DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND THE
USAF AERONAUTICAL CHART AND INFORMATION CENTER

NOTES ON BASE

The base chart was prepared by ACIC with advisory assistance from Dr. Gerard P. Kuiper and his collaborators, D. W. G. Arthur and E. A. Whitaker.

DATUM

The assumed lunar figure is that of a sphere corresponding to the mean lunar radius of 1738 kilometers. Elevations are referred to a spherical datum 2.6 kilometers below the mean radius to minimize minus elevation values.

CONTROL

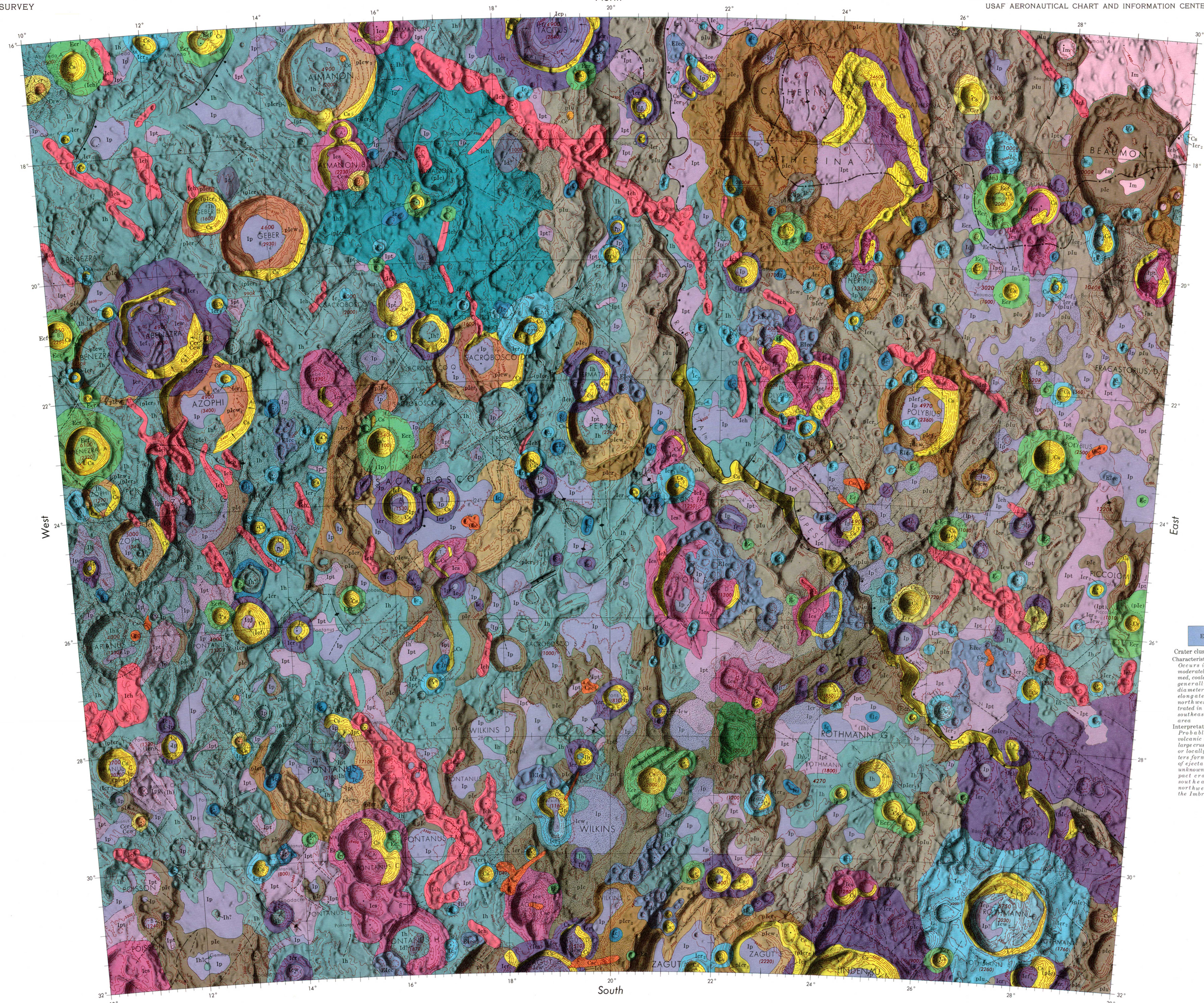
The horizontal and vertical positions of features on this chart are based primarily on the positions of 150 lunar features measured by J. Franz and computed by Schrutka-Rechtenstamm. This control network is supplemented by ACIC extensions in localized areas. Additional horizontal positions have been selected from the Consolidated Catalog of Selenographic Positions ...

ELEVATIONS

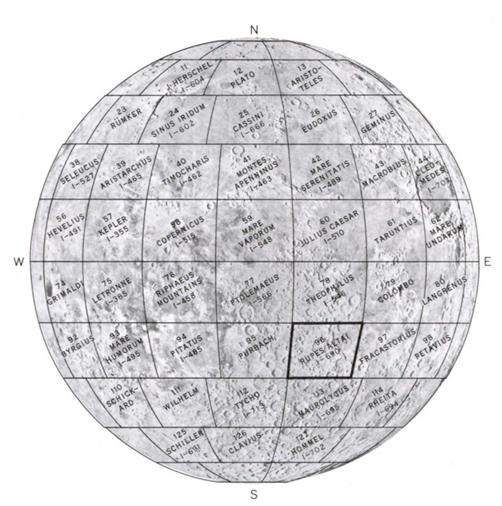
CONTOURS

NAMES

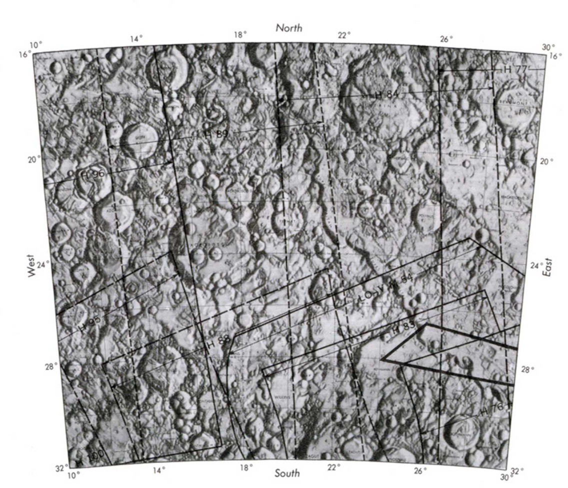
PORTRAYAL



EXPLANATION



INDEX MAP OF THE EARTHSIDE HEMISPHERE OF THE MOON
Number above quadrangle name refers to lunar base chart (LAC series); number below refers to published geologic map



LUNAR ORBITER PHOTOGRAPHIC COVERAGE OF RUPES ALTAI QUADRANGLE
All numbers refer to high-resolution frames of Orbiter IV except LO–V M 54, Orbiter V medium resolution. Heavy outline shows Orbiter V frame 54 high-resolution

GEOLOGIC MAP OF THE RUPES ALTAI QUADRANGLE OF THE MOON

By

L. C. Rowan

1971

GEOLOGIC SETTING

The Rupes Altai quadrangle of the Moon is in the rugged, cratered terra of the southeastern earthside hemisphere. East-northeast of the quadrangle lies Mare Nectaris, approximately 350 km in diameter, and near the northeast corner is the crater Theophilus. Rupes Altai (the Altai Scarp) divides the quadrangle into two markedly different morphologic provinces. To the west, complexly overlapping, fractured craters are extensively buried by distinctive noncrater units. The area east of the scarp, here referred to as the bench and trough province, is part of the multi-ringed structure (Nectaris basin) whose deep central part is occupied by Mare Nectaris (Hartmann and Kuiper, 1962) and whose western limit is the scarp. This province is characterized by fewer craters and by benches and troughs which are only shallowly filled. Mare material of Mare Nectaris in contact with the bench and trough materials is locally exposed in the northeast corner of the quadrangle and more extensively just beyond the east border of the quadrangle. In general morphology, the Nectaris basin is similar to the Orientale basin (McCauley, 1968), but the Nectaris ring structures and other features are more subdued.

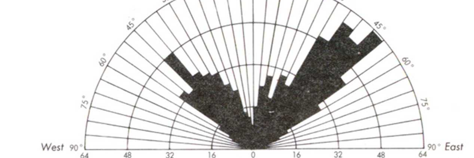
Bright rays and satellitic craters of the relatively young, probable impact craters Tycho and Theophilus cover much of the quadrangle.

STRATIGRAPHY

No unambiguous stratigraphic datum planes extend from the Rupes Altai quadrangle to the Imbrium basin area, approximately 2,000 km away, where the lunar time-stratigraphic sequence was first defined (Shoemaker and Hackman, 1962; revisions reported by McCauley, 1967, and Wilhelms, 1970). To place the local rock-stratigraphic map units of this quadrangle in this time stratigraphic sequence, relative crater ages were determined and correlated with those established for the Imbrium region. Ages were determined for most of the craters greater than about 3 km in diameter by using criteria established by Pohn and Offield (1970; Offield, 1971).

Pre-Imbrian materials.—The pre-Imbrian materials in the quadrangle consist largely of crater materials and of rugged, highly fractured materials of unknown origin (unit pIu) ...

STRUCTURE



GEOLOGIC HISTORY

REFERENCES