



# The Mason-Dixon Astronomer

Westminster Astronomical Society of Maryland

August 2000  
Vol. 16 No. 8



## Coming Events

**August 9**  
**Monthly Meeting**  
Bear Branch Nature  
Center  
7:30 p.m.

**August 14<sup>th</sup>**  
**International Dark**  
**Sky/MD Chapter**  
Silver Spring Library  
7 p.m.

**August 25th**  
**Planetarium Show**  
**BBNC**  
Please call for times

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## Presidential Message

By Skip Bird  
Howdy fellow W.A.S'es

I was cruising the Internet waiting for the so-called comet LINEAR 1999 C4 to come up and I found a disclaimer. Which basically sums up how most of the world thinks. But we in the Westminster Astronomical Society prefer to take a different view at the world. We care and we show it by helping others whenever we have a chance.

For example tonight on the way home from the Soldiers Delight star party which had 15-20 people at, I saw a car on the side of the road with a flat. Being the helpful volunteering sort of person that is typical in the W.A.S. I stopped to help. They had already called a tow truck so I thought I would just stay and keep them company until help arrived. While we were standing around talking I pointed out some of the different things in the sky; I.e. Cygnus and Alberio, Hercules, Cassiopeia (the constellation not one of our club members daughter), the sky glow from Baltimore, etc. Turns out that he has a telescope in his garage. He's not sure what kind but thinks its a 6" dob that someone gave him 20 years ago. He got so interested that he is going to go home, get it out, and show his kids some of the things we looked at. Who knows him or his kids may become our newest members at he next meeting.

See what happens when you take the time to help. So until next time  
"HAPPY TRAILS TO YOU UNTIL WE MEET AGAIN".

### Standard Disclaimer

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To read more of this disclaimer, contact the San Antonio Astronomical Association at [www.stic.net/users/merlin/saaa.html](http://www.stic.net/users/merlin/saaa.html).

## Meeting for August

All WAS meetings occur on the second Wednesday of the month. Next month's meeting will be on August 9<sup>th</sup> at 7:30 p.m. at Bear Branch Nature Center, Westminster

To see other great features, go to our web site:

[www.westminsterastro.org](http://www.westminsterastro.org)

## Light Pollution News

By Brian Eney

Last month started an exciting time for Maryland with the creation of International Dark Sky Association **Maryland Chapter!!** Over 30 people attended from several counties (Montgomery, Howard, Prince George's, Anne Arundel, Baltimore Co., and Carroll), among them five W.A.S. members, John Silva, Curt Roelle, Alf and Cynthia Shupe, and myself; GO W.A.S.!

Bob Gent, VP of Astro League and Public Relations Officers of IDA kicked off the meeting with an informative lecture and slide show on light pollution and how to get support around the state. Following the lecture, there was a brainstorming session by the new members on how to proceed, and the elections of officers President-David Corum, Vice-President- Brian Eney.

The next meeting will on Monday, August 14 at the Silver Spring Community Library, 8901 Colesville Rd. at 7 o'clock to no later 9 o'clock! Go [www.yahoo/r/mp](http://www.yahoo/r/mp) for directions. See you the 14<sup>th</sup>!

## Collecting Meteorites for Fun and Knowledge

By G.W. Gliba

Meteorite collecting can be a very rewarding hobby. If you are a meteor observer too, this adds more to your appreciation of meteors, and fireballs in particular. This is because all meteorites (not micrometeorites) were

fireballs, as they had to be big enough to survive the ablation trauma through Earth's atmosphere; so they were very bright when in the meteor phase. Of course, most meteors are the exhaust fluff of comets, which never makes it to the ground. However, there are some rare meteorites, such as the CI and CM carbonaceous chondrites that some experts think originate from the crust and mantle of ancient comets. Most meteorites come from asteroids.

It is fun to learn about the early history of the Solar System by studying meteorite books and web sites. The ordinary chondrite meteorites are the most antique relics you will probably ever see or hold most being 4.5 billion years old, or almost as old as the Solar System itself! These are the most common of the meteorites. There are three basic types of meteorites, stony, iron, and stony-iron. About 95% of meteorites are stony, 4% iron, and 1% stony-iron.

Stones are broken down more into types, such as the H, L, and LL for ordinary chondrites, and CI, CM, CV, CO, CK, and CR for carbonaceous chondrites. Other stones are considered achondrites. These include meteorites from large bodies that have differentiated, like the Moon, Mars, or large asteroids like Vesta. Some of the material in stony meteorites are formed from interstellar grains that are much older than the Solar System. It is thought that the life in the Solar System may have either come from Giant Molecular Clouds, or was provided

with the building blocks for life, that was delivered on comets.

Iron meteorites are thought to originate from the cores of larger asteroids. These contain various amounts (<20%) of Nickel, which determines what type it is. There are three main types, Hexahedrites, which have low amounts of Nickel, Octahedrites, and Ataxites, which have high amounts of Nickel. The Nickel-Iron is in the form of crystals called Taenite and Kamacite, which shows up when an Octahedrite type is etched with acid. This beautiful and distinctive pattern is called a Widmanstätten pattern. Most of the Nickel was once Cobalt-60 that was created in a supernova explosion millions of years before the formation of the Solar System along with the Iron. However, by the time the Solar System formed 4.6 billion years ago, the radioactive Cobalt-60 had decayed to Nickel.

Stony-irons meteorites are considered to be a mixture of the stone and iron type meteorites, either created through collisions, or formed at the boundary layer between the core and mantle of a large differentiated body. There are two types that represent these kinds of meteorites. The Mesosiderites, from the impact of a stony and iron type asteroid, and the Pallasites, which formed at the core mantle boundary of a fairly large differentiated body, that later broke up during the collision between it and another large asteroid or comet.

Meteorites can come from anywhere on the planet. Most meteorites end up on the bottom of the Ocean. The climate of most land locations is not favorable for the preservation of meteorites, due to the erosion and oxidation that is found in most places on Earth. However, the hot and cold deserts are the most ideal places for meteorites, as water speeds up the destruction of meteorites, and the deserts are very dry. Some collectors have found their own meteorites, but this is usually hard to do. Most meteorites come from dealers, which means you have to shop around, but most dealers are honest.

Most meteorites come from Antarctica, but when found belong to countries and institutions, and are not available to private collectors. Lately, many meteorites are found in the Sahara desert, and some of these are real bargains. Very rare meteorites, from the Moon and Mars have been found there, but these are still very expensive. This is a good time for collectors to take advantage of the prices for ordinary chondrites from the Sahara desert, as the supply is still plentiful. I recently got a nice Saharan stone with about 30% black fusion crust, that was unclassified for only .75 cents a gram that looks like an L4. Some dealers are selling unclassified Saharans for as low as .50 cents a gram! This is a good time to start a collection.

## Star Point for August

By Curt Roelle

Last month we turned our heavenly gaze southward to Scorpius, a Summer constellation close enough to the horizon that it appears to have curled its tail in order to avoid scraping it on the ground. We noted that the pattern of stars in the constellation bears some resemblance to a scorpion and found treasure in two fascinating galactic star clusters located near the stinger that were easy to see with simple binoculars.

Following close on Scorpius' tail is another constellation of summer low in the south. Sagittarius the archer is an unusual celestial specimen. Not because he is an archer, but because he is part man and part horse. His upper part is a human figure from the waist up. Below this is the body of a horse from the shoulders down. In other words Sagittarius has two arms and four legs.

Various ancient cultures viewed Sagittarius as half man and half animal. In the earliest records his animal half was a goat, or more technically a Satyr. In ancient India the constellation was simply a bow and arrow. Somehow the two images met giving us the figure we now know as Sagittarius.

Sagittarius has no bright 1st magnitude stars. The lack of bright stars and its location low on the horizon make Sagittarius difficult to pick out from light polluted areas.

The primary feature of Sagittarius is a group of eight stars that form a teapot-shaped asterism. Readers with web access can check out several links to images associated with Sagittarius at the Star Points web site at <http://www.erols.com/roelle/starpoints/>.

Scroll down to the bottom of the web page or search for "Star Point Illustrations." A small diagram of the teapot can be viewed by clicking the link labeled "Sagittarius 'teapot' Asterism".

When observed under a dark sky, such as those you may encounter during a summer vacation to the mountains or seashore away from city lights the Milky Way can be seen splashing across Sagittarius like a glowing cloud. With some imagination, it is easy to imagine the cloud as hot steam billowing out of the teapot's spout.

The teapot is only the central part of the constellation. Sagittarius is ranked 15th in total area of the 88 constellations. The full extent of the constellation is visible at the web site by clicking the link labeled "Sagittarius Constellation Chart".

The chart depicts Sagittarius as it would appear at 10 p.m. EDT in early August. As in last month's image of the constellation Scorpius the green line at the bottom of the chart represents the southern horizon and the red line near the top is the Ecliptic.

In the upper right corner of the chart are two sets of squiggly lines. These represent the best two of Sagittarius' many nebulosities.

The lower object is commonly known as the "Lagoon Nebula" and is designated Messier 8, or M8. It is visible in binoculars and is actually two objects in one: A star cluster and a nebulous cloud. A full color image is available on the web site by clicking the link labeled "Messier 8 (M8)".

In images the nebula appears red because of the light of ionized hydrogen. To the human eye the nebula appears white or whitish-blue because the human eye cannot collect light like film or imaging systems can. The star cluster is visible left of center and is seen to be fully involved with the nebula.

Across the center of the nebula you'll notice a dark lane. This is how the Lagoon Nebula got its name.

## Star Points, Continued

Another prominent feature of the Lagoon Nebula is a bright knot of gas called the "hourglass". To view it at the web site click the link labeled "'Hourglass' in M8".

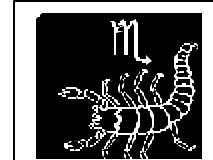
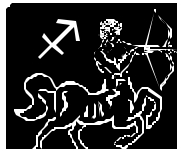
A short distance above the Lagoon Nebula is the smaller and much fainter "Trifid Nebula", or M20. In photographs this nebula has two colors, blue and red. As mentioned before, the red is produced from the light of hydrogen. The blue is starlight being reflected off the interstellar gas and dust.

A color image of M20 can be viewed at the web site by clicking the link labeled "Messier 20 (M20)". There is also an image showing the relative positions of M8 and M20. The link is labeled "M8 and M20 together".

There is a good example of another kind of object in Sagittarius. On the web site's constellation chart it is denoted as a fuzzy object to the upper left of the top of the teapot's lid.

This object is the globular star cluster M22. A globular star cluster looks like a packed ball of thousands upon thousands of stars. See the photo on the web site at the link labeled "Messier 22 (M22)".

M22 was discovered in 1665 and may have been the first globular cluster ever found. However, there is always the possibility that M22 or other globular star clusters may have been observed even earlier yet were simply assumed to be faint stars. Like M8, M22 is another easy object waiting for you and your binoculars or small telescope.



## Summer Observing at Bear Branch

By Mark Whittemore

Bear Branch Nature Center is a most wonderful resource for our club, whether its for club meetings, planetarium shows, or night time observing. But I've found it a bit chancy just to show up there with my scope for a clear night's stargazing. This is due in part because of other nature center activities, but mostly because of the Sports Complex lighting. So I compiled a list of data from appropriate sources and tried to put together a schedule of the "best observing nights at Bear Branch." Determining the schedule were three sets of events; moon phase, Bear Branch evening events, and the Carroll County Sports Complex (CCSC) evening events.

The moon phase is a matter of personal taste. Generally, I made my cut-off points at the first and last quarter moons because of either light interference or time of rising or setting. Before first quarter, the moon sets quickly and is dim enough to present minimum interference. After third quarter the moon rises late enough to get in a few good hours of observing and provides a good hint to go home and get some sleep when it peeks over the trees.

Bear Branch evening events come in two forms. The events involving our club, such as planetarium shows, are good opportunities to share our interests and knowledge with the public. Then afterwards continued observing is up to you. However, the other events held there at night generally just mean that the

Continued on page 7

## WAS Skywatch Calendar

By Ron Smith

- 1) *Summer is half over!*
- 2) **Jupiter's moons Io and Europa are 4" apart at 2:57am EDT**
- 3) *First variable star discovered, 1596*
- 4) *Huge solar flare observed, 1972*
- 5) *Neil Armstrong's birthday, 1930*
- 6) **First Quarter Moon, 9:02pm EDT**
- 7) *Johannes Kepler's mother was arrested for witchcraft, 1620*
- 8) -
- 9) **WAS Monthly meeting – Bear Branch Nature Center, 7:30pm**
- 10) **Uranus reaches opposition**
- 11) **Moon at apogee 22hUT (distance 405,652km, diameter 29'27")**
- 12) **WAS Monthly meeting, Bear Branch Nature Center, 7:30pm**
- 13) *First test glide of the space shuttle Enterprise, 1977*
- 14) -
- 15) **Full Moon, 1:13am EDT**
- 16) -
- 17) *Asaph Hall discovered Mar's larger moon, Phobos, 1977*
- 18) *Helium was discovered in the spectrum of the Sun, 1868*
- 19) **A 7<sup>th</sup> mag star passes 1' south of Mars, 5am EDT**
- 20) **Comet LINEAR passes close to the Sombrero Galaxy (M104)**
- 21) *Next total eclipse of the Sun over the continental US, 2017*
- 22) **Last Quarter Moon, 2:51am EDT**
- 23) **Jupiter's moons Ganymede and Callisto are 18" apart at 2:06am EDT**
- 24) *Lowest temperature ever recorded on Earth, -127F, in Antarctica, 1960*
- 25) *Sir William Herschel, discoverer of Uranus, dies, 1822*
- 26) *First telecast of a baseball game, played by reds and Dodgers, 1939*
- 27) **Moon at perigee 14h UT (distance 361,906km, diameter 33'01")**
- 28) *Sir William Herschel discovers Saturn's Enceladus (II), 1789*
- 29) **New Moon, 6:19am EDT**
- 30) *13,000 meteors seen in 1 hour near constellation Andromeda, 1885*
- 31) **Sundials are right on time**

## Wanted...A Few Good WAS Members

By Phil Schmitz

WANTED: A few good WAS members to embark on the Enchanted Skies Star Party in Socorro, New Mexico. There are currently four members attending this trip. We are leaving on the morning of Sep 25 and our itinerary includes Chaco Canyon (this is where the petroglyph of the Supernova of 1054 is - we know it as M1), the Painted Desert and the Petrified Forest, Meteor Crater, possible meteorite hunting at Holbrook, Lowell Observatory, (where Pluto was discovered); Sedona, AZ; and of course the star party in NM (Sep 28 – Oct 1), returning to Baltimore on Oct 2. Two of us are going to extend our trip (returning to Baltimore on Oct 7) to include some fossil hunting in NM; and visit Carlsbad Caverns and do some hiking in the Guadalupe Mountains in NM. Of course, like the weather, everything is subject to change!

Please contact me at [PASCHMITZ@HOTMAIL.COM](mailto:PASCHMITZ@HOTMAIL.COM) for more information.

## Summer Observing at Bear Branch, continued

parking lot lights are on until the center is closed up for the evening. So getting there much before ten o'clock is mostly a waste of time.

Then there's the Sports Complex! Nice enough neighbors for sure, but a real light pollution nuisance for us observers. And with its increased usage since its opening, the number and length of nights in use very much impacts on our skies. In a nutshell, the lights are on every weeknight of the summer through Labor Day until about 11:00 pm. But after 11:00 and during the weekends we can enjoy our skies as they had been prior to the CCSC's arrival.

So to summarize, the following is a list of the best days and times to visit Bear Branch for a night of observing:

### August

- Wed 2<sup>nd</sup> through Fri 4<sup>th</sup>, after 11pm
- Sat 5<sup>th</sup> is completely clear for observing after the crescent moon sets
- Wed 9<sup>th</sup>, WAS meeting
- Thu 24<sup>th</sup> between 11pm and about 12:30 am (moon rise over Bear Branch trees)
- Fri 25<sup>th</sup> on, increasing time between 11pm and moon rise
- Fri 25<sup>th</sup>: Planetarium show!
- Unfortunately, tournaments at CCSC are planned for Sat 26<sup>th</sup> and Sun 27<sup>th</sup>, so the lights will be on then too. ☹

### September

- This month CCSC starts winding down for the season, so things start to improve!
- Labor Day weekend, Fri 1<sup>st</sup> through Mon 4<sup>th</sup>, after 11pm
- Wed 13<sup>th</sup>, WAS meeting
- Thu 21<sup>st</sup> after 11pm and before moon rise.
- Fri 22<sup>nd</sup> through month's end, anytime before moon rise is all ours with the following exception
- Thu 28<sup>th</sup> after 11pm

## For Sale

Remainder of a DS16 telescope is for sale: What you don't get - the 16" primary mirror/mirror cell, the finder and some miscellaneous hardware. What you do get - The Sonotube, tripod, counter weights, clock drive (includes power cord), finder brackets, secondary mirror and the vane, small guide scope, accessory tray, end cap (for Spnotube), casters (two extra casters included), focuser, and one 25mm eyepiece, and I will even throw in the boxes they came in. Price \$500.00. Arrangements can be made for delivery of the scope. **SOME ASSEMBLY REQUIRED.** I can be reached at: [PASCHMITZ@HOTMAIL.COM](mailto:PASCHMITZ@HOTMAIL.COM) Phil Schmitz

## From Correspondent, Matt Orsie

If you are interested in supernovas, you can find information on the 2<sup>nd</sup> brightest one (so far) for year 2000 here : Information on Supernova 2000cx in NGC 524 <http://www.ggw.org/asras/supernova.html#2000cx>

### **MARS, HO!**

NASA has announced that in 2003 it plans to send a lander to Mars using a design that mimics its highly successful 1997 Pathfinder mission. Using similar drop, bounce, and roll technology, a larger cousin of the Sojourner rover is expected to reach the red planet's surface in January 2004. With far greater mobility and scientific capability, this new robotic explorer will be able to trek up to 100 meters each Martian day -- almost as far as Sojourner traveled during its lifetime. The Mars rover will carry a panoramic camera system and a sophisticated set of five instruments.

### **LINEAR IN THE EVENING**

Comet LINEAR (C/1999 S4) reached about magnitude 6.5 at its brightest this past week. It will only fade from here -- in fact, the comet's nucleus has shed at least one major fragment. Many observers have had pleasing views in binoculars and telescopes, but some report having trouble finding the comet in small binoculars. The comet is moving south and is no longer circumpolar for midnorthern latitudes.

### **HOT! HOT! HOT! OFF THE PRESS**

Rock That Damaged Car Was Meteorite Updated: Tue, Jul 25 01:00 PM EDT

MINNEAPOLIS (AP) - It was no ordinary rock that broke Rick Wirth's windshield four years ago. It came from outer space. And it's older than the Earth. Wirth got confirmation that his rock is a meteorite from a geology professor Monday. In 35 years at the University of Minnesota, Professor Paul Weiblen said he has seen thousands of rocks brought in by people who thought they had meteorites. All of them were mere Earth rocks. But when last month he saw the rock that broke through the windshield of Wirth's Geo Metro and split in two, Weiblen figured his luck had changed. "I feel every sample someone thinks might be a meteorite is worth looking at," Weiblen said. "But when I opened this package I knew." With a gray interior and ash-black exterior, the halves sported telltale signs that indicated they were meteorites.

Further testing of the rocks, which together weigh 3 ounces and are 2 inches long, confirmed it. For Wirth, the findings are vindication of his hunch about what happened to his windshield as it was parked in his driveway in Clayton, Wis., on Oct. 21, 1996. "When I took it to work and told the guys that I had a meteorite, they said, 'Yeah, right,'" said Wirth, a welder. "But I was pretty sure it was a meteorite."

But he didn't follow up on his hunch until his son took the specimen to a rock show a few months ago. Someone, who saw it said it was a meteorite, and Wirth got in touch with Weiblen... "It's a little messenger that came in the quiet of the night," Weiblen said.

### **JOVIAN MOON DISCOVERY**

Astronomers at the University of Arizona and their Massachusetts colleagues say they have found a 17th moon orbiting Jupiter. If confirmed, the 3-mile-diameter moon would be the smallest known satellite of a major planet and the first Jovian moon discovered in 21 years. "It's exciting. When you realize that you were the first person to lay eyes on something that had not been seen before, that's kind of a good feeling," University of Arizona astronomer Jeff Larsen, who made the first observations of the moon in October, said in Saturday's Arizona Daily Star.

### **SEVENTY-FIVE DOLLAR FINE AND TWO POINTS FOR SPEEDING?**

AP) -- Scientists have apparently broken the universe's speed limit. For generations, physicists believed there is nothing faster than light moving through a vacuum -- a speed of 186,000 miles per second. But in an experiment in Princeton, New Jersey, physicists sent a pulse of laser light through cesium vapor so quickly that it left the chamber before it had even finished entering. The pulse traveled 310 times the distance it would have covered if the chamber had contained a vacuum. Researchers say it is the most convincing demonstration yet that the speed of light -- supposedly an ironclad rule of nature -- can be pushed beyond known boundaries, at least circumstances.