

# FLIGHT PLAN

**NOTES**

158:00  
:02  
:12  
:15  
158:30  
REV 39  
:45  
:48  
:54  
:59  
159:00

T  
M  
S  
F  
N  
I

MNVR TO P52 ATT BY 158:06  
R 180 HGA  
P 278 P -60  
Y 45 Y 239

**POSTSLEEP CHECKLIST**  
CREW STATUS REPORT  
CONSUMABLES UPDATE  
FLIGHT PLAN UPDATE  
CYCLE H2, O2 FANS  
POT H2O HTR - ON  
NORMAL LUNAR COMM EXCEPT:  
S BD ANT - HI GAIN  
CREW MANAGES ANT OPS

MAP UPDATE REV 39  
LOS : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
180° : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
AOS : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

VERIFY DSE MOTION AT LOS

TEI 41 ASSUMES  
PLANE CHANGE 2

P52 IMU REALIGN  
OPTION 1 PREFERRED

P30 - EXTERNAL ΔV

**CSM CONSUMABLES UPDATE**  
GET: \_\_\_\_\_ : \_\_\_\_\_  
RCS TOTAL \_\_\_\_\_ %  
QUAD A \_\_\_\_\_ % B \_\_\_\_\_ %  
C \_\_\_\_\_ % D \_\_\_\_\_ %  
H<sub>2</sub> TOTAL \_\_\_\_\_ %  
O<sub>2</sub> TOTAL \_\_\_\_\_ %

P52 (PLANE CHANGE ORIENT)  
N71: \_\_\_\_\_ , \_\_\_\_\_  
N05: \_\_\_\_\_ . \_\_\_\_\_  
N93: \_\_\_\_\_  
X \_\_\_\_\_ . \_\_\_\_\_  
Y \_\_\_\_\_ . \_\_\_\_\_  
Z \_\_\_\_\_ . \_\_\_\_\_  
GET \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

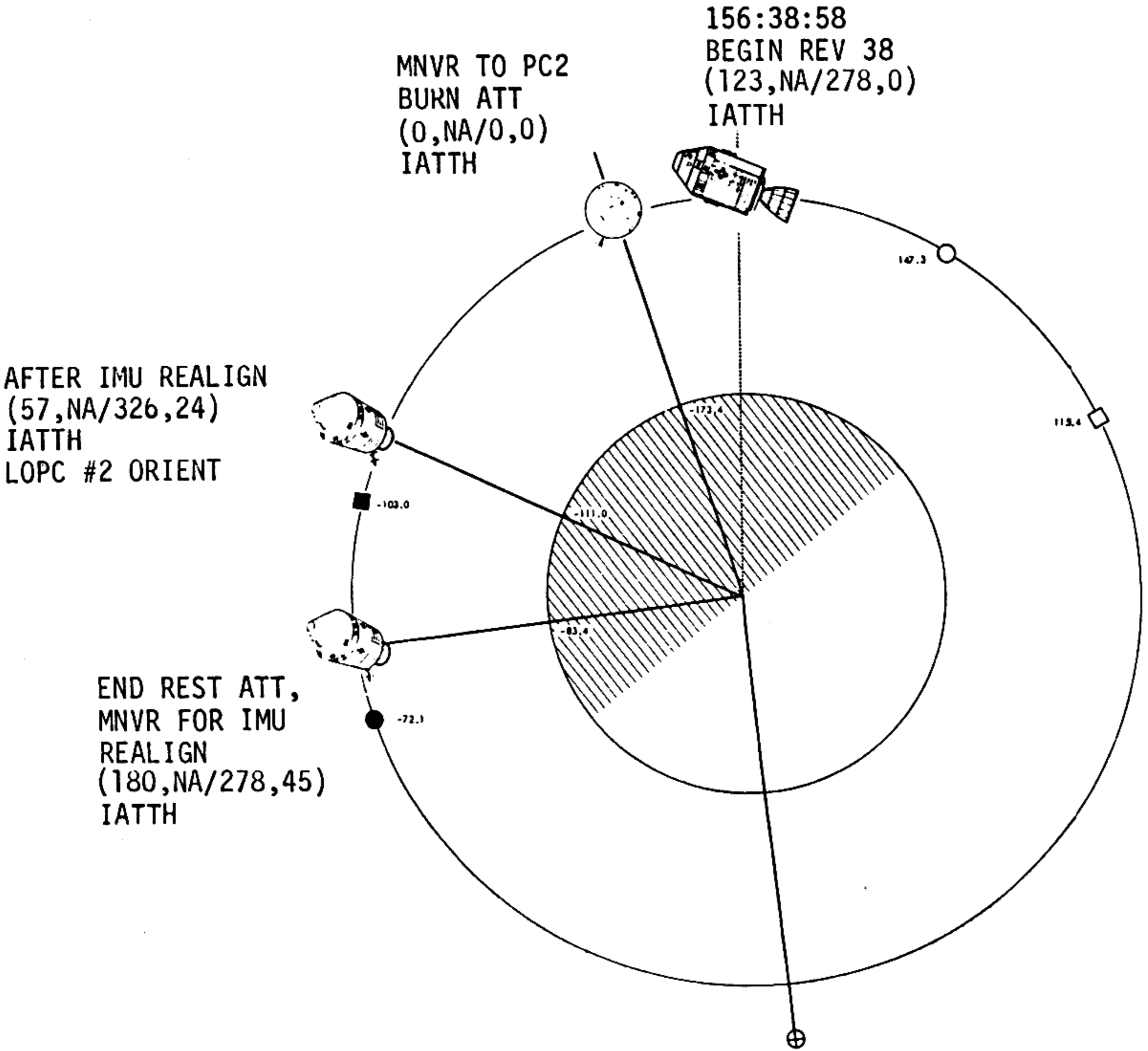
V49 - MNVR TO BURN  
ATT BY 158:35 R 0 HGA  
P 0 P -10  
Y 0 Y 274

SXT STAR CHECK  
P 40 - SPS THRUST  
SETUP DAC IN LH RNDZ WINDOW  
(OBLIQUE PHOTOGRAPHY)  
CM2/DAC/18/BW-BRKT, & MIR,  
(f8,125,∞), 6FPS (0.5 MAG, 8 MIN)  
SETUP EL CAMERA IN RH RNDZ  
WINDOW  
(HI RESOLUTION PHOTOGRAPHY)  
CM4/EL/500/BW-BRKT, CONT,  
(f8,125,∞), 20  
GDC TO IMU ALIGN

**CREW STATUS REPORT**  
CDR CMP LMP  
SLEEP \_\_\_\_\_  
PRD \_\_\_\_\_

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	158:00 - 159:00	7/38-39	3-134

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MNVR TO PC2  
BURN ATT  
(0,NA/0,0)  
IATTH

156:38:58  
BEGIN REV 38  
(123,NA/278,0)  
IATTH

AFTER IMU REALIGN  
(57,NA/326,24)  
IATTH  
LOPC #2 ORIENT

END REST ATT,  
MNVR FOR IMU  
REALIGN  
(180,NA/278,45)  
IATTH

LEGEND:

□	■	MSFN AOS, LOS
○	●	S/C SUNRISE, SUNSET
⊕		SUBEARTH POINT

(R,LHP/INP,Y)

IATTH - INERTIAL ATTITUDE HOLD

LATTH - LOCAL ATTITUDE HOLD

HIGH RESOLUTION PHOTOGRAPHY  
REV 39

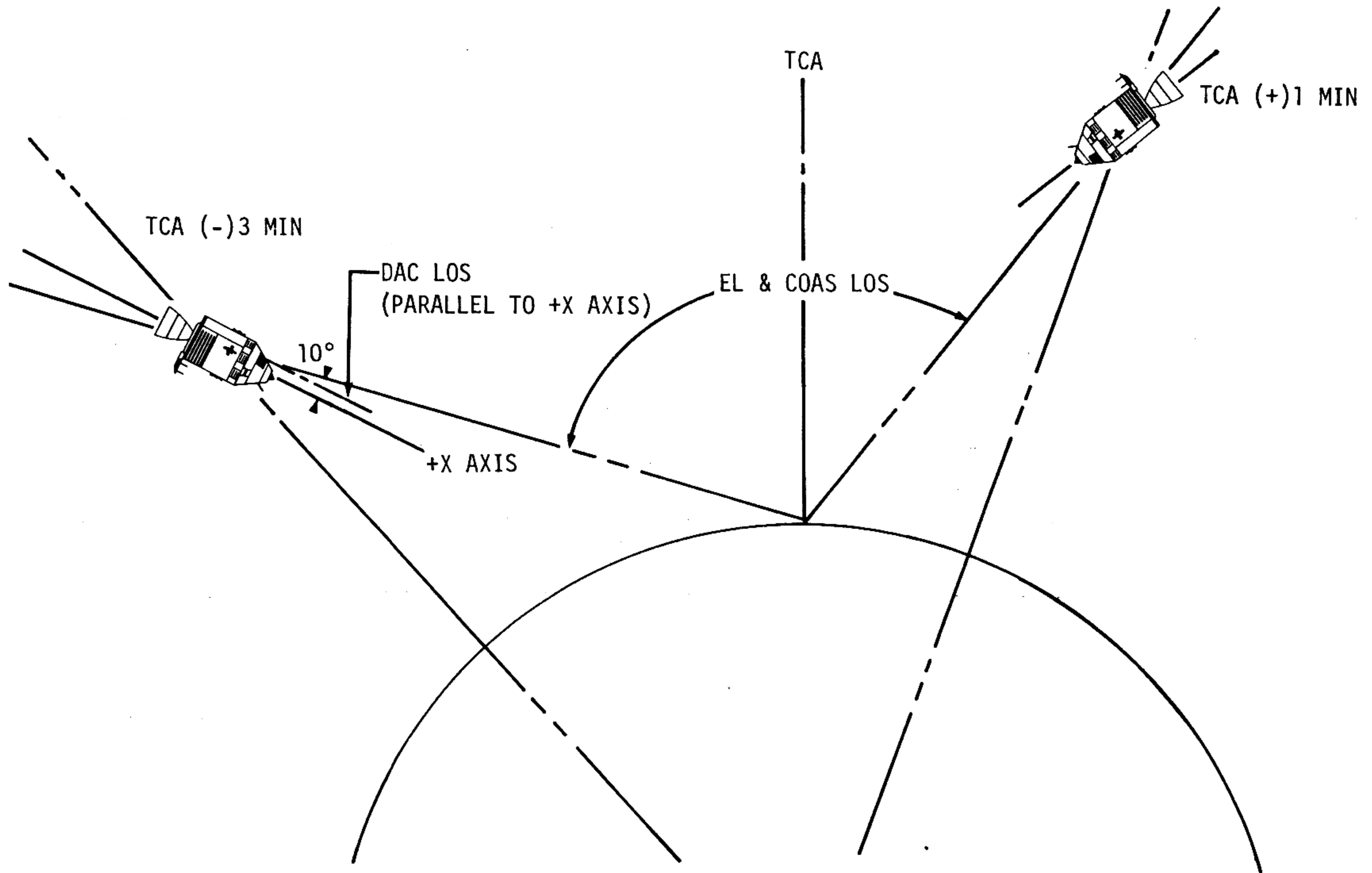


FIGURE 3-4  
3-135

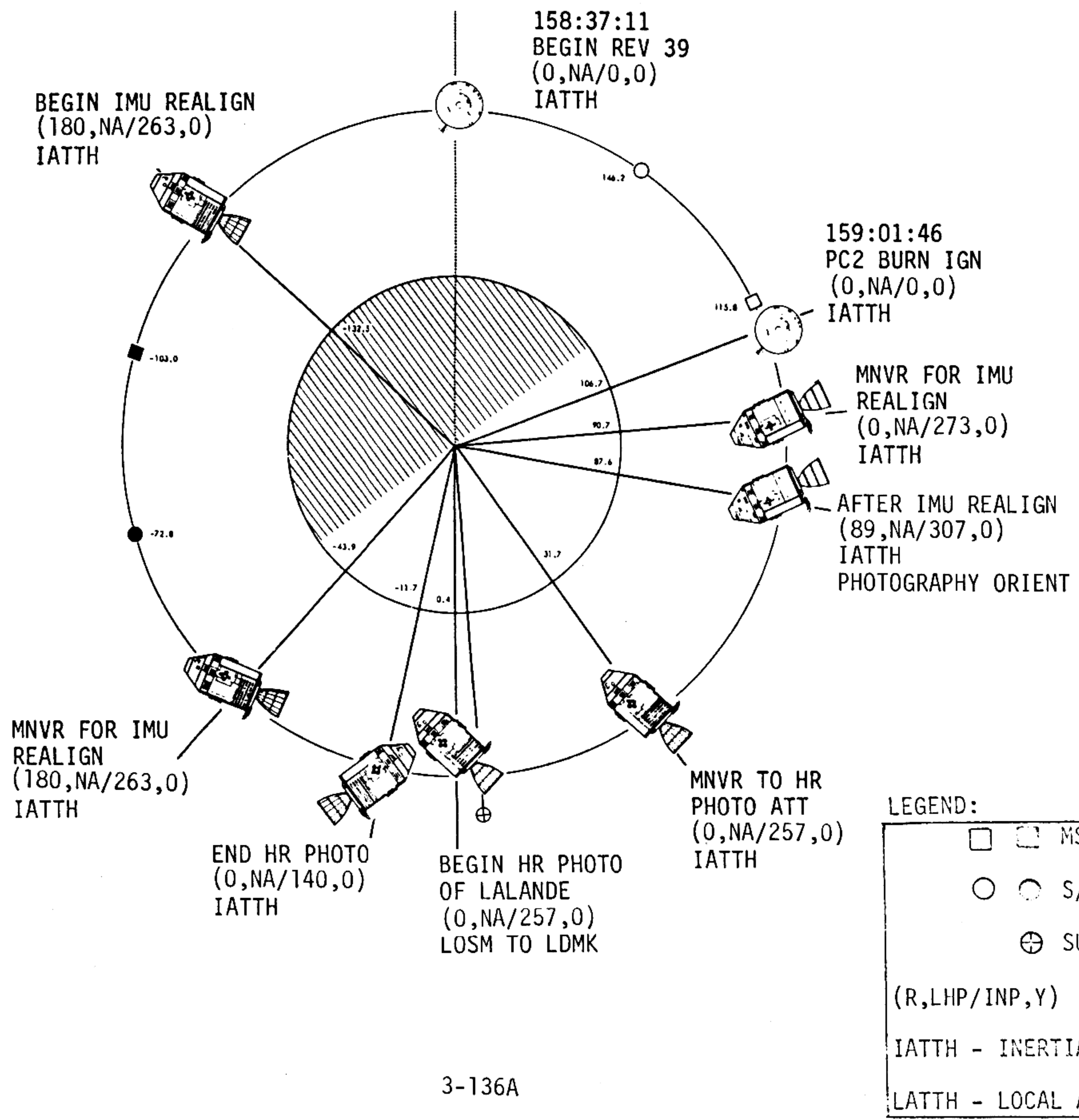
# FLIGHT PLAN

CSM PLANE CHANGE #2  
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TAKEOVER	+10° TAKEOVER	BT + 1 SEC	NO TRIM

TABLE 3-10  
3-136

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3-136A

REVISION B

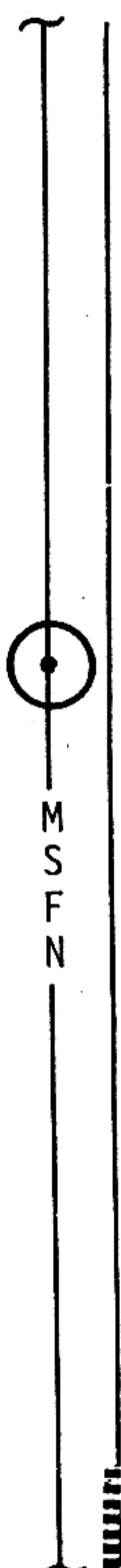
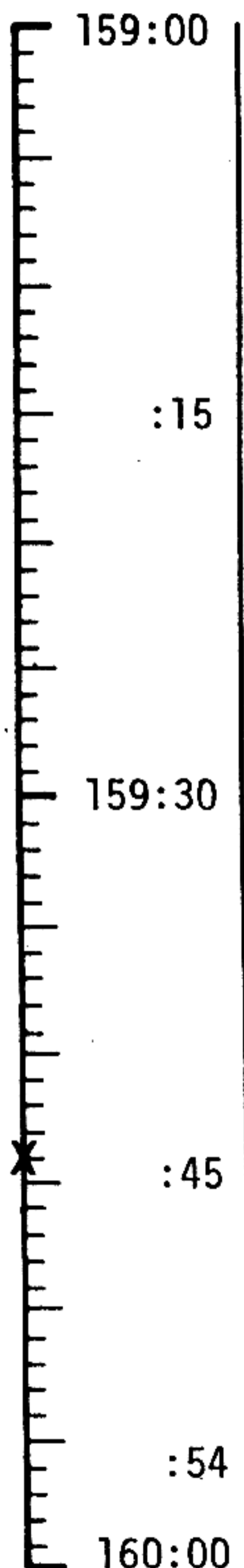
MCC-H

0122 CST

# FLIGHT PLAN

## NOTES

UPLINK TO CSM  
 DESIRED ORIENT  
 (PHOTOGRAPHY)  
 DUMP DSE  
 UPDATE TO CSM  
 TIME-HI RESOLUTION  
 PHOTO



### CSM PLANE CHANGE #2

TIG: 159:01:46.0  
 BT : 18.0 SEC  
 $\Delta V_R$ : 360.0 FPS  
 ULLAGE: 4 JET 11 SEC  
 ORBIT: 58.6 X 56.5 NM

T1 IS 3 MINUTES  
 PRIOR TO TCA  
 T2 IS 1 MINUTE  
 AFTER TCA  
 EL CAM TO BE MANUALLY  
 ACTUATED AT APPROX.  
 20 SECOND INTERVALS

MNVR TO P52 ATT BY 159:07 R 0  
 P52 IMU REALIGN P 273  
 OPTION 1 PREFERRED Y 0  
 GYRO TORQUE HGA P 3, Y 281

BURN STATUS REPORT  
 REPORT GYRO TORQUING ANGLES (P52 @158:15)  
 V66 TRANSFER CSM TO LM SLOT  
 SET COAS FOR (+) 10 DEG LOS  
 LiOH CANISTER CHANGE NO 12  
 14 INTO B, STOW 12 IN A3  
 START EAT PERIOD  
 MNVR TO ATT FOR LALANDE PHOTOGRAPHY  
 BY 159:26 (FOR T1) R 0 OMNI D

HI RESOLUTION PHOTO  
 LALANDE  
 T1 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
 T2 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
 R \_\_\_\_\_, P \_\_\_\_\_, Y \_\_\_\_\_

159:30

TRACK LALANDE THRU COAS AND START  
 CAMERAS AT T1. STOP CAMERAS AT T2

### BURN STATUS REPORT

X	X	<input type="checkbox"/>	•	$\Delta$ TIG
X	X		•	BT
<input type="checkbox"/>			•	$V_{gx}$
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
<input type="checkbox"/>			•	$V_{gx}$
<input type="checkbox"/>			•	$V_{gy}$
<input type="checkbox"/>			•	$V_{gz}$
<input type="checkbox"/>			•	$\Delta V_C^*$
X	X	X		FUEL*
X	X	X		OX*
X	X	X		UNBAL

MNVR TO P52 ATT BY 159:51

R 180 HGA  
 P -56  
 Y 0 Y 186

\*ITEMS TO BE REPORTED TO MSFN

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APOLLO 12	FINAL (REV 14)	OCTOBER 15, 1969	159:00 - 160:00	7/39	3-137



STEREO STRIP PHOTOGRAPHY  
REV 40

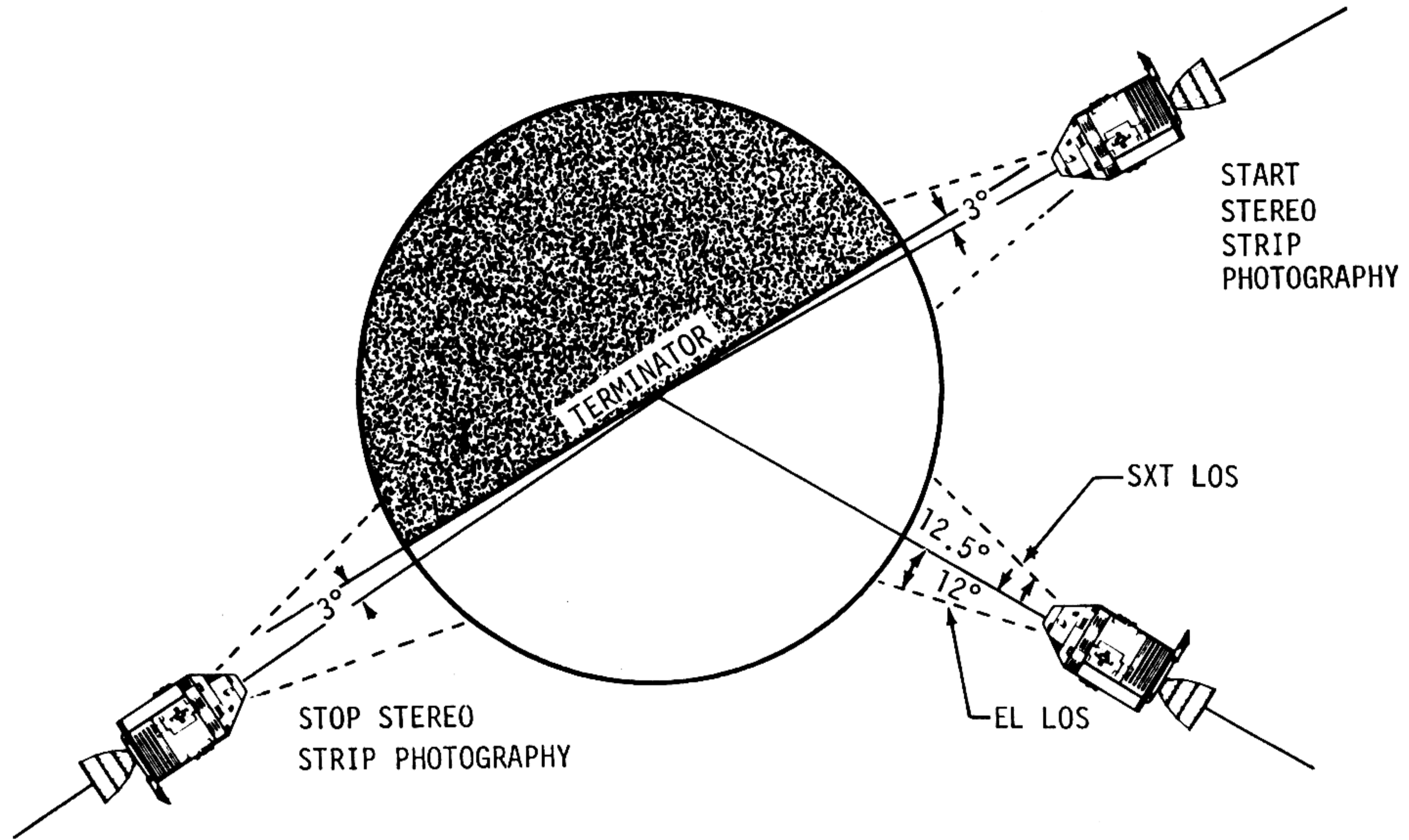


FIGURE 3-5  
3-138

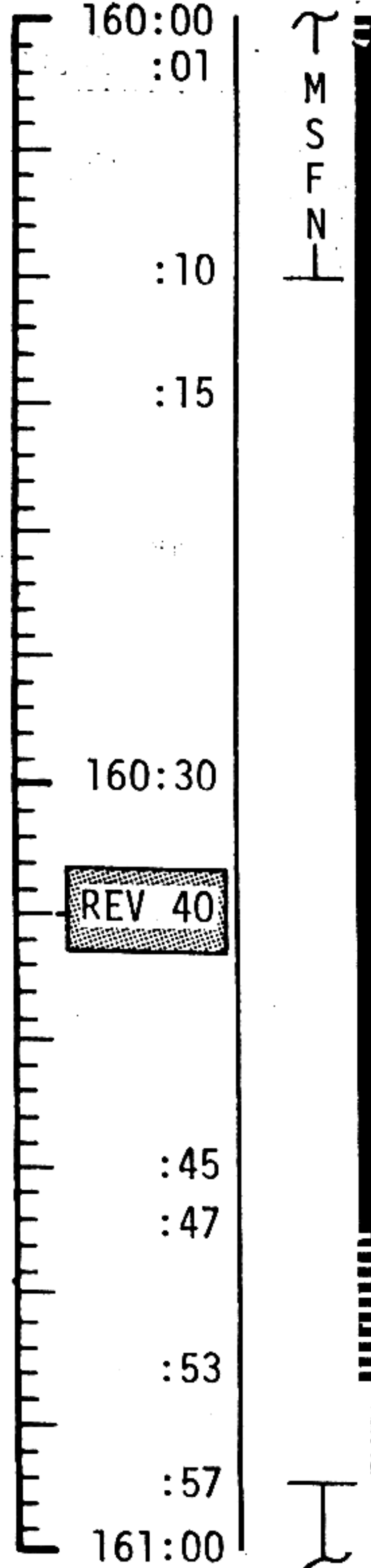
MCC-H

0222 CST

# FLIGHT PLAN

NOTES

UPDATE TO CSM  
STEREO PHOTO TIME  
MAP UPDATE REV 40



SETUP EL CAMERA FOR STEREOSCOPIC STRIP PHOTOGRAPHY (RH RNDZ WINDOW)  
CM4/EL/80/BW-BRKT, INTR, (f4,250,∞),180  
VERIFY DSE AT LOS

SET UP DAC FOR SXT/DAC PHOTOGRAPHY  
CM/DAC/SXT/CEX, (FIXED,60, FIXED), 1FPS(1MAG=93MIN)

P52 IMU REALIGN  
OPTION 3 REFSMMAT

GDC ALIGN TO IMU

ZERO OPTICS & MANUALLY SET SA=0°, TR=45°

V83E ALIGN FDAI #1  
ORDEAL R 0, P270/NA, Y 0  
V79E R1 = -0.0507  
R2 = +000.50  
R3 = +11111

SELECT OMNI D  
V06N65 AT GROUND TERMINATOR  
BEGIN PHOTOGRAPHY AT GROUND TERMINATOR (+)1 MIN(T1)  
RECORD START TIME \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ GET  
V16N91 AT GROUND TERMINATOR (+) 2 MINUTES

STEREO PHOTO		
T1	---	---
T2	---	---

MAP UPDATE REV <u>40</u>		
LOS	:	---
180°	:	---
AOS	:	---

P52 (PHOTOGRAPHY ORIENT)	
N71:	---
N05:	---
N93:	---
X	---
Y	---
Z	---
GET	---

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	160:00 - 161:00	7/39-40	3-139

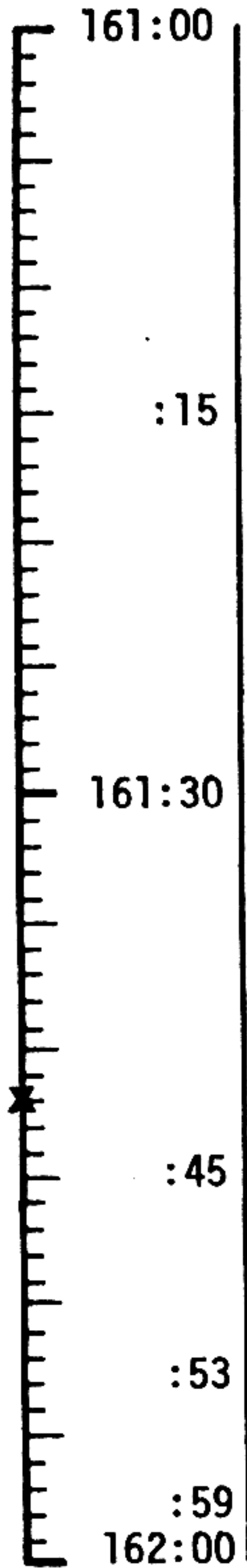
MCC-H

0322 CST

# FLIGHT PLAN

## NOTES

MAP UPDATE REV	<u>41</u>
LOS	: _____ : _____ : _____
180°	: _____ : _____ : _____
AOS	: _____ : _____ : _____



DAC SHUTTER SPEED 125 GET 161:06  
(GET \_\_\_\_\_ : \_\_\_\_\_)

DAC SHUTTER SPEED 250 GET 161:16  
(GET \_\_\_\_\_ : \_\_\_\_\_)

STEREO STRIP  
PHOTOGRAPHY

DAC SHUTTER SPEED 125 GET 161:34 OMNI B  
(GET \_\_\_\_\_ : \_\_\_\_\_)

DAC SHUTTER SPEED 60 GET 161:38  
(GET \_\_\_\_\_ : \_\_\_\_\_)

V06N65 AT GROUND TERMINATOR (-) 90 SECONDS  
END STRIP PHOTOGRAPHY AT GROUND TERMINATOR(-)1 MINUTE (T2)

GO INERTIAL R 0, P 143, Y 0

HGA P -64, Y 173

RECORD STOP TIME \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ GET

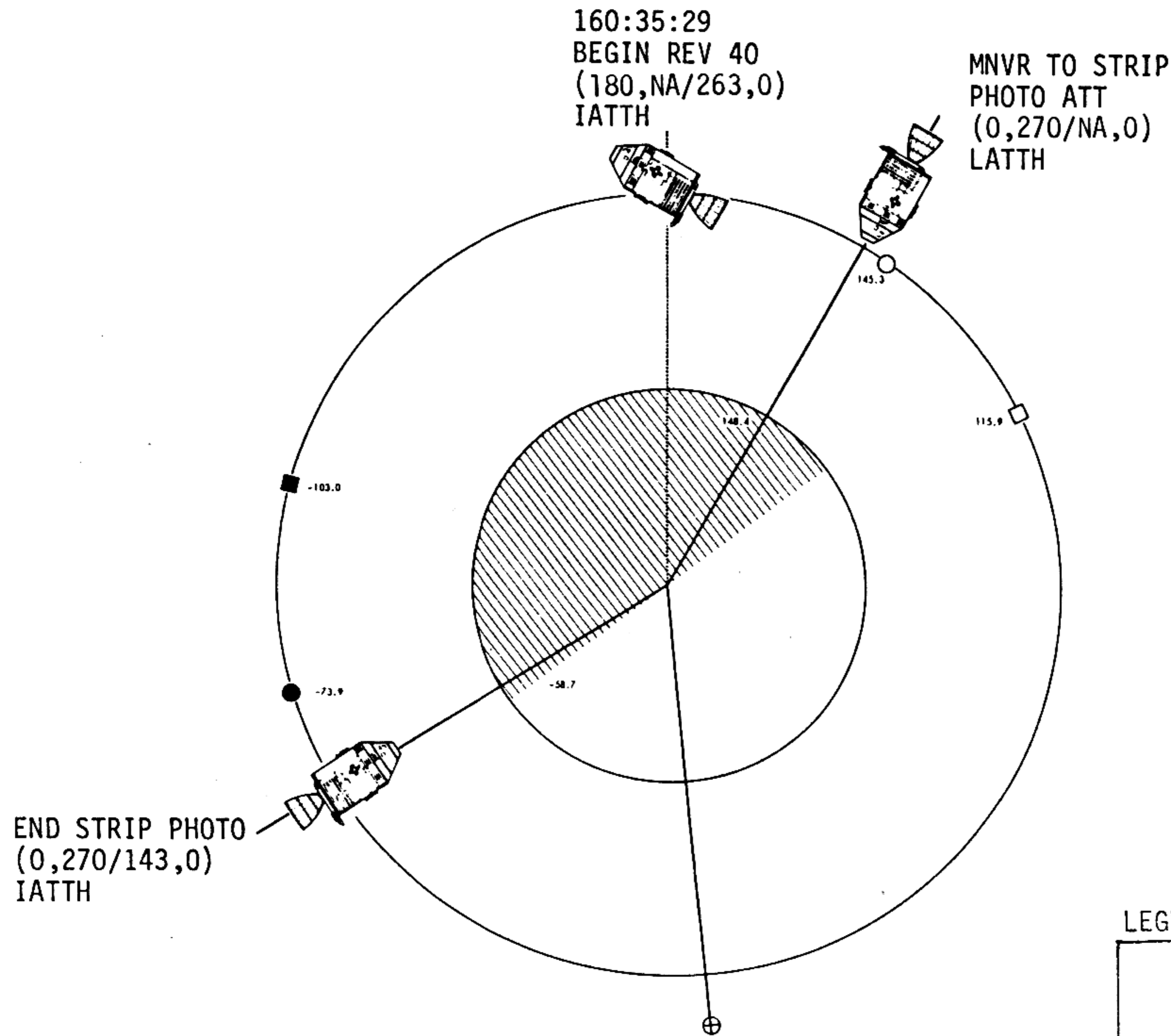
UPDATE TO CSM  
MAP UPDATE REV41  
TEI 43 PAD

DUMP DSE

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APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	161:00 - 162:00	7/40	3-140

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# REV 40



### LEGEND:

□	MSFN AOS, LOS
○	S/C SUNRISE, SUNSET
⊕	SUBEARTH POINT
(R,LHP/INP,Y)	
IATTH - INERTIAL ATTITUDE HOLD	
LATTH - LOCAL ATTITUDE HOLD	

3-140A

REVISION B

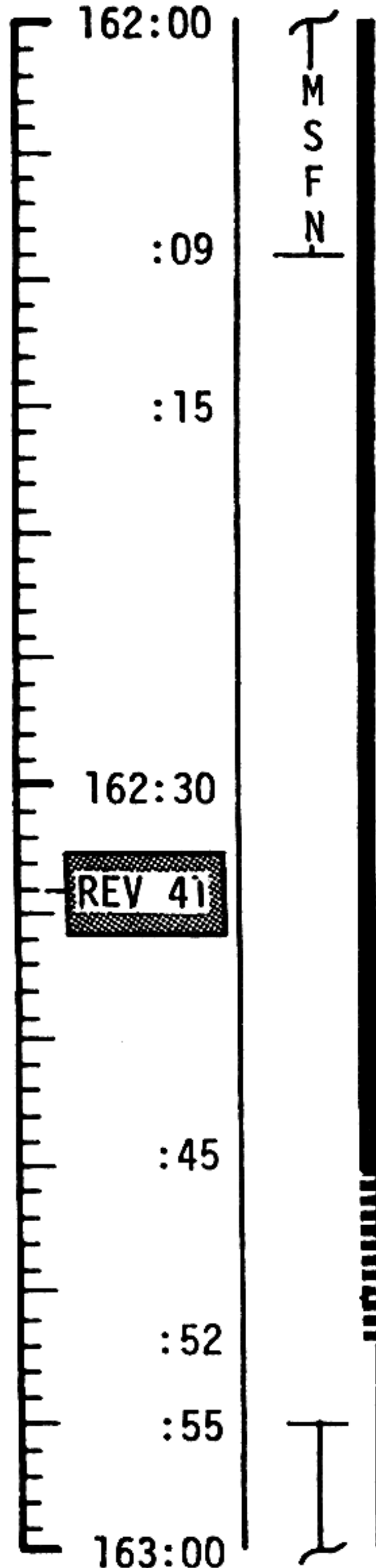
MCC-H

0422 CST

# FLIGHT PLAN

NOTES

UPDATE TO CSM  
TIME - HIGH  
RESOLUTION PHOTOS



REPORT GYRO TORQUING ANGLES

VERIFY DSE MOTION AT LOS

SETUP DAC IN LH RNDZ WINDOW (OBLIQUE PHOTOGRAPHY)  
CM2/DAC/18/BW-BRKT,MIR,(f8, 125,∞),6FPS  
(1.5 MAG-24 MIN.)

SETUP COAS (LH RNDZ WINDOW) FOR (+) 10 DEGREES

SETUP EL CAMERA IN RH RNDZ WINDOW  
(HIGH RESOLUTION PHOTOGRAPHY)  
CM4/EL/500/BW-BRKT,CONT,(f8,125,∞),150

REACQUIRE MSFN  
HGA P -64, Y 173

HI RESOLUTION PHOTO  
DESCARTES

T1 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
T2 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
R \_\_\_\_\_, P \_\_\_\_\_, Y \_\_\_\_\_

HI RESOLUTION PHOTO  
FRA MAURO

T1 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
T2 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_  
R \_\_\_\_\_, P \_\_\_\_\_, Y \_\_\_\_\_

T1 IS 3 MINUTES  
BEFORE TCA

T2 IS 1 MINUTE  
AFTER TCA

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HIGH RESOLUTION PHOTOGRAPHY  
REV 41

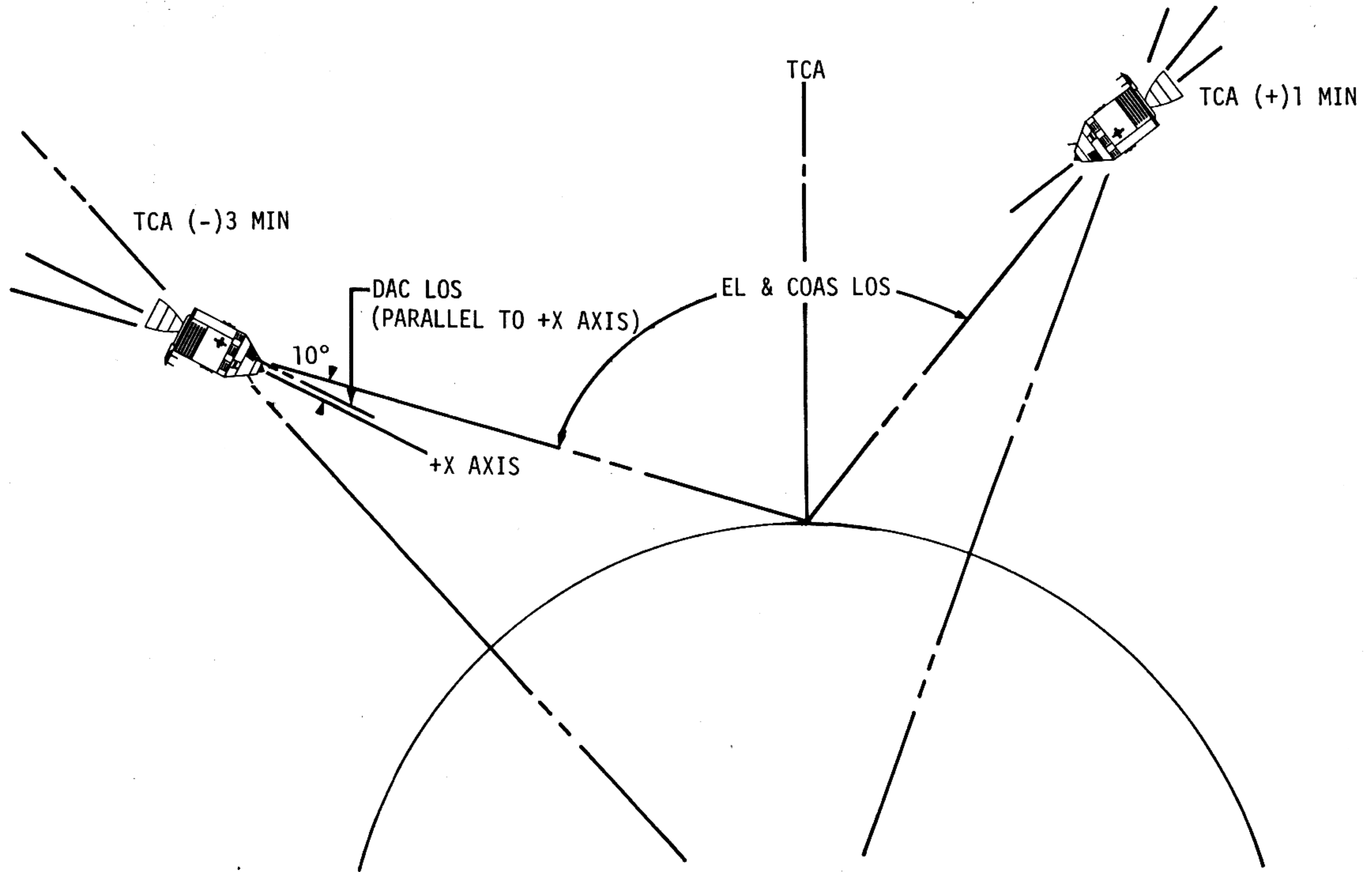


FIGURE 3-4  
3-142

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162:33:34  
 BEGIN REV 41  
 (0,NA/143,0)  
 IATTH

BEGIN IMU REALIGN  
 (0,NA/56,0)  
 IATTH

MNVR FOR IMU  
 REALIGN  
 (0,NA/56,0)  
 IATTH

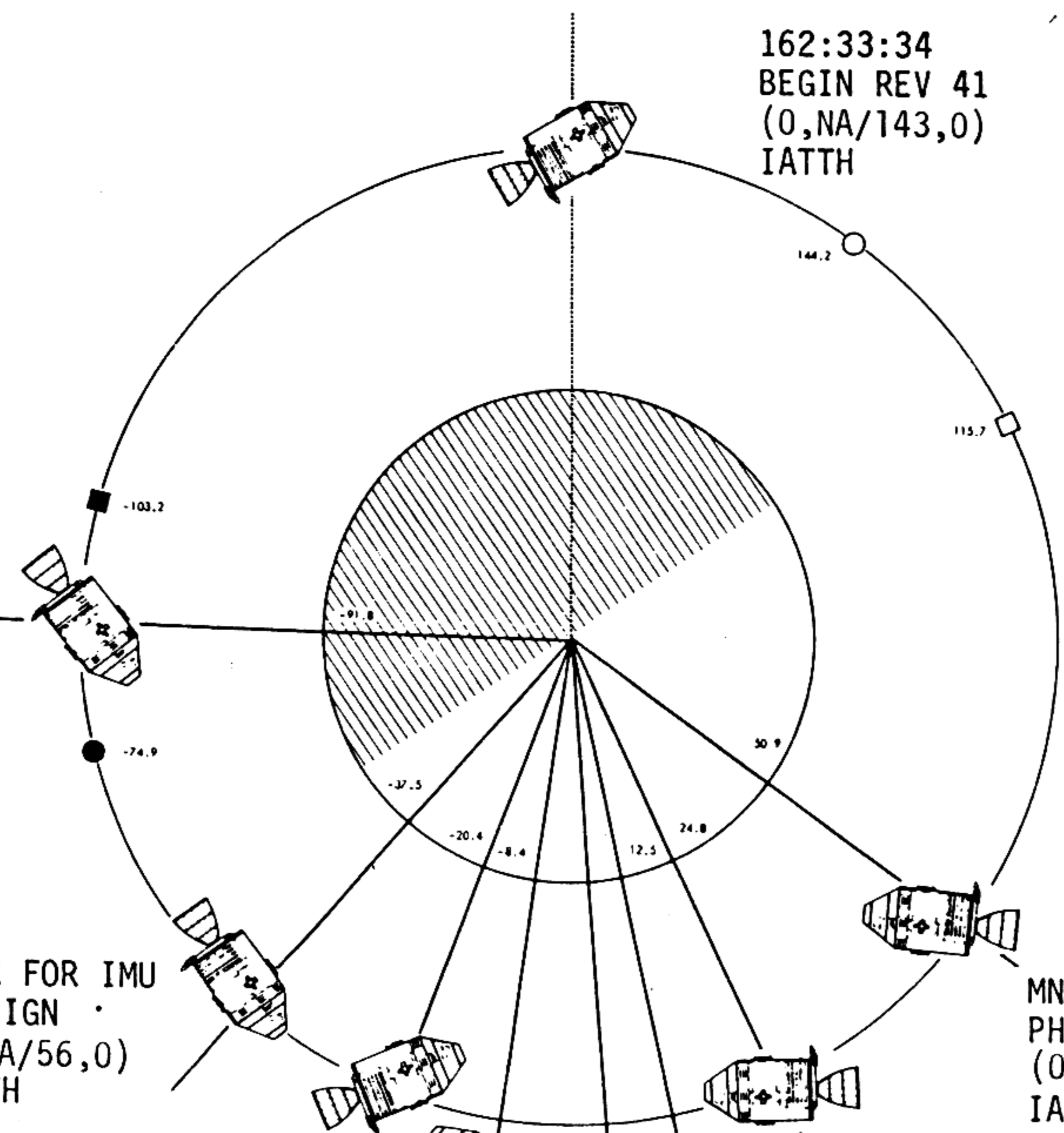
END HR PHOTO  
 (0,NA/135,0)  
 IATTH

BEGIN HR PHOTO  
 OF FRA MAURO  
 (0,NA/250,0)  
 LOSM TO LDMK

END HR PHOTO  
 (0,NA/167,0)  
 IATTH

BEGIN HR PHOTO  
 OF DESCARTES  
 (0,NA/283,0)  
 LOSM TO LDMK

MNVR TO HR  
 PHOTO ATT  
 (0,NA/283,0)  
 IATTH



LEGEND:

□	■	MSFN AOS, LOS
○	●	S/C SUNRISE, SUNSET
⊕		SUBEARTH POINT
(R,LHP/INP,Y)		
IATTH - INERTIAL ATTITUDE HOLD		
LATTH - LOCAL ATTITUDE HOLD		

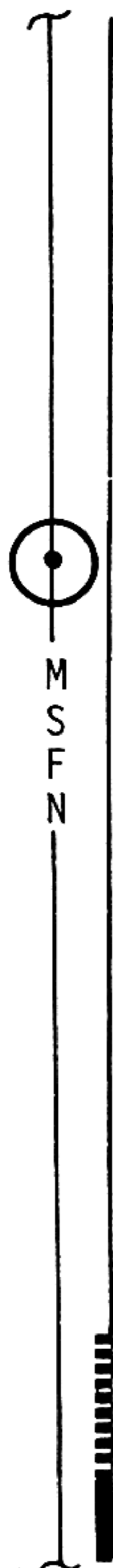
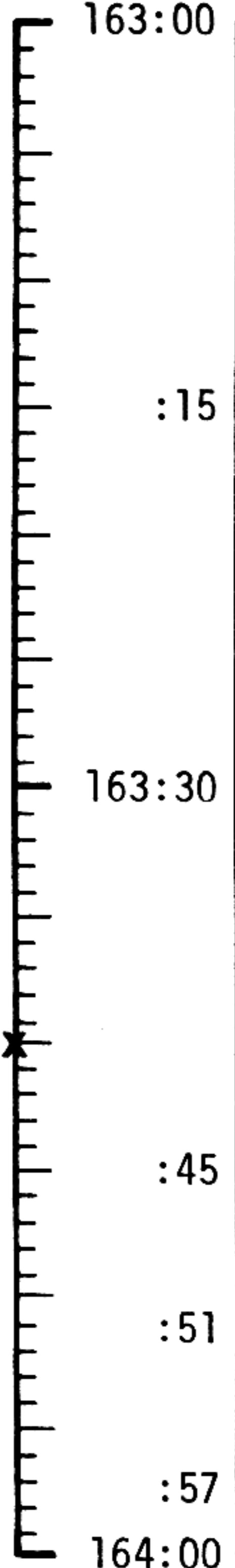
MCC-H

0522 CSI

# FLIGHT PLAN

NOTES

DUMP DSE



MNVR-TO ATT FOR DESCARTES PHOTOGRAPHY BY 163:16

OMNI D

R	<u>0</u>
P	<u>283</u>
Y	<u>0</u>

MAP UPDATE REV 42

LOS	:	---	:	---	:	---
180°	:	---	:	---	:	---
AOS	:	---	:	---	:	---

UPDATE TO CSM  
MAP UPDATE REV 42

PCM-LBR

TRACK DESCARTES THRU COAS AND START  
CAMERA AT T1, STOP CAMERAS AT T2  
MNVR TO ATTITUDE FOR FRA MAURO PHOTO BY 163:33

R 0, P 250, Y 0 OMNI D

TRACK FRA MAURO THRU COAS AND  
START CAMERA AT T1, STOP CAMERA  
AT T2

V64 ACQUIRE MSFN @ PITCH = 135°  
MNVR TO P52 ATT BY 163:45

R	<u>0</u>
P	<u>56</u>
Y	<u>0</u>

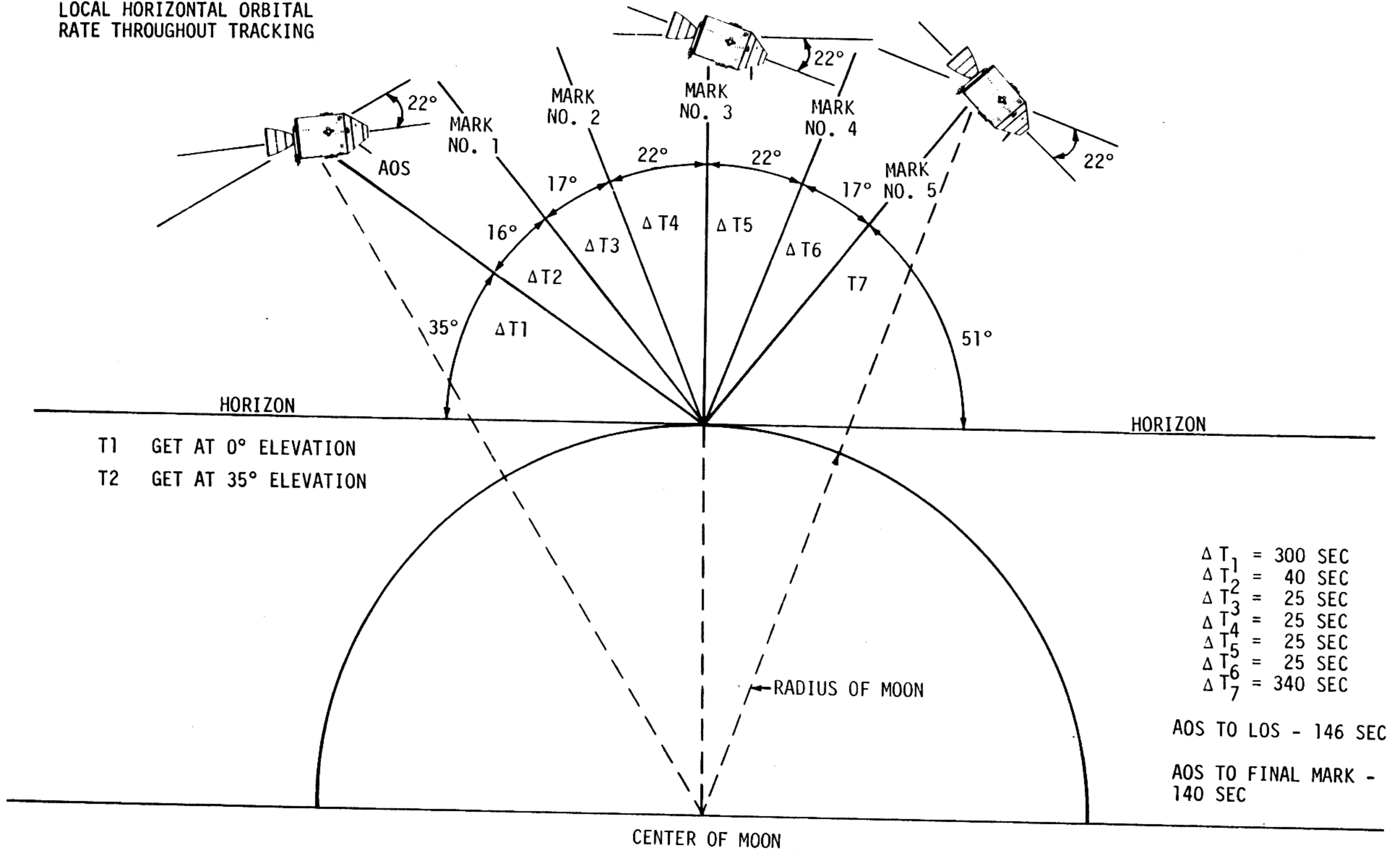
UPDATE TO CSM  
LDMK TRACK PAD

UPLINK TO CSM  
CSM STATE VECTOR  
& V66

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
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# CSM LANDMARK TRACKING PROFILE

22 DEG PITCH DOWN FROM  
LOCAL HORIZONTAL ORBITAL  
RATE THROUGHOUT TRACKING



T1 GET AT 0° ELEVATION  
T2 GET AT 35° ELEVATION

- Δ T<sub>1</sub> = 300 SEC
- Δ T<sub>2</sub> = 40 SEC
- Δ T<sub>3</sub> = 25 SEC
- Δ T<sub>4</sub> = 25 SEC
- Δ T<sub>5</sub> = 25 SEC
- Δ T<sub>6</sub> = 25 SEC
- Δ T<sub>7</sub> = 340 SEC

AOS TO LOS - 146 SEC

AOS TO FINAL MARK -  
140 SEC

CENTER OF MOON  
FIGURE 3-3  
3-144

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P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{60}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -5.667° \_\_\_\_\_ .

LONG/2 +56.000° \_\_\_\_\_ .

ALT +0.00 NM \_\_\_\_\_ .

# CP-1

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{125}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -10.250° \_\_\_\_\_ .

LONG/2 +28.091° \_\_\_\_\_ .

ALT +0.81NM \_\_\_\_\_ .

# CP-2

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{250}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -8.883° \_\_\_\_\_ .

LONG/2 +7.775° \_\_\_\_\_ .

ALT -1.70NM \_\_\_\_\_ .

# DE-1

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{60}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -3.228° \_\_\_\_\_ .

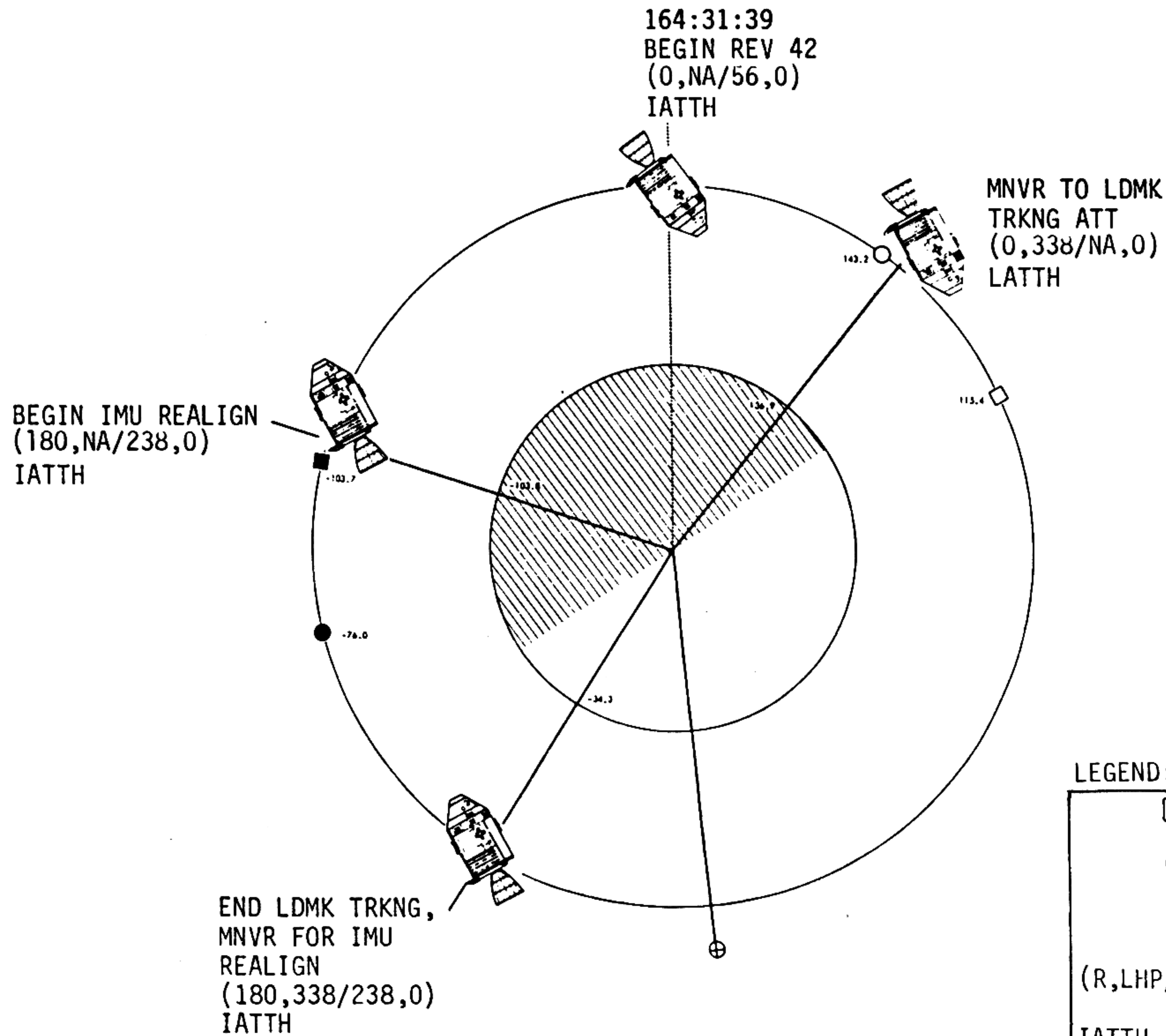
LONG/2 -8.665° \_\_\_\_\_ .

ALT -1.56NM \_\_\_\_\_ .

# FM-1

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	164:00 - 165:00	7/41-42	3-145

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LEGEND:

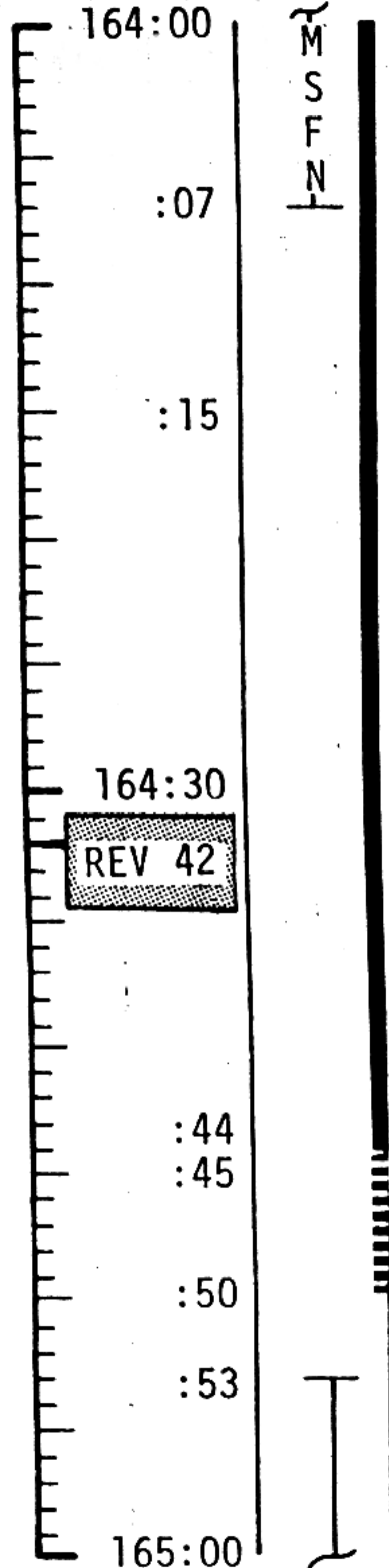
□	■	MSFN AOS, LOS
○	●	S/C SUNRISE, SUNSET
⊕		SUBEARTH POINT
(R,LHP/INP,Y)		
IATTH - INERTIAL ATTITUDE HOLD		
LATTH - LOCAL ATTITUDE HOLD		

MCC-H

0622 CST

# FLIGHT PLAN

NOTES



P52 IMU REALIGN  
OPTION 3 REFSMMAT

VERIFY DSE MOTION AT LOS

GDC ALIGN TO IMU  
O2 FUEL CELL PURGE

WASTE WATER DUMP

SET UP DAC FOR LDMK TRACKING PHOTOS THRU SXT  
CM/DAC/SXT/CEX, (SEE LDMK TRACK PAD) 1 FPS (1MAG-88MIN)

P52 (PHOTOGRAPHY ORIENT)

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

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

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

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

SELECT OMNI D

MNVR TO LDMK TRACK ATT BY 164:46  
GO ORB RATE-

R 0  
P 338/NA  
Y 0

TRACK LDMK CP-1  
DO NOT PRO ON FINAL  
N89  
25 SECONDS BETWEEN MARKS  
5 MARKS

START DAC @ T2 (-) 1 MIN

LDMK IS AT ~14.5°  
SUN ANGLE  
STOP DAC AFTER MARK 5

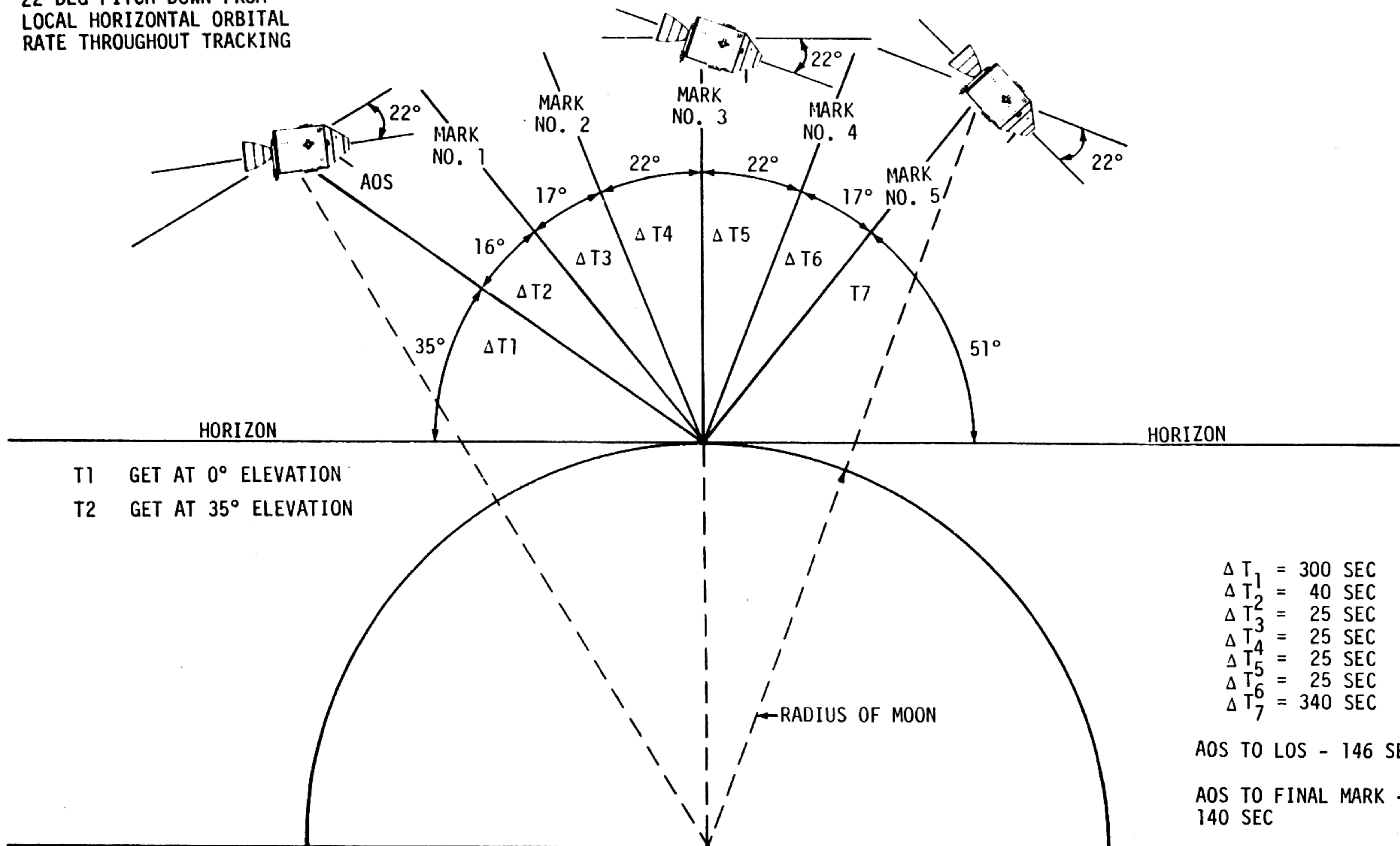
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
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### CSM LANDMARK TRACKING PROFILE

22 DEG PITCH DOWN FROM LOCAL HORIZONTAL ORBITAL RATE THROUGHOUT TRACKING



T1 GET AT 0° ELEVATION  
T2 GET AT 35° ELEVATION

- $\Delta T_1 = 300 \text{ SEC}$
- $\Delta T_2 = 40 \text{ SEC}$
- $\Delta T_3 = 25 \text{ SEC}$
- $\Delta T_4 = 25 \text{ SEC}$
- $\Delta T_5 = 25 \text{ SEC}$
- $\Delta T_6 = 25 \text{ SEC}$
- $\Delta T_7 = 340 \text{ SEC}$

AOS TO LOS - 146 SEC

AOS TO FINAL MARK - 140 SEC

CENTER OF MOON

FIGURE 3-3

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{60}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -5.667° \_\_\_\_\_ .

LONG/2 +56.000° \_\_\_\_\_ .

ALT +0.00 NM \_\_\_\_\_ .

**CP-1**

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{125}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -10.250° \_\_\_\_\_ .

LONG/2 +28.091° \_\_\_\_\_ .

ALT +0.81NM \_\_\_\_\_ .

**CP-2**

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{250}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -8.883° \_\_\_\_\_ .

LONG/2 +7.775° \_\_\_\_\_ .

ALT -1.70NM \_\_\_\_\_ .

**DE-1**

P22 MAN ACQ P dn 22° R0° Y0° ( $\frac{1}{60}$ )

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

T<sub>2</sub> \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

R \_\_\_\_\_ °P \_\_\_\_\_ °Y \_\_\_\_\_ °

N or S NM \_\_\_\_\_ SA \_\_\_\_\_ TA \_\_\_\_\_

CP \_\_\_\_\_ N89

LAT -3.228° \_\_\_\_\_ .

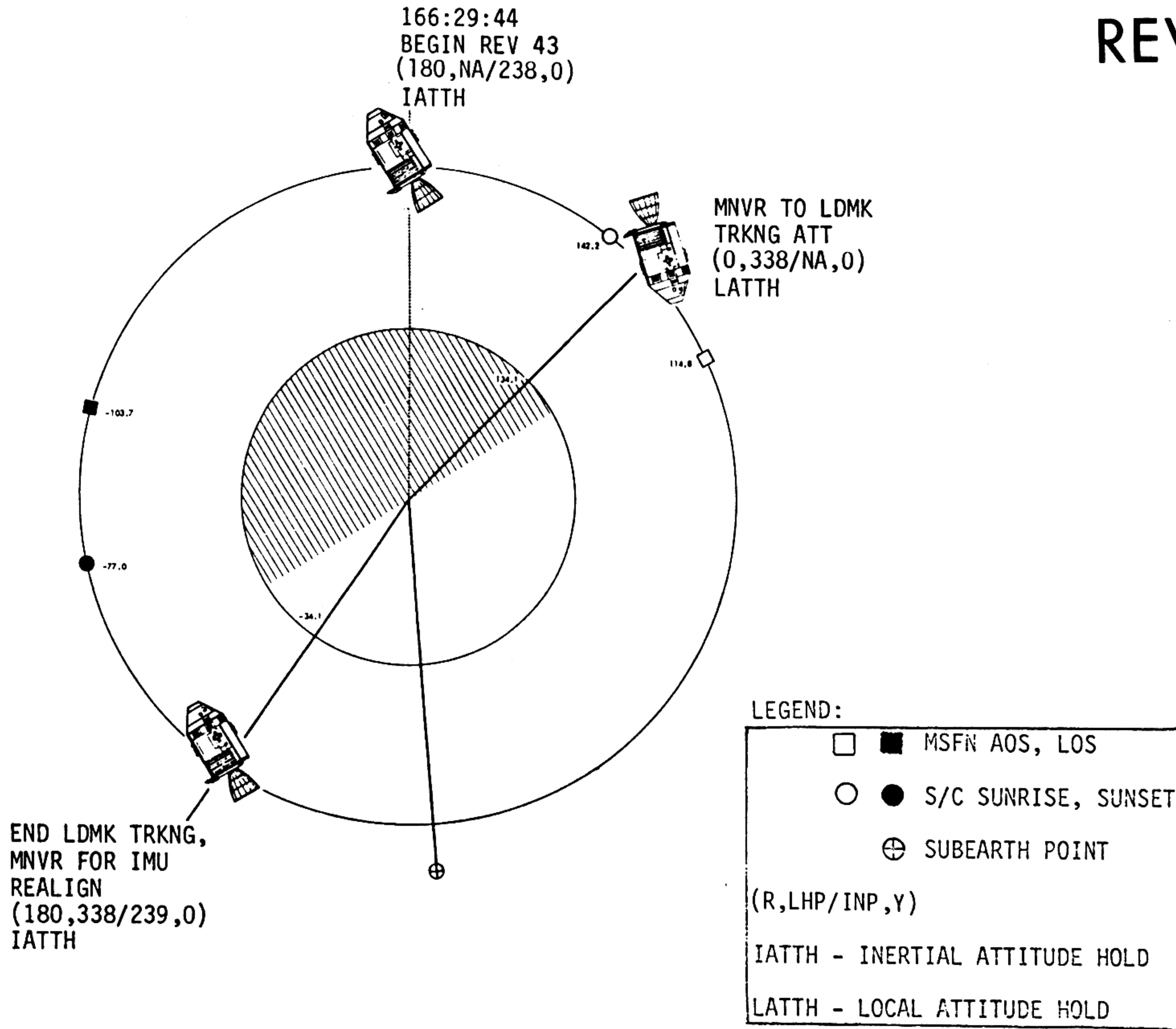
LONG/2 -8.665° \_\_\_\_\_ .

ALT -1.56NM \_\_\_\_\_ .

**FM-1**

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	166:00 - 167:00	7/42-43	3-149

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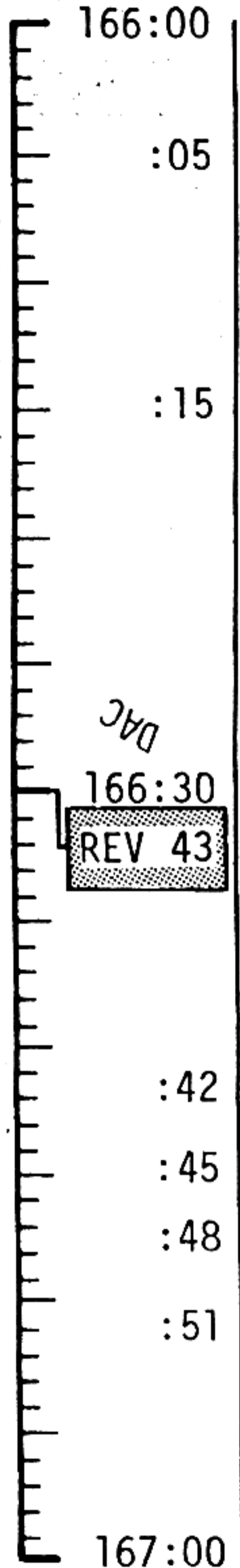
MCC-H

0822 CST

# FLIGHT PLAN

NOTES

UPLINK CSM  
STATE VECTOR  
& V66



VERIFY DSE MOTION AT LOS

P52 IMU REALIGN  
OPTION 3 REFSMMAT

GDC ALIGN TO IMU

EAT PERIOD

P52 (LDG SITE ORIENT)

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

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

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

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

SXT UP DAC FOR LDMK TRACKING PHOTO'S THRU SXT  
CM/DAC/SXT/CEX (SEE LDMK TRACK PAD) 1FPS

SELECT OMNI D

MNVR TO LDMK TRACK ATT BY 166:45  
GO ORB RATE

R 0

P 338/NA

Y 0

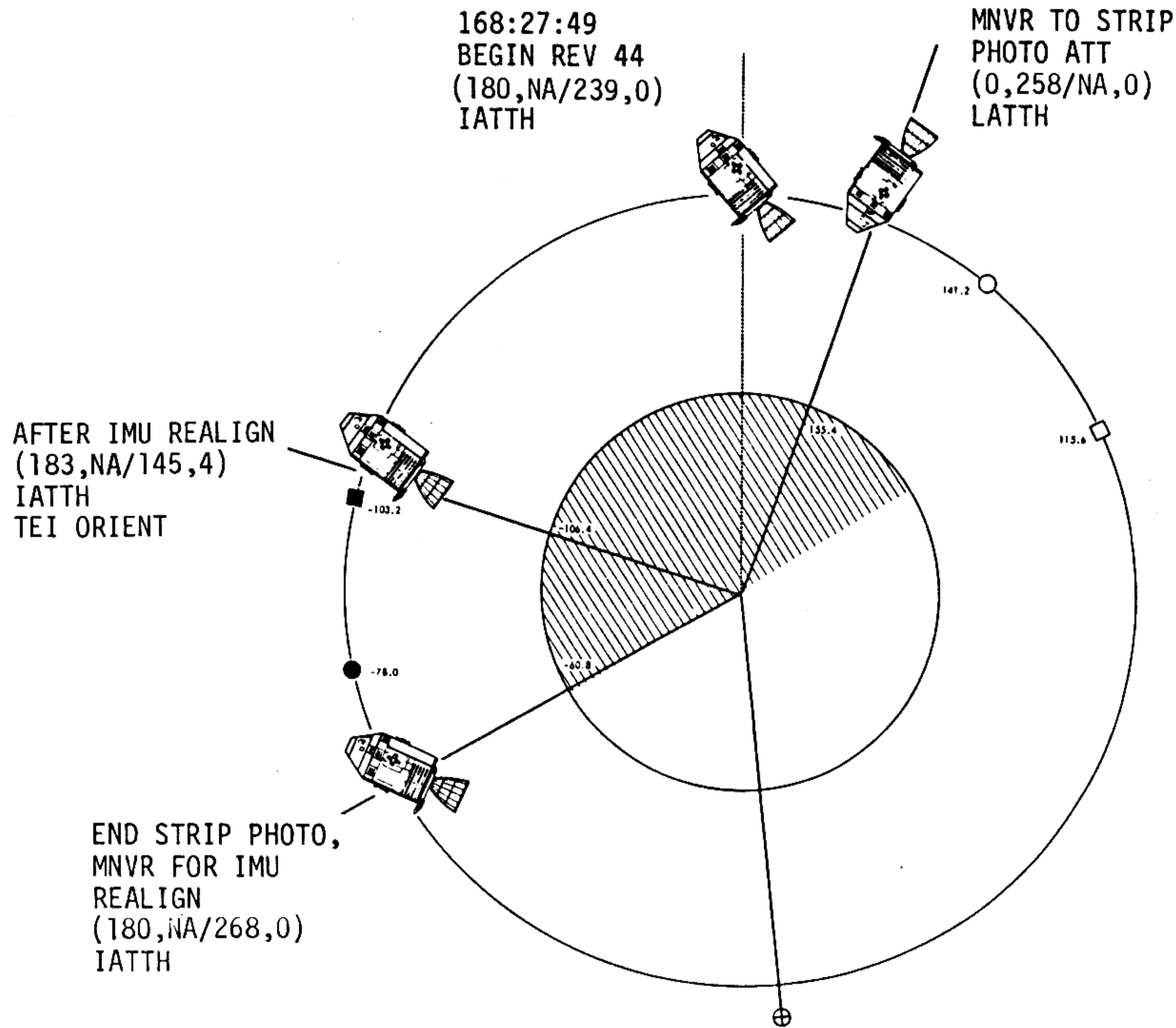
TRACK LDMK CP-1  
DO NOT PRO ON FINAL  
N89, 25 SEC BETWEEN  
MARKS  
5 MARKS

START DAC @ T2 (-) 1 MIN

CP1 LDMK IS  
AT ~ 15.5° SUN ANGLE  
STOP DAC AFTER MARK 5

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	166:00 - 167:00	7/42-43	3-150







STEREO STRIP PHOTOGRAPHY  
REV 44

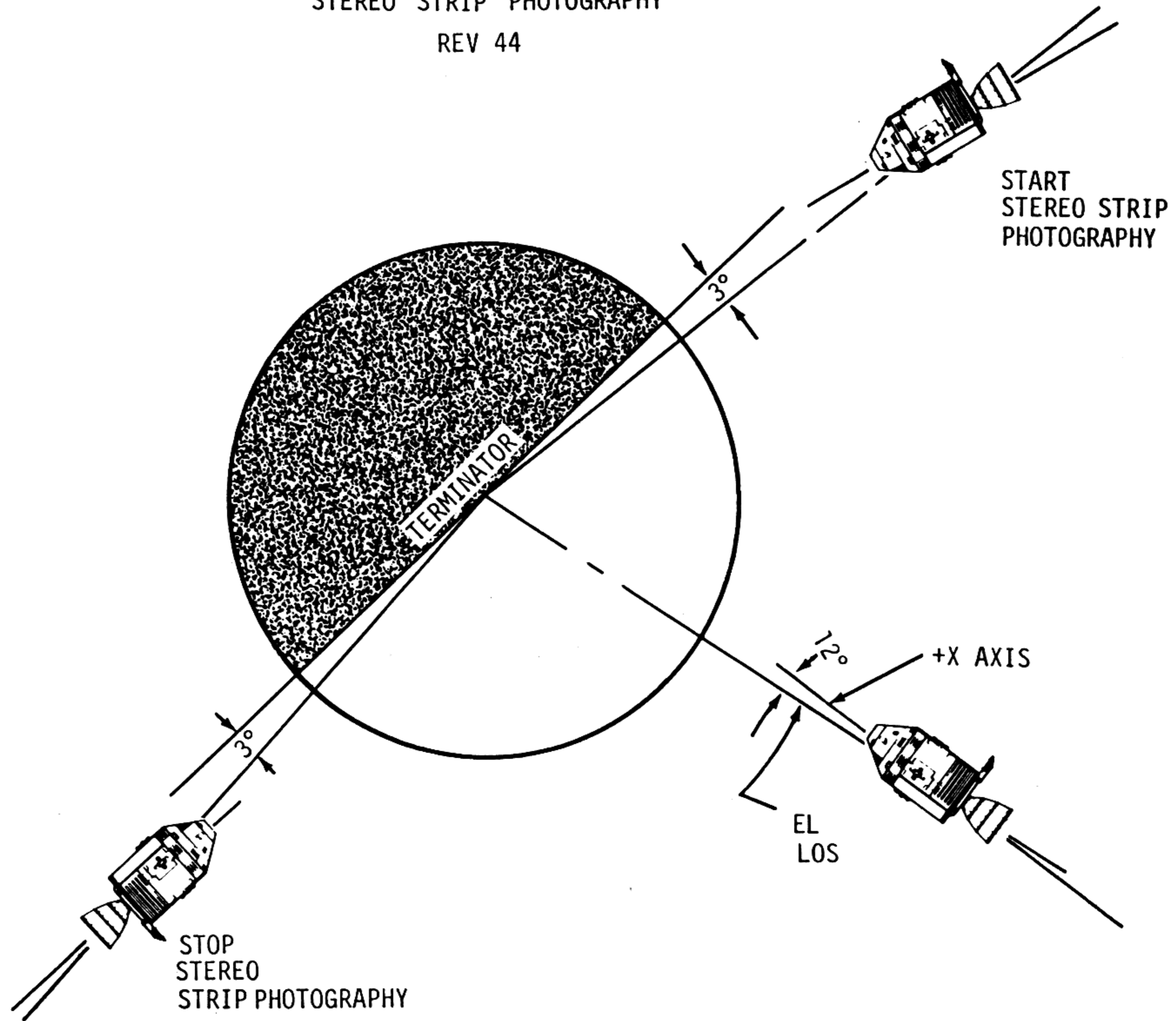


FIGURE 3-5  
3-152

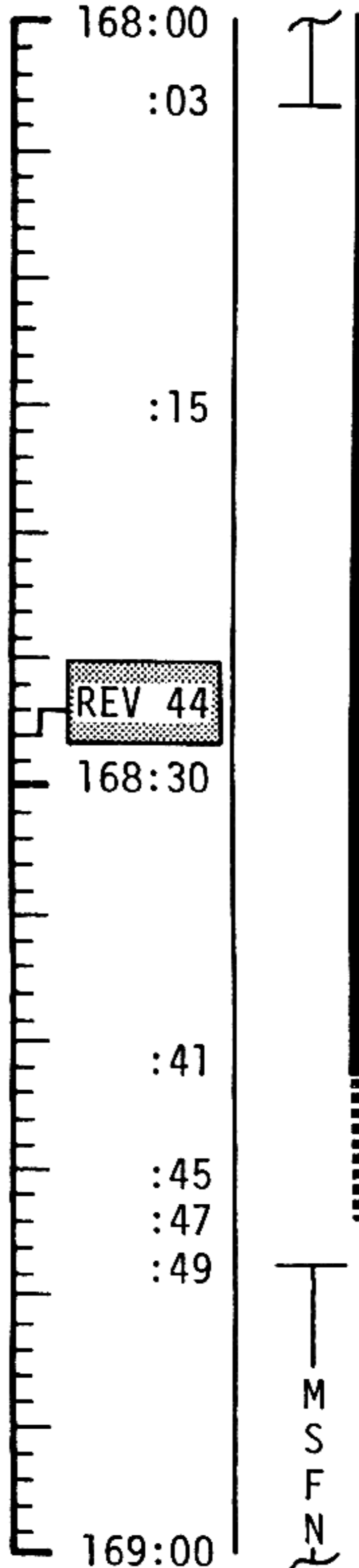
MCC-H

1022 CST

# FLIGHT PLAN

NOTES

UPDATE TO CSM  
STEREO PHOTO TIME  
PCM-LBR



VERIFY DSE MOTION AT LOS

SETUP EL CAMERA FOR STEREO STRIP  
PHOTOGRAPHY (RH RNDZ WINDOW)  
CM4/EL/80/BW-BRKT,INTR(f4,250,∞),180

MNVR TO PHOTOGRAPHIC ATTITUDE BY 168:36

R 0  
P 258/NA  
Y 0

V83E  
ALIGN FDAI #1  
ESTABLISH ORB RATE  
V79E R1 = -0.0507  
R2 = +000.50  
R3 = +11111

SELECT OMNI D

VO6N65 AT GROUND TERMINATOR  
BEGIN PHOTOGRAPHY AT GROUND TERMINATOR (+) 1 MIN T1

RECORD START TIME \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ GET

STEREO PHOTO			
T1:	---	---	GET
T2:	---	---	GET

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	168:00 - 169:00	7/43-44	3-153

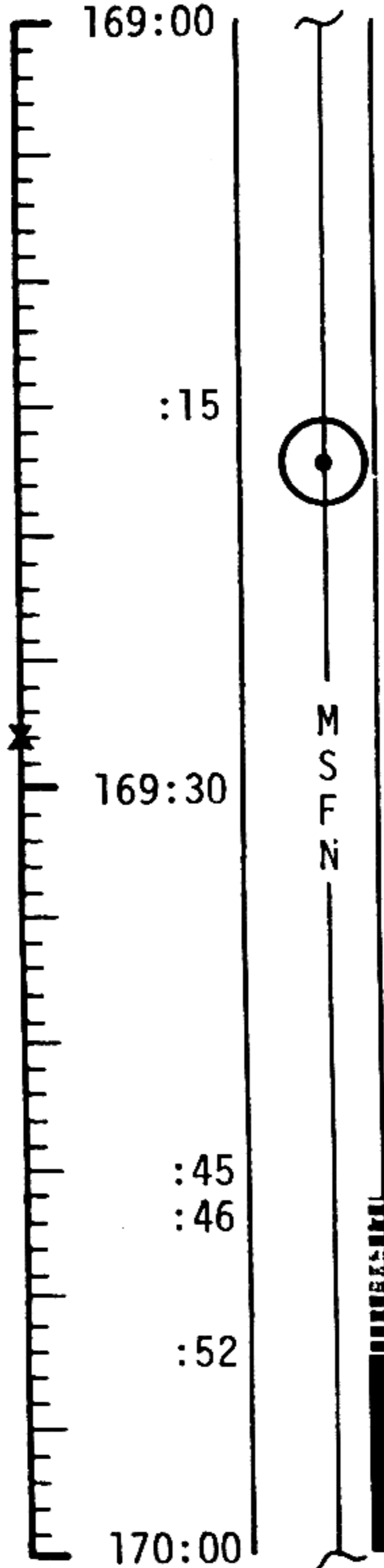
MCC-H

1122 CST

# FLIGHT PLAN

NOTES

UPDATE TO CSM  
MAP UPDATE REV 45  
TEI 45 PAD  
(PRELIMINARY)



STEREO STRIP  
PHOTOGRAPHY

N65 AT GROUND TERMINATOR (-)90 SEC  
END STEREO STRIP PHOTOGRAPHY AT GROUND TERMINATOR  
(-)1 MINUTE-T2

RECORD STOP TIME \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ GET

STOP PITCH

MNVR TO P52 ATT BY 169:47

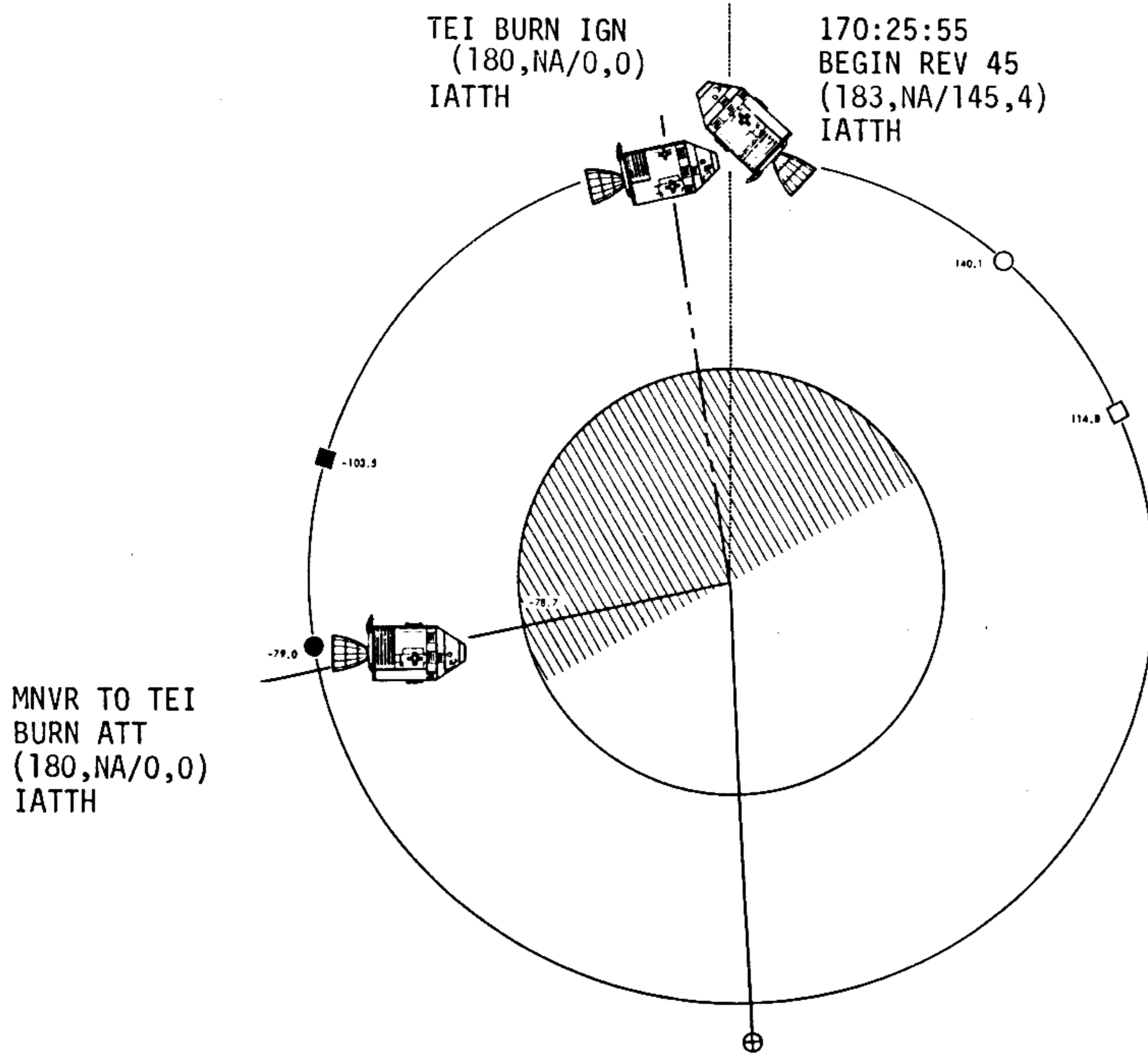
R	<u>180</u>	HGA
P	<u>268</u>	P <u>-55</u>
Y	<u>0</u>	Y <u>186</u>

UPLINK TO LM  
TEI DESIRED  
ORIENT

MAP UPDATE REV <u>45</u>		
LOS	:	_____ : _____ : _____
180°	:	_____ : _____ : _____
AOS	:	_____ : _____ : _____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	169:00 - 170:00	7/44	3-154

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MNVR TO TEI  
BURN ATT  
(180,NA/0,0)  
IATTH

TEI BURN IGN  
(180,NA/0,0)  
IATTH

170:25:55  
BEGIN REV 45  
(183,NA/145,4)  
IATTH

LEGEND:

□	■	MSFN AOS, LOS
○	●	S/C SUNRISE, SUNSET
⊕		SUBEARTH POINT
(R,LHP/INP,Y)		
IATTH - INERTIAL ATTITUDE HOLD		
LATTH - LOCAL ATTITUDE HOLD		

3-154A

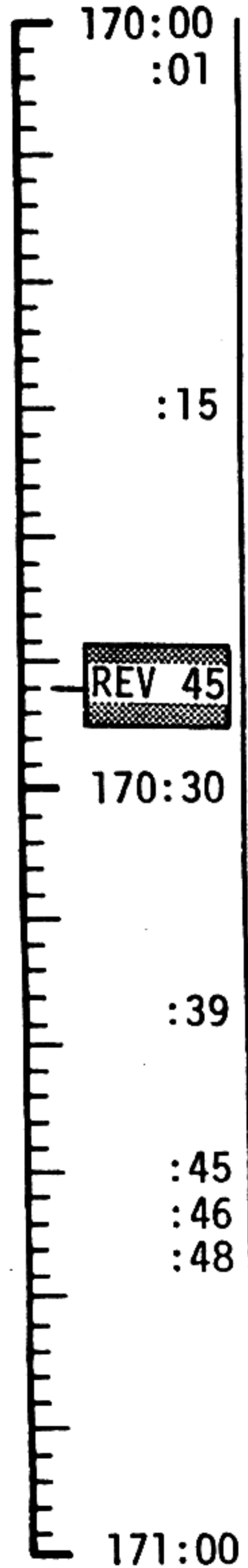
REVISION B

MCC-H

1222 CST

# FLIGHT PLAN

NOTES



I

VERIFY DSE MOTION AT LOS

P52 IMU REALIGN  
OPTION 1 PREFERRED

GDC ALIGN TO IMU

M  
S  
F  
N

REACQUIRE MSFN

HGA: P -55 Y 186

REPORT GYRO TORQUING ANGLES

P52 (TEI ORIENT)

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

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

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

X \_\_\_\_\_

Y \_\_\_\_\_

Z \_\_\_\_\_

GET \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_

DUMP DSE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	170:00 - 171:00	7/44-45	3-155

MCC-H

1322 CST

# FLIGHT PLAN

NOTES

171:00

:15

171:30

:45

:51

:59

172:00



UPDATE TO CSM  
 MAP UPDATE REV 46  
 TEI 45 MNVR PAD  
 (NOMINAL)  
 TEI 46 MNVR PAD

UPLINK TO CSM  
 STATE VECTOR & V66  
 TEI 45 TARGET LOAD

PRE TEI SYSTEMS CHECKS  
 C & W CHECK  
 CM RCS MONITOR CHECK  
 SM RCS MONITOR CHECK  
 ECS MONITOR CHECK

P30-EXTERNAL  $\Delta V$

V49-MNVR TO BURN ATT BY 171:51

R 180  
 P 0  
 Y 0

OMNI C

SXT STAR CHECK

P40-SPS THRUST  
 VERIFY DSE MOTION AT LOS

MAP UPDATE REV	<u>46</u>
LOS	_____ : _____ : _____
180°	_____ : _____ : _____
AOS WITH TEI	_____ : _____ : _____
AOS WITHOUT TEI	_____ : _____ : _____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	171:00 - 172:00	7/45	3-156

# FLIGHT PLAN

## TEI BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME		RESIDUALS
		UNDERBURN	OVERBURN	
10°/SEC TAKEOVER	+10° TAKEOVER	FOR G&N C/O >3 SEC EARLY & ΔVC >+50 FPS SWITCH TO SCS AUTO & RESTART SPS	BT + 2 SEC & ΔVC = -40 FPS	TRIM X AND Z AXIS TO 0.2 FPS

TABLE 3-11  
3-157

REVISION B



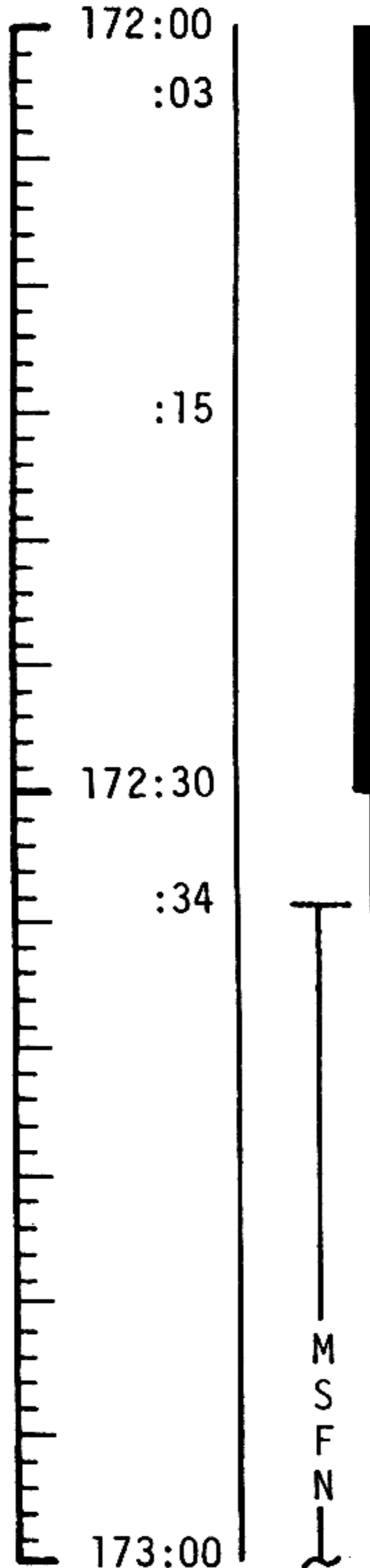
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MCC-H

1422 CST

# FLIGHT PLAN

NOTES



GDC ALIGN TO IMU

TIG: 172:21:14.7  
 BT: 02:08.9 SEC  
 $\Delta V_R$ : 3035.9 FPS  
 ULLAGE: 4 JETS, 12 SEC

**TEI**

V66 TRANSFER CSM SV TO LM SLOT

MNVR TO TV ATT BY 172:46  
 TV (MAD) 172:55 TO 173:15  
 CM4/TV-IN (f22)  
 (RH RNDZ WINDOW, HEADS DOWN)  
 TEI BURN STATUS REPORT  
 LiOH CANISTER CHANGE NO. 13  
 (15 INTO A, STOW 13 IN A4)

R 187      HGA  
 P 200      P -71  
 P 4        Y 11

UPLINK TO CSM  
DESIRED ORIENT  
(PTC)

BURN STATUS REPORT				
X	X	<input type="checkbox"/>	•	$\Delta TIG$ **
X	X		•	BT **
<input type="checkbox"/>			•	$V_{gx}$
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
<input type="checkbox"/>			•	$V_{gx}$ ***
<input type="checkbox"/>			•	$V_{gy}$ ***
<input type="checkbox"/>			•	$V_{gz}$ ***
<input type="checkbox"/>			•	$\Delta V_c$ *
X	X	X		FUEL *
X	X	X		OX *
X	X	X		UNBAL

\* ITEMS TO BE REPORTED TO MSFN  
 \*\* REPORT IF OFF MORE THAN ONE SECOND  
 \*\*\* REPORT IF > 0.2 FPS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	172:00 - 173:00	7/45-TEC	3-158

MCC-H

1522 CST

# FLIGHT PLAN

NOTES

173:00

:15

173:30

:45

174:00

M  
S  
F  
N

WIPE EXCESSIVE MOISTURE FROM  
TUNNEL HATCH AREA  
CONTAMINATION CONTROL

P52 - IMU REALIGN  
GYRO TORQUE

REPORT GYRO TORQUING ANGLES

MNVR TO PTC ATTITUDE P270  
START PTC Y 0

EAT PERIOD

PTC  
P 270 Y 0

P52 (PTC ORIENT)

N71: \_ \_ . \_ \_

N05: \_ \_ . \_ \_

N93:

X \_ \_ . \_ \_

Y \_ \_ . \_ \_

Z \_ \_ . \_ \_

GET \_ \_ : \_ \_ :

DUMP DSE

UPDATE TO CSM  
QUADS TO DISABLE  
FOR PTC (LOWEST  
QUANTITY PRPLNT)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	173:00 - 174:00	7/TEC	3-159

MSC Form 29 (May 69)

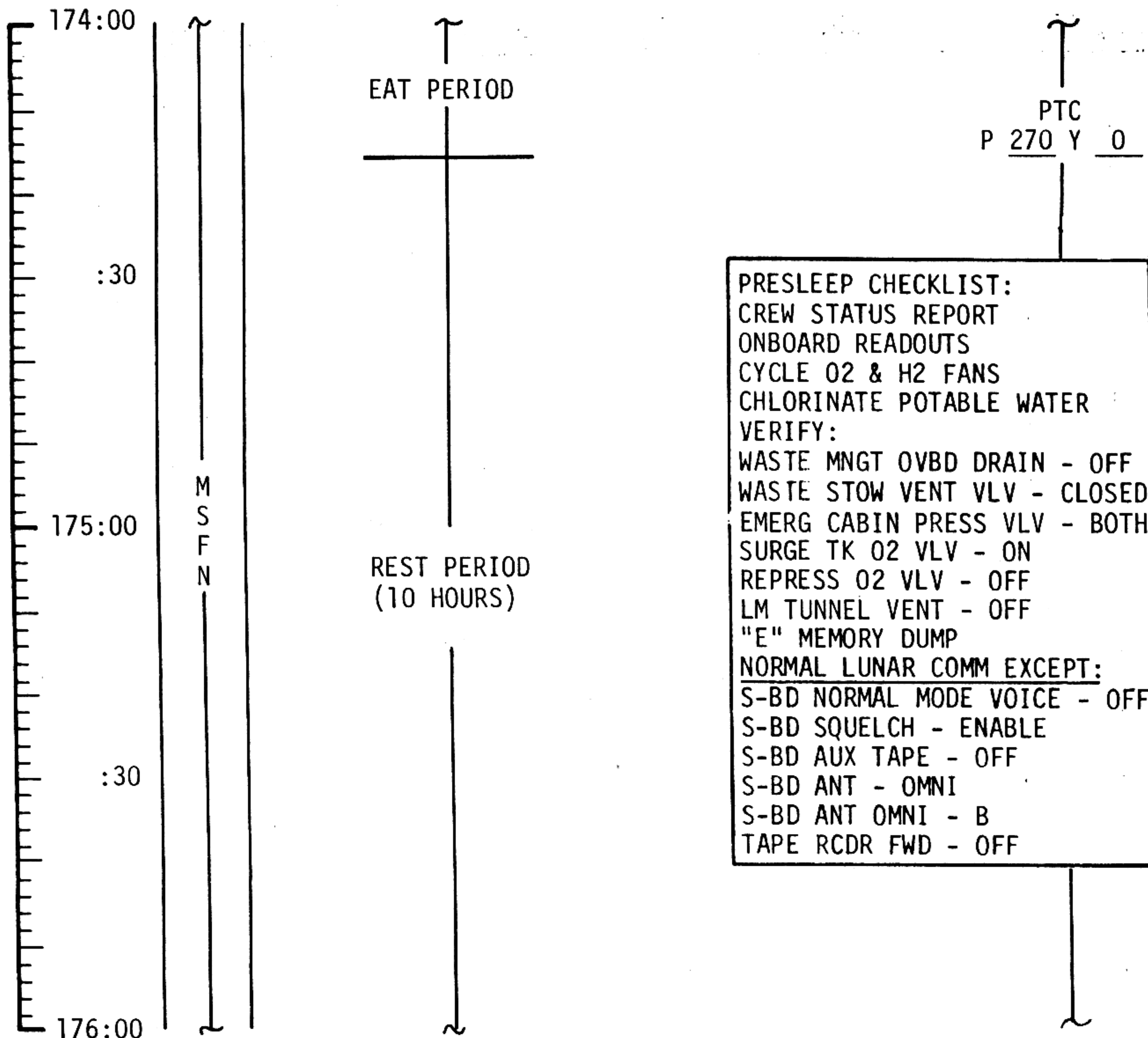
FLIGHT PLANNING BRANCH

MCC-H

1622 CST

# FLIGHT PLAN

NOTES



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

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	174:00 - 176:00	7/TEC	3-160

MCC-H

1822 CST

# FLIGHT PLAN

NOTES

176:00  
 :30  
 177:00  
 :30  
 178:00

M  
S  
F  
N

REST PERIOD  
(10 HOURS)

PTC  
P 270 Y 0

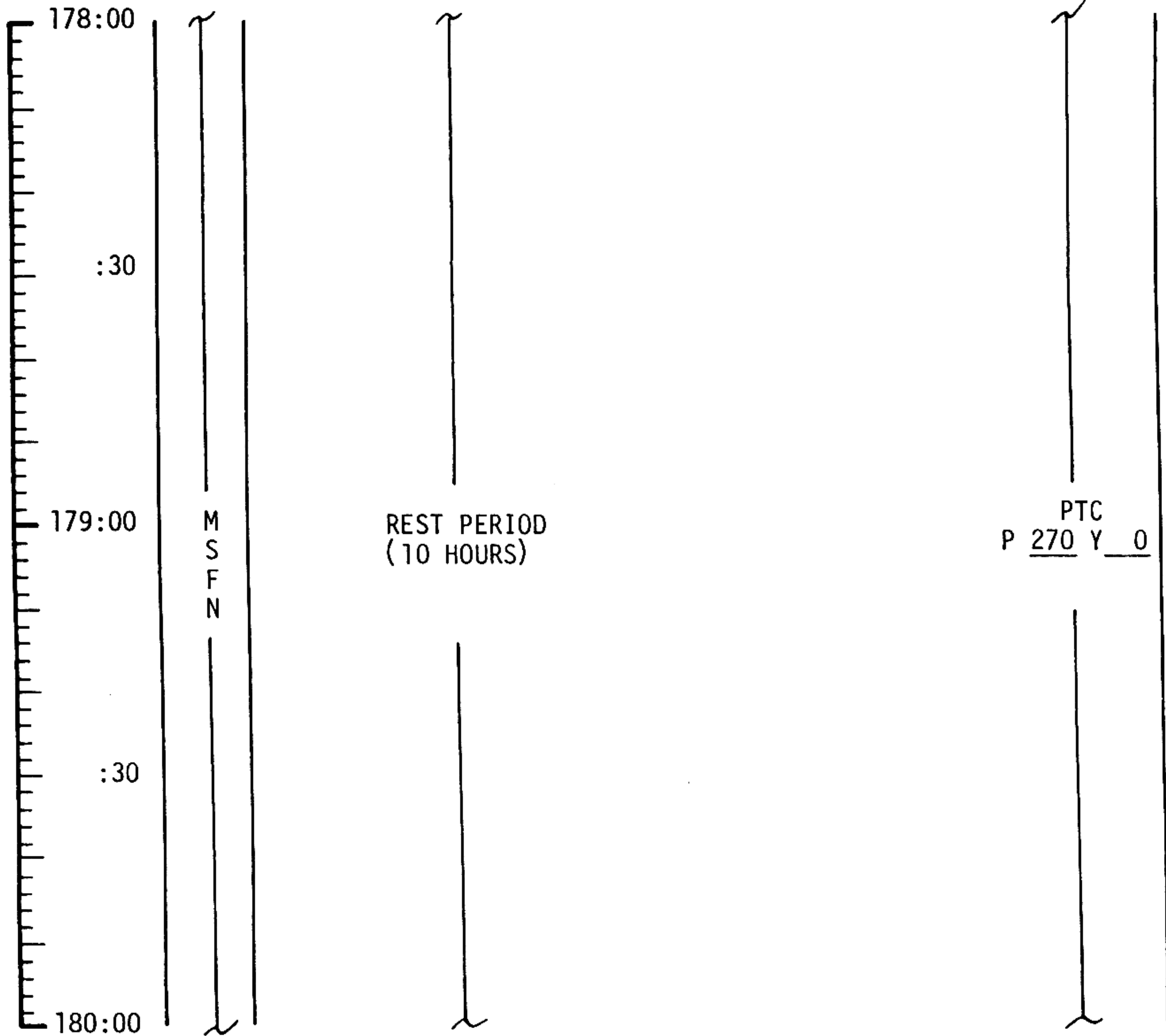
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	176:00 - 178:00	7/TEC	3-161

MCC-H

2022 CST

# FLIGHT PLAN

NOTES



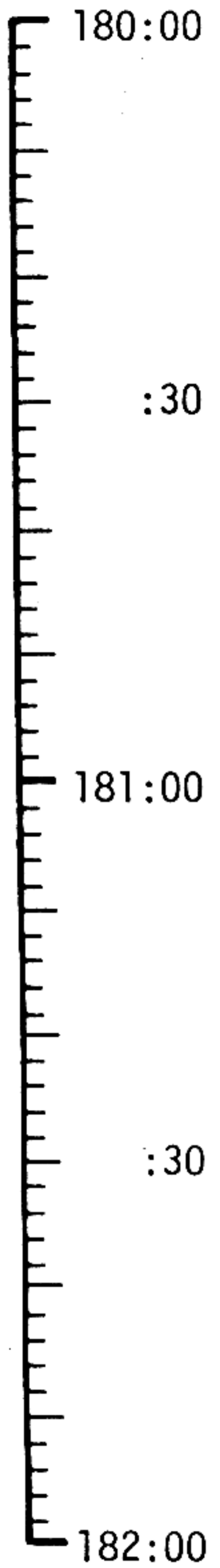
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	178:00 - 180:00	7/TEC	3-162

MCC-H

2222 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

REST PERIOD  
(10 HOURS)

PTC  
P 270, Y 0

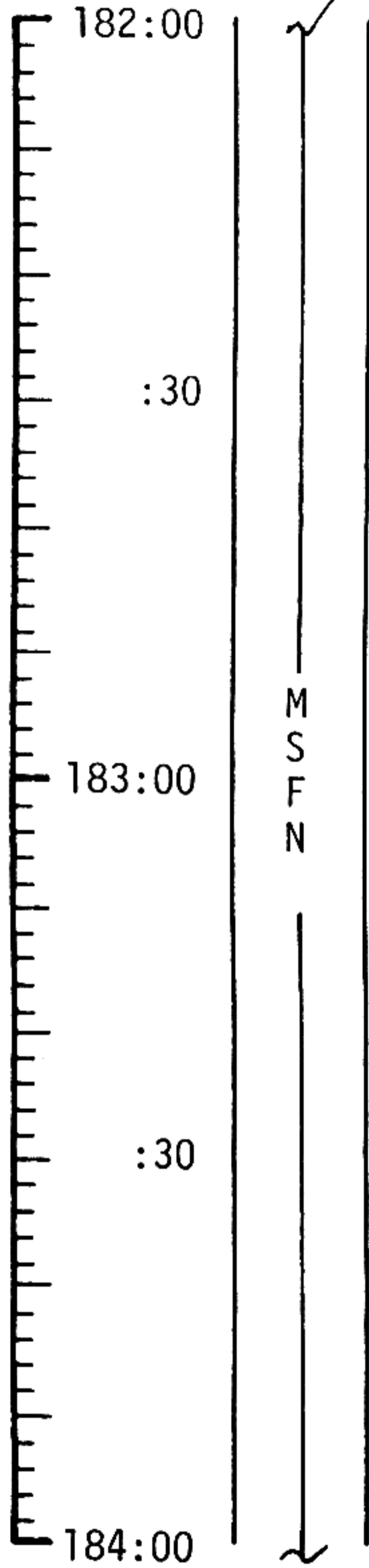
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	180:00 - 182:00	7/TEC	3-163

MCC-H

0022 CST

# FLIGHT PLAN

NOTES



M  
S  
F  
N

REST PERIOD  
(10 HOURS)

PTC  
P 270, Y 0

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	182:00 - 184:00	7/TEC	3-164