THE LUNAR OBSERVER

A NEWSLETTER FOR STUDENTS OF THE MOON . . . . . JANUARY 2000
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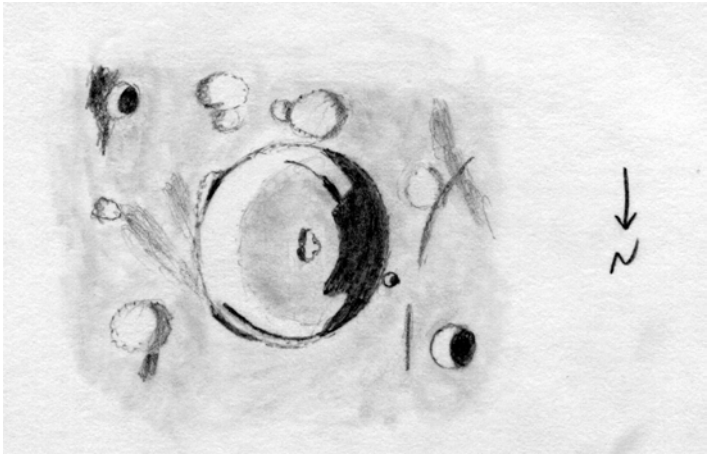
FEATURE OF THE MONTH



HERSCHEL - (5.7°S - 2.1°W)
Sketch and Text by Robert H. Hays, Jr. - Worth, Illinois
6 inch (150mm) Newtonian - 170X - August 3, 1999 - Seeing 7/10

I sketched this crater on the morning of August 3, 1999 between two occultations. This round, crisp crater is located just north of Ptolemaeus. It is not nearly as large as Ptolemaeus, but it must be much deeper judging by its interior shadow, whereas the larger crater still had gentle shading on the shadowed side. The irregularities of Herschel's interior shadow indicate much terracing of its walls. Herschel has a small, three-lobed peak slightly west of center. Herschel must be all depth; I saw very little evidence of a raised rim. The tiny crater Herschel X is perched on the west rim of Herschel, while Herschel C is the larger crater farther to the northwest. The sunlit interior of Herschel C seemed quite bright, and its rim was very crisp. Herschel R was almost as crisp to the southeast and it cast an irregular shadow with its rim as though it was on irregular terrain. By contrast, there were a few vague craters with non-circular shapes nearby, the largest being Herschel G and some low elevations to its east actually about the north rim of Ptolemaeus. I saw two narrow, sharp shadows west of Herschel. One was straight and near Herschel C, and the other was slightly curved and cut across the edge of a vague, somewhat triangular crater. This is an interesting area that may be overlooked because of the nearby large crater Ptolemaeus.

Editor: Herschel is a 41 km (25 mile) crater named for the English astronomer William Herschel (1738-1822). It can be found of Map #44 of Rukl's Atlas of the Moon.

INTERNATIONAL BRIGHT LUNAR RAYS PROJECT

Coordinator: In addition to sketches, photographs, and electronic images of bright lunar rays, we gladly accept written ideas as to the origin and/or nature of these fascinating features. Here is an example of just such a submission:

NON-RADIAL ASPECT OF LUNAR RAY STRUCTURES

By Charles Shirk - Dayton, Ohio

As I have observed the features on the Moon for many years, I am persuaded to share this observation of the non-radial aspect of ray structures.

Firstly, I do not believe that chunks in the ejecta flung outwards or upwards from impacts would be symmetrical bowling-balls as it were, but randomly shaped. Probably, there were bowling-balls, dog-bones, carrots and double-lobed gourds in the ejecta mixture.

If you could follow the non-symmetrical chunks along their flight-paths, I believe they might rotate about their centers of gravity and, upon impact, lay down nearly helical splatter marks following the flight-path. This could possibly be part of an explanation for streaks which are not 'radial' in their orientation with the impact sites where they originated. Also, as material traveled outwards, there were probably collisions between chunks causing deflections in flight-paths and consequently the patterns laid down by the ejecta.

If I may, my own feeling about rayed craters is that they are newer features for this reason: If you throw a rock into watery mud, you should get a circular hole into which runny material would quickly flow … creating a flat-bottomed crater; ie: Mare Imbrium. If you then power-slam a snowball onto a sidewalk, you get a central mountain peak instead of a flat-bottomed site. The difference being the degree of curing of the lunar surface at the time of a particular impact. Also, it might be that older craters do not show rays prominently because of prolonged solar exposure and the unending sandblasting of the surface by meteoric materials causing a blending of surface materials with overlaid ejecta.

After reading Dr. Sten Odenwald's article (NASA website) on lunar rays, I felt like making these conclusions available from my observations.

Lunar Calendar - January 2000 - (UT)

3. . . . 05:00. . . .Moon 2.5 Degrees N of Venus
4. . . . 12:00. . . .Moon at Apogee (252,536 miles - 406,406 km)
6. . . . 18:14. . . .New Moon (Start of Lunation 953)
8. . . . 05:00. . . .Moon 0.32 Degrees SW of Neptune
9. . . . 05:00. . . .Moon 0.47 Degrees SSW of Uranus
14 . . . 13:34. . . .First Quarter
19 . . . 23:00. . . .Moon at Perigee (223,297 miles - 359,352 km)
21 . . . 04:41. . . .Full Moon
28 . . . 07:58. . . .Last Quarter

RECEIVED DURING THE MONTH

BRYAN ELLIS - FALLON, NEVADA
Video still of Mare Crisium

JIM FERREIRA - LIVERMORE, CALIFORNIA
Video stills of Birt & Rupes Recta (3), Birt & Birt A

FERNANDO FERRI - ANZIO, ITALY
Sketch of Menelaus Ray System

ROBERT H. HAYS, JR. - WORTH, ILLINOIS
Sketches of Bailly, Milichius, Hind, Reiner, Plato

DAN MONTAGANO - MONTREAL, CANADA
Photograph of Petavius

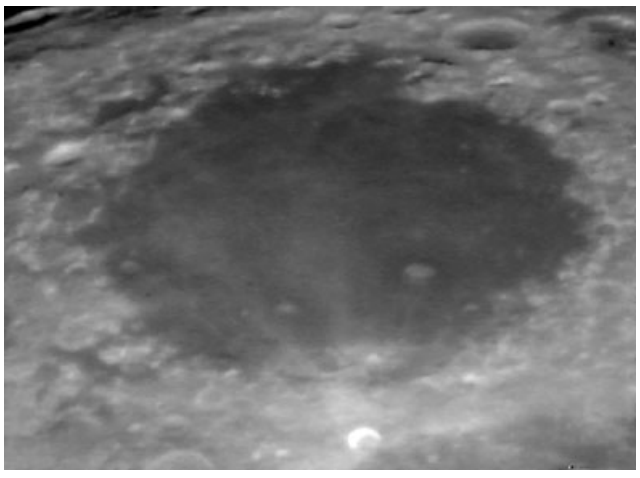
GUISEPPE SORRENTINO - ROMA, ITALY
Video stills of Copernicus, Mare Crisium, Tycho, Lunar Quadrant 4, Lunar Quadrant 3, Mare Serenitatis, Mare Fecunditatis & Mare Nectaris

GRAHAME WHEATLEY - LONG EATON, ENGLAND
Sketches of Kepler, Kepler Ray System

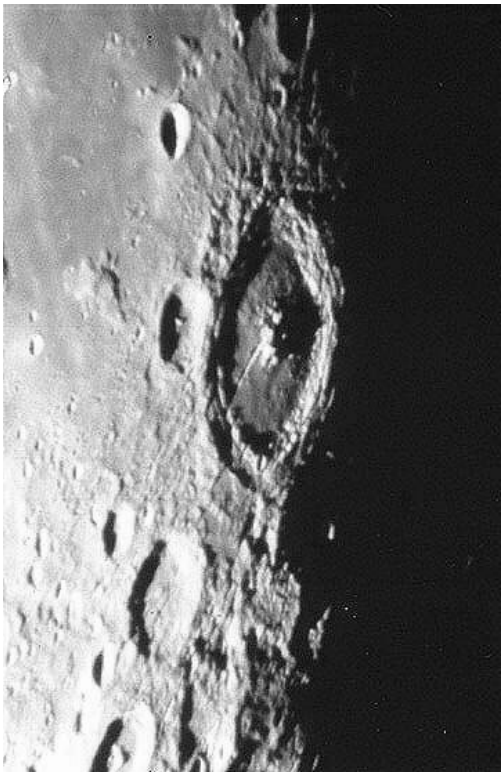
ROBERT WLODARCZYK - CZESTOCHOWA, POLAND
Sketches of Hyginus Rille, Delisle & Diophantus, Kepler Ray System

DAVIDE ZOMPATORI - ANZIO, ITALY
Video stills of Menelaus, Mare Serenitatis

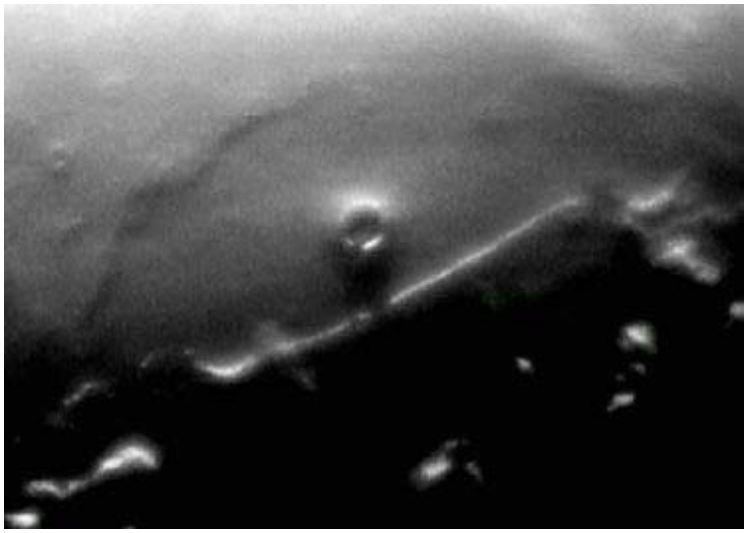
TOPOGRAPAHICAL STUDIES



Mare Crisium
Video Still by Bryan Ellis - Fallon, Nevada
October 24, 1999 - 6 inch Newtonian - f/24 - Green Filter



Petavius
Photograph by Dan Montagano - Montreal, Canada
November 25, 1999 - 8 inch Maksutov-Cassegrain - 1/2 sec - ISO 200



Birt & Rupes Recta
Video Still by Jim Ferreira - Livermore, California
October 29, 1999 - 25cm f/6 Newtonian - PC23C Video Camera

NOTES BY J. FERREIRA: The crater Birt casts a double shadow across Rupes Recta in this sunset image. The images suggests there is some elevation to the crater rim. A small notch in the elevated section of the rim is apparent, allowing sunlight to reach the wall dividing the shadow.