

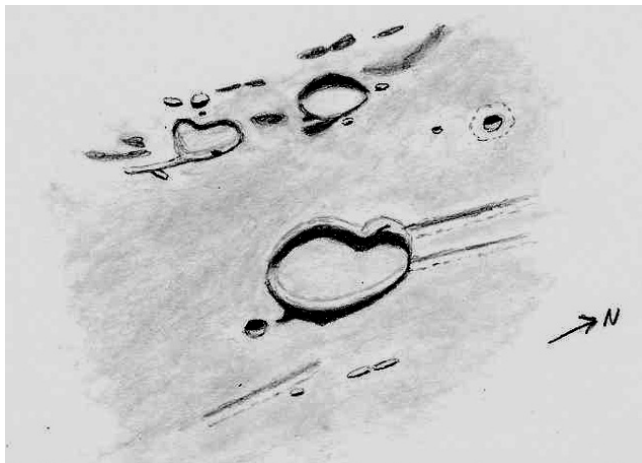


# THE LUNAR OBSERVER

RECENT BACK ISSUES: [http://www.zone-vx.com/tlo\\_back.html](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](mailto: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. 2008



### RAMSDEN

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA  
September 5, 2007 - 09:20 to 09:58 UT  
15cm Newtonian - 170x - Seeing: 6-8/10

I sketched this crater and vicinity on the morning of Sept. 5, 2007 after the occultation of 136 Tauri. This crater is in Palus Epidemiarum, between and south of Mares Nubium and Humorum. Ramsden itself appears to be a double crater, but the duplicity is far more noticeable on its western rim. The rims of Ramsden appear to be highest to the southeast and northwest. I saw no detail on Ramsden's floor. The crater Ramsden A is just south of Ramsden, and some small hills are farther east. A rille is in this area, passing very near one of the peaks. Two more rilles extend outward from Ramsden's north end. These two are at least approximately parallel to each other; they are definitely not parallel to the one to the southeast. The largest crater west of Ramsden is probably Lepaute, according to the Lunar Quadrant Map. An unlabeled crater nearly the size of Ramsden A is to the north, and has a halo. A tiny pit is between this crater and Lepaute. A shallow crater south of Lepaute has a boot shape, and may be the result of two or more impacts. A narrow ridge extends southward from its 'heel', and some hills are to its west. There is a variety of shadowing in this area. The terrain near and west of Lepaute is lighter and more chaotic than to the east near Ramsden. I saw no detail between Ramsden and Lepaute; this area appears very smooth.

## 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 - JANUARY 2008 (UT)**

Jan. 03	08:07	Moon at Apogee (405,327 km - 251,859 miles)
Jan. 05	04:00	Moon 7.0 Degrees S of Venus
Jan. 07	11:00	Moon 4.3 Degrees S of Jupiter
Jan. 08	11:36	New Moon (Start of Lunation 1052)
Jan. 09	16:00	Moon 0.35 Degrees ESE of Mercury
Jan. 10	06:00	Moon 1.4 Degrees NNW of asteroid Vesta
Jan. 11	01:00	Moon 0.42 Degrees S of Neptune
Jan. 12	23:00	Moon 2.3 Degrees NNW of Uranus
Jan. 15	19:45	First Quarter
Jan. 19	08:40	Moon at Perigee (366,435 km - 227,692 miles)
Jan. 19	24:00	Moon 1.1 Degrees N of Mars
Jan. 22	13:34	Full Moon
Jan. 25	04:00	Moon 2.6 Degrees SSW of Saturn
Jan. 30	05:02	Last Quarter
Jan. 31	04:27	Moon at Apogee (404,531 km - 251,364 miles)

### **A.L.P.O. LUNAR COORDINATORS**

Dr. Anthony Cook – Coordinator, Transient Lunar Phenomena  
[atc@aber.ac.uk](mailto:atc@aber.ac.uk)

Brian Cudnik – Coordinator, Lunar Meteoritic Impact Search  
[cudnik@sbcglobal.net](mailto:cudnik@sbcglobal.net)

David O. Darling – Asst. Coordinator, Transient Lunar Phenomena  
[DOD121252@aol.com](mailto:DOD121252@aol.com)

William M. Dembowski – Coordinator, Lunar Topographical Studies  
& Selected Areas Program [Dembowski@zone-vx.com](mailto:Dembowski@zone-vx.com)

Marvin W. Huddleston – Coordinator, Lunar Dome Survey  
[kc5lei@comcast.net](mailto:kc5lei@comcast.net)

# **FOCUS ON: Alphonsus**

**William M. Dembowski, FRAS**  
**Coordinator, Lunar Topographical Studies**

## **INTRODUCTION**

Because of its convenient placement in the early evening sky, one of the most popular times to observe the Moon is around First Quarter. At that time, the magnificent crater chain of Ptolemaeus-Alphonsus-Arzachel is near the terminator and in perfect position to observe and image. The center member of that chain, Alphonsus, is a 118 km diameter crater with a wide variety of component features.



**FIGURE 1**

**Digital image by Larry Todd - Dededin, New Zealand**  
**April 6, 2006 - Orion Optics OMC299 Telescope - Opticstar 122 ccd Camera**

## **WALLS**

Crater walls are not always the most observed features of a crater. Rather, they are often seen as simply the frame for the crater floor and its contents. The walls of Alphonsus, however, are worthy of more than just a cursory look. Reaching a height of approximately 2,000 meters above the crater floor, the walls are covered with valleys, gorges, and craterlets. The most prominent of these wall features are the two long, wide, parallel valleys that cut through the south-eastern wall of Alphonsus and continue onto the surrounding terrain (Figure 1).

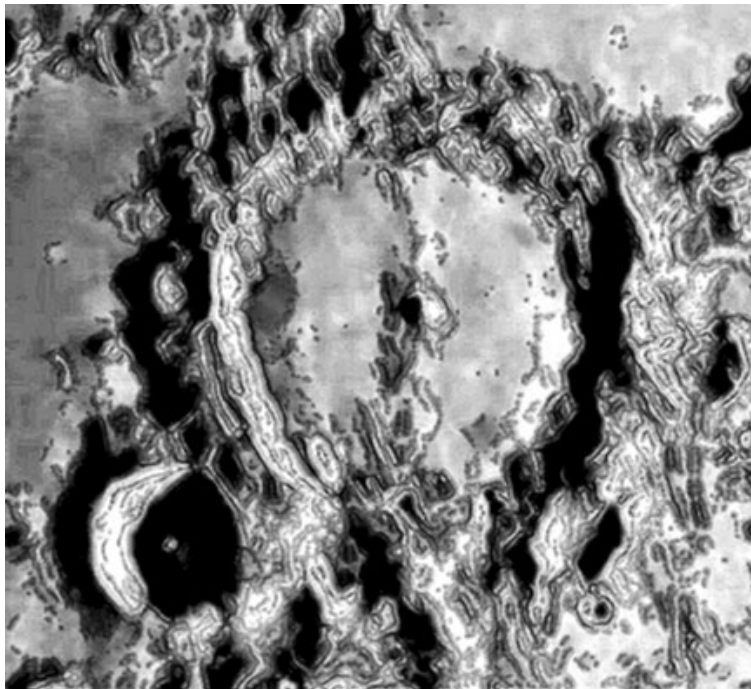
## **CENTRAL PEAK**

The floor of Alphonsus is similar to its more northerly companion, Ptolemaeus, in that it is relatively smooth and light toned. It is, however, considerably deeper and much more interesting. Most notably, Alphonsus has a central peak that is 10 km wide at the base and reaches a height of 3,000 meters. Noticeably brighter than the crater floor (Figure 2), the Alphonsus central peak lies near the center of a wide ridge that runs approximately north-south across the eastern floor of the crater (Figure 3). It is this peak that is at the center of one of the more famous LTP controversies; the alleged recording of carbon gas by Alexander Kozyrev, in 1958, using a spectrograph attached to the 50-inch reflector of the Crimean Astrophysical Observatory.



**FIGURE 2**

**Digital image by Ed Crandall - Winston-Salem, North Carolina, USA  
December 17, 2007 - 23:16 UT - Seeing: 3/10 - Trans: 3/6  
110mm f/6.5 APO Refractor - 3x Barlow - Philips Toucam**



**FIGURE 3**

**Computerized Drawing by - Donald Spain - Louisville, Kentucky, USA  
May 17, 2007 - 02:13 UT - Seeing: 6/10 - Trans: 3/6  
6 inch f/8 Achromatic Refractor - 2x Barlow - Meade LPI Camera**

## **DARK-HALOED CRATERS**

In addition to dozens of “normal” craterlets on the floor of Alphonsus, there are several which are of great interest because of the haloes of dark material which surround them. The most prominent of these features are near the southeastern, northeastern and western walls of Alphonsus (Figures 4 & 5). Some modern observers describe them as being “obviously volcanic” in nature, comparing them to the deposits of dark ash surrounding terrestrial ash cones. Others consider them to be “obviously non-volcanic” in nature, believing that the haloes are dark subsurface materials brought up by impacts. In either event, they are “obviously interesting”.



**FIGURE 4**

**Digital image by Wayne Bailey  
Sewell, New Jersey, USA  
October 29, 2007 - 04:59 UT  
Colongitude: 127.1  
Seeing: 3/10 - Trans: 4/6  
Celestron C11 f/10 SCT  
2x Barlow - Schuler IR72 Filter  
Lumenera Skynyx 2-1M**

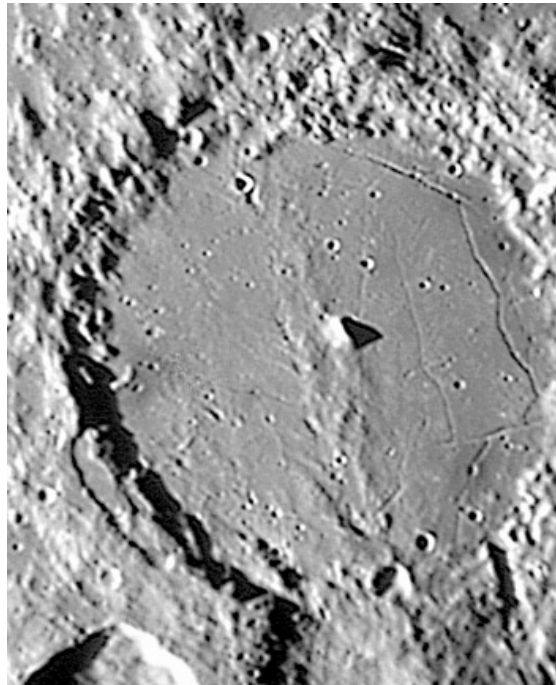


**FIGURE 5**

**Digital image by  
Howard Eskildsen  
Ocala, Florida, USA  
October 23, 2007 - 00:15 UT  
Seeing: 7/10 - Trans: 4/6  
Meade 6 inch Refractor  
2x Barlow - Orion StarShoot II**

## RILLES

A series of rilles criss-cross the floor of Alphonsus, nearly all of them on the eastern half of the crater. Although the largest rille spans the entire width of the crater it still offers quite a challenge to lunar imagers. (Figure 6)



**FIGURE 6**

**Digital image by K.C. Pau - Hong Kong, China**

**September 17, 2003 - 21:37 UT - Colongitude: 172**

**Seeing: 4-5/10 - Trans: 4/10 - 10 inch f/6 Newtonian - 5x Barlow - Philips Toucam**

## REFERENCES

Dembowski, William M., "The Ptolemaeus Chain", Selenology, Vol.23 No.3, Spring 2004

Grego, Peter, "The Moon and How to Observe It", Springer-Verlag, 2005

North, Gerald, "Observing the Moon: The Modern Astronomer's Guide", Cambridge Press 2000

Rukl, Antonin, "Atlas of the Moon", Paul Hamlyn Publishing, 1991

Wood, Charles A., "The Modern Moon: A Personal View", Sky Publishing, 2003

## **CALL FOR OBSERVATIONS:**

### **FOCUS ON: Wrinkle Ridges**

*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 2008** edition will be **Wrinkle Ridges**. 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](mailto:Dembowski@zone-vx.com)

**Deadline for inclusion in the Wrinkle Ridges article is February 20, 2008**

## ADDITIONAL ALPHONSUS OBSERVATIONS



**Digital image by Rafael Benavides Palencia - Posadas, Cordoba, Spain  
November 18, 2007 - 21:23 UT - Seeing: 6/10 - Trans 2/6  
11 inch SCT - 2x Barlow - Luna 1.3B Camera**



**Digital image by Maurice Collins - Palmerston North, New Zealand  
October 19, 2007 - Meade ETX90 - Fuji A800 Camera**



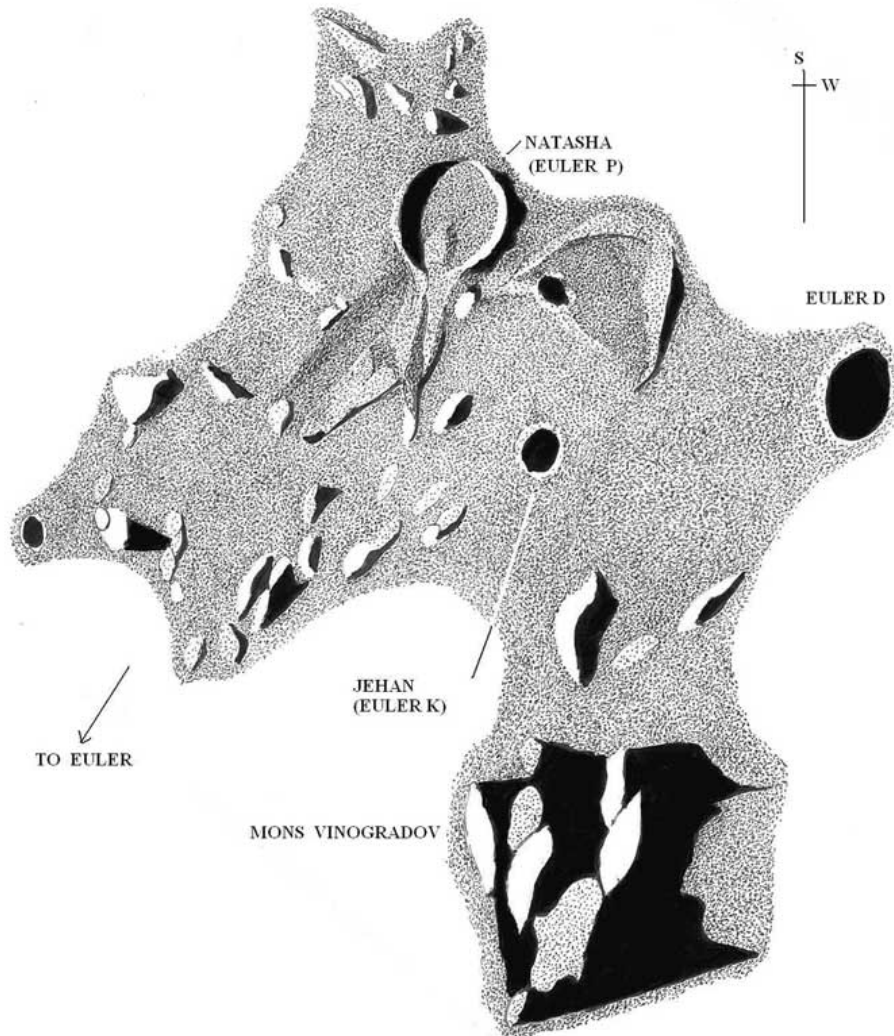
# REGION SOUTH-WEST OF EULER

Colin Ebdon - Colchester, Essex, England

## REGION SOUTH-WEST OF EULER

Observer: C.Ebdon  
Date: 2007 October 21  
Time: 21.00UT to 22.00UT  
Seeing: II, then III. Transparency good at first,  
but slowly deteriorating with advancing cloud  
and observation eventually abandoned.  
7" f15 Maksutov-Cassegrain. x300

Earth's Sel. Longitude (Deg.)  
-7.1 (0hrs 22 October)  
Earth's Sel. Latitude:  
0.79 to 0.73 decreasing  
Sun's Sel. Colongitude:  
38.08 to 38.53  
Sun's Sel. Latitude:-1.21  
(0hrs 22 October)  
Lunation: 1048



### Notes on observation

The intention of this observation was to follow up a drawing of the region made by the late Harold Hill in 1988, April 26, depicted in p.53 of '*A Portfolio Of Lunar Drawings*'. CUP. 1991.

Unfortunately, a detailed coverage of the region was curtailed on this occasion due to the onset of cloud. Nevertheless, there seems to be considerable agreement on those specific features that were recorded by both observers.

The first point of note concerns nomenclature, as it is clear that in the intervening space of some nineteen years there have been amendments and additions with regard to the naming of some of the particular topographical features of the region.

At the time of the 1988 observation all of the craterlets were alphabetically appended to Euler itself, with no separate names allocated to any of them. In addition Mons Vinogradov is referred to by Harold Hill in the following terms ‘.....it is curious that so prominent an object as the multi-peaked mountain mass, lying some distance WSW of Euler, should have received no name on modern maps, as it has a most imposing aspect at this stage of lighting. In Neison’s nineteenth century chart, however, it is designated as Euler Beta and Wilkins followed him in retaining this’.

In Rukl’s Atlas, first published some two years after the 1988 drawing, the feature is designated clearly as Mons Vinogradov, apparently named after the Soviet geochemist Alexander P. Vinogradov, 1895-1975. According to ‘*Mapping and naming The Moon*’, Whitaker, E.A, CUP.1999, the name Vinogradov was one of the additions made to the *NASA Catalogue Of Lunar Nomenclature*. 1982.

The designation *Mons*, rather than *Montes* shows that this feature is considered as a single mountain block containing several individual peaks, rather than a group of isolated mountains. Certainly the visual appearance is suggestive of a common origin as is the relevant Digital Lunar Orbiter frame (IV-133-H3).

More obscure is the redesignation of the craters Euler K and the shallow ring Euler P, now named respectively as Jehan and Natasha. These are simply referred to in Rukl as ‘A Turkish female name’ and ‘A Russian Female name’ a trend which seems to have taken hold in this particular area of the Moon, which also contains the craters Louise, Ruth and Vera.

The general area of topographical interest extends from Euler itself, westwards to a line joining the craters Brayley and T.Mayer and even beyond, and is well covered in Hill’s fine drawing. There remain many details which require confirmation or interpretation however, in this under-observed region of the Moon.

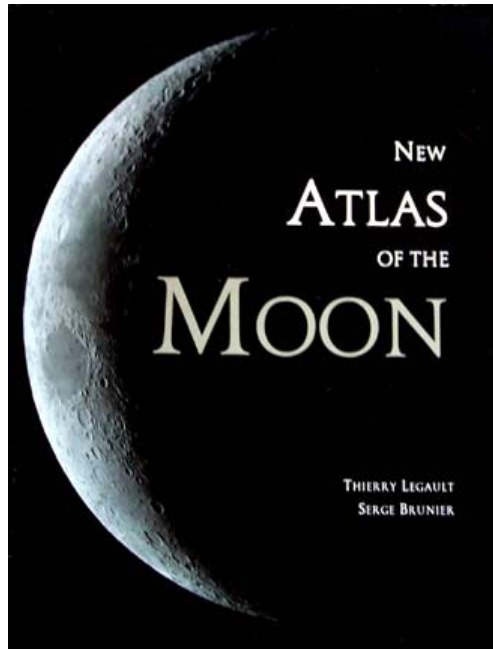
In the somewhat limited current observation, the main differences with Hill’s drawing concern the raised ‘hook’ shaped feature adjacent to the shallow ring crater Natasha (Euler P). In Hill’s drawing, the floor is shown as featureless apart from some small hillocks, although clearly recorded as being composed of darker material than the surrounding Mare. In the current observation a small craterlet is also recorded here. This crater can be seen in the Orbiter frame, although smaller than depicted in the current drawing in which it appears to have been exaggerated somewhat. The Orbiter photograph also clearly shows that the southern half of the floor of this degraded feature is flooded with some darker material, either sharply delineated by a raised edge, or slumping on the floor.

In the current observation, a dark line is also recorded running parallel to the eastern ‘arm’ of the ridges running northwards from Natasha, suggesting a change in floor level. No such albedo change is shown in Hill’s drawing, despite the fact that it is made at an earlier colongitude with features closer to the terminator.

Unfortunately, although the classic dome recorded by Hill south of Natasha was seen, cloud intervened before it could be properly recorded and the same applies to other features in the wider area. Follow up observations would therefore be very welcome.

# **BOOK REVIEW - New Atlas of the Moon**

**Review by Robert A. Garfinkle, FRAS**



## **“New Atlas of the Moon”**

**By Thierry Legault and Serge Brunier**

**Translated from the French by Klaus R. Brasch**

**Firefly Books; 125 pages; \$55.00**

This outstanding lunar photographic atlas is in a class by itself, and I don't say that lightly. The large format (12-1/2 x 11-1/2 inches) allows for the publication of incredibly clear images of the Moon. Thierry Legault took most of the images. The covers are hard, but the book is spiral-bound, which allows the reader to lay the book flat with out bending pages at the center of the book.

The book contains two main sections; the “Moon from Day to Day”, and “Lunar Cartography”. The first section is divided by lunation day with a large-scale image for most of the days. One thing that I truly like is that for these large scale images, they supplied a transparent layover with the feature names on them and on what page you will find a high-resolution image of the feature and descriptive text about it in the second section.

The book contains a clear “How to use this Atlas” page that shows typical pages from the book. One is an introduction for a lunation day and pages showing the high-resolution images.

A third section, “Lunar Movements” teaches you how the Moon moves around the Earth, eclipses and gives practical tips for observing the Moon.

# **LUNAR TOPOGRAPHICAL STUDIES**

Coordinator - William M. Dembowski, FRAS

[dembowski@zone-vx.com](mailto:dembowski@zone-vx.com)

## **OBSERVATIONS RECEIVED**

WAYNE BAILEY - SEWELL, NEW JERSEY, USA

Digital images of Mare Nubium, Mare Nectaris

Banded Crater Report Forms with digital images of Timocharis, Aristarchus, Brayley, Pytheas, Kies-A, Birt, Hercules-G, Maury

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND

Digital images of Mare Nubium, Copernicus to Reiner Gamma, Archimedes, Southern Highlands, 7-Day Moon, Terminator to Limb 6-Day Moon(4), Terminator to Limb 11-Day Moon (2), Mare Serenitatis & Mare Tranquillitatis (2), Mare Crisium, Mare Nectaris, Mare Imbrium (2)

ED CRANDALL - WINSTON-SALEM, NORTH CAROLINA, USA

Digital image of Alphonsus

COLIN EBDON - COLCHESTER, ESSEX, ENGLAND

Drawing of Natasha

HOWARD ESKILDSEN - OCALA, FLORIDA, USA

Digital images of Kepler, Aristarchus, Capuanus, Mare Humor, Reinhold, "The Helmet", Palus Epidemiarum, Janssen, Proclus, Taurus-Littrow, Colchis Highlands. Mare Imbrium to Mare Crisium, Oceanus Procellarum

Banded Crater Report Forms with digital images of Aristarchus, Damoiseau-E, Kepler, Birt (2), Ariadaeus, Aristillus, Bode, Silberschlag, Theaetetus, Burg, Conon, Menelaus, Messier, Proclus, Pytheas,

PAULO LAZZAROTTI - MASSA, ITALY

Digital images of Theophilus-Cyrrillus-Catharina, Manzinus-Mutus-Hommel-Pistiscus, Rupes Altai, Southeastern Quadrant, Clavius-Scheiner-Blancanus

K.C. PAU - HONG KONG, CHINA

Digital image of Oceanus Procellarum

RAFAEL BENAVIDES PALENCIA - POSADAS, CORDOBA, SPAIN

Digital images of Rupes Recta, Ptolemaeus-Alphonsus-Catena Davy, Deslandres

LARRY TODD - DUNEDIN, NEW ZEALAND

Digital images of Alphonsus (4)

ALEXANDER VANDENBOHEDE - GHENT, BELGIUM

Digital images of Aristarchus Plateau (2), Marius Region, Gassendi, Copernicus (2) Mons Rumker, South Polar Region

## RECENT TOPOGRAPHICAL OBSERVATIONS



### MARE NUBIUM

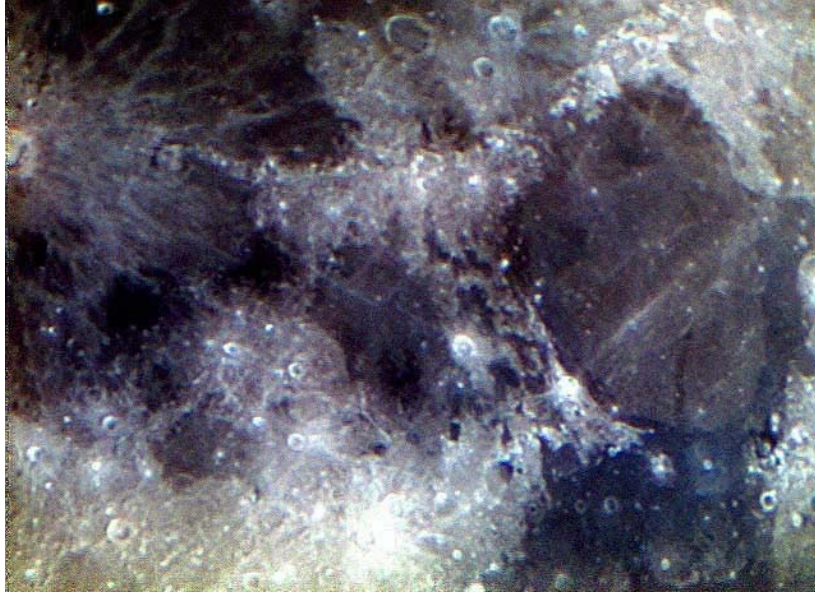
Digital image by Wayne Bailey - Sewell, New Jersey, USA  
September 26, 2007 - 02:43 UT - Colong: 84.4 - Seeing: 5/10 - Trans: 4/6  
Celestron C11 f/10 SCT - Schuler IR72 Filter - Lumenera Skynyx 2-1M



### RUPES RECTA

Digital images by Rafael Benavides Palencia - Posadas, Cordoba, Spain  
November 18, 2007 - 20:45 UT - Seeing: 6/10 - Trans: 2/6  
11 inch SCT - 2x Barlow - Luna 1.3B Camera

## RECENT TOPOGRAPHICAL OBSERVATIONS



### MARE IMBRIUM - MARE SERENITATIS

**Digital image by Maurice Collins - Palmerston North, New Zealand  
December 21, 2007 - Approx. 08:00 UT - Seeing: A-IV  
Meade ETX90 - Meade LPI Camera**



### RUPES ALTAI - PICCOLOMINI - FRACASTORIUS

**Digital image by Paolo Lazzarotti - Massa, Italy  
October 1, 2007 - 03:50 UT - Seeing: 6/10 - Trans: 4/5  
Gladius CF-315 Lazzarotti Opt. scope - LVI-1392 PRO Experimental Camera  
Edmund Optics R Filter - 31msec. Exposure - 0.18 arcsec/pixel Image Scale**

## RECENT TOPOGRAPHICAL OBSERVATIONS



### MARE IMBRIUM TO MARE CRISIUM

**Digital composite image by Howard Eskildsen - Ocala, Florida, USA  
November 25, 2007 - 01:08 UT - Seeing: 4/10 - Trans: 4/6  
Meade 152mm Refractor - Orion StarShoot II Camera**



### MARIUS HILLS & DOMES

**Digital image by Alexander Vandenbohede - Ghent, Belgium  
November 21, 2007  
Celestron C8 f/10 SCT - 2x Barlow**

## RECENT TOPOGRAPHICAL OBSERVATIONS



**GASSENDI & LETRONNE**  
Digital image by K.C. Pau  
Hong Kong, China  
October 22, 2007 - 12:26 UT  
Seeing: 5-6/10 - Trans: 5/10  
250mm f/6 Newtonian - 2.5x Barlow  
DMK31AF03.AS Camera



**GAMBART**  
Drawing by Robert Włodarczyk  
Częstochowa, Poland  
January 11, 2007 - 04:15 UT  
Seeing 5/10 - Trans: 5/6  
18cm f/6.6 Newtonian - 130x



# **BANDED CRATERS PROGRAM**

**Coordinator - William M. Dembowski, FRAS**

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

**Wayne Bailey continues to create locator maps for the Banded Craters Program.  
Twelve maps have currently been uploaded to the website indicated above.**

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

Crater Observed: Hercules G  
Observer: Wayne Bailey Observing Station: Sewell, NJ  
Mailing Address: 17 Autumn Lane, Sewell, NJ 08080  
Telescope: Celestron SCT 28 cm f/10  
Imaging: Skynyx 2-1M Filters: Schuler IR72  
Seeing: 5/10 Transparency: 4/6  
Date (UT): 2007/09/26 Time (UT): 03:01  
Colongitude: 84.1 Latitude: -0.7  
Position of crater: Selen. Long. Selen. Lat.  
39.2° East 46.4° North  
Lunar Atlas Used as Reference: Rukl, Atlas of the Moon, Revised Updated Ed.

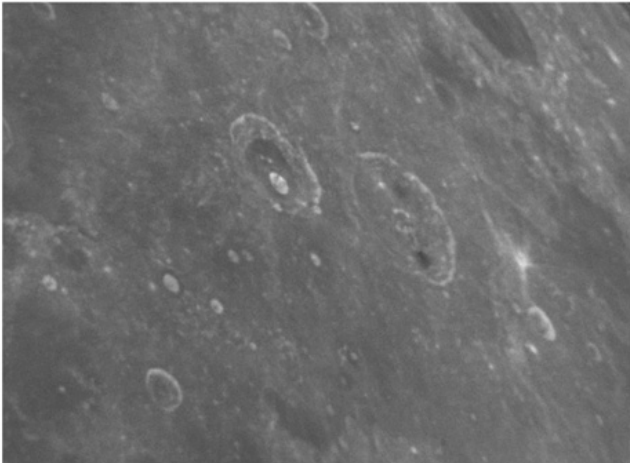
Comments:

Two distinct dark radial bands on the NE quadrant of the inner wall.

Other banded craters on this image are: Atlas A, Hercules C, Hercules D, and Mason C.

Mason B, about midway up and close to the left edge of the image, also seems to show narrow radial dark bands on the NE and SW walls.

Image (North up): (East right):





# **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 - JANUARY 2008**

Dr. Anthony Cook - Coordinator

I hope that you have all had a good break over the recent festive holidays. Observations for November were all routine with no reports of LTP. The following observers contributed: Jay Albert (FL, USA), Clive Brook (Plymouth, UK), and Marie Cook (Mundesley, UK),

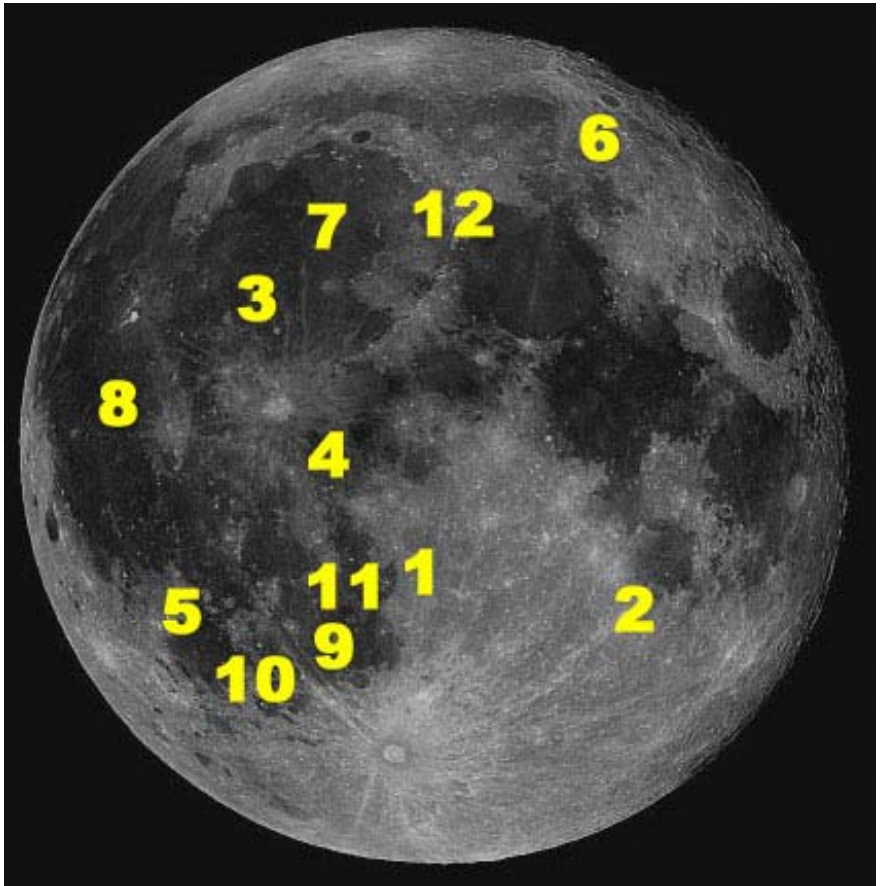
We begin 2008 with a couple of missions already orbiting the Moon: Kaguya (SELENE) from Japan and Chang'e-1 from China. 2008 will see an Indian mission Chandayana-1 due to launch in February and then towards the end of this year, US Lunar Reconnaissance Orbiter (LRO). Although imagery and details have been difficult to glean from Japan and China: Japan has released a few images and high definition video whereas China, at the time of writing has released just a framed wide area image of the lunar far side. Hopefully when imagery does become available then we can start looking for changes by comparing images with old Apollo and Lunar Obiter imagery – so long as the illumination conditions and image scales are similar.

Predictions, including the more numerous illumination only events 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. 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](mailto:atc@aber.ac.uk)

# KEY TO IMAGES IN THIS ISSUE

1. Alphonsus
2. Altai, Rupes
3. Euler
4. Gambart
5. Gassendi
6. Hercules
7. Imbrium, Mare
8. Marius
9. Nubium, Mare
10. Ramsden
11. Recta, Rupes
12. Theaetetus



## 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)