THE LUNAR OBSERVER

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A PUBLICATION OF THE LUNAR SECTION OF THE A.L.P.O.
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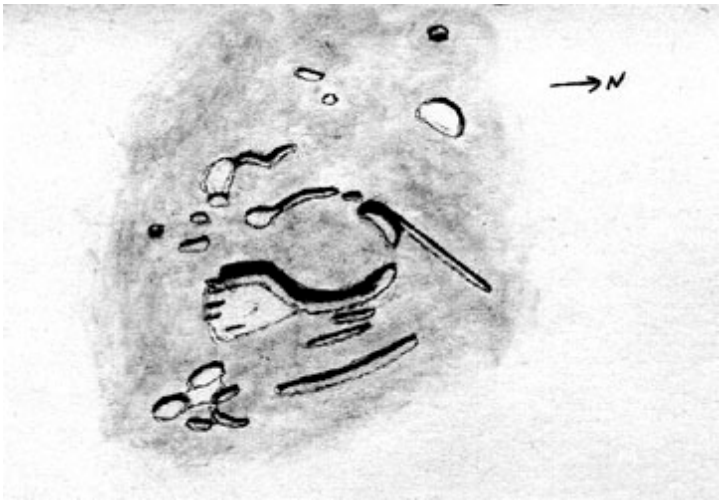
FEATURE OF THE MONTH - JULY 2005



WOLF

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
February 19, 2005 - 00:01 to 00:22 UT
15cm Newtonian - 170x - Seeing 7-8/10

I sketched this feature on the evening of Feb. 18/19, 2005 while observing three occultations. This curious feature is located near the center of Mare Nubium and has a variety of detail nearby. The main object is a broken elongated crater that is actually the combination of Wolf and Wolf B, according to the LQ Maps. The tiny pit Wolf E is to the south, while the larger pit Wolf A is to the northwest. There are several narrow ridges to the north and east; one was attached to the largest intact portion of Wolf's north rim. A bright area is east of Wolf A. This feature must be an elevation due to some slight shadowing that was noticed. A scattering of low peaks and small ridges is near Wolf E, along with a bright, shadowless spot.

There is another bright area immediately adjacent to Wolf and Wolf B to the southeast. This area has several little bits of shadow within it. There are more low elevations farther to the east with a bright area within them. Some of them might be a partial ghost ring.

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.

FOUR DOME-LIKE FEATURES IN THE REGION OF THE ARISTARCHUS PLATEAU

By Raffaello Braga, Antonio Marino and Fernando Ferri
(UAI Lunar Section, BAA L.S. Geological Sub-section)

Foreword

The purpose of this article is to invite readers to participate in one of the very few fields of the lunar topographical studies that remain open for amateur research even after decades of lunar exploration from space: the observation of lunar volcanic (or not at all volcanic) domes. Domes are very low and gentle reliefs that can be observed only when the terminator is very close to them, i.e. when the Sun is low on the local horizon. Dome slopes range typically between 1° and 5° - although more steep domes are known, and this is the reason why domes have been long neglected by the observers of the past in comparison with other more prominent features as the mountain ranges or the large craters.

Domes attracted the attention of the amateur community since planetary scientists established the true nature of these features as the lunar counterparts of the terrestrial volcanic shields. This is one of the many examples of how amateur work has changed following the advances in the understanding of our planetary system, as one can see by comparing the work and the objectives of the planetary observers before and after the space age.

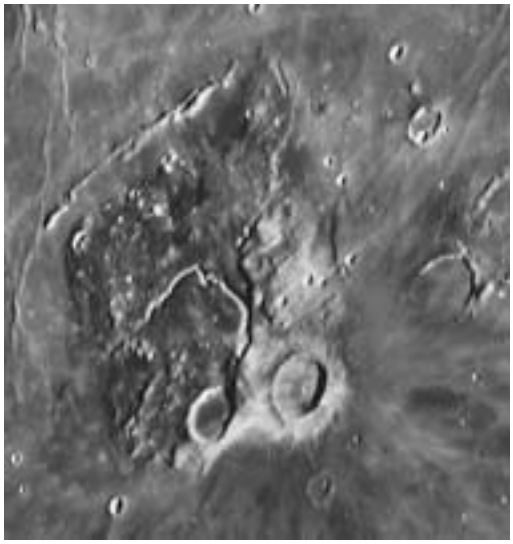


Figure 1

The Aristarchus Plateau is magnificently exposed in the Consolidated Lunar Atlas plate

The relationship between the domes and the geological processes that operated on the lunar surface has been well established. Most domes have been catalogued by both amateurs and professionals [1] [2] and a considerable number of them have been studied in detail. Every now and then “new” domes are added to the catalogues but the discovery of unknown domes of some unusual type is very unlikely today. Almost certainly our basic knowledge of domes will not change until in-situ geological surveys will be possible. However, more important than the addition of new domes to the existing lists is the refinement of the shape and dimension of those that have been already reported. Amateurs have a great advantage over the space probes in respect to this: they can choose when to observe by accurately calculating when the terminator is in the ideal position for studying a given dome or dome field. Moreover amateur work is not a time-limited activity while space missions can span for only few months or years. The same feature can thus be observed many times under different illumination conditions.

In this article I would like to invite observers to point their telescopes toward four dome-like features in the region of the Aristarchus Plateau. One of them is certainly a dome, the remaining three may or may not be true domes, further data are needed. Before to go into the details it can be useful to briefly summarize the main characteristics of the region.

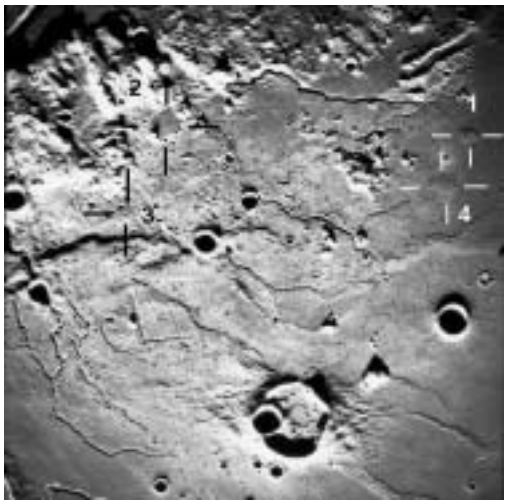


Figure 2

The four dome-like features described in the article as shown on the Apollo 15 M-2084 image (NASA). W is at top, S at left. The perfectly round crater at right is Wollaston, the larger irregular crater at bottom is Krieger.

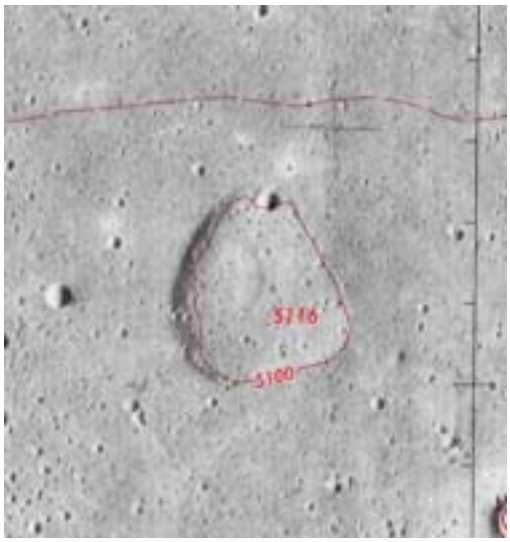
Geologic setting

The Aristarchus Plateau is a roughly rectangular crustal platform (170 x 220 km) raised over the northern Oceanus Procellarum surface, west of Mare Imbrium (Figure 1). The orientation of the platform sides is consistent with the tectonic setting of the Imbrium basin, therefore it has been generally assumed that the formation of the plateau was genetically related to that of the basin [4], although the details of the process that led to the uplift of this crustal block are still poorly known.

The block can be clearly traced on its north-western, south-western and south-eastern sides, while the north-eastern side is less defined and has been considerably disturbed by later geological event. Since its formation the block has been subjected to surface modifications. Basaltic lavas erupted both on the plateau and all around it, leaving a complex system of rilles and eruptive vents that can be easily recognized as elongated rimless craters associated with rilles.

Figure 3

Dome #1 as reported in the LTO39A1 chart (NASA). The rimless summit depression is clearly visible.



Based on the crater density and spectral properties the age of the lavas surrounding the plateau seems to decrease counter-clockwise from the north-eastern border (old Imbrian mare) to the west and south-west (Eratosthenian mare). A large part of the plateau and probably of the adjacent terrains have been mantled by a layer 10 to 30 meters thick [5] of volcanic glasses that form a so-called DMD, a Dark Mantle Deposit, on which the ejecta from the recent crater Aristarchus finally deposited. The region that form the subject of the present article is located north of crater Aristarchus, partly on the platform - on a cratered terrain heavily disturbed by the Aristarchus event, and partly just outside of it between craters Nielsen and Wollaston. To follow the discussion below the reader can refer to the Lunar Map No. 39 "Aristarchus" (http://www.lpi.usra.edu/resources/mapcatalog/LM).

Figure 4

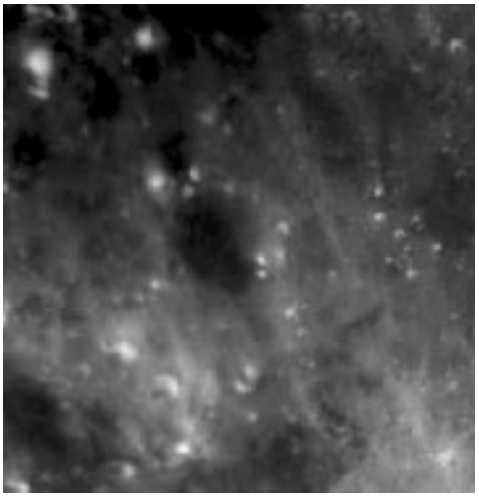
Detail of AS15-M-2611 photograph showing feature #2.

Feature #1

Of the four domelike features that I am describing here, dome #1 (refer to Figure 2) is the only one that can be surely defined as a volcanic construct. We have detected it the first time on the Apollo 15 AS15-M-2083 and 2084 photographs. It is very clearly visible on the chart LTO39A1 of the NASA Lunar Topographic Orthophotomap series, where it is reported as a low hill less than 50 m high. On the large summit there is an elongated depression barely visible on the LTO where it shows a crescent-like shape (Figure 3). On the above mentioned Apollo image, however, the depression seems to be a little more to the north. Its shape and position and the absence of a raised rim indicates that this vent could be a collapse feature possibly of the caldera type.

Figure 5

Feature #2 on the 750 nm Clementine imagery. Note the contrast between the dark terrain on the west and the bright ray passing on the east side of the feature.



Feature #2

The feature numbered as 2 in the Apollo 15 image is a more enigmatic structure. Let's look at the Figure 3, which is a detail from the AS15-M-2611 photograph. The feature seems to have a W-E axis with elevation decreasing from E to W like a whaleback. The same shape but more rounded like a bubble is apparent from the C21 plate of the Consolidated Lunar Atlas (see the detail in Figure 6) and also from a couple of telescopic images that I collected among the members of the UAI Lunar Section (not reproduced here). What leaves me suspicious about the nature of this supposed dome is a Clementine image obtained through the USGS PDS Clementine browser (Figure 5). It clearly shows that a ray and ejecta from Aristarchus crater pass just on the E edge of the feature while on the W the dark mantling remained uncovered.

Because the contour elevations reported in the LTO39A4 map confirm that the "dome" height decreases toward W and all the images I examined have been made at the local morning with the sunlight coming from E, I am wondering if the bright ray and the dark mantling can exaggerate the light-and-shadow effect and then the impression of a rounded feature. In this case the dome would be only an illusion reinforced by the presence of a semicircular arrangement of secondary craters marking the E border of the "dome". One shall note that the NASA LM39 shows here a curved cratered ridge enclosing what seems a plain. Should this map be accurate the feature would be all but a dome, of course.

Figure 6

Feature #2 as shown on the CLA plate No. 21. The rounded shape is apparent.

Feature #3

This dome-like feature is placed just in the middle of the rugged plain bordered on the east by the Rupes Toscanelli. We noticed this feature the first time on a series of CCD images (Figure 7) taken under similar illumination conditions (Col. about 62°, Sun alt. 10-12°) showing a "bulge" located at Lat. 27.05° N. The bulge is evident also on the C20 plate of the CLA. The Apollo 15 imagery (Figure 2) shows what seems a small hill with a crater on the top. The hill seems a little darker than the surroundings but I have been unable to find a confirmation of this characteristic even on the Clementine 750 nm images. The geologic map of the area sketched by Zisk et al. reports that in the zone there is a wrinkle ridge that runs parallel to the Rupes. Something of this kind can be seen on the AS15-93-12616 and AS15-88-12005 photographs as well on the LO IV-151-H1.

I am not sure that the small crater numbered 3 in Figure 2 actually corresponds with the relief visible in the CCD images because the difference in detail between these images and the Apollo 15 one is enormous, however the bulge is there, at least at low resolution. In this area there are elongated rimless craters that could be regarded as endogenic features or as degraded secondary impact craters. Further CCD images would be necessary to confirm or reject the domelike nature of this swelling.

Should it turn out to be a dome its close association with the above mentioned ridge would place it into the class IV of the dome classification scheme [1].

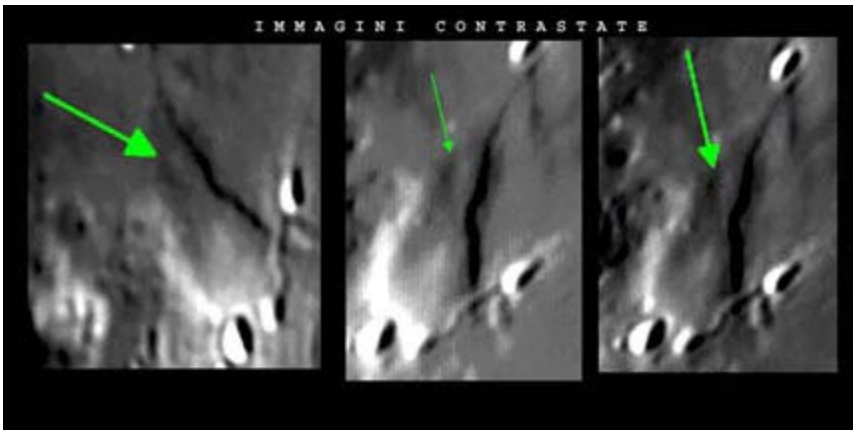


Figure 7

The "bulge" of feature #3 on CCD images from UAI members Antonio Marino, Marco Sellini and Davide Zompatori (left to right). Contrast has been enhanced for clarity.

Feature #4

I have been able to locate this structure only on the Apollo 15 imagery, namely on the 2083 and 2084 photographs already mentioned in connection with feature #1. It is a quite large swelling 9 x 7.6 km between dome #1 and a nameless large ridge W of Wollaston. It is adjacent to a similar and probably younger feature which is even more elusive but clearly visible in Figure 2 as well. I could not find this dome on other images of the area and also the LTO39A1 chart doesn't report it. At the resolution of the Figure 2 and on the IV-151-H1 the surface of the dome shows no details except from a number of small impact craters.

Conclusions

Four dome-like features in the region of the Aristarchus Plateau have been identified on telescopic and spacecraft imagery. The nature of features #2 and #3 needs to be further investigated by using of high-resolution CCD images, possibly during favourable libration conditions. Images, drawings and observing notes about this area are very much welcomed by the authors.

The study of lunar domes and the search for unreported ones is the main goal of a joint UAI-BAA lunar geology project (http://luna.uai.it/domi/domes.htm, http://luna.uai.it/Duomi/index.htm). This project is intended as a contribution to the ALPO Lunar Dome Survey (http://www.lpl.arizona.edu/~rhill/alpo/lunar.html) whose scope is the updating and the expansion of the ALPO Lunar Dome Catalogue [3] [6]. Our discussion group (which is not limited to lunar dome study) can be accessed at http://groups.yahoo.com/group/sezionelunauai.

Feature No.	Dimensions (km)	Long.	Lat.	Class	Reference map
1	5.4 x 6	-49.26	+30.60	II	LTO39A1, LM39
2	11.3 x 9.8	-48.92	+27.41	V (?)	LTO39A4, LM39
3	N.D.	-47.84	+27.05	IV (?)	LTO39A4
4	9 x 7.6	-48.60	+30.30	III	None found

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AN UNLISTED DOME NEAR CAUCHY
Located at 36.75° E and 11.06° N

By Raffaello Lena, Christian Wöhler, Jim Phillips, Maria Teresa Bregante and Paolo Lazzarotti (GLR Group)

1) Introduction

The study of domes provides lunar observers with an opportunity for systematic observations of the Moon.

Mare Tranquillitatis occupies a pre-Nectarian impact basin and the lavas are extensive but thin [1].In Mare Tranquillitatis there are numerous wrinkle ridges and obviously domes. Moreover, in the Cauchy region lie the well-known features Rima Cauchy (a graben) and Rupes Cauchy (a fault). These were probably caused by the shock wave from the Imbrium impact [2]. Several domes are developed along the extension of Rupes and Rima Cauchy, which are oriented radially to the Imbrium basin. Domes associated with a graben along a strike are interpreted to be formed by dikes that are very shallow [3].

The region near Cauchy has been very well monitored by the GLR group. In this study we report measurements and include CCD images of the lunar dome located at 36.75° E and 11.06° N (Xi 0.587 Eta 0.192). It is, to our knowledge, previously unreported by any lunar dome survey.

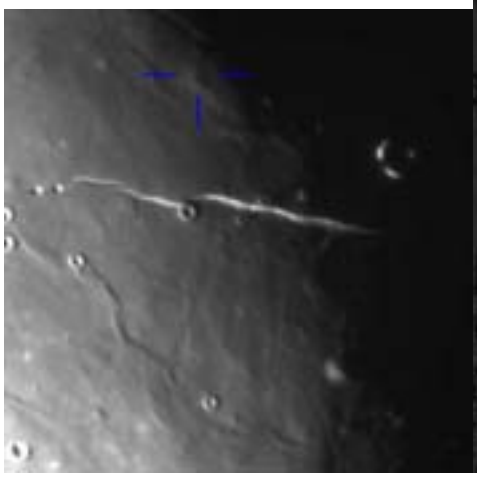

Figure 1 **Figure 2**

(See details in text)

For each of the observations, the local lunar altitude of the Sun (H) and the Sun's selenographic colongitude (C) were calculated using the Lunar Observer's Tool kit by H. D. Jamieson (ALPO). Figure 1 displays the dome under a lower solar altitude. This image was taken by J. Phillips on October 3, 2004, at 07:45 UT (H = 0.60°, C = 142.78°). Figure 2 displays the Cauchy dome field. This image with a scale of 365 m per pixel was taken on April 13, 2005, at 19:24 UT by P. Lazzarotti (H = 2.55°, C = 325.84°). The dome's eastern flank does not show a black shadow on the raw image, but a dark grey shading (penumbra) of the dome's flank. Figure 3 shows an image taken by C. Wöhler on January 15, 2005, at 16:56 UT (H = 9.52°, C = 333.26°) with a scale of 954 m per pixel.

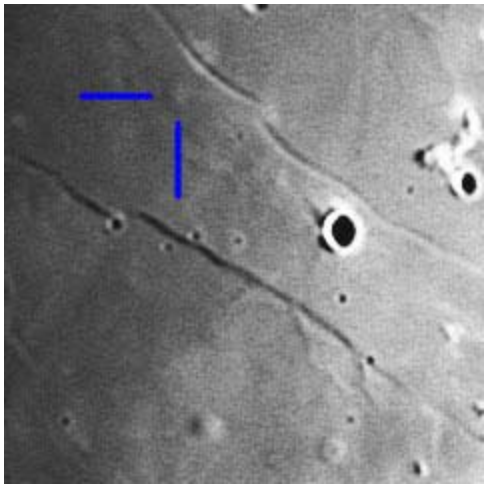

Figure 3 (See details in text)

Information about the vertical cross-section was obtained using the Ashbrook method [4]. Using this method, we estimated on the raw image of Figure 1 the fraction x of the dome's east-west diameter that is covered by black shadow. The corresponding scale of the image amounts to 0.460 km per pixel, allowing diameters and shadow lengths to be expressed in kilometres. According to Ashbrook [4], the average slope of the dome flank is equal to the solar altitude when x = 0.25, assuming a hemispherical shape of the dome. The height H of the dome was then calculated by equation (1):

$$H = r (\tan s)$$

where r is the radius of the dome of (6.1±0.460) km and (tan s) is the tangent of the average slope angle when the dome is covered by one-fourth with black shadow (x = 0.25). Moreover, we were able to distinguish between the black shadow and the dark grey shading of the dome flank which represents grazing illumination by sunlight. It turns out that the summit of the dome is (61±15) metres higher than the surrounding plain. The average slope was thus measured as 0.60°±0.15° in Figure 1. The dome appears to be associated with a ridge segment. Due to the extraordinarily gentle slope of its flank and the lack of a summit crater we believe that it is of intrusive origin.

The height values reported in Table 1 were derived by photoclinometric analysis (cf. [8] and references therein). From the image shown in Figure 2 the height of the newly discovered dome was measured as (75±15) m, in agreement with the result of the Ashbrook method.

Table 1: Morphometric properties of features in Figures 2 and 3 (see also Figure 4)

Feature	Longitude	Latitude	Solar altitude	Diameter (km)	Height (m)	Slope (°)
Dome 1	36.75°	11.06°	2.60°	12.2±0.365	75±15	0.70±0.15
Cauchy Tau	36.73°	7.58°	2.61°	17.0±0.365	190±20	1.28±0.14
Cauchy Omega	38.32°	7.23°	4.19°	12.2±0.365	125±15	1.17±0.15

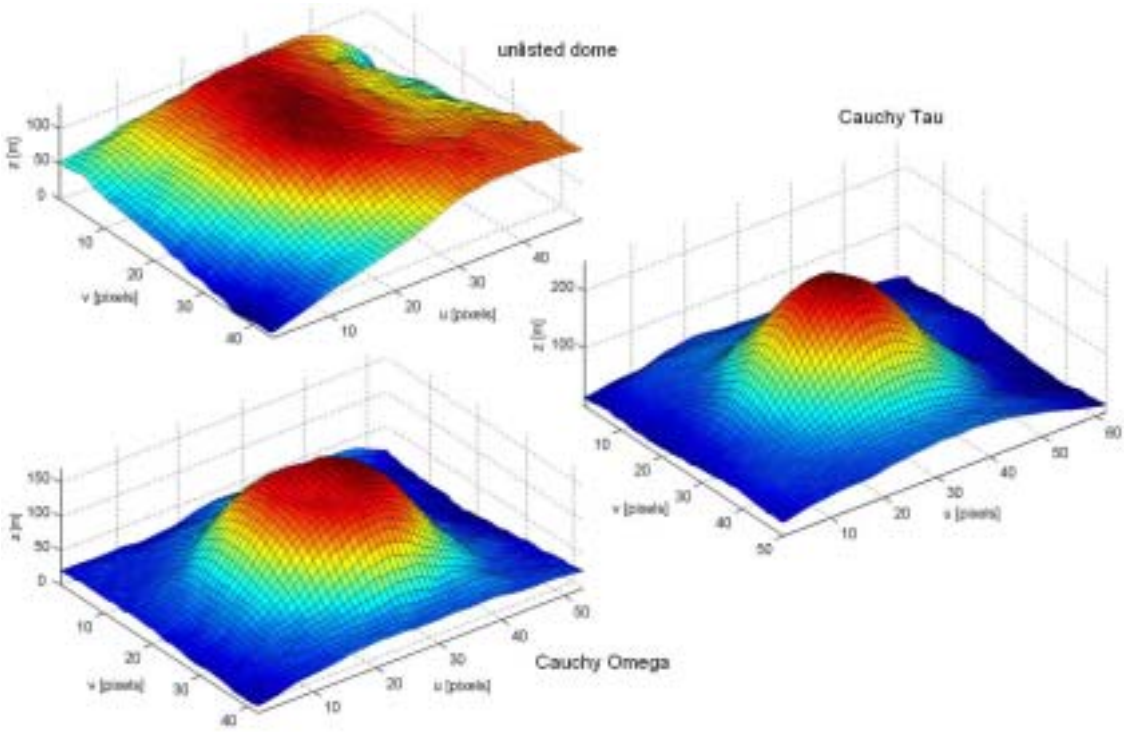

Figure 4

Due to the higher solar altitude, this feature appears only faintly on Lunar Orbiter frame IV-052-H2 (see Figure5).

Table 1 also reports the well-known domes Cauchy Tau and Omega. For the dome Cauchy Tau our estimation indicates a height of (190±20) and a gentle slope of (1.28°±0.14°). For Cauchy Omega we obtained a height of (125±15) m and a slope of (1.17±0.15°). As a note of interest, in Table 2 we state for Cauchy Omega the data published in a file report of the US Geological Survey [5]. In this work the authors present data about the morphometric properties (diameter, height, depth of the summit crater) of 18 lunar volcanoes. These were computed from Lunar Topographic Orthophotomosaics, Lunar Orbiter imagery, and Apollo images. A recent LPOD item focused on the dimension of these Lunar Volcanoes [6].

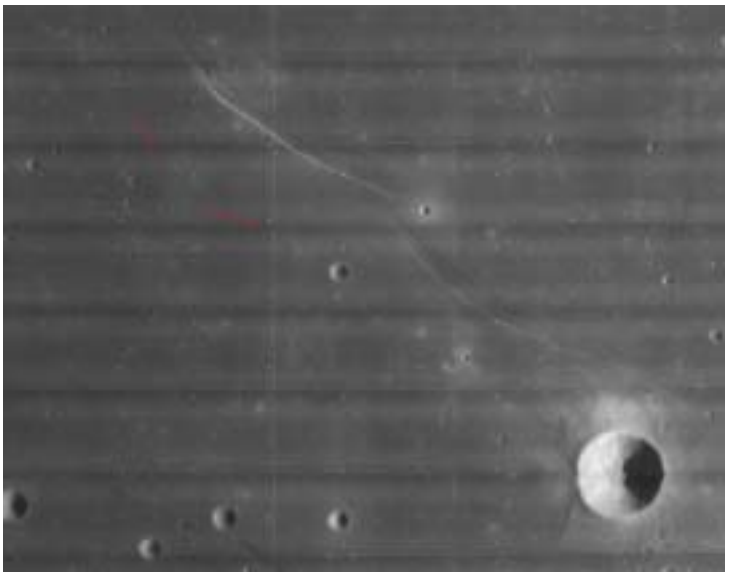

Figure 4

Table 2: Morphometric data for Cauchy Omega according to [5]

Feature	Longitude	Latitude	Diameter (km)	Height (m)
Cauchy Omega	38.30°	6.20°	12.30	116

Clearly these preliminary data about the Cauchy dome field and the unlisted dome at 36.75° E and 11.06° N described in this paper can be improved by new specific observations. Any observations that readers can make about these unlisted domes will be gratefully received for our GLR survey (lena@glrgroup.org).

The activities of the GLR group are described at http://www.glrgroup.org and at http://it.groups.yahoo.com/group/domilunari

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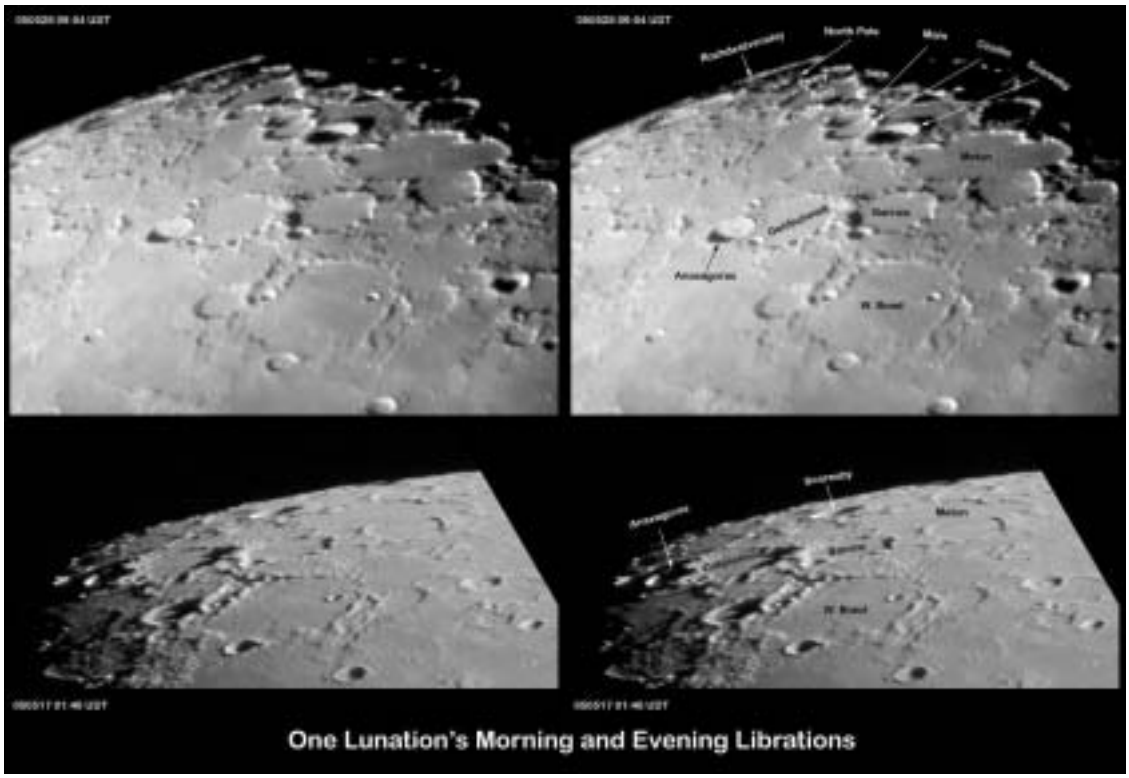
http://www.people.csail.mit.edu/people/bkph/AIM/AIM-1105A-TEX.pdf

NORTHERN NODDINGS OF THE POLAR MOON

Howard Eskildsen



I set out to "discover" the moon's north pole and found more than I was searching for. The floor of Hermite and the bright and dark rim margins of Rozhdestvenskiy caught my eye, seemingly beyond the north pole. I had never known of their existence before. Oh the thrill of discovery! I combined the polar photo with another taken during the same lunation to demonstrate the degree of libration during this current lunation. Then I added labels to a duplicate set of photos for clarification.

Upper photo taken through Meade 6" refractor with Celestron NexImage CCD. Images stacked with RegiStax and processed with Photoshop Elements. Lower photo taken through Jose Olivarez's 10" F/16 refractor using 40 mm MaxView eyepiece and 2X barlow. Nikon Coolpix 4300. Processed with Photoshop Elements. Universal dates and times on photos.

LUNAR TOPOGRAPHICAL STUDIES

Acting Coordinator - William M. Dembowski, FRAS
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Observations submitted should include the following:

- **Name and location of observer**
- **Name of feature**
- **Date and time (UT) of observation**
- **Size and type of telescope used**
- **Magnification (for sketches)**
- **Medium employed (for photos and electronic images**

OBSERVATIONS RECEIVED

STEVE BOINT - SOUIX FALLS, SOUTH DAKOTA, USA
Digital image of Area North of Gassendi

ED CRANDALL - WINSTON-SALEM, NORTH CAROLINA, USA
Digital images of Copernicus, Plato, Grimaldi, Aristillus to Eudoxus

DANIEL DEL VALLE - AGUADILLA, PUERTO RICO
Sketch of Schiaparelli, Seleucus

COLIN EBDON - COLCHESTER, ESSEX, ENGLAND
Sketches of Triesnecker, Damoiseau, Mercator to Campanus, Boussingault, Inghirami to Piazzi
Video stills of Alps, Appenines, Schickard

HOWARD ESKILDSEN - OCALA, FLORIDA, USA
Digital images of Rheita Valley, Area Northeast of Mare Crisium, North Polar Region (4)

YENAL OGMEN - LEFKONIKO, CYPRUS
Raymaps of Messier (2), Menelaus (2)

KEN POSHEDLY - SNELLVILLE, GEORGIA, USA
Digital image of Copernicus & Eratosthenes

ZAC PUJIC - BRISBANE, AUSTRALIA
Digital image of Dome at Rima Cauchy, Dome Field at Arago, Aristarchus Plateau

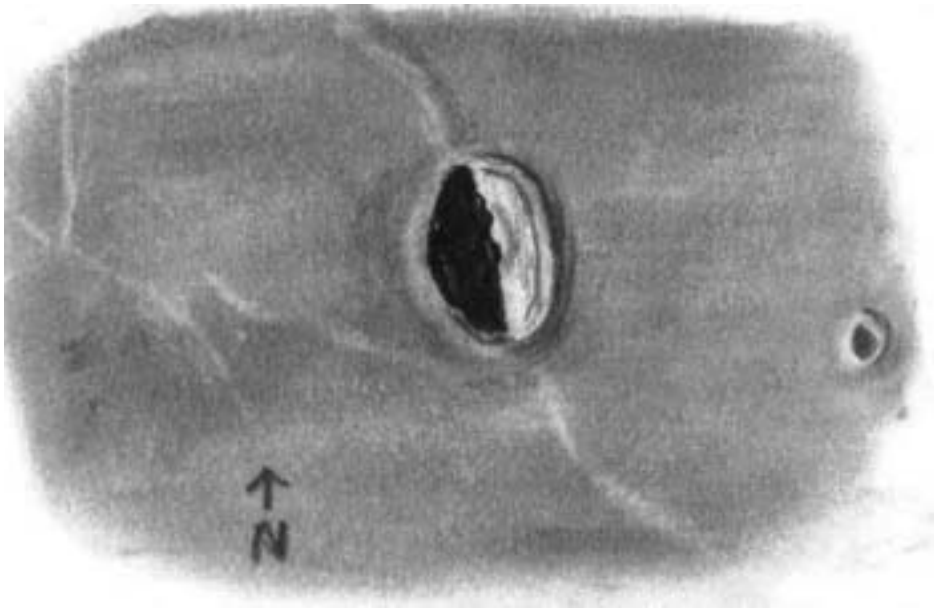
CARMELO ZANNELLI - PALERMO, ITALY
Digital image of Schickard

RECENT TOPOGRAPHICAL OBSERVATIONS

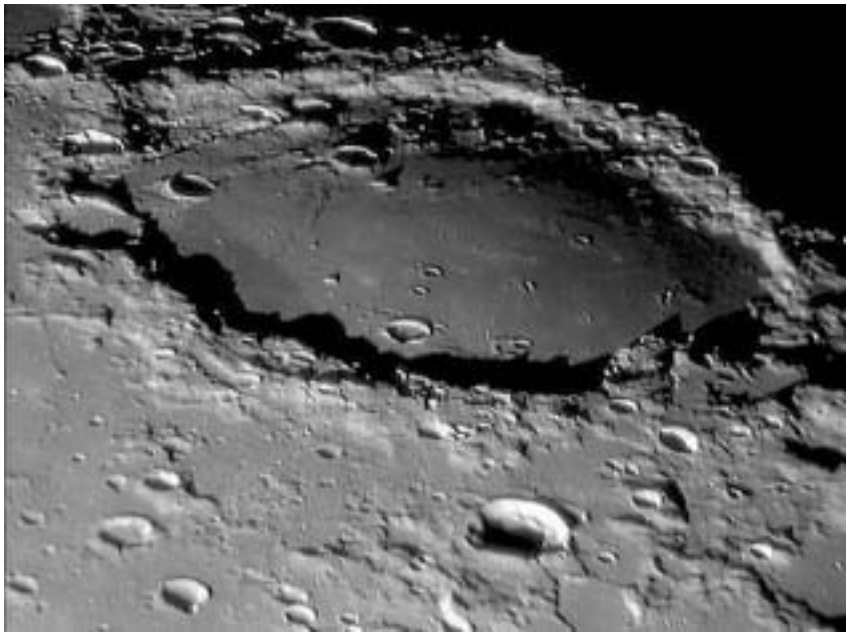
GRIMALDI
Digital image by Ed Crandall - Winston-Salem, North Carolina, USA
May 22, 2005 - 01:50 UT
110mm f/6.5 APO Refractor - 3x Barlow - Philips Toucam

AREA NORTH OF GASSENDI
Digital image by Steve Boint - Souix Falls, South Dakota, USA
July 10, 2003 - 02:57 UT
10” F/4.5 Newtonian - SBIG-237a Camera

RECENT TOPOGRAPHICAL OBSERVATIONS

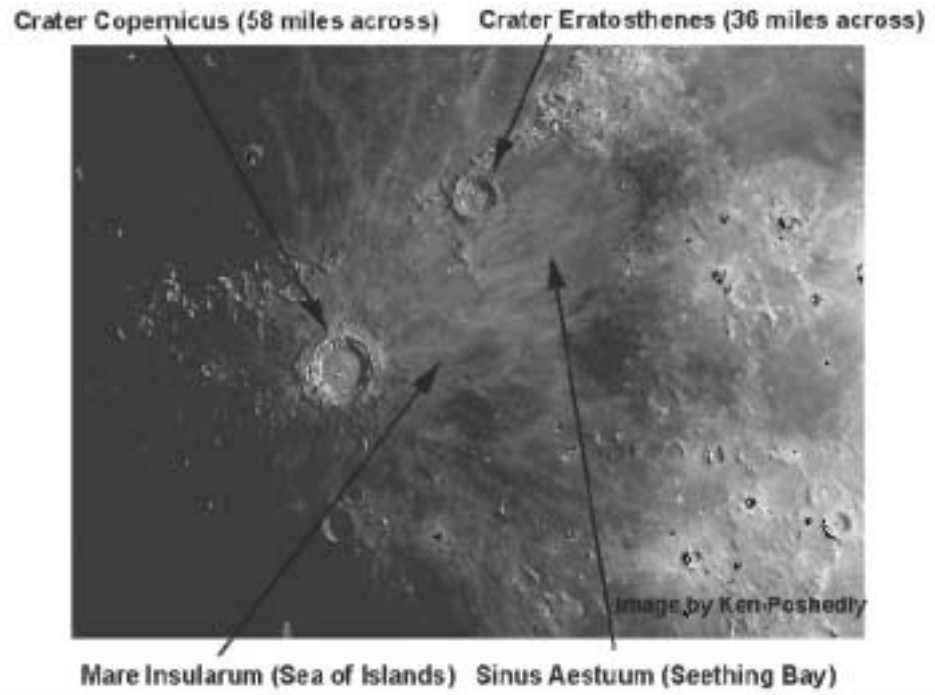


SCHIAPARELLI
Sketch by Daniel del Valle - Aguadilla, Puerto Rico
June 19, 2005 - 23:24 to 23:40 UT
8 inch SCT - 450x - Seeing 6/10



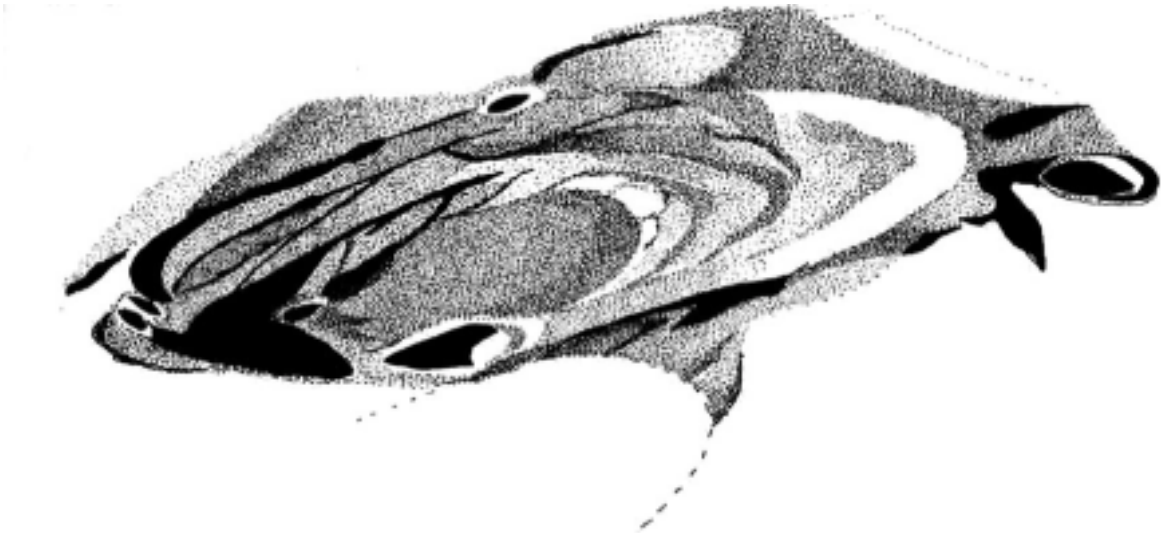
SCHICKARD
Digital image by Carmelo Zannelli - Palermo, Italy
March 22, 2005 - 21:50 UT
235mm SCT - Vesta Pro Webcam - 350/1501 Frames stacked

RECENT TOPOGRAPHICAL OBSERVATIONS



REGION AROUND COPERNICUS & ERATOSTHENES

Digital image by Ken Poshedly - Snellville, Georgia, USA
May 18, 2005 - 01:50 UT
12.5 inch f/5.7 Newtonian - Meade LPI webcam



BOUSSINGAULT

Sketch by Colin Ebdon - Colchester, Essex, England
May 15, 2005 - 20:30 to 22:00 UT
7 inch f/15 MCT - 386x - Seeing AII to AIIII

BRIGHT LUNAR RAYS PROJECT

Coordinator - Willliam M. Dembowski, FRAS

RECENT RAY OBSERVATIONS

RAY BETWEEN MENELAUS & BESSEL
Raymap by Yenal Ogmen - Lefkoniko, Cyprus
June 15, 2005 - 18:43 to 18:58 UT
Meade 5 inch ETX - 73x

ARISTARCHUS PLATEAU
Digital image by Zac Pujic - Brisbane, Australia
May 30, 2005 - 31cm f/5.75 Newtonian - Philips Toucam Pro

LUNAR TRANSIENT PHENOMENA

Coordinator – Dr. Anthony Cook – acc@cs.nott.ac.uk
Assistant Coordinator – David O. Darling – DOD121252@AOL.COM

LTP NEWSLETTER - JULY 2005

Dr. Anthony Cook - Coordinator

Observers who contributed observations in the month of May 2005 are: Clive Brook (UK) who observed on 22nd May the crater Aristarchus. On 14th May David O. Darling (USA) examined Mare Crisium, Theophilus, and Proclus. Brendan Shaw (UK) observed Kant, Pitiscus and Censorinus on 14 May and Thaeatetus, Pitatus, and Plato on 17th May. Finally Don Spain (USA) observed on the 17th & 18th of May and examined: Archimedes, Alphonsus, Plato, Ptolemaeus, Straight Wall, Copernicus, Tycho, and Moretus. The total number of days that we had observations for was 4 and the total number of minutes for which observations were received was covered was 376. No LTP were reported during these observations.

Pitiscus by Brendan Shaw taken on 2005 May 14 UT 20:52

In the March 1991 edition of Sky and Telescope, Dr Winifred Sawtell Cameron published an interesting article on LTP. One of the observations shown, although not discussed in detail, were two photographs taken by Gary Slayton of Fort Lauderdale, FL, USA on 1981 September 5 (no UT was given). They showed: *"a bright glow in the crater Pitiscus that appeared to move. Slayton alleges to have observed it visually, noting that it looked gray with a tinge of red"*. I have not reproduced the 1981 images here as these are probably copyright, but if you have the above mentioned Sky and Telescope then you can look these up on page 266. During the generation of the May 2005 predictions of repeat illumination and libration conditions, the above observation was flagged up for UK observers as occurring on 2005 May 14 from 19:50-22:17UT. Brendan Shaw was out observing on that night and managed to obtain the image seen in Fig 1. I do not have a good copy of the 1991 Sky and Telescope article, so would be very interested to hear from readers out there who could compare the images. It is likely that we have the above observation in the archives of ALPO or the BAA, but at the time of writing have not had a chance to look this up. The BAA LTP archives are contained in several large boxes and it takes considerable time to locate observations, although observations are gradually being scanned in and permanently filed on DVD disk to make access and retrieval easier.

The 1981 observation sounds to me like image flare that crops up on photographs and CCD images due to internal reflection within the telescope eyepiece tube, although Slayton did report to having seen it visually. However the Sky and Telescope article does not state whether he was looking through the camera at the time or through an eyepiece? There is also another problem, the Sky and Telescope article does not give a time of the observation, so in the computer predictions, there are two possible time periods for 1981 Sep 5 when the Moon was above the horizon (and it was night) at Fort Laurderdale (assume alt > 5deg): 00:00-03:09 (AM) and (23:35-23:59 (PM). Brendan Shaw's observation in Fig 1 corresponds to the "AM" predictions. Obviously Brendan's observation will not show a moving bright spot, as this sort of thing is not the norm, but his CCD image is useful for checking whether the date and time slots for the 1981 observation are correct. Also when we find a better copy of the original 1981 observation, then it should be feasible to scan this in, align and normalize it, and then subtract from Brendan's "usual" appearance image in order to show what the difference is. In this way if the effect is image glare it should reveal some consistent shape that will appear on both of Slayton's images, otherwise it may vindicate the 1981 images as being due to a cause other than glare.

Anyway I will keep you posted with further developments in this analysis. I included the above report to show how useful your observations are if you can observe during repeat illumination and/or libration conditions as listed in the predictions. Your observations can really help eliminate many past LTP reports that have remained an enigma for a number of years, or high light other reports that may be genuine LTP. So do please try to make some observations during July at some of the times given in the predictions as your reports will be very helpful in our analysis!

Further predictions, including the more numerous illumination only events can be found on the following web site: http://www.cs.nott.ac.uk/~acc/Lunar/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!

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MOON MISSIONS

SMART-1

Smart-1/Calcium on the Moon:
http://www.esa.int/esaCP/SEM4711DU8E_index_0.html

Smart-1 Tribute to Cassini:
http://www.esrin.esa.int/SPECIALS/SMART-1/SEM4GN1DU8E_0.html

CHANG'E 1

Chinese lunar probe:
http://english.people.com.cn/200506/24/eng20050624_192182.html