THE LUNAR OBSERVER

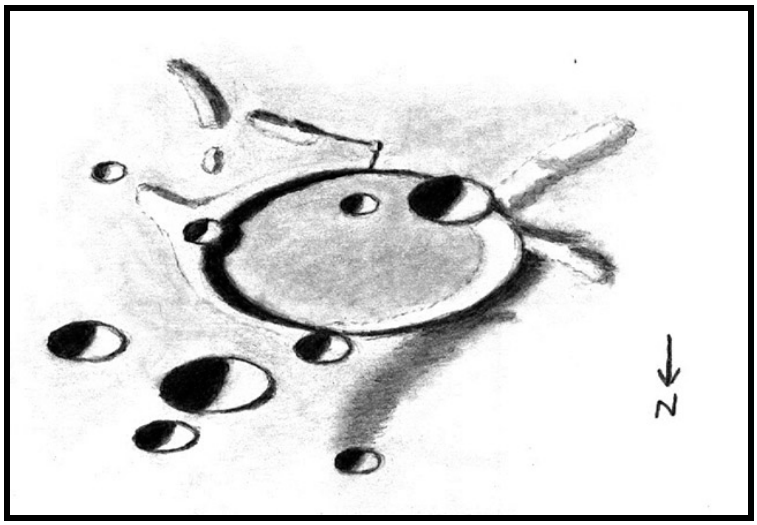
A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.

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 2013

EUCTEMON



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
May 19, 2013 03:50-04:00, 04:12-04:32 UT, 15 cm refl, 170x, seeing 6-7/10

I drew this crater and vicinity on the evening of May 18/19, 2013 while watching the moon hide three stars. This crater is well north of Mare Frigoris, normally near the limb. It was more favorably placed for observation than usual that evening. Euctemon is a fairly large, flat-floored crater with several deep, crisp craters near and within it. Euctemon H is the substantial crater mostly within the southwest rim of Euctemon. The smaller crater Euctemon K is entirely within the south rim of Euctemon, and Euctemon N is the similar crater on Euctemon's west edge. I did not note any other detail on Euctemon's floor. Another small crater is southeast of Euctemon N near the tip of a projecting ridge. This crater may not be as deep as N. Several other ridges and peaks are south of Euctemon K and N. Two other ridges protrude from the rim near Euctemon H. The southern one is longer and wider, but has lighter shadowing than the northern one. North of these ridges, the west rim of Euctemon has fuzzy, almost ragged exterior shadow. The shadowing inside the east rim of Euctemon, however, was darker and appeared smoother and more even except for a bulge from Euctemon N. The largest crater north of Euctemon is Euctemon D, and Euctemon C is probably the one to

the east of D(The Lunar Quadrant map shows C about the size of D, but I didn't see it that way). A smaller crater abuts the north rim of Euctemon, and two more craters are farther north. All five of these craters are very similar in general appearance, differing only in size. A fuzzy strip of shadow extends southward from the northernmost crater shown, and merges with the similar-appearing west side shadowing of Euctemon.

****

LUNAR CALENDAR

OCTOBER-NOVEMBER 2013 (UT)

Oct. 01	02:00	Moon 6.4 Degrees SSW of Mars
Oct. 05	00:33	New Moon (Start of Lunation 1123)
Oct. 06	24:00	Moon 2.8 Degrees NNE of Mercury
Oct. 07	02:00	Moon 2.0 Degrees SW of Saturn
Oct. 08	14:00	Moon 4.6 Degrees N of Venus
Oct. 09	23:54	Extreme South Declination
Oct. 10	23:07	Moon at Perigee (369,811 km – 229,790 miles)
Oct. 11	05:00	Moon 2.0 Degrees NW of Pluto
Oct. 11	23:03	First Quarter
Oct. 13	05:00	Moon 1.2 Degrees WSW of asteroid 3-Juno
Oct. 15	02:00	Moon 5.5 Degrees NNW of Neptune
Oct. 17	21:00	Moon 3.3 Degrees N of Uranus
Oct. 18	23:36	Full Moon (Penumbral eclipse of Moon)
Oct. 23	09:18	Extreme North Declination
Oct. 25	14:26	Moon at Apogee (404,560 km – 251,382 miles)
Oct. 25	21:00	Moon 5.0 Degrees S of Jupiter
Oct. 26	23:41	Last Quarter
Oct. 29	21:00	Moon 6.1 Degrees SSW of Mars
Nov. 03	05:00	Moon 1.3 Degrees WNW of Mercury
Nov. 03	12:48	New Moon (Start of Lunation 1124)
Nov. 03	12:48	Annular eclipse of Moon
Nov. 03	19:00	Moon 1.9 Degrees SSE of Saturn
Nov. 06	06:48	Extreme South Declination
Nov. 06	09:29	Moon at Perigee (365,361 km – 227,025 miles)
Nov. 06	24:00	Moon 8.0 Degrees N of Venus
Nov. 07	14:00	Moon 1.9 Degrees N of Pluto
Nov. 10	05:58	First Quarter
Nov. 11	06:00	Moon 5.5 Degrees NNW of Neptune
Nov. 14	00:00	Moon 3.2 Degrees NNW of Uranus
Nov. 17	15:15	Full Moon
Nov. 19	17:18	Extreme North Declination
Nov. 22	03:00	Moon 5.0 Degrees SSW of Jupiter
Nov. 22	09:51	Moon at Apogee (405,445 km – 251,932 miles)
Nov. 25	19:29	Last Quarter
Nov. 27	13:00	Moon 5.4 Degrees SSW of Mars

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 nonmember 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 is on-line at: **http://www.alpoastronomy.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.

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 be included (**Bold items are required)**:

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

Additional commentary accompanying images is always welcome.

CALL FOR OBSERVATIONS:
FOCUS ON: Schickard-Wargentin

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 2013** edition will be **the Schickard-Wargentin area.** Observations at all phases and 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 to your observing list and send your favorites to:

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

Deadline for inclusion in the Schickard-Wargentin article is October 20, 2013

FUTURE FOCUS ON ARTICLES:

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

Subject	TLO Issue	Deadline
Aristarchus	**January 2014**	**December 20, 2013**

PHILLIP MORGAN

I only recently learned of the passing of one of our most active visual lunar observers, Phil Morgan, on July 25, 2013. Phil died peacefully, after a long illness, at age 64. He was a prolific contributor to the ALPO Lunar Section. In addition to his drawings, executed in a stipple technique, he also contributed a short tutorial on lunar drawing to the April 2009 issue of The Lunar Observer. Despite his illness, which he never mentioned, he continued observing. His most recent contribution was received in March. Phil was a livestock farmer in Worcestershire, England, a very demanding job, so it's remarkable that he found so much time for observing. He will be missed.

I only knew Phil through correspondence concerning his submissions to the TLO, so with the kind permission of Bill Leatherbarrow, director of the BAA's Lunar Section, I am including the tribute he has written for the BAA's Lunar Section Circular.

FROM THE DIRECTOR [October 2013]

I fear I must introduce this issue of the LSC with the saddest of news. Phil Morgan, one of our most experienced and gifted visual observers, passed away on 25 July 2013 after a long illness bravely fought. He was 64 years old and had been an active and prolific observer of the Moon since the 1960s. His observational drawings have graced many pages of the *Lunar Section Circular* and, in the past, of the Section bulletin *The New Moon*. Phil also contributed to the first two issues of the new Section publication *The Moon: Occasional Papers of the BAA Lunar Section*. He was taken ill last year, but continued his observational activities despite the seriousness of his condition.

Phil's loss is a major blow to the Lunar Section, to the BAA and to the world of lunar observation. His work reached a wide audience and it featured regularly on the *Lunar Picture of the Day* website. The sheer number of fine drawings he produced over the years beggars belief, and I sincerely hope that steps will be taken to secure his observational legacy. I am in the process of trying to contact Phil's family in order to express the condolences of the Section.

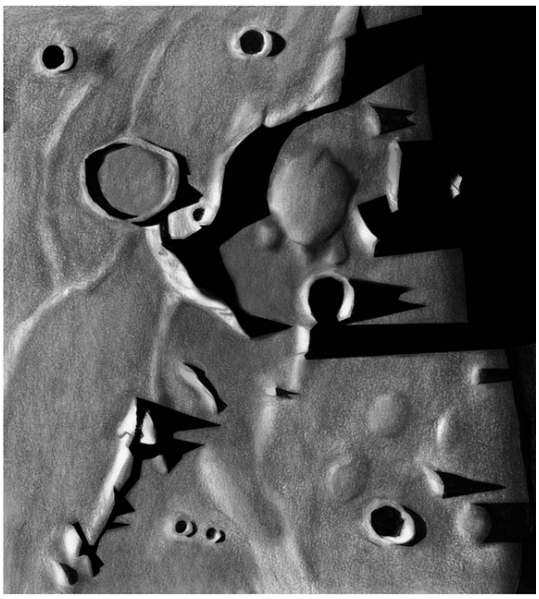
Phil was an 'old-school' lunar observer who liked nothing more than addressing long-standing topographical questions. His model in this regard was Harold Hill, whose commitment to long hours at the telescope Phil followed and whose techniques of representation he adopted. In particular, Phil became a master of the stippling method used by Harold, and he was able to use that most difficult and unforgiving of techniques to produce renderings of the lunar surface that were both artistic and realistic. However, artistry alone was never enough for Phil: his drawings also reveal acuity of vision, sound observational judgement, and an almost uncanny accuracy in the placement of topographic features. In tribute to his skills I attach one of his fine renderings of Gassendi, drawn in 2011.

There is no doubt that Phil Morgan was one of the leading selenographers of his day, and we shall sorely miss both him and his work. Those of us who corresponded regularly with him will also miss a much-valued friend and colleague.

Jansen, Cajal And The Dome Cajal 1

Peter Grego

An observation of sunset over the fascinating and much-neglected dome field near Jansen (23 km) in northwestern Mare Tranquillitatis. Jansen, slightly polygonal in appearance, was some distance from the terminator; its western rim cast a narrow shadow but most of the crater's dark, smooth-looking floor was illuminated, and appeared darkest in the upper northeastern corner at the foot of the inner eastern wall. Low ridges extended both north and south of Jansen across the mare, and another ran around Jansen in the west, some distance (around 10 km) from the crater's rim. To the northeast, near the top of the area depicted, lay the small crater Cajal L, its interior full of shadow. To the northwest of Jansen, in the upper left corner of the area depicted, was a similar-sized but unnamed crater whose floor was shadow-filled. To the east of this crater appeared a dusky patch that wasn't full shadow, perhaps an area of rough terrain or lower albedo. East of Jansen was the prominent curve of Dorsum Barlow which cast a broad shadow to the east. There appeared to be a trace of Rima Jansen cutting across the dorsum but it was not observed across the mare itself. Running south of Jansen was a more prominent mountain spine that extended southeast by around 35 km. The dorsum and ridge formed what looked like the western wall of a large but disintegrated irregular crater east of Jansen whose floor was occupied by a large dome, roughly the size of Jansen, with three smaller domes appended to its southern edge. This striking feature was the dome Cajal 1 (it used to be called Jansen F 1, and Jansen F was renamed Cajal in 1973). Cajal 1 appeared rather smooth and rounded, slightly polygonal in outline and darkly shadowed on its eastern slopes in the setting Sun; there appeared to be some structure to it , with a slight depression running across its northern slopes. Three elongated ridges or elevations lay to the east of Cajal 1, the nearest and brightest running southeast from the 4 o'clock position on the dome's base, a north-south ridge further east adjoining the terminator and the third to the north of this ridge, around 15 km from the dome's base; the latter ridge cast a shadow that nearly touched the terminator. The crater Cajal (9 km) itself, which lay south of the dome Cajal 1, had a floor completely covered by shadow but its inner eastern wall was bright. Cajal cast a prominent shadow to its east which didn't quite reach the terminator. Immediately to the southwest of Cajal was a small peak that cast a long, broad shadow to the terminator. The southern half of the observational drawing takes in the eastern wall of the large unnamed flooded crater east of Carrel (Carrel lay just outside the area drawn, to the lower left), a prominent ridge whose northern tip was connected with the previously-mentioned mountain spine to the southeast of Jansen by a low north-south ridge. Low dorsa occupy the central southern portion of the area depicted, including the little craters Jansen W and its smaller partner. Four low domes were observed in the vicinity of Sinas E, along with a peak to the crater's northeast that cast a pointed shadow towards the terminator. It's worth mentioning that the terminator here appeared rather linear and seemed to lie along the shadow cast by a low ridge (although perhaps this is not depicted clearly in the sketch). Additionally, the placement of Sinas E in the drawing is a little further north than it actually is. The observation, a 10 x 12 cm pencil sketch made at the eyepiece, was immediately scanned and transformed into the finished drawing in PhotoPlus X2 by darkening and defining the shadows more clearly and removing any obvious errors in the original sketch that could not be attended to in the field.



JANSEN-CAJAL *– Peter Grego, St. Dennis, Cornwall, UK. August 26, 2013 UT. 00:30-01:30 UT. Seeing AII, good, clear, dew towards end of session. Colongitude 146.7-147.2°. 200mm SCT, 200x, integrated light.*

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 image of Cleomedes-Geminus.

MIKE BOSCHAT – HALIFAX, NOVA SCOTIA, CANADA. Digital image of Schickard-Wargentin.

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 9(2), 10 & 11 day Moon, Aristarchus(2), Clavius, Copernicus, Gassendi, Oceanus Procellarum & Tycho(4).

HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Aristarchus, Dechen-Naumann, Eratosthenes-Motes Apenninus, Fontenell-Mouchez, Mare Imbrium, Mons Vinogradov-Natasha, Montes Recti, Pascal-Sinus Iridum & Western Procellarum rays.

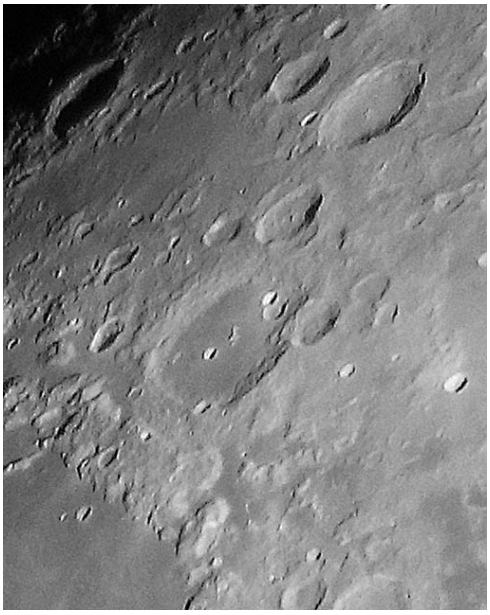
PETER GREGO – ST. DENNIS, CORNWALL, UK. Drawing of Jansen.

RICHARD HILL – TUCSON, ARIZONA, USA. Digital images of Aristarchus(12), Schickard(2) & Stoffler-Heraclitus..

MARNIX PRAET – STEKENE, BELGIUM. Digital images of Aristarchus(2) & Schickard.

****

RECENT TOPOGRAPHICAL OBSERVATIONS



.

CLEOMEDES-GEMINUS – Jay Albert, Lake Worth, Florida, USA. September 21, 2013 04:24 UT. C-11, f/10, afocal, 9mm eyepiece, HTC One smartphone.

I took this, among others, with my C11 and HTC One smartphone attached to a 9mm orthoscopic eyepiece held in place with Orion's new Universal Telescope Photo Adapter for Smartphones. Although I can take videos with the HTC One, I chose to use smaller files and took a few to several single shots of each feature I wanted to capture. After uploading the photos to my computer the next day, I selected the best frame for each feature and processed it in Photoshop Elements 9.0. I had to crop each photo due to vignetting, then I adjusted the brightness, contrast and sharpness. In some cases, as in the attached, I then converted the frame to black & white. Although I expect to continue using my Celestron Neximage 5 Solar System Camera as my primary lunar and planetary camera, it's nice to know that I can set up and image without taking the Neximage 5 and a laptop computer with me.

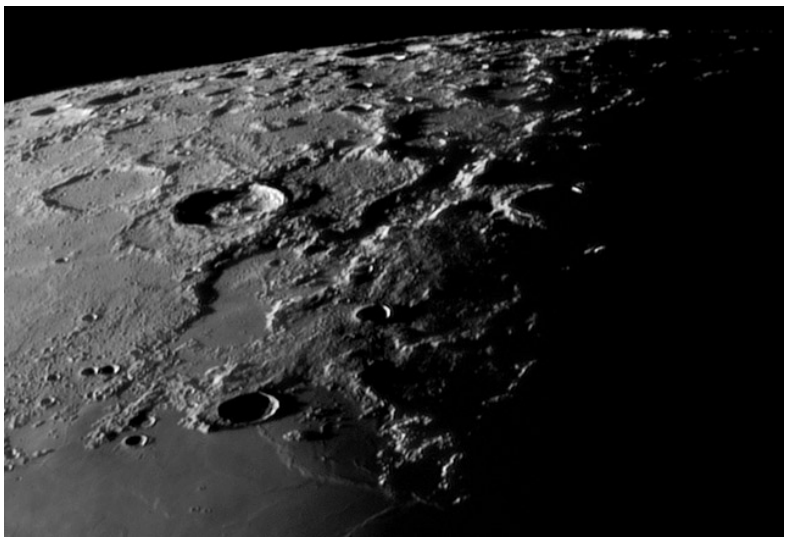
RECENT TOPOGRAPHICAL OBSERVATIONS

SCHICKARD-WARGENTIN – Mike Boschat, Halifax, Nova Scotia, Canada. September 14, 2013 23:30 UT. Seeing 6/10, transparency 5/6. C8, f/10, Phillips SPC900NC.

.

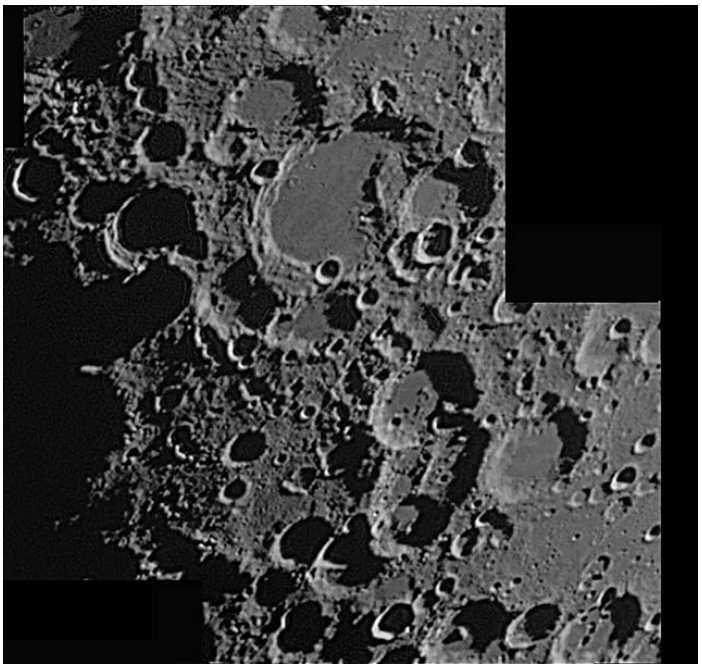
GASSENDI - Maurice Collins-Palmerston North, New Zealand. September 16, 2013 08:24 UT. C-8, f/30(3x barlow). North down.

FONTENELLE-MOUCHEZ - Howard Eskildsen-Ocala, Florida, USA. August 29, 2013 09:35 UT. Seeing 9/10, Transparency 6/6. 6" f/8 refractor, Explore Scientific lens, 2x barlow, DMK 41AU02.AS, IR block & V block filters.



From the wide, battered crater, Mouchez, near the upper part of the photo to the right of center, there are shadowed walls running south and west that seem to form a corridor or river valley extending to another battered crater, Philolaus G, located just south of Philolaus with its twin central peaks. The valley" appears to turn southward and then seems to feather out into an alluvial fan near Fontenelle on the margin of Mare Frigoris. However, no river of water ever flowed there, and the dynamics that fortuitously formed the appearance of a crater were much different than would be found on Earth. However, it still has the deceptive appearance of a valley under certain illuminations; hence I call it Valley Faux.

RECENT TOPOGRAPHICAL OBSERVATIONS



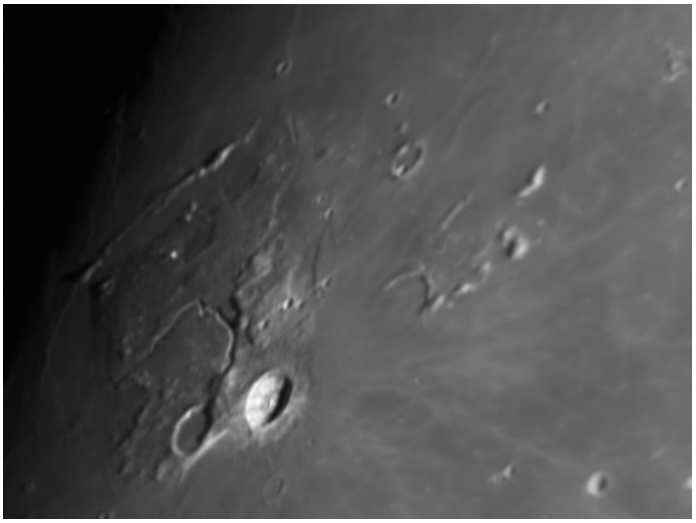
STOFFLER-HERACLITUS – Richard Hill – Tucson, Arizona, USA August 14, 2013 02:34 UT. Seeing 7/10. TEC 8" f/20 MAK-CASS, DMK21AU04. Wideband 656.3 nm filter.

One of the neatest features on the moon is the center of this image, Heraclitus. What amazing processes must have formed this elongate feature with a crater at each end. The shared wall with Cuvier to the east (right) looks razor straight. The craters an either end (Licetus to the north and Heraclitus D) appear to be more recent impacts. There is another very straight shared wall between Lilius F and D to the west.

Stofler has a delicately streaked floor covered with craterlets from 3km and down in size. To the west (left) the outer western walls of Stofler J, G and D that appear to be the remnants of some largley destroyed ancient crater.

But the thing that caught my eye as I panned over this region with the telescope was the odd dark notch created by the shadow filled Nasireddin and the shadow it cast. A wonderful region of the moon.

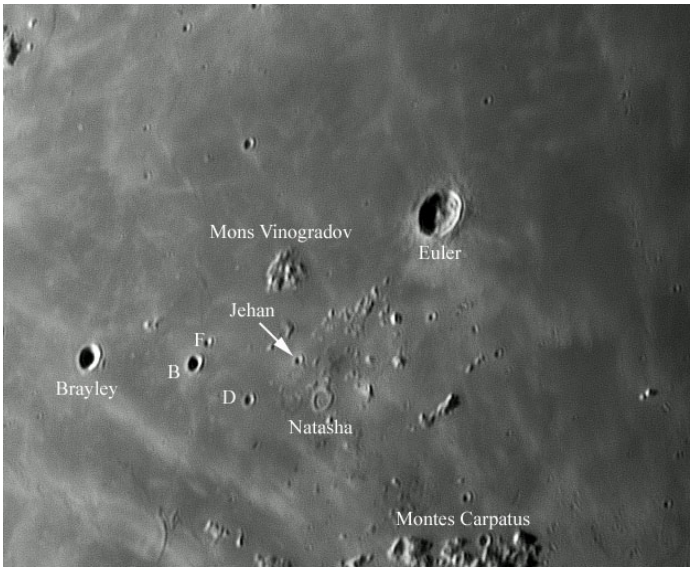
ARISTARCHUS & VALLIS SCHROTERI– Marnix Praet–Stekene, Belgium. August 23, 2013 UT. Skywatcher Quattro 10", 3x barlow, DMK21AU618, red filter .



****

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

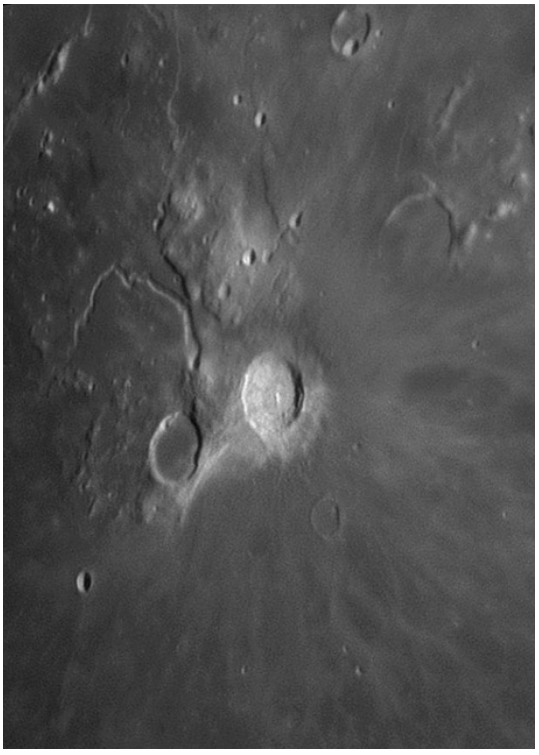
MONS VINOGRADOV-NATASHA- Howard Eskildsen-Ocala, Florida, USA. July 31, 2013 09:43 UT. Seeing 7/10, Transparency 4/6. 6" f/8 refractor, Explore Scientific lens, 2x barlow, DMK 41AU02.AS, IR block & V block filters.



While looking over some of my recent moon photos I noticed a curious mountain in plain sight that I had never ever noticed before. Has anyone ever heard of Mons Vinogradov or noticed the hills between it and Montes Carpatus? Ever see its name in print? Yet here it is hiding in plain sight, overlooked while I had previously concentrated on Euler, Brayley and the rim remnants of the Carpathian mountains. Mons Vinogradov is about the same size as Mons Hansteen, and that's what its outline reminded me of when I first saw it. But close examination of both, thanks to LROC ,show them to be quite different terrains. With names like Vinogradov and Natasha, can not Boris and Fearless Leader be lurking nearby? (With apologies to Rocky and Bullwinkle ;-)

To which Bob Garfinkle replied:

YES, there is a crater named Boris on the Moon. You will find it on LAC-39. The International Astronomical Union (IAU) adopted this generic Russian male name in 1979, when they added several such generic names, like Natasha, Ewen, and Robert. The crater Natasha was originally named in 1976 for an unnamed feature. In 1991, the IAU mistakenly named this same crater "Vinogradov" to honor the Russian-born Soviet mathematician Ivan Matveevich Vinogradov (1891–1983). His name was dropped in 2000 and not attached to Mons Vinogradov.Mons Vinogradov was also named in 1979 for the Soviet geochemist and cosmochemist Aleksandr Pavlovich Vinogradov (1895-1975). I cover all this in my *Luna Cognita* book. I am almost finished with the manuscript, which now stands at 1,657 typeset pages, 894,000 words, and 1,228 figures. (Many of these are Howard's images.)



ARISTARCHUS – Richard Hill – Tucson, Arizona, USA May 4, 2013 04:51 UT. Seeing 6/10. TEC 8" f/20 MAK-CASS, DMK21AU04. UV/IR block filter.

BRIGHT LUNAR RAYS PROJECT

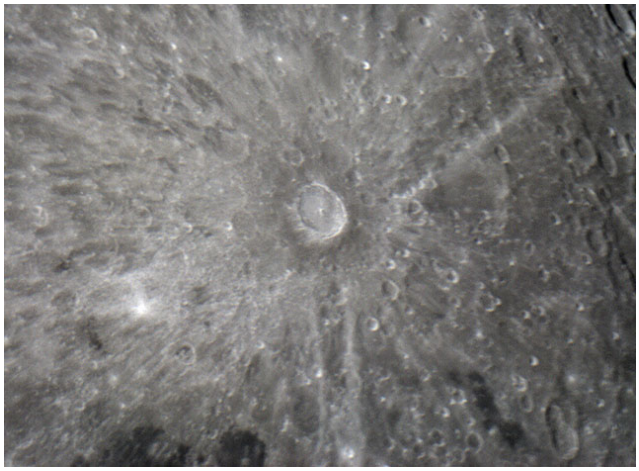
Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

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

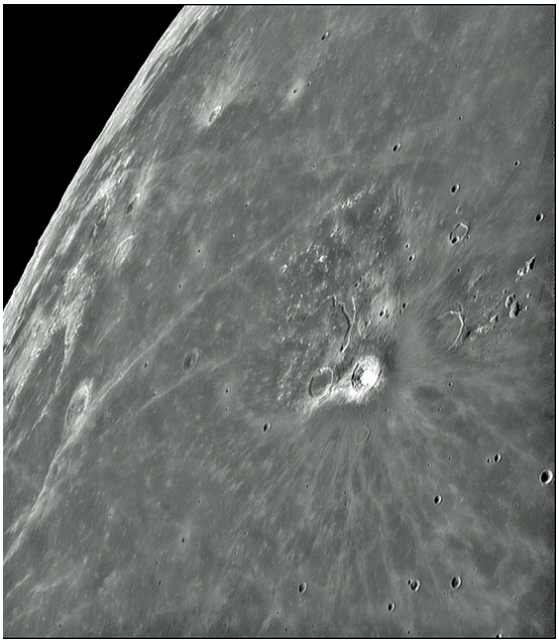
Bright Lunar Rays Website: http://moon.scopesandscapes.com/alpo-rays.html

RECENT RAY OBSERVATIONS

OCEANUS PROCELLARUM - Maurice Collins-Palmerston North, New Zealand. September 18, 2013 08:13-08:15 UT. C-8, SCT, ASI120MC. North down.



TYCHO - Maurice Collins-Palmerston North, New Zealand. September 18, 2013 08:16 UT. C-8, SCT, ASI120MC. North down.



WESTERN OCEANUS PROCELLARUM- Howard Eskildsen-Ocala, Florida, USA.August 29, 2013 09:35 UT. Seeing 9/10, Transparency 6/6. 6" f/8 refractor, Explore Scientific lens, 2x barlow, DMK 41AU02.AS, IR block & V block filters.

LUNAR TRANSIENT PHENOMENA

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

LTP NEWSLETTER – OCTOBER 2013

Dr. Anthony Cook - Coordinator

Observations for August were received from the following observers: Jay Albert (Lake Worth, FL, USA - ALPO) observed: Aristarchus, Censorinus, Gassendi, Lubbock, Mare Crisium, Mons Piton, and Ptolemaeus A. Maurice Collins (New Zealand - RASNZ) imaged: Alphonsus, Archimedes, Aristarchus, Clavius, Copernicus, Eratosthenes, Gassendi, Humboldt, Littrow, Mare Crisium, Mare Imbrium, Plato, Sinus Iridum, Tycho, and took whole disk images of the Moon. Marie Cook (Mundesley, UK - BAA) observed Aristarchus and Cabeus. Peter Grego (Cornwall, UK - BAA) observed Jansen. Rik Hill (Tucson, AZ, USA – ALPO) imaged Heraclitus. Michal Pyka (Poland) imaged several features on the Moon. Thierry Speth (France) imaged Aristarchus. Franco Taccogna (Italy – UAI) imaged Alphonsus, Menelaus, and Plato. Claudio Vantaggiato (Italy – UAI) imaged Plato. Some additional observations, for July, came to light after I re-examined a mountain of email that I had failed to go through thoroughly enough upon returning from August vacation - Charles Galdies (Malta) observed: Aristarchus and Plato – my apologies for missing these out last month.

News: NASA's LADEE mission was launched successfully near the start of September. It will take about a month to get to the Moon. If you want to support the ALPO impact flash programme, that is taking place during this mission, please get in contact with Brian Cudnik (cudnik@sbcglobal.net), who is coordinating amateur Earth-based impact flash observations. Note that we have no programme to look specifically for LTPs underneath the spacecraft flight path, as has been done during previous missions, but if you would like to increase your lunar observations during the mission, to support the repeat illumination programme (or indeed any of the other programmes) of the ALPO/BAA lunar sections, this would be enormously helpful to us. In the unlikely event that any new LTPs are discovered, this information would of course be passed onto the LADEE team in case the events concerned affect the composition and density of the lunar exosphere – something that the spacecraft is specifically designed to measure.

Back in June, Avani Soares (Brazil) emailed me about an article they have written on a ghost, or buried, 50 km diameter (120m deep) crater they found near Wolllaston D. Whilst I was browsing through some old BAA Lunar Section Circulars, I came across a BAA Lunar Section circular (1969 Apr Vol 4, p25-26) short article by T. Sato (Hiroshima, Japan) concerning a saucer shaped depression that he had found north of Aristarchus. This finding was reported to ALPO and BAA Lunar Section directors in 1963, but then it was revealed that Dr Ashbrook, of Sky and Telescope, had observed the said feature back in 1959 Aug 16 at 01:00UT. The shallow depression, equivalent in size to Herodotus, was located half way between Wollaston Gamma and Wollaston crater- a wide, shallow valley leads from just west of Gamma to the edge of this depression.

In mid-September I attended the European Planetary Science Conference in London. This year was notable because of the unfortunate lack of many US lunar and planetary scientists, due to US government budget freezes and cutbacks. The effect was so bad that several planned lectures had to be cancelled, causing some rescheduling problems with the programme. I only hope that the situation improves in the coming years as it will limit international planetary cooperation. There have been other cutbacks as well which have affected lunar science, for example the deletion of calibrated images from the LRO web site, in order to reallocate disk space for new raw images that are presently still being captured (see http://lroc.sese.asu.edu/news/index.php?/archives/798-Deletion-of-LROC-CDR-Products.html#extended).

Fingers crossed that the financial situation improves in the near future and the processed images can be re-generated,

One specific lecture that I thought seemed very relevant to LTP research was "*Lunar Dust Simulation using SPIS*", by Amuar and Honary. They used some satellite plasma charging simulation software, and had been very busy modifying it to work with lunar dust, not just in 1D, or 2D, as has been done before, but in 3D situations. In their model, they were using collisions between dust particles, to make a more realistic simulation of the motion of dust particles overall. For a simple dust cloud on the lunar surface, a ring shaped structure would apparently form as charged particles end up being repelled from the centre. The maximum dust particle height that could be obtained depended upon the ratio of surface charge over the mass of the particle, and in the simulations that they have done so far, they have not achieved the suspension of dust particles more than a few cm above the lunar surface. However this could simply be because of constraints that they have placed on their model. They have also experimented with simulated craters and found that differential charging occurs between places that are respectively shadowed from the solar wind, and shadowed from the UV light from the Sun. Sunlit areas photo-emit, and shadowed areas collect electrons, which explains the negative charging in shadows. Indeed at the edge of a crater shadow a potential voltage of -100V can exist, which in turn creates an electric field, which will then allow levitation of charged dust particles. These particles in subsequently can then be accelerated in horizontal or vertical directions. Dayside simulations reveal that charged dust moves from the crater walls to the interior, but as the terminator moves across, dust moves out of the crater interior, more so on one side than on the other. It was commented that some craters seem more dusty than others, though the reason for this was unknown.

LTP Reports: Two reports came in for August and September; one from Peter Grego, and another that appeared on an LPOD web page. Both might potentially count as LTP, but as you can see from the simulations below, the weights are both at the 1 level, in other words, probably not LTP, but are included, just in case they crop up again at similar illumination conditions. Simulations of these two reports were run using ALVIS (N.B. similar simulation software is available in the form of LTVT from this web address http://ltvt.wikispaces.com/LTVT).

East of Jansen E: was observed by Peter Grego on 2013 Aug 26 UT 00:30-01:30 and in his sketch (see Fig 1 (left)) he noticed a dark dusky area to the east of Jansen E. Nothing could be seen on Clementine or LRO images here, so one possibility was that it might have been a depression. Indeed a depression is visible in laser altimeter data of the area, and a corresponding ALVIS simulation (see Fig 1 (right)) – though it does not quite give the same appearance as in Peter's sketch. For this reason it will be worth checking again under similar illumination.

SE of Hermann D: On 2013 Sep 01 UT 02:48 Maximillian Teodorescu (Romania, C11 telescope, seeing 3-4/10) imaged the southern part of Oceanus Procellarum and spotted a dusky area. As an experiment I decided to run a simulation on ALVIS for the same illumination and libration view that would have been seen from Romania, and this can be seen in Fig 2. It does not show the dusky mark that Maximillian recorded, which implies, as Chuck Wood suggests in LPOD, that it is either an out of focus dust speck on the camera window or filter, or less likely might indicate some change since 1994, when Clementine image mosaics, used in the above simulation, were taken. However nothing new shows on the latest LRO images either, so the most likely explanation would seem to be the dust speck theory. The best way to check for this is to examine all video frames that went into the image, and see if a dark marking stays static with the Moon, or static with respect to the image. If the latter, then it simply has to be a dust speck. Until this is resolved, this observation will be allocated a weight of 1.

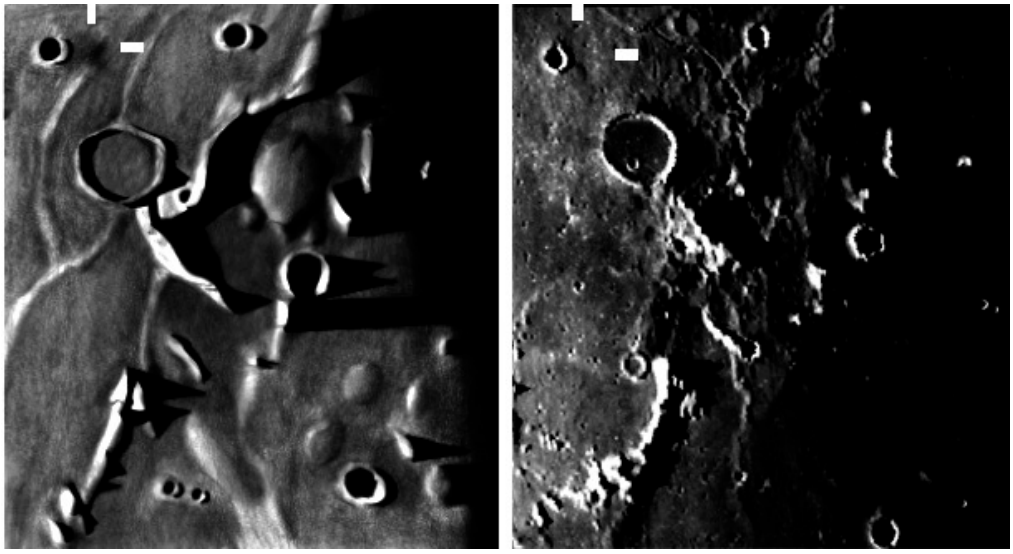


Figure 1. The above sketch and virtual image, of the Janssen area for 2013 Aug 26, are with north towards the top. The location of a dusky area coincides with a depression, marked by intersection of the white rectangular tick bars. **(Left)** Sketch by Peter Grego made at UT00:30-01:30. **(Right)** ALVIS simulation for UT00:30 and then contrast enhanced to show up dark areas – hence some shadows have been over exaggerated.

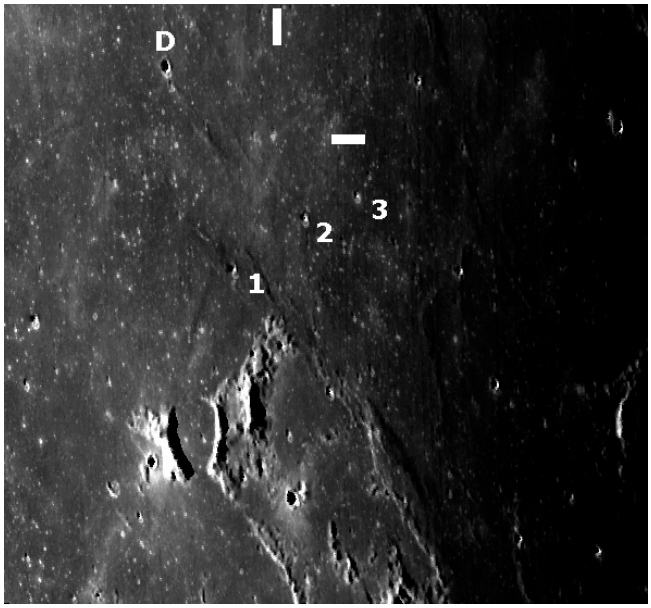


Figure 2. An ALVIS simulation of the region around the dark smudge SE of Hermann D. Craters referred to on the LPOD web site are labelled accordingly – see http://lpod.wikispaces.com/September+10%2C+2013 to compare with the smudge image. The location of where the dark smudge should be is at the intersection of the two rectangular white tick marks – though it is not apparent in this simulation.

Lastly concerning the Maginus report from, 2013 Jul 18 which we were able to eliminate as a LTP, thanks to images from Professor Arlin Crotts, I had a re-assuring email from one of our senior experienced observers, John Westfall, who commented: *"I just downloaded September's "The Lunar Observer" and saw Mark Jones' image sequence of an apparent light patch moving around inside Maginus. My immediate reaction was "I bet he was using a Barlow!" And, on reading the text, this was indeed the case. It was also telling that the phenomenon disappeared when Mark changed the relative positions of his optical components. Barlow lenses (or at least many of them) are rife with internal reflections. Why the manufacturers don't add*

internal stops to prevent this is baffling (pun intended). At any rate, I've seen numerous examples of light patches on lunar images attributable to internal reflections -- I had them on my own images until I wrapped black matte construction paper on the inside of the Barlow tube. – So my basic advice is that, if you see or image such a light patch (with or without a Barlow), move your telescope around and see if the patch moves as well."

Routine Reports: Here is a selection of reports received during August, and one report from July that I overlooked from last month, that can help to re-assess some past LTP observations.

Plato: on 2013 Jul 20 at 22:11 Charles Galdies imaged Plato under the similar illumination conditions to the following LTP:

On 1984 Feb 14 P. Moore (Selsey, UK) observed that Plato was darker than the nearby mare and no detail could be seen on the floor or the eastern wall - the latter was obscured. At 23:40UT some dimming was still present on the north east wall and still no detail on the floor of Plato. Cook noticed that the eastern floor close to the wall was misty and also noted no detail on the floor. Amery though noted that all parts of the floor were sharp although some darkening was visible in the north west and a hint of obscuration. The east wall though was quite sharp. Moseley could see the central craterlet but from 8-6 o'clock tricky to define (Foley says that this effect has been seen at this colongitude before). Streak ray across the floor of Plato seen (North) - filter measurements made. Cameron 2006 catalog extension ID=241 and weight=5. ALPO/BAA weight=3.

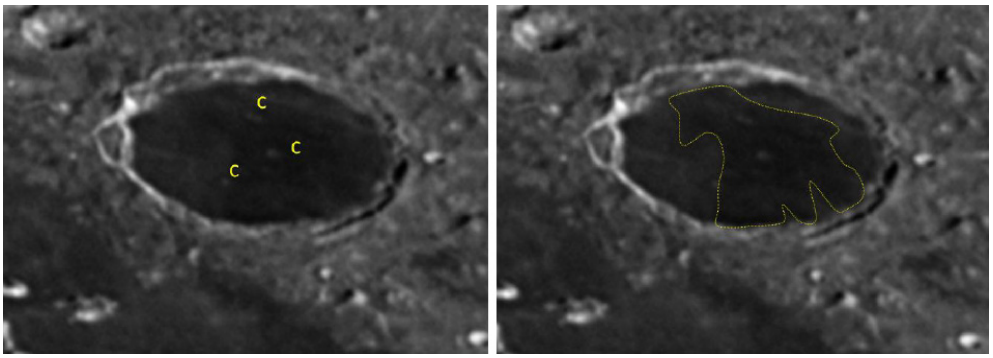


Figure 3. CCD image of Plato taken by Charles Galdies on 2013 Jul 20 UT 22:11 with north towards the top. **(Left)** locations of three craterlets. **(Right)** Darker region of the floor marked.

Charles used a Nexstar 8SE, the seeing was IV and the transparency average. The gain setting of his camera was adjusted to emphasise the detail in the crater floor. A total of 3000 images were obtained at a frame rate of 30fps, stacked using Registax 6 and he then used wavelet transform to obtain sharper images. Basic histogram levelling was performed using Adobe Photoshop™ to emphasize contrast of internal floor relative to adjacent mare. Charles comments that a streaked ray can be seen on the northern part of the crater floor shore on the NE, next to the upper "c" in Fig 3 (left) and the same illustration shows that there are at least three craterlets on the floor. Fig 3 (right) illustrates the darker area of the floor. Given the description of the LTP above, at least some detail should have been visible on the floor back in 1984, though that would have depended upon observing conditions experienced by individual observers. I am also guessing that that observing conditions could give rise to mistaken interpretation that the E & NE walls of the crater were lacking in detail. Fig 3 shows some detail on the E and NE, but it is not as contrasty as on other parts of the rim. As to whether it is unusual that the floor of Plato is darker than the surrounding mare at this stage in illumination, then Fig 3 would suggest that that it is perfectly normal. In view of these facts I am reducing the ALPO/BAA weight of this LTP report from a 3 to a 2.

Ptolemaeus A (now Ammonius): on 2013 Aug 14 at 02:28-02:40 UT Jay Albert observed this crater because it matched the illumination conditions to a LTP report from 1952:

Ptolemaeus A 1952 Oct 26 UT 00:23 Observed by Bartlett (Baltimore, MD, USA, 3" refractor, x75, S=7, T=5) "A not seen tho searched for. Observer surprised since a much smaller crater in Plato could easily be seen. A was seen next nite easily. Not obs.

since, tho not regularly obs." NASA catalog weight=4. NASA catalog ID 554. ALPO/BAA weight=2.

Jay used his C11 telescope under transparency 4, and seeing 7/10, conditions. Concerning the repeat illumination appearance for the above LTP, Jay commented: "*Ptolemaeus A [NASA #554, by Bartlett]- Like Bartlett, I did not see Ptolemaeus A. The floor of Ptolemaeus was in full, black shadow so that no details on the floor could be seen. I observed at 311x from 02:28 to 02:40UT*". It is possible that Bartlett made an error with the date – perhaps it should have been Oct 27? A quick look at the Sun's altitude for 1952 Oct 26 UT 00:23 gives: the solar altitude as 0.1°. If the date had been Oct 27, then the altitude would have been 12.2°. In view of the fact that Ammonius should not have been visible, or Bartlett got the day wrong, the weight of this LTP report has been lowered from a 2 to a 1 to reflect this uncertainty.

Gassendi: on 2013 Aug 17 at 06:04 UT Maurice Collins took a monochrome image of Gassendi. This was at similar illumination to two past LTP events from 1967 and 1971:

Gassendi 1967 Jan 21 UT 17:50-18:15 Observed by Moore & Moseley (Armagh, N.Ireland, 10" refractor, x360, S=G), Ringsdore (England, 10" reflector), Sartory (Farnham, England, 15" reflector?), Duckworth (England?), Kilburn (Ashton, England, 6" reflector), Farrant (England, 8" reflector) "Eng. moon blink at 1936 (no events from 1750-1815h) outside SE wall, brighter at 1939h, seen vis. at 1940h, faint at 1946h. Moved NW at 1950h. At 2000h, Moseley saw it farther W., lost it at 2008h. Seen again at 2026h further toward group of hills. Moore saw it faint at 2002h, lost it at 2005h, vis. & blink at 2007h. Checks again at 2010-50h, 2130-50, 2200-20, 2250-2300, 2325-0000h.Duckworth suspected blink in S.Iridum nr. Bianchini later, but clouds intervened, after clearing couldn't see it. Neg. obs. in 11 other features, inc. Alphonsus & Plato. Confirmed Gass blink 2018-2024h" NASA catalog weight=5. NASA catalog ID #1010. ALPO/BAA weight=4.

Gassendi 1971 Oct 29 UT 22:15-22:50 observed by J.Coates and A.R. Neville (Burnley, UK, 6" reflector, x192, slight fog, seeing jumpy but good at times). An in initial Moonblink search proved negative. However white light observations by Coates revealed a golden brown color between the black interior shadow and the base of the (bright W (IAU?) wall). Neville confirmed its appearance as a coppery hue and saw the color for 5 minutes before it vanished at 22:55UT. ALPO/BAA weight=2.

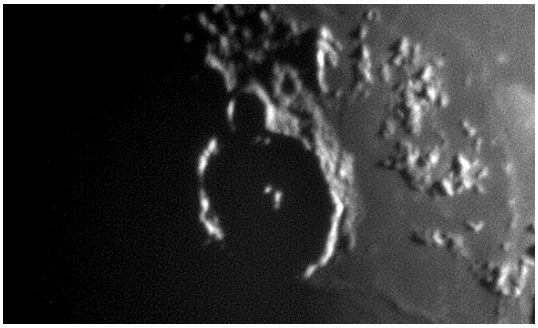


Figure 4. A monochrome image of Gassendi as imaged by Maurice Collins on 2013 Aug 17 UT 06:04.

Fig 4 shows Gassendi approximately as it would have appeared during these two LTP, though slight changes in solar altitude would have made some dramatic differences to shadow appearances. Although Maurice's image is in monochrome, it will at least be possible in future to use this to simulate atmospheric spectral dispersion effects in any subsequent analysis.

Plato: on 2013 Aug 18 UT UAI observers Franco Taccogna and Claudio Vantaggiato took images that spanned four past LTP events in terms of repeat illumination, and one repeat libration event:

Plato 1870 May 12 UT 22:00 Observed by Birt (England) "Extraordinary display of lights. Says not effect of sunlight" NASA catalog weight=4. NASA catalog ID #167. ALPO/BAA weight=3.

Plato 1972 Oct 19 UT 20:10 Observed by Taylor, Phillips, Ford, Kennedy (Dundee, Scot. 10" refractor) "Taylor noted a slight blink on NW wall. Ford said it was neg. Phillips

was not sure. Taylor returned to telescope & no blink. Kennedy reported neg." NASA catalog weight=1. NASA catalog ID #1347.

Plato 1981 Jun 14 UT 21:58 Observed by Foley (Kent, England, 11.75" Newtonian, Seeing III, Transparency Good) "Obscuration Seen" BAA Lunar Section Observation. ALPO/BAA weight=2.

Plato 1986 Dec 13 UT 20:30 Observed by A. Cook (Frimley, UK, seeing III) North East quadrant of Plato the crater was blurred and ill-defined. Also no craterlets visible anywhere on the floor of Plato until the central craterlet was just glimpsed later at 23:00-23:45, though seeing now III-IV (cirrus at times in the sky). At this later time the NE rim was less blurred than before. ALPO/BAA weight=1.

Concerning the 1870 LTP description, it is unclear how the modern day images show what could be described as an extraordinary display of lights, therefore the weight shall remain as 3 until more information comes to light over the original observation. If anybody knows more about this observation, other than what appears in the above Cameron catalog description, I would be very interested to hear from you! With regard to the 1972 LTP, no obvious signs of color can be seen on the NW wall, however the report suggests some uncertainty, and so a weight of 1 seems reasonable to keep for now. The two remaining LTPs relate to obscurations – some of the original material is illustrated in Fig 6. At present I cannot find the 1981 Foley observation in my digital records, however this could be because I have not finished sorting and cataloging all of the scanned BAA Lunar Section LTP archive material yet. Instead I enclose (See Fig 6 (Left)) some typed observational notes by Patrick Moore where he comments on some blurring on the NE wall. If you look at the UAI images in Figure 5, you can see that indeed it is less distinct here (so too the central craterlet), but this is normal appearance. The UAI images have very similar illumination and libration, to within +/-1°, of the 1981 Foley LTP. Therefore, in view of the many similarities between the LTP and the normal appearance, the weight of this observational report can be lowered from a 2 to a 1. I reserve the right to turn this into a non-LTP (weight 0) though until I find the original Foley report. Lastly, my own LTP report from 1986 describes: "*~20:30 Plato NE quadrant a bit blurred and ill defined. No craterlets visible on floor but contrast low. No blink i.e. diffuseness looked the same in both filters*". The appearance was confirmed by Marie Cook, and possibly other observers – though again these remain to be sorted and catalogued correctly on the computer. Later on, when the effect had lessened I made a sketch (See Fig 6 (Right)) which is remarkably similar to the UAI images. So almost certainly this should probably be made a weight of 0 i.e. non-LTP, but I await finding other observers' observations made on the same night, to be sure.

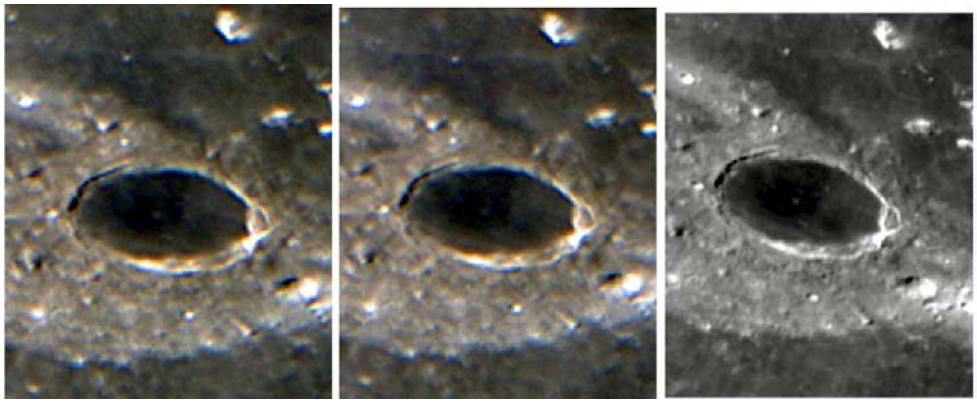
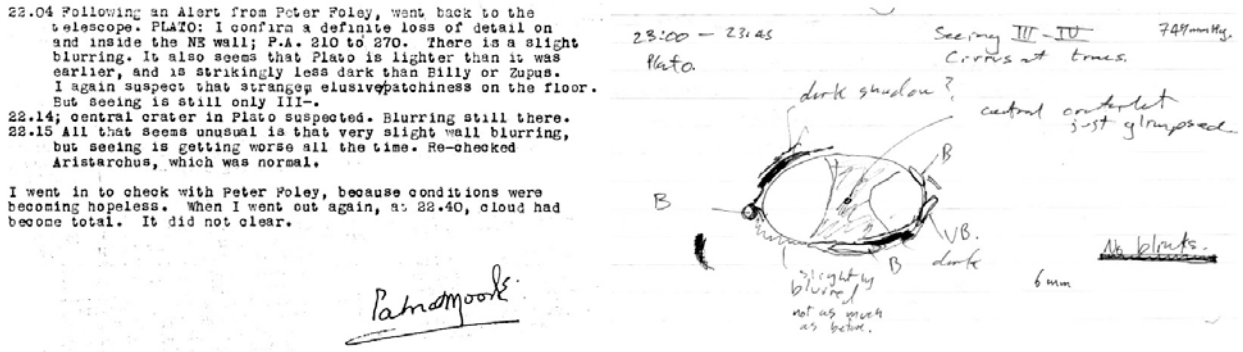


Figure 5. Images of Plato by UAI observers from 2013 Aug 18 with north towards the bottom in this instance, for comparison with Fig 6. The first two images have undergone color saturation enhancement of 40%. (Left) UT 20:21 color image taken by Franco Taccogna. (Middle) UT 20:53 color image taken by Franco Taccogna. (Right) UT21:21 monochrome image taken by Claudio Vantaggiatto.



22.04 Following an Alert from Peter Foley, went back to the telescope. PLATO: I confirm a definite loss of detail on and inside the NE wall; P.A. 210 to 270. There is a slight blurring. It also seems that Plato is lighter than it was earlier, and is strikingly less dark than Billy or Zupus. I again suspect that stranger elusive patchiness on the floor. But seeing is still only III-.
22.14; central crater in Plato suspected. Blurring still there.
22.15 All that seems unusual is that very slight wall blurring, but seeing is getting worse all the time. Re-checked Aristarchus, which was normal.

I went in to check with Peter Foley, because conditions were becoming hopeless. When I went out again, at 22.40, cloud had become total. It did not clear.

Patrick Moore.

Figure 6. Past Plato LTP reports: **(Left)** a typed report from Patrick Moore, concerning the 1981 Jun 14 LTP. **(Right)** Sketch (with north towards the bottom) by Tony Cook in a follow up observation of Plato for the 1986 Dec 13 LTP.

Aristarchus: on 2013 Aug 19 UT 19:11 and 19:13 Thierry Speth was imaging Aristarchus under both similar illumination and libration (to within +/- 1°) to when Foley observed a LTP in Aristarchus back in 1975 Sep 18:

Aristarchus 1975 Sep 18 UT 21:00? Observed by Foley (Kent, England, 12" reflector) "Deep blue-viol. spot in NW (IAU?) interior corner." NASA catalog weight=3. NASA catalog ID #1414. ALPO/BAA weight=3.

Although Thierry's image is not ideal by image quality standards (see Fig 7 (Left)), it is the only observation that we have that matches the repeat illumination and repeat libration slot. Another observation was made by Franco Taccogna (See Fig 7 (Right)) about an hour after the predicted observing slot ended and has been included because it is sharper, and also because it shows some changes due to the rising Sun. For example the Vallis Schroteri's southern part of the rill is brighter earlier on, but that is because of the sunward facing slope of the valley catching the Sun. As to what Peter Foley's deep violet-blue spot in the NW interior was? Thierry's image does not have sufficient resolution, and no obvious sign of such a spot can be seen in Franco's image – though there is a tiny dark dot on the northern interior or the rim of Aristarchus, but this cannot be said to be in the NW? In view of this, the ALPO/BAA weight will remain at 3 as there is no reason, suggested by these images, that it is normal to see a violet/blue spot where it was claimed that one had been seen back in 1975.

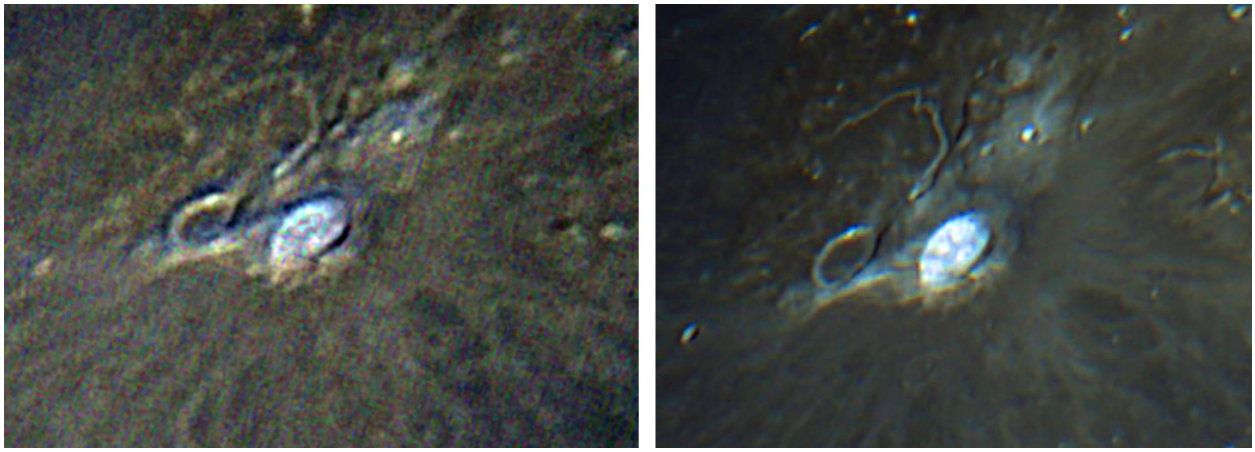


Figure 7. Images of Aristarchus from 2013 Aug 19 with north towards the top right **(Left)** Thierry Speth's 19:11UT image has been de-interlaced in the vertical and horizontal directions to remove image pattern noise, sharpened, and had its color saturation increased. **(Right**) Franco Taccogna's (UAI) image from 21:10UT has been sharpened, and had its color saturation increased.

Cabeus: On 2013 Aug 27 UT 00:05-0015 Marie Cook inspected visually this crater to check out a LTP seen by Peter Grego back in 2009 Sep 09:

2009 Sep 09 UT23:31:43 P.Grego (St Dennis, Cornwall, UK, seeing II-III) suspected a flash south of Cabeus, just beyond the terminator.It was not bright, and lasted a fraction of a second. Thinks it might have been illusory as he saw some fainter flashes (cosmic rays?) during that nights observing session. ALPO/BAA weight=1.

Marie observed under good transparency, with seeing conditions at III, but saw nothing unusual. Although the original report had some doubts about the reality of the flash, repeat illumination observations are certainly useful, in case we can show it was part of a mountain peak coming into sunlight, and visible only for a brief faction of a second when seeing conditions became perfect. The weight of this LTP shall remain at 1 for now, though if after a few more repeat illumination observations, we learn nothing new, then likely causes, in order of most probable first would be: (a) low light level limitations of the human vision system, (b) a cosmic ray, (c) an impact flash, (d) a LTP.

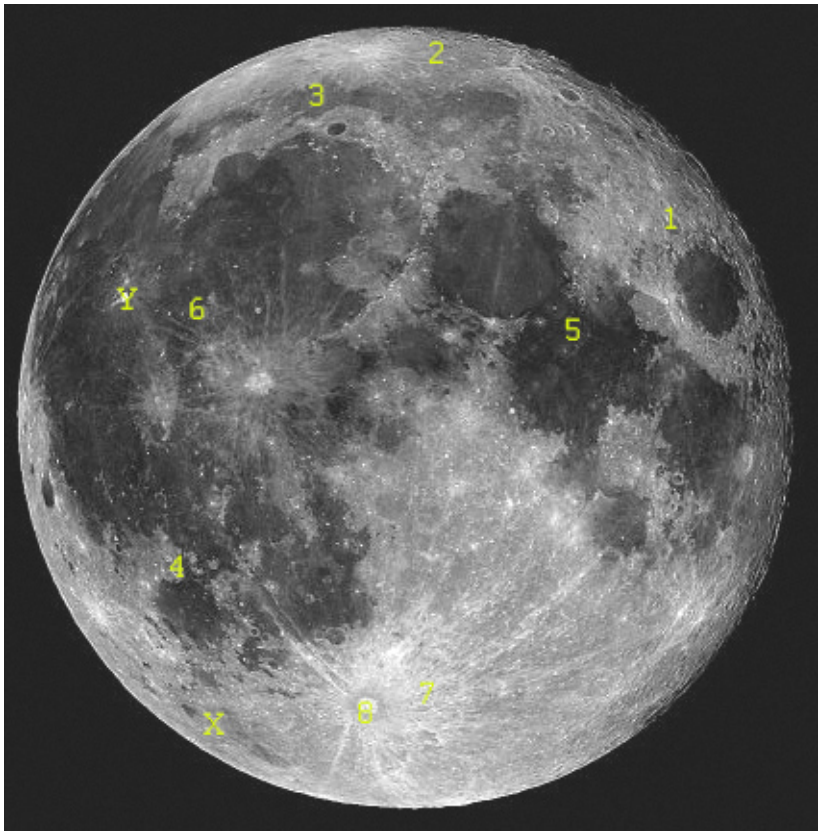
Suggested Features to observe in October: For repeat illumination (and a few repeat libration) LTP predictions for the coming month, these can be found on the following web site: http://users.aber.ac.uk/atc/tlp/tlp.htm. If you would like to join the LTP telephone alert team, please let me know your phone 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: +44 798 505 5681 and I will alert other observers. 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. **Cleomedes**
2. **Euctemon**
3. **Fontenelle**
4. **Gassendi**
5. **Jansen**
6. **Mons Vinogradov**
7. **Stoffler**
8. **Tycho**



FOCUS ON targets

X = Schickard-Wargentin (November)
Y = Aristarchus (January)