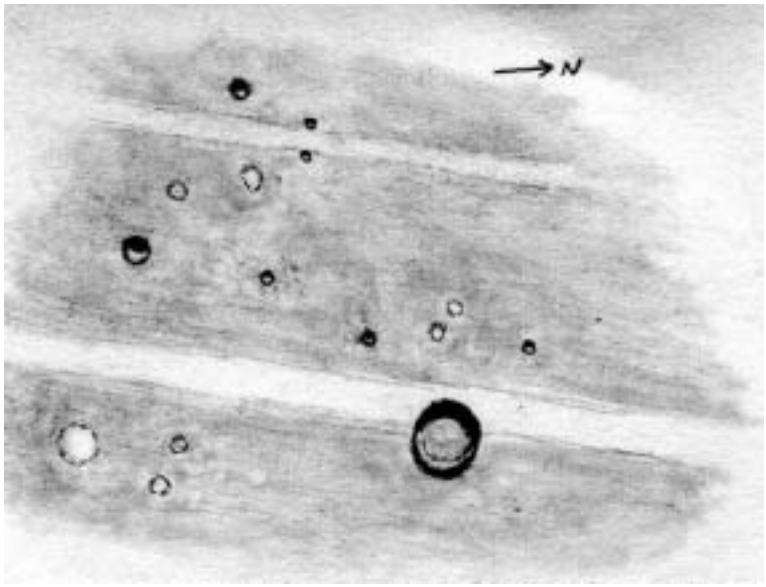
THE LUNAR OBSERVER

RECENT BACK ISSUES: http://www.zone-vx.com/tlo_back.html

A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.
EDITED BY: William M. Dembowski, F.R.A.S. - dembowski@zone-vx.com
Elton Moonshine Observatory - http://www.zone-vx.com
219 Old Bedford Pike (Elton) - Windber, PA 15963

FEATURE OF THE MONTH - DEC. 2005



BESSEL

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
August 24, 2005 - 08:02 to 08:26 UT
15cm Newtonian - 170x - Seeing 8/10

I sketched this crater and vicinity on the morning of Aug. 24, 2005 after watching the reappearance of 6th-magnitude ZC 299. Bessel is the most conspicuous crater within Mare Serenitatis. The fairly large crater to the southwest is Bessel E. The largest of three pits farther west may be Bessel F, and Bessel G may be one of the two tiny ones nearby. There are at least three small craterlets strung out north of Bessel E and west of Bessel. There are several bright shadowless spots in this area. The most conspicuous ones are east and northwest of Bessel E. A major feature in this area is the bright ray that cuts across Mare Serenitatis. This ray does not pass over Bessel squarely, but only brushes its western side. There is another, less conspicuous ray segment farther to the west and parallel to the bright ray. This segment is just east of Bessel F and threads its way between the two pits northeast of F. Their parallelism seems to indicate that these rays may have originated from distant Tycho.

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. Several copies of recent journals can be found on-line at: **http://www.justfurfun.org/djalpo/** Look for the issues marked FREE, they are not password protected. Additional information about the A.L.P.O. can be found at our website: **http://www.lpl.arizona.edu/alpo/** 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.lpl.arizona.edu/~rhill/alpo/member.html** which now also provides links so that you can enroll and pay your membership dues online.

PROFILE: Boscovich

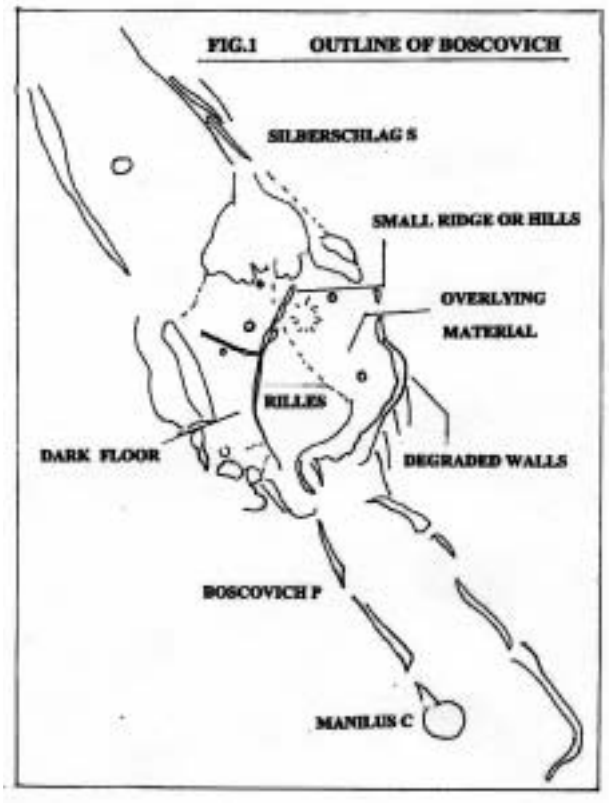
by Colin Ebdon - Colchester, Essex, England
B.A.A. Coordinator, Lunar Topographical Subsection

This article originally appeared in the Winter 2004 issue (Vol.14 No.2) of the *New Moon* and is reproduced here with permission of The British Astronomical Association

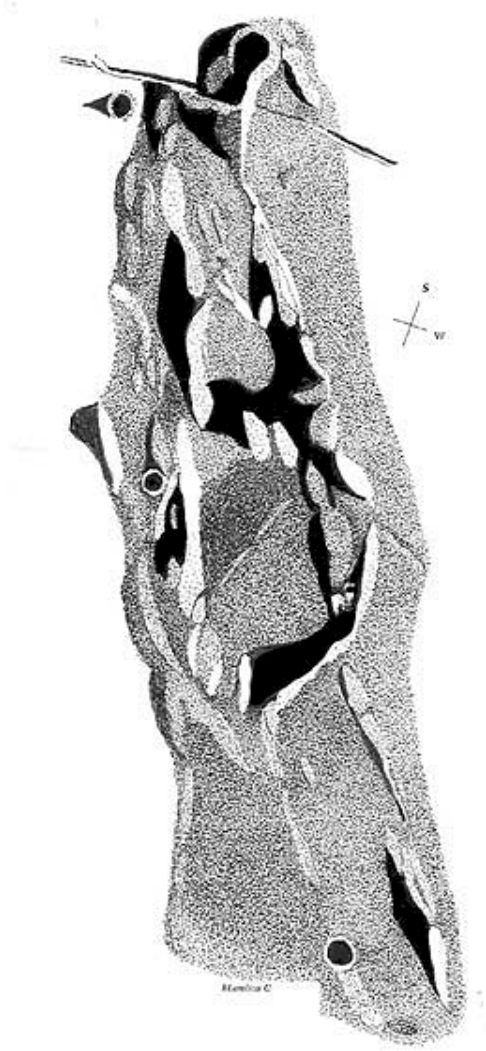
The series of observations included here was made to follow up an original observation of this area by Harold Hill on 1991 August 31.

Boscovich can be found at plate 34 of Rukl's Atlas and is described therein as a 46km wide crater with considerably disintegrated walls. It lies at 9.8 Deg.N, 11.1 Deg.E, adjacent to the larger, if not dissimilar, Julius Caesar in an area displaying a rugged and interesting topography. Although a fair amount of attention has been paid to Julius Caesar, and the nearby Rima Hyginus and Rima Ariadaeus, Boscovich itself seems to a rather neglected feature.

The main features of Boscovich, derived from a variety of sources, are shown in the outline drawing at Figure1.

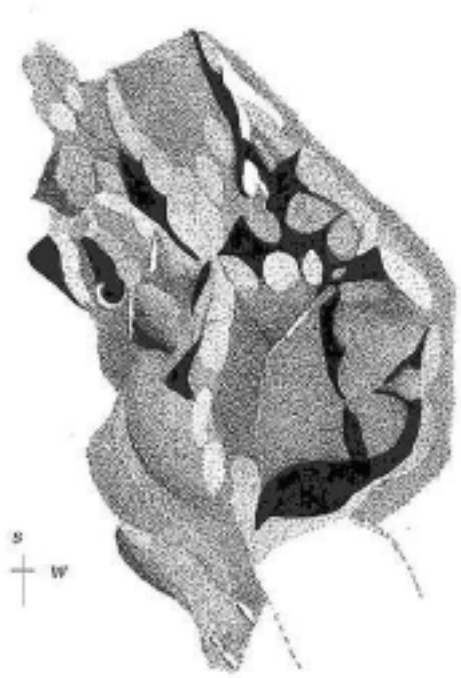


Rukl's Atlas describes the general area as “a region with a prominent radial structure directed towards the basin of the Mare Imbrium”. This is very apparent at lower telescopic magnifications which reveal a clear pattern of striations of lighter and darker material, as well as ridges, running North-West to South East, which are no doubt a result of the Imbrium Impact itself and indicative of the resulting distribution of the associated ejecta blanket.



Sketch by Colin Ebdon
Colchester, Essex England
August 7, 2004 - 00:15 to 01:30 UT
7” f/15 Mak-Cass - 225x 386x

NOTES: Moderate seeing, generally AII; some deterioration at times on passage of Cirrus cloud

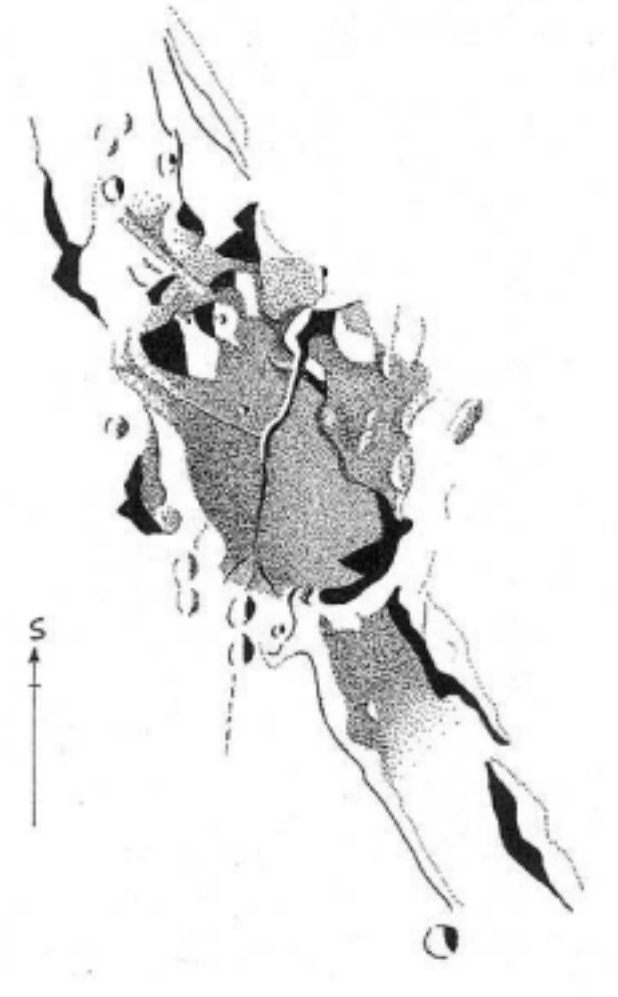


Sketch by Colin Ebdon
Colchester, Essex England
October 4-5, 2004 - 23:45 to 01:00 UT
7” f/15 Mak-Cass - 225x 300x

NOTES: Transparency good but observation interrupted by bands of Cirrus cloud. Seeing variable with passage of cloud. AIII occasionally AII.

Although, under low lighting, Boscovich can be seen as a circular crater, its South-West wall is very degraded and, without unwarranted geological speculation by the writer, appears to possibly have been partly covered by the aforesaid ejecta blanket. There is a swathe of material which cuts right across the smooth dark floor of Boscovich here, consuming approximately one third of the crater and revealing the remaining floor as a roughly rectangular shape. Whatever the cause of this in-filling material, whether ejecta or erosional effects, Orbiter Image 097 reveals (a) that it has a very sharply defined edge along the crater floor which throws a clear shadow at sunset as shown in the drawings and (b) this material has itself suffered bombardment at some later date, showing some tiny craters and a very bright spot which might be the centre of a small ray system.

Rukl's Atlas marks Boscovich with the legend 'Rimae Boscovich', or network of rilles, which form the most striking feature of the crater floor. However, the true nature and origin of these features is open to some debate. There is no such marking in the 'Times' Atlas, which shows only a faint line in place of the main rille with a contour marking defining the area immediately to the North East. This is presumably intended to be indicative of higher ground on this side of the rille, although it has to be said that there is some unreliability in the use of contour markings in this Atlas generally.



Sketch by Phil Morgan - England
Sept. 5, 2004 - 03:35 to 04:30 UT
305mm f/5 Newtonian - 400x

NOTES: Main rille/fault seen to divide into three at Northern end.

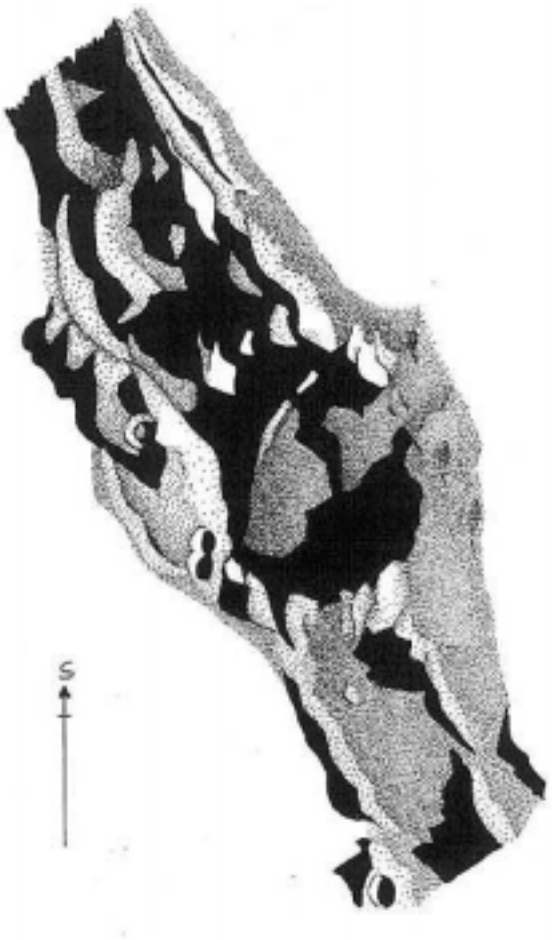
Sketch by Phil Morgan - England
Aug. 7, 2004 - 03:00 to 03:40 UT
305mm f/5 Newtonian - 400x

NOTES: Main rille/fault seen to divide into three at Northern end.

The main rille curving across Boscovich from South to North does not readily fall into any of the three main categories of rille - Sinuous, Straight and Arcuate - although Sinuous would provide the closest description. In the telescope, it does not obviously present the appearance of a winding rille cut by flowing material, but rather a curved 'crack' in the surface of the floor displaying sharply defined edges and slowly tapering along its length. The overall visual impression suggests a feature formed by stress with possible slumping of the surface at the widest point. Phil Morgan has stated that he has always taken it to be some sort of step fault, in part at least. It does not seem to extend beyond the boundaries of Boscovich itself. Although some observers show the rille as running across the entire width of Boscovich, it seems to the writer to commence within the overlying material on the South west of the floor as either a short ridge or series of adjoining small hills. At its tapering point Phil Morgan has recorded several branching rilles or cracks, and this seems to be born out by the Orbiter frame.

There is a straight rille perpendicular to the main rille, running Eastwards from it to the rim of Boscovich. In order to better determine the nature of these rilles, it is important that their appearance be examined under opposite lighting (i.e. under sunrise conditions) at around colongitude 350 Degrees and further observations are welcomed with a view to including more on this feature in these pages at a later date.

The Western rim of Boscovich runs continuously South into the Western rim of the elongated feature designated Silberschlag S. Harold Hill has noted that this rim of Silberschlag S shows striations possibly due to rilles or alternatively very narrow gaps between adjoining ridges forming a compressed wall to Silberschlag S. Again, further observations are needed. Immediately to the North of Boscovich lies the much elongated feature Boscovich P, again with a smooth, relatively featureless dark floor and low walls. This contains the crater Manilius C on its North Eastern edge. The above will hopefully show that there are still topographical questions worth following up by amateur observers, and all members are actively encouraged to participate and submit their findings.



Sketch by Phil Morgan - England
Oct. 5, 2004 - 05:45 to 06:40 UT
305mm f/5 Newtonian - 400x

OBSERVATIONS OF THE TOTAL LUNAR ECLIPSE NOVEMBER 28, 2004

By Robert H. Hays, Jr. - Worth, Illinois, USA

I had a very good view of the total lunar eclipse on Oct. 27/28, 2004. Weather prospects were poor, but there was some unexpected clearing from the east that day. Satellite and weather reports near sunset indicated that this clearing was starting to fill in from the northwest, so I traveled to a site near lake Village, Indiana, about 50 miles from home. I took along an 80mm refractor which I used at 44x for crater and contact timings. I also took along my 5-inch Celestron which was used mainly for photography. After a hasty departure, I was delayed by a detour and a train, and finally arrived at this site during the early penumbral phase. I had good conditions for most of this event except for a few passing clouds and some patchy haze.

My main observing involved the contact and crater timings. I had WWV time signals on continuously, and also used a stopwatch and/or a tape recorder. Most of the time it was easy enough to watch the umbra's edge pass over a crater while listening to WWV. The tape recorder was handy for close or overlapping events. I took the midpoint of inner and outer edges for Copernicus and Tycho. The estimated accuracy for the crater timings was 5-10 seconds, and likewise for Contacts II and III. First and last umbral contacts were less distinct, and those are probably good to 20 seconds.

I started observing at 1:01 UT, and timed a first contact not long afterward. The early partial stages progressed smoothly with no more than a slight haze at times. Crater entrances were being recorded with no problems. There was already a dull orange color in the umbra by 1:38 UT. At 1:55 UT, there were bright orange areas along the limbs near the cusps of the sunlit crescent. The southern orange patch looked brighter. There was a wide grayish umbral edge. The rest of the moon was a dusky orange-brown except for a brighter orange along the innermost limb.

UMBRAL CONTACTS AND CRATER TIMINGS

UMBRAL CONTACTS

CONTACT I	1:14:15
CONTACT II	2:23:20
CONTACT III	3:44:55
CONTACT IV	4:53:55

CRATER ENTRANCES		CRATER EXITS	
GRIMALDI	1:15:40	PYTHEAS	4:03:05
ARISTARCHUS	1:27:45	MANILIUS	4:18:25
COPERNICUS	1:34:35	MENELAUS	4:20:45
TYCHO	1:37:45	TYCHO	4:23:30
PYTHEAS	1:37:50	PLINIUS	4:25:10
MANILIUS	1:52:00	PROCLUS	4:34:05
DIONYSIUS	1:54:45	LANGRENUS	4:47:50
MENELAUS	1:56:25		
PLINIUS	2:00:05		
PROCLUS	2:11:35		

I finished my crater entrances then watched for totality. As second contact neared, the remaining sliver of sunlit moon appeared quite well defined, more so than at last November's eclipse. The start of totality could be noted within about 5 seconds.

During totality, most of the moon had a dusky orange-red appearance. There was a gray northern rim and bright orange patches to the northeast and northwest. The area north of Mare Crisium seemed particularly bright, even after the time of mid-totality (3:04 UT). The maria were all easily visible with the naked eye (plus eyeglasses), and any crater suitable for timing was conspicuous with the 80mm refractor. My naked-eye Danjon estimate was 3.0 at 3:10 UT. This eclipse was rather bright overall, but not as bright as the one last November. It was more nearly like the one on January 2000. This was true when the moon was in the clear. I was bothered by thin clouds more during totality than I had been earlier. However, the Milky Way was still well seen where it was clear. Near the end of totality, the colors graded smoothly from a bright gray northeast limb (celestial direction} to bright orange, darker orange-red and then dark rusty red. There were no discrete patches of bright orange as had been noticed earlier. The end of totality was just as abrupt as the start had been.

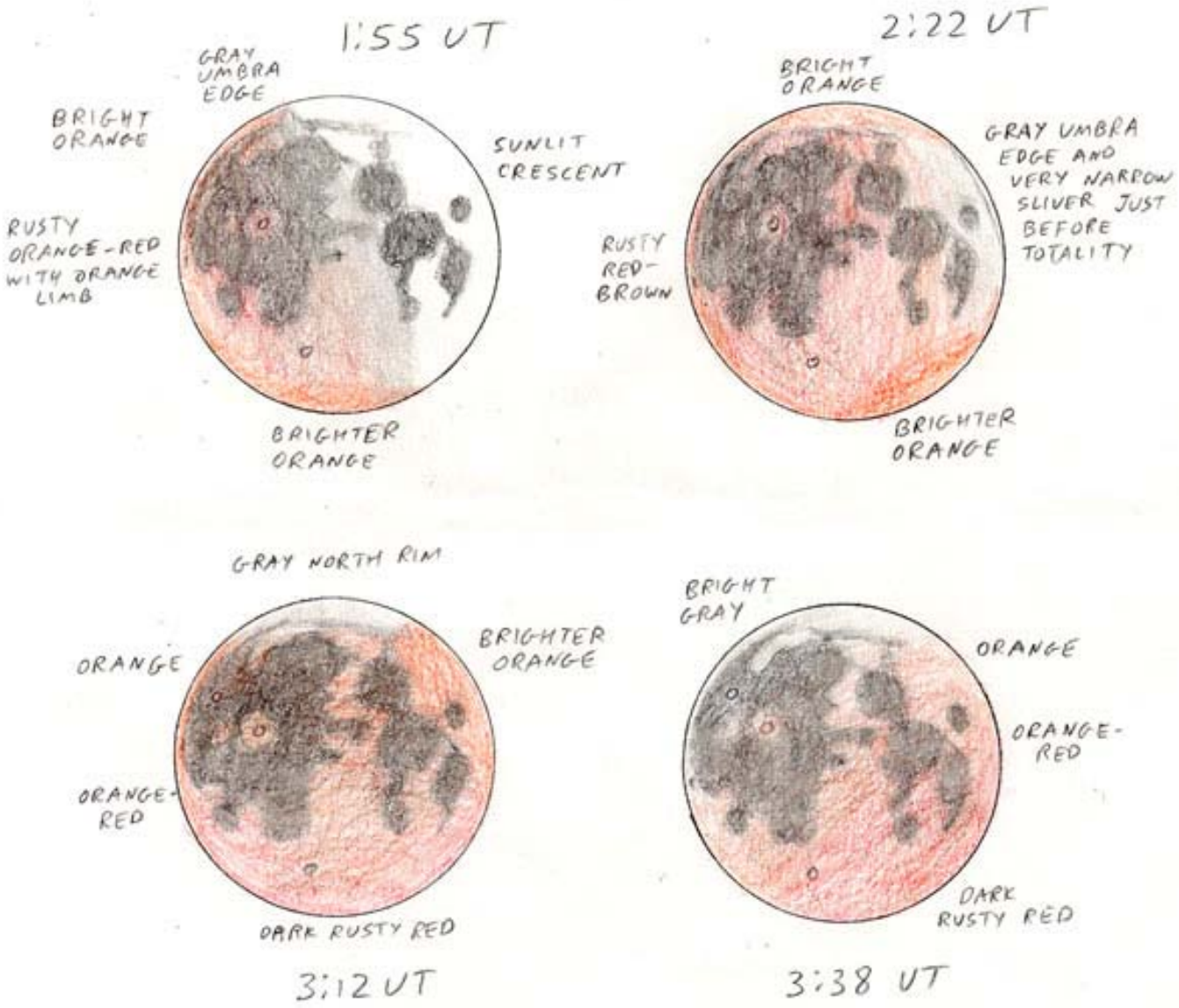
I have been a long-time lunar occultation observer, but I had not considered them too much at this eclipse because of uncertain weather and a sparse star field. I did try to watch the disappearance of 9th-magnitude SAC 92843 near mid-eclipse, but it was more difficult than expected. The star was fairly easy to follow until it neared occultation, then I had to contend with a rather bright orange limb. There may also have been a trace of haze at that time. I timed its disappearance at 3:05:49.4 UT (~0.3s; personal equation of 0.6s was applied). The star disappeared slightly north of Grimaldi. It was definitely not one of my better occultations, certainly not as good as the one of SAC 93210 at last November's eclipse, to say nothing of bright ZC 2217 the previous May. I was using the 5-inch Celestron at 70x at that time. It was the only occasion during this eclipse when I used that instrument visually. My site was at: Lat. 41° 09' 57.5" N.; Long. 87° 27' 33.0" W (both +0.5"); elevation 194 meters.

I had more clouds and haze during the closing partial stages than at any other time. It was worst around 4:10 and 4:30 UT. I did lose some crater exits due to these clouds, though I still obtained a decent list. The colors after totality also seemed more subdued than earlier. The last 20 minutes of partial eclipse were completely clear as were the closing penumbral stages. Last contact was easily visible and I followed the grayish penumbral shading off the moon. This shading seemed to be less conspicuous than I've seen in the past, probably because it was in the bright area south of Mare Fecunditatis. I lost it at 5:26 UT with the 80mm refractor.

The accompanying chart lists all of the contact and crater timings that I logged at this eclipse, along with four color sketches. It ended up being a good eclipse from where I was. However, I found out later that I would still have been quite successful at home. My travel ended up being unnecessary. I probably would have been just as well off staying home and having the use of my 6-inch reflector. (I had not taken it on this outing.)

Photographs of the eclipse were taken with a Nikon FM camera on the 5-inch Celestron with Tri-X film. (I had also used the Celestron and another Nikon for color slides on Ektachrome 400.) The film was given standard development in D-76 with no dilution.

Drawings of Total Lunar Eclipse - November 28, 2004
By Robert H. Hays, Jr.



Photographs of Total Lunar Eclipse - November 28, 2004

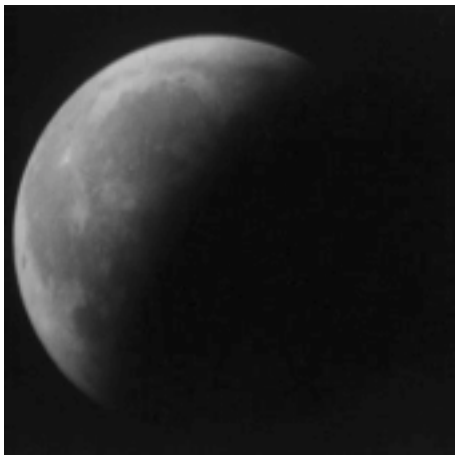
By Robert H. Hays, Jr.

01:24.1 UT (1/250 sec)

01:57.1 UT (1/125 sec)

02:48.3 UT (20 sec)

03:32.4 UT (20 sec)



04:16.2 UT (1/125 sec)

04:45.8 UT (1/250 sec)

LUNAR TOPOGRAPHICAL STUDIES

Acting Coordinator - William M. Dembowski, FRAS
dembowski@zone-vx.com

OBSERVATIONS RECEIVED

MICHAEL BOSCHAT - HALIFAX, NOVA SCOTIA, CANADA
Digital image of 7-Day Moon, Mare Nectaris (3)

ED CRANDALL - WINSTON-SALEM, NORTH CAROLINA, USA
Digital image of Mare Fecunditatis & Messier, Atlas & Hercules & Endymion, Copernicus (2), J.Herschel, Gassendi, Doppelmayer

COLIN EBDON - COLCHESTER, ESSEX, ENGLAND
Sketch of Arago and environs, Montes Spitzbergen

HOWARD ESKILDSEN - OCALA, FLORIDA, USA
Digital images of Alpine Valley, Davey, Hadley Rille, Rupes Recta, Mare Australe, South Polar Region, Mare Nectaris

PETER GREGO - REDNAL, BIRMINGHAM, ENGLAND
Sketches of Ritter, Humboldt

RAFAEL BENAVIDES PALENCIA - POSADAS, CORDOBA, SPAIN
Digital images of Pontecoulant to Boussingault, Boussingault to Scott

K. C. PAU - HONG KONG, CHINA
Digital images of Mare Frigoris, Agatharchides, Hainzel, Herigonius, Plato

ALEXANDER VANDENBOHEDE - GHENT, BELGIUM
Digital images of Full Moon Northern Limb, Full Moon Eastern Limb, Full Moon Southern Limb

CALL FOR OBSERVATIONS - FOCUS ON: MARE NECTARIS

Thanks to all who contributed to the last installment of *Focus On*. The subject for the January 2006 edition will be Mare Nectaris and will include its bordering craters Fracastorius and Dauguerre. Observations need not be recent so search your files or add this area to your observing list. Please send your observations to William Dembowski at one of the addresses shown on Page one.

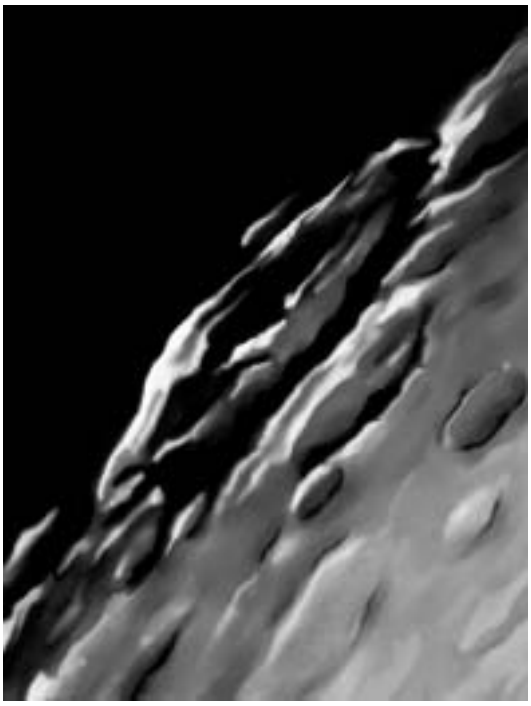
Deadline for inclusion in the Mare Nectaris article is Dec. 20, 2005.

RECENT TOPOGRAPHICAL OBSERVATIONS

7-DAY MOON - "X" Marks the Spot
Digital image by Michael Boschat - Halifax, Nova Scotia, Canada
November 8, 2005 - 21:26 UT
11cm f/10 Refractor - Centrios DSC-3020 Camera

DAVEY
Digital image by Howard Eskildsen - Ocala, Florida, USA
November 10, 2005 - 00:04 UT
6 inch f/8 Refractor - 2x Barlow - NexImage Camera

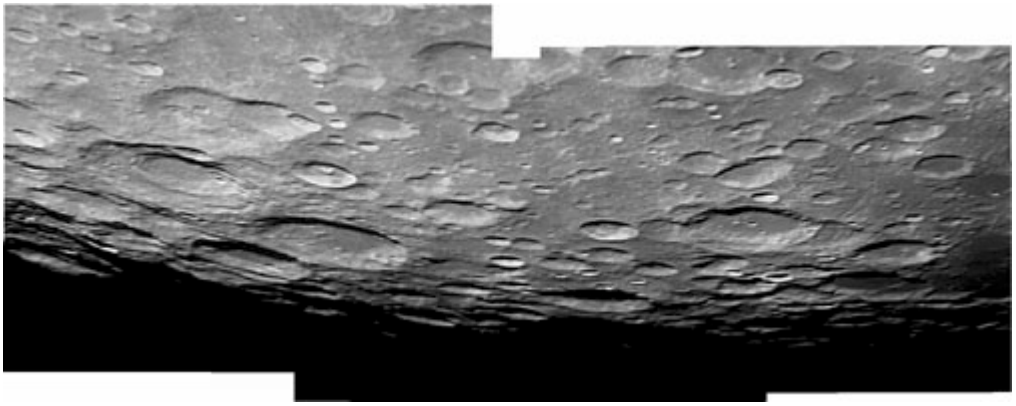
RECENT TOPOGRAPHICAL OBSERVATIONS



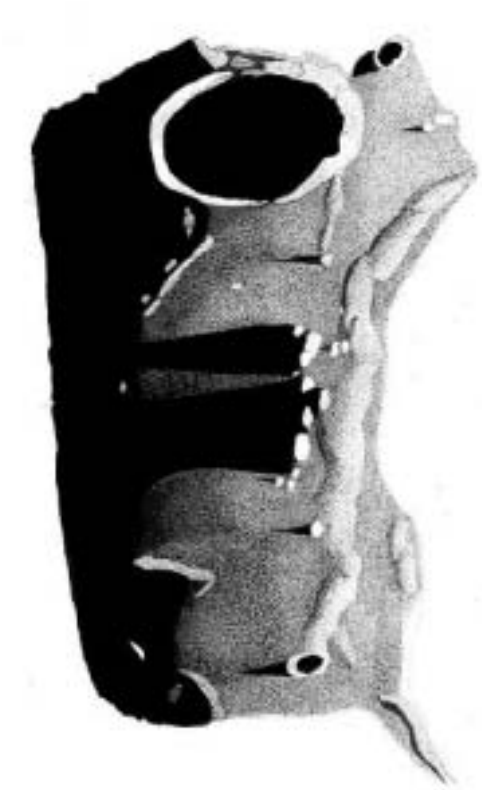
HUMBOLDT
Electronic (PDA) sketch by Peter Grego - Rednal, Birmingham, England
November 17, 2005 - 01:35 to 01:50 UT
200mm SCT - 300x

RILLE WEST OF PLATO
Digital image by K.C. Pau - Hong Kong, China
October 13, 2005 - 12:25 UT
250mm F/6 Newtonian - 12mm EP - Philips Toucam Pro

RECENT TOPOGRAPHICAL OBSERVATIONS



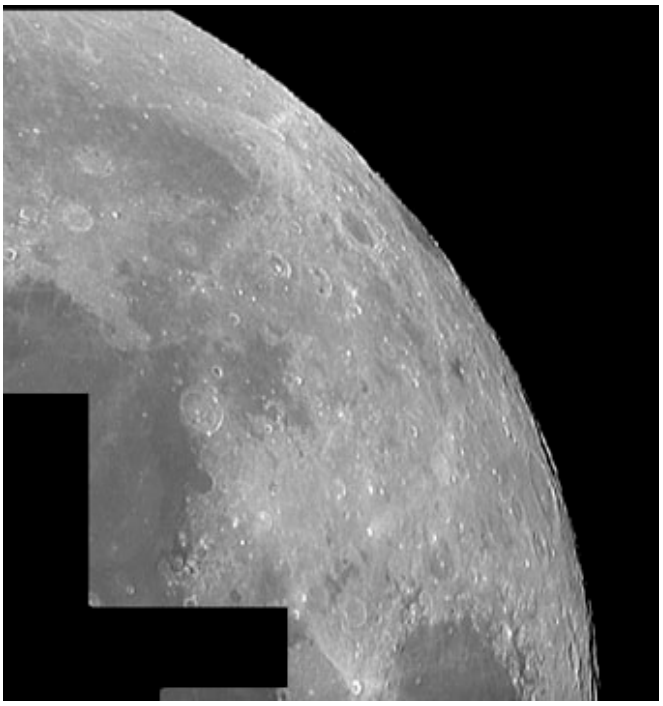
PONTECOULANT TO BOUSSINGAULT
Digital image (mosaic) by
Rafael Benavides Palencia - Posadas, Cordoba, Spain
November 16, 2006 - 23:19 UT
15cm f/8 Refractor - 2x Barlow - Philips Toucam Pro



MONTES SPITZBERGEN
Sketch by Colin Ebdon - Colchester, Essex, England
September 26, 2005 - 00:00 to 00:45 UT
7 inch f/15 Maksutov-Cassegrain - 22x

RECENT TOPOGRAPHICAL OBSERVATIONS

JOHN HERSCHEL
Digital image by Ed Crandall - Winston-Salem, North Carolina, USA
November 13, 2005 - 02:16 UT
116mm f/6.5 APO Refractor - 3x Barlow - Philips Toucam



FULL MOON - NORTHEASTERN LIMB
Digital image by Alexander Vandenbohede - Ghent, Belgium
October 17, 2005 - 21:00 UT
20cm f/6 Newtonian

BRIGHT LUNAR RAYS PROJECT

Coordinator - Willliam M. Dembowski, FRAS

Each month TLO features a book or magazine excerpt dealing with Bright Lunar Rays. Some are from current sources, others from vintage astronomical literature. This month's offering is from:

A STROLL THROUGH TYCHO AND CLAVIUS

By Michael T. Kitt

Astronomy Magazine - November 1994

Let's begin our tour of this area on a night near Full Moon. The brightly lit lunar globe offers many treasures for backyard astronomers with small telescopes observing at low power. Certainly one of the most impressive and most obvious is the magnificent system or rays emanating from the crater Tycho. The impact that formed Tycho not only created an 85 kilometer wide crater but also sprayed millions of tons of pulverized rock thousands of kilometers across the lunar nearside.

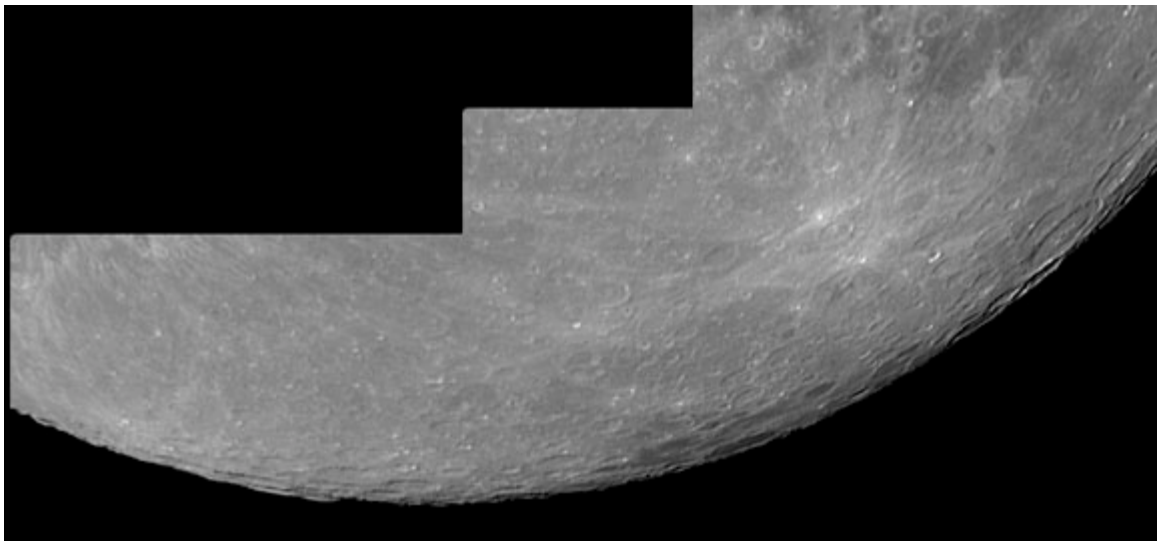
The stark white rays appear prominent because they are so young - just 109 million years old, a blink of the geologic eye in the Moon's 4.6 billion year history. Brightness equals youth on the Moon because radiation from the Sun gradually darkens fresh impact ejecta. The relative prominence of Tycho's rays varies from one night to the next as the angle of solar illumination changes, but eight to ten generally stand out, giving the Moon the appearance of a peeled orange.

The most conspicuous ray is the famous 'double ray', which trends northwest into Mare Nubium. Moving counterclockwise from the double ray (as seem through an inverting telescope with south at top and lunar east to the left), you'll note a large zone extending almost 120 degrees that contains only short an indistinct rays. Astronomers have no ready explanation for this zone of exclusion, but a number of other rayed craters exhibit a similar effect. Next comes a bright ray that extends southwest and then another that heads toward the Moon's south pole. This ray crosses Clavius and thus aids in locating that crater when the Sun is high in the lunar sky and details appear indistinct.

Continuing in a counterclockwise direction, next comes a very long ray that can be traced eastward all the way to Mare Nectaris. Last, at least two more rays trend northeast toward Mare Tranquillitatis and Mare Serenitatis. The Serenitatis ray neatly bisects the small but prominent crater Bessel.

Interspersed with these major rays are a myriad of shorter ones. As the Sun's height above the lunar horizon changes from night to night, these take turns at becoming relatively brighter or dimmer. Under excellent observing conditions with a 6-inch or larger telescope, it is possible to begin resolving portions of these rays into tiny craterlets, which represent secondary impacts from the Tycho event, with their individual sprays of ejecta.. But in general the rays are a wispy and amorphous as clouds and defy any attempt to resolve detail, practically disappearing from view as you pump up the magnification.

RECENT RAY OBSERVATIONS



FULL MOON - STEVINUS-A & FURNERIUS-A
Digital image by Alexander Vandenbohede - Ghent, Belgium
October 17, 2005 - 21:00 UT
20cm f/6 Newtonian

MESSIER-A
Digital image by Ed Crandall - Winston-Salem, North Carolina, USA
November 7, 2005 - 01:12 UT
116mm f/6.5 APO Refractor - 2x Barlow - Philips Toucam

LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – acc@cs.nott.ac.uk
Assistant Coordinator – David O. Darling – DOD121252@AOL.COM

LTP NEWSLETTER - DECEMBER 2005

Dr. Anthony Cook - Coordinator - Email: acc@cs.nott.ac.uk

Firstly I would like to wish readers, where ever they are happy holidays over the Christmas period, and a lot of good clear sky in 2006. Observations for October have been received from: Michael Amato (West Haven, CT, USA), Marie Cook (Mundesley, UK), Tony Cook (Long Eaton, UK), Robin Gray (Winnemucca, NV, USA), and Antonio Marino (Naples, Italy). A provisional 11.6 hours of coverage for October has been reported so far. Note that observing time quoted here, and in past articles, are provisional as often additional observations come to light after publication.

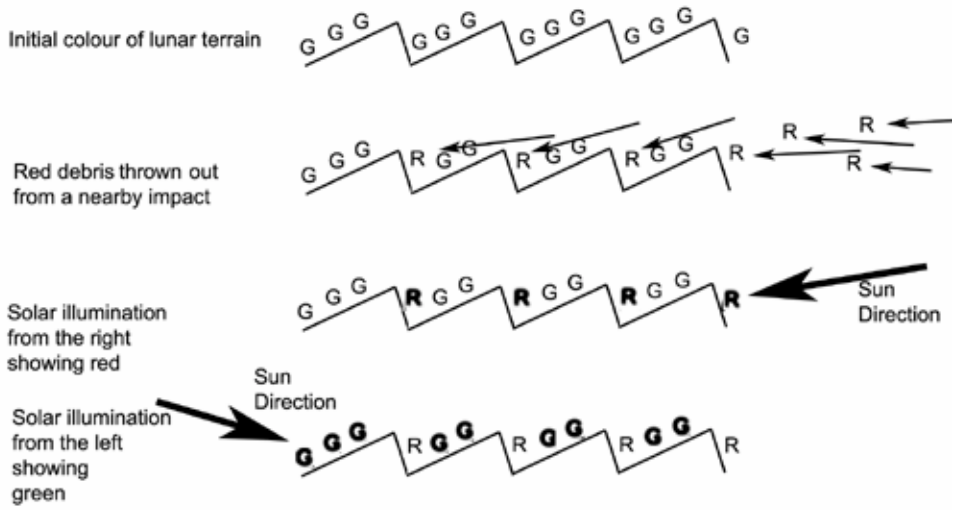


Fig 1. *Example showing how soil distribution draped over surface topography (below the limit of telescopic resolution) can change the apparent color of the surface with colongitude. (Top row) – original tinged green soil draped over parallel ridges. (Next to top row) – an impact in the past distributes red tinged material over impact facing slopes only (Next row from bottom) – sun shines from the right and the red slopes reflect light more strongly than the green slopes giving rise to a reddish tinge. (Bottom row) – sun shines from the left – now the green slopes face the sun and a greenish cast is present on the surface.*

Regarding the high pass filtered CCD image of Torricelli area in Fig 3 in last month's article, only two comments were received. Firstly Marie Cook said she thought it had been over processed, and secondly Brendan Shaw, who sent me the image originally (prior to my own processing), said that it had been already pre-processed by the RegiStax. Well I can confirm my own thoughts that I had over-processed the image, but the main issue was whether the striations were real? I suppose one test would

have been if the same area had been imaged with the CCD at a different angle in the eyepiece draw tube and whether the positions and orientations of the striations were reproduced. Also one can look to see whether the striations appear in other, similar illumination images, and this we shall certainly do. Incidentally, I have seen other striated texture elsewhere on the Moon e.g. the highlands surrounding the Alpine Valley. As to the relevance of such semi-regular topographic features to LTP studies, see figure 1? Well if these were below the limit of telescopic resolution, and covered a region of the surface that was sizeable enough to be seen telescopically from Earth, then we can have a situation where the patch concerned peaks in brightness, due to the Sun catching the sub-resolvable slopes, prior/subsequent to the surrounding terrain peaking in brightness. This would not constitute a LTP as it would be a repeatable event and the duration might be several hours, but it might catch the attention of an unwary observer. It also offers the opportunity for parts of the lunar surface to change their natural color! Consider for example the same scenario of some small scale topography on the surface (again below the resolution of the telescope), covering a large area. Suppose later in lunar geological history a near by impact sprayed ejecta across the lunar surface. If this ejecta strikes the topographic area almost tangentally, there will be topographic shadowing going on and the impact facing slopes will be coated and the other side will be shielded. Although all lunar soil is fairly weak in color, color can certainly be detected with properly equipped CCD cameras/filters, so it maybe possible that in some areas of topography (resolved or unresolved) that when the sun shines in one direction it highlights one type of color of lunar soil, and when it shines in another direction, one can get a different color. Hence there may be some areas where we can expect not only photometric, but also color changes that repeat with colongitude.

On Oct 17, whilst observing the crater Madler, between 04:14 and 05:28 UT, one of our more experienced observers, Robin Gray (Winnemuuca, NV, USA) saw a possible LTP? Robin was using an 152mm f/9 refractor (x228 and x343) with seeing initially at 5-6, then 7-8 on the US scale and transparency 5-6. He examined Madler through Wratten filters: 38A (blue), 29 (red) and 11 (yellow green). *"The interior of Madler was seen to be covered partly in apparent ray material, deeply embayed by the much darker material of the crater floor. Through the blue filter, the dark parts of the floor of Madler became darker relative to other features, and the brighter areas of the crater became harder to see. With the red filter the view looked essentially the same as in white light. Through the yellow-green filter all details in the crater seemed to be clearer and more easily seen"*. Note different levels of visibility through different colored filters is not uncommon. *"Three bright areas were very obvious on the crater rim. All, including the south one, were as bright as the inner walls of Godin, estimated at 8.0 on the Elger scale. They did not change during the observation period. However, <u>a very bright spot, small, almost pinpoint like in size was seen for a period of less than a minute</u> toward the end of the observation period on the east rim of the east crater. It was brighter than the other spots, possibly 8.5-9.0 on the Elger scale. It was seen only through the yellow green filter, and had gone after a few seconds when the filter was removed in order to try other filters"*. Note that Robin had already been examining the crater for over an hour prior to the LTP and had seen no pin-point craters at this location during that time (these sometimes can create brief flashes during exceptional moments of good seeing). Additionally, Robin has checked Clementine images (nearest to the state of illumination on the Oct 17th 2005) and has found no evidence of a small bright craterlet in this location either. All this taken together would appear to be supportive, albeit unconfirmed, evidence for a LTP?

In November, a few days prior to writing this article, I heard the very sad news that Harold Hill had passed away. Although I had never met him, I was lucky enough to have received correspondence from him on a few occasions. With the vast numbers of hours that he had spent observing, he was very much doubtful over the existence of LTP, however he highlighted one interesting instance from 1947 Jan 30 (see page 48 of his Portfolio of Lunar Drawings) when he saw… *"the main peak of the massive central mountain group, in Eratosthenes, appearing in a shadowless condition at a time, having regard for it's claimed height of 2km, that the whole area of the floor to the west should have still been in darkness. Instead, immediately to the west was a dark (intensity 1.5-2) region extending almost to the*

foot of the bright inner wall and very diffuse in outline. The observation was not followed through because of increasing cloud, but on the following night all was normal". Harold then went on in his letter that any explanation was *"purely speculative, but might infer a partial obscuration of the normal shadow by overlying dust thrown to a considerable altitude perhaps by a meteorite impact?"* I have certainly learnt a lot from his arguments, over the years, concerning the unreliability of many past LTP reports and hope in some way that our current more cautious approach/methodology helps to eliminate many of the more confusing past reports.

Predictions, including the more numerous illumination only events can be found on the following web site: http://www.cs.nott.ac.uk/~acc/Lunar/LTP.htm If you would like to join the LTP telephone alert team, please let me know your phone No. and how late you wish to be contacted. If in the unlikely event you see a LTP, please give me a call on my cell phone: +44 (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!

Dr Anthony Cook, School of Computer Science & IT, Nottingham University, Jubilee Campus, Wollaton Road, Nottingham, NG6 1BB, UNITED KINGDOM. Email: acc@cs.nott.ac.uk

* *

A.L.P.O. LUNAR COORDINATORS

Julius L. Benton, Jr. – Coordinator, Selected Areas Program
jlbaina@msn.com

Dr. Anthony Cook – Coordinator, Transient Lunar Phenomena
acc@cs.nott.ac.uk

Brian Cudnik – Coordinator, Lunar Meteoritic Impact Search
cudnik@sbcglobal.net

David O. Darling – Asst. Coordinator, Transient Lunar Phenomena
DOD121252@aol.com

William M. Dembowski – Acting Coordinator, Lunar Topographical Studies
Dembowski@zone-vx.com

Marvin W. Huddleston – Acting Coordinator, Lunar Dome Survey
kc5lei@comcast.net