

4.1.3 LUNAR EARTH SIDE, FAR SIDE & POLAR CHARTS (LMP) SERIES (Published by ACIC)

Lunar Earthside Chart LMP-1
1st Edition, January 1970
2nd Edition, October 1970
Scale: 1:5,000,000
Projection: Mercator
Limits: 50°N-S, 100°W-100°E
Size: 29 x 41 in.

Lunar Earthside Chart LEC-1 (obsolete)
1st Edition, July 1968
Scale: 1:5,000,000
Projection: Mercator
Limits: 48°N-S, 100°W-100°E
Size: 27 x 42 in.

Lunar Farside Chart LMP-2
1st Edition, January 1970
2nd Edition, October 1970
Scale: 1:5,000,000
Projection: Mercator
Limits: 50°N-S, 80°E-80°W
Size: 29 x 41 in.

Lunar Farside Chart LFC-1 (obsolete)
1st Edition, August 1967
2nd Edition, October 1967
Scale: 1:5,000,000
Projection (Front of Chart) Mercator
Limits: 48°N-S, 80°E-80°W
Projection (Back of Chart) Gnomonic
Limits: 48°N-90°N, 180°
48°S-90°S, 180°
Size: 27 x 39 in.

Lunar Polar Chart LMP-3
1st Edition, January 1970
2nd Edition, October 1970
Scale: 1:5,000,000
Projection: Polar Stereographic
Limits: 45°N-90°N, 360°
45°S-90°S, 360°
Size: 29 x 47 in.

LFC-1 (obsoleted by LMP-2) was the first Farside chart to be compiled from Lunar Orbiter photography. The original LFC-1, published in August 1967 for distribution at the August IAU meeting in Prague was based on Lunar Orbiter I, II, III, IV and USSR Zond 3 photography. At that time, photography was lacking for some 20% of the Farside area which resulted in LFC-1 being published with some holiday areas. Photography for the missing areas was acquired by Lunar Orbiter V which allowed LFC-1 to be reissued in October 1967 with complete hemispherical coverage. Also, Lunar Orbiter V replaced the Zond 3 coverage.

The position of features on LFC-1 was considered as provisional, having been independently determined from predicted coordinates of the principal points of the Lunar Orbiter photographs. Topography was portrayed by air brush shaded relief with an assumed lighting from the west. The Farside polar areas, from 48°N-S to the poles, were printed on the reverse side of LFC-1.

LEC-1 (obsoleted by LMP-1) was compiled as a companion chart to LFC-1 in order to provide similar coverage of the Earthside hemisphere. The LACs were used as source for this chart, supplemented by Lunar Orbiter photography in the limb regions. However, the polar areas for the Earthside hemisphere were not compiled because at that time, plans were being formulated to completely recompile LFC-1 and LEC-1 based on a new network of control. The Positional Reference System (1969) provided the required control basis for limb and farside areas with the ACIC Selenodetic System (1965) being the primary control source used for central earthside coverage of the LMP series.

The LMP charts provide complete coverage of the lunar sphere and serve as a basic reference/planning series. In the compilation process, maximum utilization was made of existing LOC drawings (LOCs 2, 3, and 4, 25°N-S) reduced to the LMP scale and redrawn. For the remaining areas, Orbiter photographs were reduced, rectified and paneled to the control. This formed the base for drawing the shaded relief. In the shaded relief rendering the conventional west lighting was changed to an east lighting in order to closely approximate shadows as would be seen on the Earthside of the moon during an Apollo mission flight. The relief was printed in brown, highlighted by ray patterns and albedo background, compiled from Earthbased photography and printed in blue.

The LMP series was first published in January 1970 but without names for the Farside features. Following the IAU General Assembly in August 1970, a second edition was issued in October 1970 which included the newly approved Farside names. However, some minor name changes have occurred since the October 1970 edition was distributed.

LMP-1 and LMP-2 are constructed on a Mercator projection with true scale at 34°N-S latitude. Thus, the scale at the equator is 1:6,035,533. LMP-3 contains both the north and south polar areas on the same chart. These areas are compiled on a Polar Stereographic projection with true scale tangent at the poles. LMP-1, 2 and 3 have a common scale at 45°N-S latitude.

The LMP series represents the best available 1:5,000,000 scale map coverage of the entire lunar surface. Coverage of this series is shown in Map Indices I(1) and II(1).

Section 4.1.3