

| | |
|------------------------------------|------|
| APOLLO 14 | |
| CSM LUNAR LANDMARK MAPS | |
| PART NO. | S/N |
| SKB32100083-322 | 1002 |

INDEX SHEET
LAUNCH DATE JANUARY 31, 1971

| TYPE | NUMBER | LATITUDE | LONGITUDE | DIAMETER (ft) | SCALE | TAB |
|------------------------------|------------------|----------|-----------|------------------|---|------------|
| Selenodetic Reference Point | Mösting A ★ | -03.250 | -05.283 | 39070 | 1:2.5M Oblique | MOST A |
| Training Landmark | H-3 | -03.691 | -07.542 | 2830 | 15° Oblique 1:300 K | H-3 |
| Landing Site-Landmarks | 14-1 | -04.046 | -15.600 | 1110 | 15° Oblique | 14-2 |
| | 14-2 | -03.610 | -15.317 | 1790 | 15° Oblique | |
| | 14-3 | -03.919 | -15.139 | 1975 | 15° Oblique | 14-4 |
| | 14-4 | -03.470 | -14.890 | 2010 | 15° Oblique | |
| | 14-1,2,3,4 | — | — | — | 30° Oblique Apollo Ob1 1:300K 1:630K | 14-1-4 OBL |
| Landing Site | — | -03.672 | -17.463 | — | 1:25K | SITE |
| Selenodetic Reference Points | RP-3 ★ | -03.533 | +131.700 | 17335 | 1:2.5M 1:630K | RP-3 |
| | RP-5 ★ | -10.567 | +99.400 | 18090 | 1:2.5M Oblique | RP-5 |
| | Daguerre ★ 66 | -11.717 | +33.200 | 6015 | 1:2.5M Oblique | DAG 66 |
| | RP-2 ★ | -00.283 | +141.250 | 23670 | 1:2.5M Oblique | RP-2 |
| | 12-1 | -05.736 | +112.309 | 3230 | 1:2.5M 1:630K | 12-1 |
| | Dollond E ★ | -10.433 | +15.733 | 16820 | 1:2.5M 1:630K | DOLL E |
| | FM-1 | -03.246 | -17.317 | 3130 | 1:2.5M Oblique | FM-1 |
| | RP-4 ★ | -05.850 | +120.250 | 7820 | 1:2.5M 1:630K | RP-4 |
| | Ansgarius N ★ | -11.633 | +81.067 | 32790 | 1:2.5M 1:630K | ANSG N |

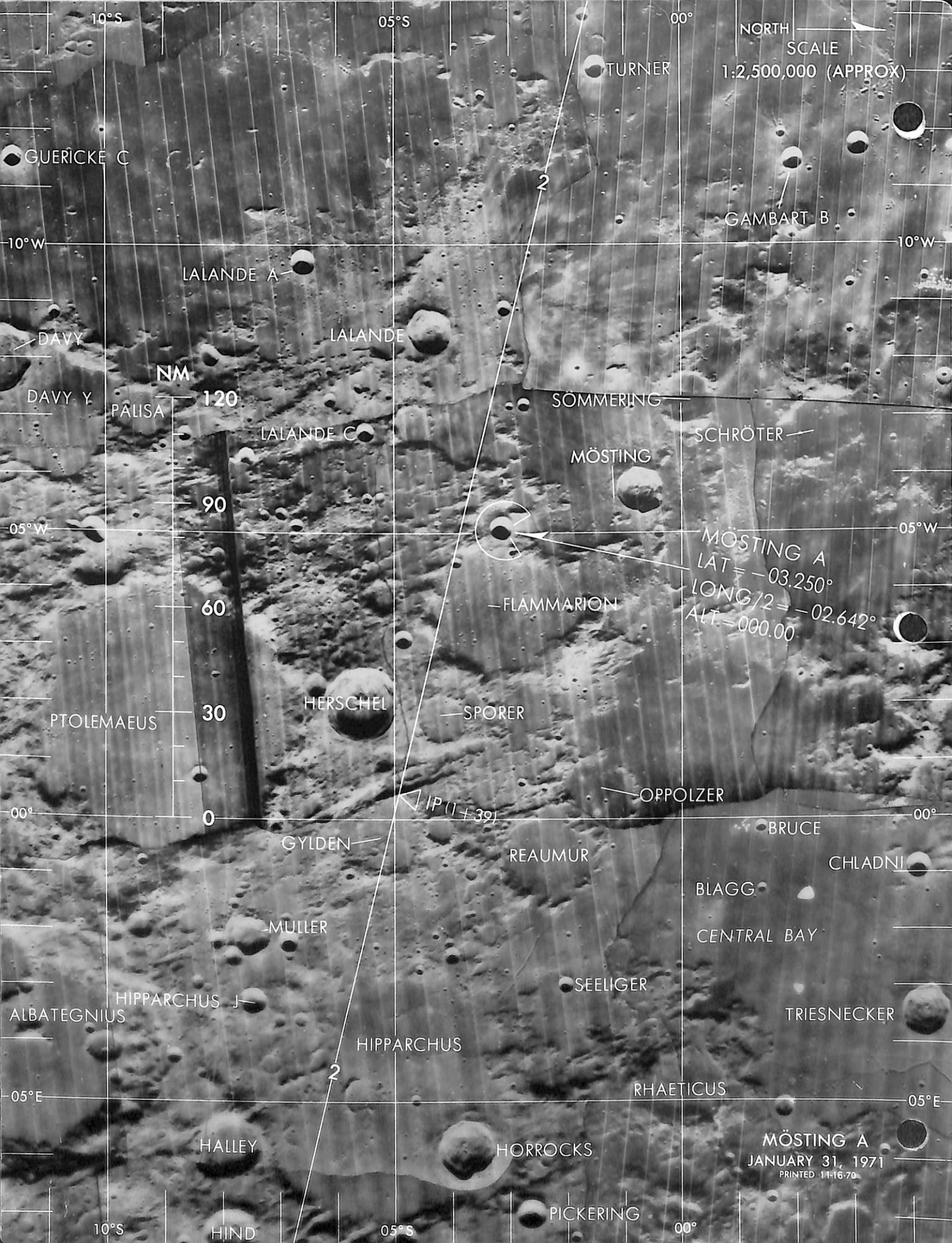
| TYPE | NUMBER | LATITUDE | LONGITUDE | DIAMETER (ft) | SCALE | TAB |
|-------------------------------------|--------------|----------|-----------|-------------------------------|-----------------------------------|-------------------|
| Control Point | DE-2 | -09.250 | +19.592 | 2840 | 1:2.5M 1:630K | DE-2 |
| Selenodetic Reference Point | Encke E ★ | +00.238 | -40.300 | 27260 | 1:2.5M 1:630K | ENCKE E |
| LTC backup targets (500 mm lens) | Descartes | -08.858 | +15.517 | — | Oblique 1:630K | DESC COAS |
| Zero Phase Landmarks * | 1 & 2 | — | — | — | 1:2.5M | LDMK 1 & 2 |
| | 1 | -06.530 | +128.580 | A-30380 B-40102 C-11544 | 30° Oblique 1:630K | 1-A,B,C |
| | 2 | -08.090 | +119.940 | A-8220 B-21300 | Oblique 1:630K 1:IM | 2- A,B |
| | 3 & 4 | — | — | — | 1:2.5M | LDMK 3 & 4 |
| | 3 | -09.260 | -03.160 | A-10572 B-10572 | Oblique 1:630K | 3-A,B |
| | 4 | -07.520 | -14.270 | A-12760 B-5000 | Oblique 1:630K | 4-A,B |
| | 5 & 6 | — | — | — | 1:2.5M | LDMK 5 & 6 |
| | 5 | -08.480 | +112.910 | A-18471 B-7716 C-13853 | Oblique 1:630K | 5-A,B,C |
| | 6 | -09.520 | +104.810 | A-13245 B-15433 C-9114 | Oblique 1:630K | 6-A,B,C |
| | 7 & 8 | — | — | — | 1:2.5M | LDMK 7 & 8 |
| | 7 | -04.760 | -18.950 | A-12638 B-7595 C-10572 | Oblique 1:630K | 7-A,B,C |
| | 8 | -03.940 | -24.190 | A-19443 B-6319 C-8446 | Oblique 1:630K | 8-A,B,C |
| Visual Targets | 1 | — | — | — | — | V-1 |
| | 2 | — | — | — | — | V-2 |

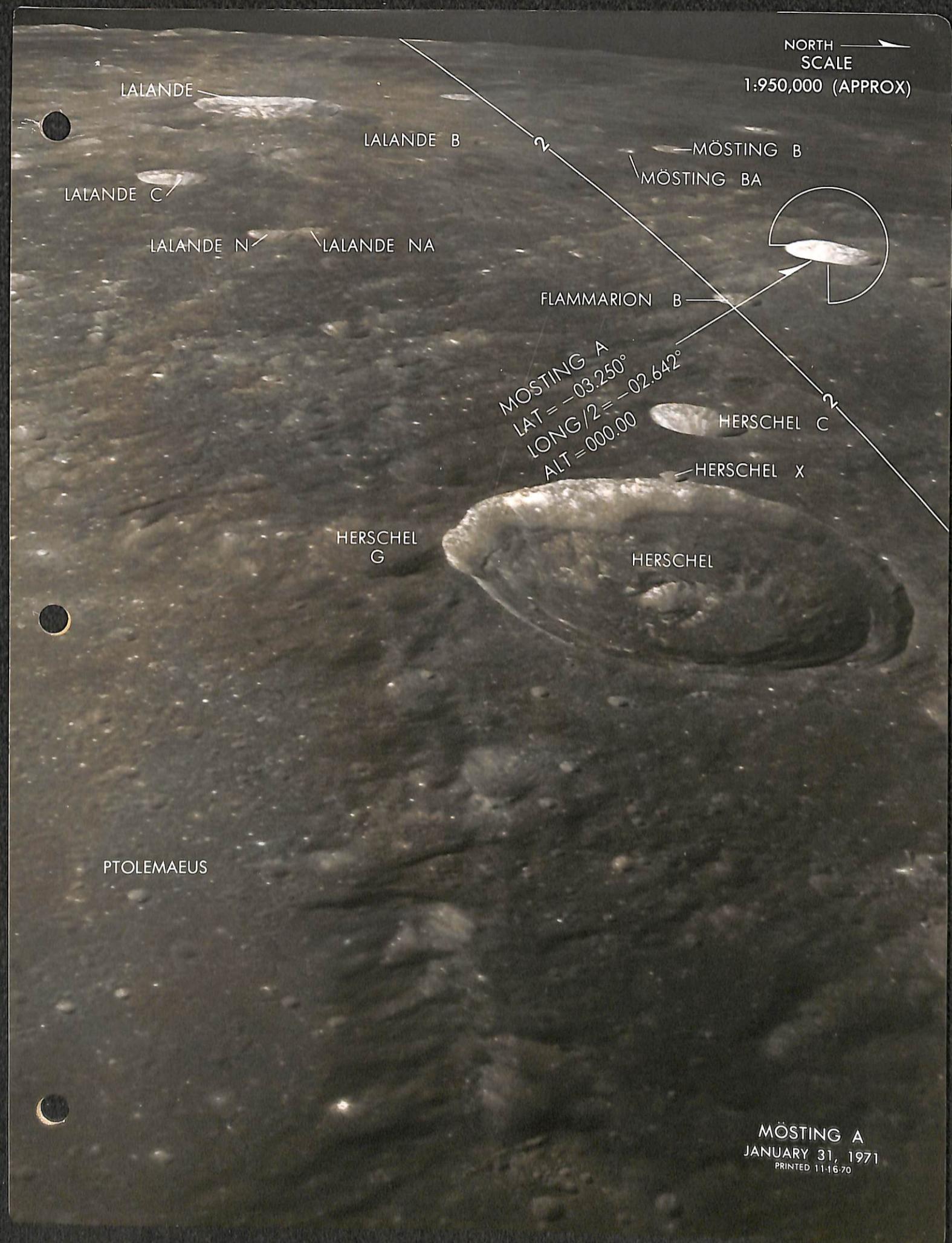
★TRACKING PRIORITIES:

1. Small crater on rim
2. Small crater outside the rim, no more than 1/2 diameter from large crater

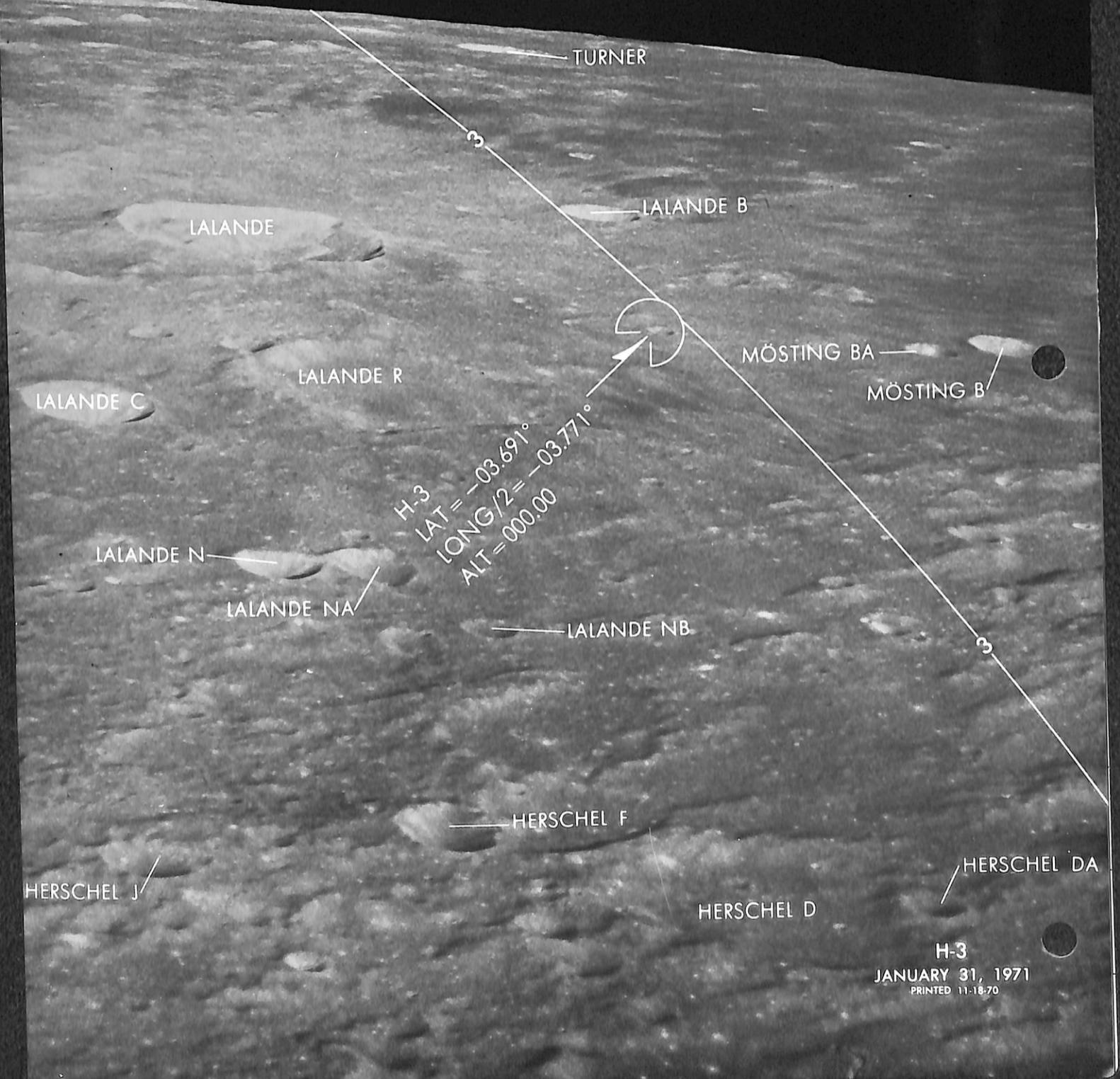
Printed
11-30-70

*The coordinates are for the Zero Phase Point, not the individual landmarks.





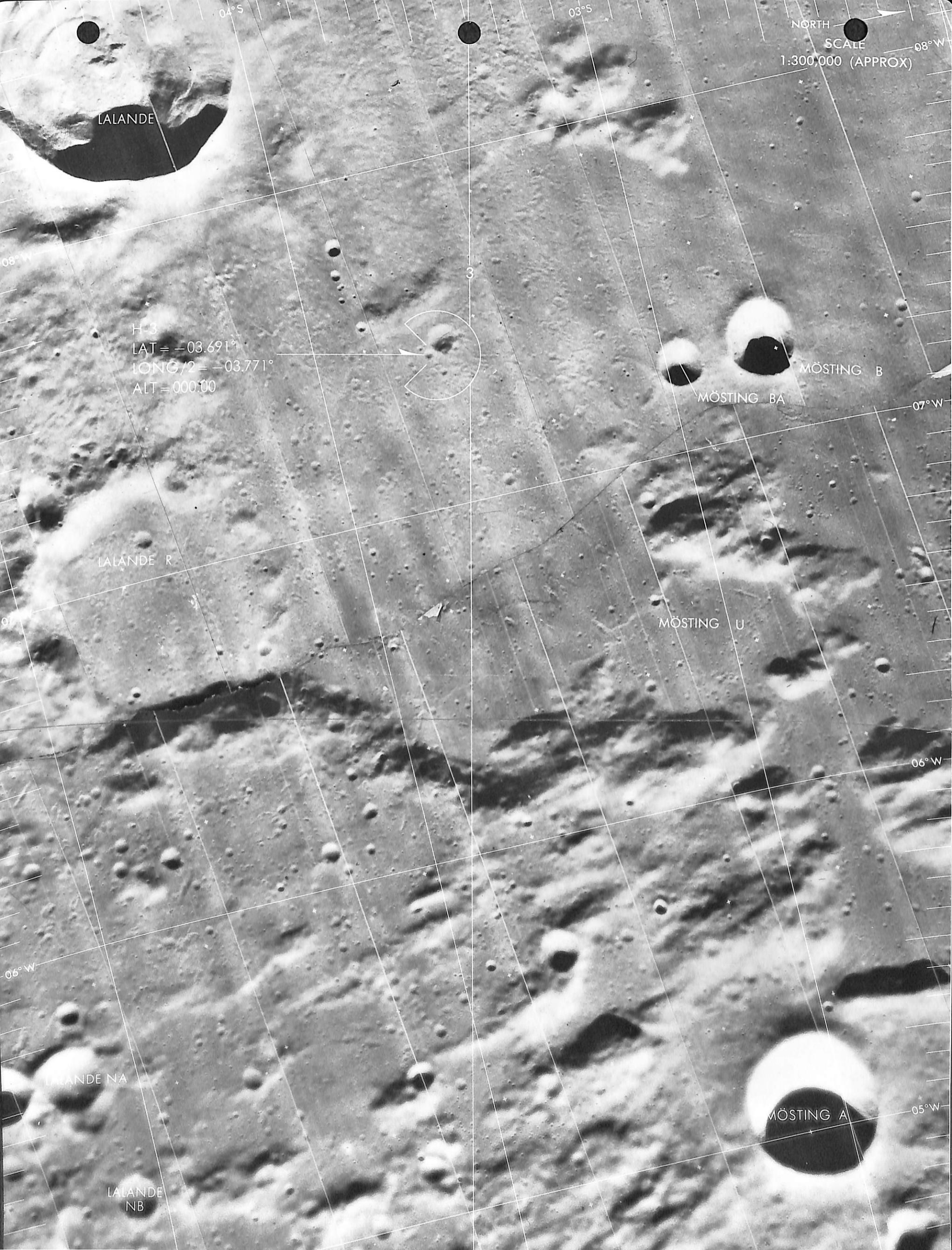
NORTH →
SCALE
1:1,240,000 (APPROX)



NORTH

H-3
LAT = -03.691°
LONG/2 = -03.771°
ALT = 000.00

H-3
SIMULATED OBLIQUE
ANGLE 15°
JANUARY 31, 1971
PRINTED 11-20-70





LANDING SITE LANDMARK DATA SHEET

LAUNCH DATE JANUARY 31, 1971

ELLIPSE CENTER DATA

| LATITUDE (0.001°) | LONG/2 (0.001°) | LONGITUDE (0.001°) | ALTITUDE (0.01 NM) |
|----------------------|--------------------|-----------------------|-----------------------|
| -03.672 | -08.732 | -17.463 | -000.76 |

LANDMARK DATA

| LANDMARK NUMBER | LATITUDE (0.001°) | LONG/2 (0.001°) | LONGITUDE (0.001°) | ALTITUDE (0.01 NM) | NOMINAL DISTANCE FROM GROUND TRACK (NM) | LANDMARK DIAMETER (ft) |
|--------------------|----------------------|--------------------|-----------------------|-----------------------|---|------------------------------|
| 14-1 | -04.046 | -07.800 | -15.600 | -000.44 | 6.04 S | 1100 |
| 14-2 | -03.610 | -07.659 | -15.317 | -000.15 | 2.02 N | 1790 |
| 14-3 | -03.919 | -07.570 | -15.139 | -000.38 | 2.10 S | 1975 |
| 14-4 | -03.470 | -07.445 | -14.890 | -000.87 | 5.88 N | 2010 |

Printed
10-30-70

NORTH

14-1

12

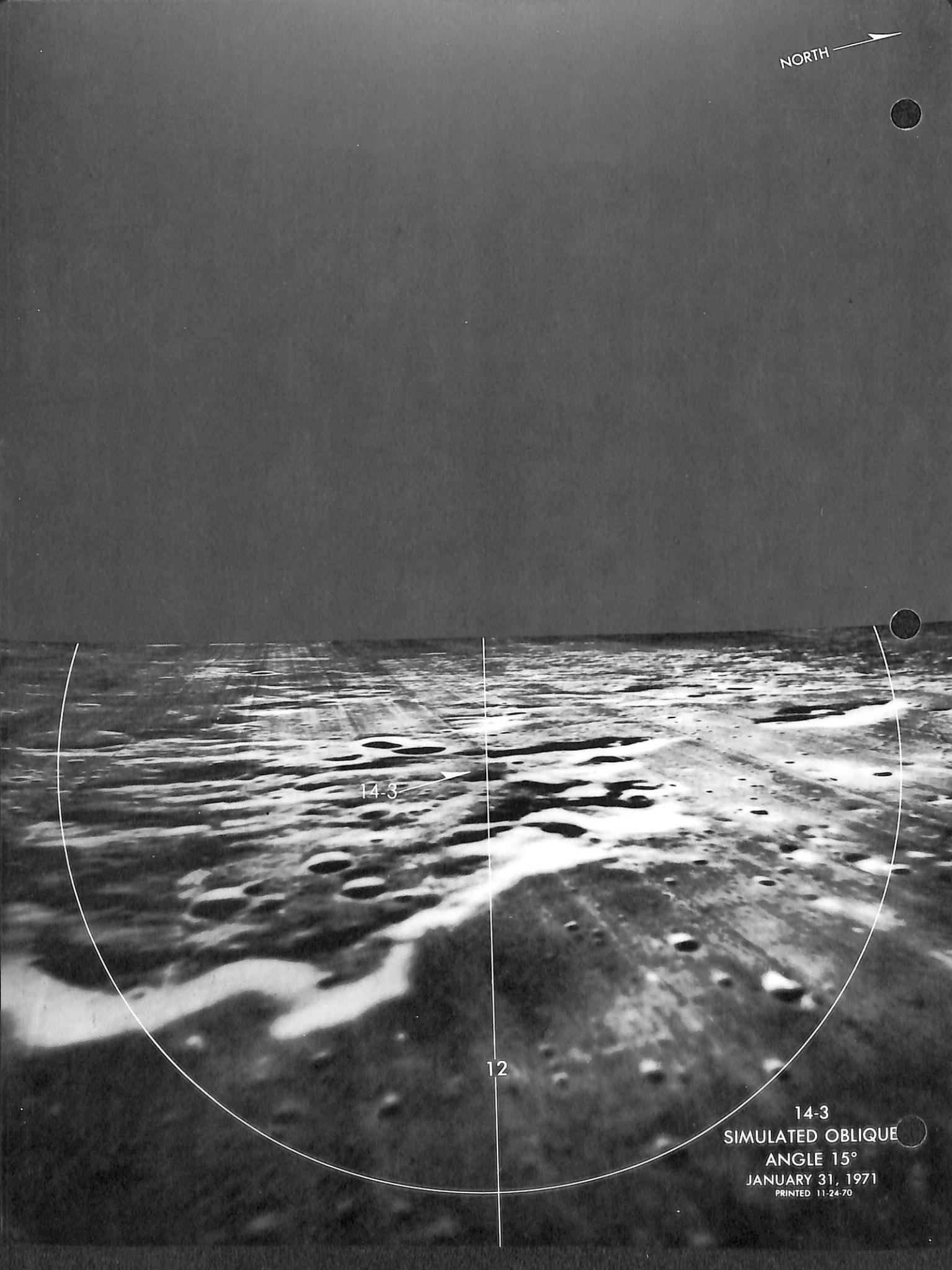
14-1
SIMULATED OBLIQUE
ANGLE 15°
JANUARY 31, 1971
PRINTED 11-24-70

NORTH

14-2
SIMULATED OBLIQUE
ANGLE 15°
JANUARY 31, 1971
PRINTED 11-24-70

12

14-2



NORTH

14-3

12

14-3
SIMULATED OBLIQUE
ANGLE 15°
JANUARY 31, 1971
PRINTED 11-24-70

NORTH →

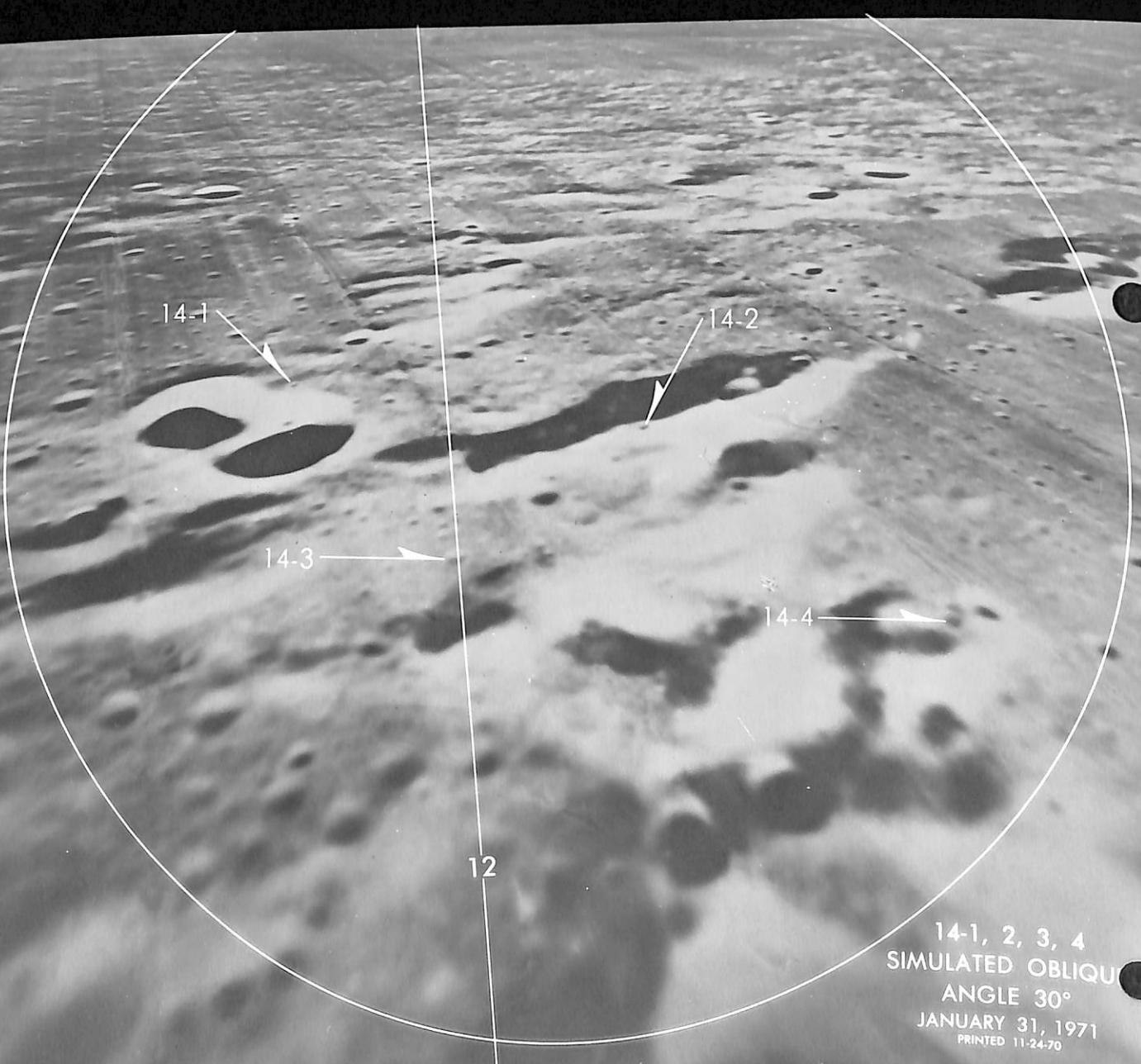
12

14-4

14-4

SIMULATED OBLIQUE
ANGLE 35°
JANUARY 31, 1971
PRINTED 11-24-70

NORTH



NORTH
SCALE
1:360,000 (APPROX)

FRA MAURO HB

14-1 FRA MAURO H

FRA MAURO HA

14-3

14-2

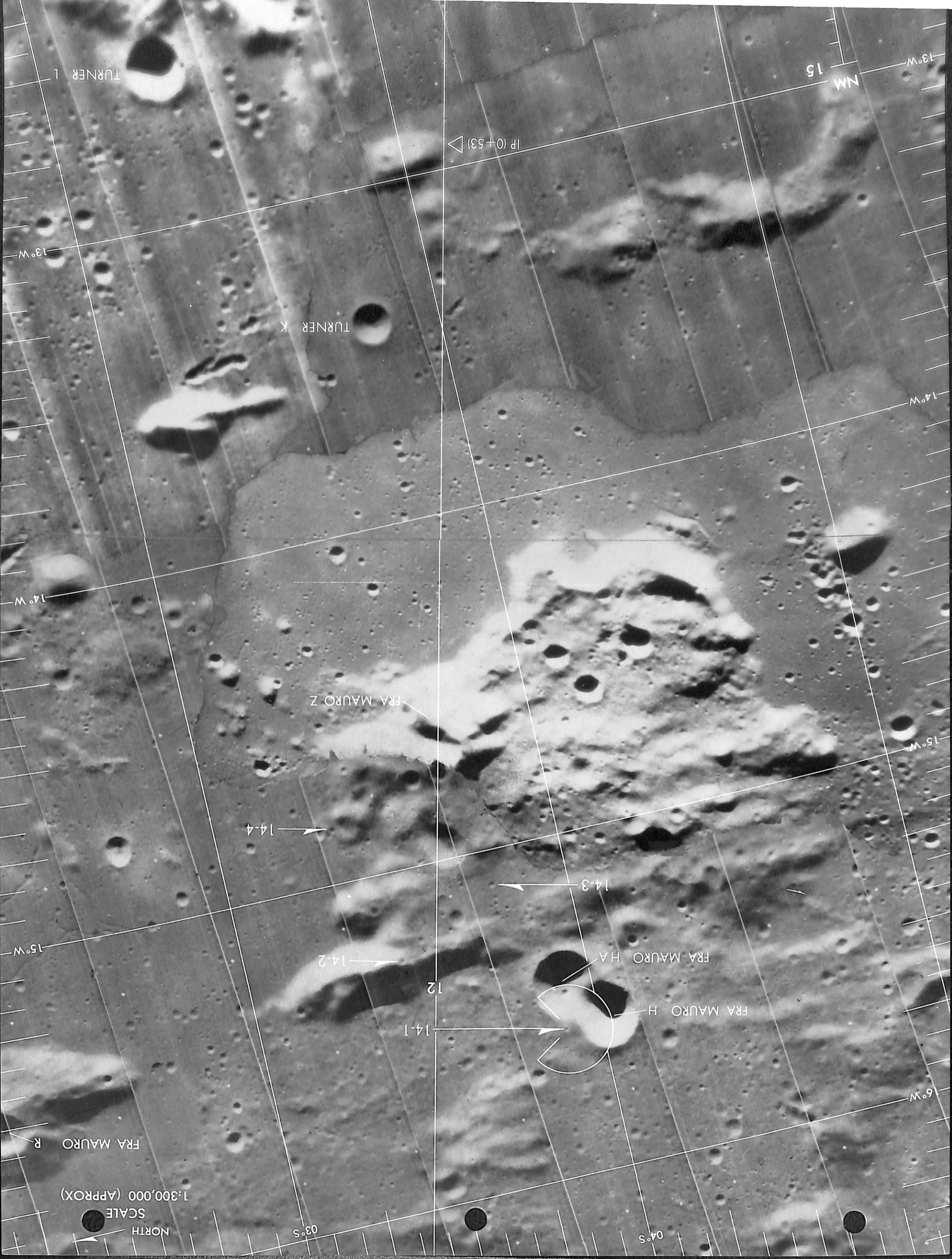
14-4

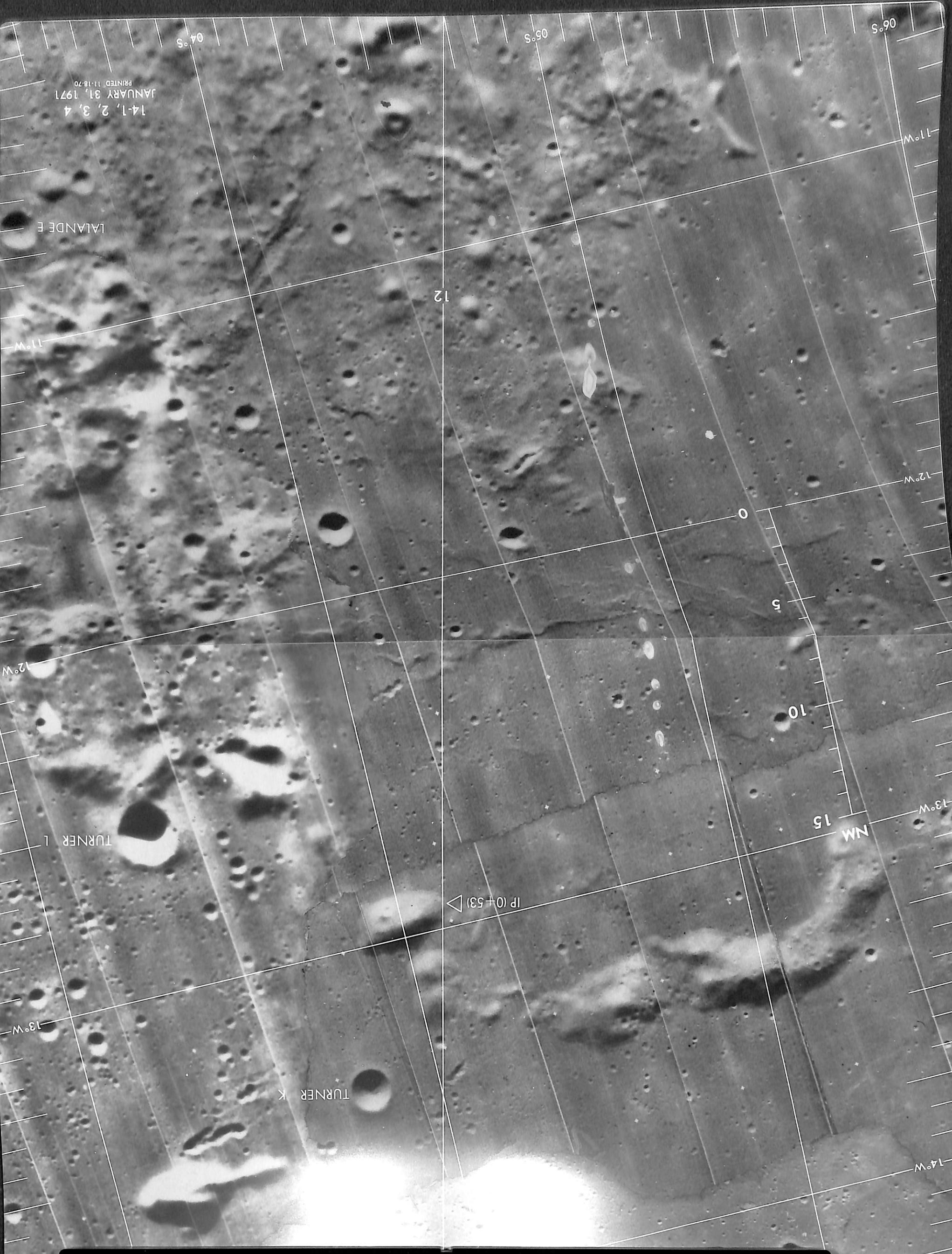
FRA MAURO Z

TURNER K

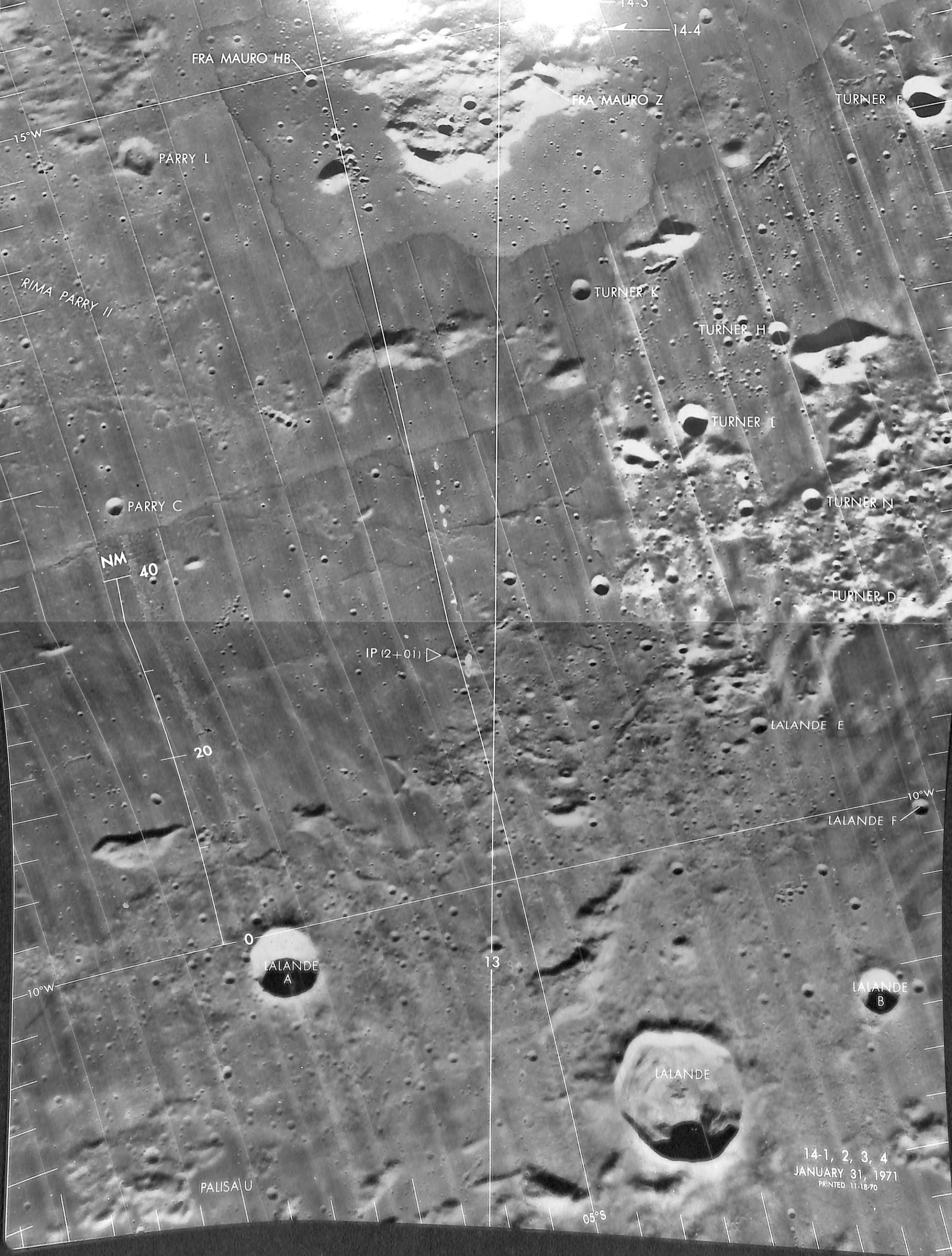
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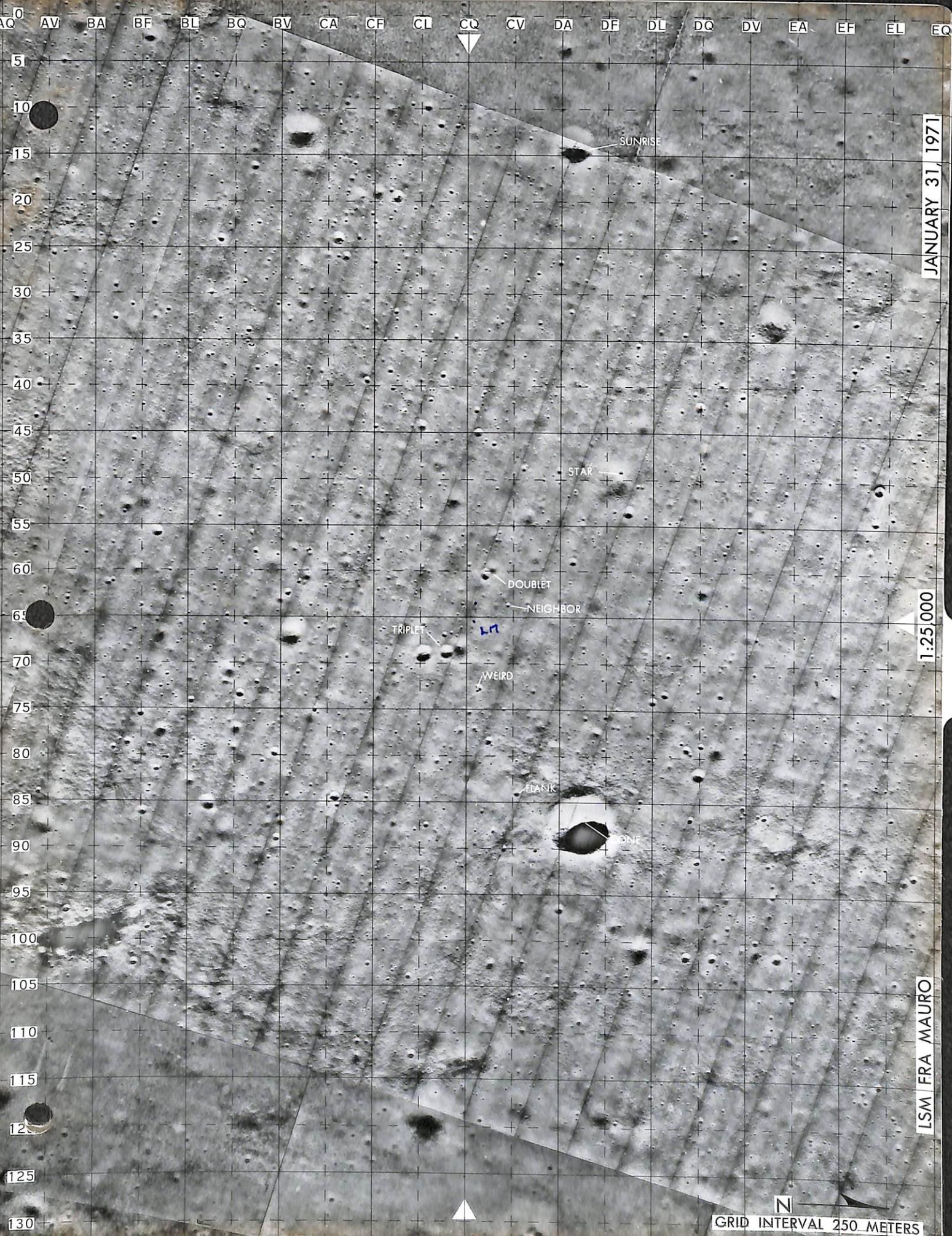
14-1, 2, 3, 4
JANUARY 31, 1971
PRINTED 11-20-70

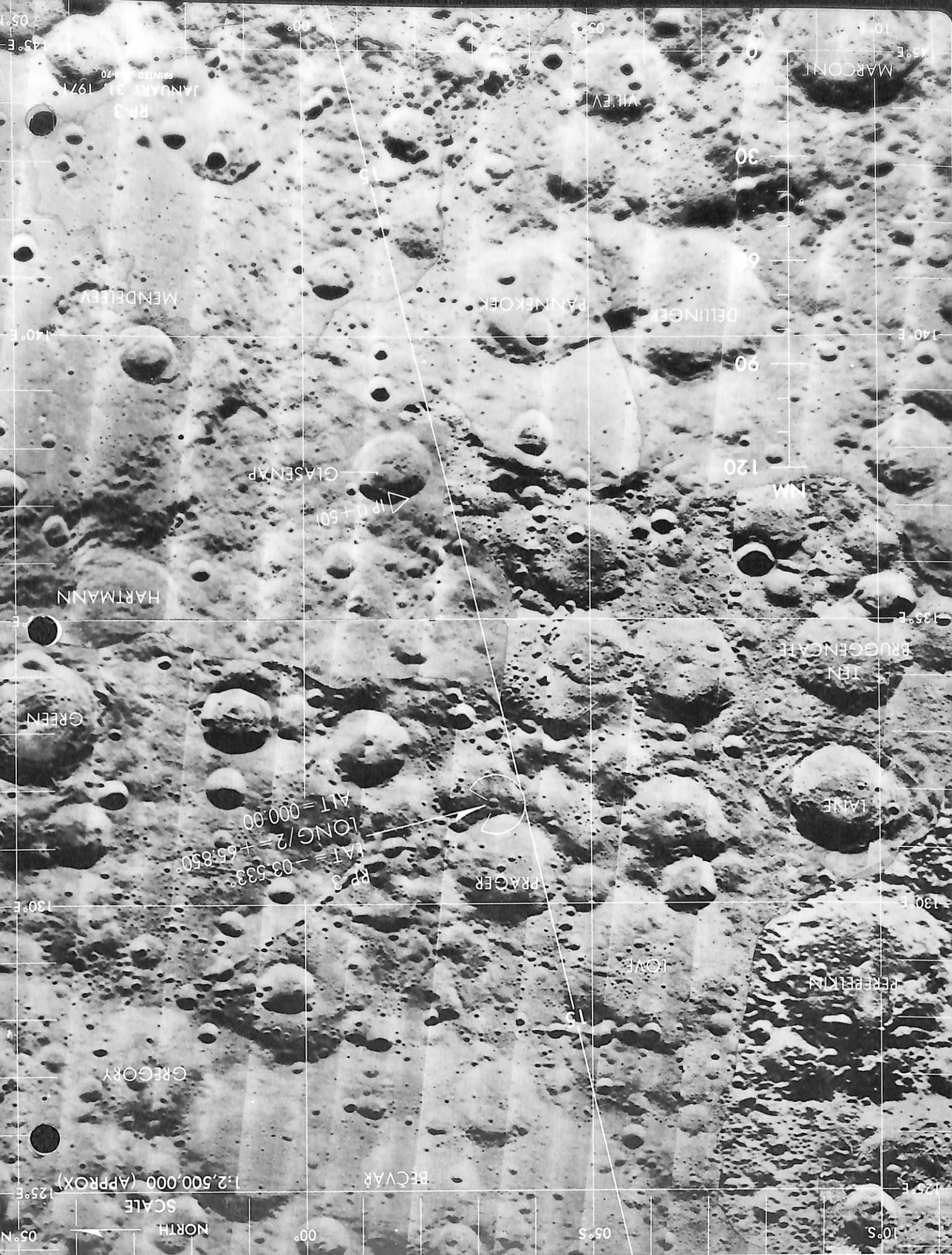












05°S

NORTH

SCALE

1:630,000 (APPROX)

PRAGER

15

NM

40

20

0

15



RP-3

LAT = -03.533°

LONG/2 = +65.850°

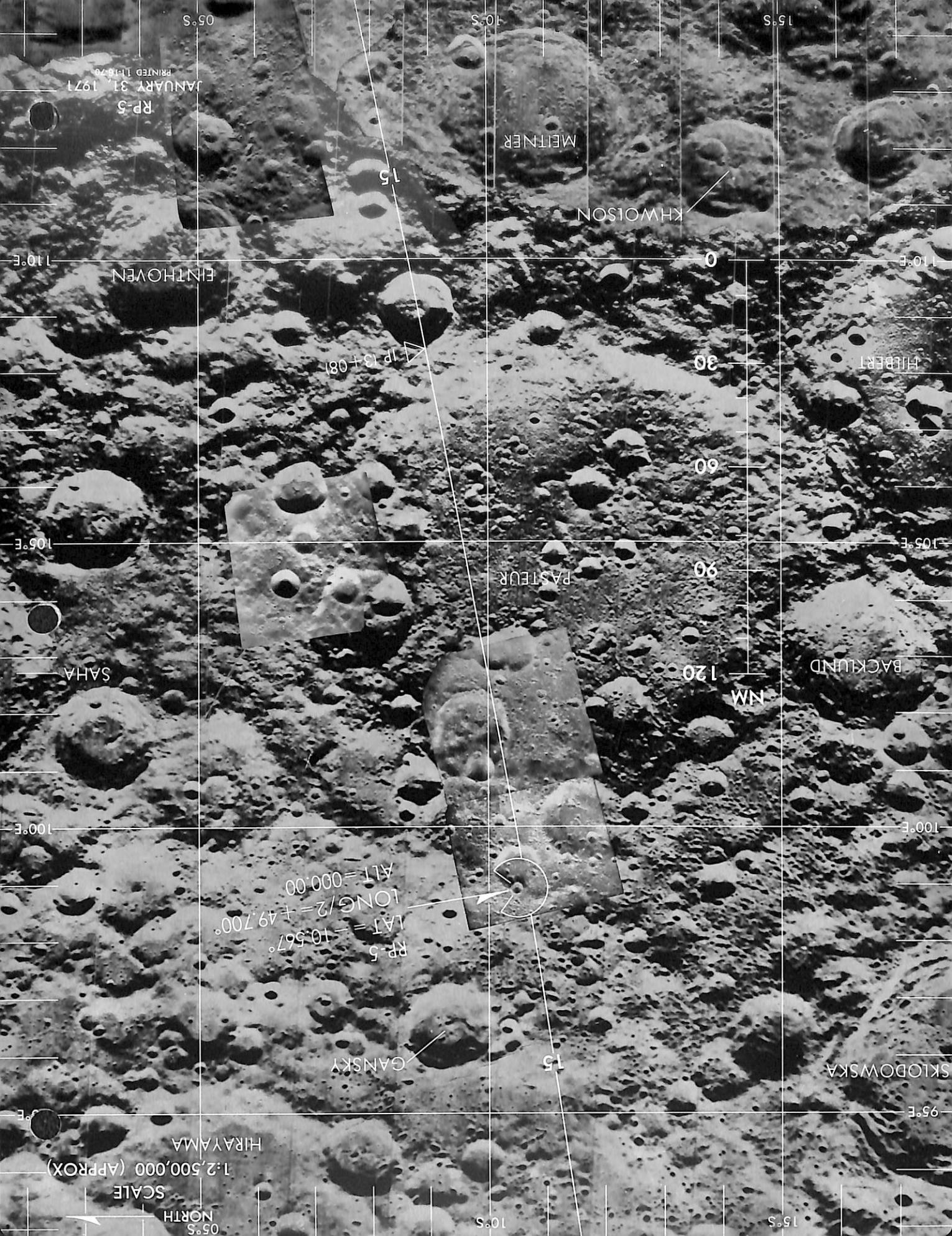
ALT = 000.00

RP-3

JANUARY 31, 1971

PRINTED 12-16-70

135°E



NORTH 

SCALE
1:770,000 (APPROX)

15

RP-5
LAT = -10.567°
LONG/2 = +49.700°
ALT = 000.00

15

RP-5

JANUARY 31, 1971
PRINTED 11-19-70

NORTH

SCALE

1:1,160,000 (APPROX)

MADILLE

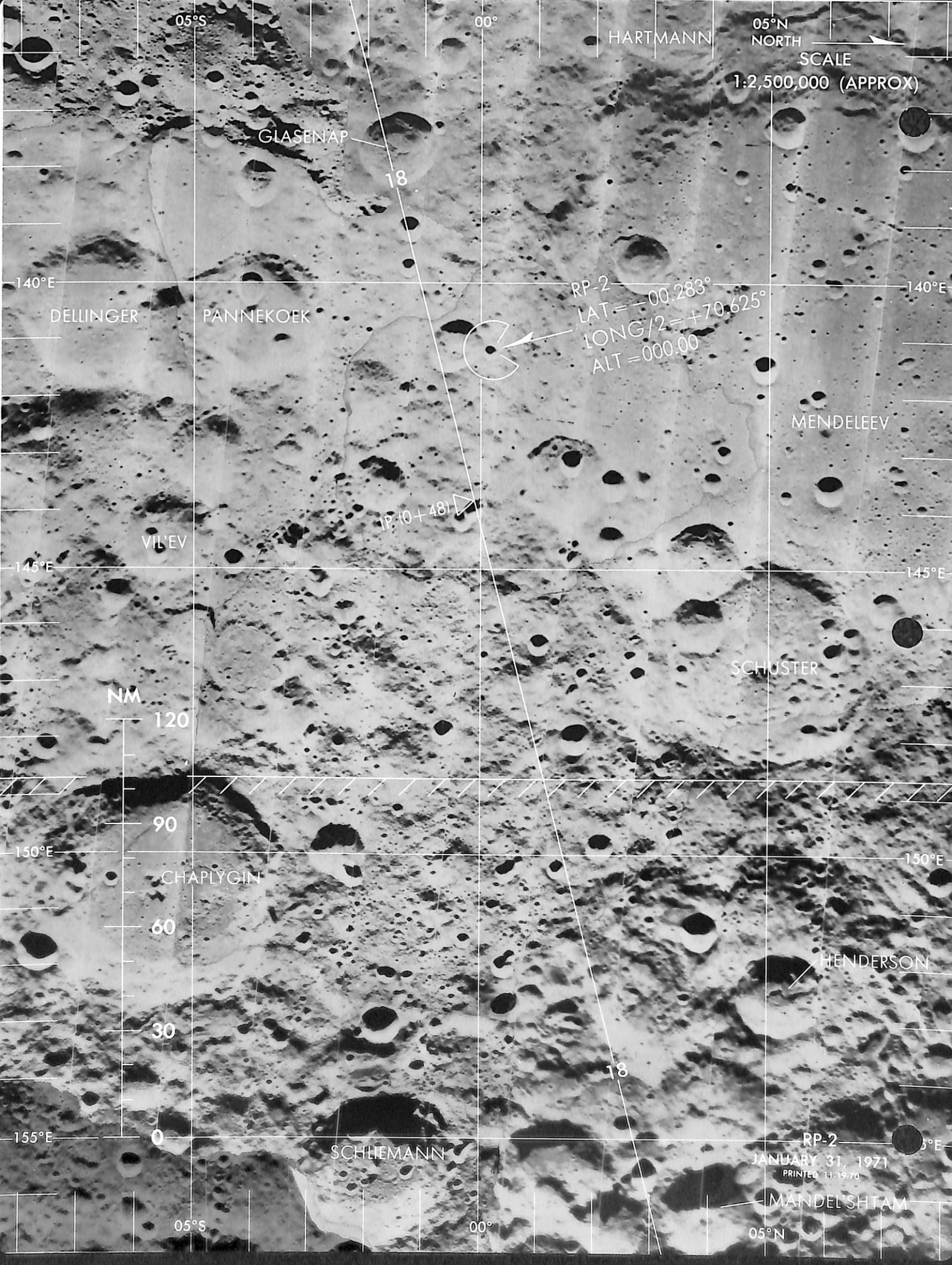
DAGUERRE
LAT = ~11217°
LONG/2 = +16.600°
ALT = 000.00



DAGUERRE

SEA OF NECTAR

DAGUERRE 66
JANUARY 31, 1971
PRINTED 11-19-70



NORTH 
SCALE
1:870,000 (APPROX)

RP-2
LAT = -00.283°
LONG/2 = +70.625°
ALT = 000.00



MENDELEEV

IP (0 + 48)

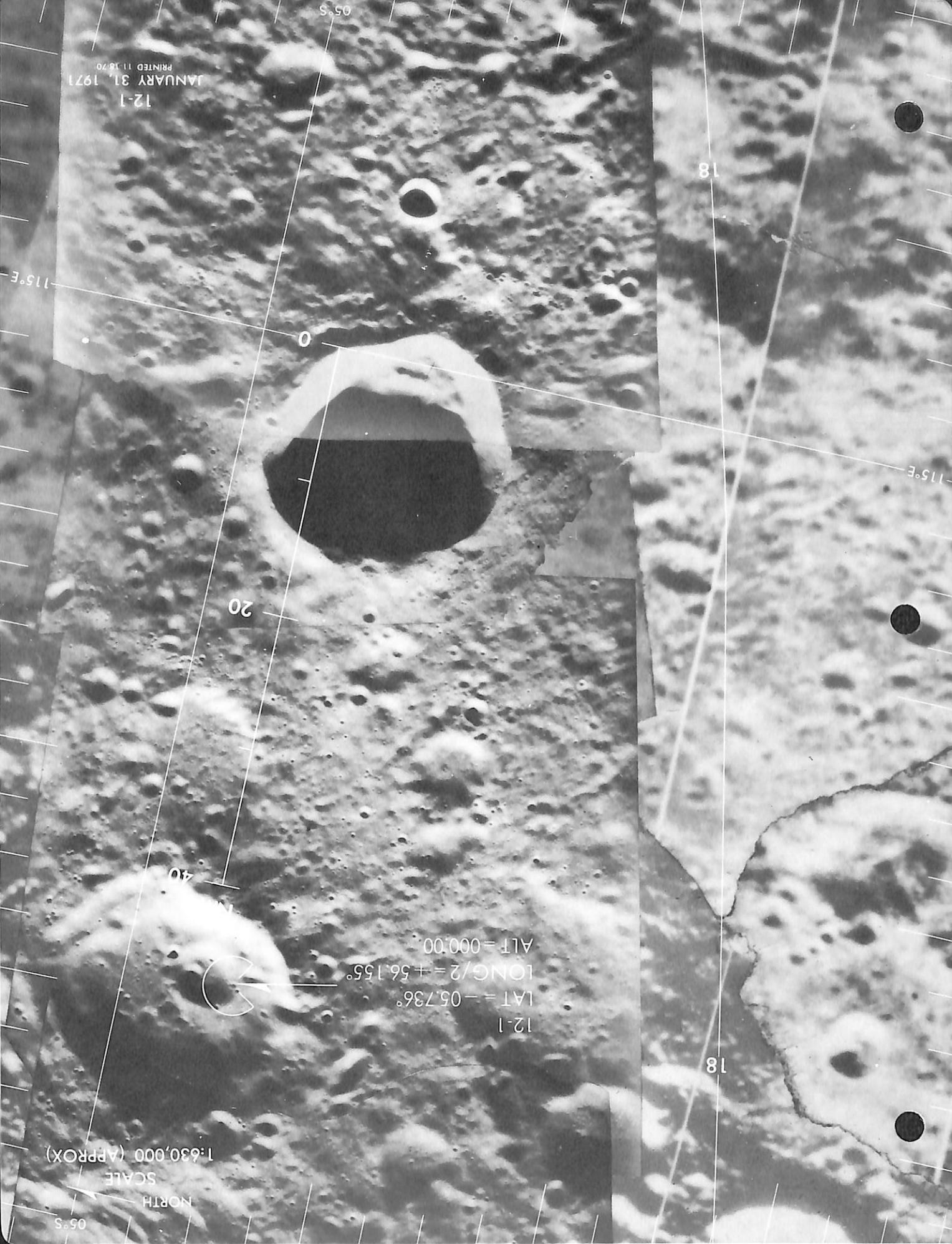
18

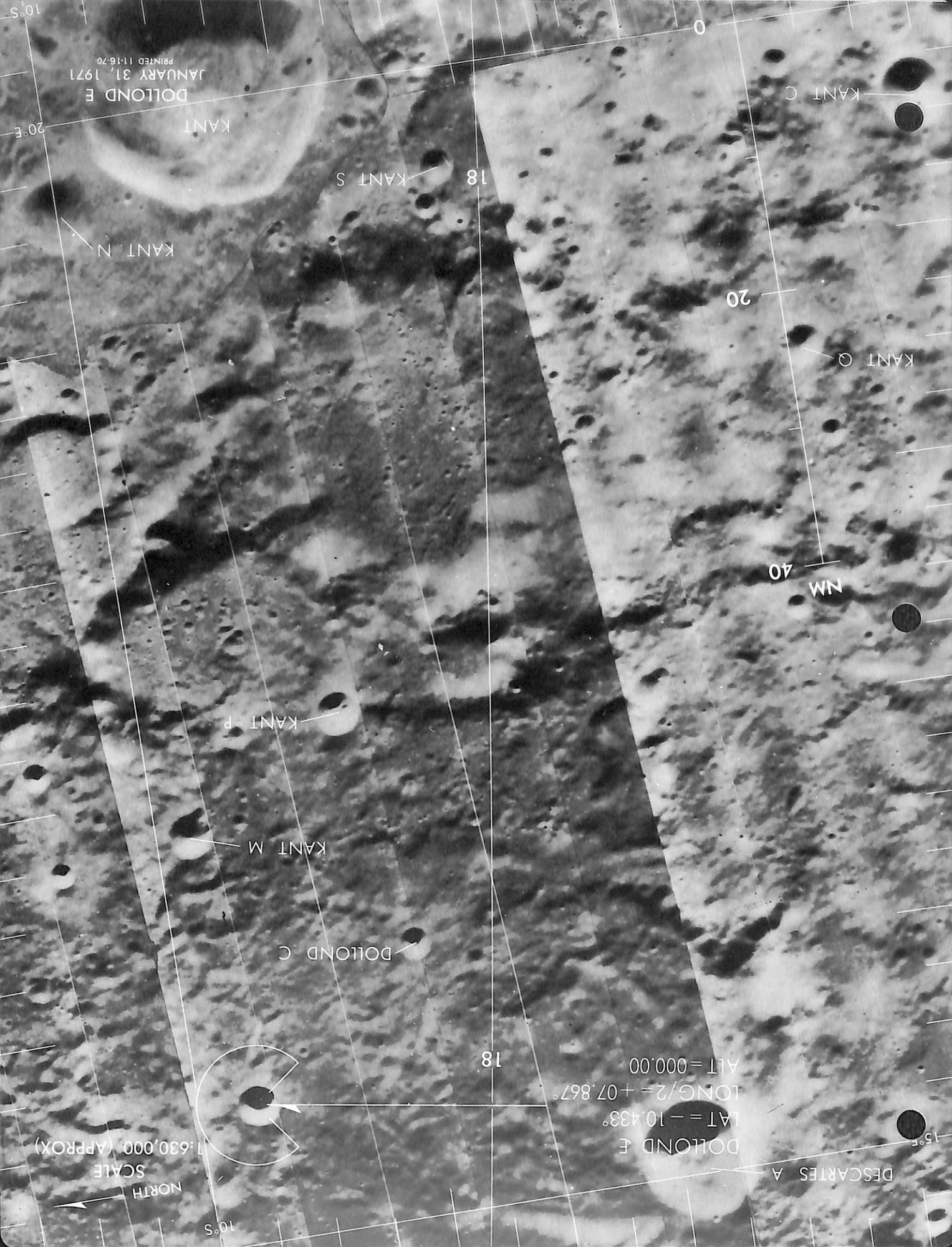
RP-2
JANUARY 31, 1971
PRINTED 11 18.70

00.
282
PRINTED 11-18-70
JANUARY 31, 1971
12-1

SECVAP

12-1





KNOWN SEA

REINHOLD

SCALE
1:2,500,000 (APPROX)

05°S 00° NORTH 05°W

10°S 25°W

20°W

15°W

10°W

05°W

00°

05°S 00° 05°W

FRA MAURO B

FRA MAURO A

BONPLAND

FRA MAURO

PARRY A

PARRY

GUERICKE

IP (t+34)

NM 120

90

60

30

0

DAVY

DAVY Y

DAVY G

PALISA

LALANDE A

LALANDE

LALANDE C

SÖMMERING

MÖSTING

MÖSTING A

FLAMMARION

PTOLEMAEUS

GAMBART A

GAMBART

GAMBART C

GAMBART B

TURNER

FM-1
LAT = -03.246°
LONG/2 = -08.659°
ALT = 000.00

JANUARY 31, 1971

PRINTED 11:16-70

SCALE
1:250,000 (APPROX)
NORTH

CAT'S PAW

FM-1
LAT = -03.246°
LONG/2 = -08.659°
ALT = 000.00

RIMA PARRY I

FRA MAURO D

FRA MAURO Y

FRA MAURO N

FRA MAURO

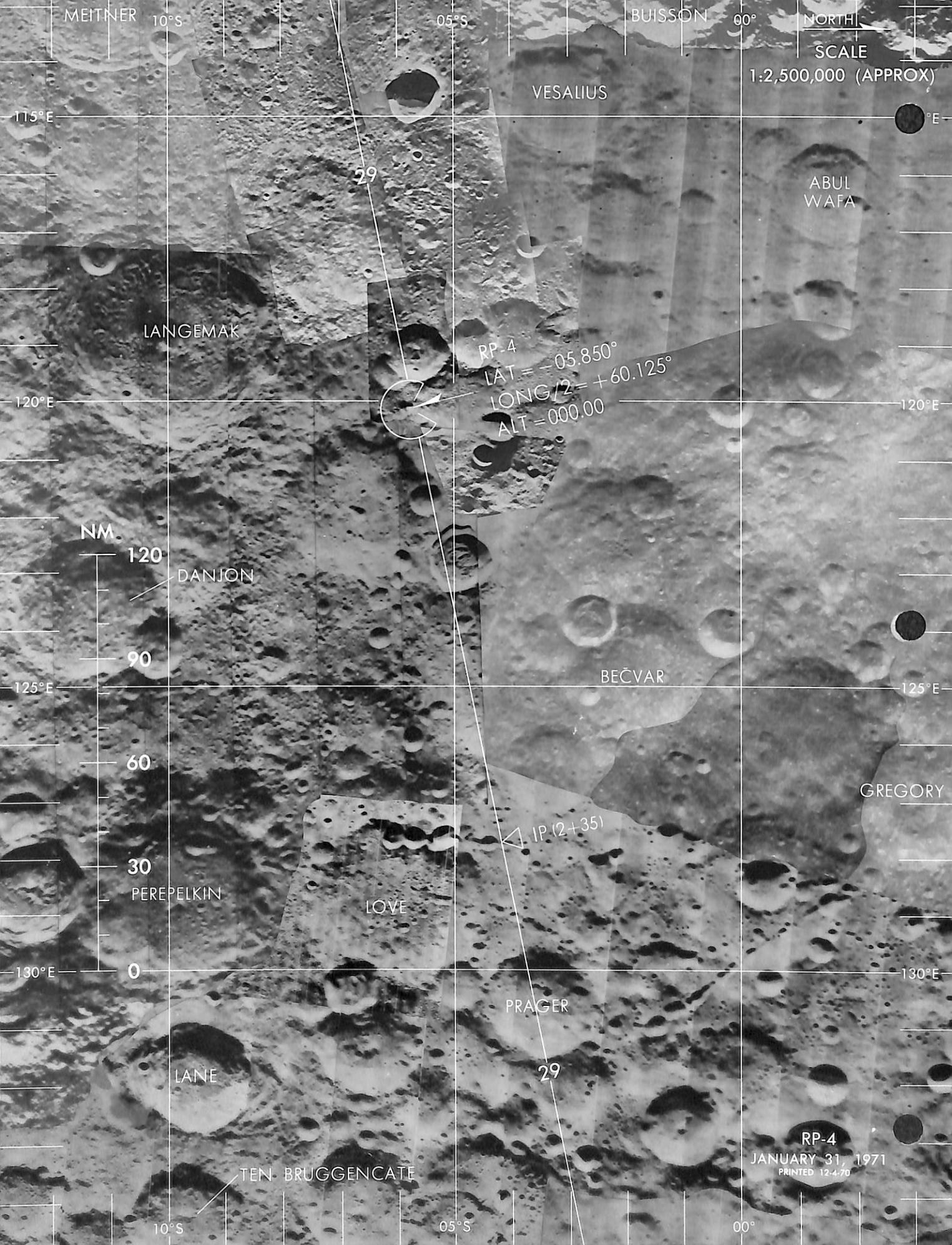
FRA MAURO H

FRA MAURO P

FRA MAURO E

18

FM-1
JANUARY 31, 1971
PRINTED 12-16-70



SPOTNITE 12470
JANUARY 31, 1977
RP-4

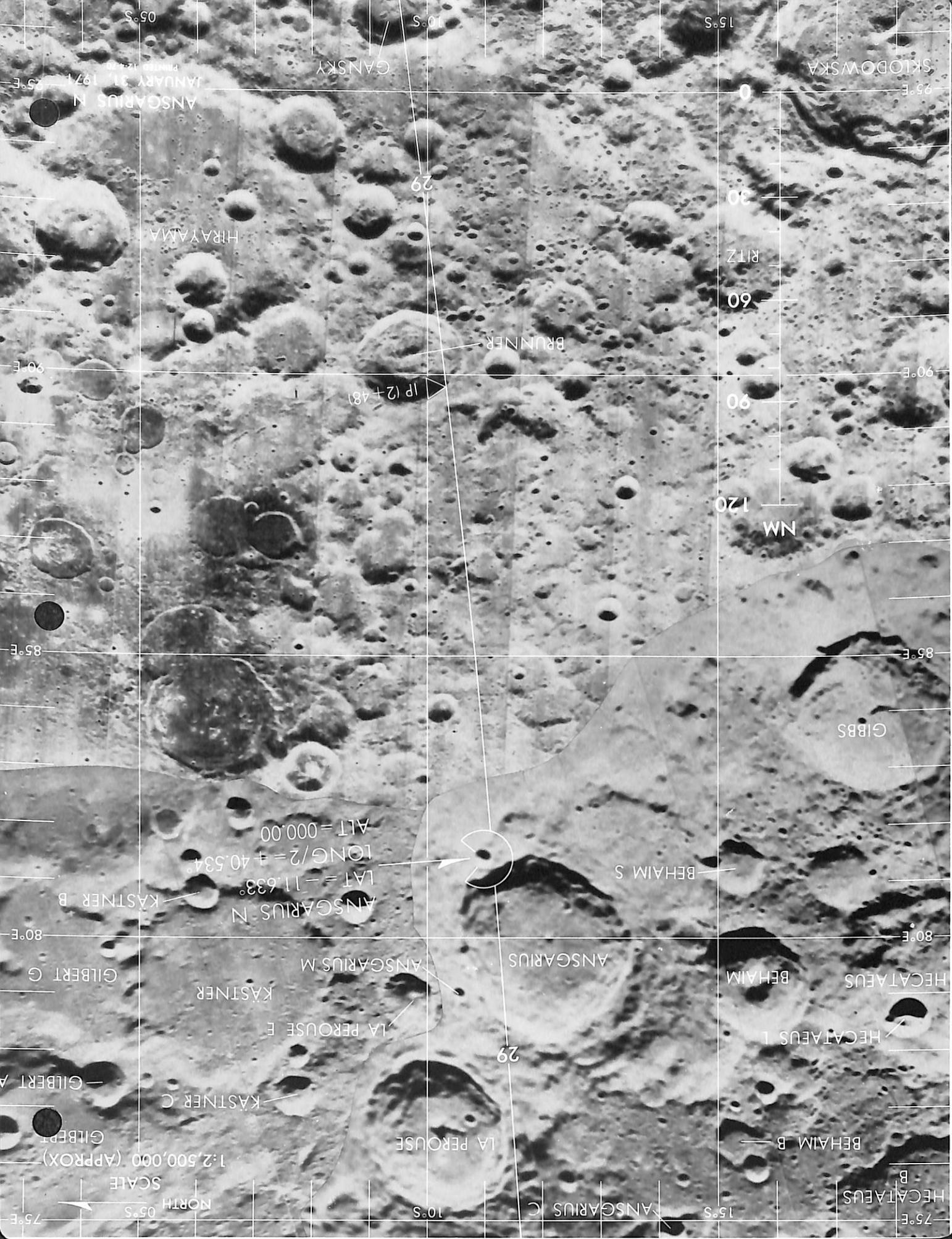
SCALE
1:630,000 (1:250,000)
NORTH
0.5 S
0.5 N
ALT = 000.00
LONG / 2 = +60.125°
LAT = -05.850°
RP-4

0
20
40
NM
120°E

0.5 S

20

0



10°S NORTH SCALE
1:630,000 (APPROX)

ANSGARIUS

29



ANSGARIUS N.

LAT = -11.633°

LONG/2 = +40.534°

ALT = 000.00

NM

40

20

85°E

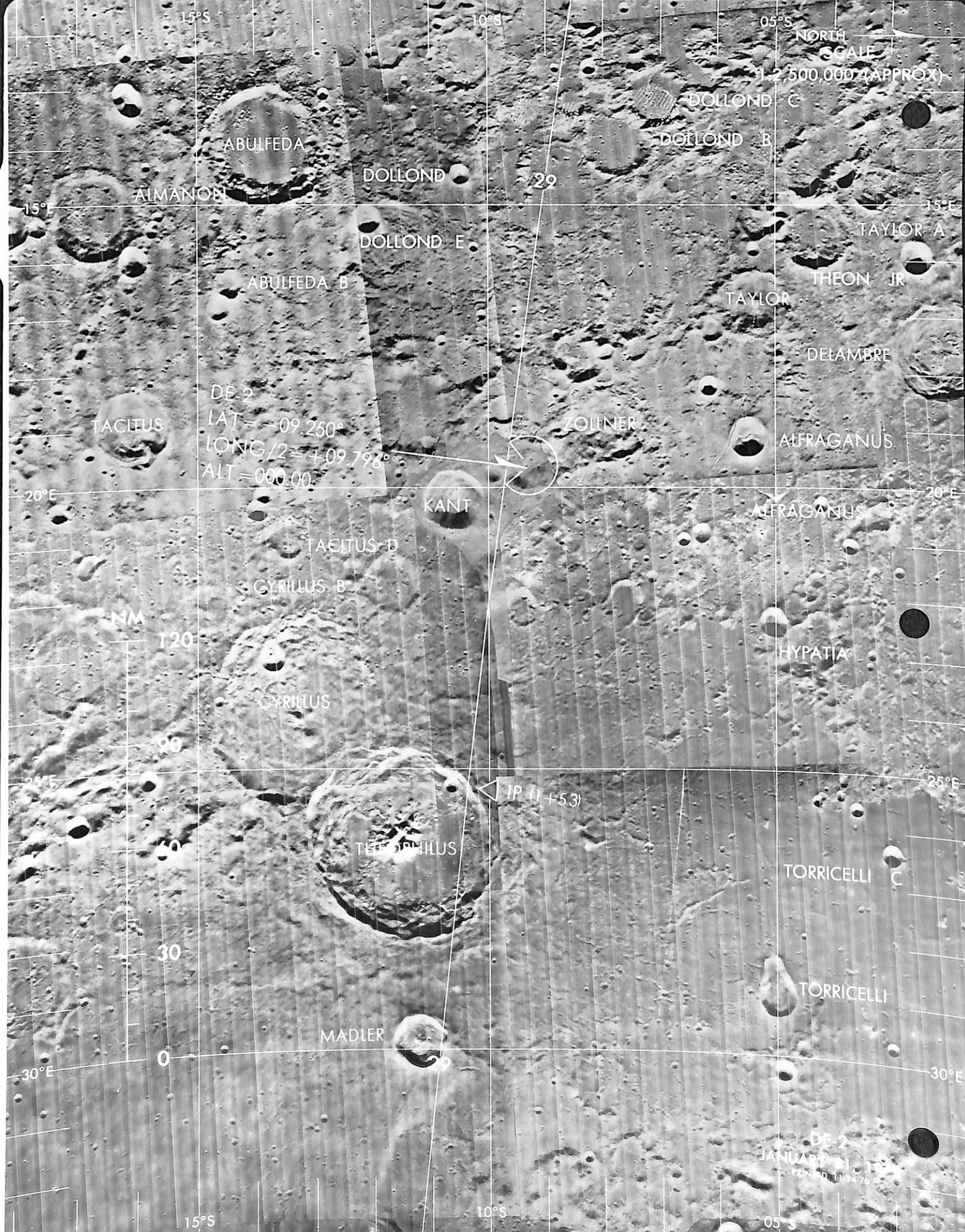
0

29

85°E

ANSGARIUS N.
JANUARY 31, 1971
PRINTED 11-24-70

10°S



NORTH
SCALE
1:630,000 (APPROX)

29

DE-2
LAT = -09.250°
LONG/2 = +09.796°
ALT = 000.00

20°E

NM

40

KANT

20

CYRILLUS B

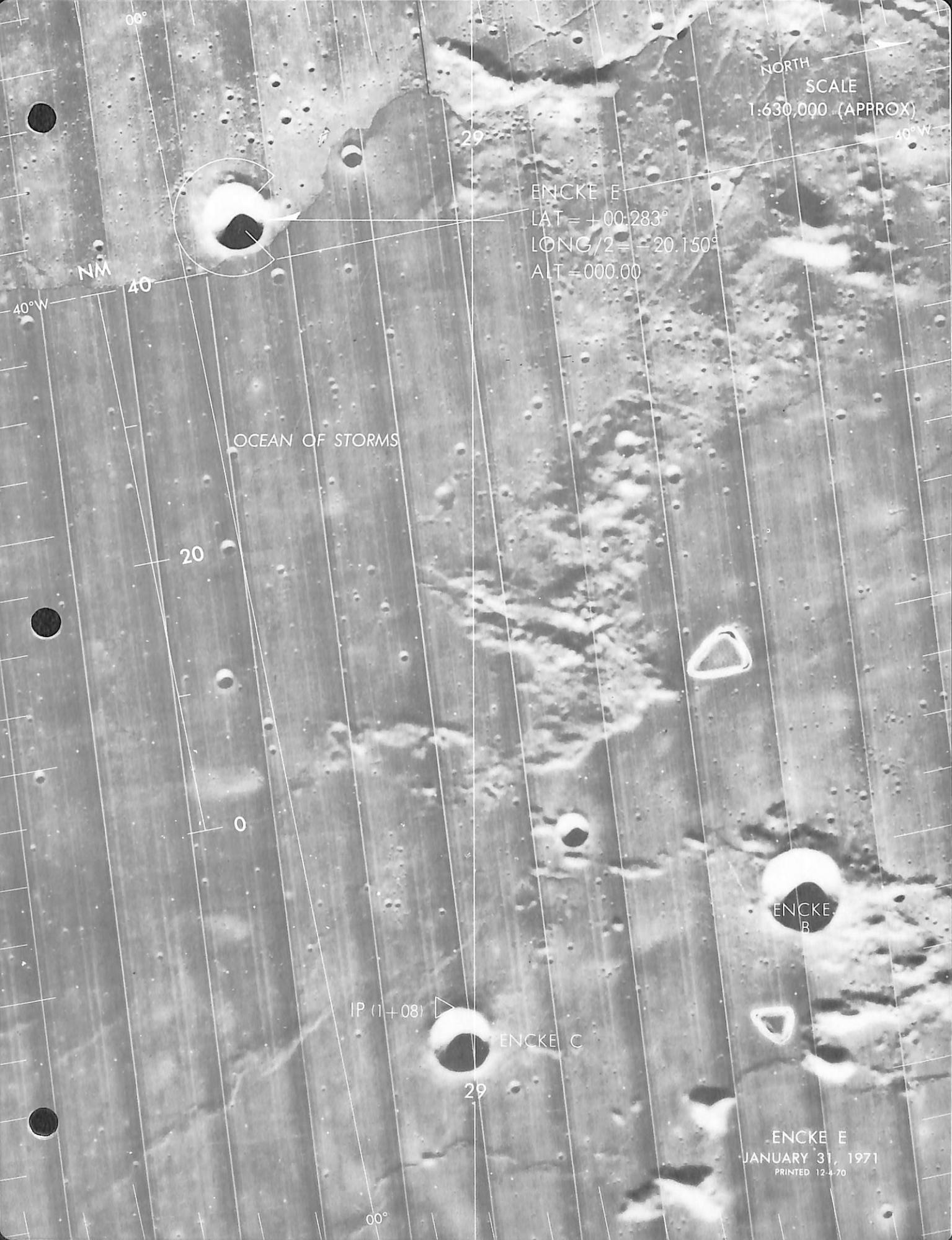
0

29

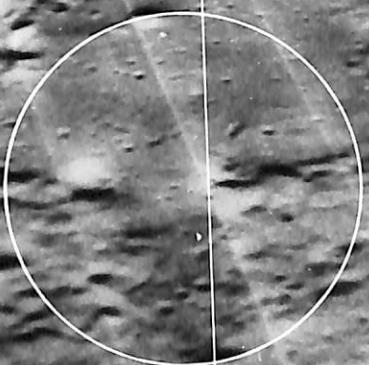
10°S

DE-2

JANUARY 31, 1971
PRINTED 11-16-70



NORTH
SCALE
1.810,000 (APPROX)



27

SIMULATED OBLIQUE 30°
DESCARTES
JANUARY 31, 1971
PRINTED 12-4-70

NORTH →
SCALE
630,000 (APPROX)

ELEVATION ANGLE 40°

DESCARTES COAS
JANUARY 31, 1971
PRINTED 11/20/70

TARGET DATA

| REV 16 | | | | REV 30 | | | |
|---|--------|---------------|-----------|--------|--------|---------------|-----------|
| AREA | TARGET | DIAMETER (FT) | SUN ANGLE | AREA | TARGET | DIAMETER (FT) | SUN ANGLE |
| 1 | A | 30,380 | 24° | 5 | A | 18,471 | 23° |
| | B | 40,102 | 22° | | B | 7,716 | 23° |
| | C | 11,544 | 22° | | C | 13,853 | 23° |
| 2 | A | 8,220 | 30° | 6 | A | 13,245 | 31° |
| | B | 21,300 | 30° | | B | 15,433 | 31° |
| 3 | A | 10,572 | 25° | | C | 9,114 | 31° |
| | B | 10,572 | 26° | 7 | A | 12,638 | 25° |
| 4 | A | 12,760 | 15° | | B | 7,595 | 25° |
| | B | 5,000 | 15° | | C | 10,572 | 25° |
| 1,2,5,6 - Backward Facing 3,4,7,8 - Forward Facing | | | | 8 | A | 19,443 | 19° |
| | | | | | B | 6,319 | 19° |
| | | | | | C | 8,446 | 19° |

VISUAL ACQUISITION CRITERIA

Acquisition Level

Definition

| | |
|--------|--|
| ZERO | No acquisition of target or target area. |
| LOW | General area around targets acquired but targets themselves are not visible, for example, a large crater in which targets are located can be identified but targets cannot be seen. |
| MEDIUM | Target acquired but based on surrounding terrain features rather than unique features of target, for example, a feature visible as an undistinguished blob is identified as a target crater by using its location relative to surrounding features. For this criterion to apply, <u>something must be visible at the expected target location.</u> |
| HIGH | Target area or target is positively acquired based on unique shapes of target features. |

TEN BRUGGENCATE

1:2,500,000 (APPROX)

14
PRACE

PRAGUE

NM

120

90

BEČVÁŘ

60

30

0-

VESALIUS

START
10+0

ZERO PHA
JUH

SNG (2)

ZERO-PHAS
(3+5)

ZERO PHASE
(3 + 54)

LANE

PEREPELKIN

B

DANJÓN

DELPORTE

卷之三

KONDRATYUK

LANDMARK TARGETS

JANUARY 31, 1924

NORTH

ELEVATION ANGLE 25°
SCALE
1: 2,700,000(APPROX)

16

PANNEKOEK

DELLINGER

LANE

C

B

A

START
(0 + 00)

ZERO PHASE
(1 + 40)

16

LANDMARK TARGET I
JANUARY 31, 1971
ED. MSC-1

NORTH

SCALE

1:2,630,000 (APPROX)

PRAGER

START
(0+00)

16

LOW

TENETRUGGUNCAH

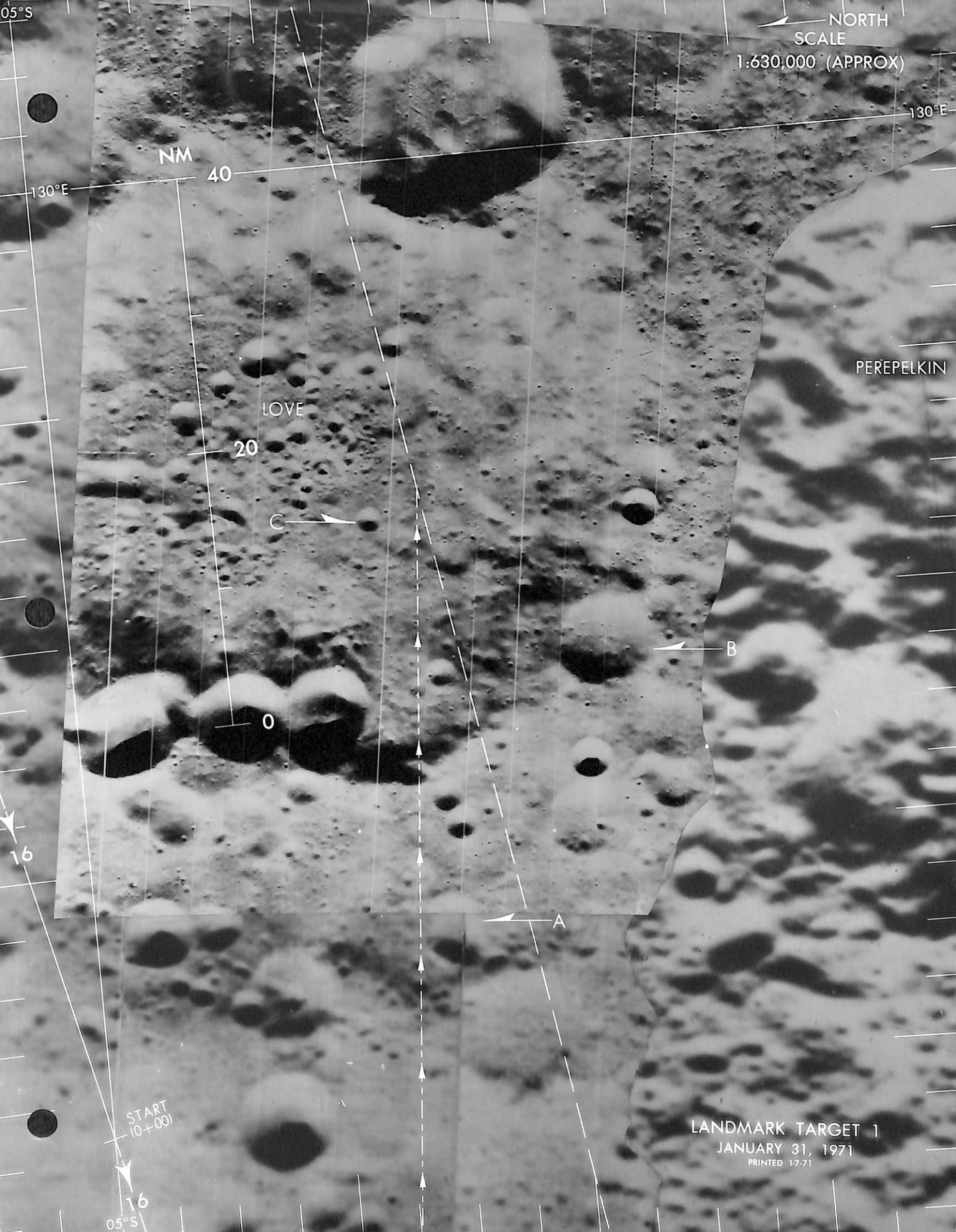
LATE

PEREPEKIN

B

DANION

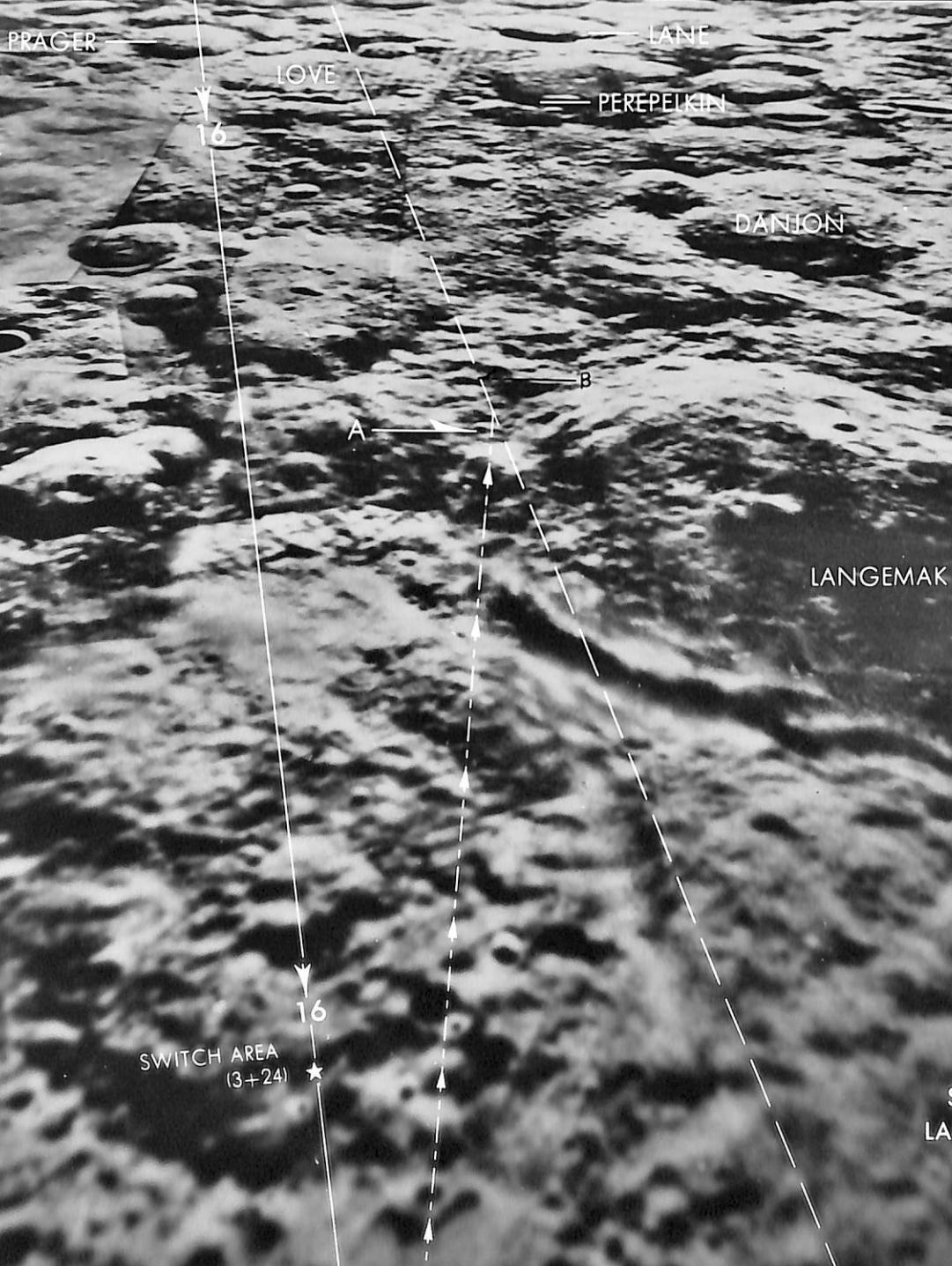
SIM OBlique 22°
LANDMARK TARGET 1
JANUARY 31, 1971
PRINTED 12-11-70



 NORTH

SCALE

1:1,700,000 (APPROX)



SIM OBLIQUE 30°
LANDMARK TARGET 2
JANUARY 31, 1971
PRINTED 12-28-70

NORTH
SCALE
1:1,000,000 (APPROX)

DANJON

NM 60

16

45

30

15

0

B

A

SWITCH AREA
(3+24)

LANGEMAK

LANDMARK TARGET 2
JANUARY 31, 1971
PRINTED 1-7-71

10°S

120°E

10 S

ELEVATION ANGLE 30°
SCALE
1:2,700,000(APPROX)

16

LOVE

DANJON

A

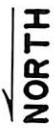
LANGEMAK

SWITCH AREA
(3+24)

ZERO PHASE
(3+54)

16

LANDMARK TARGET 2
JANUARY 31, 1971
ED. MSG-1

 NORTH

LANGEMAK

B

A

LANDMARK TARGET 2
JANUARY 31, 1971
ED. MSC-1



NORTH
ELEVATION ANGLE 33°
SCALE
1:1,250,000 (APPROX)

PTOLEMAEUS M

A

PTOLEMAEUS L

B

16

PTOLEMAEUS D

PTOLEMAEUS A

PTOLEMAEUS Y

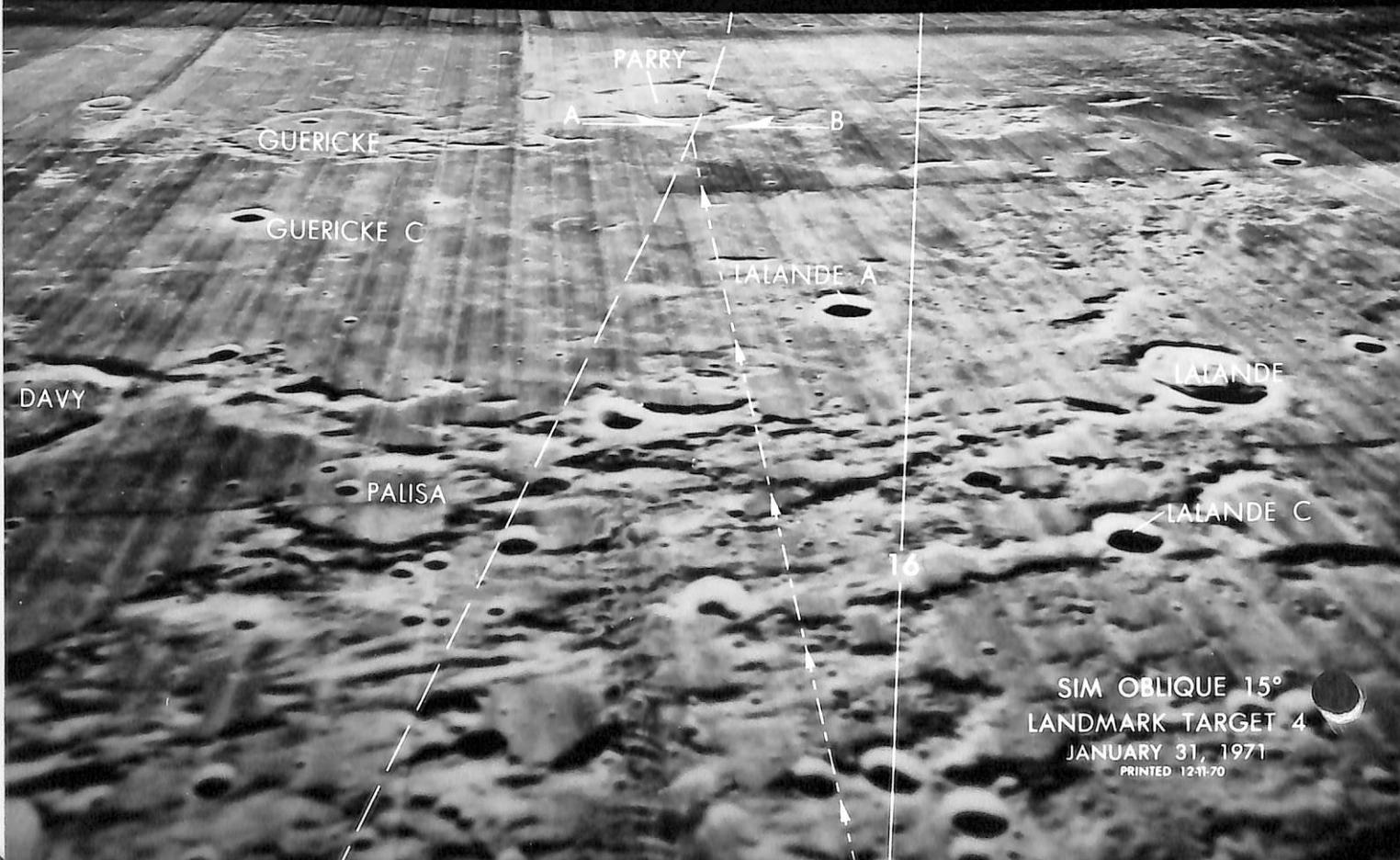
SWITCH AREA
(4 + 32)

16

LANDMARK TARGET 3
JANUARY 31, 1971
ED. MSC-1



NORTH
SCALE
1:4,687,000 (APPROX)



NORTH

SCALE

1:630,000 (APPROX)

FRA MAURO

PARRY A

PARRY

NM

40

PARRY M

20

0

PARRY F

A

B

PARRY L

PARRY C

16

LANDMARK TARGET 4
JANUARY 31, 1971
PRINTED 11-19-70



LANGEMAK

NORTH
SCALE
1:530,000 (APPROX)
ELEVATION ANGLE 30°

A

B

MEITNER

LANDMARK TARGET 5
JANUARY 31, 1971
PRINTED 12-22-70

10°S NORTH

SCALE

1:630,000 (APPROX)

115°E

NM

40

115°E

30

20

0

30

START
(0+00)

A

B

C

MEITNER

LANDMARK TARGET 5

JANUARY 31, 1971

PRINTED 11-30-70

NORTH

SCALE

1:2,700,000 (APPROX)





NORTH

SCALE

1:630,000 (APPROX)

NM
40

30

20

PASTEUR

105°E

A

B

C

0

30

LANDMARK TARGET 6
JANUARY 31, 1971
PRINTED 11-20-70

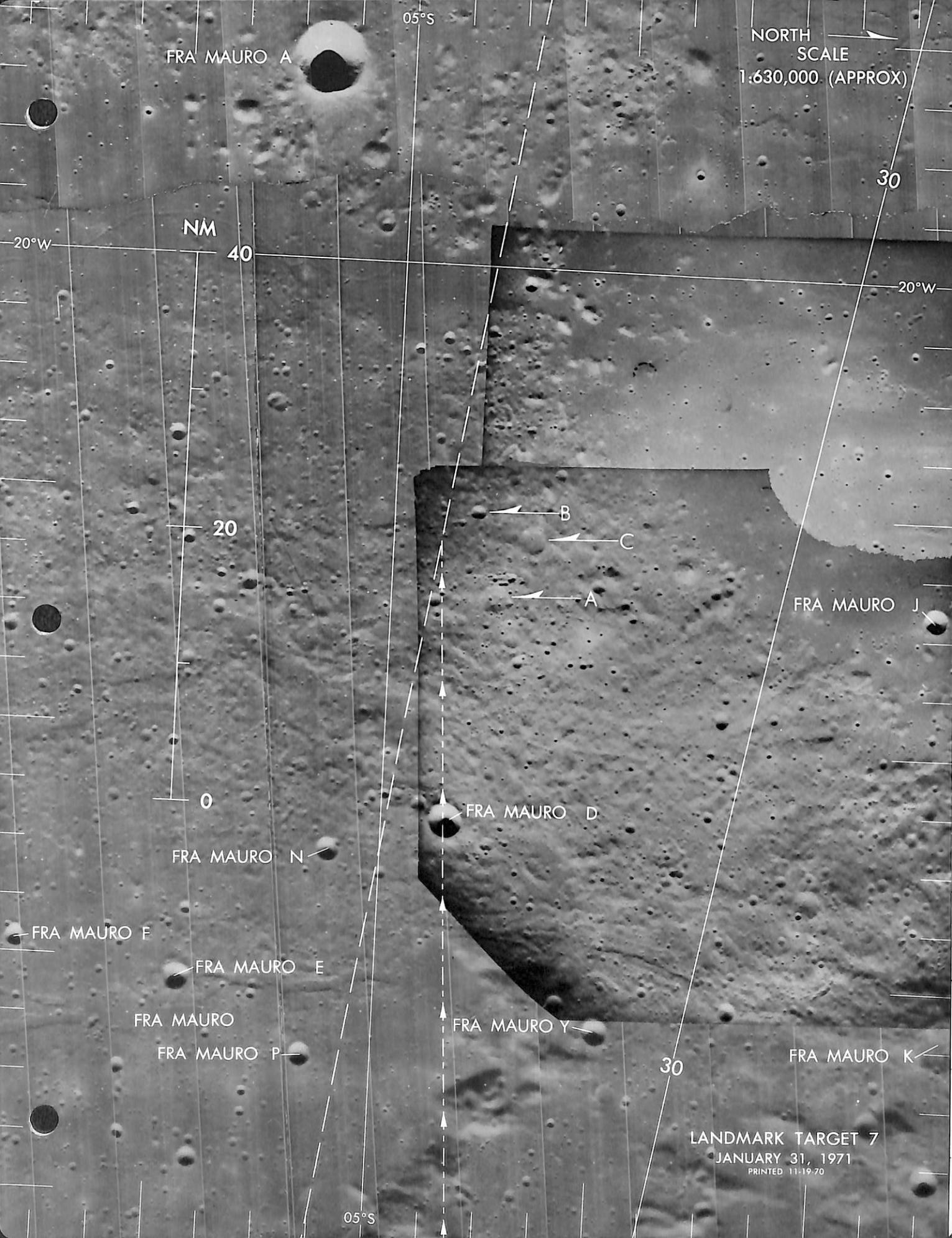
10°S

NORTH
SCALE
1:500,000 (APPROX)
ELEVATION ANGLE

30



NORTH
SCALE
1:630,000 (APPROX)



NORTH
SCALE
1:490,000 (APPROX)
ELEVATION ANGL 26°

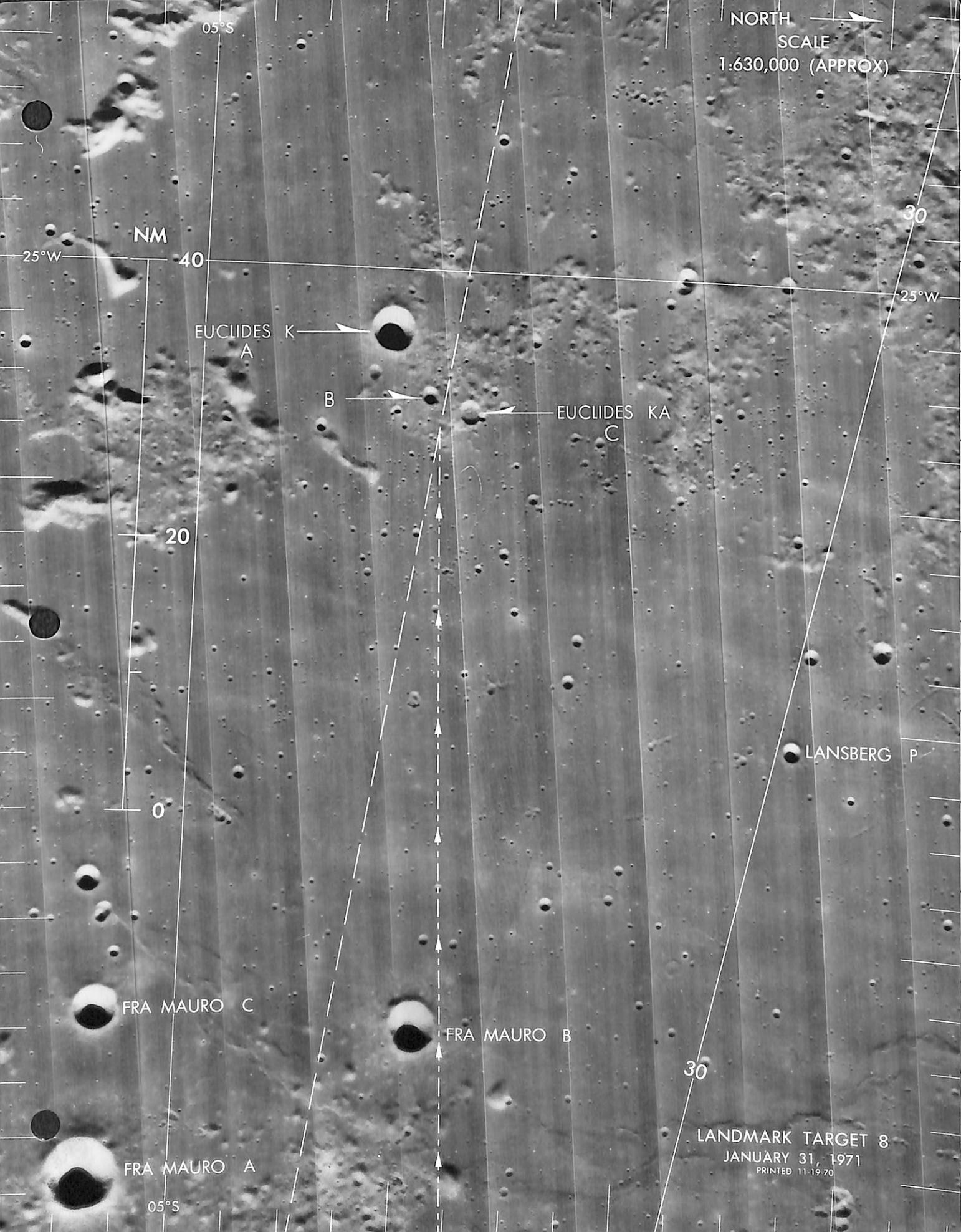
EUCLIDES K
A

EUCLIDES KA
C

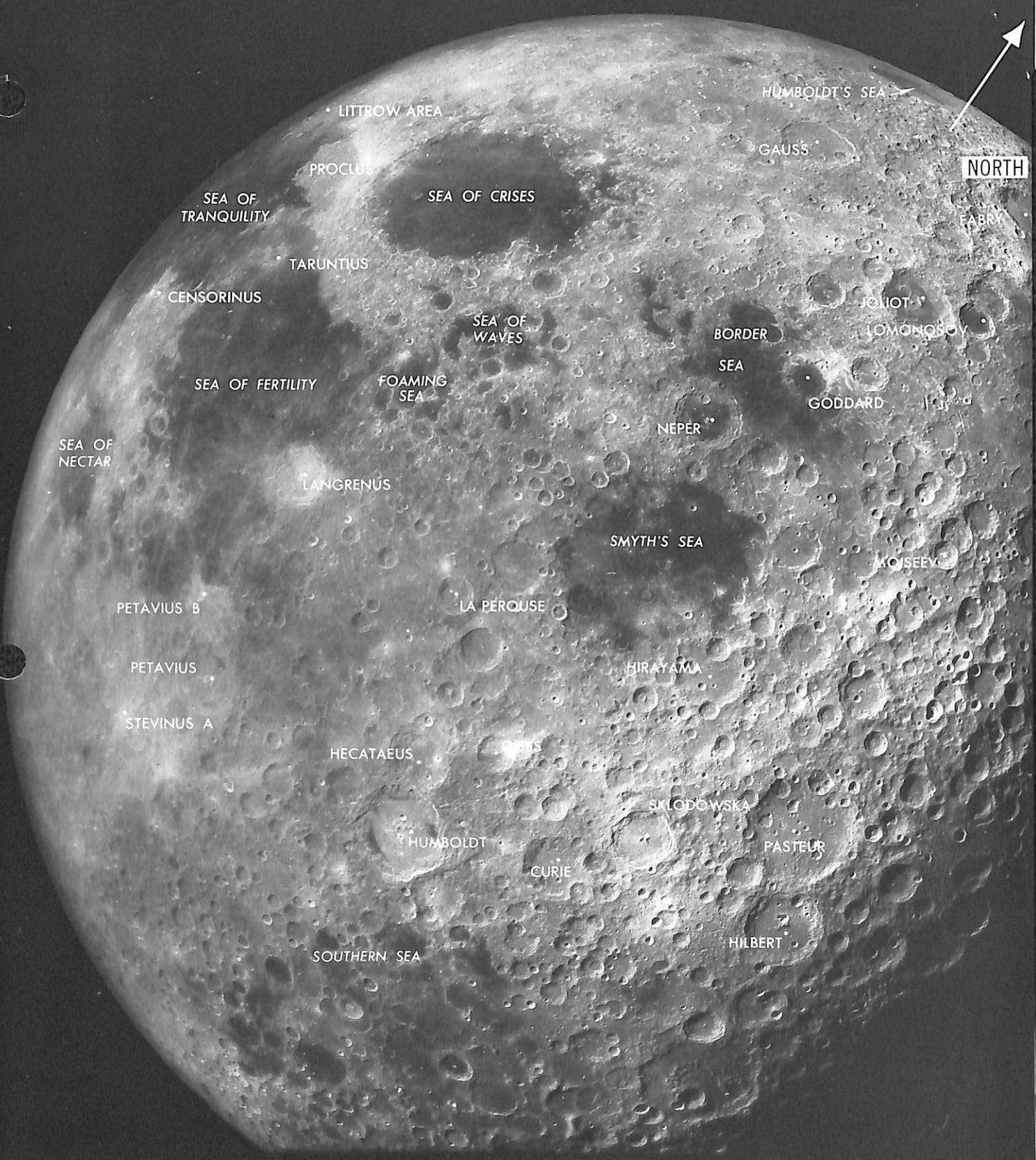
B

LANDMARK TARGET 8
JANUARY 31, 1971
PRINTED 12-3-70

NORTH
SCALE
1:630,000 (APPROX)



LANDMARK TARGET 8
JANUARY 31, 1971
PRINTED 11-19-70



V-1 MAJOR LUNAR FEATURES

Use photograph to identify observable lunar surface features during post-TEI T.V. transmission.

VISUAL TARGETS

POST-TEI

{ V-1 MAJOR LUNAR FEATURES
V-2 EASTERN MARIA

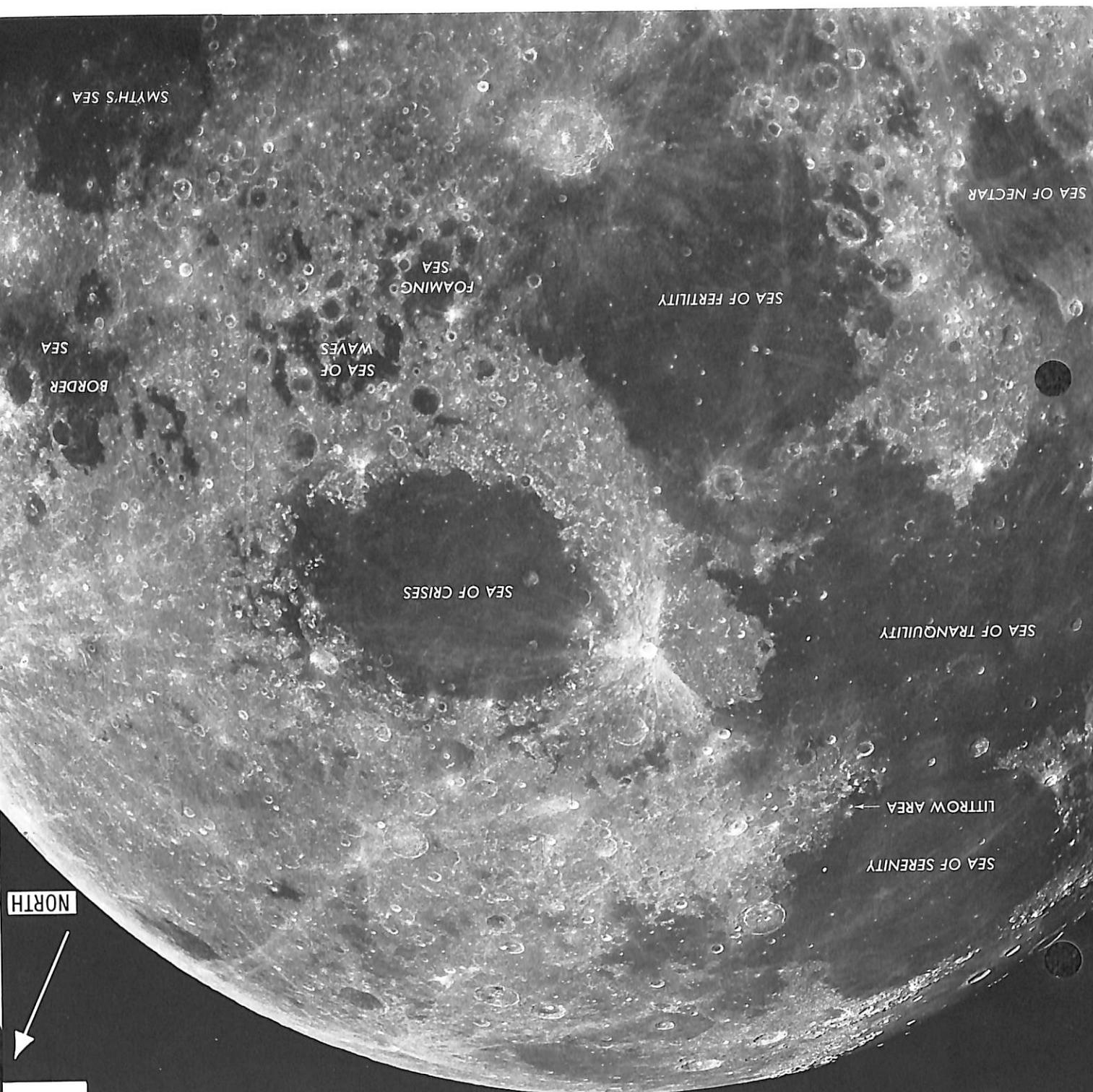
NOT
NOMINALLY
SCHEDULED

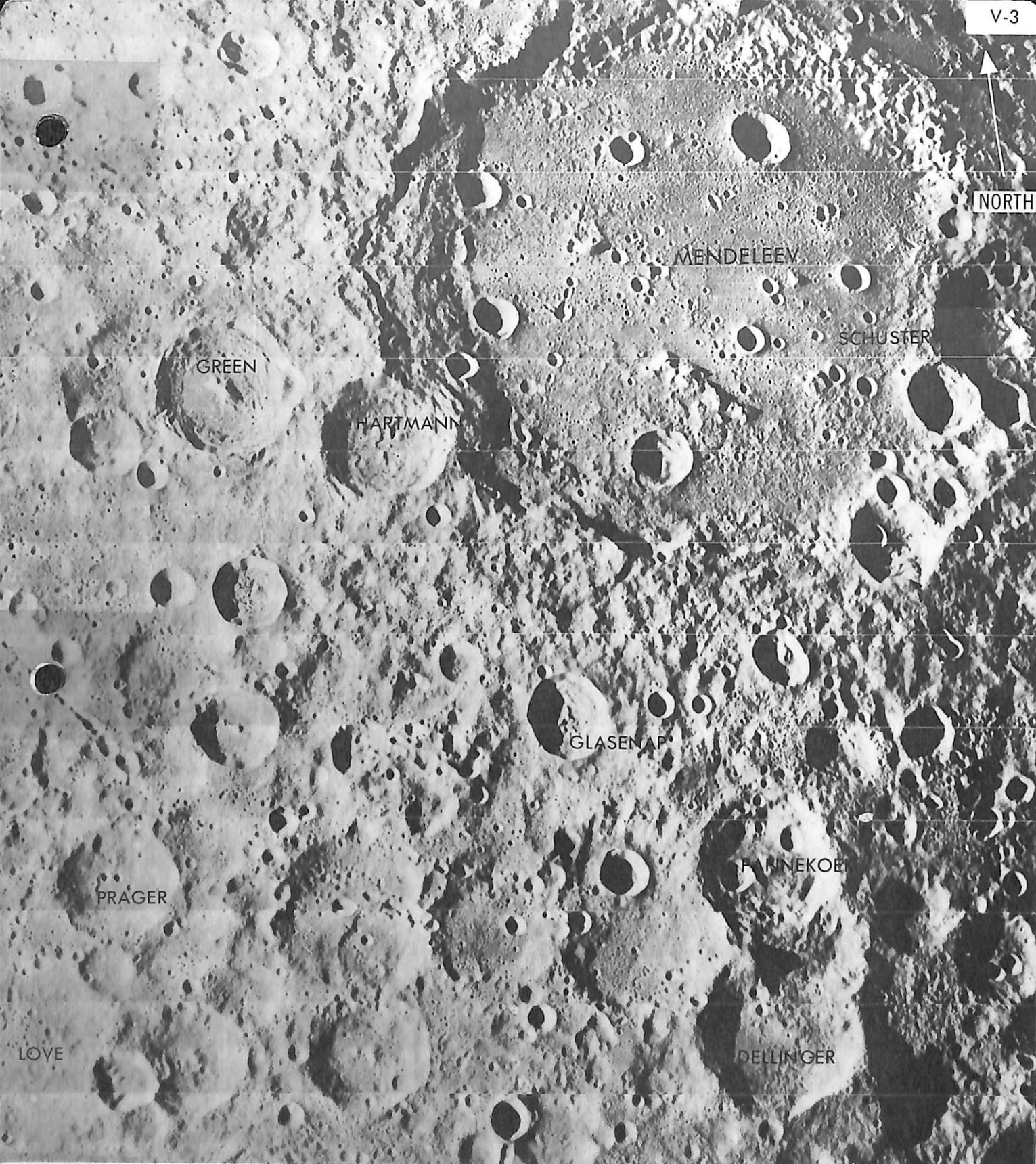
{ V-3 MENDELEEV
V-4 CRATER KING
V-5 CRATER KING
V-6 PASTEUR/PICKERING
V-7 DESCARTES
V-8 ALPHONSUS
V-9 DAVY CRATER CHAIN
V-10 FRA MAURO SITE
V-11 FRA MAURO
V-12 REINER γ STRUCTURE

Use color chart to:

- A. Compare and describe the maria in order of decreasing color tones (starting with the darkest).
B. Following TEL, list the maria in order of decreasing color tones (starting with the darkest).

V-2 EASTERN MARIA





V-3 MENDELEEV AREA (141°E, 5°N)

Make and record observations in the area of crater Mendelev.

- A. Describe crater chain in crater floor; Is it related to any structures? and can you distinguish rim deposits?
- B. Compare that chain with the chain north of crater Prager.
- C. Look for layering of dark rocks in craters Hartmann and Green.

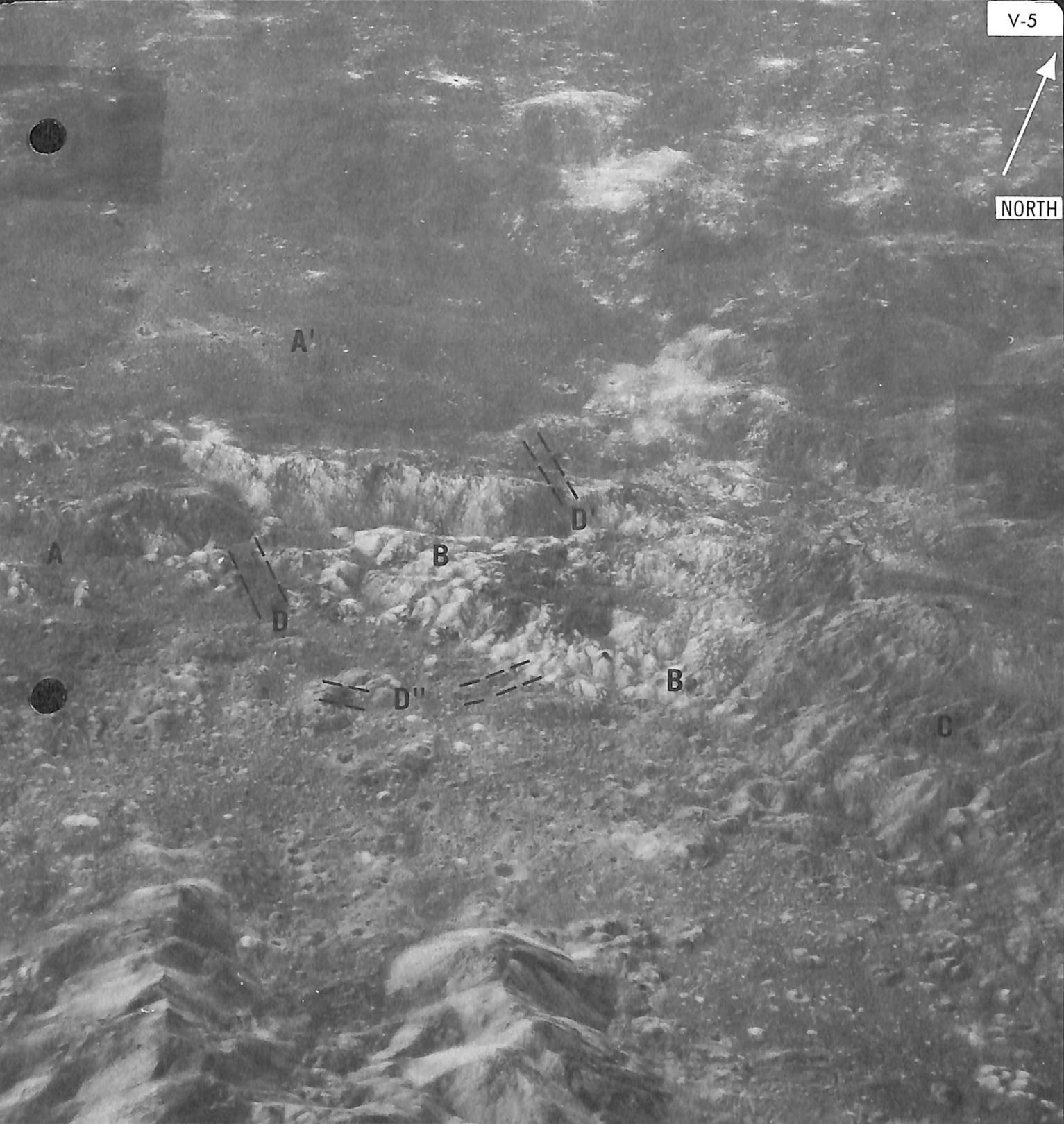


V-4 CRATER KING (120°E, 5°N)

Make and record observations of the following:

- A. Extent of dark mantling materials north of the rim crest.
- B. Differences and similarities between the high albedo areas 1 and 2.
- C. Relationships, if any, between 1 and 2 and the Central Peaks.
- D. Relationships, if any, between 1 and 2 and rays from the crater Bruno and those from the bright crater to the south.

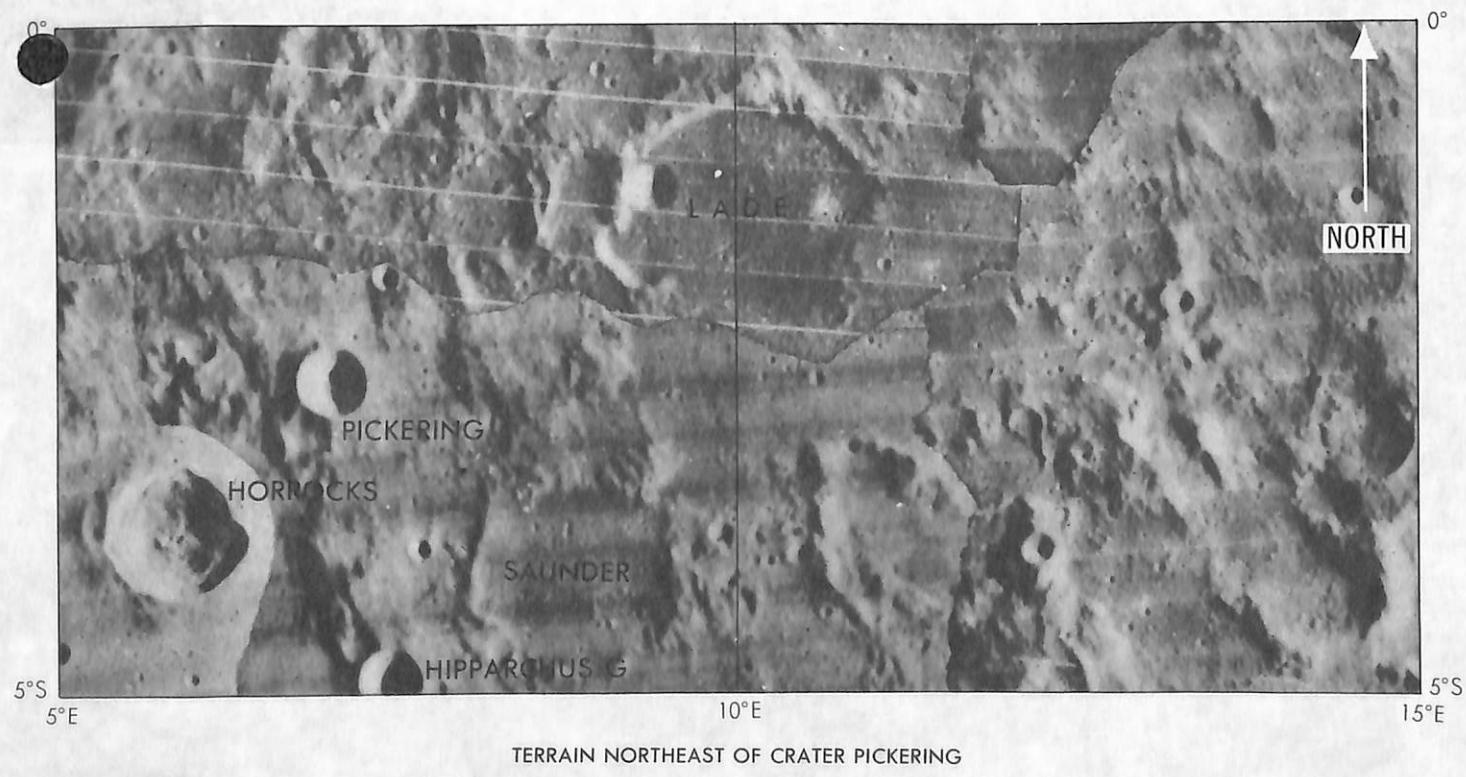
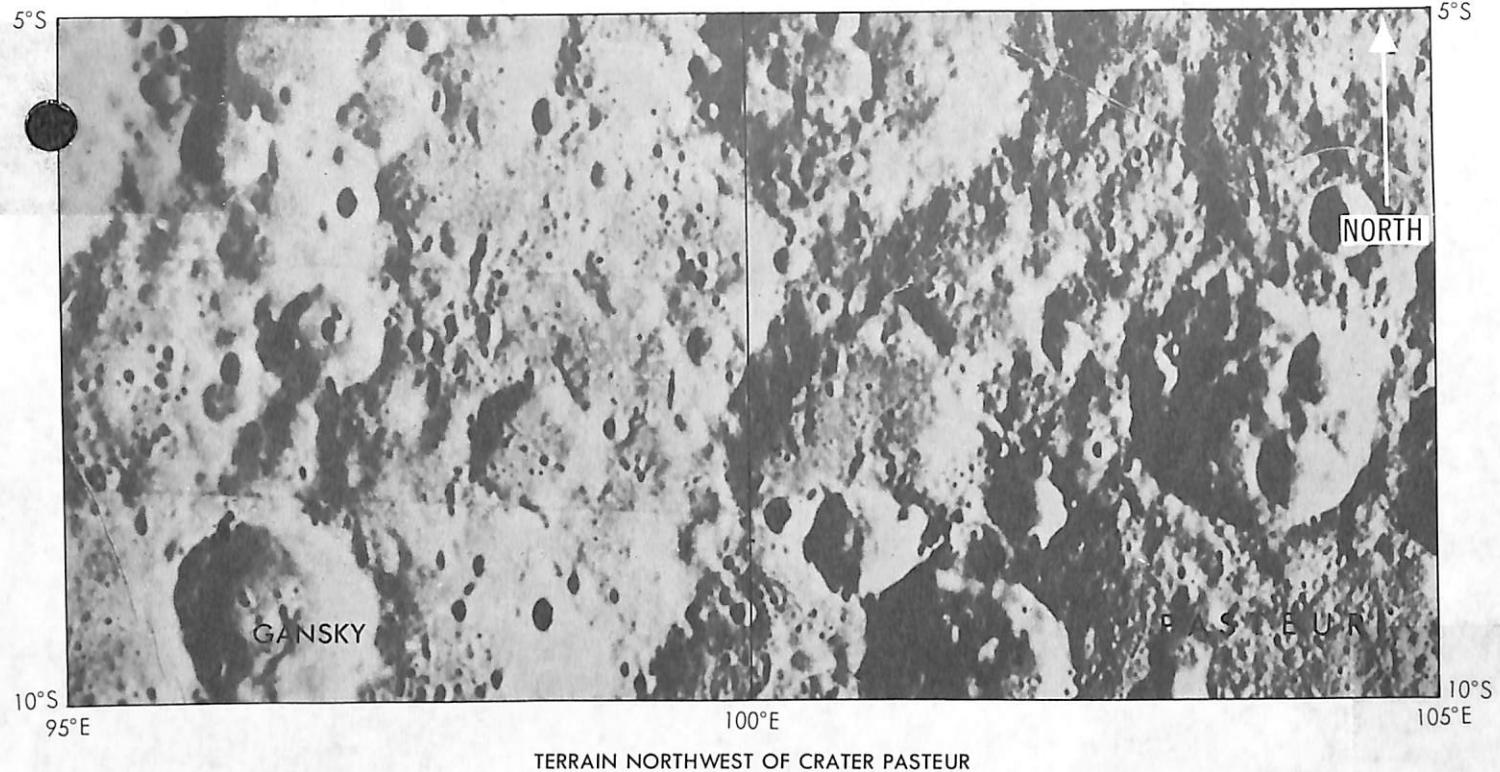
NORTH



V-5 CRATER KING (120°E, 5°N)

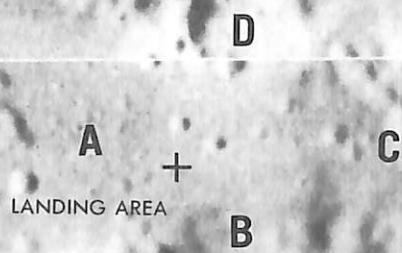
Use the photograph to locate the following areas of interest:

- A. Mantling material on crater wall (A) and pool material (A').
- B. Bright segment of crater wall (B); note structures.
- C. Eastern portion of crater wall (C); describe the terraces.
- D. Wall-like, dark tabular bodies (D, D' and D'').



Compare the terrain of both regions and note differences and similarities.

NORTH

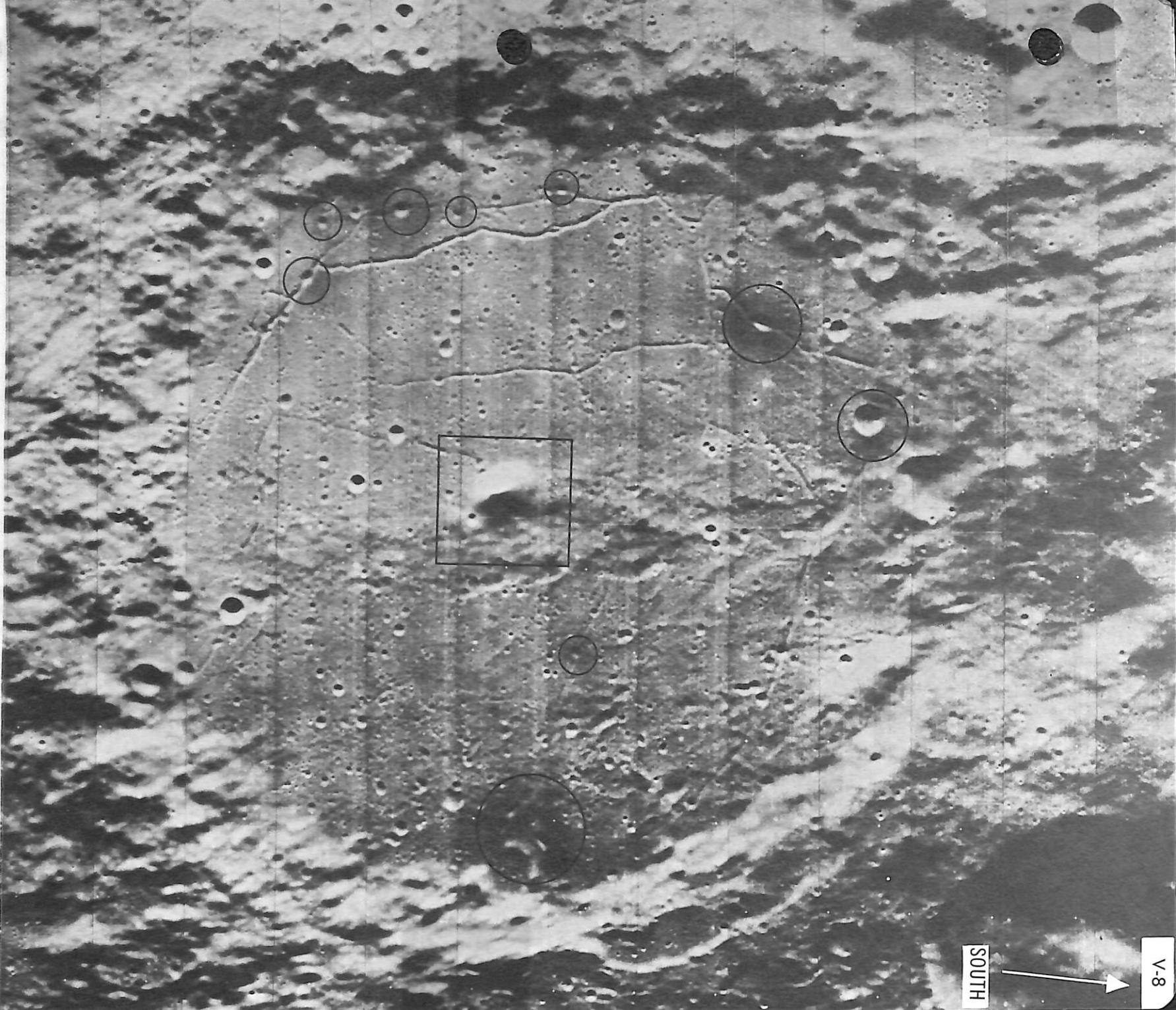


V-7 DESCARTES LANDING SITE (15.5° E, 8.9° S)

- Examine the Descartes landing site and record differences and/or similarities in appearance between:
- A. Upland plains unit to the west.
 - B. Furrowed terra materials to the south.
 - C. Undulating and hilly unit to the east.
 - D. Sculptured unit to the north.

V-8 CRATER ALPHONSIUS (3° W, 14° S)

Transient event area. Circles are drawn around dark halo craters in the floor, and a square delineates the central mountain; all represent areas of possible activity.



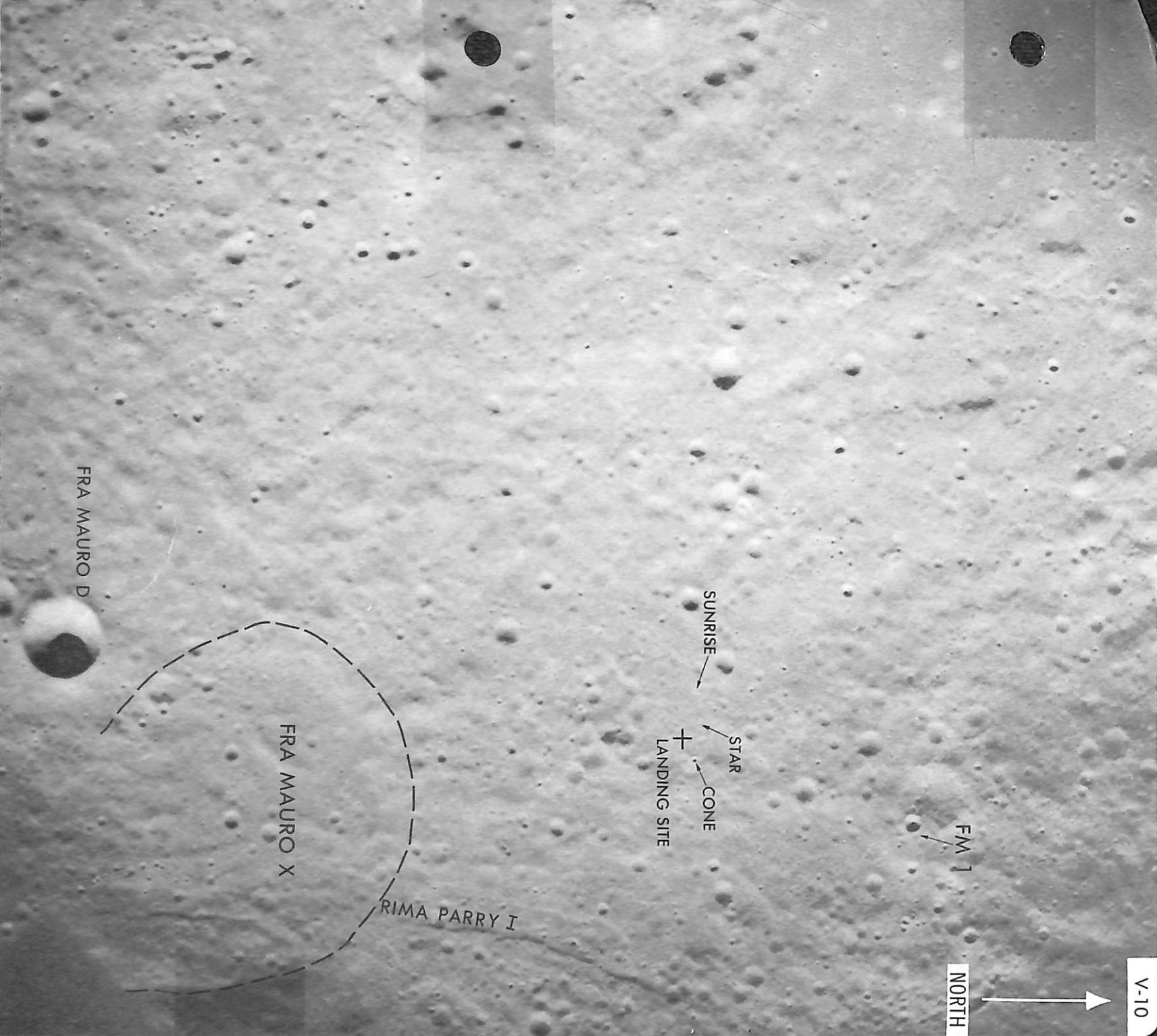
SOUTH

V-8

NORTH

V-9 DAVY CRATER CHAIN (6.29° W, 11.04° S)

Use the monocular to examine the ejecta surrounding the individual craters. Mark craters with the most extensive rim deposits.



V-10 FRA MAURO LANDING SITE (17.46°W , 3.67°S)

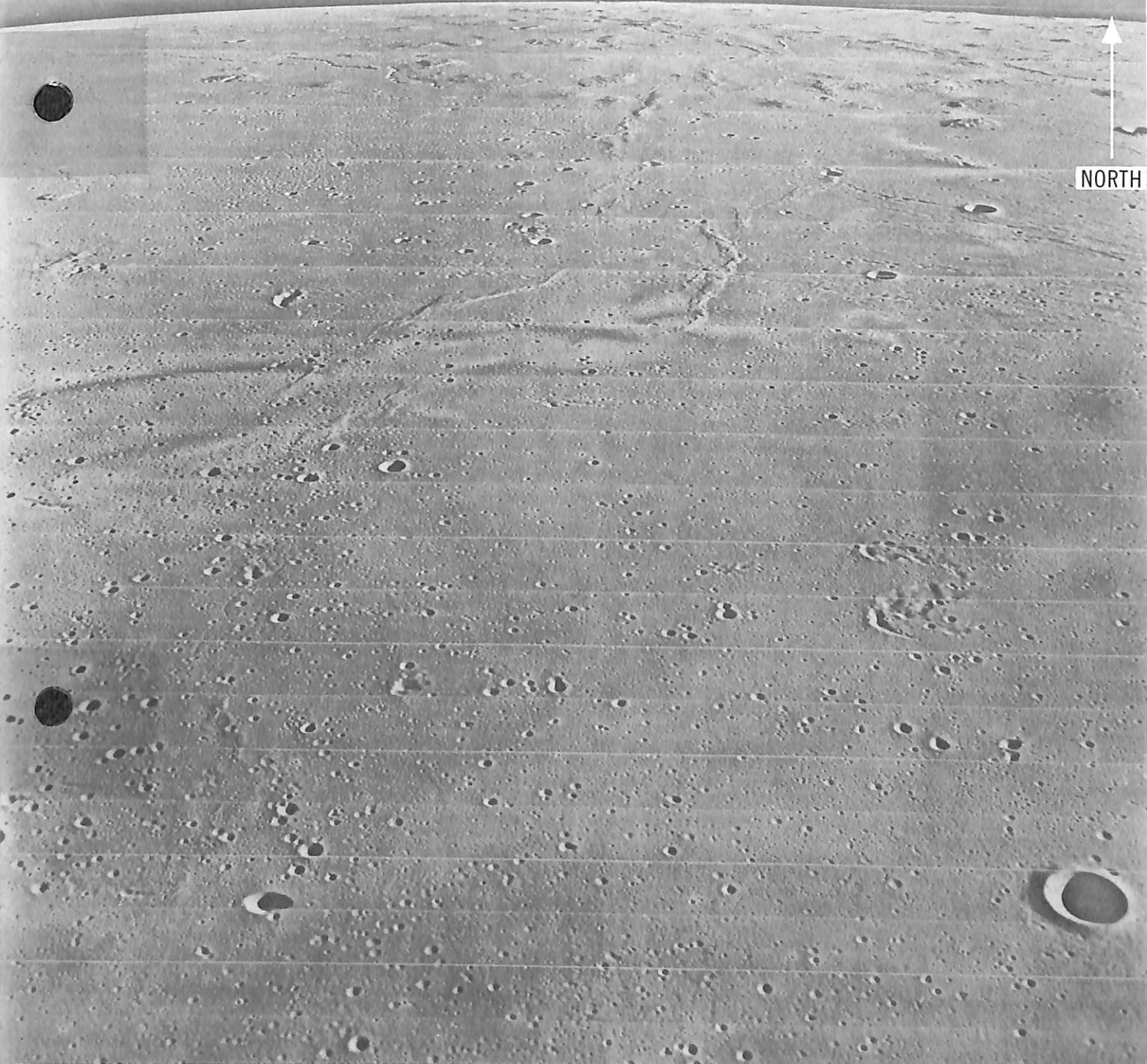
Following location of the landed LM record differences and/or similarities in appearance between the landing area and the rest of the formation.



V-11 FRA MAURO CRATER (16.66°W, 6°S)

Make and record observations of the following:

- The extent of fill of Rima Parry V in the floor of the crater.
- The volcanic and constructional features (circled areas) associated with the rille.



V-12 REINER γ STRUCTURE (60°W, 7°N)

Examine high albedo surface materials (in earthshine); compare with the swirls of the Goddard area on the eastern limb.