THE LUNAR OBSERVER

A MONTHLY NEWSLETTER FOR STUDENTS OF THE MOON — OCTOBER 1997

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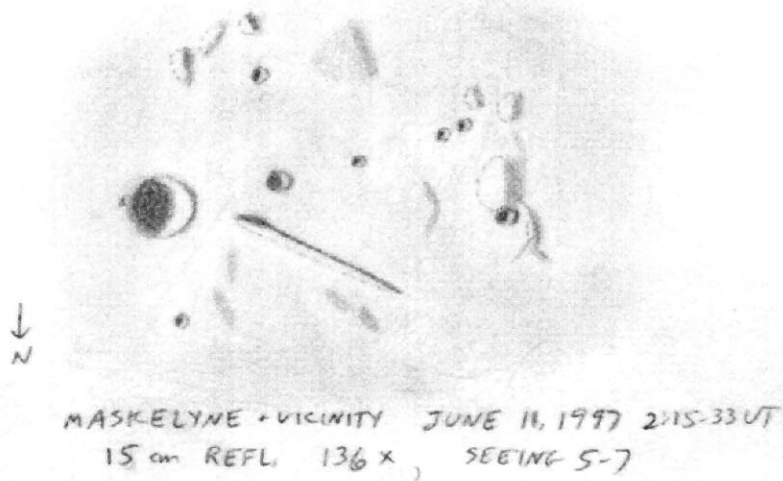
FEATURE OF THE MONTH

Maskelyne (2.2° N 30.1° E)



Sketch by Robert H. Hays, Jr. - Worth, Illinois

On Mare Tranquillitatis, about 250 km east and slightly north of the Apollo 11 landing site, is the crater Maskelyne. About 24 km in diameter, Maskelyne is approximately 2500 meter deep with a central hill that rises only 400 meters above the floor. Its inner walls are terraced and there is a small crater on the east wall. Robert Hays, Jr. of Worth, Illinois recently observed Maskelyne and submitted the following report.

"On the evening of June 10/11, I sketched the area near and west of Maskelyne after timing the occultation of a faint star. It looked like an interesting area with a sprinkling of small craters and low elevations. A long, narrow ridge began north of Maskelyne B and ended northeast of Maskelyne G. The latter crater encroached on what looked like a large, low dome. A couple of smaller domes or hills were seen to the south of this feature. An assortment of elevations were noted south of Maskelyne B (around Maskelyne W), the strangest one being perhaps the vague, triangular swelling west of Maskelyne W. Other shadows seen may have been merely wrinkles. The sky was clear that evening, but there was some slight turbulence in the twilight."

Maskelyne can be found of Map #36 of Rukl's Atlas of the Moon and should be well placed for observation five days after New Moon.

Lunar Photography - Part Two

CORRECT EXPOSURE

Establishing an upper limit on exposure times is only one step in determining the correct exposure for a lunar photograph. Although the focal length of the objective determines the size of the image, it is the focal ratio which determines the intensity of light that is delivered to the film. A 2.5 inch diameter lens with a focal length of 20 inches (f/8) will deliver four times as much light to the film as a 1.25 inch diameter lens with the same focal length (f/16) even though they will both produce an image of the same size. Exposure time, therefore, is dependent on the focal ratio of the lens.

The following are exposure guides for two of the more popular speed films. It should be understood that these are only guidelines and not hard-and-fast rules. Atmospheric conditions and the height of the Moon above the horizon are only two more variables that can directly affect the final image. It is best, therefore, to bracket your exposures by making at least one exposure above and one exposure below those shown. Maintaining a complete record of each exposure will prove to be an invaluable aid in refining your photographic technique.

EXPOSURE GUIDE - ISO 400 FILM

	Full Moon	Gibbous	Quarter	Wide Crescent	Narrow Crescent
f/5.6	1/2000	1/1000	1/500	1/250	1/125
f/8	1/1000	1/500	1/250	1/125	1/60
f/11	1/500	1/250	1/125	1/60	1/30
f/16	1/250	1/125	1/60	1/30	1/15

EXPOSURE GUIDE - ISO 100 FILM

	Full Moon	Gibbous	Quarter	Wide Crescent	Narrow Crescent
f/5.6	1/500	1/250	1/125	1/60	1/30
f/8	1/250	1/125	1/60	1/30	1/15
f/11	1/125	1/60	1/30	1/15	1/8
f/16	1/60	1/30	1/15	1/8	1/4

NEXT MONTH: Photography through a telescope.

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Observations Received During the Month

Myron E. Wasiuta, Fredericksburg, Virginia - Written descriptions of nine lunar features at Full Moon.

Writtens account of dark object transiting the Moon.

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The Lunar Calendar for October 1997
(All Times UT)

1	16:51	New Moon (Beginning of lunation 925)
5	16:00	Moon 7 Degrees North of Venue
6	08:00	Moon 6 Degrees North of Mars
9	12:22	First Quarter
10	08:00	Moon 3.8 Degrees North of Neptune
10	21:00	Moon 4.3 Degrees North of Uranus
11	10:00	Moon 4.1 Degrees North of Jupiter
15	02:00	Moon at Perigee (358,850 km)
15	03:46	Full Moon
19	09:00	Moon occults Aldebaran
23	04:48	Last Quarter
27	09:00	Moon at Apogee (405,592 km)
31	10:01	New Moon (Beginning of lunation 926)

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Observation of a Dark Object Transiting the Moon

By Myron E. Wasiuta - Fredericksburg, Va.

It was early Sunday morning, August 17, 1997. I was observing the nearly full moon from my backyard with my 5" f/14 refractor making notes for an upcoming newsletter article which will be about the various types of bright features visible on the lunar surface. The night was calm with hazy skies, but pretty good seeing. The moon was nearly on the meridian about 45 degrees above the southern horizon. With the 9.7mm Meade Plossl eyepiece (183X, about 12 arc-minutes true field of view) in place I was carefully observing the extremely bright crater Proclus located on the western (lunar) edge of Mare Crisium. Suddenly a small, extremely dark, spherical object moved into the field of view from the preceding edge. It was sharply focused, and about 1/4 the apparent size of Proclus. It traversed the field in about 3 seconds. At no point did it deviate from a straight line. Its motion was also uniform with no changes in velocity. Extrapolating its direction I quickly moved the scope into the Oceanus Procellarum and waited for it to enter. Sure enough, I got another 3 seconds of observation as it transited! Again it looked very small, perhaps 5 arc-seconds across, completely dark and perfectly spherical. I attempted to track it beyond the edge of the moon and was certain I had it in the field but once it left the lunar disk it became completely invisible. I estimate that it took about 7-8 seconds to transit the face of the lunar disk. As far as I could tell it was not luminous at all, and there were no lights of any kind on it. After about 5 more seconds I gave up the pursuit and checked the time. It was exactly 12:06 AM EDT early Sunday morning, August 17, 1997. The apparent "transit path" across the lunar disk was from Proclus to approximately the position of Aristarchus in the Oceanus Procellarum. This corresponds to an almost west to east motion in our sky given that the moon was near the meridian. This is the direction of the prevailing air currents which suggests this object may have been a high altitude balloon. But the size is uncertain because the range is unknown. Was it a small child's balloon escaping from a weekend party, or a larger object used for meteorological purposes? I will probably never know, but merely present this observation for interest's sake.