



# The Mason-Dixon Astronomer

Westminster Astronomical Society of Maryland

February 2002

Vol. 18 No. 2



## Coming Events

**February 9**  
Star Party  
Marston  
Observatory

**February 13**  
Monthly meeting  
Stefano Livi  
Cassini Mission  
BBNC 7:30pm

**February 16**  
Soldiers Delight  
Star Party

**March 3**  
Planetarium Show  
BBNC

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## Presidential Message

**By Brian Eney**

### Better Things Yet to Come...

The year 2001 was a busy year for me. Beginning in February, I started my first term as President of WAS and I went back to school, after an absence of almost 7 years.

In June, I was nominated to take over as President of the Maryland Section of the International Dark-Sky Association. Soon after, I attended ALCON 2001. At this convention, I learned about a project NOVAC (Northern Virginia Astronomy Club) did in 1995 called Project Orion, which mapped light pollution in the Washington DC area. After brainstorming with friends and colleagues Enlighten Maryland was born!

August I was hospitalized for about a week! A nasty stomach ulcer. September a new semester started. November was the first of hopefully an annual "Shedding Light Pollution Event". Gathering different experts on light pollution proved to be a very difficult task!

December semester ends! I am happy to report I now have an AA in Secondary Education. Which brings me to January 2002. I am working hard to get out the word about Enlighten Maryland. The Enlighten Maryland staff is putting the finishing touches on the web-site and education packets. Start looking for us in the news.

I have learned a lot in the past year, I would to thank every one for making 2001 a great year for me and for the club. I will continue to be the best President I can, but I will need your help so plan on helping a lot! My hope for 2002, is for darker skies, a more educated public in astronomy and light pollution, and greater things for WAS!

## Lunar and Solar Calendar Links

To obtain Ray Sterner's Lunar and Solar calendars, link to:

[http://fermi.jhuapl.edu/temp/almanac/westminster/2002/Moon\\_FEB\\_2002.pdf](http://fermi.jhuapl.edu/temp/almanac/westminster/2002/Moon_FEB_2002.pdf)

[http://fermi.jhuapl.edu/temp/almanac/westminster/2002/Sun\\_FEB\\_2002.pdf](http://fermi.jhuapl.edu/temp/almanac/westminster/2002/Sun_FEB_2002.pdf)

## Smithsonian Exhibit and the Herschels - by G.W. Gliba

There is an excellent new exhibit at the Smithsonian Air and Space Museum called "Exploring the Universe". Among the many interesting displays is the original Kodak HST mirror. The perfect one that didn't fly. Also on display was the original Newtonian end-ring for the 100-inch Mt. Wilson Observatory Hooker telescope, an old prism spectroscope for the Lick 36-inch Alvan Clark refractor, and replicas of both Galileo's and Isaac Newton's first telescopes among many other items important to the history of astronomy.

The display that put me most in awe was the 18-inch F/13.3 telescope of William and John Herschel. This great 20-foot long telescope was the workhorse that was used to make most of their many discoveries of nebulae (most of which were galaxies), and double stars, that truly revealed the complexity of the Cosmos to us for the first time. I urge everyone to go see this very historic display. I saw it recently with my wife Lynne Gilliland. Enjoying the perks of being a Smithsonian employee, she was able to see it during its opening a few months ago, when few had seen it. Lynne said the Herschel telescope brought her to tears when she first saw it. This exhibit gives one a deeper appreciation for the history of astronomy and the quest for knowledge.

Although William Herschel eventually built a 48-inch telescope, he did not use it much, and made most of his great discoveries with the 18-inch F/13.3 near Slough, England. It should be mentioned that the invaluable assistance of his sister, Caroline L. Herschel, was instrumental in keeping all of his many telescopic observations neatly recorded. She was also an astronomer in her own right, discovering eight comets and the large nebula (galaxy) NGC 253. Anyway, William's son, John Herschel, later took this same scope with him to the Cape in South Africa. His curiosity produced many discoveries of nebulae (most of which were galaxies), and double stars. He charted the southern skies much as his father had done for northern skies. This was a monumental achievement, which eventually led to the NGC catalog.

Many professional and amateur astronomers are familiar with the great work of William, Caroline, and John Herschel, but few know that the great Herschel dynasty also included the meteoricist pioneer Alexander Stewart Herschel, who was a son of John Herschel and the grandson of William Herschel. In 1864, he was the first astronomer to see the spectrum of a meteor. While he was busy observing the star Capella with a visual spectroscope, he was

## Call For Submissions

Wanted articles, drawings, etc. for MDA newsletter.  
Please submit to Jaci and Richard by the 20<sup>th</sup> of each month to rhs@home.com

## Smithsonian, continued

lucky to have a meteor cross the field, and noticed a couple of emission lines from the meteor, which were later identified as Magnesium and Sodium. He also stimulated the interest in some of the annual meteor showers known today with his research, and was an active meteor observer himself, making several discoveries.

Although not discovered by him, Alexander's observations of relatively high rates for the 1864 Quadrantids (ZHR 131, Prentice) showed that this meteor shower has a sharp peak that is missed most years. Before that, it was thought they produce only modest hourly rates. That same year it was A.S. Herschel's observation of the annual April Lyrids that preceded a new wave of interest in meteor showers in general, according to comet and meteor expert Gary W. Kronk. In 1876, it was A.S. Herschel who was first to suggest the association of the Eta Aquarids with comet P/Halley, an assertion proven correct by the late Dr. C.P. Olivier in the United States several years later.

In addition, he discovered the principle radiant for the Orionid Meteor Shower in 1864 and 1865, although it was Edward C. Herrick who first suggested meteors came from Orion from October 8th to 25th in 1840 [Kronk, Meteor Showers 1988]. He discovered the Alpha Pisces Australid Meteor Shower in 1865, which was confirmed as a new annual meteor shower a few years later by E.F. Sawyer and others [Kronk, Meteor Showers 1988]. It still shows activity every year from July 16 to August 13. Therefore, like his famous grandfather, great aunt, and father, he was also an excellent, albeit the lesser known, observer in the Herschel astronomical dynasty.

Sources -

Meteor Showers: A Descriptive Catalog - G.W. Kronk, 1988  
Smithsonian Exhibit "Exploring the Universe" - Air and Space Museum, 2001  
Observers Guide to Astronomy - Editor P.Martinez: Vol. 2, C. Buil, 1994  
Handbook for Visual Meteor Observers - Editor P. Roggemans, 1989

## A Kind Word from Your New Director-at-Large

### Thanks

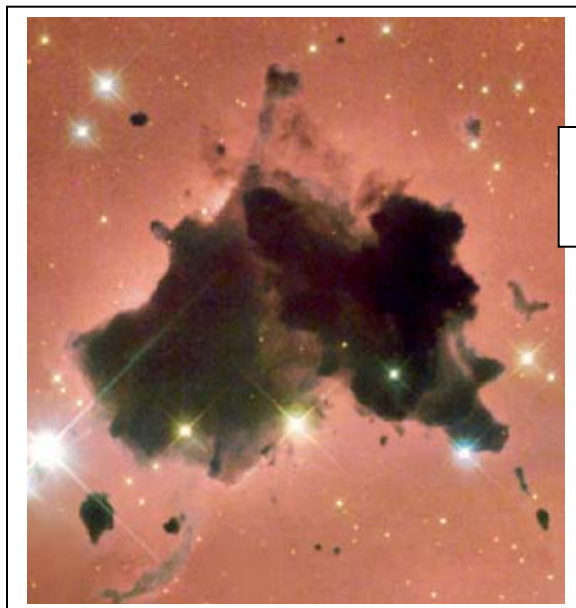
I wanted to write and say thank you to all who voted me into this position. Just what I am supposed to do I do not know. Director at Large sounds impressive but then so does petroleum distillate distribution technician. A little background on myself. I am 41 years old and work as an automobile mechanic. Married and have lived in Carroll County for about 5 years now. Originally from Montgomery County. The promise of low housing prices and lack of congestion was too good to pass up. The bonus was the fact that you could see the sky at night. I have always enjoyed astronomy at the basic level. Just knowing the basics was good enough for the longest time. Then I was given a Meade ETX 90 'scope for my 39th birthday. What an improvement over my Jason. I was blown away with the clarity and quality of what I was looking at. I just was not sure of what I was looking at. I needed new glasses and went and had my eyes checked. While making small talk with the eye doctor, I explained my interest in the stars and heavens above. He informed me of this group that meets at Bear Branch on the second Wednesday of every month. It took me almost 3 months to make it to my first meeting. I went and joined what I now believe to be one of the finest astronomical societies in the United States

Since joining I have learned more about what is up there in one year then in my previous 38 years. It really impresses my friends when I show them the Orion Nebula or the rings of Saturn. Just sitting back and trying to fathom that around many of those bright dots there could be planets; some of those planets could have life on them. Some of that life could be like us. Boggles the mind. The other thing that gets me excited is the fact that what I am looking at is history. It has already happened. Stars have gone nova thousands of years ago. Galaxies have merged. Solar systems have been born and died. Time Machines, Light Buckets,'Scopes.Wow! What ever you call it, you can't call it boring.

The people that make up W.A.S. are as varied as the stars above. All ages and walks of life. Doctors to mechanics all with the same passion. Just what is up there? We as members have an obligation to spread the word and share what we see with as many people we can. Star Parties are one good way. I set up my scope at work and share the views with my customers. I then try to explain how it is getting harder to see the stars because of light pollution. I tell them about (here comes the plug Brian) the International Dark Sky Association. Information is free. Give it away as much as you can.

Dark Skies

Erich C. Bender, Director at Large



Thackeray's Globules in  
IC 2944,  
HST

## Star Points for January, 2002; by Curtis Roelle

### Which Happy New Year?

When January arrives on the heels of December, we commonly greet each other with wishes for a "Happy New Year." This is because we know that in our Gregorian calendar system, established in 1582, January is the start of another numbered year. However, do you realize how many different kinds of years are in use today?

A popular publication containing descriptions for many types of years is Guy Ottewell's "The Astronomical Companion" published by the Universal Workshop at Furman University ([universalworkshop.com](http://universalworkshop.com)). It is a sort of non-fictional Hitchhiker's Guide to the Galaxy. This month we look at several of the years found in Ottewell's useful book.

First it should be pointed out that a year is simply a measurement of the length of time. In our civilian calendar, we assign numbers to each "calendar year" starting on January 1. However, a calendar year can be used to denote the length of time between any two dates such as from one birthday to the next.

A typical calendar year has 365 days. Nearly every four years we insert an extra day producing a 366-day leap year. This is necessary because the period of time it takes the Earth to revolve around the Sun is not an integral number of days. Although each calendar year is either 365 or 366 days long, the average length is 365.2425 days.

The actual time it takes Earth to make a full trip around the Sun, making a complete 360-degree circle with respect to the stars, is called the "sidereal year." One sidereal year equals 365.2564 days.

Before going much further it should be mentioned that the "day" being used here is the "ephemeris day" or a period of exactly 86,400 seconds. That is, twelve 60 minute hours, with 60 seconds in each minute. No surprise there, I hope.

From the point of view of an observer on Earth, the first day of spring occurs as the Sun appears to cross northbound across the celestial equator (Vernal Equinox). Other celestial crossing points mark the start of each of the other three seasons as well.

These imaginary seasonal points slowly move due to a wobbling motion of the Earth's axis known as precession. Thus, the period from the start of one season until the start of the same season next year is 365.2422 days. This Equinox-to-Equinox period is called the "tropical year." A less common name for the tropical year is the "seasonal year."

The Earth does not orbit the Sun in a perfectly circular motion. It moves in an ellipse and so the distance separating the two varies. The point at which the Earth is closest to the Sun is called "perihelion." Like the Equinox this perihelion point precesses as well. However, the perihelion point precesses for different reasons and in the opposite direction as the precessing Equinox. The period from one perihelion passage to the next is the "anomalous year" or 365.2596 days.

Armed with this yearly overview you're prepared to beat others to the punch next New Year's Day with a hale and hearty "Happy New Calendrical Year!" Only three days later as the Earth reaches its annual perihelion point on January 4 surprise them again with "Happy Anomalous New Year!" Four times a year as the seasons change your friends will cringe in anticipation of hearing your "Happy New Tropical Year" greeting.

## Minutes of January Meeting by Laura Block

Curt discussed BBNC's letter to the Club reminding us that others use the Center and we need to keep in mind that not all of them are familiar with the etiquette of star gazing i.e. turning off lights and headlights. We must remember to be courteous to others who use the BBNC, and respect the fact that others may have planned and paid for the use of the facilities.

Enlighten MD website: [Enlightenmd.org](http://Enlightenmd.org)

Hats and t-shirts for sale \$15 each

Elections-

Pres Brian Eney

V.P. Paul Henze

Secretary Laura Block

Director at Large Erich Bender

Treasurer Gary Frishkorn

We viewed two of Curt's home videos of the shuttle

We spoke about the occultation of Saturn by the moon.

Next Month: the Cassini Mission

## A Look Down the Road for WAS

Tentative Monthly Meeting Topic for March

Tom Renn – 3D Slide Show

Tentative Monthly Meeting Topic for April

Brian Eney – BBNC Planetarium Show

Tentative Monthly Meeting Topic for May

Luke Bate – Archeoastronomy

Tentative Monthly Meeting Topic for June

Max Mutchler – Enlighten Maryland

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### Star Parties

February 9	Curt Roelle – Marston Observatory	
February 16	Soldier's Delight	8pm – 11pm
March 3	BBNC Planetarium Show	
March 16	Soldier's Delight	8pm – 11pm
April 5	Messier Marathon, WAS members	BBNC
April 6	Messier Marathon, WAS & interested public (BBNC)	
April 21	EarthWorks, BBNC, volunteers needed	
May 11	Soldier's Delight	8pm – 11pm
June 11	Soldier's Delight	8pm – 11pm

## WAS 130 - Part 8 by Curt Roelle

February's objects from the list are found in Gemini and Lynx. The most famous of these is the open cluster M35 and the Eskimo Nebula.

Con	Obj.		Description
GEM	N2168 (M35)	OC	2000-Mar-05: Glorious rich open cluster for which low magnification is a must. Boils over the field of view at 63x. The most prominent feature is an arc of about 16 stars running E-W on the cluster's north side. A mag. 5 field star follows. As a bonus a detached cloud of stars, <u>NGC 2158</u> , is s.f.; its stars begin to resolve at 195x.
GEM	N2372	PN	2000-Mar-05: NGC 2372 is actually the fainter lobe of this twin-lobed planetary. <u>NGC 2371</u> the p. component of the pair is round and pretty compressed at 195x. NGC 2372 is fainter though slightly larger than NGC 2371. At 362x the faint central star makes its appearance. Also, the rest of the nebula begins to fill in; A faint arc from NGC 2372 is seen arcing around toward the north. The effect is more pronounced using a UHC or OIII filter; a little more prominent with the former.
GEM	N2392	PN	2000-Mar-05: The <b>Eskimo</b> or <b>Clown Face Nebula</b> . Very bright blue and round at 195x. The bright central star, or clown nose, is prominent. At 362x the eskimo's face becomes apparent. Appears to be an inner shell, round but flattened somewhat, surrounded by the fainter more diffuse glow of the outer shell that forms what looks like the furry edge of the eskimo's hooded parka. Although nebula filters aren't required to view the object its great surface brightness permits them to be used at high power improving the appearance of the face, especially the OIII filter. Being such a bright object one should have no fear in cranking up the magnification.
GEM	Alpha	**	2000-Mar-04: <b>Castor</b> . Low in west but still splittable at 195x and even better at 362x. Western component is the brighter.
LYN	N2683	SG	2000-Mar-05: Very edge-on, appears slightly bowed or distorted at 195x. The p. edge appears to extend farther than the f. edge. At 362x the bright middle is readily apparent.