ASSOCIATION OF LUNAR & PLANETARY OBSERVERS
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THE LUNAR OBSERVER

A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.
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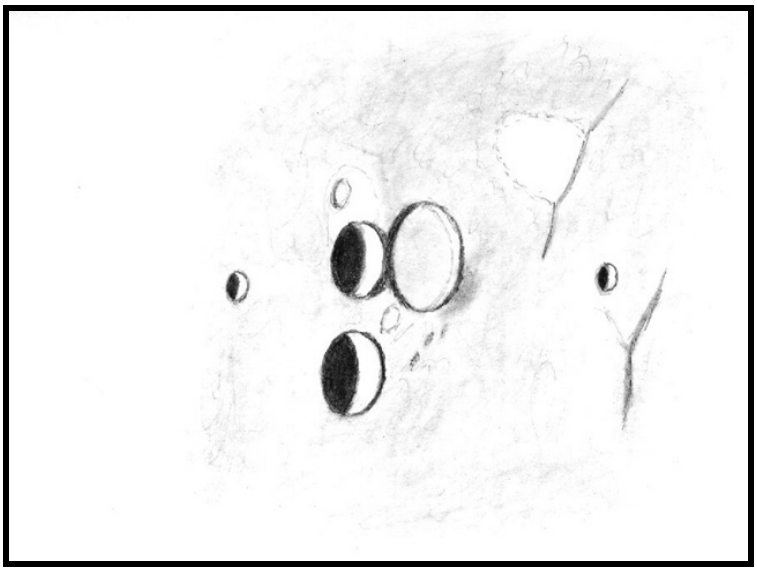
RECENT BACK ISSUES: http://moon.scopesandscapes.com/tlo_back.html

FEATURE OF THE MONTH – FEBRUARY 2011

LANGRENUS B, F, K



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
November 10, 2010 00:25-00:45 UT
15 cm refl, 136x, seeing 5/10

I observed this area on the evening of Nov. 10, 2010 while watching several occultations. These craters are a conspicuous, compact trio northwest of Langrenus. Langrenus F is the largest of this group. It is also much shallower than its neighbors as though it had been flooded by mare material. I saw no breaks in its rim, however. Langrenus K is immediately east of F. Its shadows and possibly its rim merges with those of Langrenus F. Langrenus B lies a short distance north of K, and is similar to it in size and depth. Langrenus B and K also have bright interiors. There is a relatively light area adjacent to the south side of Langrenus K, within which appears to be a shallow saucer. A small bright patch is in the midst of this trio. There is vague shadowing along the northwest side of Langrenus F, and perhaps some tiny pits to its north. These wavered

in and out of view, depending on the seeing. The conspicuous trio is flanked by Langrenus C to the east and Langrenus G to the west. These two craters are smaller versions of Langrenus B and K. There are short wrinkle ridges near Langrenus G, and an ill-defined light area extends eastward from one of them, southwest of Langrenus F.

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LUNAR CALENDAR

FEBRUARY 2011-MARCH 2011 (UT)

Feb. 01	17:00	Moon 3.5 Degrees N of Mercury
Feb. 03	02:00	Moon 4.5 Degrees NNW of Mars
Feb. 03	02:31	New Moon (Start of Lunation 1090)
Feb. 04	04:00	Moon 4.8 Degrees NNW of Neptune
Feb. 06	20:00	Moon 5.9 Degrees NNW of Uranus
Feb. 06	23:14	Moon at Apogee (405,923 km – 252,229 miles)
Feb. 07	04:00	Moon 6.3 Degrees NNW of Jupiter
Feb. 11	07:19	First Quarter
Feb. 13	09:00	Extreme North Declination
Feb. 18	08:36	Full Moon
Feb. 19	07:28	Moon at Perigee (358,246 km – 222,604 miles)
Feb. 21	12:00	Moon 7.5 Degrees SSW of Saturn
Feb. 24	23:27	Last Quarter
Feb. 25	22:12	Extreme South Declination
Feb. 27	09:00	Moon 3.9 Degrees S of Pluto
Feb. 28	00:00	Moon 0.88 Degrees SSE of asteroid 4 Vesta
Mar. 01	02:00	Moon 1.6 Degrees NW of Venus
Mar. 03	15:00	Moon 4.8 Degrees NNW of Neptune
Mar. 04	06:00	Moon 5.7 Degrees NNW of Mars
Mar. 04	20:46	New Moon (Start of Lunation 1091)
Mar. 05	13:00	Moon 6.0 Degrees NNW of Mercury
Mar. 06	04:00	Moon 5.7 Degrees NNW of Uranus
Mar. 06	07:51	Moon at Apogee (406,582 km – 252,638 miles)
Mar. 06	24:00	Moon 6.0 Degrees NNW of Jupiter
Mar. 12	17:06	Extreme North Declination
Mar. 12	23:45	First Quarter
Mar. 19	18:10	Full Moon
Mar. 19	19:10	Moon at Perigee (356,577 km – 221,567 miles)
Mar. 20	21:00	Moon 7.5 Degrees SSW of Saturn
Mar. 25	05:06	Extreme South Declination
Mar. 26	12:07	Last Quarter
Mar. 26	18:00	Moon 3.7 Degrees SSE of Pluto
Mar. 28	04:00	Moon 1.5 Degrees NW of asteroid 4 Vesta
Mar. 30	23:00	Moon 5.0 Degrees NNW of Neptune
Mar. 31	07:00	Moon 5.5 Degrees NNW of Venus

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: Central Peaks with Craters

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 2011** edition will be central peaks that have craters superimposed on them. Rik Hill pointed out three examples (Plinius, Walther & Regiomontanus), but there are others. 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 Central Peaks with Craters article is February 20, 2011

FUTURE FOCUS ON ARTICLES:

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

Alphonsus	**TLO Issue: May 2011**	**Deadline: Apr. 20, 2011**
Plato	**TLO Issue: July 2011**	**Deadline: June 20, 2011**

HYGINUS: A GRABEN OR A LAVA TUNNEL?

by Fred Corno

Lunar rilles most generally come in three flavors:

1. **Straight rilles:** linear features, often radially distributed around the mare basins. Their structure is compatible with that of a graben, a feature formed by sinking of a linear section of the crust between two parallel faults. On the Moon grabens often develop in correspondence with major impact stresses and related mantle uplift. Rima Ariadaeus is an example of this kind of landforms;
2. **Arcuate rilles:** smoothly curved fractures, developing in mare slabs mostly parallel to reliefs surrounding the basin. Their origin may be due to collapse and fracturing of the surface upon cooling and subsidence of the basaltic slab filling the mare cavity. Arcuate rilles feature parallel rims also. Typical arcuate rille systems are the Hippalus or Liebig around Mare Humorum;
3. **Sinuous rilles:** snake-like troughs running across the surface in a meandering pattern. They are mostly interpreted as volcanic landforms, related to surface lava flows or tunnels whose ceiling collapsed along time. They may connect small craters and pits, irregular in shape and not morphologically related to impacts. At one of their extremities a pool may be found, interpretable as a caldera or a lava source. When related to lava flows, sinuous rilles proceed from higher to lower ground. A typical example is Vallis Schroeteris in the Aristarcus district.

Other channel-like structures may be more complex and display patterns that are hybrids of those listed above. Among these, Hyginus is a very evident feature centered at 7.8°N, 6.3°E (Figure 1). The name is shared between a crater and a rille, the first marking the elbow of a major bent of the second. The rille is 200 km or so long, and up to 3 km wide.

The crater itself is diminutive: at 10.6 km in diameter, it is essentially featureless, to the point that it lacks even an evident rim, but it is surrounded by dark terrain and sports a flat bottom, very much to the same level of the rille crossing it E to W. It is then suspected to be an endogenous feature, as is at least a portion of the rille in both directions. The rille takes an abrupt turn at the crater, that divides it into two branches: the westermost section runs radial to Mare Imbrium roughly to the N-W, while the eastern section is close to a W-E direction. Near the crater, both branches show various oblong craterlets, centered on the rille itself, while farther from it the walls progressively become straighter until the rille fades in Mare Vaporum to the NW and the Ariadeus Rille region to the E.

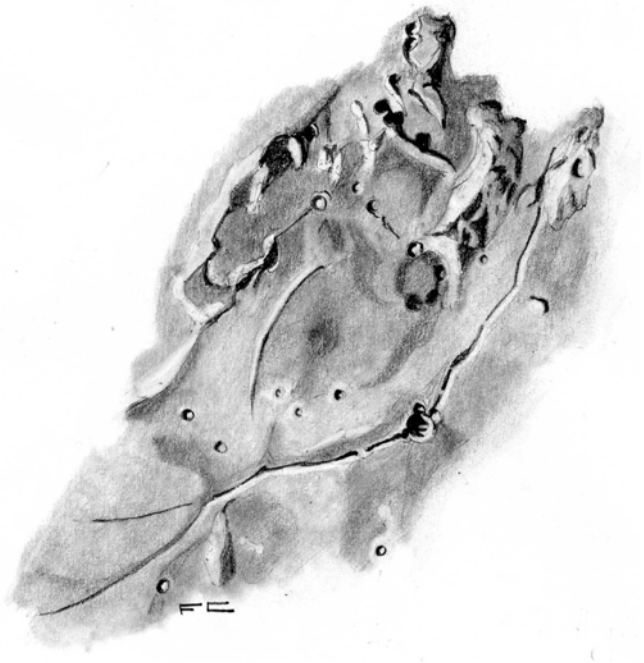

Figure 1: *Crater and Rima Hyginus. Observation of the author taken on the 14th of March 2008 at 21.00 UT. Seeing and transparency were good. Telescope used was a 5" apochromatic operated at 149 x. North is to the upper-left, East (IAU) to the lower-left.*

The interpretation given in Moon Geological Map I548 is not straightforward. The Hyginus region is emplaced in a patchwork of Cayley and Fra Mauro formations, along with patches of mare mantling lava. As reported in *The Geologic History of the Moon* by Wilhelms, the events causing the Hyginus rille system

may be related to the Procellarum and Imbric impacts. Uplifting of the mantle around the Procellarum basin may have caused faults to occur and graben to form. Furthermore, the rille may have further evolved along the Imbrian period, thus accounting for the clear cut observed in the material mantling the structure and the volcanic origin displayed by the principal crater and the close by pits and craterlets, mostly difficult to date on a simple stratigraphic basis.

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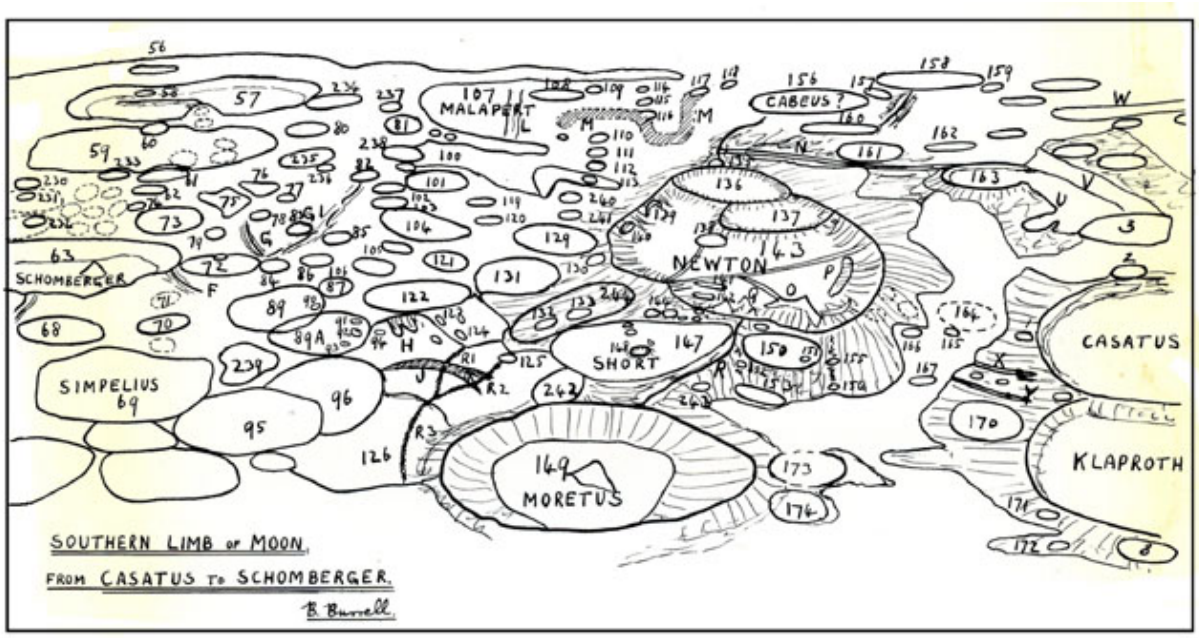
FIRST TO THE POLE?

by Phil Morgan



It is generally accepted that Ewen Whitaker was the first observer to chart the lunar south Polar Regions in any great detail. His charts that appeared in the JBAA 64, 6 (May 1954) are the first really accurate detailed maps to be published covering the whole southern limb region.

But some 20 years earlier Lunar Section stalwart Ben Burrell had already made a brave attempt at charting these difficult regions. While it is obvious that Burrell's chart (above) is not as detailed as Whitaker's, we should remember that Ewen had use of the 36-inch reflector and professional photographic equipment at the Royal Observatory Greenwich, Ben on the other hand, was working alone with his home made 8 ½-inch reflector. Considering that Ben Burrell had virtually nothing in the way of existing charts to help him find his way around this extremely challenging part of the Moon, I think that he did a remarkable job at plotting the key features that are so much better known to us today. He was obviously much impressed with the fortress-like outer ramparts of the compound crater Newton, and spent some time depicting this on his sketch to good effect. Just beyond he clearly shows the crater-valley S.334 and further south he questions his finding of Cabeus.

To the east (left) of Cabeus he clearly depicts Malapert, with the prominent peak Malapert Alpha

shown as the letter M (presumably for mountain) just to its right. At the far east (left) he draws two prominent craters and labels them 57 and 59. These are Amundsen and Scott respectively, though of course they were still unnamed at the time of Burrell's observations.

Between Scott and Malapert he draws several small craters that are associated with the plateau Leibnitz beta, though he doesn't appear to have recognised it as such. One of these small craters, labelled 81, is obviously Malapert E, and just to its left he finds the larger crater Scott M.

Beyond Malapert he depicts some more small craters. One labelled 108 that could be today's Shoemaker, and just to the south-west of this a smaller crater he charts 109 that could possibly be the actual south polar crater Shackleton.

Ben Burrel was in born in London on March 9 1903, but spent most of his life living in the Yorkshire town Doncaster. He gained his School Certificate in 1918 and moved on to the Technical College were he was awarded the National and the City and Guilds of London certificate of mechanical Engineering in 1924.

He was elected to the BAA in 1932, and became a Fellow of the RAS two years later. He was an early experimenter with colour photography, and was the very first person to successfully photograph the totally eclipsed Moon in colour. His pictures were shown on all the cinema screens in the country and in newsreels, which were popular features in those days. He was appointed the post of chief technical photographer for the London and North Eastern railways, a post he held until his retirement in 1968. He was a keen lunar observer and extremely proficient at sketching its surface features, but was also assistant Director to the Mars Section, where he had a keen interest in Martian 'dust storms' and changes in the physical appearance of the planet. He communicated with (and probably met) many of the leading amateur astronomers of the time such as Walter Goodacre, H. P. Wilkins, R. Barker, L.F. Ball, E.F. Emley and R.E.Diggles. Ben Burrell became a prominent member of the Leeds Astronomical Society, and served a term as its President. He married in 1934 and had two daughters. He died at the age of 80 on September 27, 1983 after 51 continuous year's service to the BAA.

Left: *Ben Burrell with his home made 8 1/2-inch Newtonian reflector. Image courtesy of Dr. Richard Mckim.*

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 3, 4, 7, 9, 10, 20 & 24 day moon, Full Moon, Clavius, Copernicus, Earthshine on 4 day moon (2), Kant Plateau, Mare Australe, & Plato.

FRED CORNO – SETTIMO, TORINESE, ITALY. Drawing of Rima Hyginus.

HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Archytas, Hyginus, Janssen, Mare Australe (2), Montes Caucasus, Mutus-Vlacq, Northwest Moon, Petavius B, Plinius, Sacrobosco, Southern Moon, Stofler, plus 2 composites made from these images.

MARK HARDIES – NEW PORT RICHEY, FLORIDA, USA. Digital images of Mare Humorum & Plato during & leaving eclipse (6).

ROBERT WLODARCZYK – CZESTOCHOWA, POLAND. Drawing of Goddin-Agrippa-Dembowski.

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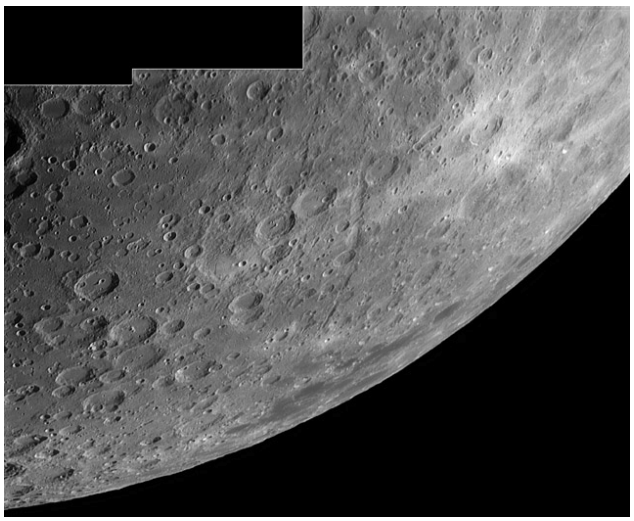
RECENT TOPOGRAPHICAL OBSERVATIONS

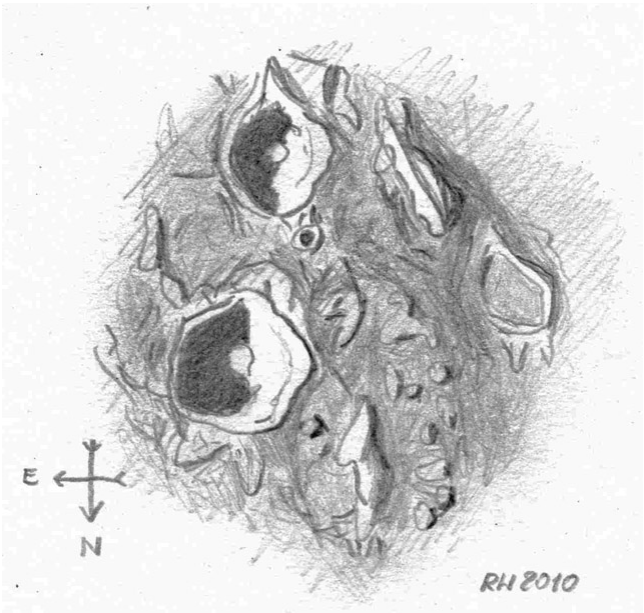
KANT PLATEAU - Maurice Collins-Palmerston North, New Zealand. January 24, 2011 18:45 UT. C8, Seeing A-II/A-III in daylight.

RECENT TOPOGRAPHICAL OBSERVATIONS



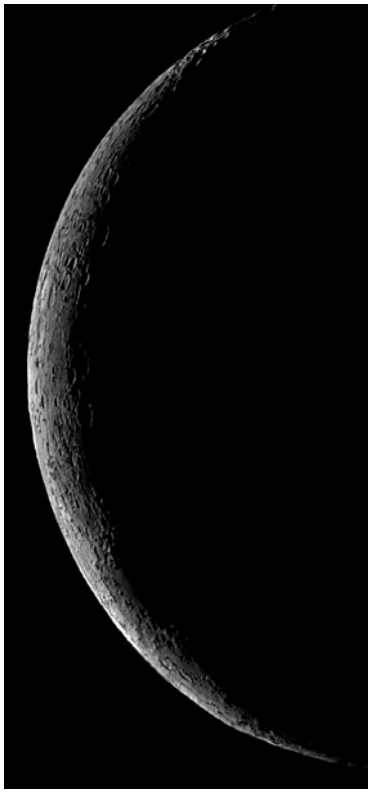
MARE AUSTRALE - Howard Eskildsen-Ocala, Florida, USA. January 11, 2011 23:44 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific lens refractor, 2x barlow, DMK 41AU02 AS, no filter.

MARE HUMORUM – Mark Hardies-New Port Richey, Florida, USA. December 17, 2010 00:20 UT. Seeing 7/10, Transparency 5/6. Colongitude 42.0º. C-8 SCT f/10, Nextimage. North-upper right, East-upper left.

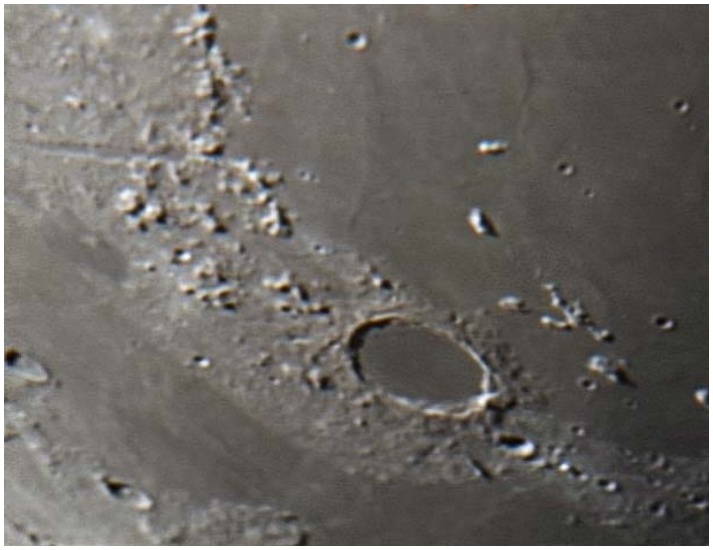


GODIN, AGRIPPA & DEMBOWSKI – Robert Wlodarczyk-Czestochowa, Poland. November 13, 2010 18:00 UT. Seeing 6/10, Transparency 7/10. 12 cm Newtonian, f/7.5, 160x.

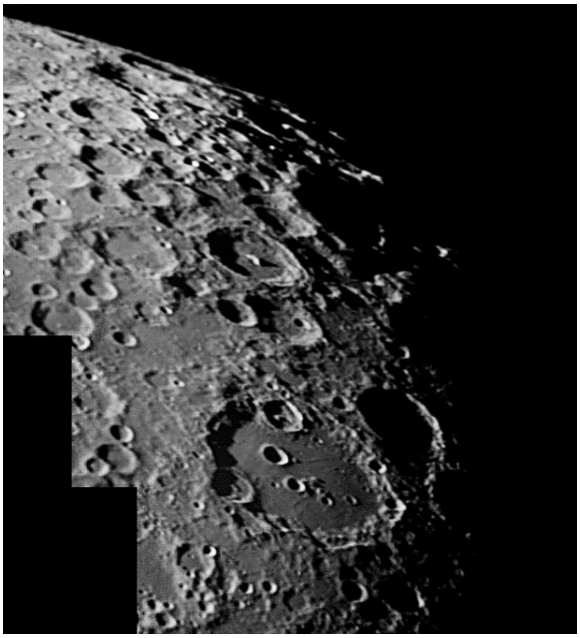
ADDITIONAL TOPOGRAPHICAL OBSERVATIONS



3 DAY MOON - Maurice Collins-Palmerston North, New Zealand. January 7, 2011 07:58-08:15 UT. C8, LPI.

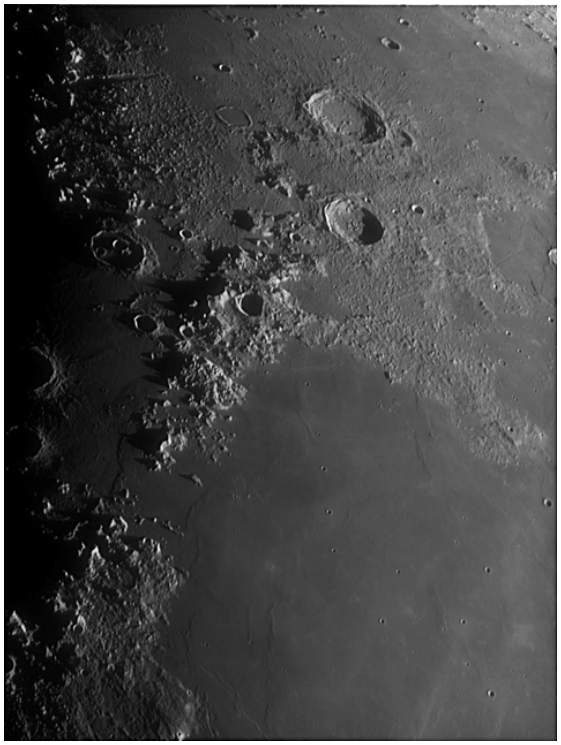


PLATO - Maurice Collins-Palmerston North, New Zealand. January 14, 2011 09:11 UT. C8, 2x barlow.

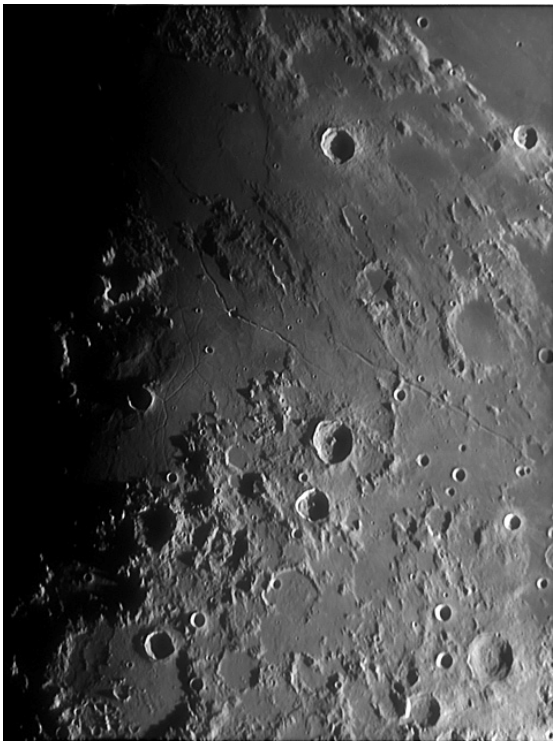


CLAVIUS - Maurice Collins-Palmerston North, New Zealand. January 14, 2011 08:53-09:00 UT. C8,2x barlow, LPI.

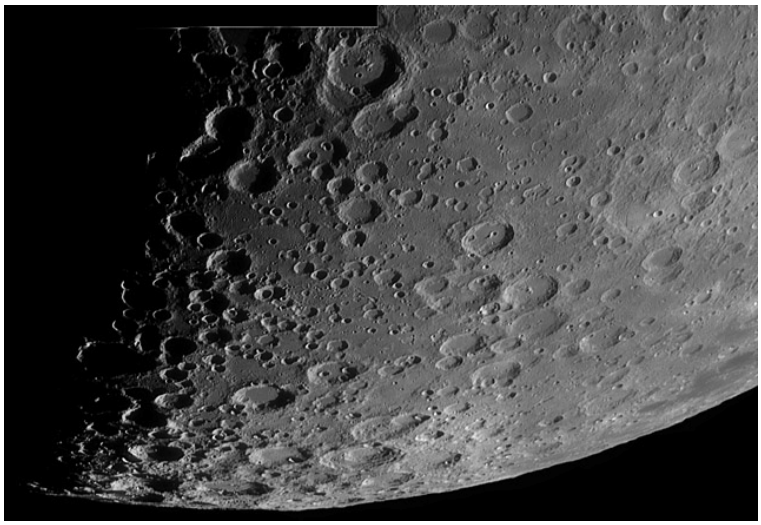
ADDITIONAL TOPOGRAPHICAL OBSERVATIONS



MONTES CAUCASUS - Howard Eskildsen-Ocala, Florida, USA. January 11, 2011 23:23 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific lens refractor, 2x barlow, DMK 41AU02 .AS, no filter.



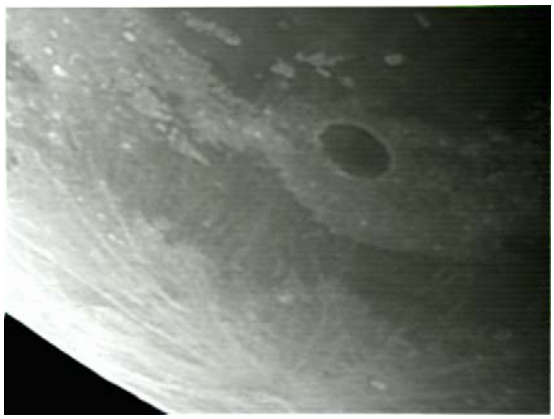
HYGINUS - Howard Eskildsen-Ocala, Florida, USA. January 11, 2011 23:30 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific lens refractor, 2x barlow, DMK 41AU02 .AS, no filter.



MUTUS-VLACQ - Howard Eskildsen-Ocala, Florida, USA. January 11, 2011 23:40 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific lens refractor, 2x barlow, DMK 41AU02 .AS, no filter.

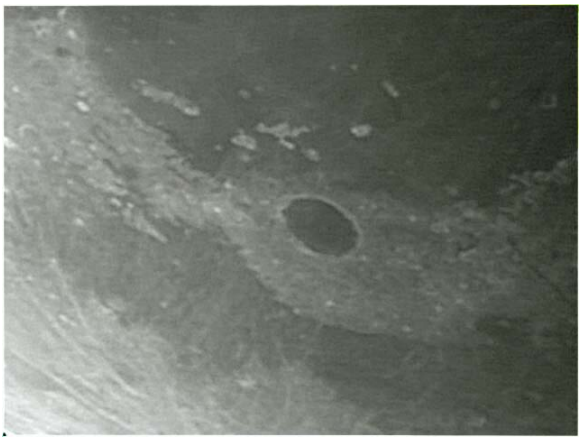
ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

PLATO EXITING ECLIPSE – Mark Hardies-New Port Richey, Florida, USA. December 21, 2010 09:18 UT. Seeing 9/10, Transparency 5/6. Colongitude 95.2º. C-8 SCT f/10, Nextimage. North-lower left, East-lower right.

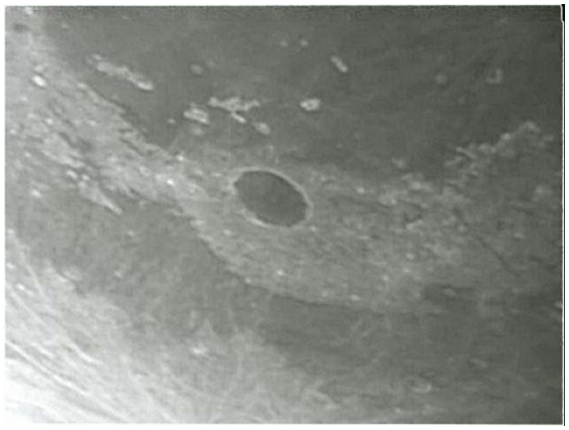


PLATO EXITING ECLIPSE – Mark Hardies-New Port Richey, Florida, USA. December 21, 2010 09:22 UT. Seeing 9/10, Transparency 5/6. Colongitude 95.2º. C-8 SCT f/10, Nextimage.

Editor's Note: Note the narrow, dark shadow band inside the southwest rim, which is visible even at this small phase angle.



PLATO EXITING ECLIPSE – Mark Hardies-New Port Richey, Florida, USA. December 21, 2010 09:30 UT. Seeing 9/10, Transparency 5/6. Colongitude 95.3º. C-8 SCT f/10, Nextimage.



PLATO EXITING ECLIPSE – Mark Hardies-New Port Richey, Florida, USA. December 21, 2010 09:36 UT. Seeing 9/10, Transparency 5/6. Colongitude 95.3º. C-8 SCT f/10, Nextimage.

BRIGHT LUNAR RAYS PROJECT

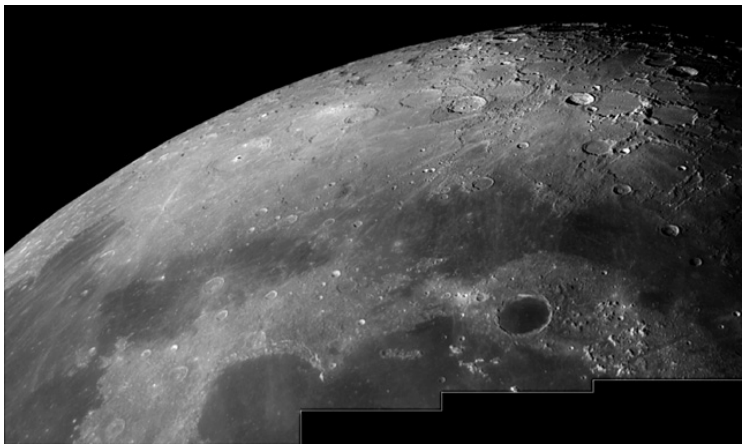
Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

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

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

RECENT RAY OBSERVATIONS

7 DAY MOON (right) - Maurice Collins-Palmerston North, New Zealand. January 11, 2011 07:34-08:34 UT. Seeing A-III, C8, LPI.



NORTHWEST MOON (above) - Howard Eskildsen-Ocala, Florida, USA. January 23, 2011 10:48 UT. Seeing 8/10, Transparency 5/6. 6" f/8 Explore Scientific lens refractor, 2x barlow, DMK 41AU02 .AS, W-15 Yellow filter.

PETAVIUS B (right) - Howard Eskildsen-Ocala, Florida, USA. January 11, 2011 23:49 UT. Seeing 7/10, Transparency 4/6. 6" f/8 Explore Scientific lens refractor, 2x barlow, DMK 41AU02 .AS, no filter.

LUNAR TRANSIENT PHENOMENA

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

LTP NEWSLETTER – FEBRUARY 2011

Dr. Anthony Cook - Coordinator

Observations for Dec 2010 were received from the following observers: Jay Albert (Lakeworth, FL, USA) observed: Alphonsus, Aristarchus, the lunar eclipse, Plato, Proclus, Tycho, and several other features. Maurice Collins (New Zealand) observed Bailly, the lunar eclipse, Mare Nectaris, Theophilus, and took whole Moon images. Marie Cook (Mundesley, UK) observed Alphonsus, Aristarchus, Atlas, Copernicus, Daniell, Endymion, Herodotus, the lunar eclipse, Theophilus, Mare Tranquilitatis, Messier, Peirce, and several other features. Myself (Aberystwyth University Robotic Telescopes and from Newtown) observed Earthshine.

News: There are to be two LTP related abstracts/posters at this year's Lunar and planetary Science Conference in Houston (March 7-11). One abstract is concerning a study looking for a correlation between gravitational tides and LTP events. The other abstract is about searching for changes on the lunar surface using old Lunar Orbiter images and more recent LRO images. More about this next month, suffice to say that the first abstract utilizes results from your own routine observations sent in, as well as all of the LTP records to date.

Routine Reports: On 2010 Dec 11th, Marie Cook (Mundesley, UK) examined Theophilus at 17:20UT to check out the appearance of the crater that matched a LTP seen by Firsoff in 1955 Jun 25. She noted that the central peak was sharp, the crater was quite clear and there was no sign of any blueness. By contrast here is the original LTP report from Firsoff from 55 years ago, as described in the 1978 NASA catalog by Cameron:

Theophilus 1955 Jun 25 UTC 20:30 Observed by Firsoff (Somerset, UK, 6.5" reflector, x240) "Blue mist. Both c.p. & ENE (IAU?) ridge appear misty, slightly bluish & milky -- renders effect perfectly. Absent next nite". NASA catalog weight= 4 (high). NASA catalog ID #596. ALPO/BAA weight=3.

On 2010 Dec 21 there was a total lunar eclipse. Alas I was clouded out from Wales, but Marie Cook managed to take some hand held digital camera images from the other side of the UK. Observers outside the UK faired better, with Jay Albert (USA) observing from UT 07:30-09:50 and Maurice Collins (New Zealand) at UT10:07, 10:16, and 10:34. Several LTPs have been seen during past lunar eclipses, so it was interesting to see if some of the effects repeated, i.e. were just normal appearances. I have always wondered though about the reliability of many LTP reports during eclipses as it all seems rather subjective to me if someone says that a crater was brighter than normal in the Earth's shadow, when in fact we can make no assumptions that the shadow is isotopic in density in the first place, or that they are expert in knowing how features look normal in a time variant density shadow. Anyway here are a small selection of comments from Jay Albert, and in italics the original LTP reports – you may judge for yourselves the merit of the original LTPs concerned:

"Tycho [297]- At mid eclipse, I couldn't see surface details of the crater either, however, I could see Tycho's rays in the S, SW, NW and NE directions (not just SW). The NW ray was definitely the brightest of the bunch. Tycho itself was seen as a circle with no detail in the interior or the walls at 167x."

On 1898 Jan 08 at UT 00:00-01:00 Chrevremont (France?) noticed that during a lunar eclipse, the mid-eclipse shadow was so dark that details of the surface disappeared, all except for the Tycho SSW ray. Cameron comments that it is unusual for that ray to remain when usually the ones towards

Kepler and Aristarchus are the ones to stand out? The Cameron 1978 catalog ID=297 and the weight=0. The ALPO/BAA weight=1.

Lunar Eclipse [413]- I didn't notice a fading of Grimaldi's floor or S part of Riccioli or any enlargement of Linne at either 38x or 167x."

In 1935 Jul 16 at UT 05:01 deWitt (Nashville, Tennessee, USA, 12" reflector) "Photos in lunar ecl. indicate a probable fading of Grim. floor a possible fading of S. tip of Ricc. spot, a possible enlargement of halo around Linne, a possible, but unlikely darkening of Schick's dark areas & no effect on Eratosthenes or white spot E. of Webb. Linne enlargement more pronounced at 1902 ecl. than at any other time. Fading of Ric. spot was pronounced on May 14, 1938". The Cameron 1978 catalog ID=413 and weight=5. The ALPO/BAA weight=3.

"Riccioli [774]- I failed to pay attention to Riccioli as it entered the umbra, but I did notice that the NW part of the floor became brighter as it exited the umbra, making the dark part of the floor appear to become smaller, even though the actual size didn't change. Used 214x."

On 1963 Jul 06 at UT 21:00 (estimated) Chernov (Russia) observed that the dark spot in Riccioli size increased suddenly during a lunar eclipse as it entered the shadow, before merging with the shadow. The mid eclipse was at 22:03UT. The Cameron 1978 catalog ID=774 and weight=1. The ALPO/BAA weight=1.

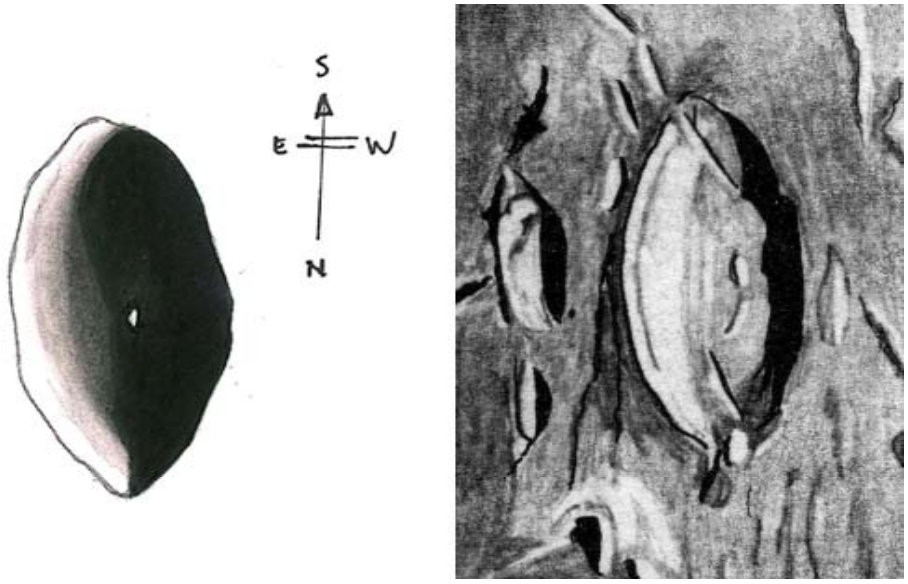


Figure 1. **(Left)** sepia tinge suspected by Longshaw on a sketch made from memory after the observation. **(Right)** sketch made by Elger (1885 Sep 25 UT 21:30-22:15) where sepia was also seen – alas not shown in color here.

LTP Reports: No LTPs were reported in December, however on 2011 Jan 21 at 22:30 UT, Nigel Longshaw (UK), using a 4" Achromat refractor at x128 and x160, under III Antoniadi scale seeing and average transparency, suspected a hint of brown (almost sepia) on the eastern rim of Geminus (See figure 1 left). Now this is exactly the effect that we would expect to see from chromatic aberration in the optics, or due to spectral dispersion in our atmosphere. However Nigel checked other craters, including: Petavius, Apollonius, Messala, and Cleomedes, but could not see this effect elsewhere; he also makes no mention of chromatic aberration blue on the opposite side of the crater. Furthermore his scope is fitted with a filter that reduces the effect of any chromatic aberration, and gives the Moon a slight yellowish cast. He mentioned that T.G. Elger claimed to have seen color too associated with this crater in the past, and here is a quote from one of Elger's 1885 skecthes (Figure 1 – right) *"I have used sepia in coloring the neighbourhood surrounding this ring-plain, as this is the only tone which truly represents the actual color, at least at this stage of illumination."* Now Elger's sketch is made at quite a different colongitude to Nigel's drawing, and Elger refers to color surrounding the crater, and not inside. I asked Nigel what LTP weight he would give

and he was hesitant, possibly because it might be natural surface color. Therefore I will assign a temporary low weight of 1 to this report until we get some repeat illumination observation that confirms that it is surface color! Incidentally, Geminus does not crop up in any LTP catalogs that I am aware of, but we also appear to have very few routine observations of this crater either.

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 .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! Twitter LTP alerts can be accessed on http://twitter.com/lunarnaut - currently 21 followers.

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KEY TO IMAGES IN THIS ISSUE

1. **Clavius**
2. **Godin**
3. **Hyginus**
4. **Kant**
5. **Langrenus**
6. **Mare Australe**
7. **Mare Humorum**
8. **Montes Caucasus**
9. **Mutus**
10. **Petavius**

FOCUS ON targets

X = Alphonsus (May)
Y = Plato (July)