THE LUNAR OBSERVER

A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.
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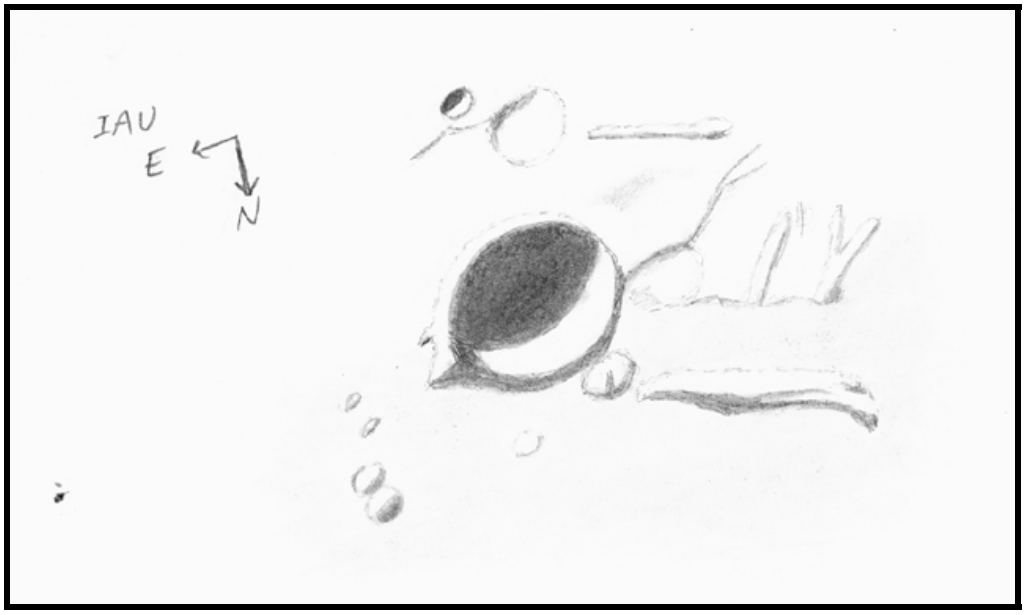
RECENT BACK ISSUES: http://moon.scopesandscapes.com/tlo_back.html

FEATURE OF THE MONTH – AUGUST 2010

FOUCAULT



Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
March 27, 2010 01:32-02:02 UT
15 cm refl, 170x, seeing 8-9

I drew this crater and vicinity on the evening of March 26/27, 2010. This crater is located on the southern edge of Sinus Roris, north of Sinus Iridum. Foucault is a relatively large, deep crater with no indication of a central peak catching the sun. There is a substantial point on its northeast rim, and a smaller point just to its south. The roundish peak just north of Foucault is Foucault gamma, and Foucault beta is the long, wide ridge to the west. A small bright spot near Foucault gamma must be a hill, judging from its shadowing. The edge of Sinus Roris is quite well defined west of Foucault, appearing as a modest cliff, then it turns to the

southwest at a Y-shaped ridge. There is an assortment of ridges and strips of shadow in this area. The edge of Sinus Roris is not as well defined to the east of Foucault, but it appears to be near two small peaks. Two larger peaks to their north constitute the double peak Harpalus lambda. A small, crisp crater is south of Foucault. A larger, but irregular and vague crater may be the feature west of this unnamed pit. The Lunar Quadrant map shows nothing in this area.

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LUNAR CALENDAR

AUGUST-SEPTEMBER 2010 (UT)

Aug. 06	02:54	Extreme North Declination
Aug. 03	04:60	Last Quarter
Aug. 10	03:08	New Moon (Start of Lunation 1084)
Aug. 10	17:57	Moon at Perigee (357,857 km - 222,362 miles)
Aug. 12	00:00	Moon 2.2 SSW of Mercury
Aug. 13	02:00	Moon 7.3 Degrees SSW of Saturn
Aug. 13	08:00	Moon 4.2 Degrees SSW of Venus
Aug. 13	14:00	Moon 5.5 Degrees SSW of Mars
Aug. 16	18:14	First Quarter
Aug. 18	17:06	Extreme South Declination
Aug. 24	07:00	Moon 4.2 Degrees NNW of Neptune
Aug. 24	17:05	Full Moon
Aug. 25	05:52	Moon at Apogee (406,389 km - 252,518 miles)
Aug. 27	01:00	Moon 5.8 Degrees NNW of Uranus
Aug. 27	05:00	Moon 6.6 Degrees NNW of Jupiter
Sept. 01	17:22	Last Quarter
Sept. 02	11:18	Extreme North Declination
Sept. 07	22:00	Moon 1.7 Degrees S of Mercury
Sept. 08	04:02	Moon at Perigee (357,191 km - 221,948 miles)
Sept. 08	10:29	New Moon (Start of Lunation 1085)
Sept. 09	18:00	Moon 7.2 Degrees SSW of Saturn
Sept. 11	04:00	Moon 4.8 Degrees SSW of Mars
Sept. 11	14:00	Moon 0.56 Degrees SE of Venus
Sept. 14	23:48	Extreme South Declination
Sept. 15	05:49	First Quarter
Sept. 20	13:00	Moon 4.2 Degrees NNW of Neptune
Sept. 21	08:04	Moon at Apogee (406,167 km - 252,380 miles)
Sept. 23	04:00	Moon 6.5 Degrees NNW of Jupiter
Sept. 23	05:00	Moon 5.7 Degrees NNW of Uranus
Sept. 23	09:18	Full Moon
Sept. 29	17:36	Extreme North Declination

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: Mare Nectaris Basin

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 **September 2010** edition will be the Mare Nectaris Basin area. This includes scarps, craters, rilles, wrinkle ridges and albedo features in the surrounding area as well as on the mare itself 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 unusual craters to your observing list and send your favorites to:

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

Deadline for inclusion in the Mare Nectaris Basin article is August 20, 2010

FUTURE FOCUS ON ARTICLES:

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

Milichius-T. Mayer Area	**TLO Issue: Nov. 2010**	**Deadline: Oct. 20, 2010**
Marius-Reiner gamma	**TLO Issue: Jan. 2011**	**Deadline: Dec. 20, 2010**

2010 ALPO CONFERENCE

The 2010 annual conference of the Assn of Lunar & Planetary Observers was held Thursday through Saturday, July 29 – 31. Scientific sessions were held at the Kent Campus of Florida State College at Jacksonville. The Hospitality Inn in Jacksonville was the site of the dinners and Hospitality Suite. Local hosts were the Northeast Florida Astronomical Society and the Florida State College Astronomy Club.

This was quite an interesting conference. The local hosts did a wonderful job. About 75 people registered. I got to meet two of our Lunar Section observers who I hadn't previously met, Howard Eskildsen and Jay Albert. Considering that the Moon is only one of the Solar System objects, we were well represented with three lunar oriented presentations out of the fourteen total. Howard Eskildsen gave a talk on Dark-Haloed Craters near Copernicus on Friday morning and a Solar and Lunar Imaging Workshop in the afternoon. I gave a talk on Photometry of Lunar Selected Areas (a topic you'll be hearing more about later). I won't describe all the other talks here, other than to mention the breadth of topics, which extended to a fascinating presentation by Richard Jakiel on Ancient Astronomical Coins.

The Starbeque was held at the Hospitality Inn due to weather concerns, but was a good opportunity to socialize. The closing banquet included music by Lorna Greenwood, presentation of several awards, door prize drawings, and a visit by Galileo (aka Robert Dawson).

Overall, an excellent meeting, and if I missed any of you that were there, I apologize. I'm just not very good at reading name tags.

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

MAURICE COLLINS - PALMERSTON NORTH, NEW ZEALAND. Digital images of 2, 3, 6, 8, 14(2), 19, 20 day Moon, Ariadaeus Rille, Descartes, Southern Highlands & Theophilus-Aristoteles.

ED CRANDALL – LEWISVILLE, NORTH CAROLINA, USA. Digital images of Archimedes, Aristarchus region, Clavius area(2), Deslandres, Eratosthenes, Kepler rays to Reiner Gamma, Mare Humorum, Montes Jura area(2), Plato area, Moretus-Cabeus, Ptolemaeus-Arzachel, Ptolemaeus-Alphonsus, Rays in Oceanus Procellarum, Schickard-Schiller, Schiller-Bailly, Straight Wall region & Tycho-Faraday.

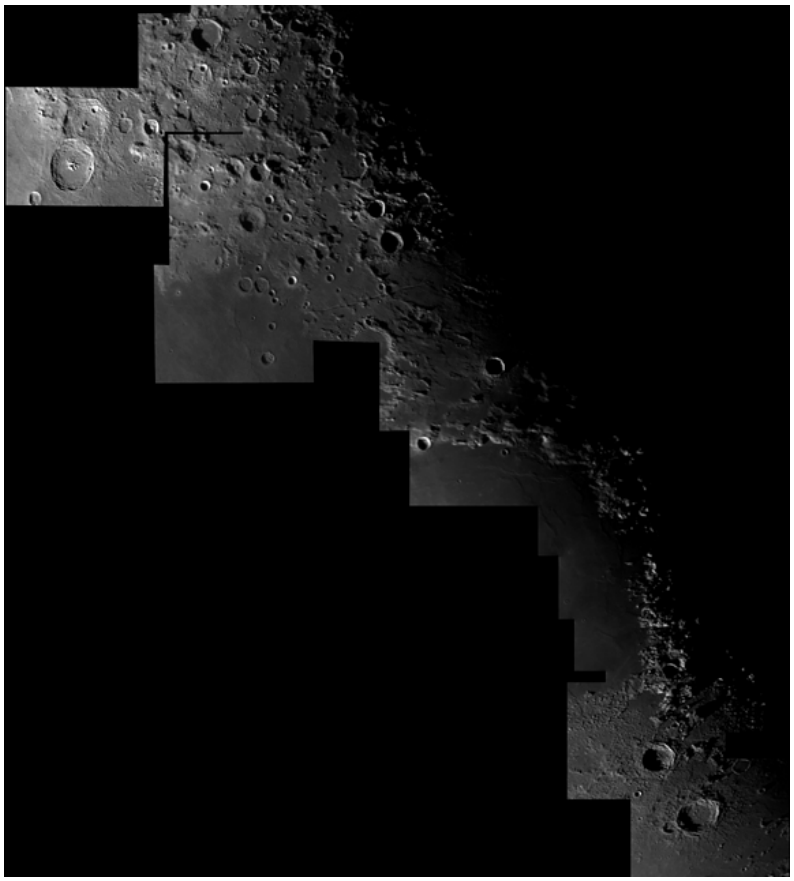
HOWARD ESKILDSEN - OCALA, FLORIDA, USA. Digital images of Arago, Aristoteles, Burg, Dawes, Descartes, Mare Humboldtianum(2), Maurolycus, Meton, Sacrobosco, Thales. Depth measurements of Arago, Manners & d'Arrest.

ROBERT HAYS – WORTH, ILLINOIS, USA Drawings of Archytas & Montes Teneriffe.

RICHARD HILL – TUCSON, ARIZONA, USA Digital images of Archimedes, Hyginus-Triesnecker & Mons Piton-Valllis Alpes.

ARAGO, MANNERS, D'ARREST-Depth Measurement-Howard Eskildsen-Ocala, Florida, USA. Feb. 20, 2010 23:59 UT. Seeing 8/10, Transparency 6/6. Meade 6", f8, refractor, 2x barlow, DMK 41AU02 AS, W-8 Yellow filter.

RECENT TOPOGRAPHICAL OBSERVATIONS



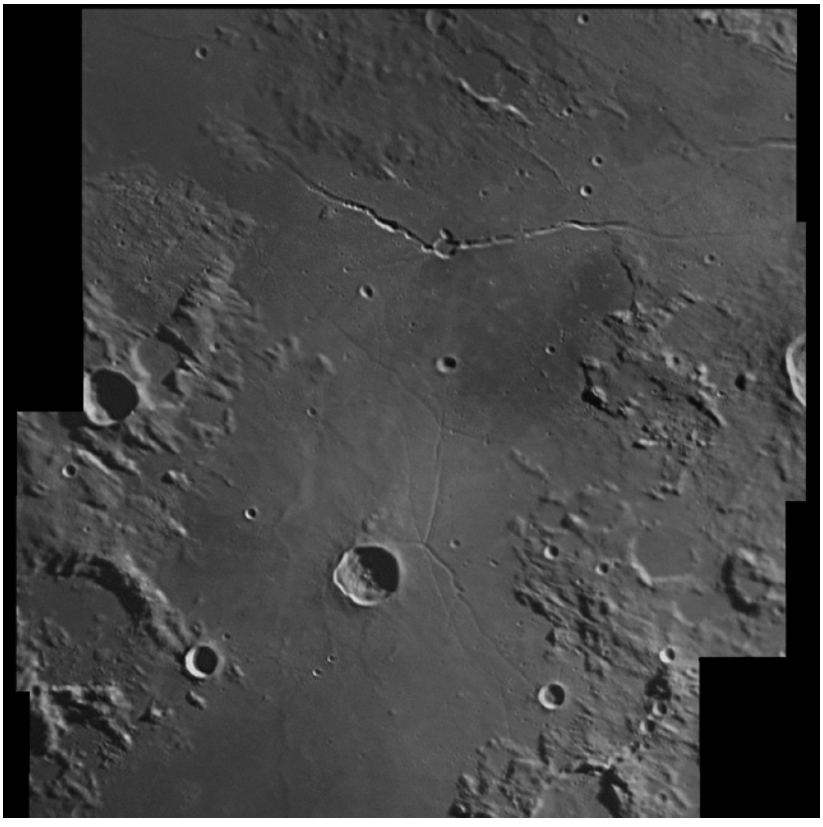
THEOPHILUS-ARISTOTELES-
Maurice Collins - Palmerston North, New Zealand. July 18, 2010 08:15-09:55 UT. C8, SCT, 3x barlow, LPI.

MONTES JURA – Ed Crandall – Lewisville, North Carolina, USA. July 6, 2010 09:47 UT. Colongitude 206.9º, Seeing AII. 110 mm f/6.5 APO, 2.4x barlow, ToUcam.

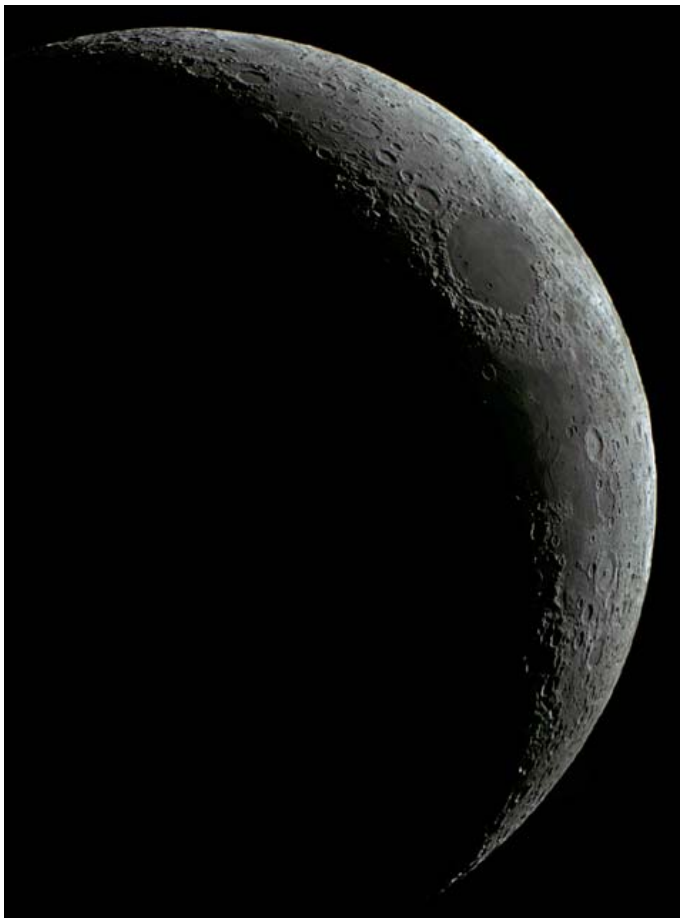
RECENT TOPOGRAPHICAL OBSERVATIONS

MARE HUMBOLDTIANUM-Howard Eskildsen-Ocala, Florida, USA. July 18, 2010 01:57 UT. Seeing 7/10, Transparency 4/6. Orion 80mm refractor, 5x barlow, DMK 41AU02 AS, IR Block filter.

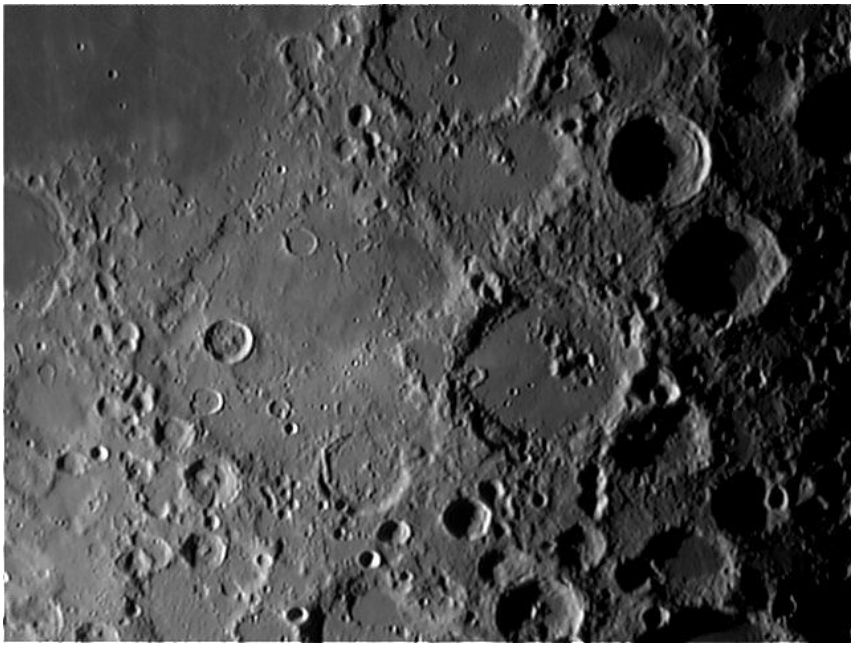
HYGINUS-TRIESNECKER – Richard Hill – Tucson, Arizona, USA . June 20, 2010 02:34 UT. Seeing 9/10. C14, 2x barlow, f/22, SCT. DMK21AU04, UV/IR block filter.
I am seeing detail here that I've never seen before. Using Lunar Orbiter images I have identified craters to 0.8 km. I remember as a kid in the early 1960s, reading Patrick Moore's book on The Moon and seeing his drawing done through his 12" telescope of the Hyginus cleft. From my boyhood home in Michigan I could not see the vents along the cleft, ever. But here they are in all their glory.



ADDITIONAL TOPOGRAPHICAL OBSERVATIONS



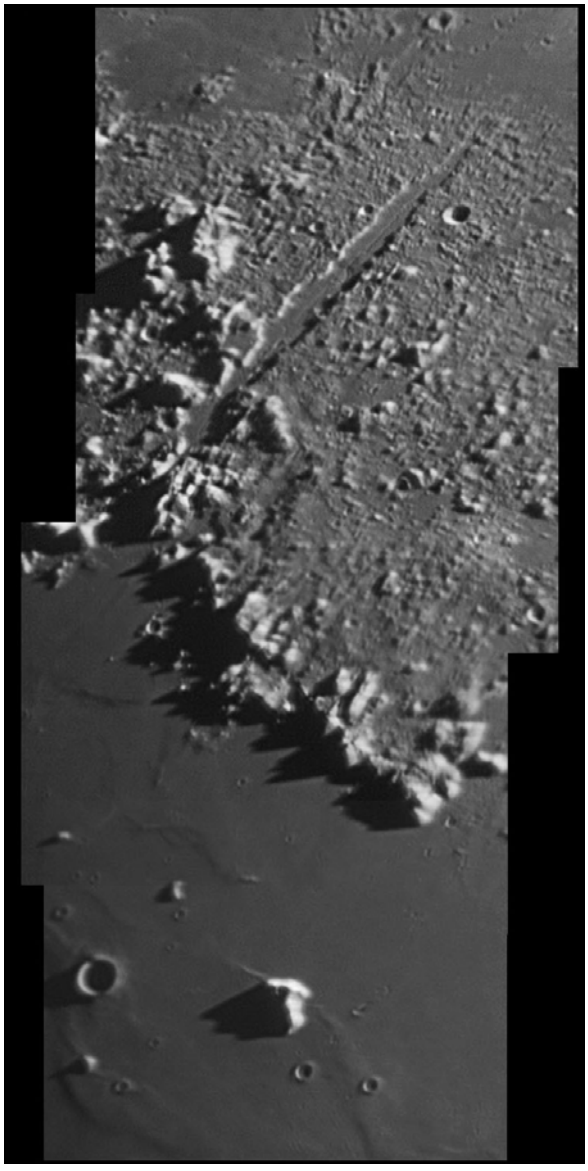
3 DAY MOON-Maurice Collins - Palmerston North, New Zealand. July 15, 2010 06:41-06:53 UT. Seeing A-IV. C8, SCT, Orion St Sarshoot III.



DESLANDRES – Ed Crandall – Lewisville, North Carolina, USA. July 3, 2010 09:30 UT. Colongitude 170º, Seeing AII. 110 mm f/6.5 APO, 3x barlow, ToUcam.

ADDITIONAL TOPOGRAPHICAL OBSERVATIONS

ARISTOTELES-Howard Eskildsen-Ocala, Florida, USA. July 18, 2010 01:51 UT. Seeing 7/10, Transparency 4/6. Orion ED 80, 600 mm FL, 5x barlow, DMK 41AU02 AS, IR block filter.



MONS PITON-VALLIS ALPES – Richard Hill – Tucson, Arizona, USA. June 20, 2010 02:45 UT. Seeing 9/10. C14, 2x barlow, f/22, SCT. DMK21AU04.

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

KEPLER RAYS to REINER GAMMA – Ed Crandall – Lewisville, North Carolina, USA. July 6, 2010 09:36 UT. Colongitude 206.8º, Seeing AIII. 110 mm f/6.5 APO, 2.4x barlow, ToUcam.

OCEANUS PROCELLARUM RAYS – Ed Crandall – Lewisville, North Carolina, USA. July 6, 2010 09:42 UT. Colongitude 206.8º, Seeing AIII. 110 mm f/6.5 APO, 2.4x barlow, ToUcam.

LUNAR TRANSIENT PHENOMENA

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

LTP NEWSLETTER – AUGUST 2010

Dr. Anthony Cook - Coordinator

Observations for June 2010 were received from the following observers: Jay Albert (Lakeworth, FL, USA) observed Alphonsus, Archimedes, Censorinus, Gassendi, Jansen, Kies, Lambert Gamma, Plinius, Sasserides B, and Vitruvius. Maurice Collins (New Zealand) observed Copernicus, Earthshine, Theophilus and obtained several images of the complete Moon. Tony Cook (Aberystwyth University, UK) obtained time lapse video of the Moon. Steve Lang (New Zealand) observed the Partial Lunar Eclipse. Marie Cook (Mundesley, UK) reports being unable to observe due to poor weather and the low lunar altitude.

News: The programme for this year's European Planetary Science Conference (EPSC), to be held in Rome September 19-25, should be on line soon, hopefully with the the abstracts for you to look through, at: http://meetingorganizer.copernicus.org/epsc2010/sessionprogramme. There will be plenty of interesting papers on results from LRO, and the LTP paper I gather has been placed into session MT10 on "Lunar Science and Exploration: Current Status and Future Outlook". I will be attending the EPSC conference and look forwards to meeting any of our Italian colleagues from ALPO who might be there. EPSC meetings encourage both amateur astronomers and professional planetary scientists to attend.

LROC has been very busy, and new discoveries of deep shadow filled skylights into lava tubes have been announced: http://lroc.sese.asu.edu/news/index.php?/archives/253-How-Common-are-Mare-Pit-Craters.html and also a recent 10 m diameter impact crater, that occurred sometime between the Apollo 15 mission and the present day, has been found near Lyell, by comparing Apollo Panoramic images with LROC images. http://lroc.sese.asu.edu/news/index.php?/archives/260-New-Impact-Crater-on-the-Moon!.html#extended. A catalogue of MoonZoo finds that might be related to recent geological activity can be found on: http://users.aber.ac.uk/atc/tlp/moonzoo.pdf . This will be updated on an ad-hoc basis as more discoveries by MoonZoo users come to light.

LTP Reports: No LTP reports were received for June.

Routine Reports: An observation was made by Jay Albert between 00:50 and 02:57UT on 2010 Jun 22. This concerned some sickle shaped pot holes seen by two US observers back in 1965. Firstly here is the original LTP report from the Cameron catalog:

In 1965 Nov 03 at UT 2300-2317 Fehring and Garris (New Jersey, USA, 2.4" refractor x88) observed a sickle-shaped series of "pot holes" near a light and dark granulated area between mare Tranquilitis and mare Serenitatis (including Plinius?). Color tones were fuzzy white to gray 5-7th magnitude. Some degree of fading. A drawing was made. The Cameron 1978 catalog ID=910 and weight=3. The ALPO/BAA weight=2.

Jay Albert comments on this from his most recent observation in June 2010: *"Plinius [910]- I saw numerous "sickle-shaped" and other "pot holes" in the area. The rilles N of Plinius could be seen at 224x with some difficulty. The "pot holes" appear to be flat areas between the bright mountains and the area appeared to be normal for this solar angle. Observed at 311x, 224x and also in the 80mm at 43x with the*

pot holes also visible in the latter. I used the 80mm in order to get a view that was more similar to that of a 2.4 inch refractor used by the LTP observer."

Therefore I now have no hesitation in downgrading this from an ALPO/BAA weight of 2 to a 0 as it really does not sound very LTP like at all. We can do this with hindsight now that we have experienced repeat illumination observers, however these verification observations were not available when Winifred Cameron compiled her catalog in 1978.

Lastly in a Lunar eclipse image sent to me by Steve Lang, I was puzzled by a bright arc (see Figure 1) along the north west limb. This has been reported as a LTP in some past Earthshine observations and so was really worth investigating. Maurice Collins generated an LTVT synthetic image for the night in question and this was able to prove that this bright arc is nothing more than the northwest highland edge of the Oceanus Procellarum area coming into view on the limb thanks to the libration!

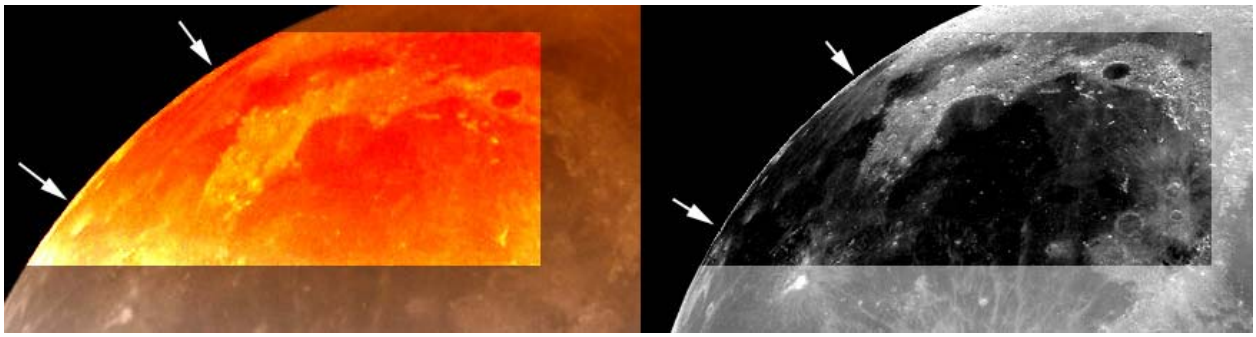


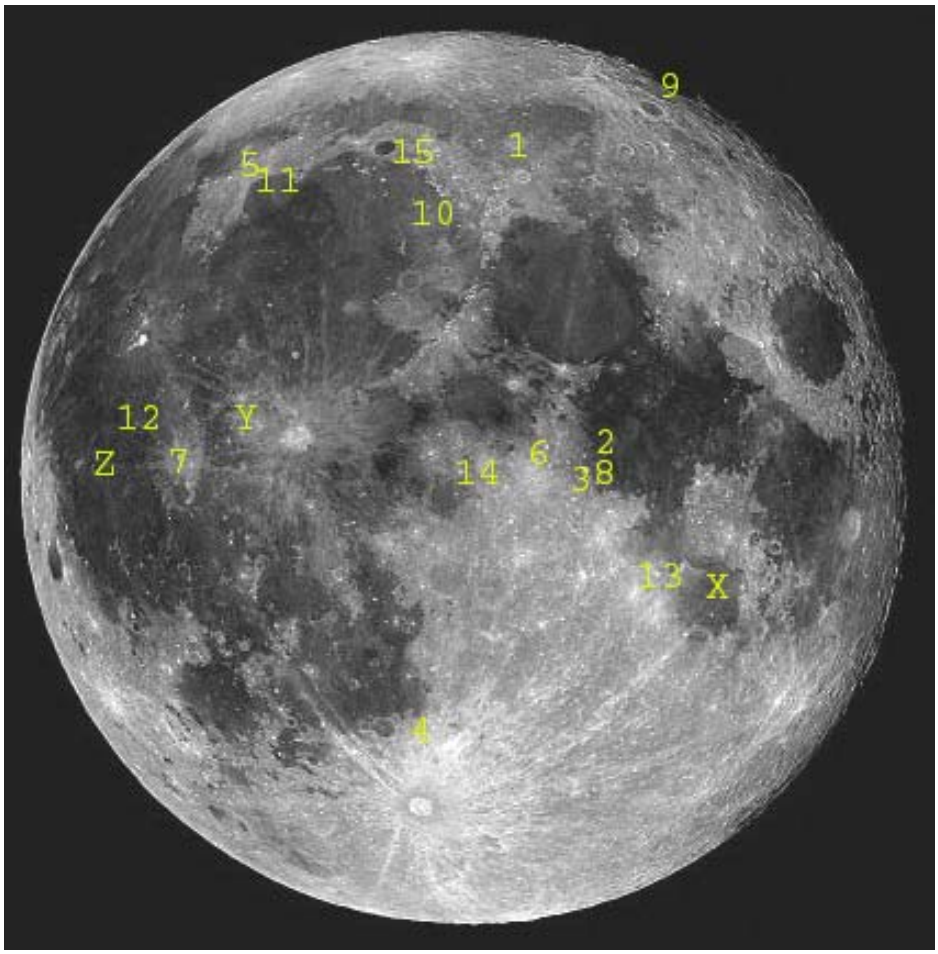
Figure 1. (Left) Contrast enhanced section of Steve Lang's image of the umbral shadow at 11:30UT of the 2010 Jun 25 Partial Lunar Eclipse, showing a bright arc along the north west limb of the Moon. (Right) An LTVT image generated by Maurice Collins showing the same limb arc. North is at the top in both cases.

Observing Schedule: 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 . 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. **Aristoteles**
2. **Arago**
3. **d'Arrest**
4. **Deslandres**
5. **Foucault**
6. **Hyginus**
7. **Kepler**
8. **Manners**
9. **Mare Humboldtianum**
10. **Mons Piton**
11. **Montes Jura**
12. **Oceanus Procellarum**
13. **Theophilus**
14. **Triesnecker**
15. **Vallis Alpes**



FOCUS ON targets

X = Mare Nectaris (September)
Y = Milichius-T. Mayer Area (November)
Z = Marius-Reiner gamma (January)