THE LUNAR OBSERVER

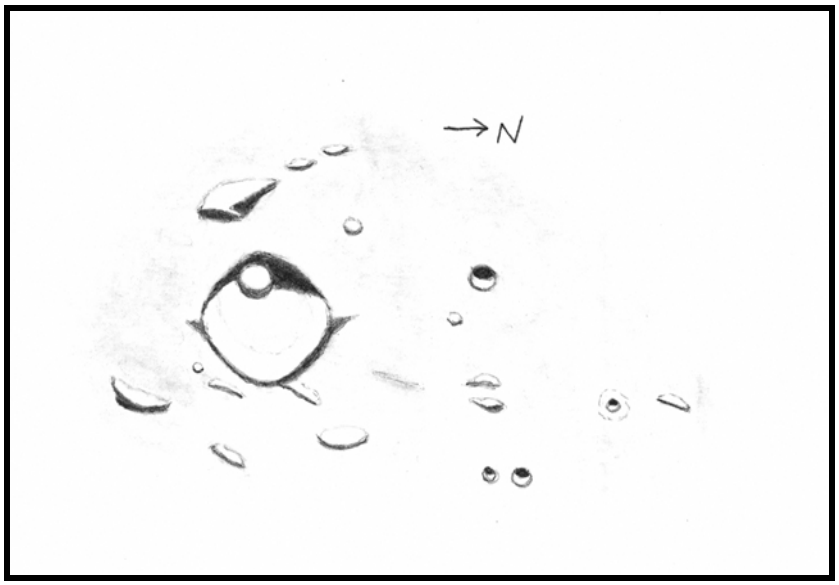
A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.

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

RECENT BACK ISSUES: http://moon.scopesandscapes.com/tlo_back.html

FEATURE OF THE MONTH – APRIL 2010

LALANDE



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
October 10, 2009 10:15-10:43 UT
15 cm refl, 170x, seeing 8

I sketched this crater and vicinity on the morning of Oct. 10, 2009 after the reappearance of ZC 966. This crater is located near the center of the visible disk north of Mare Nubium. It has a squarish shape with the corners near the cardinal points. A large hill (or slump?) is inside the west corner; the interior otherwise appeared featureless. The large peak to the west is Lalande delta. Three smaller peaks lie to its north. Several more elevations lie to the east and south of Lalande; at least one is attached to its rim. The southernmost peak in the sketch has dark shadow, like Lalande delta, and the Lunar Quadrant map shows a

ghost ring there. The largest crater to the north is Lalande B. Mosting B and smaller Mosting BA are east of Lalande B. Two elongated peaks are roughly midway between Lalande B and Mosting B, and a small round peak is just east of Lalande B. Mosting C is the small crater farther to the north; this crater has a small, bright halo. Mosting delta is the elongated peak north of C. All of the elongated peaks in this area are aligned approximately north-south except the one adjacent to Lalande's northeast edge.

****

LUNAR CALENDAR

APRIL-MAY 2010 (UT)

Apr. 04	05:24	Extreme South Declination
Apr. 06	09:37	Last Quarter
Apr. 09	02:46	Moon at Apogee (404,997 km - 251,653 miles)
Apr. 09	13:00	Moon 0.80 Degrees SE of asteroid 6 Hebe
Apr. 09	22:00	Moon 3.8 Degrees NNW of Neptune
Apr. 11	18:00	Moon 5.5 Degrees NNW of Jupiter
Apr. 12	08:00	Moon 5.5 Degrees NNW of Uranus
Apr. 14	12:30	New Moon (Start of Lunation 1080)
Apr. 15	23:00	Moon 1.5 Degrees N of Mercury
Apr. 16	11:00	Moon 4.0 Degrees NNW of Venus
Apr. 18	17:18	Extreme North Declination
Apr. 21	18:19	First Quarter
Apr. 22	05:00	Moon 4.4 Degrees SSW of Mars
Apr. 24	21:00	Moon at Perigee (367,141 km - 228,131 miles)
Apr. 25	19:00	Moon 7.4 Degrees SSW of Saturn
Apr. 28	12:18	Full Moon
May 01	14:00	Extreme South Declination
May 02	21:00	Moon 1.7 Degrees SE of asteroid 1 Ceres
May 06	04:15	Last Quarter
May 06	21:54	Moon at Apogee (404,230 km - 251,177 miles)
May 07	05:00	Moon 4.1 Degrees NNW of Neptune
May 07	23:00	Moon 1.9 Degrees NNW of asteroid 6 Hebe
May 09	12:00	Moon 5.9 Degrees NNW of Jupiter
May 09	21:00	Moon 5.7 Degrees NNW of Uranus
May 12	12:00	Moon 7.4 Degrees NNW of Mercury
May 14	01:05	New Moon (Start of Lunation 1081)
May 15	23:12	Extreme North Declination
May 16	09:00	Moon 0.62 Degrees W of Venus
May 20	07:00	Moon 4.9 Degrees SSW of Mars
May 20	08:40	Moon at Perigee (369,728 km - 229,738 miles)
May 20	23:43	First Quarter
May 22	23:00	Moon 7.5 Degrees SSW of Saturn
May 27	23:07	Full Moon
May 28	22:12	Extreme South Declination
May 29	23:00	Moon 0.61 Degrees E of asteroid 1 Ceres

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.

Note: The published images now contain links to the original, full resolution images. Clicking on an image while connected to the internet, will download the original image, which in some cases is significantly higher resolution than the published version.

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: Ray Craters

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 **May 2010** edition will be Ray Craters. A list of some ray craters is available at: http://moon.scopesandscapes.com/alpo-rays-table.pdf. Although rays are most obvious near full phase, observations are requested at any phase to show the changing visibility and topographic features of the craters. 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 complex region to your observing list and send your favorites to:

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

Deadline for inclusion in the Ray Crater article is April 20, 2010

FUTURE FOCUS ON ARTICLES:

In order to provide more lead time for potential contributors the following targets have been selected:

Dark-Haloed Craters	**TLO Issue: July 2010**	**Deadline: June 20, 2010**
Mare Nectaris Basin	**TLO Issue: Sept. 2010**	**Deadline: Aug. 20, 2010**

A list of some dark haloed craters is in Appendix A of the Selected Areas Program Handbook, available at: http://moon.scopesandscapes.com/sap-hdbk-5.pdf.

CALL FOR PAPERS
ALPO 2010

The 2010 annual conference of the Assn of Lunar & Planetary Observers will be held Thursday through Saturday, July 29 - 31, at Florida State College at Jacksonville. Participants are encouraged to submit research papers, presentations, and experience reports concerning Earth-based observational astronomy of our solar system for presentation at the event.

Topics

Suggested topics for papers and presentations include the following:

* New or ongoing observing programs and studies of solar system bodies, specifically, how those programs were designed, implemented and continue to function.
* Results of personal or ALPO group studies of solar system bodies possibly including (but not limited to) Venus cloud albedo events, dust storms and the polar caps of Mars, the various belts and Great Red Spot of Jupiter, the various belts and ring system of Saturn, variances in activity of periodic meteor showers and comets, etc.
* New or ongoing activities involving astronomical instrumentation, construction or improvement.
* Challenges faced by Earth-based observers including increased or lack of interest, deteriorating observing conditions brought about by possible global warming, etc.

Submission Format

Please observe and follow these guidelines:

*** Presentations** — The preferred format is Microsoft PowerPoint, though 35mm slides or overhead projector slides are also acceptable. The final presentation should not exceed 45 minutes in length, to be followed by no more than five (5) minutes of questions (if any) from the audience.

*** Research Papers** — Full and final research papers not being presented as described above should not exceed 5,000 words (approximately 8 pages), including figures and references. Important: The results described must not be under consideration for publication elsewhere.

*** Posters** — Posters should not exceed 1,000 words. Posters provide an opportunity to present late-breaking results and new ideas in an informal, visual and interactive format. Accepted poster submissions will receive a one-page description in the conference proceedings. The submission abstract must be no longer than one page.

Acceptance for presentation is contingent on registration for the conference. In the case of multiple authors, at least one must register.

Important Dates

*** June 15, 2010** – Deadline for four- or five-sentence abstracts / proposals for papers, reports, workshops, and posters.
*** March 30, 2010** - Registration opens.
*** July 1, 2010** - Late registration fee begins (late registration via mail accepted up to July 15; then in person at conference afterwards).
*** July 29 - 31, 2010** - ALPO Con 2010.

Contact

Dr. Richard Schmude
Professor of Chemistry
Gordon College
Barnesville, Georgia 30204
770-358-0728 schmude@gdn.edu

LUNAR TOPOGRAPHICAL STUDIES

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

Assistant Coordinator – William Dembowski - dembowski@zone-vx.com

Website: http://moon.scopesandscapes.com/

OBSERVATIONS RECEIVED

MIKE BOSCHAT- HALIFAX, NOVA SCOTIA, CANADA. Digital images of Copernicus, northwest Moon, Mare Imbrium (2), waning gibbous Moon.

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 7, 10, 13 day Moon, Full Moon, Aristarchus, Mare Orientale, and southwest Terminator.

FRED CORNO-SETTIMO TORINESE, ITALY. Drawing of Menelaus.

ED CRANDALL – LEWISVILLE, NORTH CAROLINA, USA. Digital images of Gassendi, Gassendi-Letronne, Straight Wall, Archimedes, Alphonsus, Plato, Eratosthenes-Stadius, Rima Ariadaeus, Piccolomini.

HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Waxing Gibbous Moon, Copernicus. Banded Crater reports for Agatharchides A, Ariadaeus, Aristillus, Birt, Bode, Burg, Conon, Davy, Nicollet, Silberschlag, Theaetetus.

PETER GREGO – ST. DENNIS, CORNWALL, UK. Drawings of Riemann-Gauss C, Sunrise over Triesnecker (3), Zeno sunset ray (3).

RICHARD HILL – TUCSON, ARIZONA, USA Digital images of Aristarchus, Copernicus, Kepler-Marius, Northern Limb (2 each)

JERRY HUBBELL. Digital images of Tycho rays (2).

PAOLO LAZZAROTTI – MASSA, ITALY. Digital images of Aristarchus, Clavius-Moretus, Mare Humorum, Montes Harbinger-Delisle-Gruithuisen, Reiner Gamma-Cavalerius-Olbers, Schiller-Zucchius-Bettinus, western Procellarum.

PHILLIP MORGAN –LOWER HARTHALL-TENBURY WELLS, WORCESTERSHIRE, ENGLAND. Drawing of Triesnecker.

MIKE WHITE – LEVIN, NEW ZEALAND. Digital image of 12 day Moon.

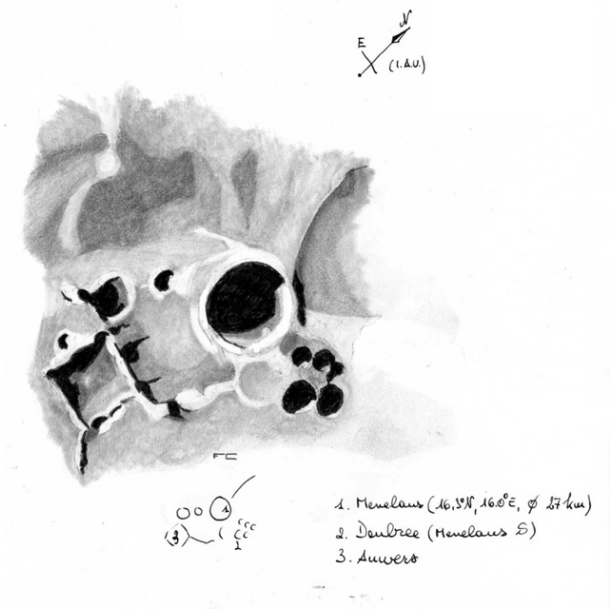
RECENT TOPOGRAPHICAL OBSERVATIONS

MARE IMBRIUM-Mike Boschat- Halifax, Nova Scotia, Canada. March 25, 2010 23:30-24:00 UT. Seeing 7/10, Transparency 4/6. C8, f/10 SCT, 80x, afocal. Canon Rebel XT 350D 8.0 MP 18-55mm lens, 1/80 second, f/5, .6,400 ISO.

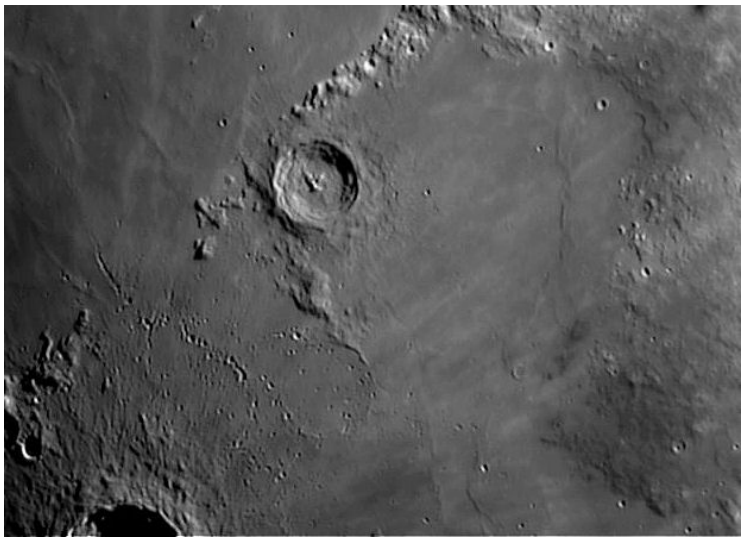
MARE ORIENTALE-Maurice Collins - Palmerston North, New Zealand. February 28, 2010 10:39 UT. C8, SCT, afocal, DSCF8910.

MENELAUS-Fred Corno-Settimo Torinese, Italy. February 20, 2010 start at 20:20 UT. Seeing-medium with light haze. 5" Apochromat, 149x.

The ray pointing north from Menelaus was fairly visible, as was the squared formation just Southeast of it. When compared with photo pictures and maps, the reliefs sitting at the West of Menelaus were by me interpreted as crater like formations rather than ridges as they are. Such an effect is due to difficulties in correctly placing features when seeing is not perfect and the tendency of brain to interpret random forms as something already known.

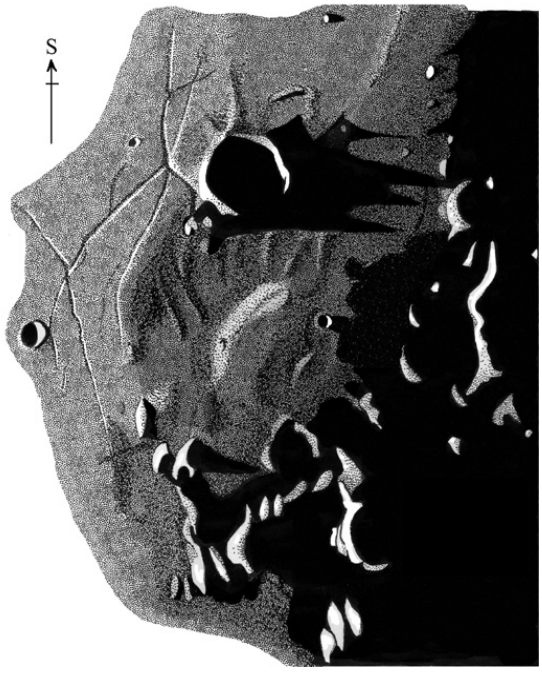


RECENT TOPOGRAPHICAL OBSERVATIONS



ERATOSTHENES & STADIUS – Ed Crandall – Lewisville, North Carolina, USA. March 25, 2010 00:32 UT. Colongitude 25º, Seeing AII. 110 mm f/6.5 APO, 3x barlow, ToUcam.

WAXING GIBBOUS MOON-Howard Eskildsen-Ocala, Florida, USA. March 24, 2010 00:11-00:24 UT. Seeing 6/10, Transparency 4/6. Orion 80mm ED, 2x barlow, DMK 41AU02 AS.

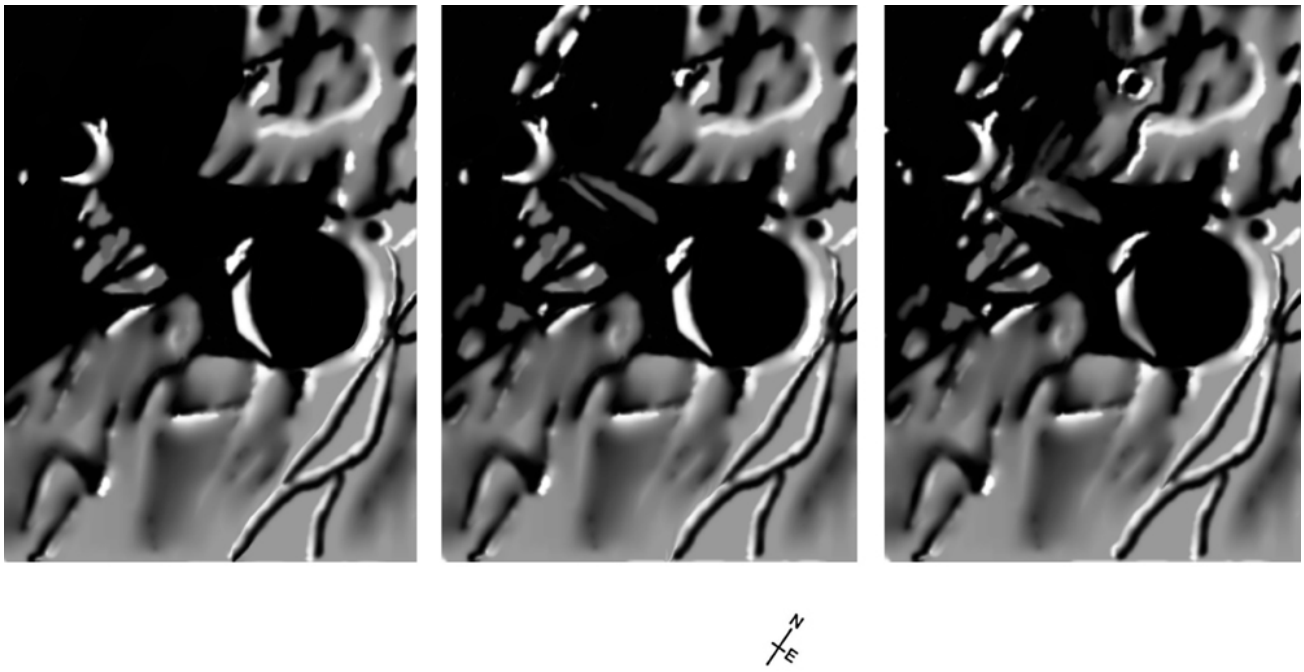


TRIESNECKER SUNRISE-Phillip Morgan –Lower Harthall-Tenbury Wells, Worcestershire, England. March 22, 2010 19:10-19:50 UT. Seeing 7/10, Transparency 3/5. Colongitude 357.7-358.0º. 305mm, f/5, Newtonian, 400x.

This observation shows well just how the North-West rampart of Triesnecker has collapsed down into the large depression to the North of the crater - it is over an hour later before the missing segment of rim crest becomes fully illuminated!

(Note: Peter Grego's and Phillip Morgan's observations of Triesnecker are simultaneous.)

RECENT TOPOGRAPHICAL OBSERVATIONS

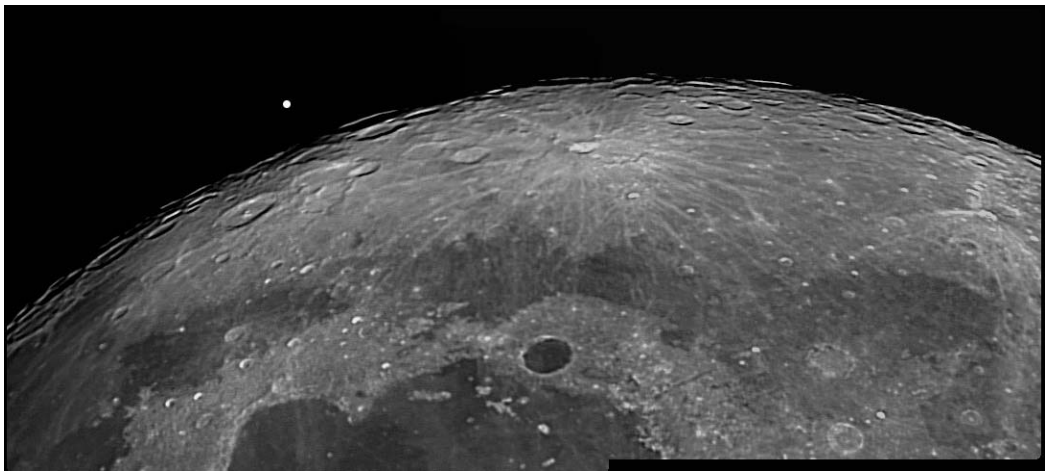


TRIESNECKER SUNRISE – Peter Grego – St. Dennis, Cornwall, UK. March 22, 2010 19:15-19:30 UT (left), 19:30-19:45 UT (middle), 19:45-20:05 UT (right). Seeing AII, clear, occasional turbulence. Colongitude 357.7-358.2º. 200 mm SCT, 250x.

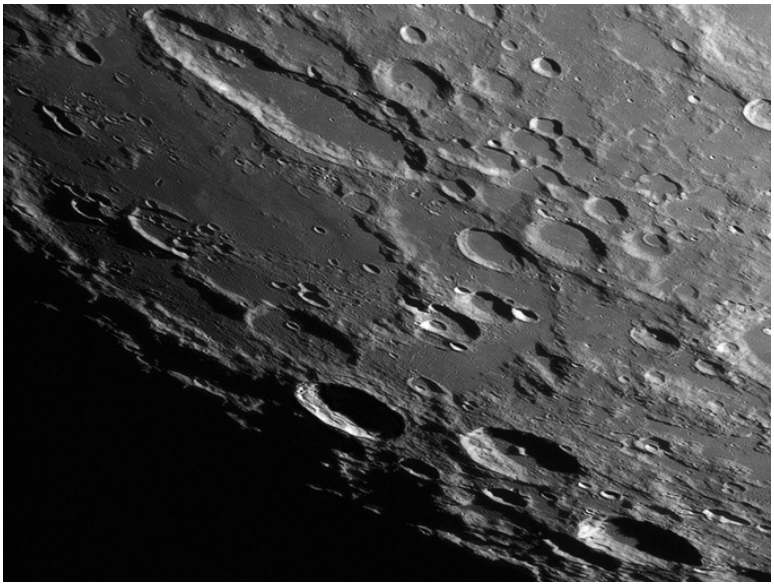
An excellent opportunity to observe the crater Triesnecker and its shadows just after sunrise presented itself this evening. Three observational sketches were made, the second two using the first sketch as a template upon which the observed changes were drawn. The eastern ramparts of the crater Chladni, west of Triesnecker, were just emerging into sunlight. In the first observation, Triesnecker cast a single black pyramidal shadow right into the terminator, pointing towards Chladni. Triesnecker itself was full of shadow, and only a disjointed segment of its inner western wall was catching sunlight. Triesnecker's outer eastern wall was brightest at about the 4 o'clock position in the sketch (due east of the crater centre). An area southeast of Chladni, adjoining Triesnecker's shadow, was catching sunlight, and here there appeared to be a number of parallel north-south ridges. The bright dual highland ridge to the north of Chladni (which actually continues on to form part of the eastern wall of Murchison) was not depicted in this first observation, and I only noted its presence in the second observation. However, I am not entirely sure whether this is an omission on my part, or whether the ridge only appeared from the second observation onwards; this would be ideal to investigate. If it did appear from the second observation, then it was fast work on the part of the Moon, as the ridge appeared rather prominent! A lumpy plateau lay north of Triesnecker, beyond which the crater Triesnecker E had become noticeable by the time of the second observation. In the second observation the shadow cast by Triesnecker's western rim and the high spur to the north had retreated to form several spire-like components, and in the third observation the shadow had retreated yet further. The landscape to the south of Triesnecker was ridged, which made a nice comparison with the various Rimae Triesnecker to the east and southeast of Triesnecker. Interestingly too, only in the third observation did I notice that the inner southwestern wall of Triesnecker was slightly shaded.

(Note: Peter Grego's and Phillip Morgan's observations of Triesnecker are simultaneous.)

RECENT TOPOGRAPHICAL OBSERVATIONS



NORTHERN LIMB-Richard Hill – Tucson, Arizona, USA July 18, 2008 08:10 UT. 3.5" Questar, 2x barlow, SP900NC. White dot indicates maximum libration point.

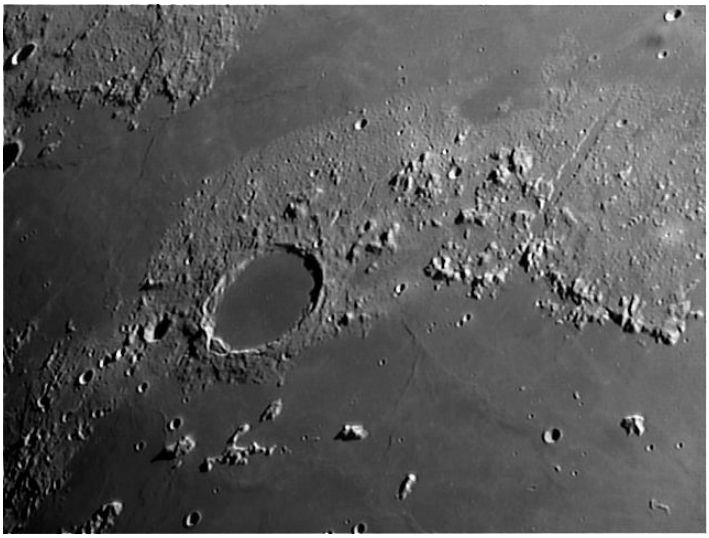


SCHILLER-ZUCCHIUS-BETTINUS-Paolo Lazzarotti – Massa, Italy. September 30, 2009 20:31 UT. Seeing 6-7/10, Transparency 5/6. Gladius CF-315 Lazzarotti Opt. Scope, LVI-1392 PRO experimental camera, Edmund R filter, 0.18 arcsec/pixel.

12 DAY MOON-Mike White – Levin, New Zealand. February 26, 2010 09:30-09:49 UT.Seeing A-III(5-6/10). Orion XT10i, DMK41AF02.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

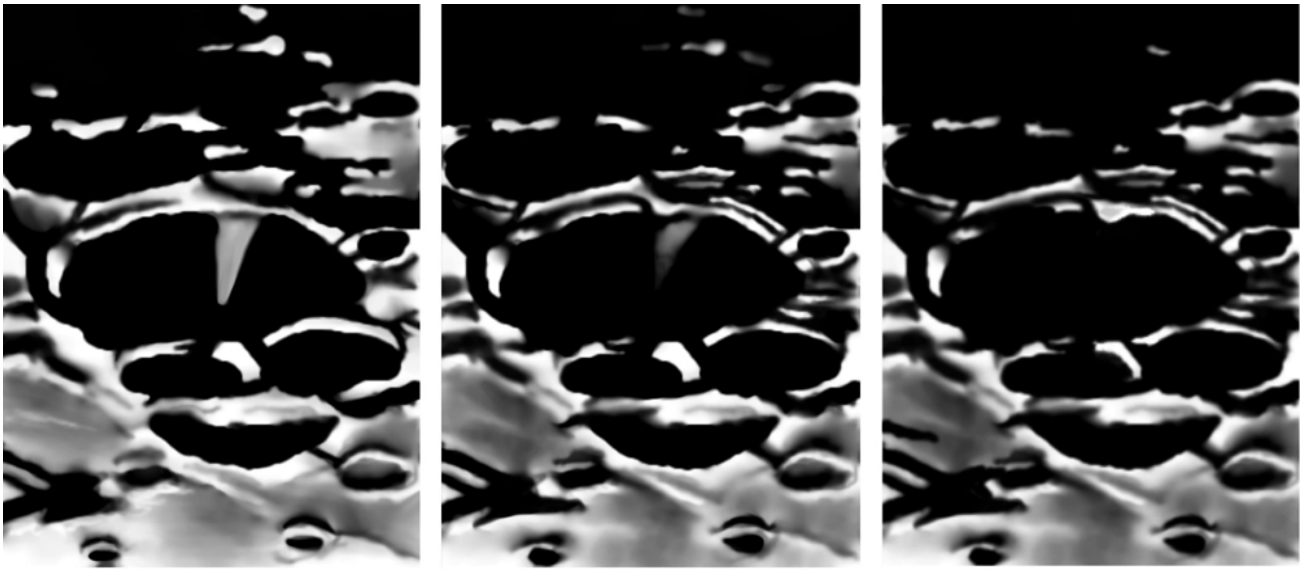
SOUTHWEST TERMINATOR– Maurice Collins - Palmerston North, New Zealand. February 27, 2010 07:40-07:58 UT. C8, SCT, 2x barlow, LPI.



PLATO-Ed Crandall – Lewisville, North Carolina, USA. March 25, 2010 00:49 UT. Colongitude 25º, Seeing AII. 110 mm f/6.5 APO, 3x barlow, ToUcam.

MONTES HARBINGER-DELISLE-GRUITHUISEN - Paolo Lazzarotti – Massa, Italy. September 30, 2009 20:48 UT. Seeing 6-7/10, Transparency 5/6. Gladius CF-315 Lazzarotti Opt. Scope, LVI-1392 PRO experimental camera, Edmund R filter, 0.18 arcsec/pixel.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

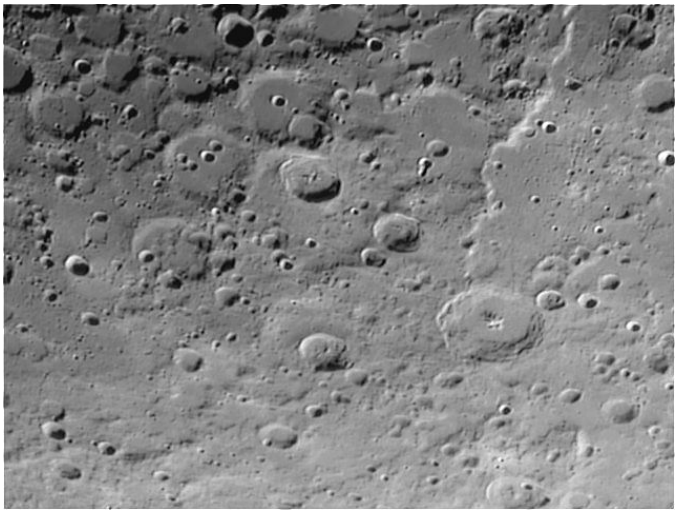


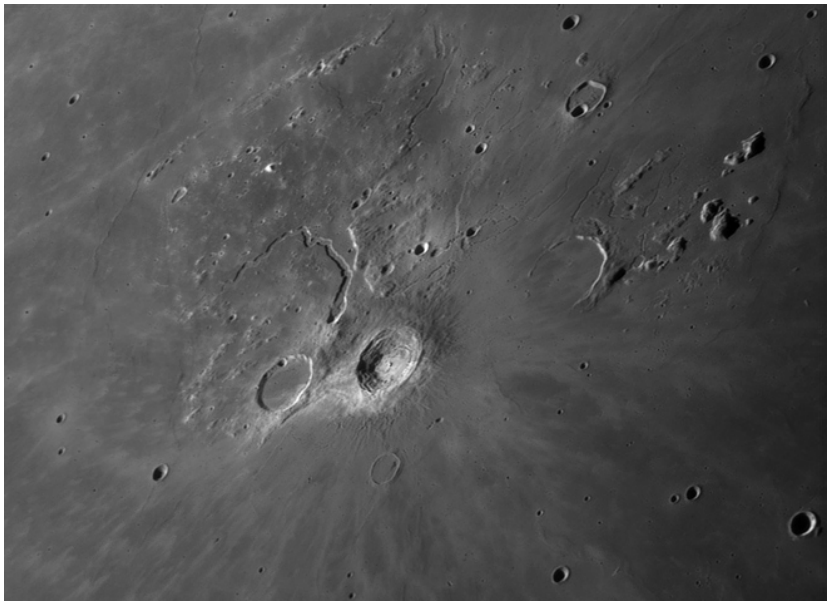
ZENO - Peter Grego – St. Dennis, Cornwall, UK. March 01/02, 2010 23:30-00:05 UT (left), 00:45-01:05 UT (middle), 01:40-01:50 UT (right). Seeing AII, intermittant light haze. Colongitude 104.4-105.6º. 200 mm SCT, 250x.

A very favourable libration for this area near the northeastern limb presented this view of late evening over Zeno and environs very nicely indeed. My attention was captured on seeing the remarkable illumination of Zeno's floor; most of it was in shadow save for a clean-cut illuminated triangular section of the floor, diverging from near the mid-western rim to the inner eastern wall – a so-called 'sunset ray'. This was made even more remarkable by the presence of a dark shadow bisecting the eastern inner wall of Zeno A, almost in line with the 'sunset ray'; this was likely partly caused by shadow from the small crater Zeno D, which lies between Zeno and Zeno A. Adjoining, the interior of Zeno B was completely shadowed except its upper inner eastern wall. The area was full of interest and rather crater-crowded. Traces of Zeno J's remaining illuminated eastern rim were visible in the darkness beyond the terminator. Unlike many lunar highland regions, a number of smooth grey plains were to be found amid the craters here, notably northwest and southwest of Zeno and at the bottom of the sketch (towards Schumacher, which is not depicted as it lies outside of the area sketched). In order to depict the changing illumination of the area, a second observation was made around an hour after the first, using the original sketch as a template (one of the great advantages of cybersketching). By 01:05 UT the sunset ray in Zeno had faded considerably, the narrowing illuminated section of Zeno's floor appearing duskier towards the west, and the edges of the bounding shadow were less distinct than before. Zeno J's eastern rim had also faded considerably by this time. Some slight differences in detail between the sketches are due to copying up and enhancing each observation immediately after each session, plus there were differences in seeing and also various amounts of observational attention was paid to different areas at different times. A third observation, made between 01:40 and 01:50 UT, saw Zeno's floor completely in shadow. Only a chink of light remained of Zeno J's wall.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

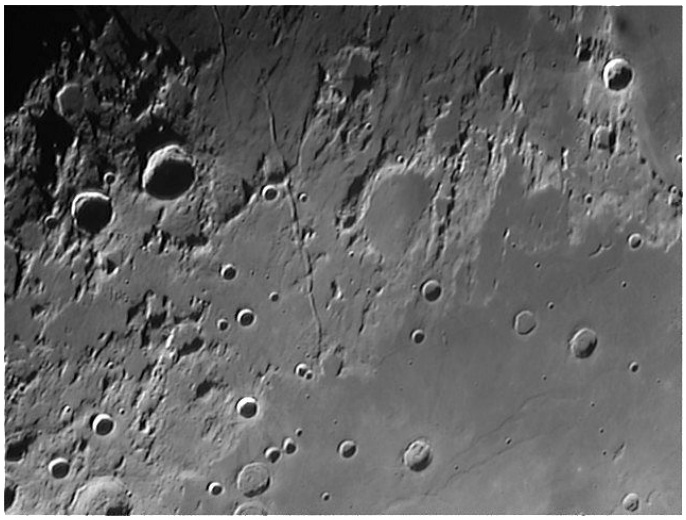
PICCOLOMINI-Ed Crandall – Lewisville, North Carolina, USA. February 20, 2010 23:47 UT. Colongitude 355º, Seeing AIII. 110 mm f/6.5 APO, 3x barlow, ToUcam.





ARISTARCHUS - Paolo Lazzarotti – Massa, Italy. August 15, 2009 03:58 UT. Seeing 6/10, Transparency 4/6. Gladius CF-315 Lazzarotti Opt. Scope, LVI-1392 PRO experimental camera, Edmund R filter, 0.18 arcsec/pixel.

RIMA ARIADAEUS-Ed Crandall – Lewisville, North Carolina, USA. February 20, 2010 23:12 UT. Colongitude 355º, Seeing AIII. 110 mm f/6.5 APO, 3x barlow, ToUcam.



BRIGHT LUNAR RAYS PROJECT

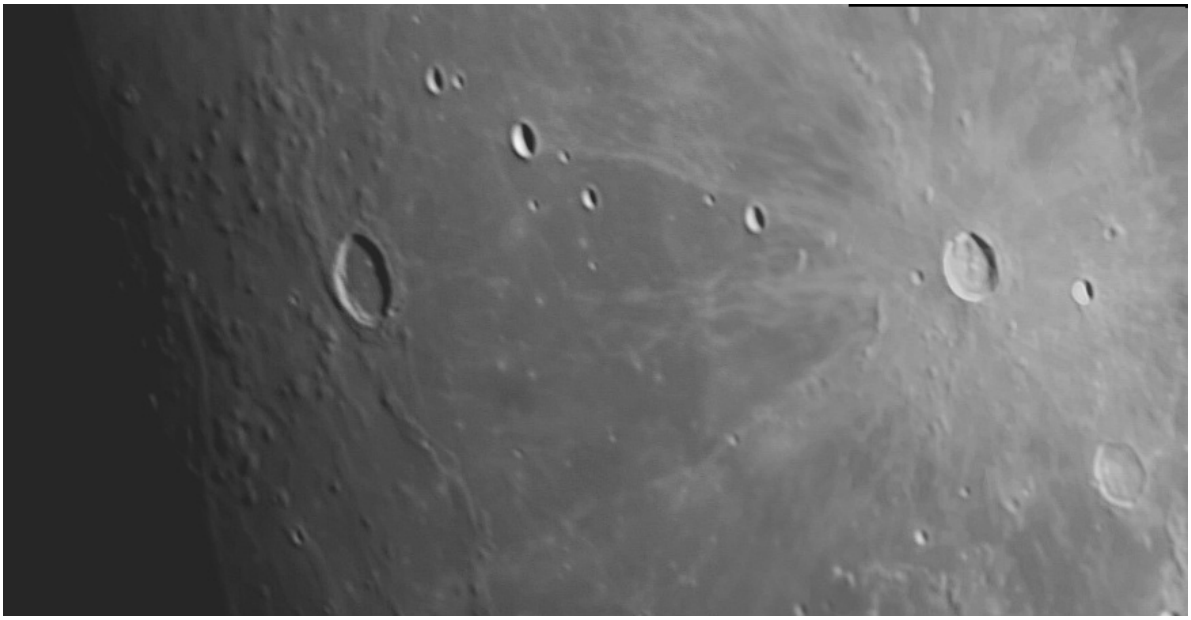
Coordinator – Wayne Bailey – wayne.bailey@alpo-astronomy.org

Assistant Coordinator – William Dembowski – dembowski@zone-vx.com

Bright Lunar Rays Website: http://moon.scopesandscapes.com/alpo-rays.html

RECENT RAY OBSERVATIONS

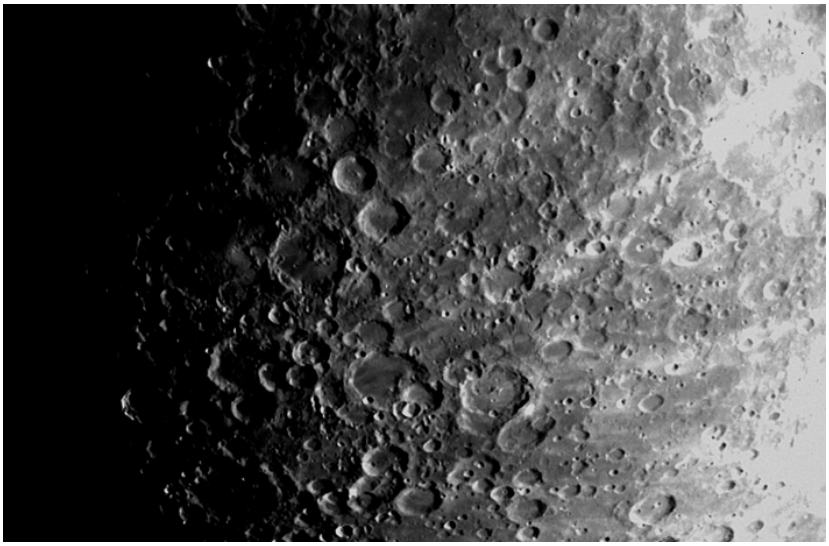
COPERNICUS RAYS – Mike Boschat- Halifax, Nova Scotia, Canada. March 25, 2010 23:30-24:00 UT. Seeing 7/10, Transparency 4/6. C8, f/10 SCT, 80x, afocal. Canon Rebel XT 350D 8.0 MP 18-55mm lens, 1/80 second, f/5, .6,400 ISO.

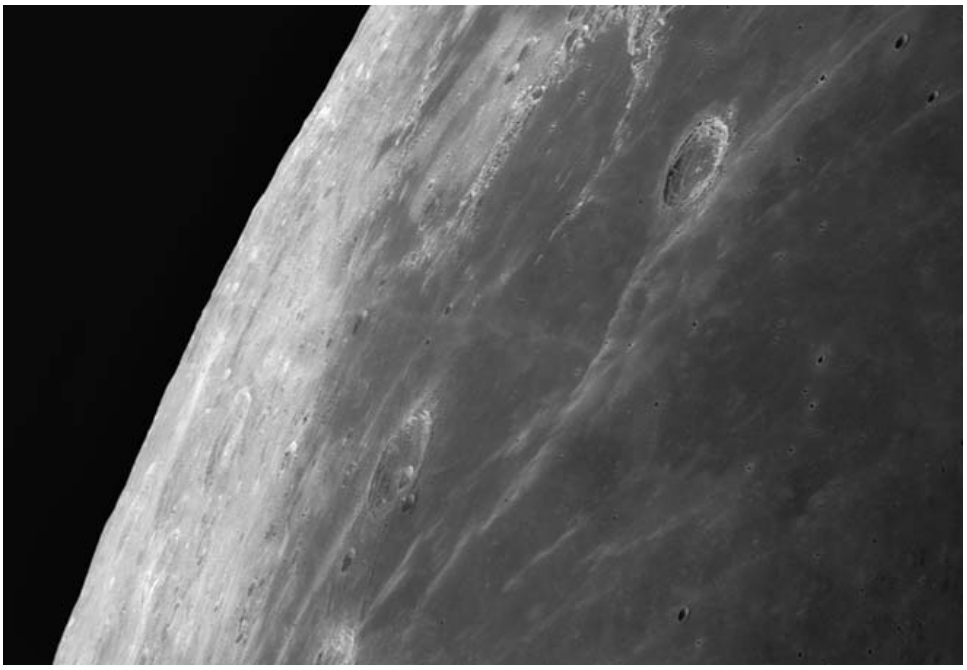


KEPLER-MARIUS – Richard Hill – Tucson, Arizona, USA . March 31, 2007 03:52 UT. C14 SCT, SPC900NC, Wratten 21 filter.

RECENT RAY OBSERVATIONS

TYCHO RAYS-Jerry Hubbell. April 4, 2009 00:25 UT. Sky-Watcher Equinox 120 ED APO refractor, ATIK 314e.





WESTERN OCEANUS PROCELLARUM-Paolo Lazzarotti – Massa, Italy. August 15, 2009 04:18 UT. Seeing 5/10, Transparency 4/6. Gladius CF-315 Lazzarotti Optics Scope, LVI 1392 PRO experimental camera, Edmund Optics R filter.

BANDED CRATERS PROGRAM

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

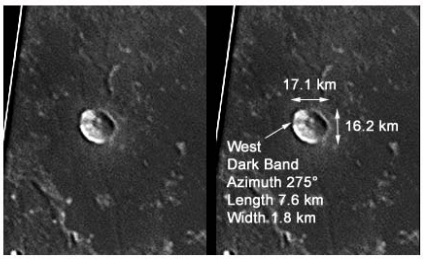
Assistant Coordinator – William Dembowski - dembowski@zone-vx.com

Banded Craters Program Website: http://moon.scopesandscapes.com/alpo-bcp.html

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

Crater Observed: Agatharchides A
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: DMK 41AU02.AS, 2X Barlow Filters: None
Seeing: 8/10 Transparency: 5/6
Date (UT): 2010/01/28 Time (UT): 00:32
Colongitude: 63°
Position of crater: Selen. Long. Selen. Lat.
2.4° West 6.7° North
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up): Comments:

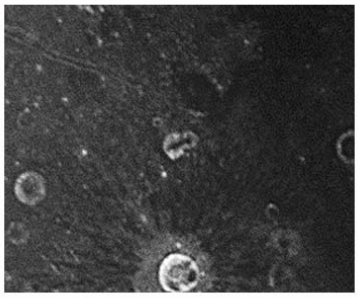


Measurements made with LTVT and estimated error for distance ≤10%. I have started a spreadsheet and will eventually list a mean and standard deviation for the measurements when I have at least five sets of measurements

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

Crater Observed: Ariadaeus
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: DMK 41AU02.AS , 2X Barlow, Filters: None
Seeing: 8/10 Transparency: 5/6
Date (UT): 2010/01/28 Time (UT): 01:02
Colongitude: 64°
Position of crater: Selen. Long. Selen. Lat.
17.3° East 4.6° North
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up): Comments:

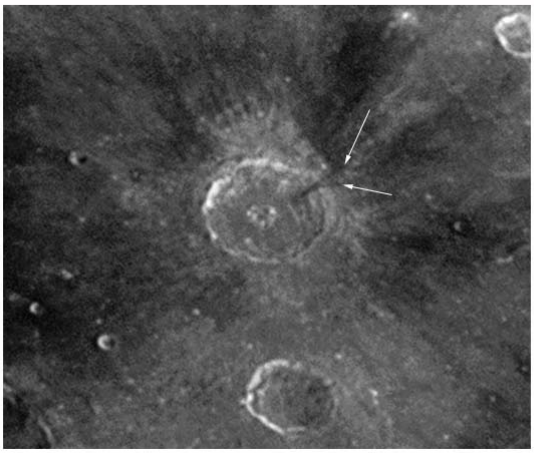


A continuous dark band crosses Ariadaeus and Ariadaeus A from WSW to ENE while extensions of dark rays from Dionysius cross the craters from north to south.

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

Crater Observed: Artistillus
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: DMK 41AU02.AS, 2X Barlow, Filters: None
Seeing: 8/10 Transparency: 5/6
Date (UT): 2010/01/28 Time (UT): 01:20
Colongitude: 64°
Position of crater: Selen. Long. Selen. Lat.
1.2° East 33.9° North
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1 2004-11-07

Image (north up):



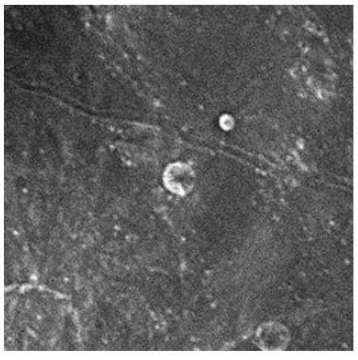
Comments:

Arrows point to the NE ends of dark bands that cross the crater rim and then separate as they continue beyond the rim. I suspect that they are two distinct bands, but it could be a single band that splits at the crater rim. It is very difficult to explain the origin of this feature.

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

Crater Observed: Silberschlag
Observer: Howard Eskildsen Observing Station: Ocala, Florida
Mailing Address: P.O. Box 830415
Telescope: Meade 6" Refractor 152 cm f/8
Imaging: DMK AU02.AS, 2X Barlow,Filters: None
Seeing: 8/10 Transparency: 5/6
Date (UT): 2010/01/28 Time (UT): 01:02
Colongitude: 64°
Position of crater: Selen. Long. Selen. Lat.
12.5° East 6.2° North
Lunar Atlas Used as Reference: Virtual Moon Atlas Expert Version 2.1

Image (North up):



Comments:

Banded albedo features radiate from the crater center to the rim, with bright areas likely representing landslides that are younger features than the dark areas.

LUNAR TRANSIENT PHENOMENA

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

LTP NEWSLETTER – APRIL 2010

Dr. Anthony Cook - Coordinator

Observations for February 2010 were received from the following observers: Jay Albert (Lakeworth, FL, USA), Maurice Collins (New Zealand), myself (Newtown, and Aberystwyth University, UK), Marie Cook (Mundesley, UK), Steve Lang (New Zealand), Brendan Shaw (UK), and Mike White (New Zealand)

LTP Reports: No LTP reports were received for February 2010. However three non-lunar surface related events were reported along the line of site to the Moon : On 2010 Feb 21 at UT 07:35 Maurice Collins (Palmerston North, New Zealand) observed a satellite transiting across the disk of the Moon. Using the "Heavens Above" satellite prediction web site, he was able to deduce that it was a French spy satellite called Helios 1B moving at 0.25 degrees per second. Satellite passages across the lunar disk are quite common and can occur several times per night, however the illumination conditions have to be correct to see them. Also on Feb 21, but much later at 21:08UT I saw visually (from Newtown, UK) a brief < 0.1 second magnitude 8-9 flash of light, about 100-150 km beyond the limb, NW of the north pole. Almost certainly this was a cosmic ray that my eye detected, but I am noting it anyway just in case it was sun glint off the lost lunar orbiter Chandrayan-1 (see the LTP article from the LSC 2009 Oct). Please report such events in case they are spacecraft related as this would help to determine rge orbit. Finally, on 2010 Feb 26 at 22:01UT a robotic telescope at Aberystwyth, that I was using, recorded a flock of birds in a nearly "V-shaped" formation (probably starlings) passing across the disk of the Moon in video recording. These can be seen in Figure 1 in 3D if you have stereo anaglyph glasses. If these were Starlings then, with a wing span of 40cm, they must have been at a distance of approximately 1.2 km away – and this accounts for the blurred nature of their silhouettes because the telescope was focused on infinity. The double image appearance is possibly due to a convolution of the telescope Airy disk with the out of focus image of the birds.

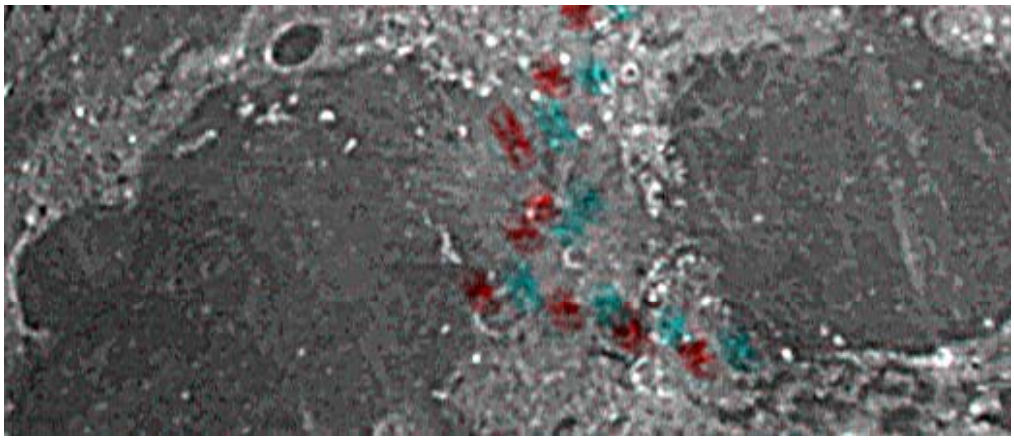


Figure 1. Flock of birds passing across the Moon from Aberystwyth. To view as a 3D Anaglyph, please use red and green/blue glasses with red over the left eye and Green/blue over the right eye. The left and right images, in this stereo pair, are separated by 1/60th second.

Ina Formation – No Longer Deemed Geologically Young: In an abstract by Dr Mark Robinson and colleagues, from this year's 41st Lunar and Planetary Science Conference at The Woodlands, Texas (2010 Mar 1-5) it has been shown that the rough surface in the Ina formation actually has craters on it. The

Ina formation had been suggested by Prof Pete Schultz (Brown University) to be a good candidate for outgassing of lunar volatiles, because both Apollo photography, and Clementine imagery showed an exceedingly low crater density on its floor, and a color index that inferred freshly disturbed soil. Both lines of evidence had suggested that it was less than 10 million years old. However crater count age estimates by Robinson *et al.*, using the new LROC images, have shown an age for the chaotic terrain of considerably in excess of 10 million years and the bulbous plateau areas to be 1 billion years old. Figure 2 includes a close up of one of the LROC images – it is certainly very unusual in morphology compared to most other lunar terrain. Perhaps the reason for the lack of craters seen by previous workers is simply a combination of lower resolution imagery available, and the difficulty of seeing craters on rough ground. Whilst this means that Ina cannot be used any longer as an example site where outgassing may have occurred recently, there are many other areas on the Moon that appear very geologically young. For example if you find LROC images of Hyginus crater, bisected by the rille, you can see some unusual very small scale depressions on the floor with no craterslets inside them. Also there is a fresh craterlet just east of Reiner Gamma that has a very bouldery interior, but which also has a circular flat centre that is totally void of bouders or craterlets. I am not proposing these as sites for outgassing, but just saying that there are some areas that appear exceedingly geologically young. Steep walls of craters also have a very low crater density, inferring geologically young surfaces due to mass wasting (avalanches and dust slides).

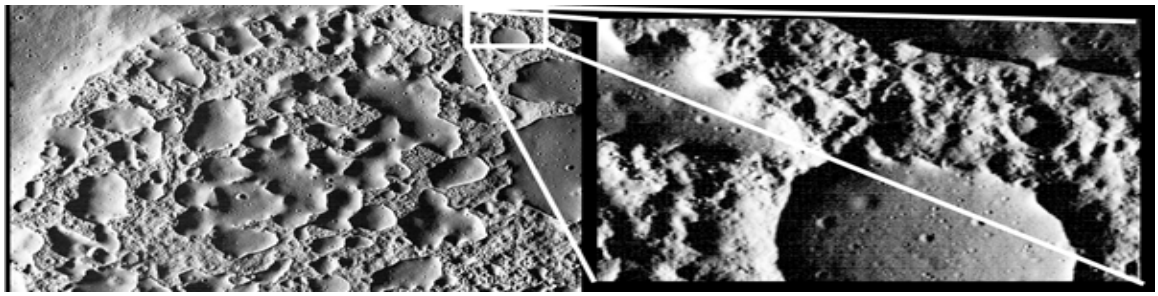


Figure 2. (Left) part of an LROC image (M116282876RC) of the Ina formation with an enlarged inset (right) showing craters on the chaotic terrain

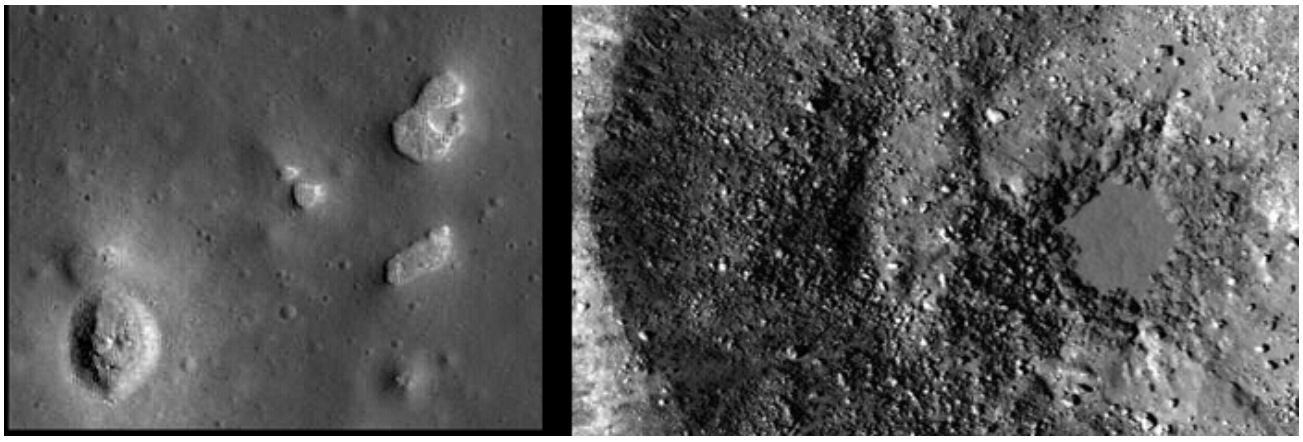


Figure 3 (Left) M104476560LE LROC image of a small part of the floor of Hyginus Crater containing some geologically young sunken areas. (Right) M111972680LE LROC image of bright ray crater (east of Reiner Gamma) with a remarkably featureless central floor area.

LROC Images On-Line: The first set of LROC images are now available on-line. The easiest route to view these is through the LROC web site. In view of the above comments, if you would like to do some searches for unusual features, then please try viewing the released LROC images systematically, and recording which images you see unusually young (lack of craters) features in, and take a snap shot (i.e. press

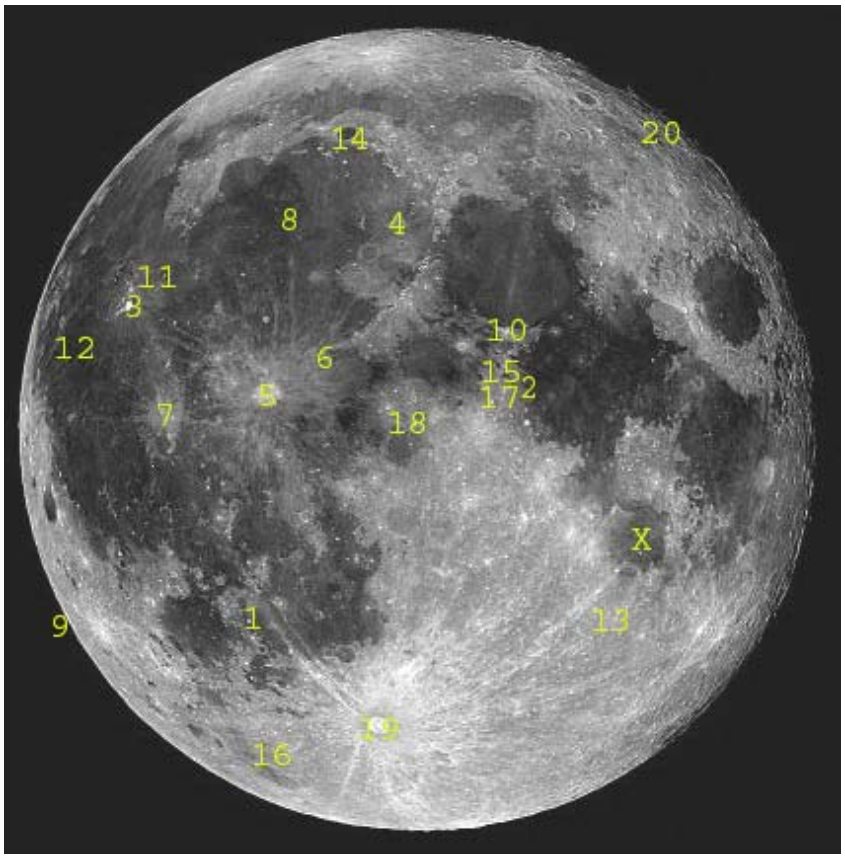
the print screen button on your PC, and save a cut out version to file). This way we can get a good record of candidate vents and geologically recent features. Alternatively in the very near future, MoonZoo will make approximately a hundred LROC images available, This is akin to GalaxyZoo, but instead users are encouraged to click on and measure craters, along with putting rectangles around any features that they find unusual.

LTP Alerts and Predictions: For repeat illumination (only) LTP predictions for the coming month, these 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! Twitter LTP alerts can be accessed on http://twitter.com/lunarnaut.

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. **Agatharchides A**
2. **Ariadaeus**
3. **Aristarchus**
4. **Aristillus**
5. **Copernicus**
6. **Eratosthenes**
7. **Kepler**
8. **Mare Imbrium**
9. **Mare Orientale**
10. **Menelaus**
11. **Montes Harbinger**
12. **Oceanus Procellarum**
13. **Piccolomini**
14. **Plato**
15. **Rima Ariadaeus**
16. **Schiller**
17. **Silberschlag**
18. **Triesnecker**
19. **Tycho**
20. **Zeno**



FOCUS ON targets

Ray Craters (May)
Dark-Haloed Craters (July)
X = Mare Nectaris (September)