

4.1.7 LUNAR EARTHSIDE MAPS (Published by USATOPOCOM)

Topographic Lunar Map
1st Edition, September 1964
Scale: 1:5,000,000
Projection Modified Stereographic
Limits: 90°N-S, 180°
Number of Sheets: 2
Sheet Size: 54" x 38"

Mare Nectaris - Mare Imbrium
1st Edition, March 1962
Scale: 1:2,500,000
Projection Modified Stereographic
Limits: 40°N-S, 40°E-40°W
Number of Sheets: 1
Sheet Size: 54" x 32"

Topographic Lunar Map
1st Edition, June 1965
Scale: 1:2,000,000
Projection Modified Stereographic
Limits: 90°N-S, 180°
Number of Sheets: 6
Sheet Size: 54" x 38"

Lunar earthside maps were produced to provide full topographic map coverage pending the availability of spacecraft photography of the moon, and to assist in the planning of early lunar missions such as those of the Ranger and Orbiter series. These maps were produced in separate Shaded Relief, Relief, and Gradient Tint versions. The contour interval is 1000 meters with supplementary contours at 500 meter intervals. Relief is shown by form lines in some areas.

Eight pairs of photographs taken at Paris Observatory between March 1896 and January 1907 were used as compilation source. The photographs of each pair were taken near the extreme longitude librations of $\pm 7^{\circ}54'$. The pairs of photos were thus stereo pairs with an effective baseline of about 65,000 miles. The scale of the source photography is about 1:22,000,000.

The control used in the compilation of these maps consisted of the coordinates of 150 points determined by Schrutka-Rechtenstamm in 1958 described in Section 3.1.2. The horizontal datum was the crater Mosting A, which was assigned latitude $3^{\circ}10'47''$ south and longitude $354^{\circ}50'13''$, based on Schrutka-Rechtenstamm control. Mosting A was also chosen as the vertical datum. However, it was considered desirable to avoid the use of negative elevation values. As the crater Aristarchus was found to be the lowest feature in the control system, 7.0 kilometers lower than Mosting A, it was assigned an elevation of zero, making the elevation of the vertical datum 7000 meters.

These maps were compiled with an M-2 stereoplotter which was substantially modified to accommodate the special characteristics of the lunar photography. The principal modification was an increase in the projection distance of the plotter from 2-1/2 to 10 feet. The compilation was performed for 288 individual 10°x10° segments which were then rectified and joined to form the compilation of the entire lunar earthside. This compilation, at 3,300,000 scale, was the basis for all three map series listed above.

Area coverage of these maps is shown in Map Index I(4).