THE LUNAR OBSERVER

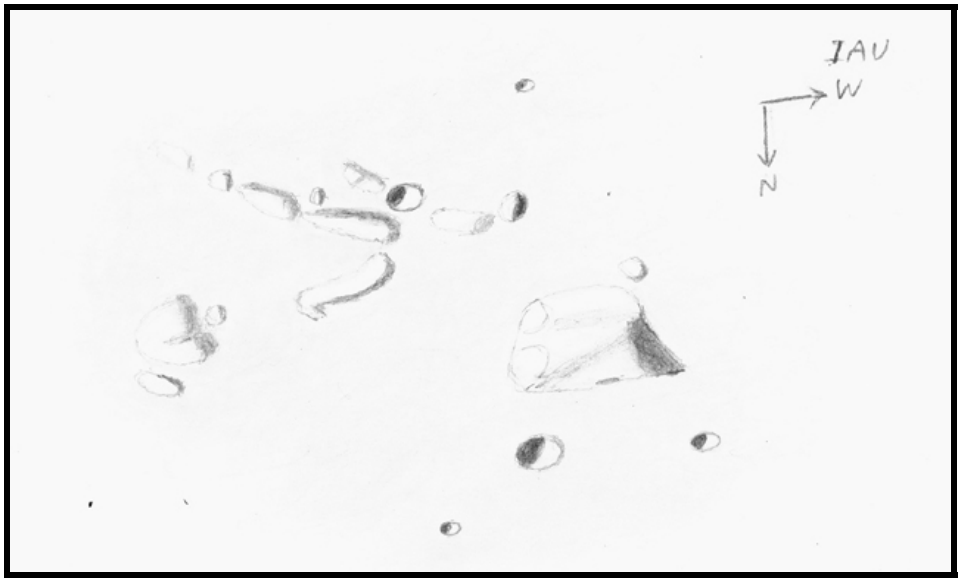
A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.

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 – SEPTEMBER 2010

MONTES TENERIFFE



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
May 24, 2010 03:58-04:34 UT
15 cm refl, 170x, seeing 7

I sketched this group of peaks on the night of May 23/24, 2010. These mountains are in northern Mare Imbrium, southwest of Plato. The largest and westernmost peak is Teneriffe epsilon. It has a well-shadowed northwest point, at least two dusky strips crossing it, and two bright areas on its east side. The small peak just southwest of epsilon is Teneriffe omega. Plato D is the largest of three craters north of epsilon. Plato X and E are to its east and west respectively. The number two peak in this group is Teneriffe iota. This kidney-shaped mountain is crossed by a dusky strip of shadow, but overall, iota appeared brighter than the grayish epsilon. Two smaller elevations are adjacent to iota. Teneriffe alpha is the hook-shaped feature west of iota. Many of the peaks in the Teneriffes are elongated mounds in a clump oriented NW-SE, south

of iota and alpha. The Lunar Quadrant map has the letters gamma, kappa and delta in this area, but it is hard to tell which features these apply to. A crater appears to be buried in this clump of peaks. It isn't shown on the map, but it looks like a pit to me, so I drew it as such. A large, crisp peak is west of this crater next to a low, dull mound. The pit south of this peak is Pico EA. Teneriffe delta may be the large mound between alpha and the interior crater. The Teneriffe range tapers down east from there, ending at a low, gray mound south of iota.

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LUNAR CALENDAR

SEPTEMBER-OCTOBER 2010 (UT)

Sept. 01	17:22	Last Quarter
Sept. 02	11:18	Extreme North Declination
Sept. 07	22:00	Moon 1.7 Degrees S of Mercury
Sept. 08	04:02	Moon at Perigee (357,191 km - 221,948 miles)
Sept. 08	10:29	New Moon (Start of Lunation 1085)
Sept. 09	18:00	Moon 7.2 Degrees SSW of Saturn
Sept. 11	04:00	Moon 4.8 Degrees SSW of Mars
Sept. 11	14:00	Moon 0.56 Degrees SE of Venus
Sept. 14	23:48	Extreme South Declination
Sept. 15	05:49	First Quarter
Sept. 20	13:00	Moon 4.2 Degrees NNW of Neptune
Sept. 21	08:04	Moon at Apogee (406,167 km - 252,380 miles)
Sept. 23	04:00	Moon 6.5 Degrees NNW of Jupiter
Sept. 23	05:00	Moon 5.7 Degrees NNW of Uranus
Sept. 23	09:18	Full Moon
Sept. 29	17:36	Extreme North Declination
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

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?

FOCUS ON: Mare Nectaris

By Wayne Bailey
Acting Coordinator: Lunar Topographical Studies

Mare Nectaris is a fairly small and inconspicuous mare in the Southeast quadrant of the moon (Fig. 1). Since sunrise in the area occurs only a few days after new moon, and consequently sunset occurs shortly after full phase, the area is illuminated during the times the moon is visible in the evening.

Even a cursory examination of the area will reveal several interesting features: the trio of magnificent craters (Theophilus, Cyrillus & Catherina) along the Northwest edge of the mare; the flooded craters Fracastorius and Beaumont on the Southwest edge; wrinkle ridges near the Eastern shore; albedo features on the mare, including the oddly straight-edged region East of Theophilus; the buried crater Daguerre;

Figure 1. 6 DAY MOON – Maurice Collins - Palmerston North, New Zealand. July 18, 2010 08:15-09:55 UT. C8, SCT, 3x barlow, LPI.

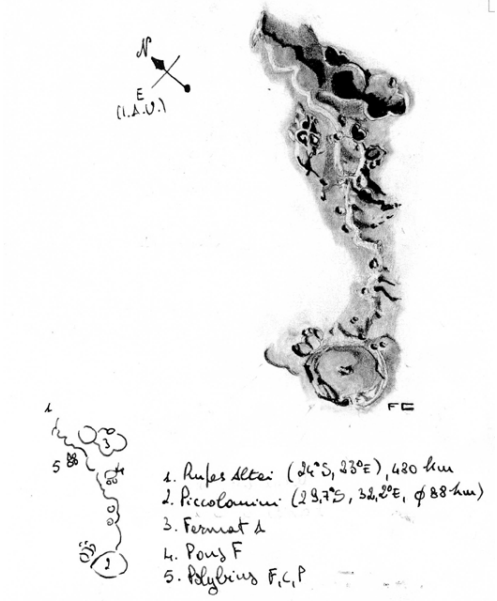
the spectacular Altai Scarp, straddled by the large crater Piccolomini; dark-halo craters on the Northwest mare; the complex northern highlands with the Rimae Gutenberg; and, further to the Southeast, ejecta formed the Rheita Valley.

Mare Nectaris appears small because less lava flooded the impact basin than filled other maria. The dark lava fills an area about 350 km in diameter, and is apparently only about 1.5 km thick. The mare floor is about 6.5 km below the average surface level of the moon. Nectaris is quite low. The main ring of the multi-ring basin is about 860 km diameter, visible on the western side as the Altai Scarp. If Nectaris were flooded to the main ring, it would be comparable in size to the other eastern Maria.

Tracing the main ring is relatively easy southwest of nectaris, the Altai Scarp is obvious from Piccolomini to Tacitus (Fig. 2 & 3). The ring can be traced continuing on west of Cyrillus and Theophilus through Kant and Hypatia to Sinus

Figure 2. ALTAI SCARP -Howard Eskildsen-Ocala, Florida, USA. August 16, 2010 00:31 UT. Seeing 6/10, Transparency 2/6. 6" f/8 Explore Scientific Refractor, 2x barlow, DMK 41AU02 AS, no filter.

Asperitatis. From Piccolomini it's harder to trace northeast past Borda then disappears into Mare Fecunditatis. The northern section would cross the highlands near Censorinus. There are several other rings, concentric to the Altai ring. The easiest to visualize is the innermost, 240 km diameter ring that roughly



coincides with the mare lava deposit edge. Evidence of this ring is mostly subtle ridges and depressions however. A 400 km diameter ring passes just outside of Fracastorius and Beaumont and along the Montes Pyrenaeus. A 620 km diameter ring passes through Cyrillus, Catherina and Colombo. The 1320 km ring is exceeding difficult to identify.

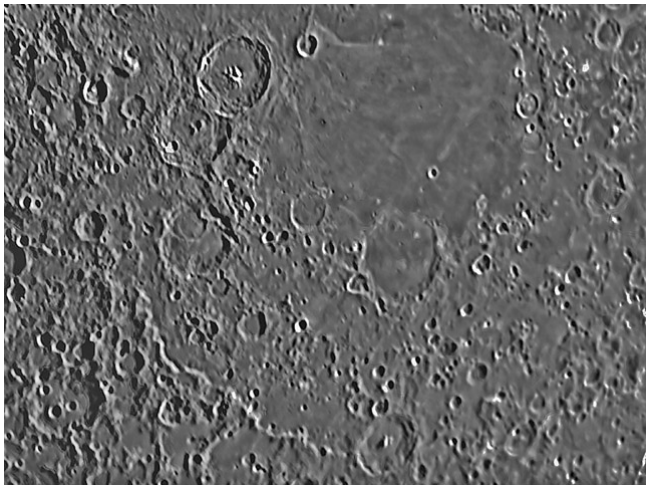
Figure 3. ALTAI SCARP - Fred Corno-Settimo Torinese, Italy. January 2, 2009 17:05 UT. Skywatcher 80 ED refractor, 200x, Williams Optics Super Planetary 3mm eyepiece.

The trio of craters, Theophilus, Cyrillus and Catherina (Fig. 4) make a magnificent sight. Theophilus is clearly the youngest of the three, with complex, terraced walls, a flat floor, and beautiful central peak. The north wall is lower than the south, and careful examination will reveal small ponds of smooth impact melt on the outer northern wall. Theophilus encroachs on Cyrillus, which has a much more complex floor, but is otherwise similar, but more degraded. Catherina is still more degraded, with several sizable impact craters superimposed on it. Several of the superimposed craters are elongated radial to Imbrium, indicating that it existed at time of the Imbrium impact.

Figure 4. THEOPHILUS-CATHERINA - Maurice Collins - Palmerston North, New Zealand.April 20, 2010 07:30 UT. C8, SCT, 3x barlow, LPI.

Several dark-halo craters, including Beaumont L, are on the light deposits in the northwest part of Nectaris near Cyrillus and Theophilus (Fig. 5). These appear to be impact craters that penetrated the light deposits to excavate underlying dark mare material. However, other similar sized craters in the vicinity do not exhibit dark haloes. Is the thickness of the light deposits highly variable, or are the dark haloes volcanic in origin?

Fracastorius and Beaumont are both tilted, flooded craters on the Southeast shore of Nectaris. They obviously formed after the Nectaris basin forming impact, but before the lava flooding the basin reached their level. Fracastorius is somewhat unusual in that it appears that its mare facing wall was not simply submerged, but was destroyed by the flooding.

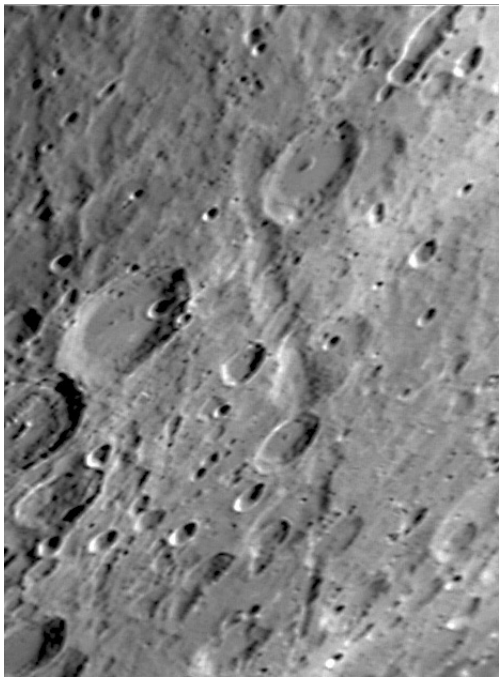


The geological structures to the north and northeast of Nectaris are complicated by overlap among the ring structures of Nectaris, Tranquilitatis and Fecunditatus. This is especially visible in the highland area around Capella and Censorinus. There are many albedo features throughout the region (Fig. 6).

Figure 5. MARE NECTARIS BASIN WITH DARK HALO CRATERS - William Dembowski, FRAS, Elton Moonshine Observatory,. September 2, 2009, 01:11 UT. Colongitude 8.4º, seeing 3/10. Celestron 9.25", f/10 SCT, DMK41.

South and a little east of Nectaris, the Rheita Valley is a nice example of a structure formed by ejecta from the Nectaris impact (Fig. 7). It is composed of a dozen or so overlapping craters that form a 330 km long valley tangential to the rim of Mare Nectaris.

Figure 6. MARE NECTARIS BASIN - Andy Miller - Conneaut, Ohio. April 13, 2009 09:30-10:00 UT. Seeing 7/10, transparency 4/6. 60 mm refractor, 16 mm Plossl eyepiece, afocal, HP 635 camera.



Between the craters Young and Mallet, the valley turns to the south and is becomes less well defined. This section is aligned radially from the center of the Nectaris basin. The Rheita Valley is actually only the most obvious of several grooves that are radial to Nectaris. Since it is oriented approximately north-south, shadows make it more prominent than the valleys that are aligned closer to the sun.

Figure 7. RHEITA VALLEY – KC Pau – Hong Kong. February 26, 2004 12:13 UT. Colongitude 339º, seeing 4/10, transparency 3/6. 10" f/6 Newtonian, 2.5x barlow, Phillips ToUcam.

Although the Mare Nectaris area is often neglected, there are numerous interesting features in the region if you just take the time to look. In particular, it's probably the second best example (after Mare Orientale) of multi-ring basin on the visible side of the moon, and Orientale is very poorly placed for observation from Earth.

ADDITIONAL READING

Bussey, Ben & Paul Spudis. 2004. The Clementine Atlas of the Moon. Cambridge University Press, New York.
Byrne, Charles. 2005. Lunar Orbiter Photographic Atlas of the Near Side of the Moon. Springer-Verlag, London.
North, Gerald. 2000. Observing the Moon, Cambridge University Press, Cambridge.
Schultz, Peter. 1976. Moon Morphology. University of Texas Press, Austin.
Spudis, Paul. 1993. The Geology of Multi-Ring Impact Basins. Cambridge University Press, Cambridge.
Rukl, Antonin. 2004. Atlas of the Moon, revised updated edition, ed. Gary Seronik, Sky Publishing Corp., Cambridge.
Wlasuk, Peter. 2000. Observing the Moon. Springer-Verlag, London.
Wood, Charles. 2003. The Moon: A Personal View. Sky Publishing Corp. Cambridge.

Barker's Quadrangle

Phil Morgan.

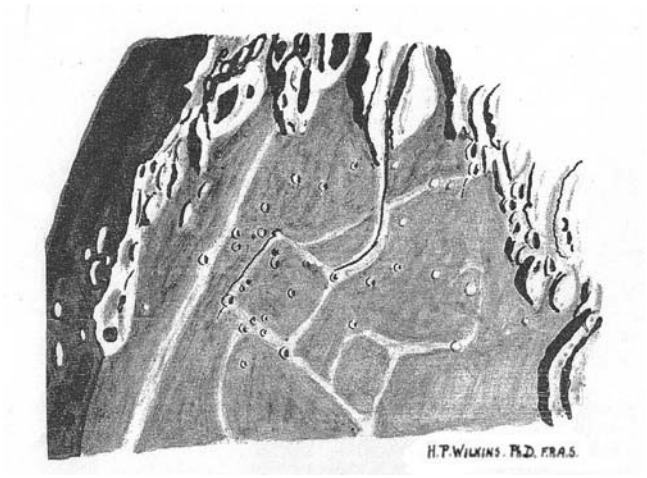
Situated on the southeast (IAU) corner of the Mare Crisium is a small and inconspicuous enclosure composed of wrinkle ridges and craterlets named in the 1930's, Barker's Quadrangle, The Trapezium or Barker's Square, after the first person to study the region in detail, Robert Barker.

Robert Barker was born in 1873 and was for many years a leading member of the BAA Lunar Section. His main interests astronomically were the Moon and Mars, though he sometimes studied Venus.

He was a first class athlete, his main sport being cycling. Unfortunately a serious accident curtailed his cycling career. He was the music critic for the former British newspapers the Morning Post and the Manchester Guardian. He died in September 1966.

His 'Quadrangle' is described in Wilkins and Moore's 'The Moon' on page 197: "On the south-western (classical) portion of the Mare (Crisium) is a peculiar trapezium, formed of ridges with craterlets on their crests or flanks. This diamond-shaped feature was first traced in its entirety by Barker, and there are some craterlets on the interior. A curved ridge connects its western (classical) corner with the mountain border of the Mare." Patrick Moore also covers the region briefly in his little book' Guide to the Moon' (1976). And writes: " There are also many minor details, including some delicate craterlets closely west (IAU) of the jutting Cape Agarum; these craterlets were first described in detail during the 1930's by the English amateur selenographer R. Barker, and some of them are connected byridges."

Robert Barker 1938.
Image courtesy of Richard Baum



H. P. Wilkins' Drawing of the Southern Portion of the Mare Crisium. 30-inch Reflector X300. October 5, 1952.

At this time the region was studied and charted in great detail by many including L. F. Ball, B. Burrell, R. Diggles, E. F. Emley, R. Barker, J. Hutchins, R. Baum and P. Taylor, with reports appearing in the old THE MOON. Harold Hill and Patrick Moore also later charted the region.

On October 5, 1952, H. P. Wilkins using W. H. Stevenson's 30-inch reflector reported a cleft issuing from the mountains on the southern border of the Mare Crisium and running down to the eastern (classical) side of the Trapezium. Wilkins' drawing of his discovery is reproduced on the next page. However, the cleft he depicts is not clearly visible on modern spacecraft images, so presumably he was mislead by the shadow cast by the wrinkle ridge that follows the same course.

Also on the next page is a chart, (classical orientation) probably by Barker, that appeared in the Memoirs of the BAA 32, (2) p15, (1936 October) – The Ninth Report of the Lunar Section. This depicts the principal craterlets and ridges that comprise Barker's Quadrangle.

The prominent crater labelled 1 at the extreme lower left of the Quadrangle is the modern crater named Fahrenheit.

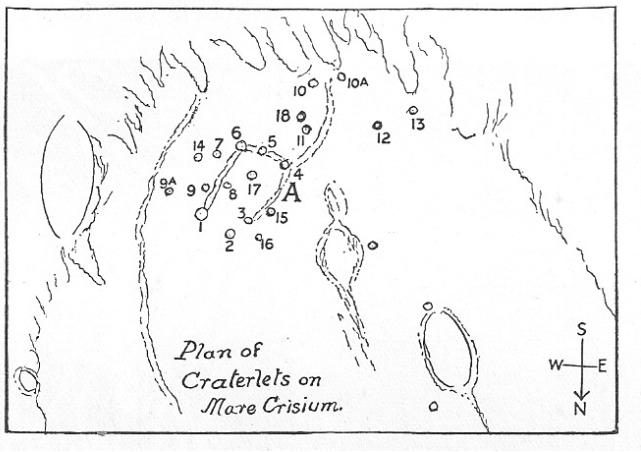
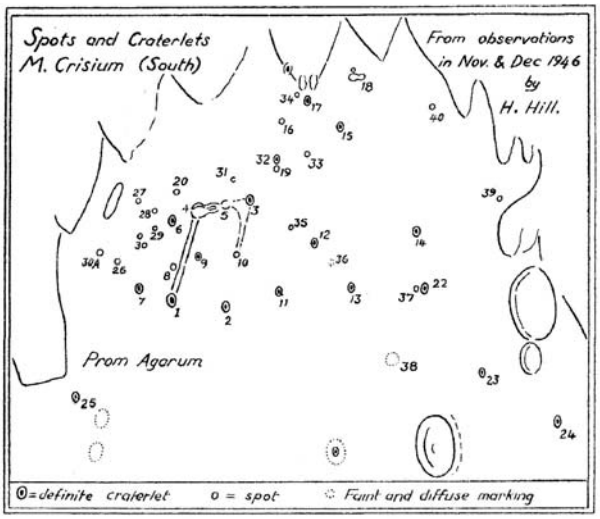
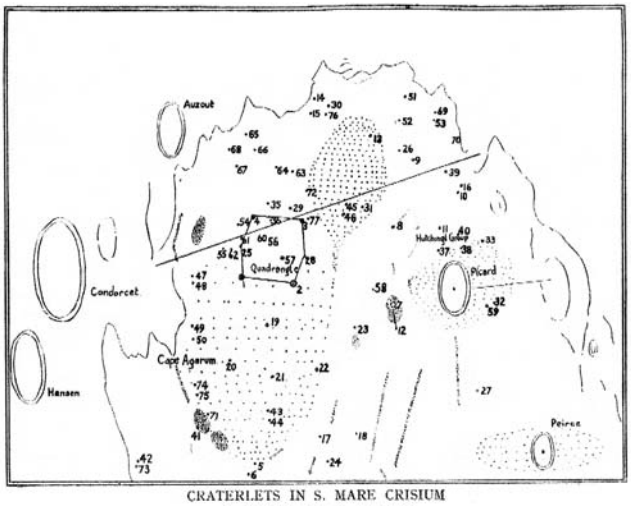


Chart of Barker's Quadrangle and Associated Craterlets. Image Courtesy of Richard Baum.



Harold Hill's 1946 chart from memoirs of the BAA,Vol. 36, Part 3, page 6. 1950.



CRATERLETS IN S. MARE CRISIUM
P. A. Moore, 1947–49. 6-in. O.G.

Patrick Moore's 1947/9 chart from JBAA, Vol. 59, page 250 (1949).

NOTE: This article also appears in the BAA Lunar Section Circulars. A more extensive article also appears in Jim Mosher's wikispaces at http://the-moon.wikispaces.com/Barker%27s+Quadrangle.

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

JAY ALBERT – LAKE WORTH, FLORIDA, USA. Digital images of 3 day moon & earthshine.

MIKE BOSCHAT – HALIFAX, NOVA SCOTIA, CANADA. Drawing of Macrobius.

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 9 & 16 day Moon, Clavius, Copernicus, Full Moon, Hadley, Hericlitus, Ptolemaeus-Alphonsus-Arzachel, & Southwest Limb.

FRED CORNO - SETTIMO TORINESE, ITALY. Drawing of Rupes Altai.

ED CRANDALL – LEWISVILLE, NORTH CAROLINA, USA. Digital images of Kepler-Encke, Mons Gruithuisen (2), Oceanus Procellarum & Kepler Rays, Reiner Gamma & Rays (2), Schickard-Schiller, Schiller-Baily.

WILLIAM DEMBOWSKI – WINDBER, PENNSYLVANIA, USA. Digital images of Eratoshenes-Appenine Mtns, Mare Nectaris-Piccolomini, Plato-Arichimedes-Aristillus, Rupes Recta. Banded crater reports for Proclus, Menelaus.

HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Altai Scarp, Pitiscus, Rabbi Levi, Theophilus. Elevation measurements of Cyrillus, Hommel, Nicolai, Polybius, Catherina, Rothamnn

CHARLES GALDIES – NAXXAR, MALTA. Drawing of Gutenberg.

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

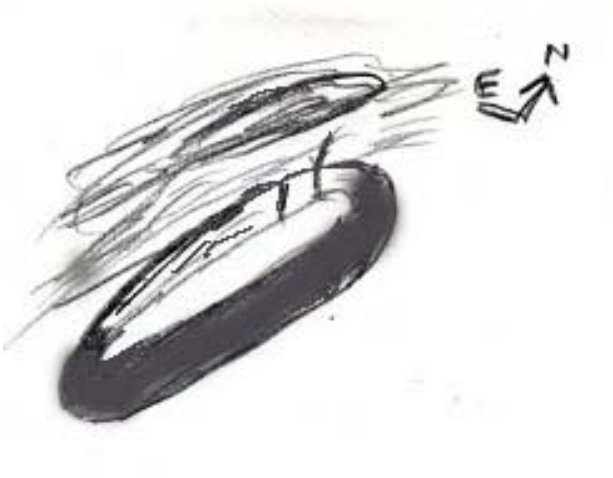
RICHARD HILL – TUCSON, ARIZONA, USA Digital images of Archimedes, Barrow, Deslandres, Hyginus, North Pole region, Plinius, Thebit, Walter, Werner.

JERRY HUBBELL – LOCUST GROVE, VIRGINIA, USA. Digital images of Gibbous Moon, Tycho-Maurolycus.

ANDY MILLER – CONNEAUT, OHIO, USA. Digital image of Mare Nectaris.

RECENT TOPOGRAPHICAL OBSERVATIONS

3 DAY CRESCENT – Jay Albert, Lake Worth, Florida, USA. August 13, 2010 01:05 UT. Olympus digital camera, 20x zoom.

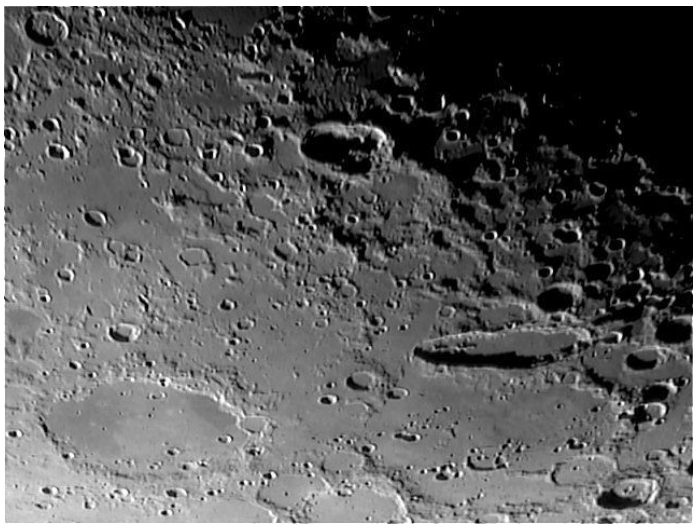


MACROBIUS – Mike Boschat, Halifax, Nova Scotia, Canada. August 28, 2010 01:00 UT. C8, f/10, 160x. Colongitude 142.3º.

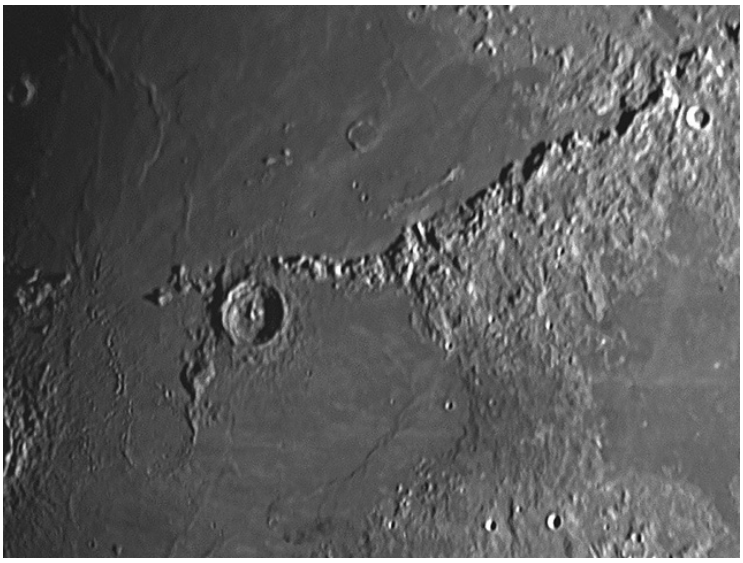
The seeing was so-so but at times good that the image steadied. I was looking at the last parts of Mare Crisium in shadow and while looking about saw two faint dark lines on the Northeast wall of Macrobius. They looked similar to the Aristarchus ones but to a much lesser degree. It looked like one was almost going up the wall and just over onto a small sunlit area. The other seemed to go from the floor and up the wall but stopped near the top.

HERACLITUS-MAGINUS-Maurice Collins - Palmerston North, New Zealand. August 19,, 2010 07:46-07:49 UT. C8, SCT, 3x barlow, LPI.

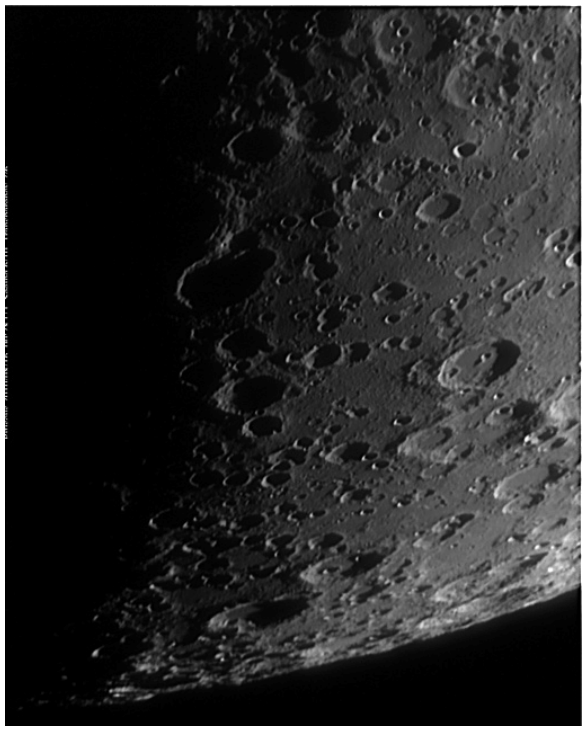
RECENT TOPOGRAPHICAL OBSERVATIONS



SCHICKARD-SCHILLER – Ed Crandall – Lewisville, North Carolina, USA. July 6, 2010 09:39 UT. Seeing AII-III. 110 mm f/6.5 APO, 2.4x barlow, ToUcam.



ERATOSTHENES & APPENNINE MOUNTAINS – William Dembowski, Windber, Pennsylvania, USA. August 19, 2010 01:21 UT Colongitude 20.8º, Seeing 3-4/10. Celestron 9.25" SCT f/10, DMK41.

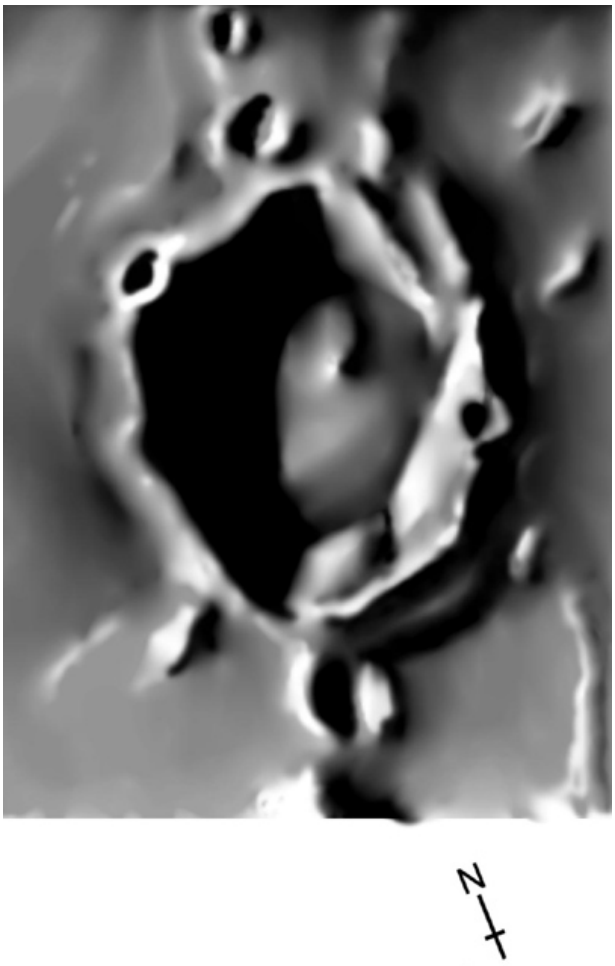


PITISCUS-Howard Eskildsen-Ocala, Florida, USA. August 16, 2010 00:28 UT. Seeing 6/10, Transparency 2/6. 6" f/8 Explore Scientific refractor, 2x barlow, DMK 41AU02 AS, no filter.

RECENT TOPOGRAPHICAL OBSERVATIONS

GUTENBERG-Charles Galdies-Naxxar, Malta. March 19, 201019:15 UT. Clear sky. 200mm SCT f/10, 2x Televue barlow, 17mm Televue Plossl eyepiece, moon filter

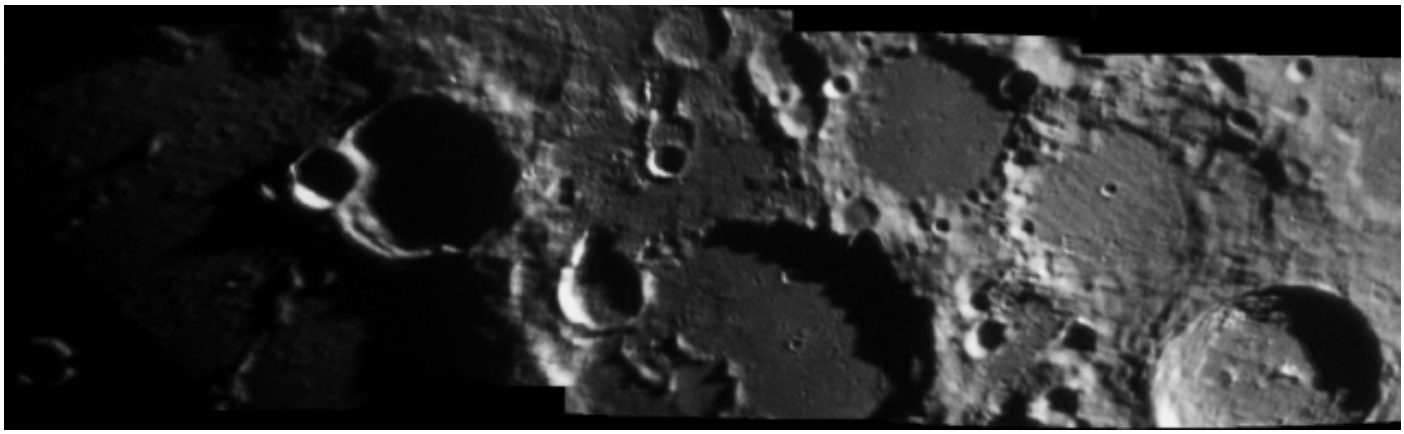
This intersting lunar formation is located at the edge of Mare Fecundatatis. It is best observed 5 days after new moon or 4 days after full moon. The rim of Gutenberg is much eroded, with steep walls on one side and broken on the opposite side by the overlapping crater 'Gutenberg E'. Prominent gaps in Gutenberg E were seen and sketched, forming a passage to the lunar mare to the east. I sketched a subtle cleft in the walls of Gutenberg E which connects to Gutenberg. Craterlet 'Gutenberg A' was in the shadow of the steep walls of Gutenberg and is not shown. The floor of Gutenberg and Gutenberg E are flat and filled with lava, and the illuminated floors did not show any significant craterlets. Another major cleft in the wall of Gutenberg E allowed light to pass and fill the central part of Gutenberg, bringing in light the central and southern hills of Gutenberg into view. The overall effect was like an extended high promontary in the centre of Gutenberg. It was this interesting feature which made me select and sketch this complex lunar formation. .



SANTBECH – Peter Grego, St. Dennis, Cornwall, United Kingdom. August 28, 2010 01:00-01:40 UT. Colongitude 129.7º-130.0º, Seeing AII-III some haze towards end. 200mm SCT, 250x.

After more than two months without having had a good opportunity of making a lunar observation because of a very wet and cloudy summer, this morning was the ideal time to spring into action once more. Santbech, a crater on the southeastern shoreline of Mare Nectaris, isn't the most spectacular or varied of lunar features, but it was presented nicely, set neatly in its own 'private' little bay and illuminated by a late afternoon Sun. The crater's interior was approximately one-third full of shadow cast by its western rim; its outline, distinctly polygonal and somewhat irregular. The western rim sported Santbech H, while on the opposite rim sat the slightly smaller Santbech D. Santbech's visible interior was generally smooth and grey, slightly patchy, with an elevation north of centre. Complicated terracing was traced on the crater's inner eastern wall. Santbech's southeastern rim appeared double, the outer glacis being visible in a grey half-light. To the north of Santbech, Santbech J, with some smooth hilly ground extending to the north. South of Santbech was Santbech E and a mountain block to its south, only half-sketched as it lay beyond the edge of the area drawn. The area to the southeast of Santbech appeared to be a possible ruined, flooded crater whose southeastern wall is depicted at the lower right of the sketch.

RECENT TOPOGRAPHICAL OBSERVATIONS



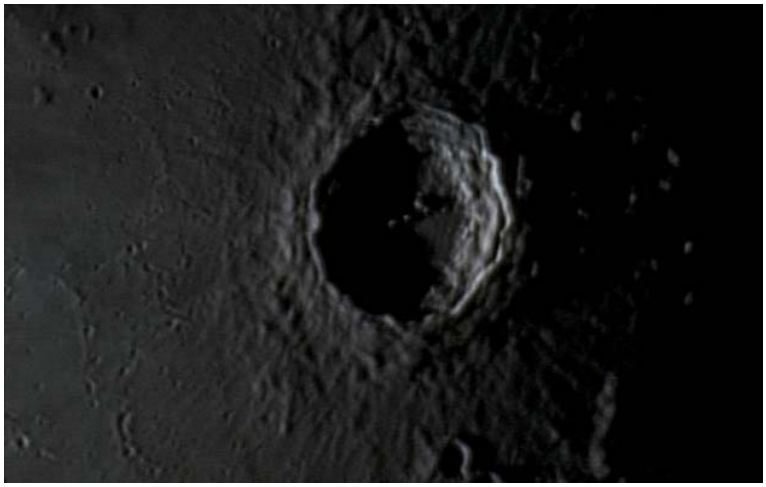
THEBIT - WERNER – Richard Hill – Tucson, Arizona, USA June 20, 2010 03:14 UT. Seeing 8/10. C14, 2x barlow, f/22, SCT. DMK21AU04, 653.6nm filter.

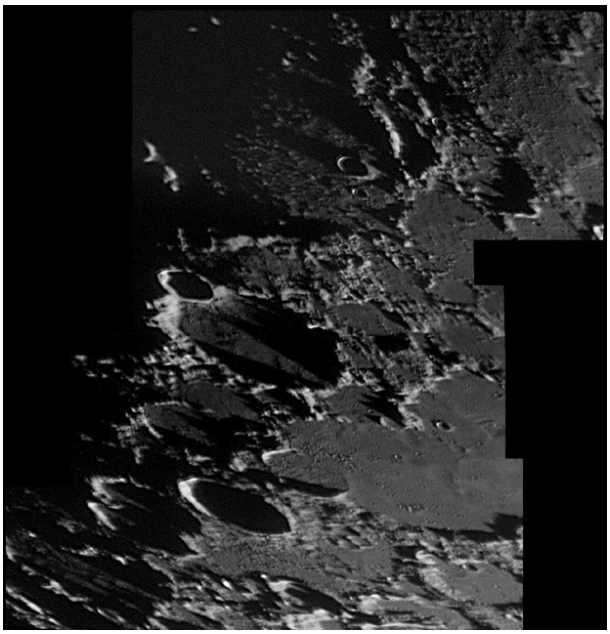
Here's another image, the last from that wonderful night of June 19/20. This strip goes from Thebit to Werner with nice detail. I particularly like the striations on the floor of Blanchinus.

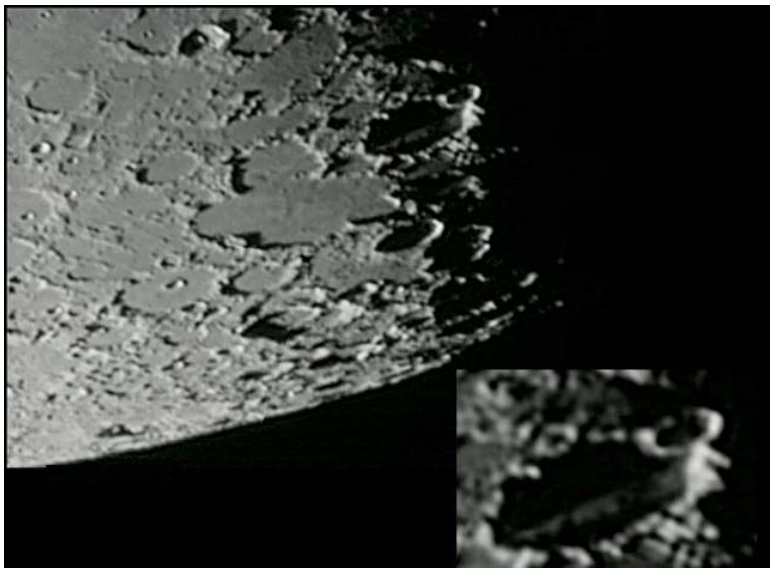
TYCHO-MAUROLYCUS – Jerry Hubbell, Locust Grove, Virginia, USA. August 30, 2010 06:35 UT. Colongitude 157.2º, Seeing 8/10, Transparency 5/6. Sky-watcher ED120 APO, Astrotech Field Flattener. ATIK 314e TEC CCD.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

COPERNICUS-Maurice Collins - Palmerston North, New Zealand. August 19, 2010 07:30 UT. Seeing A-IV. C8, SCT, 3x barlow, LPI.







BARROW – Richard Hill – Tucson, Arizona, USA Left: June 20, 2010 02:37 UT. Seeing 8/10. C14, 2x barlow, f/22, SCT. DMK21AU04, 653.6nm filter. Right: July 29, 2009 02:38 UT. Seeing 6/10. Questar 3.5", 2x barlow, SPC900NC, UV/IR blocking filter.

About a year ago I sent you an image of the moon taken with my Questar. In that image I noted a curious shaft of light crossing the floor of Barrow that I had never noticed before in 45 years of lunar observing. Since that time I have watched for it on clear nights when the illumination was nearly the same and when I had the time to observe. On the night of June 18/19 this year, I found it well displayed and got some images of the region with the C14 and the DMK camera. It's very dramatic lighting. I hope you enjoy it,

BRIGHT LUNAR RAYS PROJECT

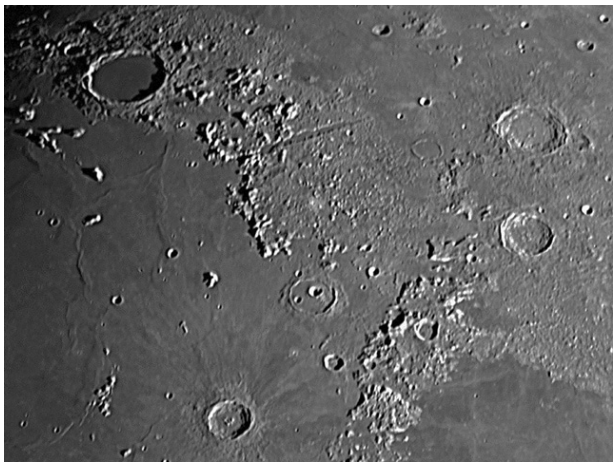
Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

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

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

RECENT RAY OBSERVATIONS

REINER GAMMA & REGIONAL RAYS – Ed Crandall – Lewisville, North Carolina, USA. July 6, 2010 09:13 UT. Colongitude 206.6º, Seeing AIII. 110 mm f/6.5 APO, 3x barlow, ToUcam.



PLATO-ARCHIMEDES-ARISTILLUS – William Dembowski, Windber, Pennsylvania, USA. August 19, 2010 01:12 UT Colongitude 20.7º, Seeing 3-4/10. Celestron 9.25" SCT f/10, DMK41.

COPERNICUS-KEPLER-TYCHO RAYS – Jerry Hubbell, Locust Grove, Virginia, USA. August 30, 2010 06:35 UT. Colongitude 157.2º, Seeing 8/10, Transparency 5/6. Sky-watcher ED120 APO, Astrotech Field Flattener. ATIK 314e TEC CCD.

BANDED CRATERS PROGRAM

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

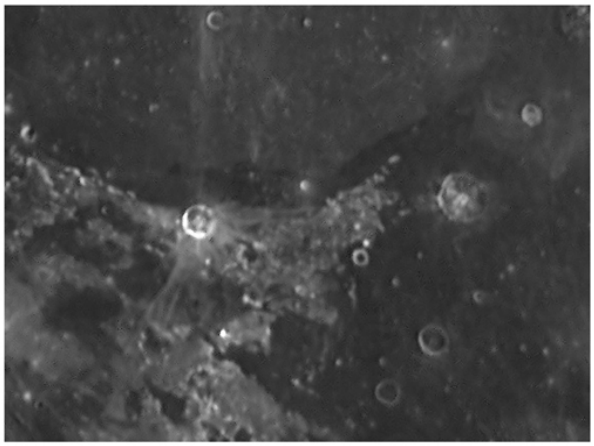
Assistant Coordinator – William Dembowski - dembowski@zone-vx.com

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

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

Crater Observed: 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
Seeing: 3/10 Transparency: 3/6
Date (UT): 2010/06/23 Time (UT): 01:45
Colongitude: 44.0

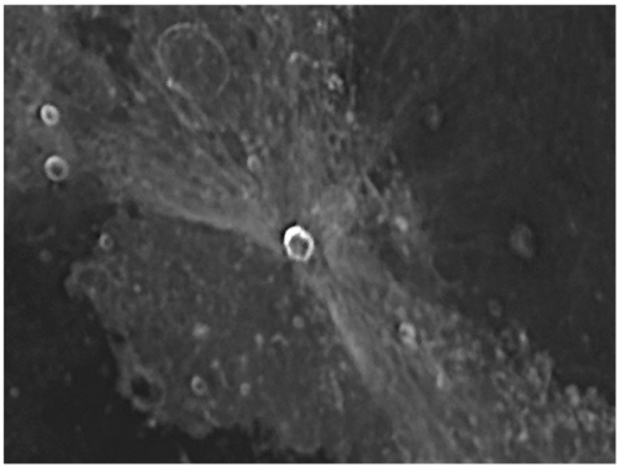
Image: (North up) (East right)



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: 3/10 Transparency: 3/6
Date (UT): 2010/06/23 Time (UT): 01:49
Colongitude: 44.1

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 – SEPTEMBER, 2010

Dr. Anthony Cook - Coordinator

Observations for Jul 2010 were received from the following observers: Jay Albert (Lakeworth, FL, USA) observed Aristarchus and Catharina, Daniell, Hubble, Peirce, and Messier. Maurice Collins (New Zealand) observed Descartes and obtained several images of the complete Moon, and finally Marie Cook (Mundesley, UK) observed several features.

Routine Reports: From the Archives: on 1979 Aug 07 at UT 01:27-03:11 J Caruso of Elmira, NY, USA, whilst observing Helicon, noted that:

"The area west of Helicon not visible despite the area being fairly bright at Full Moon time. This area was a very bright patch one night. Cameron notes: commensurability of Full Moon & Perigee. Cameron 2006 catalog extension ID=64 and weight=3. Seeing=7 and transparency=4. 2.4" refractor used. ALPO/BAA weight=2."

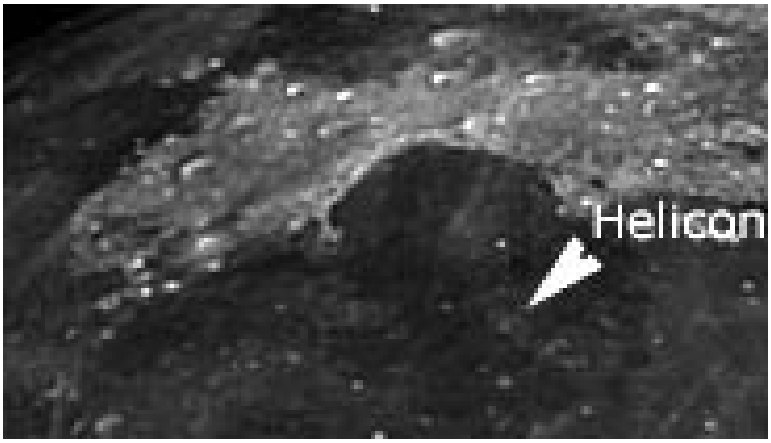


Figure 1. Helicon as indicated by the arrow from a mosaic taken by Maurice Collins 2010 Jul 25 UT 06:40-07:59. North is at the top.

Maurice Collins produced a mosaic of the Moon from images obtained on 2010 Jul 25 that matched the illumination in the 1979 Caruso LTP to within +/-0.5°. It is quite apparent that the area to the west of Helicon is not bright at all. So therefore if Helicon was correctly identified in the Caruso report, then it is perfectly normal that the area to the west should not be bright. Could this have been a misidentification with the bright craterlet Laplace A, just to the north of Helicon? If so then there is indeed a bright area to the west, but again this is perfectly normal. If anybody knows anything about this LTP observation, apart from what is in the Cameron catalog, then please let me know. Incidentally Helicon has featured in two earlier LTPs, one in 1787 and the other in 1788. Both of these were reports in Earthshine, describing the crater as a bright spot – however could these have been misidentifications with Laplace A? Incidentally I have checked through the routine observation database and can find no sketches that any one has made of this crater (on my list) – I wonder why this crater is so unpopular to observe?

LTP Reports: No LTP reports were received for July. However on 2010 Aug 19 UT00:50-01:02, Jay Albert (Lakeworth, FL) reported observing color in Tycho. Here are the report details, following a debriefing by email:

"Jay had been observing several targets on the Moon (UT 00:20-02:50) for repeat illumination observations. During a check on Tycho concerning a LTP report by Walter Haas from 1940 Jul 14, Jay saw none of what was originally described, however he did notice immediately a very faint hint of redness in a pencil thin arc (< 1/4 circumference of the rim) confined to the top of the rim of the well-lit north east wall. The colored arc was similar in thickness to the Straight Wall, but not as sharply defined. The outer east edge of the arc was perhaps sharper than the inner edge. The redness was more on the inside of the top of the rim. The outside of the rim was bright white. This effect was seen in three different eyepieces, at 311x, 224x and 400x. Jay checked other craters nearby but could not see this effect anywhere else. The color had disappeared by 01:02UT, fading over 1-2 minutes. Observation of Tycho continued until 01:06UT, but all seemed normal. Quick checks were made again on Tycho periodically until 02:50UT but the color was never seen again. Jay was using a C11 telescope, the Moon was 38° above the horizon, the transparency was 3, the seeing was 7-8, the temperature was 30C, and the humidity was very high. The ALPO/BAA weight for this observation I designated currently at a 3(?)"

Bill Dembowski, took a monochrome image at 01:25 UT (Figure 2 (Left)) and I have simulated spectral dispersion (spurious color) on this (Figure 2 (Right)). Although traditional atmospheric spectral dispersion is negligible at such a high altitude (38°), a past BAA LTP coordinator, Lawrence Fitton, speculated that one can also get this from an atmospheric pressure difference perpendicular to the line of sight (atmospheric path length) to the Moon. Upon showing the simulation to Jay he commented that although the red arc was approximately in the correct position, the length was wrong and the simulation showed plenty of color on other craters too, which he simply did not see. Therefore spectral dispersion does not appear to provide a satisfactory explanation. I should add that Maurice Collins (New Zealand) obtained some color images after 06:18 UT, however there was no color present

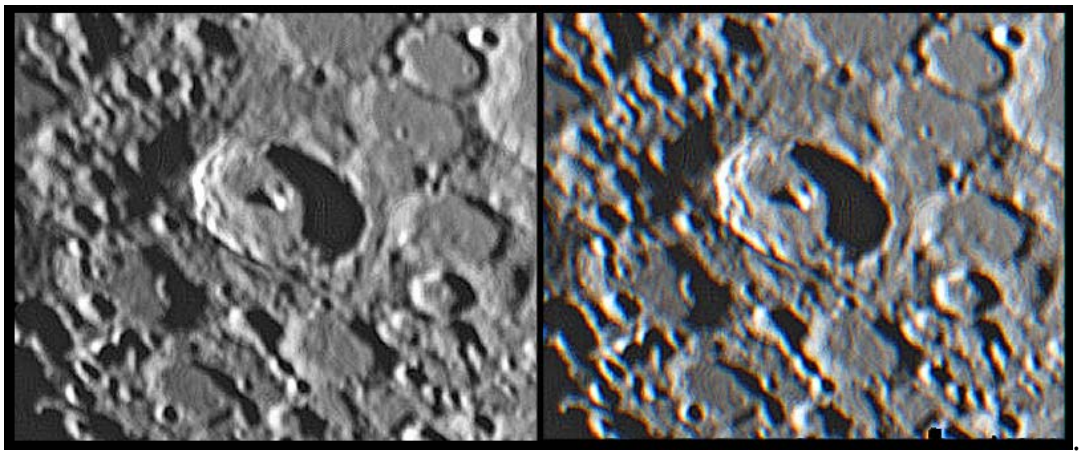


Figure 2 (Left) Section of Bill Dembowski's monochrome image from 2010 Aug 19 at UT 01:25 with north towards the top. **(Right)** "Simulated" spectral dispersion (spurious color) applied to the monochrome image.

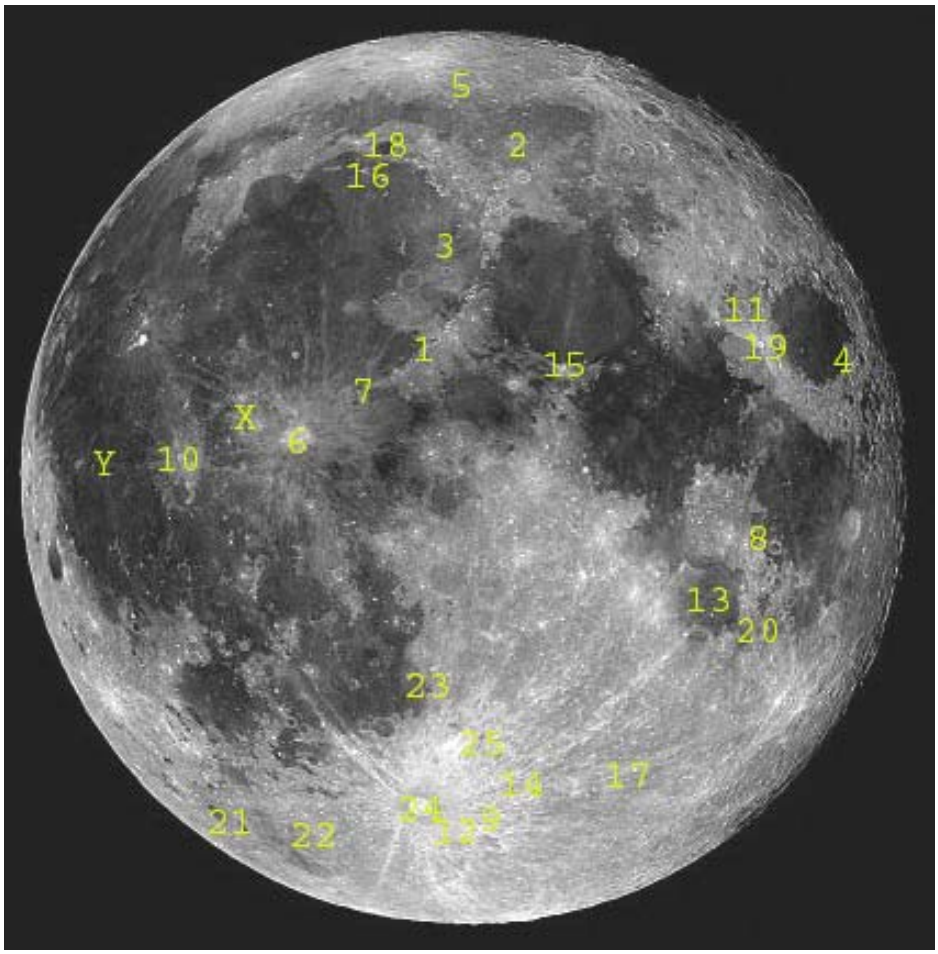
So please, if you were observing on 2010 Aug 19 around 00:50-01:02 UT, and have CCD images of the Moon, or sketches or detailed images of Tycho itself, then please email me copies so that we can check out Jay's observation. I am also especially interested in what the appearance of Tycho was before 00:50UT.

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

KEY TO IMAGES IN THIS ISSUE

1. **Appennine Mtns**
2. **Archimedes**
3. **Aristillus**
4. **Barker's Quadrangle**
5. **Barrow**
6. **Copernicus**
7. **Eratosthenes**
8. **Gutenberg**
9. **Heraclitus**
10. **Kepler**
11. **Macrobius**
12. **Maginus**
13. **Mare Nectaris**
14. **Maurolycus**
15. **Menelaus**
16. **Montes Teneriffe**
17. **Pitiscus**
18. **Plato**
19. **Proclus**
20. **Santbech**
21. **Schickard**
22. **Schiller**
23. **Thebit**
24. **Tycho**
25. **Werner**



FOCUS ON targets

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