



THE LUNAR OBSERVER

Newsletter of the American Lunar Society

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From the Editor:

Welcome to The Lunar Observer. This newsletter was created at the suggestion of Francis G. Graham in a recent edition of Selenology. The purpose of this publication is to supplement, on a monthly basis, information provided by the quarterly journal. Our intent is to provide informal articles of interest to students of the Moon, as well as provide an opportunity for members to share their observations with fellow members.

Contributions of articles, sketches, and Letters to the Editor are encouraged, as well as any comments and/or suggestions. When writing to the Editor be sure to indicate if your letter is intended for publication.

Publication of The Lunar Observer is experimental and the reaction of the membership during the first several months of publication will determine if it will continue on a regular basis. Please take a few minutes to let us know your views on this important matter. Send ground mail to the address above or E-Mail to: dembow@mail.third-wave.com

W M D

ICE ON THE MOON??

On December 3, 1996, NASA scientists made the startling announcement that they may have discovered water ice on the Moon. The ice formation, found at the bottom of a crater at the Moon's south pole, is estimated to be 8 meters thick and the size of a small pond. Although several interpretations of the data are possible, "ice is the most likely" according to Dr. Stewart Nozette of the Lawrence Livermore Laboratories.

The conclusion was based on data collected by the Clementine spacecraft in April, 1994. While passing over the north and south polar regions a bistatic radar experiment searched for frozen volatiles in permanently shadowed areas. Radar can detect and identify these deposits because, under certain conditions, frozen volatiles produce a unique radar signature. No unusual readings were made in the north polar regions where the topography has not produced any areas of permanent shadow. The lunar south pole, however, lies within the South Pole-Aitken basin which averages a depth of 12 km, well below the mean lunar radius.

The existence of ice on the Moon has been a matter of speculation for several decades. The most common scenario is for the ice to arrive at the Moon in the form of a comet. The water molecules released on impact would then migrate into a deep crater and remain intact by being shielded from sunlight. These conditions appear to have been met in data gathered by Clementine.

The significance of the existence of ice on the Moon lies in its potential to support human life should a permanent lunar base be established. Water could, conceivably, also be used to provide the raw materials of rocket fuel according to Dr. Paul Spudis of the Lunar and Planetary Institute. Dr. Spudis called water "probably one of the most strategic materials we can find in the solar system".

Although the apparent discovery requires further confirmation, we may be looking at the most significant lunar finding in the last three decades.

References: CNN Sci-Tech Story Page
Science On-Line

Feature of the Month

Lacus Mortis



Burg and environs / W. M. Dembowski

Five or six days after New Moon turn your telescope to the Moon's northeast quadrant (45N 27E) and spend a few moments enjoying Lacus Mortis. The Lake of Death is the apparent remains of a 150km diameter flooded crater whose distinctly pentagonal shape can appear almost artificial at times. Although the eastern wall is nearly lost, the western wall is one of the most abrupt features of its kind on the Moon.

The floor of the lake is a treasure trove of faults, ridges, and rilles. The most prominent fault is at the southern shore and is reminiscent of the famous Straight Wall. Rimae Burg, which lies to the west of crater Burg, is about 100km long and can be traced into the adjacent highland area. Both of these features are relatively easy targets for a small telescope.

Burg, the largest crater in Lacus Mortis, is 40km in diameter. It has terraced walls and a large central mountain. Higher magnification will reveal several craterlets on its walls as well as one on the summit of the central mountain. While observing this interesting region of the Moon be sure to make a sketch and forward it to the Editor of The Lunar Observer for possible inclusion in a future issue.

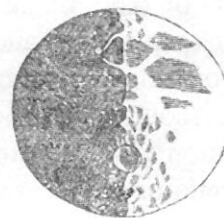
References: Rukl, Antonin; Atlas of the Moon; Paul Hamlyn Publishing
Wilkins, H.P. & Moore, P.; The Moon; MacMillan Co.

LUNAR CALENDAR

January (All times UT)

- 2 Last Quarter 01:45
- 7 Moon 5 deg. N of Venus
17:00
- 9 New Moon 04:26
- 10 Perigee (359,233 km)
08:50
- 14 Moon 2 deg. N of Saturn
05:00
- 15 First Quarter 20:02
- 19 Moon 0.7 deg. N of
Aldebaran 06:00
- 23 Full Moon 15:11
- 25 Apogee (406,244 km)
16:45
- 28 Moon 3 deg. S of Mars
23:00
- 31 Last Quarter 19:40

F.Y.I.



The sketch that appears above and in the banner on Page One is, of course, Galileo's 1610 drawing of the Moon. The large crater on the terminator is probably Albategnius whose prominence is greatly exaggerated.