

THE LUNAR OBSERVER

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

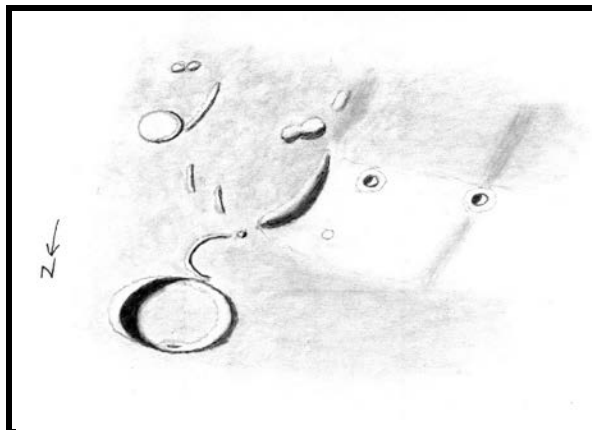
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17 Autumn Lane, Sewell, NJ 08080

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

FEATURE OF THE MONTH – AUGUST 2014

J HERSCHEL F



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA

March 13, 2014 02:00-02:35 UT, 15 cm refl, 170x, seeing 8-9/10

I drew this crater and vicinity on the evening of March 12/13, 2014 before the moon hid 60 Cancr. This area is in western Mare Frigoris south of the large broken feature J. Herschel. The main crater in this sketch is a relatively shallow, nearly symmetric feature. There is a bulge inside its north rim with a bit of shadow. A narrow curved ridge is just south of J. Herschel F, apparently part of an old ring. J. Herschel M is the crater farther to the south. The east side of M is hardly noticeable, while the west side is more conspicuous, but still not particularly high. J. Herschel M is almost a mirror image of the narrow partial ring south of F. There is a narrow, slightly curved ridge extending southwest from M, ending near two isolated peaks. Two short straight ridges are north of M, near the narrow partial ring. A wide, slightly curved ridge is just west of that area. This feature is very nearly parallel to the ridge southwest of M. A large double peak is just south of the wide ridge, and a small grayish peak is nearby. Two small, but relatively deep pits are west of the wide ridge. Horrebow C is probably the one farther to the west. Both of these pits have halos. A shadowless bright spot is north of the unnamed pit. These pits and spot are within a relatively light area west of the wide ridge. A vague wrinkle extends north and south of Horrebow C, but does not intrude upon its halo. Another vague wrinkle is south of the wide ridge near the grayish peak.

LUNAR CALENDAR

AUGUST-SEPTEMBER 2014 (UT)

Aug	02	11:26	Moon Ascending Node
	02	13:27	Moon-Spica: 2.5° S
	03	10:02	Moon-Mars: 2.4° S
	04	00:50	First Quarter
	04	10:54	Moon-Saturn: 0.1° N
	07	04:26	Moon Extreme South Dec.: 18.8° S
	10	17:43	Moon Perigee: 356900 km
	10	18:09	Full Moon
	15	00:18	Moon Descending Node
	17	12:26	Last Quarter
	18	17:46	Moon-Aldebaran: 1.7° S
	19	22:12	Moon Extreme North Dec.: 18.8° N
	24	05:48	Moon-Venus: 6.3° N
	24	06:09	Moon Apogee: 406500 km
	25	14:13	New Moon
	29	13:14	Moon Ascending Node
	29	19:08	Moon-Spica: 2.7° S
	31	19:21	Moon-Saturn: 0.4° S
	31	23:43	Moon-Mars: 4.4° S
Sep	02	11:11	First Quarter
	03	13:10	Moon Extreme South Dec.: 18.6° S
	08	03:29	Moon Perigee: 358400 km
	09	01:38	Full Moon
	11	07:32	Moon Descending Node
	15	01:01	Moon-Aldebaran: 1.5° S
	16	02:05	Last Quarter
	16	05:15	Moon Extreme North Dec.: 18.6° N
	20	14:22	Moon Apogee: 405800 km
	24	06:14	New Moon
	25	17:41	Moon Ascending Node
	26	00:48	Moon-Spica: 2.8° S
	26	09:32	Moon-Mercury: 4.6° S
	28	04:46	Moon-Saturn: 0.8° S
	30	19:29	Moon Extreme South Dec.: 18.5° S

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.alpo-astronomy.org>. 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:

Name and location of observer

Name of feature

Date and time (UT) of observation

Size and type of telescope used

Magnification (for sketches)

Filter (if used)

Medium employed (for photos and electronic images)

Orientation of image: (North/South - East/West)

Seeing: 1 to 10 (1-Worst 10-Best)

Transparency: 1 to 6

Full resolution images are preferred-it is not necessary to compress, or reduce the size of images. *Additional commentary accompanying images is always welcome.* **Items in bold are required. Submissions lacking this basic information will be discarded.**

Digitally submitted images should be sent to both

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

and Jerry Hubbell – jerry.hubbell@alpo-astronomy.org

CALL FOR OBSERVATIONS: **FOCUS ON: ALTAI SCARP**

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 **September 2014** edition will be the **Altai Scarp**. 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 (both):

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

Jerry Hubbell – jerry.hubbell@alpo-astronomy.org

Deadline for inclusion in the Altai Scarp article is August 20, 2014

FUTURE FOCUS ON ARTICLES:

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

<u>Subject</u>	<u>TLO Issue</u>	<u>Deadline</u>
Ghost Craters	November 2014	October 20, 2014

LUNAR TOPOGRAPHICAL STUDIES

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

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

Assistant Coordinator – Jerry Hubbell – jerry.hubbell@alpo-astronomy.org

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

OBSERVATIONS RECEIVED

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 2, 6(3), 9, 10 & 13 day Moon, Arago domes, Aristillis, Clavius, Condorcet, Copernicus, Plato(2) & Ptolemaeus.

ROBERT HAYS - WORTH, ILLINOIS, USA. Drawings of J. Herschel F & Plato H.

RICHARD HILL – TUCSON, ARIZONA, USA. Digital images of Alphonsus, Hyginus-Triesnecker, Langrenus-Petavius & Sinus Iridum.

PAOLO LAZZAROTTI – MASSA, ITALY. Digital images of Gassendi, Maurolycus-Clairaut & Prinz-Aristarchus.

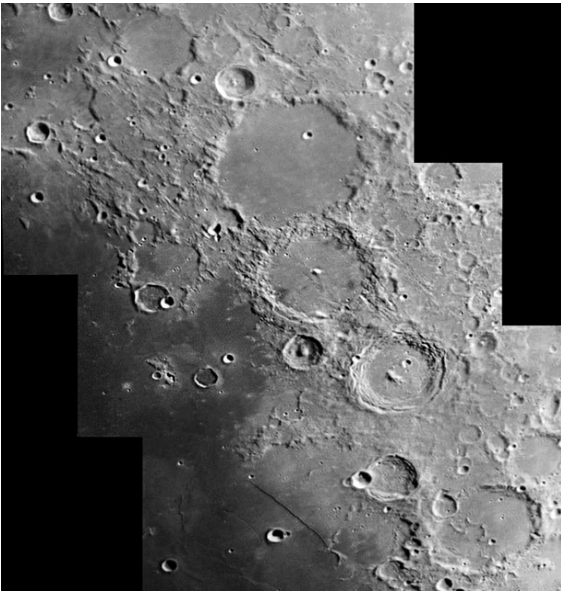
AVANI SOARES-CANOAS, BRAZIL. Digital image of Southern Moon.

RECENT TOPOGRAPHICAL OBSERVATIONS

CONDORCET - Maurice Collins-Palmerston
North, New Zealand. May 31, 2014 05:24 UT.
ETX-90. North down.



RECENT TOPOGRAPHICAL OBSERVATIONS



ALPHONSUS – Richard Hill – Tucson, Arizona, USA May 9, 2014 03:50 UT. Seeing 8/10. TEC 8" f/20 MAK-CASS, SKYRIS 445. 656.3 nm filter.

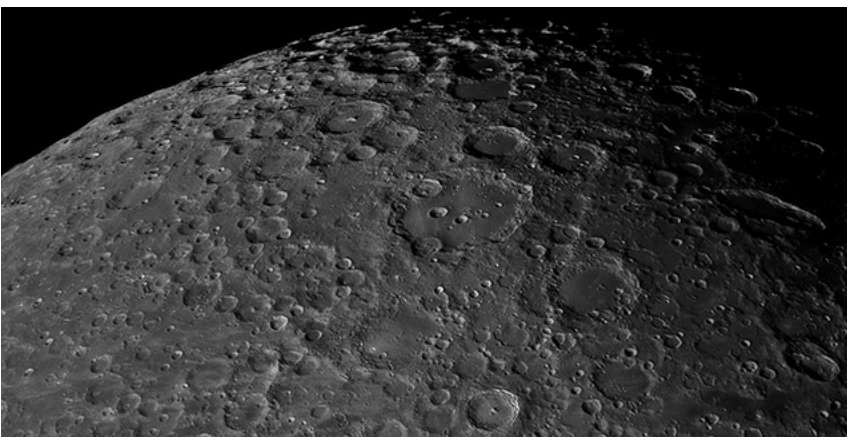
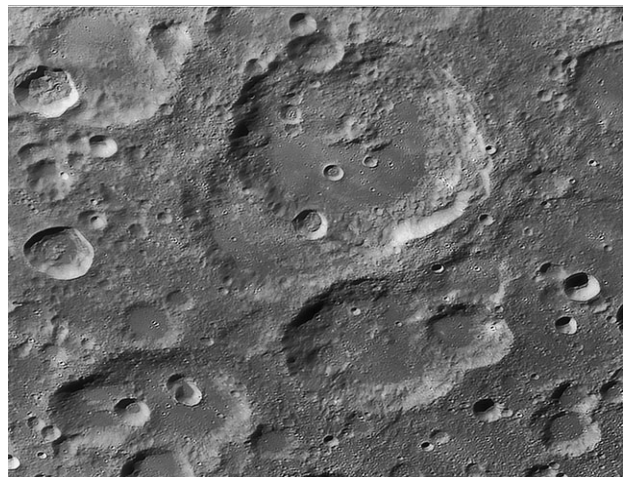
Often we look too much at the terminator. A day or so after the terminator passed over this area there is still a lot to see. The first thing that stands out are the great terraced walls of Arzachel. Look carefully at the floor of this crater and you'll see the Rimae Arzachel. Just above this is the larger crater Alphonsus with the obvious dark haloed volcanic features, some of the best such features visible to the amateur. Just to the lower left of Alphonsus is the interesting crater Alpetragius, with it's round-mound central peak. Compare this peak to the one in Arzachel. The huge crater Ptolemaeus is the topmost of the three great craters here. At low sun angles it's floor is filled with soft depressions and small craters. Then to the lower left of this is the heavily eroded crater Davy and the arc of little craters crossing the floor. This crater chain is thought to be formed from the impact of a fragmented asteroid or comet broken up by earth-moon gravitational forces. This is similar to the S-L/9 impact on Jupiter but with the much slower rotation of the moon leaving them in a much shorter chain.

At the bottom of this image is clearly seen "The Straight Wall" or Rupes Recta. On the south end is what used to be called "The Stag Horn Mountains". They seem to have lost that name over the years.

Lastly, back away and look at the whole glorious field and note the numerous diagonal gashes from the upper left to the lower right. These were carved out by mountain-sized and city-sized chunks of the lunar surface, blown out during the huge impacts that carved out the large mare to the north.

MAUROLYCUS-BAROCIOUS-CLAIRAUT– Paolo Lazzarotti – Maaciano (GR), Tuscany, Italy. August 18, 2011 03:06 UT. Seeing 6-7/10, Transparency 4/5. Gladius XLI 400mm Cassegrain, 2x barlow. Experimental Sony ICX285 camera, Baader R filter. <http://www.lazzarotti-hires.com/2014/07/una-curiosa-tripletta-2.html?lan=english>

Find here portrayed a weird trio of craters that share the same feature: they have an overlapped crater on their rim!



SOUTHERN MOON - Avani Soares-Canoas, Brazil. July 9, 2014 01:07-01:24 UT. C-14, QHY5LII color, Astronomik IR pass 742 filter.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

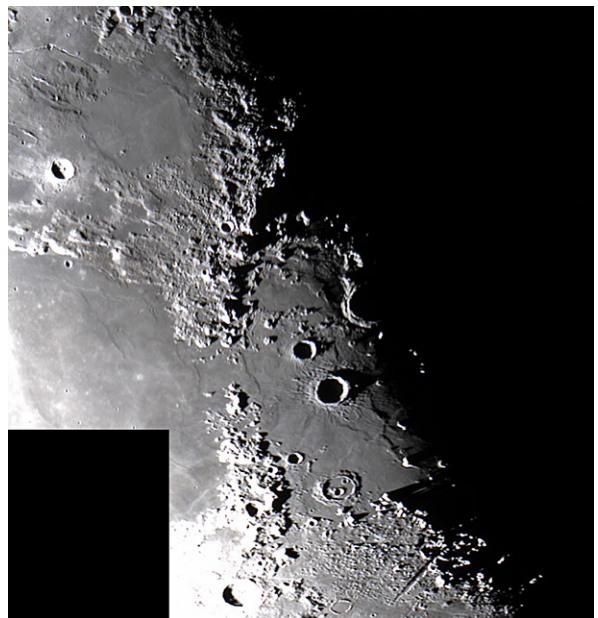
ARAGO DOMES- Maurice Collins- Palmerston North, New Zealand. July 3, 2014 05:57 UT. ETX-90, ASI120MC. North down.



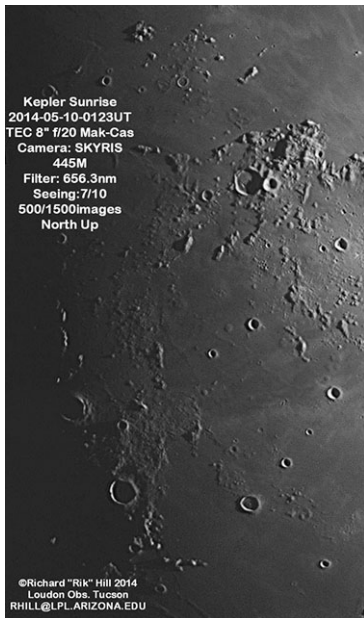
PTOLEMAEUS - Maurice Collins-Palmerston North, New Zealand. July 5, 2014 05:48 UT. C-8 SCT. ASI120MC. North down.

After a cloudy day, the clouds parted at sunset long enough to get these images of the Moon last night. The sunrise over Ptolemaeus was very impressive in showing the dimpled floor of “saucers” (older craters) that may have been buried by Imbrium ejecta or lava. The central peak of Alphonsus was catching the light in a way I had not seen before also with an extended area of brightness to the south as the central ridge caught the sun's first rays.

ARISTILLUS - Maurice Collins-Palmerston North, New Zealand. July 5, 2014 05:44 UT. C-8 SCT. ASI120MC. North down.



ADDITIONAL TOPOGRAPHICAL OBSERVATIONS



KEPLER – Richard Hill – Tucson, Arizona, USA May 10, 2014 01:23 UT.
Seeing 7/10. TEC 8" f/20 MAK-CASS, SKYRIS 445. 656.3 nm filter.

Lost in the splendor of Copernicus is a wonderful selenoscape within the triangle defined by Kunowski, Kepler and the polygonal Tobias Mayer.

Just about dead center of this image is the large Dome Milichius. To the lower left, almost to Rima Milichius, is another dome and to the lower right is a cluster of domes known as the Hortensius dome field just north of Hortensius. North of Milichius is the large low dome Tobias Mayer DZeta. There are more domes scattered over this image best seen in this kind of lighting.

HYGINUS-TRIESNECKER – Richard Hill – Tucson, Arizona, USA.

left: August 25, 2012 02:29 UT. Seeing 7/10. TEC 8" f/20 MAK-CASS, DMK21AU04. Wratten 23 filter.

right: June 20, 2010 02:34 UT. Seeing 9/10. C-14 SCT + 2x barlow (f/22), DMK21AU04. UV/IR block filter.

Some years back, when I first got my Questar, I noticed that the C14 images, while better, were not dramatically better. So I began several years of experiments and determined that the seeing cells over my home observatory were rarely (<5%) better than 7-8". This meant that a C14 would give a brighter image than an 8" aperture, but a more "confused" image with no additional detail. So I parted company with the C14 and got an 8" TEC f/20 Mak-Cass, basically just a big Questar. I have not been disappointed. On the best nights at perigee, I can get to 1km detail on the moon's surface, just as I did with the C14. The C14 at f/11 had 151" focal length and the TEC has 160", fairly equivalent.



While working on cleaning up my Lunar Image Database (see: <http://www.lpl.arizona.edu/~rhill/moonobs.html>) I noticed that I had imaged the same region on the moon, Triesnecker-Hyginus, with both telescopes at about the same illumination. I thought this comparison might be instructive. Note that the C14 image had better seeing.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

LANGRENUS-PETAVIUS – Richard Hill – Tucson, Arizona, USA March 6, 2007 07:08 UT. Seeing 7/10. C-14 SCT, SPC900NC. Wratten 21.

While home recovering from my first surgery this summer, I have spent time fixing up the Loudon Observatory Lunar Image Database (<http://www.lpl.arizona.edu/~rhill/moonobs.html>) and some of the images in it. Due to some compatability issues between both of my laptops and the new server at work, a lot of my images came off looking dark, too dark. In working on one of these I came to an image of the moon that was so stunning that I recall very clearly the morning I took it.

I had finished working on the mountain and because of weather on the peak, was coming home a few hours early. The moon was near the meridian so I rolled out my telescope for a look before going to bed. The position of the terminator and the libration conspired to show the region from Petavius (bottom) to Langrenus (top) in remarkable detail. I remember gasping when I saw it. But the image I had later posted just didn't do it justice. I took my current, better, software and reprocessed the individual images and reassembled them with iMerge. I am very happy with this result and feel it shows more accurately the breathtaking vista I saw. Between Petavius at bottom and Langrenus at top is the usually unremarkable Vendelinus. Note the nice detail in the ejecta from Petavius.



GASSENDI– Paolo Lazzarotti – Maaciano (GR), Tuscany, Italy. February 14, 2011 20:47 UT. Seeing 6-7/10, Transparency 4/5. Gladius XLI 400mm Cassegrain, 2x barlow. Experimental Sony ICX285 camera, Baader R filter. <http://www.lazzarotti-hires.com/2014/07/a-nord-ovest-di-gassendi.html?lan=english>

PRINZ-ARISTARCHUS– Paolo Lazzarotti – Maaciano (GR), Tuscany, Italy. February 14, 2011 20:51 UT. Seeing 6/10, Transparency 4/5. Gladius XLI 400mm Cassegrain, 2x barlow. Experimental Sony ICX285 camera, Baader R filter. <http://www.lazzarotti-hires.com/2014/06/alba-su-aristarco.html?lan=english>

This geologically intriguing area between Aristarchus and Prinz delivers an amazing quantity of rilles when the sun grazes this soil!



LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – atc@aber.ac.uk

Assistant Coordinator – David O. Darling - DOD121252@aol.com

LTP NEWSLETTER – AUGUST 2014

Dr. Anthony Cook - Coordinator

Observations for June were received directly, or indirectly (forwarded onto me), from the following observers: Jay Albert (Lake Worth, FL, USA - ALPO) observed: Aristarchus, Godin, Mons Pico, Mons Piton, and Plato. Gary Beal (NZ Astronomers, New Zealand) imaged Copernicus, Montes Apenninus, Petavius, Rima Birt, Tycho, and several other features. Maurice Collins (ALPO, New Zealand) imaged Archimedes, Aristarchus, Drygalski, Hausen, Humboldt, Mare Orientale, Mare Vaporum, Vallis Alpes, Yangel, and the whole Moon. Marie Cook (Mundesley, UK - BAA) observed Aristarchus and Censorinus. Franco Taccogna (Italy - UAI) imaged Alphonsus, Gassendi, Proclus, and Sinus Iridum.

News: I have been busy working on chapters on LTP, for two separate publications, over the last couple of months. More on this as and when I find out publication dates. For me, these have been a great eye opener as to the wealth of LTP theories published in mainstream scientific journals. Also it has been useful to read through some of the more famous LTP accounts again, and find additional strengths or weaknesses in the published evidence.

Unfortunately a couple of typographical errors crept into the last month's article, to which I wish to offer my sincere apologies to the astronomers concerned: "Thomas Bianchini" should have read "Thomas Bianchi", and "Alexandra Amorim", should have read "Alexandre Amorim".

LTP Reports: No LTP reports were received in June.

Routine Reports: Here is a selection of reports received for June that can help to re-assess some past LTP observations. Again I would like especially to thank Franco Taccogna (UAI) for sending observations in of many lunar features in the form of image sequences. As space is limited I can publish only one observation per person, but do make use of all observations in my research.

Copernicus: On 2014 Jun 7 UT 07:47 Gary Beal (NZ Astronomers) imaged Copernicus in monochrome under the same illumination conditions to within $\pm 0.5^\circ$ to a 2012 LTP report described below:

2012 Sep 24 UT 22:00-23:00 Copernicus. E. Horner (Salisbury, UK, 15cm reflector) observed a prominent red arc where the sunlit part of the interior wall met the shadow. Sometimes the arc was 1/4 the way around the interior, and sometimes half of the way around. Telescope moved, but the red arc stayed where it was. Eyepieces change, but the effect remained. Other parts of the Moon checked, but no red seen. There were however splashes of green e.g. Longomontanus on the terminator, elsewhere further inland from the terminator, and little splashes of green on Mare Frigoras - but lasting a brief time. The red color was as strong as a red LED and the green similar to that of the northern lights. The observer's husband was asked to independently check Copernicus and remarked that he could see a little bit of green at the top and some red near the bottom, along the line of the internal shadow. Although there were checks for red elsewhere on the Moon and none were seen, the Moon was starting to get low and it is typical of spurious color in a few respects. Therefore the ALPO/BAA weight=1 for safety.

Gary's image was in monochrome (Fig 1 centre), but it is possible to add simulated spectral dispersion, as has been shown around the edges in Fig 1. To cater for the possibility of pressure system differential effects, as suggested by Fitton in the 1970's, I have investigated spectral dispersion in different directions. As you can see, it is possible to put bright red on the inside shadow, which partly fits the description of the Horner report. Now the altitude of the Moon during the 2012 LTP was between 17° and 11° , getting on the low side, which certainly points towards atmospheric spectral dispersion as being a likely cause – in which case the bottom right simulation in Fig 1 would be the most likely appearance. However red should appear elsewhere on the Moon, and the observers concerned definitely checked for this and did not find any, only some green false color. Also it does not explain how the red arc (remember it was a strong red) changed in extent. So for now I will keep the

weight of this LTP report as a 1 – at least now thanks to Gary we have an excellent image that can be used in any future modeling studies.

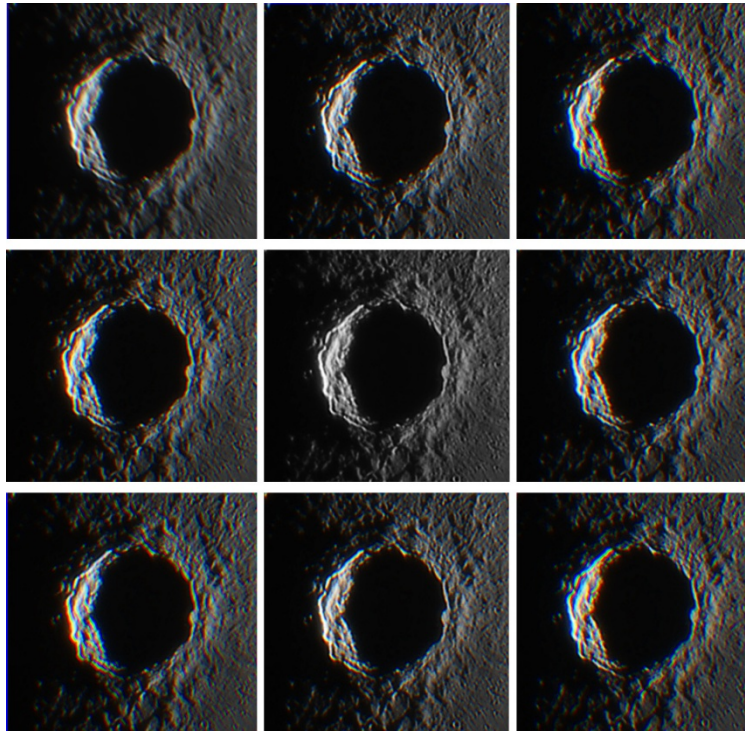


Figure 1. Gary Beal's (NZ Astronomers) image of Copernicus taken on 2014 Jun 7 UT 07:47 shown at the centre. Around the edge are simulations for atmospheric spectral dispersion at 45° intervals.

Gassendi: On 2014 Jun 8 UT 18:06-20:07 Franco Taccogna (UAI) observed this crater under repeat illumination conditions to within $\pm 0.5^\circ$ to the first four LTP described below; the fifth LTP below had similar illumination and topocentric libration to within $\pm 1.0^\circ$ - quite a rare occurrence. It is unusual to have five LTP, in different years, all in a similar range of selenographical colongitudes. One might be pre-disposed to say that these are not LTP as they occur at the same time of the lunar day, however as you will see from the descriptions below, all the effects described occur in different places on the crater or in different forms.

Gassendi 1967 Jan 21 UT 19:36-20:24 (colongitude range 39.98° - 40.39°) 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 (Sartory) outside SE wall, brighter at 1939h (Moore), 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.Iridium 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 (colongitude range 39.8° - 40.4°) 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 (illuminated E 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

On 1987 Nov 02 at UT 01:00-01:30 P. Jean (Outremont, Quebec, Canada) saw a blink from a bright spot south of the central peak of Gassendi. This was apparently the same spot seen by Foley and Moore on 1987 Sep 05. The Cameron 2006 catalog ID=312 and the weight=4. The ALPO/BAA weight=2.

On 1990 Sep 30 UT 03:39-04:25 D. Darling (Sun Prairie, WI, USA, 12.5" reflector, x150) observed a red spot on the west wall (bright in red filter and faint in the blue filter. No filter reactions were found elsewhere. Gassendi had much detail visible. A sketch was made. BAA observers in the UK were alerted but they could not observe due to cloud. Cameron 2006 extension catalog ID=411 and weight=5. ALPO/BAA weight=3

Gassendi 1977 May 28 UT 20:45-21:15 Observed by D. Sims (Dawlish, Devon, UK) saw a hazy area on the south east floor that was normal in red and white light but darker in blue. This was partly confirmed by J-H Robinson (Devon, England, 10" reflector) 21:24-23:12 who saw the south east floor of Gassendi to have a loss of detail - but no color seen, although at 21:57-21:58 it was slightly brighter in red than in blue briefly. P. Doherty (22:45-23:15) did not see anything unusual. D. Jewitt (22:22-22:55) did not reveal anything unusual, apart from spurious color. The Cameron 1978 catalog ID=3 and ID=1463. The ALPO/BAA weight=3.

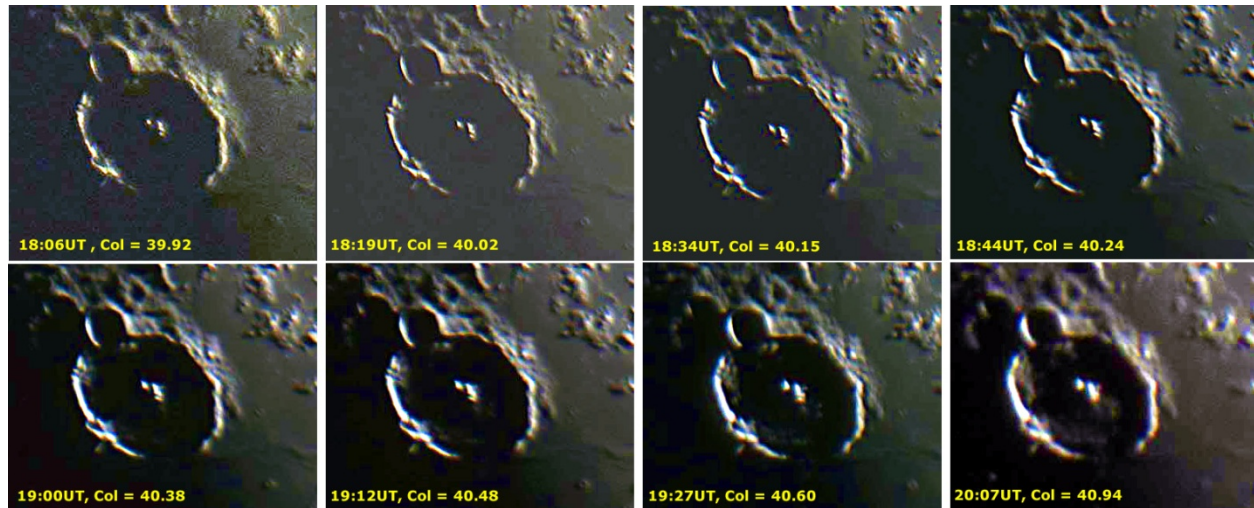


Figure 2. Franco Taccogna (UAI) took the above images of Gassendi on 2014 May 09. These are orientated with north towards the top, have been color normalised, and then had their color saturation increased to bring out natural surface color.

Alas we only have some of the original reports, but we do at least have Franco's time sequence to compare against (Fig 2). None of Franco's images show prominent surface color, though there is some golden tinge on the eastern rim on 2014 May 09 UT 18:06, but it may be due to color imbalance from the twilight conditions at the time. This does not explain the 1971 LTP by Neville and Coates (Fig 2 – top right is the closest approximation to the lighting), report of golden color between the E illuminated rim and the interior shadow. They were using a 6" reflector, so chromatic aberration should not have been too much of an issue unless it was eyepiece related. The lunar altitude at the time was 23°, so there is a chance that it could be atmospheric spectral dispersion, though it is odd that the effect was visible for 5 min only. It's a shame that their confirmed report does not implicitly make it clear whether they could detect this colored area in a moonblink. I will leave the weight of this LTP at 2 because of this.

The 1967 LTP is especially interesting because Sartory independently sees a blink on the eastern wall area around the same time that Moore and Moseley do. There is nothing in Fig 2 to indicate color here over the first five frames that the colongitude range covers. The altitude of the Moon back on that date in 1967 was very high, so there should be no danger of conventional atmospheric spectral dispersion. Moore and Moseley were using a refractor, but Sartory was not. This should make it a sound weight 5 LTP, however reading through what archives we have, there is some slight spatial discrepancy, i.e. exactly where on the eastern rim area the observers saw the effect – though Moseley does comment though that the color had moved during the time that he was observing. Therefore I will keep this LTP at a weight of 4 to reflect this uncertainty.

The 1977 Sims LTP report is a repeat topocentric libration, but in terms of colongitude, it is nearest to the very last image in Fig 2., though needs a little less shadow. There certainly is a hazy area on the SE floor, as confirmed by Hedley Robinson, but this is just a bit of illuminated floor – so this LTP is basically all about the visibility of this area in red and blue light. The other two observers came in after the LTP had ended, so saw nothing. The first two observers used 10" reflectors, and the altitude of the Moon was around 30°. It is possible that the difficulty in seeing the illuminated SE area of the floor in blue light was caused by scattered blue light in our atmosphere, which will change with atmospheric clarity – only Sims mentions some haze, Robinson does not. Although this is a confirmed observation, in view of the blue scattered light possibility, I will keep the weight of this report at a 3.

The 1987 LTP report by Pierrette Jean of Quebec, was made with a 4" reflector, and the Moon at a respectable altitude of 40° above the horizon. The closest of the images in Fig 2 to resemble the appearance are the last two (bottom right), however when comparing them to the sketch that was supplied for this LTP (not shown here), the relative sizes of the central peaks are all wrong, and the sketch does not show detail elsewhere on the floor. I feel justified in leaving the weight at 2 as there is only one observer's account, and nobody else was observing then, and also the discrepancy in peak sizes makes me wonder about the accuracy of the report details.

Finally David Darling's 1990 LTP is only represented at the start of his observation, by the last image in the sequence in Fig 3. I can confirm from an unstretched version of Franco's image sequence, that there is a bright spot here on the W rim, but it certainly should not be red. The altitude of the Moon at the start of David Darling's observation was 26°, so there is a chance of atmospheric spectral dispersion being the cause, but according to archive reports he checked other craters for moonblink color detections and found none. Also observing with moonblinks should prevent astronomers being fooled by atmospheric spectral dispersion. This report therefore retains its weight of 3, as there was no confirming observation.

Censorinus: On 2014 Jun 9 UT 20:40-20:50 Marie Cook (BAA) observed this crater under repeat illumination conditions to within $\pm 0.5^\circ$ to her 1985 LTP report described from the Cameron 2006 catalog below.

On 1985 Mar 03 at 20:00? UT M. Cook of Frimley, UK, observed an interesting difference between white and blue light crater extinction brightness measurements of Censorinus compared to Proclus. Cameron suggests that this was a continuation of the LTP activity from Mar 2nd. Cameron 2006 catalog extension ID=262 and weight=3. ALPO/BAA weight=2.

Marie Cook observed this crater just over 29 years after her original report (mentioned in the catalog), and so is a useful person to judge whether the repeat illumination was anything like the original report. Her local conditions this time around were seeing=III, but transparency was poor. Marie comments that the detail in Censorinus was sharper than in Proclus, but they had a similar brightness. She checked the crater with filters but did not find anything abnormal. Searching for Marie's original 1985 Mar 03 report, I cannot find it, only a brief mention in the BAA Lunar Section Circular from 1985 March, p5, which says: "both Kevin Marshall and Marie Cook have reported abnormal albedo behavior. 1985 March 2/3, Kevin obtained an extremely low CED reading for the region when compared with neighboring Proclus. Proclus is always used in conjunction with Censorinus for comparative purposes. The following night, Marie obtained an odd comparison between blue and white light CED readings." A quick phone call confirmed that she did not actually make any observation on the 1985 Mar 3rd, the closest observation being on the Mar 2nd, and that was a routine observation of the crater from 23:42-23:45UT. In light of this, I can only assume that the entry in the BAA Lunar Section circular was in error, and it got transcribed into the Cameron catalog. I am therefore removing this from the ALPO/BAA LTP database!

Aristarchus: On 2014 Jun 14 UT 10:57-11:40 Maurice Collins (ALPO) imaged Aristarchus under the same illumination conditions to within $\pm 0.5^\circ$ to a 1990 LTP report described below:

On 1990 Dec 03 at UT23:00-01:30 M.C. Cook (Frimley, Surrey, UK) noticed that the central peak of Aristarchus was quite bright and extended to a circular region in the east in the crater "sprout" area - Cameron suggests that this is Bartlett's self defined EWBS area?. Beyond the rim to the east was very bright. However no color effect was seen in filters. A sketch was supplied. Cameron notes the coincidence of perigee and full Moon. The Cameron 2006 catalog ID is 416 and the weight=3. The ALPO/BAA weight=2.

Fig. 3 (top) shows that in general Aristarchus was a lot brighter than Proclus and Censorinus, and this is normal. The close up view by Maurice (Fig 3 - bottom left) shows the bands that Marie depicts, clearly in her sketch (Fig 3 – bottom right), and also illustrates how brilliant the central floor is, as well as showing the nicknamed "sprout" feature coming off the eastern rim. I see no reason why this should be regarded as a LTP in the Cameron catalog, and it was never mentioned as such in Marie's original report. Therefore I will remove this from the ALPO/BAA LTP database.

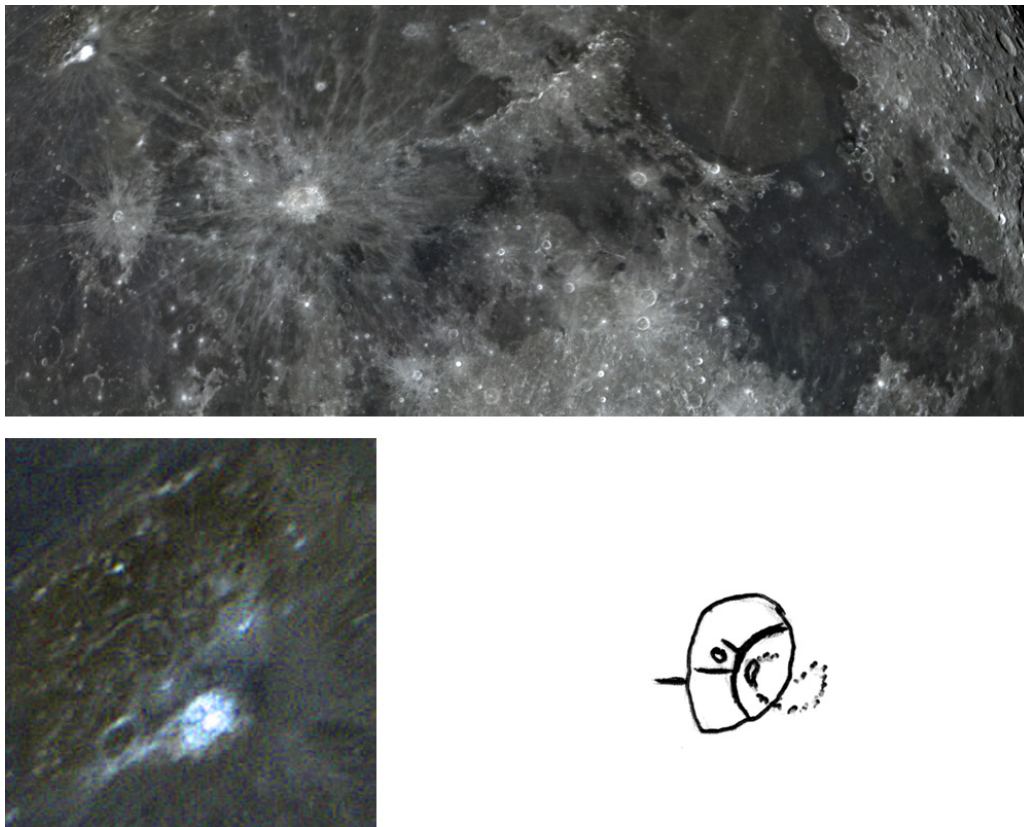


Figure 3. The following are orientated with north towards the top. (**Top**) The relative brightness of features on an image mosaic of the Moon by Maurice Collins taken on 2014 Jun 14 UT 10:57-11:40. (**Bottom Left**) Aristarchus image taken on 2014 Jun 14 UT 11:37 by Maurice Collins. (**Bottom Right**) Aristarchus as sketched by Marie Cook on 1990 Dec 03.

Godin: On 2014 Jun 15 UT 04:30-04:55 Jay Albert (ALPO) observed this crater under repeat illumination conditions to within $\pm 0.5^\circ$ to the following report from Maurice Collins:

On 2006 Dec 08 at UT 17:32 (± 2 min) M. Collins (Palmerston North, New Zealand, 3.5" Maksutov, 40mm eyepiece, seeing III-IV) observed during daylight hours an extremely bright flash south of Godin. It flared up and down over a fraction of a second and appeared three times brighter than the Moon background itself. The ALPO/BAA weight=1.

Jay comments that he did not see any flash south of the crater, and looked for any bright spots of craterlets that might be in this location. Of course tiny bright objects, just on the limit of atmospheric seeing resolution, can occasionally appear to flare up when there are rare, but brief moments of good seeing – giving rise to short apparent flash effects. Jay notes that there was a bright spot on the south rim and another on what looked like a hill south of Godin and just west of Godin B. These spots were not ephemeral and did not vary in intensity, or flash, nor were they bright enough to be consistent with the LTP description.

Now Maurice, as readers of this newsletter should know, is a very skilled observer. What he saw could of course been a cosmic ray detection in his eye, whilst he was looking at that part of the Moon, but he did say that it flared up and down over a fraction of a second. Cosmic ray detections, in CCD cameras at least, are just on-off events. It has some similarities to Thornton's flash seen in Plato in 1945, which has a weight of 3, though that post WWII flash was yellow-orange in color. Therefore as Jay took a long time studying the area for seeing induced flashes from tiny bright craterlets, and did not see any, I would like to raise the weight of Maurice's LTP from a 1 to a 2. Flashes on the Moon are most often cosmic ray induced in our eyes/cameras, but occasionally can be from impact flashes, and there is even a theory that you can get flashes from the thermal/diurnal splitting of rocks (See Zitto, R.R. (1989) A New Mechanism for Lunar Transient Phenomena, *Icarus*, 82. 419-422).

Suggested Features to observe in August: 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>. By re-observing and submitting your observations, we will get a clear understanding of what the feature ought to have looked like at the time. Only this way can we really fully analyze past LTP reports. If you would like to join the TLP 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, firstly read the LTP checklist on <http://users.aber.ac.uk/atc/alpo/ltp.htm>, and if this does not explain what you are seeing, 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>.

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KEY TO IMAGES IN THIS ISSUE

1. Alphonsus
2. Arago
3. Aristarchus
4. Aristillus
5. Censorinus
6. Condorcet
7. Gassendi
8. Godin
9. Hyginus
10. J Herschel
11. Kepler
12. Langrenus
13. Maurolycus
14. Prinz
15. Ptolemaeus

FOCUS ON targets

X = Altai Scarp (September)
Ghost Craters (November)

