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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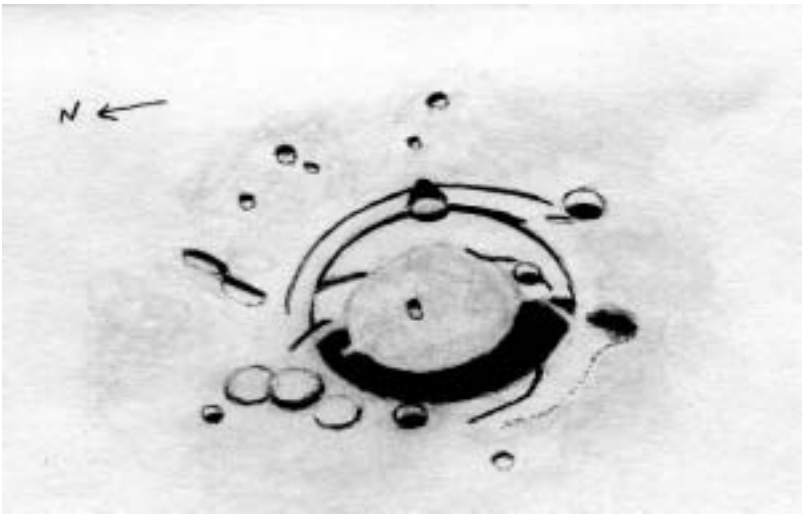
FEATURE OF THE MONTH - APRIL 2006



SANTBECH

Sketch and text by Robert H. Hays, Jr. - Worth, Illinois, USA
November 19, 2005 - 11:36 to 11:58 UT
15cm Newtonian - 170x - Seeing 6/10

I sketched this crater on the morning of Nov. 19, 2005 while the moon was hiding 49 Aurigae. This is a fairly large, crisp crater between Mares Fecunditatis and Nectaris. It has a small peak slightly north of center (labelled Santbech beta) and an unlabelled pit inside its southern rim. There is some evidence of terracing and a possible gap at its north end. Santbech D is perched on the east rim of Santbech and casts a substantial shadow with its rim. Santbech E is toward the southeast. A narrow strip of shadow starts near this crater and runs concentric to the east rim of Santbech, passing through the shadow of Santbech D. Santbech H is along the west rim of Santbech, and a bright, elevated part of Santbech's rim is south of this feature. Santbech J is probably the middle of three shallow craters north of H. That one is slightly deeper than its two neighbors, and overlaps the one to the north. Santbach K is probably the smaller, deeper pit farther to the north. An assortment of peaks and ridges is north and east of Santbech, and an isolated peak is southwest of Santbech H.

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.

Moon/SMART-1 Impact Predictions and Observation Campaign

The European Space Agency's SMART-1 spacecraft is rapidly approaching the completion of its successful mission of lunar exploration. It has been decided that, in lieu of allowing the craft to impact the Moon on its far side, the orbit of SMART-1 will be altered in such a way as to cause it to strike the Moon's visible hemisphere.

The ESA has welcomed the participation of the ALPO in observing and recording this momentous event. All amateur lunar observers are encouraged to participate and familiarize themselves, both visually and photographically, with the impact area (when announced) so that when the event occurs, the maximum amount of meaningful data can be gathered. All individual observers will be recognized and given full credit for their participation in this project. All participants will be treated equally and not identified or separated by organization. Observations, preliminary and actual, should be sent to William Dembowski at dembowski@zone-vx.com for compilation and submission to the ESA.

The following is an excerpt from a recent communication from the ESA SMART-1 team. Further details will be published as they are received, both in *The Lunar Observer* and on the ALPO Lunar Topographical Studies Smart-Impact WebPage at: http://www.zone-vx.com/alpo-smartimpact.html

"Because of gravitational perturbations by the Earth and the Sun, the SMART-1 orbit will irremediably intersect the lunar surface, having exhausted its main Xe fuel. If we would leave the spacecraft on natural course, it would impact on the far side of the Moon on 17 August 2006. We plan to extend the mission at low altitude, and also allow an impact on the near side, in a dark part near the terminator, under good observations conditions from Earth telescopes and public. From 26 June, we plan to perform for a week a series of new manoeuvers using the hydrazine attitude thrusters to impulse an extra push of some 12 m/s. Only after this is completed successfully, shall we have a better estimate of the date of impact, now calculated to occur on 3 September 2:00 UT with 7 hour uncertainty."

Dr. Bernard H. Foing
Chief Scientist, ESA Research and Scientific Support Dept.

CALL FOR OBSERVATIONS
FOCUS ON: Pitatus

Focus On is a bi-monthly series of articles which includes observations received for a specific feature or class of features. The subject of the next installment **(May 2006)** is **Pitatus.** Observations of all kinds (electronic or film based images, sketches, etc.) are welcomed and invited. Keep in mind that observations do not have to be recent ones, so search your files and/or add this fascinating crater to your observing list and send your favorites to one of the addresses shown in the banner on Page One. The deadline for inclusion in the article is **April 20, 2006**.

Lunar Topographical Studies Website

The website of the Lunar Topographical Studies Section is undergoing a major renovation. There is still much work to be done, particularly on the individual Project level and your opinions are highly valued. Members are invited to visit the site and forward your comments and suggestions to the coordinator, William Dembowski, at: dembowski@zone-vx.com

The HomePage of the Section can be found at:
http://www.zone-vx.com/alpo-topo.html

LUNAR CALENDAR - APRIL 2006 (UT)

03 . . . . . 19:00 . . . . . Moon 3.5 Degrees N of Mars
05 . . . . . 12:01 . . . . . First Quarter
07 . . . . . 01:00 . . . . . Moon 3.8 Degrees NNE of Saturn
09 . . . . . 13:00 . . . . . Moon at Apogee (405,550 km - 251,997 miles)
13 . . . . . 16:41 . . . . . Full Moon
15 . . . . . 12:00 . . . . . Moon 4.8 Degrees SSW of Jupiter
21 . . . . . 03:28 . . . . . Last Quarter
22 . . . . . 12:00 . . . . . Moon 3.5 Degrees SSE of Neptune
24 . . . . . 03:00 . . . . . Moon 1.1 Degree SSE of Uranus
25 . . . . . 11:00 . . . . . Moon at Perigee (363,733 km - 226,013 miles)
26 . . . . . 05:00 . . . . . Moon 3.5 Degrees NNW of Mercury
27 . . . . . 19:45 . . . . . New Moon (Start of Lunation 1031)

Lunar Topographical Studies Section: Mission Statement

Section Coordinator: William M. Dembowski, FRAS

The Moon is the Earth's only known natural satellite and occupies an elliptical orbit at a mean distance of 384,400 km (238,855 miles) from its parent planet. With a diameter of 3,476 km (2,160 miles) it is larger than the planet Pluto and over 70% the diameter of the planet Mercury.
Because the Moon revolves on it axis exactly once during each orbit about the Earth, the same side of this large satellite always faces the Earth. The inclination of the Moon's orbit and other factors allow us to see approximately 59% of its total surface. It is this surface, larger than that of the United States and Australia combined, that is the object of study by the A.L.P.O. Lunar Topographical Studies Section.

To the naked eye the appearance of the Moon exactly repeats itself every month as the terminator (the dividing line between lit and unlit regions) marches across the surface of the Moon. Because of the orbital mechanics involved, however, a telescopic view reveals that changes in the lighting, and the resultant shadows, are not exactly duplicated each month. This slight change in lighting can provide a surprisingly different view of the same feature each month for many years. This, combined with the almost infinite detail available to even modest backyard telescopes, can make the topographical study of the Moon a lifelong adventure.

It is the mission of the Lunar Topographical Studies Section to observe, study, and record the many surface features of the Moon. These features include such broad categories as mountain chains and isolated peaks, impact rays and bright spots, lava flows and wrinkle ridges, domes, rilles and scarps, and craters of every conceivable size. The instrumentation used by Section participants varies from modest 60mm refractors to massive dobsonian mounted reflectors. Lunar observers utilize imaging equipment that ranges from traditional film cameras to the latest in digital and video systems. Filar micrometers, photoelectric photometers, and a host of other specialized tools are brought into play in the pursuit of topographic studies but such sophistication, useful as it is, is not a prerequisite. Many insightful and valuable observations are still being performed by those with telescopes of modest size who sketch what they see.

Because of the broad nature of topographical observations, this Section also stands ready to assist other A.L.P.O. Lunar Sections in the pursuit of their research programs. Requests for corroborating observations from the Lunar Transient Phenomena Section and Lunar Dome Survey are always quickly researched through the Section's computerized archives and assistance provided whenever possible.

In order to be of scientific value, all observations submitted to the Section Coordinator should include the following:

Name and location of the observer
Name of feature
Date and time (UT) of the observation
Size and type of telescope used
Seeing: 1 to 10 (1-Worst 10-Best)
Transparency: 1 to 6
Magnification (for sketches)
Medium employed (for photographs and electronic images)
Any other vital technical data as it relates to the observation made

Interested observers of any skill and experience level are welcomed and should contact the Section Coordinator for additional information at Dembowski@zone-vx.com

LUNAR TOPOGRAPHICAL STUDIES

Coordinator - William M. Dembowski, FRAS
dembowski@zone-vx.com

OBSERVATIONS RECEIVED

ANTHONY AYIOMAMITIS - ATHENS, GREECE
Digital image of Pitatus

WAYNE BAILEY - SEWELL, NEW JERSEY, USA
Digital images of Pitatus, Tycho rays into Mare Nectaris, Atlas & Hercules & Endymion (4), Theophilus (2)

MICHAEL BOSCHAT - HALIFAX, NOVA SCOTIA, CANADA
Digital images of Pitatus

HOWARD ESKILDSEN - OCALA, FLORIDA, USA
Digital images of Mare Nectaris, Humboldt (2), Haemus Mountains, Maurolycus, Langrenus rays, Copernicus/Kepler rays, Pitatus (2)

PAOLO LAZZAROTTI - COMANO, ITALY
Digital image of Pitatus & Hesiodus

RAFAEL BENAVIDES PALENCIA - POSADAS, CORDOBA, SPAIN
Digital images of Tycho, Rupes Recta, Arzachel, Maginus, Plato & Alpine Valley, Archimedes & Aristillus & Autolycus

K.C. PAU - HONG KONG, CHINA
Digital images of Wilhelm, Wurzelbauer

ZAC PUJIC - BRISBANE, AUSTRALIA
Digital image of Eratosthenes, Pitatus

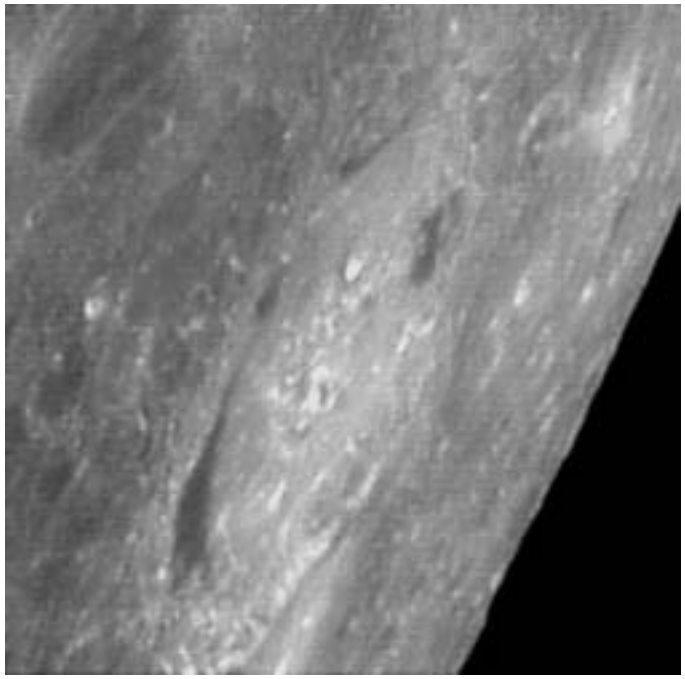
GUIDO SANTACANA - SAN JUAN, PUERTO RICO
Digital images of Catharina & Cyrillus & Theophilus, Rima Ariadeaus, Eudoxus & Aristoteles, Lindenau, Posidonius

ANTONIO MARINO - ERCOLANO, ITALY
Digital image of Pitatus

DAVIDE ZOMPATORI - ANZIO, ITALY
Digital image of Pitatus

RECENT TOPOGRAPHICAL OBSERVATIONS

THEOPHILUS & CYRILLUS
Digital image by Wayne Bailey - Sewell, New Jersey, USA
March 6, 2006 - 01:22 UT
11 inch SCT - Philips Toucam



HUMBOLDT
Digital image by Howard Eskildsen - Ocala, Florida, USA
March 7, 2006 - 00:52 UT
6" f/8 Refractor - 5x TelXtender - Celestron Neximage

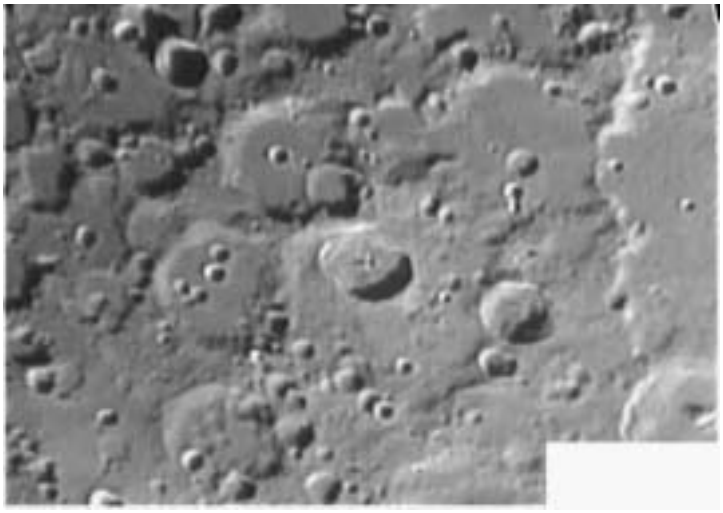
RECENT TOPOGRAPHICAL OBSERVATIONS

ARZACHEL
Digital image by Rafael Benavides Palencia
Posadas, Cordoba, Spain
March 8, 2006 - 22:28 UT
15cm f/8 Refractor - 3x Barlow - Philips Toucam Pro

ERATOSTHENES
Digital image by Zac Pujic - Brisbane, Australia
April 18, 2005 - 17:54 UT
31cm Newtonian at f/28 - Wratten 25A Filter - Philips Toucam Pro

RECENT TOPOGRAPHICAL OBSERVATIONS

WURZELBAUER
Digital image by K.C. Pau - Hong Kong, China
March 9, 2006 - 13:09 UT
250mm Newtonian - 20mm EP - Philips Toucam Pro



LINDENAU & ROTHMANN
Digital imge by Guido Santacana - San Juan, Puerto Rico
February 5, 2006 - 01:20 UT
6 inch f/8 Newtonian - 2x Barlow - Logitech Quickcam Pro

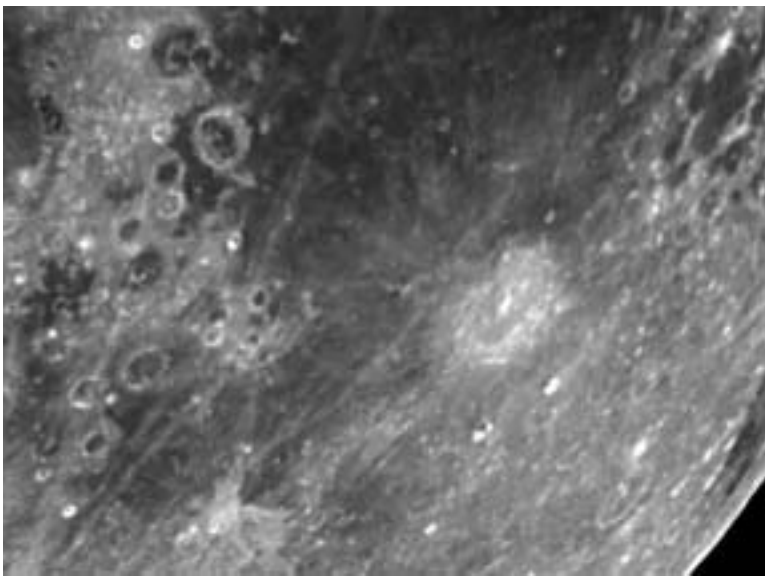
BRIGHT LUNAR RAYS PROJECT

Coordinator: William M. Dembowski, FRAS

RECENT RAY OBSERVATIONS

UNNAMED BRIGHT SPOT NEAR ATLAS

Digital image by Wayne Bailey - Sewell, New Jersey, USA
March 8, 2006 - 02:58 UT - 11 inch Schmidt-Cassegrain
Philips Toucam - Schuler IR Block Filter



RAYS AT LANGRENUS

Digital image by Howard Eskildsen - Ocala, Florida, USA
February 10, 2006 - 01:26 UT - 10 inch Newtonian
5X TeleXtender - Maxview 40 - Nikon Coolpix 4300

LUNAR TRANSIENT PHENOMENA

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

LTP NEWSLETTER - APRIL 2006

Dr. Anthony Cook - Coordinator

Observations for February were received from: Michael Amato (West Haven, USA)Tony Buick (Orpington, UK), Fabio Carvalho (Lunar Section of REA, Brazil), Clive Brook (Plymouth, UK), Marie Cook (Mundesley, UK), GLR observers (Italy), Robin Gray (Winnemucca, USA), Rosaly Gregio/Valmir Martins (Brazil), Jana Kviz (Australia), Gerald North (UK), Cecil Post (Las Cruces, USA), Brendan Shaw (UK), Don Spain (Louisville, USA), Kath Teychenne (Australia), and myself.

This report is again short due to work load pressure – but it does illustrate an excellent response to a LTP alert in Plato!

Suspect LTP Report : 2006 Feb 8 – Clive Brook (UK) telephoned me to say that he had noticed some dark patches on the floor of Plato coming and going in appearance 20:10-20:31 UT. He was using a mobile phone at the telescope whilst he was observing the event and so I was able to ask him to check other features to see if they showed similar variability elsewhere. He said that the only variability was in the floor of Plato, hence this might suggest that it was probably not atmospheric seeing conditions to blame. I then phoned David Darling to put out an international alert and made a limited No of telephone/text messaging to European observers. Unfortunately by the time I and others could make any observations (waiting for the seeing to quieten down in my case, the effect that Clive had seen had stopped. Several good images were sent in by Brendan Shaw, Don Spain, some GLR observers and Brazillian observers, but these were all taken after the LTP event and none show the effect that Clive had seen. Here is Clive's report in more detail: 4" OG x216 used and the Moon was at a high altitude. 19:54UT Commenced observing Plato. 20:10 UT Noticed dark patches appearing and disappearing on floor of Plato. Occasional views of central craterlet as white spot. Seeing good. No sign of trembling on Teneriffe Mts. or Straight Range. 20:26 UT dark patches which last about 1-2 seconds dying out. 20:31 UT floor detail now visible. 20:34 UT stopped observing".

Finally please look out for next month's LTP article, I may have some exciting news about observer participation in SMART-1.

Further 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

Dealing With Moon Dust
http://www.space.com/adastra/adastra_moondust_060223.html

SMART-1 Tracking Reiner gamma
http://smart.esa.int/science-e/www/object/index.cfm?fobjectid=39022

NASA Plans Lunar Base For Trips To Mars
http://www.detnews.com/apps/pbcs.dll/article?AID=/20060330/NATION/603300322/1013/rss12

The Search For Old Spacecraft
http://news.yahoo.com/s/space/20060327/sc_space/lunarlostfoundthesearchforoldspacecraft

What Does Earth Look Like From The Moon?
http://www.earthsky.org/shows/listenerquestions.php?date=20060402

NASA To Put Man On Far Side Of Moon
http://www.timesonline.co.uk/article/0,,2089-2092495,00.html

Tectonic Wrinkles In Crater DeGasparis
http://www.esa.int/SPECIALS/SMART-1/SEME93OVGJE_0.html

Watch Out For Moonquakes
http://www.universetoday.com/am/publish/aldrin_moonquakes.html?1632006

Moon Water: A trickle of data and a flood of questions
http://www.usatoday.com/tech/science/space/2006-03-06-moon-water_x.htm

Resource-rich Lunar South Pole Seen As Perfect Area To Explore
http://www.chron.com/disp/story.mpl/front/3701891.html

World's Nations Will Shoot For The Moon In The Next Decade
http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/03/05/MOON.TMP&type=science

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