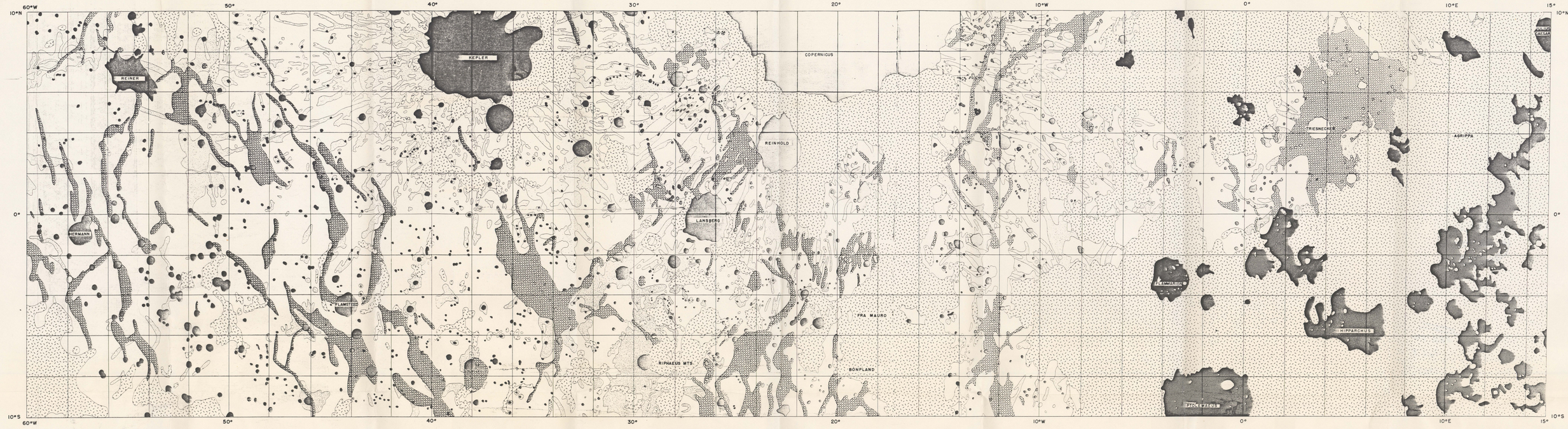




# TERRAIN CLASSIFICATION OF THE LUNAR EQUATORIAL BELT (10°N–10°S, 60° W–15° E)

## (PRELIMINARY EDITION, JULY 1964)

BY

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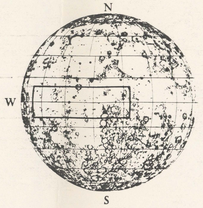
### LOCATION OF MAP AREA






Prepared by the U.S. Geological Survey
for the
National Aeronautics and Space Administration

## GENERAL NOTES

### CONTROL

The selenographic control for this map was derived chiefly from Aeronautical Chart and Information Center, U.S. Air Force, LAC Charts at the scale of 1:1,000,000. Compositing and reduction in scale, however, has resulted in some degradation of positional accuracy.

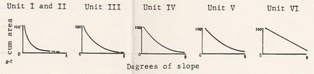
### SOURCES OF INFORMATION

The information for this classification is derived primarily from slope measurements made by photometric and shadow progression methods. It has been supplemented by visual and photographic studies and by geological mapping in the lunar equatorial belt. E.C. Morris, D.J. Milton and D.W. Wilhelms have contributed geological information from unpublished sources. Published map sources used include Shoemaker, 1962, Hackman, 1962, Marshall, 1963, McCauley, 1964.

## GENERAL INFORMATION

The map represents a classification of the lunar surface according to its relative resolvable roughness. It is based primarily on some 40,000 slope components measured in an east-west direction by a photometric technique (Wilhelms, 1963). The length of the average measured slope element is 3/4 kilometer for the central part of the moon, beyond 30° W. longitude it is approximately one kilometer.

The slopes for different parts of the belt were arranged into cumulative slope frequency diagrams that are used to express the relative order of roughness of the surface. Average characteristic curves for each of the units are given below. The median slope value is the most effective parameter in expressing the relative roughness.




Slope information for the roughest units, V and VI, was supplemented by measurements by the shadow progression technique (Pohn, 1962). The discrimination of units I and II is made primarily on the basis of visual estimates of relative roughness, and from geological mapping of the equatorial belt.



## EXPLANATION

Increasing roughness

Topographic characteristics:

Median slope frequency ranges from zero (no resolvable relief) for small areas to 1.5° as determined by photometric techniques. Generally consists of the darker parts of the maria.

Median slope frequency ranges from zero (no resolvable relief) for small areas to 1.5° as determined by photometric techniques. Generally consists of the lighter parts of the maria and ray covered mare areas. Visual studies indicate that these areas are, under the conditions of best resolution, rougher than the darker parts of the maria.

Median slope frequency ranges from 1° to 2°, as determined by photometric techniques. Consists of mare areas that show numerous structural elements such as sinuous ridges, domes, rilles or chain craters which contribute to an undulating, uneven topography.

Median slope frequency, as determined by photometric techniques, ranges from 1.5° to 2.5°. Consists generally of relatively smooth basins occupying the floors of the largest craters within Unit VI.

Median slope frequency, as determined from shadow progression and photometric techniques, ranges from 2° to 6°. Consists of individual craters superposed on smoother surfaces. Includes both the crater floor, walls and rim deposits to a distance of approximately one crater radius.

Median slope frequency, as determined from shadow progression and photometric techniques, ranges from 3° to a measured maximum of 8°. Surface consists primarily of a complex sequence of overlapping craters and crater deposits; the mean slope value of the interior walls of individual craters is 37°.

## REFERENCES

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