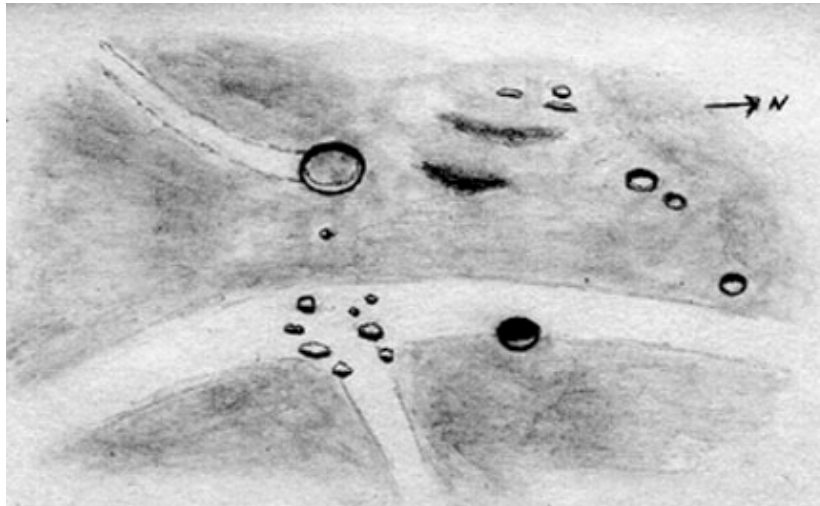


THE LUNAR OBSERVER

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 - JAN. 2006



KUNOWSKY

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
September 27, 2005 - 08:46 to 09:10 UT
15cm Newtonian - 170x - Seeing 8/10

I sketched this crater and vicinity on the morning of Sept. 27, 2005 after watching the moon uncover Omega and 4 Cancri. This crater is in Oceanus Procellarum southeast of Kepler and Encke. Kunowsky is a shallow crater with a featureless interior the same tint as Oceanus Procellarum. Its rim appears to be unbroken. The deeper crater to its northeast is Hortensius A, according to the Lunar Quadrant map. Hortensius D is the largest of a few shallow craters north of Kunowsky, and a few small peaks are southwest of this crater. A larger group of peaks is east of Kunowsky. These peaks lie at the junction of a wide, curved ray and a smaller ray branching off to the east. The large, curved ray extends roughly south to north, passing east of Kunowsky and brushing the west side of Hortensius A. Another ray extends southwest from the south rim of Kunowsky. These rays were all fairly conspicuous despite the area's proximity to the terminator. None of them showed any shadowing. The wide, curved one might be from Tycho, but I don't know about the others. I don't think Kepler caused them, though one or the other (but not both) of the two narrower ones might be from Copernicus.

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.justfun.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.

FOCUS ON: Mare Nectaris

William M. Dembowski, FRAS
Coordinator, Lunar Topographical Studies

Near the center of the southeastern quadrant of the Moon lies Mare Nectaris. With a diameter of 350 km (218 miles) it is the smallest of the circular mare. (See Figures 1 & 2) It should be noted that although relatively small, Mare Nectaris is only the flooded center of the much larger (860 km) "Nectaris Basin" whose outer rim is marked by the Altai Scarp.

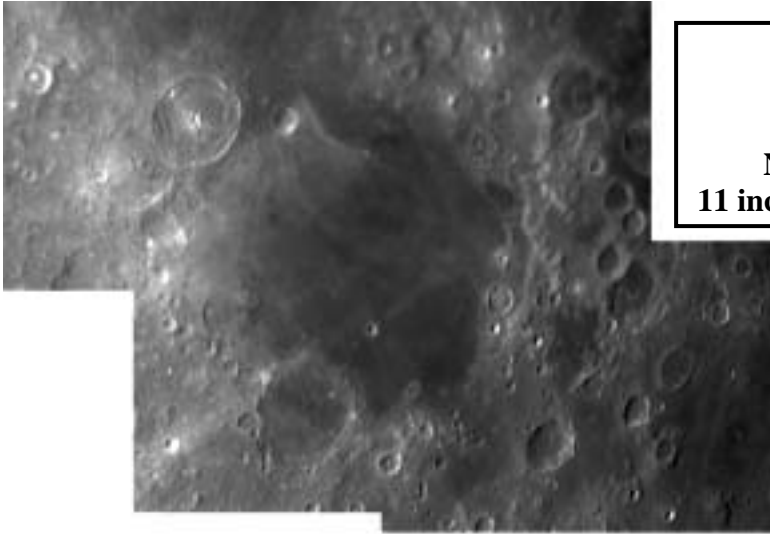


Figure 1
Digital image by Wayne Bailey
Sewell, New Jersey, USA
November 18, 2005 - 04:56 - 05:07 UT
11 inch f/10 SCT - Baader UV-IR Block Filter

Figure 2
Digital image by Michael Boschat
Halifax, Nova Scotia, Canada
November 20, 2005 - 02:15 UT
105mm f/10 Refractor
67x EP - Centrios Digital Camera



Beginning at the extreme southern shore of Nectaris, the first feature encountered is the prominent crater, Fracastorius. With its northern wall almost completely destroyed, the 124 km (77 miles) Fracastorius is nearly large enough to be considered a bay (sinus). The floor of Fracastorius holds much

of interest for the lunar observer. Near the center of the crater is a cluster of small hills which may be the last evidence of a central peak now buried under a kilometer of mare lava. Slightly to the south is a nice rille with an interesting right angle branch near its eastern end. Still further south are a few rounded hills of unknown origin. (See Figure 3)



Figure 3
Digital image by Gerardo Sbarufatti
Caselle Landi, Italy
8 inch SCT - 2x Barlow
IR Filter - Philips Vesta Pro

Following the Mare shoreline in a clockwise direction we next encounter Beaumont. This crater, with a diameter of 53 km (33 miles), also has its seaward wall submerged by mare lava giving it the appearance of a miniature Fracastorius. The floor of Beaumont, like that of Fracastorius, is peppered with craterlets and well worth some close scrutiny. (See Figure 4)

Figure 4
Digital image by K.C. Pau
Hong Kong, China
January 16, 2005 - 12:16 UT
250mm f/6 Newtonian
2.5x Barlow - Philips Toucam Pro



Proceeding northward from Beaumont is a ropelike wrinkle ridge that stretches nearly to crater Madler (28 km/17miles) at the northwestern corner of Mare Nectaris. Madler has a central peak and is the center of an interesting fan of bright rays, one arm of which reaches eastward to Daguerre. (See Figure 5) Although 46 km (29 miles) in diameter, Daguerre can barely be called a crater, being little more than a semi-circle of low ridges.



Figure 5
Digital image by Ed Crandall
Winston-Salem, North Carolina, USA
November 6, 2005 - 23:18 UT
110mm f/6.5 APO Refractor
3x Barlow - Philips Toucam

The eastern shore of Mare Nectaris features a nice series of interconnecting wrinkle ridges reaching all the way to the southern most major crater, Rosse. Rosse, at a mere 16 km (10 miles) is actually the largest crater entirely within the confines of Mare Nectaris. If it were not for its near total isolation on this sea, it would be easily overlooked by most observers.

But for a smattering of craterlets the remainder Mare Nectaris is nearly devoid of interesting features. Notable exceptions are two bright rays, one seeming to originate from Rosse itself, and another to the north which may or may not emanate from the crater Tycho. (See Figure 6)

Figure 6
Sketch by Robert Włodarczyk
Czestochowa, Poland
January 12, 2000 - 18:00 UT
180mm Newtonian - 140x



REFERENCES:

- Price, Fred W. - "The Moon Observer's Handbook", Cambridge University Press, 1988
Rukl, Antonin - "Atlas of the Moon" - Hamlyn, 1990
Wlasuk, Peter T. - "Observing the Moon", Springer-Verlag, 2000

COLOR STUDY OF MARE NECTARIS

Alexander Vandenbohede - Ghent, Belgium

**All images were made on 11/10/2005, 1800 UT,
with my 20cm F6 Dobson and webcam in prime focus.**



Figure 1 - The area photographed with a UV/IR-cut filter.

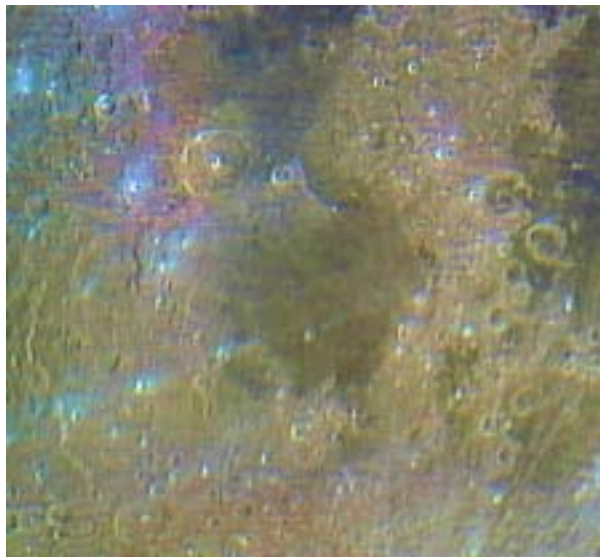


Figure 2 - The same as Figure 1 but colour enhanced.

It shows some interesting features. No differentiation of different basalts types can be made. Basalts are generally of low TiO₂ content (1 to 2 wt %) and Mare Nectaris therefore has a yellowish hue. Some dark spots can be seen on its floor (Beaumont L, one just north of that and around Daguerre). These are almost certainly dark mantle deposits. Surroundings of the mare are reddish to yellowish due to the presence of mature regolith. Recent impact craters are identifiable by their blue ejecta blanket.

Central in the area is a ray of Tycho which crosses Mare Nectaris. Overall this ray is very bright indicating its geological young age. Colour enhanced image shows an interesting characteristic of such rays. The ray segment on the highlands is blue but the ray segment on the mare, east of Rosse is yellow. This is due to the fact that the rays are locally produced by secondary impacts. The bluish ray segment is mainly composed of highland material, whereas the yellow segment is mainly composed of mare basalts. Differences are also visible in the peculiar ejecta deposits around Mädler in the colour image.



Figure 3 - The area through an UV filter.

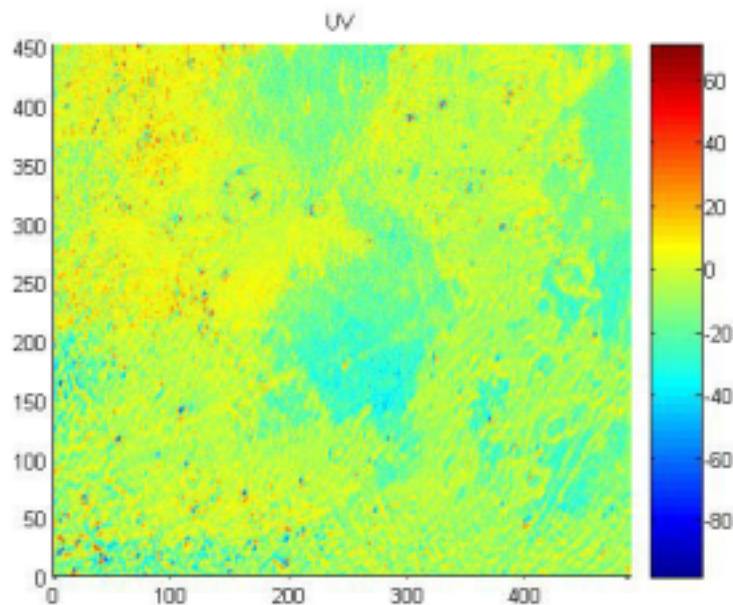


Figure 4 - The difference brightness between a normalised UV image and normal image.

The more positive the brighter in UV. I've only recently started to image the Moon through an UV filter so I'm still learning how to take the images and the interpret them. My very limited experience until now is that contrast between different units in the mare is decreased but contrast in highlands and rays systems is slightly increased. So I think that it is interesting to compare normal and UV images of ray systems.

RIMA ARCHYTAS

Image & Text by: Howard Eskildsen - Ocala, Florida, USA



Rima Archytas
November 9, 2005 - 00:20 UT
6 inch f/8 Refractor
Orion V-Block Filter - NexImage Camera

Location: 53° N, 5° E

Length: 90 kilometers

Period: Most likely Imbrian (From -3.85 billions years to -3.2 billions years)

Features: Rima Archytas appears about 70 km north of Vallis Alpes and runs a 90 km course towards the northwest following the contour line of the Montes Alpes between Mare Frigoris and an Alpine embayment. On the photograph the southwestern side of the rille appears higher than the northeastern margin, possibly due to lavas in the embayment supported by buried portions of Montes Alpes. This could imply that subsidence of the mare lavas were greater in the thicker portions of Mare Frigoris than in the embayment.

Possible time-line of events: A giant impact created the Imbrian basin and raised the Alps and other structures, but left a low spot where the current embayment lies. Mare lavas gradually filled in the Mare Frigoris depression and the later flows eventually spilled into the low spots along the Alps and created the embayment. Subsidence of the mare lavas created stresses that finally broke along the line of Rima Archytas as the northwestern side settled downward. Later impacts scattered rays across the area causing albedo differences while the gardening effect of micrometeoroids softened the contours, giving the site its current appearance.

I could find little that had been written about this rille. It does appear on plate 4 of Rukl's Atlas of the Moon and on plates A5 and A9 of the Consolidated Lunar Atlas. It also appears on Lunar Chart LAC 12. The region, but not the rille, is visible in the Digital Lunar Orbiter Photographic Atlas of the Moon, photo number IV-115-H3. Clementine image lua5136o.034, taken from the Clementine Lunar Image Browser 1.5 at <http://www.cmf.nrl.navy.mil/clementine/cJlb/> also shows the area, but the rille is not visible. It is visible telescopically only during favorable lighting and libration. Thanks to Jose Olivarez for pointing out this elusive structure and suggesting that I photograph it.

Other questions that come to mind:

1. Is the embayment area due to random distribution of the ejecta that formed the Montes Alpes, or might there be a buried, pre-existing crater in that area.
2. Is the dark albedo of the embayment compared to surrounding Frigoris due to the lack of ray covering, or might later lava flows have darkened this area after the rays were in place?
3. Is Rima Archytas a local structure, or might a fault line follow further along the Alpes-Frigoris boarder? This photo certainly does not give any evidence to that effect, nor do other sources mentioned above.

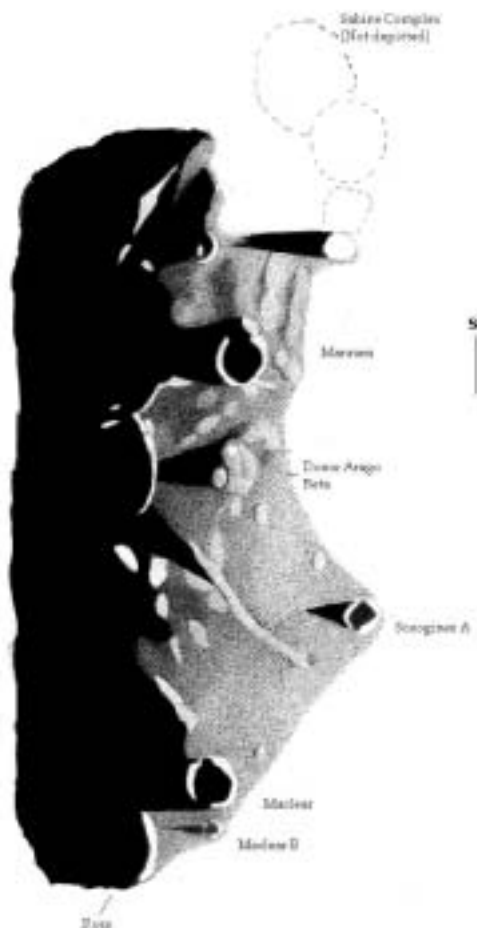
CALL FOR OBSERVATIONS - FOCUS ON: ERATOSTHENES

Thanks to all who contributed to this installment of *Focus On*. *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 March 2006 edition will be Eratosthenes and immediate surroundings. Observations of all kinds (electronic or film based images, sketches, 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 fascinating crater to your observing list and send your favorites to one of the addresses shown in the banner on Page One.

Deadline for inclusion in the Eratosthenes article is Feb. 20, 2005.

ARAGO & ENVIRONS

Sketch & Text by Colin Ebdon - Colchester, Essex, England



ARAGO & ENVIRONS

September 23/24, 2005

23:15 to 00:15 UT

Seeing: AII-AIII

Transparency: Good

7 inch f/15 Mak-Cass 225x

Sun's Sel. Long: - +6.5 (0hrs. 24/9)

Latitude: -6.1 (0hrs. 24/9)

Sun's Sel. Colong: 158.32 to 158.83

Latitude: 0.31

The scene appeared quite complex with many undulations visible on the Mare surface, and several domes visible. No attempt was made to depict the Sosogines rille system in whole or in part. The well known dome Arago Beta was well displayed and showed considerable structure. There must be some doubt as to whether this constitutes a lunar dome in the classical sense, as its general appearance, as previously noted by Harold Hill, is more akin to the complex formation Rumker. Under these extreme lighting conditions, the westernmost portion of the dome seemed to be detached and isolated from the rest of the structure. The ground immediately adjoining the dome to the South appeared to dip down, being partly in shadow and then to rise again, curving clockwise to a brighter region. Two further domes were noted immediately to the North of Arago Beta, not obviously depicted in Rukl's Atlas.

There must be some doubt about the small third dome depicted closer to Sosogines A, as in the Atlas, this seems to be in the spot occupied by the tiny craterlet Sosogines C, with which it may have been confused under the less than adequate seeing conditions North of Arago, there were several bright spots on the terminator which were indeterminate, but seem to mark a position close to the edge of (or possibly the edge of) the second large dome in this area, Arago Alpha, itself engulfed in shadow at this stage. Two domes were also seen immediately to the East of Manners; again, neither of these seems to be depicted in Rukl. There was also another dome on the terminator to the SSW of Manners, which is hinted at in Rukl, although covered by the name of the crater in the Atlas. The small dome to the SE of Maclear is shown in Rukl.

LUNAR TOPOGRAPHICAL STUDIES

Acting Coordinator - William M. Dembowski, FRAS

dembowski@zone-vx.com

OBSERVATIONS RECEIVED

WAYNE BAILEY - SEWELL, NEW JERSEY, USA

Digital images of Mare Nectaris (9), Clavius (4)

ED CRANDALL - WINSTON-SALEM, NORTH CAROLINA, USA

Digital images of Mare Nectaris (5), Fracastorius to Archimedes, Atlas & Hercules Region, Gambart, Rima Birt, Eratosthenes, Davey & Ptolemaeus & Alphonsus

HOWARD ESKILDSEN - OCALA, FLORIDA, USA

Digital images of Rima Archytas, Moon & Mars

ROBERT H. HAYS, JR. - WORTH, ILLINOIS, USA

Sketches of Kunowsky, Ritchey

RAFFAELLO LENA - ROME, ITALY

Digital image of Theophilus & Cyrillus

RAFAEL BENAVIDES PALENCIA - POSADAS, CORDOBA, SPAIN

Digital images of Mare Crisium, Humboldt & Hecataeus, Mare Australe to Oken, Rupes Altai, Gilbert to Ansgarius, Posidonius, Rima Ariadaeus, Menelaus, Proclus, Messier, Kepler, Tycho

K. C. PAU - HONG KONG, CHINA

Digital images of Fontenelle, Moretus, Cichus

GERARDO SBARUFATTI - CASSELE LANDI (LODI), ITALY

Digital images of Santbech to Colombo, Isidorus to Goclenius, Fracastorius

ALEXANDER VANDENBOHEDE - GHENT, BELGIUM

Digital images of Mare Nectaris (4)

ROBERT WLODARCZYK - CZESTOCHOWA, POLAND

Sketches of Ptolemaeus & Alphonsus, Gassendi

Observations submitted should include the following:

Name and location of observer

Name of feature

Date and time (UT) of observation

Size and type of telescope used

Magnification (for sketches)

Medium employed (for photos and electronic images)

RECENT TOPOGRAPHICAL OBSERVATIONS



POSIDONIUS

Digital image by Rafael Benavides Palencia

Posadas, Cordoba, Spain

December 6, 2005 - 18:56 UT

15cm f/8 Refractor - 3x Barlow - Philips Toucam Pro



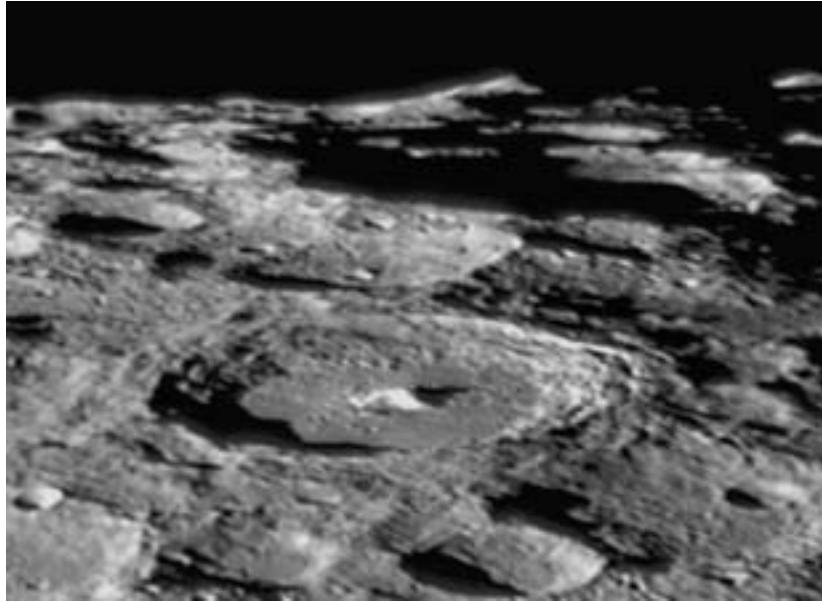
THEOPHILUS & CYRILLUS

Digital image by Raffaello Lena - Rome, Italy

13cm f/6 Refractor

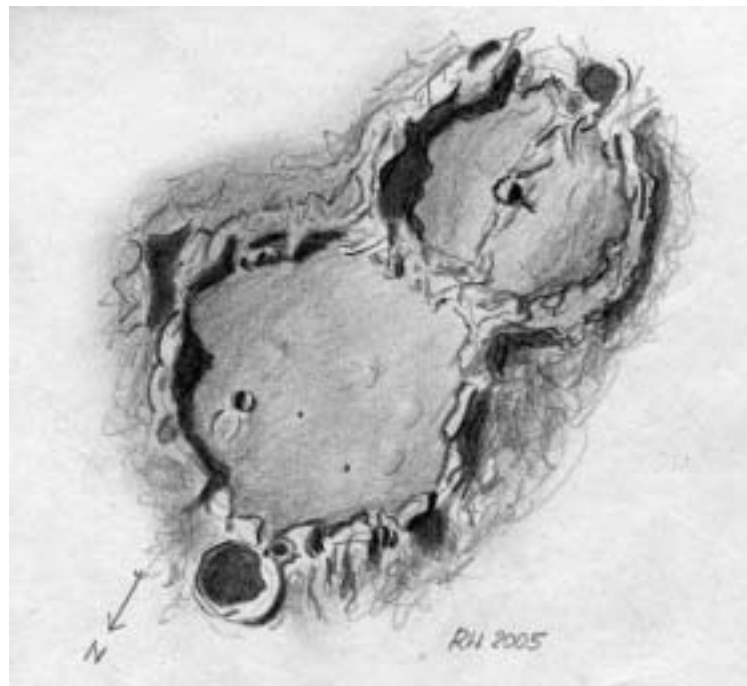
2x Barlow and Extension Tube

RECENT TOPOGRAPHICAL OBSERVATIONS



MORETUS

Digital image by K.C. Pau - Hong Kong, China
November 11, 2005 - 12:31 UT
250mm f/6 Newtonian - 20mm Eyepiece



PTOLEMAEUS & ALPHONSUS

Sketch by Robert Wlodarczyk - Czestochowa, Poland
November 9, 2005 - 16:00 UT
12cm f/7.5 Newtonian - 112x

BRIGHT LUNAR RAYS PROJECT

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 an excerpt from:

EXPLORE THE LUNAR RAYS

By Edmund Fortier

Astronomy Magazine - April 1992

Readying Your Telescope:

Lunar rays reflect sunlight most strongly straight back toward the Sun, so observing them at their best means viewing at Full Moon, a dazzling sight. You can cope with the glare in several ways. With a small telescope, your eye will probably adjust to the brightness easily enough. With medium and large scopes, however, consider reducing the aperture by means of a mask with a circular hole in it. If you have a reflector, place the hole off-center so that it falls between the edge of the tube and the secondary mirror and its support vanes.

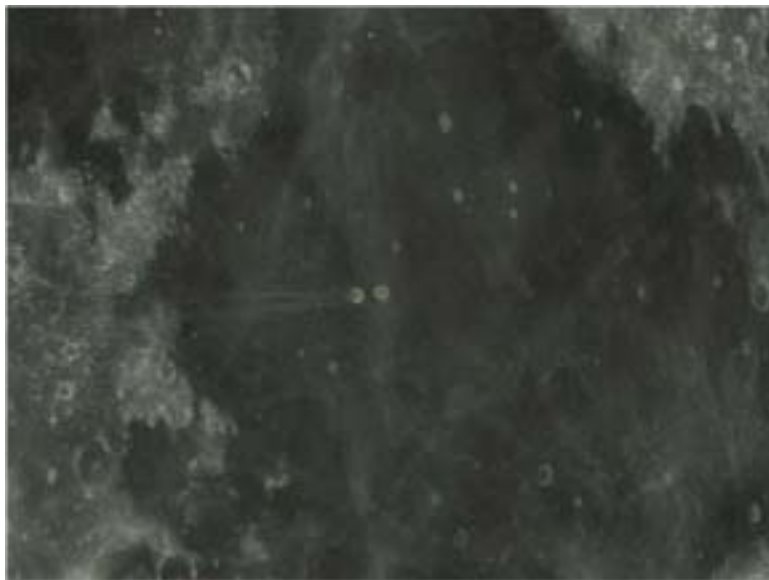
Some observers don't like to reduce their instrument's aperture, so they equip their eyepieces with neutral-gray Moon filters - lunar sunglasses. A neutral density filter, either by itself or combined with a deep red filler, will reduce glare and enhance contrast.

While viewing craters often calls for high magnifications, many ray systems run for hundreds of miles. Often observers find a low-power eyepiece - one that allows you to see the entire lunar disk along with a portion of sky provides the most pleasing views. Certainly, it's the most dramatic. Besides seeing the Moon in a way unmatched by any photograph, a low-power view shows you in a glance, the color, structure, and relative size of all the major rays. Medium-power eyepieces, on the other hand, work best for examining individual ray systems. However, it's wise to resist using very high magnifications unless the atmosphere holds exceptionally steady. When those moments occur, however, go all-out for the finest details the seeing allows.

Observing lunar rays can provide hours of enjoyment for anyone with a small or medium sized telescope. If you haven't looked at these remarkable features, you've missed one of the solar system's finest sights. Once you have spent some time tracing individual rays, examining the details of their structure, and watching them brighten and fade with the changing elevation of the Sun, you'll understand why they have fascinated Moon-watchers for centuries.

Besides, what other plans do you have for the next Full Moon?

RECENT RAY OBSERVATIONS



MESSIER

Digital image by Rafael Benavides Palencia
Posadas, Cordoba, Spain

December 14, 2005 - 22:34 UT

15cm f/8 Refractor - 2x Barlow - Philips Toucam Pro



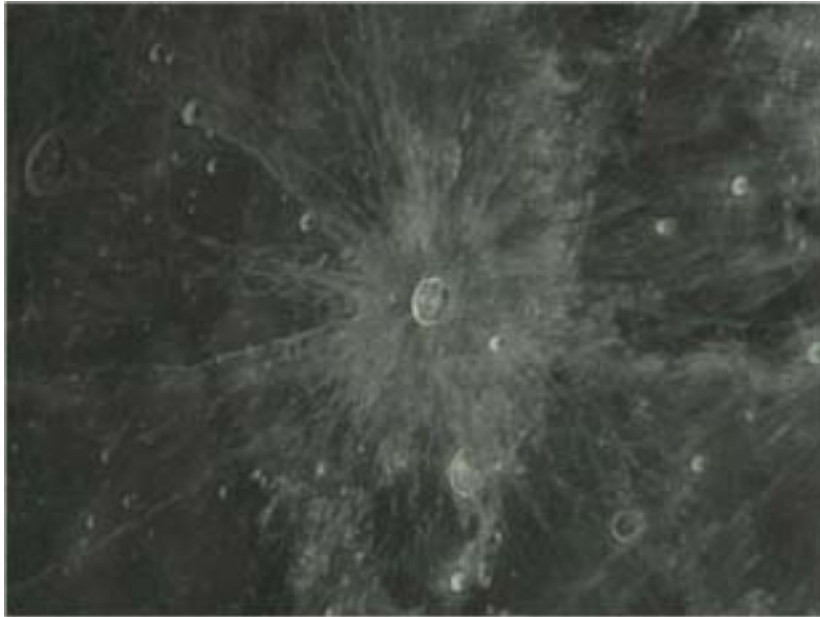
PROCLUS

Digital image by Rafael Benavides Palencia
Posadas, Cordoba, Spain

December 14, 2005 - 22:36 UT

15cm f/8 Refractor - 2x Barlow - Philips Toucam Pro

RECENT RAY OBSERVATIONS

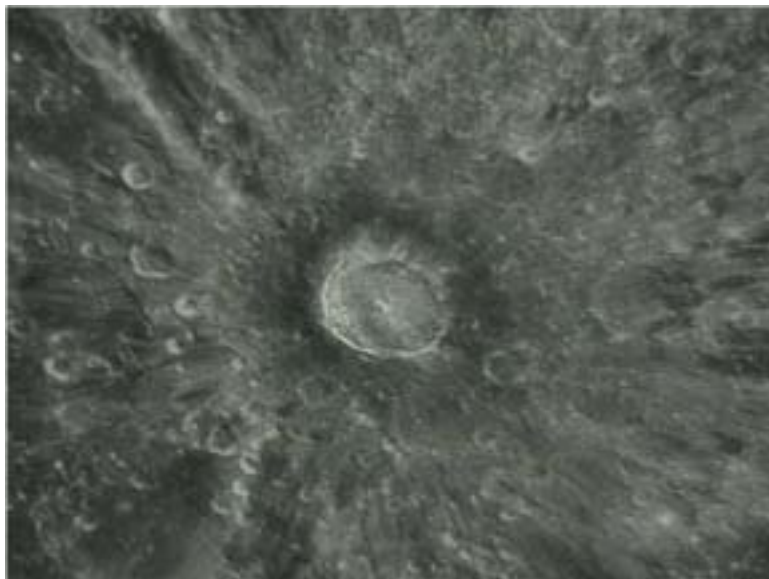


KEPLER

Digital image by Rafael Benavides Palencia
Posadas, Cordoba, Spain

December 14, 2005 - 22:29 UT

15cm f/8 Refractor - 2x Barlow - Philips Toucam Pro



TYCHO

Digital image by Rafael Benavides Palencia
Posadas, Cordoba, Spain

December 14, 2005 - 22:32 UT

15cm f/8 Refractor - 2x Barlow - Philips Toucam Pro

LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – acc@cs.nott.ac.uk

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

LTP NEWSLETTER - JANUARY 2006

Dr. Anthony Cook - Coordinator

I would like to wish readers all the best for 2006. Observations for November have been received from: Jay Albert (Lakeworth, FL, USA), Michael Amato (West Haven, CT, USA), Clive Brook (Plymouth, UK), Marie Cook (Mundesley, UK), Tony Cook (Long Eaton, UK), Robin Gray (Winnemucca, NV, USA), Antonio Marino (Naples, Italy), Gerald North (Narborough, UK), Brendan Shaw (UK), and Glen Ward (Bridgeport, WV, USA). A provisional 910 min of coverage for November has been reported so far. Note that observing time quoted here, and in past articles, are provisional because often additional observations come to light after publication.

On 2005 Nov 13 at UT 04:50-04:57, Glen Ward (Bridgeport, WV, USA) was observing with a 4" refractor (2 element) and noticed that an area near Mersenius was looking quite blurred, *“as if in a greenish cloud (not pure green, but the color of dead grass) and was shaped like an oval cloud”*. By 04:57 the effect had gone and the area concerned looked just like a peak and quite clear. He found a reference on an internet map that suggested that it might be an area to the SW of Mersenius C. To check for optical effects, two eyepieces were used and the telescope wiggled, but despite this the unusual area stayed co-registered to the Moon. No other parts of the Moon exhibited this effect. He comments that he was not sure when the effect had started but had been looking at the Moon previously for half an hour with a 90 mm Maksutov, but did not notice anything unusual, although he may not have been looking at the area closely before. Glen is an experienced observer with 10 years of lunar observing behind him and has not reported anything like this before. Fig 1 shows the location of the suspected area. Approximately 7 hours earlier I obtained some CCD video of this region, but the terminator was 3.5 deg further east at the time and nothing unusual was seen then. So the big question is was anybody else observing at this time and in particular do they have any images?

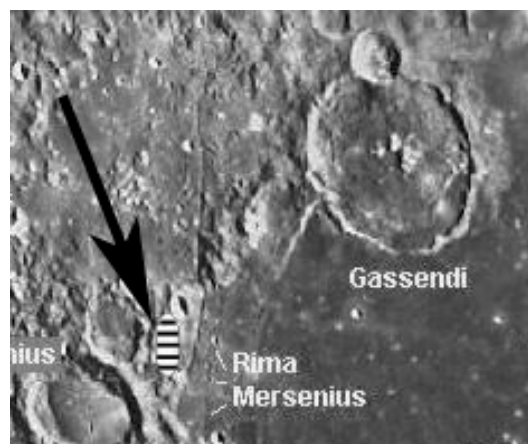


Fig 1 – Location of Glen Ward’s suspect area – extent illustrated by the hatched lines.

On 2005 Nov 17th the illumination and libration conditions for the famous 1983 Jan 29th LTP re-occurred. I was able to observe from the UK, but like about three previous attempts there was no repeat of that famous LTP was seen. Once again this hints strongly that the original event was endogenic and a

one-off event and possible theories concerning internal refraction from glass beads, or specular reflection of volcanic glass surfaces, are now unlikely.

Another repeat illumination and libration event predicted for November was on 2005 Nov 20 and concerned Patrick Moore's report for Messier A from 1951 Oct 20 as listed in the 1978 NASA LTP catalog. In the catalog it states that "*Messier A 1951 Oct 20 UT 00:00? – a brilliant white circular patch in it. Has seen it and Messier blurred several times. NASA catalog ID #545. NASA catalog weight=4*". Unfortunately both myself and Marie Cook attempted to observe this but found that the crater was invisible, being on the night side of the terminator! This would infer that the date in the catalog may be wrong. For now this event has been removed from our active list of past LTP reports until this issue is resolved.

I would like to show an interesting image of Proclus obtained by Brendan Shaw on 2005 Nov this corresponded to the same illumination as Bartlett's 1976 Jun 10th LTP report. Many astronomers criticize Bartlett for the sheer frequency of his LTP reports. However I have been finding out that, on the whole he was accurate in what he reported, and if any criticism is due it is that his interpretation of what was unusual was flawed. In the instance of his 1976 Jun 10th Proclus LTP the NASA catalog states: "*Proclus 1976 Jun 10 UTC 02:07 Observed by Bartlett (Baltimore, MD, USA, 4.5" reflector 40-225x, S=4-3, T=3 hazy) "C.p. invis. (=2 deg?), floor=2deg. Still invis. on 11th. (c.p. normally 5 deg)" NASA catalog weight=4, NASA catalog ID #1434*". Well it is clear from Brendan's image that indeed at this stage in the illumination, any central peak (or rather spot as there is no physical peak) is not very bright. I suspect that as Proclus is over towards the limb that libration and topographic shielding may have an effect on the visibility of features on the floor and could account for Bartlett seeing his "C.p." on some occasions and not on others. This theory can be proven if we observe close to the same libration when Bartlett did claim to see this feature on other occasions.

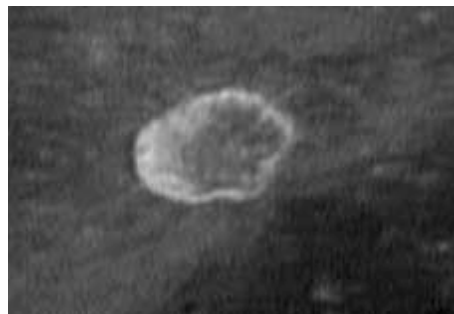


Fig 2 Proclus by Brendan Shaw 2005 Nov 14 UT 00:04 (Registax used). North is to the bottom left and west is on the bottom right. Note the ray bisecting the S rim – this is visible on Clementine images of the Moon!

Further 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> 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. 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

THE MOON IN THE NEWS

NASA article on "Moon Storms"

http://science.nasa.gov/headlines/y2005/07dec_moonstorms.htm

Universe Today: Amateur discovers double star during lunar occultation.

http://www.universetoday.com/am/publish/amateur_observers_double.html?28102005

Da Vinci and the mystery of Earthshine.

http://science.nasa.gov/headlines/y2005/04oct_leonardo.htm

Lunar meteoritic impact captured with off-the-shelf equipment.

<http://www.astronomy.com/asy/default.aspx?c=a&id=3794>

Follow-up to above article.

http://science.nasa.gov/headlines/y2005/22dec_lunartaurid.htm?list778348

SMART-1 and its Advanced Moon Imaging Experiment (AMIE)

http://www.esa.int/esaCP/SEM9TL8A9HE_index_0.html

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