

APOLLO 8

FLIGHT PLAN VOL. II

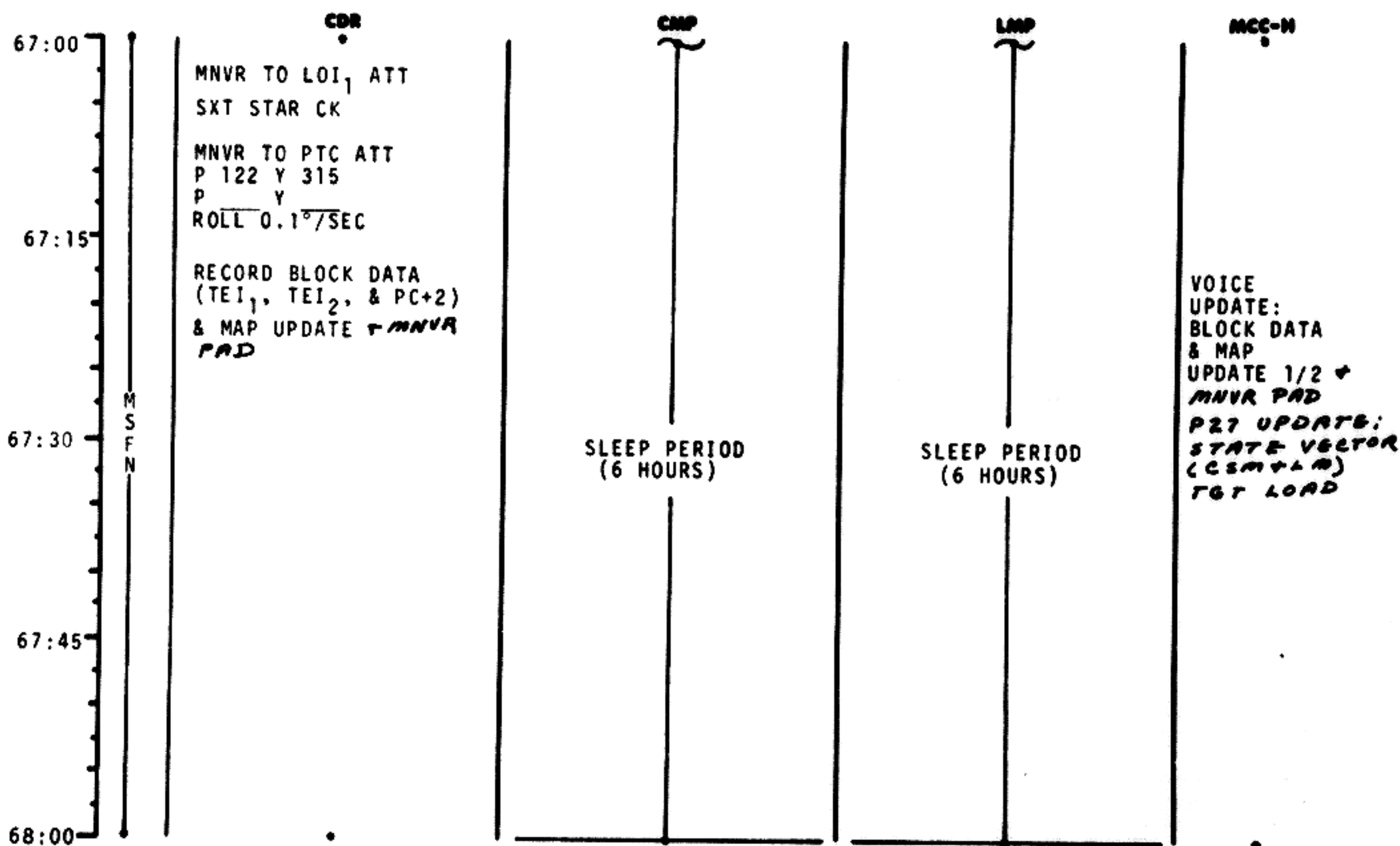
PART NO. .

S/N

SKB 32100031-201

1004

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE

CDR	CMP	LMP	REC-11
68:00	GO/NO GO FOR LOI ₁	CMP/LMP CREW STATUS REPORT	GO/NO GO
	GROUND TRACK DET - P21 (LOI ALTITUDE DET)	RECORD MANEUVER PAD	P27 UPDATE: STATE VECTOR TARGET LOAD
	IMU REALIGN P52 OPTION 3 - REFSMMAT AND GYRO DRIFT TEST STAR ID STAR ANGLE DIFF		VOICE UPDATE: MNVR PAD
	TORQUE ANGLES: X Y Z	PRE LOI SYSTEMS CKS: C&W CK CM RCS CK SM RCS CK SPS PERIODIC MONITOR EPS PERIODIC MONITOR ECS PERIODIC MONITOR NON ESS BUS AND INITIATE WATER BOILER	
68:30	MNVR TO P52 ATT		
	EXTERNAL ΔV P30 EMS CK SPS THRUST P40 MNVR TO BURN ATT		
	GDC ALIGN TO IMU		
68:57			
69:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	68:00 - 69:00	3/TLC	2-50

WFO Form 1010 (Rev. 10-67)

FLIGHT PLANNING BRANCH

BURN STATUS REPORT

X X ☐ :O.T. ΔTIG
X X 4:06.5 BT
☐ 1.4 V_{gx}

TRIM

X X X R
X X X P
X X X Y
-1.4 V_{gx}
2.0 V_{gy}
0.2 V_{gz}
20.2 ΔV_c

X X X FUEL
X X X OX
X X X UNBALANCE

REMARKS:

LOI₁ BURN CHART

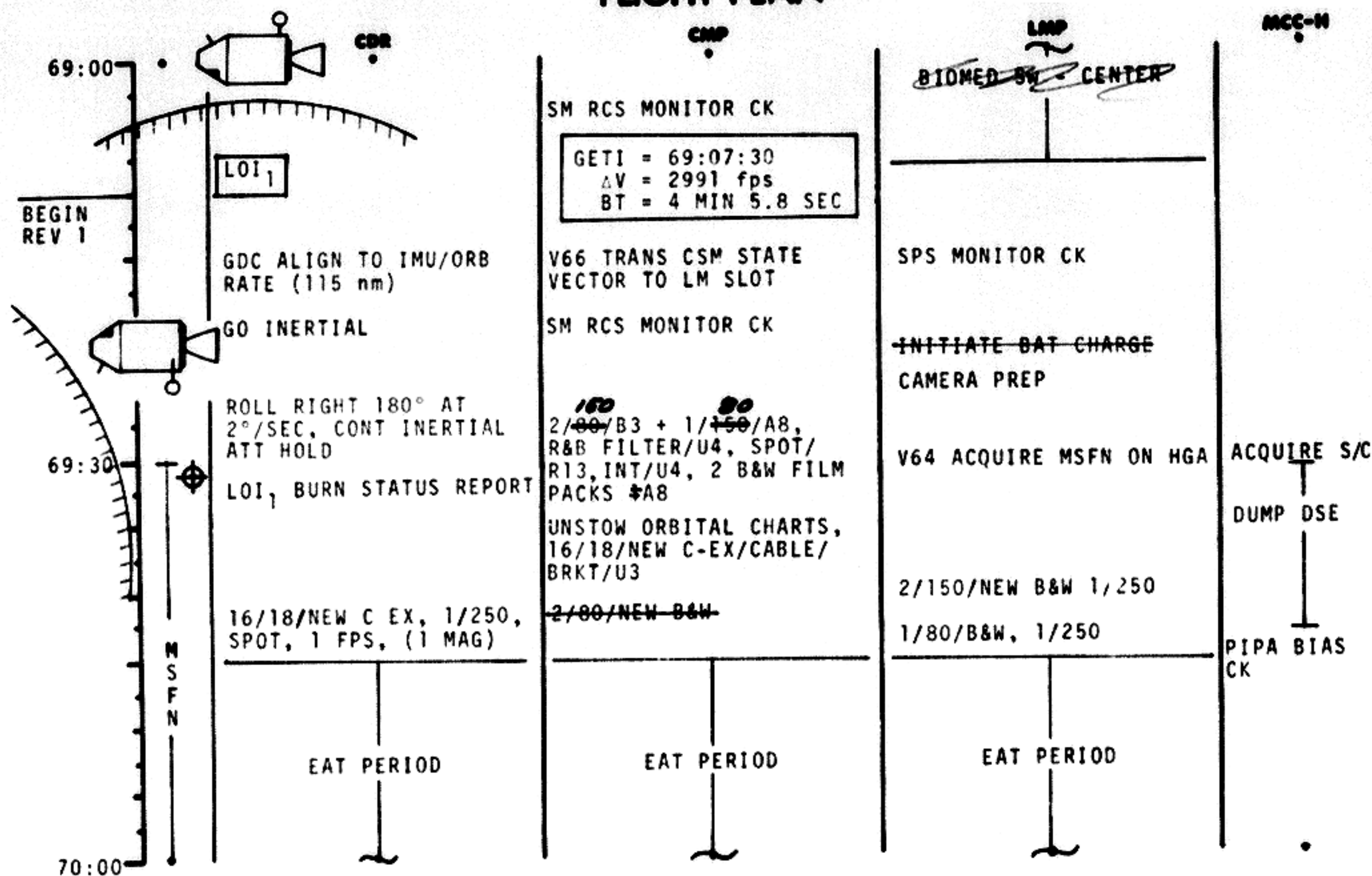
	P or V RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
LOI ₁	10°/SEC TAKEOVER	10° TAKEOVER	B/T+6 SEC	NO TRIM

LOI₁ ABORT MODES

LOI V _{go}	B/T	TRAJECTORY	ABORT MODE
3050-2100	0 -1:20	HYPERBOLIC	COAST OUT OF SPHERE-P37
2100-1650	1:20-2:00	UNSTABLE	5 HR COAST. MODE I ABORT
1650-0	2:00-4:06	LUNAR ORBIT	MODE III ABORT AFTER 1 REV

h_a = 169.
h_p = 60.5

2-50a

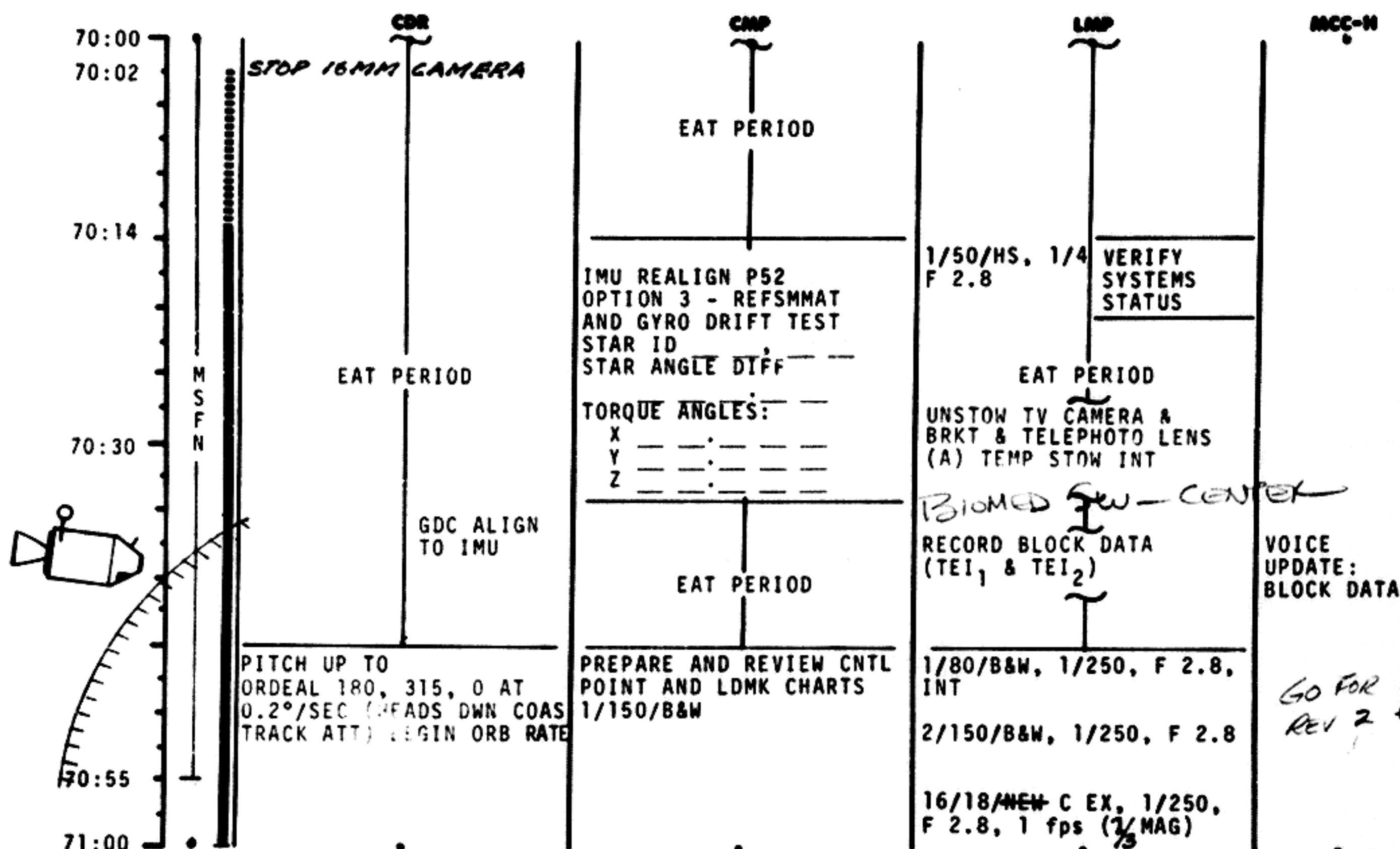


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	69:00 - 70:00	3/LPO 1	2-51

MSC Form 1910 (Nov 68)

FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
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CDR		CMP		LMP		MCC-H	
71:00	MAINTAIN ORB RATE AND BEGIN COAS GROUND TRACK DETERMINATION	CONTROL PT (CP) SIGHTING (THRU HATCH WINDOW)		START 16 MM CAMERA AT TERMINATOR			
71:09		CP1 7 1:1 3:4 6 TCA 7 1:1 4:5 2 CP1 NO. 504 LAT -05.250°S LONG -162.700°W ALT 000.00 nm		SPOT METER READINGS PHOTOGRAPH TARGETS OF OPPORTUNITY			
BEGIN REV 2		CP2 7 1:2 7:4 0 TCA 7 1:2 8:3 2 CP2 NO. 526 LAT -10.200°S LONG +155.100°E ALT 000.00 nm		CONFIGURE FOR TV			
71:30	YAW RT 45° FOR TV ORDEAL 180, 315, 45 315°						
71:38	TV YAW LEFT 45° TO ORDEAL 180, 315, 0	CP3 7 1:4 6:3 8 TCA 7 1:4 7:2 6 CP3 NO. 334 LAT -09.000°S LONG +95.000°E +96.350°E ALT 000.00 nm		V64 ACQUIRE MSFN ON HGA		ACQUIRE S/C P27 UPDATE: STATE VECTOR (CSM + LM) TARGET LOAD	
72:00		PSEUDO LDG SITE LDMK SIGHTING (THRU HATCH WINDOW)		RECORD MAP UPDATE		VOICE UPDATE: MAP UPDATE 2/3	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	71:00 - 72:00	3/LPO 1+2	2-53

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FLIGHT PLANNING BRANCH

FLIGHT PLAN

CDR		CMP		LMP		MCC-H	
72:00	MAINTAIN ORBITAL RATE AND COAS GROUND TRACK DETERMINATION	B-1 7 2:0 9:1 0 TCA 7 2:0 9:4 2 LDMK NO. B1 LAT +02.675°N LONG +35.025°E ALT -000.99 nm		BIOMED Sw - LEFT STOP 16 MM CAMERA RECORD MNVR PAD, BLOCK DATA (TEI ₃ , TEI ₃ NO LOI ₂).		GO/NO GO VOICE UPDATE: MNVR PAD BLOCK DATA	
72:10		L10H CANISTER CHANGE (CARTRIDGE 9 FROM B ₃ INTO CANISTER A)		<i>Chup fan cycle</i> 1/80/HS 1/4, F 2.8		DUMP DSE	
72:23		IMU REALIGN P52 OPTION 3 - REFSMMAT AND GYRO DRIFT TEST STAR ID STAR ANGLE DIF.		PRE LOI SYSTEMS CKS: C&W CK CM RCS CK SPS PERIODIC MONITOR EPS PERIODIC MONITOR ECS PERIODIC MONITOR		PIPA BIAS CK	
72:30	GO/NO GO FOR LOI ₂ GO INERTIAL	TORQUE ANGLES: X Y Z		CHLORINATE WATER			
73:00	EXTERNAL ΔV P30 EMS CK SPS THRUST - P40 MNVR TO BURN ATT GO INERTIAL	<i>Put off til later</i>					

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	72:00 - 73:00	4/LPO 2	2-54

BURN STATUS REPORT

X X ☐ :0.7 ΔTIG
 X X / 1 :0.0 BT
☐ :0.2 V_{gx}

TRIM

X X X R
 X X X P
 X X X Y
 .2 V_{gx}
 1.8 V_{gy}
 .2 V_{gz}
 9.4 ΔV_c
 X X X FUEL
 X X X OX
 X X X UNBALANCE

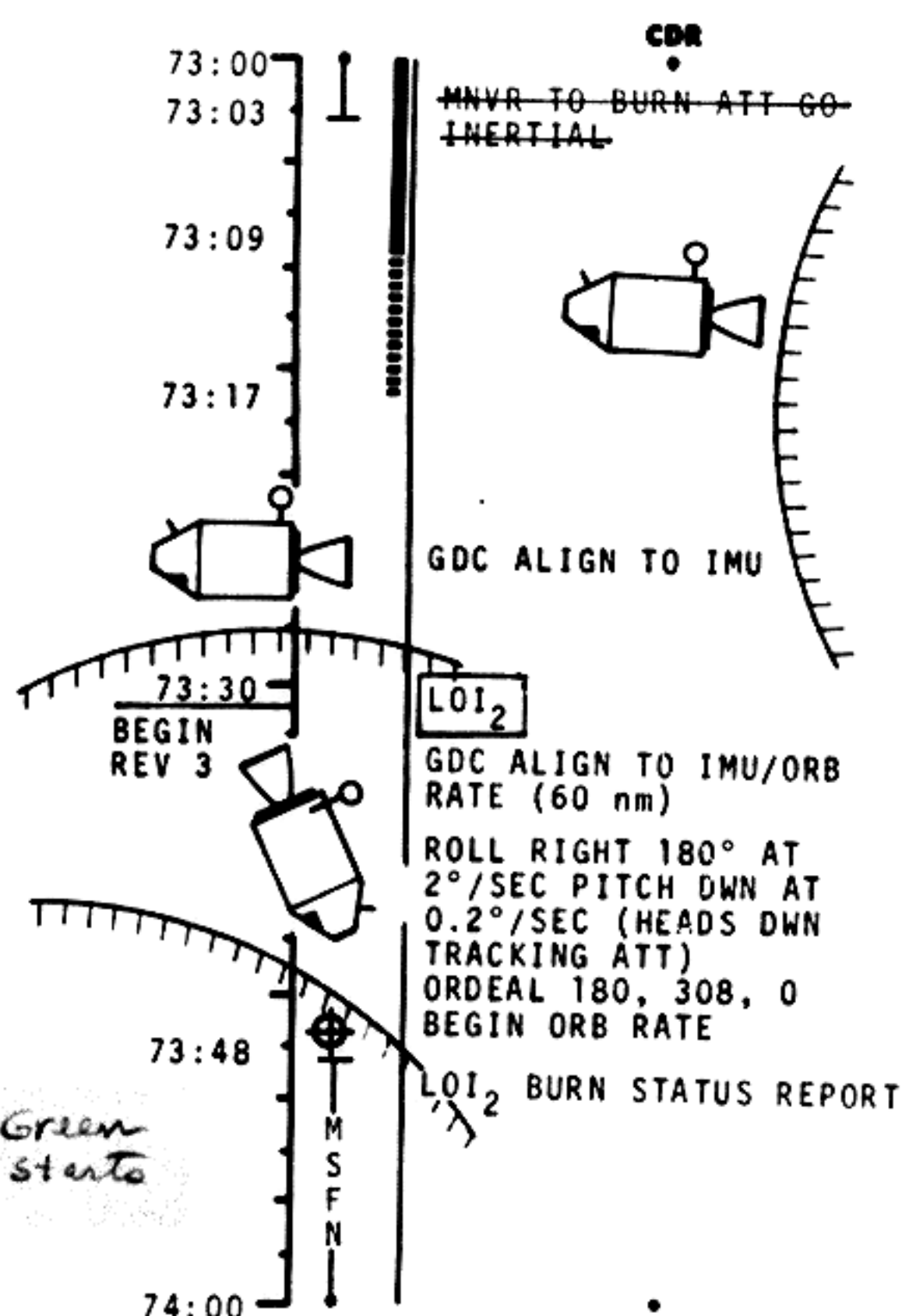
REMARKS:

Ha 62.0
 Hp 60.8

LOI₂ BURN CHART

	P or Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
LOI ₂	10°/SEC TAKEOVER	10° TAKEOVER	B/T +1 SEC	NO TRIM

FLIGHT PLAN



SXT STAR CK
 TRANSFER TO COUCH

SM RCS MONITOR CK

GETI = 73:30:54
 ΔV = 138.5 fps
 BT = 9.7 SEC

V66 TRANS CSM STATE
 VECTOR TO LM SLOT
 SM RCS MONITOR CK

REST PERIOD
 (2 HOURS)

2/80/B&W, 1/250
 16/18/C EX, 1/250 PB 1/2 MAG
 F CHART, 6 fps, BRACK
 1/150/B&W, 1/60, 1/250 PB
 CHART, BRKT
 PRE LOI SYSTEMS CKS

SPS MONITOR CK

INITIATE BAT⁵CHARGE

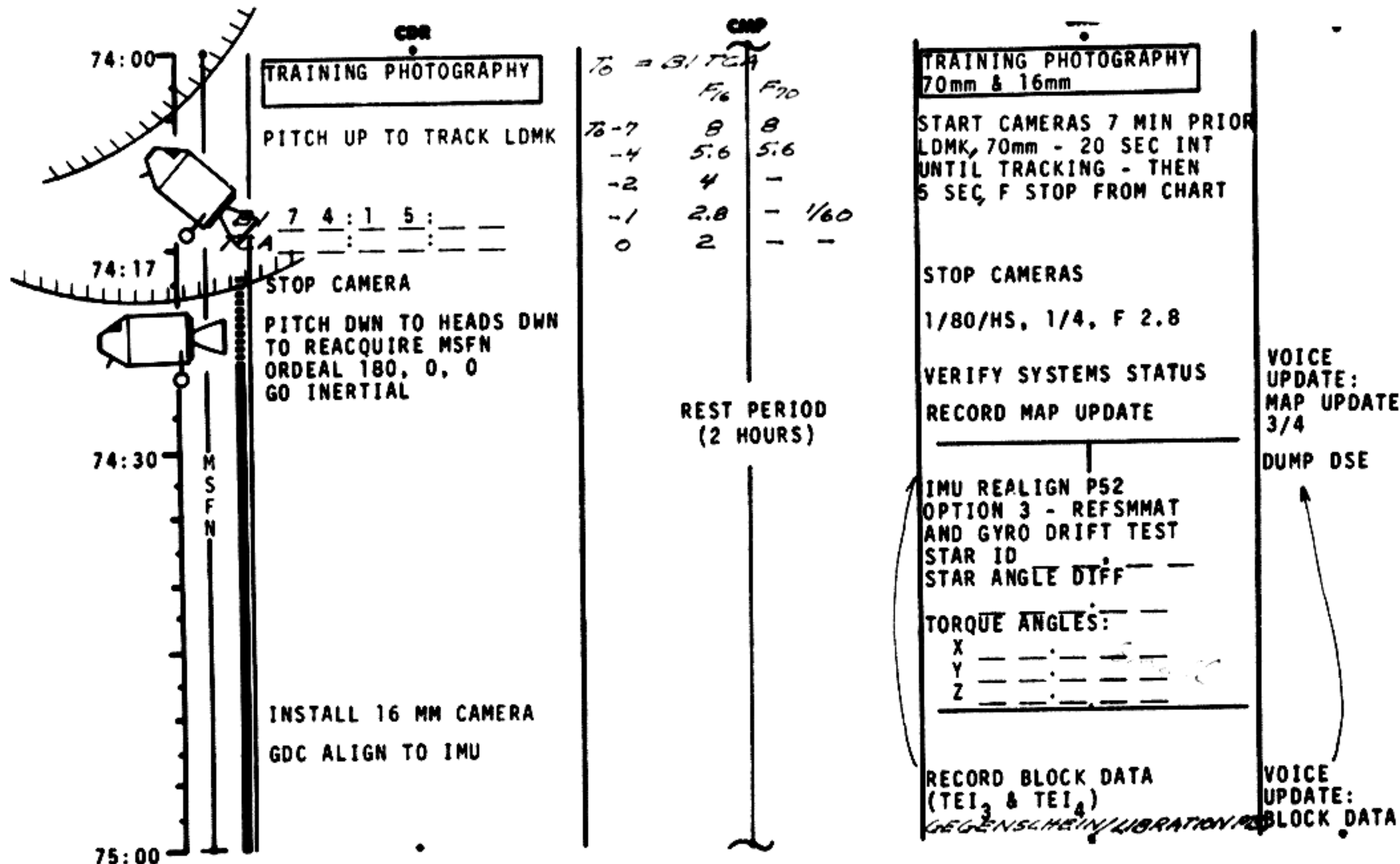
V64 ACQUIRE MSFN ON HGA

BIOMED Sw - RIGHT

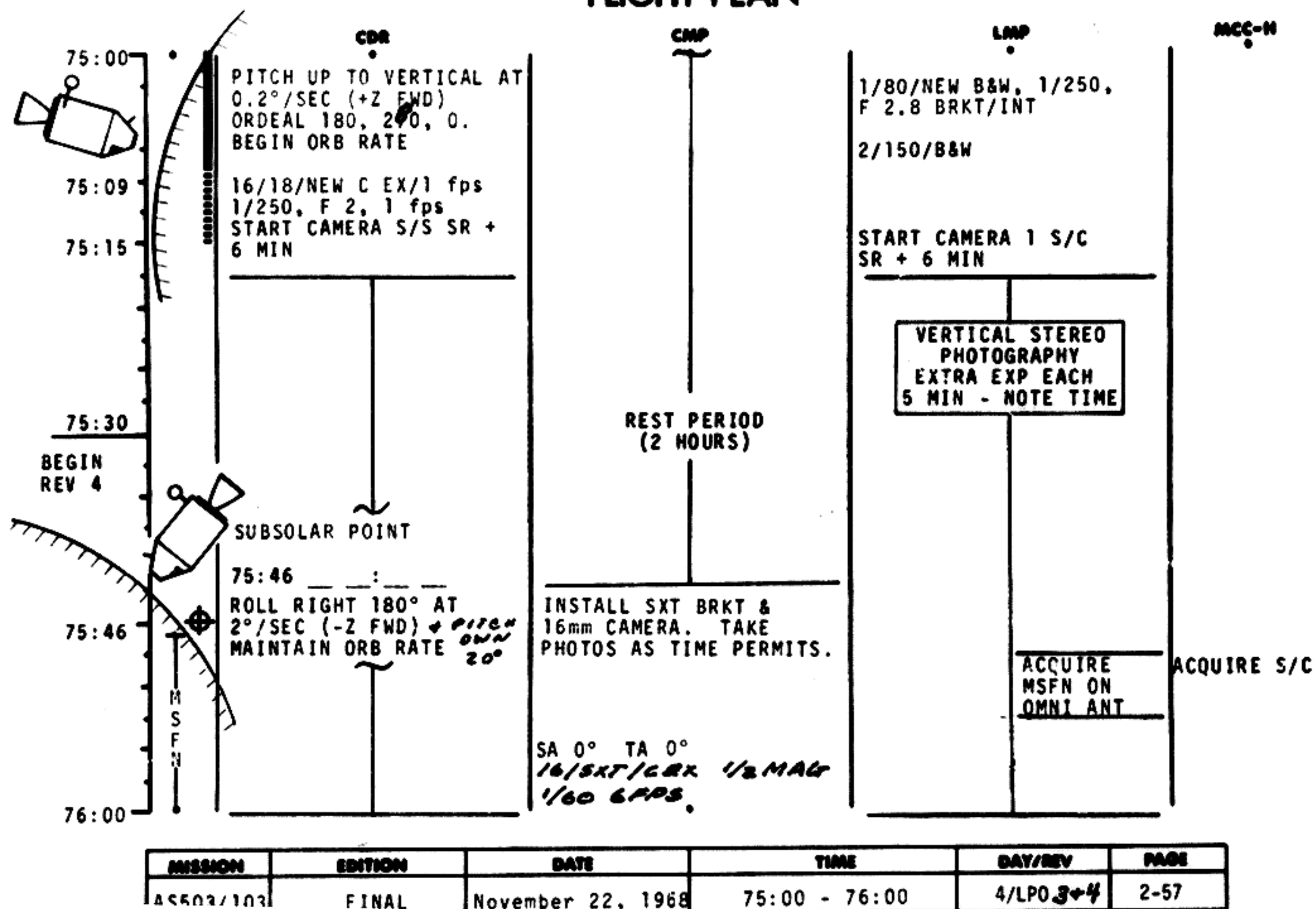
MCC-H

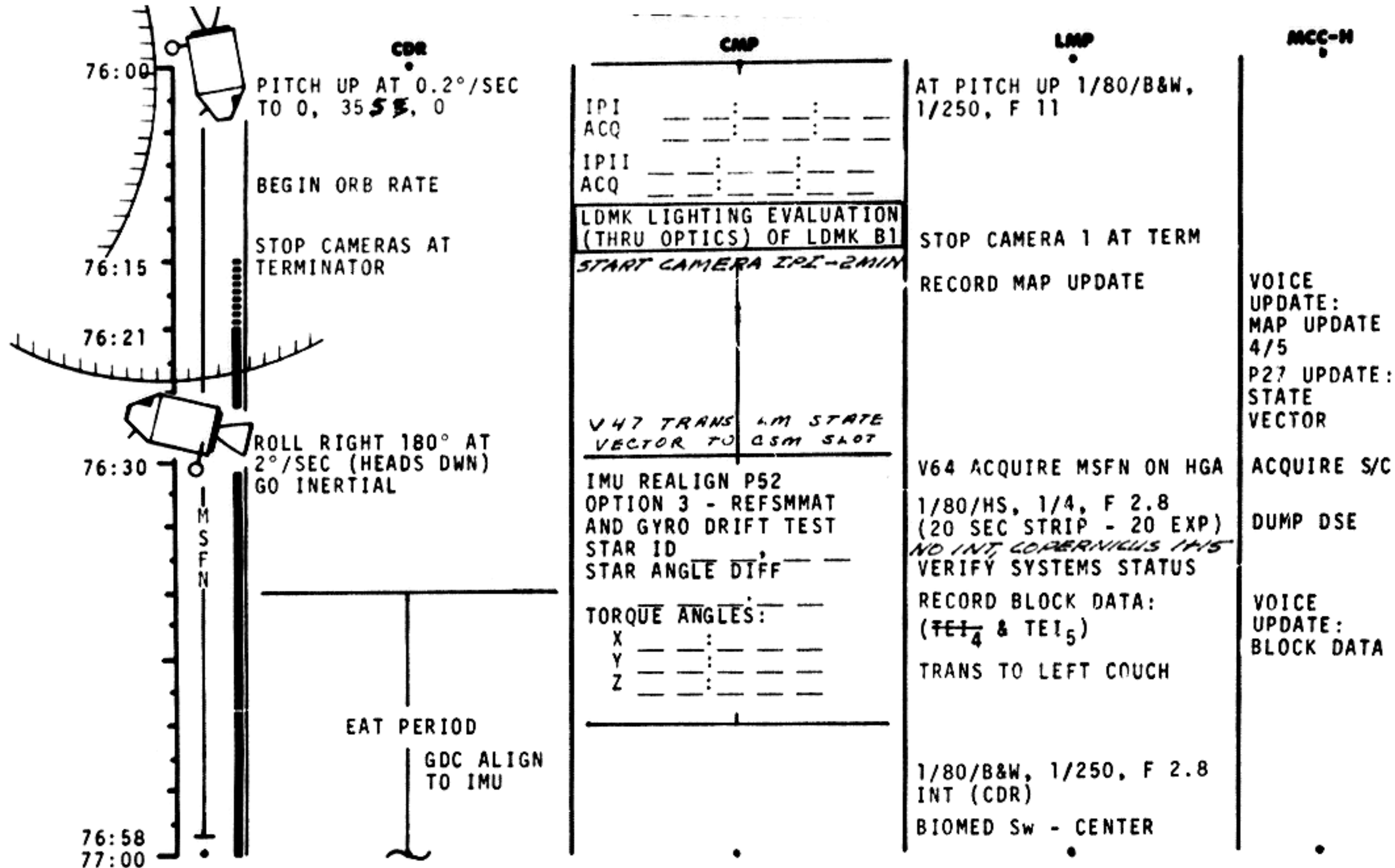
ACQUIRE S/C
 PIPA BIAS
 CK

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
				4/1 PD 2+2	2-55



FLIGHT PLAN



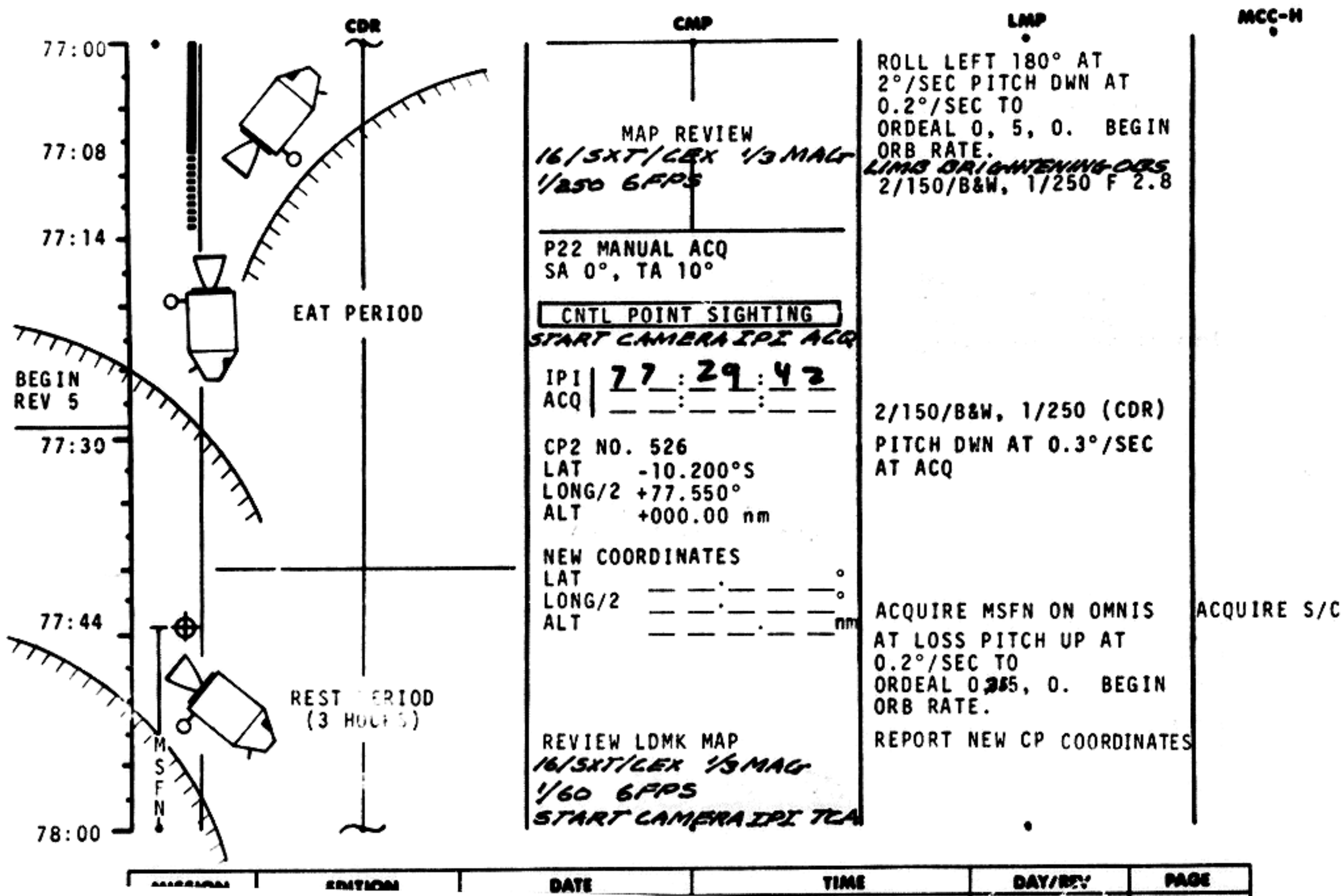


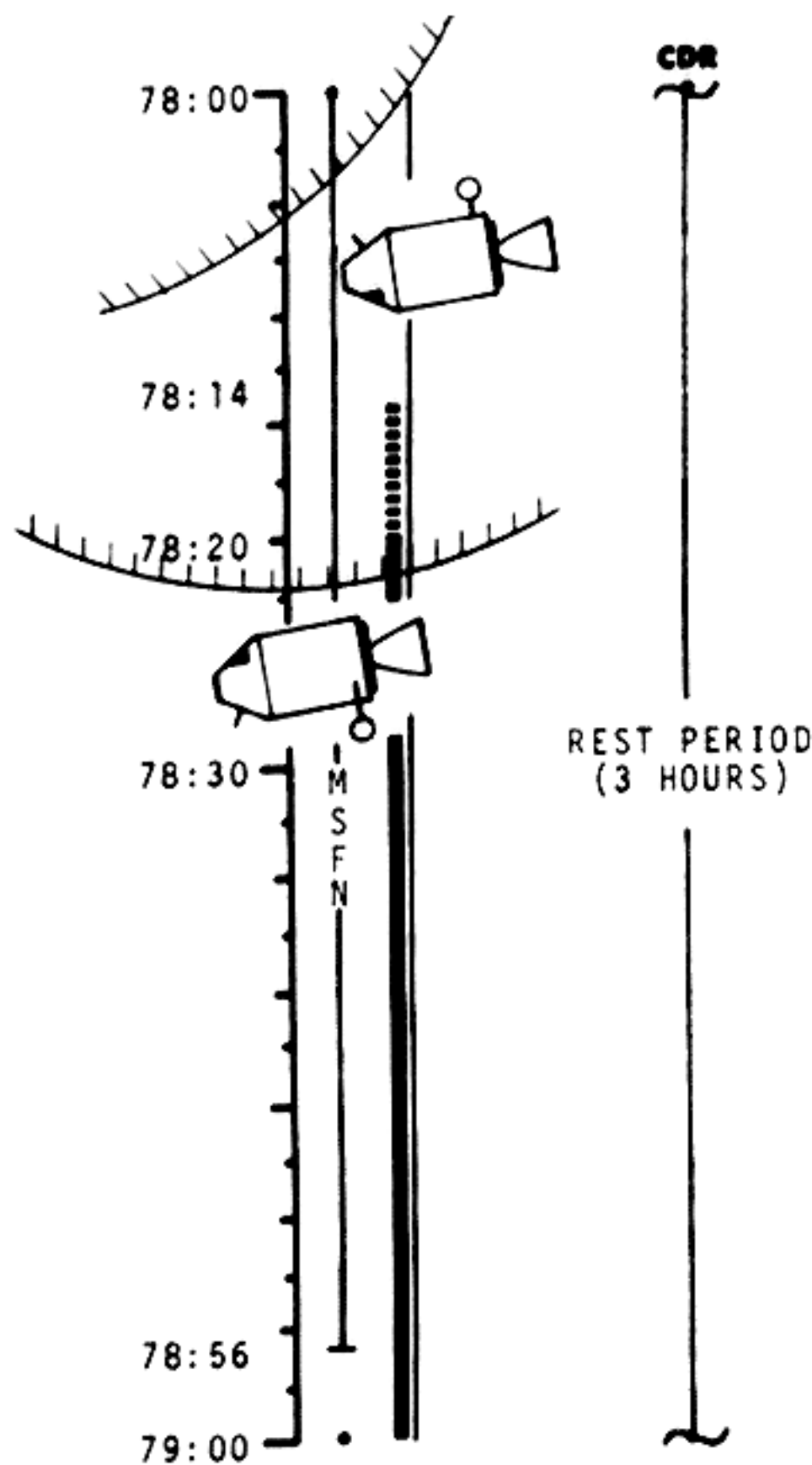
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	76:00 - 77:00	4/LPO 4	2-58

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FLIGHT PLANNING BRANCH

FLIGHT PLAN





PSEUDO LDG SITE SIGHTINGS

P22 - AUTO OPTICS
 IPI ~~17~~ ~~29~~ ~~42~~
 TCA ~~12~~ ~~10~~ ~~25~~
 LDMK NO. B1
 LAT +02.675°N
 LONG/2 +17.512°
 ALT -000.99 nm
 NEW COORDINATES
 LAT +02.515°
 LONG/2 +17.265°
 ALT -000.22 nm

PITCH DWN 0.3°/SEC AT ACQ
 AT LOSS ROLL RIGHT 180°
 AT 2°/SEC TO HEADS DWN
 GO INERTIAL

V64 ACQUIRE MSFN ON HGA
 1/80/HS, 1/4, F 2.8

REPORT NEW COORDINATES

RECORD BLOCK DATA
 (TEI₆), & MAP UPDATE

VERIFY SYSTEMS STATUS

ACQUIRE S/C
 P27 UPDATE:
 STATE
 VECTOR
 VOICE
 UPDATE:
 BLOCK DATA
 & MAP
 UPDATE
 5/6

V47 TRANS LM STATE
 VECTOR TO CSM SHOT

IMU REALIGN P52
 OPTION 3 - REFSMMAT
 AND GYRO DRIFT TEST
 STAR ID
 STAR ANGLE DIFF

TORQUE ANGLES:

X
 Y
 Z

SC EXT ATM (EARTHSHINE)
 1/80/HS F2.8
 B6SEC, B13SEC, 1/60
 90° FROM SUN

DUMP DSE

GDC ALIGN TO IMU
 16/18/ C EX, 1/250, 1 fps
 (MAGS)

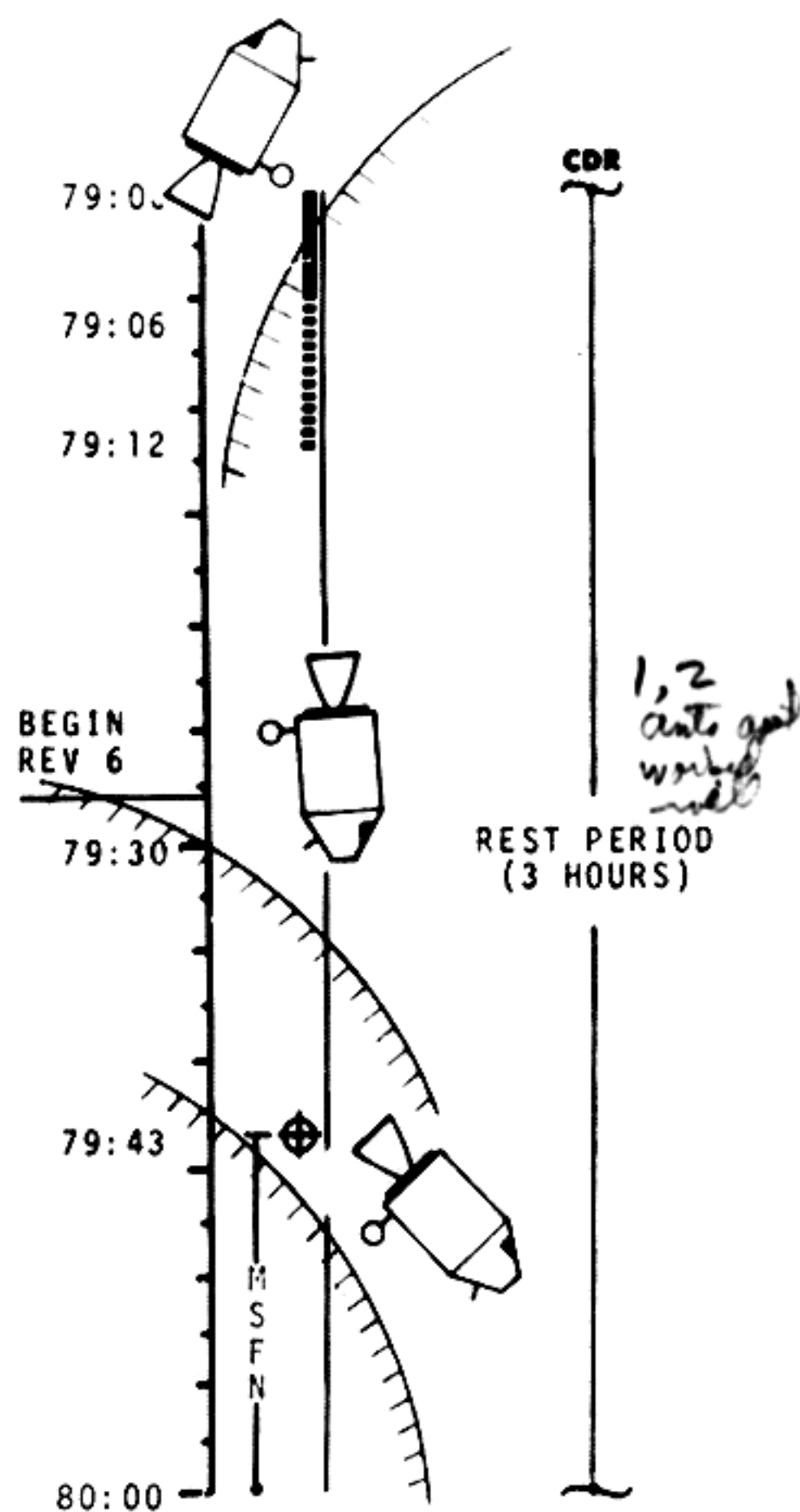
2/150/C121/1/250 SPOT
 GENERAL OBSERVATIONS
 SC EXT ATM (DARKNESS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	78:00 - 79:00	4/LPO 5	2-60

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FLIGHT PLANNING BRANCH

FLIGHT PLAN



REVIEW CONTROL POINT MAP

16/5XT/CEX 1/3 MAG
 1/500 1 FPS

CNTL POINT SIGHTING

START CAMERA IPI TCA

P22 - AUTO OPTICS
 IPI ~~17~~ ~~29~~ ~~42~~
 TCA ~~12~~ ~~10~~ ~~25~~
 CP2 NO. 526
 LAT -10.200°S
 LONG/2 +77.550°
 ALT +000.00 nm

NEW COORDINATES
 LAT
 LONG/2
 ALT

REVIEW LDMK MAP
 CP3 New Coord.
 08766
 48631

PSEUDO LDG SITE SIGHTING

START CAMERA IPI TCA
 1/60 1 FPS

ROLL 180° AT 2°/SEC
 PITCH DWN AT 0.2°/SEC TO
 OPDEAL 0, 5, 0.
 BEGIN ORB RATE
 LIMB BRIGHTENING
 1/80/HS 1/60 F2.8
 SR-15 SEC TO SR

SC EXT ATM (SUNLIT)

PITCH DWN 0.3°/SEC AT ACQ

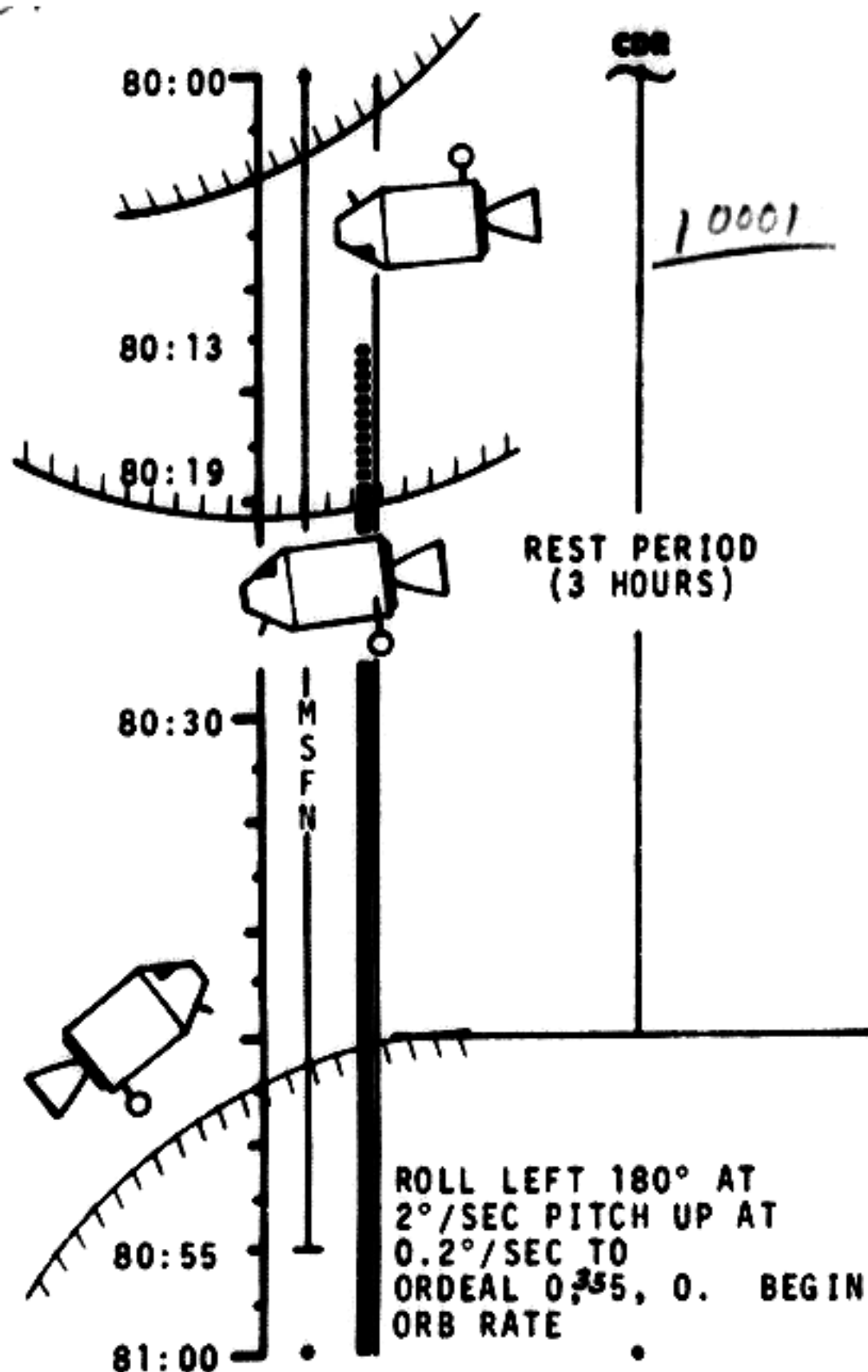
AT LOSS PITCH UP AT
 0.2°/SEC TO
 ORDEAL 0.55, 0. BEGIN
 ORB RATE

ACQUIRE MSFN ON OMNIS

REPORT NEW COORDINATES

ACQUIRE S/C

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
			79:00 - 80:00	4/LPO 5+6	2-61



CMP
P22 AUTO OPTICS
IPI 80:09:08
TCA
LDMK NO. B1
LAT +02.675°N
LONG/2 +17.512°
ALT -000.99 nm
NEW COORDINATES
LAT 02.457°
LONG/2 17.618°
ALT -000.95 nm

V47 TRANS LM STATE
VECTOR TO CSM SLOT

IMU REALIGN P52
OPTION 3 - REFSMAT
AND GYRO DRIFT TEST
STAR ID 20, 21
STAR ANGLE DIFF
000.01

TORQUE ANGLES:
X-00.052
Y+00.062
Z+00.071

16/SXT/NEW CXT, CEX 1/3 MAG
8/fps

PITCH DWN 0.3°/SEC AT ACQ

AT LOSS ROLL RIGHT 180°
AT 2°/SEC. GO INERTIAL
V64 ACQUIRE MSFN ON HGA

REPORT NEW COORDINATES
RECORD BLOCK DATA
(TE17) & MAP UPDATE

VERIFY SYSTEMS STATUS
1/80/B&W, 1/250 F 2.8 INT
2/150/B&W, 1/250 (R&B)
TRANS TO RIGHT COUCH

ACQUIRE S/C
P27 UPDATE:
STATE
VECTOR
VOICE
UPDATE:
BLOCK DATA
& MAP
UPDATE 6/7
DUMP DSE

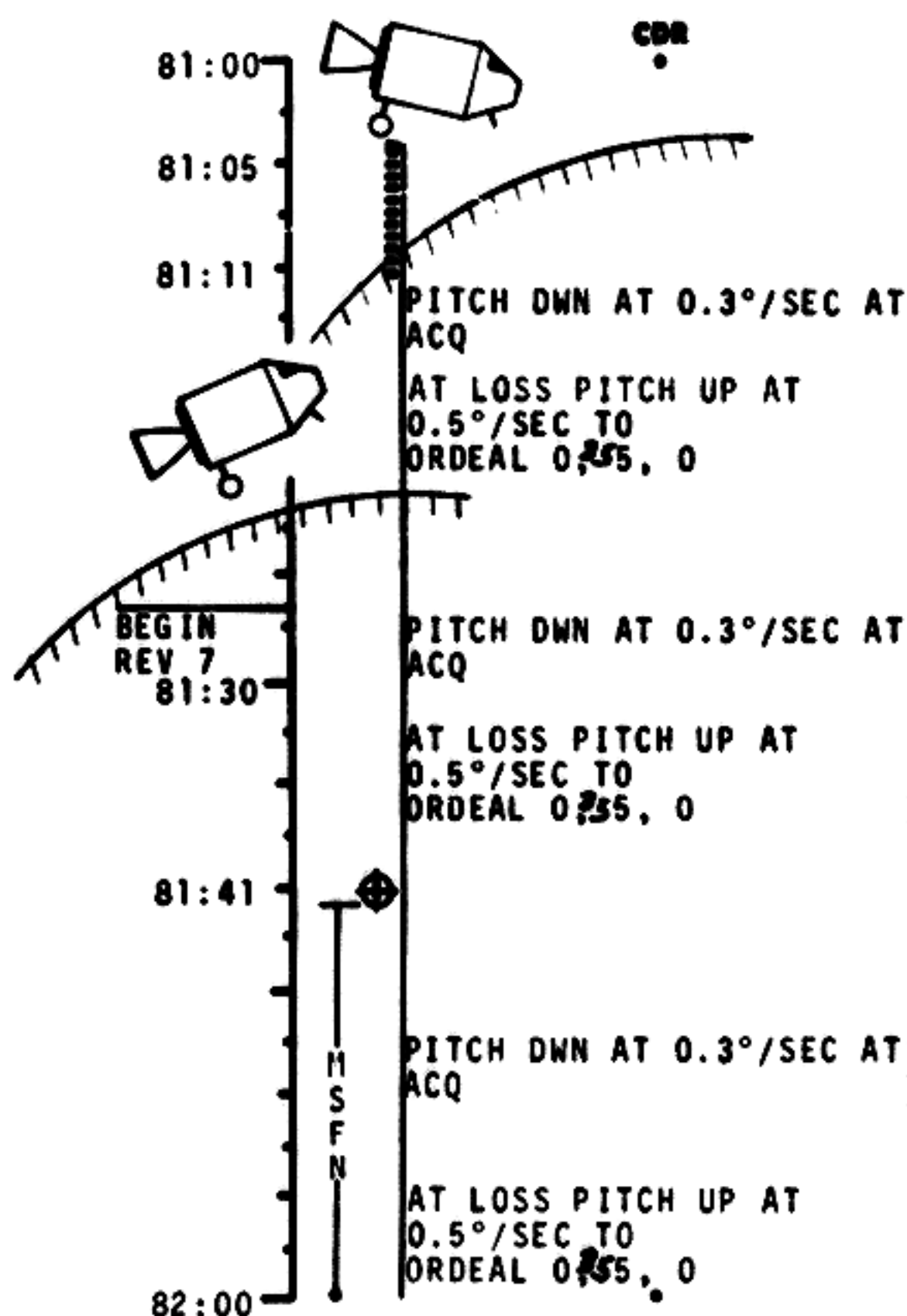
EAT PERIOD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	80:00 - 81:00	4/LPO 6	2-62

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FLIGHT PLANNING BRANCH

FLIGHT PLAN



CMP
CNTL PT SIGHTINGS (3)
START CAMERA AT EPI
ACQ OR TCA

P22 MAN ACQ SA 0° TA 10°
IPI
ACQ
CP1 NO. 504
LAT -05.250°S 1/60
LONG/2 -81.350°
ALT +000.00 nm

P22 AUTO OPTICS
IPI
TCA
CP2 NO. 526
LAT -10.200°S 1/500
LONG/2 +77.550°
ALT +000.00 nm

P22 MAN ACQ SA 0° TA 10°
IPI
ACQ
CP3 NO. 334
LAT -09.000°S 1/500
LONG/2 +47.950°
ALT +000.00 nm

PSEUDO LOG SITE SIGHTING
P22 AUTO OPTICS

BIOMED Sw - LEFT

EAT PERIOD

NEW COORDINATES
LAT
LONG/2
ALT

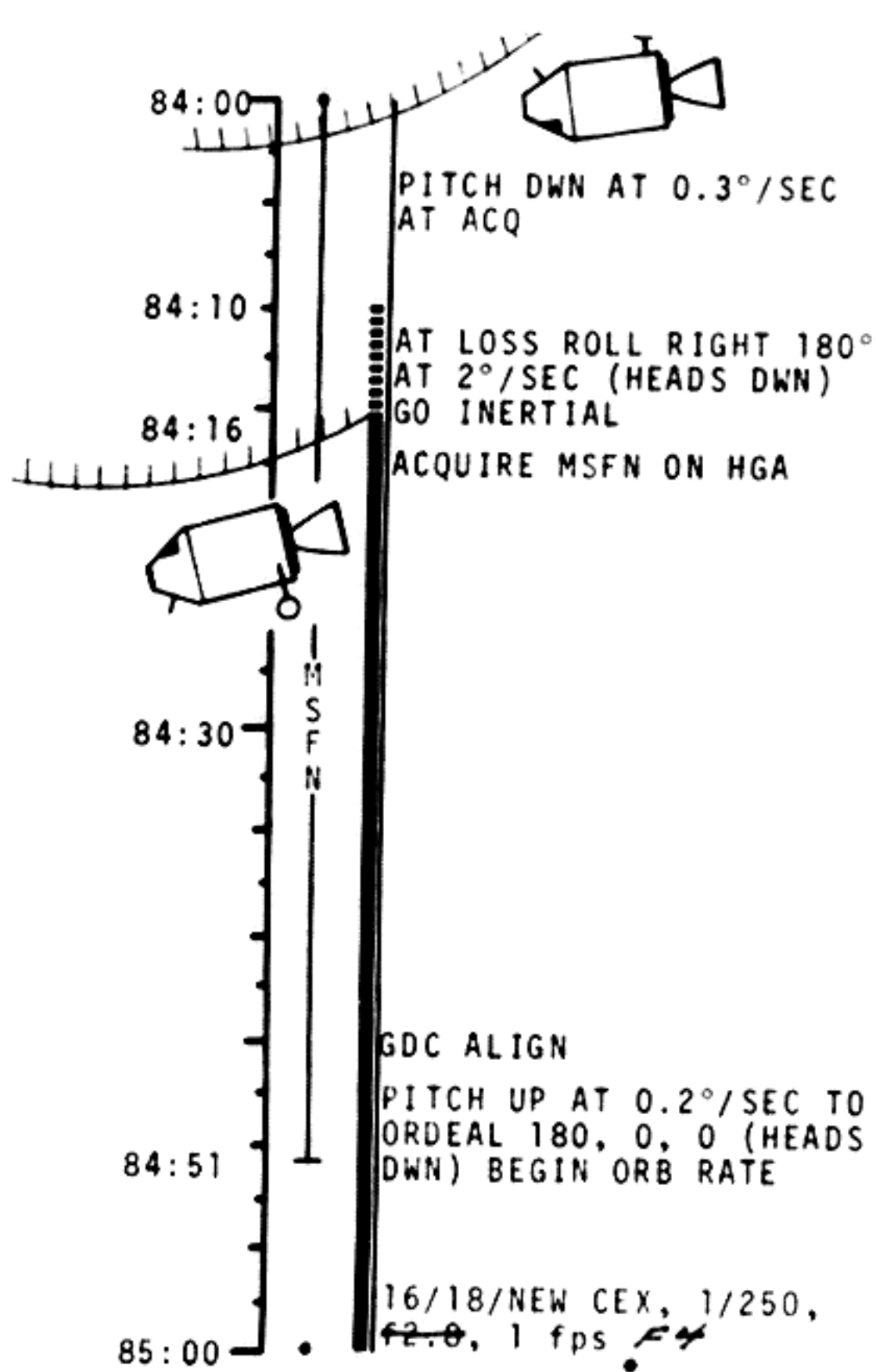
EAT PERIOD

NEW COORDINATES
LAT
LONG/2
ALT

NEW COORDINATES
LAT
LONG/2
ALT

ACQUIRE S/C

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	81:00 - 82:00	4/LPO 6+7	2-63



IPI
TCA
LDMK NO. B1
LAT +02.512°N 1/60
LONG/2 +17.512°
ALT +000.99 nm

LiOH CANISTER CHANGE
(CARTRIDGE 10 FROM B86
INTO CANISTER B)
V47 TRANS 4M STATE
VECTOR TO CSM SLOT

IMU REALIGN P52
OPTION 3 - REFSMMAT
AND GYRO DRIFT TEST
STAR ID
STAR ANGLE DIFF

TORQUE ANGLES:

X
Y
Z

REST PERIOD
(2 HOURS)

NEW COORDINATES
LAT
LONG/2
ALT

REST PERIOD
(2 HOURS)

2/150/NEW B&W, 1/250
(R&B)

BIOMED SW - RIGHT

VERIFY SYSTEMS STATUS

RECORD MAP UPDATE &
BLOCK DATA (TEI₉)

1/80/H.S. B, f2.8, POL
POS/CORONA HORIZON

SR -12 MIN: START DARK ZODIACAL
3 1/2 MIN EXP, Δ POL 60°

1/80/B&W, 1/250, f2.8, POL
HS, B, f2.8

SR -4 MIN: START CORONA
3 1/2 SEC EXP, Δ POL 60°

SR-3 MIN: 3 1/2 SEC EXP, Δ POL 60°

ACQUIRE S/C

P27 UPDATE:
STATE
VECTOR

DUMP DSE

VOICE
UPDATE:
MAP UPDATE
8/9
BLOCK DATA

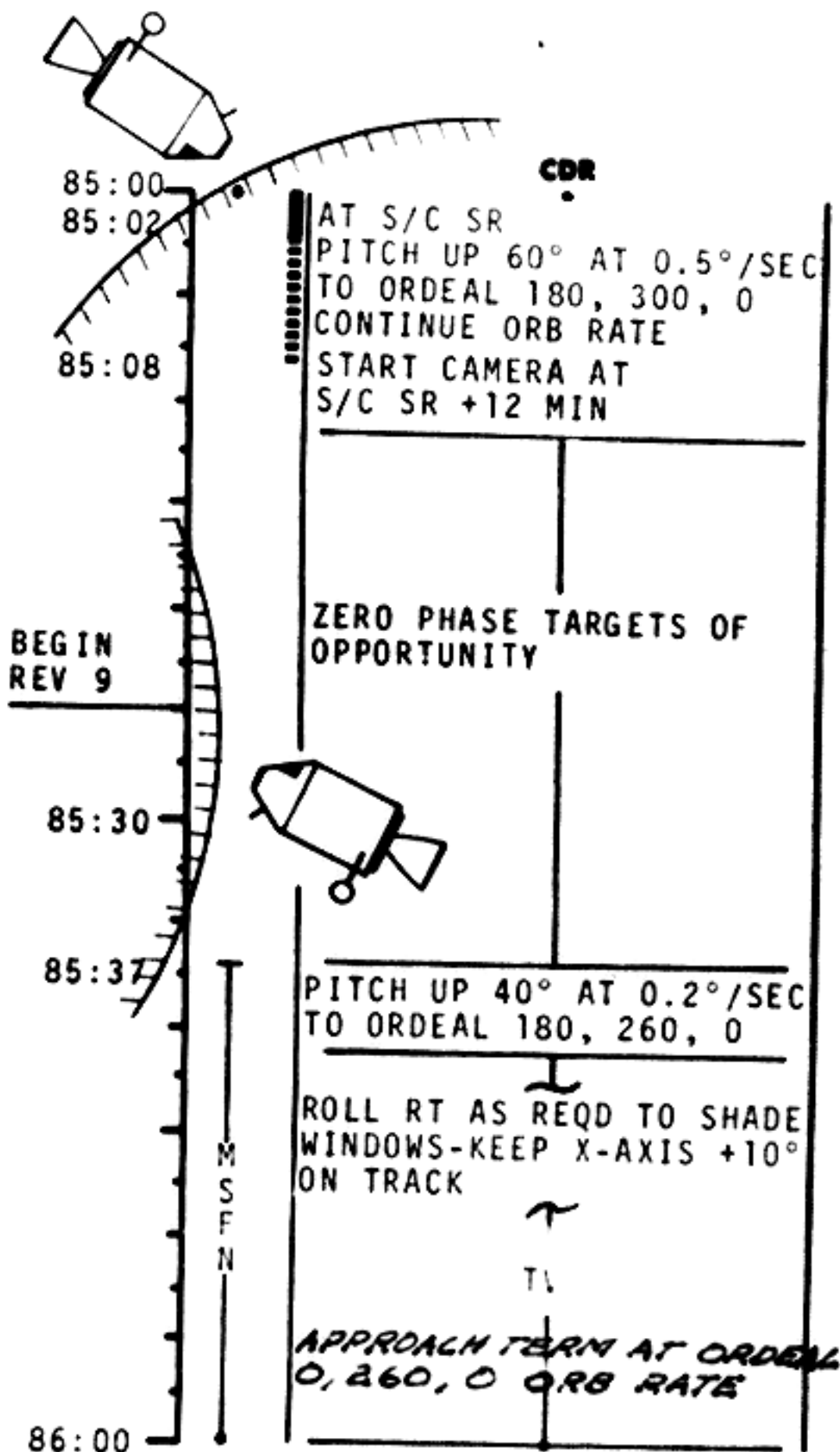
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	84:00 - 85:00	4/LPO 8	2-66

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FLIGHT PLANNING BRANCH

SR-1 MIN: SEVERAL 1/2 SEC EXP,
Δ POL 60°
SR-15 SEC: 1/60 SEC EXP TO SUNRISE,
Δ POL 60° AS FEASIBLE

FLIGHT PLAN



REST PERIOD
(2 HOURS)

1/80/NEW C BRKT INT
1/250 F4

START CAMERA 1 AT
SR +12 MIN

CONVERGENT STEREO
PHOTOGRAPHY-EXTRA
EXP EACH 5 MIN -
NOTE TIME

ACQUIRE MSFN ON HGA

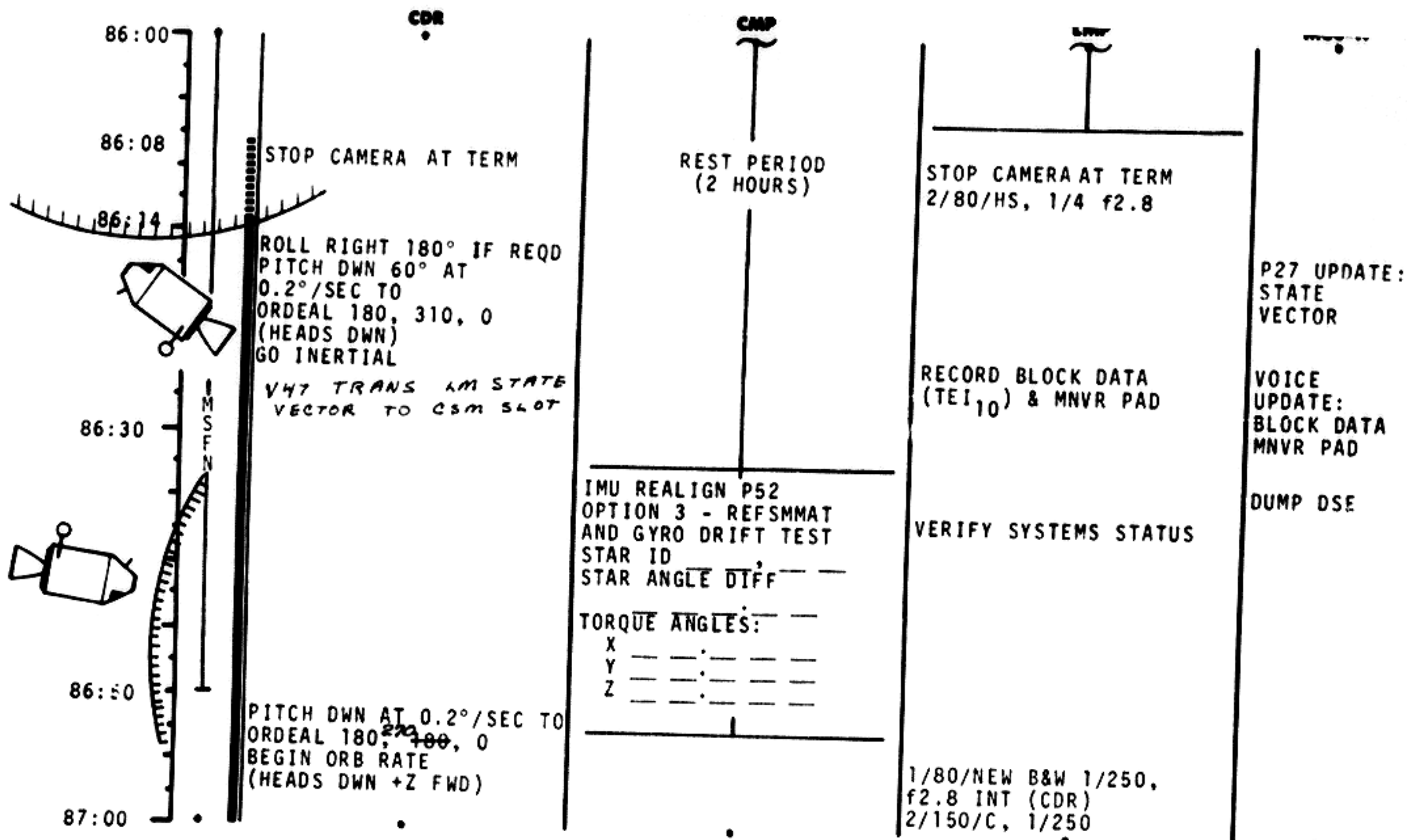
RECORD MAP UPDATE

2/80 B&W/R&B
4 STOPS WIDER

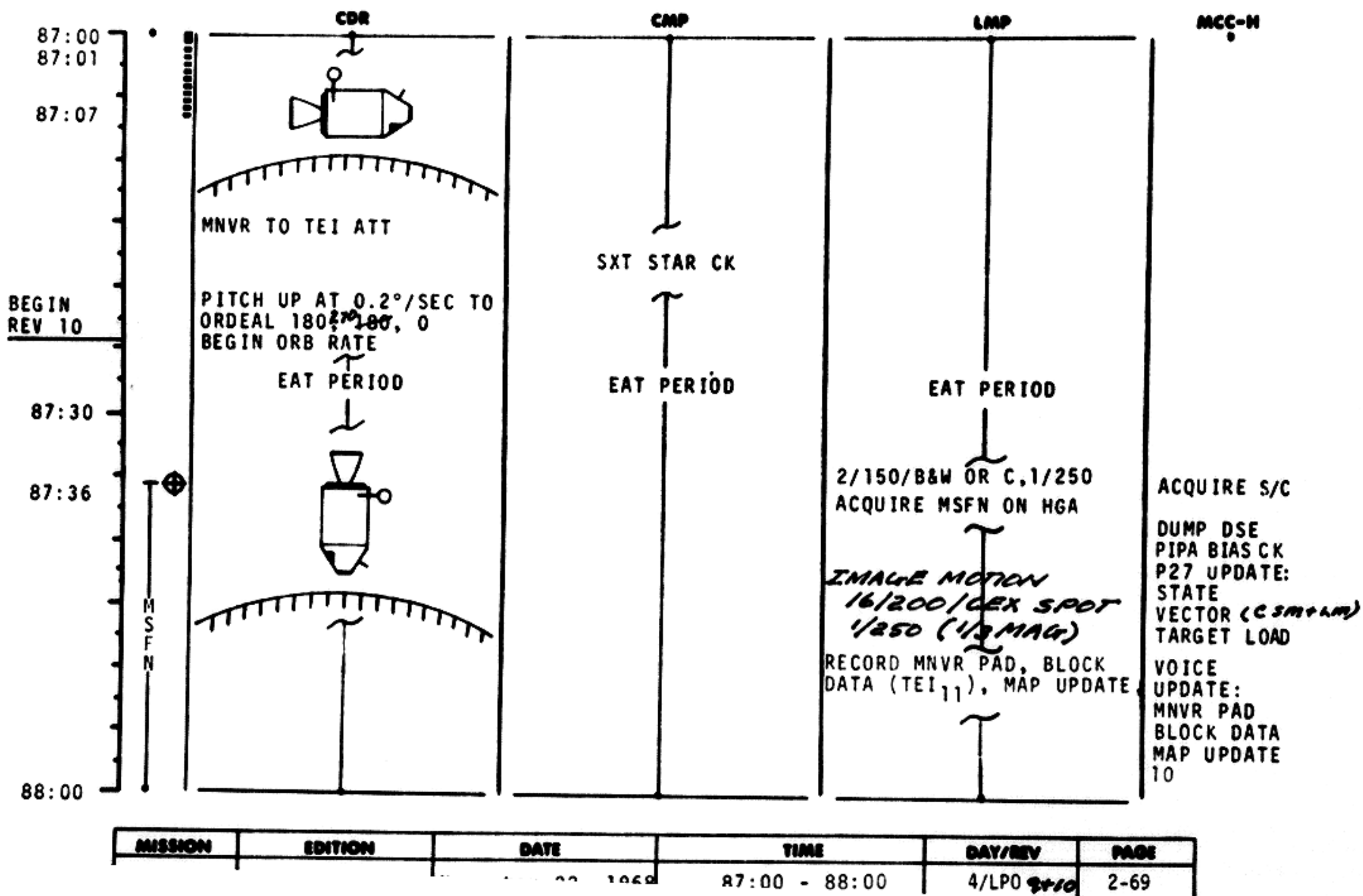
ACQUIRE S/C

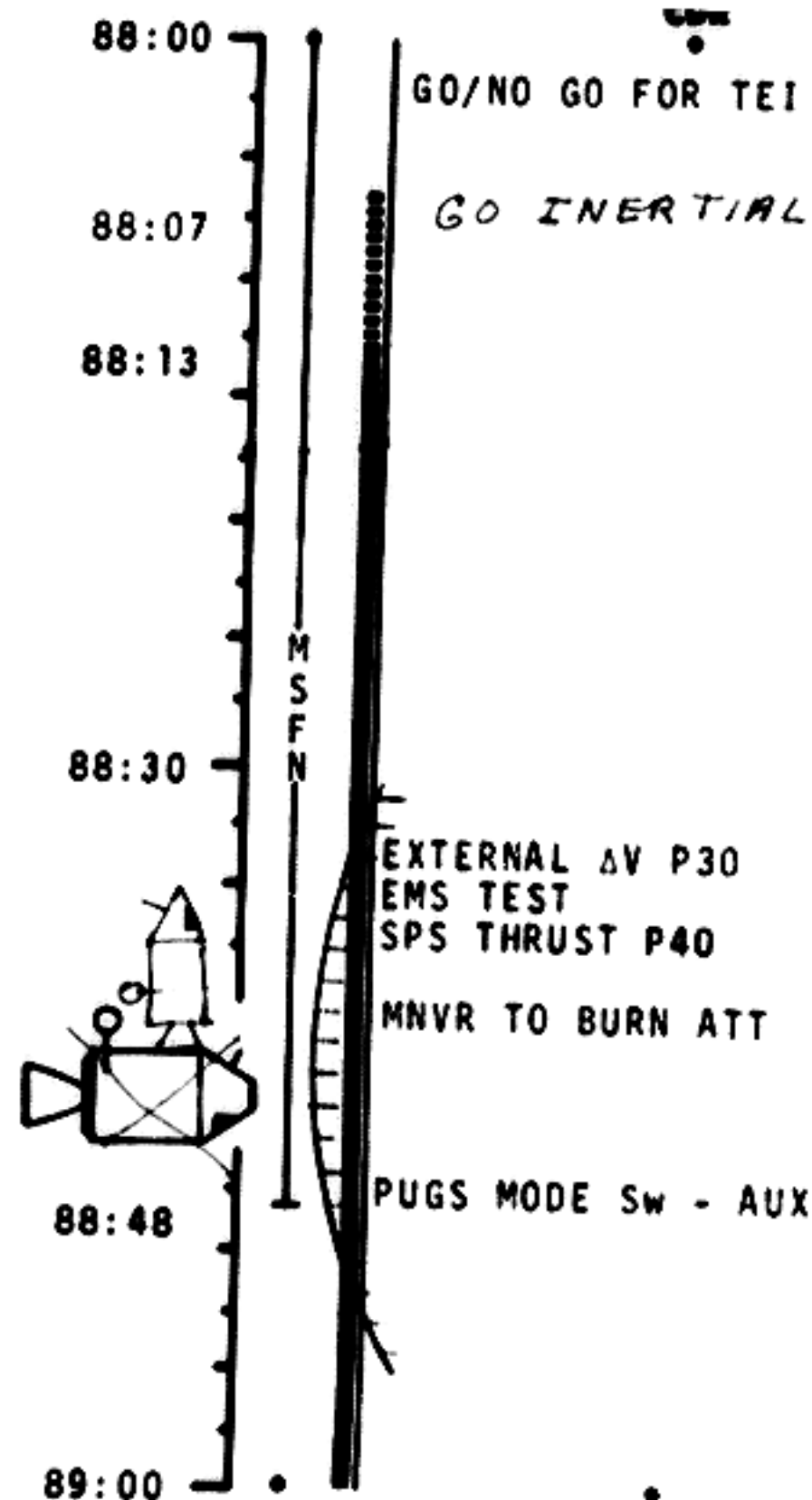
VOICE
UPDATE:
MAP UPDATE
9/10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
			85:00 - 86:00	4/LPO 8+9	2-67



FLIGHT PLAN





IMU REALIGN P52
OPTION 3 - REFSMMAT
AND GYRO DRIFT TEST
STAR ID
STAR ANGLE DIFF

TORQUE ANGLES:

X
Y
Z

2/150/C SPOT
16/75/CEX/1 fps/SPOT

PRE TEI SYSTEMS CKS

C&W CK
CM RCS CK
SM RCS CK
SPS PERIODIC MONITOR
EPS PERIODIC MONITOR
ECS PERIODIC MONITOR

SXT STAR CK
TRANSFER TO COUCH

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	88:00 - 89:00	4/LPO 10	2-70

NSC Form 1010 (Nov 68)

FLIGHT PLANNING BRANCH

BURN STATUS REPORT

X X : ATIG
X X : BT

TRIM V_{gx}

X X X R
X X X P
X X X Y

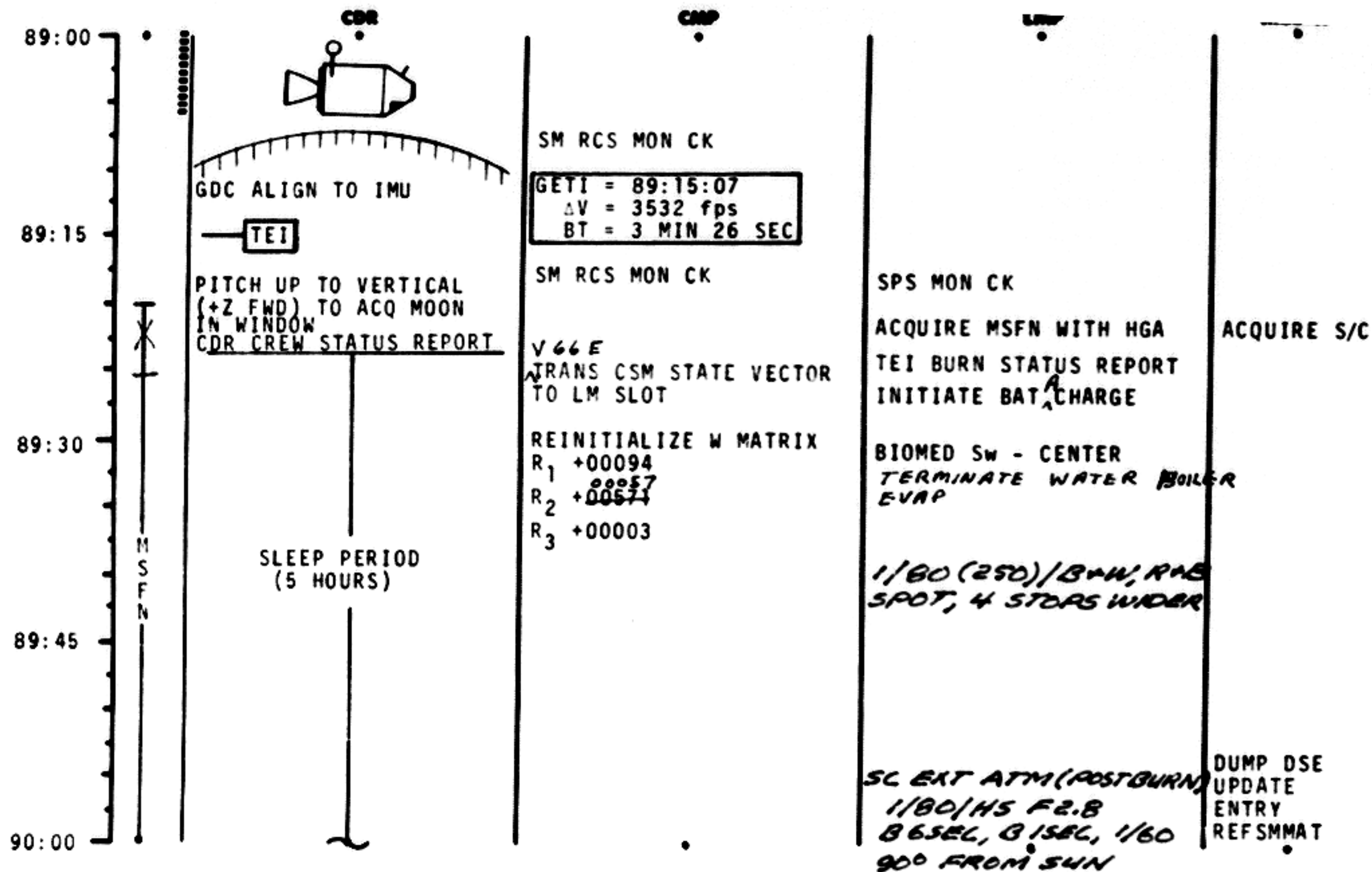
V_{gx}
V_{gy}
V_{gz}
ΔV_c

X X X FUEL
X X X OX
X X X UNBALANCE

REMARKS:

TEI BURN CHART

	P or V RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
TEI	10°/SEC TAKEOVER	10° TAKEOVER	B/T+2 SEC & ΔV _c = -40 fps	TRIM TO 2.0 fps
TEI ABORT MODES-SYSTEMS PROBLEMS: 15-MIN ABORT CHART OTHERWISE				
TEI V _{go}	B/T	TRAJECTORY	ABORT MODE	
2850-950	0 -2:00	LUNAR ORBIT	MODE III AFTER 1 REV 5-HR COAST, MODE I COAST OUT OF SPHERE - P37	
950-600	2:00-2:20	UNSTABLE		
600-0	2:20-2:54	HYPERBOLIC		

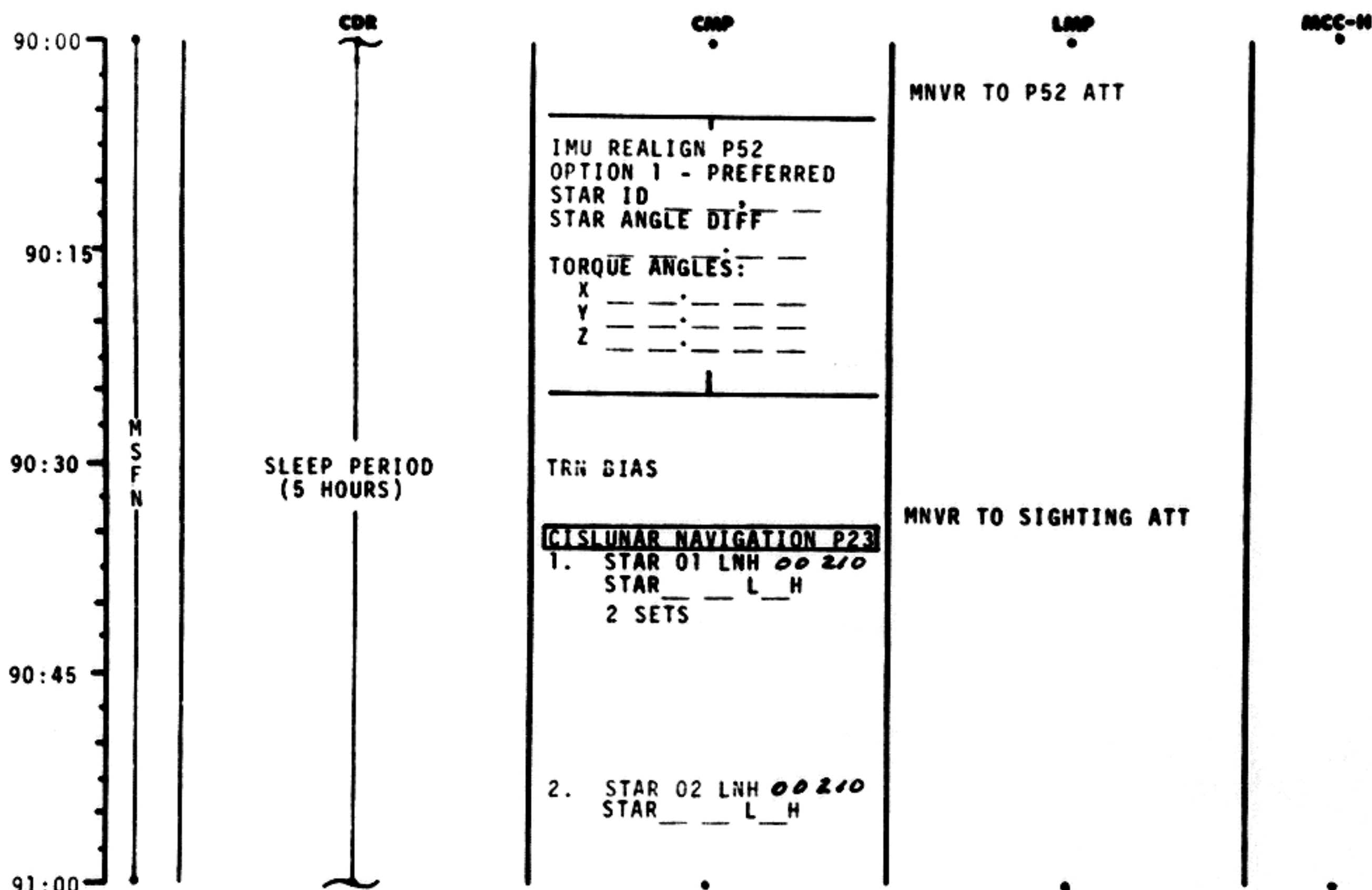


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	89:00 - 90:00	4/TEC	2-71

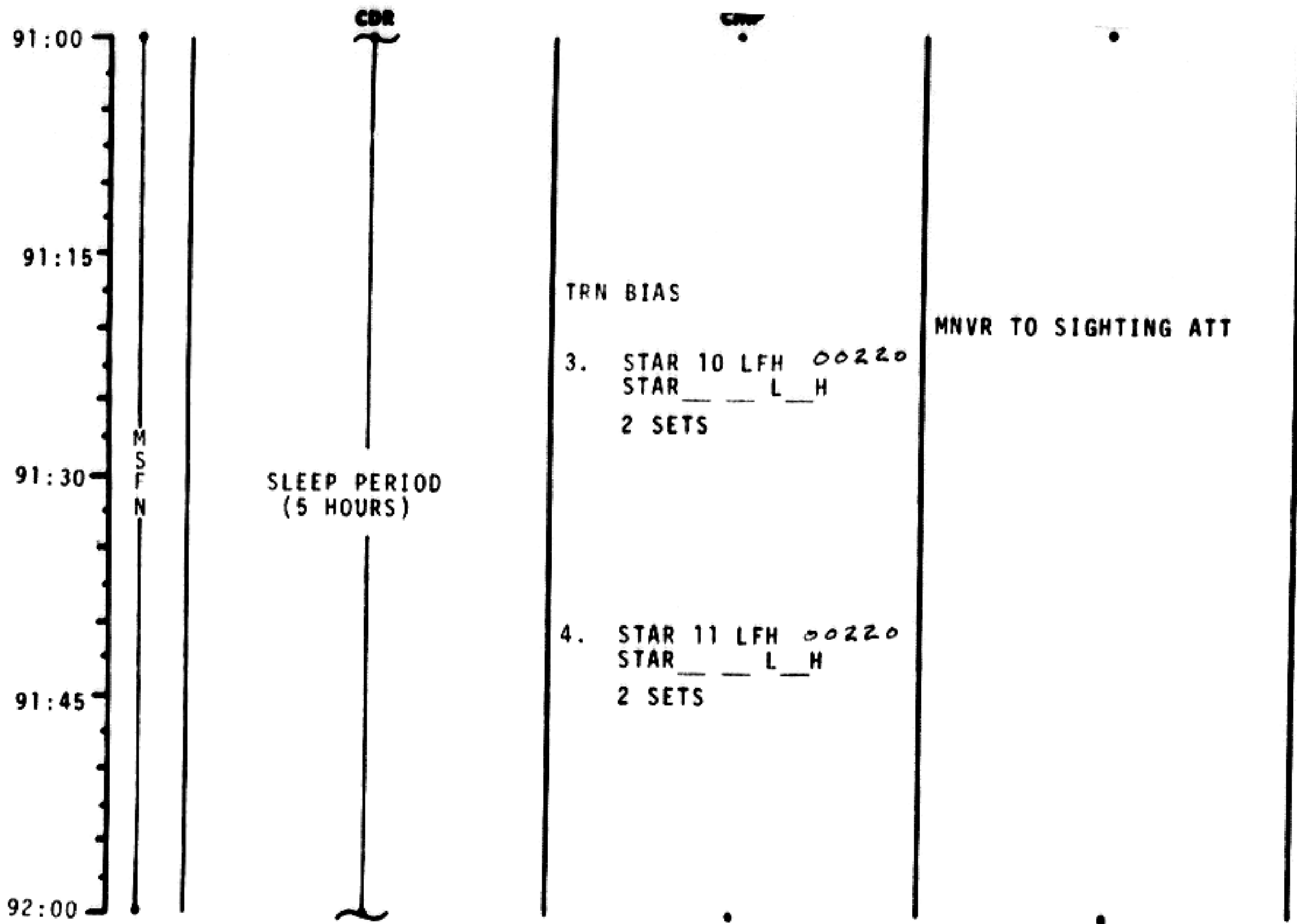
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FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	90:00 - 91:00	4/TEC	2-72

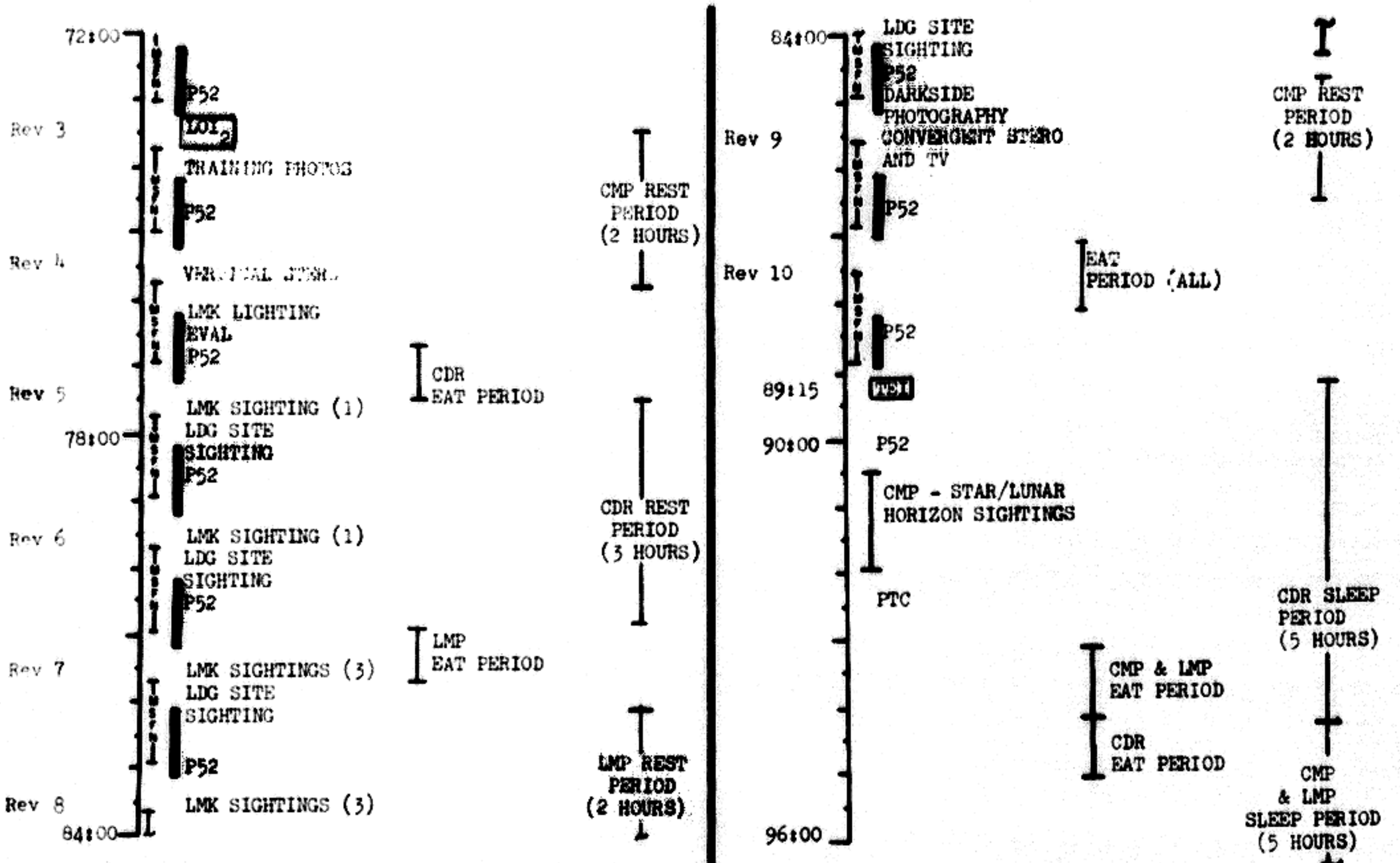


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	91:00 - 92:00	4/TEC	2-73

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FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
AS503/103	FINAL	November 22, 1968	72:00 - 96:00	4	5-4

FLIGHT PLANNING BRANCH