THE LUNAR OBSERVER

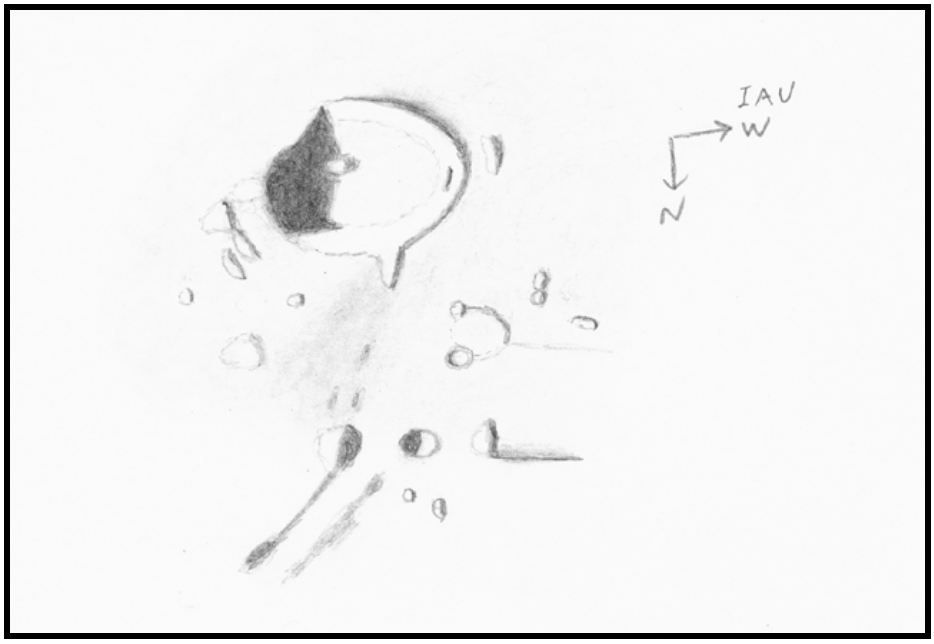
A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.

EDITED BY: Wayne Bailey wayne.bailey@alpo-astronomy.org
17 Autumn Lane, Sewell, NJ 08080

RECENT BACK ISSUES: http://moon.scopesandscapes.com/tlo_back.html

FEATURE OF THE MONTH – OCTOBER 2010

ARCHYTAS



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
June 21, 2010 02:20-02:38, 02:44-02:58 UT
15 cm refl, 136x, seeing 6-7/10

I drew this crater and vicinity on the evening of June 20/21, 2010. This crater in northern Mare Frigoris had favorable libration that night. Archytas is an egg-shaped crater with a tapered west end and a dimple in its southeast rim. There is a peak south of center nearly buried in interior shadow. A large peak extends from its north rim, and another peak is just west of Archytas near a bit of interior shadow. A group of one large and several small peaks is north east of Archytas, and a bright patch connects the large peak with the east end of Archytas. A low, bright mound is also in this area. A wide rille begins at a large peak north of

Archytas, and continues northeastward beyond the sketched area. There is a particuularly dusky area between the peak at the base of the rille and the peak extending north from Archytas. The crater Archytas W is west of the rille, and another large peak is west of Archytas W. The crater has a bright interior, and the peak has a strip of shadow extending westward. This strip of shadow is sharp on the north side, but fuzzy on the south side. A small, shallow crater is southwest of Archytas W, adjacent to what may be an old ring. There is a scattering of small peaks near this ring, which is northwest of Archytas.

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LUNAR CALENDAR

OCTOBER-NOVEMBER 2010 (UT)

Oct. 01	03:52	Last Quarter
Oct. 06	13:42	Moon at Perigee (359,452 km - 223,353 miles)
Oct. 07	05:00	Moon 6.7 Degrees SSW of Mercury
Oct. 07	09:00	Moon 7.2 Degrees SSW of Saturn
Oct. 07	18:44	New Moon (Start of Lunation 1086)
Oct. 09	19:00	Moon 3.4 Degrees NNE of Venus
Oct. 10	00:00	Moon 3.4 Degrees SSW of Mars
Oct. 12	07:48	Extreme South Declination
Oct. 14	21:25	First Quarter
Oct. 17	20:00	Moon 4.4 Degrees NNW of Neptune
Oct. 18	18:19	Moon at Apogee (405432 km - 251,924 miles)
Oct. 20	04:00	Moon 6.5 Degrees NNW of Jupiter
Oct. 20	10:00	Moon 5.8 Degrees NNW of Uranus
Oct. 23	01:37	Full Moon
Oct. 26	22:36	Extreme North Declination
Oct. 30	12:46	Last Quarter
Nov. 02	00:00	Moon 0.62 Degrees NNE of asteroid 3 Juno
Nov. 03	17:23	Moon at Perigee (364,188 km - 226,296 miles)
Nov. 04	01:00	Moon 7.3 Degrees SSW of Saturn
Nov. 05	07:00	Moon 1.1 Degrees W of Venus
Nov. 06	04:51	New Moon (Start of Lunation 1087)
Nov. 07	03:00	Moon 1.8 Degrees SSW of Mercury
Nov. 07	23:00	Moon 1.7 Degrees SSE of Mars
Nov. 08	17:00	Extreme South Declination
Nov. 13	16:37	First Quarter
Nov. 14	01:00	Moon 4.6 Degrees NNW of Neptune
Nov. 15	11:48	Moon at Apogee (404,633 km - 251,427 miles)
Nov. 16	09:00	Moon 6.6 Degrees NNW of Jupiter
Nov. 16	18:00	Moon 5.9 Degrees NNW of Uranus
Nov. 21	17:28	Full Moon
Nov. 23	04:24	Extreme North Declination
Nov. 28	15:36	Last Quarter
Nov. 30	19:10	Moon at Perigee (369,438 km - 229,558 miles)

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.

Note: The published images now contain links to the original, full resolution images. Clicking on an image while connected to the internet, will download the original image, which in some cases is significantly higher resolution than the published version.

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)

CALL FOR OBSERVATIONS:
FOCUS ON: Milichius-T. Mayer Area

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 **November 2010** edition will be the Milichius-T. Mayer Area. This area, northwest of Copernicus, includes domes, craters, highlands, mare, and albedo features. 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 this area to your observing list and send your favorites to:

Wayne Bailey - wayne.bailey@alpo-astronomy.org

Deadline for inclusion in the Milichius-T. Mayer article is October 20, 2010

FUTURE FOCUS ON ARTICLES:

In order to provide more lead time for potential contributors the following targets have been selected:

Marius-Reiner Gamma	**TLO Issue: Jan. 2011**	**Deadline: Dec. 20, 2010**
Central Peaks with craters	**TLO Issue: Mar. 2011**	**Deadline: Feb. 20, 2010**

Note: Rik Hill has pointed out three craters (Plinius, Walther, Regiomontanus) that have central peaks with craters superimposed on them. These are probably chance impacts, but I don't know of any list of such features. How many other examples can you find? And does anyone know of an existing list?

Heartache on the Moon

Fred Corno

Domes are among the most elusive structures on the Moon: their typical appearance is that of a low and round hill, with gentle slopes, slightly bubble- or "blister-" like. They may present different features at their summit, such as pits, craters, cracks, or even nothing.

They may occur alone or in groups, in close proximity with other typical structures, such as sinuous rills or crater chains, most commonly on or in the immediate neighborhood of Mare areas.

Domes are usually referred to as volcanic structures, being interpreted as shield volcanoes or laccoliths: lava flows emerge to cover the surface in smooth and fluid blankets for the former, or intrude in between two different strata in the latter case. The presence of a pit or crater at the summit supports the volcanic nature, featureless or cracked surfaces may be better related to intrusion: nevertheless dome study is still quite puzzling, particularly for the amateur astronomer, due to the small size of the features to be recognized, the low hue contrast involved and the challenging light conditions required to show fundamental details.

While other domes, for example the sharply outlined cones in the Marius district, are very easily recognizable, Valentine Dome is most elusive.

Valentine Dome is officially reported in LAC 42 as Linnè α (Figure 1): it lies on the north-western quadrant of

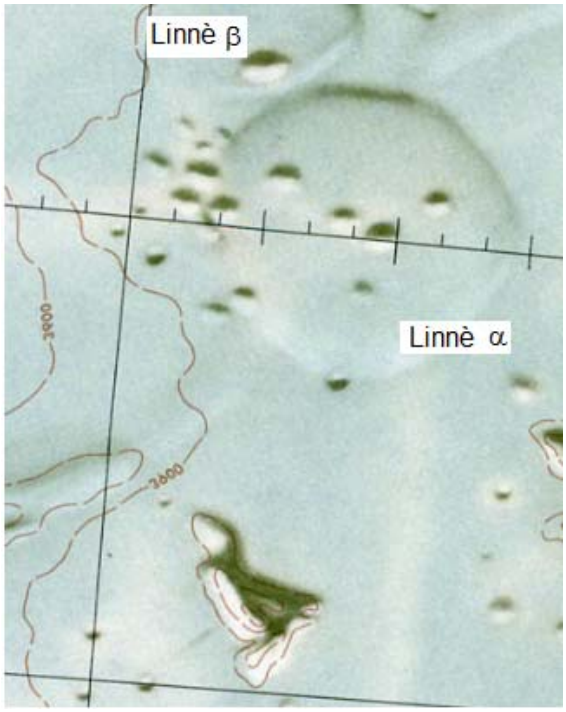
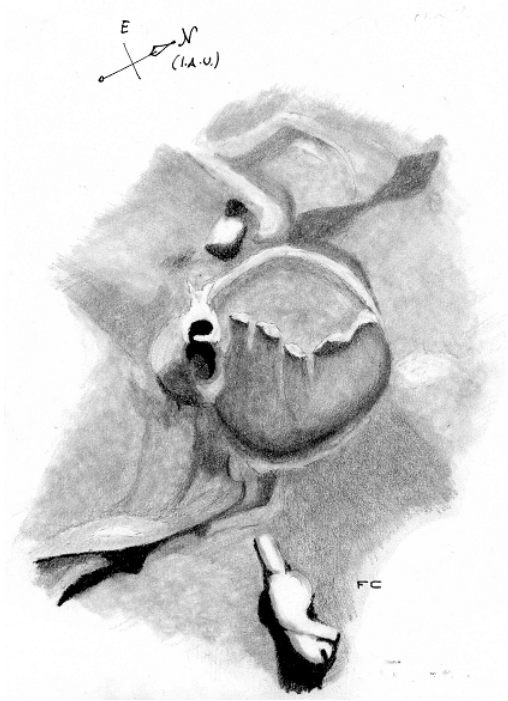


Figure 1: *Crop from LAC 041, oriented and reflected to match author's drawing.*

Mare Serenitatis, close to the Montes Caucasus, where it sports a vaguely heart-shaped outline, the origin of the nickname it is known by in the amateurs' community. Its size has been estimated as 27 x 33 km^2 (R. Lena et al.) and classified as DW/3a/5g/8p 9 n according to the Westfall Scheme (1964, A Generic Classification of Lunar Domes, JALPO 18, 1-2, 15-20).



I first observed Valentine Dome on the 20th of April 2010, with a 5" apo refractor at 209x (Figure 2). The low sun illumination (19.50 UT) allowed me to recognize the smooth dome profile and

Figure 2: *Observation of Valentine Dome by the author. Takahashi FS 128 at 209x, 20th of April 2010 19.50 UT.*

the typical relieves buttering its surface, as well as Linnè β and the rill running eastward from the main edifice. The rill opening on its top was beyond my capabilities at the time of observation. Prominences over the dome are most puzzling: they do not look like volcanic edifices, neither show the typical gentle slope of sides of this kind of geological structure. Their contour, already under telescopic observation, and more when portrayed in Apollo 15

image (Figure 3), looks quite sharp and similar to other non-volcanic features in the surroundings, such as Linnè β.

An explanation is given in the Moon Geological Maps I489 and I463: Linnè β and the prominences are classified as a part of the Fra Mauro Formation, originated upon imbrian ejecta deposition, then engulfed by mare lava emplacement. The relieves belong therefore to the Apenninian Series, contemporary to the imbrian impact, while Mare Serenitatis' lava bed was emplaced later in the Archimedean Series. Valentine Dome formed last, at the boundary between the Imbrian and the Erathostenian System (3 billion years ago, approximately). Still, a heartache remains: is Valentine Dome a shield volcano or a laccolith? The same geological maps indicate the dome material as volcanic, even made of volcanic ashes. If deriving from an eruption, I would expect the upwelling from the dome surround asymmetrically the Fra Mauro Formation ejecta blotches, due to a radial protrusion from a central vent: instead it simply lay underneath them, in a quite symmetrical pattern, and no vent is shown on the dome. Therefore, I would rather qualify Valentine as a laccolith. Does anybody agree?

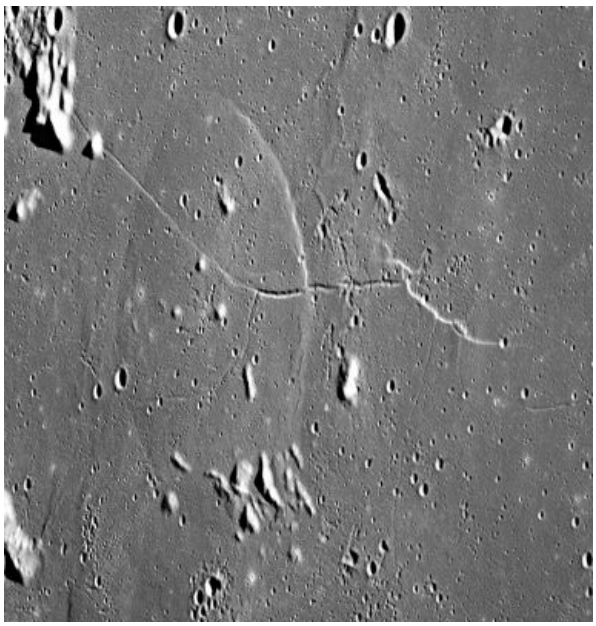


Figure 3: *Valentine Dome (Linnè α) in Apolo 15 image AS15-91-12372. In the foreground Linnè β, similar in appearance to the structures on top of the dome.*

Fred is most interested in receiving your point of view at anas-p@libero.it.

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LUNAR TOPOGRAPHICAL STUDIES

Coordinator – Wayne Bailey - wayne.bailey@alpo-astronomy.org

Assistant Coordinator – William Dembowski - dembowski@zone-vx.com

Website: http://moon.scopesandscapes.com/

OBSERVATIONS RECEIVED

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 5, 6, 10 & 11 day, 1st Quarter & Full Moon, Agrippa & Theophilus.

FRED CORNO - SETTIMO TORINESE, ITALY. Drawing of Valentine Dome.

ED CRANDALL – LEWISVILLE, NORTH CAROLINA, USA. Digital images of Bullialdus, Clavius, Copernicus(2) Eratosthenes(2), Fra Mauro & Plato.

WILLIAM DEMBOWSKI – WINDBER, PENNSYLVANIA, USA. Digital images of Aristoteles-Eudoxus-Cassini, W. Bond, Clavius-Deslandres, Proclus Mare Crisium, Mare Fecunditatis-Mare Smythii & Stofler-Maurolycus and south. Banded crater reports for Proclus, Menelaus.

HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Alpes, Aristillus, Burg(2) Conon, Gambert, Godin, Guericke, Hercules, Jansen, Mare Marginis, Menelaus, Messier, Picolomini, Pitatus, Proclus, Mare Smythii, Tauru-Litrow, Torricelli & Tycho. Elevation measurements of Alpes, Appenines, Archimedes, Autolycus, Aristillus, Caucasus, Gauricus, Wurzelbauer, Hesiodus, Pitatus, Mons Piton, Spitzbergen & Imbrium Wrinkle Ridge.

PETER GREGO – ST. DENNIS, CORNWALL, UK. Drawing of Bullialdus.

RICHARD HILL – TUCSON, ARIZONA, USA Digital images of Sabine-Ritter & Theophilus.

FRANK MELILLO – HOLTSVILLE, NEW YORK, USA. Digital images of Ina area(2).

PHILLIP MORGAN –LOWER HARTHALL-TENBURY WELLS, WORCESTERSHIRE, ENGLAND. Drawing of Bullialdus W.

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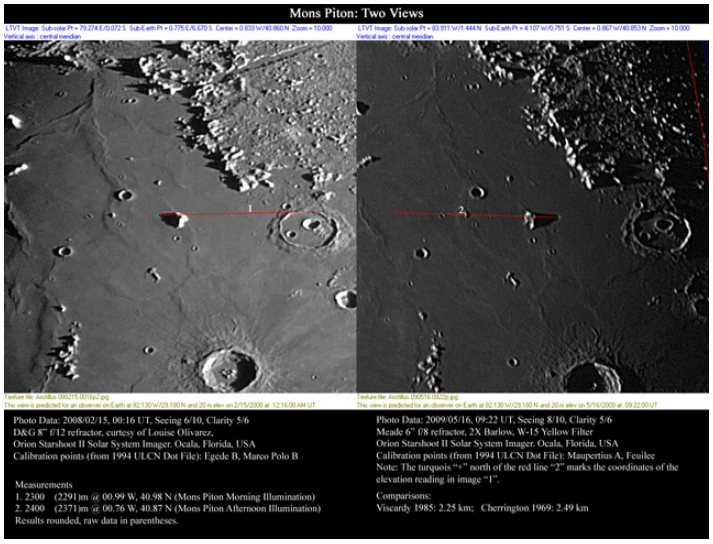
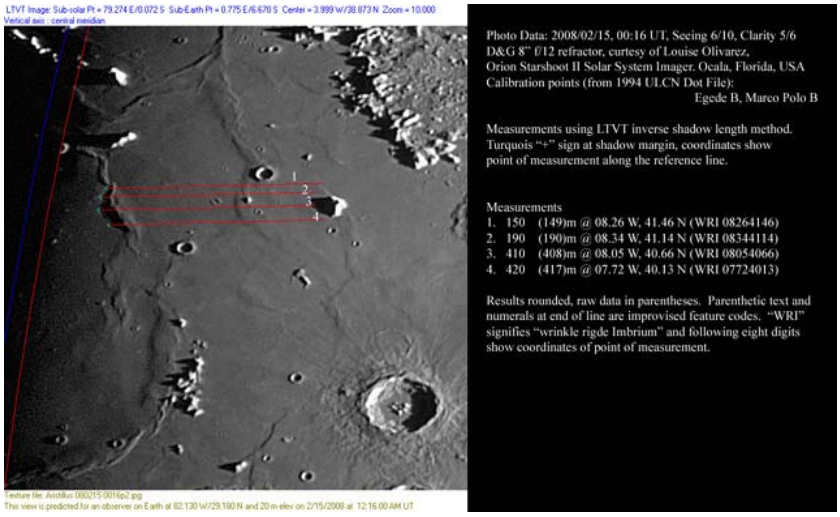
RECENT ELEVATION OBSERVATIONS

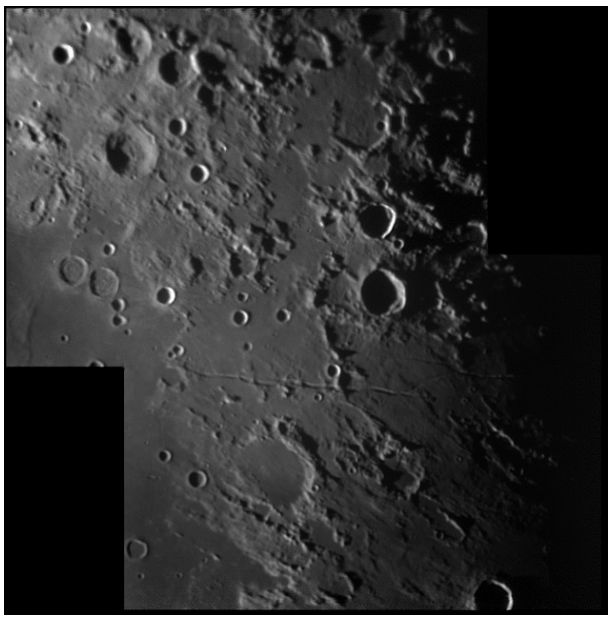


MONS PITON-Howard Eskildsen-Ocala, Florida, USA. Left: February 15, 2008 00:16 UT. Seeing 6/10, Transparency 5/6. 8" f/12 refractor, Orion Starshoot II. Right: May 16, 2009 09:22 UT Seeing 8/10, Transparency 5/6. Meade 6" f/8 refractor, 2X Barlow, Orion Starshoot II, W-15 Yellow filter.

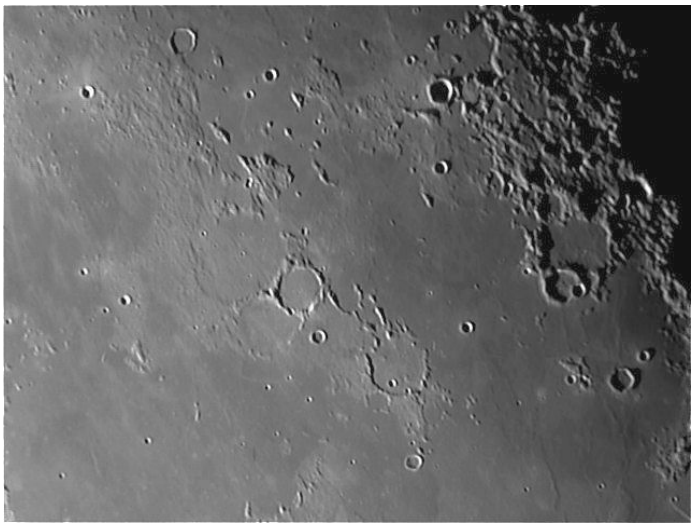
WRINKLE RIDGES IN MARE IMBRIUM - Howard Eskildsen-Ocala, Florida, USA. February 15, 2008 00:16 UT. Seeing 6/10, Transparency 5/6. 8" f/12 refractor, Orion Starshoot II.



RECENT TOPOGRAPHICAL OBSERVATIONS



AGRIPPA-Maurice Collins - Palmerston North, New Zealand. September 15, 2010 08:00 UT. Seeing AII-III with wind. C8, SCT, 2x barlow, LPI.



FRA MAURO – Ed Crandall – Lewisville, North Carolina, USA. September 1, 2010 10:09 UT. Seeing AIII. Colongitude 183.2º. 110 mm f/6.5 APO, 2.4x barlow, ToUcam.

W. Bond – William Dembowski, Windber, Pennsylvania, USA. August 19, 2010 01:16 UT Colongitude 20.7º, Seeing 3/10. Celestron 9.25" SCT f/10, DMK41.

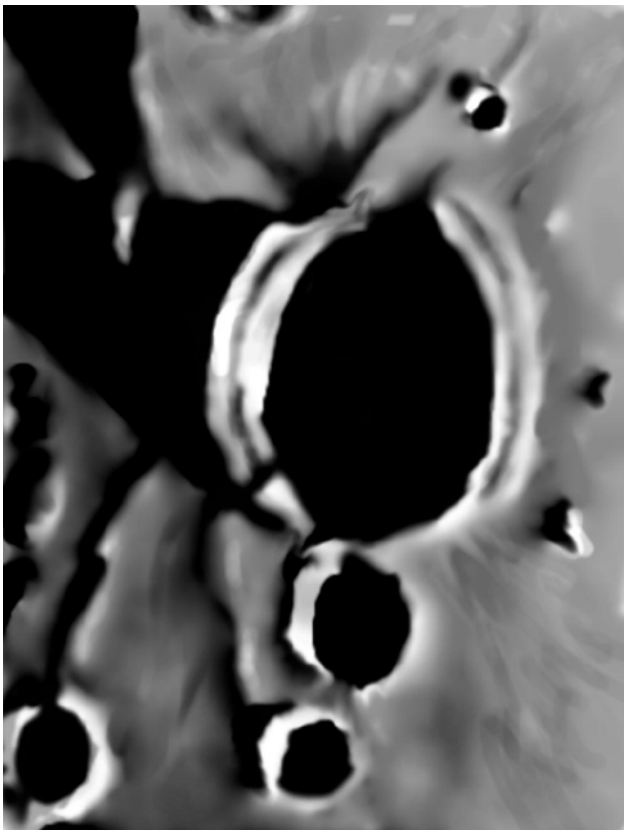
RECENT TOPOGRAPHICAL OBSERVATIONS

BURG-Howard Eskildsen-Ocala, Florida, USA. September 14, 2010 00:03 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific refractor, 2x barlow, DMK 41AU02 AS, W-8 Yellow filter.

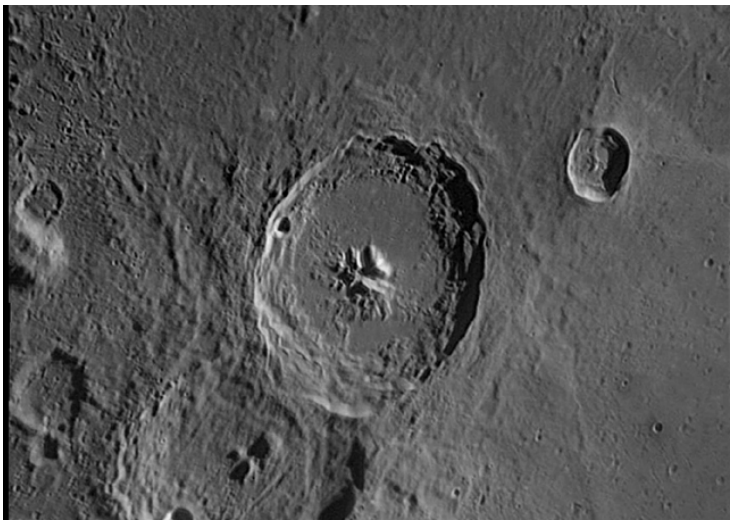
Editors Note: *Note the apparent linear features extending from north of Democritus, past Schwabe, and continuing between Strabo N and J.*

BULLIALDUS – Peter Grego, St. Dennis, Cornwall, United Kingdom. September 17, 2010 21:00-21:30 UT. Colongitude 24.3º-24.6º, Seeing AIII, low moon, 18º altitude. 300mm Newtonian, 195x.

Welcome return to Bullialdus, my first observation of this particular crater in many years. An early morning view, the receding terminator had drawn back so that just the end of the conical shadow cast by Bullialdus' western rim merged with it. Seeing conditions were not very good owing to the low altitude of the Moon, so this is to be considered just a general study. Most of Bullialdus' interior was filled with shadow. The crescent of light illuminating the inner western wall displayed terracing structure and a radial shadow cutting across the wall in the south. Bullialdus' outer eastern flanks also displayed terrace-like structure, in addition to fainter radial ridges extending across Mare Nubium. A small isolated projection mid-way on the northern edge of the western cone of shadow appeared to be a high point catching sunlight – this was a hill north of the small crater Bullialdus L. To its north lay the unusual elongated valley Bullialdus W, the floor of which was in shadow. At the veery northern edge of the area depicted was the southern rim of Lubiniezky. South of Bullialdus, the floors of Bullialdus A and B, along with Konig (at lower left) were immersed in shadow. The inner western wall of Bullialdus B and the outer eastern flanks of Konig were rather bright. The terrain between Konig and Bullialdus contained two prominent ridges casting shadows, along with other more subtle detail radial to Bullialdus.



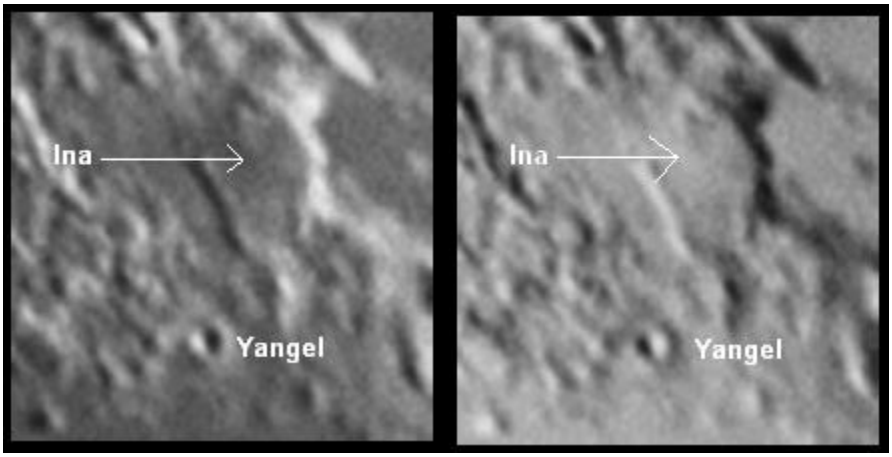
RECENT TOPOGRAPHICAL OBSERVATIONS



THEOPHILUS – Richard Hill – Tucson, Arizona, USA May 20, 2010 02:33 UT. Seeing 8/10. C14, 2x barlow, f/22, SCT. DMK21AU04, 653.6nm filter.

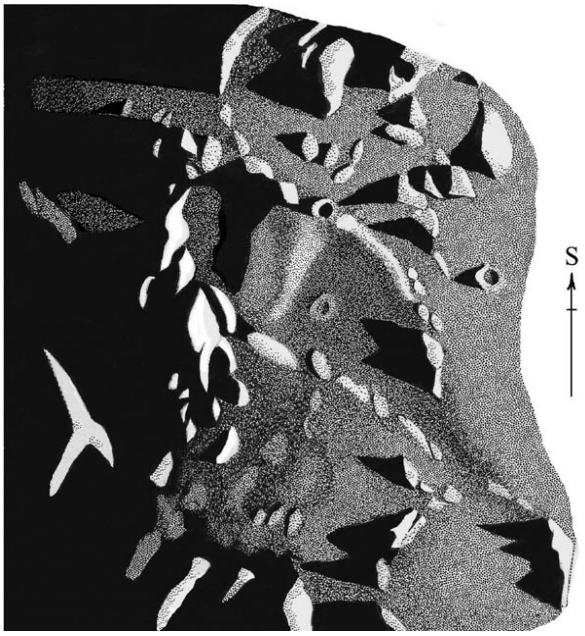
The old joke is that Theophilus is "the-awfulest". Just had to do it one more time.

This image was done as an afterthought at the end of an observing session on May 19/20. The seeing was quite good and the new DMK camera was working quite well. While the terracing of the walls is always eye catching, I like the smoothness of the hummocky terrain of the ejecta blanket surrounding the crater and then all the secondary cratering beyond that.



INA - Frank Melillo, Holtsville, NY, USA. September 16, 2010 00:45 UT. Seeing 5/10, low moon. Meade 10" SCT, Starlight Express MX-5.

BULLIALDUS W - Phillip Morgan –Lower Harthall-Tenbury Wells, Worcestershire, England. September 3, 2010 04:15-04:55 UT. Seeing 6/10, Transparency 3/5. Colongitude 204.9º-205.2º. 305mm, f/5, Newtonian, 400x.



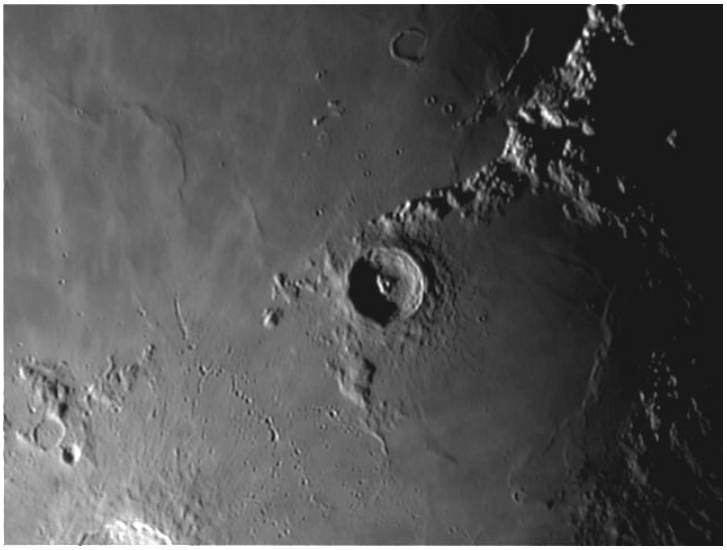
Running in a northwesterly direction from the outer flank of the crater Bullialdus is a wide flat graben/valley some 20 km in width and over 90 km long. Midway along the valley floor is a peculiar flat topped 10km wide wall that effectively dams the floor of the valley, which under some lighting conditions can be mistaken for a bridge. Finding a convincing explanation for this little feature is difficult, but presumably when the valley floor of Bullialdus W subsided, the crustal material of the bridge was more resistant to the downward movement of material, possibly because it is the surface expression of a magmatic intrusion, i.e. a dyke or horst. Interestingly, and as my recent observation shows, the bridge is actually slightly thicker at its upside or (southwestern) end rather than at its base. Could this be due to a downward (northeasterly) flow of material in the valley floor?

Situated just a little way to the east of the bridge a curving mountain arm also spans the valley floor, though whether or not this is just the remnant of a once perfect crater rampart is difficult to say.

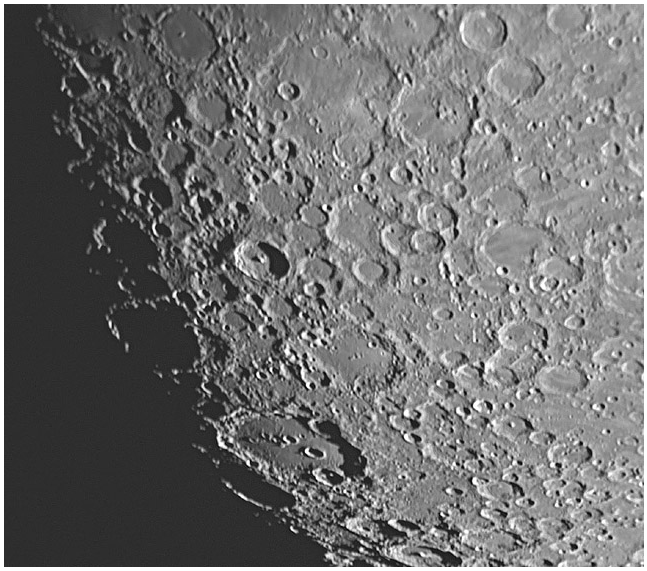
Ed. Note: This note also appeared in the September 15, 2010 LPOD and in the BAA LSC.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

11 day MOON-Maurice Collins - Palmerston North, New Zealand. September 19, 2010 07:22-07:40 UT. ETX-90.

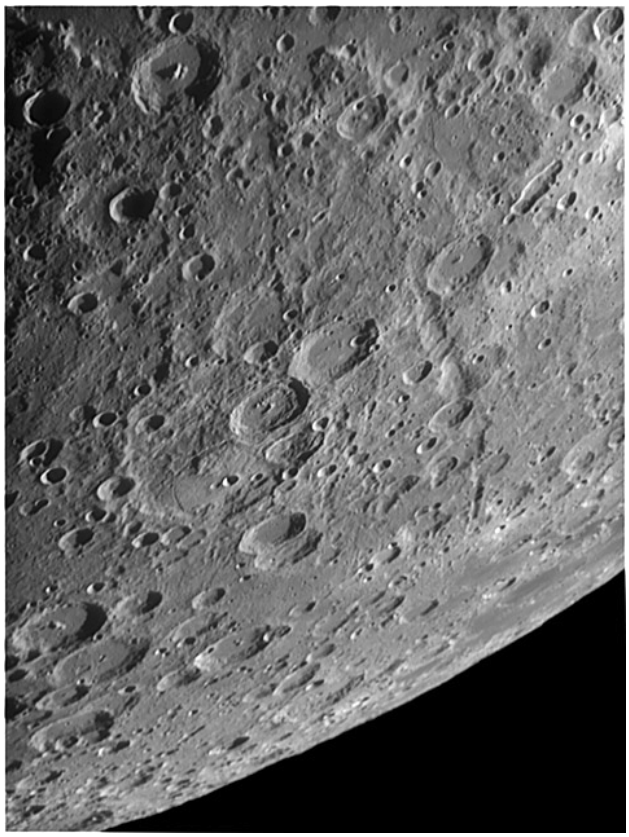


ERATOSTHENES – Ed Crandall – Lewisville, North Carolina, USA. September 1, 2010 09:57 UT. Seeing AIII. Colongitude 183.2º. 110 mm f/6.5 APO, 3x barlow, ToUcam.

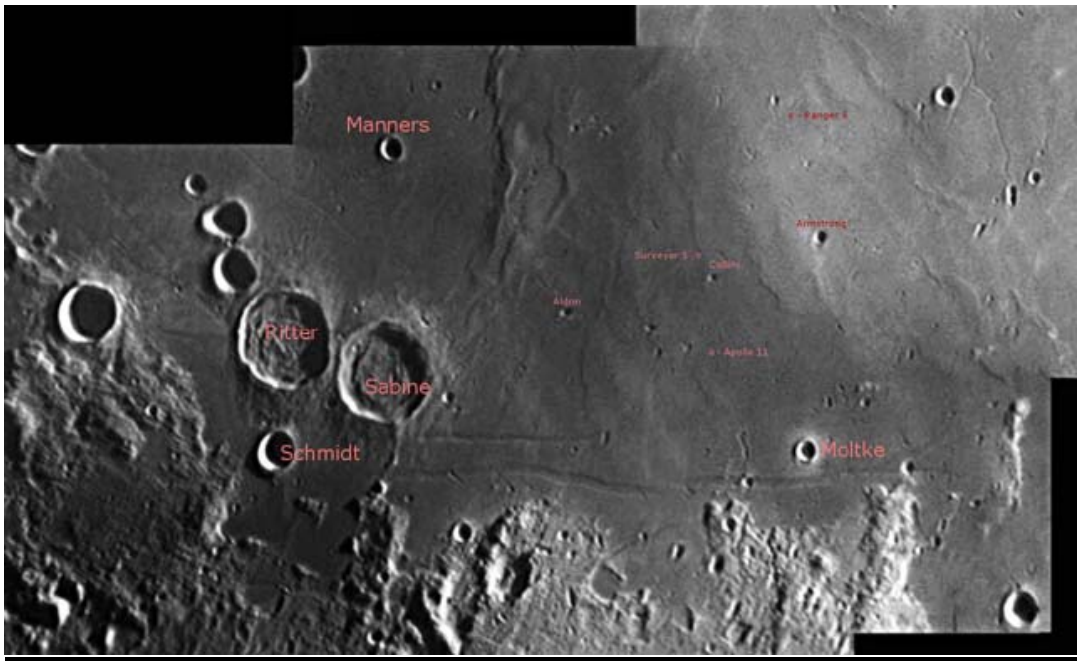


CLAVIUS-DESLANDRES – William Dembowski, Windber, Pennsylvania, USA. August 19, 2010 01:25 UT Colongitude 20.8º, Seeing 3/10. Celestron 9.25" SCT f/10, DMK41.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS



Jansen - Howard Eskildsen-Ocala, Florida, USA. September 14, 2010 00:11 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific refractor, 2x barlow, DMK 41AU02 AS, W-8 Yellow filter.



SABINE & RITTER – Richard Hill – Tucson, Arizona, USA May 20, 2010 01:40 UT. Seeing 8/10. C14, 2x barlow, f/22, SCT. DMK21AU04, 653.6nm filter.

Still house cleaning. I think this is about the best of this region I've ever done though I think I may be able to improve on it in the future. Even so, it shows much more than the Rukl Atlas and I had to locate the landing sites from Apollo images. The image contrast/brightness/gamma was stretched to enhance the Apollo 11 landing site.

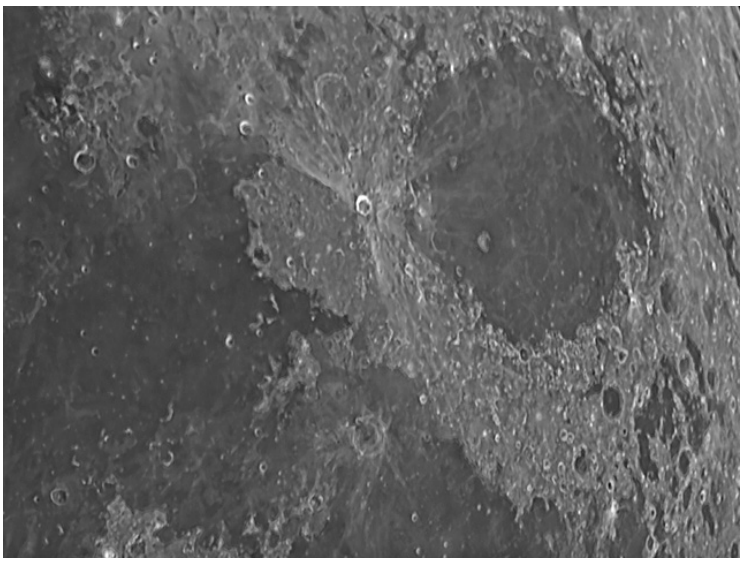
BRIGHT LUNAR RAYS PROJECT

Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

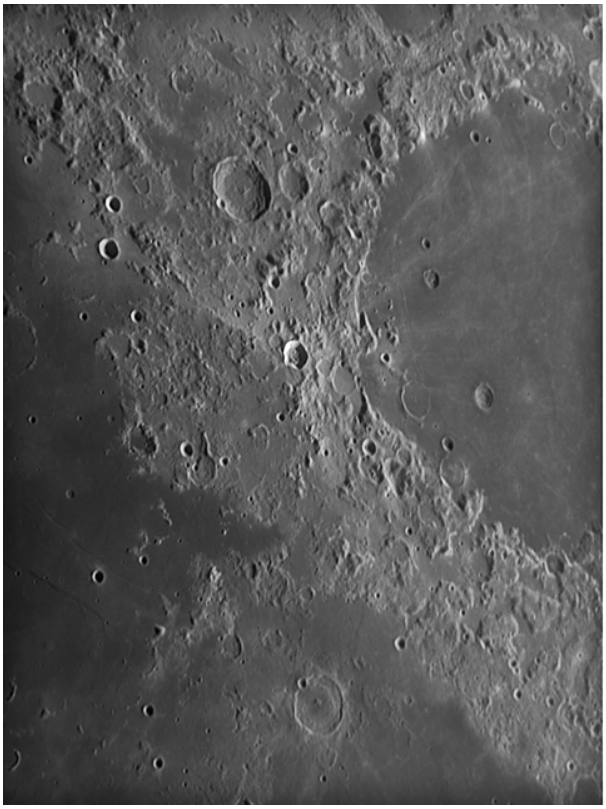
Assistant Coordinator – William Dembowski – dembowski@zone-vx.com

Bright Lunar Rays Website: http://moon.scopesandscapes.com/alpo-rays.html

RECENT RAY OBSERVATIONS



PROCLUS – William Dembowski, Windber, Pennsylvania, USA. August 19, 2010 01:33 UT Colongitude 20.9º, Seeing 3/10. Celestron 9.25" SCT f/10, DMK41.



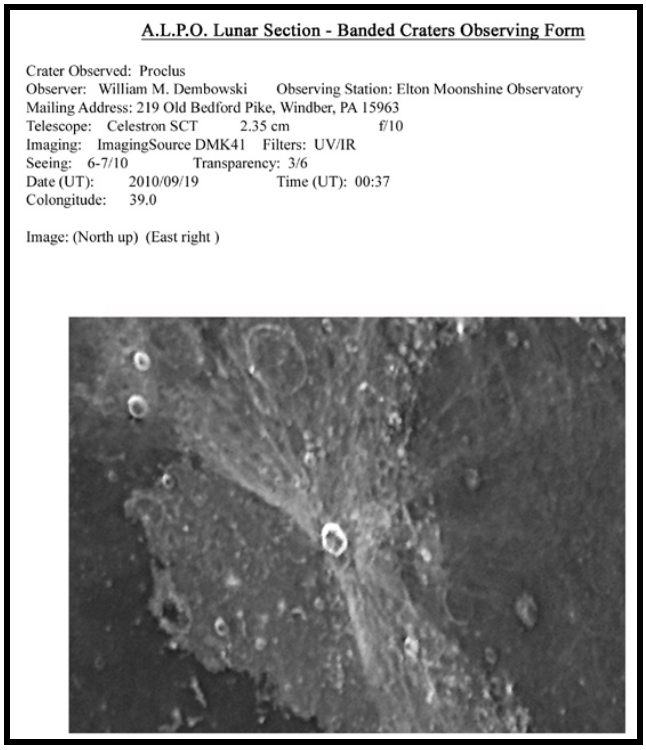
PROCLUS-Howard Eskildsen-Ocala, Florida, USA. September 14, 2010 00:15 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific refractor, 2x barlow, DMK 41AU02 AS, W-8 Yellow filter.

BANDED CRATERS PROGRAM

Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

Assistant Coordinator – William Dembowski - dembowski@zone-vx.com

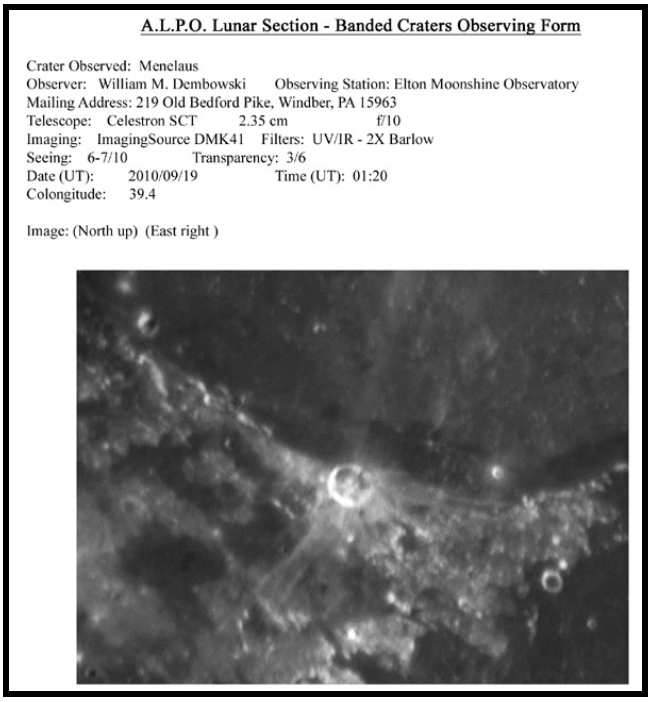
Banded Craters Program Website: http://moon.scopesandscapes.com/alpo-bcp.html



A.L.P.O. Lunar Section - Banded Craters Observing Form

Crater Observed: Proclus
Observer: William M. Dembowski Observing Station: Elton Moonshine Observatory
Mailing Address: 219 Old Bedford Pike, Windber, PA 15963
Telescope: Celestron SCT 2.35 cm f/10
Imaging: ImagingSource DMK41 Filters: UV/IR
Seeing: 6-7/10 Transparency: 3/6
Date (UT): 2010/09/19 Time (UT): 00:37
Colongitude: 39.0

Image: (North up) (East right)



A.L.P.O. Lunar Section - Banded Craters Observing Form

Crater Observed: Menelaus
Observer: William M. Dembowski Observing Station: Elton Moonshine Observatory
Mailing Address: 219 Old Bedford Pike, Windber, PA 15963
Telescope: Celestron SCT 2.35 cm f/10
Imaging: ImagingSource DMK41 Filters: UV/IR - 2X Barlow
Seeing: 6-7/10 Transparency: 3/6
Date (UT): 2010/09/19 Time (UT): 01:20
Colongitude: 39.4

Image: (North up) (East right)

LUNAR TRANSIENT PHENOMENA

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

LTP NEWSLETTER – OCTOBER, 2010

Dr. Anthony Cook - Coordinator

Observations for Aug 2010 were received from the following observers: Jay Albert (Lakeworth, FL, USA) observed Earthshine, and several other features, Maurice Collins (New Zealand) observed Clavius, Copernicus, Tycho, Earthshine, Rima Hadley, and took whole Moon images, Marie Cook (Mundesley, UK) observed Messier and several other features, myself (Aberystwyth University Robotic Telescopes) observed Earthshine and took time lapse video of the Moon in various spectral wavebands, Bill Dembowski (Windber, PA, USA) observed Tycho, and Kerry Koppert (New Zealand), took some whole Moon images.

The Censorinus Color Challenge: Whilst checking through whole Moon color images from Maurice Collins, I discovered that there was quite a noticeable color visible in the Censorinus ejecta blanket in the range of selenographic colongitudes of 342°-345° (possibly a few degrees outside this range too?). As this repeated at similar colongitudes, several months apart, one can only presume that this must be natural surface color that is visible between when local topographic shadows start to wane and before the bright ejecta blanket begins to become saturated in brightness. Without showing you the image, and revealing what color was seen, I would like to request that observers please try to observe the Censorinus ejecta blanket around the dates and times listed below. You can take color CCD images, or observe visually in white light. Note that the Moon may have set at some of these times, so it is your responsibility to check that the Moon is above the horizon beforehand. What I am really interested to learn about is: (a) what color you see, b) what is the earliest and latest colongitude that you can see color here?

2010 Oct 14 UT 00:32	2010 Feb 09 UT 09:20	2011 Jun 07 UT 11:46	2011 Oct 03 UT 09:19
2010 Nov 12 UT 14:00	2011 Mar 10 UT 23:16	2011 Jul 06 UT 22:43	2011 Nov 01 UT 22:26
2010 Dec 12 UT 04:13	2011 Apr 09 UT 12:20	2011 Aug 05 UT 09:41	2011 Dec 01 UT 09:19
2011 Jan 10 UT 18:50	2011 May 09 UT 00:26	2011 Sep 03 UT 21:07	2011 Dec 31 UT 21:08

Table 1. Please try to look visually for, or image, color on the Censorinus ejecta blanket within a few hours of the above suggested times. Both positive and negative reports of color will be welcome, so long as you include the date and UT.

Routine Reports: On 2010 Aug 21 at 08:53 UT Kerry Koppert (New Plymouth, New Zealand) took a whole Moon mosaic in monochrome. This happened to coincide with the exact same illumination conditions (to within ±0.5°) of a LTP observation made by former BAA Lunar Section director, Jeremy Cook, back in 1978. Here is a description of the original LTP report derived from the Cameron 2006 LTP catalog:

"On 1978 May 18 at UT 20:45-21:53 J.D. Cook (Frimley, UK, 12" reflector, x240) observed Promontorium Laplace to have visually a brown color - though no Moon Blink (red and blue filters) effect was detected. Cameron

comments that this is probably a subjective effect - also others have reported something similar at times." The Cameron 2006 catalog ID=30 and weight=3. The ALPO/BAA weight=2.

Figure 2. **(Left)** Section of Kerry Koppert's image from 2010 Aug 21 with north at the top. **(Right)** Image with artificial spurious color added so as to maximize brown on Prom. Laplace.

Note that it is possible to get spurious color in the correct location as shown in the "simulation" in Figure 1, however spurious color should have been seen elsewhere and it was not. Furthermore the Moon's altitude at the time of the Promontorium Laplace LTP back in 1978 was quite high at 35°-33°. However the fact that the Moonblink did not detect anything suggests that it might have been spurious color. In view of this contradiction, for now I will leave the ALPO/BAA weight at 2 and await repeat illumination observations in color. Interestingly enough there are twelve LTP reports on record concerning Promontorium Laplace and four of these concern color.

LTP Reports: One LTP reports was received for 2010 Aug 19 UT00:50-01:02 concerning Tycho, as seen by Jay Albert (Lakeworth, FL). This was described in full detail last month and no further reports have been received.

European Planetary Science Congress: Having just returned from this interesting conference, I can now discuss the LTP paper findings. A study was performed, using for the first time non-LTP observations (6429 routine entered into the ALPO/BAA database in contrast to 2639 LTP reports) to help calibrate the LTP reports.

Firstly a study was done to see if LTP occur at a preferred time of the year, just in case they are related to dust being kicked up from meteor shower abrasion, impacts, or meteorite induced seismic disturbance on the lunar surface. Figure 2 shows a ratio plot of LTP to routine observations for different weeks in the year. LTPs are categorized into weights, from 1 (low quality) to 5 (high quality). There are hints that some of the low weight LTP have isolated peaks during the Lyrids and southern Delta Aqaurids, however this is negated by the fact high quality 4 and 5 weighted LTPs do not exhibit peaks here. Also it is apparent that LTP seem to occur more often in the Summer months in the northern Earth hemisphere, presumably because the Moon is lower and there is more atmosphere to look through. This in turn leads to greater spectral dispersion and loss of image detail and presumably more mis-identifications between LTP and terrestrial atmospheric effects. The higher weight LTP do not exhibit this Summer excess in activity though.

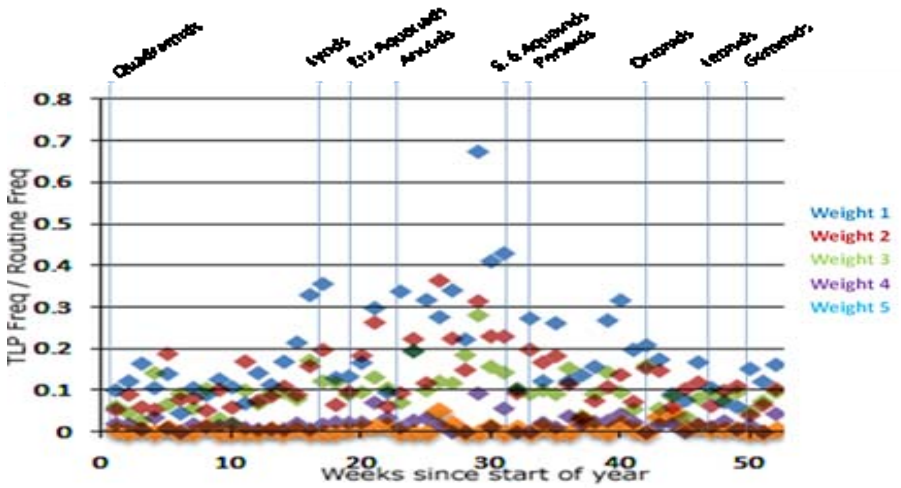


Figure 2. Ratio of LTP to Routine Reports according to week of the year using 1 week wide data bins. From Cook *et al.* EPSC, 2010).

Secondly another study was made to see if there was any evidence of electrostatic dust activity around the terminator area which has been a suspected cause of some LTP in the past. This was achieved by looking at a plot TLP frequency to routine frequency ratios against the local azimuth angle (effectively local time of day) of the Sun on the Moon at each LTP site (See Figure 3). The use of the ratio was an attempt to calibrate out the fact that amateur astronomers gravitate their observing towards the terminator because it is so spectacular to watch. What we see is that night time LTP activity in Earthshine is 10-100x more active than routine observations available in our database. However routine Earthshine observations may be considerably under represented, because the image contrast is usually too low to enable amateurs to make sketches or obtain high resolution CCD images as they would normally do on the dayside, hence we should be very wary of the apparent increase LTP activity here. What is clear is that LTP activity around sunrise and sunset (compared to the large number of routine observations being made), is relatively low. However as the Sun approaches local lunar noon, LTP activity appears to increase by almost a factor of 10. Is this local noon perhaps related to surface temperature or solar wind particle incidence angle, or is it more likely to be another amateur astronomer observing pattern effect? The authors of this conference abstract continue to investigate possible causes for this apparent effect. The results around sunrise and sunset though do suggest that the electrostatic dust particle levitation theory cannot be a major cause of TLP along the terminator.

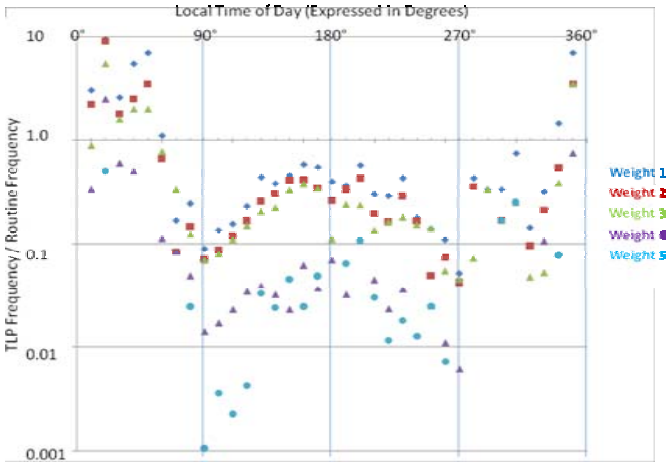


Figure 3. Plot of the ratio of LTP frequency to Routine observation frequency (for different weight LTP), as a function of local solar time of day on the Moon. 0° = midnight, 90° = sunrise, 180° = mid day, and 270° = sunset. From Cook *et al.* EPSC, 2010).

Observing Schedule: For repeat illumination (only) LTP predictions for the coming month, these can be found on the following web site: http://users.aber.ac.uk/atc/tlp/tlp.htm . 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! Twitter LTP alerts can be accessed on http://twitter.com/lunarnaut.

Dr Anthony Cook, Institute of Mathematical and Physical Sciences, University of Wales Aberystwyth, Penglais, Aberystwyth, Ceredigion, SY23 3BZ, WALES, UNITED KINGDOM. Email: atc @ aber.ac.uk

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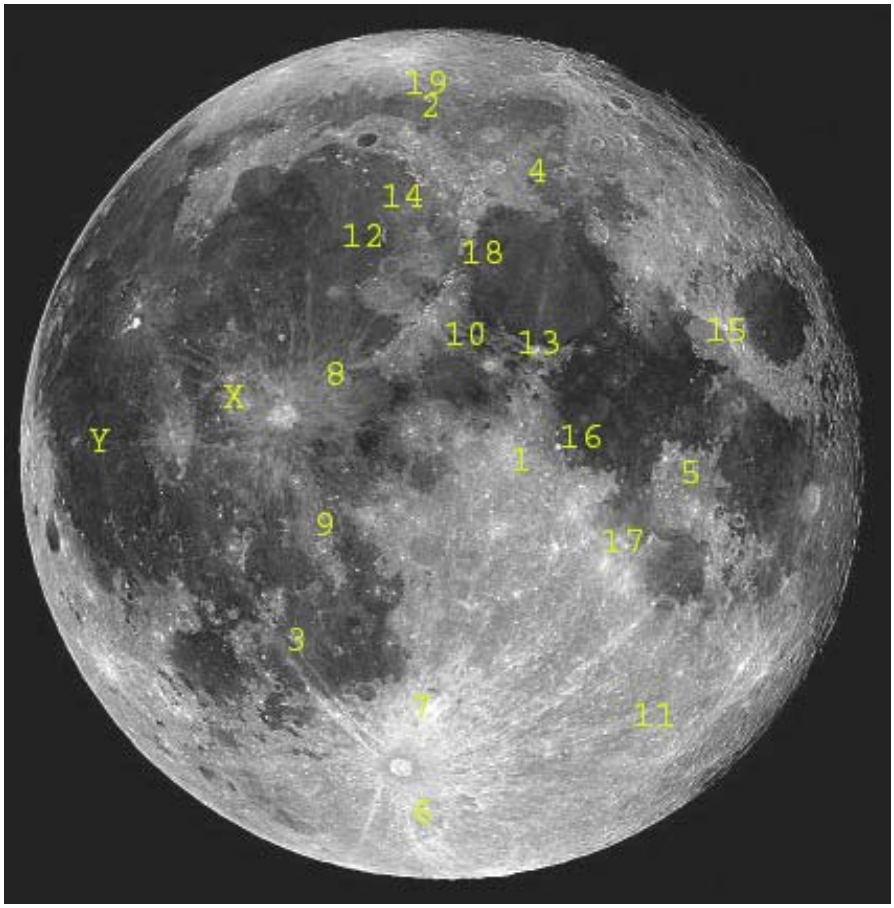
KEY TO IMAGES IN THIS ISSUE

1. **Agrippa**
2. **Archytas**
3. **Bullialdus**
4. **Burg**
5. **Censorinus**
6. **Clavius**
7. **Deslandres**
8. **Eratosthenes**
9. **Fra Mauro**
10. **Ina**
11. **Jansen**
12. **Mare Imbrium**
13. **Menelaus**
14. **Mons Piton**
15. **Proclus**
16. **Sabine-Ritter**
17. **Theophilus**
18. **Valentine Dome**
19. **W. Bond**



FOCUS ON targets

X = Milichius-T. Mayer Area (November)
Y = Marius-Reiner gamma (January)