

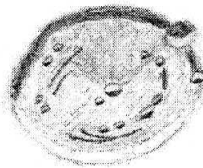
THE LUNAR OBSERVER

A MONTHLY NEWSLETTER FOR STUDENTS OF THE MOON
EDITED BY: BILL DEMBOWSKI 219 OLD BEDFORD PIKE WINDBER, PA 15963

FEBRUARY 1998
DEMBOW@TWD.NET

FEATURE OF THE MONTH

Taruntius - (5.6°N 46.5°E)



Sketch by Robert H. Hays, Jr. - Worth, Illinois
150mm Reflector - 170X

At the northern end of Mare Fecunditatis lies the crater Taruntius. Taruntius is about 56 km in diameter and has relatively narrow and low walls. The walls do not appear to rise more than 1,000 meters above the floor of the crater. The floor contains a complete inner ring and a variety of hills and ridges. The central peak of Taruntius also contains a summit craterlet visible in large telescopes.

Robert Hays of Worth, Illinois sketched Taruntius and submitted this report:

"On the morning of October 19, 1997 I had some time between several reappearances of Hyades stars, and the disappearance of Aldebaran, so I looked for something to sketch. I settled on the interior of Taruntius. This is a modest crater that had previously gotten my attention only during lunar eclipses for crater timings. The interior of this crater is dominated by the remnants of what appears to be the remnants of at least two internal rings. There is a central peak with a smaller peak alongside. Taruntius C intrudes on the northwest rim, but I saw no other craters on the floor or Taruntius. One odd feature was a darker area covering the western quarter of Taruntius. This is a wedge-shaped area extending from the central peak that is fairly well defined. It's a subtle feature, but noticeable enough. It doesn't seem to be related to any relief features."

Taruntius can be found on Map #37 of Rukl's Atlas of the Moon and should be in good position for observing about four nights after New Moon.

Editor's Note: The dark area that Robert observed was also recorded by H. P. Wilkins.

Taruntius C is also known as Cameron.

Lunar Observer's Notebook:

Part of the appeal of photography is its ability to record lunar detail with unquestionable accuracy. While no photograph can match the wealth of detail visible through the same telescope, no sketch can equal a photograph for the accuracy of what it does record. A good example of photographic accuracy is a project I undertook in 1992 to illustrate the difference in the apparent size of the Full Moon at apogee and perigee.

The Moon travels about the Earth in an elliptical orbit and, therefore, its distance from the Earth is not constant. At its greatest distance (apogee) it will appear to be smaller than it does at its nearest point (perigee). The difference is not apparent to the eye but should be noticeable in a series of photographs.

The first step in the project was to determine when apogee and perigee would be the most extreme (not all are equidistant) and occur at Full Moon. A quick look at Guy Ottewell's *Astronomical Calendar* showed that the Full Moon in January would be 356,530 km from Earth while the Full Moon in August would be a whopping 406,279 km distant. My target dates were, therefore, January 19 and August 13.

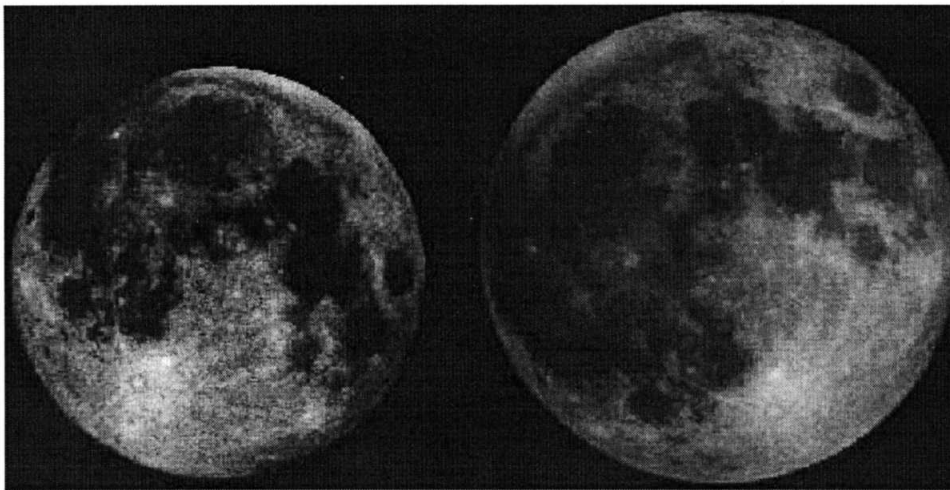
In a project of this sort, where comparisons are to be made of two separate photographs, one must be certain to take both photos with the same equipment in the same configuration. I had to be sure that I used not only the same telescope, but all other parts of the optical path as well. I have, for instance, several different adapters for linking a camera to my telescope. If I used two different adapters, having slightly different lengths, I would negate the project by introducing a variation in size that was not the result of the Moon's orbital position. I decided to use a 10" SCT operating at f/5 since this would give me the approximate image size I wanted.

January 19, the night of perigee, was the coldest night of the winter. Working quickly to beat the cold and some rapidly approaching bad weather, I managed to get several usable shots. Although the presence of some thin, high clouds caused some loss of contrast, the results were still acceptable. Photographing the August Moon was almost leisurely by comparison although predictions of rain had me worried for days in advance.

The next critical step in the process was making the prints. Processing film cannot alter the size of the final image, but making the enlargements most certainly can. The ideal method is to place both negatives in the enlarger at the same time. This will guarantee that both images are being enlarged to the same degree. Depending on the actual size and position of the images, however, this method may not be possible or esthetically pleasing. Alternate methods would be to project first one image then the other onto the enlarging paper without changing the height of the enlarger. Or, simply to make two separate prints using the same enlarger height. I felt that the images would have more impact if both were on the same print and was fortunate enough to be able to sandwich the negatives and print them both at the same time.

The resulting photograph is quite interesting and clearly shows the difference in apparent size. I suppose, using these two images as a base line, it would now be possible to determine the Moon's distance at any given time by carefully measuring its diameter on any subsequent negatives taken with the same equipment. The important thing, however, is to look at lunar photography in new and creative ways in order to more fully utilize its ability to record with great accuracy, and to enhance the enjoyment of lunar astronomy.

..... *Bill Dembowski*



Lunar Calendar for February 1998 (UT)

1	21:00	Moon 0.6 Degrees South of Saturn
3	22:54	First Quarter
11	10:23	Full Moon
15	15:00	Moon at Apogee (405,485 km)
19	15:28	Last Quarter
24	05:00	Moon 3 Degrees North of Neptune
26	17:26	New Moon (Start of Lunation 930)
27	01:00	Moon 1.4 Degrees North of Mercury
27	20:00	Moon at Perigee (359,077 km)
27	23:00	Moon 0.7 Degrees South of Mars

From the Editor:

On January 6, 1998 NASA's Lunar Prospector was successfully launched from Cape Canaveral and ten days later it was placed into its final mapping orbit. The spacecraft carries five science instruments (sorry, no camera) and will investigate the Moon's origin, structure, and resources (including the presence of water). You can follow the progress of the mission at <http://lunar.arc.nasa.gov/>

TLO contributor, Robert Bruce Kelsey, (See TLO March 1997) has written a book titled "Welcome To The Moon". It is directed toward young beginning astronomers and would make the perfect gift for the youngster that received a telescope for Christmas and isn't quite sure what to do with it. Copies cost \$11.95 and are available from Naturegraph Publishers, Inc., 3543 Indian Creek Road, Happy Camp, CA 96039. Phone: (916) 493-5353.

The Lunar Observer is looking for contributions of sketches, photographs, or written accounts of lunar observations. Observers at any skill and experience level are welcome. This is everyone's newsletter.

Clear and steady skiesW.M.D.