Mission Planning and Analysis Division
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS 77058

REPLY TO ATTN OF: FM21 (72-245)

October 27, 1972

MEMORANDUM

TO: Distribution

FROM: FM2/MPAD Apollo Project Manager

SUBJECT: Apollo 17 Mission Planning Press Briefing

The attached charts are to be used for an Apollo 17 Mission Planning Briefing to the Press on November 10, 1972, in Building 1.

Floyd V. Bennett

Enclosure

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MPAD 72-425-S

MISSION PLANNING BRIEFING

MPAD/FOD/MSC

APOLLO 17 MISSION EVENTS

EVENT	G.E.T. HR:MIN	C.S.T. HR:MIN
---WED/DEC. 6---		
LIFT-OFF	00:00	8:53 p.m.
EPO INSERTION	00:12	9:05
---THUR/DEC. 7---		
TRANSLUNAR INJECTION		
BURN INITIATION (t_B = 346 SEC)	03:21	12:14 a.m.
CSM/S-IVB SEPARATION	04:12	1:05
TV COVERAGE (TRANS & DOCK, 15 MIN)	04:12	1:05
DOCKING	04:22	1:15
CSM/LM EJECTION	05:07	2:00
S-IVB EVASIVE MANEUVER	05:30	2:23
FIRST MIDCOURSE CORRECTION (MCC-1) (OPTIONAL UP TO TLI + 9 HR)	08:45	5:38
---FRI/DEC. 8---		
MCC-2	35:30	8:23 a.m.
---SAT/DEC. 9---		
MCC-3	66:55	3:48 p.m.
---SUN/DEC. 10---		
MCC-4	83:55	8:48 a.m.
SIM DOOR JETTISON	84:25	9:18
LUNAR ORBIT INSERTION (LOI)		
BURN INITIATION (t_B = 395 SEC)	88:56	1:49 p.m.
S-IVB PREDICTED LUNAR IMPACT	89:21	2:14
SELENOGRAPHIC LATITUDE = -7.0°		
SELENOGRAPHIC LONGITUDE = -8.0°		
DESCENT ORBIT INSERTION (DOI-1, REV 3)		
BURN INITIATION (t_B = 23 SEC)	93:13	6:06
---MON/DEC. 11---		
UNDOCKING & CSM SEPARATION (REV 12)	110:28	11:21 a.m.
CSM CIRCULARIZATION (REV 12)		
(t_B = 4 SEC)	111:55	12:48 p.m.
LM DESCENT ORBIT INSERTION (DOI-2, REV 12)		
BURN INITIATION (t_B = 27 SEC)	112:01	12:54
POWERED DESCENT INITIATION (REV 13)		
DPS IGNITION	112:50	1:43
HIGH GATE (P63 TO P64)	112:59	1:52
LOW GATE	113:00	1:53
VERTICAL DESCENT (P64 TO P66)	113:01	1:54
LM LANDING	113:02	1:55
SELENOGRAPHIC LATITUDE = 20.2°		
SELENOGRAPHIC LONGITUDE = 30.7°		
CSM FIRST PASS OVER LLS (REV 13)	112:57	1:50
FIRST EVA (EVA-1, 7 HR)	116:40	5:33
TV COVERAGE (5 HR, 38 MIN)	117:50	6:43
---TUES/DEC. 12---		
EVA-2 (7 HR)	139:10	4:03 p.m.
TV COVERAGE (6 HR, 30 MIN)	139:30	4:23

APOLLO 17 MISSION EVENTS (CONCLUDED)

EVENT	G.E.T. HR:MIN	C.S.T. HR:MIN
--- WED/DEC 13 ---		
EVA-3 (7 HR)	162:40	3:33 p.m.
TV COVERAGE (6 HR, 39 MIN)	163:00	3:53
---THUR/DEC. 14---		
CSM LUNAR ORBIT PLANE CHANGE (REV 48)		
BURN INITIATION (t_B = 19 SEC)	182:36	11:29 a.m.
TV COVERAGE (LM LIFT-OFF, 25 MIN)	187:47	4:40 p.m.
CSM SECOND PASS OVER LLS (REV 51)	188:04	4:57
LM ASCENT (REV 51)		
LM LIFT-OFF	188:03	4:56
LM INSERTION (t_B = 438 SEC)	188:11	5:04
TPI (APS) (t_B = 3 SEC)	188:58	5:51
RENDEZVOUS MANEUVERS		
BRAKING	189:39	6:32
DOCKING	190:00	6:53
LM JETTISON (REV 54)	193:59	10:52
CSM SEPARATION		
BURN INITIATION (t_B = 13 SEC)	194:04	10:57
---FRI/DEC. 15---		
ASCENT STAGE DEORBIT	195:39	12:32 a.m.
ASCENT STAGE LUNAR IMPACT (CSM REV 55)	195:58	12:51
SELENOGRAPHIC LATITUDE = 19.9°		
SELENOGRAPHIC LONGITUDE = 30.5°		
---SAT/DEC. 16---		
TRANSEARTH INJECTION (REV 75)		
BURN INITIATION (t_B = 142 SEC)	236:40	5:33 p.m.
TV COVERAGE (32 MIN)	236:53	5:46
---SUN/DEC. 17---		
MCC-5	253:42	10:35 a.m.
TV COVERAGE (TRANSEARTH EVA, 1 HR, 4 MIN)	257:22	2:15 p.m.
---MON/DEC. 18---		
MCC-6	282:18	3:11 p.m.
TV COVERAGE (30 MIN)	284:07	5:00
---TUES/DEC. 19---		
MCC-7	301:18	10:11 a.m.
~~CSM/LM~~ SEPARATION cm/sm	304:03	12:56 p.m.
ENTRY INTERFACE	304:18	1:11
CM LANDING	304:31	1:24
GEODETIC LATITUDE = -17.9°		
GEODETIC LONGITUDE = -166.0°		

NASA-MSC-FOD
MISSION PLANNING & ANALYSIS DIVISION
OCTOBER 30, 1972

MISSION COMPARISON

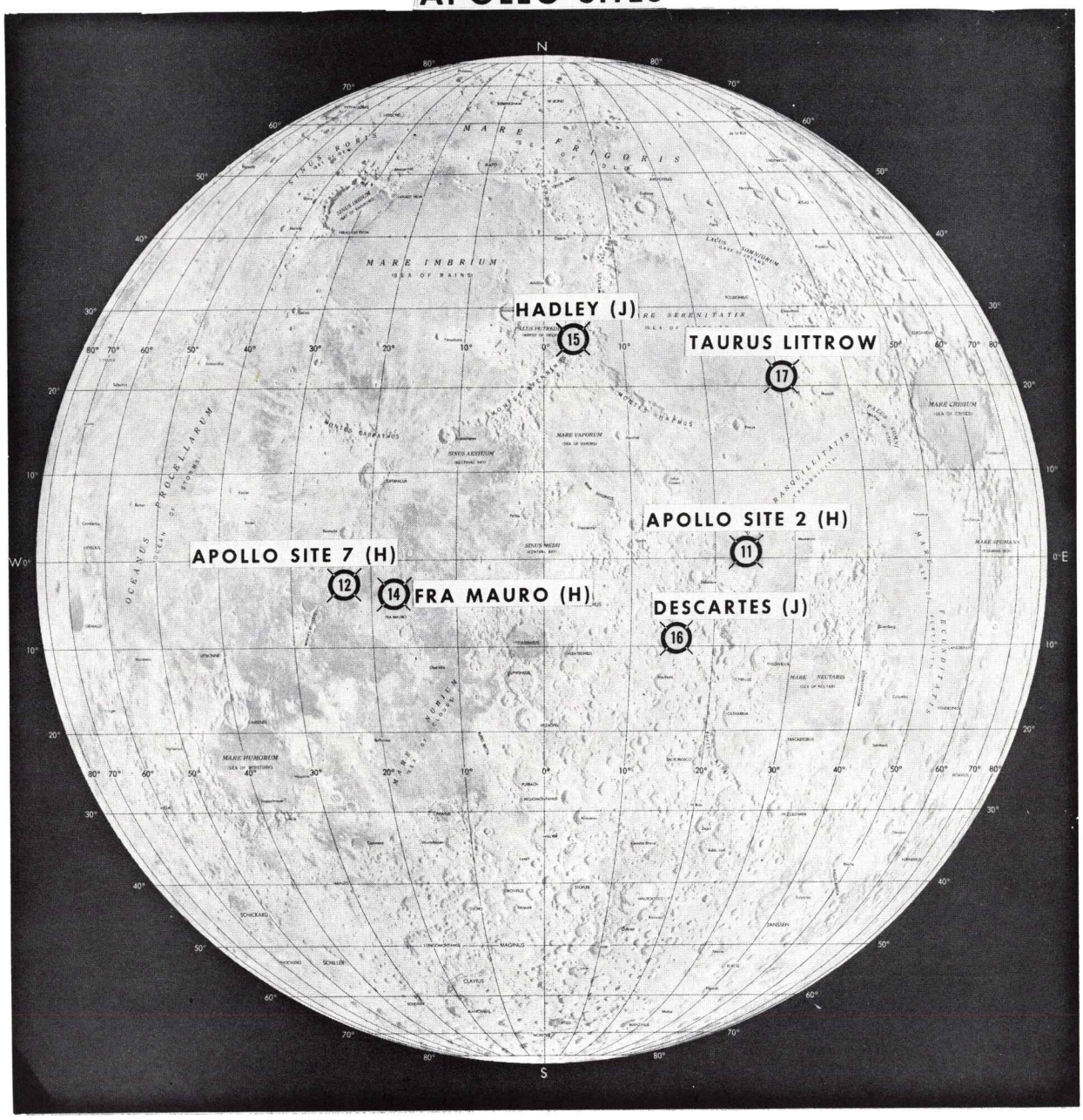
	APOLLO 16	APOLLO 17
LAUNCH	DAY	NIGHT
LAUNCH WINDOWS	1-3-3	2-3-2
LAUNCH WINDOW DURATION	3.8 HOURS	3.6 HOURS
LAUNCH AZIMUTH	72-100 DEG	72-100 DEG
EARTH PARKING ORBIT	93 N. MI.	93 N. MI.
TRANSLUNAR INJECTION	PACIFIC	ATLANTIC
TRANSLUNAR COAST TIME	71:55 HOURS	85:29 HOURS
LUNAR ORBIT INCLINATION	9.0 DEG	20.1 DEG
DESCENT ORBIT INSERTION	1 BURN	2 BURNS
LANDING REV	13	13
SUN ELEVATION AT LANDING	11.8 DEG	13.3 DEG
LUNAR SURFACE EVA/REST CYCLE	E-R-E-R-E-R	E-R-E-R-E-R
EVA'S	(7-7-7 HOURS)*	(7-7-7 HOURS)
LUNAR SURFACE STAY TIME	73 HOURS	75 HOURS
LOPC MANEUVERS	2 (ASCENT, SCIENCE)	1 (ASCENT)
SUBSATELLITE	YES	NO
EARTH LANDING		
INCLINATION	ASCENDING, 62 DEG	DESCENDING, 66 DEG
LATITUDE	5 DEG NORTH	18 DEG SOUTH
LONGITUDE	-159 DEG	-166 DEG
MISSION DURATION	12 DAYS + 3 HOURS	12 DAYS + 16 HOURS

*ACTUAL (7:01, 7:23, 5:40)

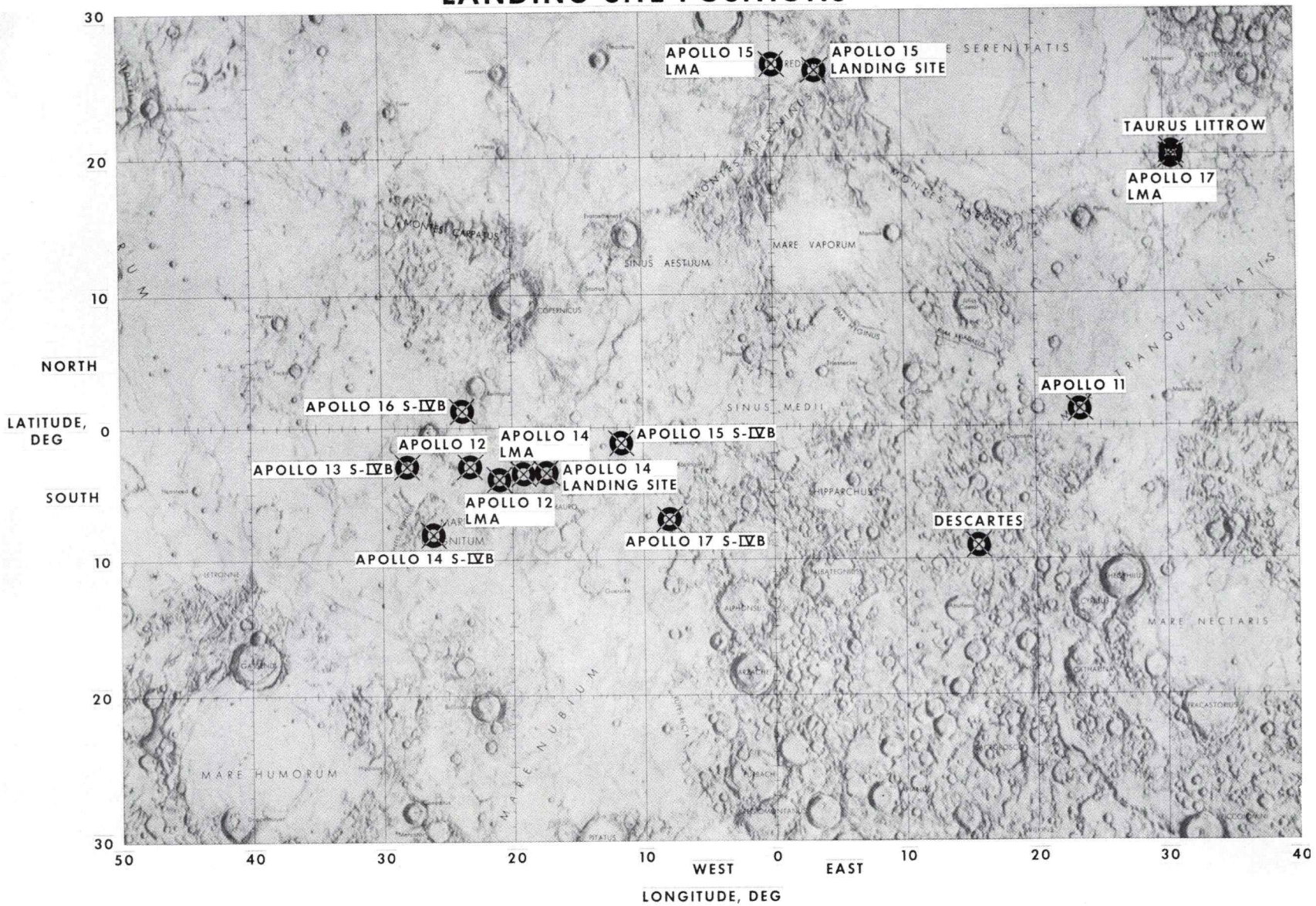
APOLLO 17 MISSION OBJECTIVES

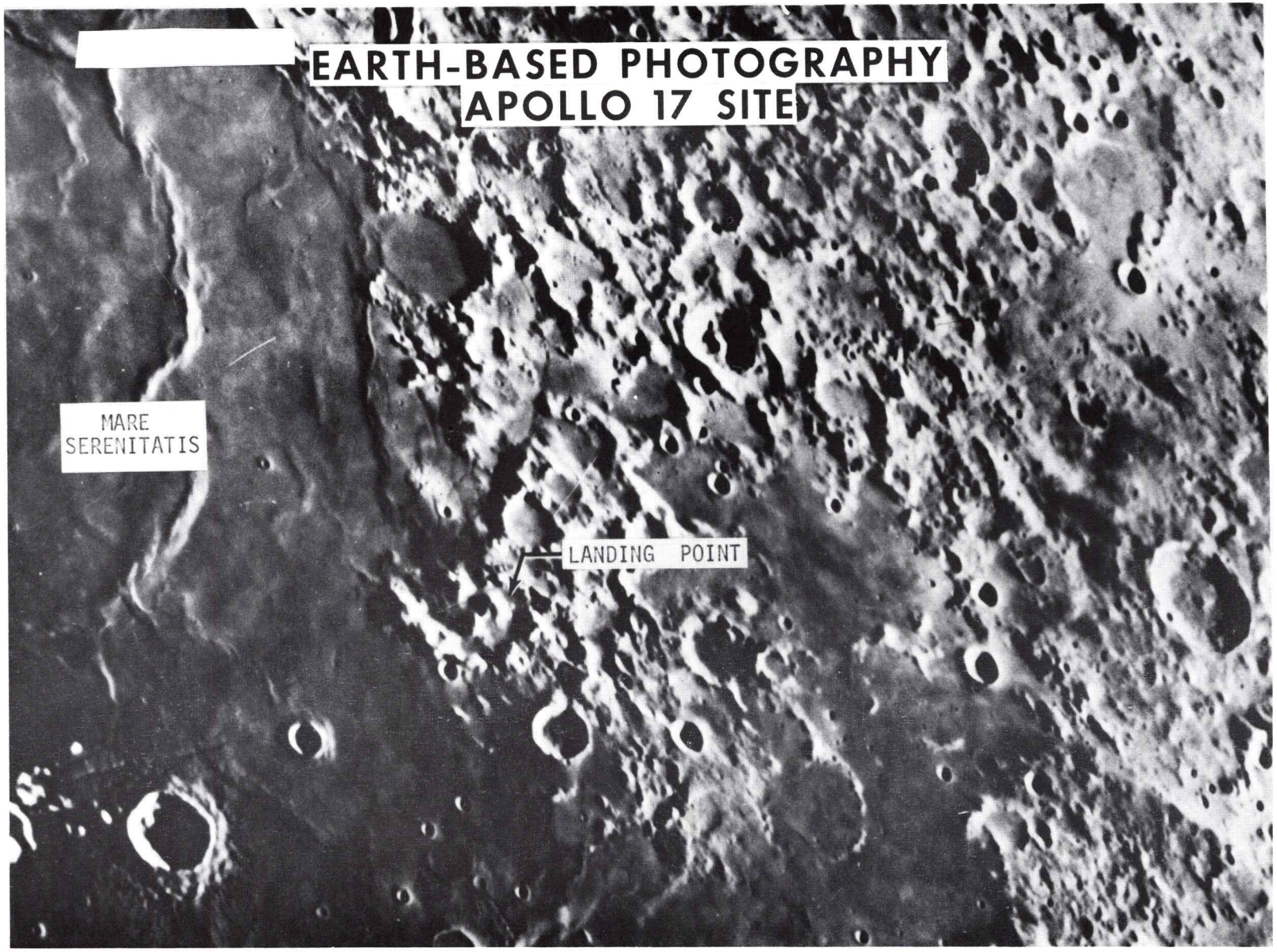
- INVESTIGATE THE LUNAR SURFACE AND ITS ENVIRONMENT
- EMPLACEMENT OF THE APOLLO 17 ALSEP
- PERFORM EXPERIMENTS IN LUNAR ORBIT
- OBTAIN LUNAR MATERIAL SAMPLES
- ENHANCE THE CAPABILITY FOR FUTURE MANNED LUNAR EXPLORATION

APOLLO SITES



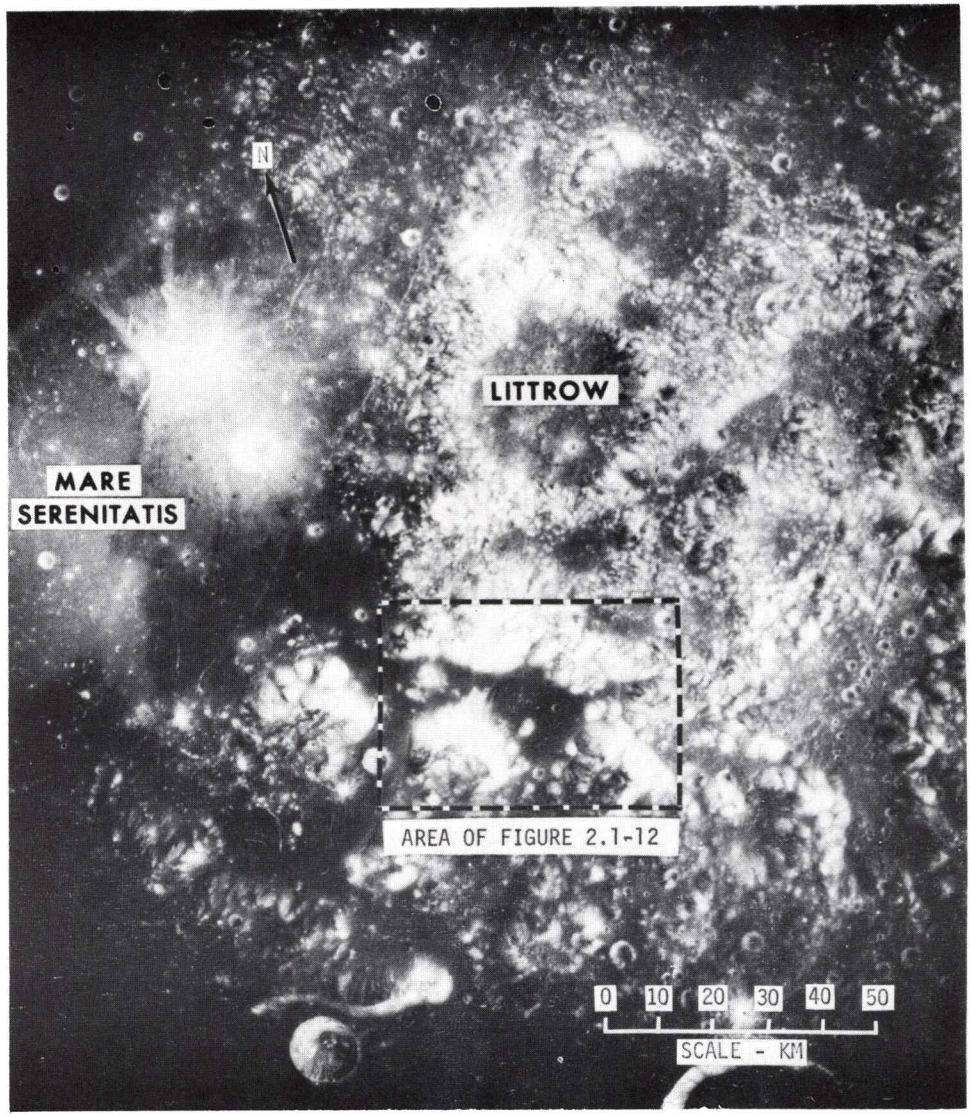
LANDING SITE POSITIONS




EARTH-BASED PHOTOGRAPHY
APOLLO 17 SITE
MARE
SERENITATIS
LANDING POINT

MPAD 72-376 S

APOLLO 15 MAPPING CAMERA VIEW OF APOLLO 17 LANDING AREA

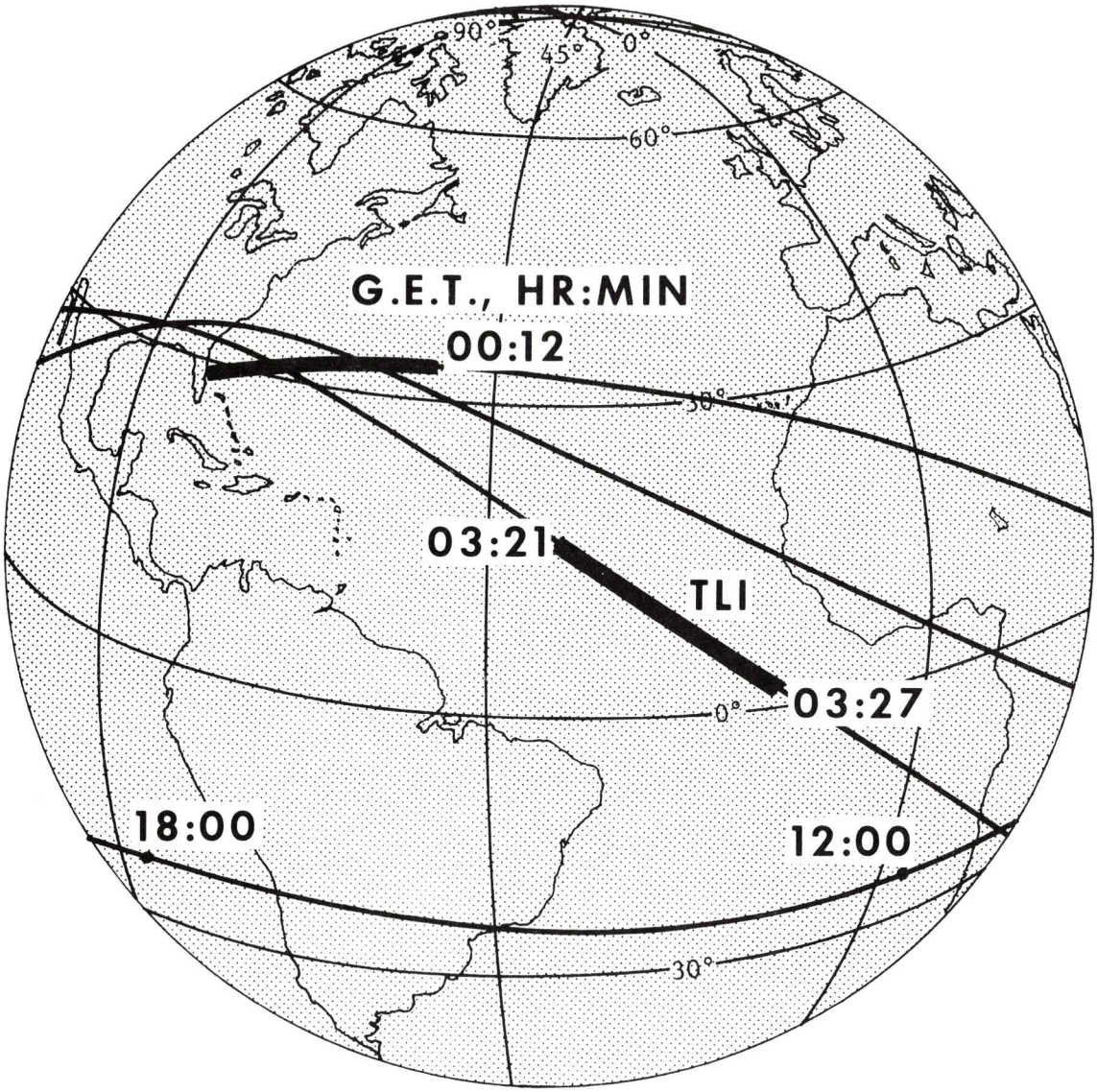


APOLLO 17 LAUNCH WINDOW

OPPORTUNITY	DATE	TIME, E.S.T.	DURATION, HR:MIN
T - 0	DEC. 6, 1972	21:53	3:38
T + 24	DEC. 7, 1972	21:53	3:39
T - 0	JAN. 4, 1973	21:51*	2:02
T + 24	JAN. 5, 1973	20:21	3:31
T + 48	JAN. 6, 1973	20:29	3:28
T - 24	FEB. 3, 1973	18:47	3:26
T - 0	FEB. 4, 1973	18:58	3:22

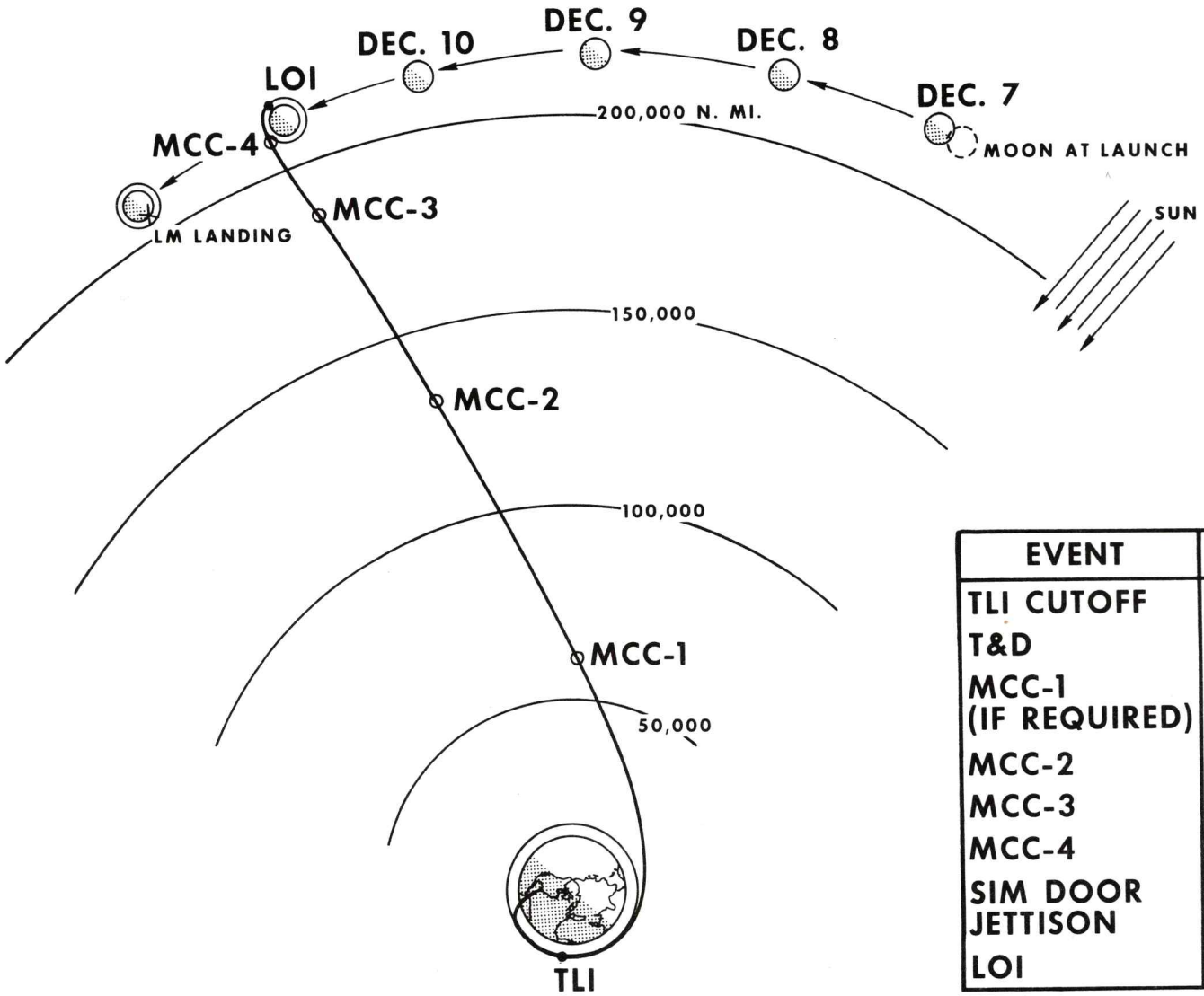
*WINDOW OPENS AT 84° AZIMUTH

APOLLO 17 LAUNCH THROUGH TLI



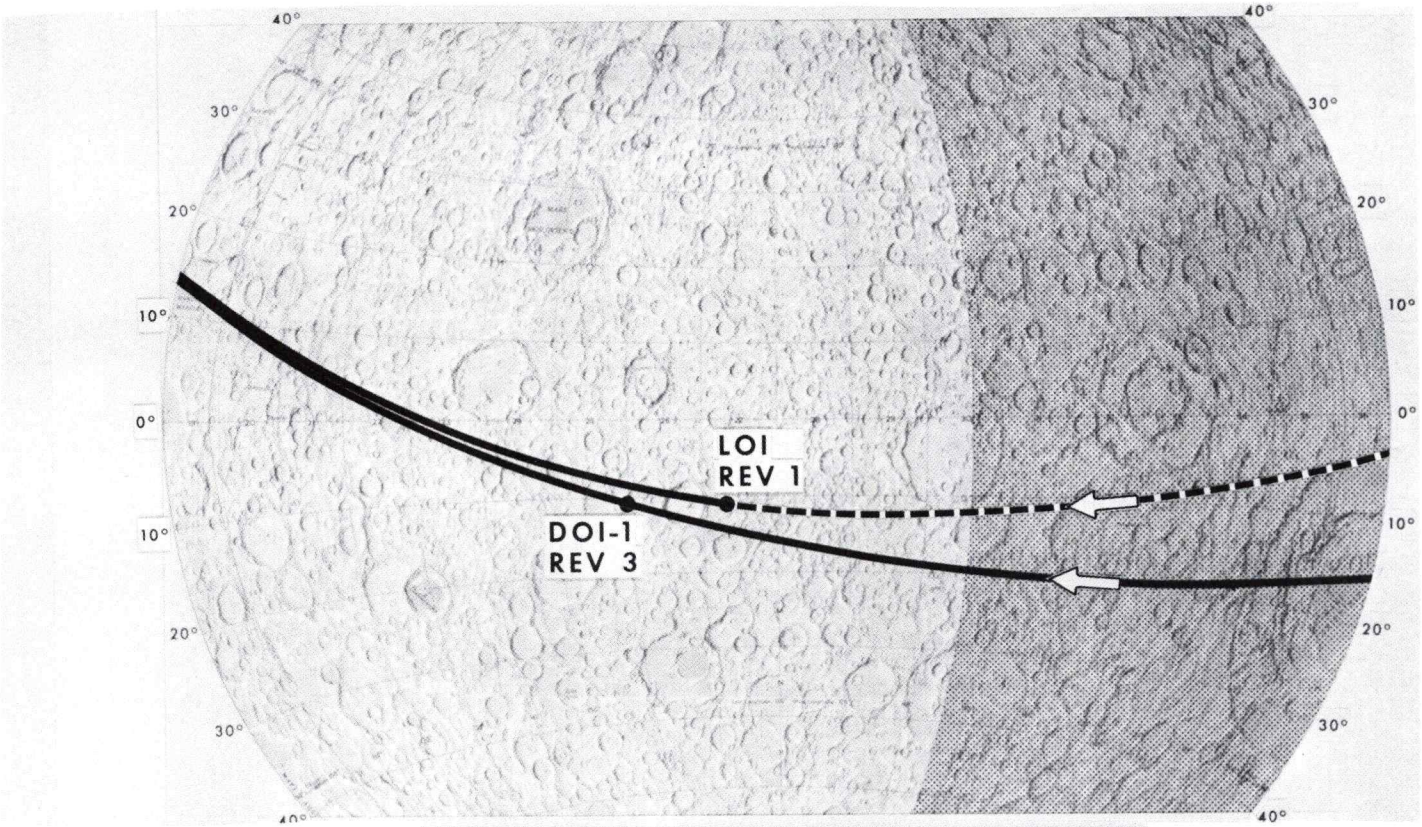
LAUNCH DEC 6, 9:53 P.M. E.S.T.

TRANSLUNAR COAST



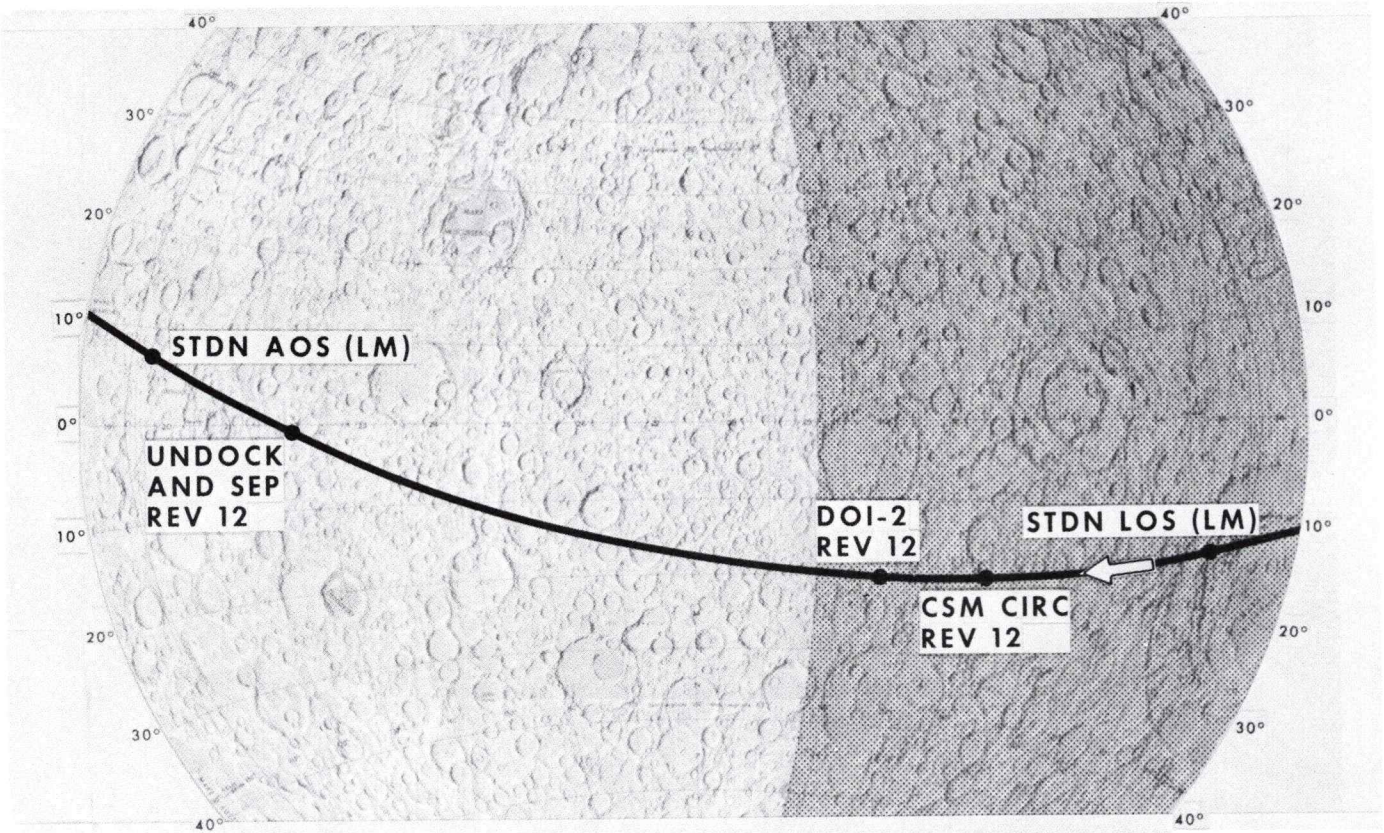
EVENT	DATE	C.S.T.	G.E.T.
TLI CUTOFF	DEC. 7	00:20	3:27
T&D	DEC. 7	1:15	4:22
MCC-1 (IF REQUIRED)	DEC. 7	5:38	UP TO TLI + 9
MCC-2	DEC. 8	8:23	TLI + 32
MCC-3	DEC. 9	15:48	LOI - 22
MCC-4	DEC. 10	8:48	LOI - 5
SIM DOOR JETTISON	DEC. 10	9:18	LOI - 4.5
LOI	DEC. 10	13:49	88:56

LUNAR ORBIT ACTIVITIES



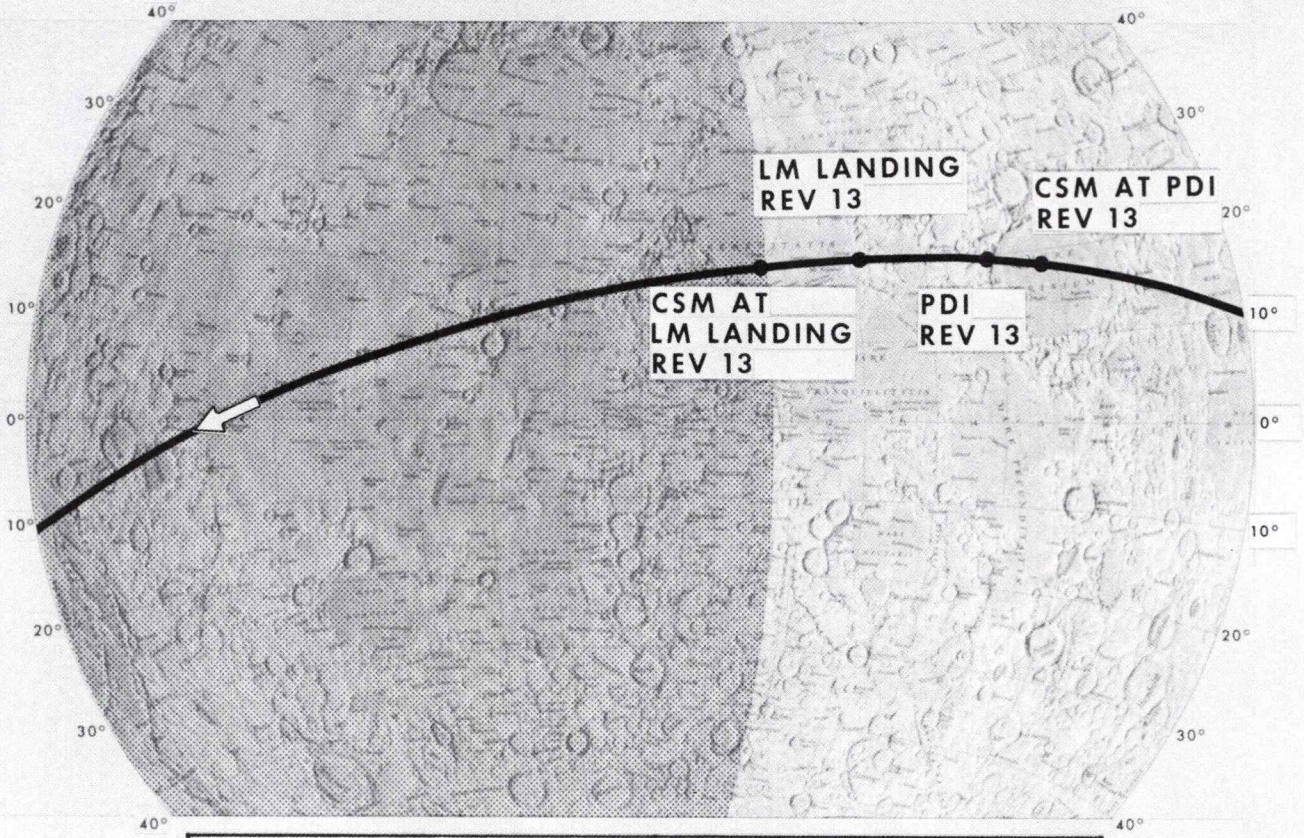
EVENT	TIME FROM LOI, HR:MIN:SEC
LOI (DEC. 10 13:48:38 C.S.T.; 88:55:38 G.E.T.)	00:00:00
DOI-1	04:17:31

LUNAR ORBIT ACTIVITIES (CONTINUED)



EVENT	TIME FROM UNDOCKING, HR:MIN:SEC
UNDOCKING AND SEPARATION (DEC. 11 11:20:55 C.S.T.; 110:27:55 G.E.T.)	00:00:00
CIRC	01:27:28
DOI-2	01:32:39

LUNAR ORBIT ACTIVITIES (CONCLUDED)

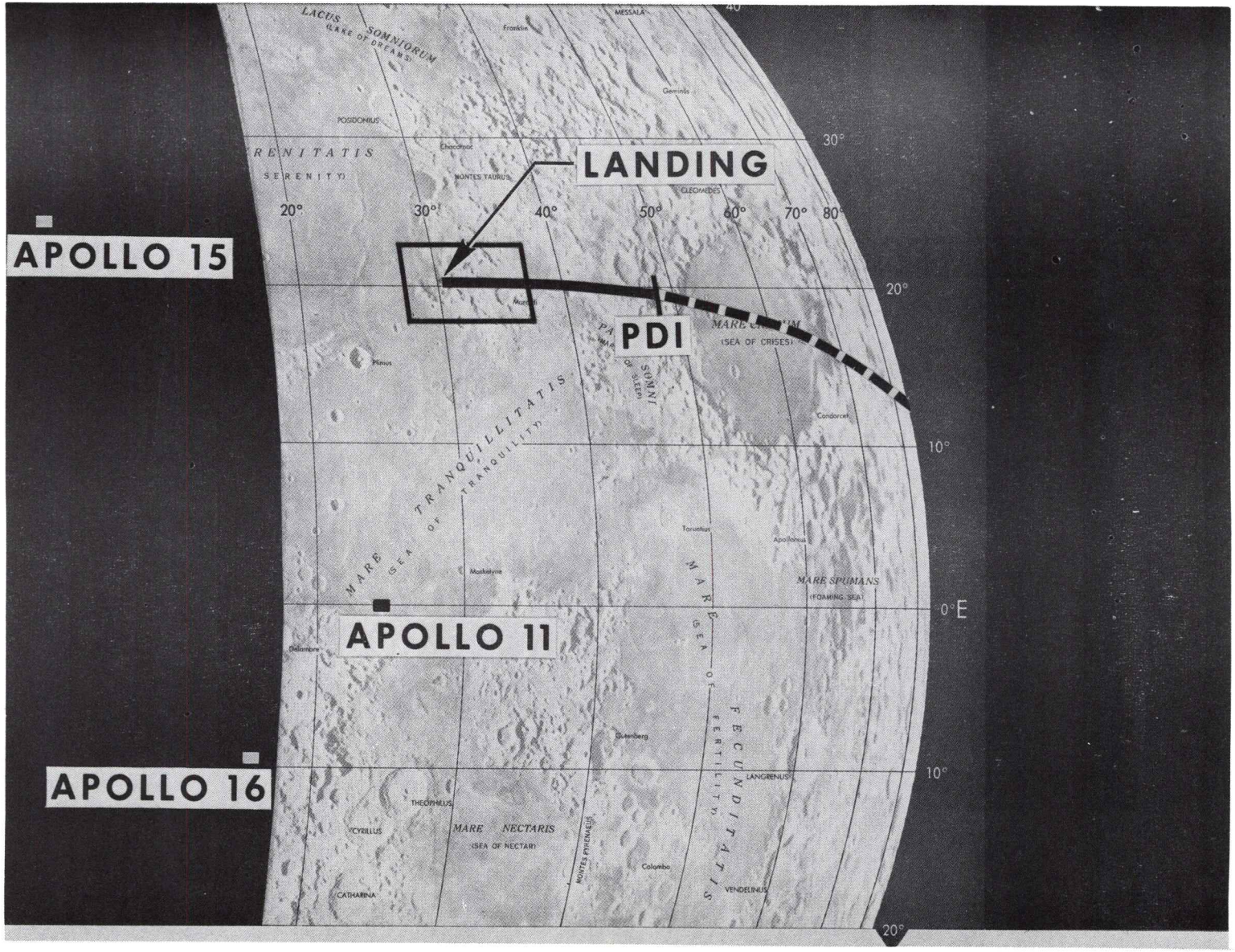


EVENT	TIME FROM UNDOCKING, HR:MIN:SEC
PDI	02:21:44
LANDING LAT. 20.2°N LONG. 30.8°E (DEC. 11 13:54:37 C.S.T.; 113:01:37 G.E.T.)	02:33:42

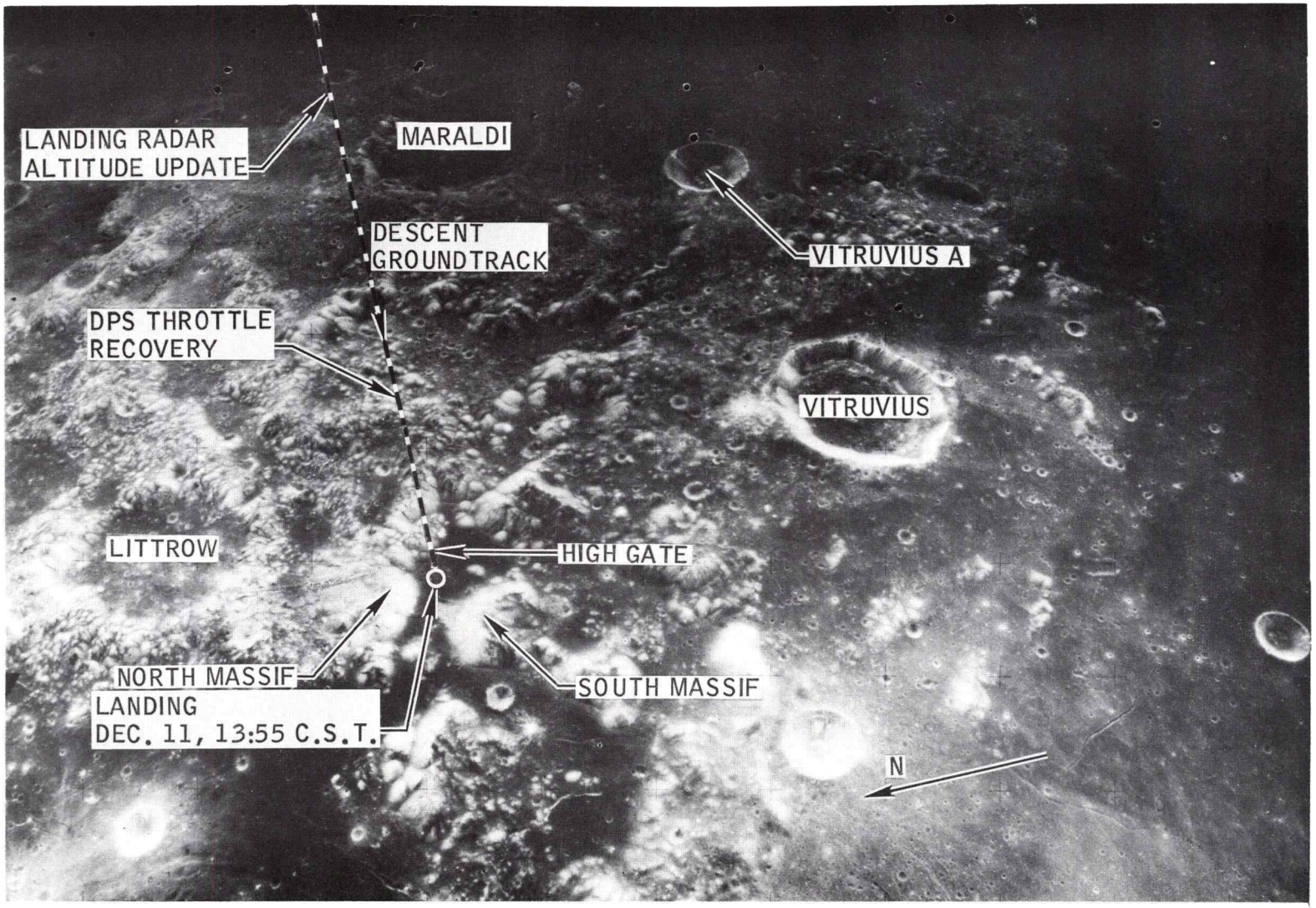
FRONT

MPAD 72-421-S

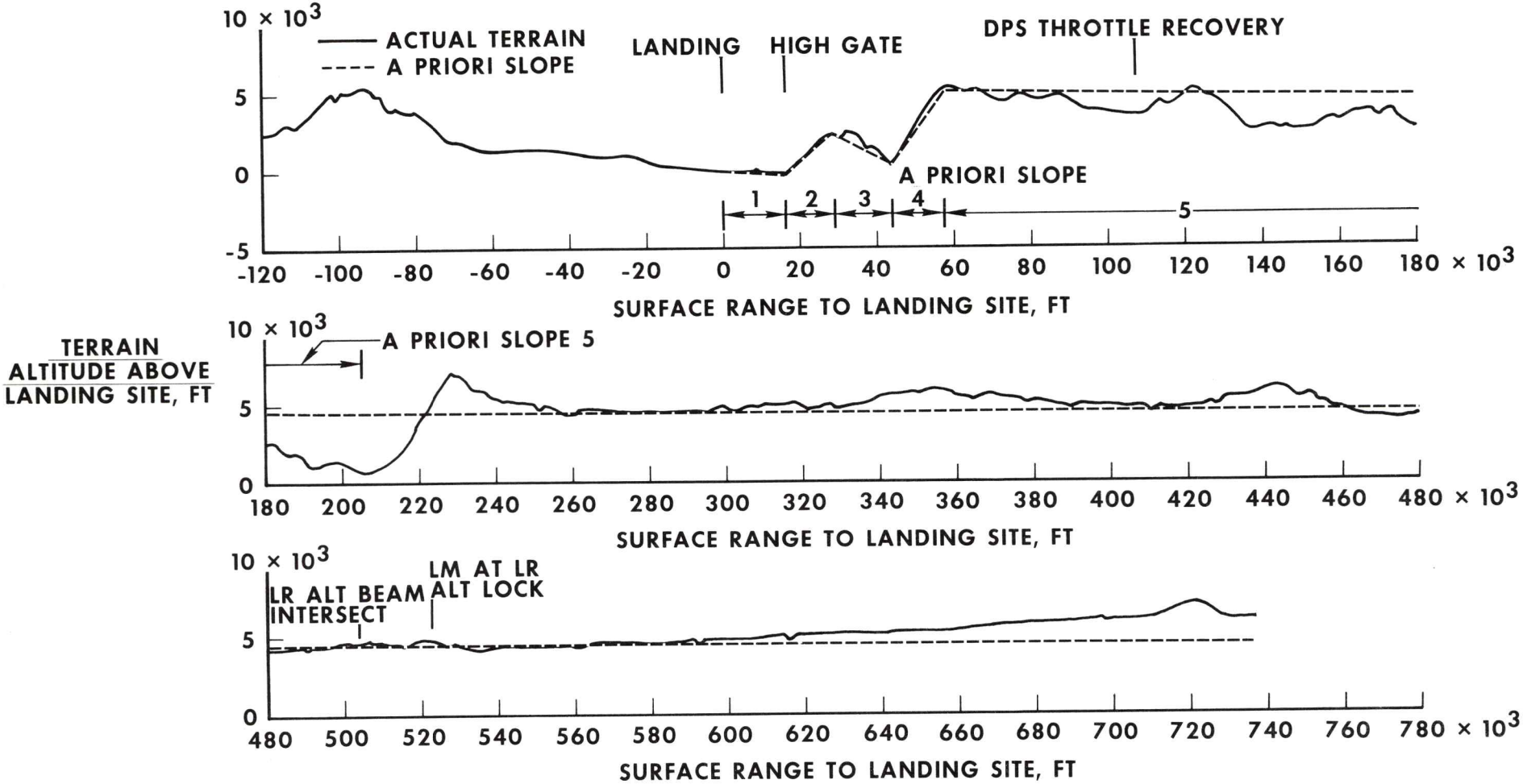
APOLLO 17 LM DESCENT



LM DESCENT TO TAURUS-LITTROW

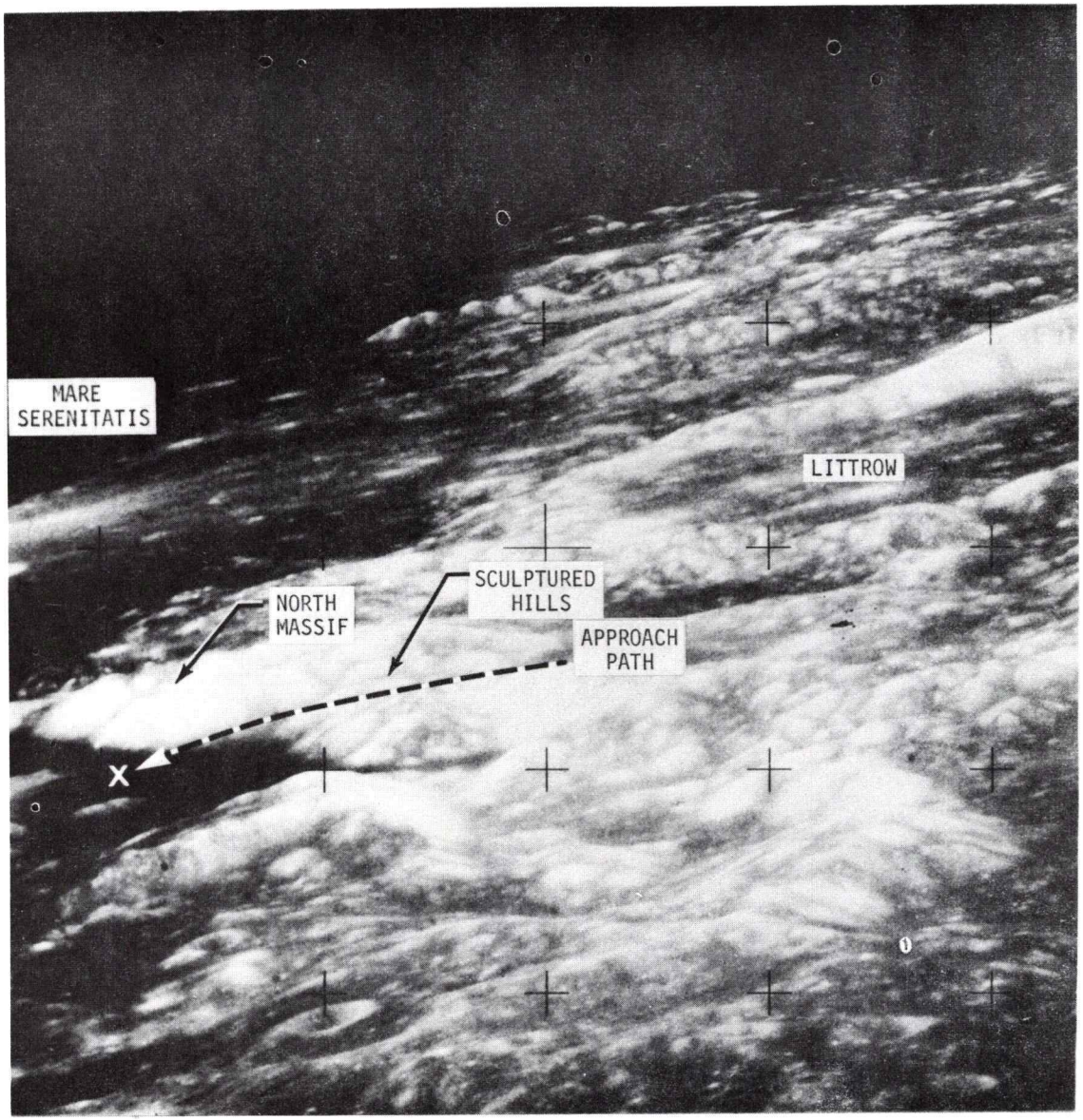


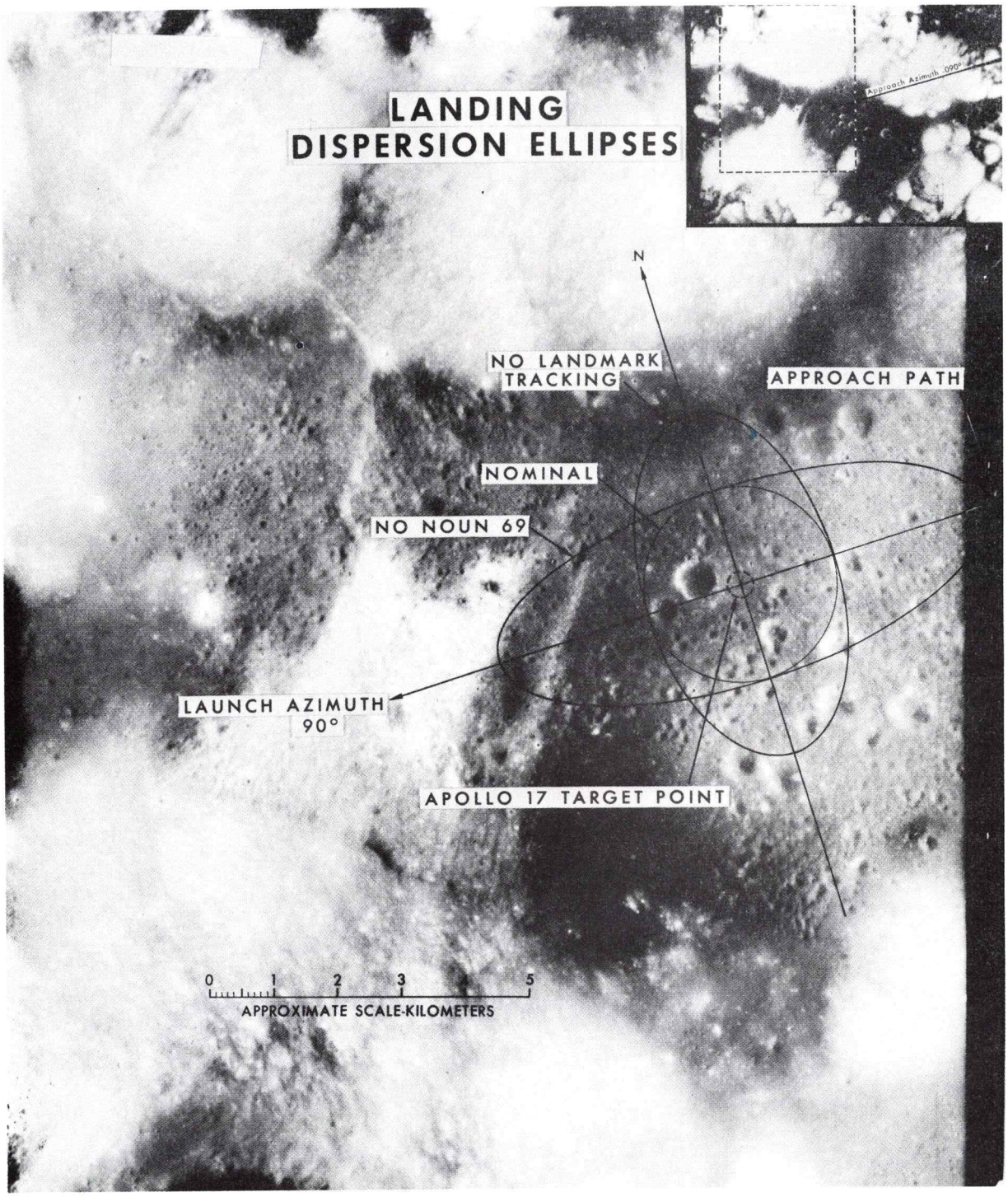
TAURUS-LITTROW TERRAIN PROFILE



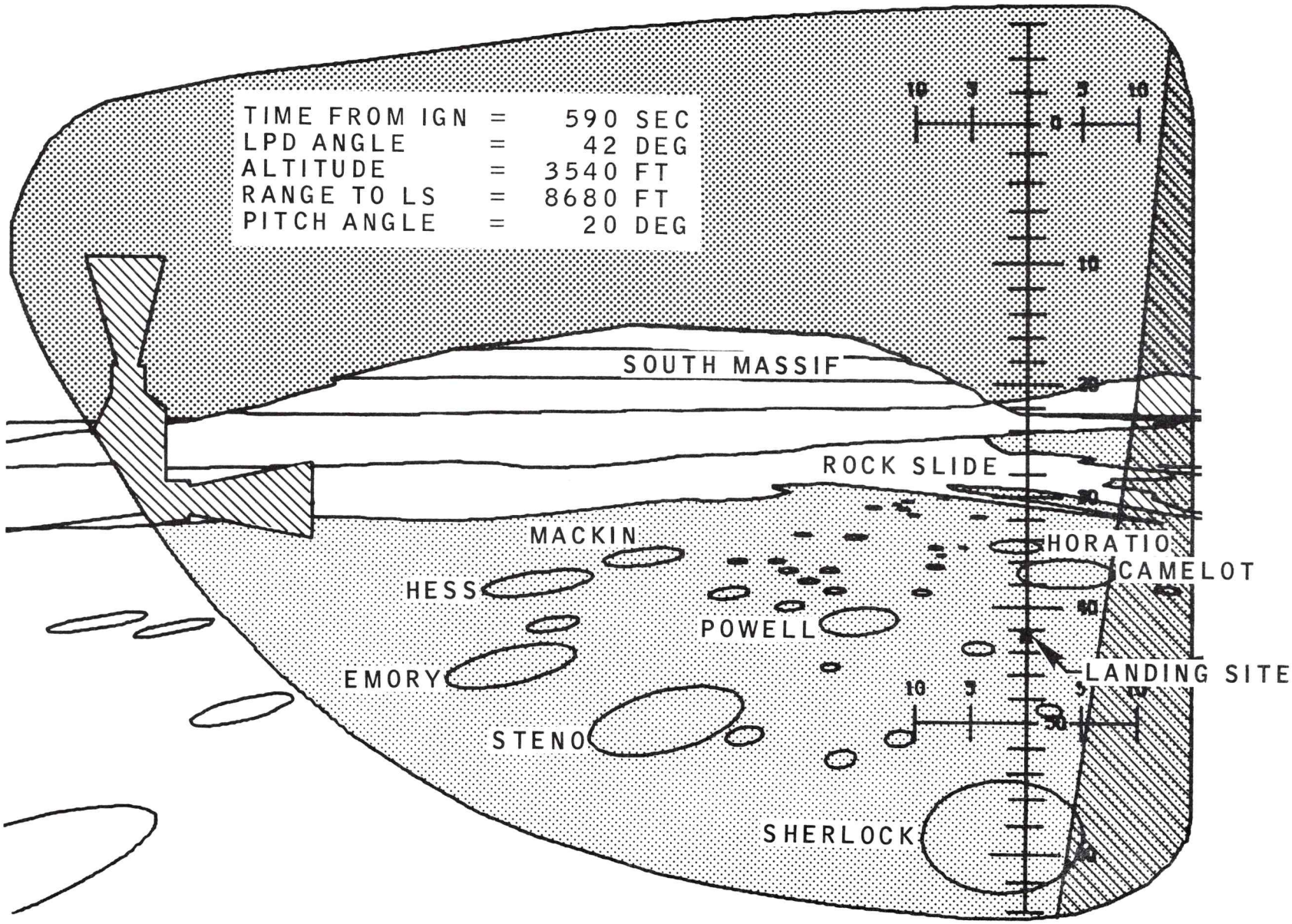
MPAD 72-389 S

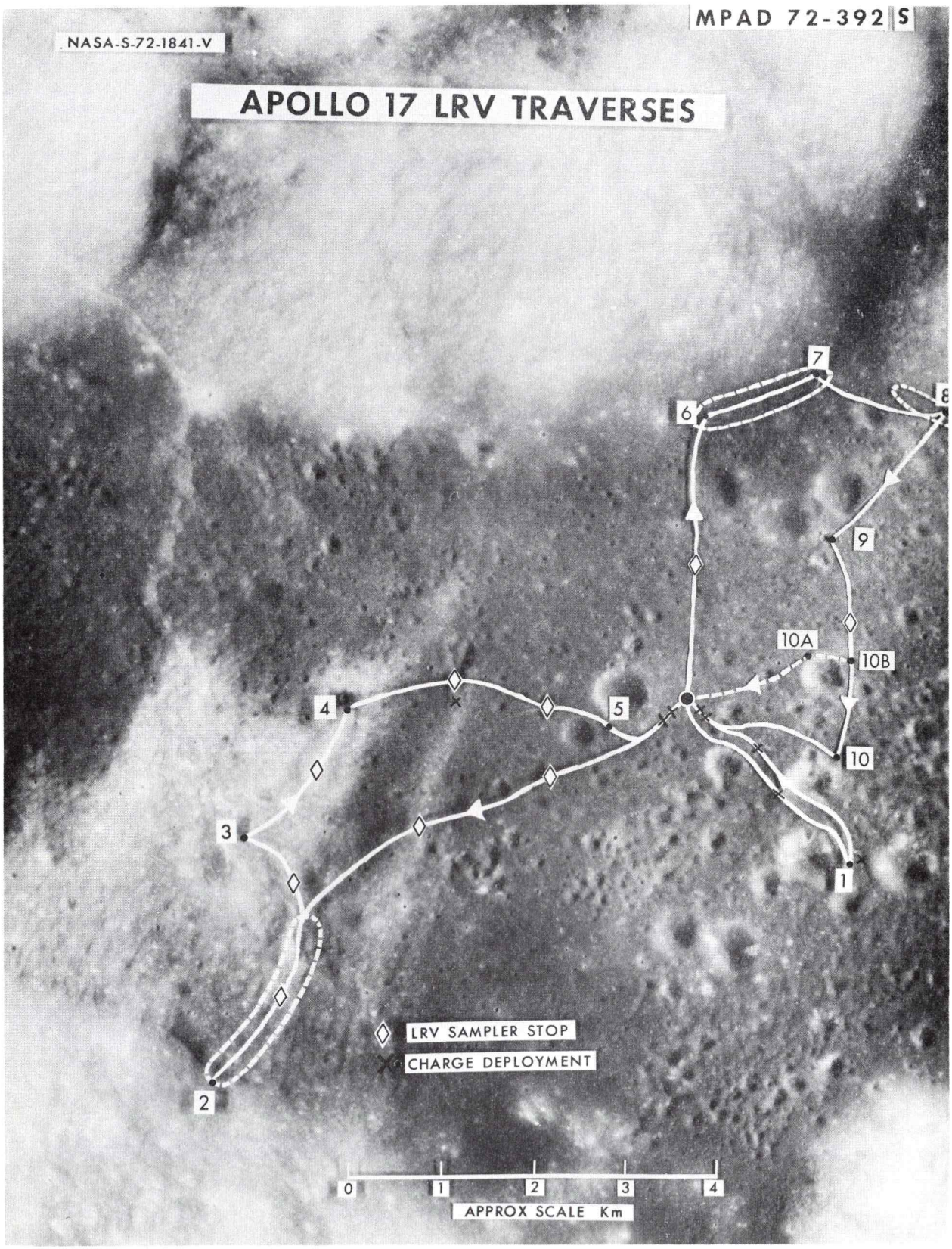
OBLIQUE VIEW (NORTHWEST) OF TAURUS-LITTROW




LANDING
DISPERSION ELLIPSES
Approach Azimuth 090°
N
NO LANDMARK
TRACKING
APPROACH PATH
NOMINAL
NO NOUN 69
LAUNCH AZIMUTH
90°
APOLLO 17 TARGET POINT
0 1 2 3 4 5
APPROXIMATE SCALE-KILOMETERS

VIEW FROM COMMANDER'S WINDOW



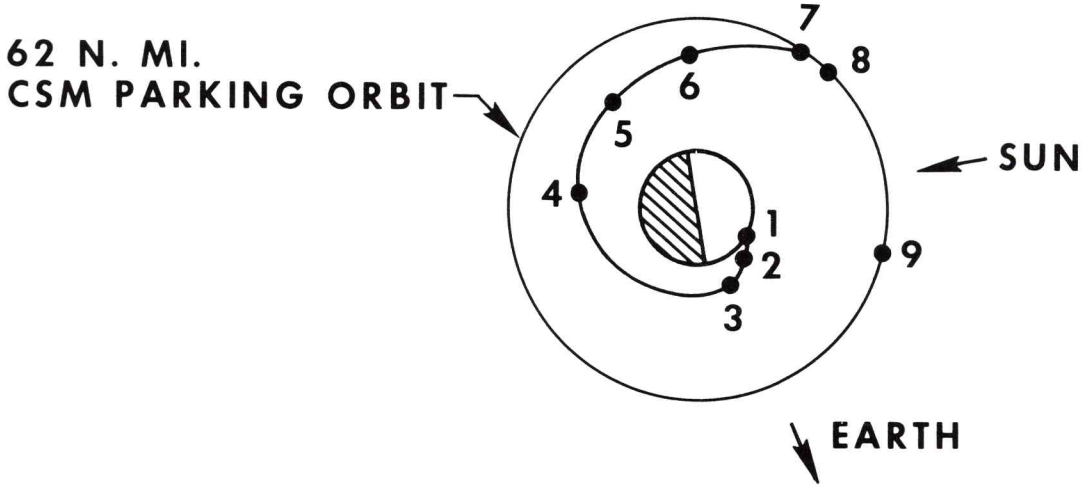

MPAD 72-392 S
NASA-S-72-1841-V
APOLLO 17 LRV TRAVERSES
7
8
6
9
10A
10B
4
5
10
3
1
2
LRV SAMPLER STOP
CHARGE DEPLOYMENT
0
1
2
3
4
APPROX SCALE Km

EVA SCHEDULES

(Based on preliminary flight plan)

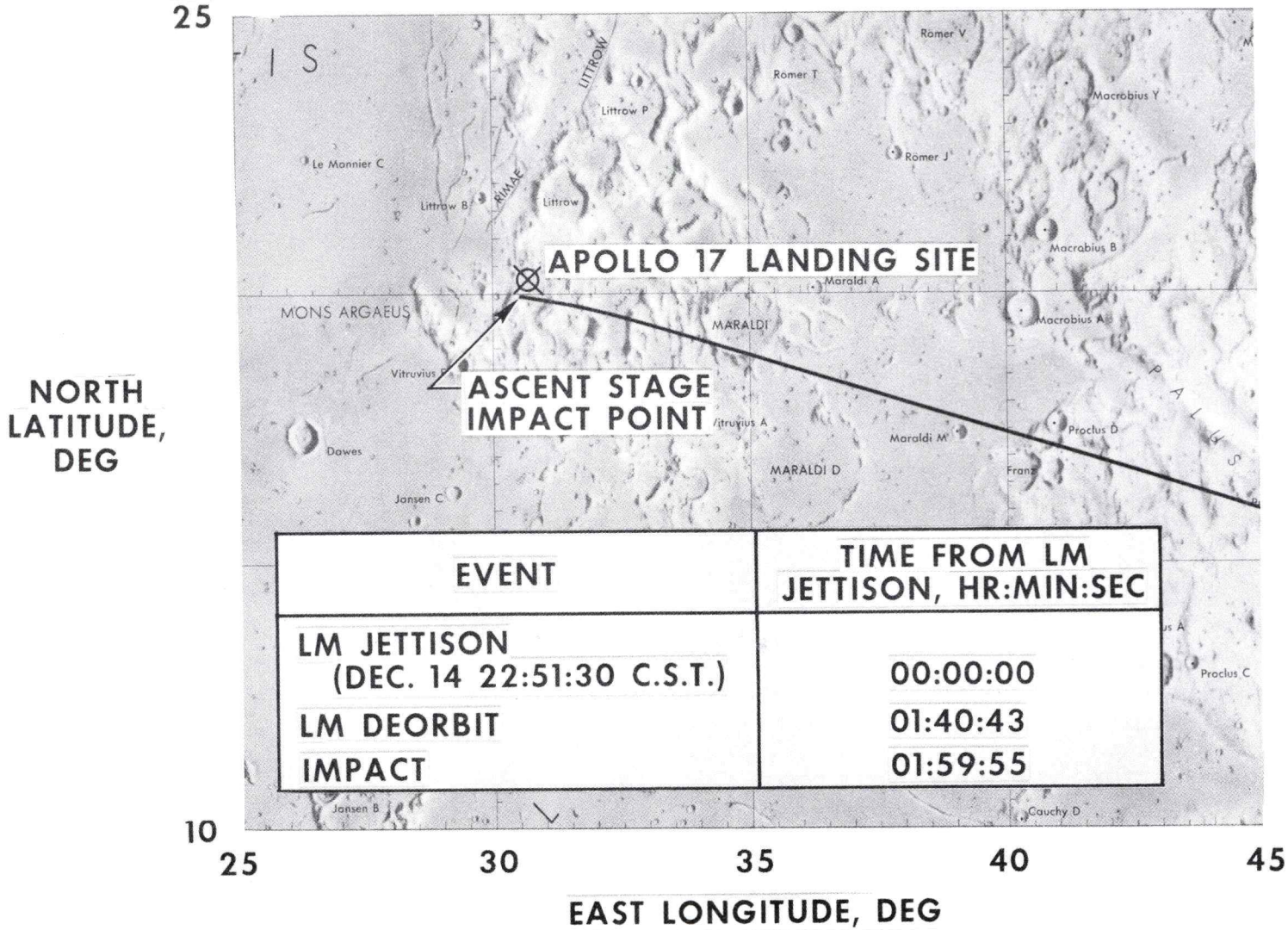
	Date	Start C.S.T.	Stop C.S.T.	Start G.E.T.	Duration, hr
EVA-1	Dec. 11	5:33 p.m.	Dec. 12 12:33 a.m.	116:40	7
EVA-2	Dec. 12	4:03 p.m.	11:03 p.m.	139:10	7
EVA-3	Dec. 13	3:33 p.m.	10:33 p.m.	162:40	7

LM ASCENT AND RENDEZVOUS



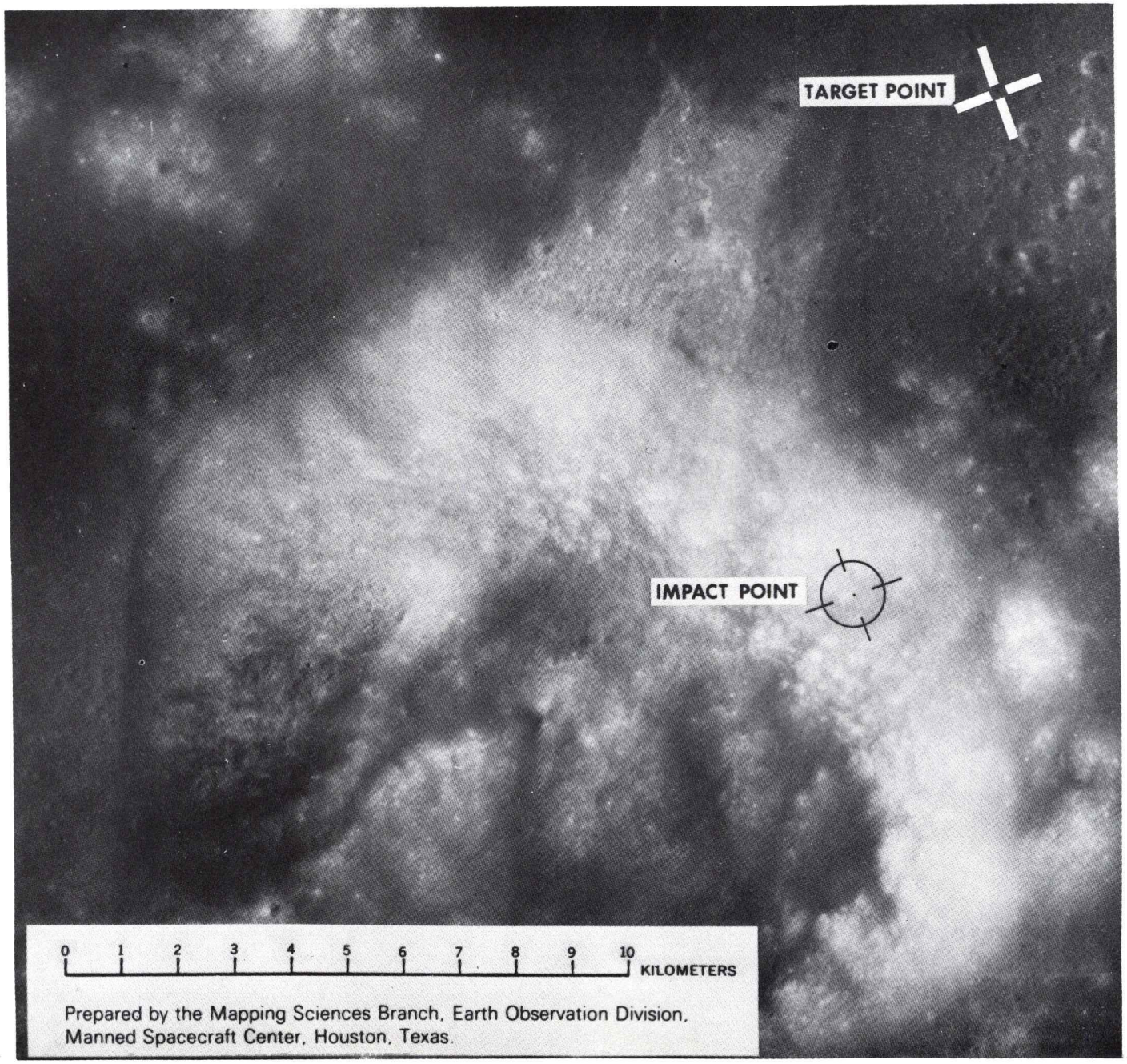
	EVENT	TIME FROM LIFT-OFF, HR:MIN:SEC
1.	LIFT-OFF G.E.T. 188:03 (DEC. 14, 16:56 C.S.T.)	00:00:00
2.	LM INSERTION (9 × 48 N. MI.)	00:07:18
3.	TWEAK	00:10:18
4.	TPI	00:54:18
5.	MC-1	01:09:18
6.	MC-2	01:24:18
7.	BEGIN BRAKING	01:35:45
8.	BEGIN STATIONKEEPING	01:40:00
9.	DOCKING	01:56:45

APOLLO 17
LM ASCENT STAGE IMPACT GROUNDTRACK



EVENT	TIME FROM LM JETTISON, HR:MIN:SEC
LM JETTISON (DEC. 14 22:51:30 C.S.T.)	00:00:00
LM DEORBIT	01:40:43
IMPACT	01:59:55

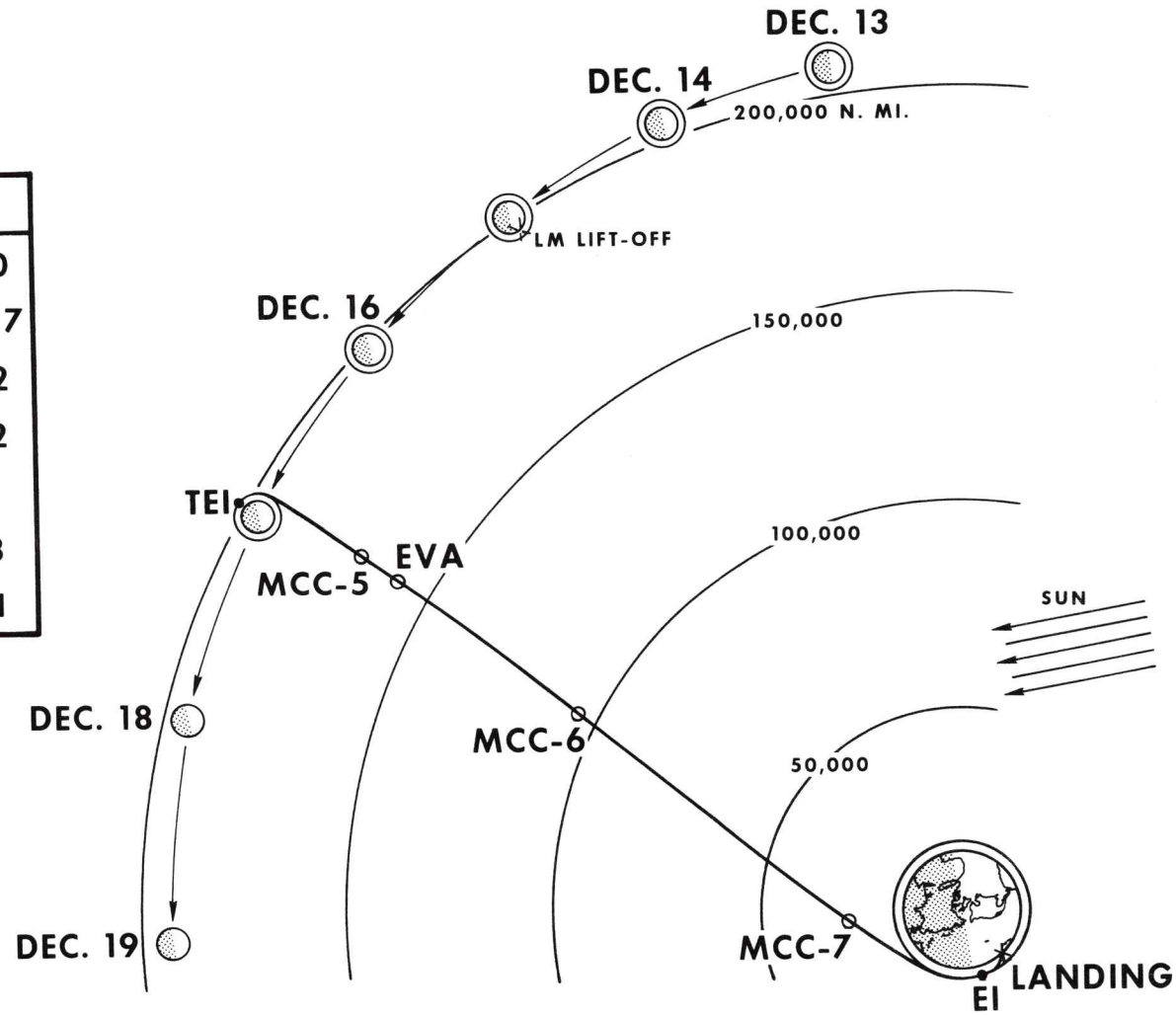
APOLLO 17 LM ASCENT STAGE IMPACT POINT



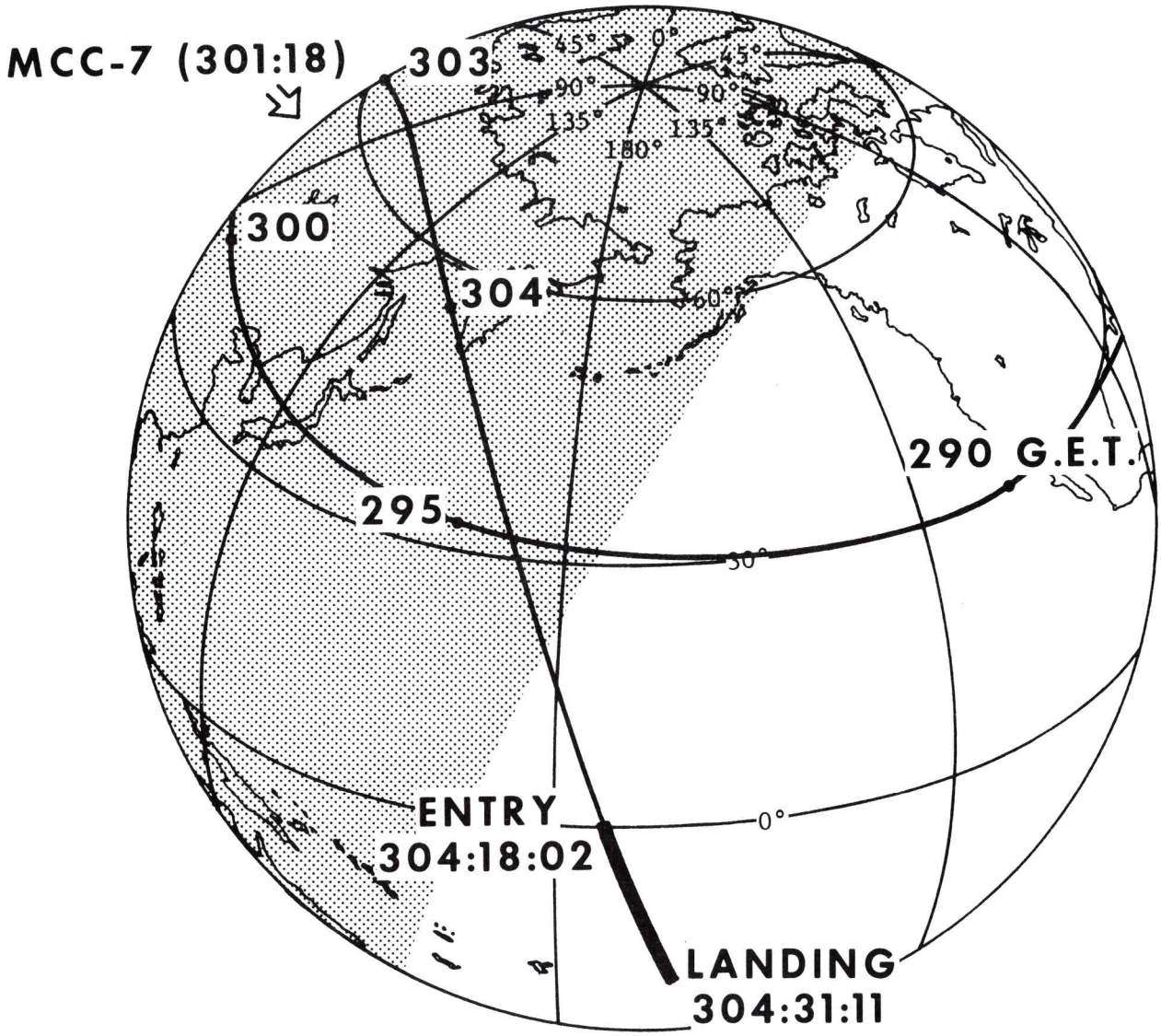
Prepared by the Mapping Sciences Branch, Earth Observation Division, Manned Spacecraft Center, Houston, Texas.

TRANSEARTH COAST

EVENT	DATE	C.S.T.	G.E.T.
TEI	DEC. 16	17:33	236:40
MCC-5	DEC. 17	10:35	TEI + 17
EVA	DEC. 17	14:15	257:22
MCC-6	DEC. 18	15:11	EI - 22
MCC-7	DEC. 19	10:11	EI - 3
EI	DEC. 19	13:11	304:18
SPLASH	DEC. 19	13:24	304:31

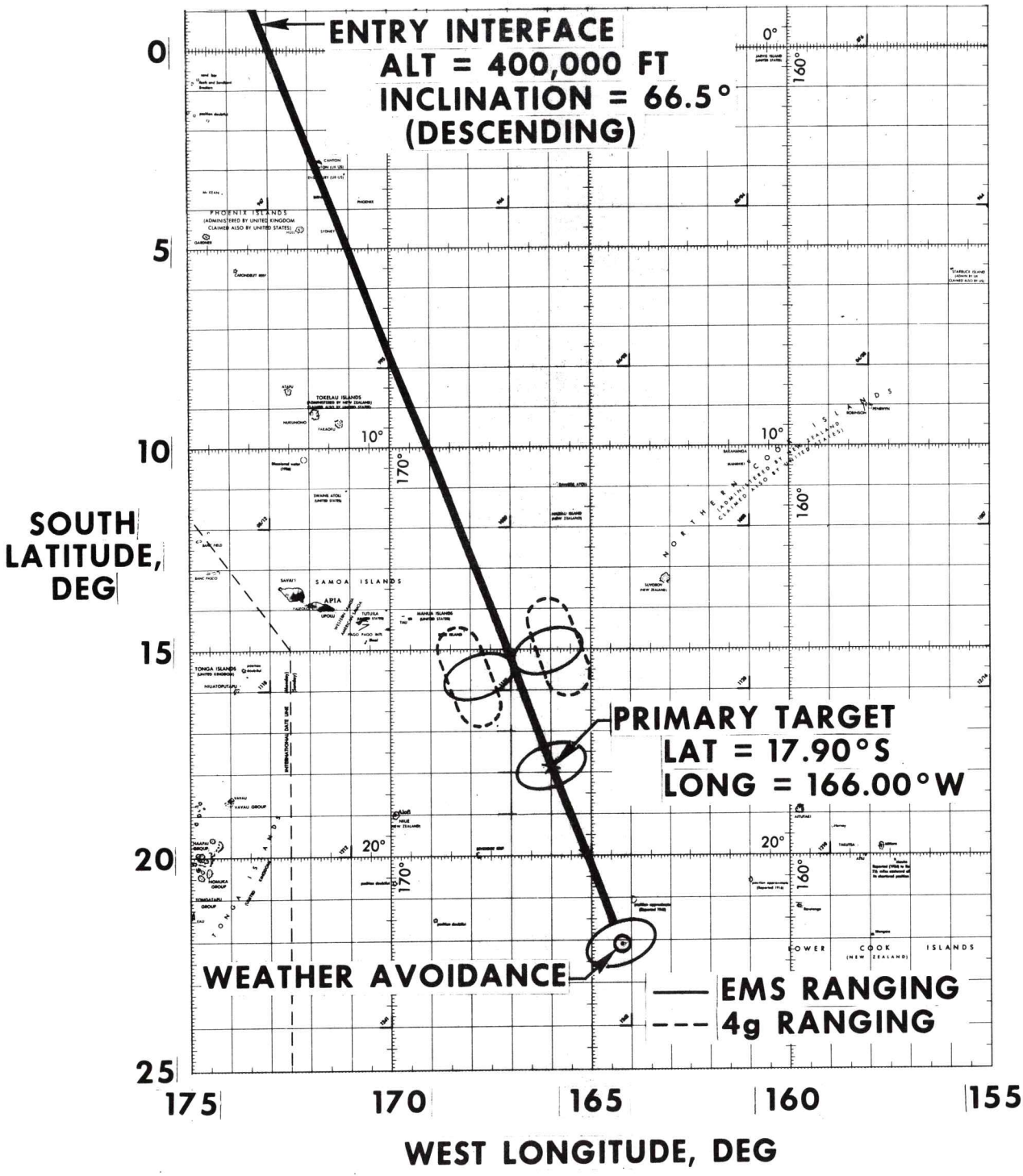


APOLLO 17 TRANSEARTH COAST TO LANDING



LANDING
DEC 19, 13:24 C.S.T.
(8:24 LOCAL)
17.9° S 166.0° W

APOLLO 17 ENTRY LANDING AREA



APOLLO ALTERNATE MISSION SUMMARY

NO GO FOR TLI IN EARTH ORBIT	LM JETTISON AND DEORBIT INTO PACIFIC INCREASE INCLINATION TO 45 DEG PHOTOGRAPHY OVER AUSTRALIA, SOUTH AMERICA, AND AFRICA IN APPROXIMATELY 240 BY 115 ORBIT DEORBIT AND LANDING IN PACIFIC, NEAR NOMINAL
NO GO FOR LANDING DURING TLC ● CSM ALONE	FREE-RETURN TRAJECTORY 20-DEG LPO INCLINATION (NODE SHIFTED 55 DEG EAST) 6-DAY LPO STAYTIME SPS TEI ON REV 80 APPROXIMATELY 304-HOUR TOTAL MISSION TIME
● CSM + LM	NOMINAL MISSION LPO WITH 20-DEG INCLINATION SPS TEI ON REV 75 APPROXIMATELY 304-HOUR TOTAL MISSION TIME
NO GO FOR LANDING IN LUNAR ORBIT	SAME AS CSM + LM MISSION ABOVE

MPAD 72-433-S

SUMMARY OF APOLLO MISSIONS

EARTH ORBIT MISSIONS

- AS-201 - SUBORBITAL, HIGH HEAT RATE (SATURN IB)
- AS-202 - SUBORBITAL, HIGH HEAT LOAD (SATURN IB)
- APOLLO 4 (AS-501) - SUBORBITAL, LUNAR RETURN VELOCITY
- APOLLO 5 - FIRST LM FLIGHT (SATURN IB)
- APOLLO 6 (AS-502) - CLOSED LOOP EDS
- APOLLO 7 - FIRST MANNED APOLLO (SATURN IB)
- APOLLO 9 - FIRST MANNED LM

LUNAR MISSIONS

- APOLLO 8 - FIRST MANNED MISSION TO MOON
- APOLLO 10 - FIRST SEPARATION OF LM FROM CSM IN LUNAR ORBIT
  LM DESCENDS WITHIN 48,000 FT OF SURFACE
- APOLLO 11 - FIRST MANNED LUNAR LANDING
- APOLLO 12 - FIRST LM ASCENT STAGE IMPACT ON MOON
  FIRST TIME TWO EVA'S PERFORMED
  FIRST PINPOINT LANDING

LUNAR MISSIONS (CONCLUDED)

- APOLLO 13 - FIRST S-IVB IMPACT ON MOON
  FIRST CREWMAN SUBSTITUTION
  FIRST MAJOR MALFUNCTION ON A LUNAR MISSION
- APOLLO 14 - FIRST USE OF DIRECT RENDEZVOUS IN LUNAR ORBIT
- APOLLO 15 - FIRST TIME THREE EVA'S PERFORMED
  FIRST USE OF ROVER
  FIRST SUBSATELLITE LAUNCHED IN LUNAR ORBIT
  FIRST CISLUNAR EVA
- APOLLO 16 - EXTENSION OF SCIENTIFIC GOALS
  AND SPACECRAFT OPERATION