THE LUNAR OBSERVER

RECENT BACK ISSUES: http://www.zone-vx.com/tlo_back.html

A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.
EDITED BY: William M. Dembowski, F.R.A.S. - dembowski@zone-vx.com
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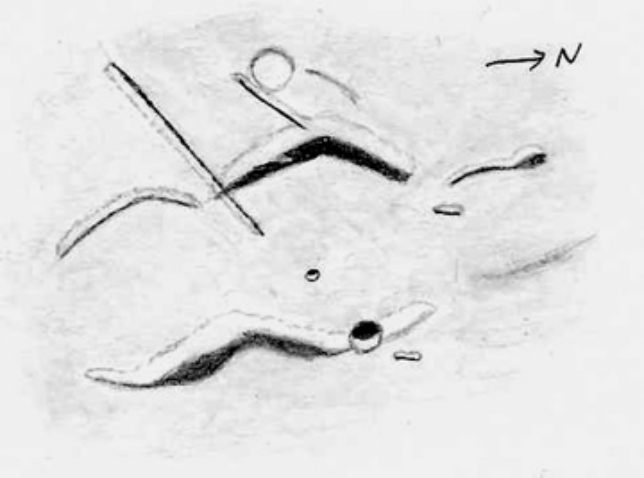
219 Old Bedford Pike (Elton) - Windber, PA 15963

FEATURE OF THE MONTH - FEB. 2008



GOULD

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
October 4, 2007 - 09:04 to 09:30 UT
15cm Newtonian - 170x - Seeing: 7-8/10

I sketched this crater on the morning of Oct. 4, 2007 before the moon occulted kappa Geminorum. This ruined crater is in Mare Nubium east of Bullialdus. The most conspicuous part of Gould is its chevron-shaped west rim. A very narrow, straight ridge extends southwestward from its bend. There is a very shallow crater just north of this ridge. The east rim of Gould is lower than the west rim; its shadowing is not as dark. Gould P is perched on this rim. The Lunar Quadrant Map shows Gould P to be outside of Gould, but I didn't see it that way. The tiny pit Gould A is near the center of Gould. The east rim of Gould merges into the similar east rim of an unlabeled ruined ring just south of Gould. The west rim of this ring is much narrower than that of Gould, and does not merge with Gould's west rim. Neither Gould nor its companion has anything resembling north or south rims. There is a rille that starts near Gould A, cuts across the south tip of Gould's west rim, and continues southwest from there. This rille is not parallel to the aforementioned ridge at Gould's west rim. I found it to be easier than many rilles. There are a few other low ridges and shadowing north of Gould aligned approximately north-south. Some of them may form the ghost ring Gould N which the LQ map shows north of Gould.

AN INVITATION TO JOIN THE A.L.P.O.

The Lunar Observer is a publication of the Association of Lunar and Planetary Observers that is available for access and participation by non-members free of charge, but there is more to the A.L.P.O. than a monthly lunar newsletter. If you are a non-member you are invited to join our organization for its many other advantages.

We have sections devoted to the observation of all types of bodies found in our solar system. Section coordinators collect and study members' observations, correspond with observers, encourage beginners, and contribute reports to our Journal at appropriate intervals.

Our quarterly journal, **The Strolling Astronomer**, contains the results of the many observing programs which we sponsor including the drawings and images produced by individual amateurs. Additional information about the A.L.P.O. and its Journal can be found on-line at: **http://www.alpo-astronomy.org/index.htm** I invite you to spend a few minutes browsing the Section Pages to learn more about the fine work being done by your fellow amateur astronomers.

To learn more about membership in the A.L.P.O. go to: **http://www.alpo-astronomy.org/main/member.html** which now also provides links so that you can enroll and pay your membership dues online.

LUNAR CALENDAR - FEBRUARY 2008 (UT)

Feb. 04	07:00	Moon 4.0 Degrees S of Jupiter
Feb. 04	13:00	Moon 4.2 Degrees S of Venus
Feb. 07	03:44	New Moon (Start of Lunation 1053)
Feb. 07	03:00	Moon 4.6 Degrees SSE of Mercury
Feb. 07	10:00	Moon 0.34 Degrees SSW of Neptune
Feb. 09	07:00	Moon 2.5 Degrees NNW of Uranus
Feb. 14	01:09	Moon at Perigee (370,215 km - 230,041 miles)
Feb. 14	03:33	First Quarter
Feb. 16	08:00	Moon 1.6 Degrees N of Mars
Feb. 21	03:29	Full Moon (Total Lunar Eclipse)
Feb. 21	09:00	Moon 2.5 Degrees SSW of Saturn
Feb. 28	01:28	Moon at Apogee (404,441 km - 251,308 miles)
Feb. 29	02:19	Last Quarter

CALL FOR OBSERVATIONS:
FOCUS ON: Wrinkle Ridges

Focus on is a bi-monthly series of articles which includes observations received for a specific feature or class of features. The subject for the **March 2008** edition will be **Wrinkle Ridges**. Observations of all kinds (electronic or film based images, drawings, etc.) are welcomed and invited. Keep in mind that observations do not have to be recent ones, so search your files and/or add these fascinating features to your observing list and send your favorites to **Dembowski@zone-vx.com**

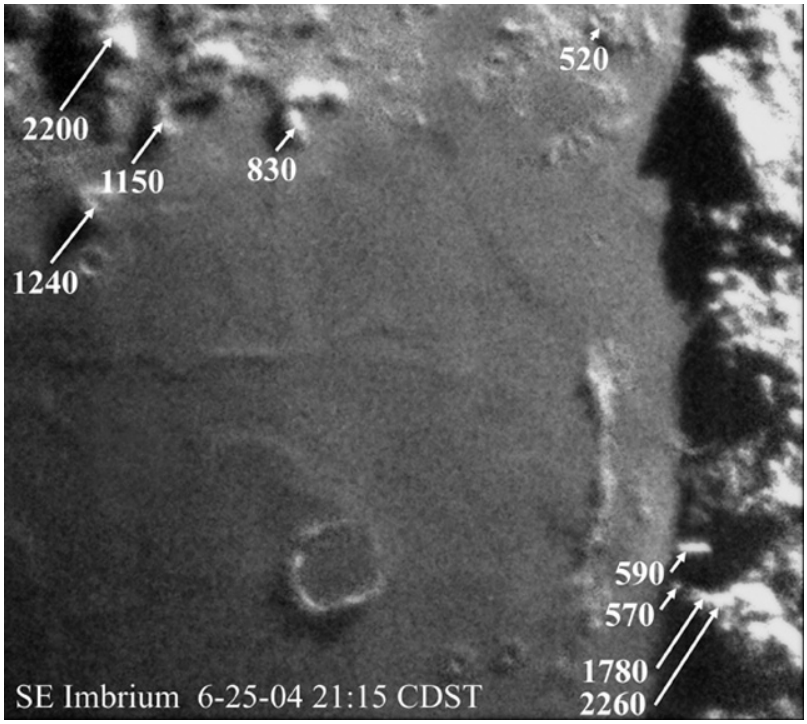
Deadline for inclusion in the Wrinkle Ridges article is February 20, 2008

Email to the Editor - re: "Focus On Alphonsus"
(January issue of TLO http://www.zone-vx.com/TLO200801.pdf pages 4-8)

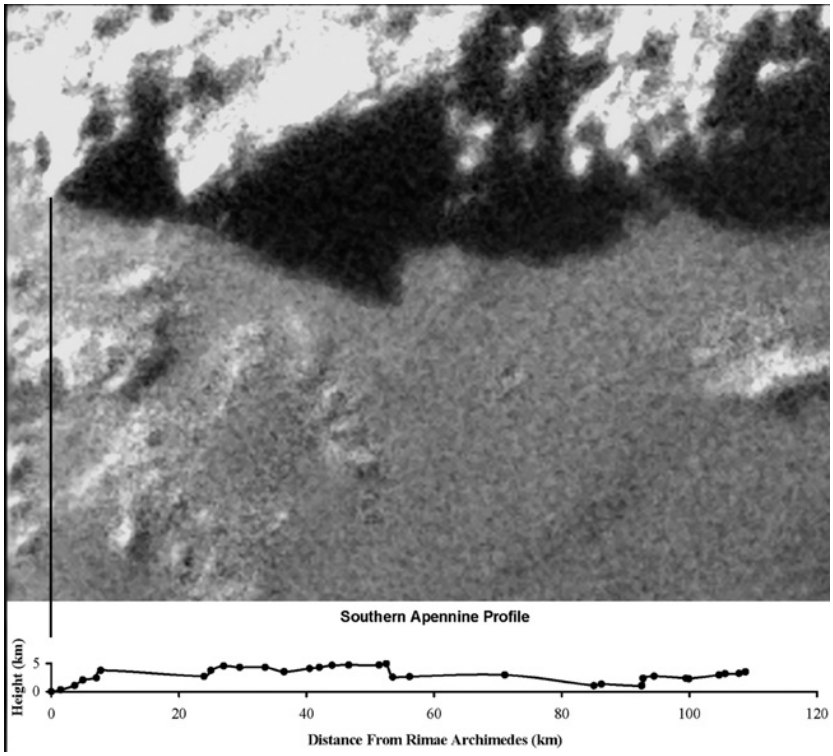
Bill ……
Another nice issue! One comment - the dark halo craters on the floor of Alphonsus are among the most certain volcanic features on the Moon. Some DHC are impacts that excavate dark material, but when they occur on rilles as at Alphonsus and have non-impact morphology, it is a great bet that they are volcanic.
…… Chuck Wood

MEASURING THE APENNINE MOUNTAINS AND RIMAE ARCHIMEDES

Images and Text by Steve Boint



Southern Apennines and Rimae Archimedes



Southern Apennines Profile

Although the photo does not rise above mediocre, I think the profile produced from it is interesting, both in its own right and as a demonstration of what can be done with LTVT. I have calculated many relative heights of lunar features in the past and could never have attempted this many measurements in one project—it would have been a project over weeks. LTVT reduced the time invested to a handful of hours. What an improvement!

15 years ago, someone donated a beat-up dime store telescope with no stand to the science department at the high school where I teach. I took it home and decided to try it out—I'd never looked through a telescope before. It had a right-angle eyepiece holder. I tried and tried to point the scope at the moon while holding it in my hands. In frustration, I gave up. My wife quietly took the scope from me, laid it down, and got a stepladder. Laying the telescope across this, she was able to see the moon. When I tried it, the first thing I saw were the Apennine Mountains! Spectacular! I had no idea there really were mountains on the moon. Ever since, I've wondered what the Apennines would look like from ground level. Stumbling across this old photo a couple of weeks ago, I decided to try LTVT to get a profile.

Although the shadow is strong and crisp, in the more jumbled areas it isn't clear which peak is casting the shadow. A viewer looking at the Apennines from the floor of Imbrium would see no east or west offset and because the peaks zigzag east and west, it wasn't simple to get an accurate distance from the zero point. Consequently, an imaginary line running down the length of the mountain range was set and all peak locations were brought to this line before measuring their distance from the zero point. The error introduced through this process was, for this project, minimal. By moving the cursor slightly during the measurement process, the precision was determined to be plus or minus 1 km horizontally (distance from the northern end) and plus or minus 0.4 km vertically (height).

On the same photo I also measured several heights of the Rimae Archimedes. I chose peaks whose shadows appeared to be relatively free of interference from rugged terrain. The values on the photo are in meters.

The longitude and latitude for calibrating the photo in LTVT were measured using the Orthographic Atlas of the Moon. I would estimate the overall accuracy to be plus or minus twenty percent.

The photo was taken on 6-26-04 at 2:15 UT from Sioux Falls, SD using a 10 inch Newtonian, f/4.5, a 2x Barlow, and an SBIG 237a. The observation site had an elevation of 434.64m. Longitude was 96.73133 and latitude 43.52933.

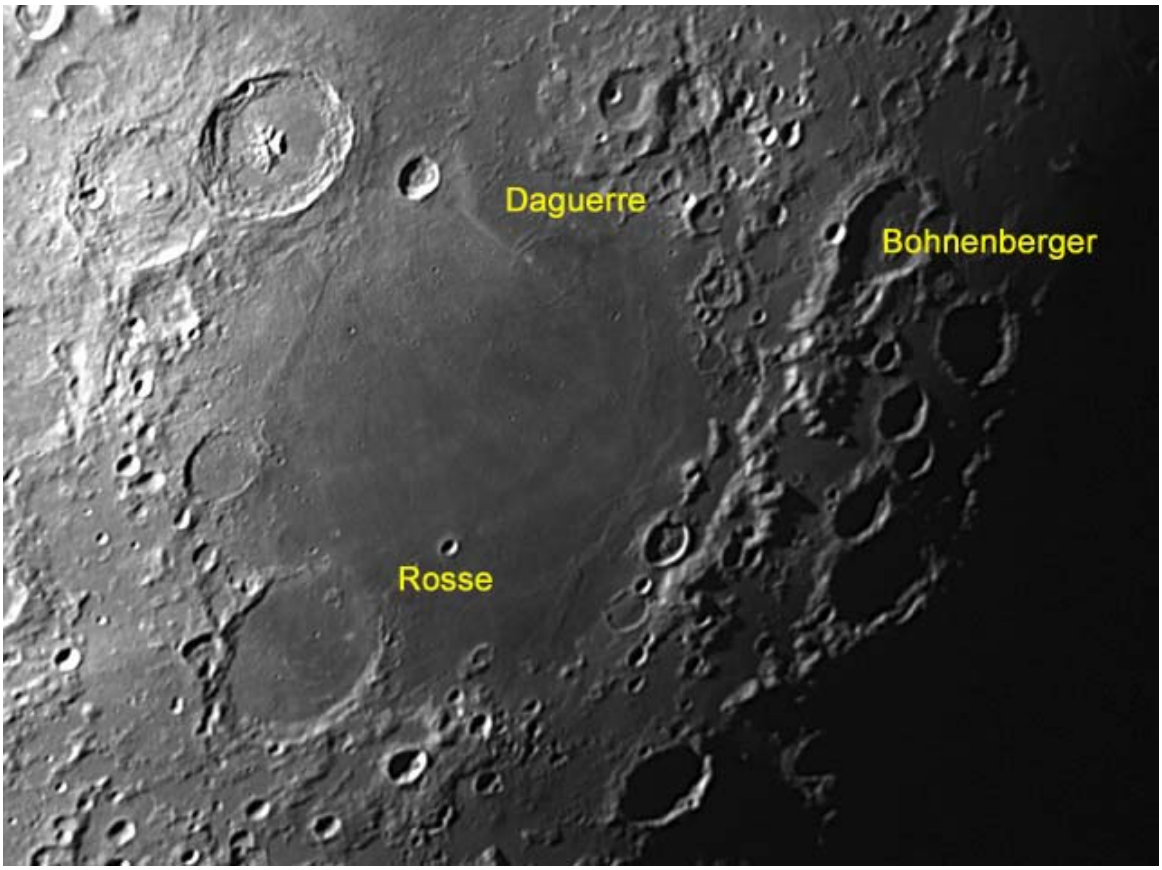
When submitting observations to the A.L.P.O. Lunar Section

In addition to information specifically related to the observing program being addressed, the following data should always be included:

Name and location of observer
Name of feature
Date and time (UT) of observation
Size and type of telescope used
Orientation of image: (North/South - East/West)
Seeing: 1 to 10 (1-Worst 10-Best)
Transparency: 1 to 6
Magnification (for sketches)
Medium employed (for photos and electronic images)

OBSERVATION OF MARE NECTARIS

Image and Text by Wayne Bailey



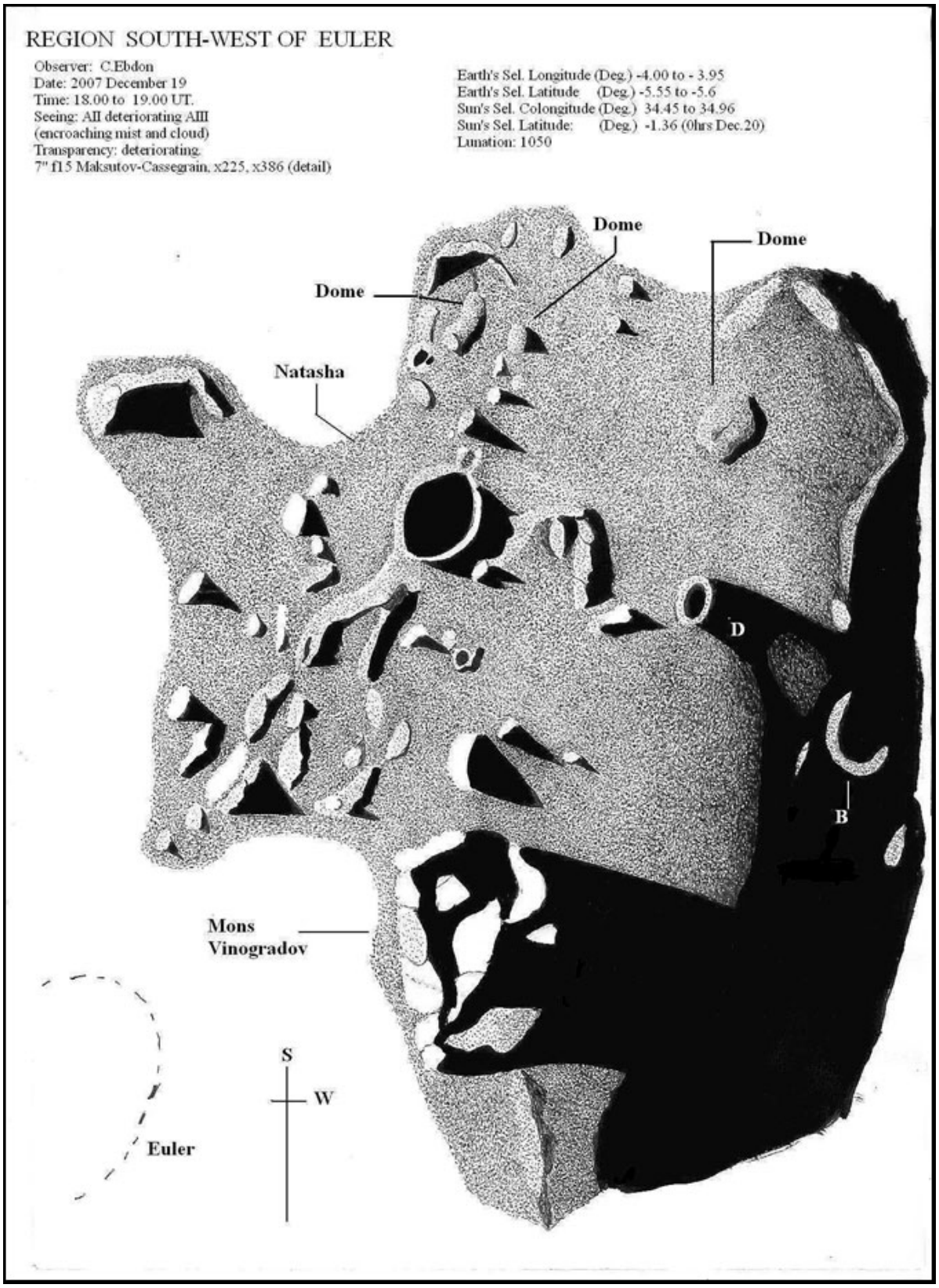
MARE NECTARIS
Digital image by Wayne Bailey - Sewell, New Jersey, USA
August 2, 2007 - 04:40 UT - Colongitude 133.3
Seeing 3/10 - Trans: 5/6 - Schuler IR72 Filter
Celestron 11 inch f/10 SCT - Lumenera Skynyx 2-1M Camera

On the Mare Nectaris image, there appears to be a large, shallow, depressed area extending in a curve to the NE from just NE of Rosse to NW of Bohnenberger. It's shaped sort of like an ice cream cone with the bottom of the cone near Rosse and the upper end at Gaudibert H. It may be two non parallel ridges, or an extended depression, or just an illusion due to the albedo pattern.

The eastern side of the depression seems to continue in a smooth arc (possibly changing to a series of small flooded craters) passing between Daguerre and Gaudibert. The left (west) side continues past Gaudibert H as a light feature curving west across the center of Daguerre, merging with the bright ray from Madler. One of these two arcs is probably the inner ring that's mentioned in Wood's The Modern Moon but I don't know which. I'm not even sure whether some parts of these features are topographic or albedo features.

REGION SOUTH-WEST OF EULER

Drawing and text by Colin Ebdon



REGION SOUTH-WEST OF EULER
OBSERVER'S NOTES:

This is a more complete rendering of the features South West of Euler than that achieved by the writer on 2007 October 21 (See January 2008 issue of TLO). There remain some differences between the drawings and also between this observation and those of other observers, and the area is well worth looking over in detail whenever conditions permit.

In comparison with the writer's drawing of October 21 2007, there was, despite the lower sun - angle, no sign of the dark line referred to as 'running parallel to the eastern 'arm' of the ridges running northwards from Natasha, suggesting a change in floor level.....'

Comparison with the drawing rendered by Harold Hill on 1988 April 26 (Portfolio p.53*) is also favourable, in particular with reference to the dome noted by Hill south of the crater D, albeit that to the current observer it appeared slightly more misshapen than recorded by Hill, with a partly offset central cleft rather than the 'distinct craterlet' on its summit. There seems little doubt from the positions recoded that the two features are the same.

In his observation, Hill also refers to the collection of hillocks in the area 'some ....are rounded.....some are conical...' and this is certainly true as there are distinct differences in type under close scrutiny. For example, the fourth hillock in a line extending SSW from Natasha appeared to the author to be a classical dome. Adjacent to this, to the east, in the centre of what gave the loose impression of a half ruined elliptical ring, seemed to the writer to be another elongated dome-like feature adjoining a small hill. This collection of features is hinted at in Hill's drawing, though not directly referred to.

The shadow profiles closer to the terminator confirm a distinct undulation in the lunar floor between the crater D and Brayley B as seen in Hill's drawing.

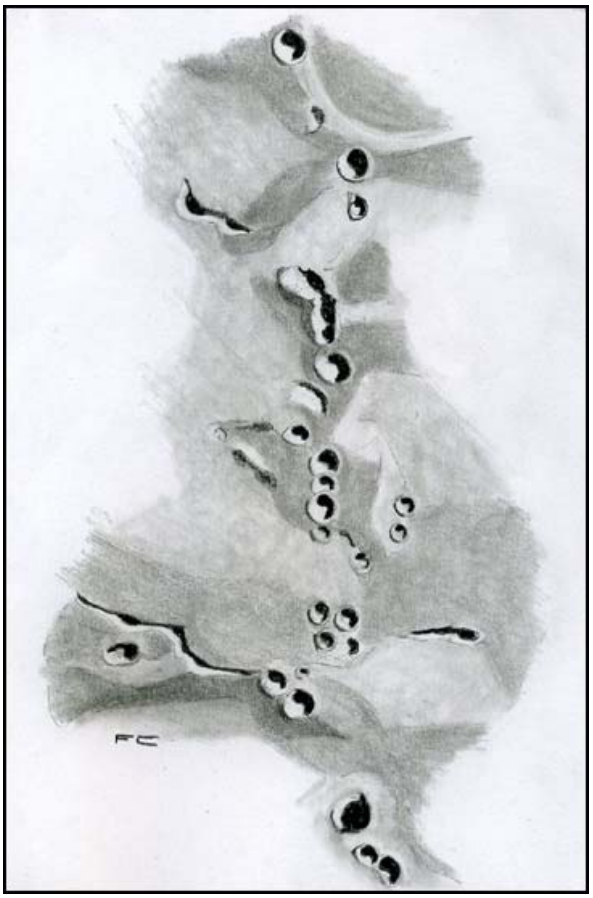
In the current drawing, Euler K (Jehan) should be considered rendered to a more accurate scale than that apparent in the writer's observation of 2007 October 21.

EDITOR'S NOTE:

Mr. Ebdon's original observation of this region, as referenced above, can be found by going to: http://www.zone-vx.com/TLO200801.pdf (Pages 9-10)

CRATER CHAINS NEAR COPERNICUS & STADIUS

Drawing and text by Fred Corno



OBSERVER'S NOTES:

This observation is the "natural follow up" of the Copernicus observation for a previous "Focus On". It has been done from Settimo Torinese (Italy) on the 21st of October 2007, between 20:00 and 20:30 UT. Instrument used was a FS 128 Takahashi refractor, operated at 208 x (Vixen orthoscopic 5 mm eyepiece). Transparency was good, but seeing was not better than 4-5.

Crater chains on the Moon surface are often evidences of the secondary impacts due to main impacts: in the drawing the crater chain spanning to the North between Copernicus and Stadius is represented. Stadius' rim is the white arc at the top of the drawing. The crater chain has been originated by materials thrown out during the formation of the main crater and it lies within the ray system of Copernicus. It forms a line approximately perpendicular to the rays beaming out of the main crater. Some of its members overlap the buried walls of the ghost crater Stadius.

Even if an evident target for observation, the drawing of it was somehow tricky, due to the large number of craterlets present mixing up in the unstable seeing.

LUNAR TOPOGRAPHICAL STUDIES

Coordinator - William M. Dembowski, FRAS
dembowski@zone-vx.com

OBSERVATIONS RECEIVED

WAYNE BAILEY - SEWELL, NEW JERSEY, USA
Digital images of Mare Frigoris, Mare Tranquillitatis, Mare Fecunditatis, Delisle, Mare Serenitatis, East Mare Imbrium, Sinus Iridum, Marius, Mare Nectaris

Banded crater report forms with digital images of Pytheas, Bessarion, Brayley

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND
Digital images of North region of 23 day-Moon, Central region of 23-day Moon, Southern region of 23-day Moon, Mosaic of 5-day Moon, Region south of Theophilus, Mosaic of 4-day Moon, 3-day Moon.

FRED CORNO - SETTIMO TORINESE, ITALY
Drawing of crater chains near Coprnicus & Stadius

ED CRANDALL - WINSTON-SALEM, NORTH CAROLINA, USA
Digital images of Rupes Recta, Archimedes, Mons Piton, Dorsa Smirnov, Messier Rays, Mare Humorum & Gassendi

COLIN EBDON - COLCHESTER, ESSEX, ENGLAND
Drawings of Natasha, Triesnecker to Chladni

HOWARD ESKILDSEN - OCALA, FLORIDA, USA
Digital images of Dorsa Aldrovandi, Eastern Mare Frigoris, Airy Swirl (2)

Banded crater report forms with digital images of Aristarchus (3), Aristillus (3), Birt (3), Bode (3), Brayley (3), Conon (4), Damoiseau, Pytheas (4), Theaetetus (3), Burg (2), Dawes, Menelaus (3), Messier (2), Proclus (2), Ariadaeus (2), Silberschlag,

ROBERT H. HAYS, JR. - WORTH, ILLINOIS, USA
Drawings of Gould, Neper & banachiewicz, Hell, Biot & vicinity

Timings of 74 stars occulted by the Moon

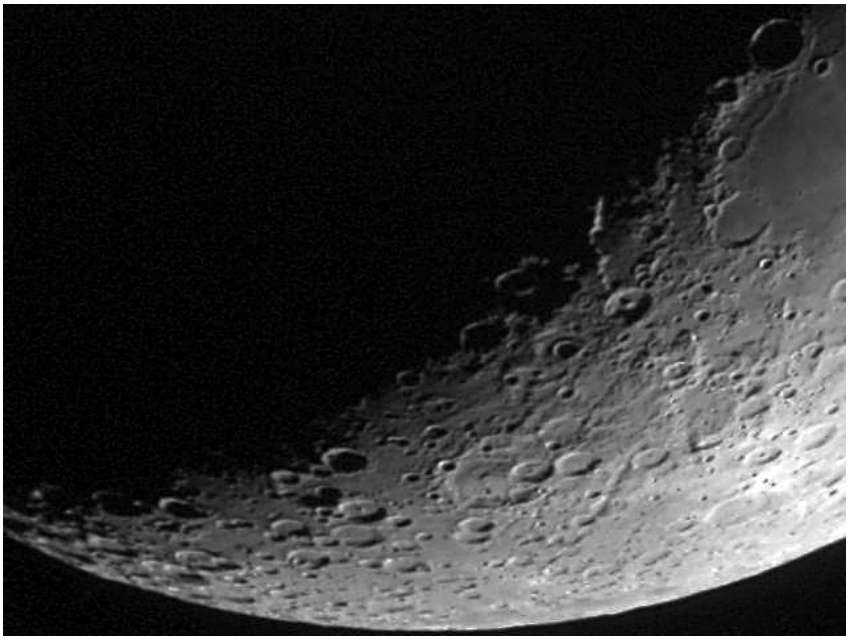
PAULO LAZZAROTTI - MASSA, ITALY
Digital images of Deslandres-Regiomontanus-Walter, Tycho & Clavius, Eastern Mare Imbrium

ANDY MILLER - CONNEAUT, OHIO, USA
Digital images of Dorsa in Mare Imbrium, Mare Crisium, Mare Fecunditatis, Mare Humorum

RAFAEL BENAVIDES PALENCIA - POSADAS, CORDOBA, SPAIN
Digital images sof Rima Hyginus, Rima Ariadaeus & Julius Caesar

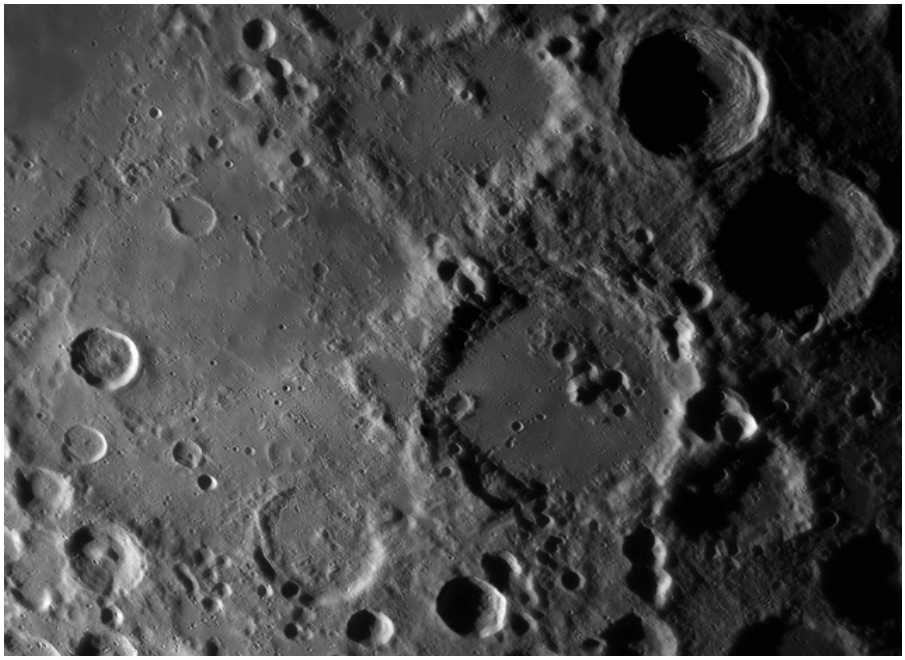
RECENT TOPOGRAPHICAL OBSERVATIONS

RIMAE HYGINUS & MANILIUS (North up)
Digital image by Rafael Benavides Palencia - Posadas, Cordoba, Spain
November 29, 2007 - 02:15 UT - Seeing: 7/10 - Trans: 2/6
Celestron 11 inch SCT - 2x Barlow - Luna 1.3B Camera



SOUTHERN REGIONS (North up)
Digital image by Maurice Collins - Palmerston North, New Zealand
January 13, 2008 - 08:34 UT - Seeing A-III
Meade ETX-90 - Meade LPI Camera

RECENT TOPOGRAPHICAL OBSERVATIONS



DESLANDRES-REGIOMONTANUS-WALTER (North up)
Digital image by Paolo Lazzarotti - Massa, Italy
October 3, 2007 - 00:58 UT - Seeing: 5-6/10 - Trans: 4/5
Gladius CF-315 Lazzarotti Opt. Scope - LVI-1392 PRO Experimental Camera
0.18 arcsec/pixel image scale - Edmund Optics R Filter - 31 msec. exposure

SOUTHERN HIGHLANDS (North up)
Digital image by Howard Eskildsen
Ocala, Florida, USA
January 22, 2008 - 01:09 UT
Seeing: 4/10 - Trans: 5/6
Meade 6 inch f/8 Refractor
2x Barlow - Orion StarShoot II Camera

BRIGHT LUNAR RAYS PROJECT

Coordinator - Willliam M. Dembowski, FRAS
Bright Lunar Rays Project Website:
http://www.zone-vx.com/alpo-rays.html

VISUAL OBSERVATIONS OF LANGRENUS AND ITS RAYS

By Mark Bradbury - Greenwood, Indiana, USA

Sept. 27, 2007 - 02:20 to 02:45 UT (One day after Full Moon)
80mm Refractor - 80x - No filter

My purpose of this observation was to study the lunar rays stemming from the western rim of the crater in order to gauge their brightness under various sun angles. This is the first of my observations of this crater and its rays system in a protracted observing program.

At one day past Full Moon, the rays of Langrenus appeared somewhat faint, like a ghostly shadow spread unevenly on the plains west of Langrenus. Within the southernmost ray there appeared a white shining east and west of the very small crater. This eye-catching feature was pretty bright and stood out like a sore thumb within the grayish southern ray.

Furthermore, similar to the faint, grayish rays there appeared a light grayish covering on the lunar floor just north-northwest of Langrenus, between a group of three small craters and a smaller crater due east. The matter appeared very much like that of the grayish rays. Likewise, on most of the eastern floor of Langrenus, between the central peak and the eastern rim, there also was a very faint grayish coloring. This was not a shadow of any object.

Nov. 18, 2007 - 00:10 UT (First Quarter Moon)
80mm Refractor - 80x - No filter - Seeing: 6/10 - Trans: 5/6

An observation of lunar crater Langrenus and its rays were made on this evening of the First Quarter Moon. At this stage the Sun was high over Langrenus and the Moon's eastern limb, and I wanted to see if the crater and its rays were visible. Furthermore, I wanted to know how different they appeared compared to my observation of them on the first day after the Full Moon of last month.

Langrenus was nearly invisible. I barely saw the outline of the crater and its rim had a very faint, yellowish-white coloring. It resembled to me a ghostly, banded crater. Additionally, the rays that spread north, west, and southwest of the crater were completely invisible. I could not see any evidence of the rays or their extensions. Moreover, I scrutinized Mare Fecunditatis and could detect neither it nor anything else in the region except for craters Messier and Messier A, the rims of which appeared brightly.

RECENT RAY OBSERVATIONS

MESSIER RAYS (North upper-left)
Digital image by Ed Crandall - Winston-Salem, North Carolina, USA
January 13, 2008 - 23:05 UT - Colongitude: 341 - Seeing: 3/10 - Trans: 3/6
110mm f/6.5 APO Refractor - 3x Barlow - Philips Toucam

BYRGIUS RAYS (North up)
Digital image by Maurice Collins - Palmerston North, New Zealand
January 1, 2008 - 22:00 UT (Daylight)
Meade ETX-90 - Meade LPI Camera

BANDED CRATERS PROGRAM

Coordinator - Willliam M. Dembowski, FRAS

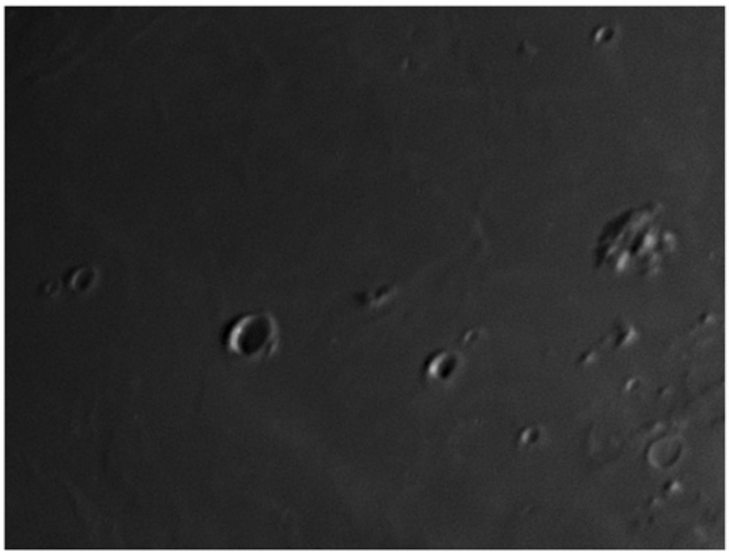
Banded Craters Program Website: http://www.zone-vx.com/alpo-bcp.html

Wayne Bailey (Sewell, New Jersey, USA) submitted Banded Crater Locator Maps for the following areas: Argelander & Janssen, Posidonius & Mare Crisium, Maginus & Schickard. All locator maps can be found at the Banded Craters

A.L.P.O. Lunar Section: Selected Areas Program Banded Craters Observing Form

Crater Observed: Brayley
Observer: Wayne Bailey Observing Station: Sewell, NJ
Mailing Address: 17 Autumn Lane, Sewell, NJ 08080
Telescope: Celestron SCT 28 cm f/10 + 2x barlow
Imaging: Skynyx 2-1M Filters: Schuler IR72
Seeing: 5/10 Transparency: 4/6
Date (UT): 2008/01/19 Time (UT): 01:24
Colongitude: 42.9 Latitude: -0.8
Position of crater: Selen. Long. Selen. Lat.
36.9° West 20.9° North
Lunar Atlas Used as Reference: Rukl, Atlas of the Moon, Revised Updated Ed.

Image (North up): (East right):



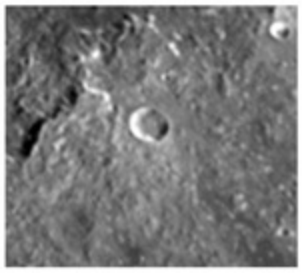
Comments:

One bright band on western wall, flanked by faint dark band on it's north edge.
Faint bright band on southwestern wall.

A.L.P.O. Lunar Section: Selected Areas Program Banded Craters Observing Form

Crater Observed: Conon
Observer: Howard Eskildsen Observing Station: Ocala, Florida
Mailing Address: P.O. Box 830415, Ocala, Florida, 34483
Telescope: Meade Refractor 15.2 cm f/8
Imaging: Orion Starshoot II, 2X Barlow, Filters: none
Seeing: 5/10 Transparency: 5/6
Date (UT): 2007/12/20 Time (UT): 01:49
Colongitude: 39.7°
Position of crater: Selen. Long. Selen. Lat.
2.0° East 21.6° North
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up): Comments:

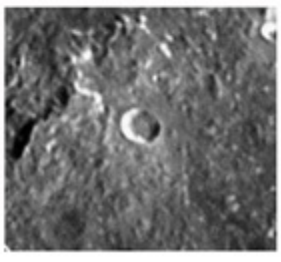


Slightly different exposure shows dark bands on western side of crater that are not visible in the photo taken two minutes later. This shows the importance of careful adjustment of the exposure to maximize visiblity of the bands.

A.L.P.O. Lunar Section: Selected Areas Program Banded Craters Observing Form

Crater Observed: Conon
Observer: Howard Eskildsen Observing Station: Ocala, Florida
Mailing Address: P.O. Box 830415, Ocala, Florida, 34483
Telescope: Meade Refractor 15.2 cm f/8
Imaging: Orion Starshoot II, 2X Barlow, Filters: none
Seeing: 5/10 Transparency: 5/6
Date (UT): 2007/12/20 Time (UT): 01:51
Colongitude: 39.7°
Position of crater: Selen. Long. Selen. Lat.
2.0° East 21.6° North
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up): Comments:



Bands not visible on western side of crater due to over exposure of bright crater wall. See photo taken 2 minutes earlier.

LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – atc@aber.ac.uk
Assistant Coordinator – David O. Darling - DOD121252@aol.com

LTP NEWSLETTER - FEBRUARY 2008

Dr. Anthony Cook - Coordinator

Observations for December 2007 were received from the following observers: Jay Albert (FL, USA), Maurice Collins (New Zealand) and Marie Cook (Mundesley, UK), We also had three inquiries from new members (Alex Vernios, Eric Watkins, and Paul Abel) who wished to participate in the LTP observing programme and so details have been sent off to them.. Alex observed something that seemed unusual at the time: on 2007 Dec 16 UT 04:37 he noted four barrel-shaped objects pass across the Moon through his 5" SCT at x158 and observed this from Phoenix, AZ. Each object was slightly larger than Proclus crater and crossed the eyepiece field in 5-7 seconds. Some tumbling motion was seen. Nothing was sighted visually when Alex glanced at the Moon with the naked eye. Best guess here, is that this was obviously not a LTP, but as the Moon was low down, it was possibly party balloons tied together that had been released accidentally. Was anybody else observing from Phoenix AZ at this time? To be honest I get a lot of reports of objects drifting across the Moon, and it is quite common place to see birds, planes, insects, pollen etc. I even videoed a helicopter doing this on one occasion and recall that I have another video of a dragon fly shaped object - possibly the ISS?

Other news, I have bought two new narrow band (10 nm FWHM wide) filters, one at 840 nm and another and 860 nm. I will attempt to use these to look directly for emission lines of Argon at 840.9 and 842.5 nm and for Radon at 860.0 nm. This of course depends heavily on theories (which others have suggested) that assume that some of the more colorful LTP, seen visually, are due to spectral emissions form one or either of these radiogenic gases. Both gases leak out of rocks inside deep seated fractures in the Moon's crust. Visual observers would see alternative emission lines in the visual spectrum e.g. 705 and 745nm for Radon (a ruby red color), and a whole host of fainter lines for Argon. By blinking between these rapidly, whilst imaging with a near IR sensitive monochrome CCTV camera (e.g. a Watec 902H or HS), emissions at either of these wavebands may be detected. I may possibly add a third filter, not associated with either emission wavebands, as a reference. I have previously used a narrow band filter at 855nm, but the new 860nm filter is more central to the Radon emission line and so should give a stronger signal.

This concept is very similar to the original Trident Project moonblink from the 1960's that used a monochrome vidicon type camera to blink between broader waveband red and blue filter views. This recorded successfully a few of the LTP during that era and these are mentioned in the 1978 Cameron catalog. A cheaper British derivative soldiered on during more recent times by using the human eye instead of a TV camera and Kodak Wratten filters such as 44a (blue-green) and 25 (red). The idea being that if there is a faint red color on part of the Moon, then that region will be brighter in the red filter than in the blue filter – all other areas stay the same brightness. The reverse effect would appear for a blue or green color. By switching back and forth between filters, it will blink.

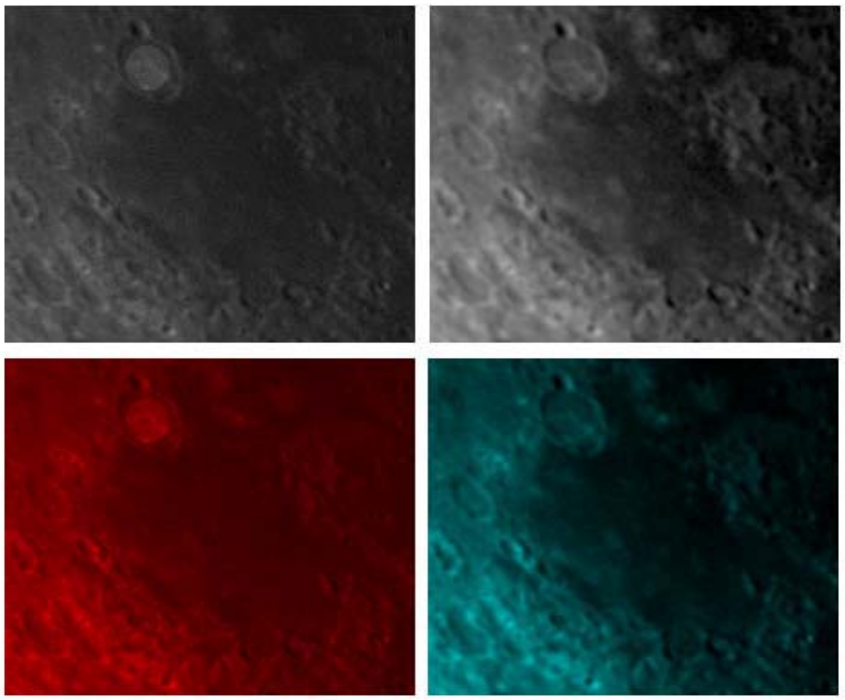


Figure 1- This is a simulation of a rather obvious red LTP as seen through 1960's "Electronic" (Top) and 1970's-1980's "British" style (Bottom) moonblink devices. In practice a LTP would be rarely this size, nor as obvious. (Top left) image of the Moon in red light. (Top right) image of Moon in blue light. (Bottom left) - image as seen visually through red filter. (Bottom right) image of Moon as seen visually through a blue filter. Note that image quality may vary between blue and red filters due to scattering of light and focusing issues at different wavelengths.

This is illustrated in Figure 1 above. The advantage of the British moon blink system, over the older electronic system, is that it is relatively cheaper - although Kodak Wratten gelatin filters are several tens of pounds each. One drawback for the visual observer though, using a British moonblink, was that they have to ignore the rest of the image changing from blue to red (or vice versa) each time a filter is switched and concentrate instead on looking for brightness changes (see the lower half of figure 1). The original electronic moonblink was better in this respect because the observer watched the Moon on a monochrome TV screen and it is this approach that I will be taking.

The spectral sensitivity of the CCTV camera to be used will ranges from about 390-1200 nm, and as the spectral widths of each filter will be roughly 1% of this, the color sensitivity to Radon or Argon emission lines will be equally good and probably of the order of 50 times more sensitive that traditional moonblinks. This of course depends upon the assumption that the visual colors seen in the past are due to one or more of these gases.

Incidentally the reason why the filters are in the near IR and not in the visible was because I had problems finding narrow band filters at other wavelengths that exhibited strong emission lines for these gases. Another useful feature is that the two filters are also only 20nm apart in wavelength. So the CCTV/telescope optics will not need to be refocused as often happens over wider wavelengths, and the sensitivity of the camera should be very similar through both filters.

On 2008 Feb 21 there is a Total Lunar Eclipse (UT 00:35-52-06:17) - For LTP work please watch for impact flashes in the dark umbra (send any reports to Brian Cudnik and myself) and also watch for short

term brightening of features in the umbra, well away from the edge of the shadow. Trying to look for LTP in penumbral parts of the shadow and the umbral edges is notoriously difficult due to density and color variations in the shadow itself. Please video the eclipse if possible-- if a LTP, or an impact flash, do occur then we stand a very good chance of obtaining confirmation from more than one observer, and possibly on both sides of the Atlantic! Although this will be a fun time for Earth-based observers, I suspect that Japanese and Chinese scientists, involved with respective lunar missions, will not be so happy because their spacecraft will be starved of electricity, and frozen due to the lack of solar power. Let us hope that they remembered to take enough spare battery capacity and maybe can sneak in some images of the eclipsed Earth, as was done by NASA's Surveyor III landers in the 1967!

Further predictions, including the more numerous illumination only events can be found on the following web site: http://users.aber.ac.uk/atc/LTP/LTP.htm . For members who do not have access to the internet, please drop me a line and I will post predictions to you. If you would like to join the LTP telephone alert team, please let me know your phone No. and how late you wish to be contacted. If in the unlikely event you see a LTP, please give me a call on my cell phone: +44 (0)798 505 5681 and I will alert other observers. Note when telephoning from outside the UK you must not use the (0). When phoning from within the UK please do not use the +44!

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KEY TO IMAGES IN THIS ISSUE

1. **Apennine Mtns.**
2. **Brayley**
3. **Byrgius**
4. **Conon**
5. **Copernicus**
6. **Deslandres**
7. **Euler**
8. **Gould**
9. **Hyginus, Rimae**
10. **Messier**
11. **Nectaris, Mare**