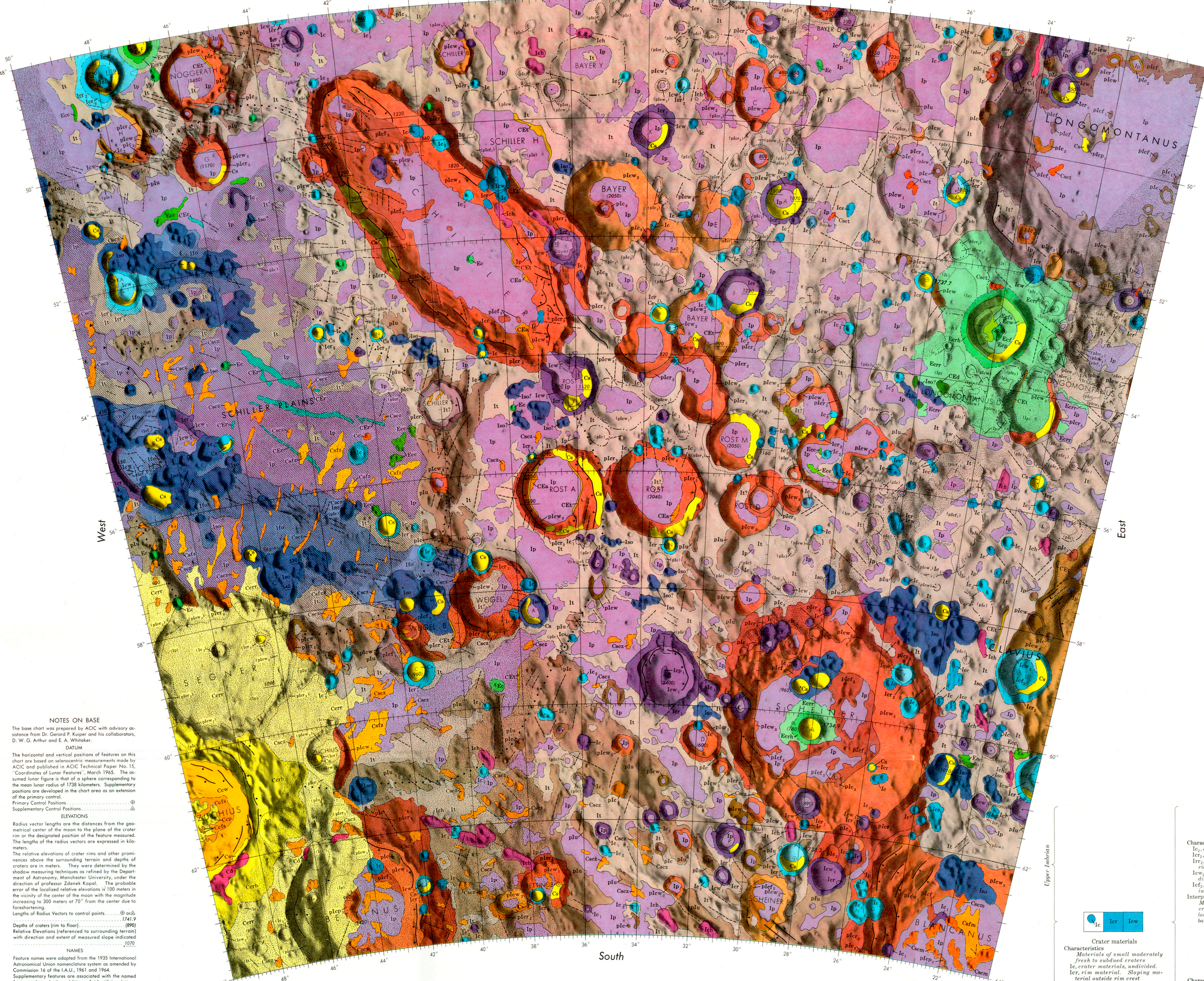
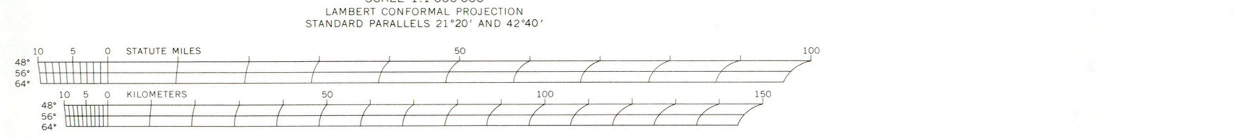
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

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



Lunar base chart LAC 125, 1st edition, 1967, by the USAF Aeronautical Chart and Information Center, St. Louis, Missouri 63118

SCALE 1:1 000 000
LAMBERT CONFORMAL PROJECTION
STANDARD PARALLELS 21°20' AND 42°40'



EXPLANATION

GEOLOGIC SETTING

The Schiller quadrangle is in the southwest quadrant of the earthside hemisphere of the Moon, about 600 km south of the Humorum basin. Cratered terra occupies most of the quadrangle; the most prominent feature is the footprint-shaped crater Schiller. A large area of plains, here called the Schiller plains, occurs in the western part of the quadrangle, partly filling the Schiller basin, an old structure defined by two rings of mountainous terra (Hartmann and Kuiper, 1962). Geologic units of regional extent unrelated to basins cover most of the region, but some units and structures are related to the Orientale basin, more than 1,000 km to the west-northwest.

STRATIGRAPHY

Because the quadrangle is far from the Mare Imbrium area where the lunar time-stratigraphic sequence was defined (Shoemaker and Hackman, 1962) it is difficult to assign ages to the stratigraphic units. The problem is dealt with by use of a sequence of inferred relative ages for craters established by Pohn and Offield (1970) on the basis of morphologic freshness. The sequence is divided into morphologic stages assigned arbitrary numbers in a scale from 7.0 (youngest) to 0.0 (oldest). These stages (not given numerically on the present map) are here tentatively correlated with the established lunar time-stratigraphic subdivisions (Shoemaker and Hackman, 1962 as revised by McCauley, 1967a, and Wilhelms, 1970). For this correlation, a crater-age number of 4.2 has been assigned to the beginning of the Imbrian Period, the time of formation of the Imbrium basin, on the basis of the oldest craters superposed on the basin ejecta

COPERNICAN SYSTEM

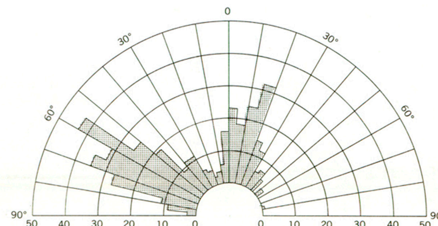
ERATOSTHENIAN OR COPERNICAN SYSTEM

ERATOSTHENIAN SYSTEM

IMBRIAN SYSTEM

PRE-IMBRIAN

STRUCTURE



AZIMUTH-FREQUENCY DISTRIBUTION OF LINEAMENTS

GEOLOGIC HISTORY

The earliest decipherable event in the area was the formation of the Schiller basin. Aside from formation of major craters such as Longomontanus, Clavius, and Schiller, and possible faulting associated with the Humorum basin-forming event, no major geologic event is recorded until Imbrian time, when widespread mantling of the terra took place (unit It). In late Imbrian time much faulting, cratering, and deposition of ejecta occurred as a result of the event which formed the Orientale basin. This event was followed by the emplacement of smooth plains materials which fill most older craters, the Schiller basin, and many low areas in the terra. The last major event was the emplacement of dark material as a surficial covering in the Schiller plains area. Formation of the crater Zuchius in late Copernican time resulted in widespread distribution of fresh ejecta across the southwest corner of the quadrangle. Still more recently, dark material was emplaced in three small areas (unit Cd).

Impact cratering and mass wasting have occurred throughout the history of the quadrangle, covering many surfaces with debris and exposing others. Bright surfaces are probably areas where materials have been recently exposed; they are mapped as unit Cs.

REFERENCES

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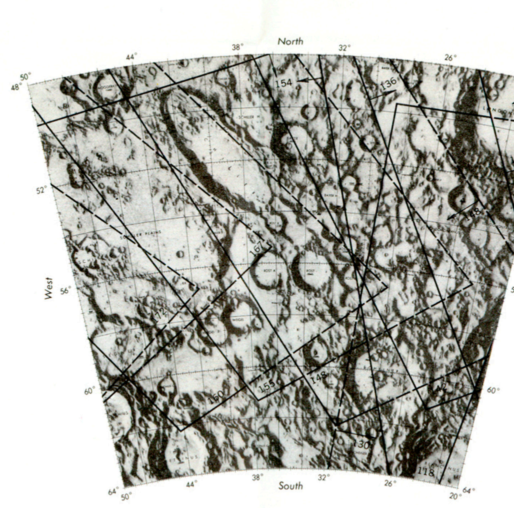
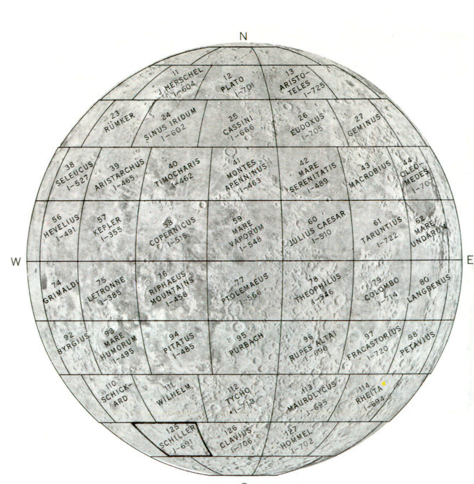


LUNAR ORBITER PHOTOGRAPHIC COVERAGE OF SCHILLER QUADRANGLE
All numbers refer to high-resolution frames of Orbiter IV



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

GEOLOGIC MAP OF THE SCHILLER QUADRANGLE OF THE MOON

By
Terry W. Offield

1971