS REQD FOR NEXT DAY:

DAC: VHBW - HH & MM

EL: VHBW - TT

NK: VHBW - X

REST PERIOD  
(8 HOURS)

PTC

SIM EXP STATUS  
(\*0210)  
(00224)

DAP LOAD STATUS  
(11101)(X1111)

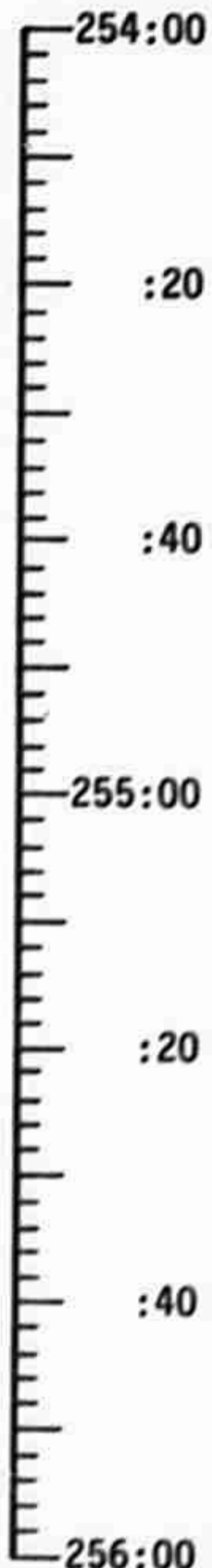
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) <i>chg B.</i>	3/5/72 4/7/72	252:00 - 254:00	11/TEC	3-362

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0154 CST



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

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	254:00 - 256:00	11/TEC	3-363

FLIGHT PLANNING BRANCH



MCC-H

0354 CST

# FLIGHT PLAN

## NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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	256:00 - 258:00	11/TEC	3-364

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0554 CST

## NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

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	258:00 - 260:00	11/TEC	3-365

FLIGHT PLANNING BRANCH

MCC-H

0754 CST

# FLIGHT PLAN

## NOTES

260:00  
:10  
:20  
260:30  
:40  
:50  
261:00

M  
S  
F  
N

REST PERIOD  
(8 HOURS)

PTC

SIM EXP STATUS  
(\*0210)  
(00224)

DAP LOAD STATUS  
(11101)(X1111)

UPDATE TO CSM  
CONSUMABLES STATUS  
FLIGHT PLAN  
SIM EXP STATUS  
DSE VOICE STATUS

**CSM SYSTEMS CHECKLIST**

POST - SLEEP CHECKLIST

PAGE S/1-29

CMP DON BIOMED - HARNESS  
LMP DOFF BIOMED - HARNESS  
GR: SHIELD - OFF

**CSM G&C CHECKLIST**

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3

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

COMM: HGA REACQ MODE P -40, Y 90

V49 MNVR TO SUPER GAL AUX PTC ATT

(N20,189,031)

P20 OPT 2, X-AXIS

N78 (0,0,0)

N79 (-0.4200, +000.50)

N34 (0,0,0)

LOGIC PWR (2) - DPLY/RETR

GR: SHIELD - ON (CTR)

QUAD D, A3, AND  
C4 WILL BE USED  
FOR PTC RATE  
DAMPING, B2 & D2  
FOR PTC SPINUP

SUPER  
GAL  
AUX  
PTC

ONLY 5 MIN OF RATE  
DAMPING REQD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	260:00 - 261:00	11-12/TEC	3-366

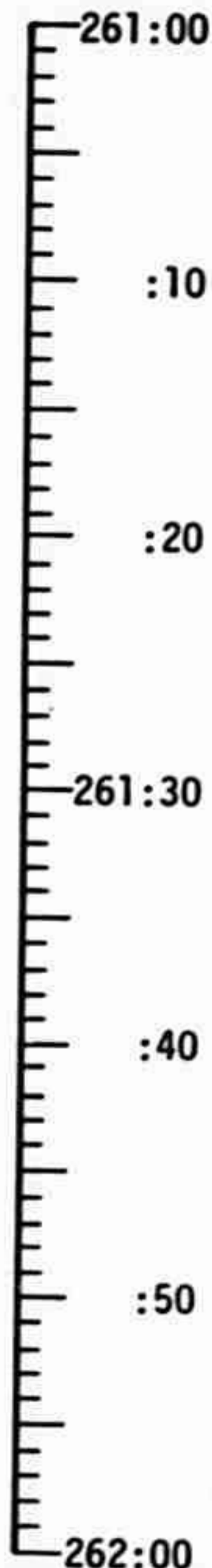
FLIGHT PLANNING BRANCH

MCC-H

0854 CST

# FLIGHT PLAN

## NOTES



M  
S  
F  
N

TIME & LOG ALL URINE VOIDS AND MEASURE  
FLUID INTAKE UNTIL ~284:30 GET

EAT PERIOD

SUPER  
GAL  
AUX  
PTC

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

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0954 CST

NOTES



MSFN

**EVALUATE TRANSMISSION OF SXT, SCT, & WINDOWS WITH SPOTMETER ON SUN**

SIM EXP STATUS  
(\*0210)  
(00224)

DAP LOAD STATUS  
(11101)(X1111)

P52 (OPTION 3 )  
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES  
GDC ALIGN

**CSM EXP/EVA CHECKLIST**

ALFMED, PAGE X/2-38  
LIGHT FLASH PHENOMENON OBSERVATION  
DON EYESHIELDS

SUPER  
GAL  
AUX  
PTC

P52 IMU REALIGN	
N71:	___'___
N05:	___'___
N93:	
X	___'___
Y	___'___
Z	___'___
GET	___:___:___

LIGHT  
FLASH  
OBS

MSFN CMDS:  
DSF RECORD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) CHANGE A	3/27/72 3/6/72e (P4I)	262:00 - 263:00	12/TEC	3-368

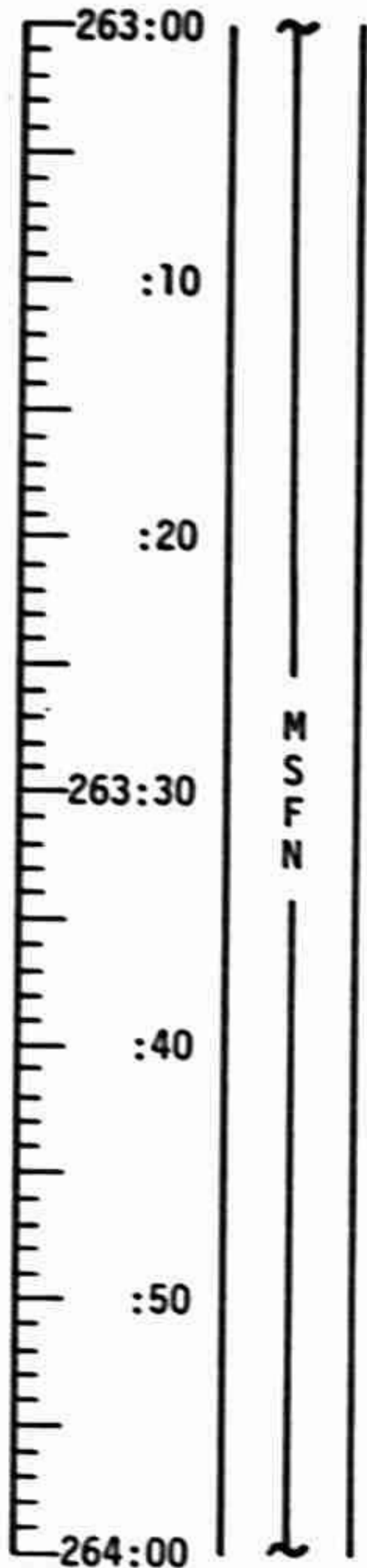
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1054 CST

## NOTES



SIM EXP STATUS  
(\*0210)  
(00224)

DAP LOAD STATUS  
(11101)(X1111)

LIGHT  
FLASH  
OBS

SUPER  
GAL  
AUX  
PTC

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3

EARTH DISTANCE  
~ 119,681 NM

MSPN CMDS:  
DSE STOP/REWIND

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) CHANGE A	3/27/72 3/6/72c (P/I)	263:00 - 264:00	12/TEC	3-369

FLIGHT PLANNING BRANCH

MCC-H

1154 CST

# FLIGHT PLAN

NOTES

264:00  
:10  
:20  
264:30  
:40  
:50  
265:00

MSFN

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2  
 COMM HGA REACQ MODE P -40, Y 90  
 V49 MNVR TO ECLIPTIC 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

LiOH CANISTER CHANGE  
 (22 INTO A, STOW 20 IN A4)  
 H<sub>2</sub> PURGE LINE HEATER - ON

PURGE O<sub>2</sub> FUEL CELL 1  
 MS - RETR TO 12 FEET (1 MIN 35 SEC)  
 PURGE O<sub>2</sub> FUEL CELL 2

MS - RETR TO 6 FEET (43 SEC)  
 PURGE O<sub>2</sub> FUEL CELL 3

MS - DPLY  
 H<sub>2</sub> FUEL CELL PURGE

URINE DUMP  
 WASTE WATER DUMP TO PERCENTAGE SPECIFIED BY MSFN

H<sub>2</sub> PURGE LINE HEATER - OFF

ECLIPTIC  
AUX  
PTC

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

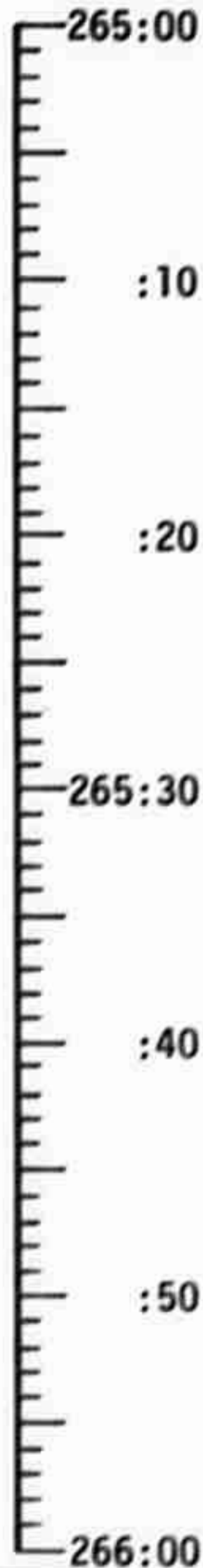
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1254 CST

## NOTES



M  
S  
F  
N

CREW EXERCISE PERIOD

ECLIPTIC  
AUX  
PTC

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

FLIGHT PLANNING BRANCH

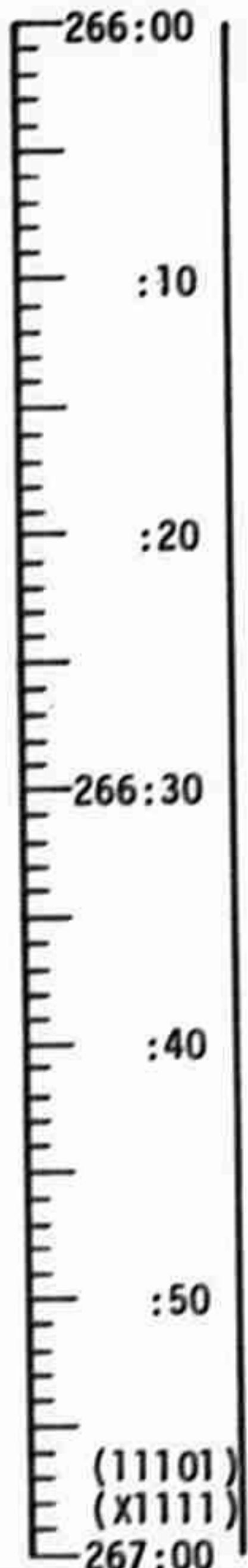


MCC-H

1354 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

GR SHIELD - OFF

CREW EXERCISE PERIOD

GR - GAINSTEP - ON (UP) 4 STEPS (STEP 3)/SHIELD - ON (CTR)

XR - ON

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3

SIM EXP STATUS  
(\*0210)  
(00224)  
  
DAP LOAD STATUS  
(11101)(X1111)

ECLIPTIC  
AUX  
PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	266:00 - 267:00	12/TEC	3-372

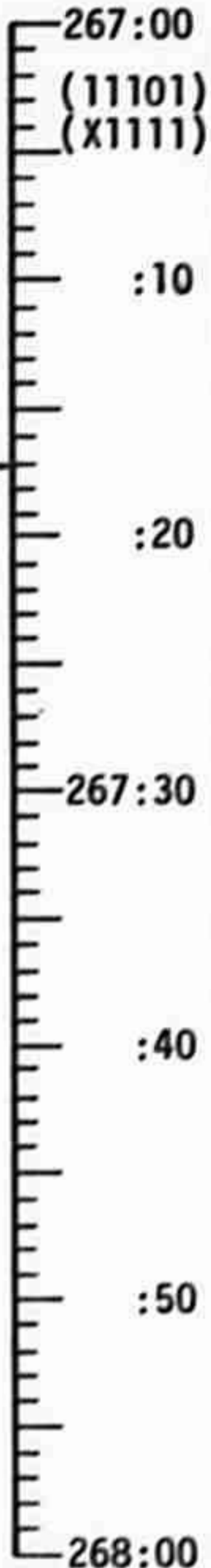
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1454 CST

NOTES



MSFN CMDS:  
DSE DUMP

MSFN

V49 MNVR TO X-RAY POINTING ATT (SCO X-1) (267:15)  
(332,280,000) HGA P 1, Y 261

AP/XR COVER OPEN

EAT PERIOD

SCO  
X-1

SIM EXP STATUS  
(\*0210)  
(00222)

IF MCC-6 IS REQUIRED:  
UPLINK TGT LOAD  
UPDATE MNVR PAD

EARTH DISTANCE  
~ 107,534 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16) <small>CHANGE A</small>	3/27/72 3/6/72-c (P41)	267:00 - 268:00	12/TEC	3-373

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1554 CST

NOTES

268:00  
 (11101)  
 (X1111)  
 :10  
 :20  
 268:30  
 :40  
 :50  
 269:00

M  
S  
F  
N

GR: GAINSTEP - ON (UP) 4 STEPS (STEP 7)/SHIELD-ON (CTR)  
 P52 (OPTION 3)  
 (PTC ORIENT)

MS - RETR

REPORT: GYRO TORQUING ANGLES  
 GDC ALIGN

CHARGE BATTERY A

MS - DPLY

SCO  
X-1

SIM EXP STATUS  
 (\*0211)  
 (00222)

IF MCC-6 REQUIRED,  
 PERFORM AT 268:23

<b>P52 IMU REALIGN</b>	
N71:	___ . ___
N05:	___ . ___
N93:	
X	___ . ___
Y	___ . ___
Z	___ . ___
GET	___ : ___ : ___

UPDATE TO CSM  
ENTRY PAD

UPLINK TO CSM  
CSM S.V. & V66

EI -22 HR

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

269:00  
 (11101)  
 (X1111)  
 :10  
 :20  
 269:30  
 :40  
 :50  
 270:00

M  
S  
F  
N

**ENTRY CHECKLIST**

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

GR: SHIELD - ON (CTR)

MS - RETR TO 15 FEET (1 MIN 14 SEC)

SCO  
X-1

SIM EXP STATUS  
 (\*0211)  
 (00222)

UPDATE TO CSM  
 MS BOOM RETR  
 TIME (15 FEET)

ENABLE ALL JETS  
 P47 *MAN ATT (3) - ACCEL CMD*

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

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1754 CST

NOTES

270:00  
 (11101)  
 (X1111)  
 :10  
 :20  
 270:30  
 :40  
 :50  
 271:00

M  
S  
F  
N

TRANSLATE -Y FOR <1 SEC (FIRES RCS JETS C1 & A2)  
 P00  
 WAIT 5 MINS  
 YAW LEFT FOR <1 SEC (FIRES RCS JETS B4 & D4)  
 INHIBIT ALL JETS EXCEPT A1&C2 OR D1&B2,A3,C4,B3,D4

**TIME CALIBRATION ON TAPE RECORDER**

**CNC MODE - FREE**  
**NAV ATT(3) - RATE CMD**  
**CNC MODE - AUTO**

MS: ION SOURCE - STBY

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 -72, Y 304

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

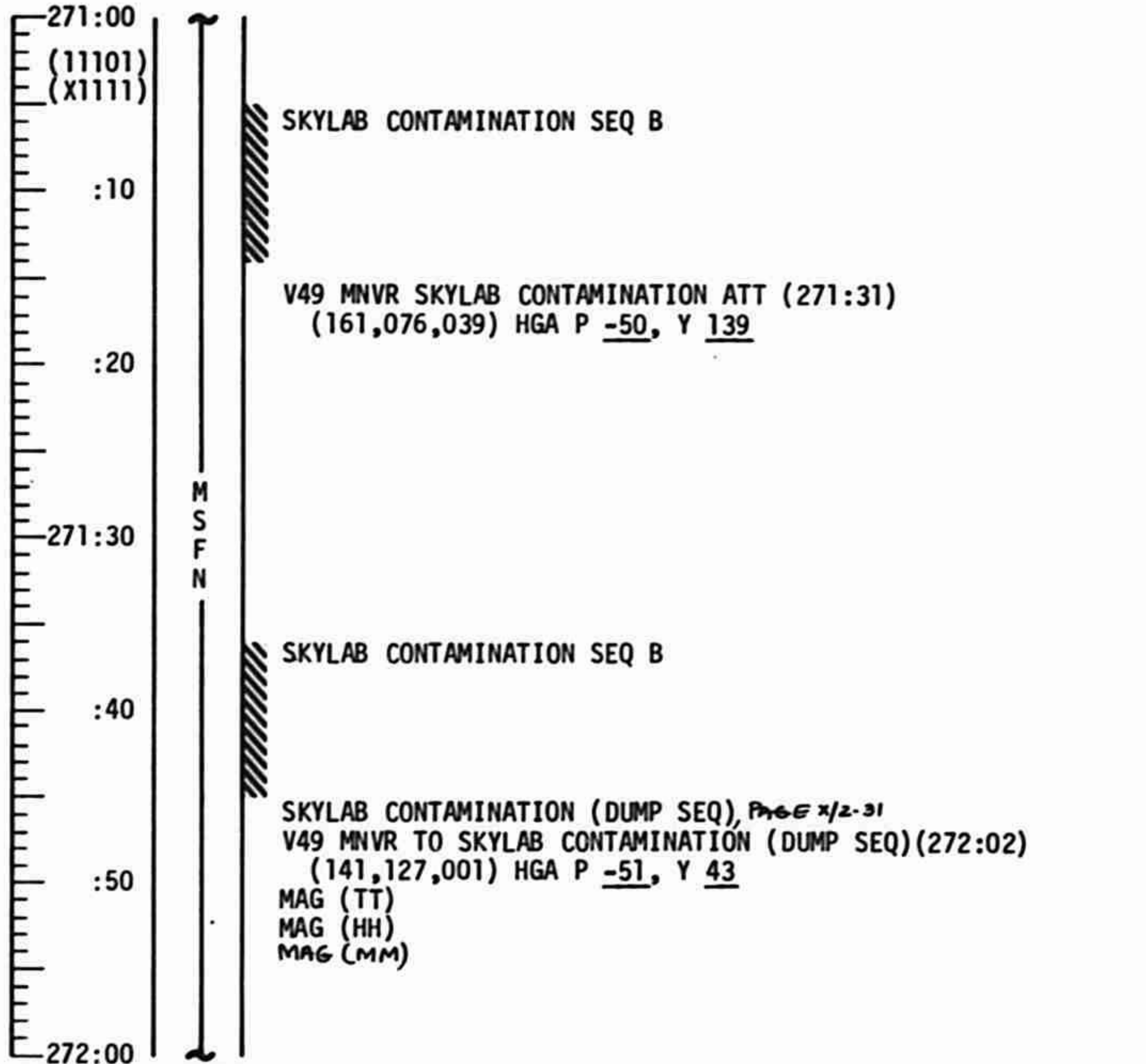
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

1854 CST

NOTES



SIM EXP STATUS  
 (\*2210)  
 (00224)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/27/72-3/6/72e (P11)	271:00 - 272:00	12/TEC	3-377

CHANGE A

FLIGHT PLANNING BRANCH

MCC-H

1954 CST

# FLIGHT PLAN

NOTES



MSFN

MC/LA COVER - CLOSE

SKYLAB CONTAMINATION (DUMP SEQ)

V49 MNVR TO SKYLAB DUMP OBSERVAITON ATT (272:17)  
(086,080,034) HGA P -43, Y 239

SKYLAB CONTAMINATION (DUMP SEQ)

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)  
 :10  
 :20  
 273:30  
 :40  
 :50  
 274:00

M  
S  
F  
N

XR - ON  
 START ON ENTRY STOWAGE

GR: SHIELD - OFF  
 V49 MNVR TO X-RAY POINTING/THERMAL ATTITUDE (CYG X-1)(273:30)  
 (278,295,310) OMNI BC

AP/XR COVER - OPEN  
 GR: SHIELD - ON (CTR)

CDR DON BIOMED HARNESS  
 CMP DOFF BIOMED HARNESS

REPORT: CM RCS INJECTOR VALVE TEMPS  
 (SYS TEST METER 5C, 5D, 6A, 6B, 6C, 6D)

LiOH CANISTER CHANGE  
 (23 INTO B, STOW 21 IN A5)

SIM EXP STATUS  
 (\*0210)  
 (00224)

CYG  
X-1

CM RCS INJECTOR TEMP	
5C _____	5D _____
6A _____	6B _____
6C _____	6D _____

MSFN CMD:  
 DSE RECORD HBR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE <del>X</del> <sup>B</sup> (4/16)	<del>3/27/72</del> 4/7/72	273:00 - 274:00	12/TEC	3-379

FLIGHT PLANNING BRANCH



MCC-H

2154 CST

# FLIGHT PLAN

NOTES

274:00  
 (11101)  
 (X1111)  
 :10  
 :20  
 274:30  
 :40  
 :50  
 275:00

M  
S  
F  
N

V49 MNVR TO X-RAY POINTING (CYG X-1) ATT (274:30)  
 (178,127,039) HGA P -22, Y 98

EAT PERIOD

CYG  
X-1

CYG  
X-1

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

# FLIGHT PLAN

MCC-H

2254 CST

NOTES

275:00  
 (11101)  
 (X1111)  
 :10  
 :20  
 275:30  
 M  
 S  
 F  
 N  
 :40  
 :50  
 276:00

EAT PERIOD

CYG  
 X-1

SIM EXP STATUS  
 (\*0211)  
 (00222)

**CSM SYSTEMS CHECKLIST**

PRE-SLEEP CHECKLIST PAGE S/1-29  
 COMM - HGA  
 LOGIC PWR (2) - OFF  
 FILM MAGS REQD FOR NEXT DAY:  
 DAC: CEX-GG  
 EL: UV-00, CEX-RR

**CSM G&C CHECKLIST**

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2  
 COMM: HGA REACQ MODE P -40, Y 90  
 V49 MNVR TO SUPER GAL PTC ATTITUDE  
 (N20,043,335)  
 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

SUPER  
 GAL  
 PTC

DAP LOAD STATUS  
 (11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	Chg B FINAL (4/16)	3/6/72 4/7/72	275:00 - 276:00	12/TEC	3-381

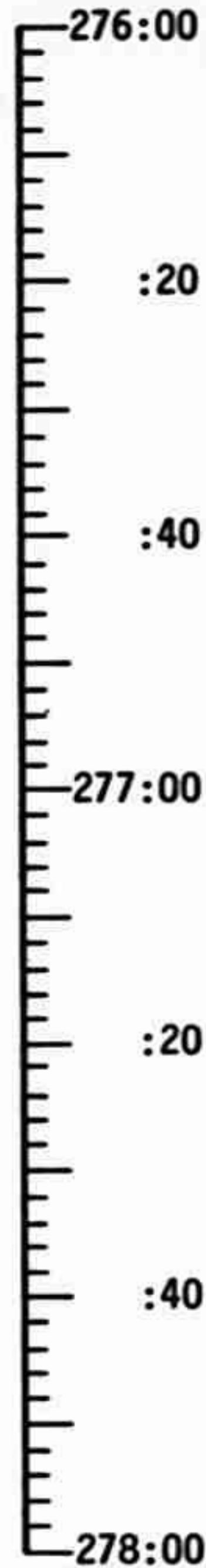
FLIGHT PLANNING BRANCH

MCC-H

2354 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

SUPER  
GAL  
PTC

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



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

SUPER  
GAL  
PTC

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	278:00 - 280:00	12/TEC	3-383

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0354 CST

NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

SUPER  
GAL  
PTC

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

## NOTES



M  
S  
F  
N

REST PERIOD  
(8 HOURS)

SUPER  
GAL  
PTC

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 PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0754 CST

NOTES

UPDATE TO CSM  
CONSUMABLES STATUS  
FLIGHT PLAN  
MS BOOM RETR  
TIME (15 FEET)



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

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

MSFN CMDS:  
DSG RECORD HBR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	27/23/72 (P&I)	284:00 - 285:00	13/TEC	3-386

CHANGE A

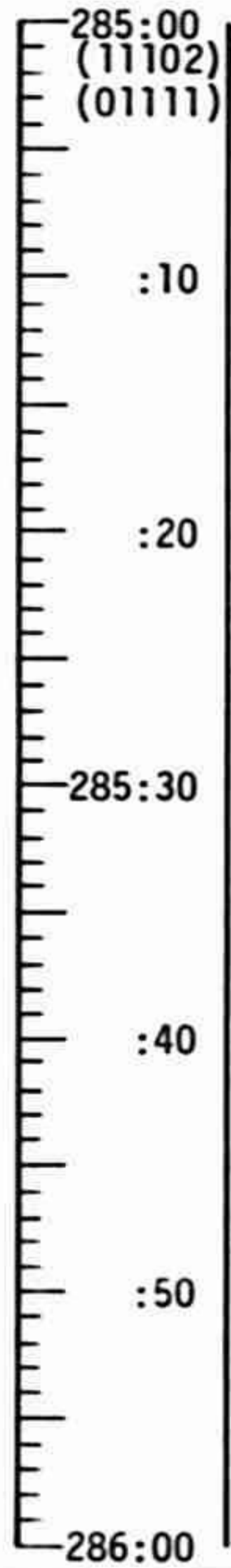
FLIGHT PLANNING BRANCH

# FLIGHT PLAN

MCC-H

0854 CST

## NOTES



M  
S  
F  
N

EAT PERIOD

GAL  
ANTI  
CENTER  
POINT

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)

GR: SHIELD - OFF  
MS: ION SOURCE - OFF  
EXP - OFF  
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM  
XR - OFF  
AP - OFF  
AP/XR COVER - CLOSE  
MS - RETR  
GR - RETR  
GR - OFF  
V49 MNVR TO P52 ATTITUDE (286:00)  
(157,134,040) HGA P -37, Y 80  
LOGIC PWR (2) - OFF

CSM ENTRY CHECKLIST PAGE E/1-1

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  
(11102)  
(01111)  
:10  
:20  
286:30  
:40  
:50  
287:00

M  
S  
F  
N

LIMIT CYCLE - ON  
ATT DEADBAND - MIN STARS \_\_\_\_\_  
RATE - LOW SA \_\_\_\_\_  
BMAG (3) - ATT 1/RATE 2 TA \_\_\_\_\_  
SC CONT - SCS  
P52 (OPTION 3)  
(PTC ORIENT)  
REPORT: GYRO TORQUING ANGLES  
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

\*P30 EXTERNAL ΔV  
\*V49 MNVR TO PAD BURN ATT

DATA SYS - OFF

P52 IMU REALIGN	
N71:	_____
N05:	_____
N93:	_____
X	_____
Y	_____
Z	_____
GET	_____

\*PERFORMED IF  
MCC-7 IS REQUIRED

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

EI -4 HR

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# 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



M  
S  
F  
N

\*SXT STAR CHECK

\*P40 SPS THRUSTING OR  
\*P41 RCS THRUSTING

TIG: 287:23
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NOM ZERO

MCC-7

\*V66 SET CSM S.V. INTO LM S.V.  
\*REPORT: BURN STATUS

**CSM EXP/EVA CHECKLIST**

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)

**LOOK FOR NOCTILUCENT CLOUDS**

\*PERFORMED IF MCC-7 IS REQUIRED

BURN STATUS REPORT			
X	X	<input type="checkbox"/>	•
X	X	<input type="checkbox"/>	•
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•
TRIM			
X	X	X	
X	X	X	
X	X	X	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	•
X	X	X	
X	X	X	
X	X	X	

ΔTIG  
BT  
V<sub>gx</sub>  
R  
P  
Y  
V<sub>gx</sub>  
V<sub>gy</sub>  
V<sub>gz</sub>  
ΔV<sub>c</sub>  
FUEL  
OX  
UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL <sup>a</sup> (4/16) CHANGE A	3/27/72 3/6/72e (P1)	287:00 - 288:00	13/TEC	3-391

FLIGHT PLANNING BRANCH

MCC-H

1154 CST

# FLIGHT PLAN

## NOTES

288:00  
(11102)  
(01111)

:10

REMOVE AND STOW CABIN FAN FILTER (U2)

:20

STOW FLIGHT PLAN

**CSM ENTRY CHECKLIST**

LOGIC SEQUENCE CHECK PAGE E/1-2  
GO/NO-GO FOR PYRO ARM (CUE MSFN)

288:30

M  
S  
F  
N

:40

P52 (OPTION 3) PAGE E/1-2  
(ENTRY ORIENT)

:50

REPORT: GYRO TORQUING ANGLES  
GDC ALIGN PAGE E/1-3

289:00

EARTH DISTANCE  
~20,900 NM

P52 IMU REALIGN

N71: \_ \_ . \_ \_

N05: \_ \_ . \_ \_

N93: \_ \_ . \_ \_

X \_ \_ . \_ \_

Y \_ \_ . \_ \_

Z \_ \_ . \_ \_

GET \_ \_ : \_ \_

EI -2 HR  
UPDATE TO CSM  
GO/NO-GO FOR PYRO  
ARM SEQUENCE

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

# FLIGHT PLAN

MCC-H

1254 CST

NOTES

289:00  
(11102)  
(01111)

:10

:20

289:30

:40

:50

290:00

M  
S  
F  
N

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

CONFIGURE FOR VHF A SIMPLEX VOICE CHECK

TERMINATE RCS PREHEAT PAGE E/1-5  
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 GO/NO-GO FOR PYRO ARM (CUE MSFN)  
 LOGIC ON  
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 EMS INITIALIZATION

RSI ALIGNMENT  
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CONFIGURE DSE: (HBR/RCD/FWD/CMD RESET)

SEPARATION CHECKLIST PAGE E/2-2

EI -1 HR

VHF - A SIMPLEX  
 COMM CHECK  
UPDATE TO CSM  
GO/NO-GO FOR  
 PYRO ARM  
 ENTRY PAD  
 RECOVERY PAD

UPLINK TO CSM  
 CSM S.V. & V66

EI -30 MIN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	289:00 - 290:00	13/TEC	3-393

FLIGHT PLANNING BRANCH

MCC-H

1354 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

P61 ENTRY PREP PAGE E/2-2  
 P62 CM/SM SEP & PRE-ENTRY MNVR  
 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



3/27/72

4-1

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  $3\sigma$  dispersions are the RSS of the penalties imposed on the SPS margin by  $3\sigma$  dispersions in propellant loading, mixture ratio, engine  $I_{sp}$ , maneuver  $\Delta V$ , 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  $3\sigma$  engine. Thus, in order to have a combined  $3\sigma$  confidence level for the S-IVB and SPS, the S-IVB  $\Delta V$  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  $\Delta V$  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 $\Delta V$ . . . . .		40 194.8
Required for $\Delta V$		
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
$-3\sigma$ performance . . . . .	363.6	969.5
S-IVB $\Delta V$ deficit . . . . .	0.0	969.5
Margin above $3\sigma$ . . . . .		969.5
Available for contingencies* . . . . .		969.5

\* 969.5 lb is equivalent to 365 fps end-of-mission reserve.

3/27/72

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 -  $0.5^\circ$ .
9. Attitude hold deadband at other times -  $3.0^\circ$  (except for  $2^\circ$  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

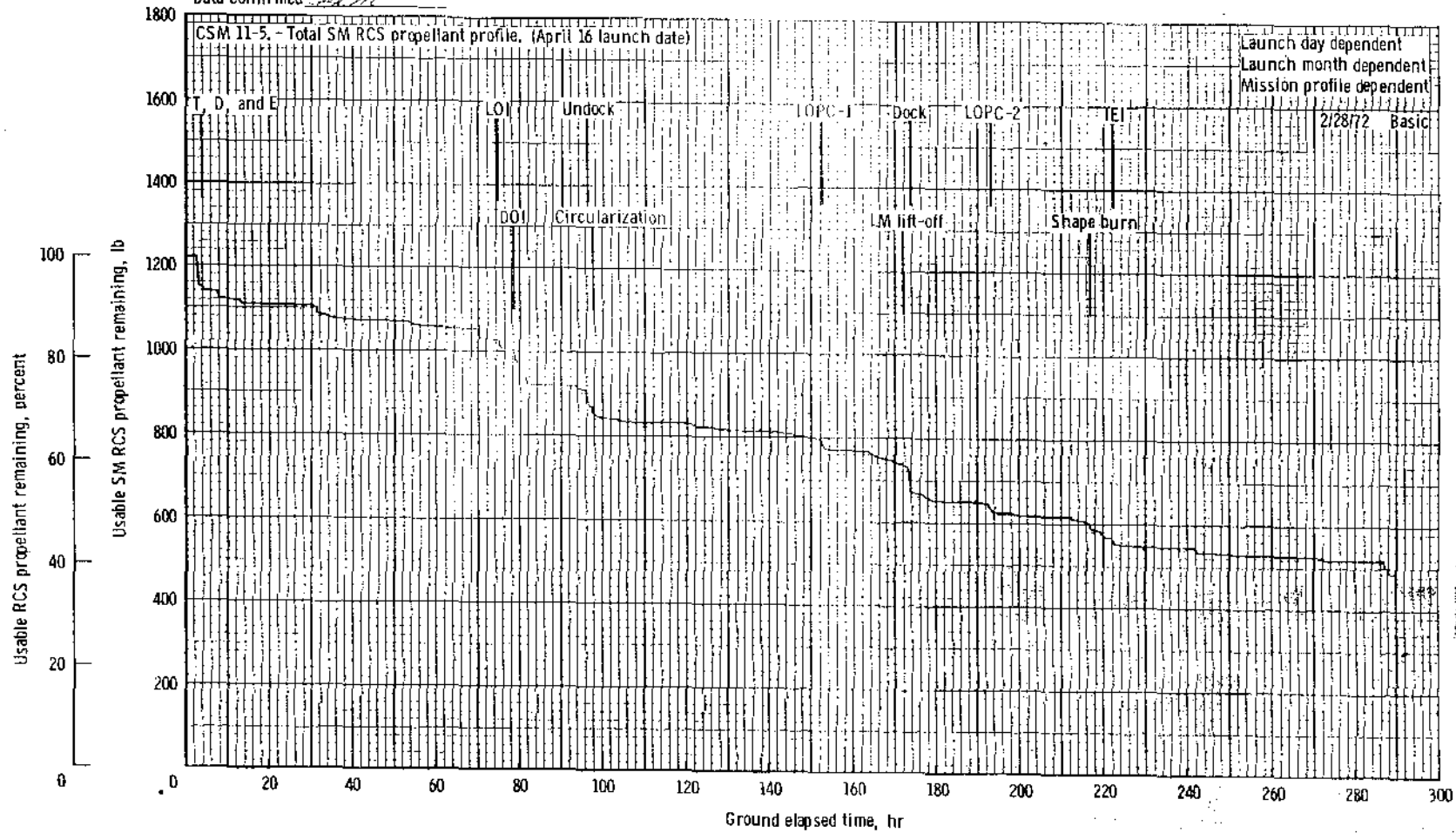
Item	Required, lb	Remaining, lb
Expected loading	- -	1342.4
Initial outage M/R	15.6	- -
Total trapped	26.4	- -
Gaging inaccuracy*	80.4	- -
Deliverable		1220.0
Nominal usage		
Translunar coast	200	- -
Lunar orbit	468	- -
Transearth coast	92	- -
Total	760	- -
Nominal remaining usable		460.0

\*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.

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source: *Flight Plan 1-5-68*

Data confirmed: *1-2-68*



Total SM RCS propellant usage profile.

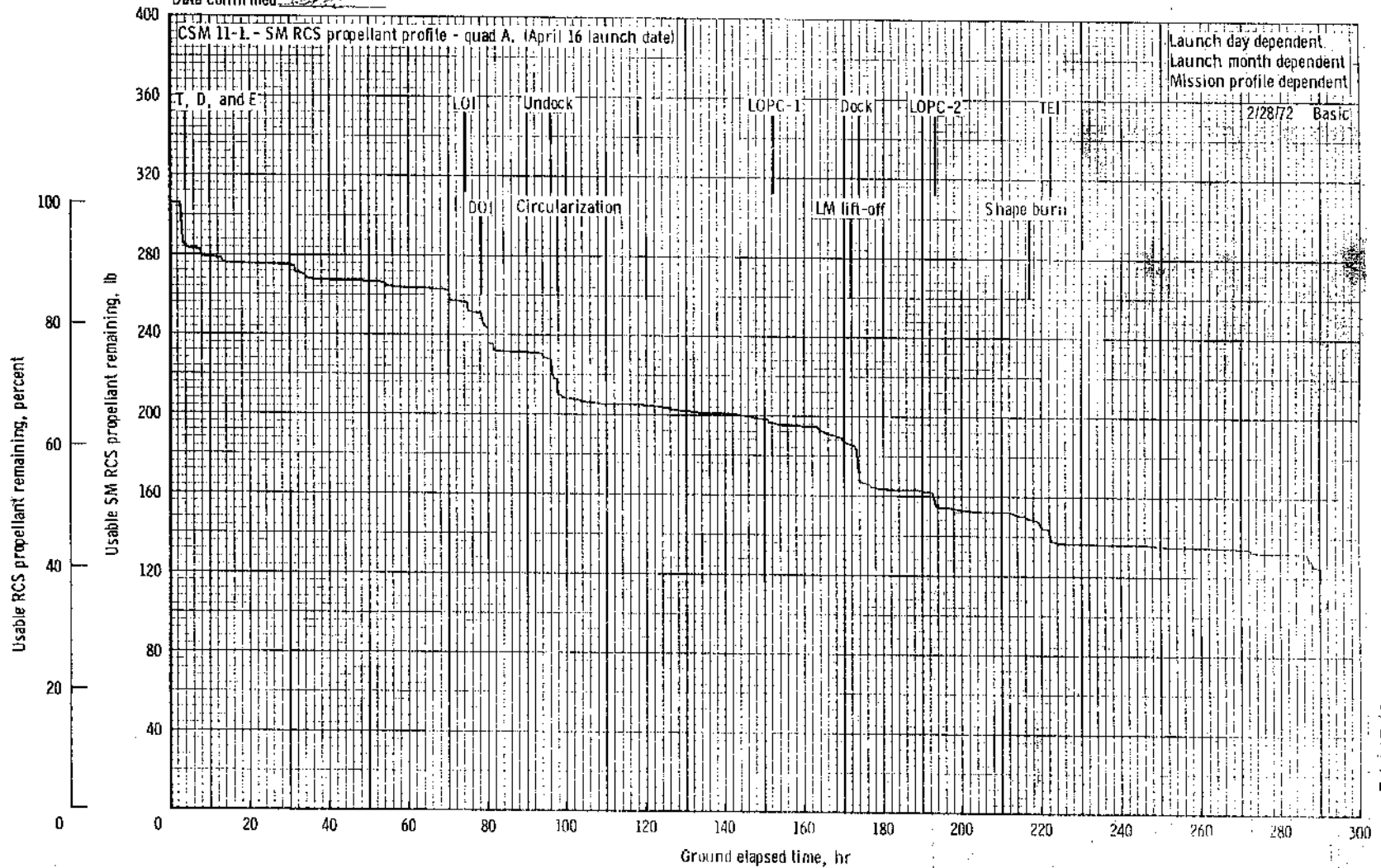
3/27/72

4-5

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source Flight Plan 2 5068

Data confirmed SM

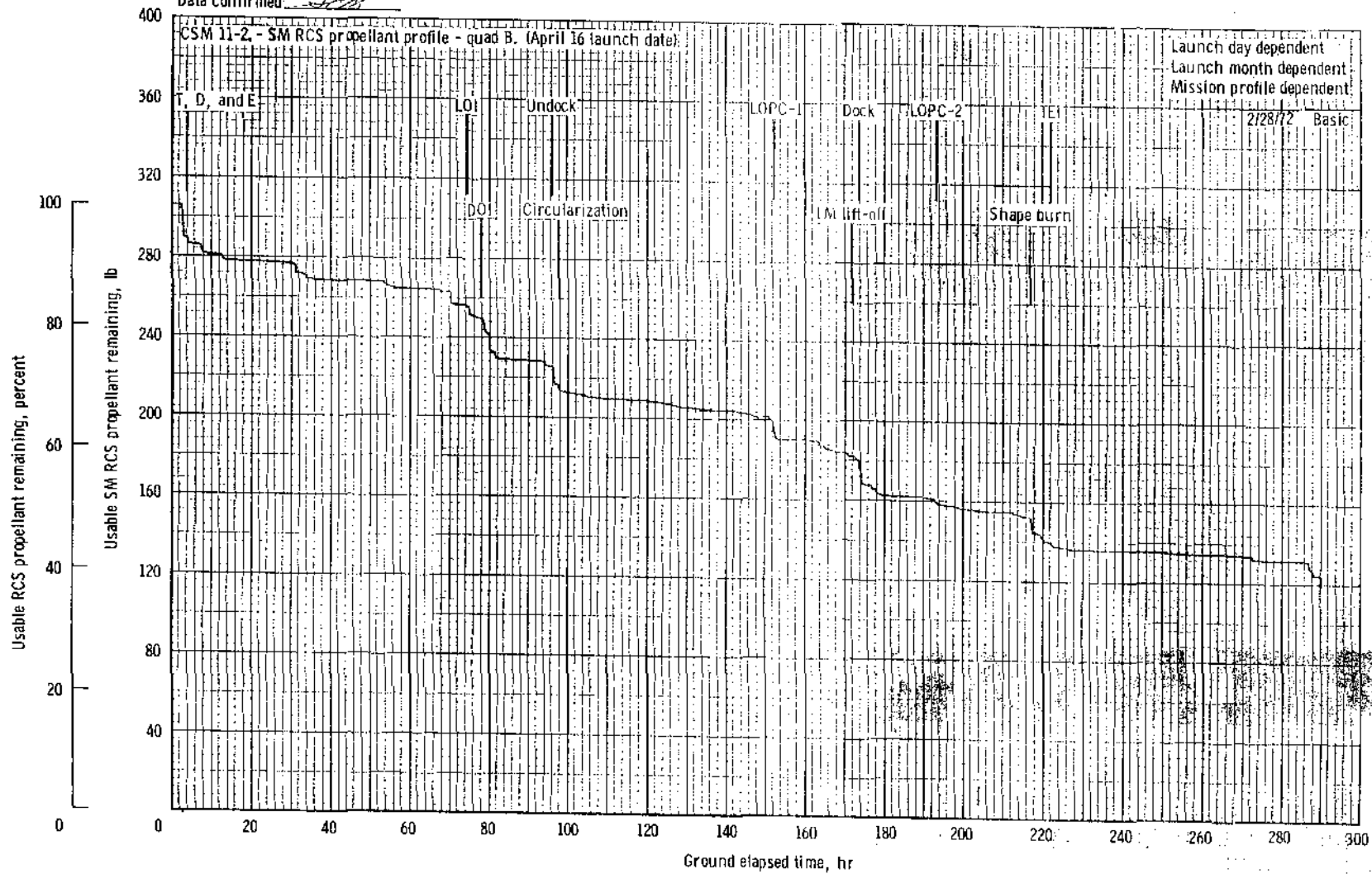


4-6

3/27/72

SM RCS propellant profile - quad A.

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)  
 Data source Flight Plan F 500B  
 Data confirmed [Signature]



3/27/72

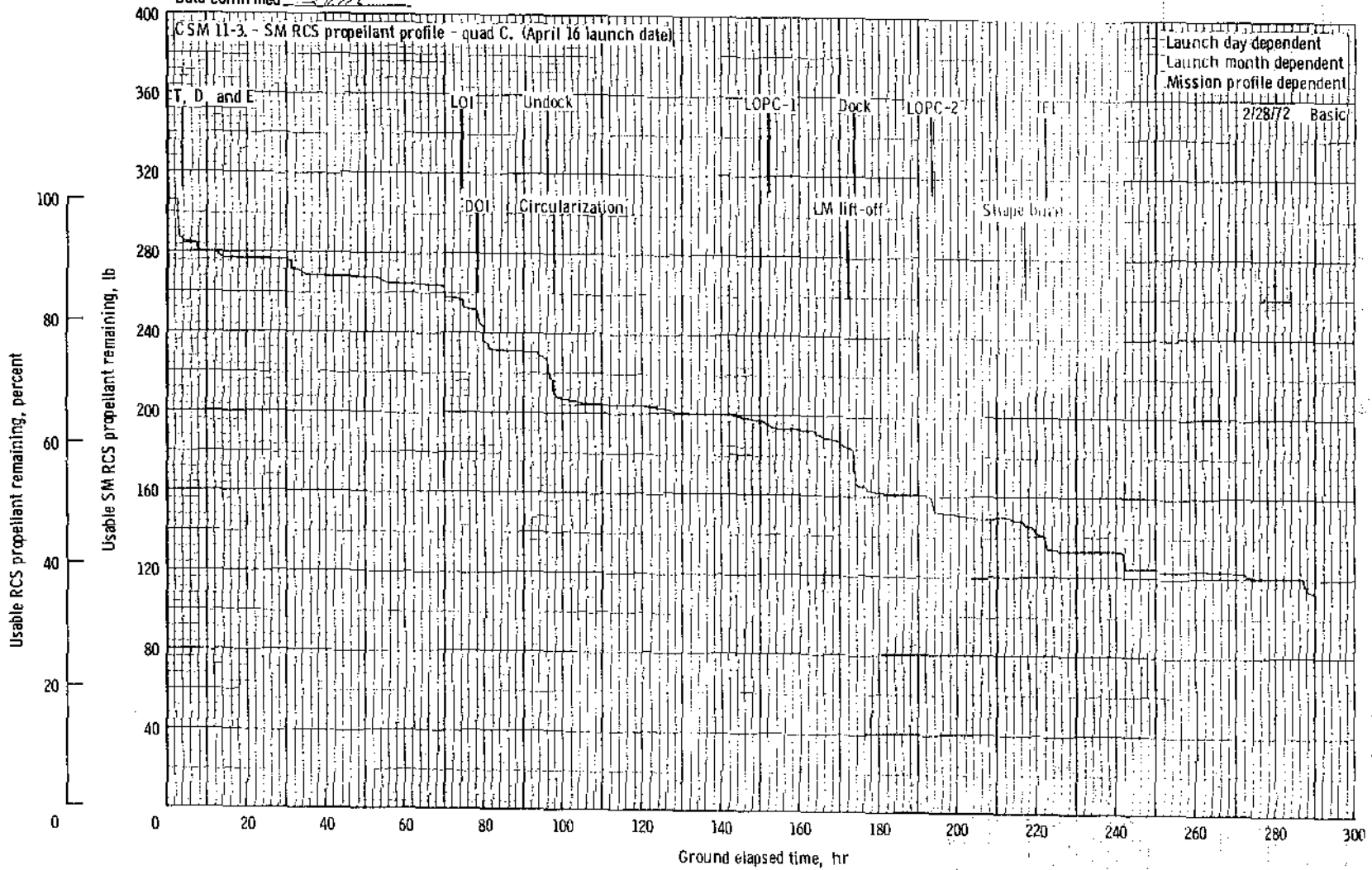
4-7

SM RCS propellant profile - quad B.

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source Flight Plan & SDR

Data confirmed 1/772



SM RCS propellant profile - quad C.

4-8

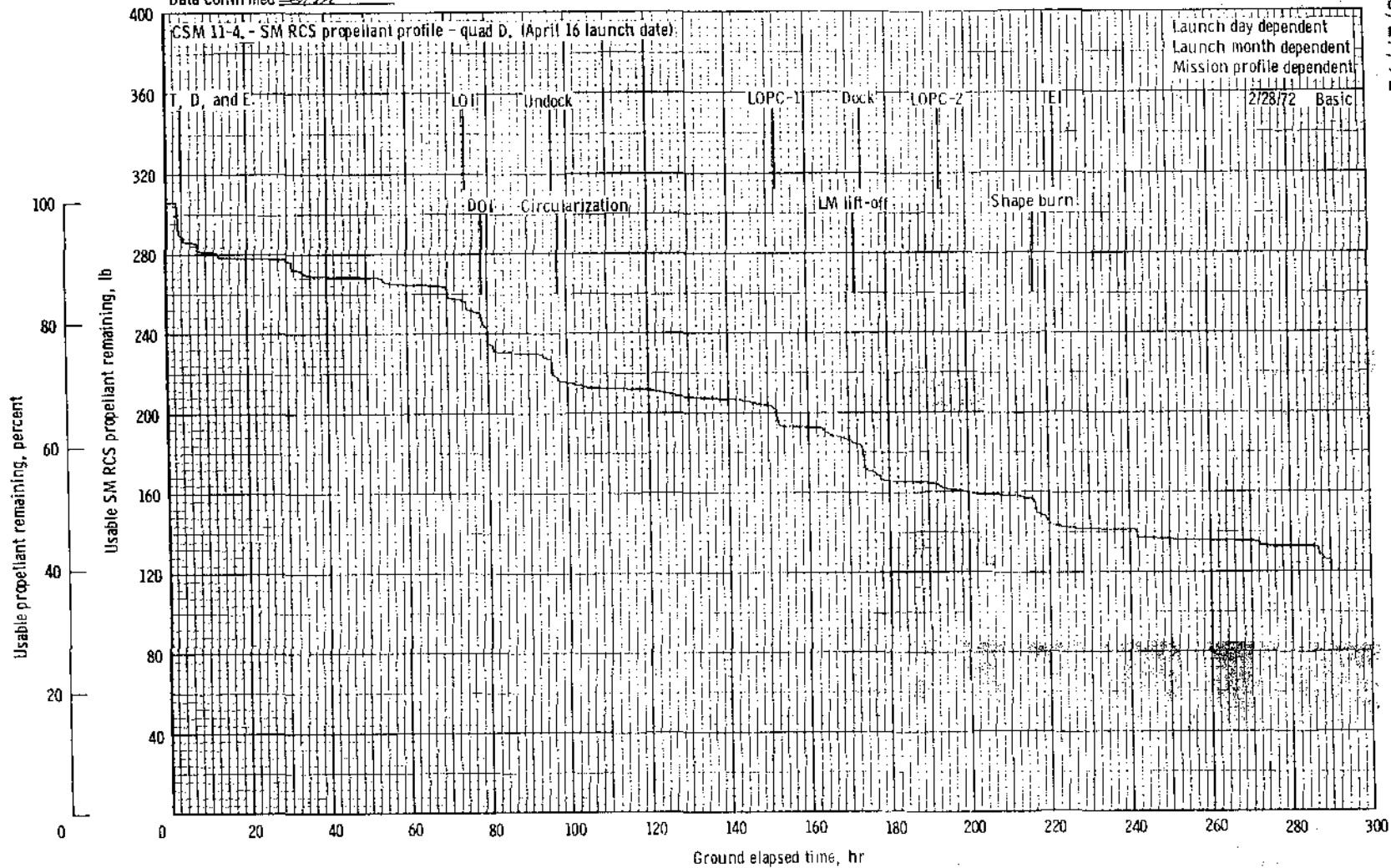
3/27/72



Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)

Data source Flight Plan ESDB

Data confirmed 1/19/72



3/27/72

4-9

SM RCS propellant profile - quad D.

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

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.

3/27/72

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 hrs <sup>a</sup>		H <sub>2</sub> tank 1, 2 hrs, 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			
<sup>a</sup> 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			

<sup>a</sup>Switch to 100-watt heaters in O<sub>2</sub> tanks 1, 2, and 3 at this time.

The CSM consumables summary (table 5-1) shows that a significant H<sub>2</sub> and O<sub>2</sub> margin exists at the end of the mission. This is reflected in the H<sub>2</sub> and O<sub>2</sub> 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

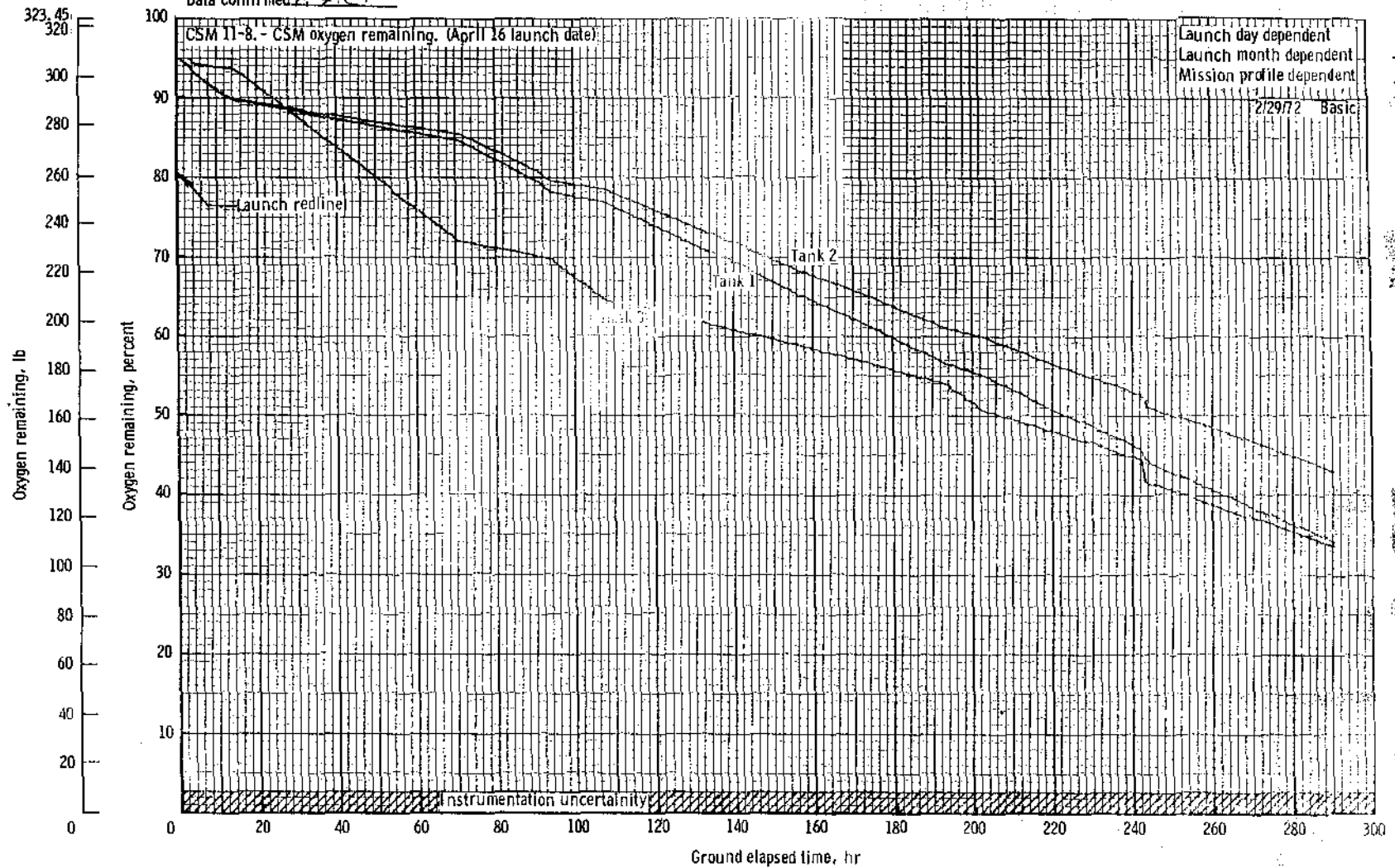
	H <sub>2</sub> lbs	O <sub>2</sub> lbs
PLANNING ALLOWANCE		
TOTAL LOADED	87.9	990.3
LESS RESIDUAL	3.5	19.8
LESS INSTRUMENTATION ERROR	2.3	26.0
AVAILABLE FOR MISSION PLANNING	82.1	944.5
PRELAUNCH REQUIREMENT*	3.8	48.3
FLIGHT REQUIREMENT		
EPS (INCLUDING FUEL CELL PURGE)	59.3	470.9
ECS (INCLUDING CABIN PURGE + EVA)	--	83.7
LM PRESSURIZATION	--	11.1
	<u>59.3</u>	<u>565.7</u>
NOMINAL RESERVES		
EPS UNCERTAINTY (2.5%)	1.5	11.8
ECS UNCERTAINTY (.08 #/HR)	--	23.2
	<u>1.5</u>	<u>35.0</u>
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 SADB, 7<sup>th</sup> Flt Aln

Data confirmed D. Z. C.



4-14

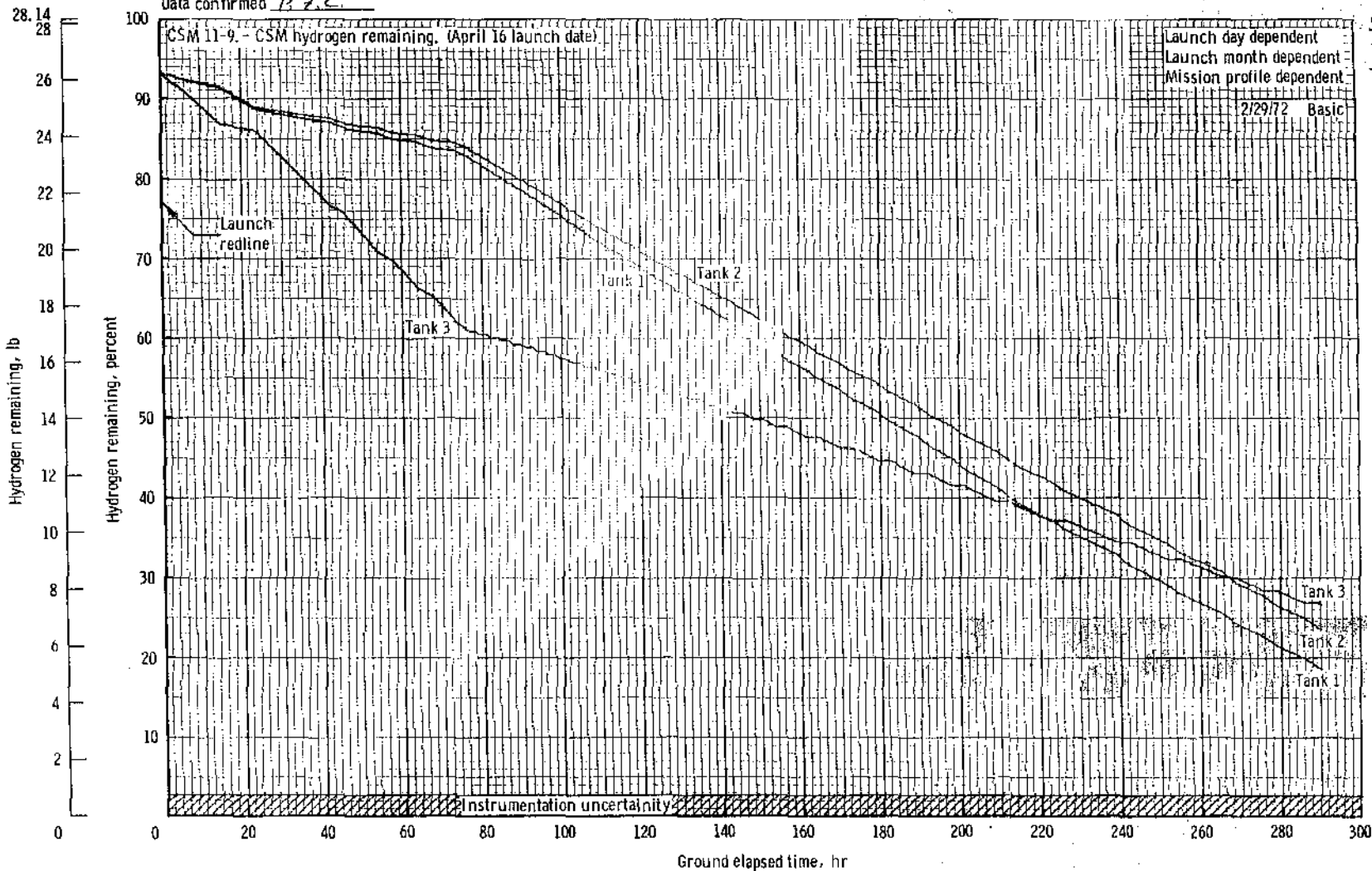
3/27/72

CSM oxygen remaining.

Cantin/SMB/MPAD (for Flight Plan)

Data source SODS 7th Plan

Data confirmed B.Z.C.



3/27/72

4-15

CSM hydrogen remaining.

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  $\Delta V$  requirements were coordinated with the Landing Analysis Branch. The  $\Delta V$  requirement for lunar descent differs from that in the operational trajectory because of differences in the inert vehicle weight.

The  $3\sigma$  dispersions represent total propellant cost based on  $3\sigma$  uncertainties in propellant loading, trapped propellant, specific impulse,  $\Delta V$ , separation weight, non- $\Delta V$  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  $305.9 \pm 1.8$  seconds.
- c. Mixture ratio is  $1.595 \pm .012$ .
- d. Non- $\Delta V$  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 $\Delta V$ . . . . .	19 417.8	--
Required for $\Delta V$ (150-sec flying time from low gate, $\Delta V = 7057.7$ fps) . . . . .	-18 726.1	--
Remaining . . . . .	691.6	74
Dispersion ( $-3\sigma$ ) . . . . .	-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  $\Delta V$  requirements were coordinated with the Landing Analysis Branch. The  $\Delta V$  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

5/1/72 Basic

## APS PROPELLANT SUMMARY

Item	Total propellant, lb
Loaded . . . . .	5242.5
Trapped and unavailable . . . . .	-51.9
Outage . . . . .	-11.9
Available for $\Delta V$ . . . . .	5178.7
Required for Ascent (6048.1 fps) . . . . .	-4958.9
Remaining . . . . .	219.8
Required for APS TPI <sup>a</sup> (52.8 fps) . . . . .	-31.4
Remaining . . . . .	188.4
Dispersions ( $-3\sigma$ ) . . . . .	-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

<sup>a</sup>The total TPI  $\Delta V$  is 74.8 fps. It is assumed that 22 fps is obtained by a 10-sec, 4-jet ullage.

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

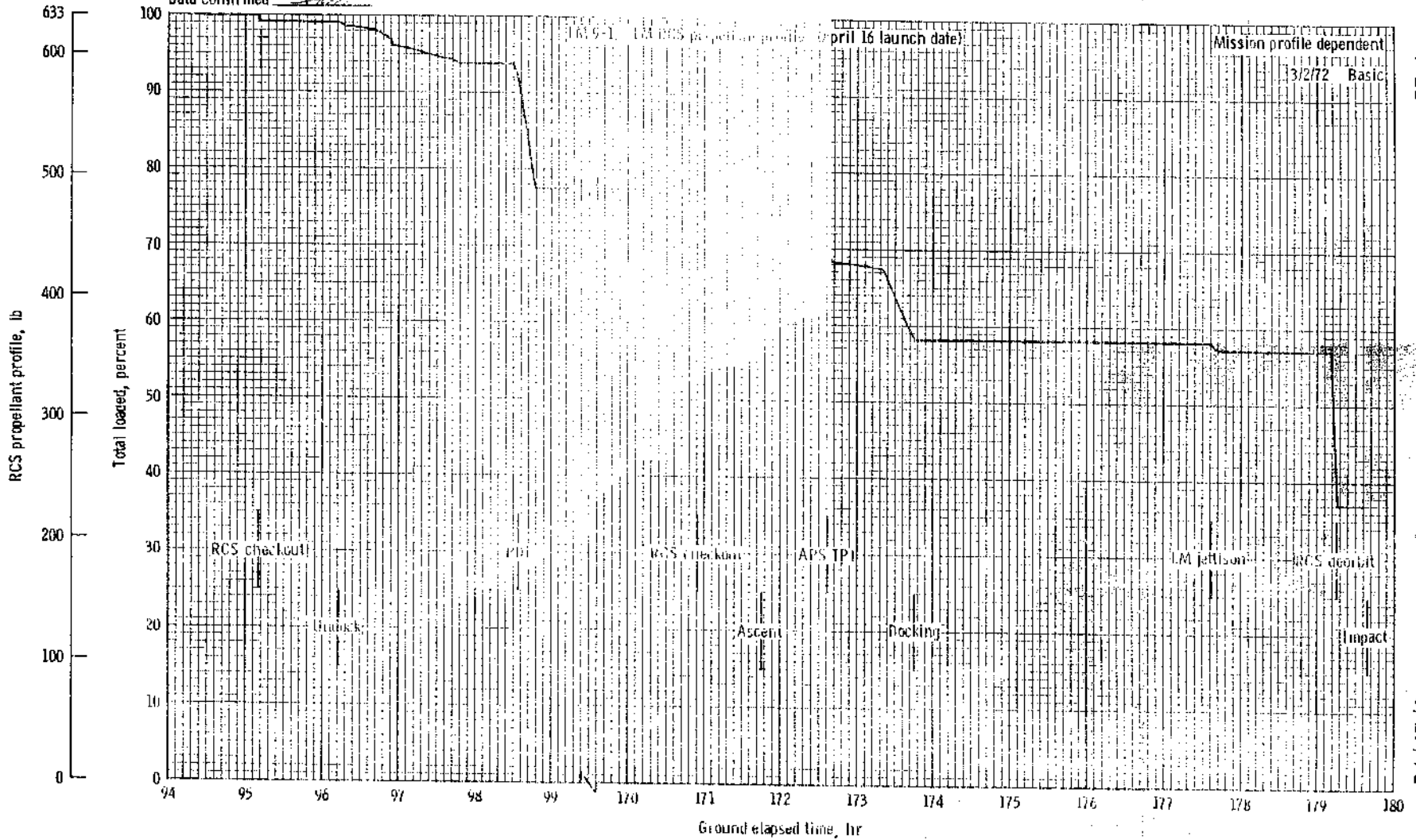
LM RCS PROPELLANT LOADING AND USAGE SUMMARY

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 Flight Data 1968

Data confirmed 3/27/72



LM RCS propellant profile.

4-22

3/27/72

3/27/72

4-23

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 inverter was operated throughout the mission.
- j. The CDR and LMP forward window heaters were assumed not to be needed.

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 time line.

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

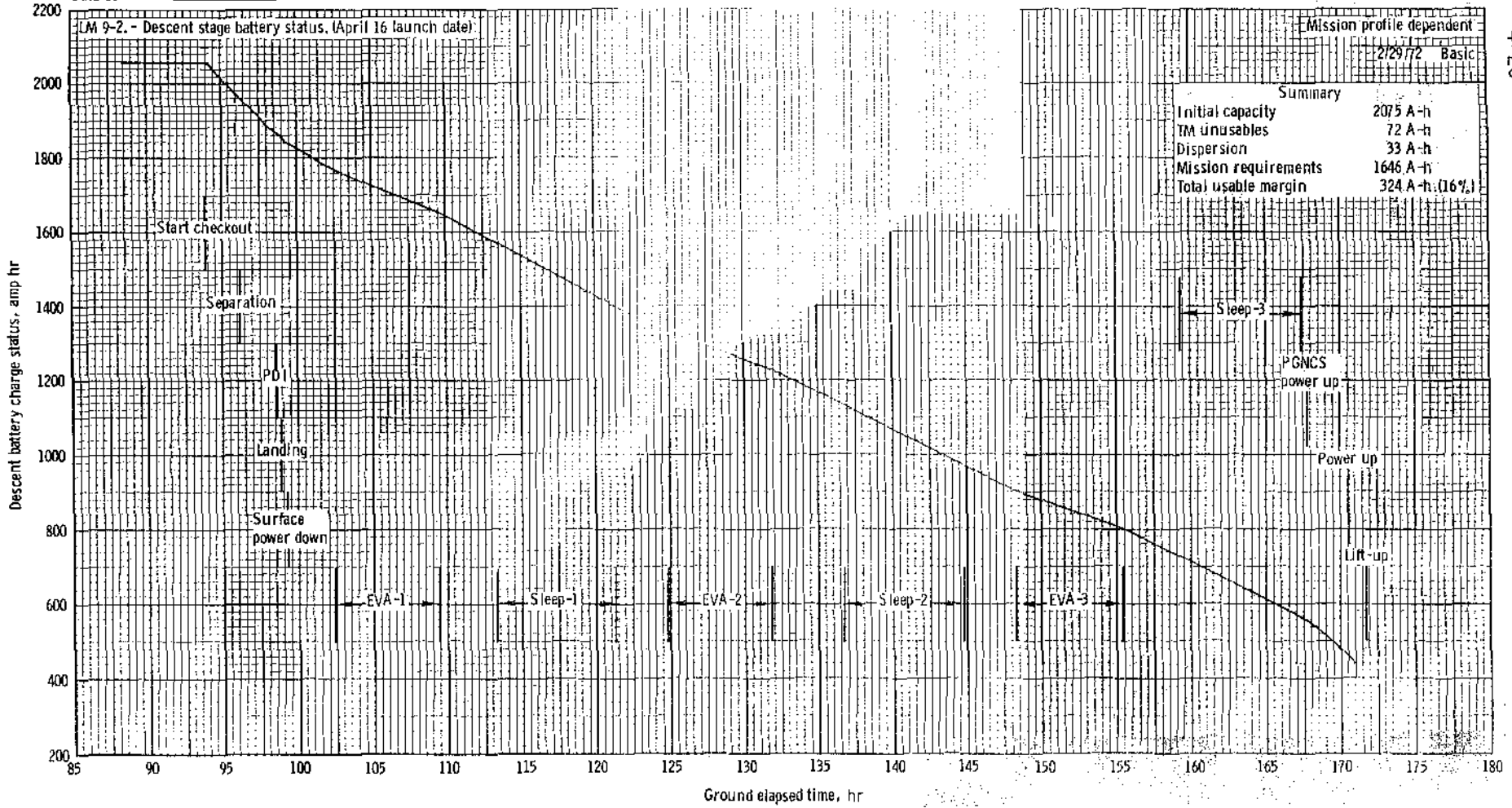
DESCENT STAGE EPS SUMMARY

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 *Incom Flight Plan*  
 Data confirmed *VSR*



4-26

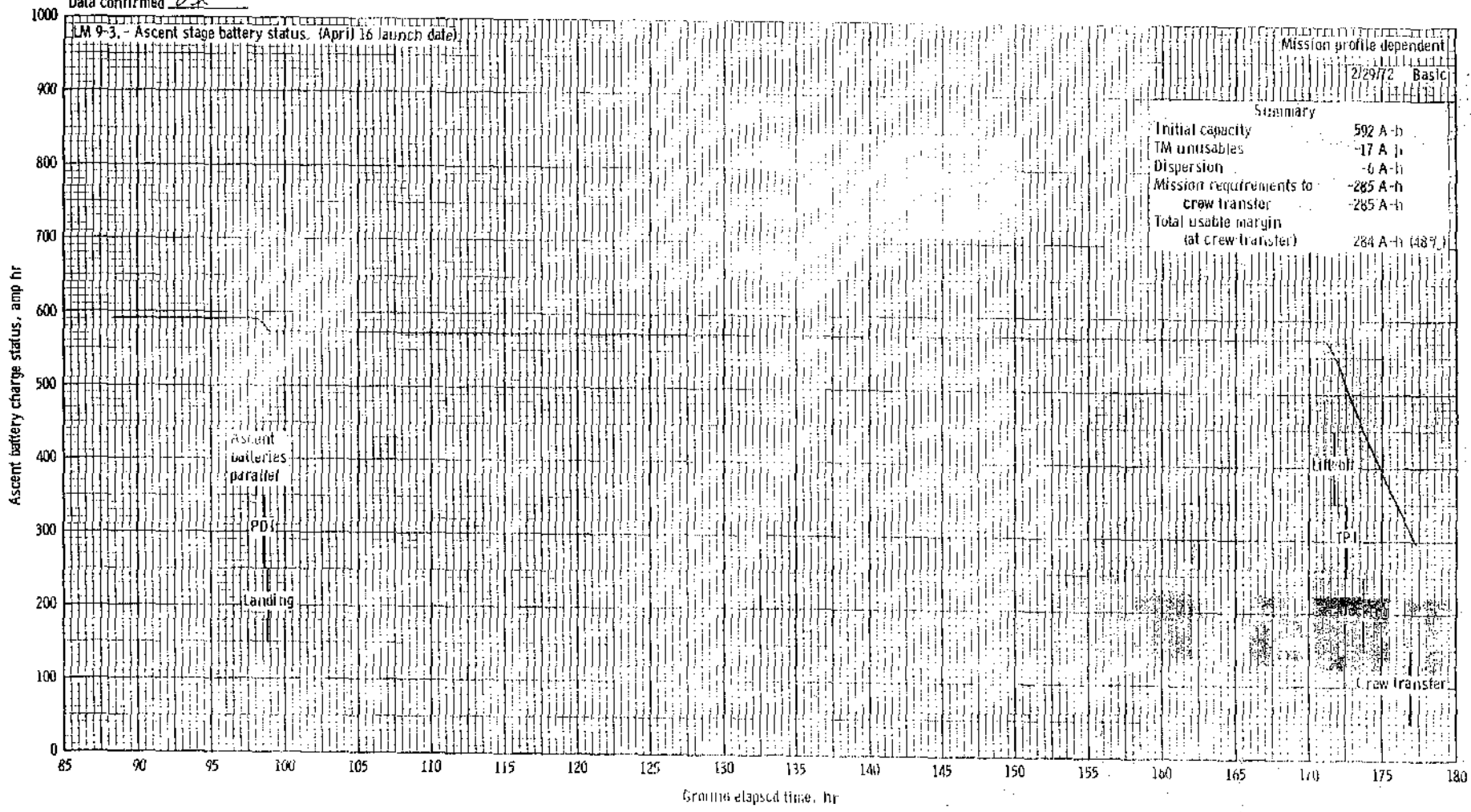
3/27/72

Apollo 16 descent electrical energy remaining.

Ritchey/SMB/MPAD (for LM Systems)

Data source Ascent Flight Plan

Data confirmed USR

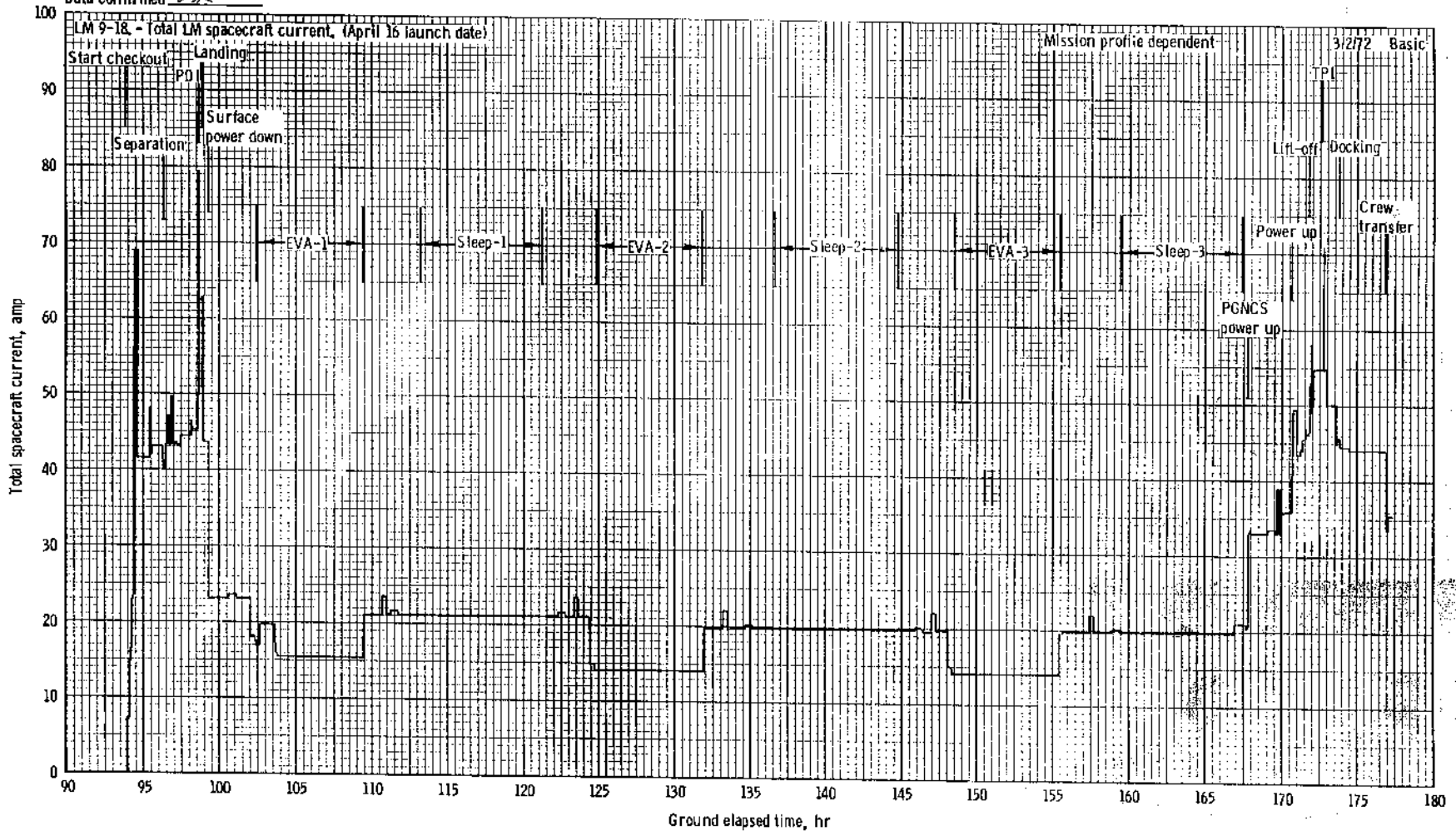


Apolló 16 ascent electrical energy remaining:

3/27/72

4-27

Ritchey/SMB/MPAD (for LM Systems)  
Data source *Aspen Flight Plan*  
Data confirmed *USR*



Apollo 16 total LM spacecraft current,

4-28

3/27/72

3/27/72

4-29

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 . . . . .	405.0	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

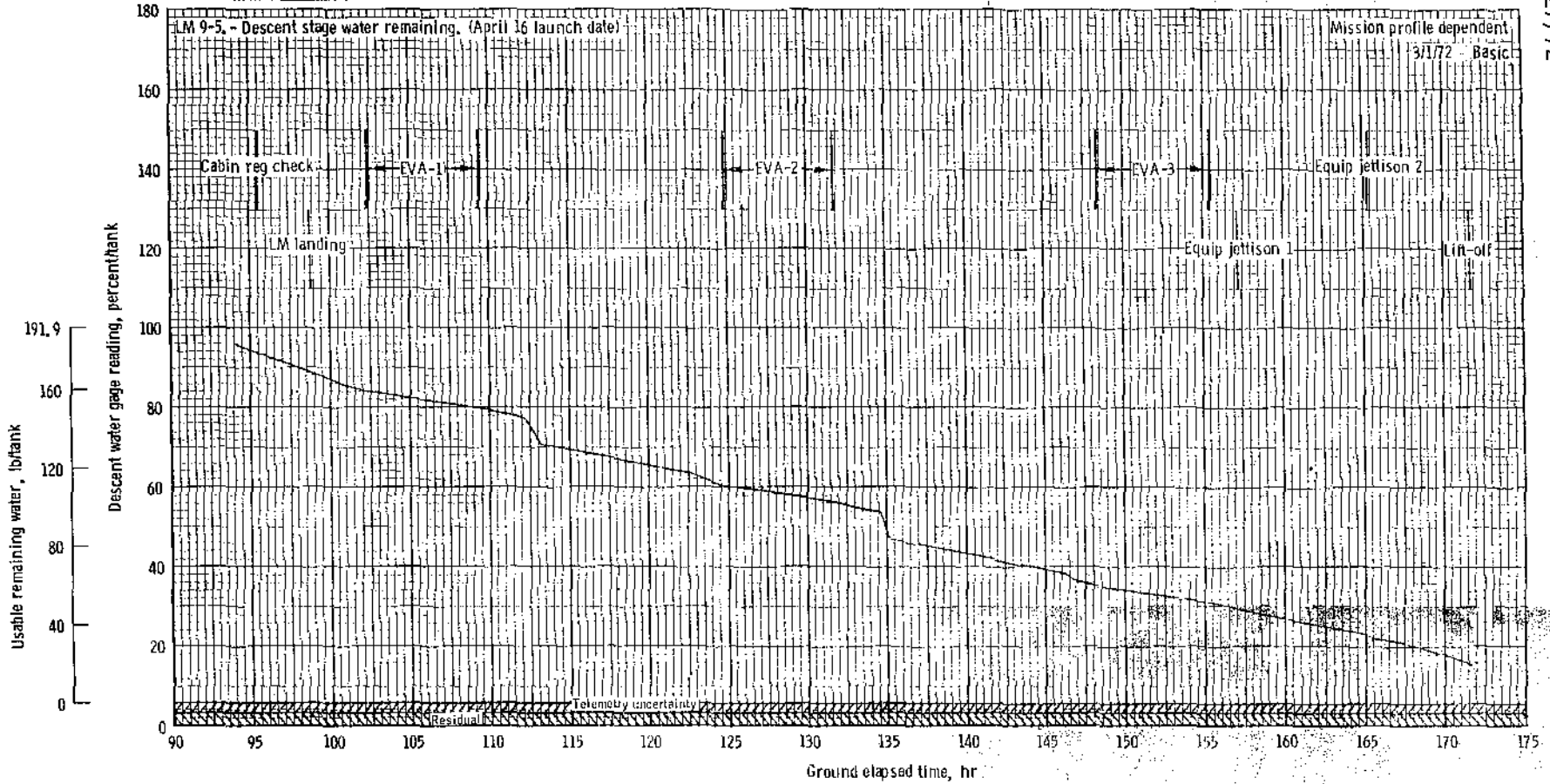
Description	Descent, 1b	Ascent 1, 1b	Ascent 2, 1b
Loaded . . . . .	93.8	2.4	2.4
Residual . . . . .	1.6	0.1	0.1
Loading uncertainty . . . . .	1.7	0.1	0.1
Available for mission . . . . .	90.5	2.2	2.2
Required to lunar landing . . . . .	1.7	0	0
Required to lunar lift-off . . . . .	45.1	0	0
Required to LM/CSM 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

Swain/SMB/MPAD (for LM Systems)

Data source: Flight Plan 5000

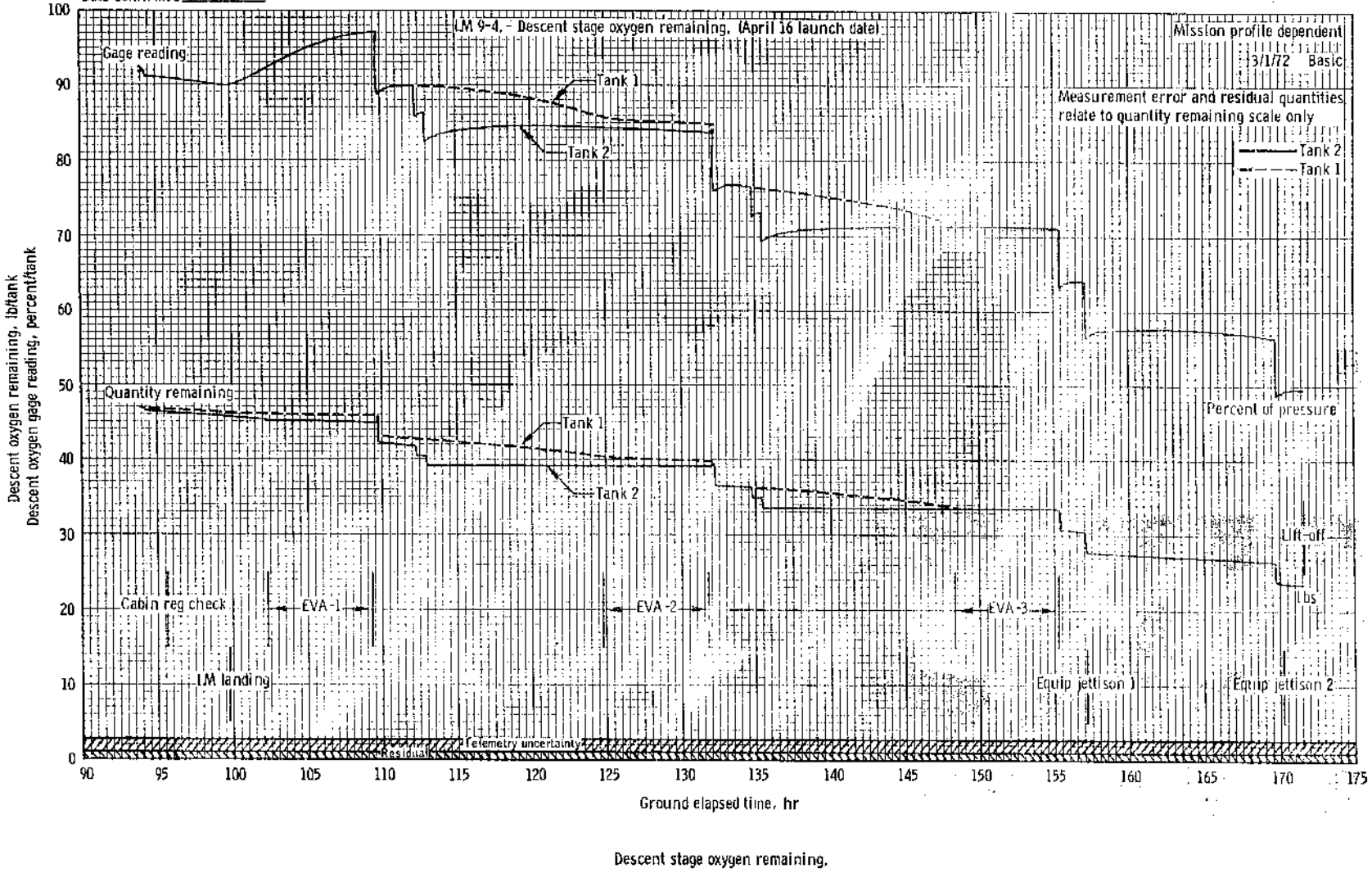
Data confirmed: Tom Smith

3/27/72



4-31

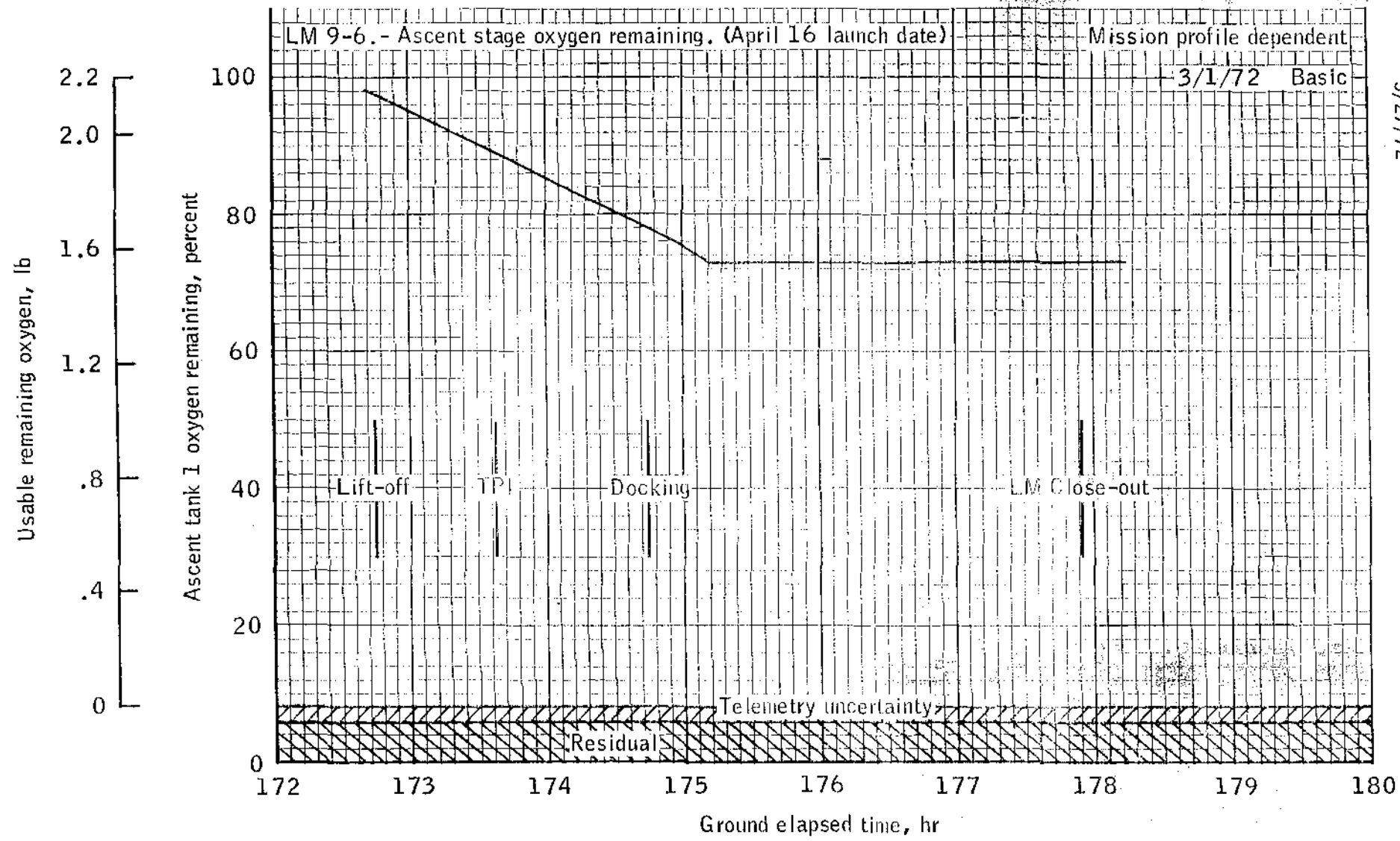
Swain/SMB/MPAD (for LM Systems)  
 Data source: FLIGHT PLAN & SOPS  
 Data confirmed: SAI



4-32

3/27/72





3/27/72

4-33

Ascent tank 1 oxygen remaining.

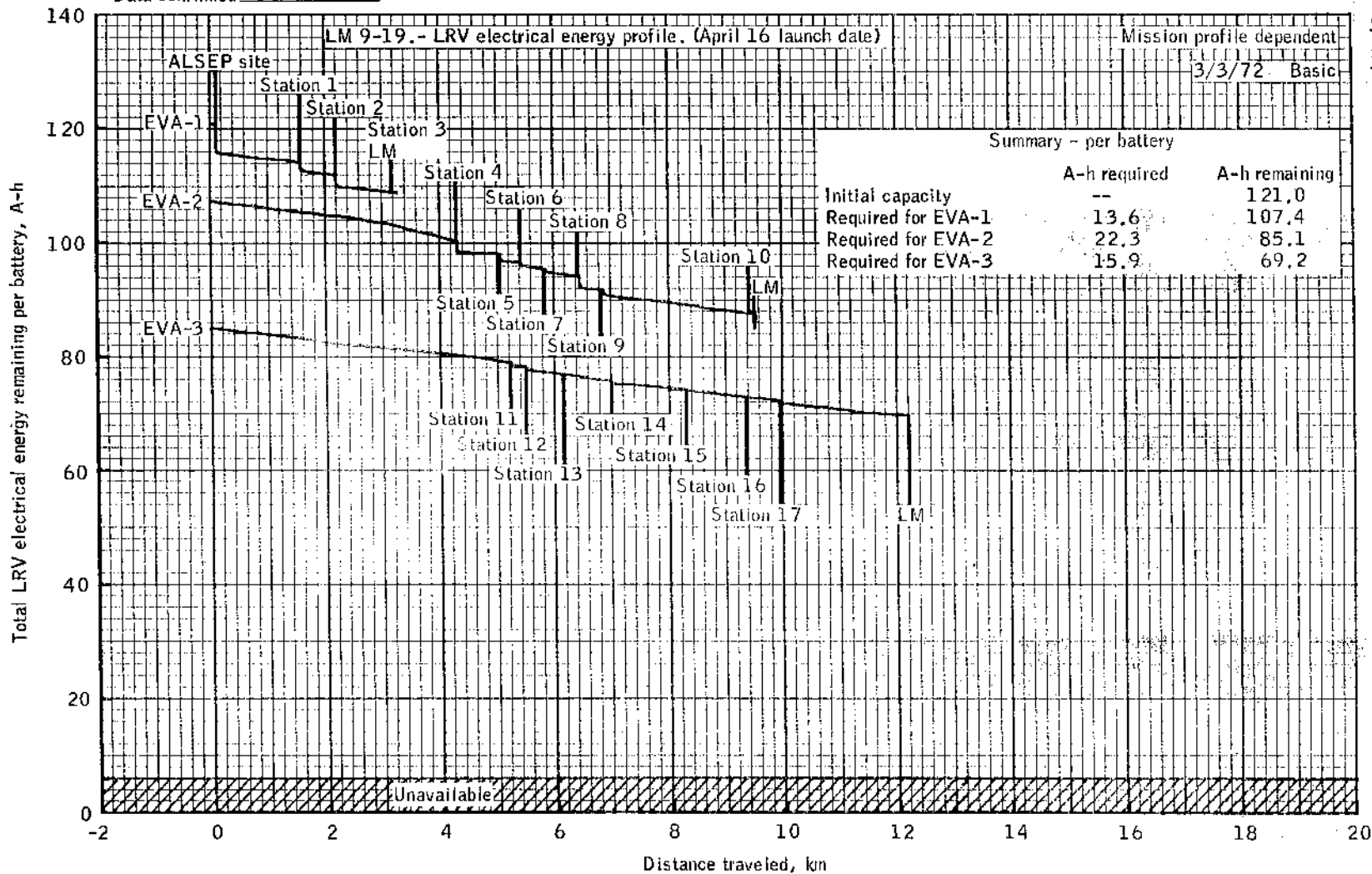
3/27/72

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 PMI/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 Trounce P. Jan 17 FEB 72  
 Data confirmed USR



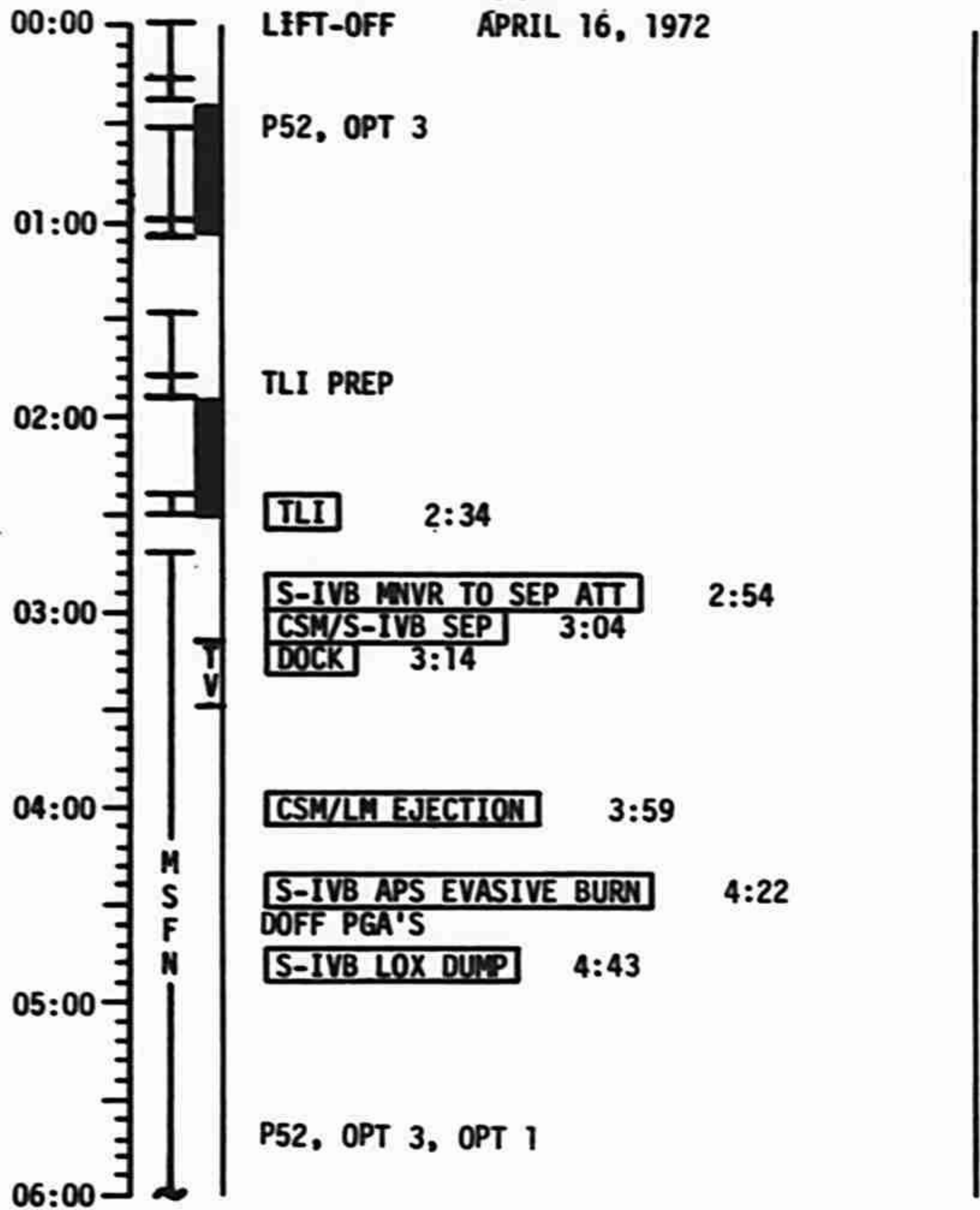
3/27/72

4-35

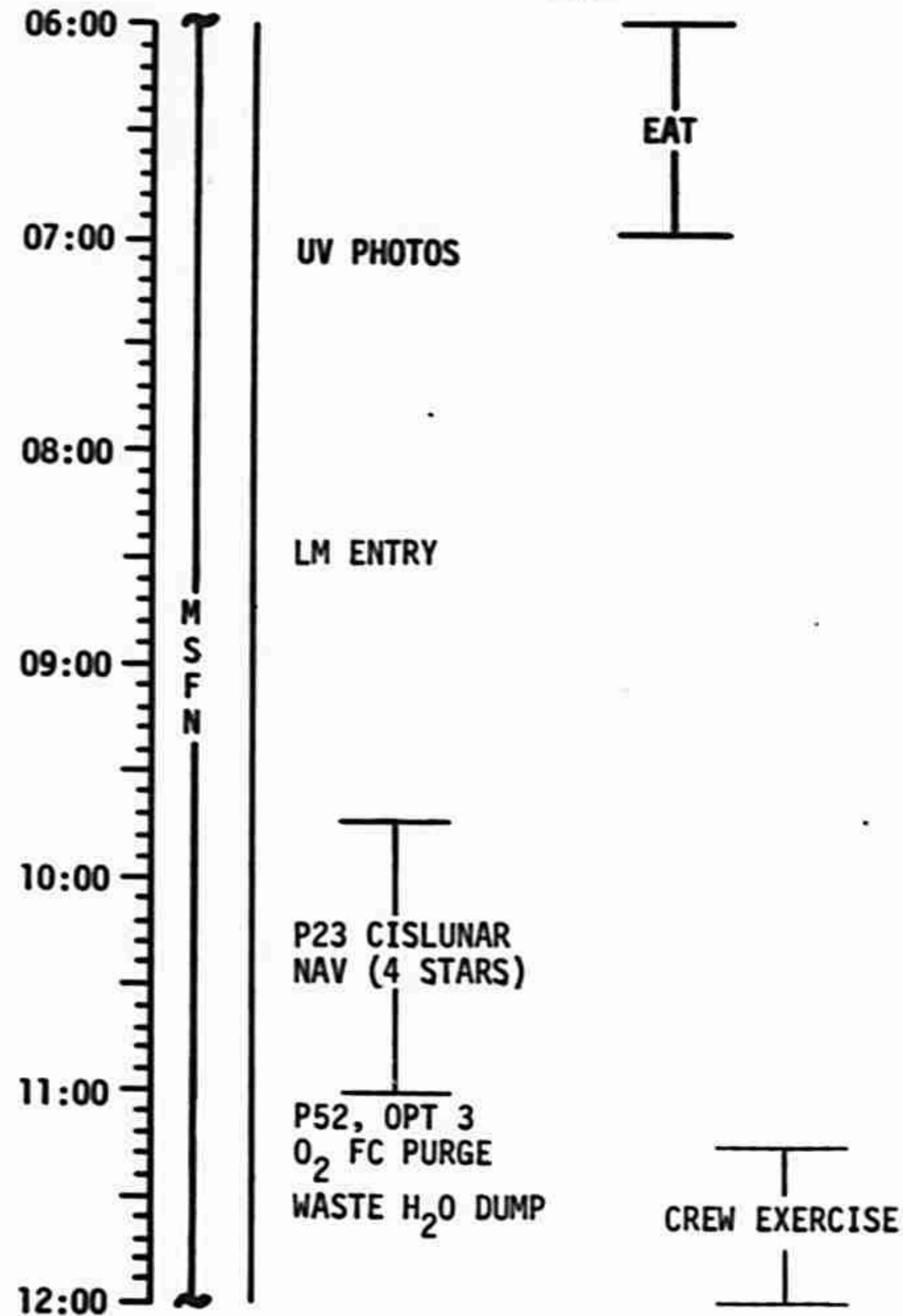
LRV electrical energy profile.

# FLIGHT PLAN

**CSM**  
APRIL 16, 1972



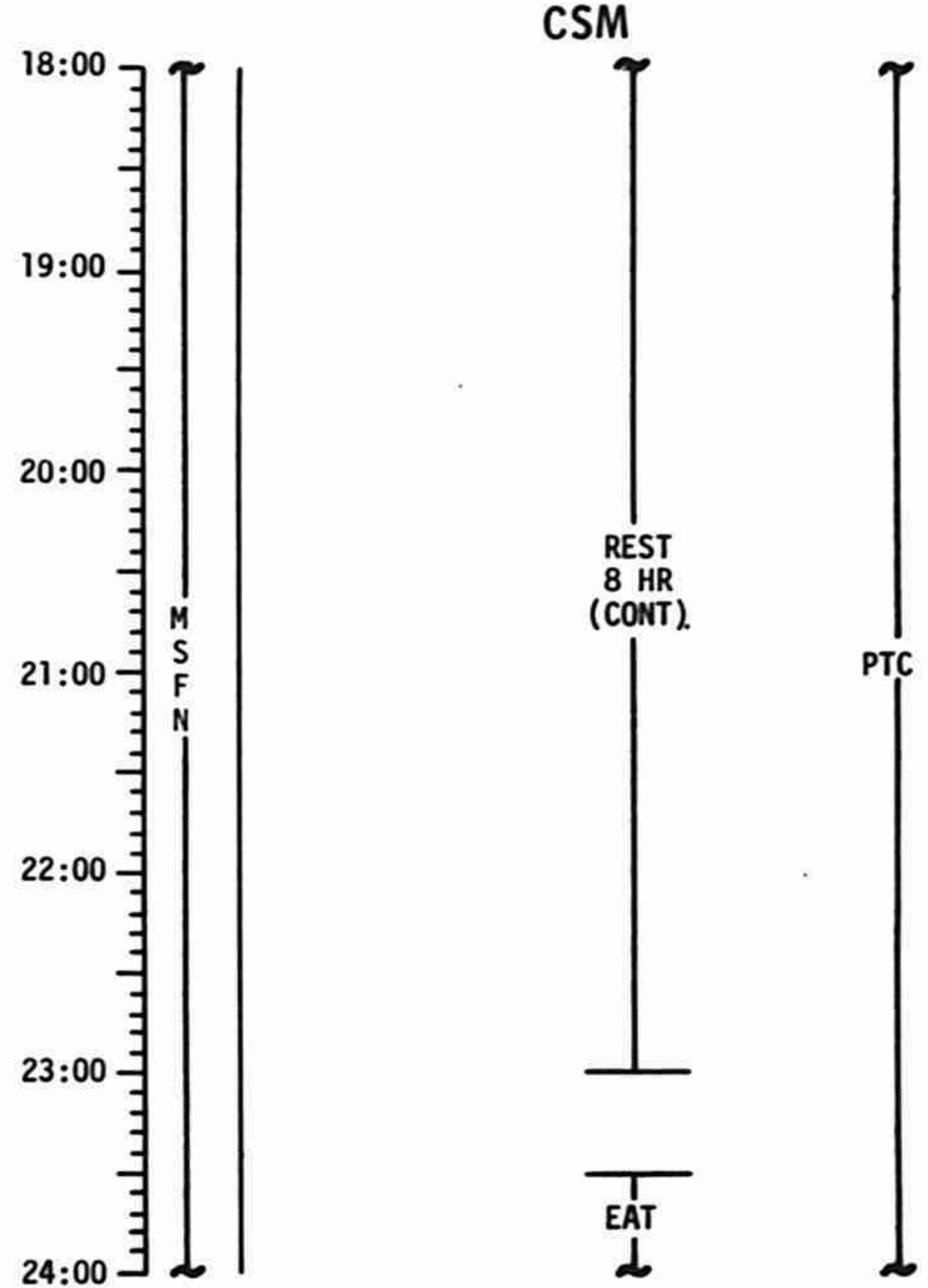
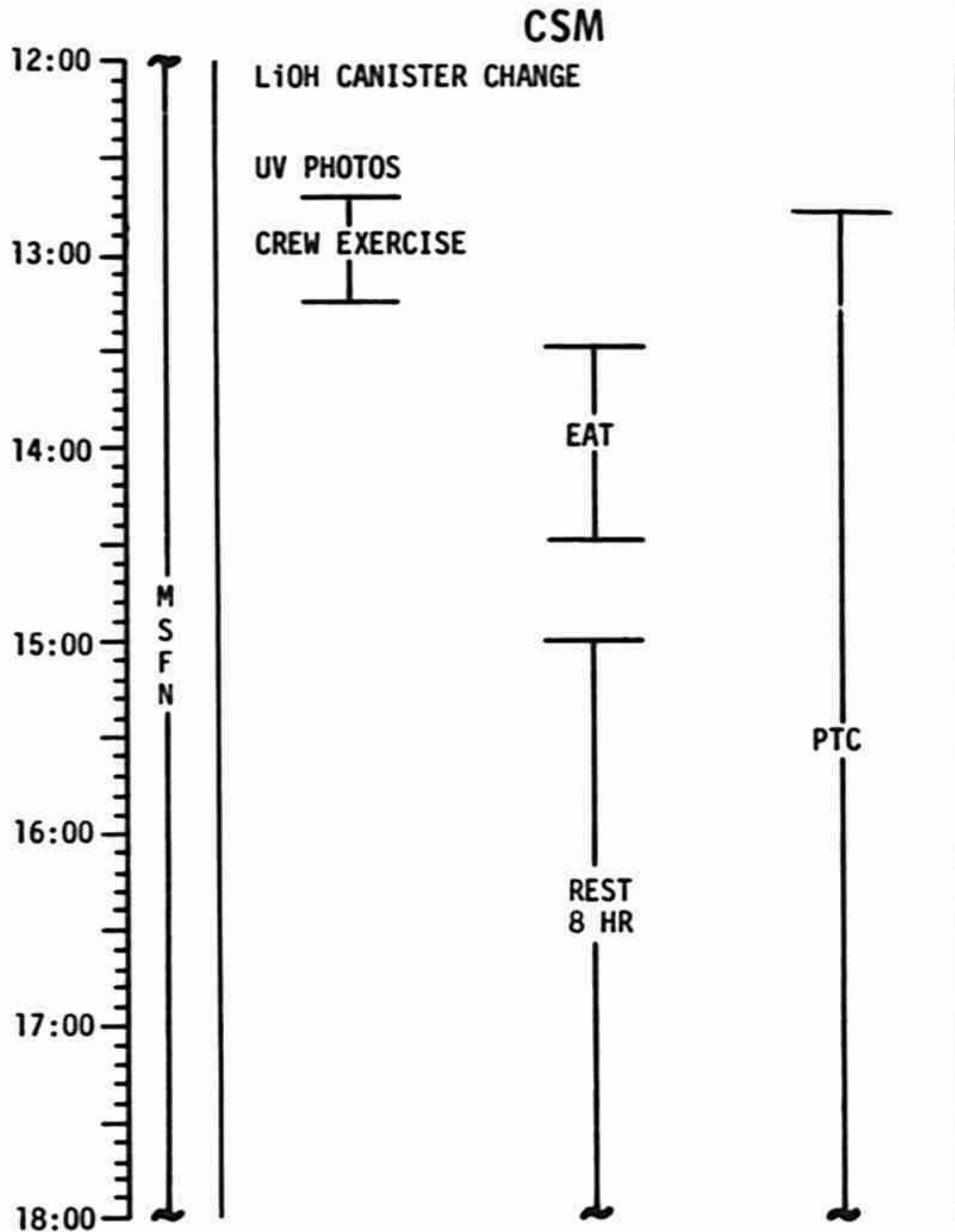
**CSM**



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	00:00 - 12:00	1/E0-TLC	5-1

2

# FLIGHT PLAN

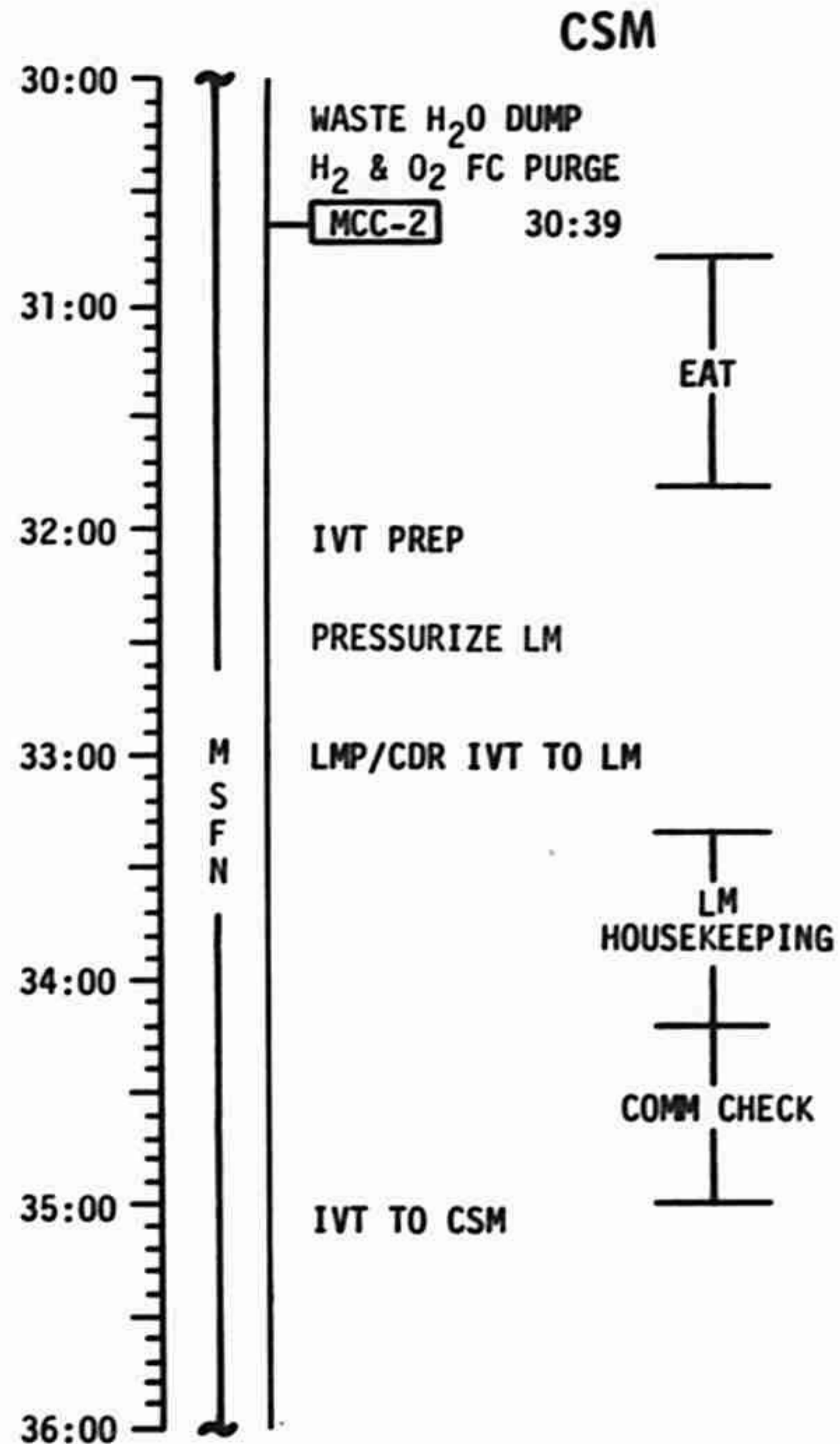
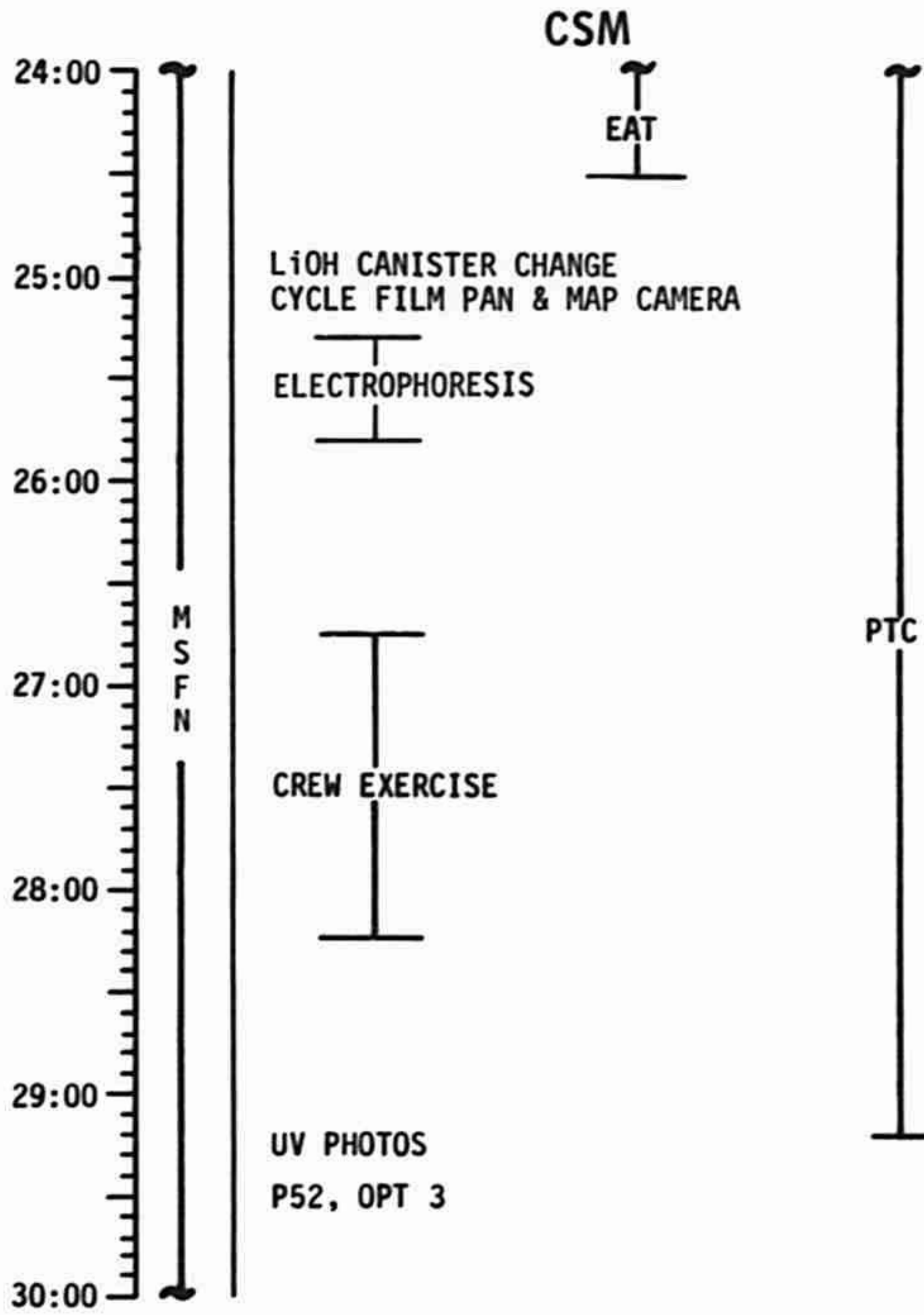


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	12:00 - 24:00	1-2/TLC	5-2

3

4

# FLIGHT PLAN

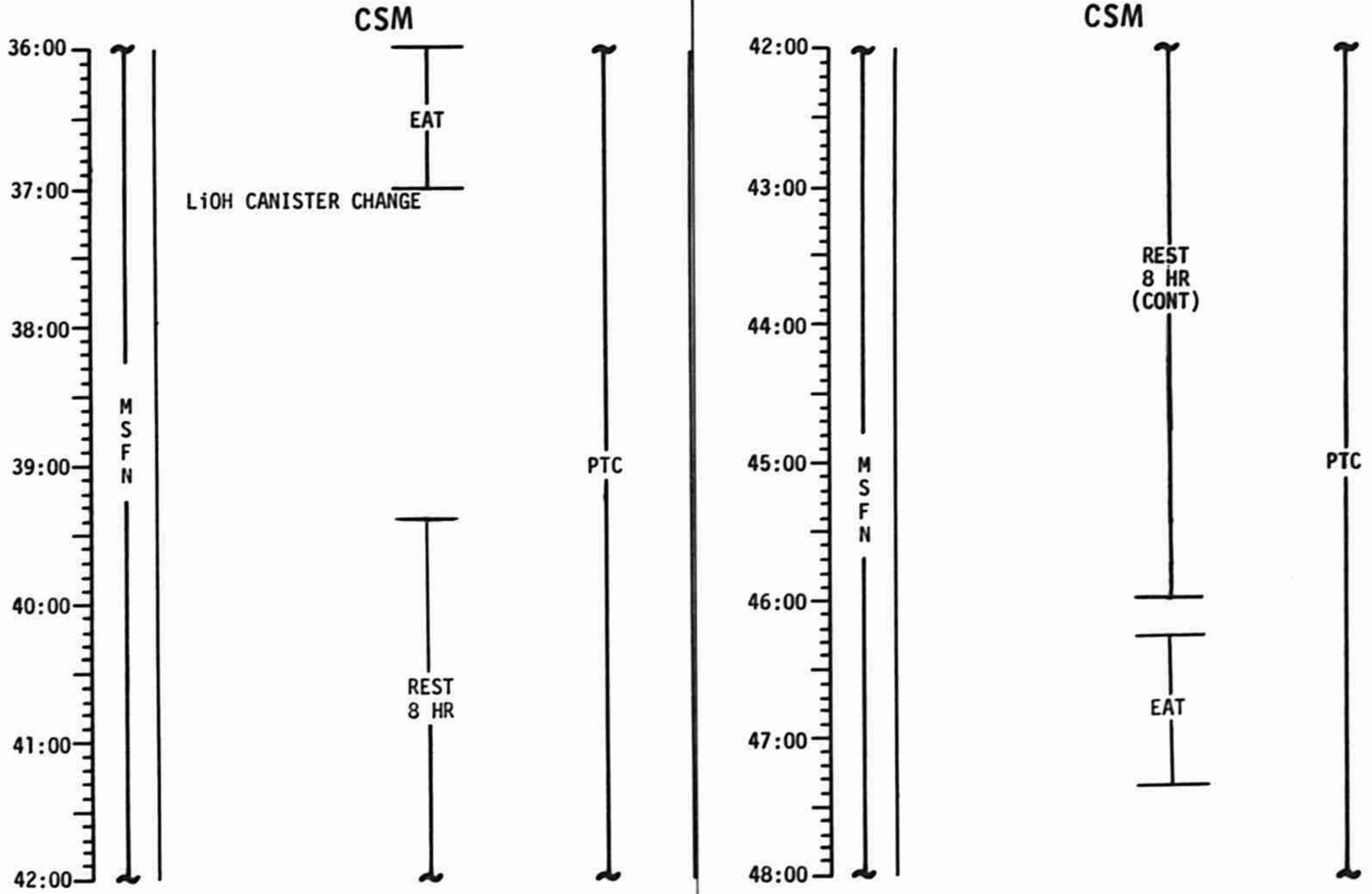


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	24:00 - 36:00	2/TLC	5-3

5

6

# 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

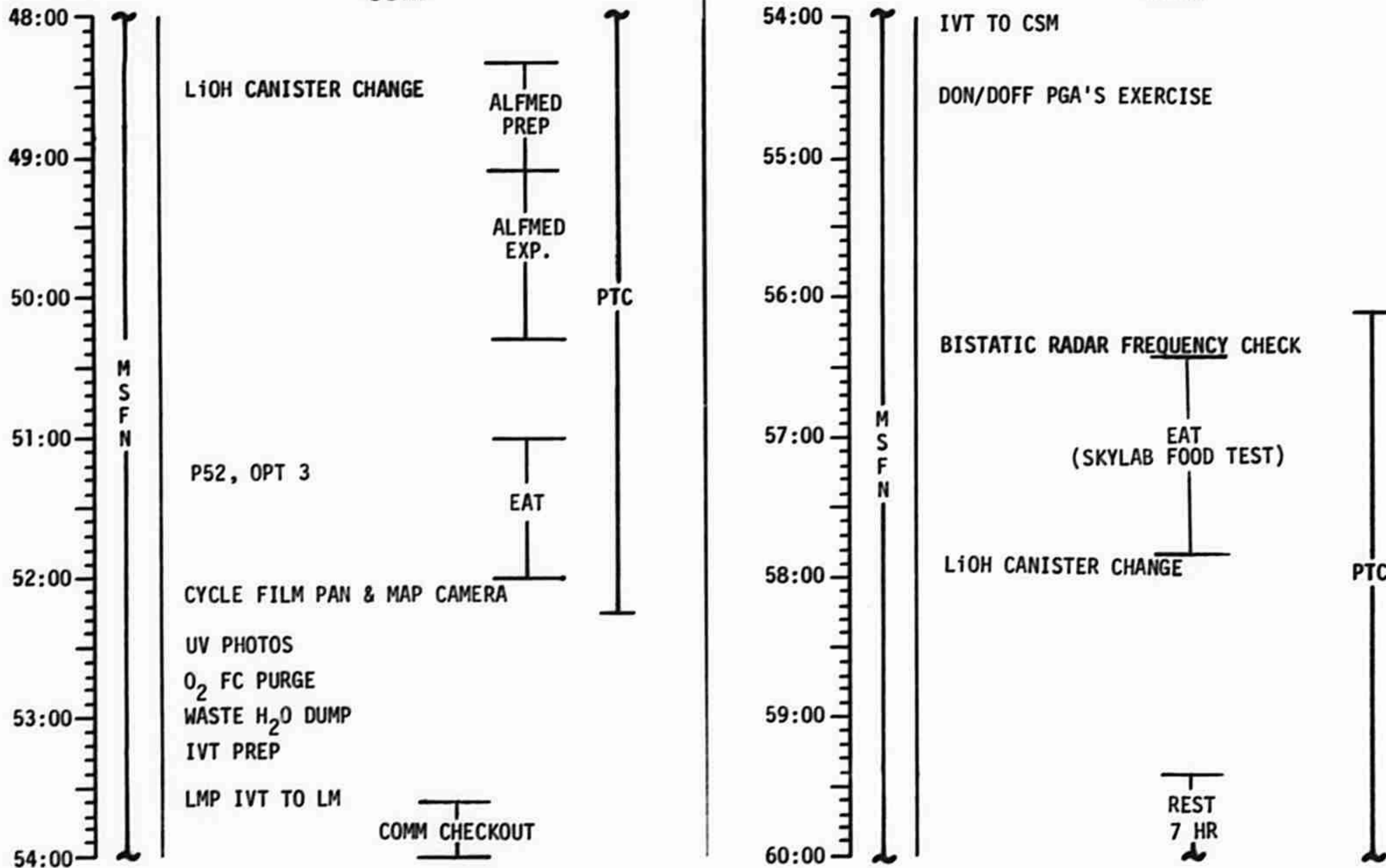
7

8

# FLIGHT PLAN

CSM

CSM



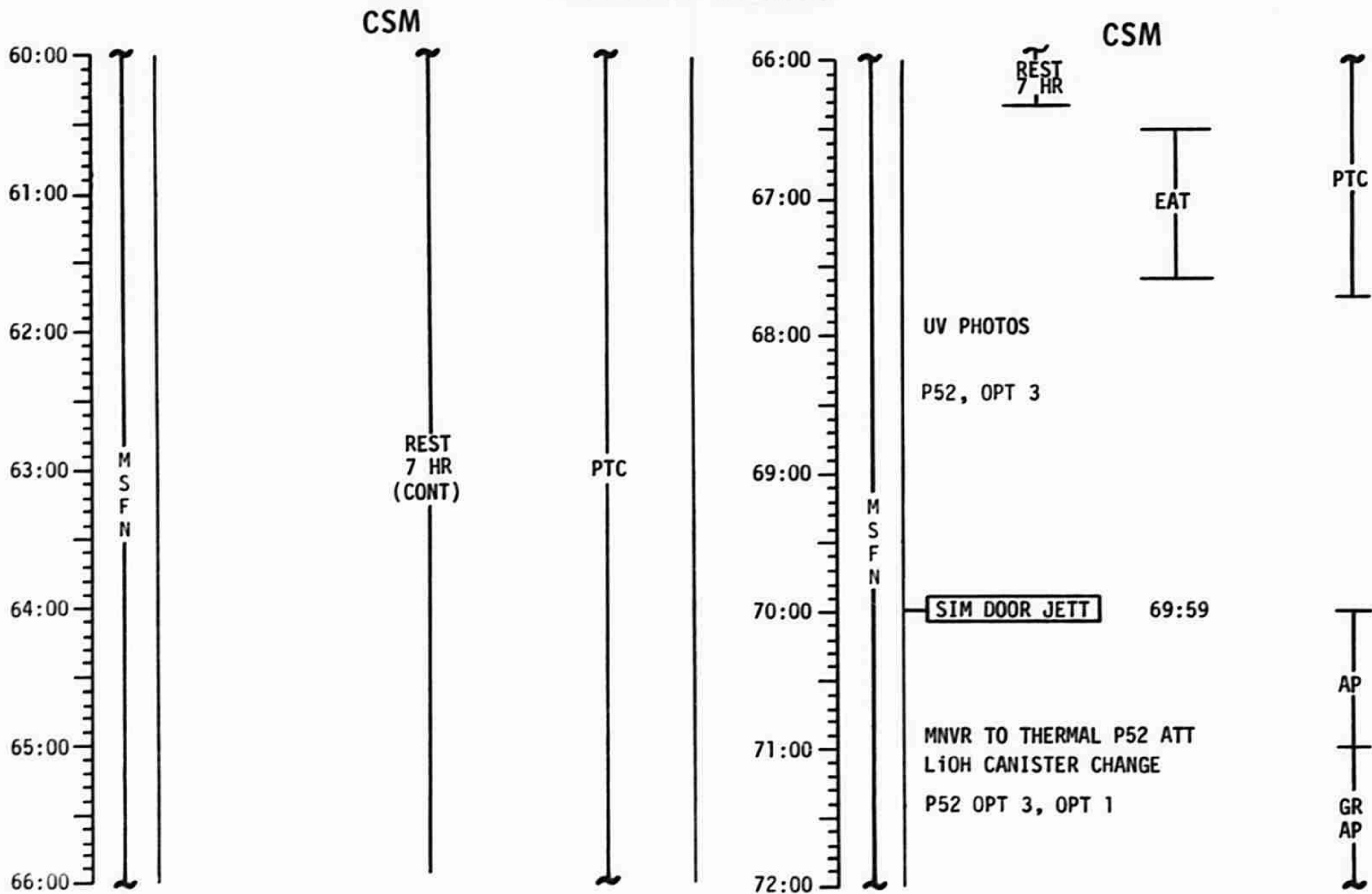
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	48:00 - 60:00	3/TLC	5-5

7

10



# FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	60:00 - 72:00	3-4/TLC	5-6

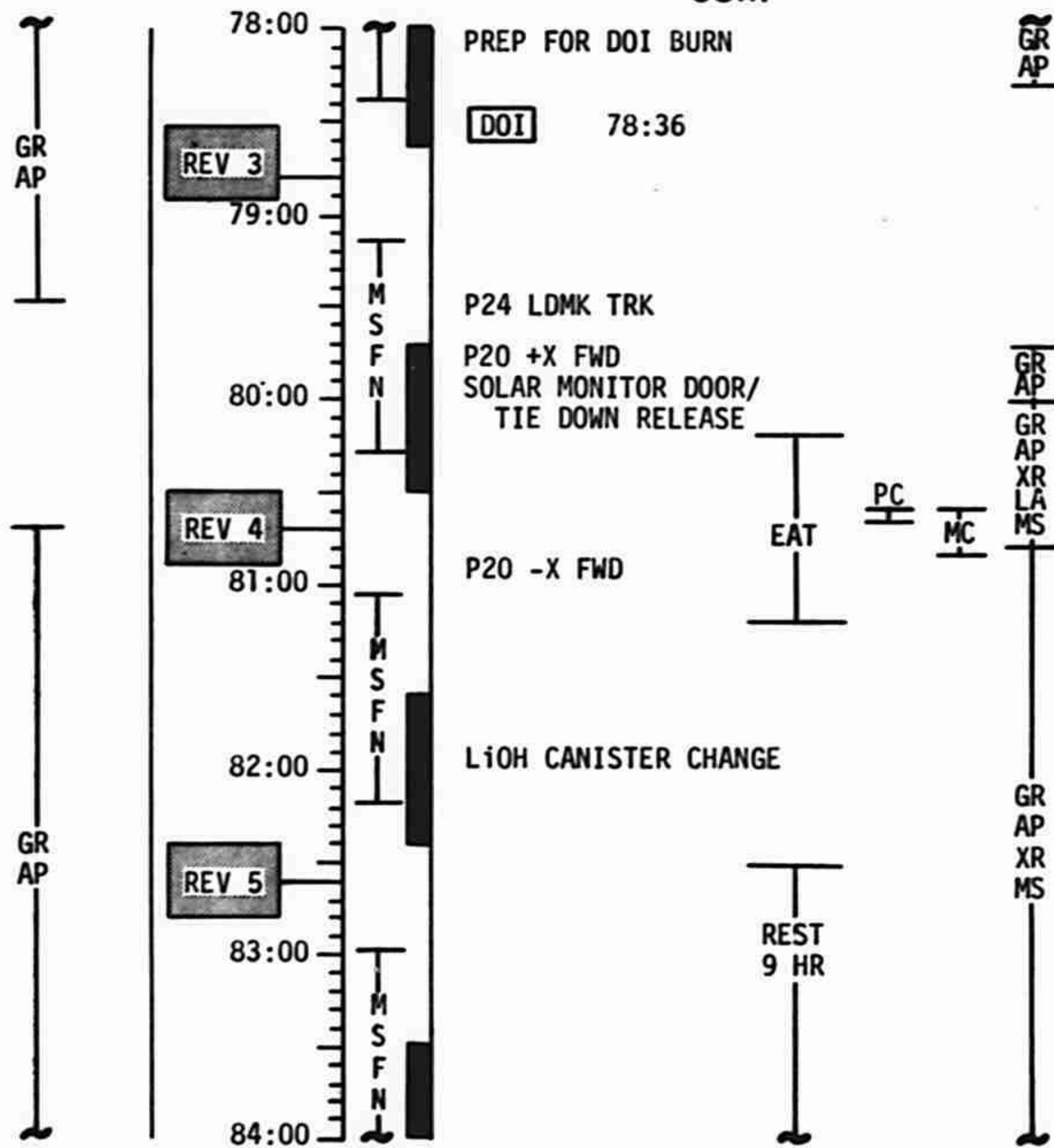
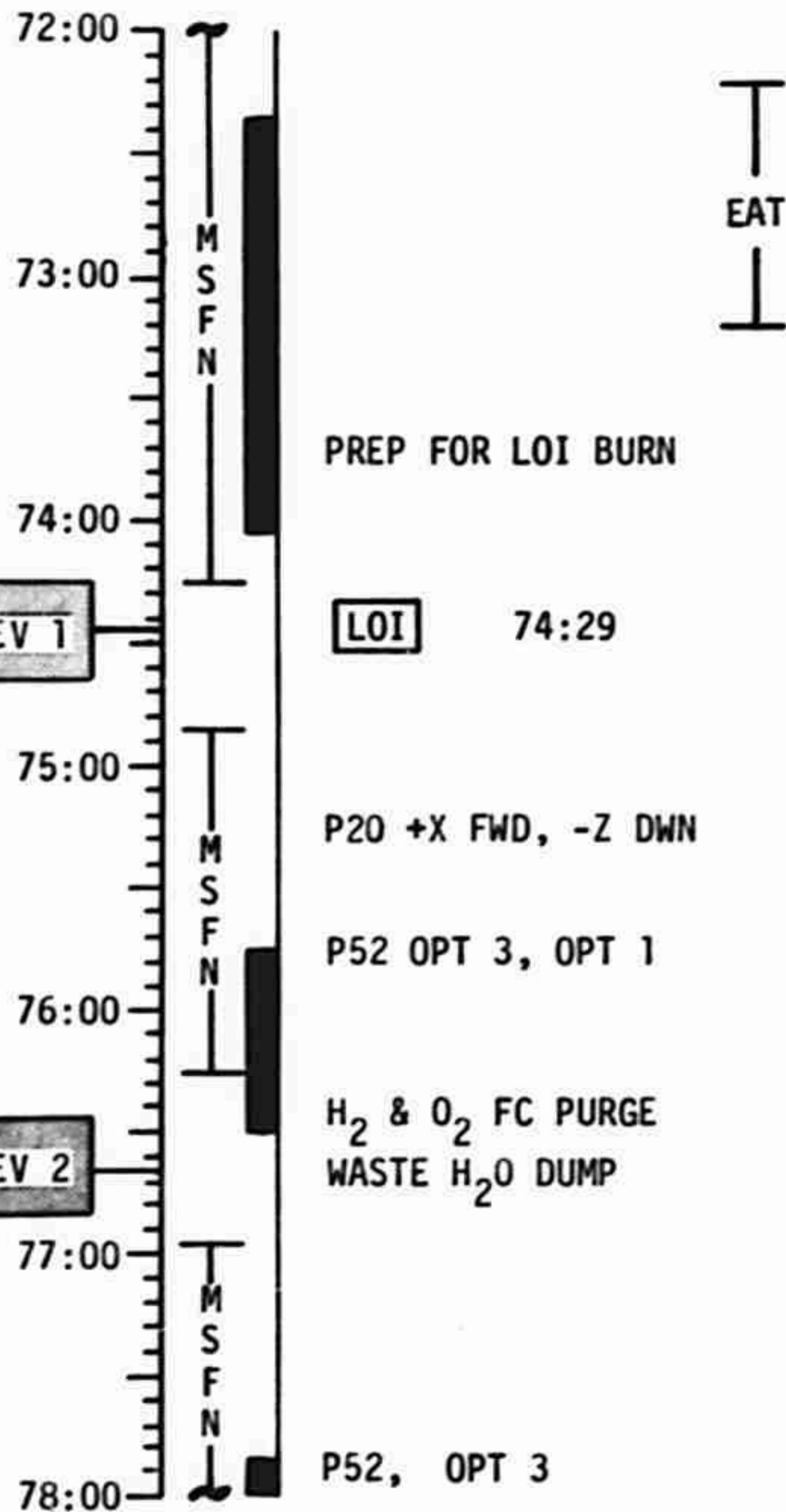
11

12

# FLIGHT PLAN

CSM

CSM

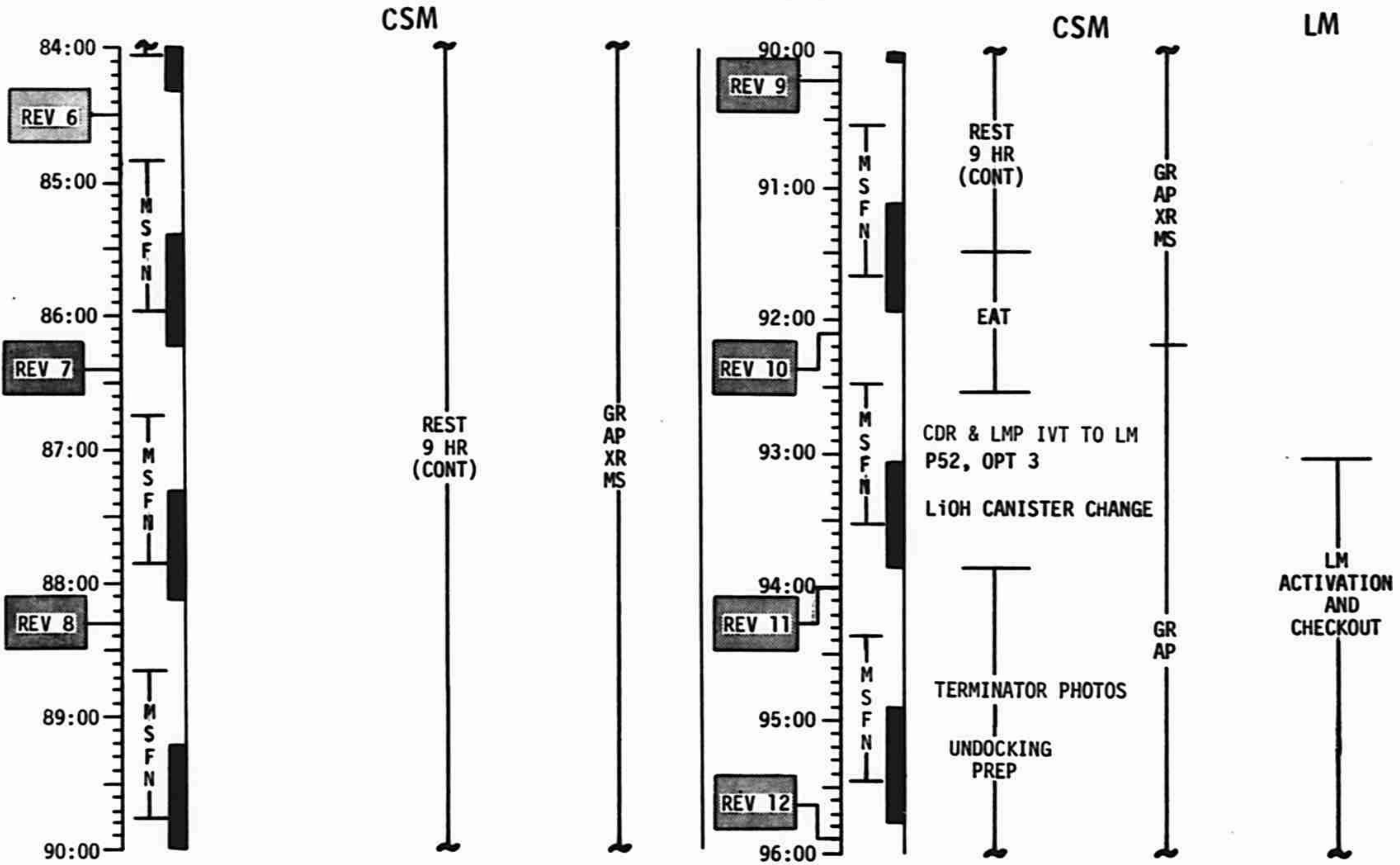


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	72:00 - 84:00	4/1-5	5-7

13

14

# FLIGHT PLAN

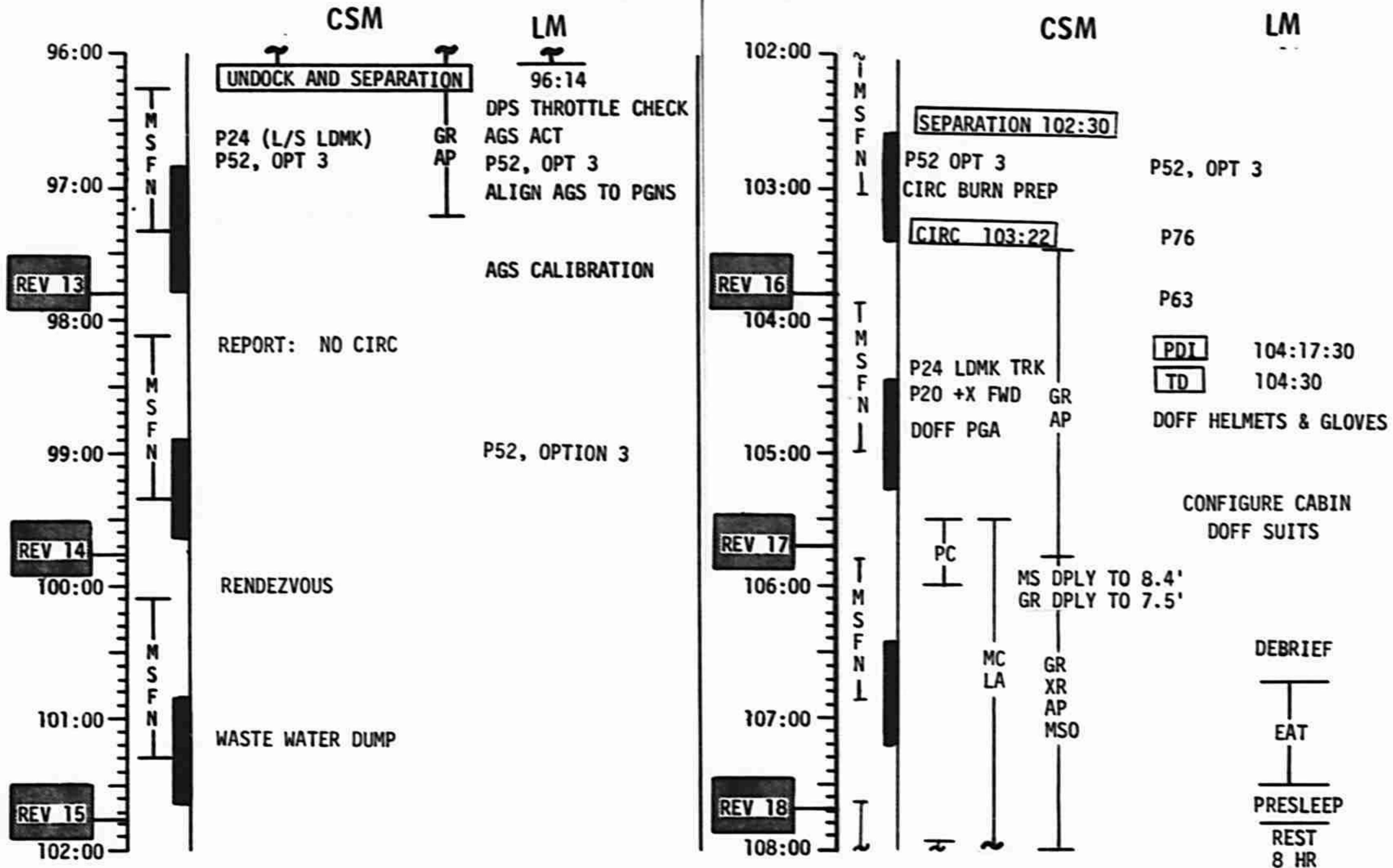


15

14

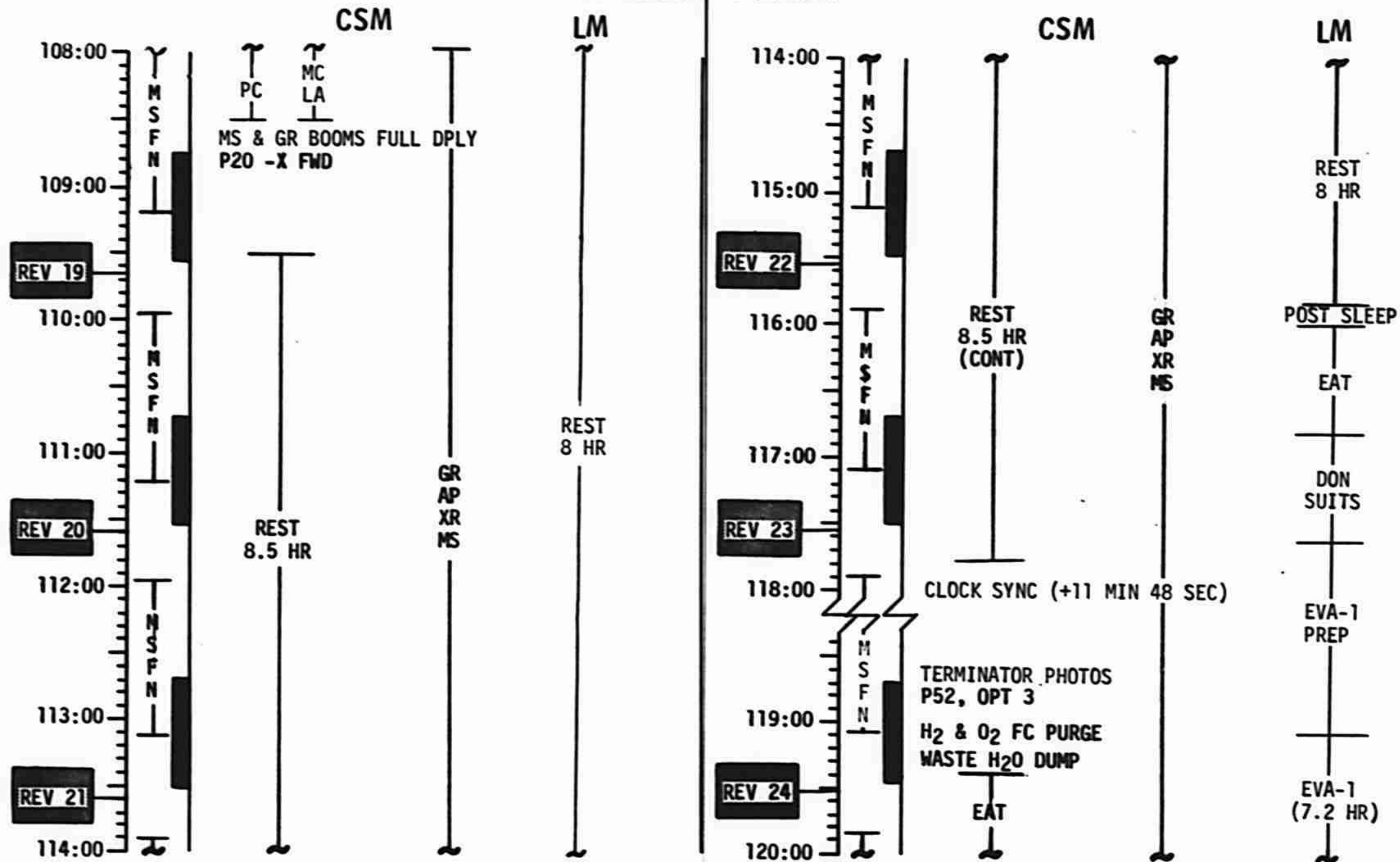
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	84:00 - 96:00	5/6-12	5-8

# FLIGHT PLAN



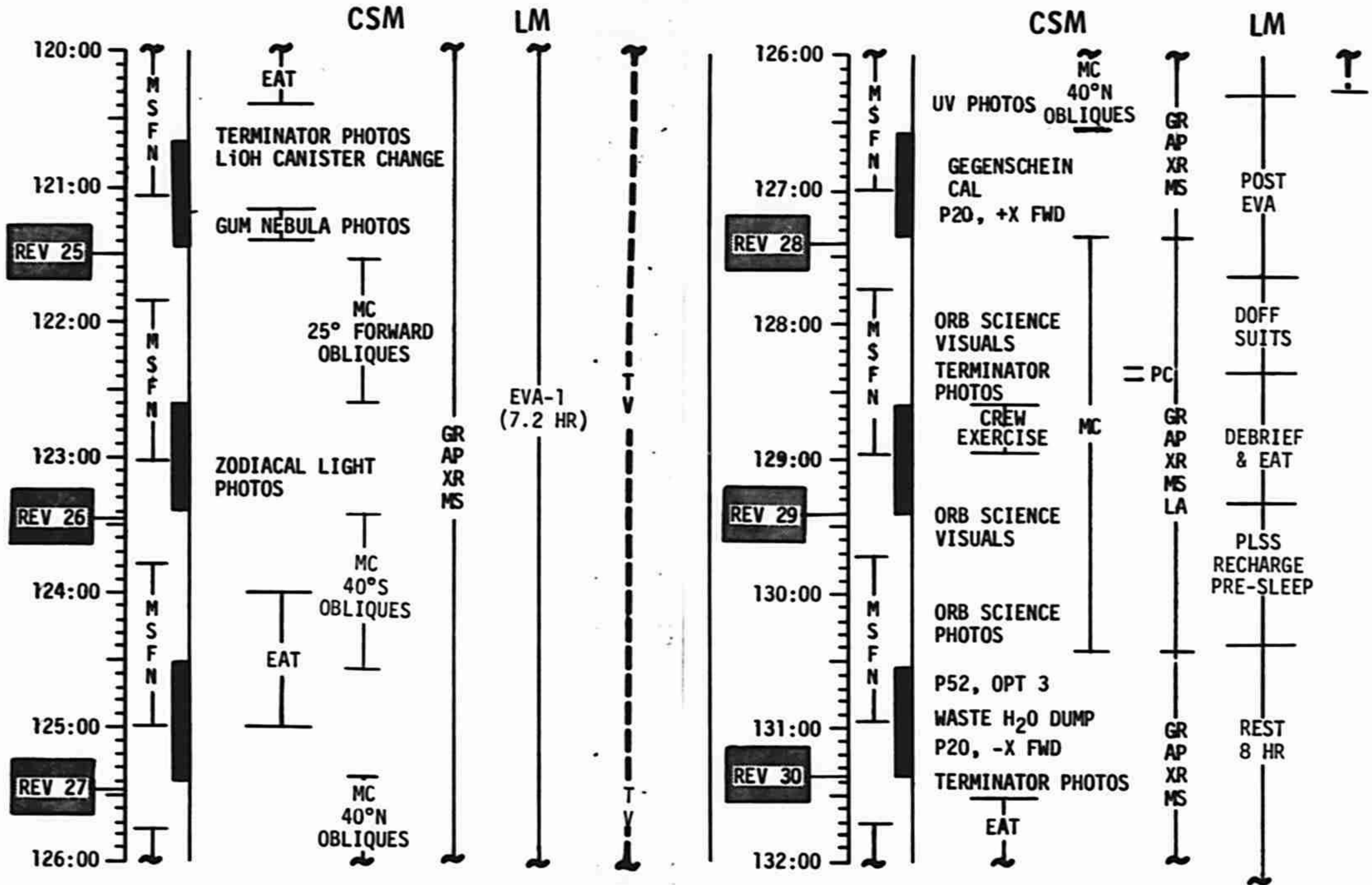
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:00 - 108:00	5/12-18	5-9

# 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

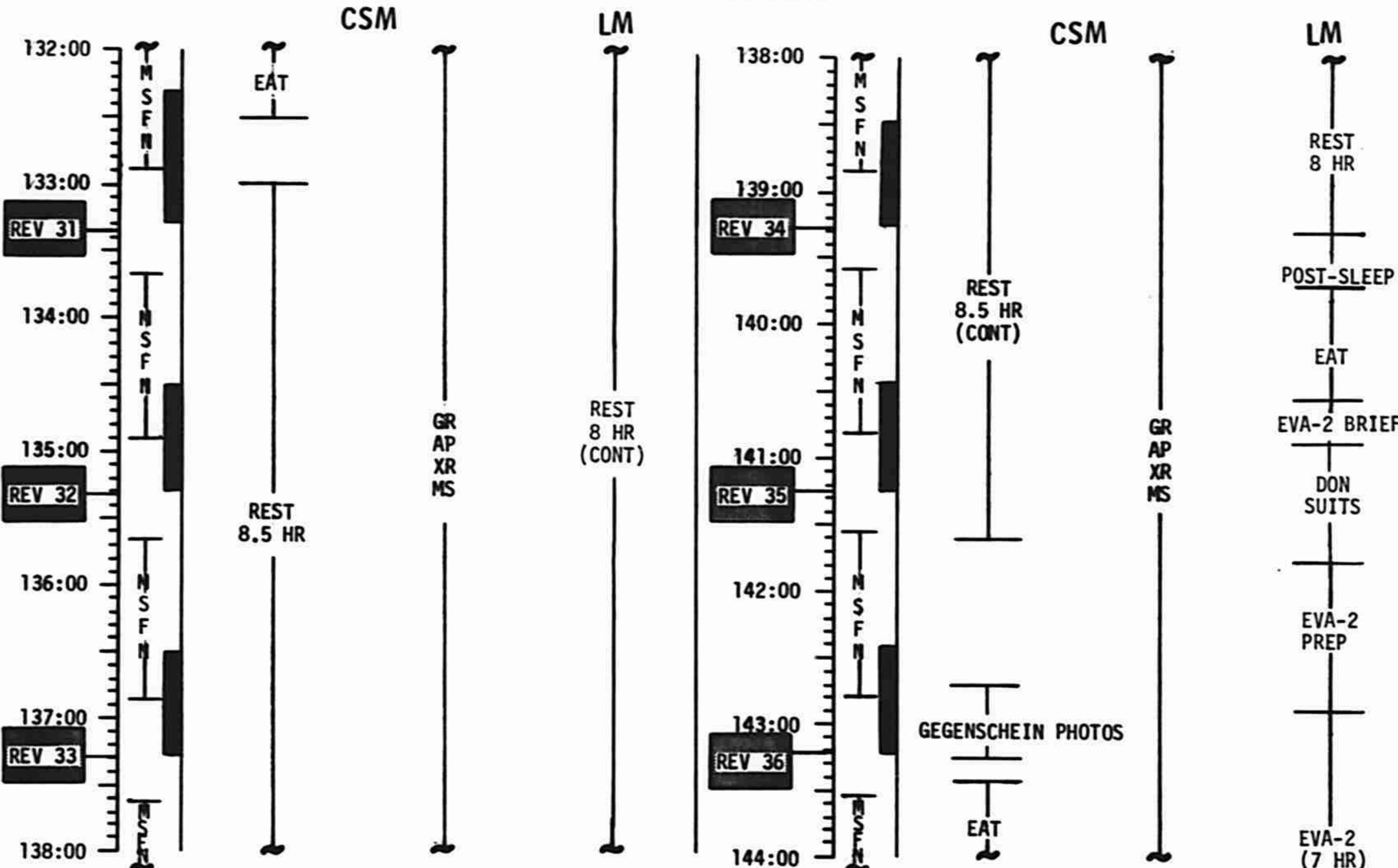


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	120:00 - 132:00	6/24-30	5-11

21

22

# FLIGHT PLAN

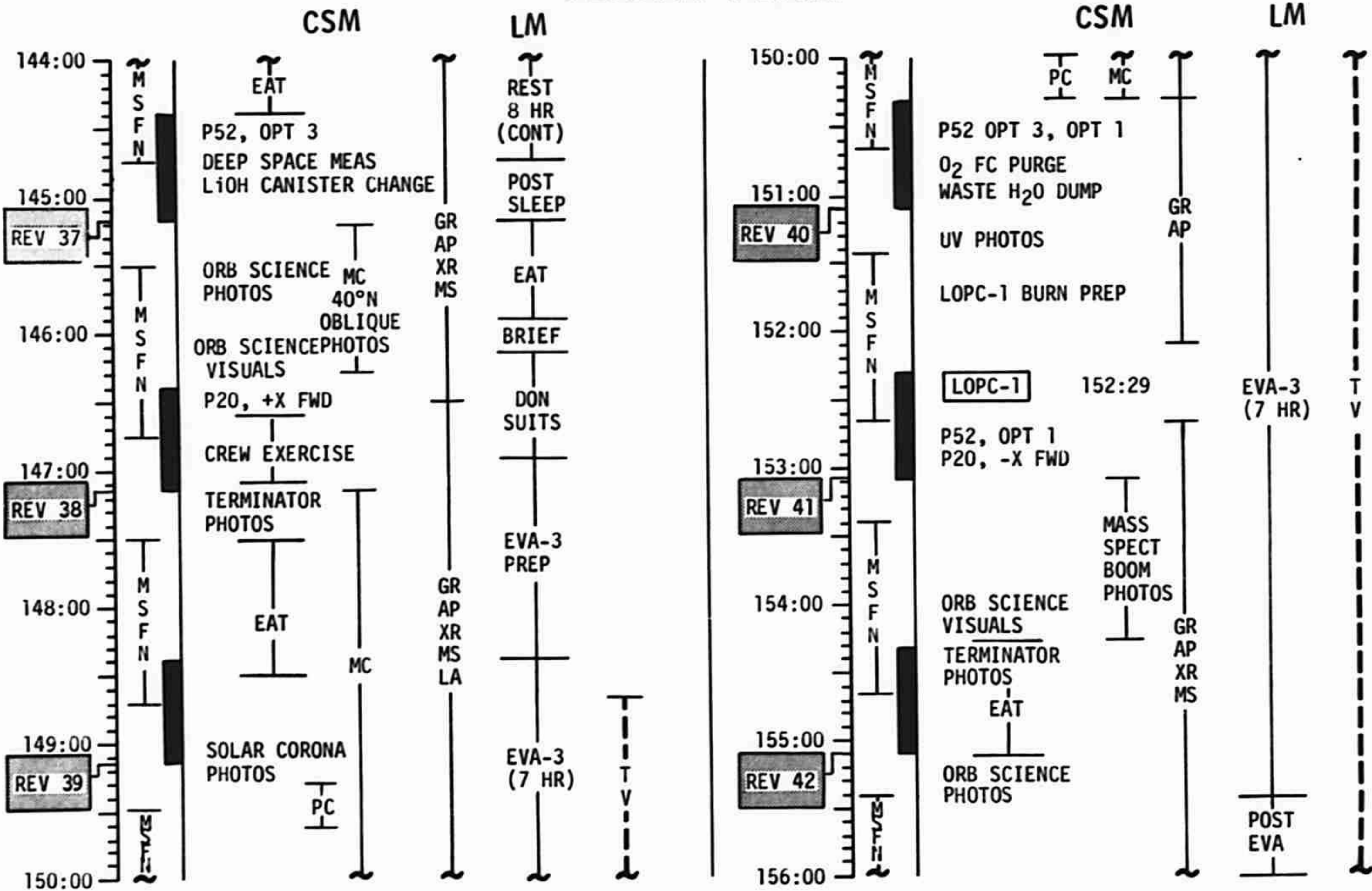


23

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

24

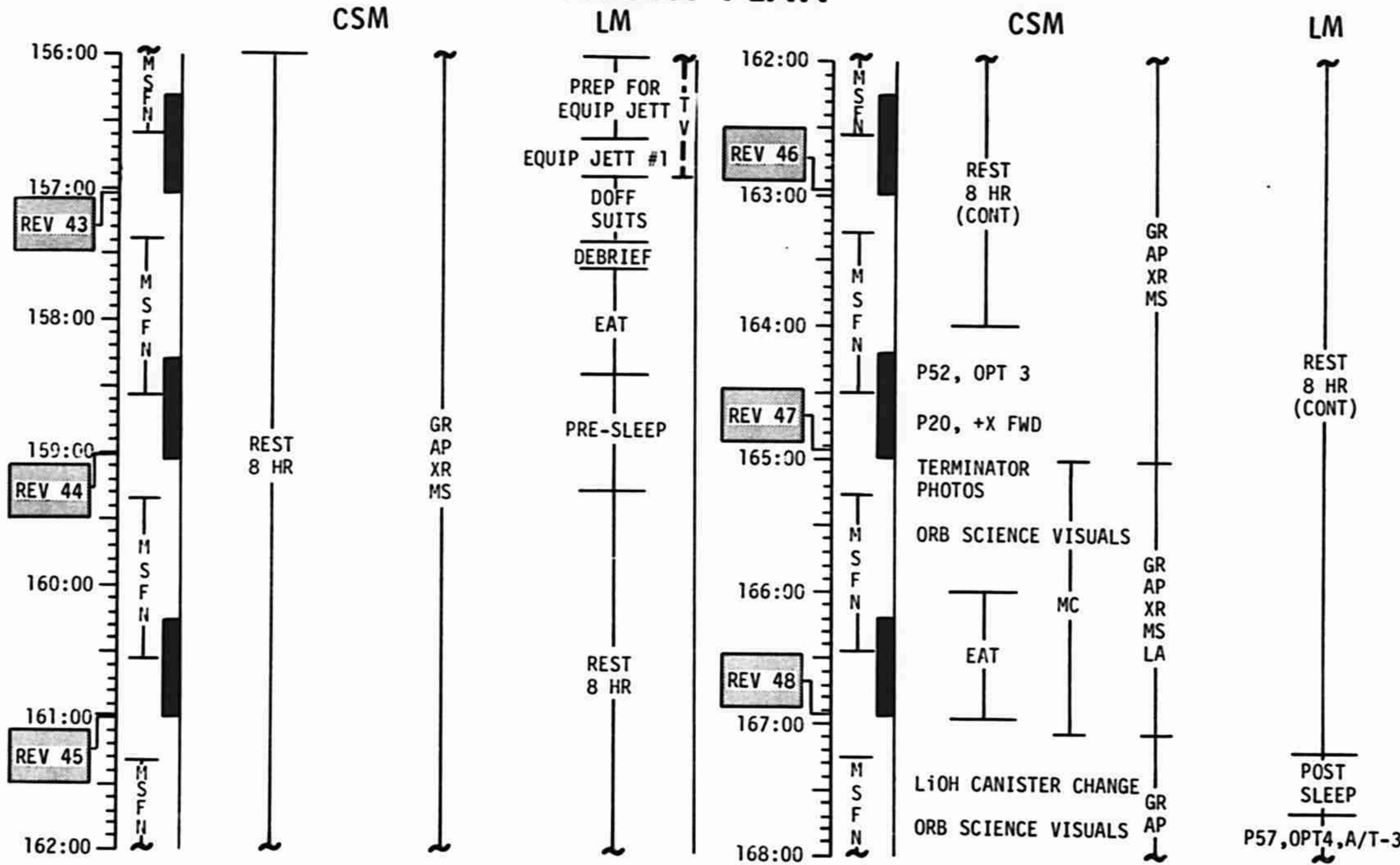
# FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	144:00 - 156:00	7/36-42	5-13

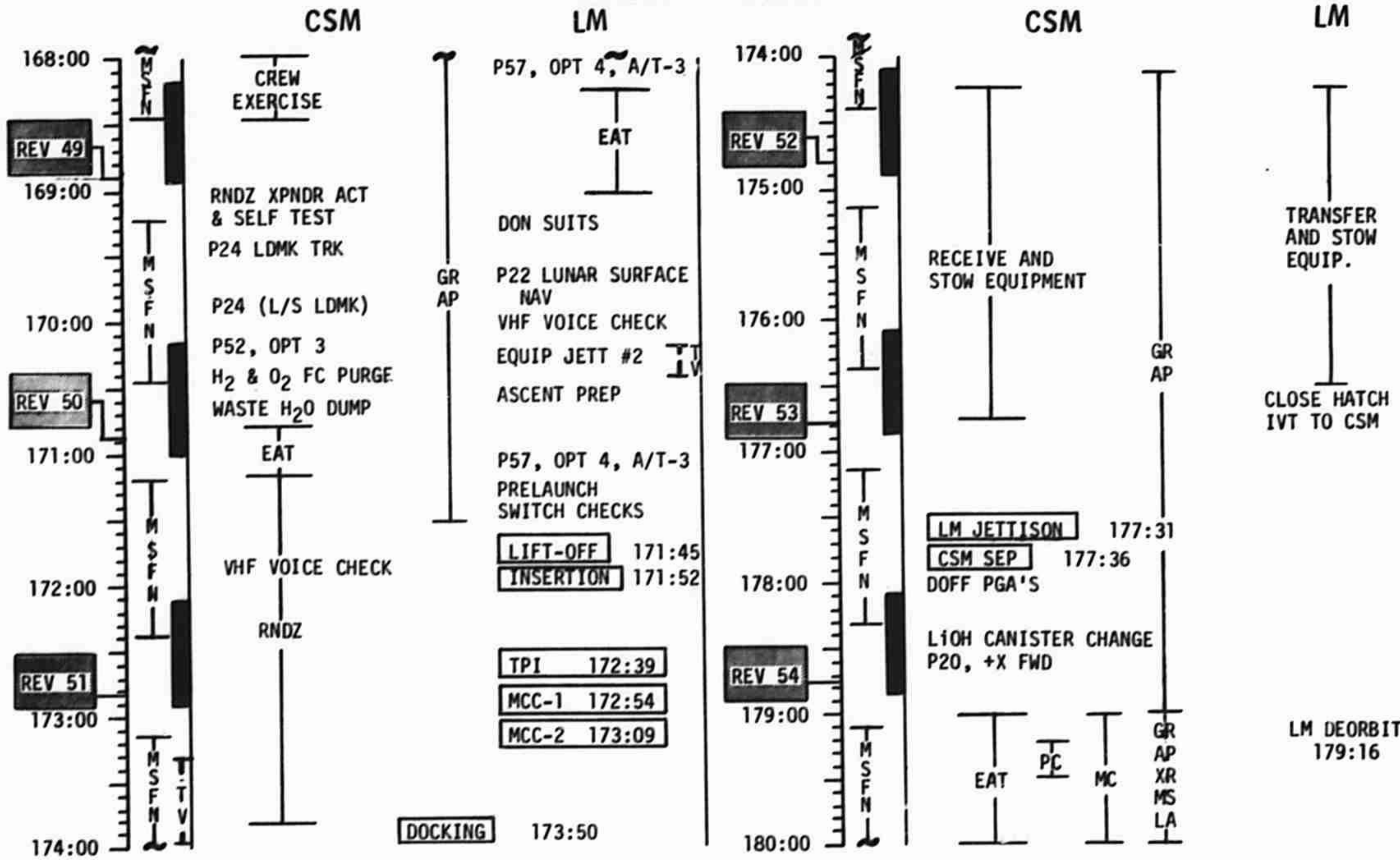


# FLIGHT PLAN



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

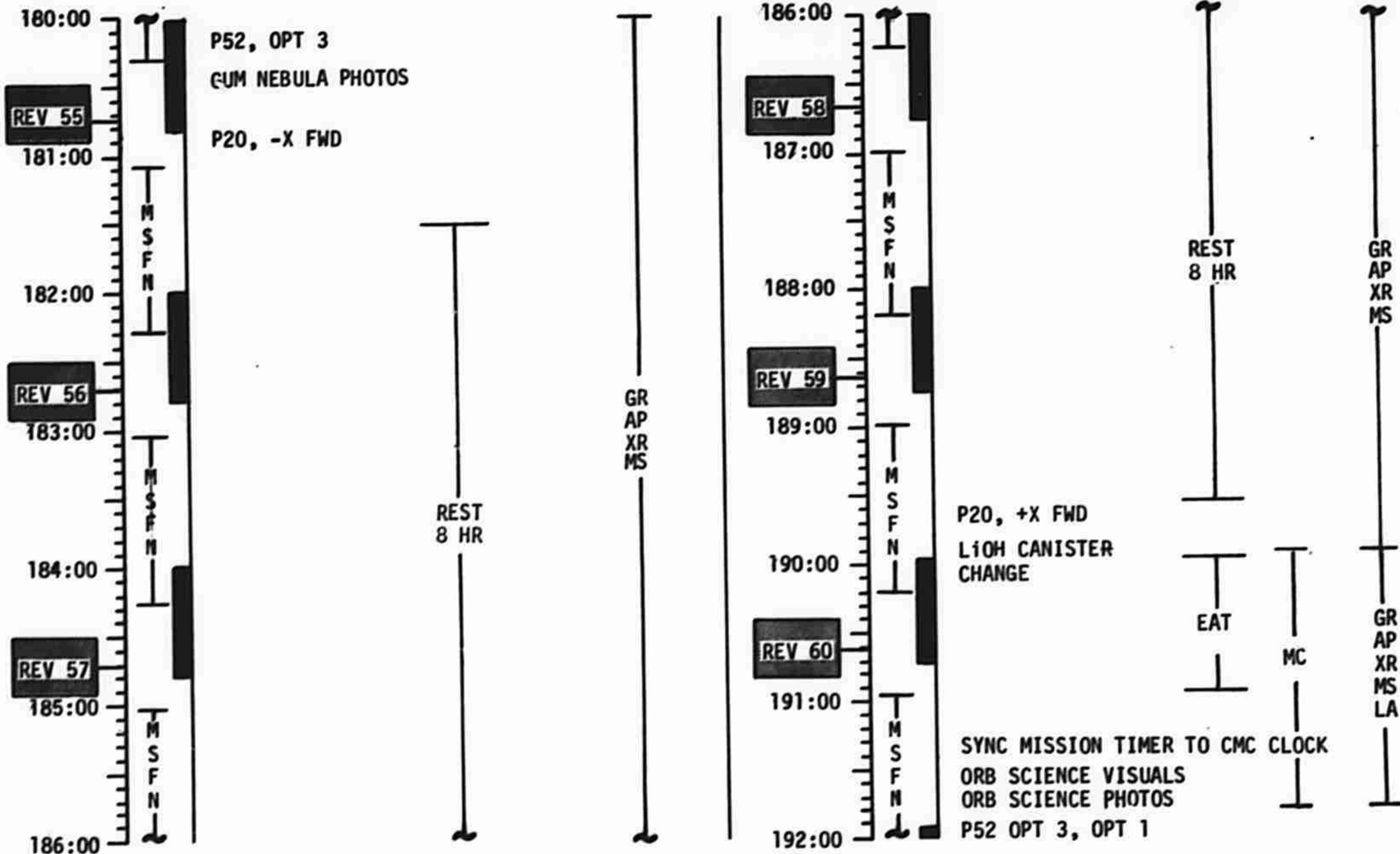


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	168:00 - 180:00	8/48-54	5-15

# FLIGHT PLAN

CSM

CSM

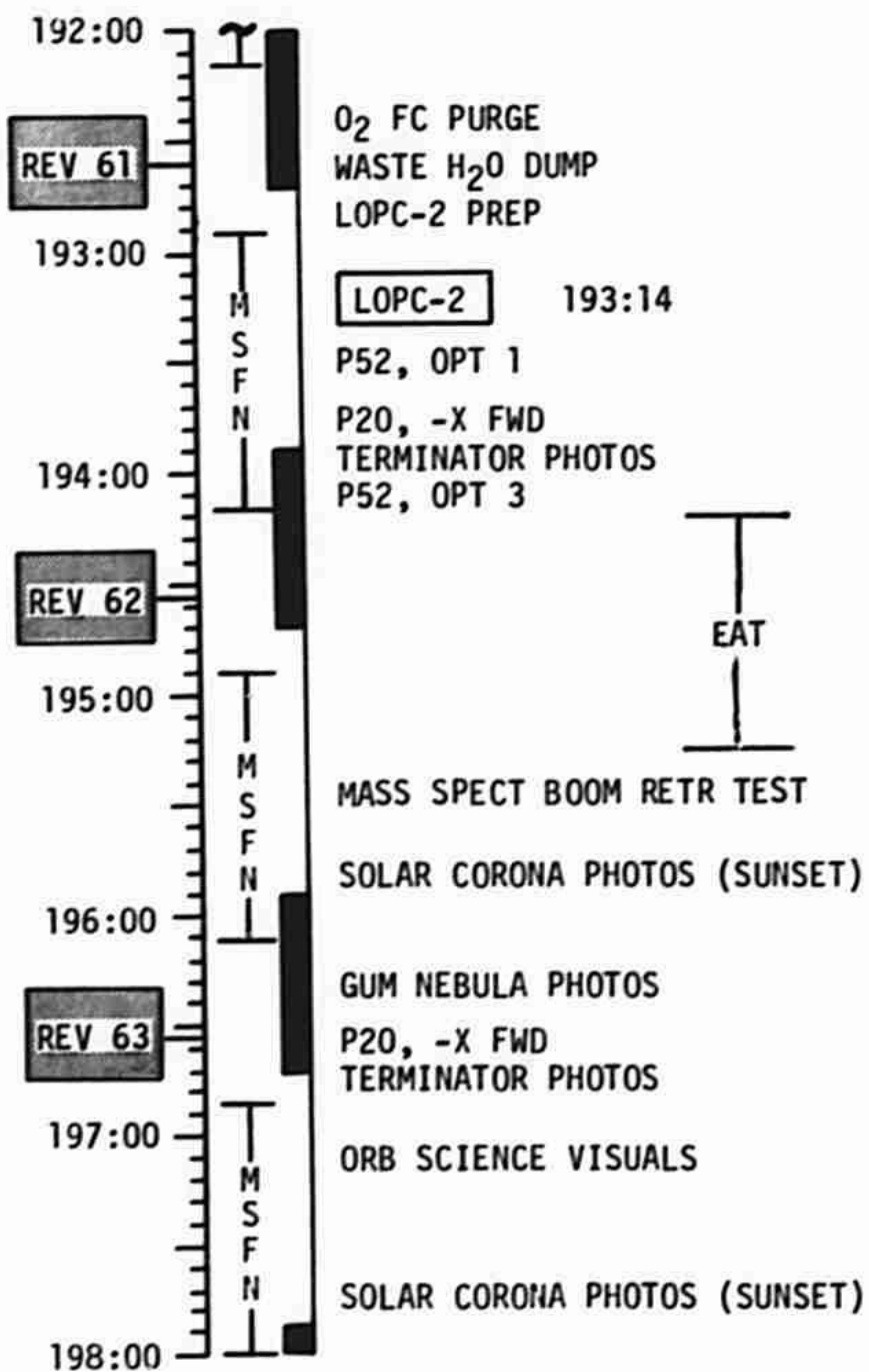


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	180:00 - 192:00	8-9/54-60	5-16

# FLIGHT PLAN

CSM

CSM

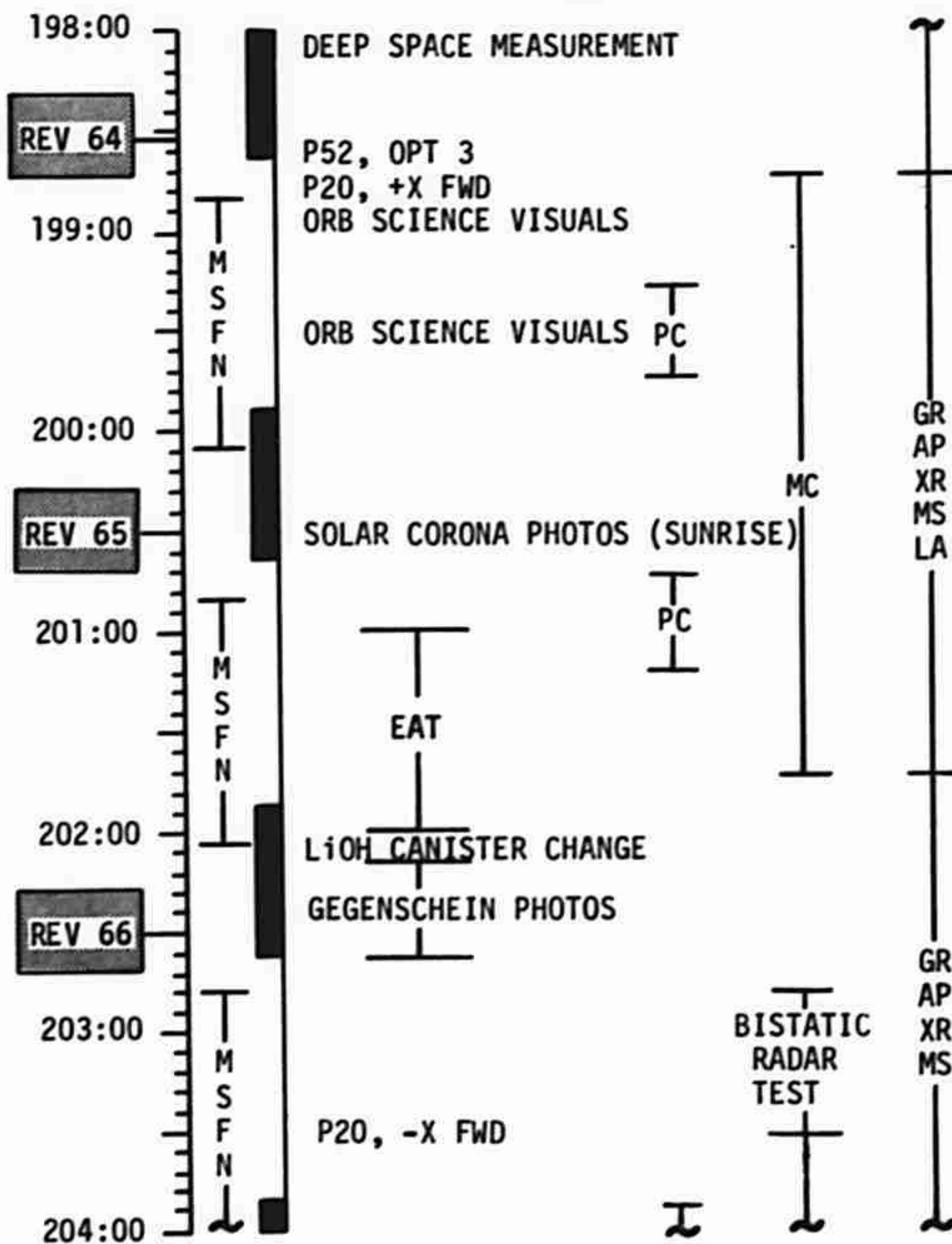


GR  
AP

GR  
AP  
XR  
MS

GR  
AP  
XR  
MS

GR  
AP  
XR  
MS



PC

PC

PC

MC

BISTATIC  
RADAR  
TEST

GR  
AP  
XR  
MS  
LA

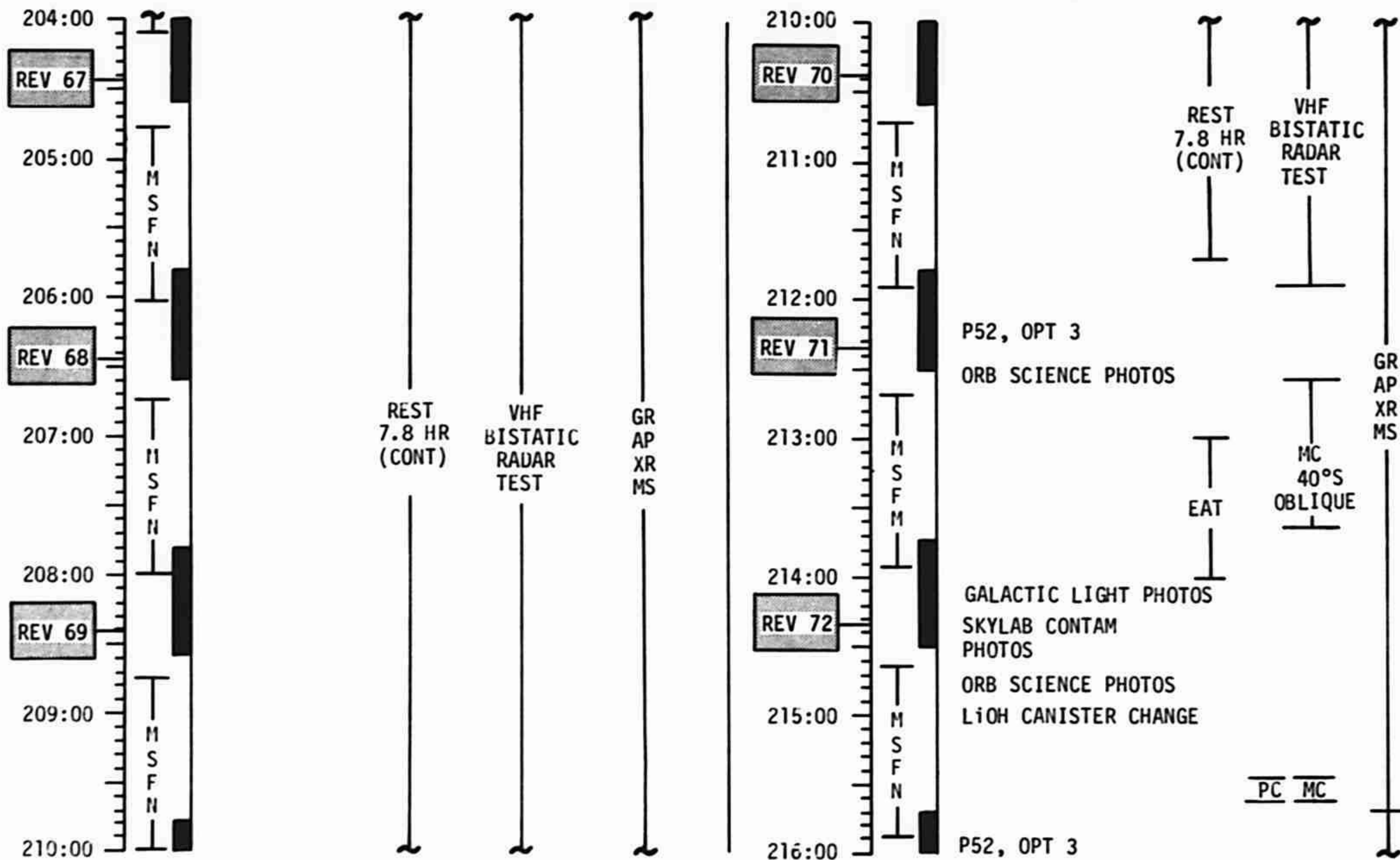
GR  
AP  
XR  
MS

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

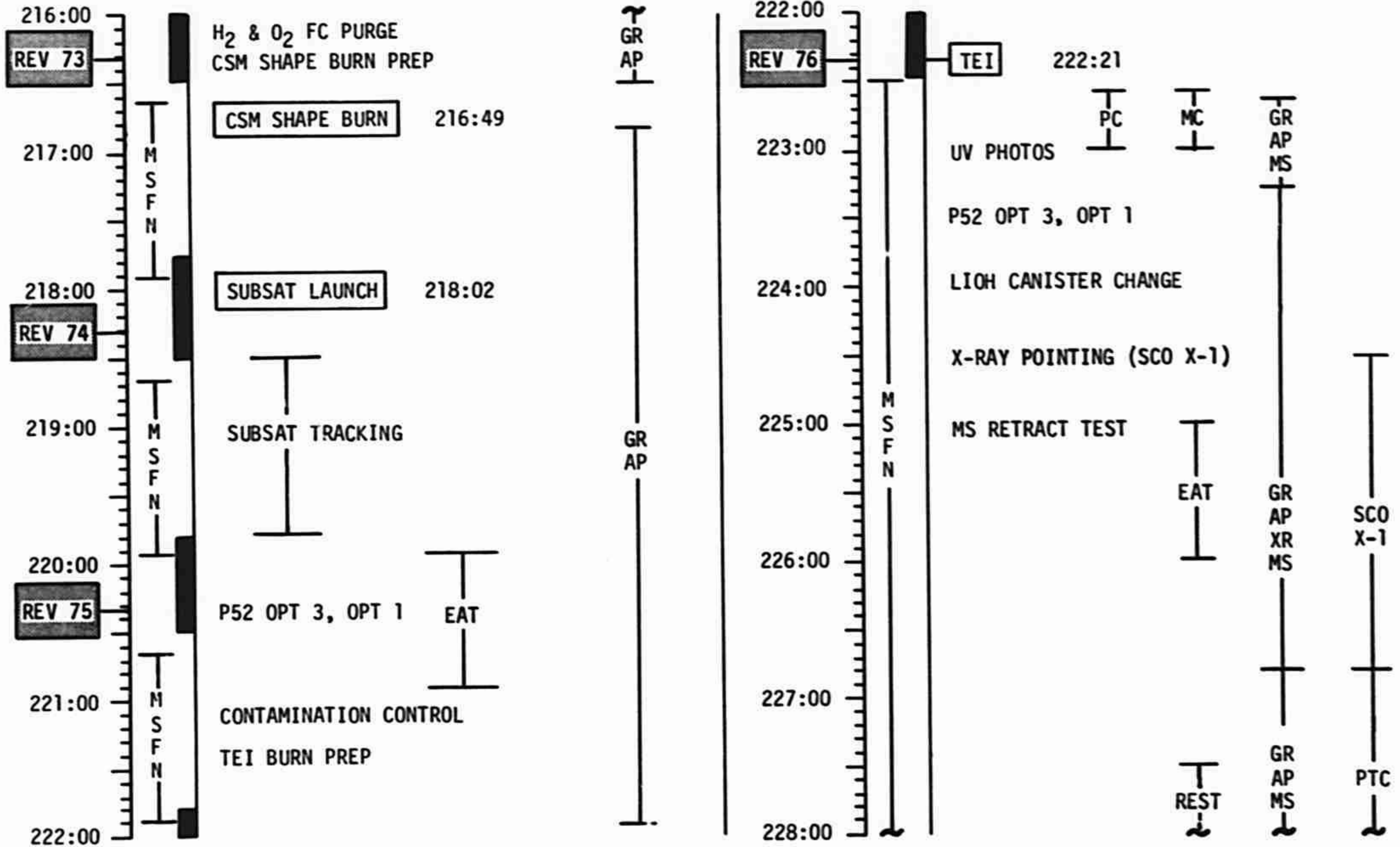


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	204:00 - 216:00	10/67-72	5-18

# FLIGHT PLAN

CSM

CSM

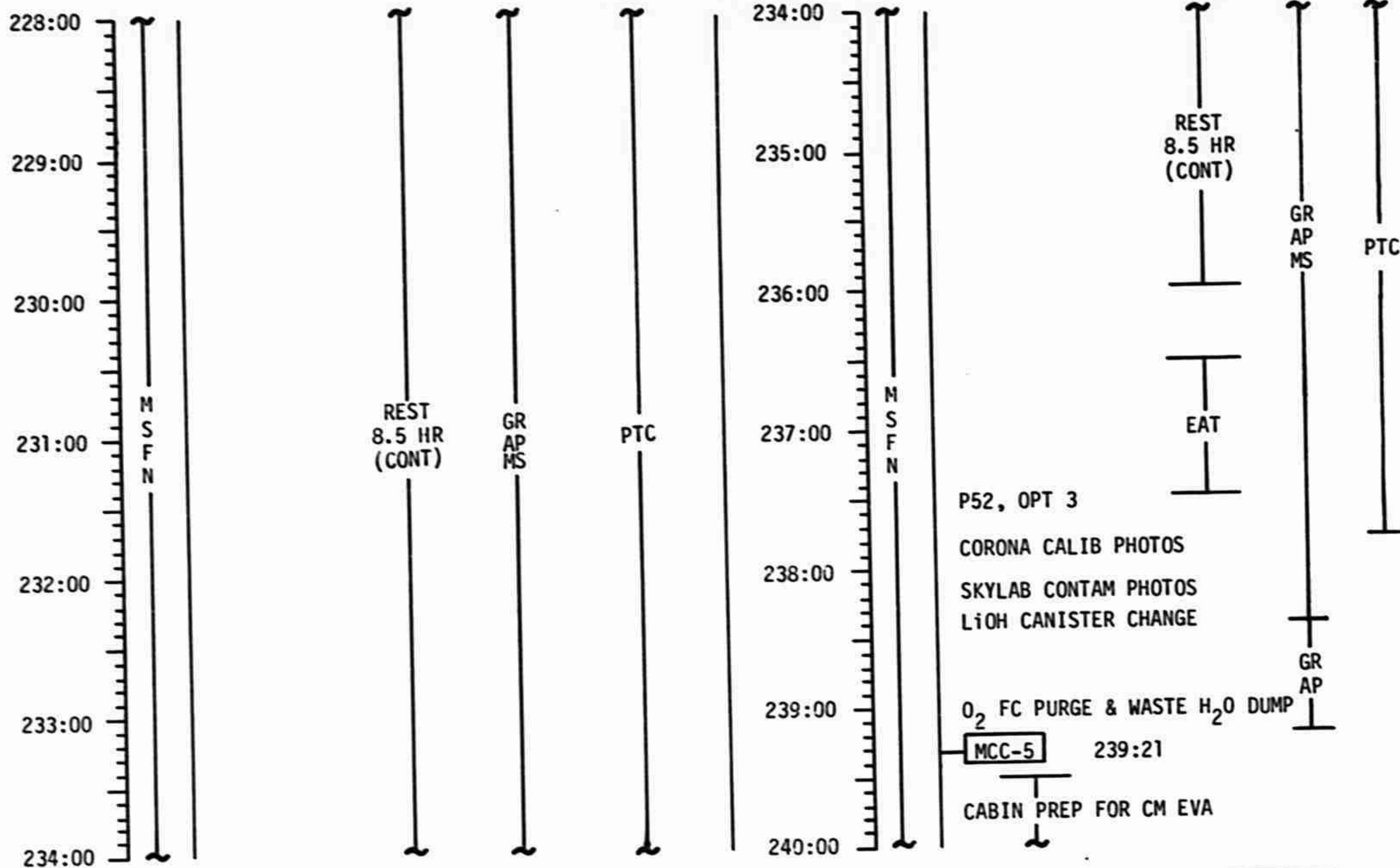


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	216:00 - 228:00	10/72-TEC	5-19

# FLIGHT PLAN

CSM

CSM



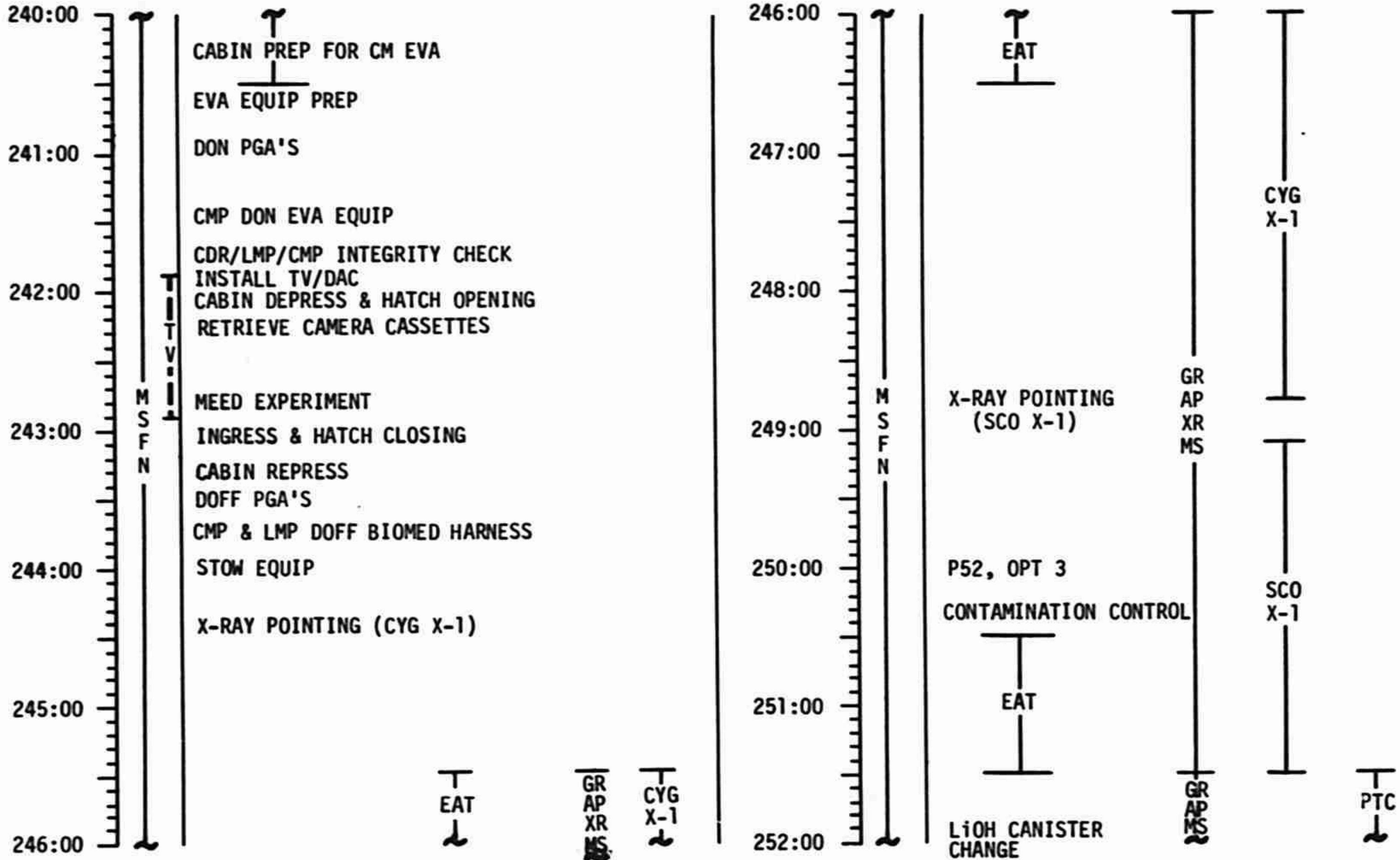
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	228:00 - 240:00	11/TEC	5-20

FLIGHT PLANNING BRANCH

# FLIGHT PLAN

CSM

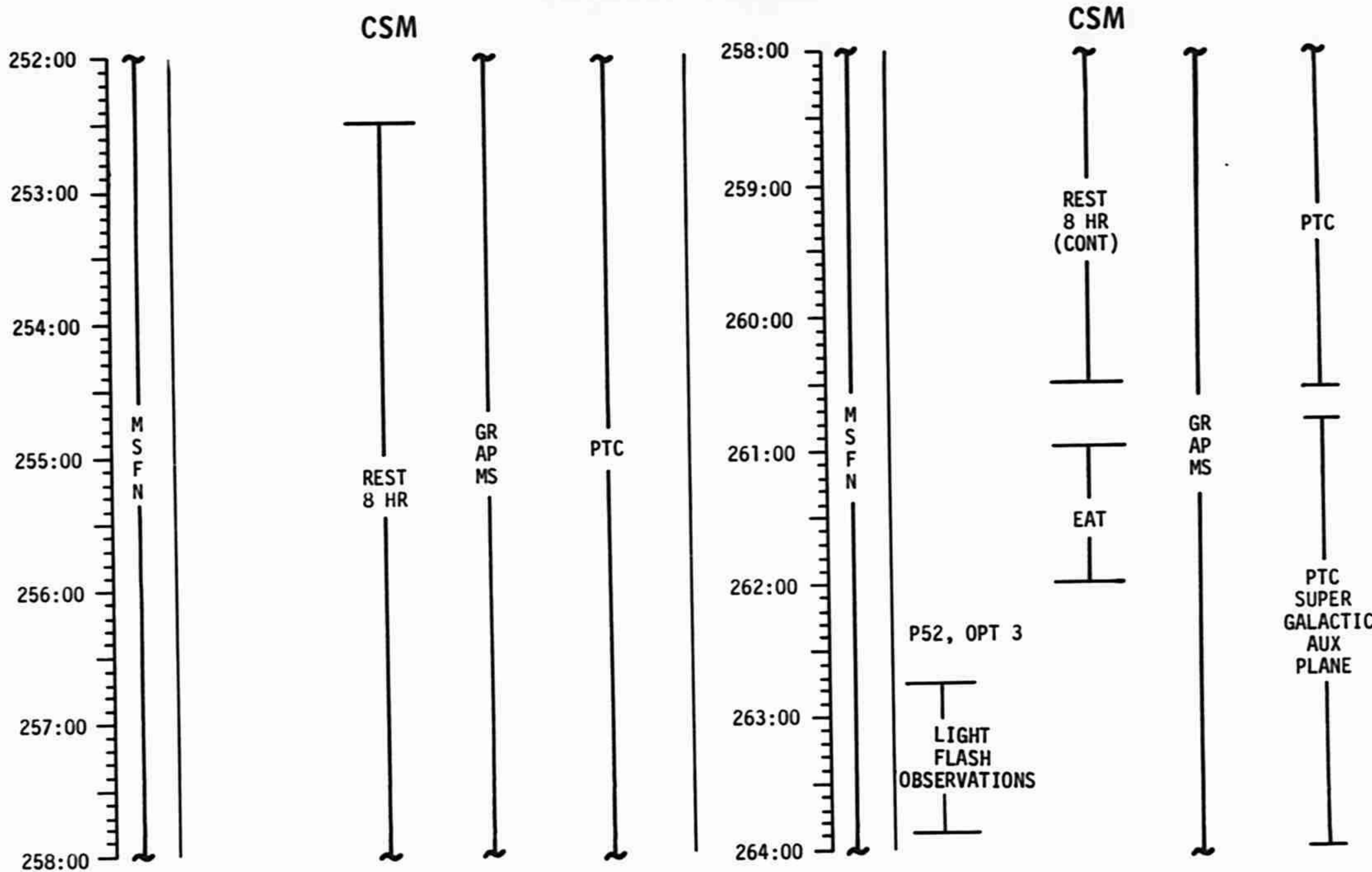
CSM



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

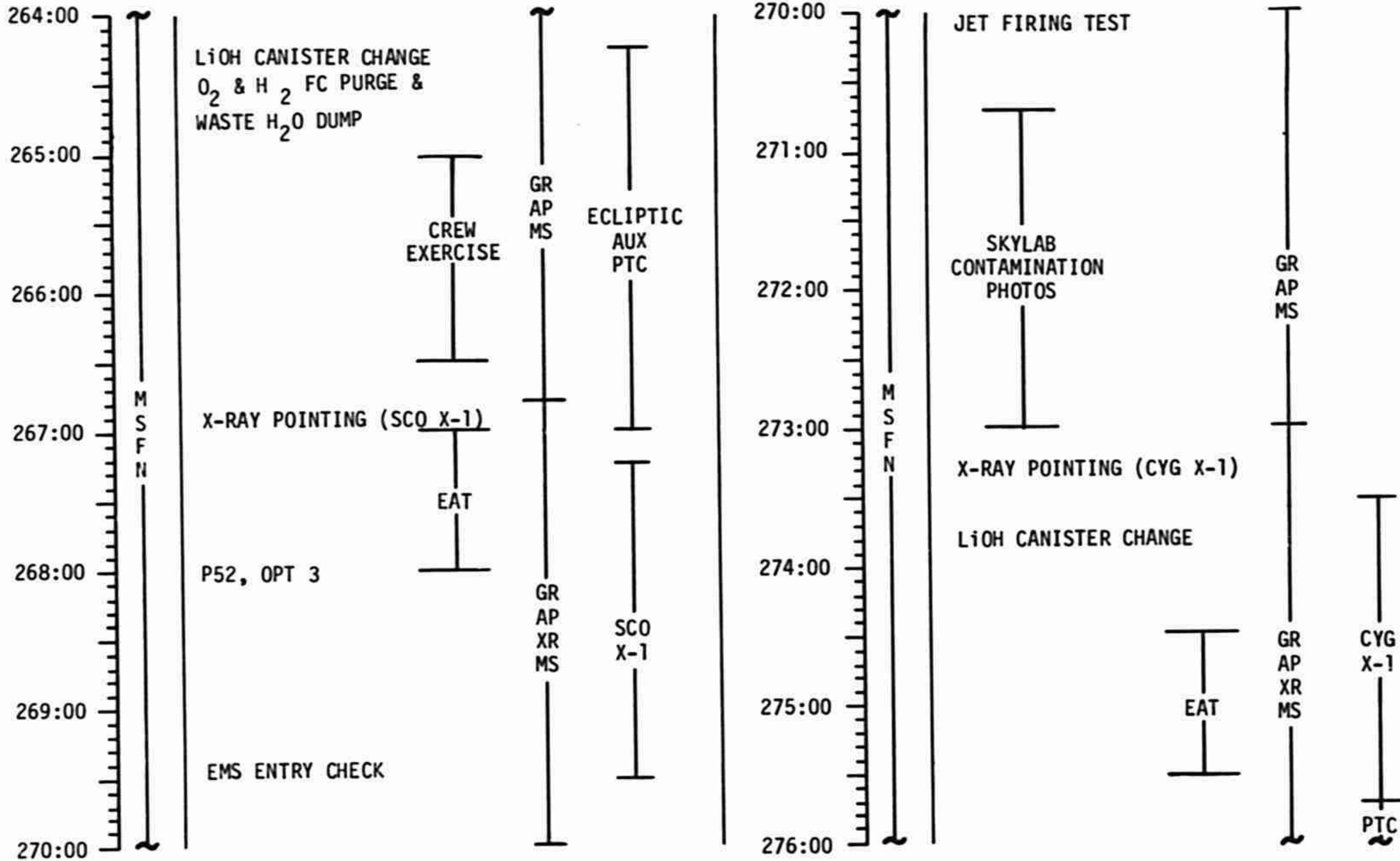


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	252:00 - 264:00	11-12/TEC	5-22

# FLIGHT PLAN

CSM

CSM

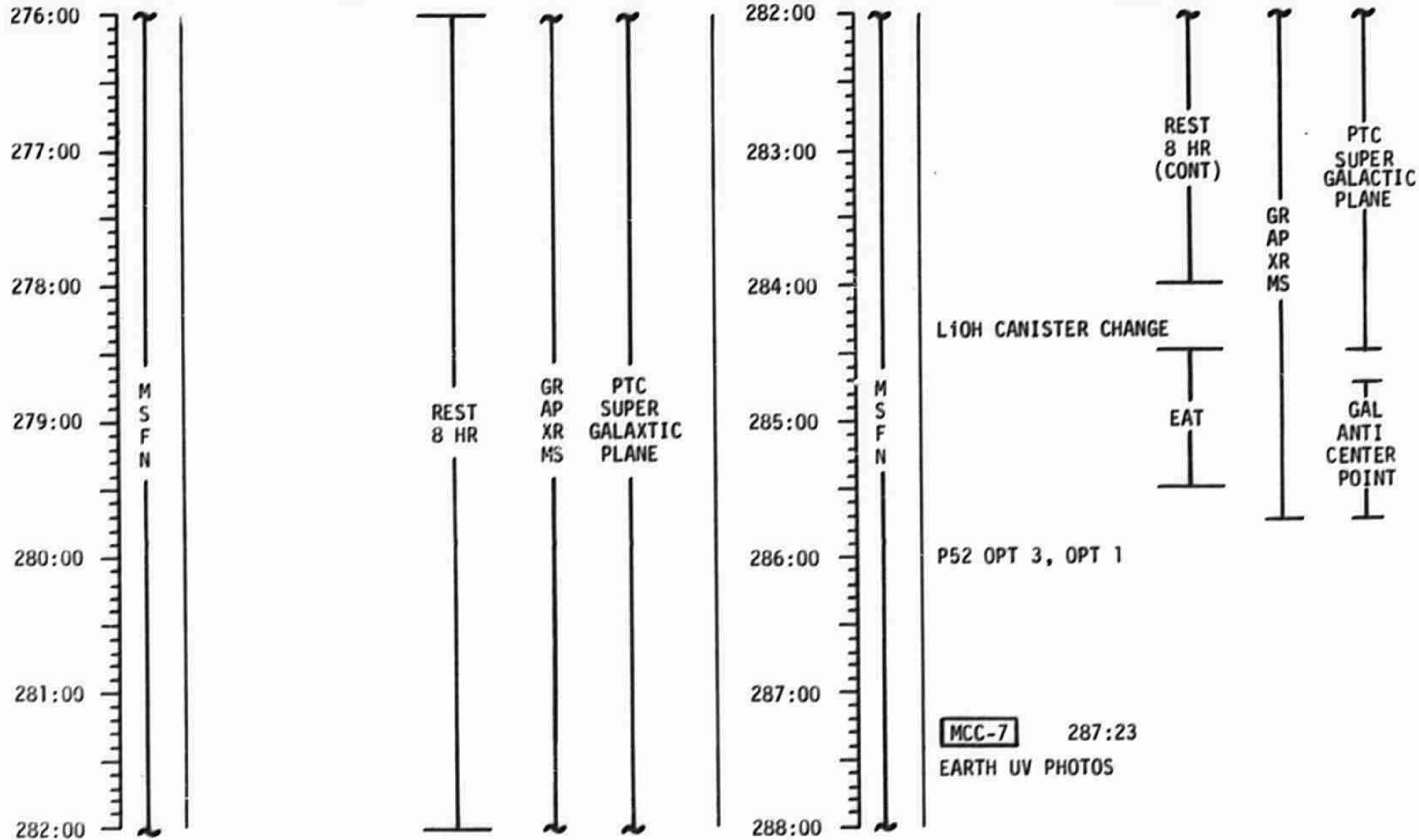


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	264:00 - 276:00	12/TEC	5-23

# FLIGHT PLAN

CSM

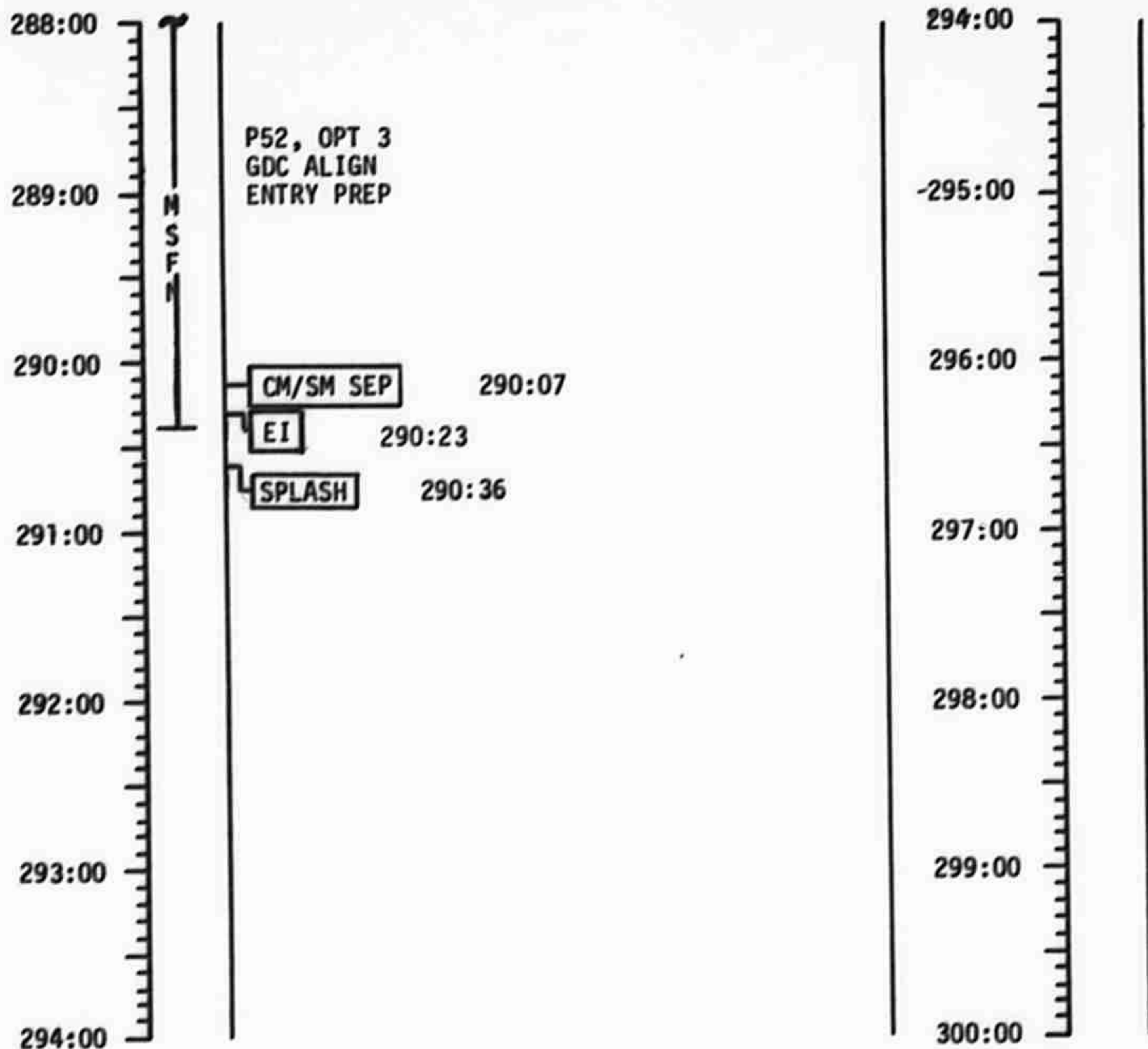
CSM



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

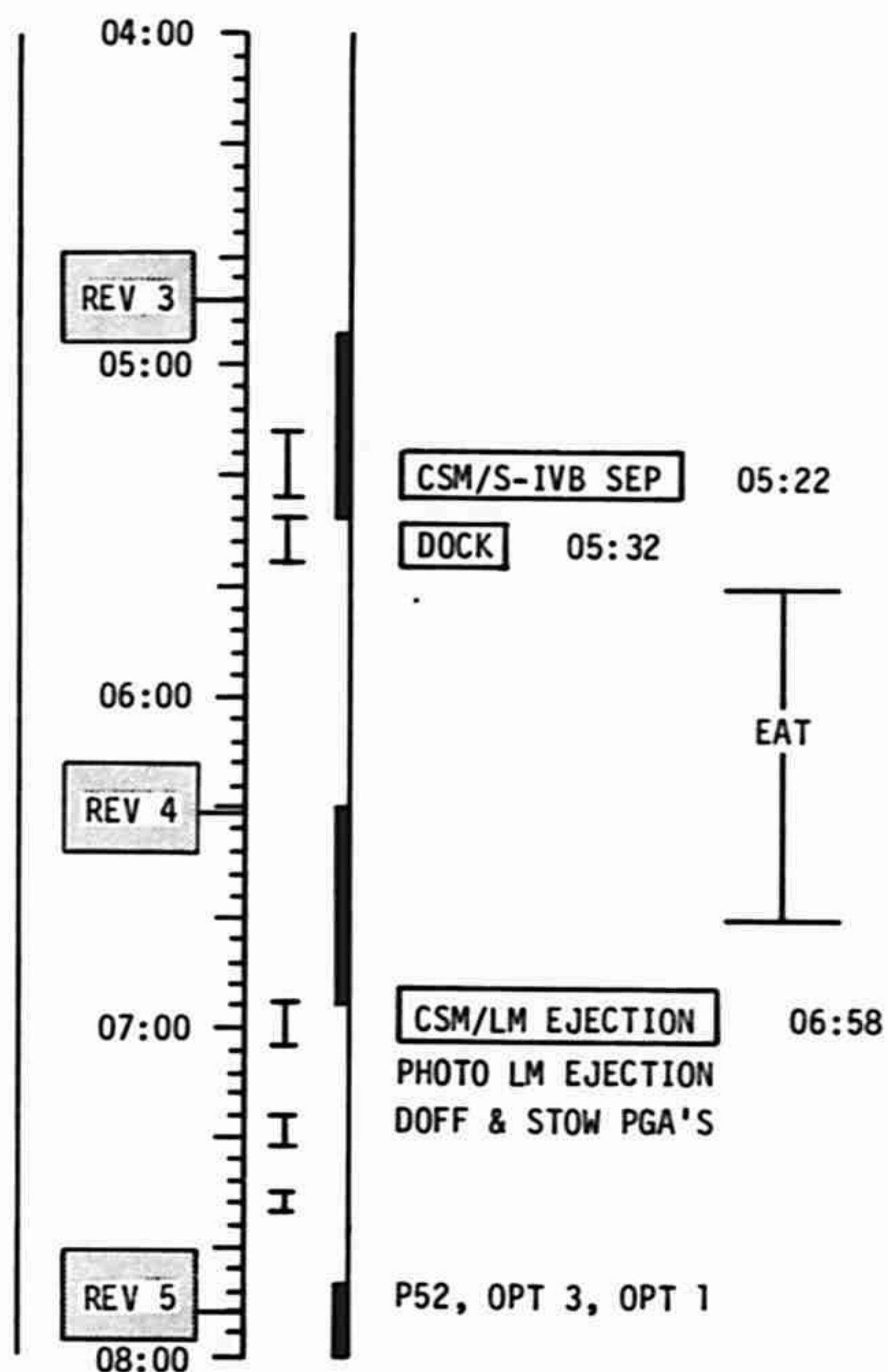
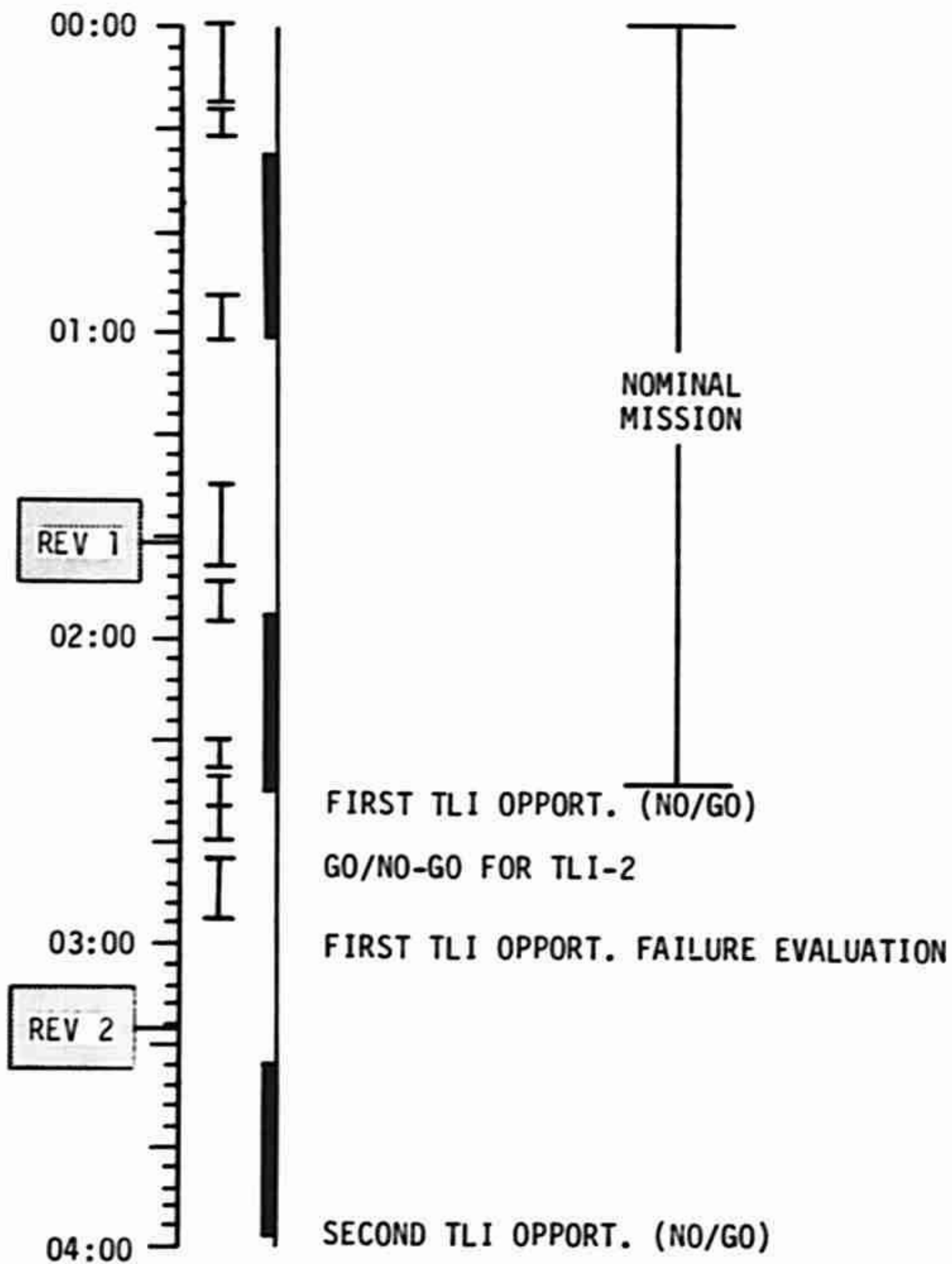
- 1) Maintain SM-RCS deorbit capability.
- 2) Photography over U.S.
- 3) LM to be jettisoned for water impact.

### 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.

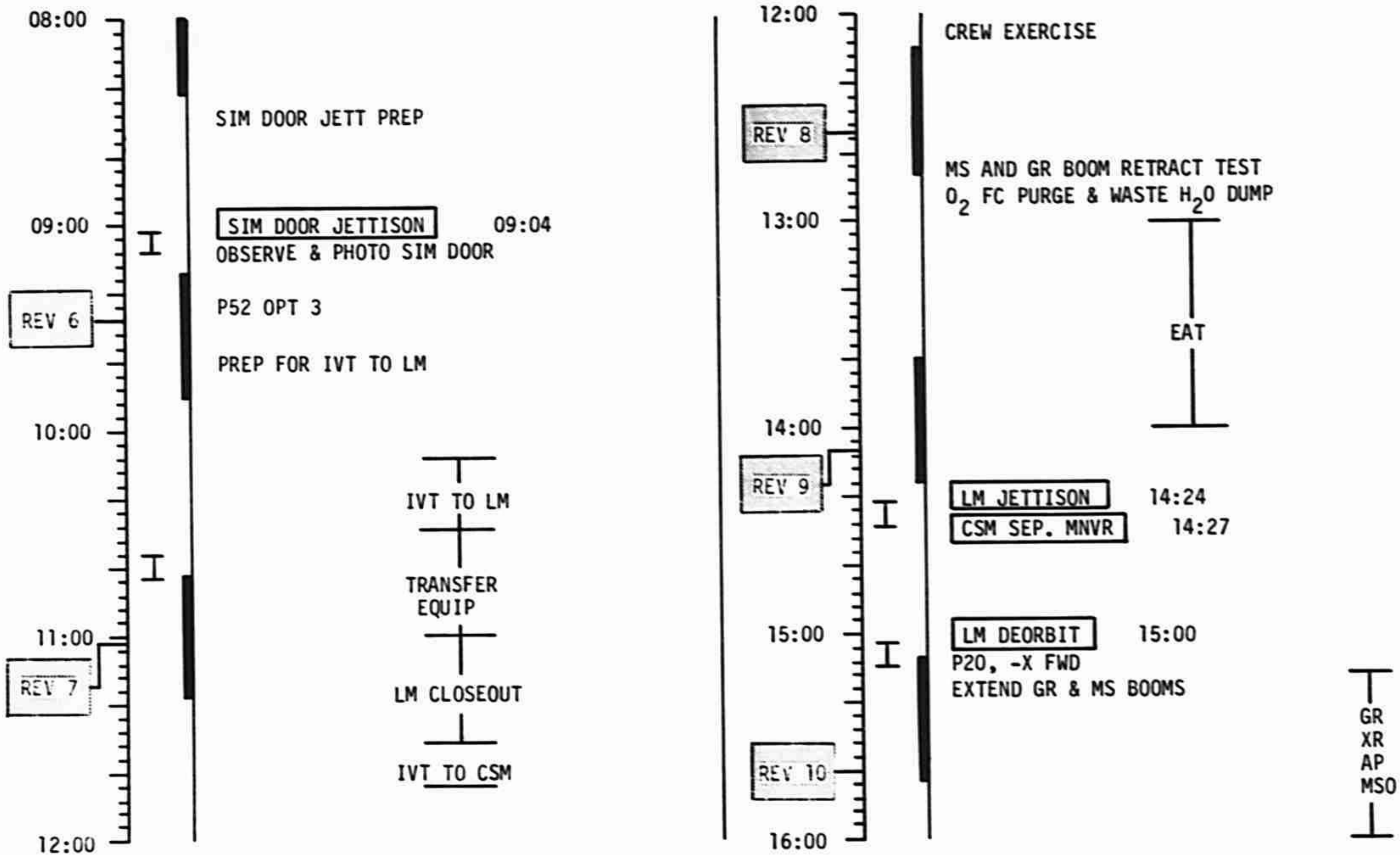
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# FLIGHT PLAN



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

# FLIGHT PLAN

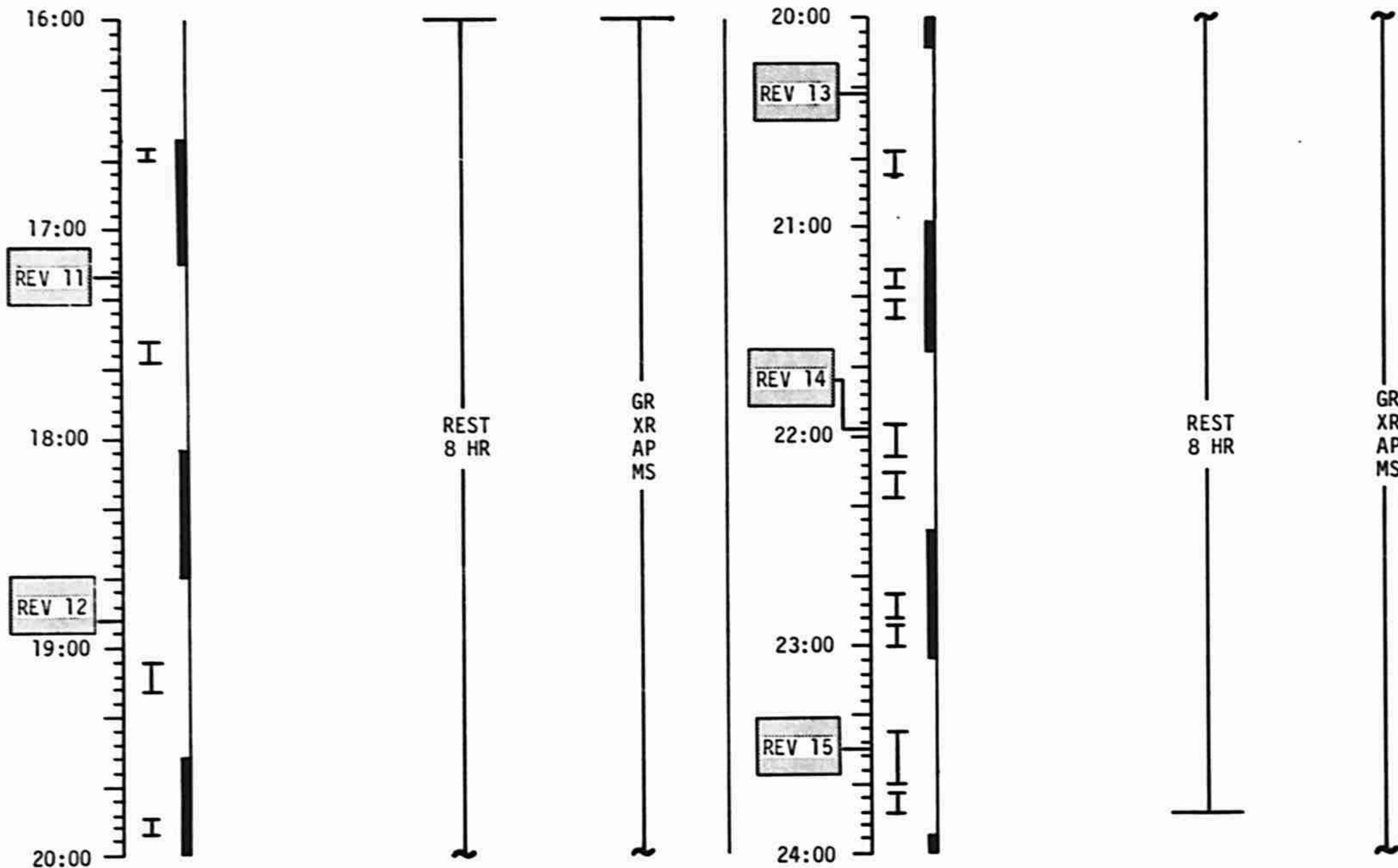


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	08:00 - 16:00	1/5-10	6-4



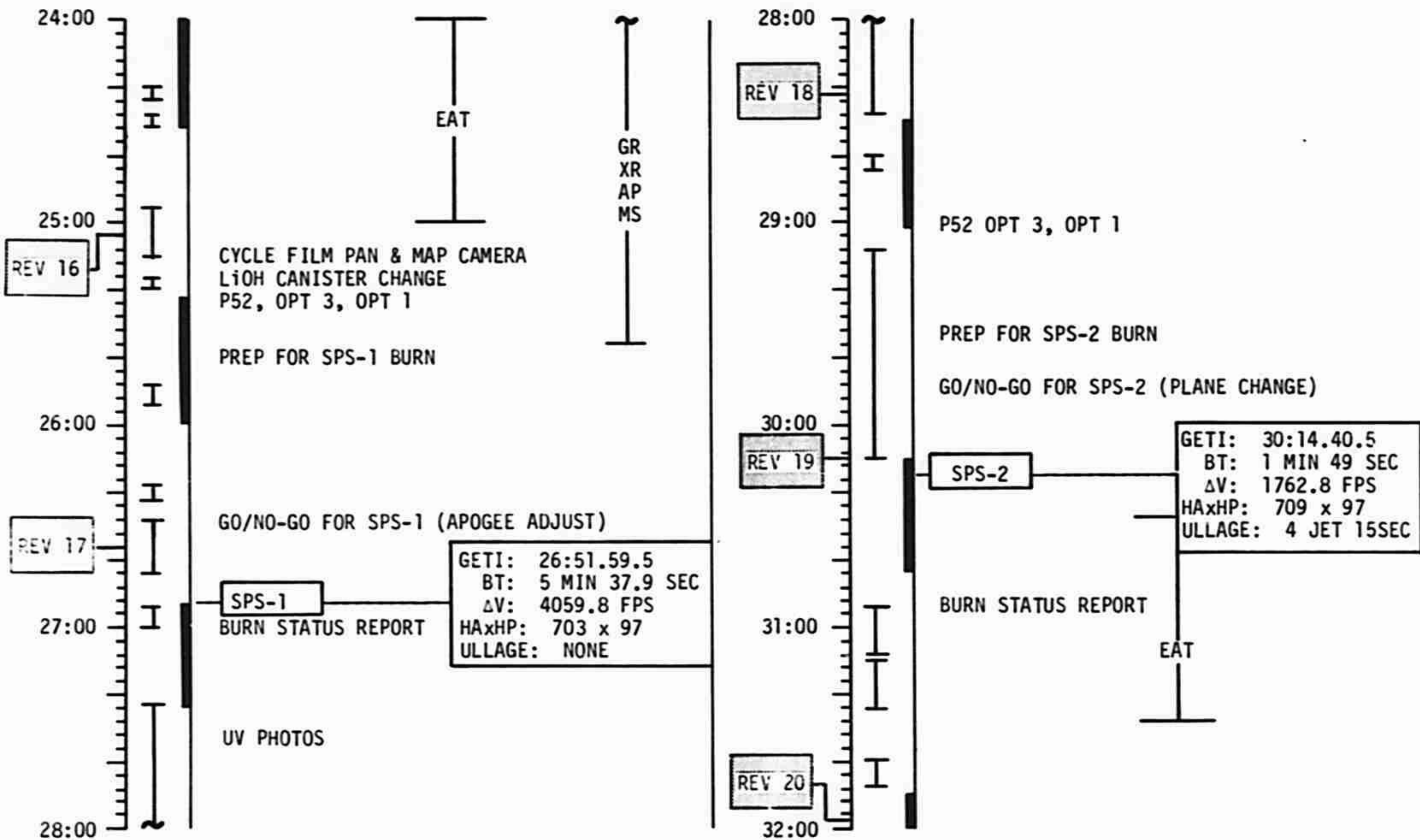
EARTH ALTERNATE

# FLIGHT PLAN



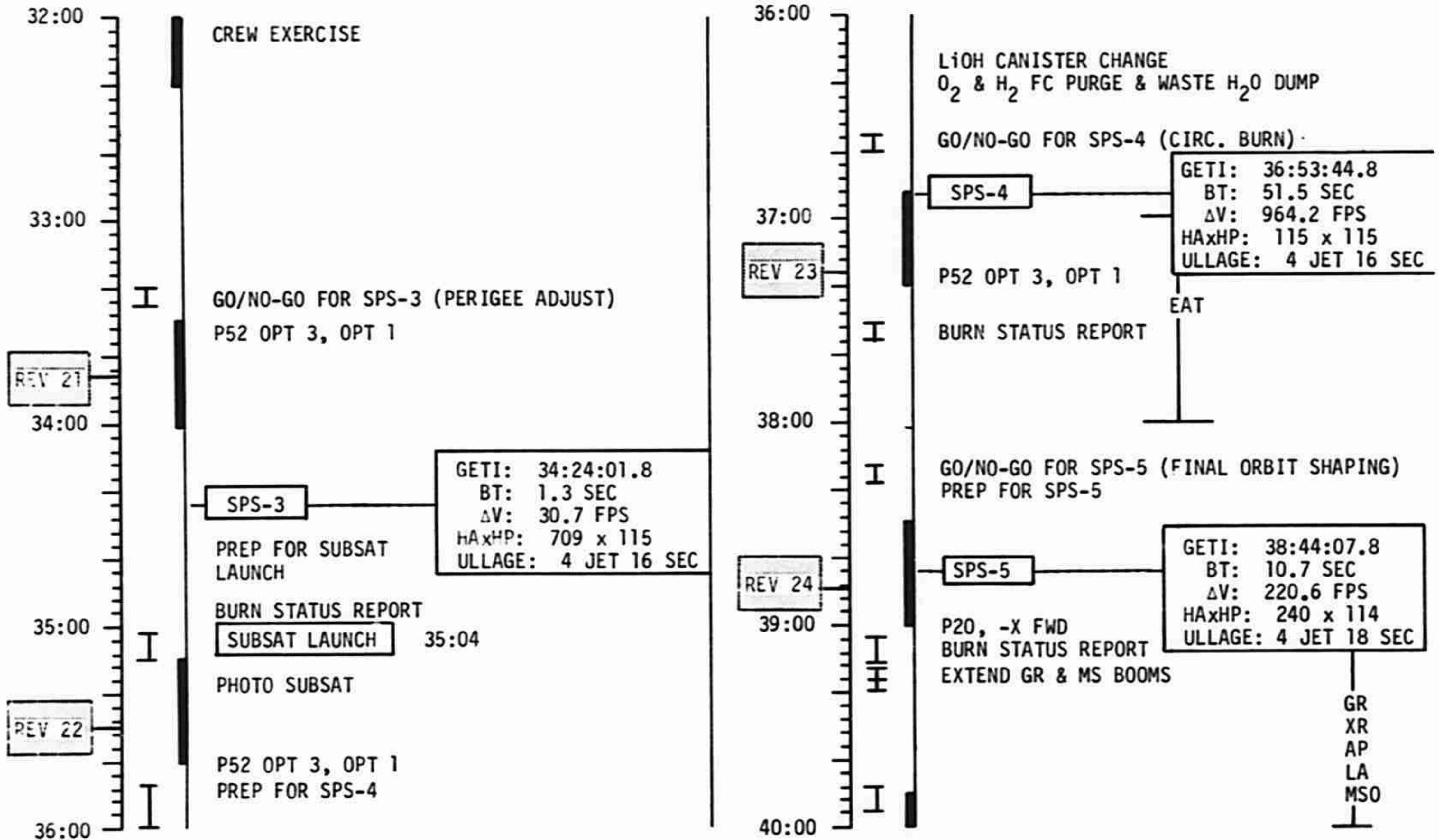
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	16:00 - 24:00	1/10-15	6-5

# FLIGHT PLAN



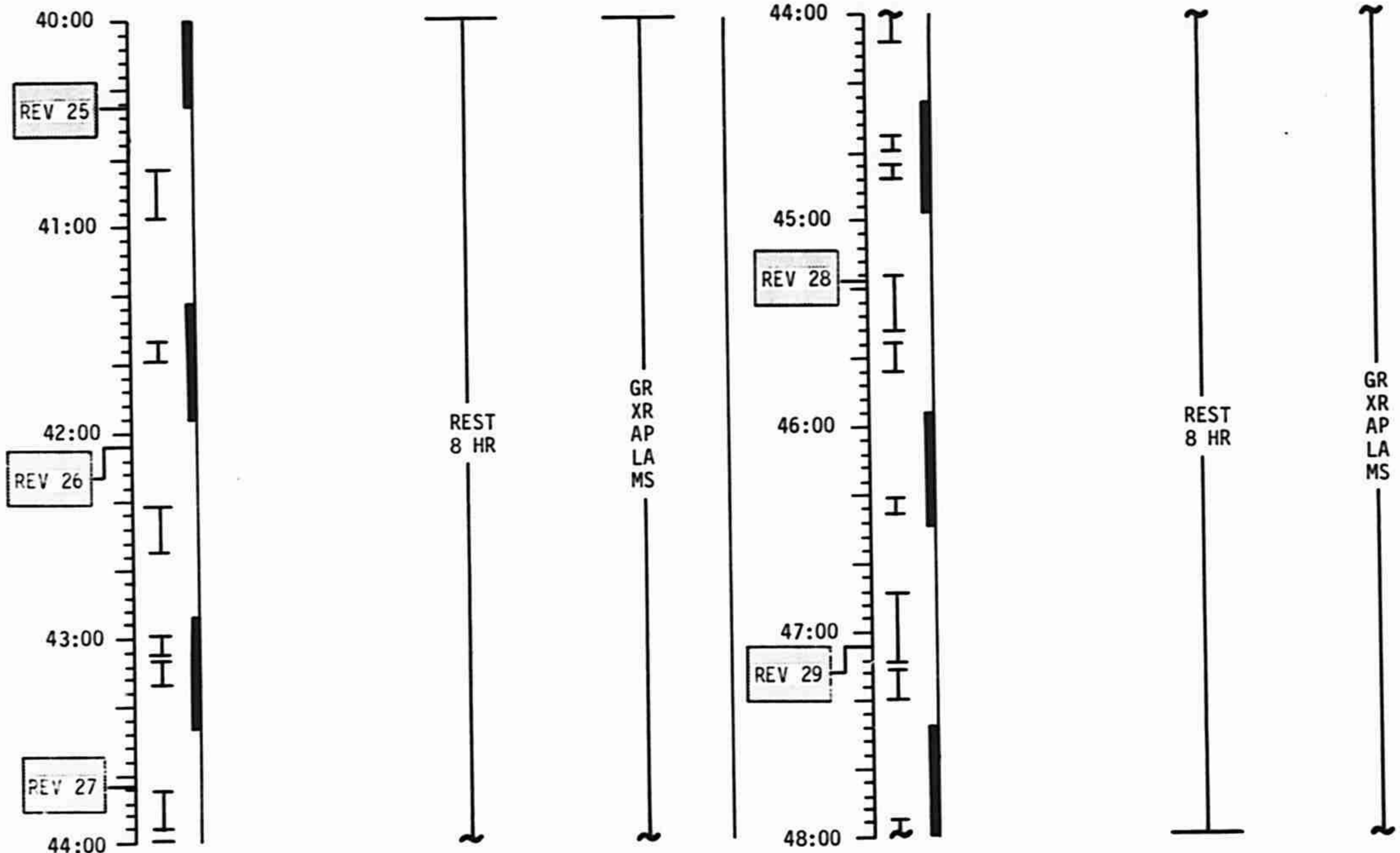
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	24:00 - 32:00	2/15-20	6-6

# FLIGHT PLAN



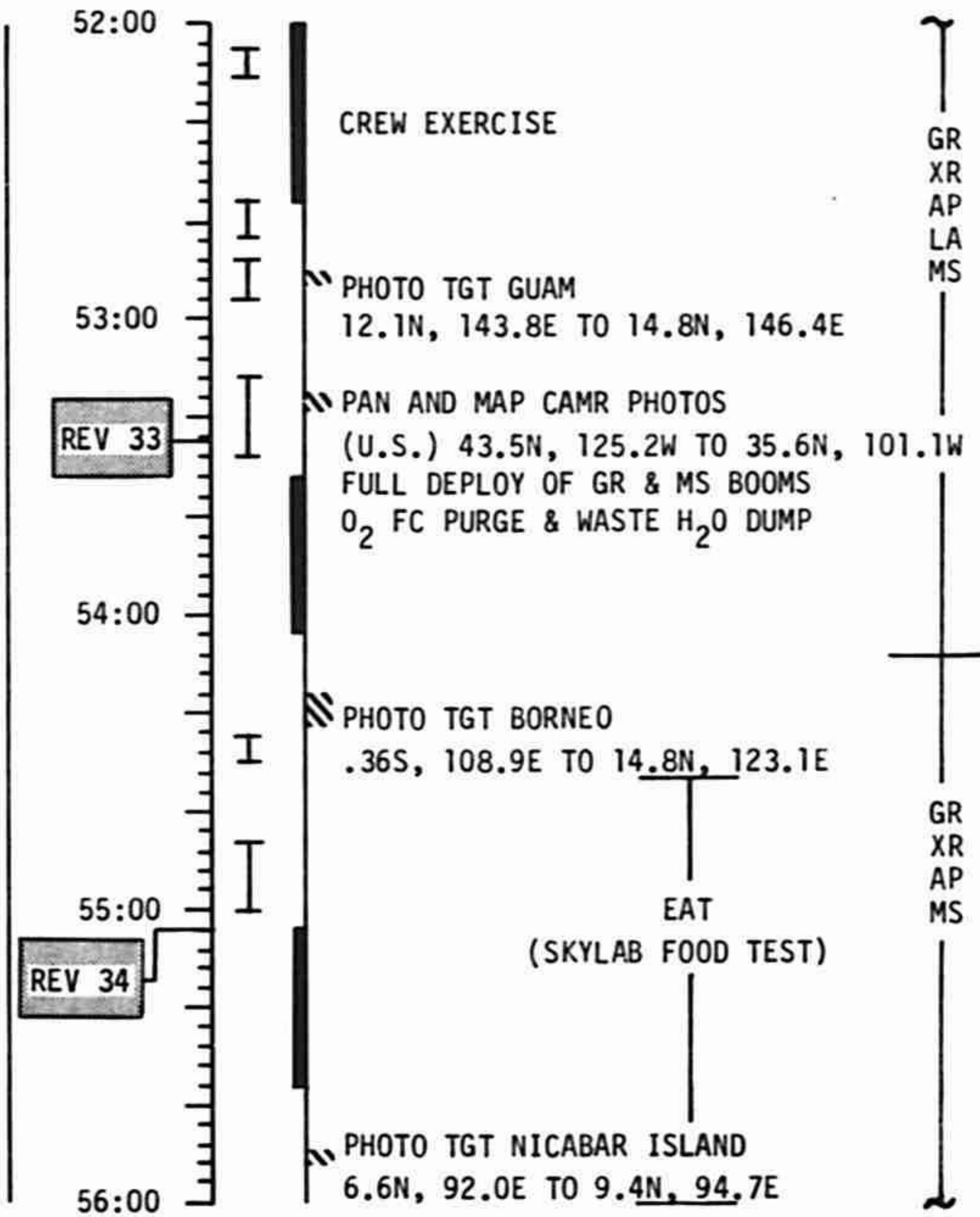
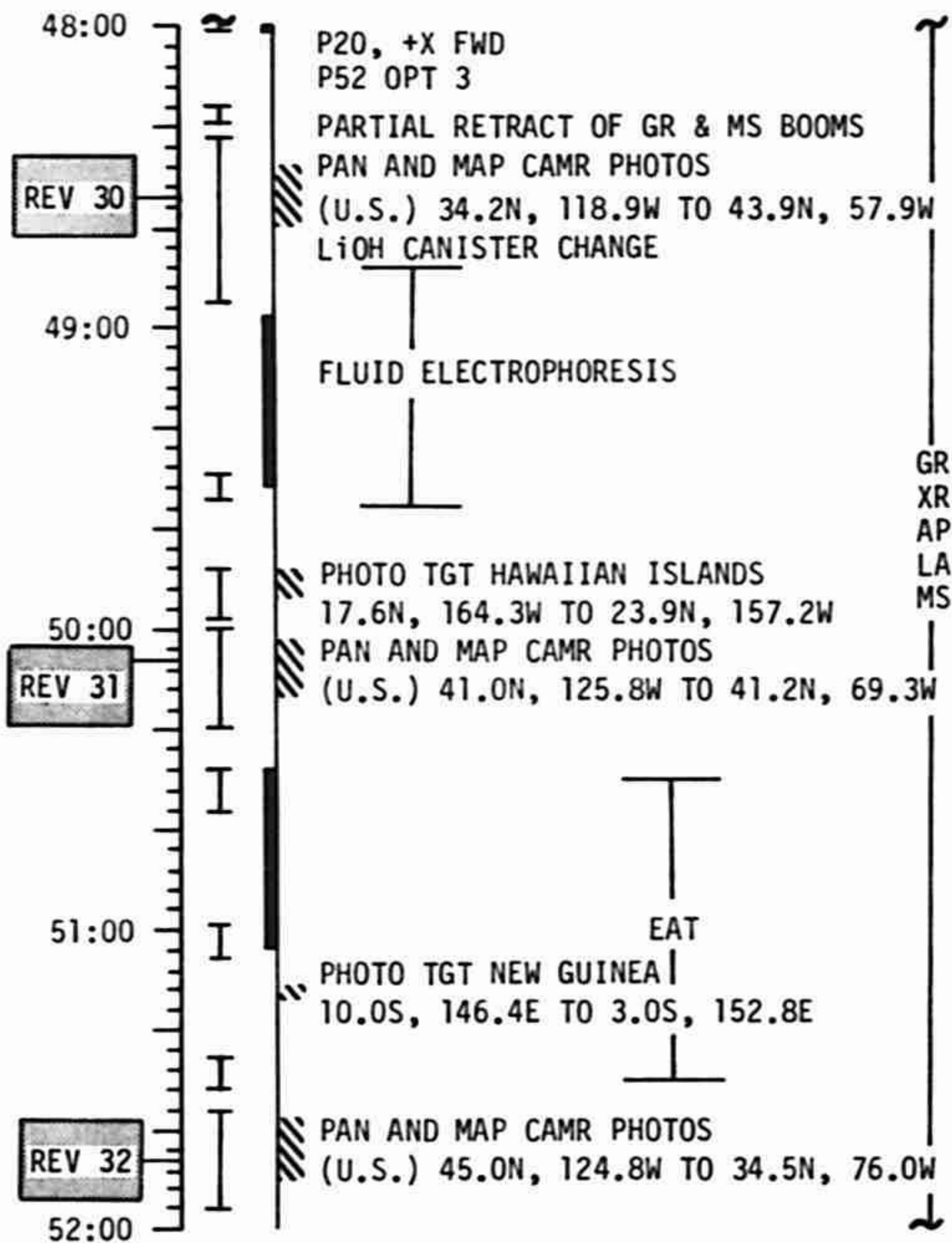
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	32:00 - 40:00	2/20-24	6-7

# FLIGHT PLAN



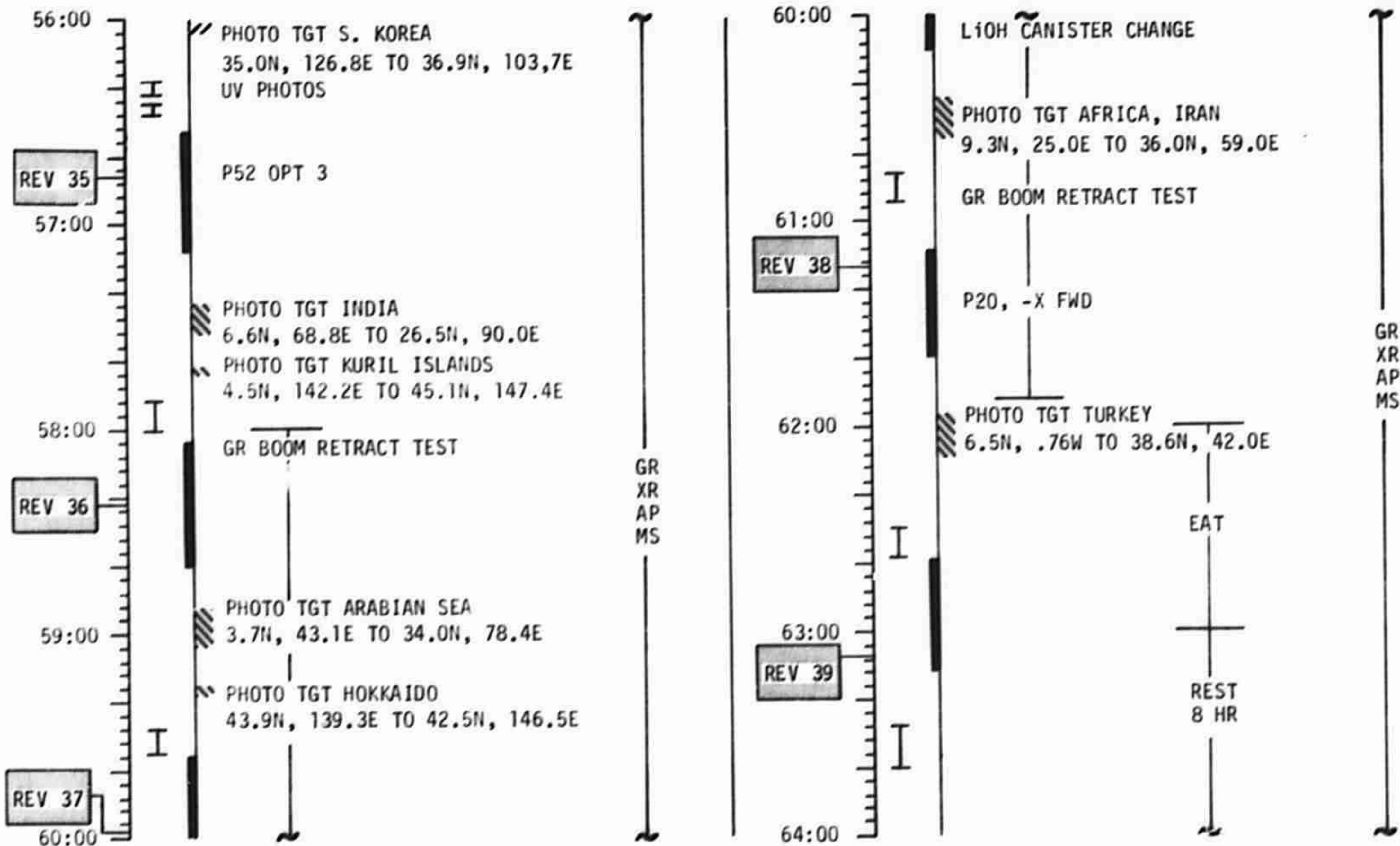
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	40:00 - 48:00	2/24-29	6-8

# 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

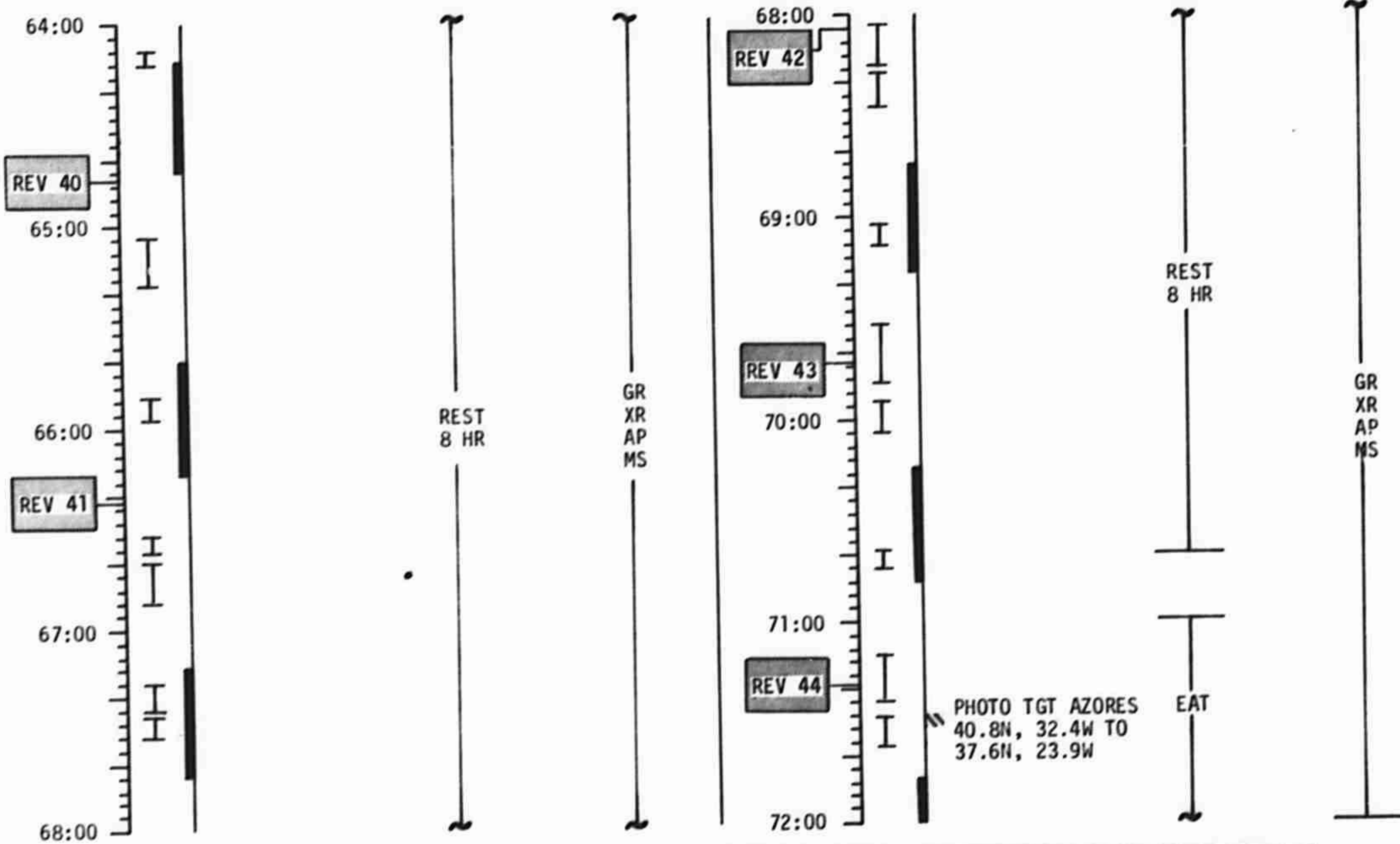
# FLIGHT PLAN



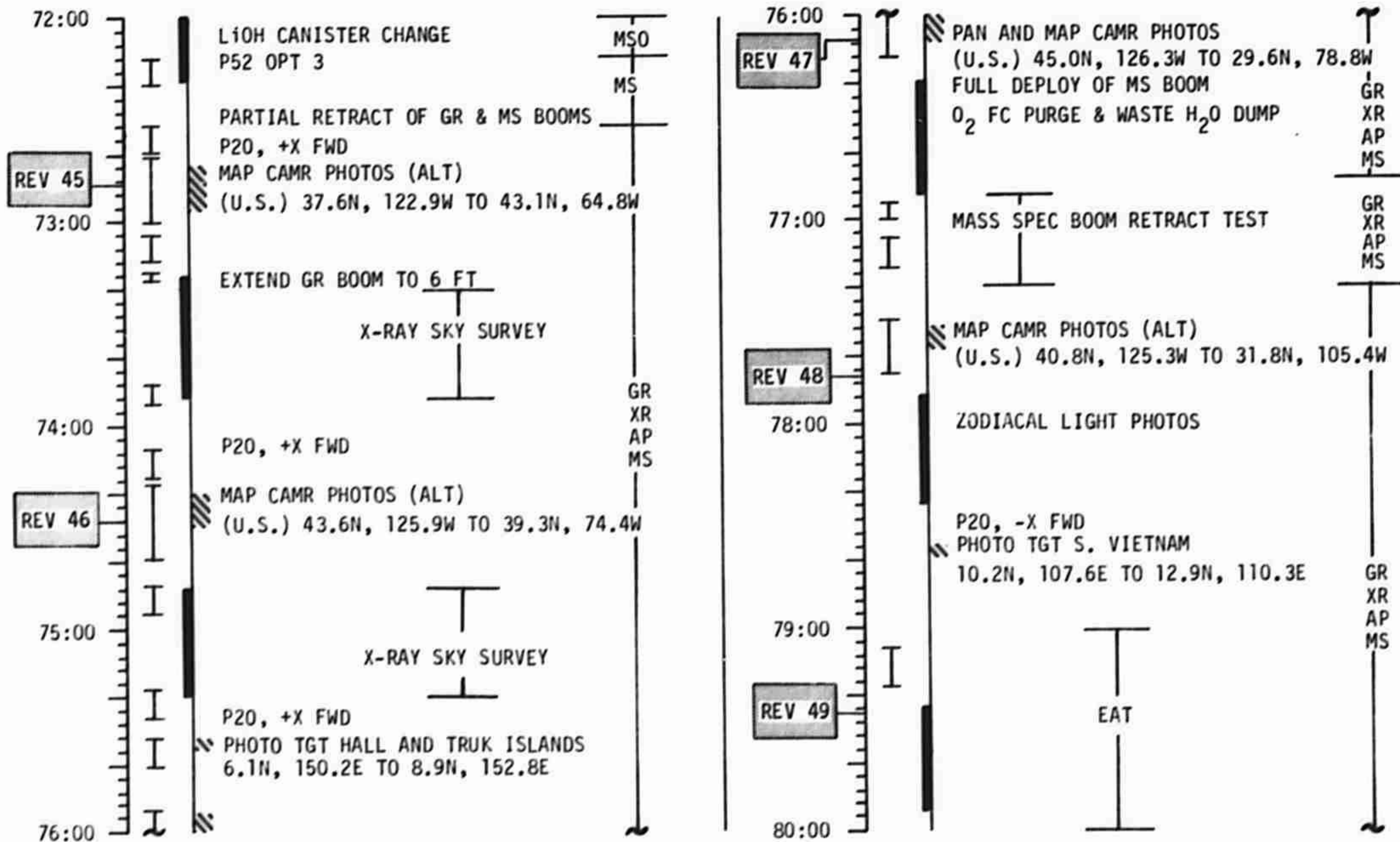
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	56:00 - 64:00	2/34-39	6-10

EARTH ALTERNATE

# FLIGHT PLAN



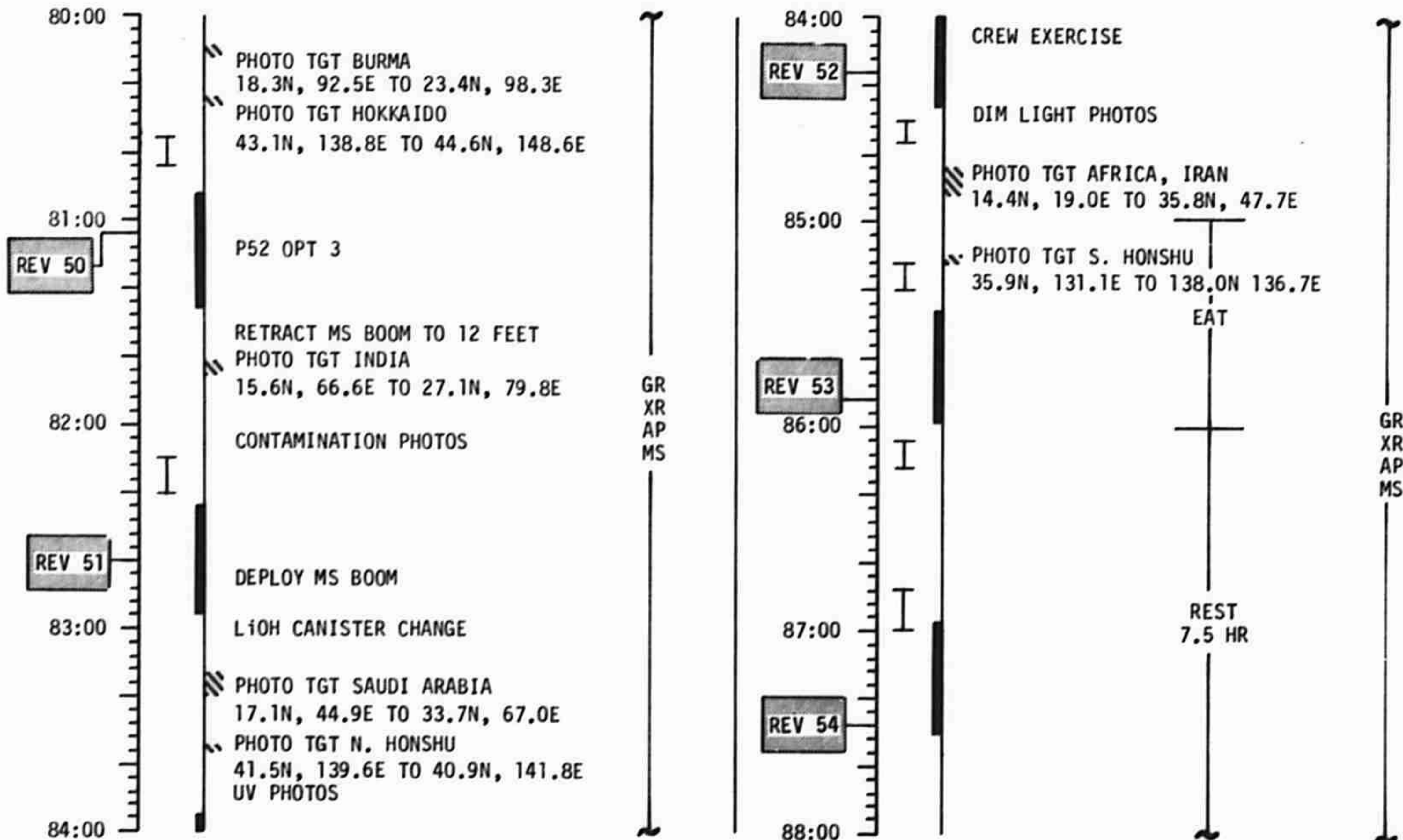
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	64:00 - 72:00	2/39-44	6-11



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

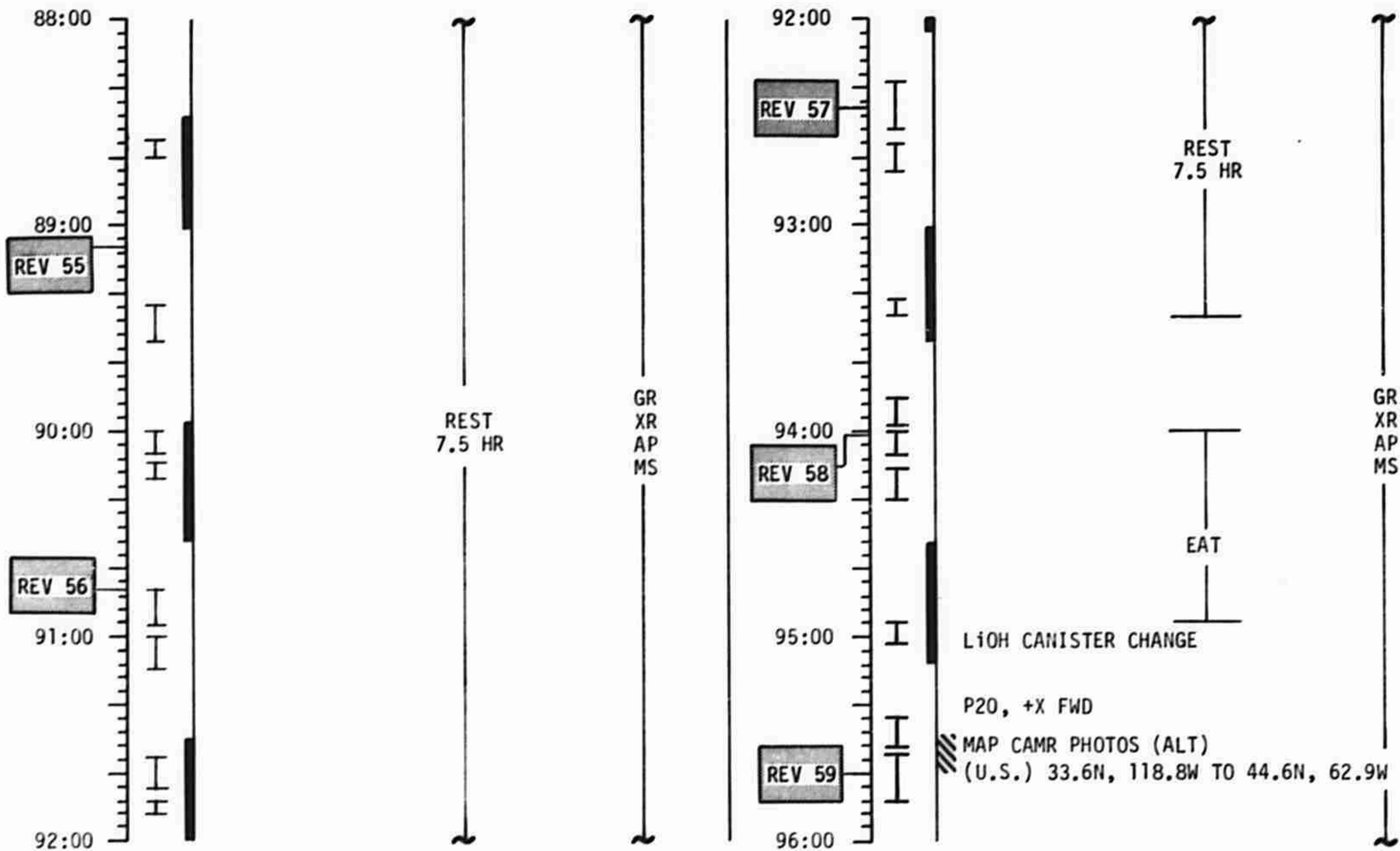


# FLIGHT PLAN



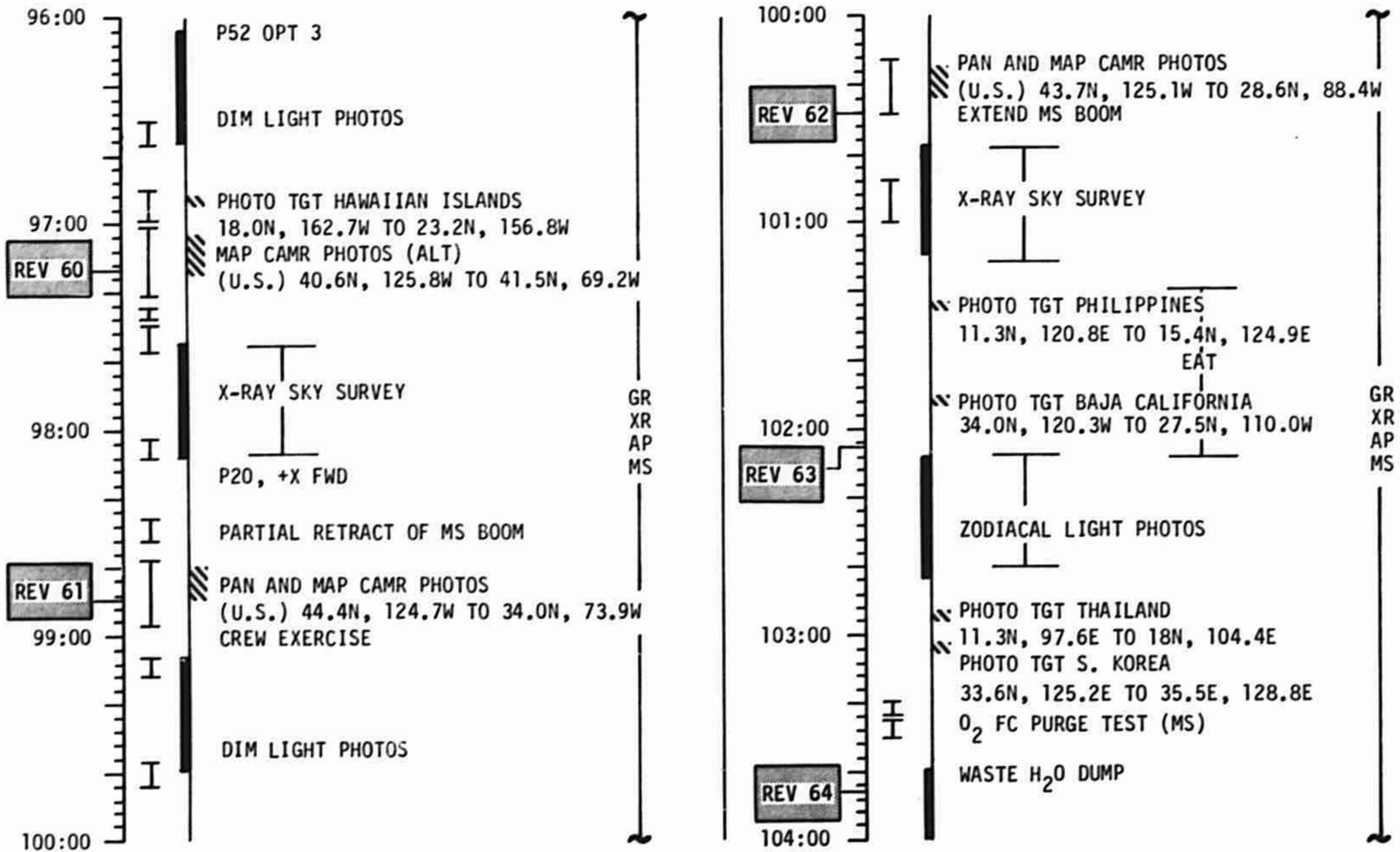
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	80:00 - 88:00	3/49-54	6-13

# FLIGHT PLAN



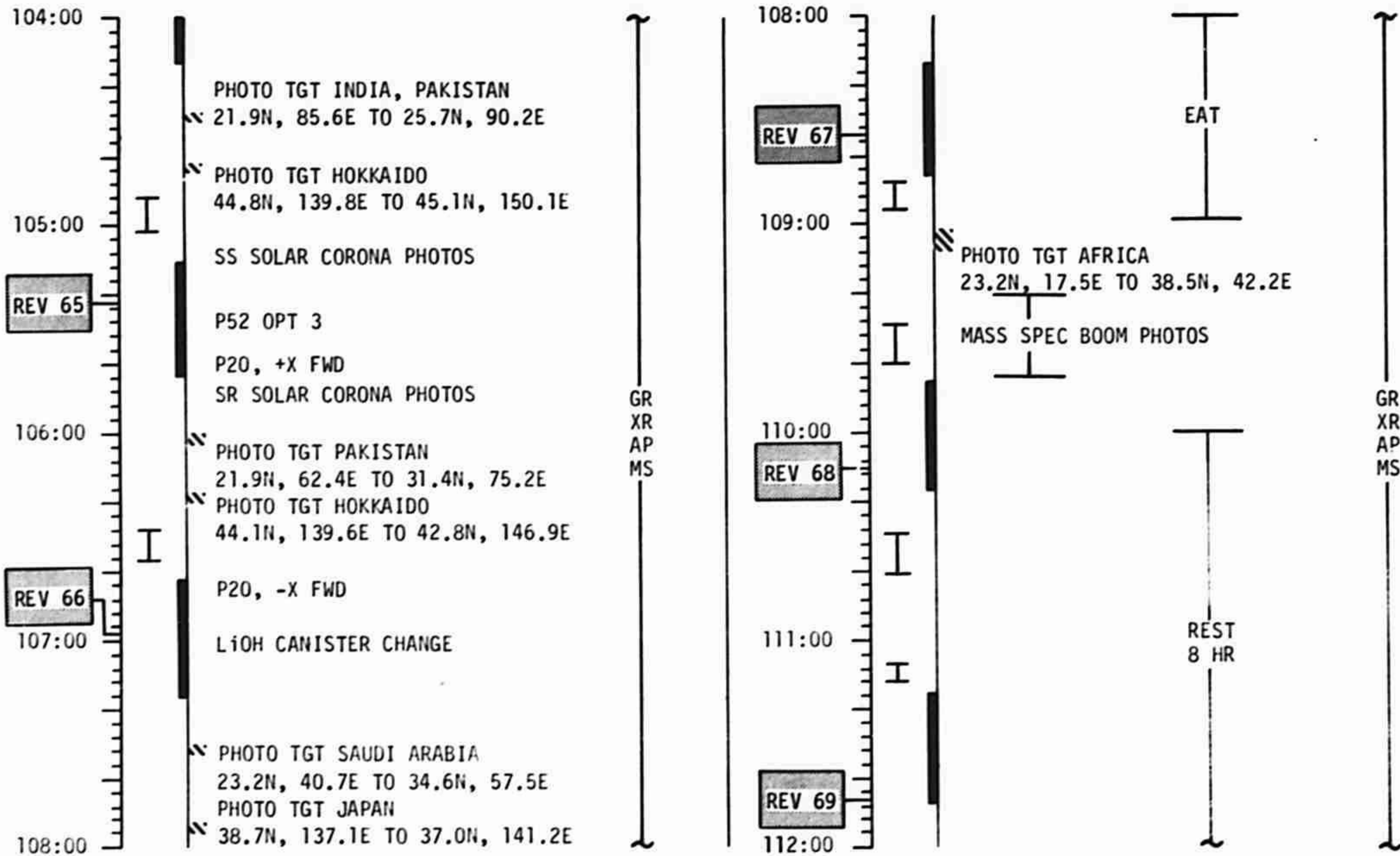
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	88:00 - 96:00	3-4/54-59	6-14

# FLIGHT PLAN



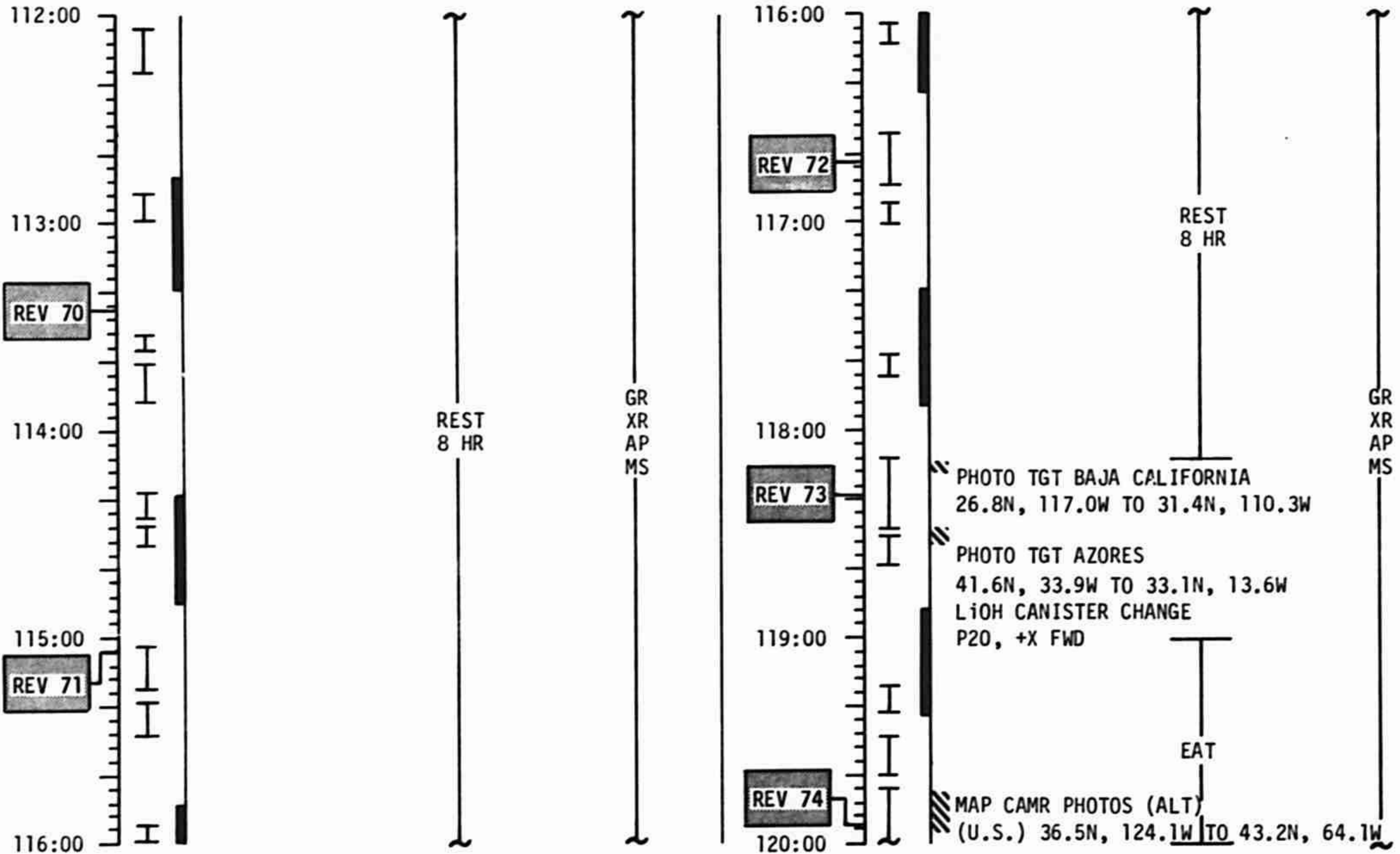
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 104:00	4/59-64	6-15

# FLIGHT PLAN



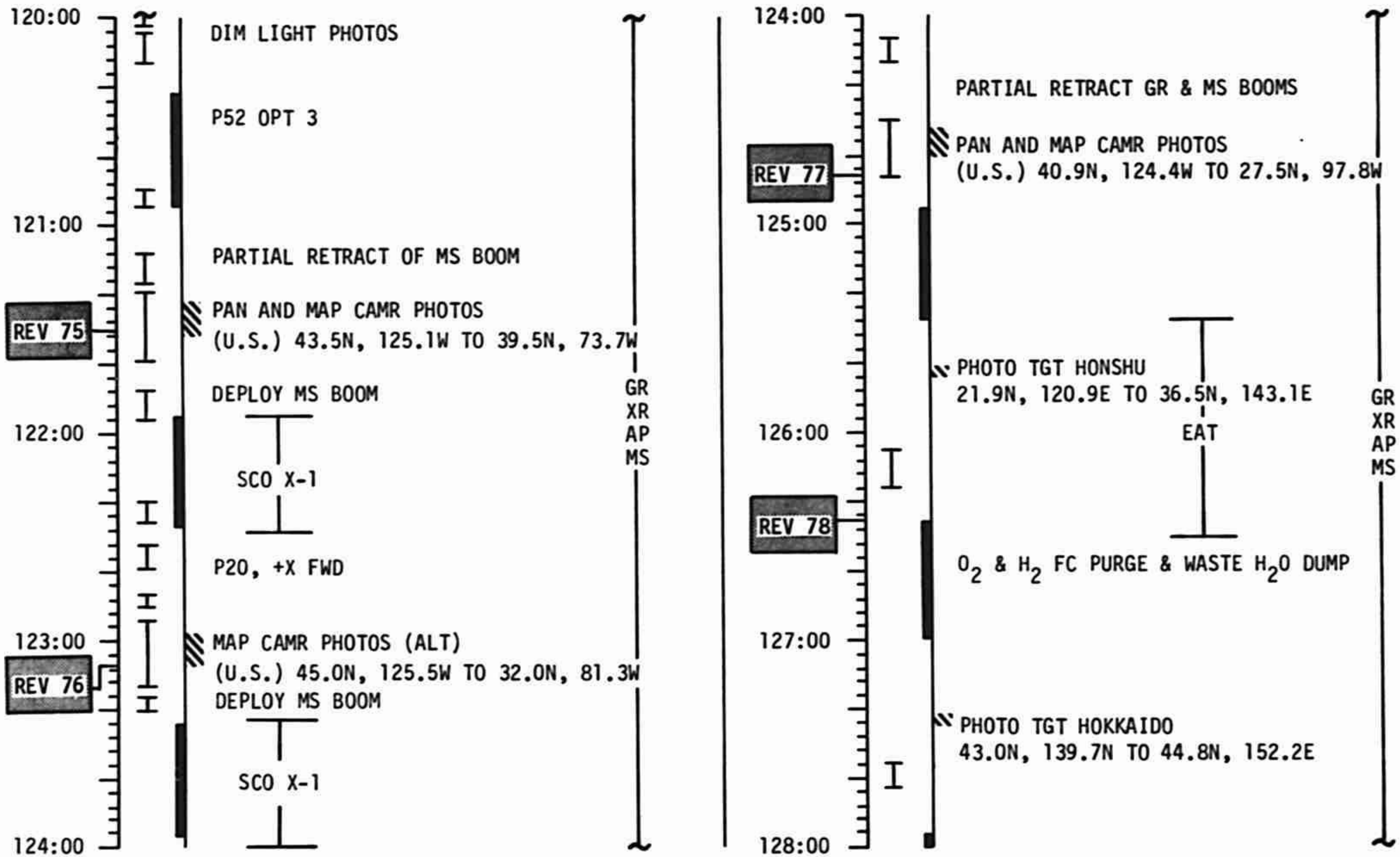
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	104:00 - 112:00	4/64-69	6-16

# FLIGHT PLAN



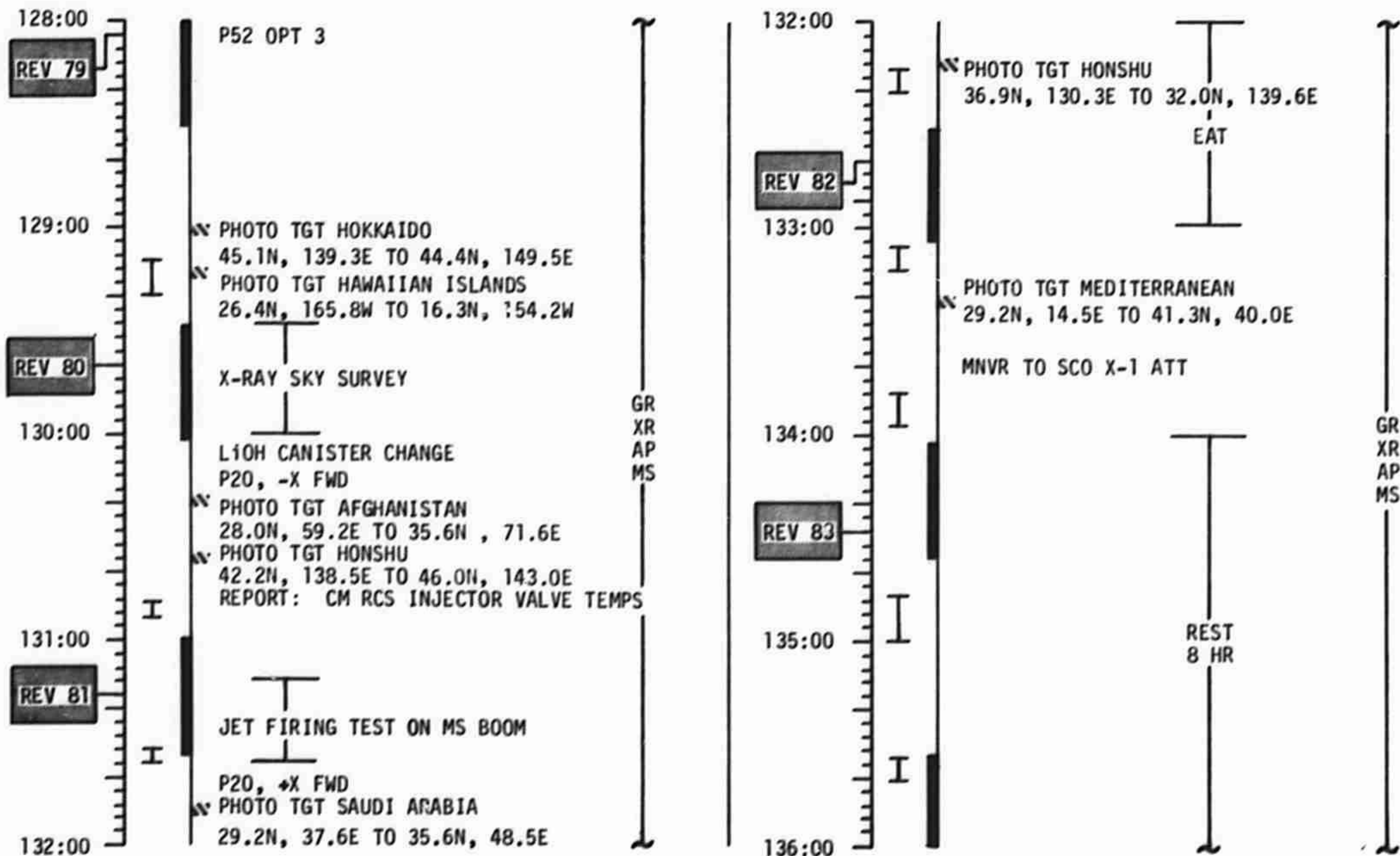
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	112:00 - 120:00	4-5/69-74	6-17

# FLIGHT PLAN



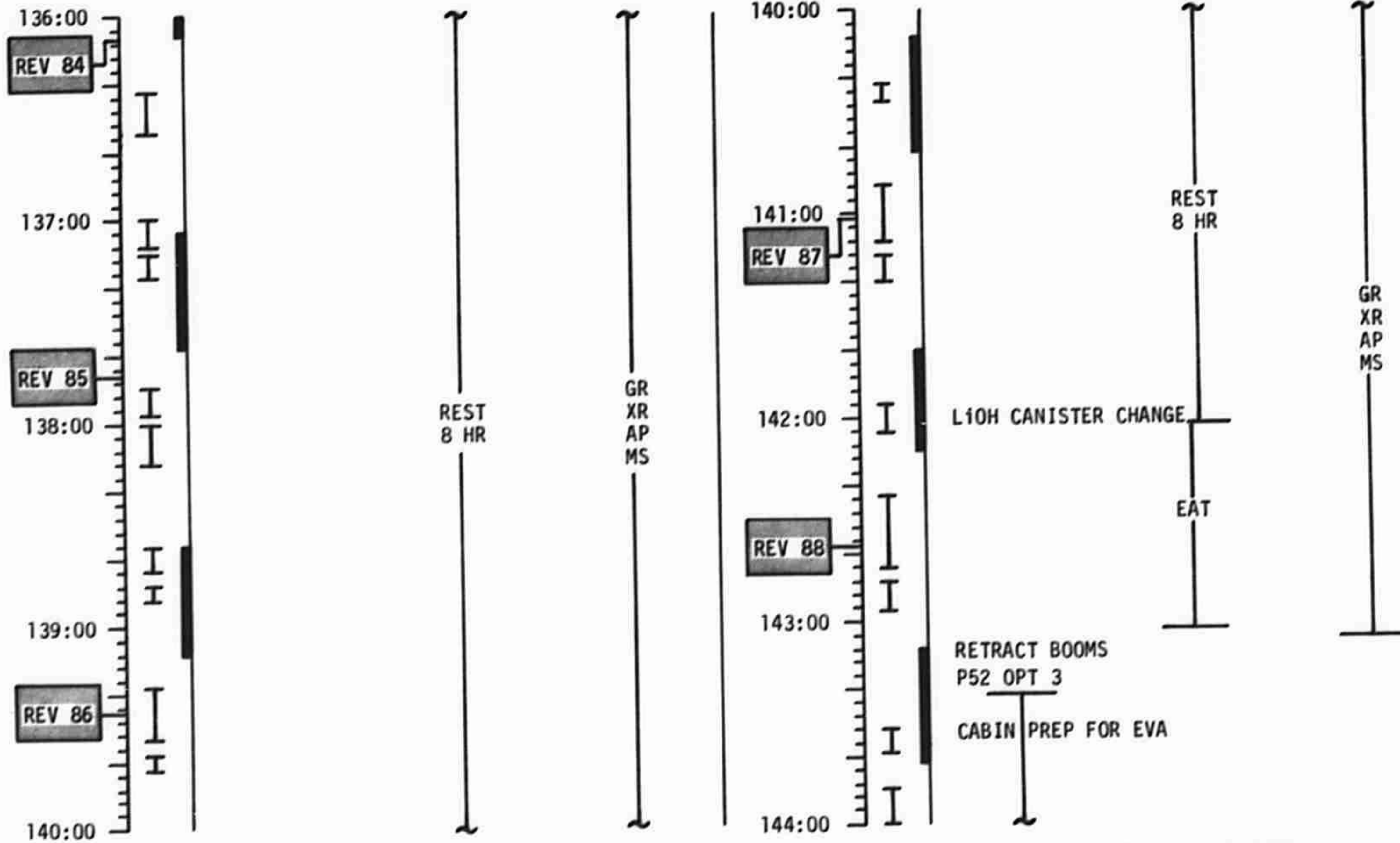
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 128:00	5/74-78	6-18

# 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

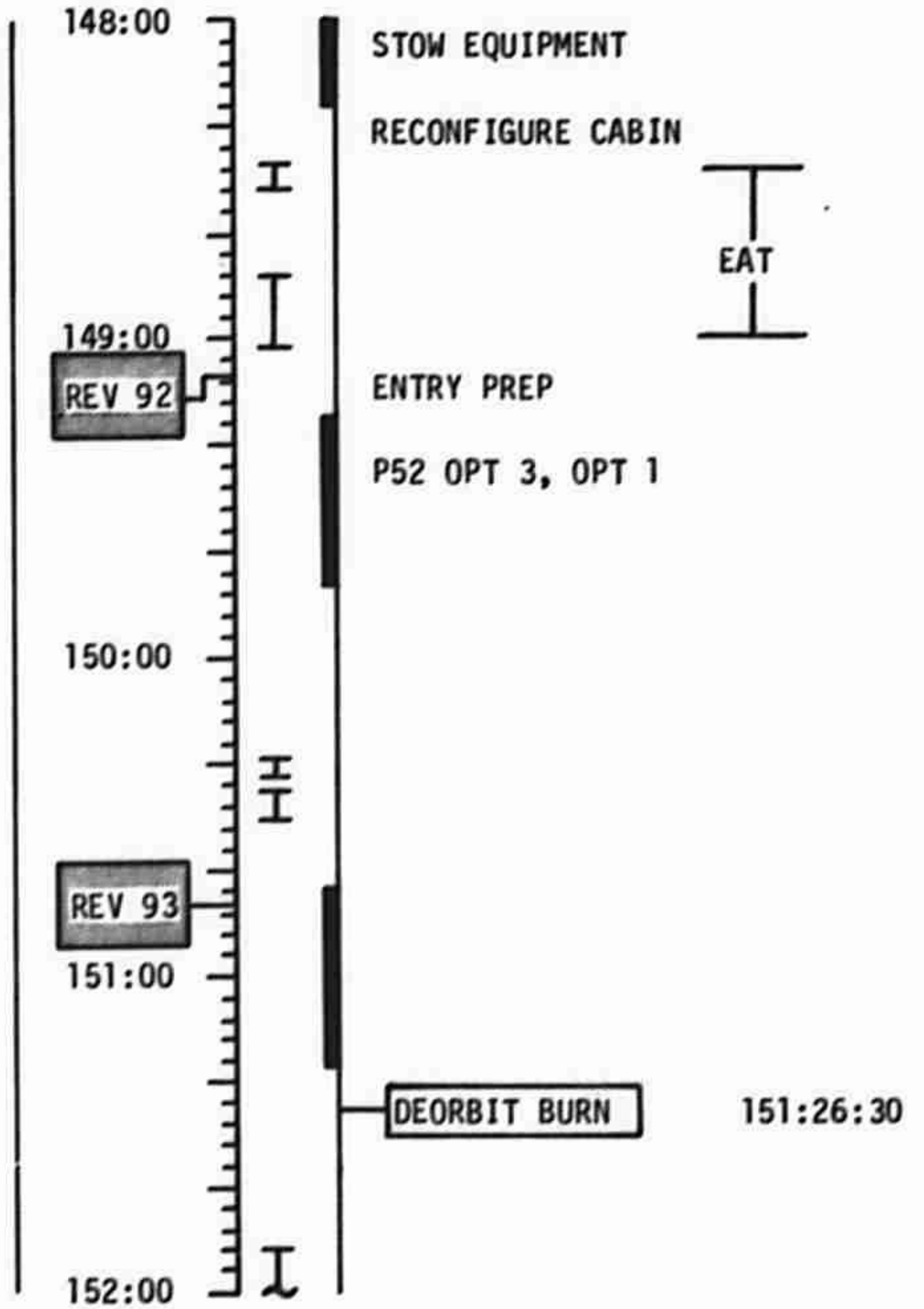
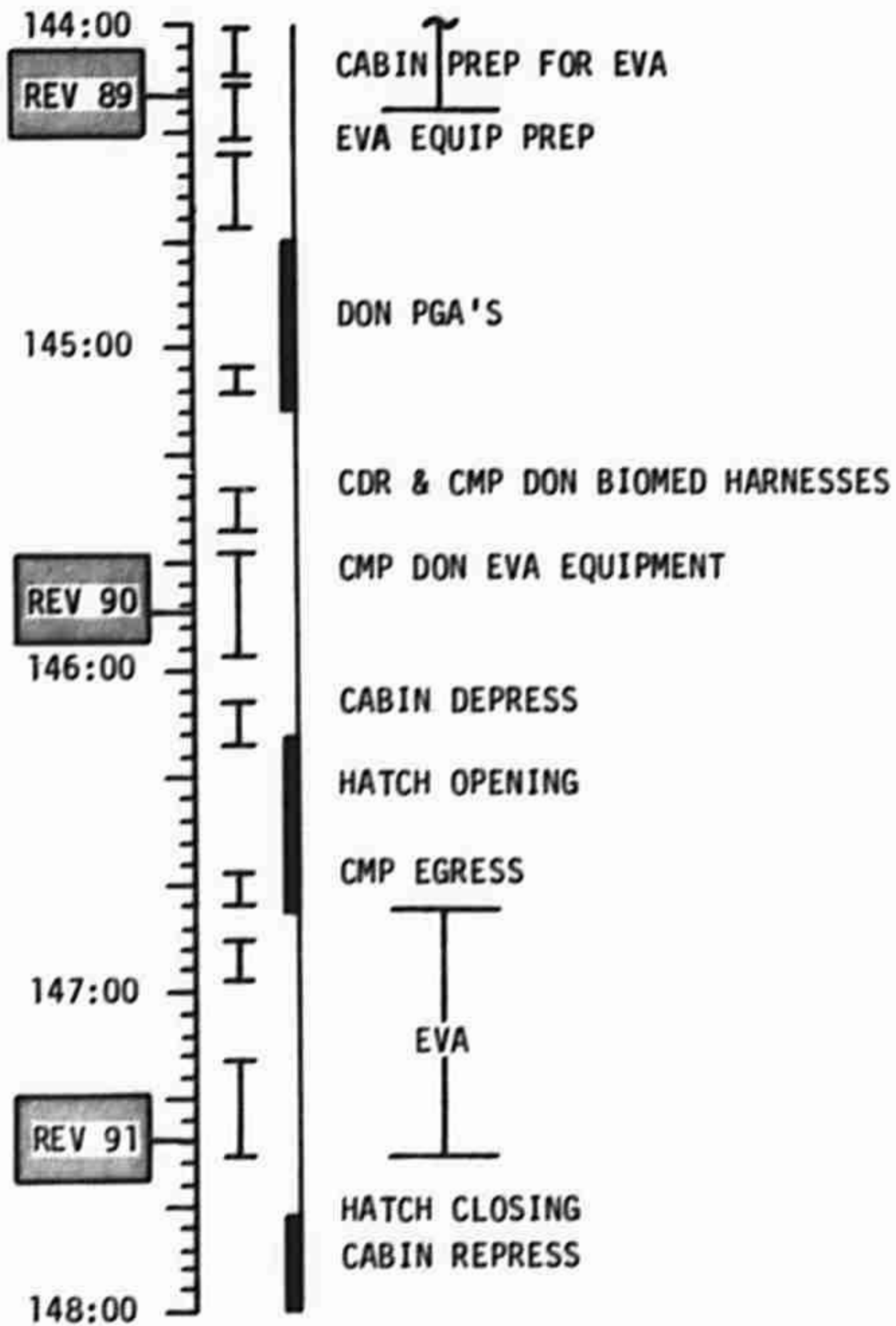
# FLIGHT PLAN



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



# 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

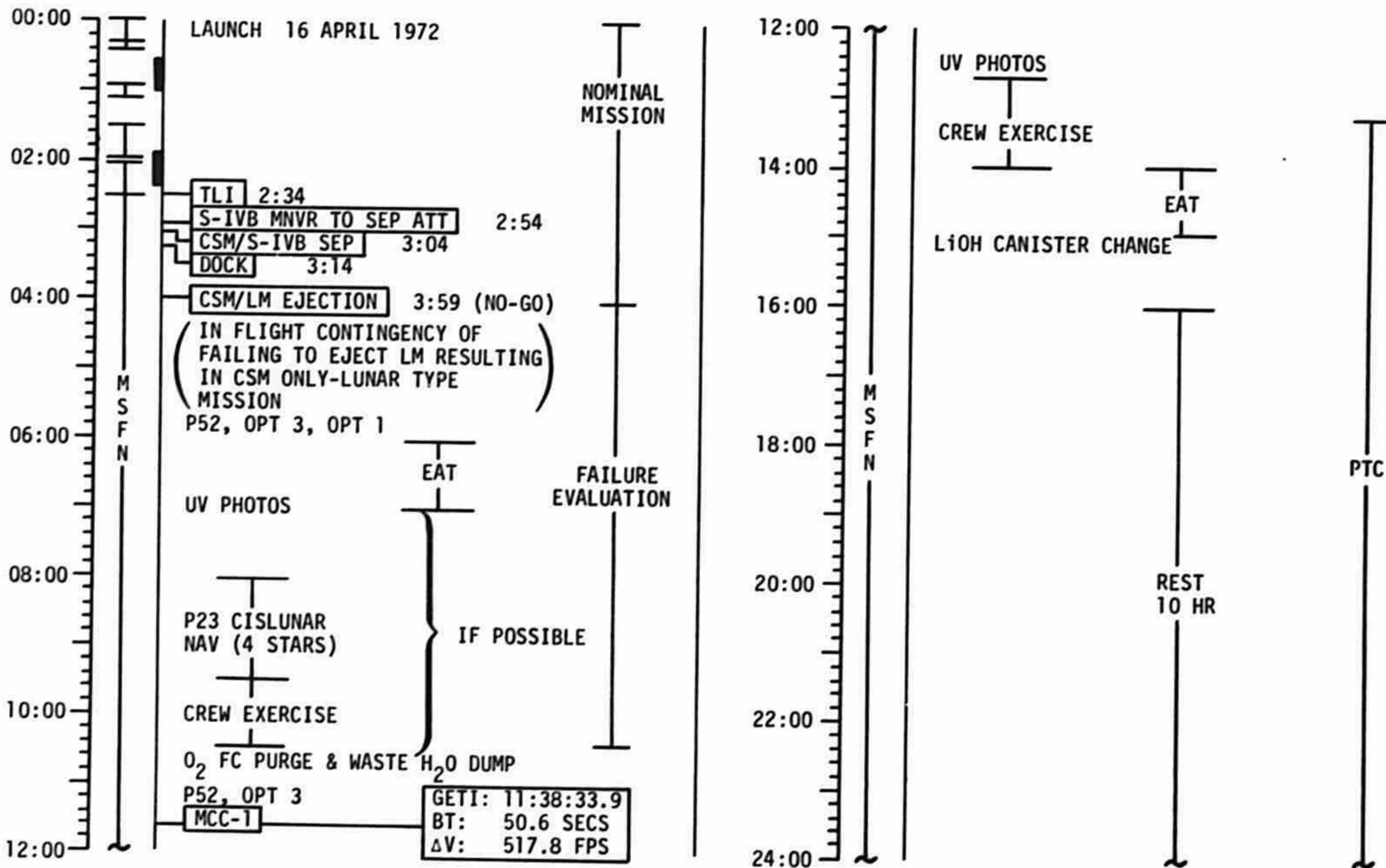
- 1) SPS midcourse burn to return to a free return trajectory.
- 2) Adherence to the nominal flight plan as much as possible.
- 3) Maximize inclination in lunar orbit within SPS limits.
- 4) Maintain any rev TEI Capability.
- 5) Obtain sim bay experiments data.

### 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.

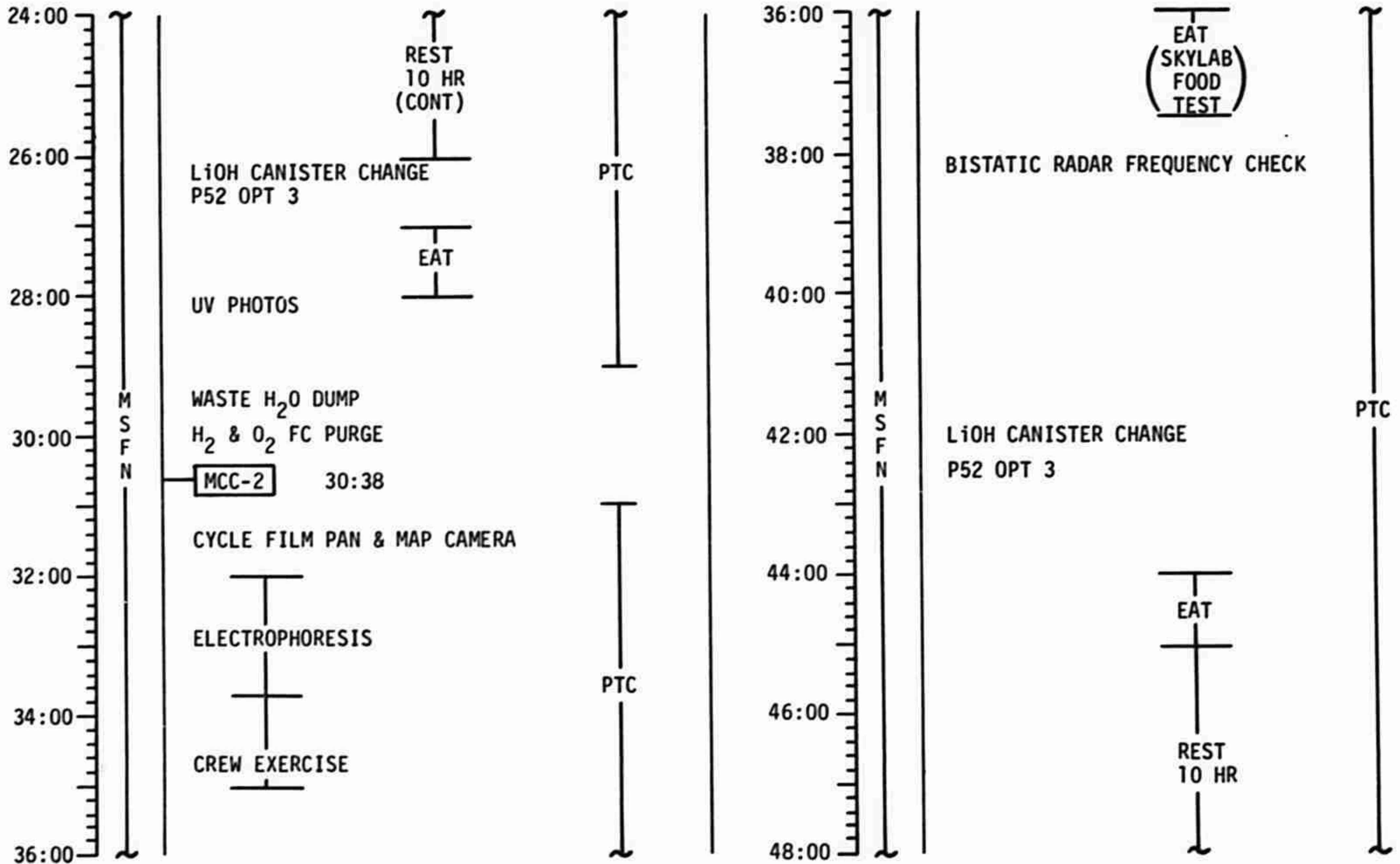
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# FLIGHT PLAN



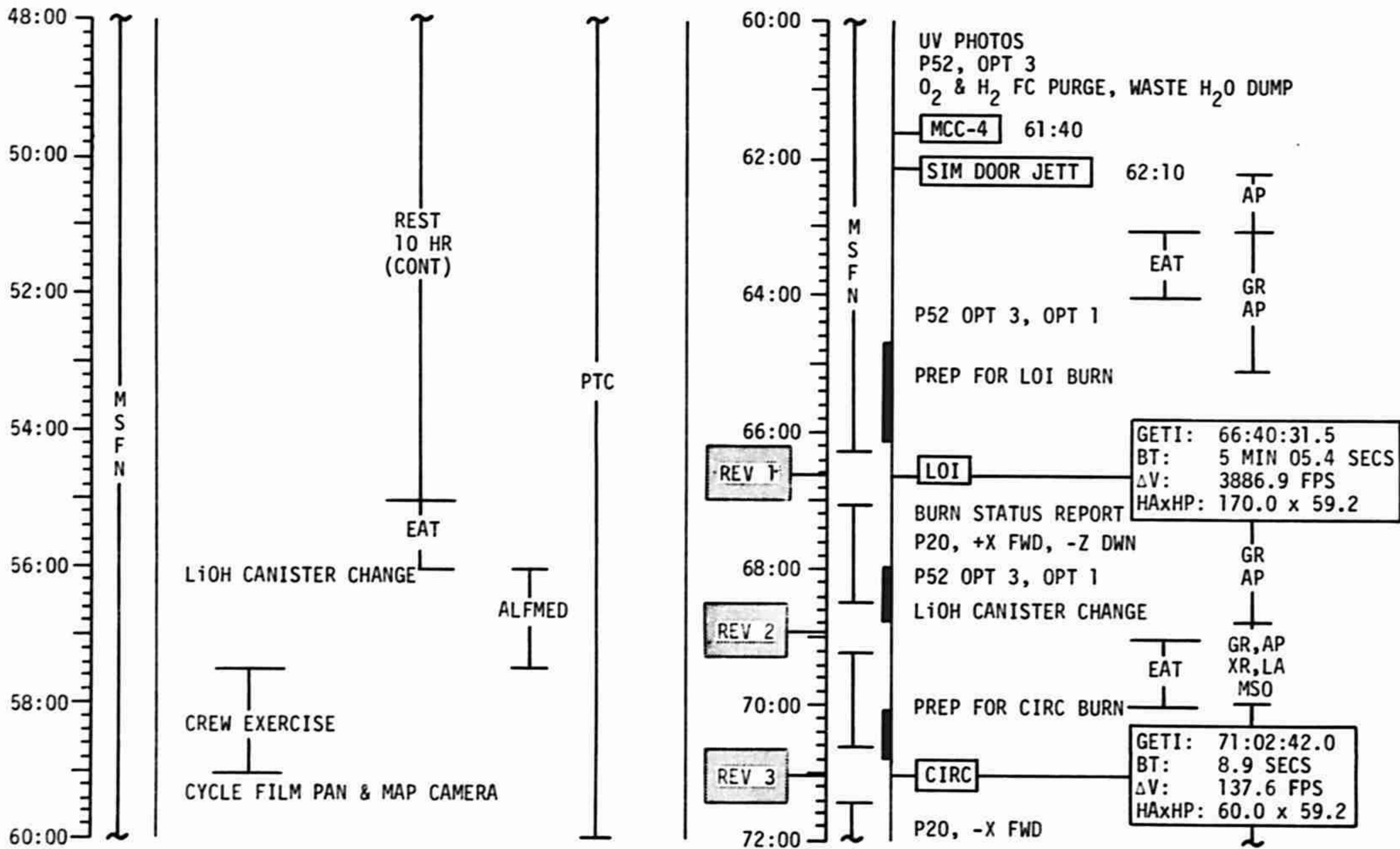
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	00:00 - 24:00	1/TLC	6-25

# FLIGHT PLAN



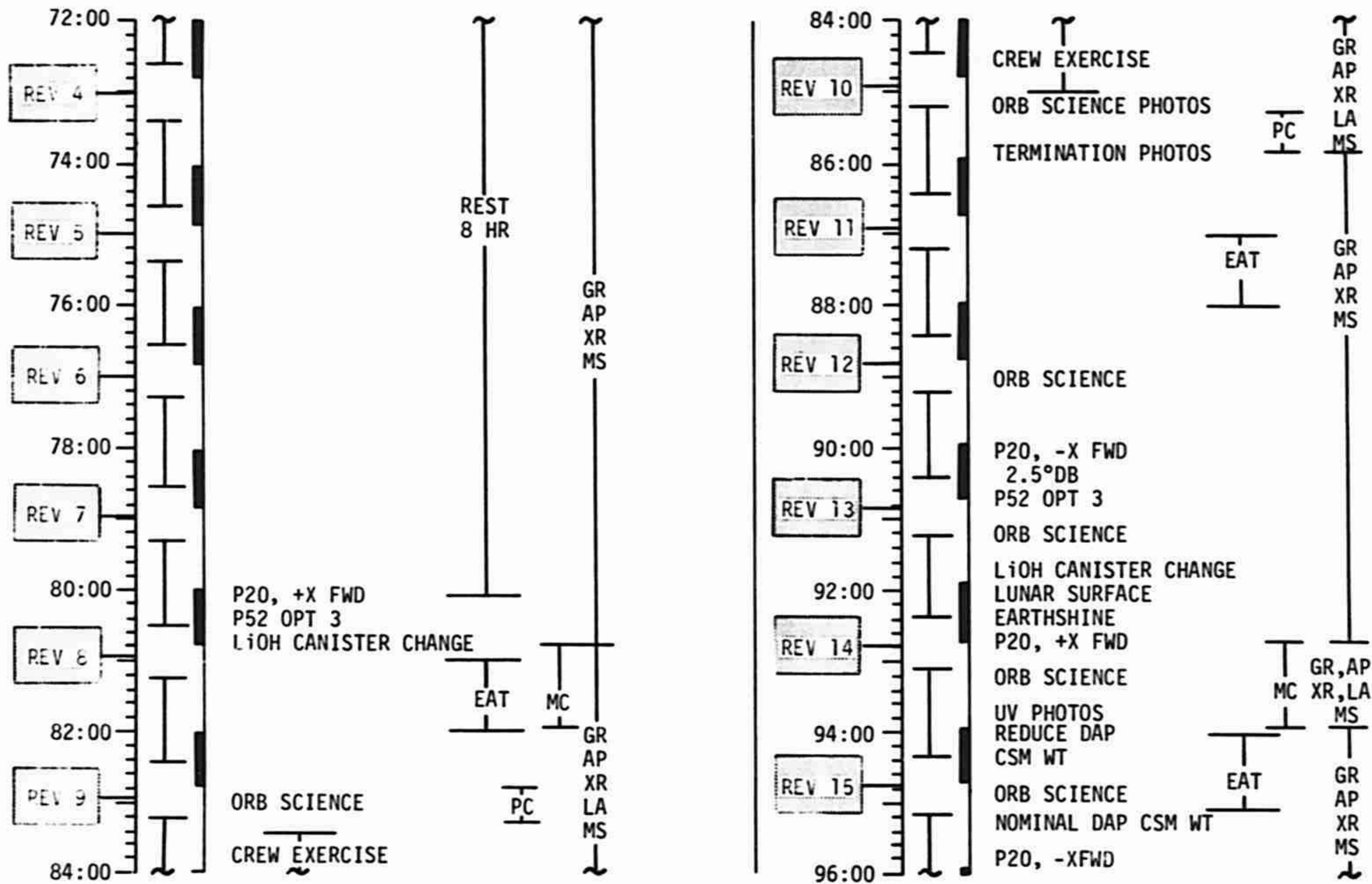
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	24:00 - 48:00	2/TLC	6-26

# 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

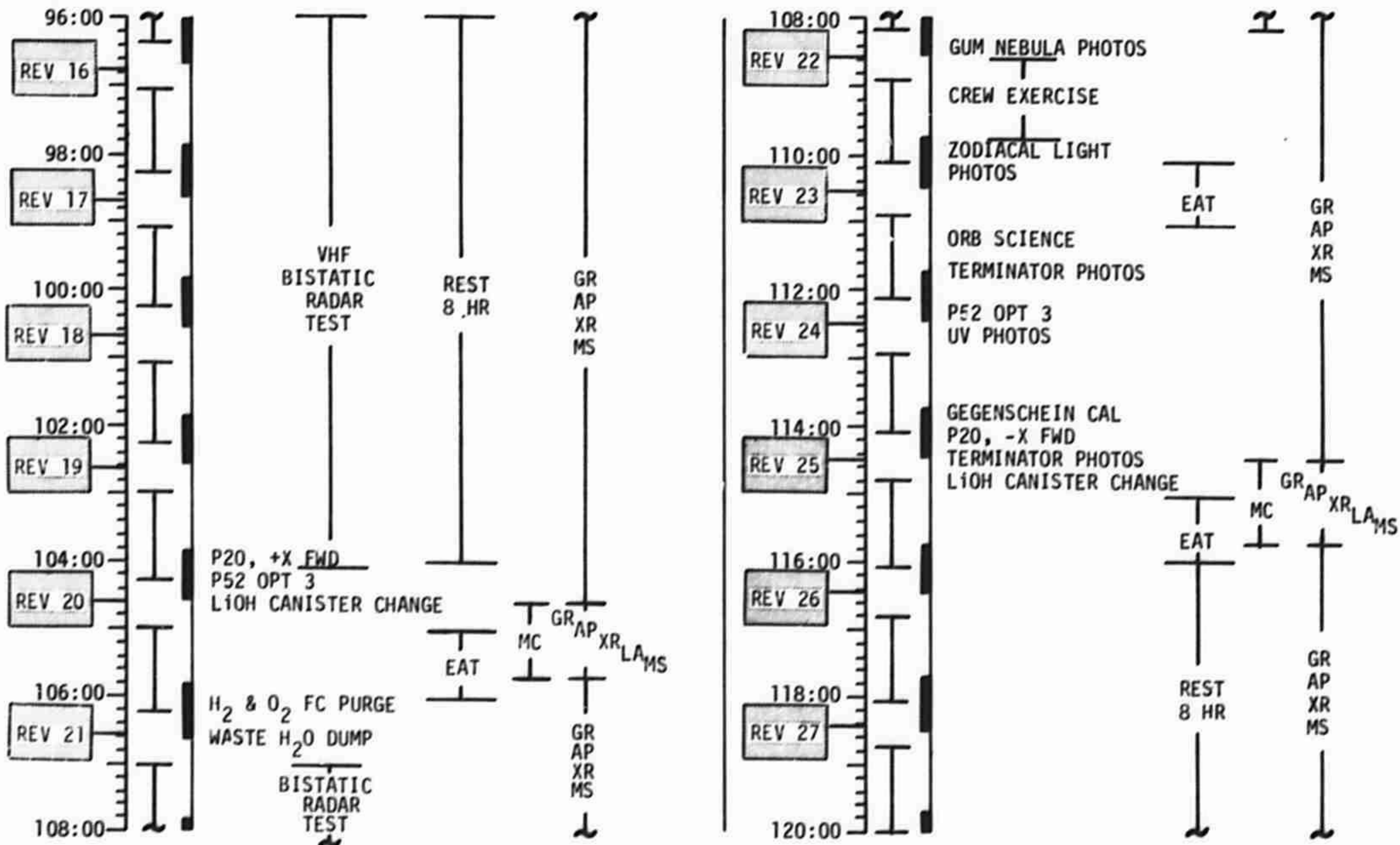
# FLIGHT PLAN



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

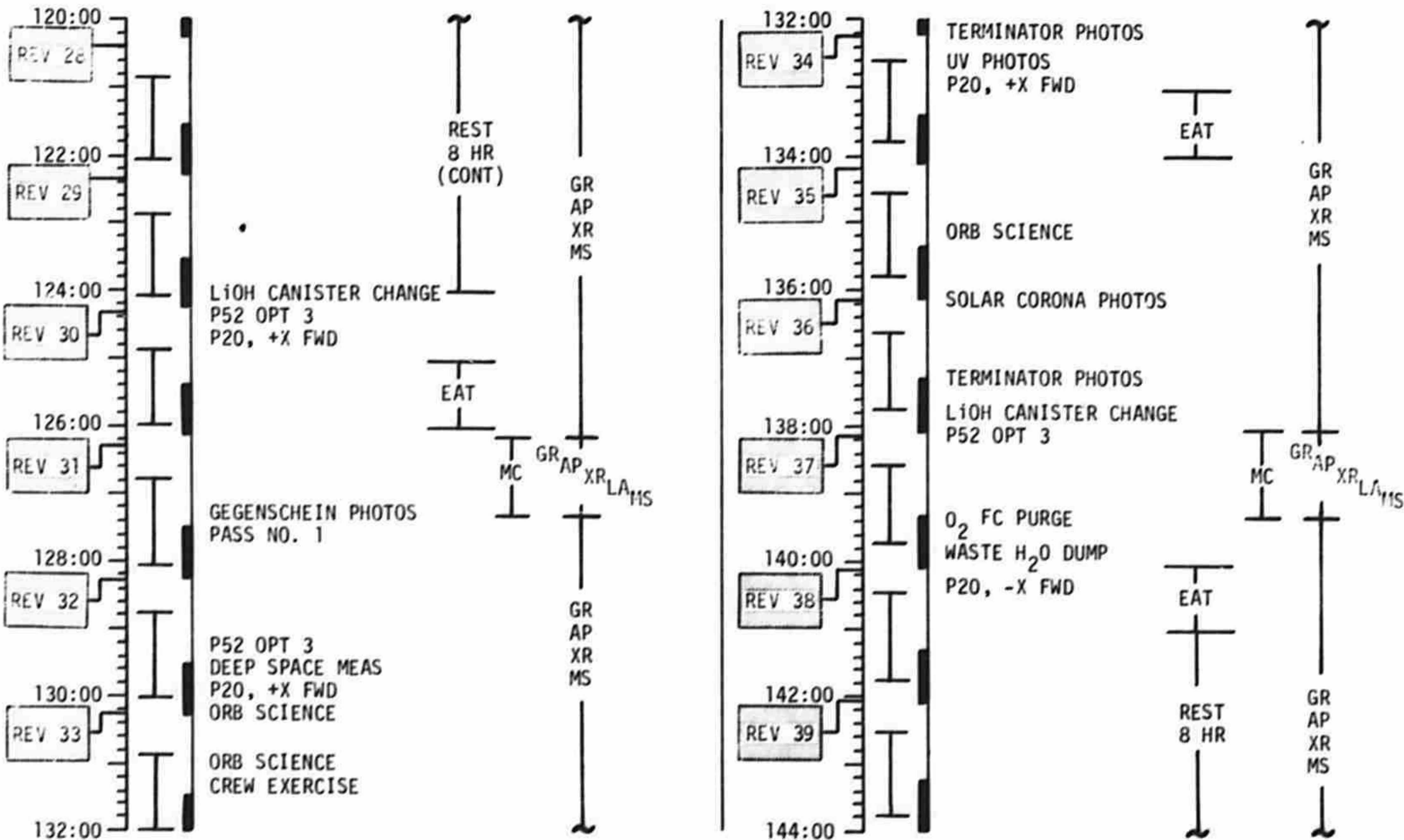


# FLIGHT PLAN



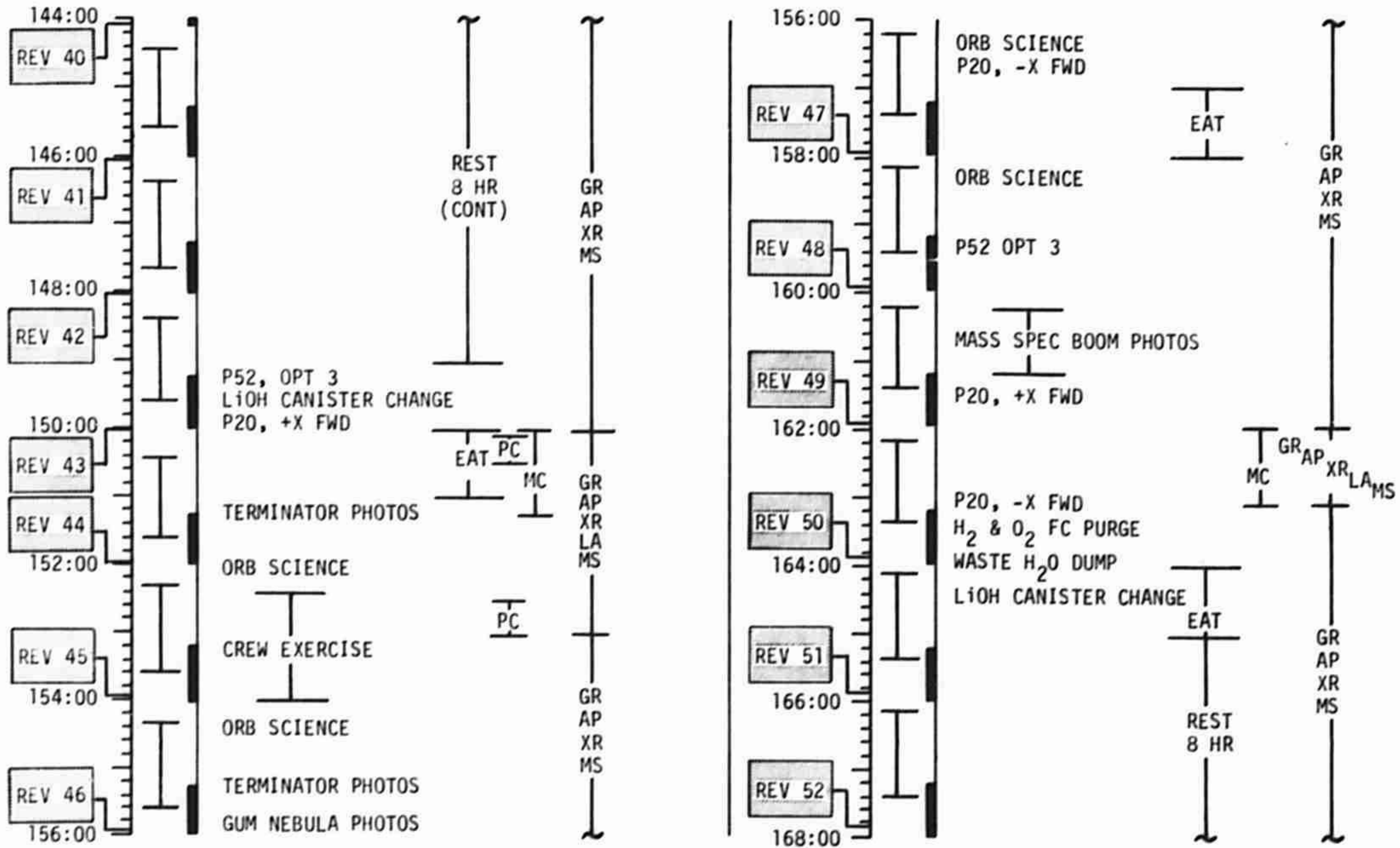
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 120:00	5/15-27	6-29

# FLIGHT PLAN



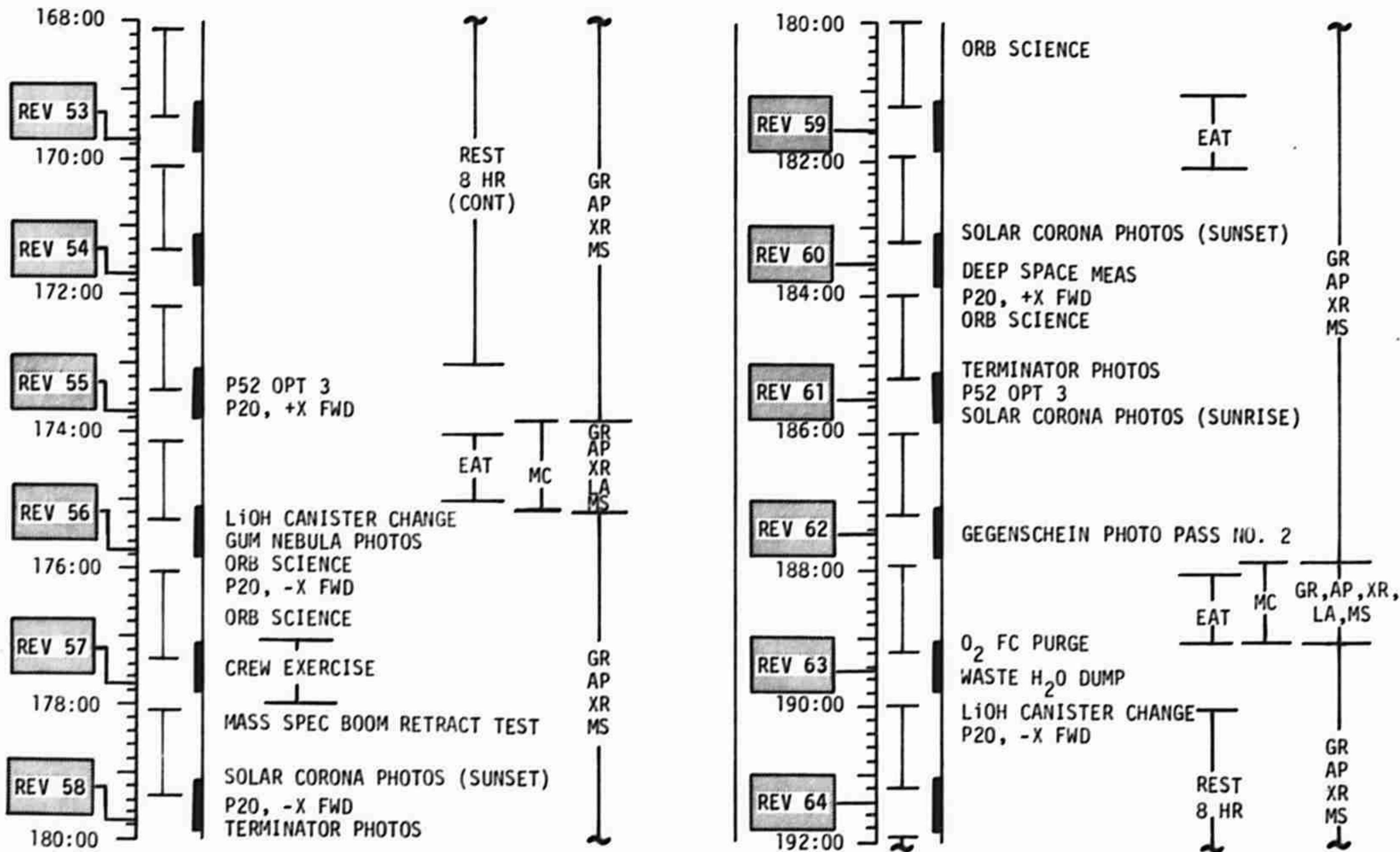
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 144:00	6/27-39	6-30

# 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

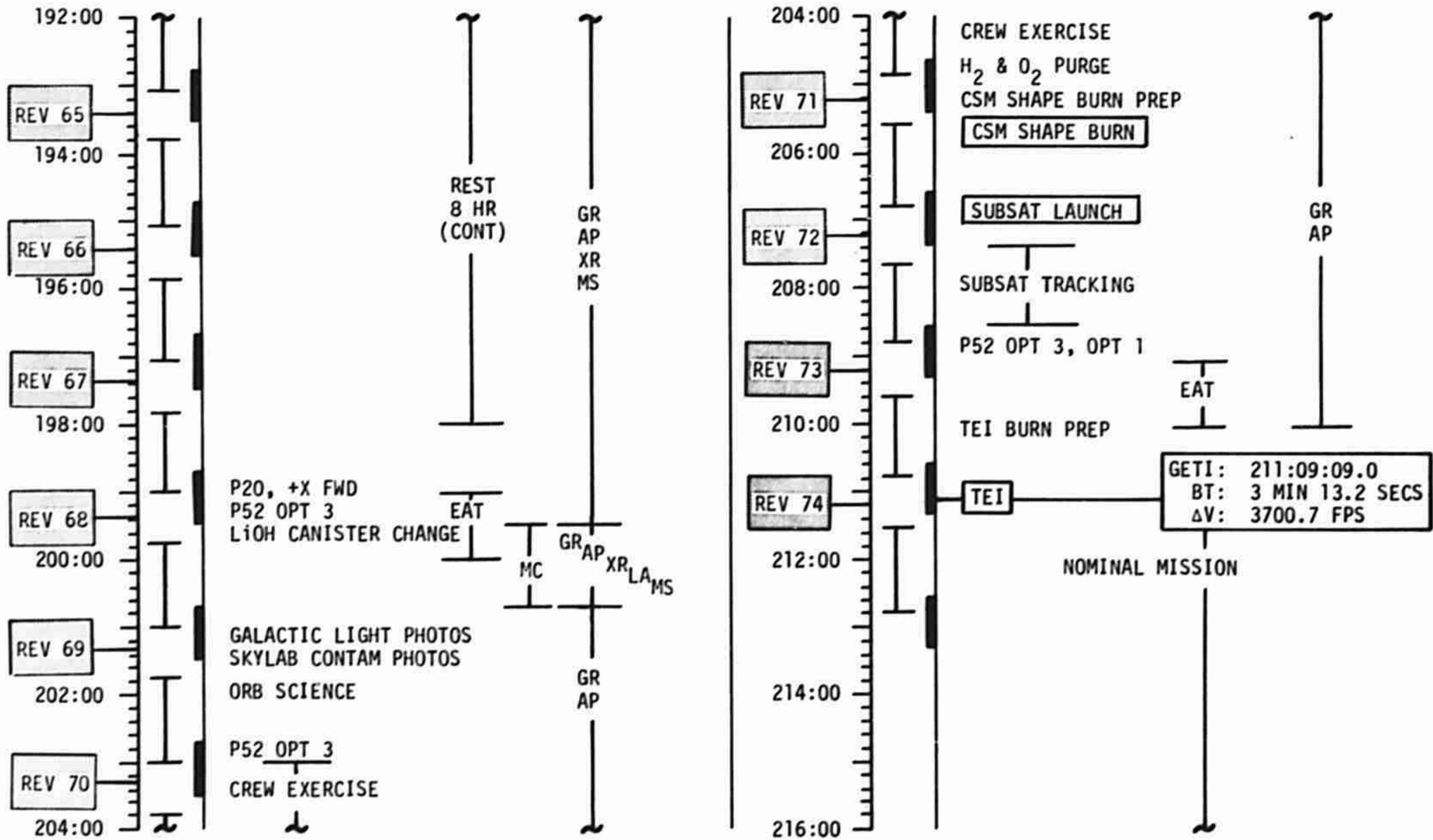
# FLIGHT PLAN



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

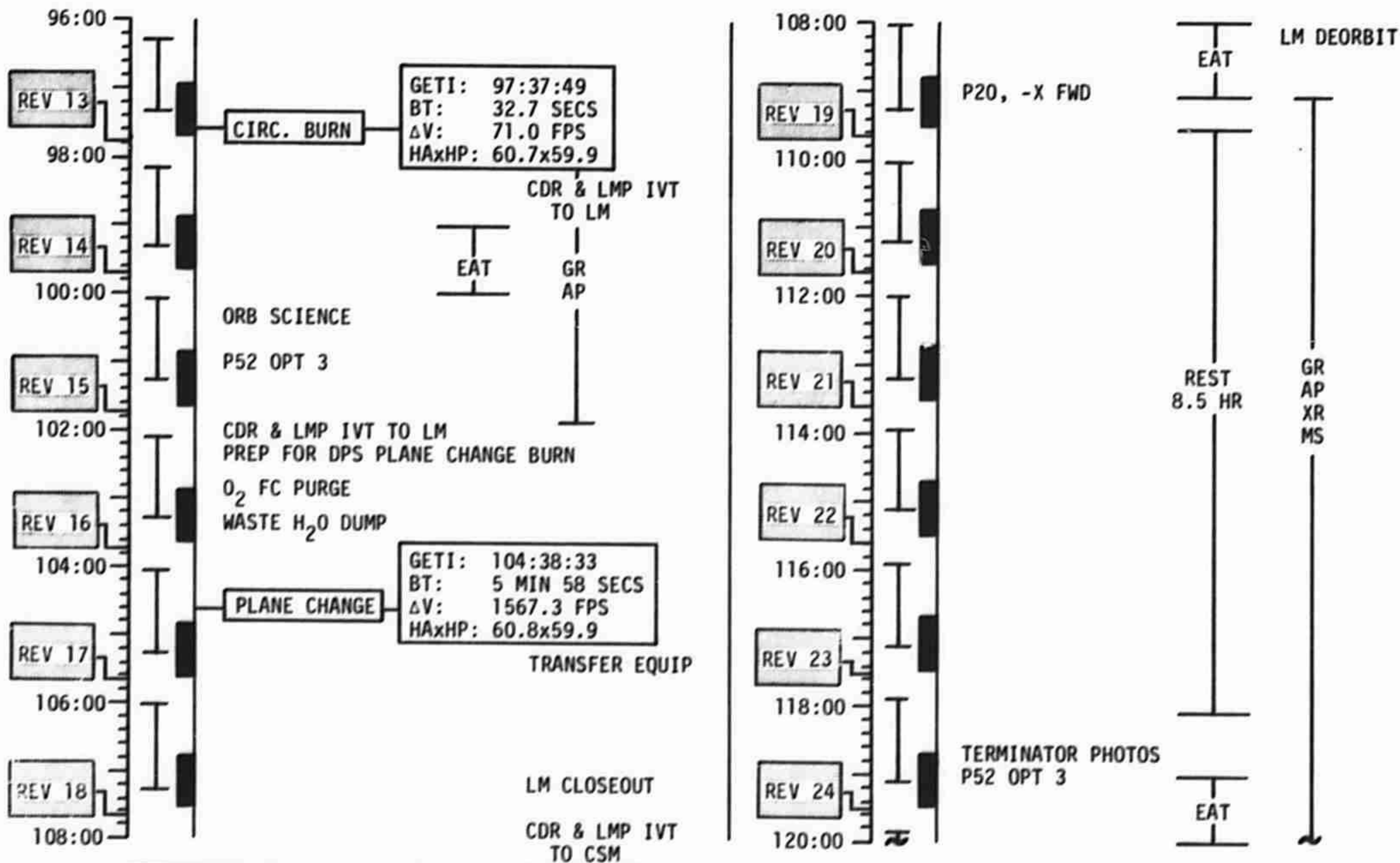
- 1) DPS Circularization Burn at approximately nominal Circularization burn time.
- 2) DPS Plane Change Burn to match LPO ground track with CSM only alternate Mission (20° inclination).
- 3) LM Jettison to Lunar impact.
- 4) Adhere to nominal flight plan as much as possible.
- 5) Obtain sim bay experiments data.
- 6) SPS TEI

### Sequence of Events

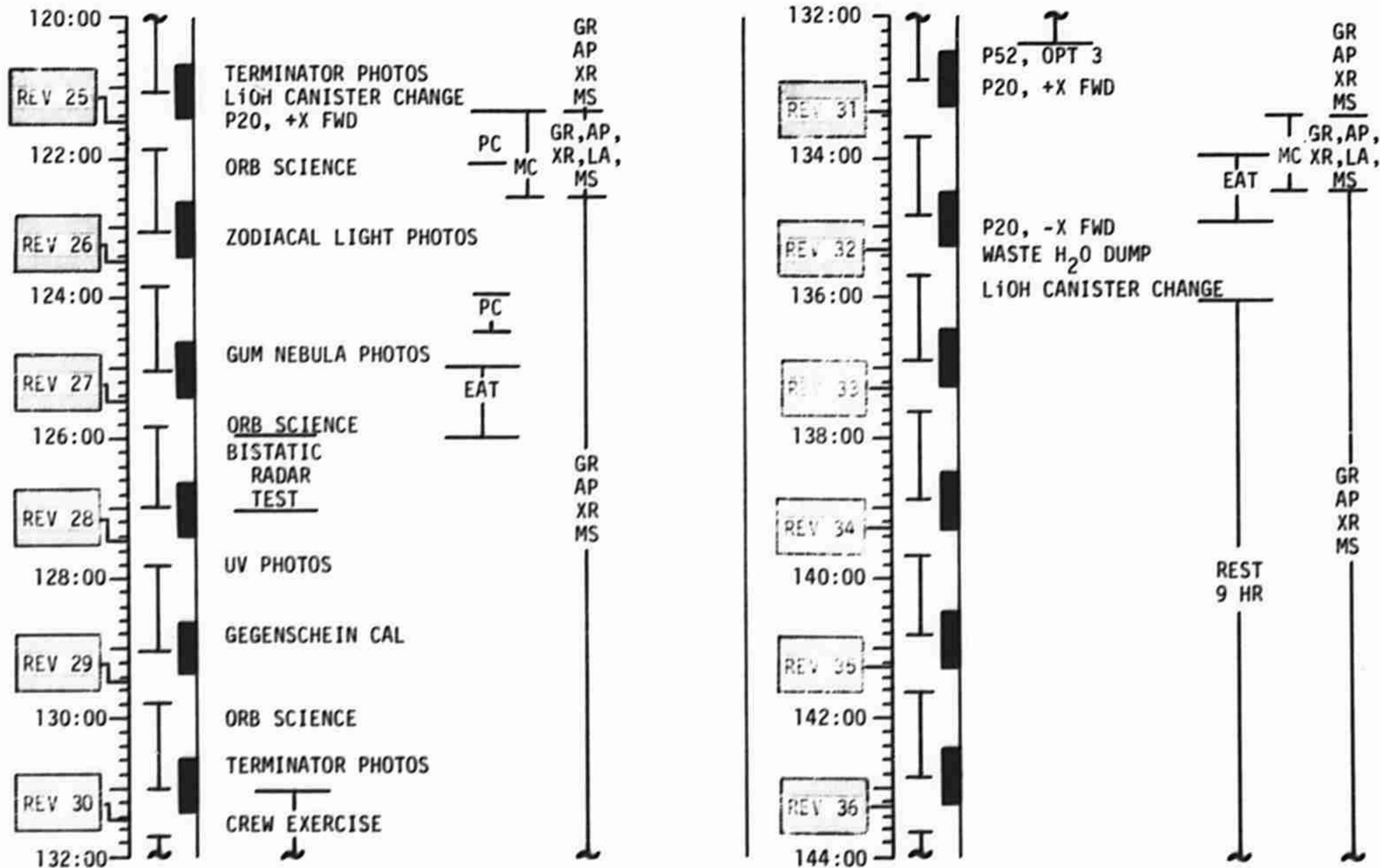
This alternate Mission is initiated by a systems failure other than the DPS which will not allow a landing mission. The nominal mission is followed through DOI with a Circularization burn performed by the DPS at approximately the same time as the nominal Circularization burn. A DPS plane change burn 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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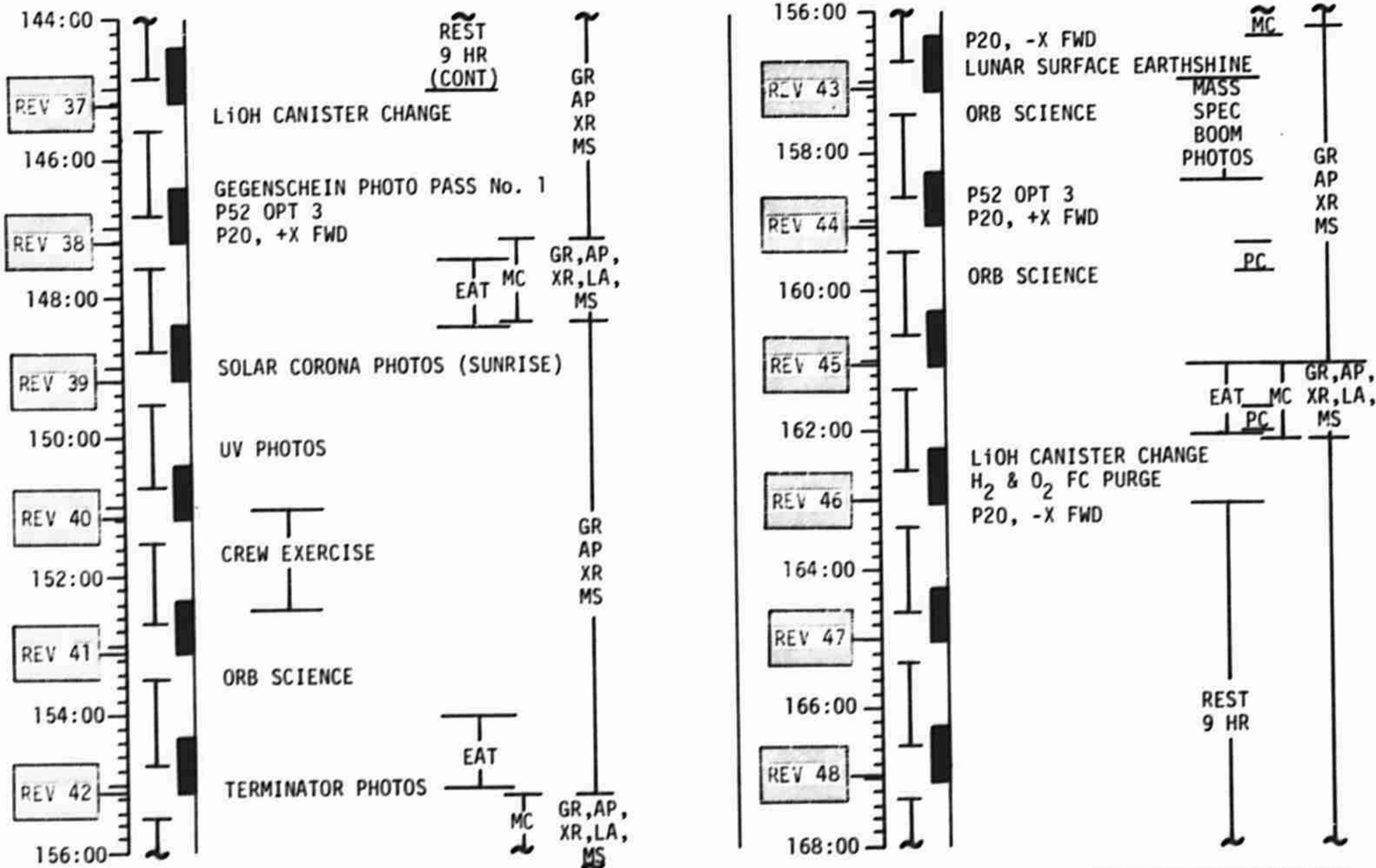




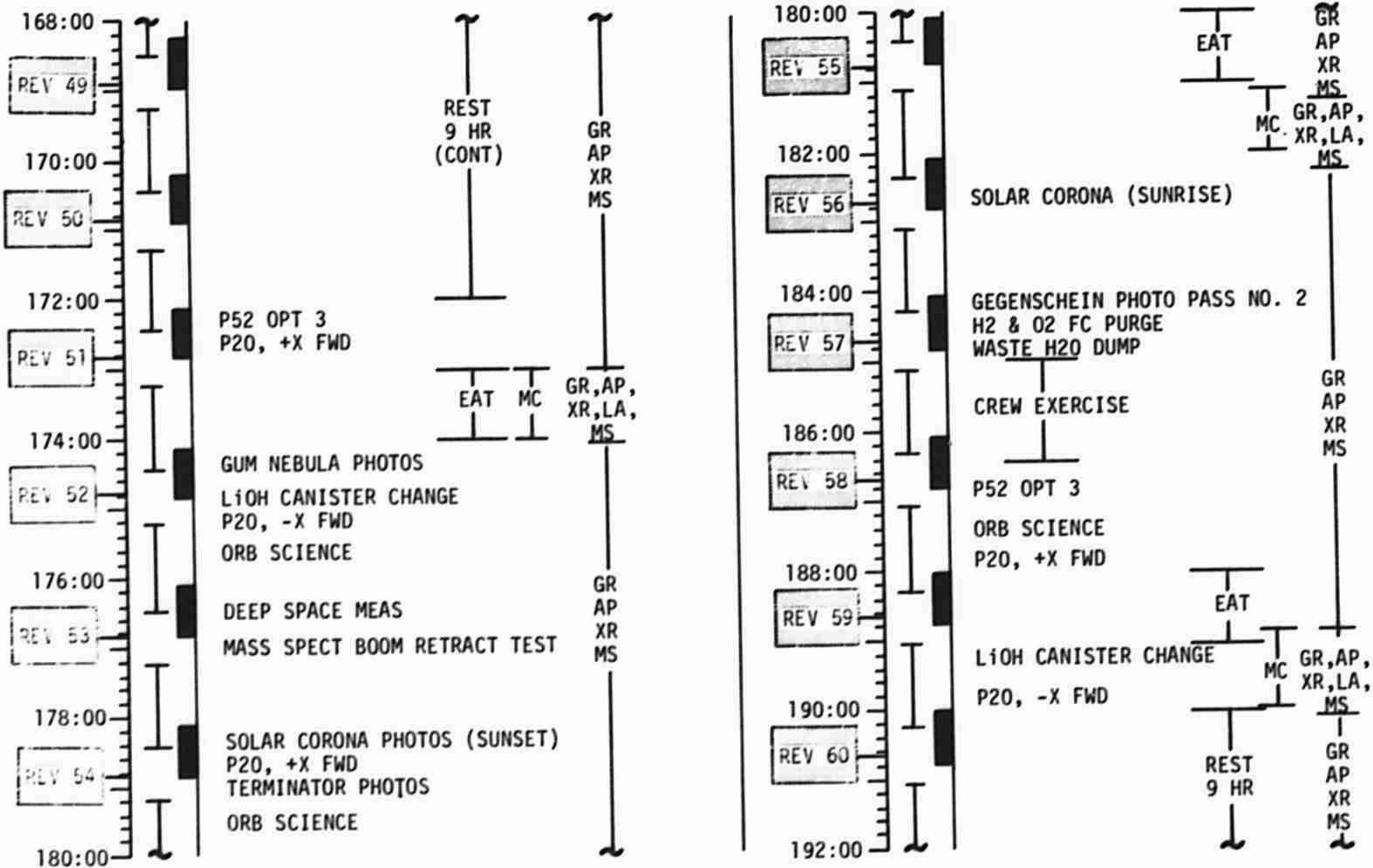
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 120:00	5/12-24	6-37



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

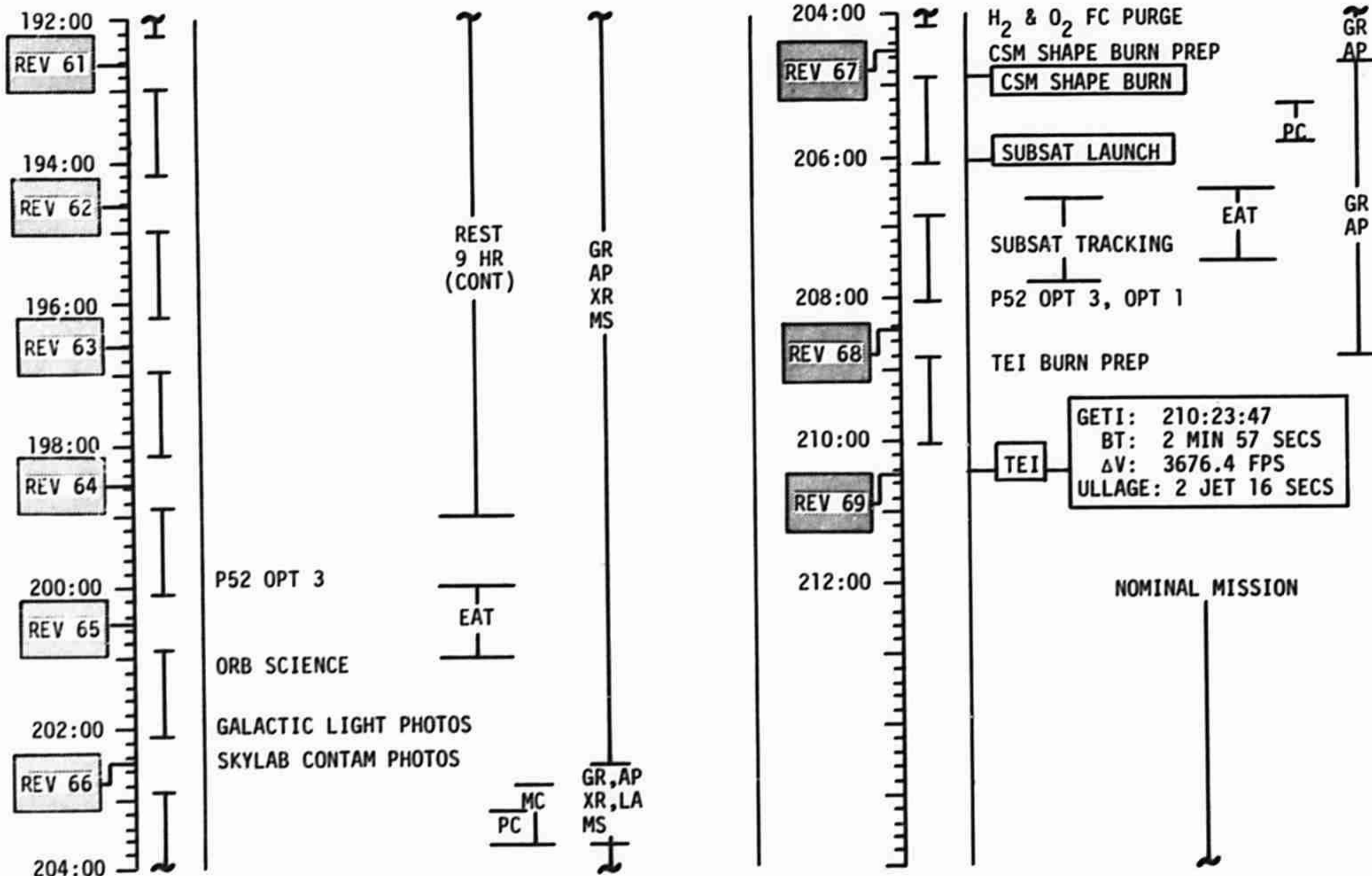


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 168:00	7/36-48	6-39



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

# FLIGHT PLAN



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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