The Mason-Dixon Astronomer

Westminster Astronomical Society of Maryland

February 2001 Vol. 17 No. 2

Coming Events

February Meeting
Feb 14
Tom Renn
"3-D Slide Show"

Saturday, Feb 17
Planetarium Show
Bear Branch
7:30 & 8:30

Friday, Mar 23
Messier Marathon

May 19
Star Party
Piney Run

In This Issue

Presidential Message

By Brian Eney

After reading the WAS Constitution for a detailed description of the duties of the Office of the President; I came across the purpose of forming our Society. The Purpose:" The purpose of the society is to engage its members in the study of astronomy, the knowledge and skills of the WAS shall also be directed at promoting the public's astronomical awareness. The society is a primary source of astronomical information in the community."

I think we have done a great job in the 17 years of existence, but I think we can do more. The collective knowledge of our members is ***ASTRONOMICAL***! I would like to share that with not only with the new members but the general public. Let's face it the only thing Channels 2, 11, 13 etc. know about life after dark is it is dangerous in Baltimore!

I believe Skip's outreach towards the kids is very admirable, children shape the future. The state of Maryland has a great legacy in astronomy and the space program; Martin Marietta, APL, Goddard, and not mention three out of five in the next Shuttle mission (STS 98) from Baltimore; it all started because someone sparked an interest in a child's mind! I hope to continue his effort as well as reaching to the "older" kids.

I also understand, that the general consenses in club is why not throw more star parties at Bear Branch. OK, your President has spoken! Starting in March, the third Friday of every month there will a planetarium show followed by observing (**mark your calendars**!!). Note: Jan 26 and Feb 17 Planetarium Shows at 7:30.

I have many other plans for the future of WAS, (when think of them I will tell you). I look forward to serving as President and THANK YOU for confidence.

Minutes from January Meeting

By Phil Schmitz, Secretary

Brian opened meeting.

Curt asked if someone could pick up the key to open the Nature Center on meeting night. Tom Renn will present his 3D photography at the February meeting. Curt spoke on the issue of the newsletter, hard copy vs. the web. Curt has rescheduled David Durham to talk in March.

Richard Schoen stated that it costs $75.00 a month to produce the newsletter. Richard suggested that members who prefer a hard copy should pay higher dues for the newsletter.

Skip mentioned some upcoming star parties, May 19 (Saturday) at Piney Run (Solar 1PM - 4PM), evening (8PM -???). Jul 13 and 27 star parties for sleepover also at Piney Run (Scouts?). The July star parties are not open to the public, volunteers are needed.

Curt has taken over the WAS library. Skip also mentioned that the 6" refractor needs a lot of work. He will take it to Company 7, next week.

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Star Points for February
Bright Planets Make Easy Targets

By Curt Roelle

This month provides a good opportunity to drag out that new Christmas telescope and see the three brightest planets, Venus, Jupiter, and Saturn. Each offers unique features visible in even the smallest telescope.

The planet going through the most dramatic and noticeable changes right now is also the brightest planet in the night sky. Venus is gaining on Earth and is moving in between the Sun and us. As Venus draws nearer its apparent size will swell. Between New Year's Day and the end of February the apparent size of Venus will more than double.

Something else to keep your eye on is the changing shape of Venus. In a telescope Venus goes through phases just like the Moon. In early February just a little less than half of the disc of Venus is illuminated. If you follow Venus with your telescope you may notice it shrinking to a thin crescent shape in the coming weeks.

As Venus grows in apparent size and shrinks in phase, it also sets a little earlier after sunset each evening. The ironic thing about Venus however, is that it is so brilliantly bright that it is best

viewed during bright twilight before the sky has completely darkened. Once in a dark sky its dazzling brilliance renders Venus difficult to observe comfortably.

Higher up in the sky as twilight ends rules Jupiter, king of the gods and giant of the planets. Although currently about ten times farther away than Venus, Jupiter's intrinsically large size still causes its disc to appear larger in a telescope than Venus does.

With a small telescope you may see some of the dark brownish or rusty colored bands that wrap around Jupiter. The two most prominent such bands lie on either side of the planet's equator. Thus they are

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Meeting and Elections, Part II

Brian mentioned over 400 people showed up at the Science Center to view the Christmas Day partial eclipse. Phil mentioned that February's Sky & Telescope (pg 96-97) mentions the Westminster Astronomical Society members that attended the Enchanted Skies Star Party in Socorro, NM last September.

The elections were held and the results are:

President: Brian Eney
Vice Pres: Paul Henze
Treasurer: Gary Frishkorn
Secretary: Laura Block
Member at Large: Phil Schmitz

After the elections Curt Roelle showed his videotape of the Solar Eclipse from his house and some additional video he took at the Naval Observatory on New Year's Eve (He also had his 20" Dobsonian at the Naval Observatory).

Star Points, continued

referred to as the north and south equatorial belts.

If you have a moderately large telescope you might also notice several of the other belts or the lighter colored bands. These creamy colored bands are called zones.

From time to time Jupiter's "Great Red Spot" is visible in its southern hemisphere. Up until the 1980s the spot was noticeably red and dark. Then it faded to a pale pink and almost vanished from view. The red spot appears to be making somewhat of a comeback and seems to have darkened somewhat more.

Jupiter rotates rapidly completing one rotation in a little less than 10 hours. You can take advantage of Jupiter's rapid spin to see a lot of Jovian real estate in a relatively short time. In about five hours a telescopic observer can see the entire planet, front and back.

With a small telescope, or even binoculars, you can follow Jupiter's four brightest moons. Their names are Io, Callisto, Europa, and Ganymede. Magazines such as "Sky & Telescope" and "Astronomy" include monthly charts that can be used to identify which moon is which on any given night.

If you're lucky you might happen to catch a shadow of one of the moons as it transits across the face of the planet. A shadow will appear as a slowly moving tiny black dot. You can also find transit predictions listed for the entire month in tabular form in those magazines.

Finally, very close to Jupiter in the sky, the planet Saturn shines down on February evenings. Saturn's most striking feature of course is its beautiful ring system. It is a wonderful sight in any sized telescope. If you look carefully you can see the shadow of Saturn cast by the Sun on the rings on the far side of the planet.

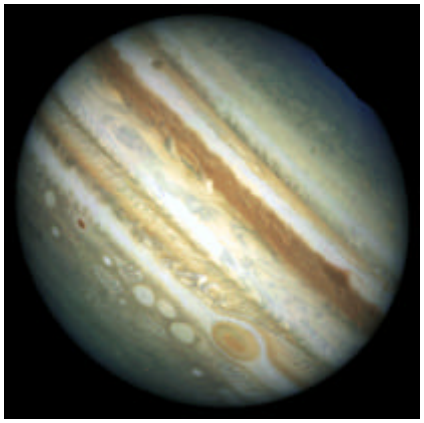
Several of Saturn's brightest moons are visible in amateur telescopes. The brightest, Titan, is visible in just about any instrument. The larger the telescope the more moons will be visible. Sky & Telescope plots monthly positions for the five brightest moons, Titan, Rhea, Dione, Tethys, and Enceladus.

What else is there to see in the sky besides planets? Between and a little above Jupiter and Saturn is the star cluster known as the Pleiades or Seven Sisters. Located in the constellation Taurus the Bull, the Pleiades are close enough to be visible to the unaided eye. To some people the Pleiades appear to form a small dipper, and it is often confused with the "Little Dipper" asterism of stars near the north celestial pole in the constellation Ursa Major.

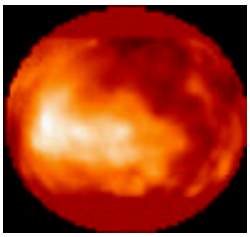
The Pleiades are viewed best in a telescope at low power or through binoculars. This is because a low magnification is needed in order to fit the entire cluster in the field. The Pleiades are also item 44 in the Messier catalog of "deep sky" objects. If you are looking for more challenging targets to point your telescope at the Messier catalog is an excellent place to begin. The entire catalog has about 110 entries. All of them are visible in small to intermediated sized telescopes.

Next month we'll discuss more about the celestial gems in the Messier catalog. We'll also mention a viewing opportunity coming up in March where you can meet some local amateur astronomers for a night of observing Messier's objects with a variety of telescopes.

Jupiter



Titan



Impact Craters around the World

By Phil Schmitz

I had the good fortune to visit Meteor Crater last September with five other WAS members. My first impression of the crater was that it looked deeper and narrower than the aerial photos I had seen many times in the past. Keeping in mind that the space invader was only about 150 feet across, the resulting blemish in the Earth was impressive!!! What a sight it must have been when thousands of tons of Permian sandstone were thrown miles from the crater in just an instant (Of course, no one would have survived seeing the event up that close). The rim of the crater itself is still littered with huge white-gray rocks from the impact event some 50,000 years later. The rim stands some 150 feet higher than the surrounding landscape. The crater itself is about 4/5 of a mile across and 600 feet deep (it was about 700 feet deep after impact but has partly silted in due to Earth's changing environment).

When we look at the Moon through binoculars or a telescope, we see craters all over its surface. Why is this? Unlike the Earth, the Moon has no atmosphere. So when an asteroid fragment or comet strikes the Moon, it leaves its mark. The resulting crater will remain for eons, only being changed, by chance, by another asteroid fragment striking the surface. Even though the Earth is about four times the diameter of the Moon, our atmosphere protects us from some of the outer space intruders. Many fragments burn up in the atmosphere and never reach the ground. Others, those reach the ground, and then have to compete with plate tectonics, the oceans, seas, earthquakes, and volcanoes (to name just a few) to survive. Time always wins this battle. There have been tens of thousands of impact sites around the world during the Earth's 4.5 billion year existence. Only about 150 or so are known today, the best-preserved being Meteor Crater near Winslow, Arizona.

The Odessa, Texas crater (meteorites were recovered from here) was the second authenticated crater in the United States. The main crater is only about 500 feet across and is now only about 18 feet deep. The rim itself is only a few feet above the surrounding terrain. The crater was probably about 75 feet deep when the impact occurred. Weather has taken its toll on the Odessa crater field. There is another crater on the ocean floor not to far from Atlantic City, New Jersey. The lower Chesapeake Bay was definitely formed by an impact millions of years ago. Quebec Canada has quite a few impact craters. New Quebec Crater is only two miles across; however, Clearwater Lakes is actually two large craters, 16 and 20 miles in diameter. They were formed by what is known as a contact binary. A contact binary is formed when two asteroids collide and fuse together. This particular contact binary stayed together through the Earth's atmosphere and probably split apart just before contact with the Earth. Another large impact is the 40-mile wide diameter Manicouagan Crater. This crater is some 214 million years old, forming at the end of the Paleozoic era. Considering its age, it isn't surprising that no meteorites have been found (darn!!!), they have all surrender to the Earth's erosion processes a long time ago. An elliptical crater near Sudbury, Ontario is now Canada's largest known impact crater. It is 155 miles across and around 1.8 billion years old.

Australia is also known for some famous impact sites. The impact at Henbury, discovered in 1931, left 13 craters, and this crater field is probably only a few thousand years old. Since this is an arid region, meteorites have survived!!! The meteorites found at Henbury are classified as a medium octahedrite (Iron) meteorite and displays a nice Widmanstatten pattern. Wolf Creek Crater is almost 3,000 feet across and 160 feet deep and was discovered from the air in 1947. Only oxidized (rusted) meteorites have been found, indicating that this is a very old crater. Australia's largest crater is Acraman Lake. The crater is about 56 miles in diameter and is about 450 million years old.

The largest known impact crater in the world is the Vredefort Ring, in South Africa; it is 186 miles in diameter and some two billion years old. Only the largest impact craters have survived the test of time (on the Earth).

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Another well-known impact scar is the Chixalub crater in Mexico (I will write a separate article on this one in a future issue - this is the one that is believed to have wiped out the dinosaurs).

Next Month - Tektites

Berringer Meteor Crater, Arizona

Henbury Crater, Australia

Welcome New Members

The Westminster Astronomical Society would like to welcome these new members:

- Karl & Pam Lubkans
- Howard Redman
- Timothy Catling
- Kevin S. Weaver
- Ian Slepian
- Charles & Carol Baker
- William Pitcher
- Joe Lillibridge
- Herbert Silver
- Laura Block

Light Pollution News

By Brian Eney

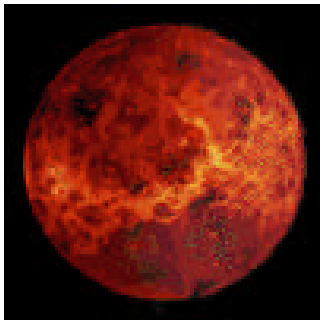
Delegate Nancy Kopp (of Montgomery County) is introducing a bill into the State Legislature for starting a task force to probe into light pollution in the state of Maryland. We will pass the bill number when it becomes available. The pass of this bill is dependent on our informing our representatives on how we feel.

Kids Page

The Solar System

T B W O Q Q Y Y F E U R
A L H T R A E R M U R M
S O E N E P T U N E A S
H A S B V F L C T G N R
O E T E D X H R V T U A
H T N U Y I R E E C S M
N U U G R E O M V P Y J
S Q H L T N Z R I U V Q
X T F I P Z P J E C A L
L Q P Q K H A A U T T Y
G U F N X B G J R Y S E
J B L M A C V B T E F A

ASTEROID BELT
EARTH
JUPITER
MARS
MERCURY
NEPTUNE
PLUTO
SATURN
SUN
URANUS
VENUS



Mazed™ "Zodiac Signs" by Isaac Thayer

Star Party News

By Phil Schmitz

Three WAS members; Erika Olson, Frank Martin and his daughter Cassiopeia Martin attended the Virginia Association of Astronomical Societies Conference and Star Party from September 22 - 24, 2000 at the University of Virginia in Charlottesville, VA. Speakers included Bob Gent - "Preserving the Night Sky"; Eric Douglass - "Evidence for Water on Mars" and Marty Cohen - "What to look for in Telescope Quality" to name a few. Erika got a picture of Frank in front of the 40" telescope (that picture can be seen on the WAS website). Frank also won a TeleVue 40mm Plossl eyepiece and a planesphere.

Six WAS members, Jeff Asner, Brian Eney, Gary Frishkorn, Mark Kaidy, Mark McPherson and Phil Schmitz attended the Seventh Annual Enchanted Skies Star Party in Socorro, NM from September 28 - October 1, 2000. The star party included an insider's tour of the VLA (Very Large Array) as well as observing at New Mexico Tech's Etscorn Campus Observatory. Speakers included Colonel Sid Gutieurez, a former Space Shuttle Commander. Saturday night (Sep 30th) was spent at the Pound Ranch. After a "chuck wagon"dinner, we were treated to very dark skies.

All six members won various door prizes. On Thursday night (Sep 28), Brian Eney won the very first door prize, a hat and a pin, later Phil Schmitz won a pin and a key chain. Prize winners on Sunday (Oct 1) were Mark Kaidy who won a pin and key chain, Phil Schmitz (again!!!) won a VLA RR Patch, Mark McPherson won The Sky Version 4 CD Rom, Gary Frishkorn won a coffee mug, and Jeff Asner won a book (he traded the book for The Sky CD Rom that a lady had won).

WAS Skywatch Calendar

1 Capricornid/Sagittarid meteors
2 Groundhog Day
3 Mercury stationary in right ascension
4 Clyde Tombaugh born 1906
5 /
6 Moon at ascending node
7 Moon at perigee, 0.40 deg. N of Beehive
8 Full moon
9 Uranus at conjunction with Sun
10 /
11 /
12 Lincoln's birthday
13 Capricornid meteors
14 WAS Meeting at 7:30 BBNC [Valentine's Day]
15 Moon at last quarter
16 Jupiter and Pluto at heliocentric opposition
17 /
18 Moon 0.55 deg. NNW of Ceres
19 Nicolas Copernicus born 1473
20 Neptune 2 deg. N of Moon
21 Moon 2 degrees south of Neptune; Venus at mag –4.6 --- greatest brilliancy
22 Venus at perihelion
23 New Moon; Supernova 1987A explodes, 1987
24 Delta Leonid meteors
25 Moon 0.92 deg. SE of asteroid Juno
26 /
27 Mardi Gras
28 Ash Wednesday

WAS Web Site of the Month

WAS web site pick of the month is The Salopian Web which is located:

http://www.r-clarke.org.uk/astrosoft.htm

Your editor stumbled upon this while perusing the NEAR web site, which we will get to in a moment. The Salopian Web is a fun place to kill some time if you like planetarium shareware programs. As they say, make sure your daily affairs are in order before you go exploring here. Don't miss the links as well; there is a link for a gun shop **-- *Chris Potter Guns*** which apparently also sells telescopes and binoculars.

The End Is NEAR

As you may know, NEAR is set to gently land on the EROS regolith on February 12, 2001. WAS has several historical NEAR connections as Ray Sterner has worked with their web site http://near.jhuaple.edu and Dr. Robert Farquhar (and others) have lectured to our group. Apparently the scientific "take" is ten times greater than was planned for this mission. On the way down to the surface, detail as small as 4 inches may be imaged.

Please look at the NEAR web site and by all means run the quick time simultion movies of the touch down. It becomes obvious that the mission scientists are incredibly brilliant because in addition to slowing the space craft to 5 mph, the have to station keep with the asteroid which tumbles in x-, y-, and z- axis and land in a controlled fashion. Their goal is to keep the craft alive for a little while after landing. Stay tuned!

NEAR image of the day for 2001 Feb 07

Links to the Lunar and Solar Calendars

Due to problems inserting these in the newsletter, the editors found it easier to link to directly to the site. So, you can download the February Lunar and Solar Calendars (using Acrobat Reader) at:

http://fermi.jhuapl.edu/temp/almanac/westminster/2001/Moon_FEB_2001.pdf

http://fermi.jhuapl.edu/temp/almanac/westminster/2001/Sun_FEB_2001.pdf

Thanks,

Jaci and Richard