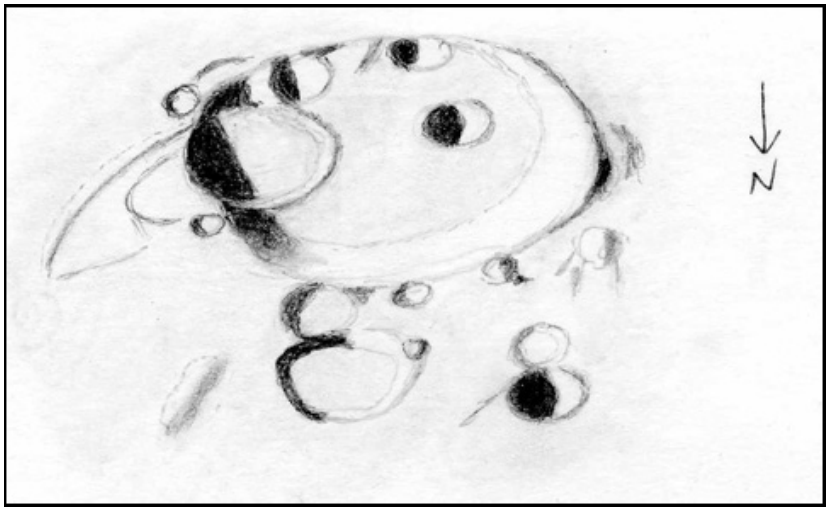
THE LUNAR OBSERVER

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 – SEPT. 2008



MUTUS

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
March 15, 2008 – 02:32 to 03:04 UT
15cm Newtonian - 170x - Seeing: 7-8/10

I drew this crater and vicinity on the evening of March 14/15, 2008 between two occultations. This lozenge-shaped crater is well to the south on the moon, southwest of the conspicuous Hommel group. The librations were favorable for it this evening. There is no central peak, but Mutus B is conspicuous west of center. Another crater, nearly as large as B, is on the south rim. Mutus V is the large crater inside the east rim of Mutus, and Mutus A adjoins V to the south. There may be a poorly-defined crater sandwiched between these two and the rim of Mutus. There are two small, shallow craters just outside the east rim of Mutus, and two curved ridges that may be the remnants of ghost rings. Mutus C is the largest crater north of Mutus, and Mutus CA is the saucer between them. Mutus N is the small crater west of CA, and on the north rim of Mutus. There is a conspicuous bright peak on the southwest edge of Mutus C. Mutus L is to the west; it is smaller, but much deeper than C. A very shallow saucer is just south of Mutus L. There appears to be a small high point on the west rim of Mutus near some isolated peaks and strips of shadow.

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 can be found on-line at: **http://www.alpo-astronomy.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.

LUNAR CALENDAR - SEPTEMBER 2008 (UT)

Sept. 01	16:00	Moon 4.7 Degrees SSW of Venus
Sept. 01	21:00	Moon 2.6 Degrees SSW of Mercury
Sept. 02	03:00	Moon 4.5 Degrees SSW of Mars
Sept. 07	14:04	First Quarter
Sept. 07	15:00	Moon at Apogee (404,209 km - 251,164 miles)
Sept. 09	21:00	Moon 2.7 Degrees S of Jupiter
Sept. 13	01:00	Moon 0.71 Degrees NW of Neptune
Sept. 15	05:00	Moon 3.6 Degrees NNW of Uranus
Sept. 15	09:14	Full Moon
Sept. 20	03:00	Moon at Perigee (368,888 km - 229,216 miles)
Sept. 22	05:05	Last Quarter
Sept. 27	16:00	Moon 4.0 Degrees SSW of Saturn
Sept. 29	08:12	New Moon (Start of Lunation 1061)
Sept. 30	10:00	Moon 1.1 Degrees SW of Mercury

CALL FOR OBSERVATIONS:
FOCUS ON: Bullialdus to Kies

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 **November 2008** edition will be the region from **Bullialdus to Kies**. Observations 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 these fascinating features to your observing list and send your favorites to:

Dembowski@zone-vx.com or dembowski@alpo-astronomy.org

Deadline for inclusion in the Bullialdus/Kies article is October 20, 2008

FUTURE *FOCUS ON* ARTICLES:

Albategnius **TLO Issue: Jan. 2009** **Deadline: December 20, 2008**

FOCUS ON: Aristoteles to Eudoxus

By William M. Dembowski, FRAS
Coordinator: Lunar Topographical Studies

Figure 1
Digital image by Howard Eskildsen – Ocala, Florida, USA
Aprifl 26, 2008 – 09:50 UT – Seeing: 8/10 – Trans: 5/6
Meade 6 inch f/8 Refractor – 2x Barlow – Orion StarShoot II

In the far eastern regions of Mare Frigoris is a handsome pair of craters that come into prominence around the time of First Quarter, Aristoteles and Eudoxus (Figure 1). Aristoteles is 87 km in diameter and is somewhat hexagonal in shape. Its walls rise 3.3 km above the floor of the crater and are heavily terraced. In addition, the western rim has a triangular landslip reminiscent of that on Plato's west wall. (Figures 2 & 3)

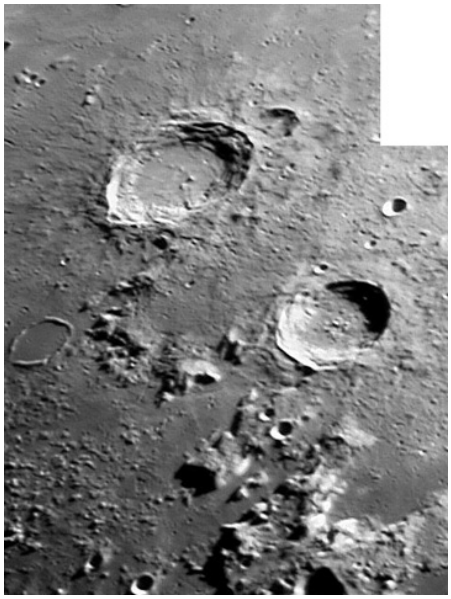


Figure 2
Digital image by Ed Crandall
April 17, 2005 – 01:52 UT
110mm f/6.5 APO Refractor
3x Barlow – Philips Toucam

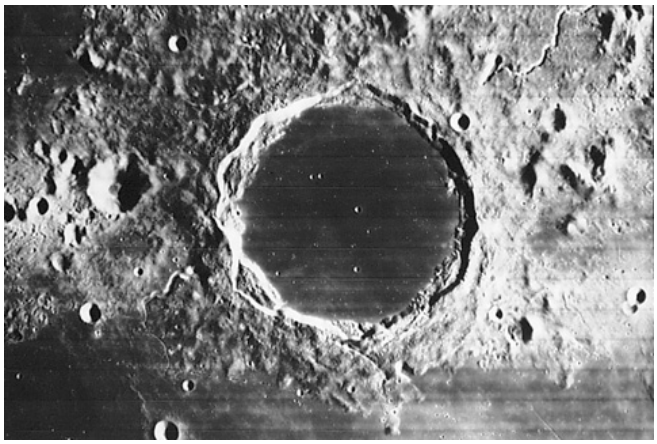


Figure 3
Crater Plato
Consolidated Lunar Atlas
Image IV-127-H3

No noticeable craterlets intrude on its walls, but Aristoteles is unusual in that it is superposed onto a smaller crater, Mitchell (30 km). (Figure 4) The floor of Aristoteles has no pronounced central peak, only a scattering of small hills, the largest of which are south of center. There is a very pronounced ejecta blanket radiating outward from the walls but only a weak ray system.

Figure 4
Digital image by Wayne Bailey
Sewell, New Jersey, USA
August 9, 2008 – 02:25 UT – Colong: 11.9
Seeing: 3/10 – Trans: 4/6
Celestron 11 inch SCT – f/20
Lumenera Skynyx 2-1M Camera – IR72 Filter

An arc of the Caucasus Mountains connects the southwestern wall of Aristoteles to the northwestern wall of Eudoxus (Figure 5). A half-dozen peaks within this arc top 1400 meters, with the highest measuring 2370 meters. Just west of this arc is another interesting feature, Egede, a 37 km flooded crater. Egede has a smooth floor and very low walls. It is, in fact, so shallow that it is probably best described as a mountain-ring rather than a crater. (Figure 6)

Figure 5
Digital image by Wayne Bailey - Sewell, New Jersey, USA
October 31, 2007 – 06:02 UT – Colong: 152.0 - Seeing: 4/10 – Trans: 5/6
Celestron 11 inch SCT – f/20 - Lumenera Skynyx 2-1M Camera – IR72 Filter

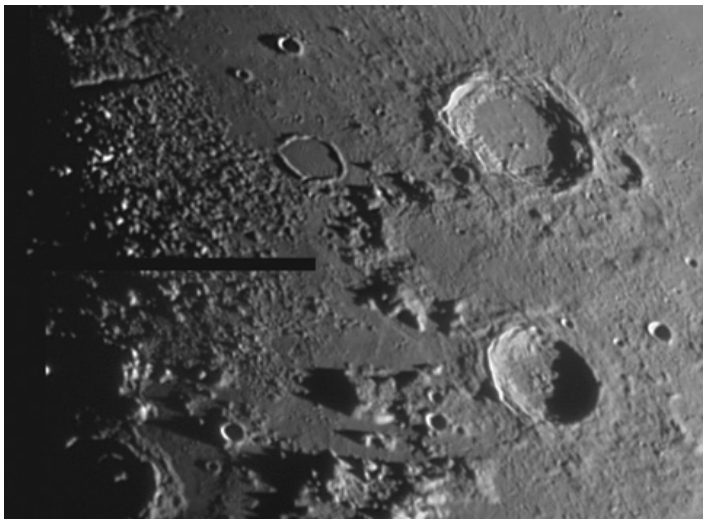


Figure 6
Digital image by Rik Hill
Tucson, Arizona, USA
November 17, 2007 – 02:04 UT
Seeing 7/10
Celestron 14 inch SCT
1.6x Barlow – UV/IR Filter
SPC900NC Camera
300/1750 images

Almost directly south of Aristoteles is Eudoxus. Slightly smaller (67 km), it is similar in overall appearance to Aristoteles although its floor features are more centrally located. Eudoxus also has a deep valley on its western wall that can, at times, give the appearance of a double wall.

REFERENCES:

Lewis, H.A.G. – "The Times Atlas of the Moon", Times Newspapers Limited (1969)
North, Gerald – "Observing the Moon: The modern astronomer's guide", Cambridge Univ. Press (2000)
Rukl, Antonin – "Atlas of the Moon", Hamlyn (1991)
Woods, Charles A. – "The Modern Moon: A personal view", Sky Publishing Corp. (2003)

SALVAGING AN IMAGE OF ARISTOTELES

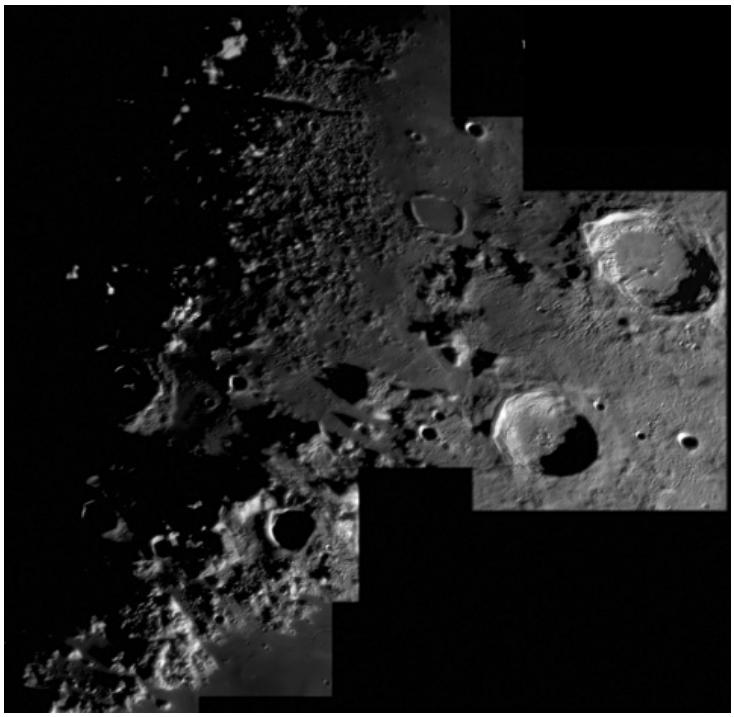
Digital image and commentary by Jay Albert
Lake Worth, Florida, USA

I had hoped to get a better photo of Aristoteles and Eudoxus this month, but the weather didn't cooperate. Nevertheless, there's an interesting story behind this shot taken July 9, 2008 which illustrates my inexperience with astrophotography.

I used my Celestron 11" SCT with a Klee 2.8x Barlow and I attached my Olympus C 5050 digital camera to the scope using a Scopetronix MaxView 40mm eyepiece. When I set my camera in shutter priority mode, it showed an exposure of 1/1000". This seemed rather fast to me, but I thought if the camera suggested it, it must be right. I took a total of 10 frames in TIFF format with exposures ranging from 1/1000 to 1/100 of a second. When I uploaded the frames to my computer and looked at them in Photoshop Elements, ALL of the frames were solid black! That's when I realized that the 1/1000 shutter speed the camera initially showed must have been a default rather than a suggested setting. I played around with Photoshop's "enhance" and "highlights & shadows" tools and found that only the 1/100 second exposure had some detail. As I enhanced the brightness and contrast, the image turned almost lime green. I was able to change the image to black and white and what you see is the result, compressed from an original 14MB TIFF file. I thought some of your readers might be interested in this because it shows how you can get something (even if it's not great) from a totally blown exposure.

ADDITIONAL OBSERVATIONS OF ARISTOTELES TO EUDOXUS

ARISTOTELES
Drawing by Fred Corno
Settimo Torinese, Italy
April 26, 2004 – 20:50 to 21:30 UT
Seeing: 5/6 – Trans: Acceptable
Vixen VMC200L – 7mm Ortho EP (279x)



Digital Mosaic by Raffaello Lena – Rome, Italy
June 10, 2008 – 19:47-20:48 UT
Seeing: 5-6/10 – Trans: 3/5
18 cm Maksutov-Cassegrain – Lumenera LU078M

LUNAR TOPOGRAPHICAL STUDIES

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

OBSERVATIONS RECEIVED

JAY ALBERT – LAKE WORTH, FLORIDA, USA
Digital image of Aristoteles & Eudoxus

WAYNE BAILEY - SEWELL, NEW JERSEY, USA
Digital images of Atlas & Hercules (2), Aristoteles & Eudoxus (4), Copernicus, Ptolemaeus, Alphonsus, Ptolemaeus & Alphonsus, Milichius, Byrgius-A, Kepler & Copernicus
Banded Crater Report Forms with digital images of Proclus, Menelaus, Aristarchus

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND
Digital images of 13-day Moon (2), 8-day Moon (2), Petavius, Mare Crisium (2), Ptolemaeus, 9-day Moon (2), First Quarter Moon, Mare Humorum, Burg, Ariadaeus Rille, Mare Serenitatis, North polar region, Bullialdus (2), Endymion, Mare Crisium & Proclus, Posidonius, Sinus Iridum

ANTHONY COOK – ABERYSTWYTH, WALES, UK
Digital image of lunar eclipse

FRED CORNO – SETTIMO TORINESE, ITALY
Drawing of Eudoxus

HOWARD ESKILDSEN - OCALA, FLORIDA, USA
Digital images of Einstein-A, Oceanus Procellarum, Reiner Gamma, Epidemiarum
Banded Crater Report Forms with digital images of Messier, Proclus, Rosse

PETER GREGO - ST. DENNIS, CORNWALL, ENGLAND
Digital image of lunar eclipse

ROBERT H. HAYS, JR. - WORTH, ILLINOIS, USA
Drawing of Julius Caesar
Photograph of Moon in Pleiades Cluster (2)
Timings of 80 stars occulted by the Moon

RAFFAELLO LENA – ROME, ITALY
Digital image of Valentine Dome to Alpine Valley

ANDREW MARTIN - ROCKVILLE, MARYLAND, USA
Written observations of the ray systems of Proclus (3), Langrenus (3), Petavius-B (3), Aristarchus (2), Kepler (2), Glushko (2)

ROBERT WLODARCZYK - CZESTOCHOWA, POLAND
Drawings of Copernicus, Pytheas

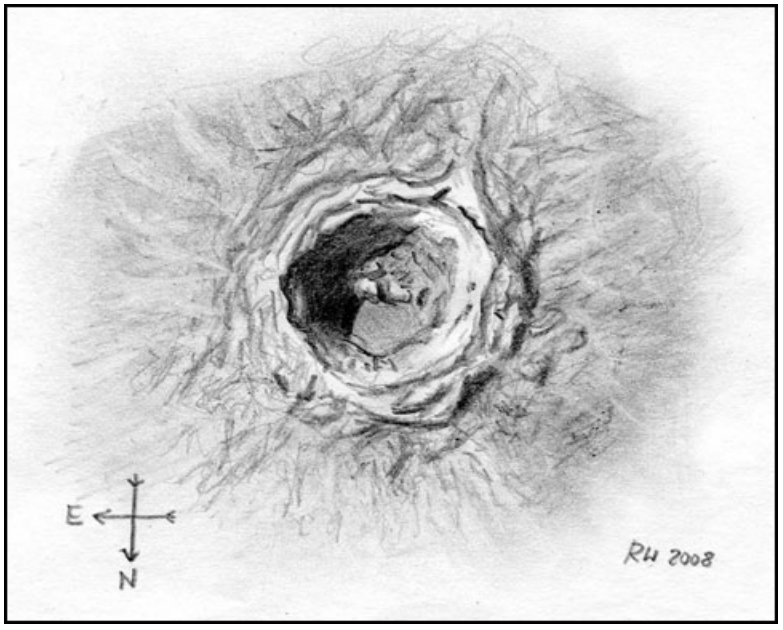
RECENT TOPOGRAPHICAL OBSERVATIONS

MILICHIUS
Digital image by Wayne Bailey – Sewell, New Jersey, USA
August 12, 2008 – 02:55 UT – Colongitude: 36.6
Seeing: 4/10 – Transparency: 4/6
Celestron 11 inch SCT – f/20 – Lumenera Skynyx 2-1M Camera – IR72 Filter

PETAVIUS
Digital image by Maurice Collins – Palmerston North, New Zealand
August 5, 2008 – 05:48 UT – Seeing: AIII
Celestron 8 inch SCT – Meade LPI Imager

RECENT TOPOGRAPHICAL OBSERVATIONS

PALUS EPIDEMIARUM
Digital image by Howard Eskildsen – Ocala, Florida, USA
May 28, 2008 – 10:08 UT – Seeing: 8/10 – Trans: 4/6
Meade 6 inch f/8 Refractor – 2x Barlow – Orion StarShoot II Camera



COPERNICUS
Drawing by Robert Wlodarczyk – Czestochowa, Poland
May 14, 2008 – 19:30 UT – Seeing: 6/10 – Trans: 4/6
12cm Newtonian f/7.5 225x

BRIGHT LUNAR RAYS PROJECT

Coordinator - Willliam M. Dembowski, FRAS
Bright Lunar Rays Project Website:
http://www.zone-vx.com/alpo-rays.html

RECENT RAY OBSERVATIONS

Name: Andrew Martin SFO
Location: Rockville MD (77° 8' 22" W, 39°4' 50" N, elevation 128 meters)

Date: August 15th 2008
Time: 03:30:43 UT to 04:21:41 UT
Ephemeris for 03:30:43 UT
Distance: 389439 km
Colongitude: 85.8°
Lunation: 14.72 days
Phase: 8.6°
Illumination: 99.4%
Solar Inclination: -0.1°

Telescope used: 150mm Celestron C6-S SCT (XLT) f/10
Lens: GTO Plossl 20mm and GTO x2 Barlow (150x) and Celestron #47 Violet Filter.
Seeing: Clear Sky Chart estimated 3 out of 5. Observing the moon's limb directly I would say 4-5 out of 10, but with a nearby star it was about 5 out of 10 using Pickering Scale.
Transparency: Clear Sky Chart estimated 1 out 5, but I would say 3-4 out of 6.
Weather: Clear with some thin clouds about. Surface temps were 64°F. Humidity was 88%.

Name of Feature: Proclus (46.8°E, 16.1° N)
Filter Observation: Proclus was a bright rimmed crater with a dark floor. Rays could be seen emanating from the crater in its normal "V" notch pattern. The rays were wispy in nature and I was unable to make out individual rays. The terra was difficult to make out. Three bright spots could be made out in the rays. One to the north was Fredholm (70 km away), the one to the west near Mare Crisium was Yerkes E (100 km away), and the one to the south was Glaisher (100 km away). Using the #47 filter enhanced the appearance of the brighter spots and rays but really cut down on the details I could see. Some lesser craters were now non-existent.

Name of Feature: Langrenus (60.9°E, 8.9°S)
Filter Observation: Using the #47 filter made Langrenus fuzzy in nature. The bright peak could be seen in the center, but the crater itself was just slightly brighter than the surrounding terra and mare surface allowing for detection of it. No rays could be seen either on the surface or as dark rays emanating from the crater wall. Langrenus M could easily be made out to the west as a bright spot.

Name of Feature: Petavius B (57.1°E, 19.9°S)
Filter Observation: The filter made observation of Petavius B more difficult. The crater could be seen barely with a bright spot to its immediate south (which I have in the past saw as a faux crater). I was able to locate the crater due to the heavier material's "V" notch which stood out in contrast against the darker mare surface of Mare Fecunditatis. The eastern material simply faded into the terra. The normally

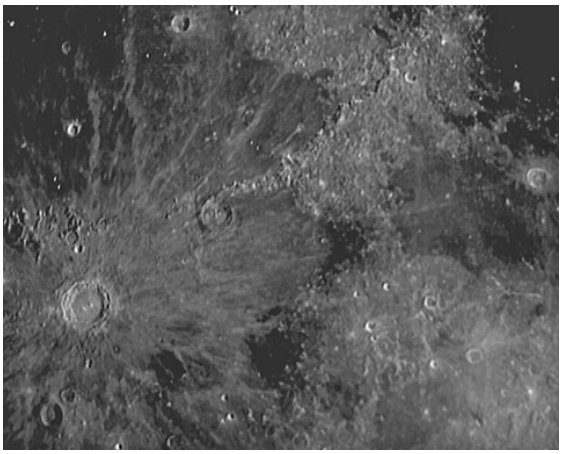
thinner material on the mare surface to the west was not present. Neither were the non-associated rays to the north of Petavius B. No features could be made out on the terra or craterlets in the rays.

Name of Feature: Aristarchus (47.4°W, 23.7° N)
Filter Observation: Aristarchus was a very bright object even through the filter but a lot of details were lacking. A bright triangle of material could be seen going in a in the south west direction towards Herodotus (which could not be really made out). The Vallis Schroter could not be made out. Bright small spots could be made in the Aristarchus plateau hills to the north. No other rays could be made out aside from the bright triangle of material.

Name of Feature: Kepler (38.0°W, 8.1°N)
Filter Observation: The #47 filter made Kepler appeared as a westerly white rimmed crater. But like many other features, the crater details were difficult to make out through the filter. Individual rays could be seen emanating from the crater in the western direction. Rays in the eastern direction were less defined and had the appearance of a blanket of ejecta. The rays were slightly brighter than the surrounding mare surface but not by much with this filter. About four bright craters could be seen in and around the rays. Kepler C could be seen to NW as bright spot. Kepler A could be seen to the east. Enche B and E could be seen to the far south just outside the rays.

Name of Feature: Glushko (formerly known as Olbers A) (77.6°W, 8.1°N)
Filter Observation: The #47 filter was a bit better for details but not by much. The terminator was about 240 km to the west of Gluskho. The Cardanus-Selecus ray segment could be seen running north east towards Montes Agricola nearly some 780 km. Glushko's eastern wall was in shadow but the western wall was bright. Oblers itself could be made out as more of depression than a crater. The flat crater of Hedin could be seen south of Glushko. Some ray material could be seen radiating from the crater but barely. Most of the ray material fades into the surrounding terra with this filter. A double "V" notch could barely be made out running in a NW-SE direction from the crater. The ray material seems to favor more a NE direction versus SW which is more craters.

****



<u>EASTERN RAY SYSTEM OF COPERNICUS</u>
Digital image by Bill Dembowski – Elton, Pennsylvania, USA
August 13, 2008 – 01:46 UT – Colongitude: 48.1 – Seeing: 4/10
Celestron 8 inch SCT – Orion StarShoot II Camera

BANDED CRATERS PROGRAM

Coordinator - Willliam M. Dembowski, FRAS

Banded Craters Program Website: http://www.zone-vx.com/alpo-bcp.html

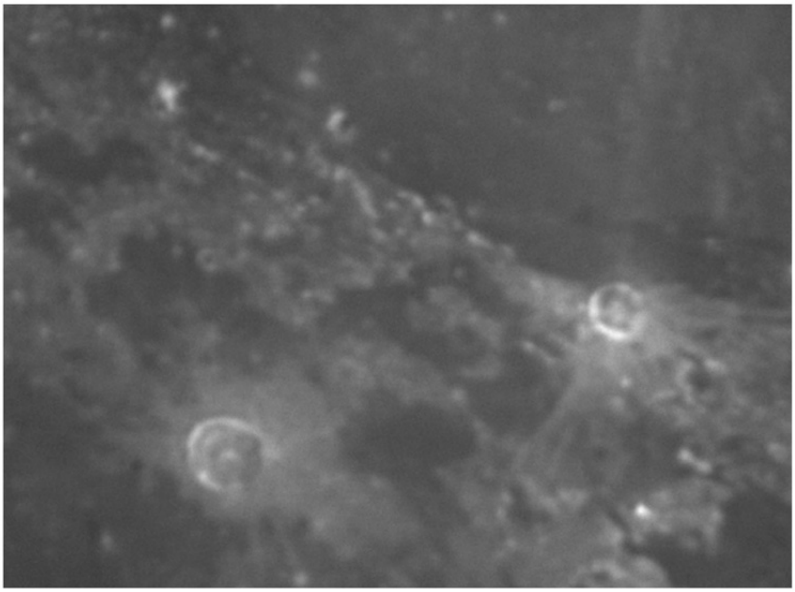
A.L.P.O. Lunar Section: Selected Areas Program Banded Craters Observing Form

Crater Observed: Menelaus
Observer: Wayne Bailey Observing Station: Sewell, NJ
Mailing Address: 17 Autumn Lane, Sewell, NJ 08080
Telescope: Celestron SCT 28 cm f/20
Imaging: Skynyx 2-1M Filters: Schuler IR72
Seeing: 4/10 Transparency: 5/6
Date (UT): 2008/08/12 Time (UT): 02:38
Colongitude: 48.7 Latitude: 0.0
Position of crater: Selen. Long. Selen. Lat.
16.0° East 16.3° North
Lunar Atlas Used as Reference: Rukl, Atlas of the Moon, Revised Updated Ed.

Comments:

Five dark radial bands on inner wall. NW dark band is broad, SE band is indistinct. Bright center in generally dark floor. Two radial bright spokes from center to W & SE wall. W spoke aligns with brightest section of W wall.

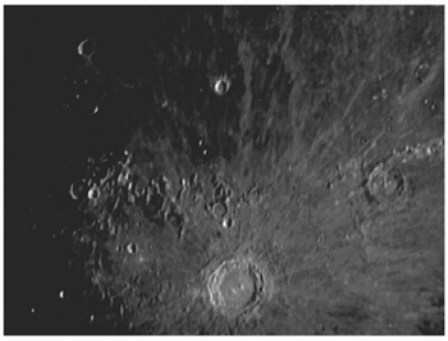
Image (North up): (East right):



A.L.P.O. Lunar Section - Banded Craters Observing Form

Crater Observed: Pytheas
Observer: William M. Dembowski Observing Station: Elton Moonshine Observatory
Mailing Address: 219 Old Bedford Pike, Windber, PA 15963
Telescope: Celestron SCT 20 cm f/10
Imaging: Orion StarShoot II Filters:
Seeing: 3/10 Transparency: 3/6
Date (UT): 2008/08/13 Time (UT): 01:46
Colongitude: 48.1

Image: (North up) (East right)



A.L.P.O. Lunar Section: Selected Areas Program Banded Craters Observing Form

Crater Observed: Rosse
Observer: Howard Eskildsen Observing Station: Ocala, Florida
Mailing Address: P.O. Box 830415, Ocala, Florida, 34483
Telescope: Meade Refractor 15.2 cm f/8
Imaging: Orion StarShoot II, 2X Barlow, Filters: None
Seeing: 9/10 Transparency: 5/6
Date (UT): 2008/08/07 Time (UT): 00:52
Colongitude: 335.0°
Position of crater: Selen. Long. Selen. Lat.
35.0° East 17.9° South
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up):

Comments:

No bands visible on this photo at this colongitude.

****

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)

****

LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – atc@aber.ac.uk
Assistant Coordinator – David O. Darling - DOD121252@aol.com

LTP NEWSLETTER - SEPTEMBER 2008

Dr. Anthony Cook – Coordinator

Observations for July 2008 were received from the following observers: Jay Albert (FL, USA), Maurice Collins (New Zealand), myself (Aberystwyth, UK), Marie Cook (Mundesley, UK). On 2008 Jul 07 Maurice Collins made a whole Moon mosaic from CCD images acquired between 05:28 and 08:36 UT. When he sent me his mosaic (see a sub-section of this in Fig 1) I noticed that a mountain on the northern shore of Mare Crisium appeared unusually bright for this distance from the terminator. At this stage we think that the most likely explanation is the common sunward facing slope theory. To some extent this has been confirmed by earlier images from the Consolidated Lunar atlas and the Hatfield Atlas which do show a bright mountain slope here, but not quite as bright as appeared in Maurice's mosaic. However just in case, this event has been tagged as a LTP, but given a very low weight of 1.

Fig 1 – Mare Crisium sub-section of a whole Moon mosaic obtained by Marice Collins on 2008 Jul 07

The weight system (see Table 1) that I am applying to LTP will form part of the new comprehensive ALPO/BAA LTP catalog that I am working on. It is fairly similar to the old Cameron system as it ranges from 0 to 5. However it is defined slightly differently and will be much harder to assign a weight of 5. All new LTP reports are assigned initially to the most appropriate category between 1 and 5 according to the descriptions in table 1. If in doubt a placeholder of 1 is allocated. After a careful evaluation, LTP reports are then re-assigned to an appropriate level, this will usually be a demotion. In order to fall out of the any future statistical analysis, a 0 is given to any report whose mostly likely explanation can be shown to be "normal appearances of the Moon", or related to effects in our atmosphere. Although this seems a relatively trivial exercise, it will hopefully form part of a major new analysis of all past LTP reports.

ALPO/BAA Catalog Weight System – Initial	Cameron 1978 Catalog Weight System
0 = a non LTP i.e. proven that this is a normal appearance	0 = non-LTP or inexperienced observer
1 = probably a non-LTP - but cannot rule out – needs to be checked	1 = some merit
2 = report from an in-experienced observer - so might be real	2 = poor information or non-independent observation
3 = observation from an experienced observer - so probably real	3 = good observer
4 = confirmed report by more than 1 observer (at least one experienced)	4 = very experienced observer
5 = definitive unambiguous documented evidence	5 = confirmed or recorded LTP

Table 1 – Comparison of the new ALPO/BAA LTP and Cameron catalog weight systems

Data going into this new database will include the following key descriptions commonly found in LTP reports: Atmosphere, Brightening, Brightness Variation, Color, Darkening, Earthshine, Eruption, Flash, Glistening, Glow, Limb, Lunar Eclipse, Whole Moon Effect Moving, Miscellaneous, Obscuration, Occultation, Shadow, Solar Eclipse, and Spectra. Naturally some of these will have additional parameters e.g. "Color" can have all or any of the following: near-IR, red, orange, yellow, green, cyan, blue, violet, UV, brown, pink, mauve, grey, black and white.

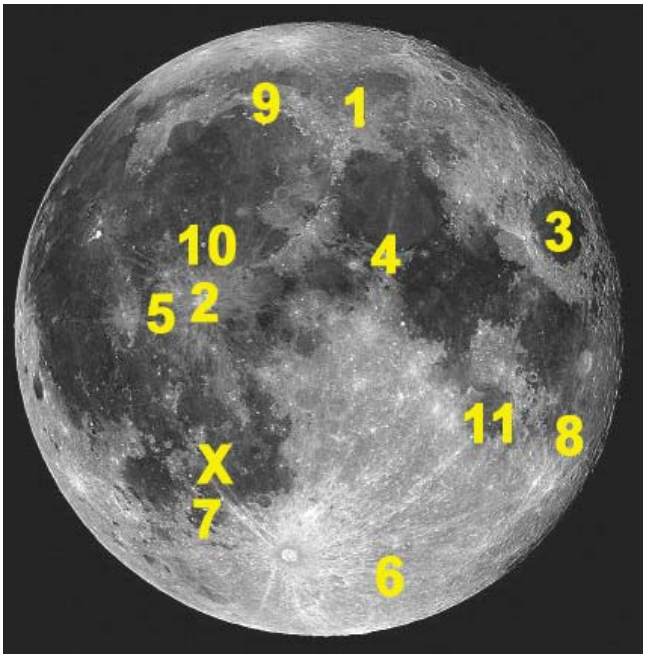
Just a reminder to readers again, the new style repeat illumination/libration predictions for LTP can be found on: http://users.aber.ac.uk/atc/LTP/Test/trial.htm - this is in effect a BETA test version for you to try out and give me comments. It has expanded in the number of reports covered quite considerably since last month. Please do try this out and if you cannot find your own observing site in there, then let me know your geographical location and I will add it to the system – this is trivial for me to do. Fingers crossed I will replace the existing system on the current web site: http://users.aber.ac.uk/atc/LTP/LTP.htm for next month. 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, Institute of Mathematical and Physical Sciences, University of Wales Aberystwyth, Penglais, Aberystwyth, Ceredigion, SY23 3BZ, WALES, UNITED KINGDOM. Email: atc@aber.ac.uk

KEY TO IMAGES IN THIS ISSUE

1. **Aristoteles/Eudoxus**
2. **Copernicus**
3. **Crisium, Mare**
4. **Menelaus**
5. **Milichius**
6. **Mutus**
7. **Epidemiarum, Palus**
8. **Petavius**
9. **Plato**
10. **Pytheas**
11. **Rosse**

X = Bullialdus & Kies
Next *FOCUS ON* target



****

A.L.P.O. LUNAR COORDINATORS

Dr. Anthony Cook – Coordinator, Transient Lunar Phenomena atc@aber.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 – Coordinator, Lunar Topographical Studies & Selected Areas Program
Dembowski@zone-vx.com

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

****