REFLECTIONS

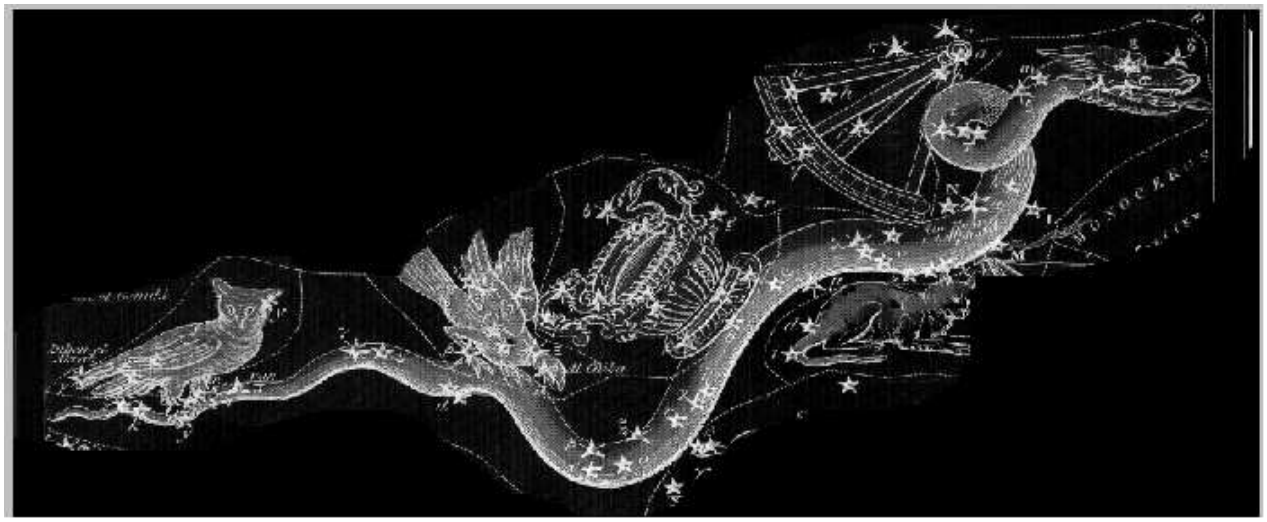
of the University Lowbrow Astronomers

May 2001

The University Lowbrow Astronomers is a club of Astronomy enthusiasts which meets on the third Friday of each month in the University of Michigan's Physics and Astronomy building (Dennison Hall, Room 130 or 807). Meetings begin at 7:30 p.m. and are open to the public. Public star parties are held twice a month at the University's Peach Mountain Observatory on North Territorial Road (1.1 miles west of Dexter-Pinkney Road; further directions at the end of the newsletter) on Saturdays before and after the new Moon. The party may be canceled if it's cloudy or very cold at sunset. For further information call (313)

This month's featured constellations are:

Hydra, Corvus & Crater; The Water Serpent, The Crow, & The Cup



This Month:

May 18 - Meeting in Rm. 130 Dennison at 7:30 PM Come see your New Prez in action. Speaker TBA
May 19 - Public Star Party at Peach Mt. Observatory - Fear the Virgo Cluster? Find out tonite, its on the meridian.
May 26 - Public Star Party at Peach Mt. Observatory - Can you stay for a glimpse of the "RED PLANET" that's right Mars rises at 22:36 local time and should clear the trees about 01:00

Next Month:

June 15 - Meeting in Rm. 130 Dennison at 7:30PM Speakers will give a report on the Texas Star Party.
June 16 - Public Star Party at Peach Mt. Observatory - Summer is feeding time for the State Bird "The Mosquito" come to the hill and fill their bellies.
June 23 - Public Star Party at Peach Mt. Observatory - Mars at its Best!!!

Constellation of the Month:
Hydra, Corvus & Crater; The Water Serpent, The Crow & The Cup

These three constellations are linked in mythology and are sometimes portrayed as link in the sky. So, we will look at them together. The story of these three is a delightful one that involves Apollo and his wrath and sense of humor.

At one time Corvus, the Crow had beautiful silver-white plumage and a lovely singing voice, but he lost both of these as a result of not carrying out Apollo's orders. It seems that Apollo sent Corvus to fetch a cup (Crater) of water. Corvus set out immediately to complete this task, but along his way he noticed a fig tree, laden with juicy figs. However, these figs were not quite ripe. Corvus could not pass these lovely, juicy figs by and leave them for someone else to devour, so he decided to wait until they ripened. When the figs had finally ripened, he enjoyed his tasty but final meal. When Corvus had eaten all of the figs he suddenly remembered his task of fetching water for Apollo. Corvus quickly filled the Cup (Crater) and raced back to Apollo, offering a rather lame excuse that the Water Serpent (Hydra) had hindered his efforts to scoop up the water. Apollo was young but not that gullible, so Apollo punished Corvus. For his selfishness, Apollo changed the beautiful silver-white plumage of Corvus to dirty black. For lying to Apollo, Corvus' lovely song was changed into a raucous screeching caw. The worst punishment by far was that Apollo placed Corvus and the Cup (Crater) in the sky on the back of the Water-Serpent (Hydra). Hydra was instructed to make sure that Corvus never came within reach of the Cup (Crater) to quench his thirst.
This Hydra is not the same multi-headed beast that Hercules fought in his second labor, as this Hydra is always pictured with only one head.

Transit at Midnight of Alpha Hydra: February 15th
Transit at Midnight of Alpha Crater: March 13th
Transit at Midnight of Alpha Corvus: March 30th

The constellations are situated rather low in the sky, (from our point of view) as only the head of Hydra rises north 0 degrees Declination. The constellations Crater and Corvus are completed south of -6 degrees 30 minutes Declination and -11 degrees 30 minutes respectively. Hydra, the largest constellation, stretches across the sky from 8 hours 11.5 minutes at its western border to 15 hours 2.5 minutes at its eastern edge, and from north 6 degrees 39 minutes declination to south 35 degrees 39.5 minutes declination. Crater and Corvus are rather small in comparison, occupying about 1 hour of R. A. each and only 20 degrees and 15 degrees of Dec. respectively. The main stars of these three constellations are not very bright, with the exception of Alpha Hydrae; Alphard, a 1.9 magnitude giant star about 25 times the size of our sun and about 370 times the luminosity. The rest of the main stars are 3rd, 4th, and 5th magnitude and because these constellations ride the southern horizon can be difficult to see.

Things to Check Out in Hydra, Crater and Corvus
Multiple Star Systems

Beta Hydrae; HJ4478
RA (J2000): 11h 52.9m declination –33 54.0'
Component A: magnitude +4.8
Component B: magnitude +5.6
Separation AB: 0.7" at position angle 28

Epsilon Hydrae; STF1273; ADS 6993
RA (J2000): 08h 46m 46.65s declination: +06 25' 08.1"
Visual binary star. Included in Michael R. Feltz's list of the widest visual binaries.
Orbital elements and diagram available on Richard Dibon-Smith's website
Component A: magnitude +3.8 spectral type G5III
Component B: magnitude +4.7 spectral type F0V
Component C: magnitude +7.8 spectral type F7V
Component D: magnitude +12.7 spectral type K0V
Separation AC: 2.7 " at position angle 302
The close pair A and B were discovered by Schiaparelli in 1888. Struve discovered star C in 1830. Star D shares the same proper motion.
Distance: 135 light-years. Projected orbital separation: 119 AU
Luminosity (Sun =1): AB 53 C 3 D 0.01
Diameter (Sun =1): AB ?? C 1.3 D 0.1

N Hydrae; H96, HD100286; ADS 8202
RA (J2000): 11h 32m 16.42s declination: -29d 15' 40.9"
Included in the Astronomical League's certificate list of 100 double stars
Component A: magnitude +5.8 spectral type F8V
Component B: magnitude +5.9 spectral type F8V
Separation AB: 9.2 " at position angle 210
First observed by Herschel in 1783. It used to be known as 17 Crateris but is clearly within Hydra: Norton's calls it N Hydrae. Sometimes said to show a yellow tint in both stars.
Distance: 87 light-years Projected orbital separation: 245 AU
Luminosity (Sun =1): A 3 B 2.8
Diameter (Sun =1): A 1.5 B 1.5

STF1474AB; STF1474AC
(J2000) RA 10h47.6m Declination -15 16'
Mag 6.6 and 7.9; Mag 6.6 and 6.9
Washington Double Star (WDS) catalog
Component A: +6.6 magnitude
Component B: +7.9 magnitude
Component C: +6.9 magnitude
Position angle of AB: 26 Angular separation 67.4 arcseconds
Position angle of AC: 25 Angular separation 74.1 arcseconds

Gamma Crateris; HJ 840
(J2000) RA 11h24.9m Declination -17 41'
Mag 4.1 and 7.9
Washington Double Star (WDS) catalog
Component A: +4.1 magnitude
Component B: +7.9 magnitude
Position angle of AB: 94 Angular separation: 5.3 arcseconds

Iota Crateris; KUI 58
(J2000) RA 11h38.7m Declination -13 12'
Mag 5.6 and 11.0
Washington Double Star (WDS) catalog
Component A: +5.6 magnitude
Component B: +11.0 magnitude
Position angle of AB: 226 Angular separation: 1.4 arcseconds

Delta Corvi; Algorab; SHJ145; ADS 8572
RA (J2000): 12h 29m 51.98s declination: -16 30' 54.3"
Included in the Astronomical League's certificate list of 100 double stars. Included in the Saguaro Astronomy Club's list of 110 best multiple stars. Components show no relative motion. Components display common proper motion.
Component A: magnitude +3.0 spectral type A0V
Component B: magnitude +9.2 spectral type K2V
Separation AB: 24.2 " at position angle 214
Distance: 88 light-years
Projected orbital separation: 650 AU
Luminosity (Sun =1): A 38 B 0.1
Diameter (Sun =1): A 2.3 B 0.5

STF1669 Corvi; VV Corvi; ADS 8627
RA (J2000) 12h 41m 16.02s declination: -13d 00' 50.1"
Included in the Saguaro Astronomy Club's list of 110 best multiple stars
Component A: magnitude +6.0 spectral type F5V
Component B: magnitude +6.0 spectral type F5V
Component C: magnitude +10.5 spectral type ??
Separation AB: 5 " at position angle 309
Separation AC: 59 " at position angle 235
First observed by Struve in 1828.Distance: 278 light-years.
Projected orbital separation: AB: 426 AU
Luminosity (Sun =1): A 24 B 24 C ??
Diameter (Sun =1): A 3.7 B 3.7 C ??

Burnham 28 Corvi; HD108799; ADS 8573
RA (J2000): 12h 30m 04.93s declination: -13d 23' 35.0"
Visual binary star. Included in Michael R. Feltz's list of the widest visual binaries.
Orbital diagram available on Richard Dibon-Smith's website.
Component A: magnitude +6.5 spectral type G0V
Component B: magnitude +8.6 spectral type K
Separation AB: 2.2 " at position angle 329
First observed by Burnham in 1875. Distance: 81 light-years
Projected orbital separation: 53 AU
Luminosity (Sun =1): A 1.2 B 0.07
Diameter (Sun =1): A 1.0 B 0.4

Zeta Corvi; BU 1245
RA 12h20.6m (J2000) Declination -22 13'
Mag 5.2 and 13.7
Washington Double Star (WDS) catalog
Component A: +5.2
Component B: +13.7
Position angle of AB: 66 Angular separation: 11.2 arcseconds

Deep Sky Objects

M 48; NGC 2548; OCL 584 Open cluster
RA: 08h 13m 43.1s (J2000) declination: -05d 45' 02"
Magnitude: 5.8
Angular diameter 54.0' Cluster, very large, pretty rich in stars, pretty much compressed, stars of magnitude 9 to 13; = M48 Messier gave wrong position by 4 deg. in dec.

M 68; NGC 4590; GCL 20; ESO 506-SC30; Globular cluster
RA: 12h 39m 28.0s (J2000) declination: -26d 44' 34"
Magnitude: 7.8
Globular cluster, large, extremely rich in stars, very compressed, irregular round, resolved, stars 12th mag.; = M68 Angular diameter 12.0'

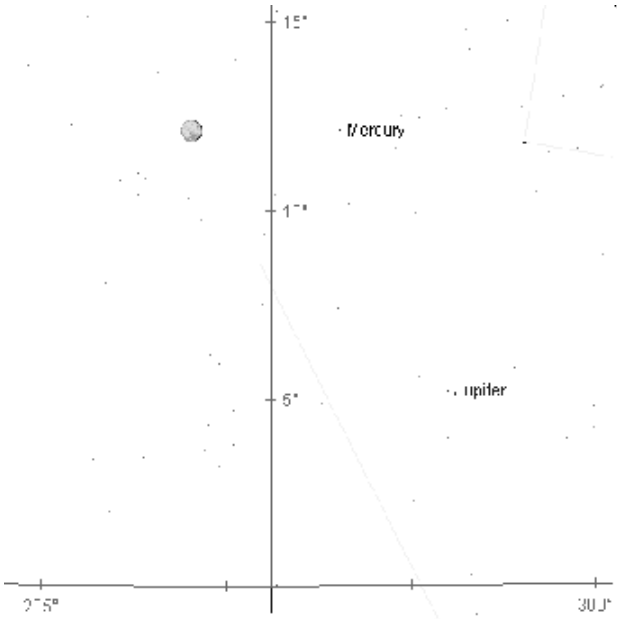
M 83; NGC 5236; MCG -5-32-50; Spiral Galaxy
RA: 13h 37m 00.2s (J2000) declination: -29s 52' 04"
Magnitude: 8.0
Very much remarkable very bright, very large, extended 55deg, extremely suddenly brighter middle nucleus, 3- brighter resolvable spiral; = M83 Angular diameter 11.2' Surface brightness 12.8 Fast supernova producer, 4 in 50 yrs.
The supernova 1923A was found in this galaxy on May 5, 1923 at RA 13 34.3, declination -29 37 (epoch B1950), magnitude 14.0.
The supernova 1945B was found in this galaxy on Jul 13, 1945 at RA 13 34.3, declination -29 37 (epochB1950), magnitude 14.2.
The supernova 1950B was found in this galaxy on Mar 15, 1950 at RA 13 34.3, declination -29 37 (epochB1950), magnitude 14.5.
The supernova 1957D was found in this galaxy on Dec 1, 1957 at RA 13 34.3, declination -29 37 (epochB1950), magnitude 15.0.
The supernova 1968L was found in this galaxy on Jul 17, 1968 at RA 13 34.3, declination -29 37 (epochB1950), magnitude 11.9.
The supernova 1983N was found in this galaxy on Jul 03, 1983 at RA 13 34.3, declination -29 37 (epochB1950), magnitude 12.5.

NGC 5694; Caldwell 66; Globular Cluster
Right ascension: 14h39m36.8s Declination: -26 32' 16"
Magnitude: +10.2
Angular diameter 3.6' Considerably bright, considerably small in angular size, round, pretty suddenly brighter middle, resolvable, star 9.5 south preceding

NGC 4361; PK67: 294+43; Planetary Nebula
J2000 RA: 12h 24.5m dec: -18d 48'
Magnitude, integrated over entire object: 10.3. Magnitude of central star: 12.9
Angular diameter: 80". Very bright, large, round, very suddenly much brighter middle nucleus, resolvable.

NGC 4038 & NGC 4039; Caldwell 60 & Caldwell 61; Ringtale Galaxy
Right ascension: 12h01m52.82s Declination: -18 51' 54.2"
Magnitude: 10.3
Pretty bright, considerably large, round, very gradually brighter middle. Ringtail Galaxy, two filaments. Angular diameter 2.6' x 1'. The supernova 1921A was found in this galaxy on Mar 01, 1921at RA 11 59.3, declination -18 35 (epochB1950), magnitude ??.

NGC 3242; Caldwell 59; PK67: 261+32 1; Ghost of Jupiter; Planetary Nebula
J2000 RA: 10h 24.8m dec: -18d 38'
Magnitude: +8.6. Magnitude of central star: 11.5
Remarkable planetary nebula, very bright, little extended 147deg, 45" diameter, blue
Angular diameter 40"x 35"



May 24, 2001 at 21:30 EDT find a good Northwestern horizon, because this is a pretty cool grouping! A very young Moon, Mercury and Jupiter! (chart produced by Distant Suns 2.0 for Windows)

An Observational History of Mars

by David Snyder (Continued from Last Month)

Last month I discussed the history of Mars observations. However I only briefly mentioned Percival Lowell and the canal controversy. And I only briefly mentioned the Mars observations and discoveries made after 1960. This article covers both topics.

Public attention was first drawn to the Martian canals in 1892, mainly through the efforts of the Italian astronomer Schiaparelli and the French astronomer Flammarion. However Percival Lowell kept the canals in the public's attention. Lowell was born into a wealthy Massachusetts family and was well educated (he graduated from Harvard). While he was aware of current astronomical theories, he seemed more interested in other matters (which included travels to Japan). He owned a small telescope, but there is no evidence he did any serious observing with it. However, Lowell was well connected; among his numerous acquaintances was the Harvard astronomer, W. H. Pickering. Lowell and Pickering corresponded with each other on the subject of Mars.

In 1893, Percival Lowell was given one of Flammarion's books as a Christmas present. This book discussed what was known about Mars, including the canals and Flammarion's own ideas, in particular the suggestion that the canals might be signs of intelligent life. Lowell read the book and became obsessed with Mars. (The Mars map I passed around at last month's meeting was from volume 2 of this book, published in 1909).

Only someone with Lowell's wealth and connections would take this obsession to the next step. Lowell decided to build an observatory he could use to study the red planet. He did not take the easy approach and build an observatory near his home in Boston; rather he considered many possible locations in an attempt to find the best seeing conditions. Seeing is a term used by astronomers; good seeing means there is little or no turbulence in the atmosphere. Even though he wasn't the first to understand the importance of good seeing, it wasn't widely understood at the time and he made a large number of people aware of it.

Lowell convinced Pickering to join him in a trip to Arizona to scout out possible locations. Pickering brought his assistant, Andrew Douglass and eventually the three of them set up an observatory near Flagstaff and conducted systematic observations of the red planet. These observations gave Lowell a well-deserved reputation as one of the best planetary observers.

Pickering left the observatory after a couple years, but Douglass stayed until he was fired in 1901. That is when Douglass started doubting Lowell's canal observations. To fill the positions Lowell hired Vesto M Slipher, Carl Lampland and Vesto Slipher's brother Earl C Slipher as assistants. In 1902 Lowell was appointed to the Massachusetts Institute of Technology as a non-resident astronomer. He could have just continued with his observations and be remembered as a skilled astronomer. However Lowell was not content to just observe. He had numerous theories, some of which involved canals and the intelligent creatures that supposedly built them. These theories were internally consistent and very ellaborate.

The available observations did not always support Lowell's ideas. There was growing doubt about the existence of the canals themselves, not to mention the rest of Lowell's ideas. When he encountered skepticism, Lowell became dogmatic and found new audiences for his ideas by giving public lectures and writing articles in popular magazines. Lowell became an outcast in the scientific community. However he had support from a few scientists. In particular, Flammarion was always sympathetic to Lowell and his ideas.

The canal controversy would not be completely resolved until spacecraft arrived at Mars. In 1964, after a few U. S. and soviet failures, a U. S. spacecraft, Mariner 4, is the first to flyby Mars. In 1969, Neil Armstrong walks on the Moon. Some consider that a manned mission to Mars is the next step. However there are problems with the idea. A round trip would take two years. Enough fuel and water must be carried on board so the astronauts could survive and return to earth. The weight of that fuel and water adds to the expense. A one way manned trip to Mars (assuming one could find anyone to volunteer for such a thing) seemed manageable, but a round trip seemed too expensive and too difficult. To date, it has never been attempted, but the idea has been tempting and there are plans to send people to Mars (it remains to be seen if and when these plans will succeed).

Since Mariner 4, the U. S. has sent several spacecraft which either flyby or orbit Mars: Mariner 6, 7 and 9, Viking 1 and 2, Pathfinder and the Mars Global Surveyor (MGS). These spacecraft along with several soviet spacecraft have returned thousands of photographs and a vast quantity of other data. In addition, a dozen or so meteorites are known to have originated on Mars. Analysis of these meteorites has supplied additional data.

We now have a very different picture of Mars. Some parts of Mars have numerous craters suggestive of Mercury and the Moon, but other parts of Mars have plains, volcanoes, canyons and river channels. The volcanoes and canyons are bigger than any other known examples, however there is a vague similarity between some of these features and similar features on the Earth. There was no evidence of canals and no liquid water.

Since the canals are not real, why were Schiaparelli, Flammarion and

clues. First, Schiaparelli was colorblind and this explain why he saw details others did not. Once Schiaparelli's results were known, the power of suggestion may have influenced other observers. Also, records suggest most observations of canals happened under poor seeing conditions or when small apertures were used. The canals disappeared under better conditions and larger apertures. Lowell preferred to reduce the aperture of his scope (which made observing the canals easier), but many of his critics used larger apertures.
The data from the spacecraft prove that in its early history Mars was warmer and had abundant liquid water. Today there is still water, but it is all in the form of ice (in the polar caps and below the surface). There is also the possibility Mars may had tectonic plates like the Earth does now (however if so, they were active for only a 500 million years or so). We now know that the atmosphere has a pressure that varies between 5 and 10 millibars (much lower than anyone had suspected until Mariner 4 made radar occultation measurements). It is almost entirely carbon dioxide, but contains some water vapor and other trace gases. The polar caps are partly water ice and partly frozen carbon dioxide, but there are differences between the northern and southern polar caps, as there is between a polar cap seen in the Martian winter and a polar cap seen in the Martian summer.
There also have been a few tantalizing clues suggestive of life, but to date no proof that Mars has or ever had life. The most publicized of these clues was a meteorite that was given the designation ALH84001. ALH84001 is one of the dozen or so meteorites known to come from Mars and had what looked like fossils. Some scientists believe these fossils come from ancient Martian bacteria, however other scientists are not convinced. I should note that Viking photographs in the region known as Cydonia look like a human face, but MGS photographs of the same region look like a pile of rocks. A few non-scientists claim this is a structure built by Martians, however that is unlikely.

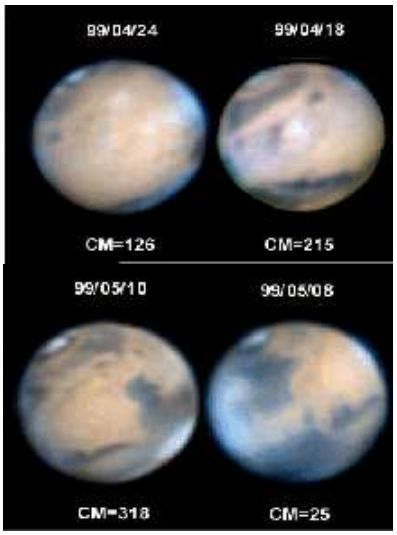


Photo used with the permission of António Cidadão ©

There are currently two spacecraft enroute to Mars. One was launched by Japan in 1998. There were some technical problems, but it is expected to arrive at Mars in late 2003. The other is Odyssey, which was launched in April 2001 and is expected to arrive at Mars in October 2001.
Anyone with a telescope can attempt to observe Mars themselves. The best time to observe Mars is the couple months before and after opposition (this year opposition occurs in mid June). The rest of the time, it is difficult to see any detail. Every 15 years there is an exceptionally good opposition; the last one was in 1988, the next one is in 2003. This year we have the best opposition since 1988.
Observing Mars takes practice. Details become clear after a little acclimation. If the seeing is bad, you will not observe as much detail as when the seeing is good so patience is important. You should try to observe Mars as often as possible during the opposition, this will allow you to track changes in surface and atmospheric features. When you observe Mars, you may want to try sketching; this will train your eye to observe detail. Generally the polar caps are the easiest features to see, however you should see the maria and deserts as well. If you observe over long periods and are patient, you may see clouds, dust storms and various atmospheric phenomena. You may also notice changes in the polar caps and the maria.
If you have a good telescope and sharp eyes it may be possible to see the two moons, Phobos and Deimos. At best they have magnitudes 11 and 12, and are rather close to the bright red Mars.
Observers have seen various types of clouds on Mars. They are known by the labels blue, white, yellow and W-shaped. These labels can be misleading. Yellow clouds look yellow to the eye, however blue clouds do not necessarily look blue, white clouds do not necessarily look white and W-shaped clouds are not always W shaped. Yellow clouds are composed of dust and sometimes grow to cover much of the Martian surface, when this happens it is known as a dust storm.
Having the correct equipment will help your observations. If you wish to observe surface details, a dark yellow, red and/or orange filter is helpful. Violet and blue filters are helpful if you want to observe clouds and other atmospheric phenomena (but not yellow clouds or dust storms). Green filters are helpful for observing the polar caps and other white areas, yellow clouds and dust storms. If you have made either Jupiter or Saturn observations, you may want eyepieces that provide slightly more magnification than the eyepieces you used for Jupiter and Saturn.
One phenomenon worth mentioning is the violet clearing. When Mars is observed through a blue or violet filter, it usually appears as a featureless blob (but clouds can sometimes be observed). However on occasion (usually only once every few years) details on the surface appear. This lasts a few days; such events are known as violet clearings. It has been suggested this demonstrates a poorly understood change in the Martian atmosphere, but the best evidence suggests it has nothing to do with the atmosphere at all and is probably an optical illusion.
Note: The information for both of these Mars articles came from a variety of sources, a complete list can be found on the web site.

ASTRONOMY/SPACE EVENTS

(All times in EDT & Produced by Doug Warshow)

May 18 - 17:00 1 Ceres is stationary. Located 0.5 deg. SE. of 52 Sagittarii.
Past Events: 1969 - Apollo 10 launched (Moon).
May 19 - 3:12 Great Red Spot on Jupiter's central meridian.
- 5:00 Venus 4 deg. N. of Moon.
- 23:03 Great Red Spot on Jupiter's central meridian.
- PM Mercury 4.5 deg. above Jupiter.
Past Events: 1996 - STS-77 Endeavor launched.
2000 - STS-101 Atlantis launched.
May 20 - 7:25 Algol at minimum.
- 17:00 4 Vesta 0.6 deg. S. of Moon.
- 18:55 Great Red Spot on Jupiter's central meridian.
- AM Old Moon rising N. of E., 12 deg. lower left of Venus.
- PM Mercury 5.2 deg. above Jupiter and 3 deg. lower left of Beta Tauri.
Past Events: 1978 - Pioneer-Venus 1 launched.
1995 - Spektr module launched to Mir space station.
May 21 - 4:51 Great Red Spot on Jupiter's central meridian.
May 22 - 0:00 Mercury at greatest eastern elongation.
- 0:42 Great Red Spot on Jupiter's central meridian.
- 20:34 Great Red Spot on Jupiter's central meridian.
- 22:46 New Moon.
- 2 Pallas is 4' S. of 56 Herculis.
Past Events: 1969 - Apollo 10 descends to within 50,000 ft. of the lunar surface.
May 23 - 4:14 Algol at minimum.
- 6:30 Great Red Spot on Jupiter's central meridian.
- 19:45 Young Moon WNW, 4-5 deg. below Jupiter. Mercury 7 deg. upper left of Jupiter.
May 24 - 2:22 Great Red Spot on Jupiter's central meridian.
- 3:00 Jupiter 1.3 deg. N. of Moon.
- 15:00 Mercury 3 deg. N. of Moon.
- 22:13 Great Red Spot on Jupiter's central meridian.
Past Events : 1962 - Aurora 7 launched. Scott Carpenter is first American to eat food in space.
May 25 - 9:00 Saturn in solar conjunction.
- Aten asteroid 1999 KW(4) within 4.8 million km of Earth. Look in southern Aquila.
Past Events: 1961 - John F. Kennedy challenges U. S. to achieve a Moon landing before the end of the decade.
1966 - First full-scale Apollo Saturn V rolls out of Vehicle Assembly Building.
1973 - First Skylab crew launched. Good thing that the station was launched previously.
May 26 - 1:03 Algol at minimum.
- 4:01 Great Red Spot on Jupiter's central meridian.
- 23:53 Great Red Spot on Jupiter's central meridian.
- PM Moon to left of Pollux and Castor.
May 27 - 3:00 Moon at perigee (368,033 km).
- 14:00 2 Pallas at opposition.
- 19:44 Great Red Spot on Jupiter's central meridian.
- 2 Pallas at opposition.
Past Events: 1999 - STS-96 Discovery launched.
May 28 - 5:40 Great Red Spot on Jupiter's central meridian.
- 21:52 Algol at minimum.
- PM Moon near Regulus.
Past Events: 1959 - First primates in space (Able and Baker) complete suborbital flight.
1964 - SA-6 launched: second Saturn I Block 2.
May 29 - 1:32 Great Red Spot on Jupiter's central meridian.
- 18:00 Uranus is stationary.
- 18:09 First Quarter.
- 21:24 Great Red Spot on Jupiter's central meridian.
- R Camelopardalis at maximum bightness.
- 6 Hebe is 5' W. of 6 Comae Berenices.
Past Events: 1919 - Einstein's General Theory of Relativity tested during solar eclipse.
May 30 - PM Mercury 25 deg. lower right of Pollux and 23 deg. lower left of Capella.
Past Events: 1966 - Surveyor I launched (Moon).
1971 - Mariner 9 probe launched (Mars).
May 31 - 3:11 Great Red Spot on Jupiter's central meridian.
- 6 Hebe is 9' S. of 6 Comae Berenices.
Past Events: 1975 - European Space Agency formed.
1990 - Kristall module launched to Mir space station.
Jun 1 - PM Moon near spica.
Jun 2 Past Events: 1966 - Surveyor I lands on the Moon.
1970 - First drop test of M2-F3 lifting body.
1998 - STS-91 Discovery launched.
Jun 3 - Mercury at its descending node.
- S Ursae Majoris at maximum brightness.
Past Events: 1948 - Dedication of 200" Hale telescope.
1965 - Gemini 4 launched. Ed White takes America's first space walk.
1966 - Gemini 9 launched.
Jun 4 - 1:00 Mercury is stationary.
- 8:00 Pluto at opposition.
Past Events: 1971 - Last (28th) flight of X-24A lifting body.
1974 - Construction begins on Space Shuttle Enterprise.

2000 - Compton Gamma Ray Observatory re-enters atmosphere.
Jun 5 - 21:39 Full Moon.
- Moon near Antares.
Past Events: 1989 - Voyager 2 begins observations of Neptune.
1991 - STS-40 Columbia launched.
Jun 6 - AM 14 Irene 7' N. of Xi Ophiuchi.
- Moon near Mars.
Past Events: 1971 - Soyuz 11 launched. First crew to man Salyut 1.
Jun 8 - Venus at greatest western elongation.
Past Events: 1625 - Giovanni Cassini born.
1958 - First X-15 unpowered glide test.
1975 - Venera 9 launched (Venus).
Jun 9 Past Events: 1812 - Johann Gottfried Galle born.
1913 - Robert Goddard patented first rocket-powered aircraft design.
Jun 10 - 4:00 Neptune 3 deg. N. of Moon.
Past Events: 1985 - Vega 1 deploys lander and balloon on Venus.
Jun 11 - Moon at apogee (404,629 km).
Past Events: 1985 - First balloon used to explore another planet (Venus).
Jun 12 - 5:57 Algol at minimum.
Past Events: 1967 - Venera 4 launched (Venus).
Jun 13 - 14:00 Mars at opposition.
- 23:28 Last Quarter.
- Mercury at aphelion.
Past Events: 1974 - National Space Society founded.
1983 - Pioneer 10 leaves solar system.
Jun 14 - 9:00 Jupiter at solar conjunction.
- Venus at aphelion.
- Earliest sunrise at 40 deg. N. latitude.
Past Events: 1965 - Mariner 4 returned first close-up images of Mars.
1967 - Mariner 5 launched (Venus).
1975 - Venera 10 launched. Second spacecraft to photograph Venusian surface.
1985 - Vega 2 deploys lander and balloon on Venus.

Got Something to Sell?

For Sale: Meade 10" Starfinder Dobsonian with a 6x30 achromatic finder scope, Telrad, Meade 9mm and 26mm Series 4000 Plossl (both 1.25"), 32mm Sirius Plossl (1.25"), 2" focuser w/1.25" adapter, red LED flashlight, star charts, and Planisphere. **$500.00 Like New Condition** Call 734-662-8669 (ask for Isaac) or E-mail: isaac004@hotmail.com

For Sale: Meade 10" LX50 (SCT) w/tripod, 9mm and 26mm Series 4000 Plossl, star diagonal. Meade off-axis guider, T-ring adapter, T-ring for an Olympus camera, telextender. Meade Pictor 201XT CCD autoguider, counter weights, Kendrick dew zapper, Olympus OM-1 35mm camera w/cable release & two focusing screens. **$2300.00 or Best Offer 3 yrs. Old and hardly used.** Owners Manuals and all original packaging. Contact: Dennis Bartes astroman775@yahoo.com

Wanted: Articles for next month's Newsletter. IF YOU WRITE IT, I WILL PRINT IT. Send me a picture of you next to your scope, and I'll put it in the Newsletter. Tell everyone about your favorite Astronomy related book, computer software, video tape or whatever, and I'll print it in the Newsletter. This is your Newsletter and you are the First Priority. E-mail articles or whatever's to: msdpressed@mediaone.net or send them USPostal to:
Mark Deprest, 3138 Bolgos Circle, Ann Arbor, MI 48105.

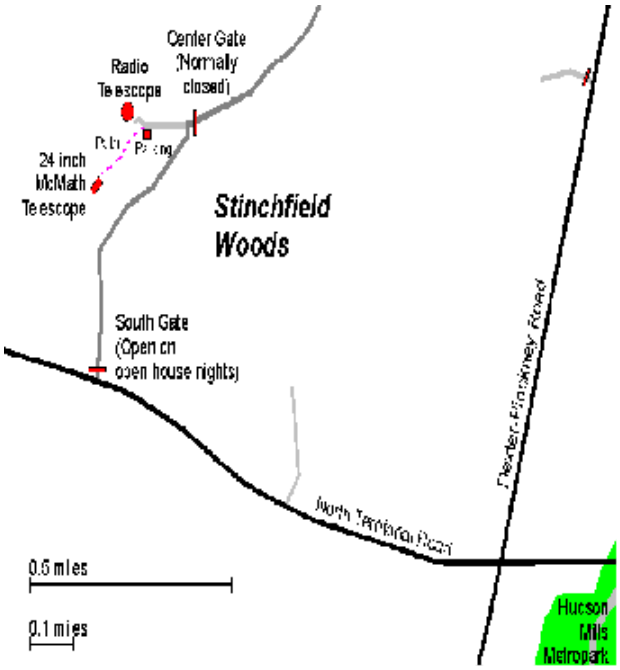
From The Observatory: by Mark Deprest

April 28, 2001, 7:30PM: I arrived a little earlier than I had planned to get things set up. You see, it was going to be a big night on the hill. It was National Astronomy Day, a scheduled Open House / Star Party, and it was going to be CLEAR! We anticipated a large turn out and we weren't disappointed, we had a small group of 6th grade Girl Scouts from Dexter and a group of Tiger Scouts (1st grade) from Ann Arbor, plus their parents and group leaders, not to mention an enthusiastic general public.
There were no shortage of Lowbrows on the hill either, the list included some faces not seen at the observatory for a while. Reid Travis was there with his 10" LX200 (the worlds loudest slewing scope) someone suggested bring their blender to keep it company. Doug Scobel showed up with his "High Constrast" 13" dob, it was nice to see him again and I always enjoy the views through his eyepiece. John Ridley was there with his scope and was very excited about the arrival of his 15" Swayze mirror, for the "Obsession Style" scope he is trying to find time to complete (we are looking forward to seeing it on the hill soon). Jim Wadsworth was there with his 17.5" Coulter and I never tire of watching him unload and load that "light bucket" of his out of and into his van. Gary Perrine was there with his 10" truss-tube dob and found a spot on the quickly crowding hill.
Charlie Neilsen and Dave Snyder were in the Observatory and handling the 10" SCT and 24" McMath (thank you both), Charlie was pulling double duty collect money for the Green Lowbrow sweatshirts and probably recruiting new members. John Causland was there with his C-11 and his platformed 18" collapsible truss-tube dob and you could tell he was getting warmed up for the Texas Star Party (he and I finally closed up around 3:30 a.m.). Chris Sarnecki was there with his newly re-coated mirror all put back together in his 13" Coulter. Paul Walkowski found a patch of ground to set up his 10" home-built reflector. Randy Pruitt had his binoculars set up in a corner of the hill, and Kristine Nyland and company with Dad in tow showed up and almost ruined everyone dark adapted eyes (gotta use those parking lights Kristine, when you get there that late). Kristine's friend (sorry I don't remember his name) had a very nice image of M81 and M82 in an Edmund's Scientific Astroscan that they showed me. Bernard had told me that due to other commitments, he would not be able to make it to the Open House that night, but he must have found at least a few minutes in his busy schedule to make a brief appearance and say hello to all. Lorna Simmons and Dick Syder were doing they're usual "Stellar" job of telling people where to PARK – IT, (thank you both, you make everyone's trip to the hill much more enjoyable). Oh yeah I was there with my 5" Jaeger RFT and my trusty 8" dob, hunting down obscure and strangely named asterism. I also took time to conduct a little talk for our Scouting groups, (I do enjoy being a "Ham").
The Moon and Jupiter were the early targets of choice and as the night wore on the guests were treated to bright galaxies, open clusters, and globular clusters. There was an attempt to hunt down Comet McNaught – Hartley at a very diffused 10.5 magnitude but if it really was seen we can't say for sure. We showed off some nice double stars and even the ring nebula made its appearance in at least two scopes. Well as the crowds started to leave and the late evening turned into early morning the die-hards anticipated the rising of Mars. Those that stuck it out were treated to a "low and atmosphere bouncing" image that showed a promise of good views to come. We did not see any Aurora activity but we did get a chance to see a couple of bright pieces of "space-junk" (two separate booster stages) and a nice bright satellite, thanks to one of the guests with a Palm Pilot and a satellite tracking program. We also saw a few meteors that were sporadic throughout the night and from an undetermined radiant.
All in all I'd have to say it was a very good night for everyone, I know I enjoyed myself and I want to thank everyone for coming out and making the night on the hill fun.

Places and Times:

Dennison Hall, also known as The University of Michigan's Physics and Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. It is found in Ann Arbor on Church Street about one block north of South University Avenue. The meeting is held in room 130. Monthly meetings of the Lowbrows are held on the 3rd Friday of each month at 7:30 PM. During the summer months, and when weather permits, a club observing session at Peach Mountain will follow the meeting.

Peach Mountain Observatory is the home of The University of Michigan's 25 meter radio telescope as well as the University's McMath 24 inch telescope which is maintained by the Lowbrows. The observatory is located northwest of Dexter. The entrance is on North Territorial Road, 1.1 miles west of Dexter-Pinckney Road. A small maize-and-blue sign marks the gate. Follow the gravel road one mile to a parking area near the radio telescopes. Walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



Public Star Parties:

Public Open House/Star Parties are held on the Saturday before and after each new Moon at the Peach Mountain Observatory. Star Parties are canceled if the sky is cloudy at sunset or the temperature is below 10 degrees F. Call 480-4514 for a recorded message on the afternoon of a scheduled Star Party to check on the status. Many members bring their telescopes and visitors are welcome to do likewise. Peach Mountain is home to millions of hungry mosquitoes - bring insect repellent, and it does get cold at night so dress warmly ! Amateur Telescope Making Group meets monthly, with the location rotating among member's houses. See the calendar on the front cover page for the time and location of next meeting.

Membership:

Membership dues in the University Lowbrow Astronomers are $20 per year for individuals or families, and $12 per year for students and seniors (age 55/+). This entitles you to the monthly REFLECTIONS newsletter and the use of the 24" McMath telescope (after some training).
Dues can be paid to the club treasurer at the monthly meeting or by mail at this address:
Charlie Nielsen
6655 Jackson Road #415
Ann Arbor, MI 48103

Magazines:

Members of the University Lowbrow Astronomers can get a discount on these magazine subscriptions:
Sky and Telescope: $29.95 / year
Astronomy: $29.00 / year

For more information contact the club Treasurer. Members renewing subscriptions are reminded to send your renewal notice along with your check when applying through the club Treasurer. Make the check payable to "University Lowbrow Astronomers".

Newsletter Contributions:

Members and (non-members) are encouraged to write about any astronomy related topic of interest. Call or E-mail to Newsletter Editors at:
Mark Deprest (734)662-5719 msdpressed@mediaone.net
Bernard Friberg (743)761-1875 Bfriberg@aol.com
to discuss length and format. Announcements and articles are due by the first Friday of each month.

Telephone Numbers:

President:	D.C. Moons	
Vice Presidents:	Dave Snyder	(734)747-6537
	Paul Walkowski	(734)662-0145
	Doug Warshow	(734)998-1158
Treasurer:	Charlie Nielsen	(734)747-6585
Observatory Dir.:	Bernard Friberg	(734)761-1875
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	Bernard Friberg	(734)761-1875
Parking Enforcement	Lorna Simmons	(734)525-5731
Keyholders:	Fred Schebor	(734)426-2363
	Mark Deprest	(734)662-5719
	Bernard Friberg	(734)761-1875

Lowbrow's Home Page:

http://www.astro.lsa.umich.edu/lowbrows.html
Dave Snyder, webmaster
http://www-personal.umich.edu/~dgs/lowbrows/

2001 – 2002 LOWBROW OFFICERS & STAFF

D.C. Moons – President & Dictator
Paul Walkowski – Vice-President
Doug Warshow – Vice-President
Dave Snyder – Webmaster & Vice-President
Charlie Nielsen – Treasurer & Membership Director
Bernard Friberg – Observatory Director & Newsletter Publisher
Mark Deprest – Newsletter Editor
Lorna Simmons – Parking Assistant
Key Holders: Bernard Friberg, Fred Shebor, Mark Deprest, Charlie Nielsen

Sporting a mushroom cloud atop his hat, D.C. Moons, (your new President), searches for trinitite, a mineral created by the first atomic test explosion, at the Trinity Site in New Mexico on the 50th anniversary of the 1945 test.

University Lowbrow Astronomers
Ann Arbor, Michigan

UNIVERSITY LOWBROW ASTRONOMERS
3684 Middleton Drive
Ann Arbor, Michigan 48105

Lowbrow's WWW Home Page:
www.astro.lsa.umich.edu/lowbrows.html

Check your membership expiration date on the mailing label !