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.
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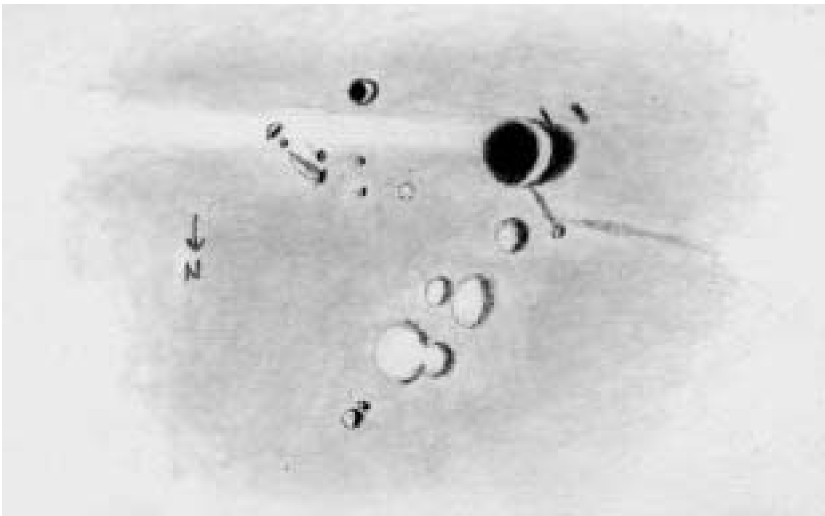
FEATURE OF THE MONTH - NOV. 2006



HORTENSIUS

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
May 8, 2006 - 02:00 to 02:30 UT
15cm Newtonian - 170x - Seeing 7-8/10

I observed this crater and vicinity on the evening of May 7/8, 2006 before the moon hid ZC 1643 and 80 Leonis. This is a modest, ordinary crater west of Copernicus. The presence of several domes to its northeast make this area interesting. The feature closest north of Hortensius is the dome Hortensius omega, according to the LQ map. There are four other domes to the northeast, two of them being coalesced. All of these domes are at least approximately round with only modest shading on their shadowed sides, but omega's shading appears slightly darker than the others. Hortensius gamma is farther to the northeast, but this is not a dome. H. gamma is a double peak with black shadow. The sizable pit toward the southeast is Hortensius C. North of C is a small group of peaks with a tiny craterlet mixed in. A shadowless bright spot is between this group and Hortensius. A faint ray extends eastward from Hortensius, passing just north of C. Near Hortensius and toward the west are some linear shadows which are either wrinkles or low ridges.

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. Several copies of recent journals can be found on-line at: **http://www.justfurfun.org/djalpo/** Look for the issues marked FREE, they are not password protected. Additional information about the A.L.P.O. can be found at our website: **http://www.lpl.arizona.edu/alpo/** 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.lpl.arizona.edu/~rhill/alpo/member.html** which now also provides links so that you can enroll and pay your membership dues online.

LUNAR CALENDAR - NOVEMBER 2006 (UT)

01 . . . . . . 08:00 . . . . . . Moon 0.51 Degrees S of Uranus

03 . . . . . . 23:52 . . . . . . Moon at Perigee (360,597 km)

06 . . . . . . 07:00 . . . . . . Moon 1.8 Degrees SSE of asteroid Iris

12 . . . . . . 17:46 . . . . . . Last Quarter

13 . . . . . . 02:00 . . . . . . 1.5 Degrees NNE of Saturn

15 . . . . . . 23:21 . . . . . . Moon at Apogee (405,192 km)

19 . . . . . . 08:00 . . . . . . Moon 6.0 Degrees SSW of Mercury

20 . . . . . . 03:00 . . . . . . Moon 4.3 Degrees SSW of Mars

20 . . . . . . 22.17 . . . . . . New Moon (Start of Lunation 1038)

20 . . . . . . 24:00 . . . . . . Moon 5.3 Degrees SSW of Jupiter

21 . . . . . . 11:00 . . . . . . Moon 4.9 Degrees SSW of Venus

26 . . . . . . 23:00 . . . . . . Moon 2.7 Degrees SSE of Neptune

28 . . . . . . 06.29 . . . . . . First Quarter

28 . . . . . . 16:00 . . . . . . Moon 0.36 Degrees E of Uranus

FOCUS ON: Banded Craters

In order to familiarize TLO readers with the SAP, the subject of the next installment of "Focus On" will be Banded Craters. Any crater exhibiting dark bands on its floor and/or inner walls will qualify for this assignment. As always, the observations do not need to be recent so search your files in addition to adding these fascinating craters to your observing list.

Because of the difficulty of this assignment, the timeframe for submissions will be extended from the usual two months to four months. The deadline for inclusion in the Banded Crater article will, therefore, be December 20, 2006 - with the article appearing in the January 2007 issue of TLO.

As stated in the September issue of TLO, the Selected Areas Program (SAP) previously coordinated by Dr. Julius Benton, Jr. has been transferred to the Lunar Topographical Studies Section. The SAP provides for the formal monitoring of seven specific areas of the Moon for albedo changes during a lunation and from one lunation to the next. In addition, it includes programs for the cataloging and study of Dark Haloed Craters and Bright & Banded Craters.

Following is a description of the Dark Haloed Craters Program as prepared by Dr. Benton:

DARK HALOED CRATERS

Dr. Julius Benton, Jr.

After considerable discussion with several past A.L.P.O. Lunar Recorders, and as a result of a number of appeals by observers, it was decided during early 1996 to resurrect two important lunar observational programs, the *Bright and Banded Craters Program* and the *Dark Haloed Craters Program.* Because of inherent similarities in observing methodology and technique, both programs have been merged with the A.L.P.O. Selected Areas Program.

1. DARK HALOED CRATERS

The *Dark Haloed Craters Program* (abbreviated *DHCP),* as the name implies, focuses on systematic observations of lunar craters which have dark haloes surrounding them. The most familiar examples of dark haloed craters (abbreviated *DHCs) are* the small craterlets girdled by very dark material situated on the floor of Alphonsus and which are especially prominent at Full Moon. Other DHCs are found near the crater Copernicus.

Many theorists believe that the majority of DHCs are endogenic volcanic features that are morphologically and dimensionally analogous to *maars* found on Earth. Terrestrial maars are produced by explosive, usually singular, events that create craters surrounded by dust and debris rather than lava. Maar-type DHCs have interiors that are at least as dark as their haloes. Some DHCs, however, appear to be exogenic (i.e., meteoric) in origin, as evidenced by outer slopes that are upwardly concave like typical impact craters. Meteoric DHCs have interiors that are characteristically light, yet have dark ejecta surrounding them. Good examples of what seem to be meteoric DHCs are found near Copernicus.

During 1968, it had been suggested in the literature that, after a detailed examination of high-resolution Earth-based lunar photographs, there are probably no less than 100 definite DHCs, with another 300 or so suspected DHCs that remain unconfirmed. DHCs, including some that are too small to be resolved from Earth, were revealed on photographs taken by spacecraft such as *Orbiter, Apollo,* and *Clementine.*

The original DHCP was initiated during August of 1971 with the following objectives:

1. Confirm the existence of dark haloed craters (abbreviated as *DHCs).*

2. Discover new DHCs.

3. Determine how the visibility of DHCs changes with varying solar illumination throughout a lunation and from one lunation to the next.

4. Document the existence of any dark rays associated with DHCs.

5. Define and understand the distribution pattern of DHCs on the lunar surface.

6. Define and understand the association of DHCs with rills, lunar domes, and Lunar Transient Phenomena (LTP).

7. Catalog all observationally confirmed DHCs with respect to location on the lunar surface and record details on their morphological and dimensional characteristics.

Unfortunately, due to inconsistent observer participation, the DHCP was terminated in 1976 after cataloging some 83 DHCs. Clearly, an enormous amount of observational and analytical work still needed to be done. Even so, the DHCP was successful in generating some interesting and valuable data. The following are some of the more important gleanings from the five-year observational effort, with notes added as appropriate suggesting where there exists a need for further study in a subsequent observational program:

1. As noted above, 83 confirmed DHCs were cataloged by 1972, and charts were made by the A.L.P.O. that plotted all confirmed and unconfirmed DHCs in the catalog. [NOTE: Further checking needs to be performed to insure the accuracy of positional data.]

2. Based on studies of albedo vs. changing solar illumination for about 20 DHCs throughout several lunations, it was found that no real variation patterns could be established. Thus, the tentative conclusion was be that most DHCs remained rather stable in albedo. Some DHCs, however, exhibited definite intensity variations in response to changing solar angle. [NOTE: More thorough, long-term albedo studies are needed, ideally for all confirmed and cataloged DHCs.]

3. Nearly two-thirds of the confirmed 83 DHCs were distributed on the mar/a (found most often along the edges of the maria), and about a fourth of the DHCs were located on the dark floors of larger craters (e.g., Alphonsus). [NOTE: As more DHCs are observed and confirmed, their distribution patterns need to be given further scrutiny.]

4. About 61% of the 83 cataloged DHCs were situated in clusters or pairs, with only 39% appearing singular. Some DHCs are so close together in clusters that their dark haloes overlap. [NOTE: With the addition of additional confirmed DHCs, it would be interesting to see if these statistics change.]

5. Nearly 80% of the 83 DHCs were located at or near the center of their dark haloes (i.e., radially symmetrical with respect to the central crater); with regard to peripheral boundaries, it was found that 78% of the dark haloes were circular, 12% were elliptical, and 10% were irregular. [NOTE: As more DHCs are confirmed, it would be useful to reassess these statistics.]

6. Among the 83 DHCs, only 2 had dark rays emanating from them, suggesting that there may be poor correlation between DHCs and craters exhibiting prominent bright rays. [NOTE: As cataloged DHCs grow in number, it would be meaningful to see if the relative abundance of dark rays associated with DHCs changes.]

7. Efforts to understand any relationship of DHCs with Lunar Transient Phenomena (LTP) resulted in limited success. For example, DHCs in the crater Alphonsus have produced sporadic LTP events over many years, but few systematic observations of DHCs in relation to LTP were carried out during the DHCP from 1971 - 1976. An internal origin of LTP is supported by the distribution and association of many LTP sites with volcanic maria, dark-haloed craters, sinuous rills, and lunar domes.
[NOTE: Consistent monitoring DHCs for LTP as part of a systematic program needs to continue.]

8. Studies of DHCs and how they relate to features like sinuous rills and lunar domes gave limited results. A few DHCs were found in the environs of sinuous rills, as well as atop lunar domes. Because lunar domes are most probably endogenic and sinuous rills are collapsed lava tubes, the idea that dark haloed craters have an internal origin is given more credence. [NOTE: The location of DHCs in the proximity of sinuous rills and lunar domes needs further study.]

It should be pointed out that some lunar craters fortuitously occur within localized dark spots or regions on the Moon. By an earlier classification scheme adopted by the DHCP, these are not considered bona fide DHCs. This convention means that craters located within dark regions that are *more than 10 times greater than the diameter of the crater itself* would not be considered a DHC. We will maintain this criterion. A complication arises, however, when two or more DHCs are clustered near one another with overlapping dark haloes. For example, dark haloes merging together when two DHCs are in close proximity to each other would take on the appearance of a elongated dark region engulfing the two craters. Thus, our criterion would be applied to the *width* of the merging haloes rather than to their combined length. An example of this scenario can be seen on the floor of Alphonsus adjacent to the West (IAU) wall.

Photographs taken from Earth or from spacecraft have not typically shown DHCs to real advantage, mainly because of the unique exposure requirements needed to enhance the contrast of the DHCs with respect to surrounding lunar terrain. It is also quite unlikely that the Moon will remain under enough rigorous photographic surveillance (via spacecraft or large Earth-based telescopes), especially under optimum contrast conditions, to spoil the dedicated efforts of DHCP observers for years to come. The amateur observer who wants to contribute something useful to our knowledge about the Moon can definitely do so.

By now, it may be quite obvious that observations of DHCs have a strong correlation with other studies of the Moon. As we have seen above, some DHCs are LTP sites, and several DHCs are located within craters that are already monitored by the Selected Areas Program (e.g., Atlas and Alphonsus). Thus, including the detection, observation, and cataloging of DHCs into the overall Selected Areas Program is justified.

The objectives of the initial DHCP have been revised as follows:

1. Using the existing DHC catalog, further confirm the existence and location of known DHCs. Survey the Moon for additional DHCs, and enter their precise location in the existing DHC catalog. A systematic, standardized approach would be to limit scans of the lunar surface to a small region at a time (e.g., 15° of selenographic longitude x 15° of selenographic latitude) when searching for new DHCs to include in the catalog.

2. Monitor each DHC throughout a lunation, and from lunation to lunation, to determine the normal albedo profile for the feature as a function of changing solar illumination. Because of the small size of most DHCs, the number of albedo reference indices used by the Selected Areas Program will need to be adjusted accordingly.

3. Further confirm or establish the morphological and dimensional characteristics of DHCs, including their overall symmetry with respect to craters vs. surrounding dark haloes, the occurrence of any associated dark rays, as well as the distribution of DHCs on the Moon.

4. Determine how soon after lunar sunrise a particular DHC is first noticed, establish the *colongitude*, *C*, when the DHC becomes most prominent, and ascertain how close to lunar sunset the DHC can still be seen.

5. Further confirm or establish the occurrence of clusters of DHCs vs. singular DHCs.

6. Further confirm or establish the occurrence of DHCs in association with features such as sinuous rills, lunar domes, etc.

7. Monitor DHCs for LTP events (data would subsequently be passed on the Lunar Recorder in charge of the Lunar Transient Phenomena Patrol).
8. Use extensive drawings, photographs, CCD images, and video tape to help support and achieve the objectives of the DHCP.

With only slight modification, individuals would use the same observational procedures, methods, and techniques normally employed by the Selected Areas Program when observing DHCs. For the convenience of the observer, a *DHC Observing Form* has been developed for use in recording DHCs. In most cases, observing DHCs is easy and less time consuming than regular SAP observations. In terms of their visibility, the relative sizes of DHCs range from diminutive craterlets near the threshold of resolution of larger instruments to the crater Picard, which is fairly conspicuous. So, the majority of DHCs are within reach of a 10.2 cm. (4.0 in.) to 15.2 cm. (6.0 in.) aperture, but instruments in excess of 20.0 cm. (8.0 in.) are recommended for more detailed work. In the final analysis, the main factor that affects visibility of DHCs, aside from atmospheric seeing and transparency, is varying illumination by the Sun. Observers will soon discover that there is a particular phase of the Moon when a specific DHC will be most prominent in contrast with its environment. Yet, even though optimum observing times need to be established for each DHC, it is just as important to know what the overall pattern of visibility for each DHC is throughout a lunation.

Although filling out the *DHC Observing Form* is fairly straightforward, the following tips may be worth considering:

1. Use only one form for each DHC observed.

2. Lunar maps and atlases of differing vintage exist among observers. Positional data for DHCs may be expressed using *xi* and *eta* coordinates, as well as *Selenographic Longitude* and *Selenographic Latitude.* Either or both coordinates are useful. Enter descriptive data about the "Environs" in which the DHC is located [e.g., "DHC located on floor near W (IAU) wall of Alphonsus"] should always be included. Always enter the *colongitude, C,* for the date and time of the observation.

One of the easiest ways to determine the position of a newly confirmed DHC, or to check the positional accuracy of an existing DHC, is to make a copy of the region containing the DHC from a lunar atlas depicting coordinates. Using the copy, sketch in the position of the DHC, paying attention to the relative size of the crater and dark halo, and measure the coordinates of the feature later. Some observers actually make drawings on copies of lunar maps, attaching them to the observing forms.

3. Using lunar features of known dimensions, estimate the diameter of DHCs in kilometers whenever possible (careful use of kilometer scales on lunar maps will improve accuracy).

4. Estimates of albedo (intensity) should be made by reference to *Elger's Albedo Scale,* and albedo data should be linked to specific indices on the DHC (in most cases, there will be an index for the crater itself, another for the dark halo, and one for the surrounding terrain). Utilization of the *Albedo and Supporting Data Form* (same as that used for the Bright & Banded Craters Program) is essential for recording intensity data, and it should be attached to the *DHC Observing Form.* Information that is duplicated on the two forms need not be entered twice.

5. Drawings of DHCs should be made on the *DHC Observing Form.* Make certain that the direction of North (N) is clearly indicated on the drawing (attention should be given to the proper field orientation of the eyepiece). Also, supplement drawings with good photographic, CCD, or video images of DHCs in an effort to capture their overall characteristics during different solar illumination conditions. It would be useful to record the appearance of DHCs in different color filters and variable-density polarizers, too.

6. In the "Descriptive Notes" section of the *DHC Observing Form,* include information that may not be immediately apparent on the rest of the form or drawing. Notes should be made about the symmetry of the DHC with respect to the surrounding dark halo, whether the crater and/or dark halo is circular or elongated, etc. If the crater and/or dark halo is non-circular, notes describing the orientation of the major axis of the feature should be included.

7. Submit observations at the end of a given lunation along with any photographs, video tapes, or CCD images to the A.L.P.O. Lunar Section.

Links to Observing Forms for the Dark Haloed Craters Program (PDF)

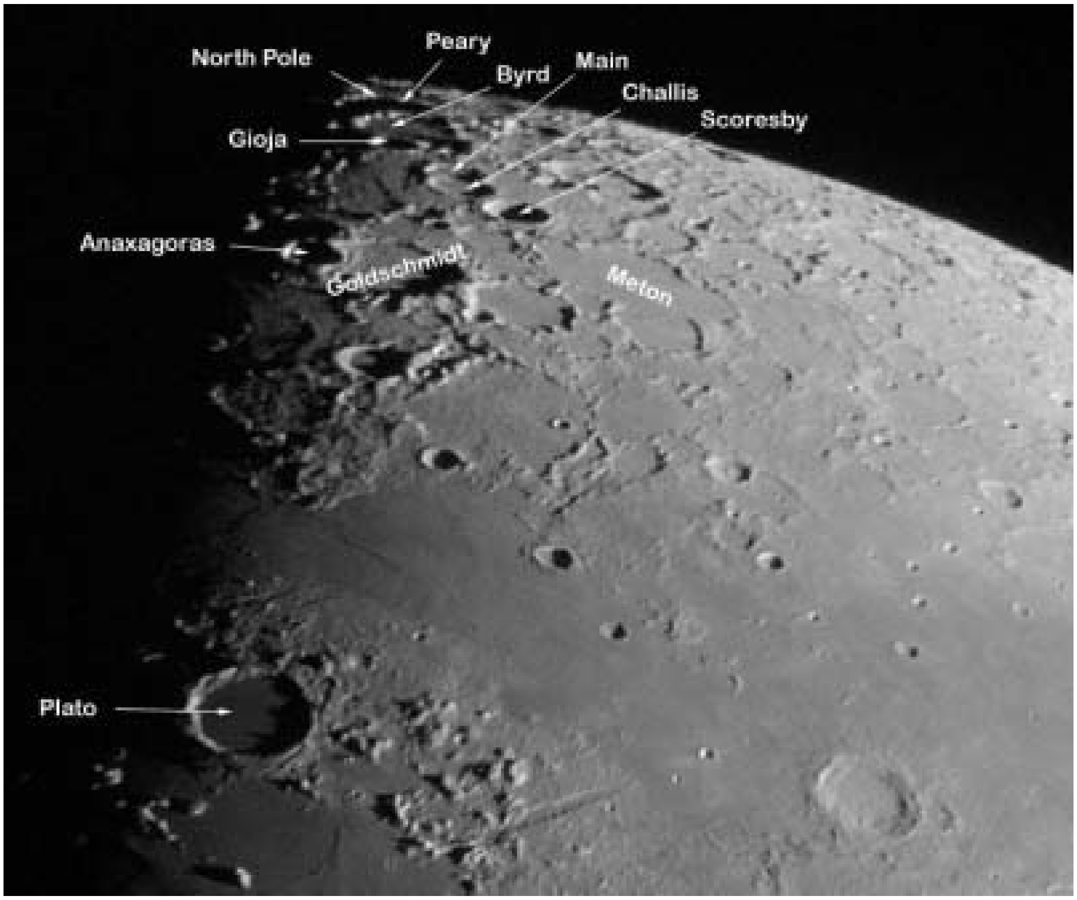
DHCP Observing Form: http://www.zone-vx.com/alpo-dhcp-observing.pdf

Albedo & Supporting Data Form: http://www.zone-vx.com/alpo-bbcp-albedo.pdf

DARK HALOED CRATERS WITHIN ALPHONSUS
Digital image by Bill Dembowski - Elton, Pennsylvania, USA
October 30, 2006 - 22:41 UT - Colongitude: 18.9 - Seeing 5/10
8 inch f/10 SCT - Celestron NexImage

STEPS TO THE LUNAR NORTH POLE

Howard Eskildsen - Ocala, Florida, USA



NORTHERN HEMISPHERE
October 1, 2006 - 00:59 UT
10 inch f/6 Reflector - MaxView 40 Eyepiece - 2x Barlow
Nikon Coolpix 4300

STEPS TO THE LUNAR NORTH POLE:

North of Plato the fresh crater Anaxagoras splashes rays over Goldschmidt, Meton and the northeastern highlands. North of Meton, Scoresby (with double central peak) begins a distinctive group of craters that lead to Peary and the north pole.

Follow the overlapping craters Challis and Main to Gioja and Byrd. The next crater is Peary where the north pole rests near its far rim. In this photo a region, which I think of as “south of north”, is visible beyond the pole.

LUNAR TOPOGRAPHICAL STUDIES

Coordinator - William M. Dembowski, FRAS
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OBSERVATIONS RECEIVED

WAYNE BAILEY - SEWELL, NEW JERSEY, USA
Digital images of Pytheus, Aristillus & Thaetetus, Ball, Birt & Nicollet, Menelaus & Dawes, Domes near Milichius, Eudoxus & Conon, Burg & Lacu Mortis

STEVE BOINT - SIOUX FALLS, SOUTH DAKOTA, USA
Digital image of Mare Crisium

COLIN EBDON - COLCHESTER, ESSEX, ENGLAND
Sketches of Encke & Kepler, Furnerius, Legrendre, Taruntius

HOWARD ESKILDSEN - OCALA, FLORIDA, USA
Digital images of Mare Crisium & Mare Fecunditatis, Mare Serenitatis, Eastern Mare Imbrium, Eratosthenes to Guericke, Clavius & environs, Bettinus & Casatus, Schiller & Zucchius region, Clavius, Maginis, M. Crisium & M. Marginis & M. Smythii, Northern Hemisphere (2), Herschel & Arnold (2)

PAULO LAZZAROTTI - MASSA, ITALY
Digital image of Mare Crisium, Northwestern Limb, Mare Nectaris, Stofler & Maurolycus, Purbach & Werner, Clavius to Tycho

GERARDO SBARUFATTI - CASELLE LANDI, ITALY
Digital images of Aristarchus, Bode, Kepler

ALEXANDER VANDENBOHEDE - GHENT, BELGIUM
Digital images of SW Limb near Mare Orientale (2), SE Limb near Humboldt (2), SW Limb near Mare Australe, NE Limb near Gauss, NE Limb near Joliot, Messier & Messier A, Aristarchus Plateau

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:

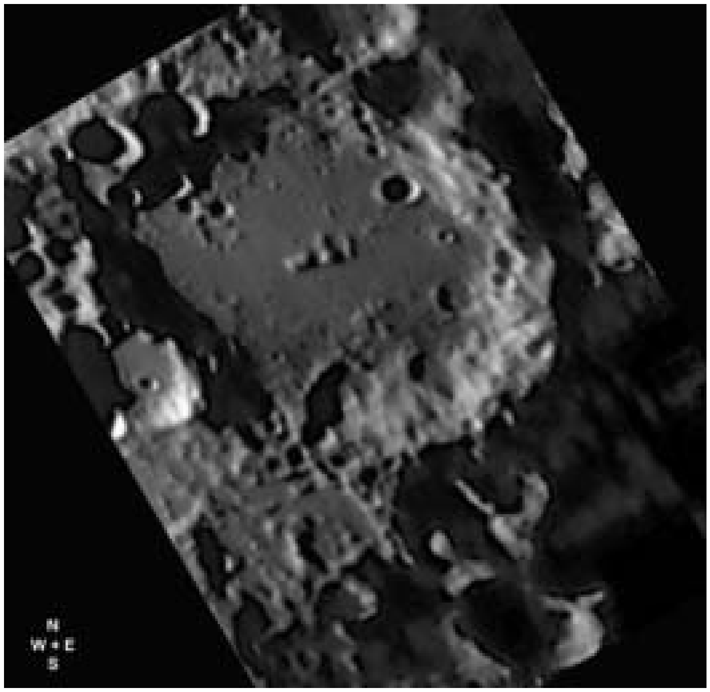
Name and location of observer
Name of feature
Date and time (UT) of observation
Size and type of telescope used
Orientation of image: (North/South - East/West)
Seeing: 1 to 10 (1-Worst 10-Best)
Transparency: 1 to 6
Magnification (for sketches)
Medium employed (for photos and electronic images)

RECENT TOPOGRAPHICAL OBSERVATIONS

KEPLER, T.MAYER, MILICHIUS, HORTENSIUS DOMES
Digital image by Wayne Bailey - Sewell, New Jersey, USA
October 3, 2006 - 01:46 UT - Colong: 39.3 - Seeing 6/10
Celestron 11 inch f/10 SCT - IR72 Filter - Philips Toucam

MARE CRISIUM
Digital image by Steve Boint - Sioux Falls, South Dakota, USA
May 3, 2006 - 02:20 UT - Average seeing
10 inch f/4.5 Newtonian - Dob mount - 2x Barlow - Philips Toucam Pro
Mosaic of 15 images - Average of 150 frames stacked per image

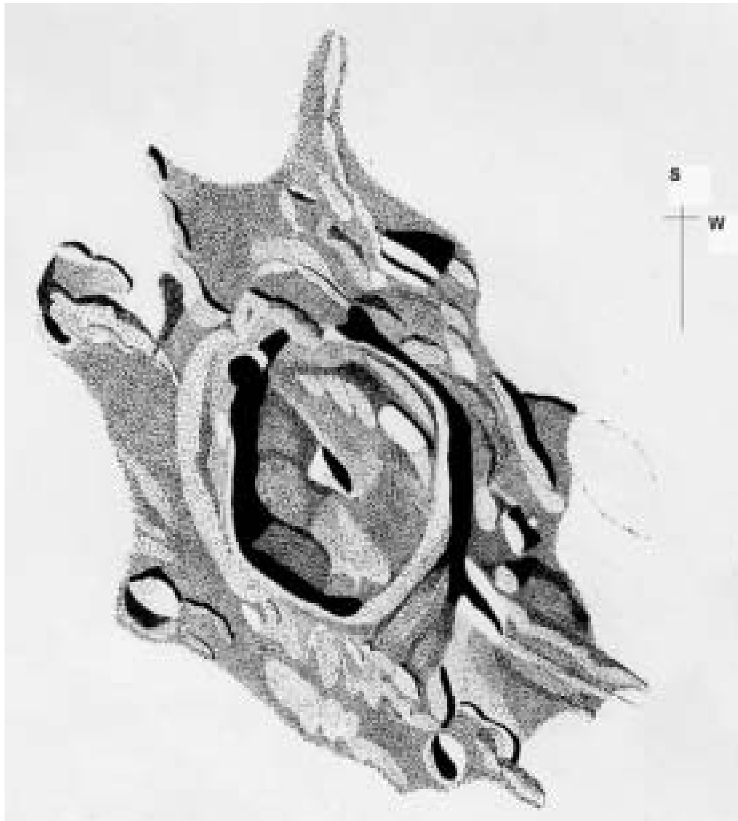
RECENT TOPOGRAPHICAL OBSERVATIONS



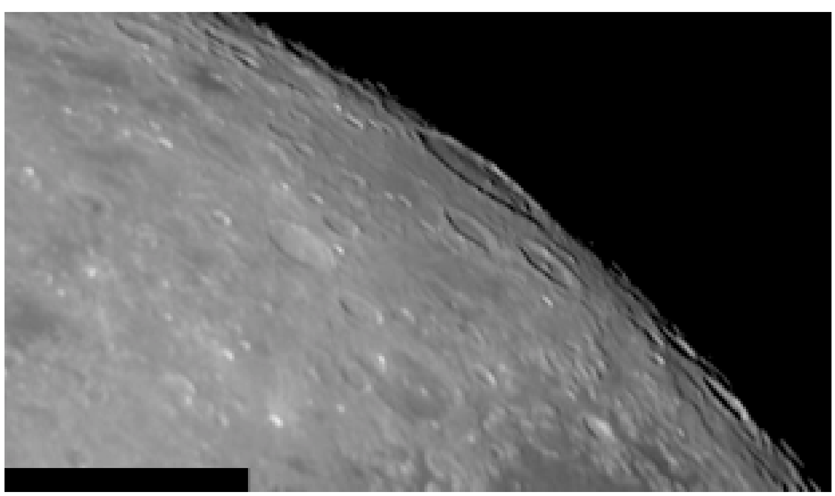
MAGINUS
Digital image by Howard Eskildsen - Ocala, Florida, USA
October 6, 2006 - 10:45 UT - Seeing 7/10 - Transparency 5
Meade 6 inch f/8 Refractor - IR Block Filter - NexImage Camera

BODE
Digital image by Gerardo Sbarufatti - Caselle Landi, Italy
October 11, 2006 - 03:03 UT - Seeing II-III Ant. - Trans: 4/5
Celestron 8 inch f/10 SCT - 2x Barlow - Red filter
Mpeg2 100 sec. at 25fps 1,000 Best frames with KamPro02 camera

RECENT TOPOGRAPHICAL OBSERVATIONS

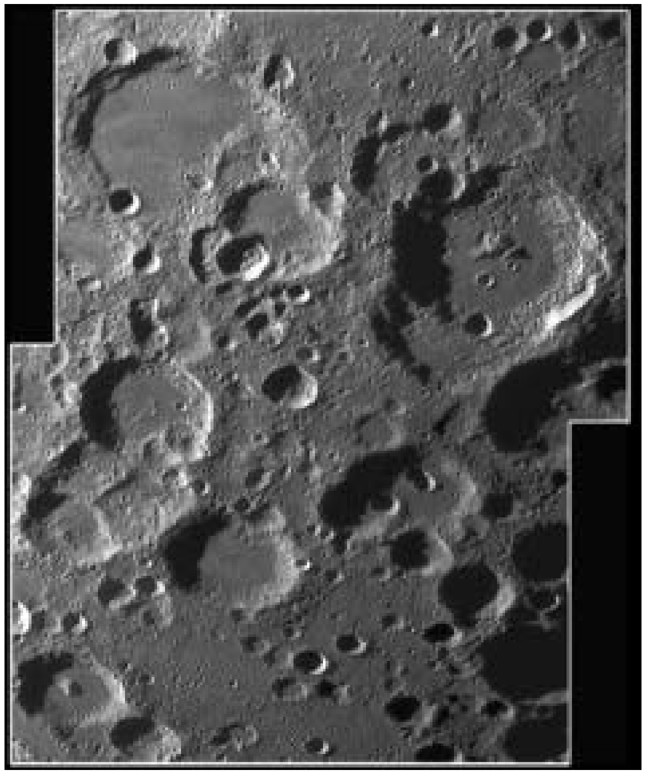


TARUNTIUS
Sketch by Colin Ebdon - Colchester, Essex, England
September 10, 2006 - 21:30 to 22:45 UT - Colong: 128.53 to 129.17
Seeing: AIII improving steadily to AII - Trans: Very good
7 inch F/15 Maksutov-Cassegrain - 225x



NORTHEAST LIMB NEAR GAUSS
Digital image by Alexander Vandenbohede - Ghent, Belgium
October 7, 2006 - 19:30 UT
Celestron C8 f/10 SCT - Webcam

RECENT TOPOGRAPHICAL OBSERVATIONS



STOFLER, MAUROLYCUS, & HERACLITUS
Digital image by Paolo R. Lazzarotti - Massa, Italy
September 13, 2006 - 04:11 to 04:14 UT - Seeing 5/10 - Trans: 4/5
Gladio 315 Lazzarotti Opt. scope - Lumenera Infinity 2-1M Camera
Edmunds Optics R filter - 42 msec. exposure
0.24 arcsec/pixel image scale (binning 2x2) 250/4000 frames scaled to 130%

A.L.P.O. LUNAR COORDINATORS

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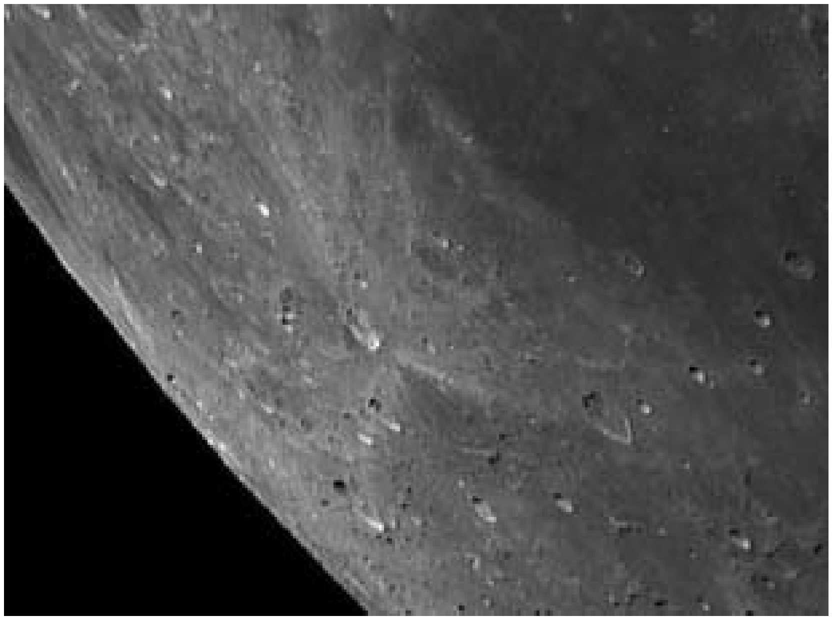
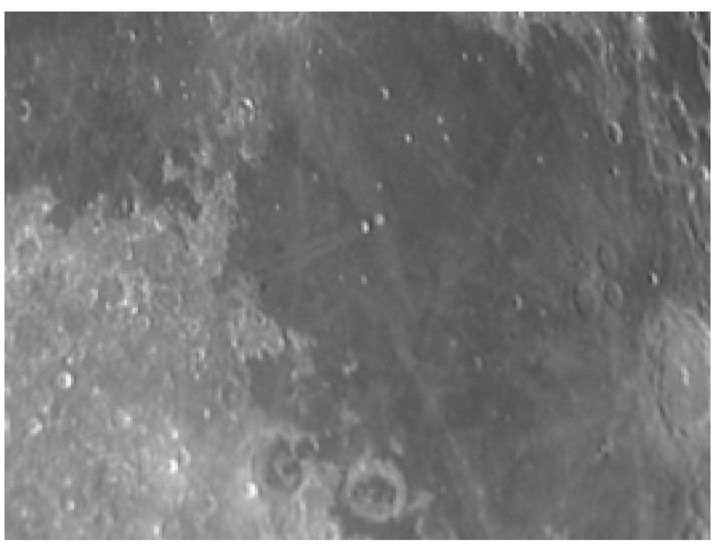
Marvin W. Huddleston – Coordinator, Lunar Dome Survey
kc5lei@comcast.net

BRIGHT LUNAR RAYS PROJECT
Coordinator - Willliam M. Dembowski, FRAS

RECENT RAY OBSERVATIONS



THALES
Digital image by Guilherme Grassmann - Americana, Brasil
September 3, 2006 - 20:59:29 UT - Seeing: 8/10 - Trans. 5/6
10 inch f/10 SCT - No filter - Philips Toucam Pro



MARE FECUNDITATIS
Digital image by Alexander Vandenbohede - Ghent, Belgium
October 7, 2006 - 22:00 UT
Celestron C8 f/10 SCT - Webcam

LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – acc@cs.nott.ac.uk
Assistant Coordinator – David O. Darling - DOD121252@aol.com

LTP NEWSLETTER - NOVEMBER 2006

Dr. Anthony Cook - Coordinator

Observations were received for 2/3 September, mostly related to the attempts to observe the SMART-1 impact flash or subsequent debris, which could have potentially happened on 2 orbits before, 1 orbit before, on the planned orbit, or 1 orbit after. I made some observations two orbits before using the University of Nottingham robotic telescope in remote control mode, but fortunately saw nothing and anyway the orbit had been raised at this point. David Darling (WI, USA) went for one orbit before but saw nothing apart from an aircraft flying in front of the Moon, across the line of sight. Larry Wadle (TX, USA) went for the planned orbit but with the Moon only 7 deg above the horizon, he saw nothing. Finally Kath Teychenne (Australia) went for a later orbit, but by this time the probe had crashed on it's planned orbit. Thanks to all observers who participated – nobody really knew for sure what to expect and it was good to have observers standing by, just in case. We also received routine observations (nothing to do with SMART-1), from Michael Amato (CT, USA) who observed on 7-10th and 13th Sep., concentrating on Proclus, Menelaus and Aristarchus. Routine reports were also received from Marie Cook, who is now back in operation again. Finally I would like to welcome BAA lunar section member Rod Hobbs to the team.

Please support Brian Cudnik of ALPO in looking out for Leonid impact flashes on the Moon during 2006 Nov 16-18, and especially close to 05:34UT on Nov 17th. There may be a surge in activity and although nowhere near as strong as in previous years, the Leonids are high velocity and are more likely to create visible flashes than other showers.

Not much luck lunar-observation-wise with the robotic telescopes here in Nottingham. Usually when the Moon has been around it has been too low, or the weather has worsened, or I have been busy with academic tasks which have to be completed before the next day! However I have been able to get the 11" Celestron scope working on some deep sky objects in order to try out the different filters – see: http://www.cs.nott.ac.uk/~acc/Robotic_telescopes.html . This has not been without problems, trying to get the scopes aligned on bright stars for the initial set up has taken ages as this has had to be done remotely over an internet link. Also now for the cooled ATK-16 CCD camera on the Celestron scope I have been experiencing humidity and frost problems which have degraded image quality on a number of occasions. Hopefully a recently installed dehumidifier will help to reduce this problem in future! The 10" Meade scope has been a bit more temperamental in the set up procedure and as yet I have not got this working properly in goto mode. Hopefully with nights lengthening in the UK I can go upto the roof one night and manually sort out the set/up alignment. I hope to use this scope in particular for occultations, impact flash detection and searching for LTP with some narrow band or Polaroid filters.

Suggested observing predictions, including the more numerous illumination only events can be found on the following web site: http://www.lpl.arizona.edu/~rhill/alpo/lunarstuff/ltp.html. 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!

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THE MOON IN THE NEWS

SMART-1 Image of highlands near crater Pentland:

http://www.esa.int/SPECIALS/SMART-1/SEMW67BUQPE_0.html

SMART-1 view of Shackleton crater:

http://www.esa.int/SPECIALS/SMART-1/SEMP7QOFHTE_0.html

Several reports (of many) on recent efforts to detect water ice on the Moon:

http://www.moontoday.net/news/viewpr.html?pid=21086

http://sciencenow.sciencemag.org/cgi/content/full/2006/1018/1

http://news.bbc.co.uk/2/hi/science/nature/6061984.stm

http://www.universetoday.com/2006/10/18/no-ice-at-the-moons-southern-pole/

NASA plans for Lunar Reconnaissance Orbiter:

http://www.al.com/news/huntsvilletimes/index.ssf?/base/news/1161422183294500.xml&coll=1

Interview with Neil deGrasse Tyson on lunar exploration:

http://www.loe.org/shows/segments.htm?programID=06-P13-00043&segmentID=7

Science News - The Eclipse That Saved Columbus:

http://www.sciencenews.org/articles/20061007/mathtrek.asp