OK
mc

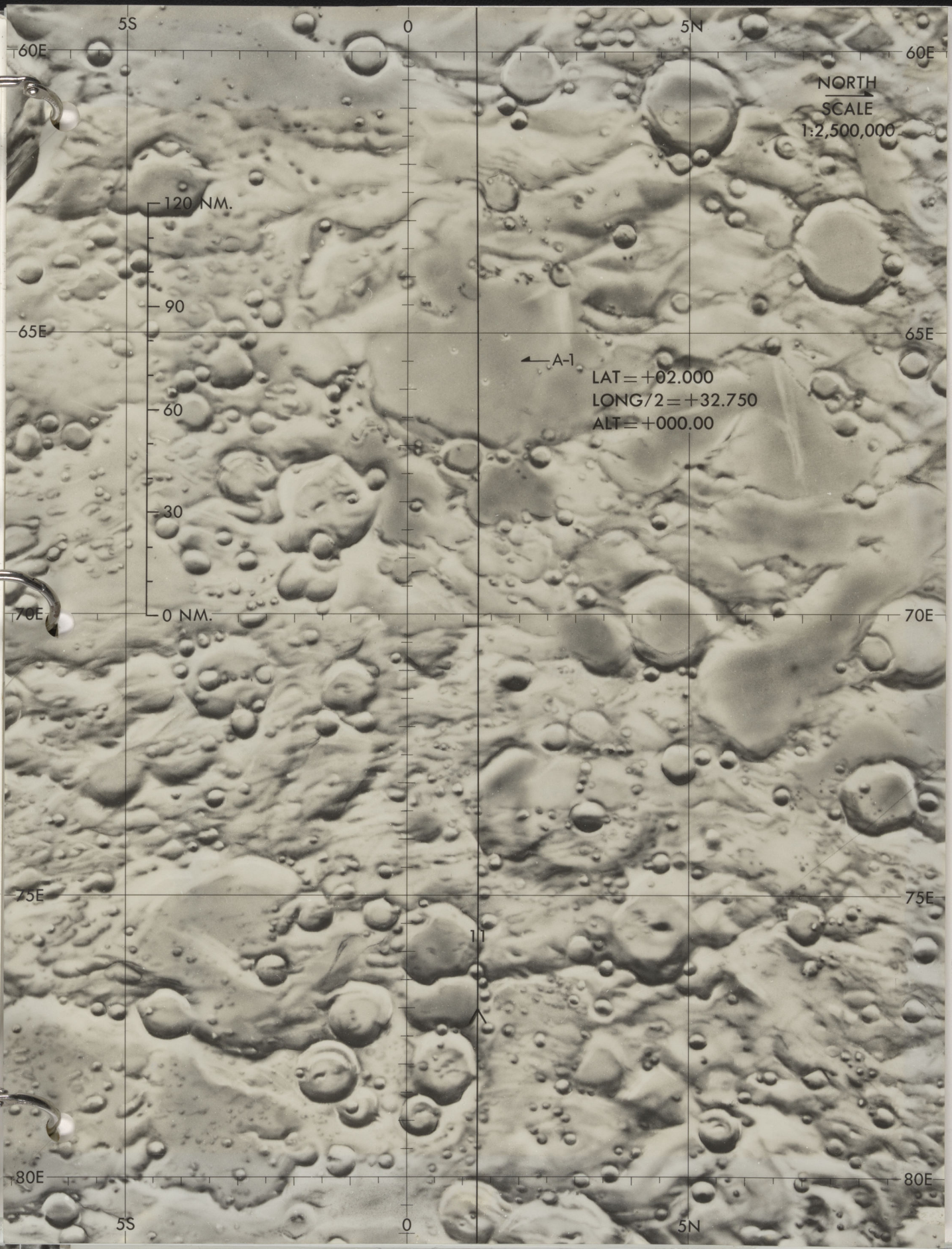
APOLLO 11	
CSM LUNAR LANDMARK MAPS	
PART NO	S/N
SKB32100080 - 322	1001

16 JULY

SUMMARY

LAUNCH DATE JULY 16, 1969

TYPE	NUMBER	LATITUDE	LONGITUDE	DIAMETER (ft)	GRAPHIC NO.
PSEUDO LANDING SITE	A1	+02.000°	+65.500°		A 1
INITIAL POINT AND LANDING SITE 2	IP	+01.885°	+28.726°		SITE 2 OBLIQUE 1:200,000 1:630,000
	130	+01.266°	+23.679°	2100	
	SITE 2	+00.714°	+23.708°		
SURVEYOR LOCATION	V	+01.500°	+23.200°		SITE 2


5S
0
5N
60E
NORTH
SCALE
1:2,500,000
120 NM.
90
65E
A-1
LAT = +02.000
LONG/2 = +32.750
ALT = +000.00
60
30
0 NM.
70E
75E
11
80E

Armstrong

CSM Maps

The prototype lunar maps for the CSM are attached. A preliminary list of needed corrections is inside the Lunar Maps (CSM) book.

The two graphics provided for the pseudolandmark, G1, were locally reproduced because the final graphics from the mapping agencies were not available.

I believe the Lunar Maps (CSM) book should contain a 1:630,000 and a 1:2,500,000 scale graphic. The 1:630,000 will give a better view of the area immediately around G1 and the 1:2,500,000 scale graphic will give a good overall view including lead-in features such as the IP.

The final copy of the 1:100,000 scale landing site map will have a grid overlaid to match the 1:100,000 graphic in the Lunar Surface Maps package in the LM.

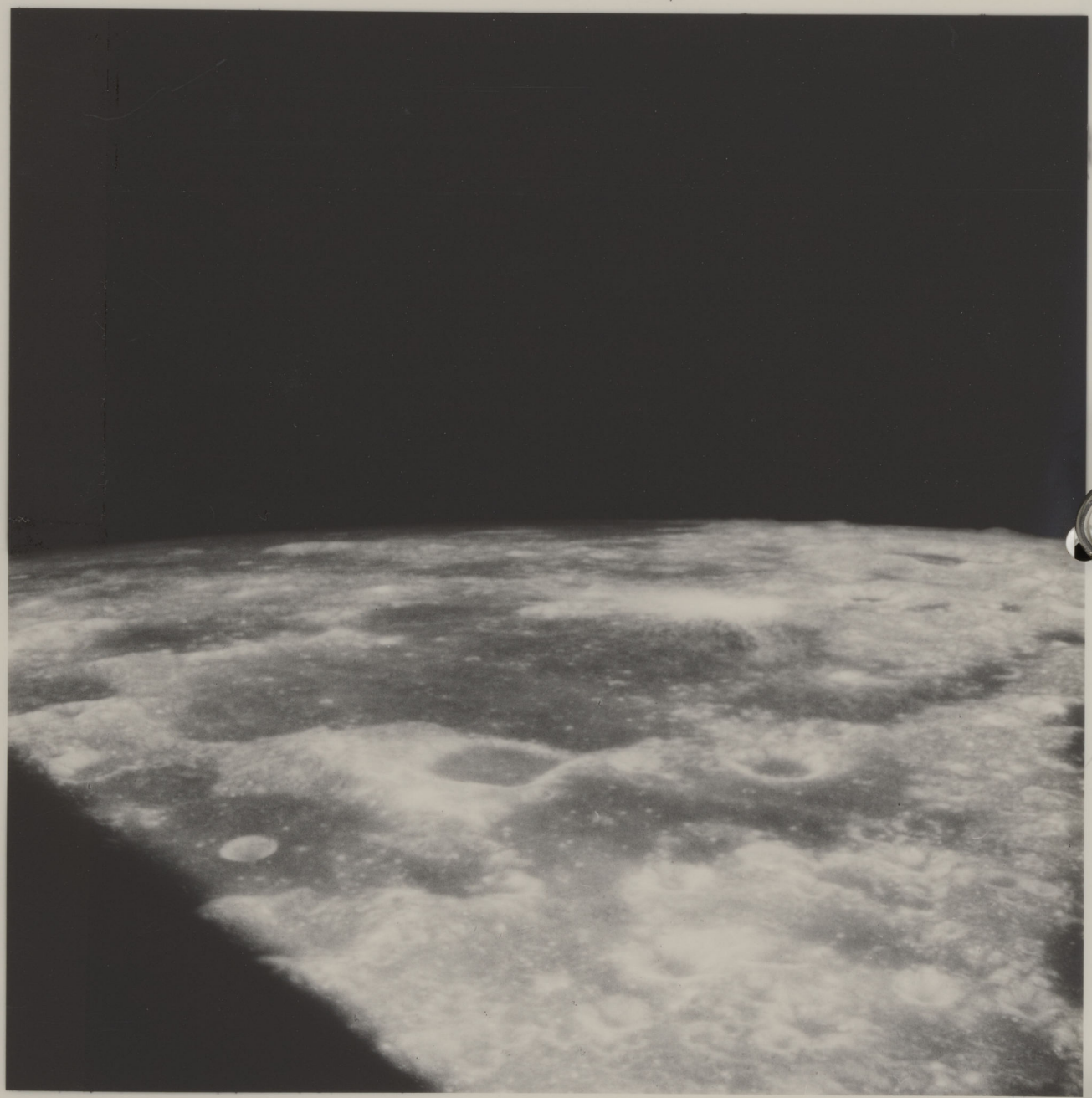
The description list of photographic targets is not yet available. The photo targets indicated on the target of opportunity map (ATO) and the descriptive list will be reduced by the targets photographed on Apollo 10.

The final copies will have tabs on the side of the G1 and landing site landmark graphics.

More copies of the maps are being produced so that training items will be available in either Houston or Cape Kennedy.

Data is now available to give the difference in trunnion angle between the landmark and the IP when the landmark is exactly on the horizon. If landmark 130 is on horizon then its IP is at an angle of 1.2610 lower in field of view. The difference in trunnion between landmark G1 and its IP is 1.161° when G1 is on the horizon (T_1 time).

AI AREA



NASA
AS10-30-4494

JULY 16 LAUNCH

SCALE 1:200,000

20° EAST SUN ANGLE

LANDING SITE LANDMARK MAPS

MISSION APOLLO 11
SITE 2
LUNAR LANDING SITE 2

LATITUDE (0.001°)	LONG/2 (0.001°)	LONGITUDE (0.001°)	ALTITUDE (0.01nm)	HORIZONTAL UNCERT. (nm)	ALTITUDE UNCERT. (nm)
+00.714°	+11.854°	+23.708°	-001.61		

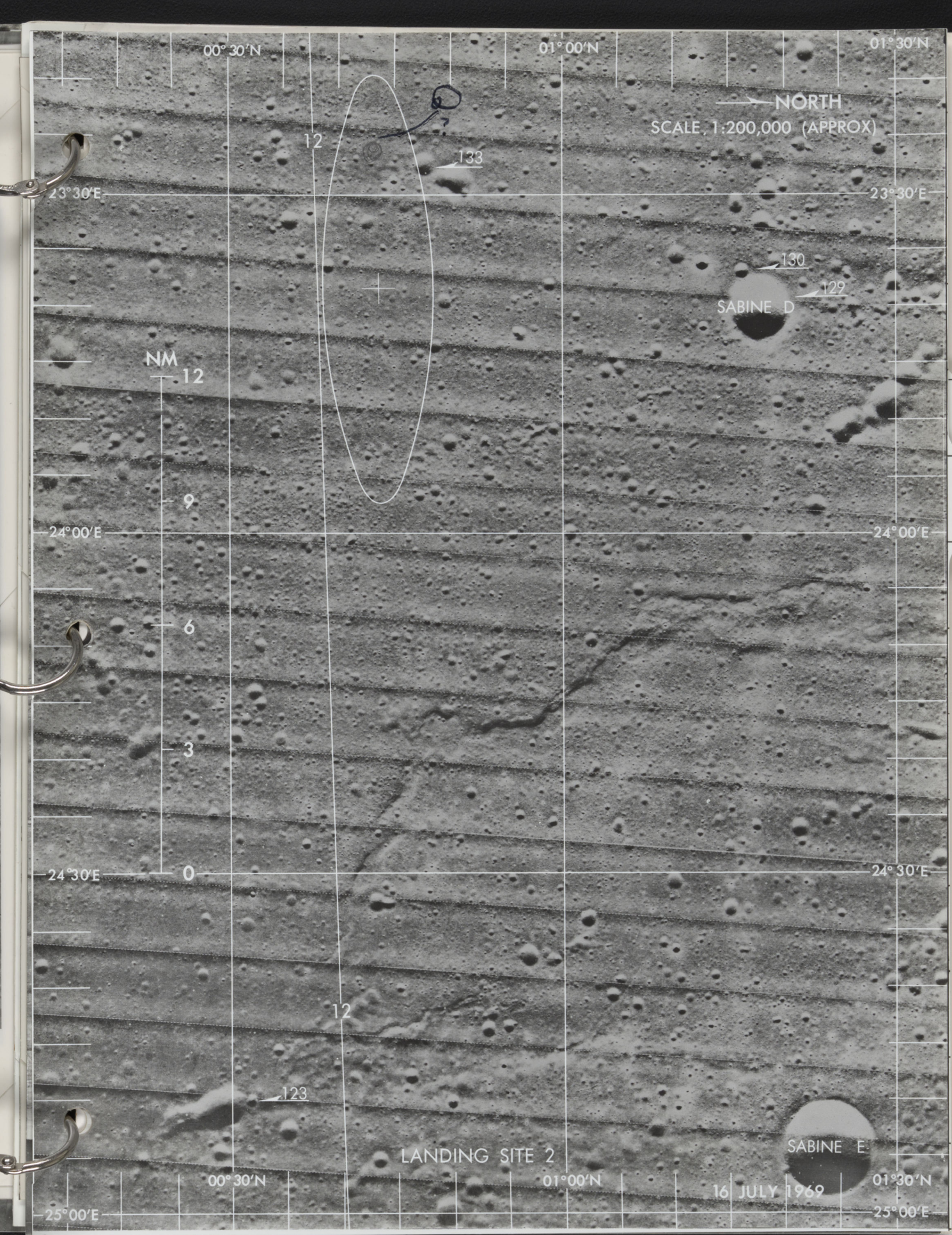
LUNAR LANDING SITE 2 LANDMARKS

	LANDMARK NUMBER	LATITUDE (0.001°)	LONG/2 (0.001°)	LONGITUDE (0.001°)	ALTITUDE (0.01nm)	LANDMARK DIAMETER (ft)
*	130	+01.266°	+11.839°	+23.679°	-001.68	2100
	129	+01.285°	+11.872°	+23.744°	-001.76	9480
	133	+00.787°	+11.758°	+23.515°	-001.68	3300
	123	+00.505°	+12.444°	+24.889°	-001.71	1500

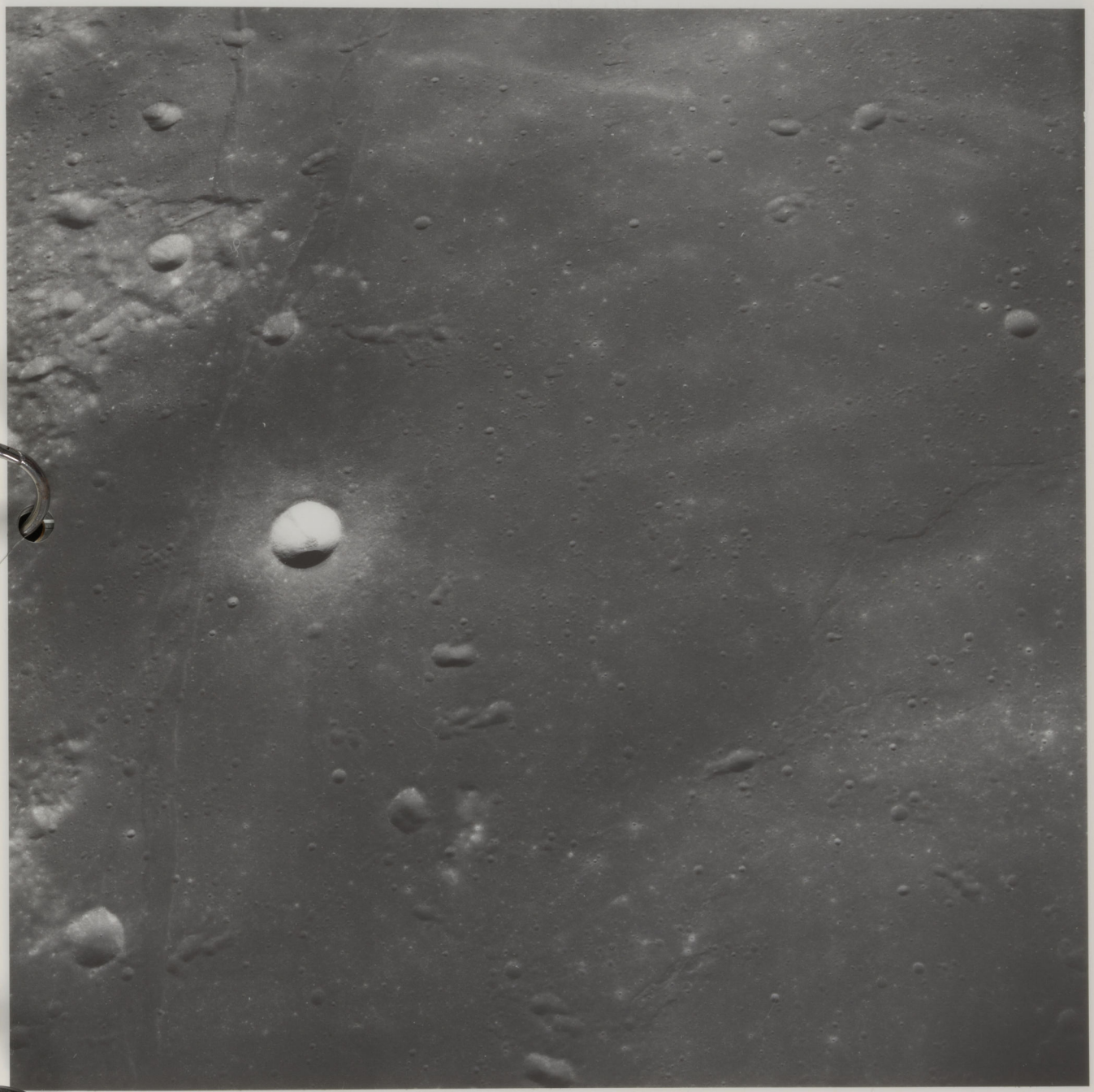
* PREFERRED SIGHTING


SCALE
1:400,000 (APPROX)
12
SCHMIDT
RITTER
SABINE
SURVEYOR V
133
130
129
MOLTKE
123
SABINE E
12
LANDING SITE 2
16 JULY 1969

SITE 2


00° 30′N
01° 00′N
01° 30′N
NORTH
SCALE, 1:200,000 (APPROX)
12
133
23° 30′E
130
129
SABINE D
NM
12
9
24° 00′E
6
3
24° 30′E
0
12
123
LANDING SITE 2
SABINE E
16 JULY 1969
25° 00′E
SITE 2
SITE 2

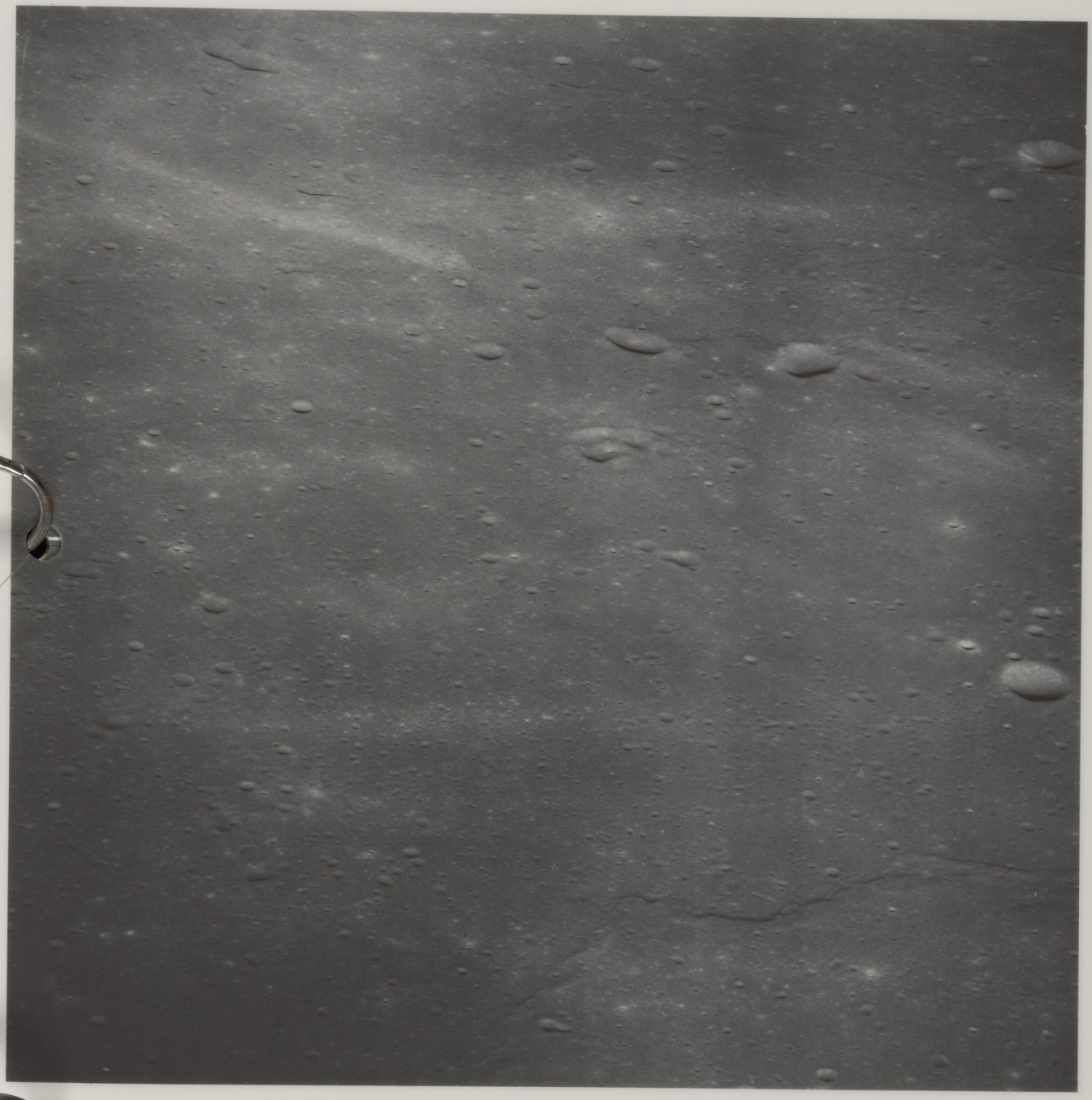
LANDING SITE 2



NASA
AS10-32-4848

JULY 16 LAUNCH

LANDING SITE 2



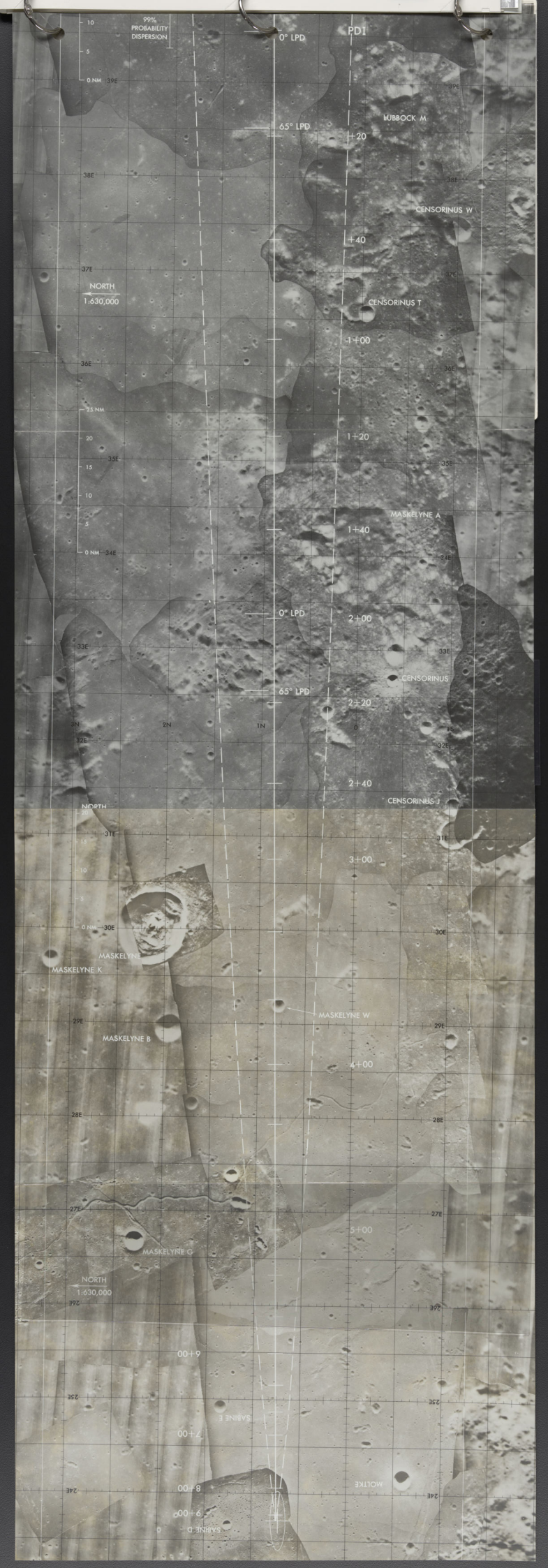
NASA
AS10-31-4608

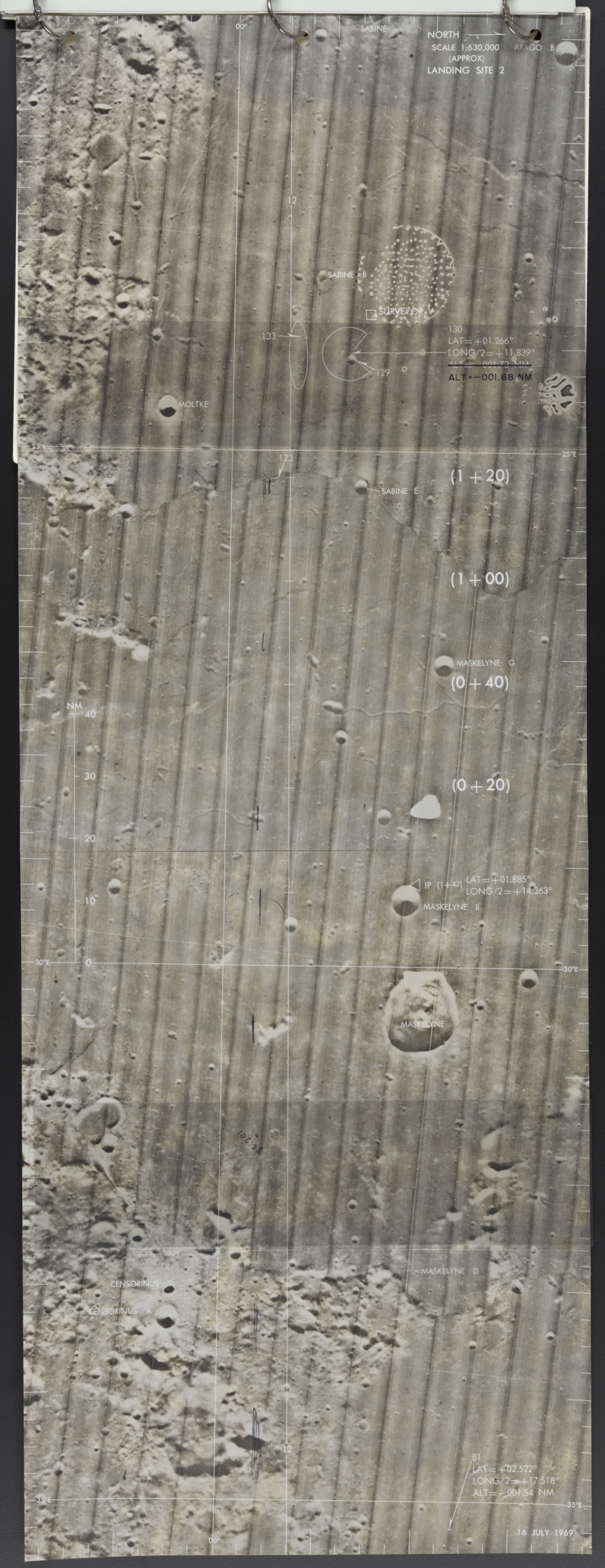
JULY 16 LAUNCH

LANDING SITE 2

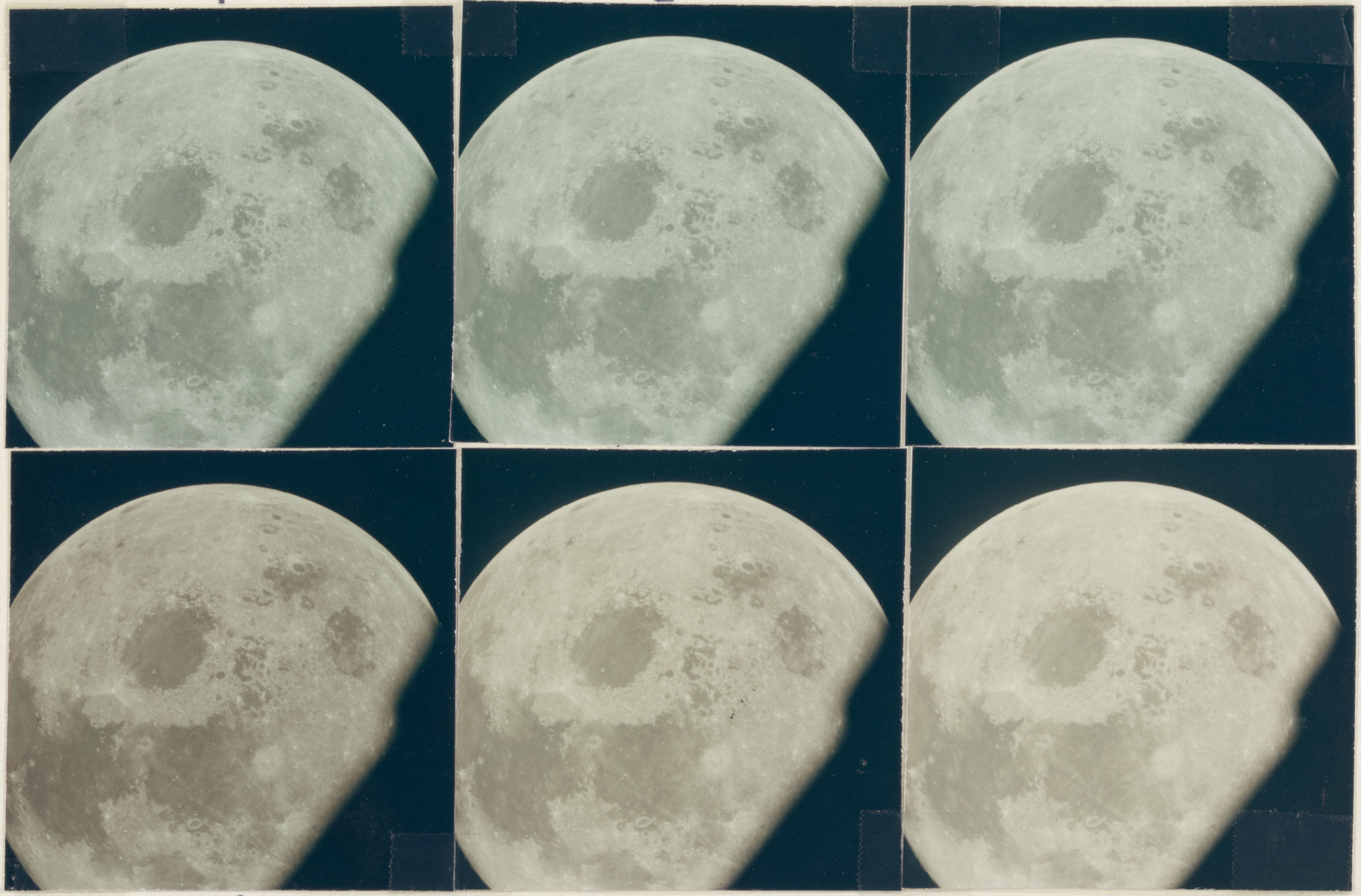
NASA
AS10-32-4753

JULY 16 LAUNCH


99% PROBABILITY DISPERSION
10
5
0 NM
0° LPD
PDI
65° LPD
HUBBOCK M
+20
CENSORINUS W
+40
NORTH
1:630,000
CENSORINUS T
1+00
25 NM
20
15
10
5
0 NM
1+20
MASKELYNE A
1+40
0° LPD
2+00
CENSORINUS
65° LPD
2+20
2N
1N
0
2+40
CENSORINUS J
NORTH
3+00
MASKELYNE K
MASKELYNE W
MASKELYNE B
4+00
MASKELYNE G
5+00
NORTH
1:630,000
6+00
SABINE E
7+00
8+00
MOLTKE
9+00
SABINE D
39E
38E
37E
36E
35E
34E
33E
32E
31E
30E
29E
28E
27E
26E
25E
24E

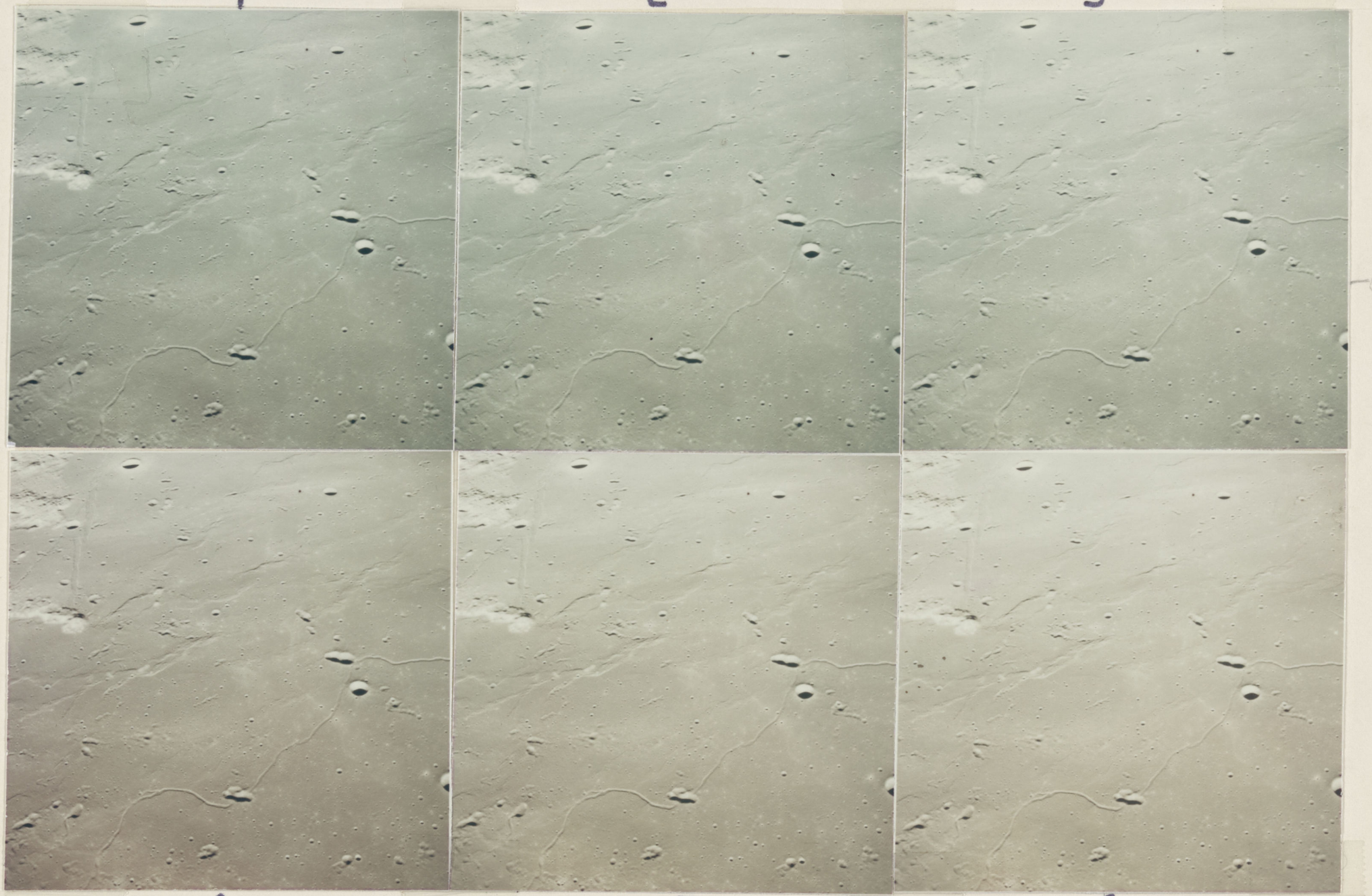

00°
SABINE
NORTH
SCALE 1:630,000
(APPROX)
LANDING SITE 2
ARAGO B
12
SABINE B
SURVEYOR V
133
130
LAT = +01.266°
LONG/2 = +11.839°
ALT = 001.73 NM
129
ALT = −001.68 NM
MOLTKE
25°E
123
SABINE E
(1 + 20)
(1 + 00)
MASKELYNE G
(0 + 40)
NM
40
30
20
(0 + 20)
10
IP (1+42)
LAT = +01.885°
LONG/2 = +14.363°
MASKELYNE B
30°E
0
MASKELYNE
102.3°
MASKELYNE D
CENSORINUS
CENSORINUS A
12
B1
LAT = +02.522°
LONG/2 = +17.518°
ALT = −001.54 NM
35°E
00°
16 JULY 1969

FULL MOON: POST TE I

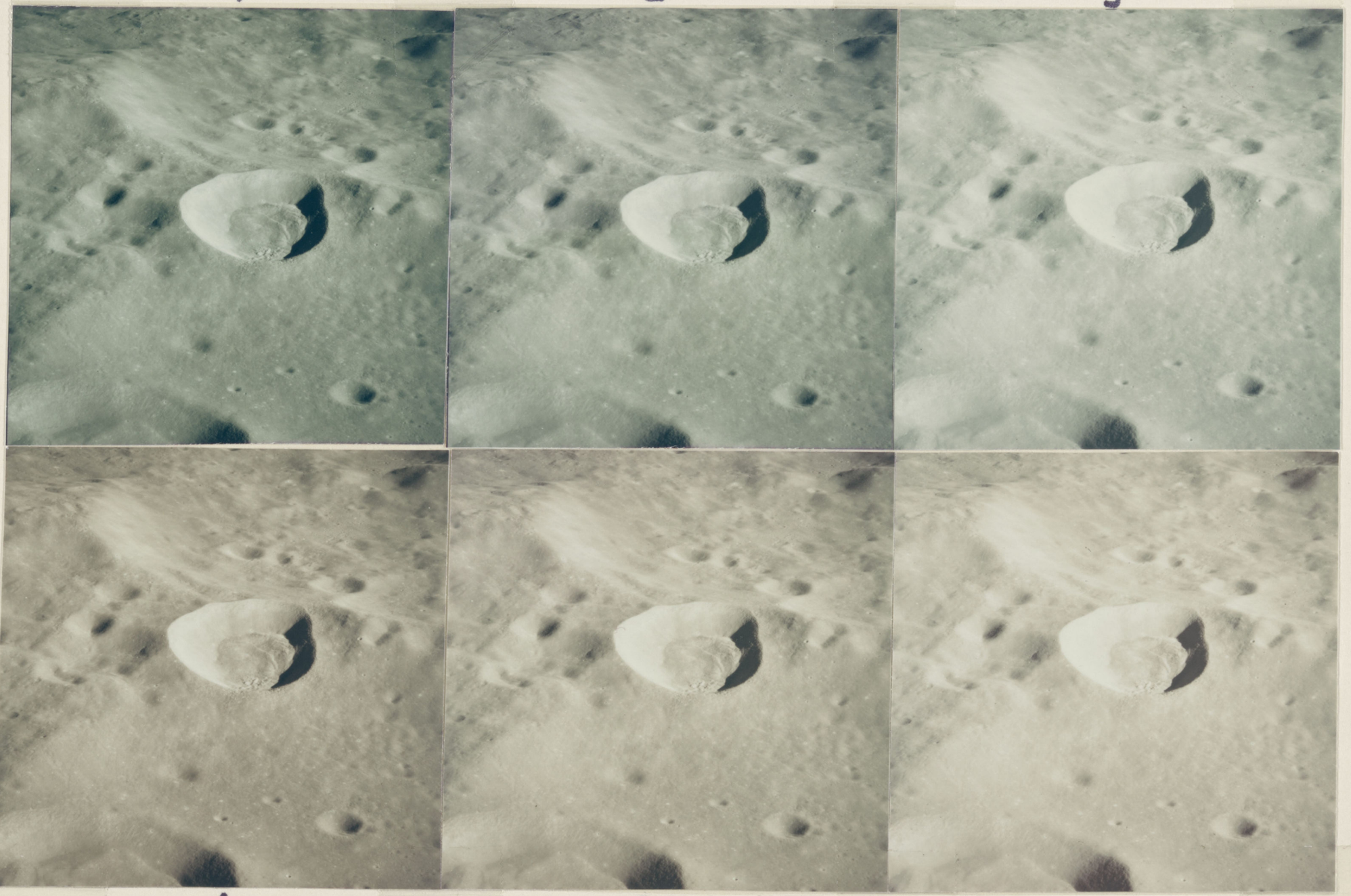


(1) into sun (45° above horizon)

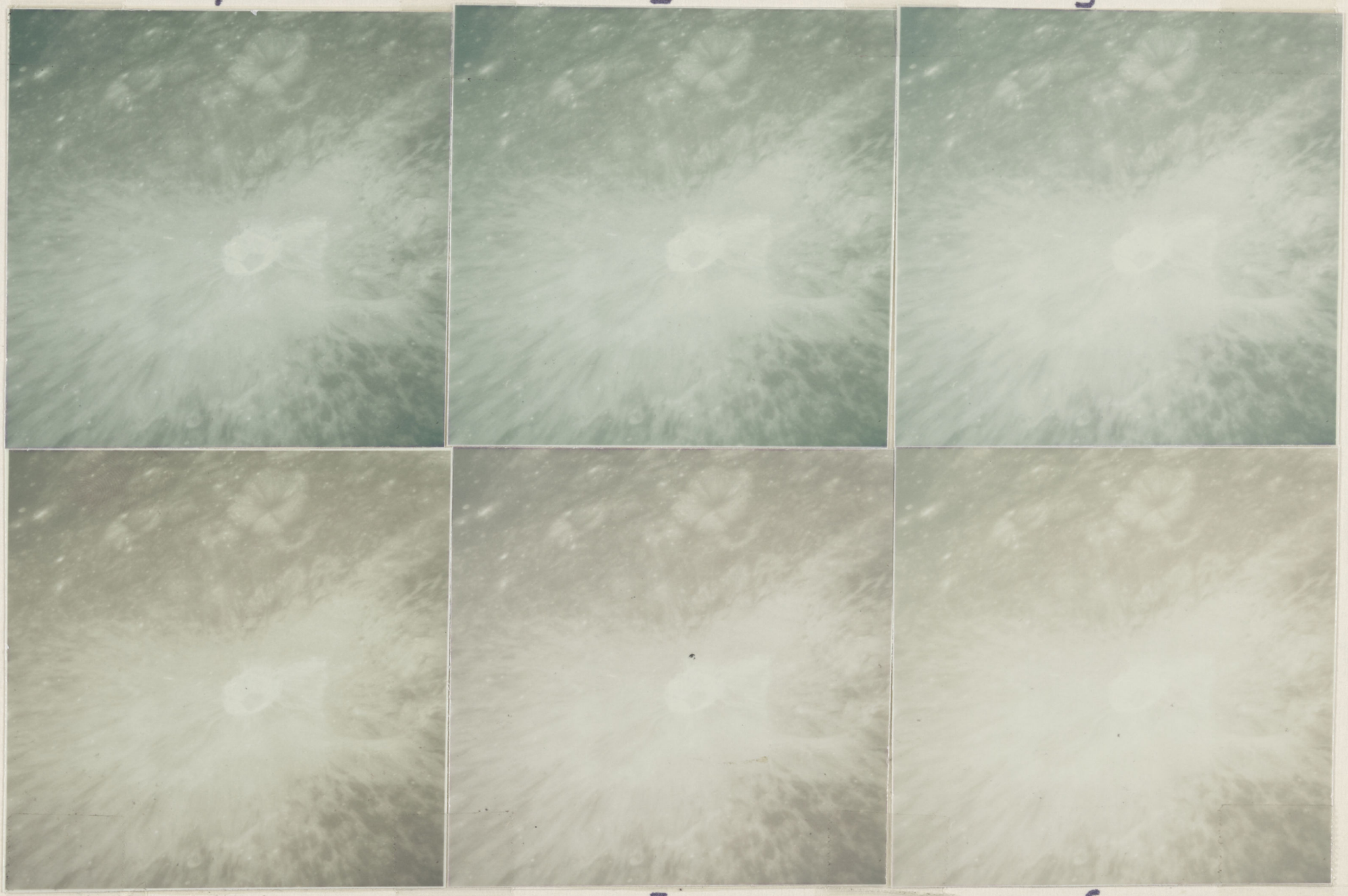
APPROACH TO SITE 2: LOOKING AT 27°E 0.7°N

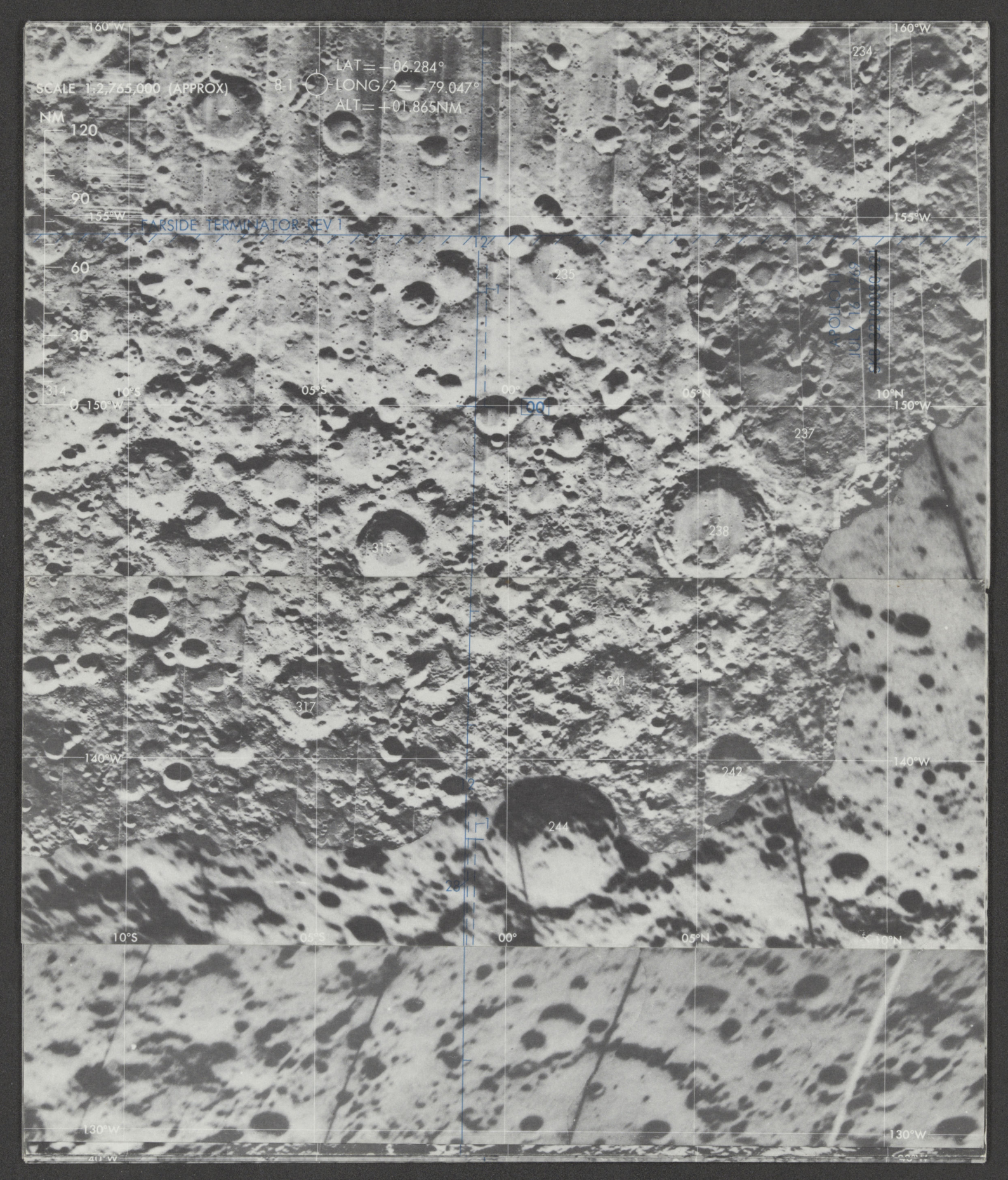


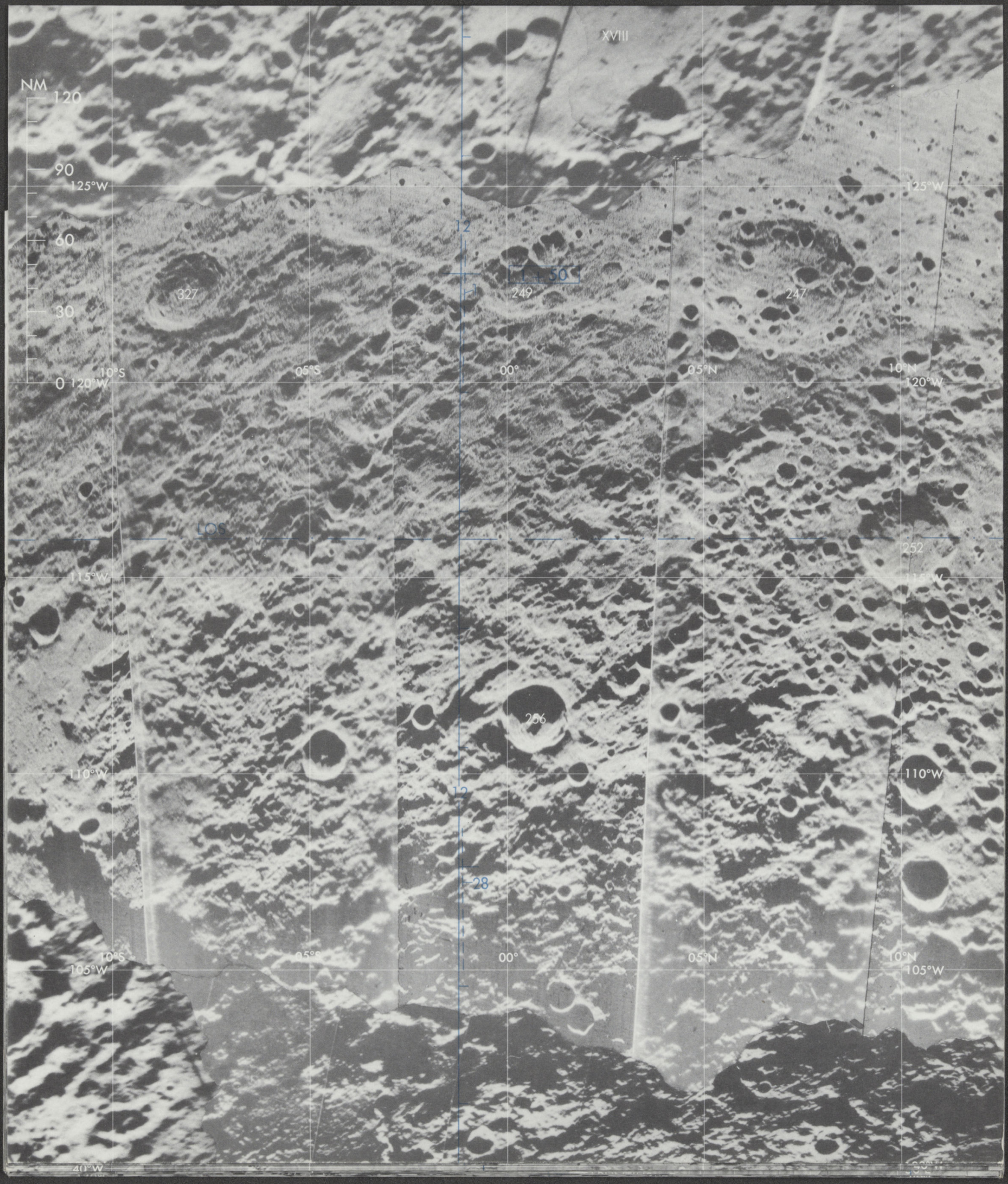
FARSIDE VIEW: LOOKING AT 158° E 6° S
CRATERS 300 AND 302



FOAMING SEA AREA: LOOKING AT 64.5°E 1°N



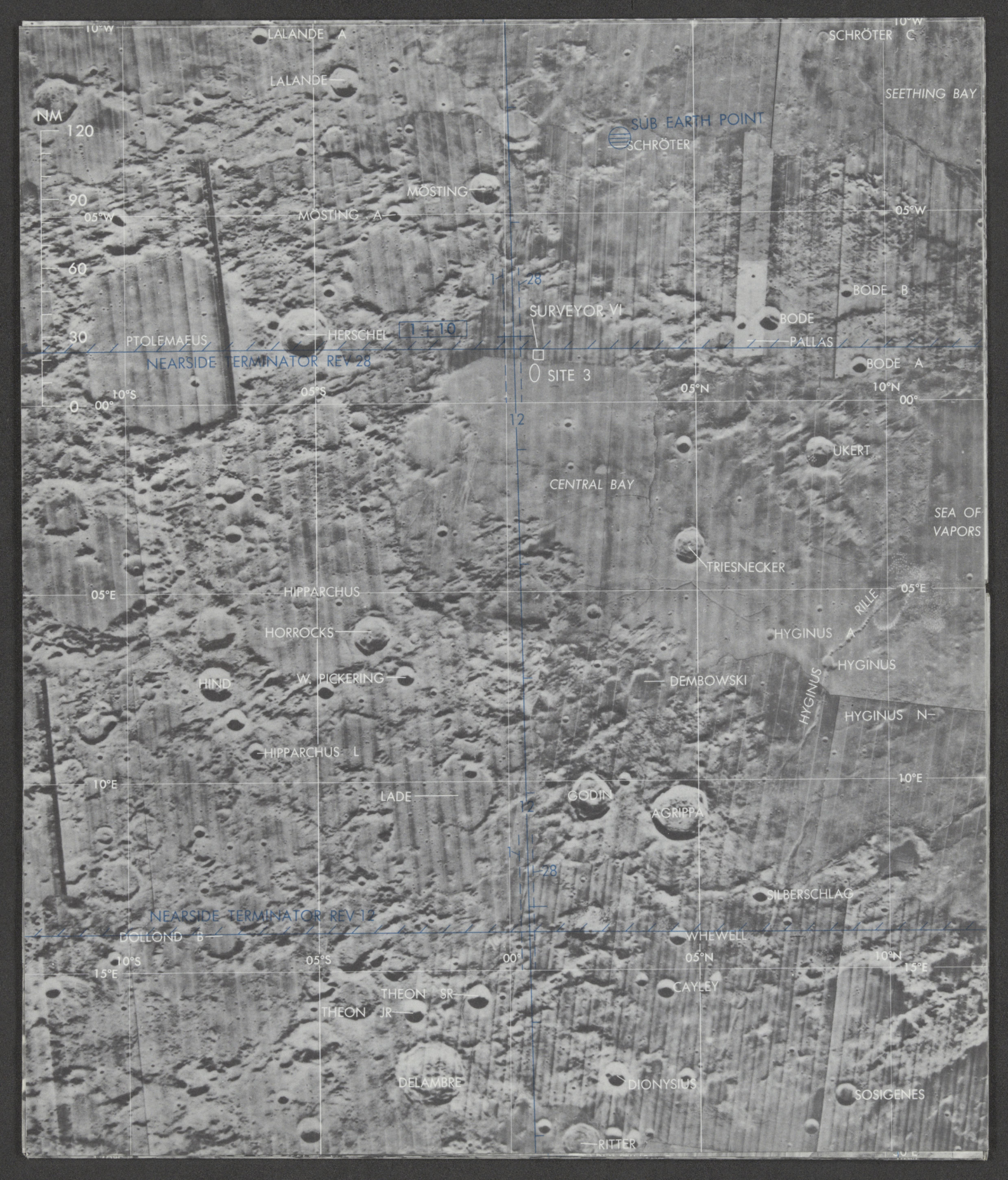

160°W
SCALE 1:2,765,000 (APPROX)
NM
120
90
155°W
60
30
LAT= −06.284°
LONG/2= −79.047°
ALT= +01.865NM
8.1
FARSIDE TERMINATOR REV 1
234
235
237
238
241
242
244
APOLLO 17 LANDING SITE
10°S
05°S
00°
05°N
10°N
150°W
140°W
130°W

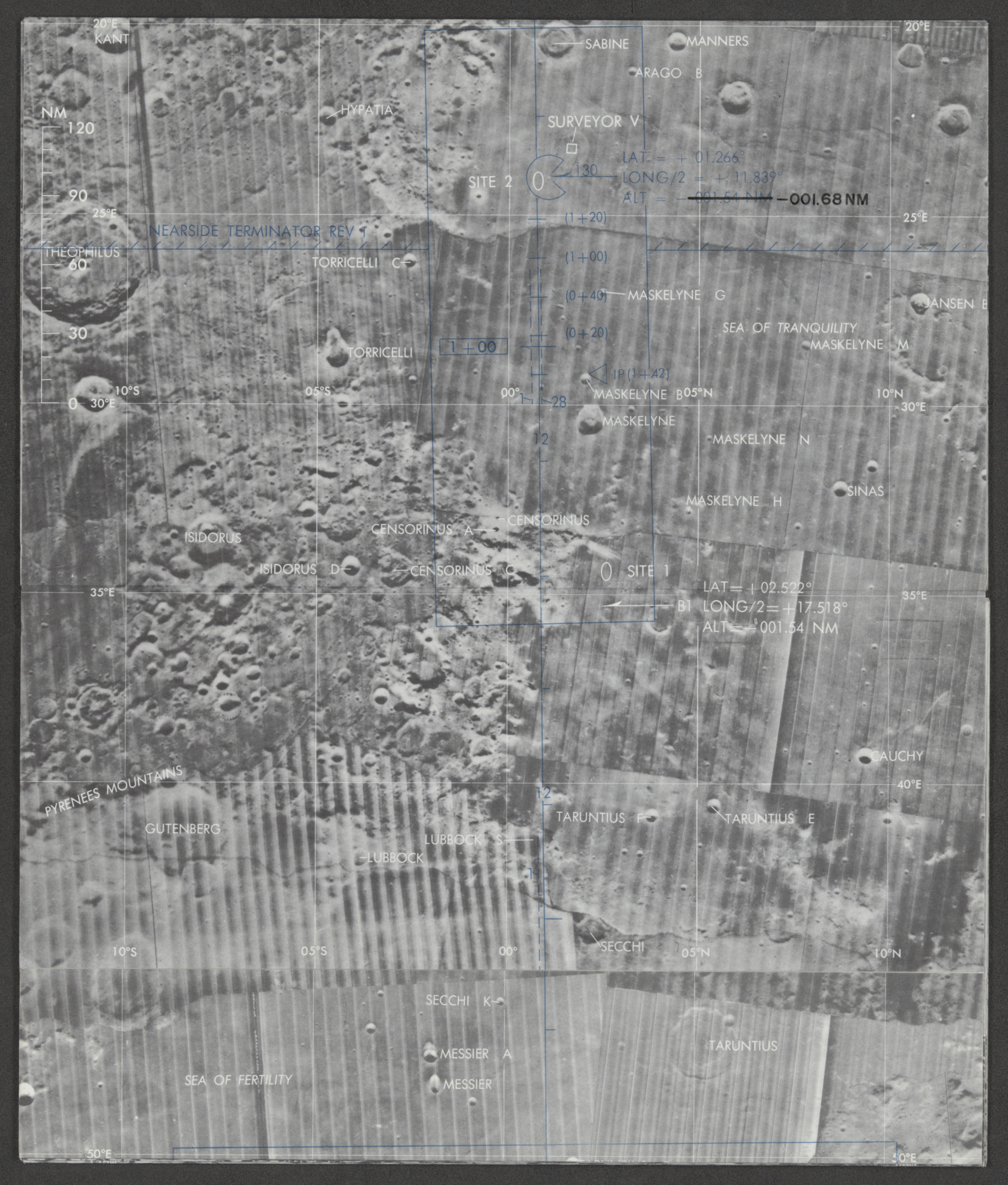

XVIII
NM
120
90
60
30
0
125°W
120°W
115°W
110°W
105°W
10°S
05°S
00°
05°N
10°N
327
249
247
252
256
LOS
12
28

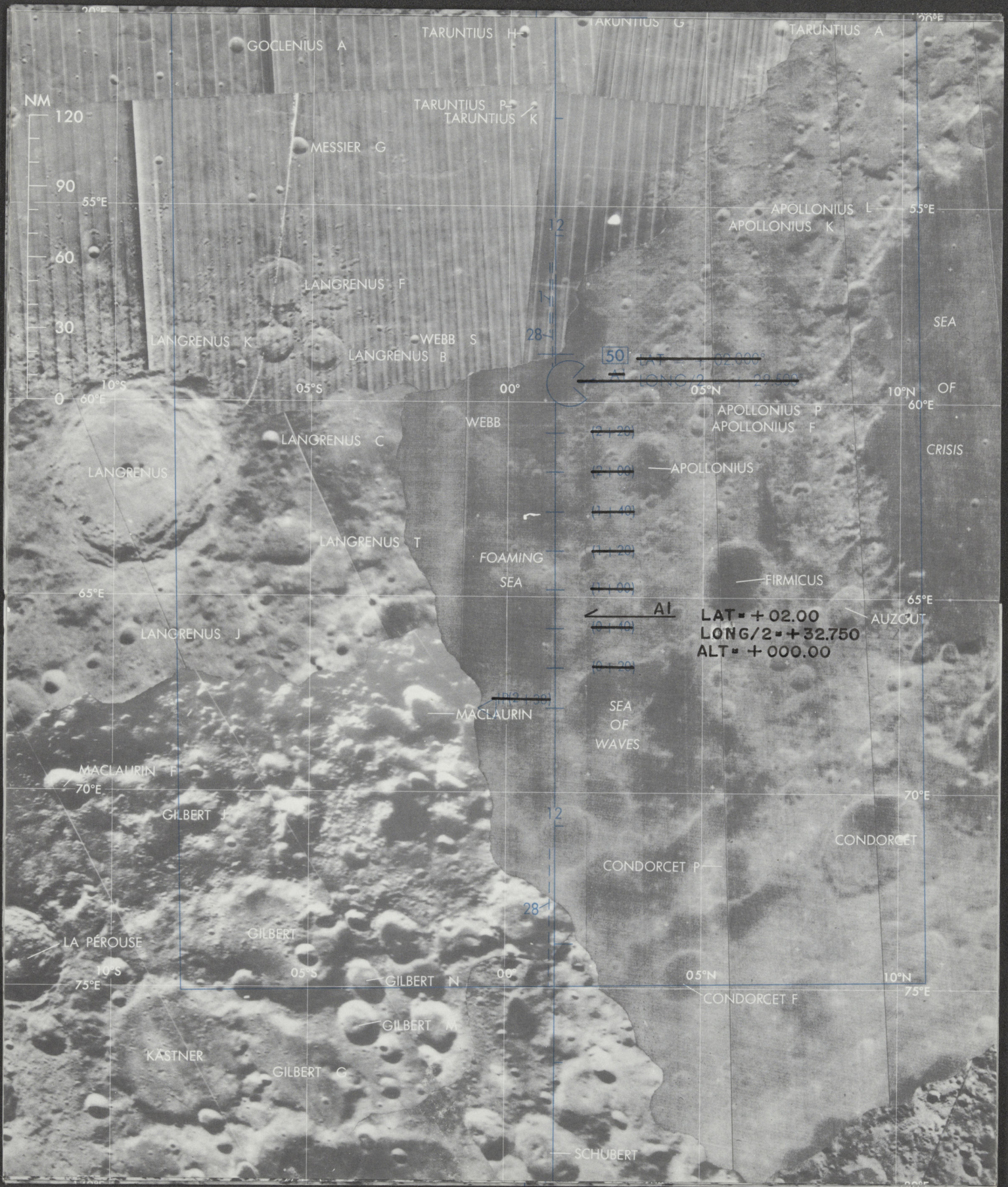

NM
120
90
60
30
0
100°W
95°W
90°W
85°W
80°W
75°W
40°W
10°S
05°S
00°
05°N
10°N
D'ALEMBERT
MOUNTAINS
SCHLUTER
HEDIN Z
HARTWIG B
OLBERS A
OLBERS
RICCIOLI
RICCIOLI C
GRIMALDI A

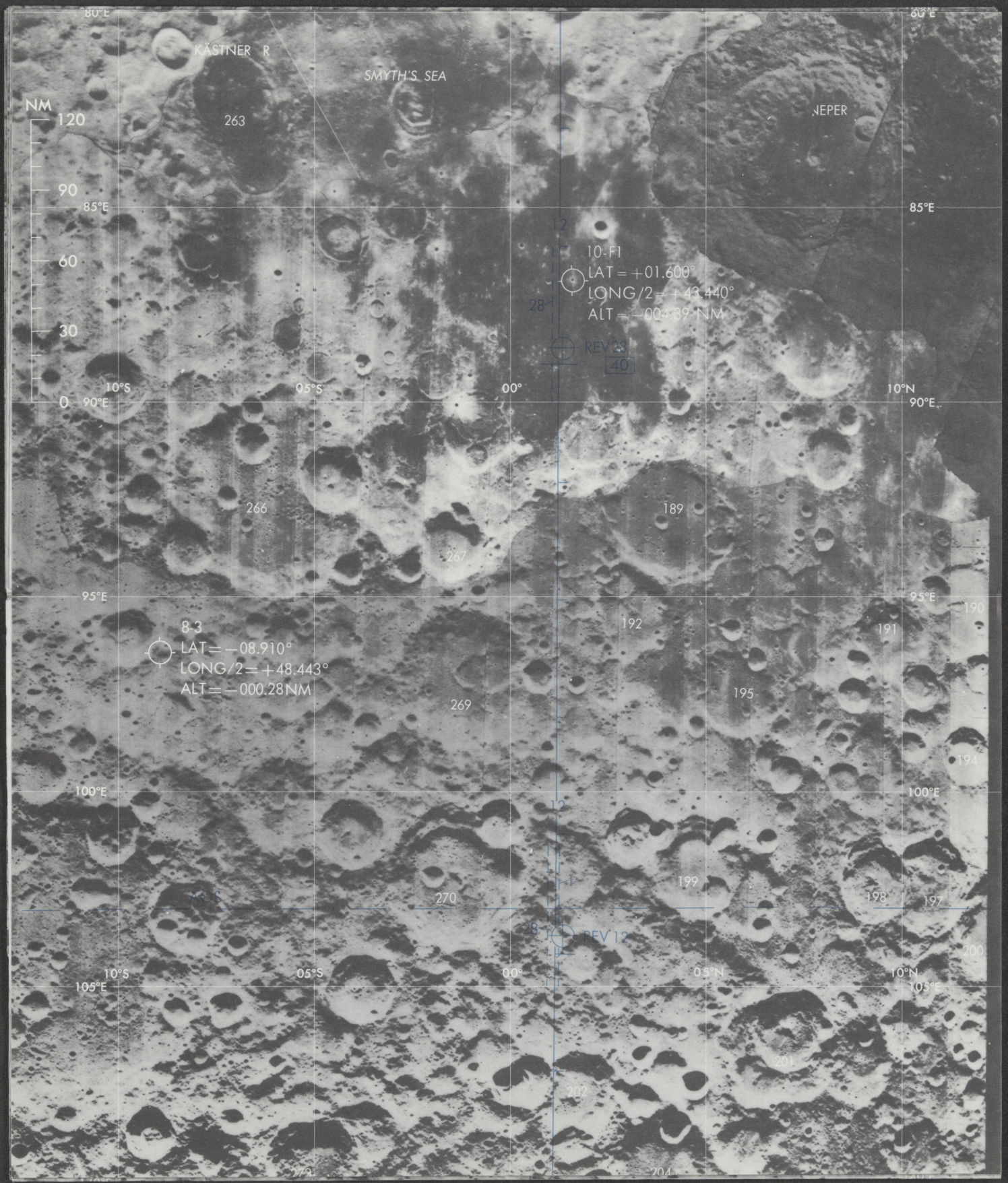

70°W
GRIMALDI
HEVELIUS
CAVALERIUS D
CAVALERIUS
LOHRMANN
NM
120
90
GRIMALDI D
CAVALERIUS F
65°W
12
60
SIRSALIS C
SIRSALIS B
DAMOISEAU D
DAMOISEAU A
1 + 30
GALILAEI
30
28
HEVELIUS D
SIRSALIS
0
10°S
05°S
00°
05°N
10°N
60°W
SIRSALIS D
SIRSALIS K
REINER N
SIRSALIS E
OCEAN
55°W
REINER
OF
STORMS
FLAMSTEED GC
HANSTEEN
REINER C
REINER A
FLAMSTEED G
50°W
12
SUESS
REINER B
28
FLAMSTEED
FLAMSTEED B
SURVEYOR I
FLAMSTEED A
SITE 5
KEPLER C
ENCKE E
40°W

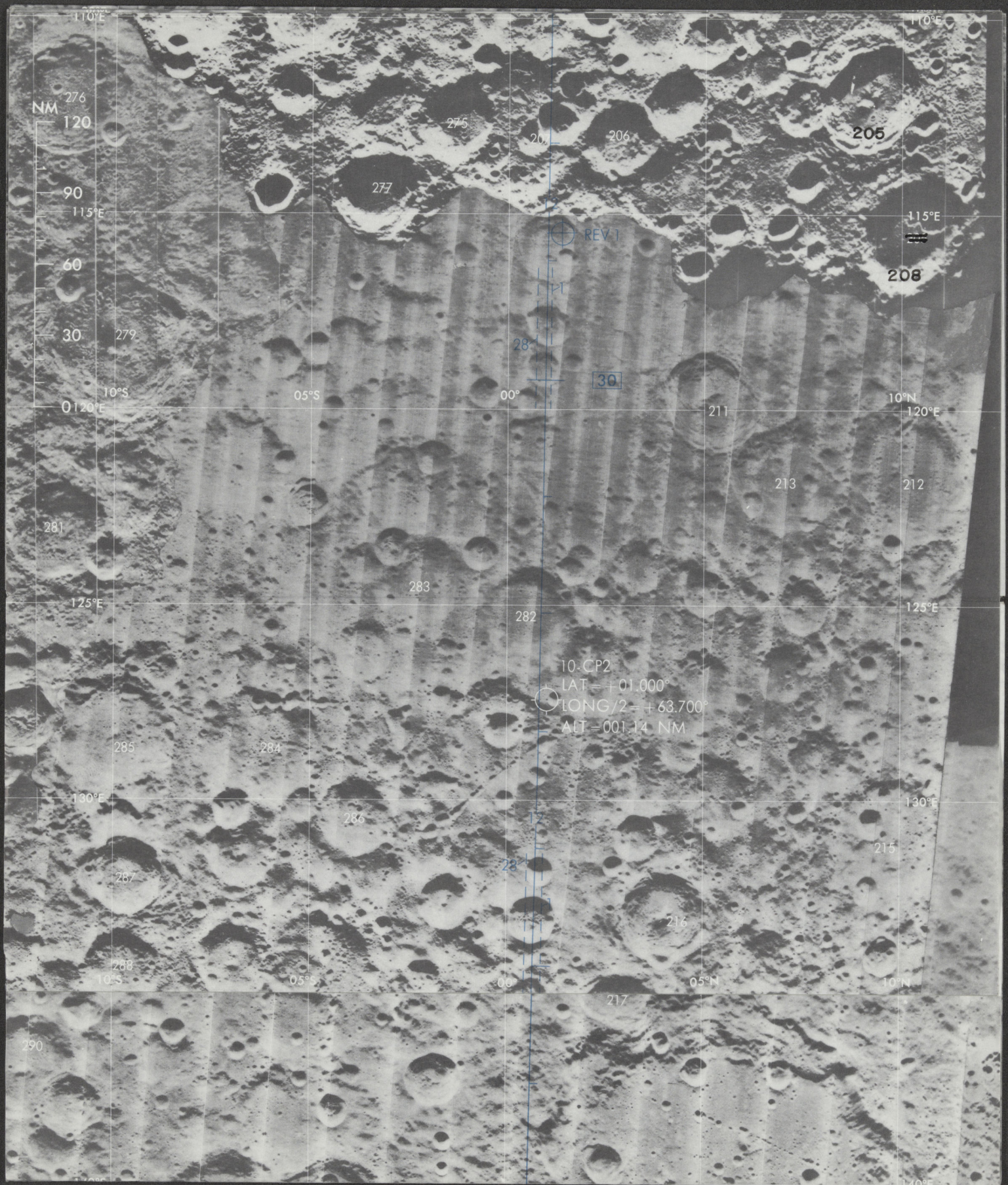

NM
120
90
60
30
0
WICHMANN
KEPLER
SITE 4
ENCKE C
ENCKE
35°W
KUNOWSKY
28
1 + 20
LANSBERG F
LANSBERG D
LANSBERG E
LANSBERG A
HORTENSIUS A
10°S
05°S
05°N
MILICHIUS
30°W
EUCLIDES
HORTENSIUS B
12
RIPHAEN MOUNTAINS
HORTENSIUS
LANSBERG
25°W
SURVEYOR III
KNOWN SEA
REINHOLD
FRA MAURO B
FRA MAURO C
FRA MAURO A
REINHOLD B
20°W
FAUTH
COPERNICUS
GAMBART A
COPERNICUS H
28
FRA MAURO
PARRY
10°S
05°S
GAMBART
05°N
10°N
15°W
12
GUERICKE
STADIUS
TURNER
GUERICKE C
GAMBART C
GAMBART B

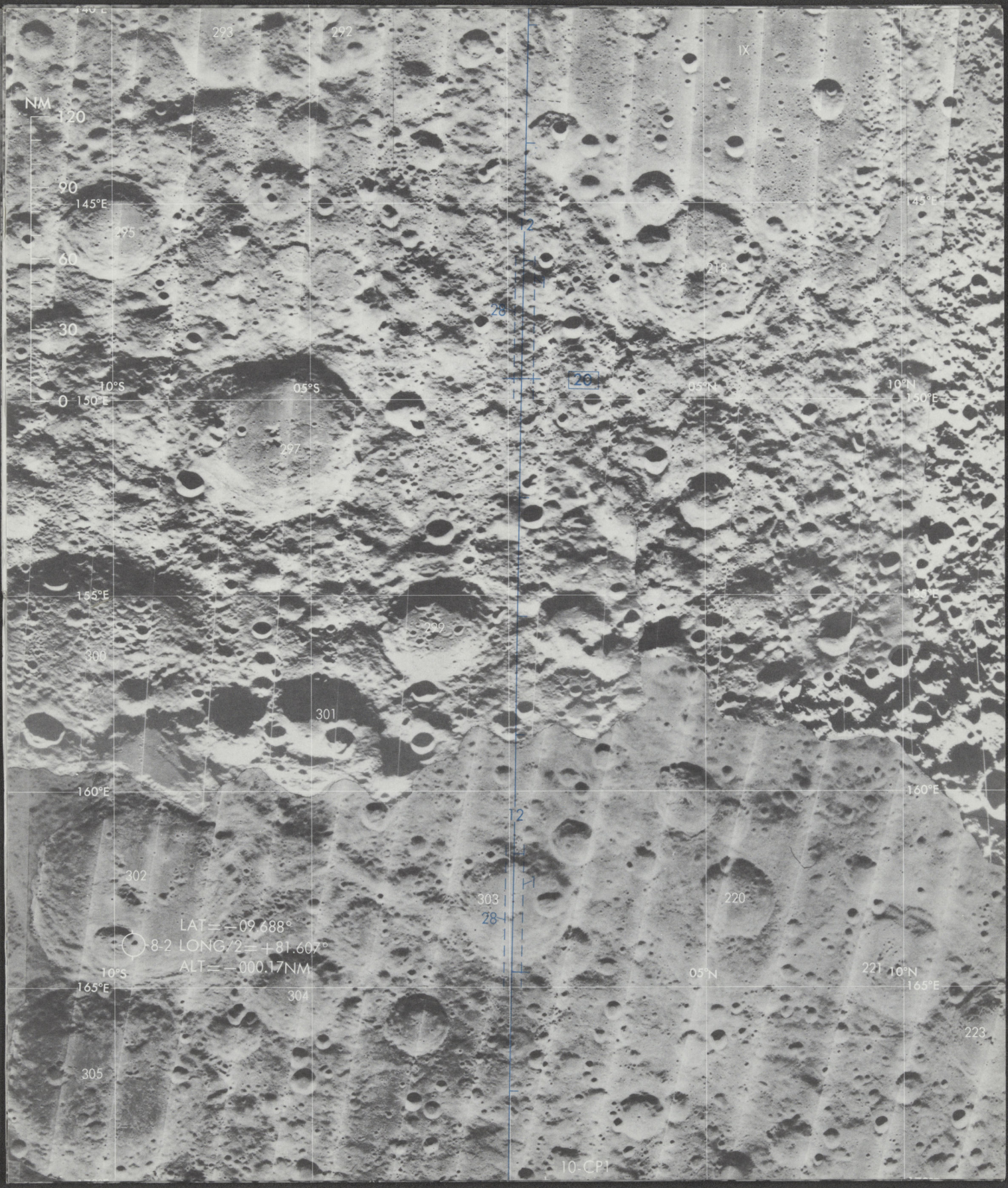

10°W
LALANDE A
LALANDE
SCHRÖTER C
SEETHING BAY
NM
120
90
60
30
0
SUB EARTH POINT
SCHRÖTER
MÖSTING
MÖSTING A
05°W
1
28
BODE B
SURVEYOR VI
BODE
1 + 10
PTOLEMAEUS
HERSCHEL
PALLAS
NEARSIDE TERMINATOR REV 28
SITE 3
BODE A
10°S
05°S
00°
05°N
10°N
12
ÜKERT
CENTRAL BAY
SEA OF VAPORS
TRIESNECKER
05°E
HIPPARCHUS
RILLE
HORROCKS
HYGINUS A
HYGINUS
HIND
W. PICKERING
DEMBOWSKI
HYGINUS N
HIPPARCHUS L
10°E
LADE
GODIN
AGRIPPA
1
28
SILBERSCHLAG
NEARSIDE TERMINATOR REV 12
DOLLOND B
WHEWELL
15°E
CAYLEY
THEON SR
THEON JR
DELAMBRE
DIONYSIUS
SOSIGENES
RITTER

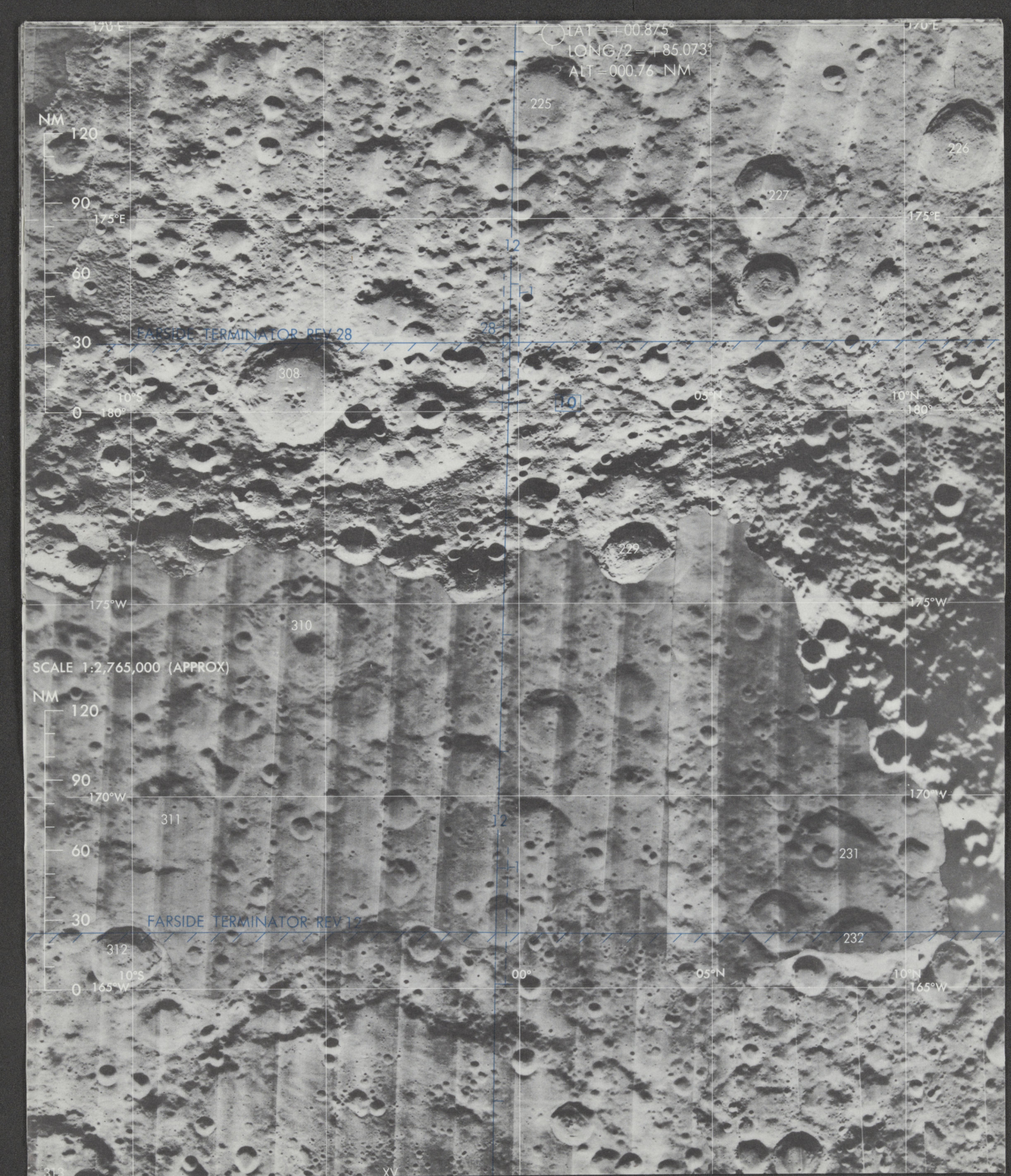

20°E
KANT
SABINE
MANNERS
ARAGO B
HYPATIA
SURVEYOR V
NM
120
90
60
30
0
LAT = + 01.266°
LONG/2 = + 11.839°
ALT = ~~001.54 NM~~ −001.68 NM
SITE 2
130
25°E
(1+20)
NEARSIDE TERMINATOR REV 1
THEOPHILUS
TORRICELLI C
(1+00)
(0+40)
MASKELYNE G
JANSEN E
SEA OF TRANQUILITY
(0+20)
MASKELYNE M
TORRICELLI
1+00
IP (1+42)
10°S
05°S
00°
28
MASKELYNE B
05°N
10°N
30°E
MASKELYNE
12
MASKELYNE N
SINAS
MASKELYNE H
CENSORINUS
CENSORINUS A
ISIDORUS
ISIDORUS D
CENSORINUS C
SITE 1
35°E
LAT = + 02.522°
B1
LONG/2 = + 17.518°
ALT = − 001.54 NM
CAUCHY
40°E
PYRENEES MOUNTAINS
12
TARUNTIUS F
TARUNTIUS E
GUTENBERG
LUBBOCK S
LUBBOCK
SECCHI
SECCHI K
TARUNTIUS
MESSIER A
SEA OF FERTILITY
MESSIER
50°E


GOCLENIUS A
TARUNTIUS H
TARUNTIUS G
TARUNTIUS A
TARUNTIUS P
TARUNTIUS K
MESSIER G
NM
120
90
60
30
0
55°E
APOLLONIUS L
APOLLONIUS K
LANGRENUS F
LANGRENUS K
WEBB S
LANGRENUS B
SEA
OF
CRISIS
10°S
05°S
00°
05°N
10°N
60°E
APOLLONIUS P
APOLLONIUS F
WEBB
LANGRENUS C
LANGRENUS
APOLLONIUS
LANGRENUS T
FOAMING
SEA
FIRMICUS
65°E
AUZOUT
LANGRENUS J
LAT = +02.00
LONG/2 = +32.750
ALT = +000.00
MACLAURIN
SEA
OF
WAVES
MACLAURIN F
70°E
GILBERT J
CONDORCET
CONDORCET P
LA PEROUSE
GILBERT
75°E
GILBERT N
CONDORCET F
GILBERT M
KASTNER
GILBERT C
SCHUBERT


KÄSTNER R
SMYTH'S SEA
NEPER
263
NM
120
90
60
30
0
85°E
80°E
10-F1
LAT = +01.600°
LONG/2 = +43.440°
ALT = −004.39 NM
REV 23
40
28
12
10°S
05°S
00°
10°N
90°E
266
189
267
95°E
8-3
LAT = −08.910°
LONG/2 = +48.443°
ALT = −000.28 NM
192
191
190
269
195
194
100°E
270
199
198
197
REV 12
105°E
201
202
204


110°E
NM
120
90
60
30
0
276
275
277
205
206
115°E
208
REV 1
279
280
281
10°S
05°S
00°
30
10°N
120°E
211
213
212
283
125°E
282
10-CP2
LAT = +01.000°
LONG/2 = +63.700°
ALT = 001.14 NM
285
284
130°E
286
215
287
216
288
217
290


NM
120
90
60
30
0
145°E
150°E
155°E
160°E
165°E
10°S
05°S
05°N
10°N
293
292
IX
295
218
297
299
300
301
302
303
304
220
221
223
305
LAT = −09.688°
8-2 LONG/2 = +81.607°
ALT = 000.17NM
10-CP1


LAT = +00.875°
LONG/2 = +85.073°
ALT = 000.76 NM
170°E
175°E
180°
175°W
170°W
165°W
225
226
227
229
308
310
311
312
231
232
FARSIDE TERMINATOR REV 28
FARSIDE TERMINATOR REV 12
NM
120
90
60
30
0
10°S
05°N
00°
10°N
SCALE 1:2,765,000 (APPROX)