



# THE LUNAR OBSERVER

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

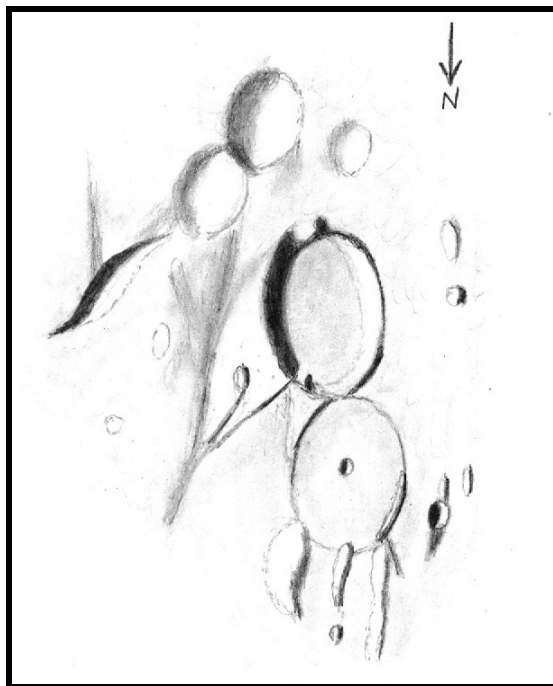
EDITED BY: Wayne Bailey [wayne.bailey@alpo-astronomy.org](mailto:wayne.bailey@alpo-astronomy.org)

17 Autumn Lane, Sewell, NJ 08080

RECENT BACK ISSUES: [http://moon.scopesandscapes.com/tlo\\_back.html](http://moon.scopesandscapes.com/tlo_back.html)

## FEATURE OF THE MONTH – MARCH 2011

### DREBBEL



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

November 19, 2010 06:24-07:06 UT

15 cm refl, 170x, seeing 7-8/10

I sketched this crater and vicinity on the night of Nov. 18/19, 2010 after the moon hid 101 Piscium. This crater is just east of Schickard. Drebbel itself is a fairly crisp-edged, mid-sized crater with a smooth floor, and high points on its south and northeast rims. There is extra shadowing on its south side east of the high point. There is a variety of detail in this area, and most of it has diffuse or grayish shadowing. The low ring Drebbel K is adjacent to the north rim of Drebbel. This ring appears to be complete, but most of the rim is

narrow. The highest segment of its rim is the northwest side. A tiny pit is near the center of Drebbel K. Several low ridges and elevations extend northward from Drebbel K, and two more are to their west. Drebbel L is embedded in one of them. Two more peaks are west of Drebbel. There is a relatively light area along the east side of Drebbel, and the southeast side of Drebbel K. There is some shadowing on its northwest sides, so this may be a swelling of sorts. An isolated peak is in this area east of Drebbel. A substantial dusky area and two vague bright patches are farther to the east. There are at least three shallow saucers south of Drebbel. The middle one is the largest, and has fairly extensive interior shading, but it isn't dark, except perhaps in its northeast side where it adjoins another saucer (These features may be too conspicuous on the sketch). A long, narrow depression lies to their east and southeast of Drebbel. This roughly S-shaped feature does have dark interior shadow, much like that inside Drebbel, and unlike those inside the nearby rings.

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# **LUNAR CALENDAR**

## **MARCH 2011-APRIL 2011 (UT)**

Mar. 01	02:00	Moon 1.6 Degrees NW of Venus
Mar. 03	15:00	Moon 4.8 Degrees NNW of Neptune
Mar. 04	06:00	Moon 5.7 Degrees NNW of Mars
Mar. 04	20:46	New Moon (Start of Lunation 1091)
Mar. 05	13:00	Moon 6.0 Degrees NNW of Mercury
Mar. 06	04:00	Moon 5.7 Degrees NNW of Uranus
Mar. 06	07:51	Moon at Apogee (406,582 km – 252,638 miles)
Mar. 06	24:00	Moon 6.0 Degrees NNW of Jupiter
Mar. 12	17:06	Extreme North Declination
Mar. 12	23:45	First Quarter
Mar. 19	18:10	Full Moon
Mar. 19	19:10	Moon at Perigee (356,577 km – 221,567 miles)
Mar. 20	21:00	Moon 7.5 Degrees SSW of Saturn
Mar. 25	05:06	Extreme South Declination
Mar. 26	12:07	Last Quarter
Mar. 26	18:00	Moon 3.7 Degrees SSE of Pluto
Mar. 28	04:00	Moon 1.5 Degrees NW of asteroid 4 Vesta
Mar. 30	23:00	Moon 5.0 Degrees NNW of Neptune
Mar. 31	07:00	Moon 5.5 Degrees NNW of Venus
Apr. 01	22:00	Moon 1.6 Degrees SE of asteroid Eunomia
Apr. 02	09:01	Moon at Apogee (406,655 km – 252,684 miles)
Apr. 02	12:00	Moon 5.9 Degrees NNW of Mars
Apr. 02	15:00	Moon 5.7 Degrees NNW of Uranus
Apr. 03	14:32	New Moon (Start of Lunation 1092)
Apr. 03	20:00	Moon 5.8 Degrees NNW of Jupiter
Apr. 04	09:00	Moon 1.4 Degrees NW of Mercury
Apr. 08	22:54	Extreme North Declination
Apr. 11	12:05	First Quarter
Apr. 17	03:00	Moon 7.6 Degrees SSW of Saturn
Apr. 17	06:01	Moon at Perigee (358,087 km – 222,505 miles)

Apr. 18	02:43	Full Moon
Apr. 21	13:42	Extreme South Declination
Apr. 23	00:00	Moon 3.4 Degrees S of Pluto
Apr. 25	02:46	Last Quarter
Apr. 27	05:00	Moon 5.2 Degrees NNW of Neptune
Apr. 29	18:03	Moon at Apogee (406,042 km – 252,303 miles)
Apr. 29	23:00	Moon 5.8 Degrees NNW of Uranus
Apr. 30	18:00	Moon 6.6 Degrees NNW of Venus

## **AN INVITATION TO JOIN THE A.L.P.O.**

**The Lunar Observer** is a publication of the Association of Lunar and Planetary Observers that is available for access and participation by non-members free of charge, but there is more to the A.L.P.O. than a monthly lunar newsletter. If you are a non-member you are invited to join our organization for its many other advantages.

We have sections devoted to the observation of all types of bodies found in our solar system. Section coordinators collect and study members' observations, correspond with observers, encourage beginners, and contribute reports to our Journal at appropriate intervals.

Our quarterly journal, **The Strolling Astronomer**, contains the results of the many observing programs which we sponsor including the drawings and images produced by individual amateurs. Additional information about the A.L.P.O. and its [Journal is on-line at: http://www.alpoastronomy.org/index.htm](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.

**Note:** The published images now contain links to the original, full resolution images. Clicking on an image while connected to the internet, will download the original image, which in some cases has significantly higher resolution than the published version.

### **When submitting observations to the A.L.P.O. Lunar Section**

In addition to information specifically related to the observing program being addressed, the following data should always be included:

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

### **CALL FOR OBSERVATIONS:**

#### **FOCUS ON: Alphonsus**

*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 2011** edition will be Alphonsus. 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 crater to your observing list and send your favorites to:

**Wayne Bailey** - [wayne.bailey@alpo-astronomy.org](mailto:wayne.bailey@alpo-astronomy.org)

**Deadline for inclusion in the Alphonsus article is April 20, 2011**

### **FUTURE FOCUS ON ARTICLES:**

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

**Plato**

**TLO Issue: July 2011**

**Deadline: June 20, 2011**

### **EDITOR'S NOTE**

I apologize for the lateness of this month's issue. Two consecutive computer failures delayed production. Rather than reconstruct this month's scheduled Focus On article, which would cause an additional delay of several days, I've decided to postpone it until the April issue. Future Focus On topics are not affected.

# Tiny New Rille?

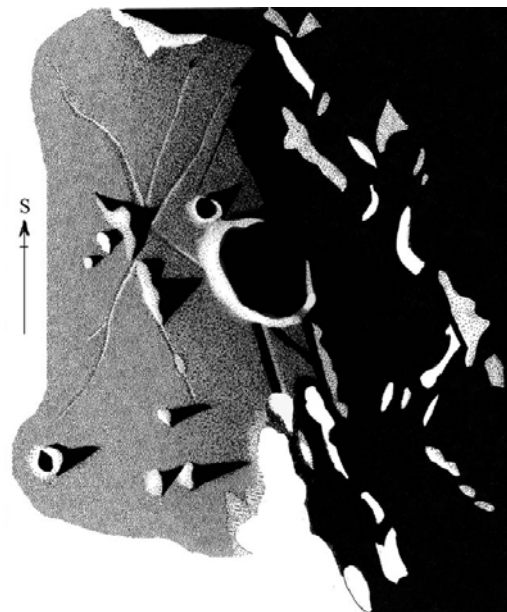
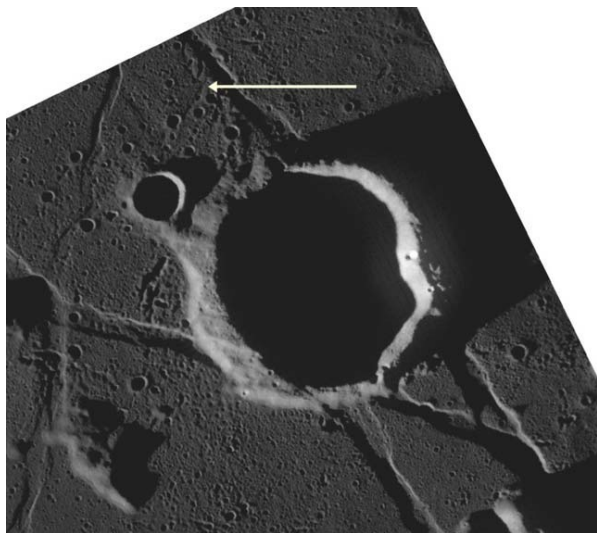
**Phil Morgan**

On the evening of January 14th 2011, I was observing the western extremity of the Palus Epidemiarum (Fig. 1). The terminator was on the western outer flank of Ramsden and to the south of this crater I noticed a definite cut-back in the line of the terminator, with a dark line of shade striking north-westwards down to the small abutting crater Ramsden A. This indicating a change of surface level at this

**FIGURE 1. Ramsden and Associated Rilles at Sunrise.**

*Phillip Morgan, lower Harthall-Tenbury Wells, Worcestershire, England. January 14, 2011 21:40-21:10 UT. Seeing 5/10, Transparency 3/5. Colongitude 32.7°-33.0°.*

point, perhaps due to a fault or rille. Seeing conditions were fairly poor, so it was difficult to determine precisely what it was I was seeing.



I decided to send my observation to Maurice Collins, who produced the LROC WAC (Wide Angle Camera) image of the area in question shown here (Fig.2). This appears to show a new small rille (arrowed) in roughly the same position as my line of shade, though one has to allow for the fact that the image was taken overhead, whilst my sketch was an oblique view.

**FIGURE 2. LROC WAC image of Ramsden area.**

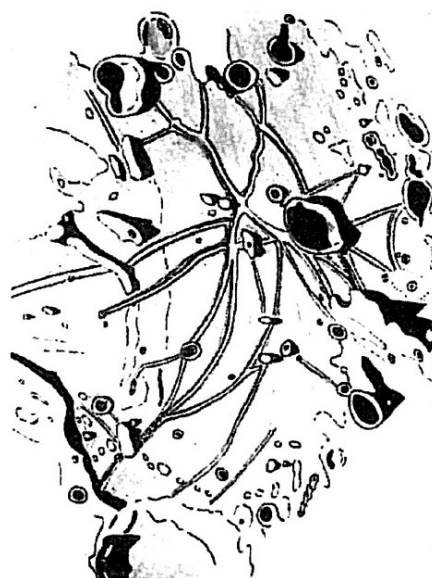
Further south, just beyond and parallel to the Rima Ramsden II, I recorded another apparent new rille, possibly just a chance alignment of ridges and craterlets.

Another rille-like feature was seen striking northwards from the lower of the two hills to the east of Ramsden. This has been seen by past observers, including Harold Hill and was shown on a detailed sketch (Fig. 3) of the region made by Brian Warner in 1960, December 28, using the 18-inch reflector of the University of London. It would seem though, that this feature represents a change in tone and surface level.

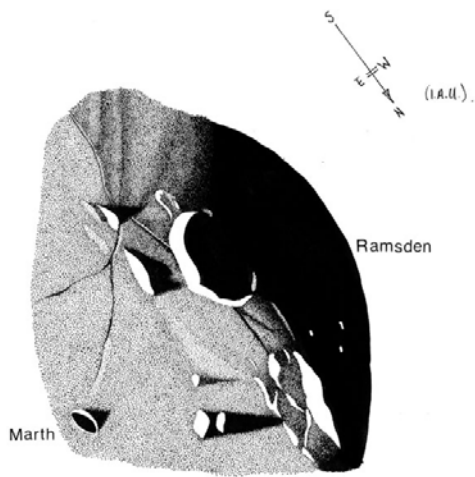
**FIGURE 3. Brian Warner's sketch of rilles in Palus**

**Epidemiarum region.** *December 28, 1960. University of London Observatory, 18 inch reflector, x520.*

Just to the north of Ramsden, and running up to its outer northern rampart, the Rima Ramsden V was seen to have distinctive raised banks on its western side. This is confirmed on Maurice's



image, as some hills on the west side of the rille can be seen casting shadows. Following some discussion on the subject of these apparent 'new' features with Nigel Longshaw, he sent me an observation made by himself on January 11th 1995 (Fig. 4). The colongitude of Nigel's observation was almost identical to my



own, and he also recorded a hint of these linear features seen by myself; noting a decided 'furrowed' appearance to the terrain to the south of Ramsden, though not able to resolve these new features as definite rilles.

***FIGURE 4. Nigel Longshaw's observation of January 11th, 1995.***

Observers of the past have always disagreed in their positioning of the rille system surrounding Ramsden. So it would seem that interesting work could still be undertaken by imagers in trying to resolve the true nature of the finer details to be seen in this region when lighting is very low and glancing.

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## **LUNAR TOPOGRAPHICAL STUDIES**

**Coordinator – Wayne Bailey - [wayne.bailey@alpo-astronomy.org](mailto:wayne.bailey@alpo-astronomy.org)**

**Assistant Coordinator – William Dembowski - [dembowski@zone-vx.com](mailto:dembowski@zone-vx.com)**

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

## **OBSERVATIONS RECEIVED**

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 7 & 14 day moon.

MARK HARDIES – NEW PORT RICHEY, FLORIDA, USA. Digital images of Anaxagoras & Plato (3).

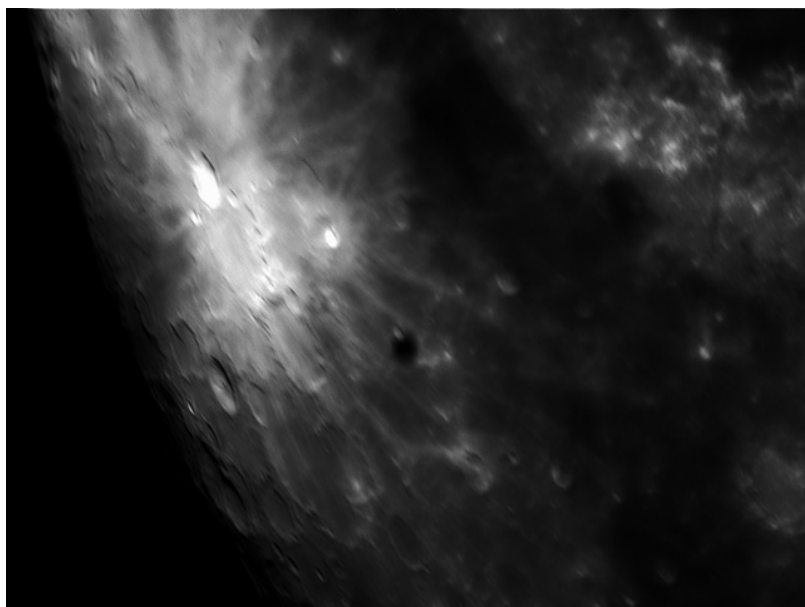
ROBERT HAYS – WORTH, ILLINOIS, USA Drawings of Ramsden & Thales rays.

PHILLIP MORGAN – LOWER HARTHALL-TENBURY WELLS, WORCESTERSHIRE, ENGLAND. Drawings of Mons Rumker & Ramsden.



## RECENT TOPOGRAPHICAL OBSERVATIONS

**14 DAY MOON** - Maurice Collins-Palmerston North, New Zealand. February 17, 2011 07:55-10:00 UT. Seeing A-IV. C-8, LPI.

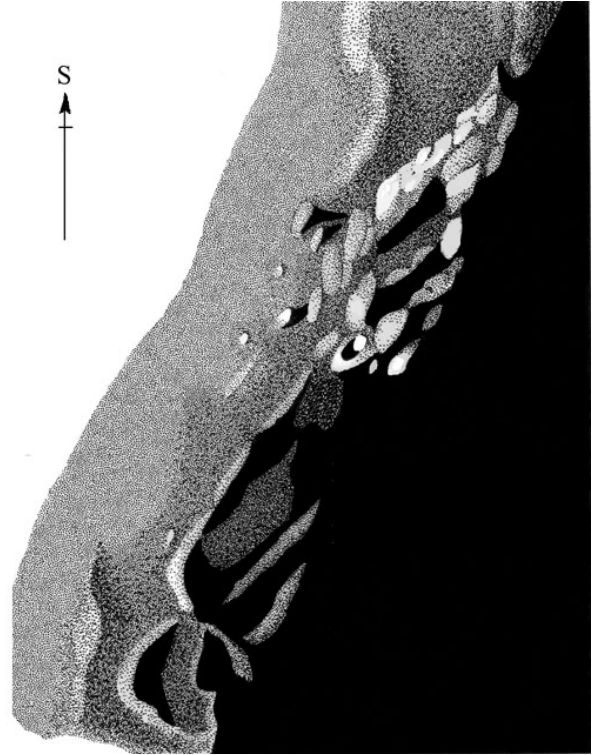


**ANAXAGORAS** – Mark Hardies-New Port Richey, Florida, USA. February 18, 2011 22:30 UT. Seeing 6/10, Transparency 4/6. Colongitude 102.1°. C-8 SCT f/10, DMK 41AU02.

## RECENT TOPOGRAPHICAL OBSERVATIONS

**MONS RUMKER** – Phillip Morgan –Lower Harthall-Tenbury Wells, Worcestershire, England. January 16, 2011. 22:00-22:30 UT, Colongitude 57.8°-58.1°. Seeing 7/10, Transparency 4/5. 305mm, f/5, Newtonian, 400x.

The central section looked very depressed at this angle of illumination, and I could see how early observers mistook it for a crater!.



## ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

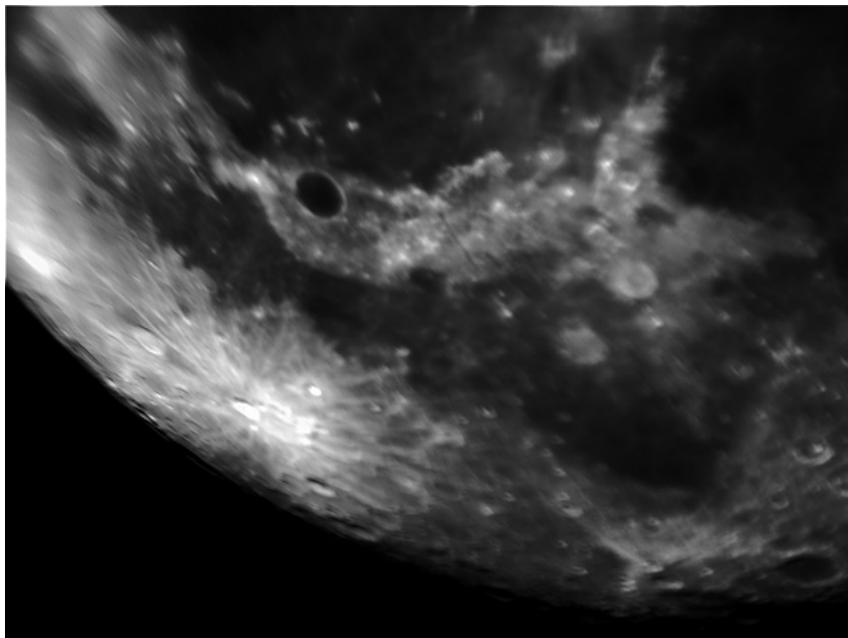
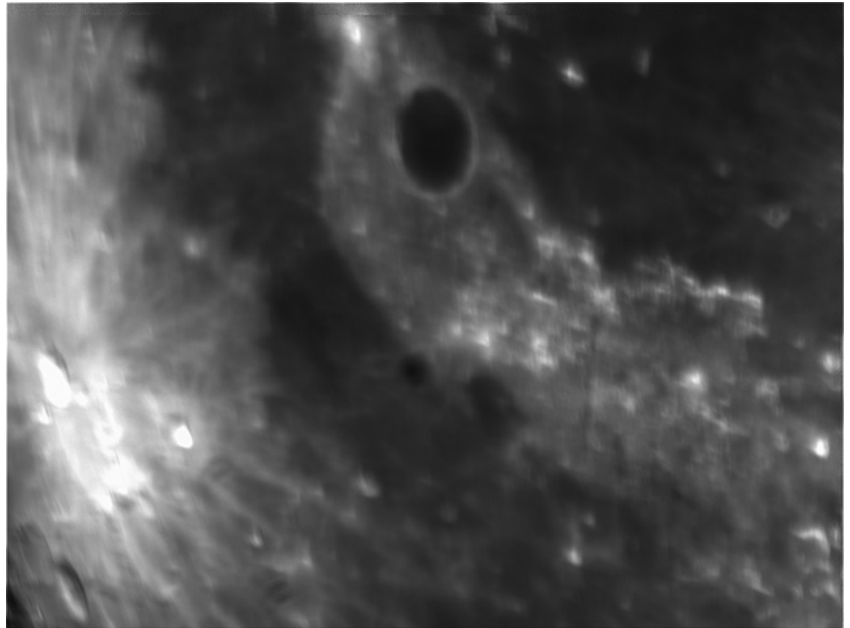


**7 DAY MOON** - Maurice Collins-Palmerston North, New Zealand. February 10, 2011 07:19-07:34 UT. In daylight. Seeing A-IV. C8, LPI.



## ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

**PLATO** – Mark Hardies-New Port Richey, Florida, USA. February 18,2011 22:27 UT. Seeing 6/10, Transparency 4/6. Colongitude 102.1°. C-8 SCT f/10, DMK 41AU02.



**PLATO & ANAXAGORAS** – Mark Hardies-New Port Richey, Florida, USA. February 18,2011 22:49 UT. Seeing 6/10, Transparency 4/6. Colongitude 102.1°. C-8 SCT f/5, DMK 41AU02.

# **LUNAR TRANSIENT PHENOMENA**

**Coordinator – Dr. Anthony Cook – [atc@aber.ac.uk](mailto:atc@aber.ac.uk)**

**Assistant Coordinator – David O. Darling - [DOD121252@aol.com](mailto:DOD121252@aol.com)**

## **LTP NEWSLETTER – MARCH 2011**

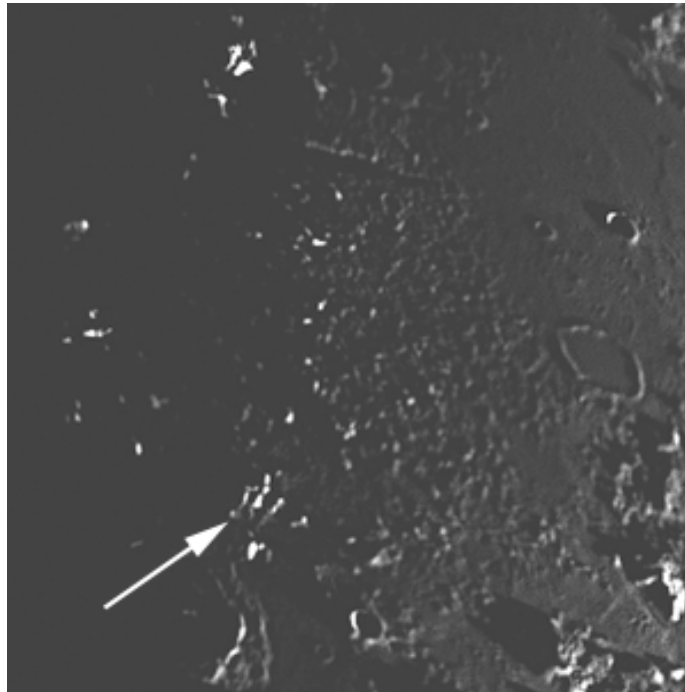
**Dr. Anthony Cook - Coordinator**

Observations for Jan 2011 were received from the following observers: Jay Albert (Lakeworth, FL, USA) observed: Aristarchus, Copernicus, Fracastorius, and Several Features Maurice Collins (New Zealand) observed Clavius, Copernicus, Earthshine, Kant, Langrenus, Mare Australe, Plato, Proclus, and took whole Moon images. Marie Cook (Mundesley, UK) observed Agrippa, Alphonsus, Aristarchus, Beaumont, Cleomedes, Earthshine, Furnerius, Gassendi, Langrenus, Linne, Mare Crisium, Mare Tranquilitatis, Messier, Palus Somni, Peirce, Petavius, Promontorium Agarum, Snelius, Stevinus, Stofler, Torricelli B, and Vendelinus. Schickard. Myself (Newtown, UK) observed Earthshine and several features on the illuminated disk with a color webcam, Alan Heath observed Clavius and Plato. Bill Leatherbarrow observed Promontorium Agassiz, and Brendan Shaw (UK) observed Agrippa, Alphonsus, Aristarchus, Dawes, Linne, Mare Crisium, Mare Nectaris, Plato, and a whole Moon images. Alex Pratt (Leeds, UK) forwarded me images that he took of the 2010 Dec Lunar Eclipse and also from the Mar 2007 lunar eclipse, to help with the study of past LTP reports in the eclipse shadow. Many thanks to the excellent quality of observations received from all of our observers, these have been extremely helpful. I would however like to ask visual observers if they could please make sure that they observe a specific feature for at least 5 minutes, and also ensure that they include the start and end UT for each feature observed, as this really helps with the statistics.

**News:** At the Astrofest astronomy meeting, held in London in February, Chuck Wood gave a talk on his opinions on LTP. Although I was unable to attend, he placed a copy of one of his slides on LPOD: <http://lpod.wikispaces.com/February+5%2C+2011> . The slide is extremely critical of LTP observations and sums up by saying that there is really no obvious reason why we should look for LTP! However Brendan Shaw and Bill Leatherbarrow, who attended, did say that Chuck singled out the “Emergence of Low Relief Terrain from Shadow: An Explanation for Some LTP” JBAA 114 (p136-139) paper by Lena and Cook as something useful that could be done. So how should we proceed? Firstly, some of the observations that we receive are used to disprove past LTP reports as mistaken appearances (see the above paper). Secondly when the observations that you send in do not explain what was seen at the same illumination, then in the case of images, we can at least use these to simulate spurious color in the atmosphere and chromatic aberration in telescope optics. The past LTP reports that remain unexplained after this two stage filtering process remain a challenge and go into a statistical analysis (along with all routine observations – acting as a control) that is being performed at Aberystwyth University. I hope to say more about this in a few months time in the LTP newsletter. Another reason why you should still carry on participating in the LTP programme is that even if Chuck were correct in his opinions, then your observations are archived digitally and periodically passed onto other observing programme coordinators within the section, in order to maximize their usage. Lastly, I would never encourage you to participate in the LTP programme unless I thought LTP did occur on the Moon, as has been conclusively demonstrated for example by the dust cloud detected in Langrenus by Dolfus using an imaging CCD polarimeter, There are also plenty of peer reviewed journal papers on LTP mechanisms that we can attempt to disprove by statistical analysis, or by specialized time lapse imaging. If you have any questions about some of the points raised by Chuck Wood, or LTPs in general, then please email them to me so that I can answer them.

**Routine Reports:** On 2011 Jan 19 at sometime between UT02:35-03:30 Jay Albert (Lakeworth, FL, USA) examined Aristarchus in order to check out the appearance, that matched a LTP report by Quindeau. Jay comments: *"The bright point on the NE interior wall was seen, but tiny and overwhelmed by the much brighter central peak. Used 224x and 311x for all Aristarchus observations."* For comparison here is the original LTP report – maybe libration makes the bright spot on the NE wall become more visible at times?:

*Aristarchus 1972 Jun 25 UTC 22:42-22:51 Observed by Quindeau (8° 35'E, 51° 25'N, 60mm refractor) "Bright point at NE wall of crater". - Ref: Hilbrecht & Kuveler, Earth Moon & Planets, Vol 30, pp53-61 (1984). ALPO/BAA weight=1.*



**Figure 1.** Promontorium Agassiz as imaged on 2011 Jul 11.  
North is at the top..

On 2011 Jan 11 at UT18:34 BAA Lunar Section Director, Prof Bill Leatherbarrow (Sheffield, UK) imaged Promontorium Agassiz. This matched the same illumination, to within +/-0.5 to that from Holden's 1888 observation – or at least according to the Cameron 1978 NASA catalog. Below is a description of the original LTP:

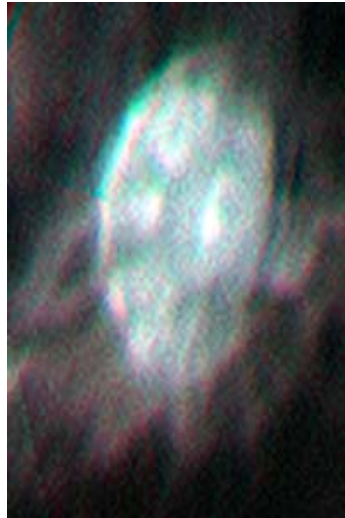
*On 1888 Jul 15 at UT 22:00? Holden of England saw a "Lunar Volcano, 1<sup>st</sup> magnitude star on the dark side, at least 10x brighter than other illuminated portions of the Moon. Yellow light tinged with red from refractor's secondary spectrum. Hunt saw similar phenomenon in 1863. Holden followed the observation up the following night and concluded that it was due to favourable illumination of mountain ridge. Holden thought that what he saw might explain some of Herschel's volcanoes?" Cameron 1978 catalog ID=357 and weight=1. ALPO/BAA weight=1.*

Bill comments: *"I attach an image (not very good) from 18h 33m UT, just inside your window. It shows the Sun rising over Cassini and just catching the peaks of Prom. Agassiz. I can see nothing like a "lunar volcano", and the area looked normal during visual inspection too, with no color or flashes. Pity I could not continue observation and take further images."*

Unfortunately, digging a little deeper into the references for the above 1888 LTP observation reveals that Professor Singleton Holden was in fact the director of Lick observatory in California, and was not observing in the UK, so therefore the UT (and possible even the date) given in the Cameron catalog must have been wrong. Although I cannot find the precise UT, it has to be somewhere between UT03:27-07:43 on 1888 Jul 16, else the Moon would have been below the horizon. The LTP database has been updated accordingly, and as soon as we get a repeat of Holden's 1<sup>st</sup> magnitude star effect, the already low weight for this will be dropped to zero, effectively removing it from the database.

On 2011 Jan 18 at UT22:01-22:05, Brendan Shaw (UK) obtained the color image of Aristarchus shown in Figure 2. This matched the same illumination, to within  $\pm 0.5$  to that of Gordon's observation from 1966 Jun 03 which is described below, and since no obvious signs of the blue or brown color was seen this time, it gives added credibility to the 1966 observation:

*Aristarchus 1966 Jun 03 UTC 01:00-01:45 Observed by Gordon (2), Delano (Ackerman, PR?, 5" reflector / Massachussets, 3" (x92) & 10" reflector T=4) "Deep blue color on N. wall. S. part of crater was brownish, (not on alert). Delano saw E. wall bright spot unusually bright, confirm, ?" NASA catalog weight=5 (very high). NASA catalog ID #947.*



**Figure 2** Aristarchus, by Brendan Shaw on 2011 Jan 18 with north at the top. Some of the Purple color can be attributed to image Alignment issues

**LTP Reports:** No further LTP reports were received for January 2011, following the Nigel Longshaw's observation of a hint of brown color on the eastern rim of Geminus on Jan 21<sup>st</sup>. Almost certainly this was natural surface coloring, but for now the observation has been given a low LTP weight of 1 until the crater is re-observed under the same illumination conditions, and either: the sepia-like color is seen again – in which case the observation will be dropped from the LTP list, or if the color is not seen again, then the LTP weight will rise to a 3.

Although too late to make it into last month's report, Alan Heath (Long Eaton, UK) observed through 10x50 binoculars, some colored bands in Earthshine, Alan, a veteran BAA lunar and planetary observer commented: "The part near the terminator of the 3 day old Moon was more or less black but a bluish band was seen together with a narrow off white band bordering it. The rest of the Earthshine was a dull brown. The reason for this not clear but the temperature at the time was 38°F. Cloud prevented further observation and there was broken cloud at the time of the observation. It is assumed that this was a local atmospheric effect in frosty conditions. NOTE: I am suspicious of the Earthshine color as...". Apart from the unacceptably large area of the Moon affected, and also for additional reasons that Alan gives that I am withholding, I think that Alan is correct to suspect an origin within the this side of the terrestrial atmosphere. Nevertheless to put matters to rest, if anybody else was observing at this time and has any images, or just visual notes on the appearance of the Earthshine, then please get in contact.

**Suggested Features to observe in March:** For repeat illumination (only) LTP predictions for the coming month, these can be found on the following web site: <http://users.aber.ac.uk/atc/tlp/tlp.htm>. For members who do not have access to the internet, please drop me a line and I will post predictions to you. If you would like to join the LTP telephone alert team, please let me know your phone No. and how late you wish to be contacted or alternatively if you would prefer to receive a text message. If in the unlikely event

you see a LTP, please give me a call/text 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> , and this has at the time of writing some 32 followers.

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.

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## KEY TO IMAGES IN THIS ISSUE

1. Anaxagoras
2. Mons Rumker
3. Ramsden

### FOCUS ON targets

X = Alphonsus (May)

Y = Plato (July)

