# ( <br> <br> THE LUNAR <br> <br> THE LUNAR OBSERVER 

AN INDEPENDENT NEWSLETTER FOR STUDENTS OF THE MOON - NOVEMBER 2003 EDITED BY: William M. Dembowski, FRAS - Elton Moonshine Observatory 219 Old Bedford Pike (Elton) - Windber, PA 15963 - Dembowski@Adelphia.net

## FEATURE OF THE MONTH



> SILBERSCHLAG $\left(6.2^{\mathrm{O}} \mathrm{N}-12.5^{\circ} \mathrm{E}\right)$ \& RIMA ARIADAEUS Sketch and Text by Robert H. Hays, Jr. - Worth, Illinois, USA March 11, 2003-15cm Newtonian - 170x - Seeing 7/10

I made an observation of this area on the evening of March $10 / 11,2003$ after watching the moon pass through the cluster NGC1746. Silberschlag is a rather ordinary looking crater, but it is surrounded by a variety of features. The most notable feature is the Rima Ariadaeus which seemingly cuts at will across some low hills and ridges northeast and north of Silberschlag. To the west, the rille breaks, then jogs slightly to the south to continue westward in an area that I didn't sketch. To the east, it seems to break and resume in chaotic terrain. This rille has a wide, flat floor which makes it an easy target.

The crisp crater north of the rille is Silberschlag A; this is the only other crater on this sketch. Several elevations were seen south and west of Silberschlag, one casting a substantial shadow. Most of the other features shown are low ridges and mounds which the sketch describes better than words could.

EDITOR: Silberschlag is a round crater that is slightly more than 13 km ( 8 miles) in diameter. Rima Ariadaeus, however, stretches for 220 km ( 137 miles). Both of these features can be found on Map 34 of Rukl's Atlas of the Moon. Robert's sketch was made while the Moon was at First Quarter

# OBSERVATIONS RECEIVED 

MICHAEL AMATO - WEST HAVEN, CONNECTICUT, USA
Ray Maps of Messier, Menelaus, Proclus, Aristarchus, Kepler
ED CRANDALL - WINSTON-SALEM, NORTH CAROLINA, USA
CCD Images of Walter to Stofler, Sinus Iridum (2), Clavius \& environs, Ptolemaeus Chain, Copernicus
DANIEL DEL VALLE - AGUADILLA, PUERTO RICO
CCD Images of Gassendi, Kepler, Sinus Iridum, Hainzel, Reiner Gamma (2), Aristarchus (2),
Schiller, Mare Orientale \& Lacus Varis, Macrobius, Vallis Rhieta, Boguslawsky, Janssen, Stiborius, Theophilus, Viacq,

WILLIAM ELSBURY - MASON CITY, IOWA, USA
Video Stills of Manilius \& environs
ROBERT H. HAYS, JR. - WORTH, ILLINOIS, USA
Sketches of Herschel, Descartes \& Dolland, Scoresby \& Challis \& Main, LeVerrier \& Helicon Timings of 54 stars occulted by the Moon
K. C. PAU - HONG KONG, CHINA

Video Stills of Alphonsus, Arzachel, Ptolemaeus, Kepler, Mare Fecunditatis, Messier, Mare Crisium, Valentine Dome

DOUG SLAUSON - SWISHER, IOWA, USA
CCD Image of Plato
ALEXANDER VANDENBOHEDE - GENT, BELGIUM
CCD Imges of Aristarchus \& Kepler, Aristarchus, Aristarchus to Sinus Iridum, Aristarchus to Mairan

## LUNAR CALENDAR - NOV. 2003 (UT)

01 . . . 04:26 . . . First Quarter
03 . . 09:00 . . . Moon 3.0 Degrees SSE of Mars
$09 \ldots$. 01:14 . . Full Moon (Total lunar eclipse)
10 . . . 06:00 . . . Moon 3.2 Degrees SSE of the Pleiades
$10 \ldots$. 12:00 . . . Moon at Apogee ( 252,464 miles - 406,290 km)
17 . . . 04:16 . . . Last Quarter
23 . . 22:59 . . New Moon (Start of Lunation 1001) (Total solar eclipse)
$23 \ldots 23: 00 \ldots$ Moon at Perigee $(221,712$ miles $-356,801 \mathrm{~km})$
$25 \ldots$. . 03:00 . . . Moon 0.37 Degrees SW of Mercury
$30 \ldots$. . 17:16 . . . First Quarter

# TIMETABLE FOR TOTAL LUNAR ECLIPSE Universal Time - November 8/9, 2003 

22:15 . . . Moon enters Earth's penumbra
23:32 . . . Moon enters Earth's umbra
01:06 . . . Total eclipse begins
01:31 . . . Total eclipse ends
03:04 . . . Moon leaves Earth's umbra
04:22 . . . Moon leaves Earth's penumbra

## WANT TO DO ECLIPSE SCIENCE?

If you would like to try your hand at doing scientifically useful work at eclipse time, give shadow timing a try. Simply set your watch to the telephone time or WWV radio signal (not your local DJ) and you are ready to go. You don't need a large or powerful telescope for eclipse timing. A relatively low power, one that shows the entire Moon, should work nicely. In fact, since the Earth's shadow is not well defined, using a high magnification will only confuse the issue. Events to time are:

1. When the leading edge of the Earth's shadow enters the lunar disk.
2. When the trailing edge of the Earth's shadow enters the lunar disk.
3. When the leading edge of the Earth's shadow leaves the lunar disk.
4. When the trailing edge of the Earth's shadow leaves the lunar disk.

In addition, timing when the Earth's shadow crosses the middle of a specific crater is also useful. Some of the craters most commonly timed are:

| Grimaldi | Aristarchus | Kepler | Copernicus | Pytheas |
| :--- | :--- | :--- | :--- | :--- |
| Timocharis | Tycho | Plato | Aristoteles | Eudoxus |
| Manilius | Menelaus | Plinius | Taruntius | Proclus |

For smaller craters it should not be difficult to judge when the shadow reaches the center. For larger craters, however, it is suggested that you time when the shadow contacts the near crater wall and then the opposite wall. An average of the two times will provide the time of center-crossing. In all cases you should strive for an accuracy of 6 seconds ( $1 / 10$ of a minute).

Finally, you should estimate the darkness of the eclipse using the five point scale devised by A. Danjon. This estimate should be made at mid-eclipse using binoculars or the naked eye:
$\mathrm{L}=0$ - Very dark eclipse. Moon almost invisible at mid-totality.
$\mathrm{L}=1$ - Dark eclipse. Color gray or brown. Surface details difficult to see.
$\mathrm{L}=2$ - Moon deep red or rust-colored. Umbra very dark in center but bright at edge.
$\mathrm{L}=3$ - Moon brick red. Often with a bright or yellow rim to the shadow.
$\mathrm{L}=4-$ Moon bright copper colored or orange. Shadow rim bluish and very bright.
Organizations seeking these data include the Association of Lunar \& Planetary Observers, the American Lunar Society, the Society for Popular Astronomy, the British Astronomical Association, and Sky and Telescope Magazine.

## IMAGES OF MAY 2003 ECLIPSE



CCD IMAGE - 20 cm F/4 Vixen
Alexander Vandenbohede - Gent, Belgium


VIDEO STILLS - 8 inch SCT
David O. Darling - Sun Prairie, Wisconsin, USA

## TOPOGRAPHICAL STUDIES



## SINUS IRIDUM

CCD Image by Ed Crandall - Winston-Salem, North Carolina, USA September 21, 2003-10 inch f/7 Newt. - Starlight Express HX516


JANSSEN
CCD Image by Daniel del Valle - Aguadilla, Puerto Rico September 30, 2003 - 8 inch SCT - Logitech QuickCam

## TOPOGRAPHICAL STUDIES



## ALPHONSUS

Video Still by K.C. Pau - Hong Kong, China Septenber 17, 2003-10 inch Newt. - Philips Toucam Pro


ARISTARCHUS TO MAIRAN
CCD Image (Mosaic) by Alexander Vandenbohede - Gent, Belgium
February 14, 2003 - 20 cm f/15 Refractor - WebCam

