



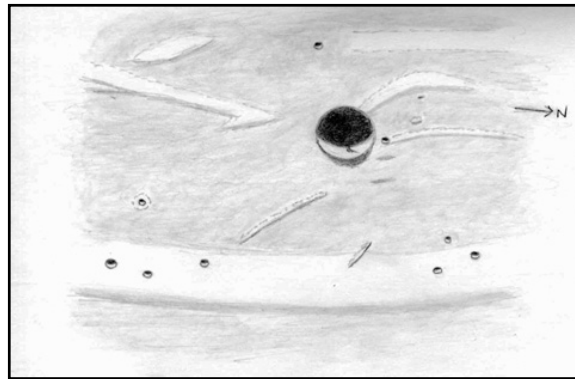
THE LUNAR OBSERVER

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: Wayne Bailey wayne.bailey@alpo-astronomy.org
17 Autumn Lane, Sewell, NJ 08080

FEATURE OF THE MONTH – DEC. 2008

PYTHEAS



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

September 23, 2008 – 10:01 to 11:10 UT

15cm Newtonian - 170x - Seeing: 8/10

I sketched this crater and vicinity on the morning of Sept. 23, 2008 while watching the moon uncover 52 Gem and five other stars. This is a familiar crater north of Copernicus, which was largely filled with shadow that morning. The shadow cast by the outer rim appeared slightly wider north of center, and a narrow strip of shadow intruded on the sunlit interior crescent. Pytheas D is the small pit just north of Pytheas, while Pytheas A is the similar pit to the west. Pytheas U is the westernmost of three pits to the northeast; the other two are unlabeled on the Lunar Quadrant map. Pytheas C, E and B form a roughly north to south line southeast of Pytheas. A tiny, unnamed pit west of E and B has a small halo. (It is the only crater on this sketch with a halo.) There are several low ridges in this area. The most conspicuous one is a wide, gently curving raylike feature east of Pytheas. It takes in the Pytheas B, E, C chain and the two unlabeled pits east of Pytheas U (but not U itself). This feature looks like an ordinary ray under a high sun, but there was definite shading on its east side this morning, indicating that it is a relief feature as well as an albedo one. A long, narrow ridge lies east-southeast of Pytheas and a shorter one lies to its northeast, intruding into the west edge of the aforementioned wide ridge. Another long, narrow ridge extends northward from Pytheas D, and a wider one curves gently outward from the northwest rim of Pytheas. A tiny dot of shadow in the bend of its curve may be the pit Pytheas J, judging from the L.Q. map. An isolated low hill lies between these ridges, and a couple of vague strips of shadow are east of Pytheas D. Two wide streaks are south of Pytheas, and another one extends northward from near Pytheas A. This last feature is the only bright one in that area that had no shadowing of any kind with it, so this one may be purely an albedo feature.

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.

Editorial

As Bill announced here last month, I'm the new Acting Coordinator of Lunar Topographical Studies and Editor of The Lunar Observer. First of all, I'd like to express my appreciation for the great job Bill has done. I'll try to continue his good work. Bill continues to help me learn my new duties, so there shouldn't be any major glitches. But just as I'm finding that I underestimated the amount of work Bill contributed to the section, Bill may find that he underestimated the amount of help that I'll need. I expect that Bill or anyone else will point out to me (politely, I hope) where I can use improvement. A brief biographical sketch is scheduled for the JALPO, so I won't repeat that here. Finally, thanks to everyone for your past and future contributions. Keep them coming.

***** Wayne Bailey

LUNAR CALENDAR -December 2008 (UT)

Dec. 01	16:00	Moon 0.80 Degrees N of Venus
Dec. 01	16:00	Moon 1.3 Degrees SSE of Jupiter
Dec. 04	02:00	Moon 1.3 Degrees NNW of Neptune
Dec. 05	21:25	First Quarter
Dec. 06	06:00	Moon 3.9 Degrees NNW of Uranus
Dec. 12	16:38	Full Moon
Dec. 12	22:00	Moon at Perigee (356,567 km - 221,560 miles)
Dec. 18	22:00	Moon 5.4 Degrees SSW of Saturn
Dec. 19	10:30	Last Quarter
Dec. 26	18:00	Moon at Apogee (406,600 km - 252,650 miles)
Dec. 26	24:00	Moon 2.7 Degrees S of Mars
Dec. 27	12:22	New Moon (Start of Lunation 1064)
Dec. 29	03:00	Moon 0.66 Degrees NNW of Mercury
Dec. 29	09:00	Moon 0.63 Degrees S of Jupiter
Dec. 31	09:00	Moon 1.5 Degrees NNW of Neptune
Dec. 31	18:00	Moon 3.1 Degrees NNW of Venus

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

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

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

CALL FOR OBSERVATIONS:

FOCUS ON: Albategnius

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 **January 2009** edition will be the crater **Albategnius**. 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 this fascinating feature to your observing list and send your favorites to:

Wayne Bailey - wayne.bailey@alpo-astronomy.org

Deadline for inclusion in the Albategnius article is December 20, 2008

FUTURE FOCUS ON ARTICLES:

In order to provide more lead time for potential contributors the following target has been selected:

Tycho & its ray system TLO Issue: March 2009 Deadline: Feb. 20, 2009

LUNAR TOPOGRAPHICAL STUDIES

Website: <http://www.zone-vx.com/alpo-topo.html>

OBSERVATIONS RECEIVED

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND Digital images of Petavius, Janssen, Grimaldi, Mare Crisium, Northern Moon (2), Schiller-Zucchius, 1-day Moon, 4-day Moon, 13-day Moon

ED CRANDELL – WINSTON-SALEM, NORTH CAROLINA, USA Digital images of Triesnecker, Mare Serenitatis & Posidonius, Albategnius, Descartes bright patch, Menelaus-Bessel ray, Kepler rays, Mare Nectaris rays, Copernicus rays

WILLIAM DEMBOWSKI – WINDBER, PENNSYLVANIA, USA Digital image of Albategnius

COLIN EBDON - COLCHESTER, ESSEX, UK Drawings of Marius, Maraldi, Silberschlag & Ariadaeus rille

HOWARD ESKILDSEN - OCALA, FLORIDA, USA Digital images of Curtius & Moretus, Southern moon.

Banded crater report forms for Menelaus, Milichius, Nicollet, Pytheas, Rosse, Silberschlag, Theaetetus, Conon, Damoiseau E, Davy A&G, Dawes, Kepler, Bessarion, Birt, Bode, Brayley, Burg, Agatharchides A, Anaxagoras, Ariadaeus, Aristarchus, Aristillus

ROBERT H. HAYS, JR. - WORTH, ILLINOIS, USA Drawing of Pytheas

RIK HILL - TUCSON, ARIZONA, USA Digital images of Petavius, Langrenus, Torricelli, Theophilus

BRUCE KINGSLEY - MAIDENHEAD, UK Digital images of Mare Crisium, Janssen, Piccolomini & Altai Scarp

ANDREW MARTIN - ROCKVILLE, MARYLAND, USA Written observations of the ray systems of Aristarchus, Kepler, Glushko

ANTONIUS SCHALKEN – MELBOURNE, AUSTRALIA Digital images of Albategnius (3)

ROBERT WLODARCZYK - CZESTOCHOWA, POLAND Drawings of Campanus, Capuanus

WAYNE BAILEY – SEWELL, NJ, USA Banded crater report forms for Aristarchus, Kepler, Pytheas

RECENT TOPOGRAPHICAL OBSERVATIONS



13-Day Moon – Maurice Collins – Palmerston North, New Zealand
November 11, 2008, 0835-0917 UT - C8 – LPI

RECENT TOPOGRAPHICAL OBSERVATIONS

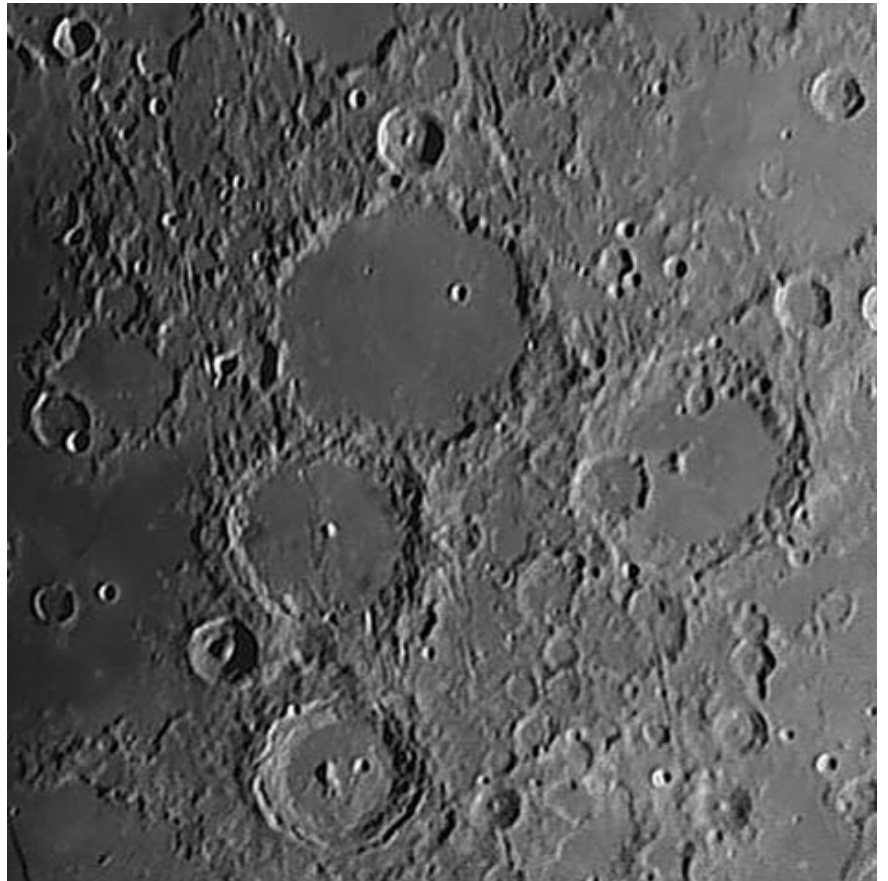


Triesnecker Region

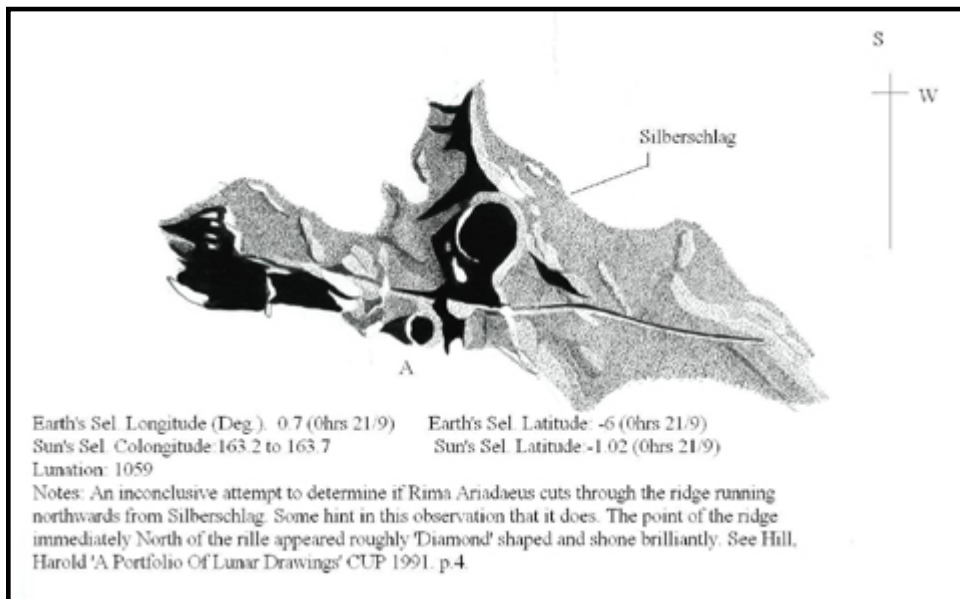
Ed Crandall - Winston-Salem,
North Carolina, USA
November 5, 2008 22:52 UT
colongitude 3.5 - seeing 3-4/10,
trans 4/6 - 110mm f/6.5 APO
3x barlow – Toucam

Ptolemaeus Chain & Albategnius

William M. Dembowski
Elton, Pennsylvania, USA
October 30, 2006 22:41 UT
colongitude 18.9 – seeing 4/10
Celestron 8 inch SCT
NexImage Camera



RECENT TOPOGRAPHICAL OBSERVATIONS



Silberschlag & The Ariadaeus Rille – Colin Ebdon – Colchester (Essex), England

September 21, 2008 00:00-01:00 UT

seeing III, improving II, trans very good, some low cloud & mist

7" f/15 Maksutov-Cassegrain, x236

Southern Moon – Howard

Eskildsen – Ocala, Florida, USA

October 18, 2008 04:28-04:30 UT

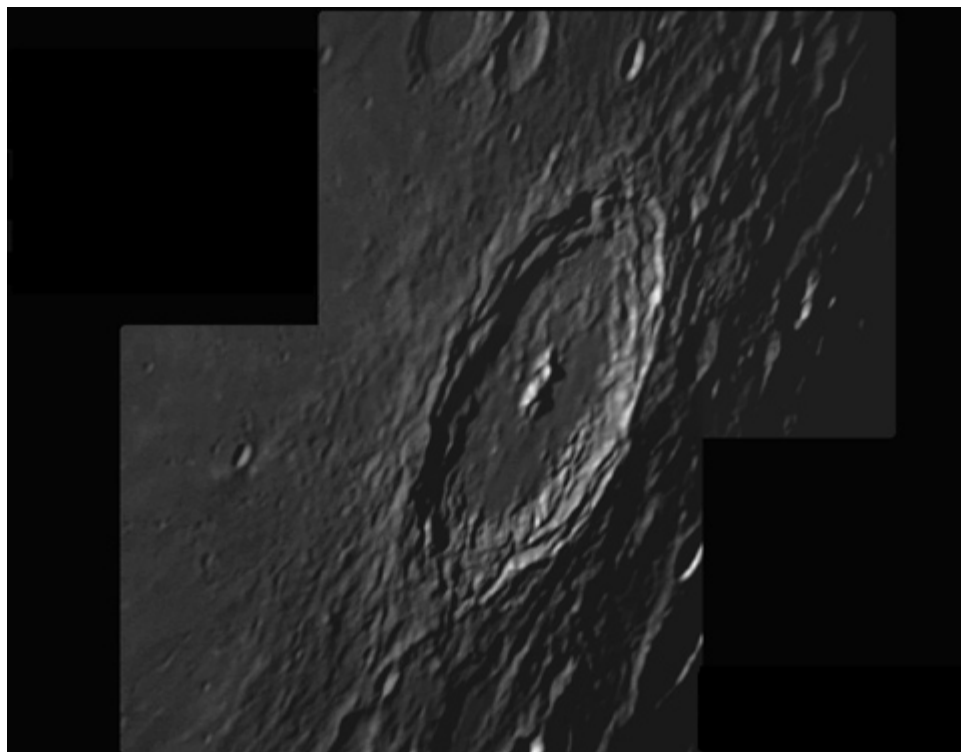
Seeing 6/10, trans 5/6

Meade 6" f/8 Refractor – 2x barlow

Orion StarShoot II



RECENT TOPOGRAPHICAL OBSERVATIONS



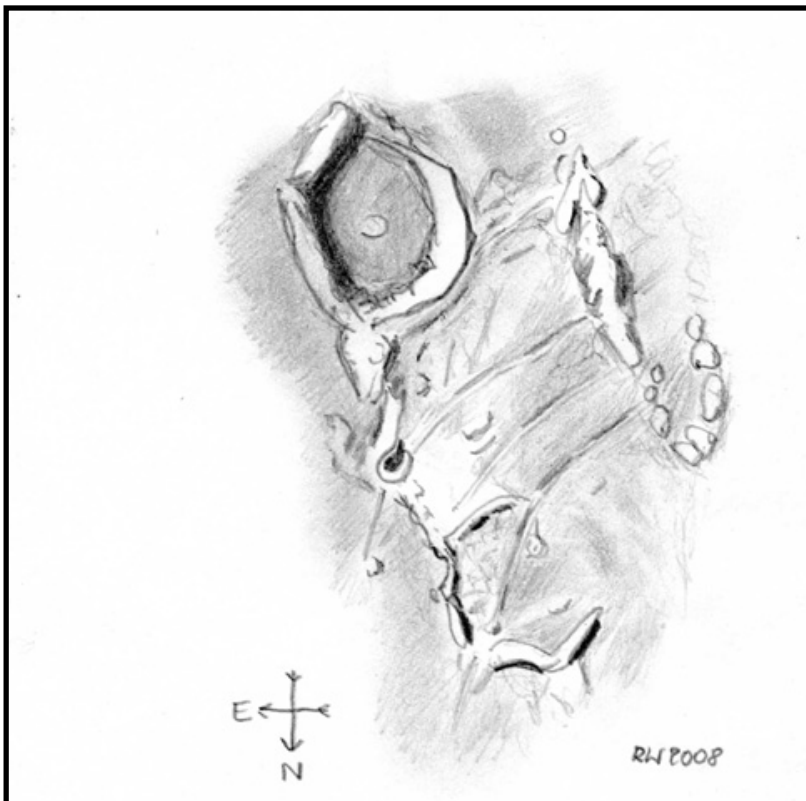
Langrenus - Richard Hill
Tucson, Arizona, USA
August 18, 2008 06:41 UT
Seeing 7/10
C14 + 2x barlow
UV/IR blocking filter
SPC900NC camera

Piccolomini & the Altai Scarp – Bruce Kingsley
Maidenhead, UK
November 17, 2008
280mm SCT, f/28
Baader IR filter 742 nm
Lumenera Skynyx 2-0



RECENT TOPOGRAPHICAL OBSERVATIONS

Albategnius – Antonius Schalken
Melbourne, Victoria, Australia
August 20, 2006 19.2 UT colongitude 162.9
6" Maksutov f/20 - ToUcam Pro II 740K



Campanus – Robert Włodarczyk
Czestochowa, Poland
October 9, 2008 17:45 UT
12 cm, Newtonian f/7.5, 225x
seeing 5-6/10, transparency 5/6

THE YOUNG CRESCENT MOON

Editor's Note: Maurice Collins – Palmerston North, New Zealand, submitted these images which attracted my attention for two very different reasons. The first is an interesting artistic version of an image of the very young crescent moon. Most of us don't view the moon at this phase, one reason being proximity to the sun, which the composite image emphasizes. Maurice writes concerning this image;

"I've created this bit of space art from my image mosaic of the 1-day old crescent Moon of Oct 30 using Photoshop. A view I imagine that a spacecraft would probably have seen that day above earth's atmosphere."



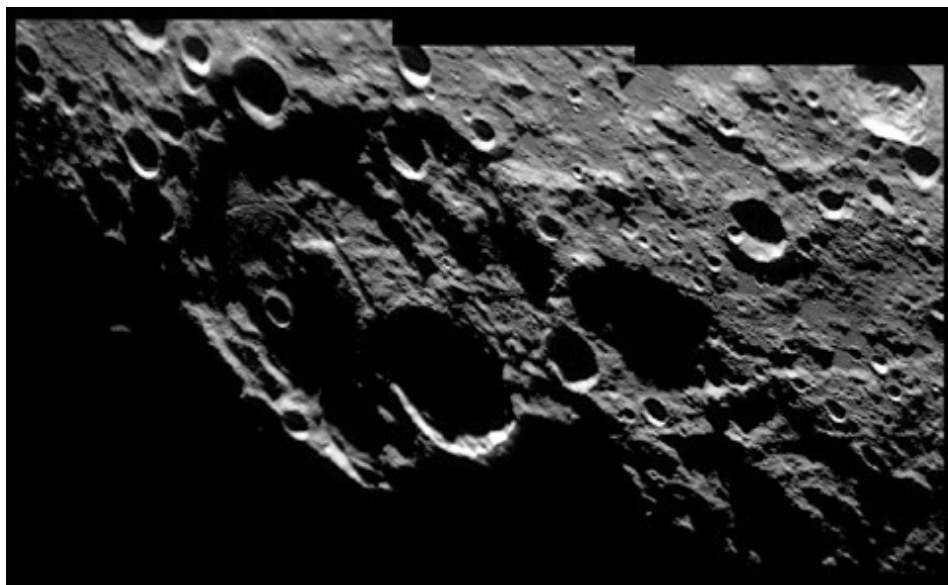
Crescent Moon – October 30, 2008, 07:40 UT (Age – 1.35 days) - C8 & LPI CCD with sun added in Photoshop.

4 Day Moon in Daylight – November 2, 2008 03:35-03:50 UT) - C8 & LPI CCD



The second image relates to one reason that imaging the crescent moon is difficult: The crescent moon is always at low altitude when it's dark, so imaging in daylight is necessary to avoid a long atmospheric path with its usually poor seeing. Daytime imaging has its own problems with seeing though and scattered sunlight reduces contrast. Maurice's image illustrates that the problems of daytime imaging can be overcome. Experimenting with different filters, time of day and processing techniques might lead to more images at very young or old phases.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS



Janssen – Bruce Kingsley - Maidenhead, UK - November 17, 2008 02:06-02:14 UT
280mm SCT, f/28, Baader IR filter 742 nm - Lumenera Skynyx 2-0



Torricelli- Richard Hill Tucson, Arizona, USA August 8, 2008 06:48 UT
Seeing 8/10 - C14 + 2x barlow, UV/IR blocking filter, SPC900NC camera

BRIGHT LUNAR RAYS PROJECT

Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org
Bright Lunar Rays Website: <http://www.zone-vx.com/alpo-rays.html>

RECENT RAY OBSERVATIONS

Name: Andrew Martin SFO, ALS Member

Location: 722 Mapleton Rd, Rockville MD (77° 8' 22" W, 39°4' 50" N, elevation 128 meters)

Date: Nov. 22, 2008

Time: 11:03:45 UT to 11:52:24 UT

Ephemeris for 11:03:45 UT

Distance: 3874347 km

Colongitude: 204.3°

Lunation: 24.49 days

Phase: 239.1°

Illumination: 24.3%

Solar Inclination: -1.5°

Telescope used: 102mm Celestron C4-R Achromat Refractorf/10

Lens used: Celestron Plossl 20mm and GTO x2 Barlow (magnification 100x)

Seeing: Clear Sky Chart estimated 2 out 5, but based on observations of moon directly I would say 2-3 out of 10.

Transparency: Clear Sky Chart estimated above age, but I would say 4-5 out of 6.

Weather: Clear. Temperature was 23° F (feels like 16° F) with humidity at 58%. Winds WNW 6mph.

Name of Feature: Aristarchus (47.4°W, 23.7° N)

Observation: Aristarchus was a bright white floored crater with a small shadow along its western inner wall. The crater had the appearance of being raised up from the terra around it. Vallis Schroter could be seen snaking its way west as a thin shadowed line. There is a white streak running from Aristarchus' rim towards Herodotus and a darker halo of material could be seen to the opposite of the white streak. Extremely faint rays could be seen running away from Aristarchus from the eastern section after the dark halo of material onto the mare surface. This was different from similar lunation observed on July 26, 2008. It may be the result of one day difference, but it also maybe the libration which different as well.

Name of Feature: Kepler (38.0°W, 8.1°N)

Observation: Kepler could be seen with a partial shadow along the floor on the western side. Eastern wall appeared a light grey. The crater itself appeared raised due to the shadowing. The smaller craters of Kepler A (to the east) and Kepler C (to the NW) could be seen imbedded into the rays as dark centered raised craters. The rays pattern to be distributed around Kepler with more defined forks north and west. The ray

system was a faint muddy white-gray. The ray system appeared to encompass a similar area to that of the July 26, 2008 observation of 300 km in diameter and the less defined ray segments occupying an area of 185 km in diameter. What was different was that the ray pattern appeared rougher as well as around Kepler itself.

Name of Feature: Glushko (formerly known as Olbers A) (77.6°W, 8.1°N)

Observation: Poor libration made seeing Glushko impossible or any of its close rays. What was visible was the Cardanus-Selecus ray segment running along the mare surface from Cardanus to Montes Agricola. Even then this segment was poorly illuminated. This was radically different than observations done on July 26, 2008.



Kepler Rays Digital image by Ed Crandall - Winston-Salem, North Carolina, USA.

November 10, 2008 UT - colongitude 53 - seeing 5-6/10, transparency 4/6
110mm f/6.5 APO - 3x barlow – Toucam

Mare Nectaris Rays

Digital image by Ed Crandall
Winston-Salem, North Carolina, USA.

November 5, 2008 22:56 UT
colongitude 3.5
seeing 3/10, transparency 4/6
110mm f/6.5 APO - 3x barlow
Toucam



BANDED CRATERS PROGRAM

Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

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: Brayley

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: W-15 Yellow

Seeing: 5/10 Transparency: 4/6

Date (UT): 2008/10/18 Time (UT): 04:02

Colongitude: 134°

Position of crater:

Selen. Long.

Selen. Lat.

36.9° West

20.9° North

Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up):

Comments:



Alternating bright and dark bands on the western rim give the resemblance of a dinosaur foot print.

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

Crater Observed: Menelaus

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: W-15 Yellow

Seeing: 5/10 Transparency: 4/6

Date (UT): 2008/10/18 Time (UT): 03:38

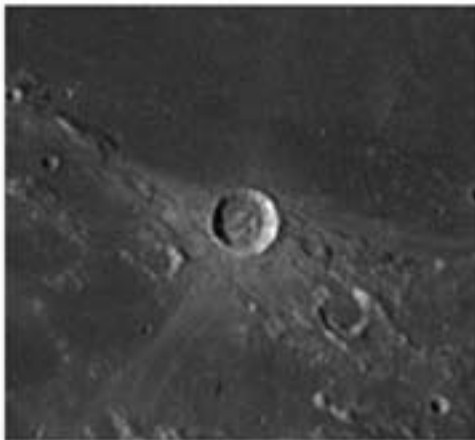
Colongitude: 134°

Position of crater:	Selen. Long.	Selen. Lat.
	16.0° East	16.3° North

Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up):

Comments:



Alternating bright and dark markings on the rim resemble a bottle cap. Complex markings cross the crater floor diagonally.

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

Crater Observed: Pylaeus

Comments:

Observer: Wayne Bailey Observing Station: Sewell, NJ

Mailing Address: 17 Autumn Lane, Sewell, NJ 08080

Telescope: Celestron SCT 28 cm f20

Imaging: Skynyx 2-1M Filters: Schuler IR72

Seeing: 4/10 Transparency: 5/6

Date (UT): 2008/11/11 Time (UT): 05:06

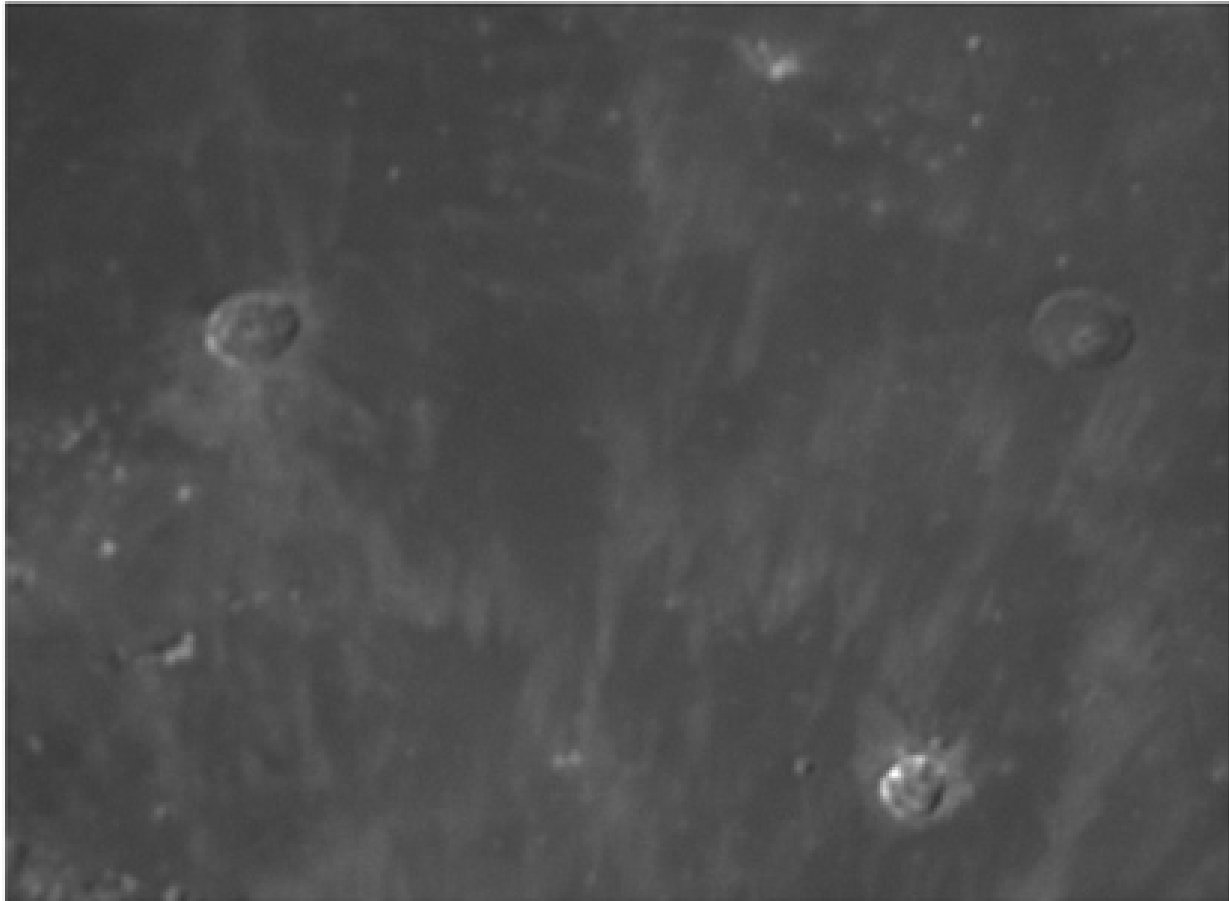
Colongitude: 67.5 Latitude: -1.5

Position of crater: Selen. Long. Selen. Lat.

20.6° West 20.5° North

Lunar Atlas Used as Reference: Rukl, Atlas of the Moon, Revised Updated Ed.

Image (North up) (East right):



LUNAR TRANSIENT PHENOMENA

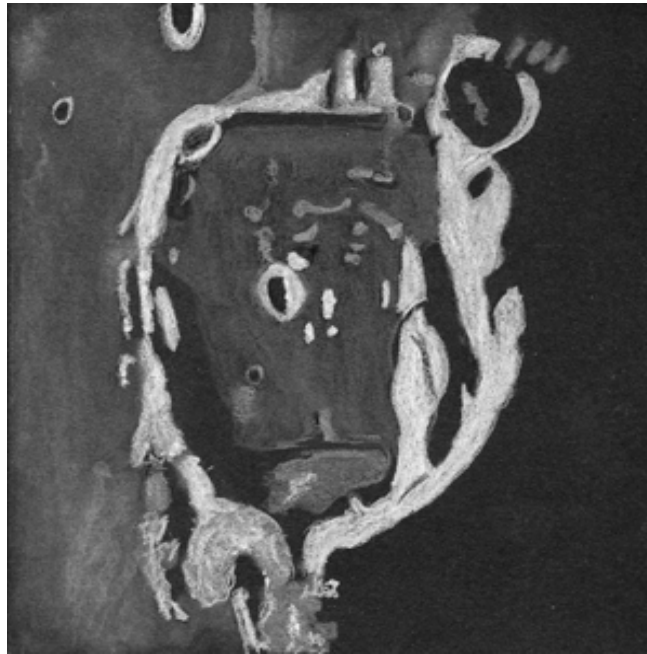
Coordinator – Dr. Anthony Cook – atc@aber.ac.uk

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

LTP NEWSLETTER - DECEMBER 2008

Dr. Anthony Cook - Coordinator

Happy Holidays to you all. Observations for October 2008 were received from the following observers:, Jay Albert (FL, USA), Clive Brook (Plymouth, UK), Maurice Collins (New Zealand), myself (Aberystwyth, UK), Marie Cook (Mundesley, UK) and Dale Holt (Chipping, UK).



Posidonius J – top right corner. Sketch by Dale Holt.
2008 Oct 19 UT 05:30-06:30, Col. 147.4-147.9 deg.
Solar altitude at the crater ranged from 0.8 to 0.4 deg.

The above sketch, by Dale Holt, was forwarded to me by Peter Grego (BAA Lunar Section Assistant Director), and shows possible raised ground, remaining visible in the floor shadow of Posidonius J, a crater just to the north east edge of Posidonius. Checking a Clementine stereo derived digital elevation model of the area I reckon that the floor to rim height is at least 2.3 km and the floor is not flat, so there might be enough topographic relief to produce this effect. However as I and Peter are unfamiliar with the appearance of this area of the Moon at this co-longitude, as a precaution we would like to request that observers check their archives to see if they can find something similar – if not then there is a chance that it might have been an LTP.

There are now three lunar orbiters going around taking images of the Moon's surface (Japan, China, and India) and in April 2009 NASA's LRO will enter orbit and obtain 50cm/pixel scale images of 5km wide swatches of the Moon in discrete study areas. In view of the wide spread coverage by these four missions, I would like to strongly encourage observers to go out and study the Moon to attempt to detect LTP in the act. With such coverage from four orbits, there is a fairly good likelihood that they will cover the region of activity within a few hours to days of a LTP being seen from Earth and maybe capture some precursor or residual effects, perhaps showing up as very localized soil disturbance at the source. There are also Earth-based lunar monitoring teams at Brown University (Ina formations), Columbia University, NY (white light whole disk images every few seconds), and a rather weather limited effort going on here at Aberystwyth University (large area imaging at Hyrdogen, Argon and Radon wavelengths). So the Moon has never been so well observed before – however it should be said that any evidence for TLP in spacecraft images will likely go undetected unless someone takes the trouble to look at the images. Similarly the data reduction on ground-based observing programmes by the Universities is not in real time. It is therefore important that we mobilize our observers to go out and look for LTP - alerting me in Europe, or David Darling in the US, if you see anything unusual. Those of you who can take color (filtered) images and are capable of looking for subsequent color patches (or brightness changes) shortly after observing, would be immensely helpful, especially if you can get a time sequence. Visual observers too, providing that they are experienced and objective, are also welcome as they usually have a faster response time, than CCD observers, in detecting LTP. I have emailed Prof Arlin Crofts of Columbia University, NY and a team member of LRO, to let them know that we will pass on any information should we detect a LTP so that they can check their own images. I am also one of the team on the British CIXS experiment on the Indian Chandrayaan-1 mission, and although this experiment is not designed to look for LTP, other experiments on the mission are more suitable e.g. they have a capability to detect Radon concentrations on the surface. So again if we learn of LTPs from yourselves, I could pass on any observations that we might capture to relevant experiment teams.

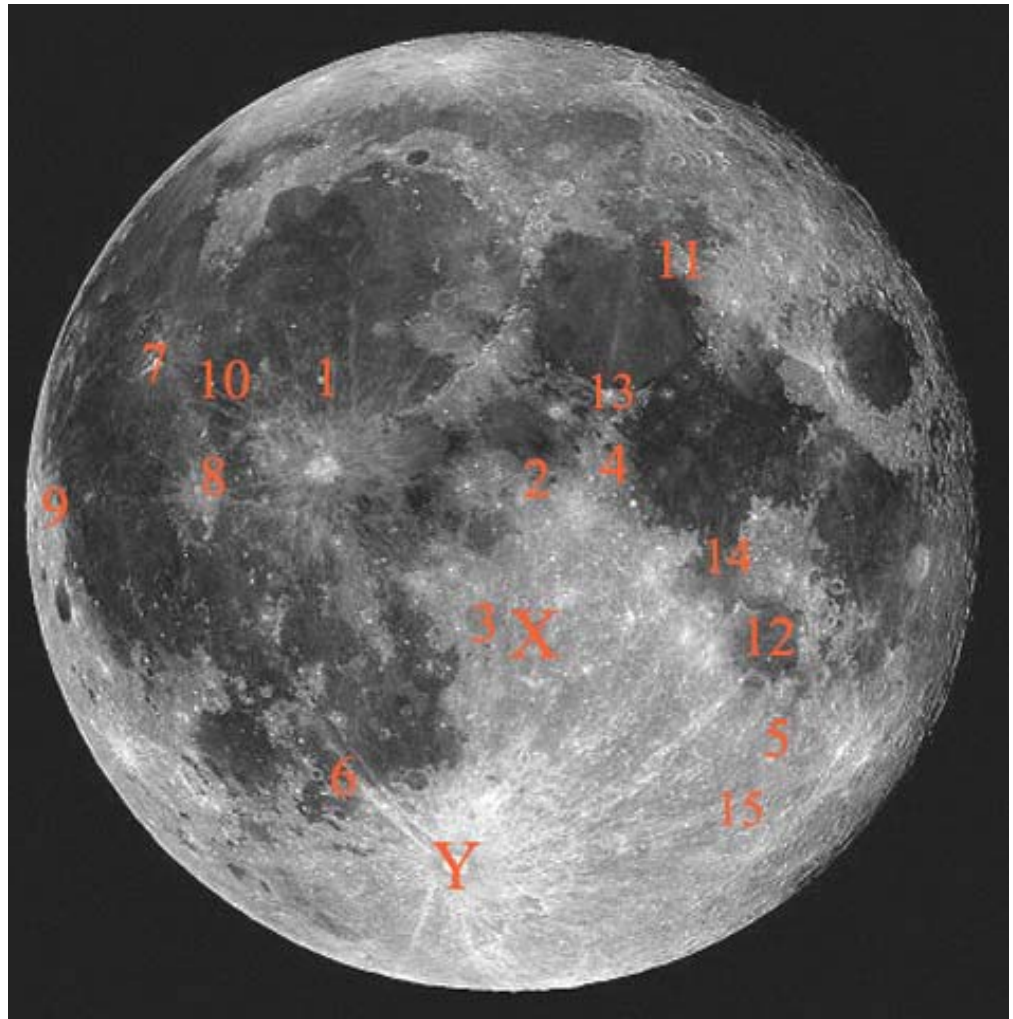
The 30 minute BBC Radio 4 LTP programme went ahead at 9PM UK time on 2008 November 3rd, presented by Andrew Luck-Baker. You can still hear it if you go to the following BBC Radio 4 web link: http://www.bbc.co.uk/radio4/science/frontiers_20081103.shtml . As far as I am aware this is one of the few occasions where anybody has brought together leading experts on the subject, including Sir Patrick Moore, Prof. Peter Shultz (Brown University), Prof Arlin Crofts (Columbia University), Dr Paul Spudis (Lunar and Planetary Institute), and a skeptic on LTP Dr Chuck Wood (Wheeling Jesuit University). The only deficiency I could see was not much of a mention of clouds of electrostatic dust particles as a possible explanation for LTP. Anyway if you are interested in a balanced discussion about LTP, then do please have a listen.

Suggested former LTP site repeat illumination 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! David Darling's contact details are also available on his web site: <http://www.ltpresearch.org>

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. Pytheas
2. Triesnecker
3. Ptolemaeus
4. Silberschlag
5. Piccolomini
6. Campanus
7. Aristarchus
8. Kepler
9. Glushko
10. Brayley
11. Posidonius
12. Mare Nectaris
13. Menelaus
14. Torricelli
15. Janssen



X = Albaternius (Next FOCUS ON target)

Y = Tycho (March FOCUS ON target)