

THE LUNAR OBSERVER

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

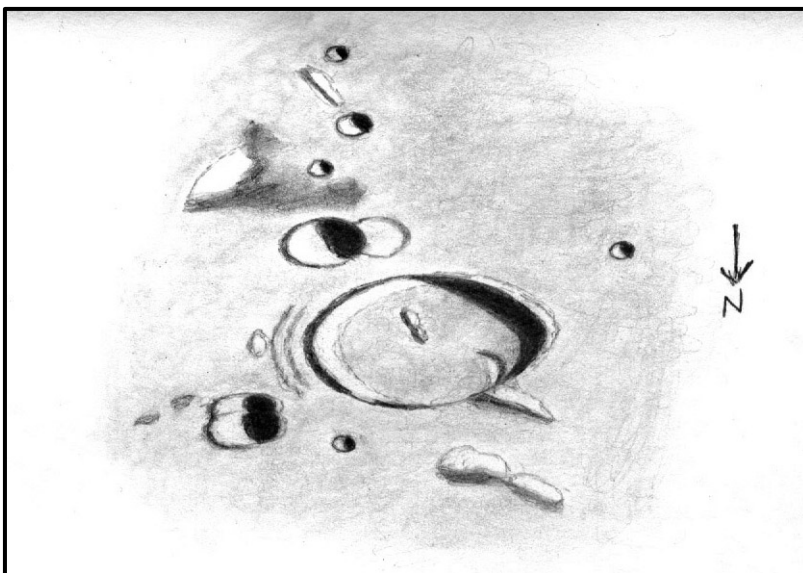
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RECENT BACK ISSUES: http://moon.scopesandscapes.com/tlo_back.html

FEATURE OF THE MONTH – MARCH 2015

ANAXAGORAS



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

October 12, 2014 04:50-05:28 UT, 15 cm refl, 170x, seeing 8/10

I drew this crater and vicinity on the night of Oct. 11/12, 2014 while watching the moon uncover 63 Tauri and four other stars in the Hyades. This crater is north of Mare Frigoris and well north of Plato. It shows a double peak south of center and a pointed west end. A short, curved strip of shadow inside the northwest rim looks like part of an old ring - somewhat surprising since Anaxagoras appears relatively young. The northeast rim must have a high area that nearly covers the exterior shadow there. Anaxagoras A is the large crater just southeast of the main crater and overlaps an apparent ghost ring. Goldschmidt C and B are farther south, B being the larger one. A bright peak is east of Goldschmidt C, and a variety of shadowing is in that area. Epigenes H is south of Goldschmidt B, and a short ridge is between those two craters. Two vague strips of shadow are concentric to the east rim of Anaxagoras, and a bright patch, probably a peak, is just to their east. Goldschmidt D and an overlapped ring are northeast of Anaxagoras, and a small pit is to their west. A low ridge extends out from the northwest rim of Anaxagoras, and a similar feature parallels it to the north. A small pit is southwest of Anaxagoras in an area that otherwise looks quite smooth.

LUNAR CALENDAR

MARCH-APRIL 2015 (UT)

Mar	05	07:35	Moon Apogee: 406400 km
	05	18:05	Full Moon
	07	21:04	Moon Ascending Node
	12	08:25	Moon-Saturn: 2.4° S
	13	17:48	Last Quarter
	14	01:39	Moon South Dec.: 18.3° S
	19	19:38	Moon Perigee: 357600 km
	20	09:36	New Moon
	20	09:46	Total Solar Eclipse
	21	02:19	Moon Descending Node
	21	22:13	Moon-Mars: 1° N
	22	19:51	Moon-Venus: 2.9° N
	25	06:55	Moon-Aldebaran: 0.9° S
	26	14:29	Moon North Dec.: 18.2° N
	27	07:43	First Quarter
Apr	01	12:59	Moon Apogee: 406000 km
	04	03:17	Moon Ascending Node
	04	12:01	Partial Lunar Eclipse
	04	12:06	Full Moon
	08	13:08	Moon-Saturn: 2.3° S
	10	07:46	Moon South Dec.: 18.2° S
	12	03:44	Last Quarter
	17	03:53	Moon Perigee: 361000 km
	17	13:07	Moon Descending Node
	18	18:57	New Moon
	21	16:35	Moon-Aldebaran: 0.9° S
	21	18:09	Moon-Venus: 6.8° N
	22	23:26	Moon North Dec.: 18.3° N
	25	23:55	First Quarter
	29	03:55	Moon Apogee: 405100 km

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.

2015 ALPO CONVENTION

The 2015 ALPO Convention will be held in Las Cruces, NM Monday –Saturday, July 6-11, 2015, in conjunction with the Astronomical League's ALCON2015. Details will be available in the next issue of the Journal of the ALPO. Registration, schedule and accommodation information is available on the ALCON2015 website (alcon2015.astroleague.org). Las Cruces is the home of Walter Haas, the ALPO's founder.

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: Rimae Sirsalis

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 **May 2015** edition will be **Rimae Sirsalis**. 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 Rimae Sirsalis article is April 20, 2015

FUTURE FOCUS ON ARTICLES:

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

Subject

TLO Issue

Deadline

FOCUS ON: HAINZEL

By Wayne Bailey

Coordinator: Lunar Topographical Studies

Hainzel is one component of a group of three overlapping craters in the southwest quadrant, south of Mare Humorum and east of Schickard (Fig. 1). Hainzel is the largest (70 km), and oldest of the three. The most conspicuous crater is Hainzel A, the northwest component. The northeast component, Hainzel C, also has the oddest shape. Under some lighting conditions it

Figure 1. Hainzel-12 day Moon. Maurice Collins, Palmerston North, New Zealand. August 8, 2014 08:31-08.48 UT. C-8 SCT.

appears to be almost perfectly rectangular (Fig. 2). Both A and C have small central peaks. Any central peak in Hainzel itself would have been obliterated by the impacts that formed A and C. Curiously, Hainzel B is the middle crater in the line of three small craters north of A (Fig. 3)

Although Hainzel is the largest of the trio, it is also the least conspicuous. At times, it is overwhelmed by A



is mostly an empty gap, where little remains of either rim. My impression is that C appears more weathered than A, and the curvature of the low relief structures in the overlap area seems to follow the interpolated rim of A, implying that A is the younger of the two. Overlapping craters usually show a

Figure 3. Inconspicuous Hainzel. Jay Albert, Lake Worth, Florida USA. January 3, 2015 02:56 UT. Seeing 7-8/10 Transparency 2/6. 6" Nextstar SCT, NexImage 5

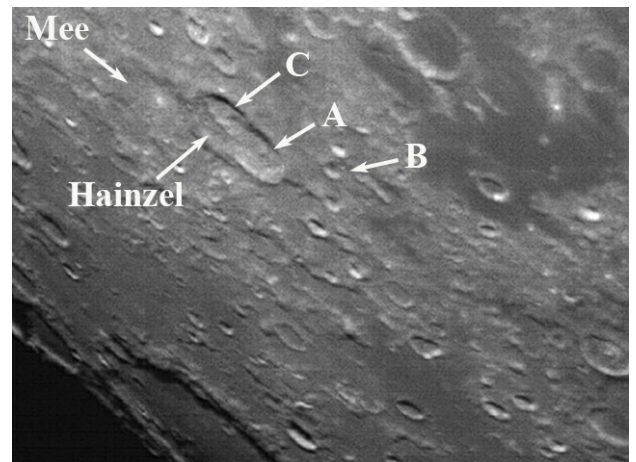
recognizable rim created by the later impact in the overlap area. Could the almost complete lack of such a feature for Hainzel A & C indicate near simultaneous impacts of a binary asteroid? For a separation of tens of kilometers, both impacts

and C, which may lead to overlooking it (Fig. 3). With different lighting, it becomes an obvious, round crater with A superposed on its northwest rim, and little sign of C (Fig. 4 & 5).

Figure 2. Hainzel. Damian Peach –Selsey, West Sussex, United Kingdom. April 22, 2014.

<http://www.damianpeach.com/lunar14.htm>

It's apparent that Hainzel is older than either A or C since both A and C are superimposed on it, and its softer, degraded appearance, compared to their sharper, more finely detailed features, indicates a longer exposure time (Figs. 2 & 6). The formation sequence of A and C is less obvious, since their region of overlap





would occur within seconds.

Hainzel, in turn, intrudes on the north rim of the older crater Mee. The patch of mare material known as Lacus Timoris lies to the northeast.

Figure 4. Round Hainzel. Maurice Collins, Palmerston North, New Zealand. May 11, 2014 06:51UT. C-8 SCT.

Although it is not one of the large, eye-catching features, when examined closely Hainzel is a complex, interesting structure. The area south of Mare Humorum, east of Schiller and west of Tycho, seems to be neglected by most observers. At first glance it appears rather cluttered but bland. With closer inspection it will yield many interesting sights.

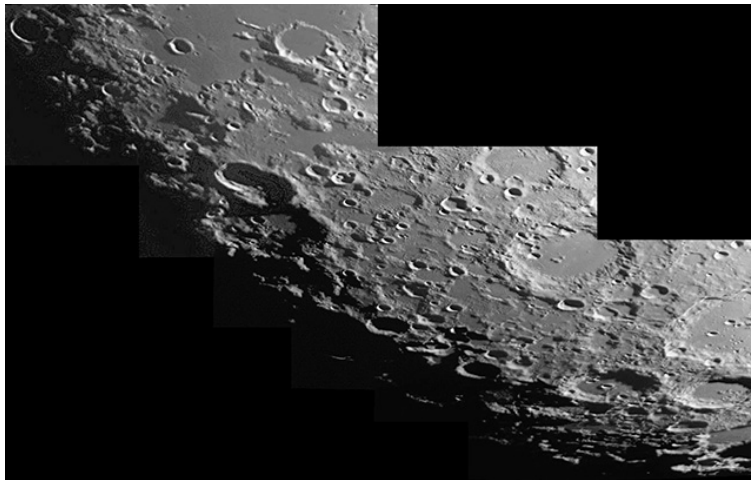


Figure 5. Hainzel & Mee. Richard Hill – Tucson, Arizona, USA May 10, 2014 02:09UT. Seeing 8/10. TEC 8" f/20 MAK-CASS, SKYRIS 445M. 656.3 nm filter.



Figure 6. Hainzel to Longomontanus. Avani Soares – Canoas, Brazil. July 9, 2014 01:07-01:24 UT. C-14 Edge, QHY5LII color, Astronomik IR742 filter.

ADDITIONAL READING

- Bussey, Ben & Paul Spudis. 2004. The Clementine Atlas of the Moon. Cambridge University Press, New York.
- Byrne, Charles. 2005. Lunar Orbiter Photographic Atlas of the Near Side of the Moon. Springer-Verlag, London.
- Chong, S.M., Albert C.H. Lim, & P.S. Ang. 2002. Photographic Atlas of the Moon. Cambridge University Press, New York.
- Chu, Alan, Wolfgang Paech, Mario Wigand & Storm Dunlop. 2012. The Cambridge Photographic Moon Atlas. Cambridge University Press, New York.
- Dobbins, Thomas. 2013. Sky & Telescope, March, pg. 54.
- Gillis, Jeffrey J. ed. 2004. Digital Lunar Orbiter Photographic Atlas of the Moon. Lunar & Planetary Institute, Houston. Contribution #1205 (DVD). (http://www.lpi.usra.edu/resources/lunar_orbiter/).
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- Rukl, Antonin. 2004. Atlas of the Moon, revised updated edition, ed. Gary Seronik, Sky Publishing Corp., Cambridge.
- Schultz, Peter. 1972. Moon Morphology. University of Texas Press, Austin.
- Wlasuk, Peter. 2000. Observing the Moon. Springer-Verlag, London.
- Wood, Charles. 2003. The Moon: A Personal View. Sky Publishing Corp. Cambridge.
- Wood, Charles & Maurice Collins. 2012. 21st Century Atlas of the Moon. Lunar Publishing, UIAI Inc., Wheeling.
- The-Moon Wiki. <http://the-moon.wikispaces.com/Introduction>

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 7, 8 & 9 day Moon, Clavius, Copernicus & Plato(2).

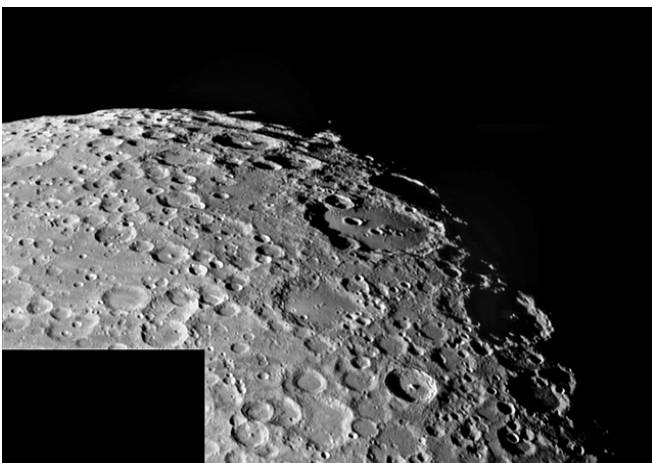
HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Hipparchus-Mare Nubium, Posidonius-Plinius, Sacrobosco-Maurolycus, Taruntius-Magelhaens & Taylor-Pontanus.

ROBERT HAYS - WORTH, ILLINOIS, USA. Drawings of Anaxagoras, Cayley-Whewell & Turner.

RICHARD HILL – TUCSON, ARIZONA, USA. Digital image of Piccolomini.

ALEXANDER VANDENBOHEDE-ASSEBROEK, BELGIUM. Digital images of Atlas-Hercules, Mare Frigoris, Palus Somni & Southeast limb.

RECENT TOPOGRAPHICAL OBSERVATIONS



CLAVIUS - Maurice Collins, Palmerston North, New Zealand. February 28, 2015 08:24 UT. Seeing A-1 to A-2, FLT-110 APO, f/21, Refrac.

RECENT TOPOGRAPHICAL OBSERVATIONS

COPERNICUS - Maurice Collins, Palmerston North, New Zealand. February 28, 2015 08:21 UT. Seeing A-1 to A-2, FLT-110 APO, f/21, Refrac.



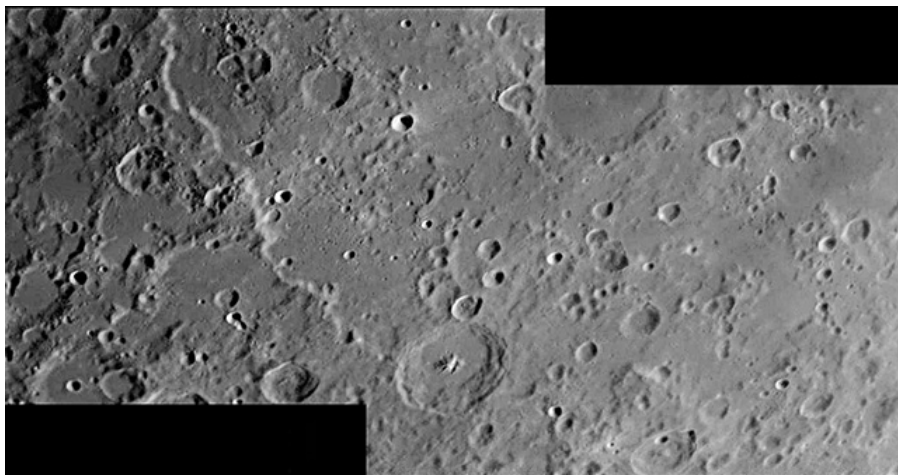
HIPPARCHUS-MARE NUBIUM - Howard Eskildsen, Ocala, Florida, USA. December 13, 2014 11:50 UT. Seeing 5/10, Transparency 6/6. Mewlon 250, 0.73x focal reducer, W-25 red filter, DMK 41AU02.AS.



POSIDONIUS-PLINIUS - Howard Eskildsen, Ocala, Florida, USA. January 26, 2015 00:54 UT. Seeing 7/10, Transparency 5/6. Mewlon 250, IR block filter, DMK 41AU02.AS.



RECENT TOPOGRAPHICAL OBSERVATIONS



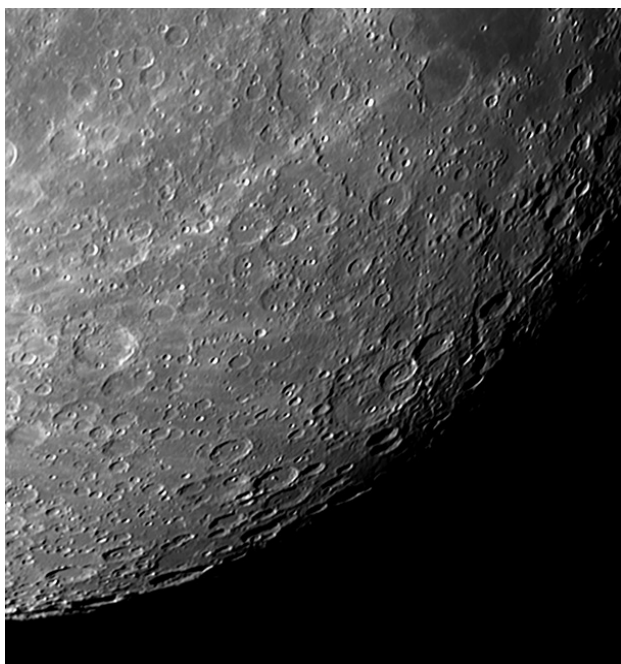
PICCOLOMINI – Richard Hill – Tucson, Arizona, USA February 26, 2015 02:02 UT. Seeing 8/10. TEC 8" f/20 MAK-CASS, SKYRIS 445M. 656.3 nm filter.

Finally our winter weather gave me a crack at the moon again. It's been a warm, wet winter in the "Old Pueblo" (Tucson) so far.

Five days after new moon you can get a good look at Piccolomini on the terminator, but how many people look for it after that until it's back on the terminator 4 or 5 days after full moon? Here you see it with a high sun, looking

much more shallow but the terraced inner walls are nicely shown. Of course the show-stopper is the great gash, what we used to call "scarps" back in the 1960s, now know as Rupes Altai formed during the great Nectarus impact. Peeking in from the upper edge is part of Fracastorius, a partially submerged large crater. Take a look at the two craters on the left edge. The lower one that appears to be three overlapped secondary craters was the subject of some controversy in Sky and Telescope back in the 1960s. Note also some of the brighter, fresher craters scattered across this image. Note that their depth/diameter ratio is greater than the older craters where slumping has occurred.

PALUS SOMNI– Alexander Vandenbohede, Brugge, Belgium. February 6, 2015 22:05 UT. C-8 SCT, webcam.



SOUTHEAST LIMB– Alexander Vandenbohede, Brugge, Belgium. February 6, 2015 22:30 UT. C-8 SCT, webcam.

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



ANAXAGORAS-MARE FRIGORIS – Alexander Vandenbohede, Brugge, Belgium. February 6, 2015 22:20 UT. C-8 SCT, webcam



MESSIER - Howard Eskildsen, Ocala, Florida, USA.
January 26, 2015 01:04 UT. Seeing 7/10, Transparency 5/6.
Mewlon 250, IR block filter, DMK 41AU02.AS.

LUNAR TRANSIENT PHENOMENA

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

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

LTP NEWSLETTER – MARCH 2015

Dr. Anthony Cook – Coordinator

Observations from the following observers were received in January: Jay Albert (Lake Worth, FL, USA - ALPO) observed: Aristarchus, Herodotus, Janssen K, Langrenus, Mare Smythi, Proclus, and Vallis Schroteri. Aldo Tonon (Italy – UAI) imaged Aristarchus. Maurice Collins (New Zealand, RASNZ) observed Deslandres, Plato, and several features. Anthony Cook (Newtown & Mundesley, UK – BAA) imaged several features and observed Earthshine. Marie Cook (Mundesley, UK – BAA) observed Aristarchus, Maskelyne, and Proclus. Ralph Eikelenberg (Belgium - ALPO) imaged several features. Chris Garrison (near Granada, Spain) imaged the Moon. Brendan Shaw (UK – BAA) imaged Alpetragius, Aristarchus, Gassendi, Hercules, Maskelyne, Proclus, and Yerkes. Kevin Taylor (Leeds, UK) imaged the whole Moon.

News: Nothing much to report in the way of news over the last month – though we had a film crew from Japan, visit Aberystwyth, to film about the Moon. More about this next month. Also next month I will unleash changes to the LTP program, to deal with the new findings about the Moon that have been deduced by analysis of recent spacecraft results.

On 2015 Apr 04 UT 10:15-13:44 (Umbral start and end times) there will be a total lunar eclipse. Mid eclipse will be at 12:00. This is best seen from the Pacific region.

LTP Reports: No LTP were reported in January, but on 2015 Feb 01 UT 22:41 Kevin Taylor of Leeds took a whole Moon color image, using a Canon 1000D camera (with an Astronomic CLS clip filter) on a Skywatcher 6" f/5 telescope, with a and recorded a red region on the inner northern-rim/floor area of Plato (See Fig 1). Although the red patch in Plato might be in the right place to be spectral dispersion color, evidence for spectral dispersion type color is not present so strongly on other obvious contrasty edges. The effect may instead be some sort of processing artifact, as Kevin fed images through Registax software, and the individual images are a lot more blurry and do not show any sign of red here. Whatever the cause, both Kevin, and myself, think that it probably was not a LTP, as there are some reddish patches on dark crater patches elsewhere, but just for now we will give this a weight of 1 as it would be good to have some repeat illumination images for comparison.

Routine Reports: Below is a selection of reports received for January that can help to re-assess past LTP observations.

Aristarchus region: On 2015 Jan 03 UT 01:05-02:00 Jay Albert (ALPO) observed both Aristarchus and Herodotus and the same illumination conditions to the following three LTP reports:

On 2002 Sep 19 at UT 06:31-07:22 R. Gray (Winnemucca, NV, USA) found that the bright areas of the crater floor, and the east facing part of the west rim, were brighter noticeably in red (Wratten 25) or white light, than in blue (Wratten 38A). The observer suspects that the apparent LTP was more to do with the relative densities of the filters and the contrast in Aristarchus than a real event. This was partly confirmed after checks on other craters, though it did not work everywhere. The ALPO/BAA weight=1.

Aristarchus 1963 Oct 30 UT 01:50-02:15 Observed by Greenacre and Barr (Flagstaff, AZ, USA, 24" Clark Refractor) observed 2 ruby red spots - one just to the SW of the cobra's Head and the other on a highland area east of Vallis Schroteri. A pink color formed covering the SW rim of Aristarchus. Effects present with or without Yellow Wratten 15 filter. Similar effects checked for elsewhere on other craters but not seen. So presumed not to have been due to chromatic aberration or atmospheric dispersion. Effect not seen in 12" refractor, but this may have been a resolution issue. The NASA catalog ID No. is #778. The NASA catalog weight is 5 (highly reliable). ALPO/BAA weight=4.

Herodotus 1950 Jul 27 UTC 03:56 Observed by Bartlett (Baltimore, MD, USA) described in the NASA catalog as: "Pseudo c.p. in Herod. Drawings. (Similar to NASA catalog event #523)" 5" reflector used at x100, NASA catalog weight=4 (high). ALPO/BAA weight=3.

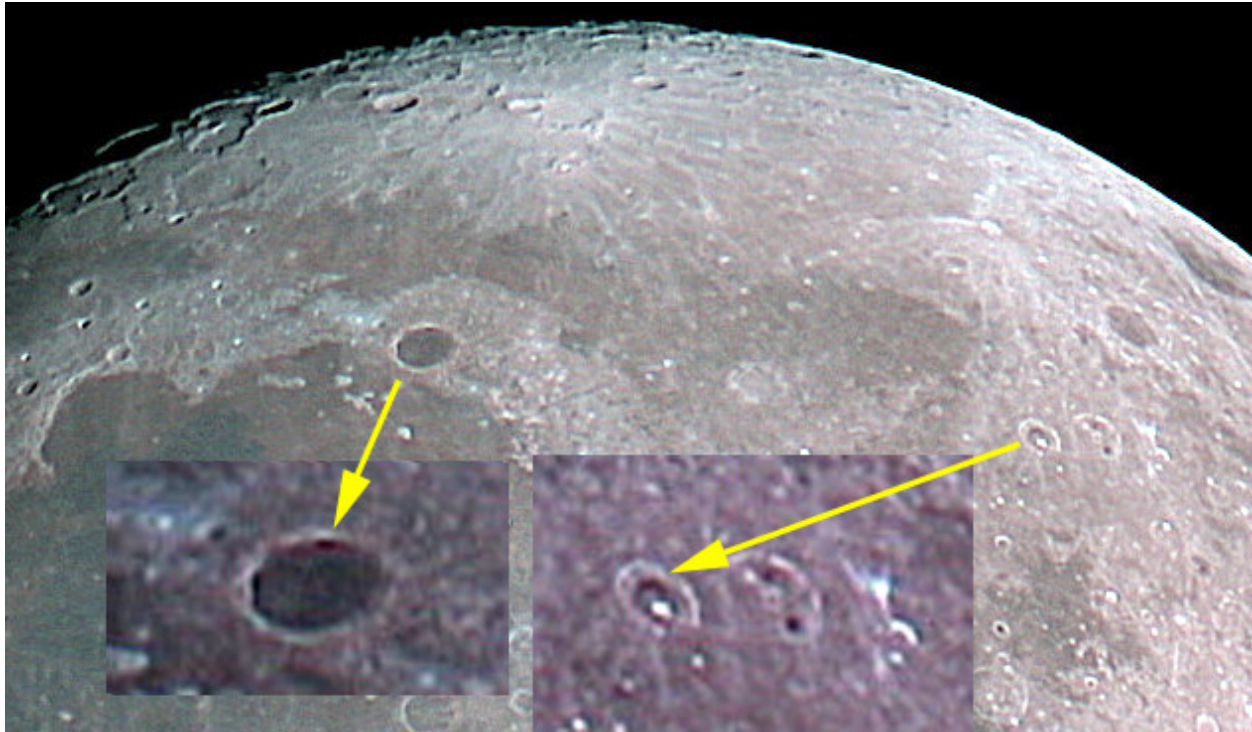


Figure 1. 2015 Feb 01 UT 22:41 enlargements of Kevin Taylor's whole Moon image, orientated with north towards the top. **(Left)** some apparent redness on the northern rim/floor area of Plato - probably an image processing artifact. **(Right)** a similarly enlarged region around Atlas and Hercules, also showing possible hints of dark red - likewise - probably image processing artifacts.

Jay comments that concerning the 2002 Robin Gray LTP event, Jay performed blinks with Wratten 25 red, Wratten 38A dark blue, and Wratten 44A blue filters. He noted that all features in the area were much brighter in the Wratten 25 than in the Wratten 38A filter, but only about equally bright in the Wratten 25 and Wratten 44A filters. The greater density of the Wratten 38A filter makes it a poor match for the Wratten 25, making it unlikely that this is an LTP. I will therefore remove the 2002 report from the LTP database by giving it a weight of 0.

No "ruby red" spots were seen near the Cobra Head and Vallis Schroteri area, or the pink color on the SW rim, during the repeat illumination event for the Greenacre and Barr 1963 LTP. Jay also saw no color anywhere in else in the area. He used 214x with, and without, a Wratten 8 yellow filter. The central peak was a brilliant white, the west wall was very bright with vertical bands and terracing easily seen. Some black shadow from the east wall covered the eastern floor roughly halfway to the central peak. Everything looked normal. The Greenacre and Barr LTP will therefore remains at a weight of 4.

Finally, Jay checked out Bartlett's Herodotus pseudo peak LTP report from 1950. On this January 2015 repeat illumination apparition, Jay noted that there was a diffuse patch south of the center of the crater which was slightly lighter than the rest of the floor, and it was easily seen at 214x throughout the time he observed Aristarchus and Herodotus. Note that this is not the same as the "central pseudo peak" effect as seen by Bartlett. Therefore this LTP remains at a weight of 3.

Aristarchus: On 2015 Jan 06 UT 22:49-23:18 Aldo Tonon (UAI), and Brendan Shaw (22:46-22:56 and 23:54-00:02UT) imaged the Aristarchus area under the same illumination conditions ($\pm 0.5^\circ$) to the LTP reports listed below. Note that in the case of the 1980 Sep 25 LTP, this was a repeat illumination & libration

event to within $\pm 1^\circ$ on Jan 6th.

Aristarchus 1983 Oct 22 UT 22:00 G.W. Amery, (Reading, UK, Seeing III-IV) found Aristarchus so bright that the CED was unable to give a reading. The crater's interior was also diffuse in appearance. The Cameron 2008 catalog ID=232 and weight=4. The ALPO/BAA weight=3.

On 1898 Apr 07 at UT 22:30 Pickering (Cambridge, Mass, USA, 15" refractor?) observed in Vallis Schroteri and its vicinity "Variations in vapour col. Lge. gap in main column near edge of C. Gap not previously seen, but fine lines crossing it had. E is still most conspic. (time est. fr. col. given)". The Cameron 1978 catalog ID=298 and weight=3. The ALPO/BAA weight=2.

Aristarchus 1969 May 03 UTC 07:00? Observed by Smith, Gallivan (Corralitos Observatory, Organ Pass, NM, 24" reflector, photos) "Bluing around crater. Visible on monitor, but immeasurable in photos" NASA catalog weight=5. NASA catalog ID #1125. ALPO/BAA weight=3.

On 1980 Sep 25 at UT 20:20-22:14 P.Moore (Selsey, UK, 15"? reflector, seeing = III) saw a red glow to the south west of Aristarchus, but this was also visible in some other craters, therefore probably spurious color. Cameron 2006 catalog LTP ID=111 and weight=0. ALPO/BAA weight=1.

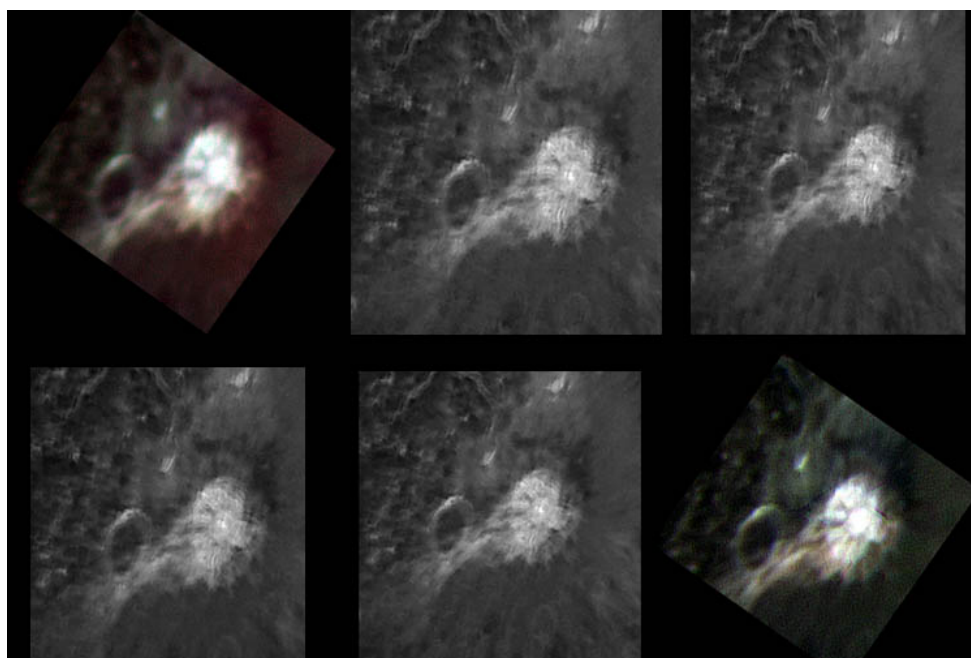


Figure 2. Aristarchus images from 2015 Jan 06, orientated with north towards the top. **(Top Left)** UT22:46-22:56 False Color image (Red Channel=IR, Green Channel=Red, Blue Channel=Blue) by Brendan Shaw (BAA). **(Top Center)** UT22:49 Monochrome image by Aldo Tonon (UAI). **(Top Center)** UT22:56 Monochrome image by Aldo Tonon (UAI). **(Bottom Left)** UT23:02 Monochrome image by Aldo Tonon (UAI). **(Bottom Center)** UT23:14 Monochrome image by Aldo Tonon (UAI). **(Bottom Right)** UT23:53-00:02 False Color image (Red Channel=IR, Green Channel=Red, Blue Channel=Blue) by Brendan Shaw (BAA).

It is difficult to say from the images in Fig 2, whether Aristarchus was incredibly bright, for the 1983 Geoff Amery LTP, because as we need a wider context area to compare against other bright craters such as Proclus, Censorinus, etc. However the images by Aldo Tonon suggest that the crater's interior was not diffuse. The images by Brendan, in color, appear to show more diffuseness, but that is because the focusing was off slightly in one or more of the filters – otherwise it was sharp. So it could be the atmospheric seeing conditions back in 1983 that made Geoff Amery think the interior was fuzzy, however this does not explain the brilliance of the crater 32 years ago. So for now the weight of that LTP will remain the same, at 3.

Pickering's 1898 "Vapor" LTP, is one of many he has described for the Vallis Schroteri area, and the general consensus amongst the present day era astronomers is not to pay too much attention to his LTP reports, and that it is just the natural appearance of the Moon at this stage in illumination, perhaps compounded by

seeing. Aldo Tonon's images confirm that there are lines going over this area, namely ray material from Aristarchus. Before lowering the ALPO/BAA weight from its present 2 though, I would be happier if I could find some articles by Pickering describing/showing what he had seen back in 1898 (and other occasions), so that we can do a direct comparison with modern day images that Thomas and Brendan took.

The 1969 Gallivan LTP seen in Aristarchus is an interesting report. The Corralitos Observatory group, led by Prof. Allen Hynek (of Project Blue Book fame) spent ~8000 hours imaging the Moon through different colored filters, trying to verify LTP reports seen by amateur astronomers, or to find some LTP themselves. They did not publish much, unlike a rival Project Moon Blink team who did claim positive detection of LTP. The Corralitos team, despite using a 62cm reflector, claim not have found, or confirmed any LTP, though they did not observe always simultaneously when other amateurs found LTP, and the filter refresh rate was relatively slow - according to Cameron. However on a few occasions, the Corralitos team did detect some "bluing's" over large areas of the Moon, principally over Aristarchus, but also to a lesser extent over Copernicus and Kepler. The effect could last several days, it would occur under similar lunar phase, and the blueness of Aristarchus could be upto 30% above the red and green channels. The Corralitos team checked for systematic errors and found none, but were not aware of confirmation of this effect being seen elsewhere in the world by other astronomers. There was apparently no correlation with solar activity, but it did seem to happen when the Moon was at its most northerly range of orbits, and consequently was often higher up in the sky and being seen through the least air-mass. Though they also followed the effect down to when the Moon was only 10° above the horizon on one occasion. Their final NASA CR-147888 technical report, brushes off the "bluing" effects as non-LTP, but does not give a satisfactory account of the physics involved which would cause this effect in our atmosphere. Again we would need large area context images covering Aristarchus, Copernicus, and Kepler, and in color to check out the Corralitos Observatory team story. This LTP will remain at a weight of 3 for now. One wonders what happened to the 45 thousand photographs captured during the duration of the Corralitos observing programme? Are they at the University of New Mexico, or the home base of the Corralitos Observatory team at North Western University?

Lastly, concerning the 1980 Patrick Moore report of color on the SW of Aristarchus, which he suspects as atmospheric spectral dispersion, well take a look at Brendan Shaw's two color images, and you can indeed just see a hint of red here – though I have not color calibrated these especially well. Is this what Patrick Moore was seeing – just natural surface color, or would it have been too faint for him to see? I will err on the side of caution and take the brave decision to reduce the weight of this LTP report from a 1, to a non-LTP status of 0, as Patrick Moore was very doubtful anyway about this being a LTP.

Proclus: On 2015 Jan 26 UT 19:40-20:00 Marie Cook observed Proclus under the same illumination conditions to a LTP report from Julio Lobo from 2008:

Proclus 2005 Jun 13 UT 16:00-17:10 Observed by Lobo (Sao Paulo, Brazil, 500mm telescope + finder scope) "Glow and reddishness (pink) seen on circular rim. Also crater was intensely bright all over. After 16:30 the brightness fades, returning to normal. The ALPO/BAA weight=3.

Marie saw no color on the crater rim or anywhere. The crater was clear and sharp. Therefore this LTP will remain at a weight of 3.

Alphonsus: On 2015 Jan 28 UT 08:57 Maurice Collins imaged Alphonsus under the same illumination conditions to a LTP report from David Darling from 1990:

On 1990 May 03 at UT 02:03 D. Darling (Sun Prairie, WI, USA, seeing steady) observed a point of light inside Alphonsus just to the north of the central peak, along the "center ridge". It was seen again, half way between the central peak and the north west rim - along the ridge. All other features were normal. The Cameron 2006 catalog ID=403 and the weight=3. The ALPO/BAA weight=3.

Clearly on the image that Maurice has taken, within the limits of resolution of the image, there is no clear "point of light". The central ridge is clearly visible though, as one would expect. On the right of Fig 3, we

can see a ray crater (it would better seen in this LROC mosaic if the Sun was more overhead) as indicated by the light blue/green in the color ratio overlay. Now I am not saying that this feature is the same one that David Darling saw, but it is the closest craterlet that I can find to the LTP area. Clearly the David Darling 1990 Alphonsus LTP remains a mystery, and I shall keep the weight at 3.

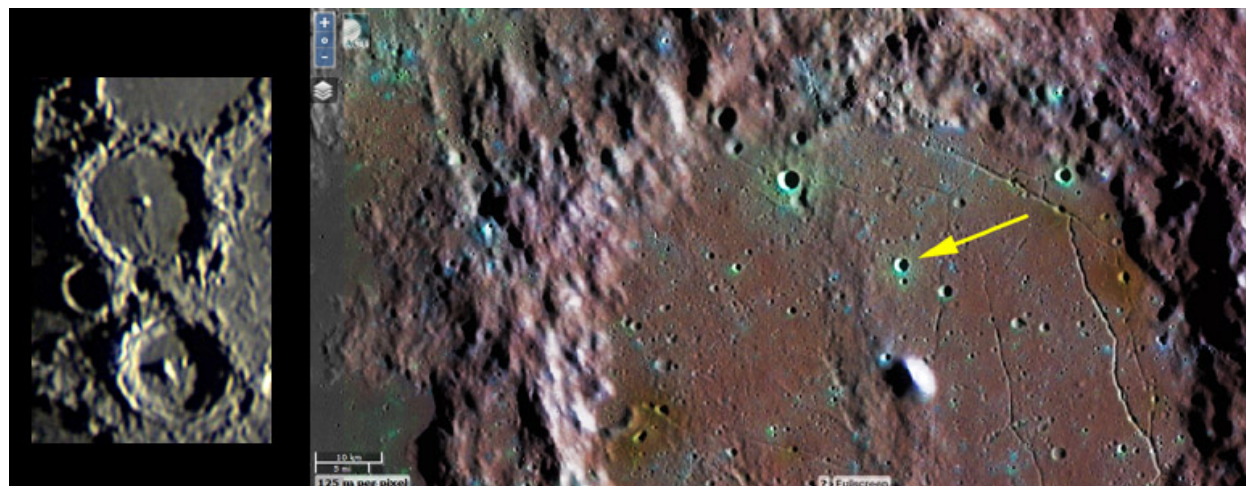


Figure 3. Alphonsus with north towards the top. (Left) A Maurice Collins image from 2015 Feb 29 UT. (Right) An LROC Quickmap product (<http://target.lroc.asu.edu/q3/>) with an LROC WAC shadowed mosaic – to highlight relief, overlaid with a Clementine UVVIS color ratio mosaic – to highlight bright ray craters (blue-green cast.). The arrow indicates a possible candidate crater for the bright spot seen in 1990.

Suggested Features to observe in March: 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 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, 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. Anaxagoras
3. Aristarchus
4. Clavius
5. Copernicus
6. Hipparchus
7. Mare Frigoris
8. Mare Nubium
9. Messier
10. Palus Somnii
11. Piccolomini
12. Plato
13. Plinius
14. Posidonius
15. Proclus

FOCUS ON targets

X = Hainzel

Y = Rimae Sirsalis

