

SPECTRUM

Northern Cross Science Foundation Newsletter

July 2014

Looking Up

July 3, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Meeting

July 5, Saturday

Public Viewing

8:00 p.m.

Harrington Beach State Park

July 9, Wednesday

Public Viewing

8:00 p.m.

Bayshore Towne Center

July 12, Saturday

Public Viewing

8:30 p.m.

Pike Lake State Forest

July 19, Saturday

Public Viewing

5:00 p.m.

Horicon Marsh Visitor Center

July 26, Saturday

SMALL SCOPE STAR PARTY

7:00 p.m.

Harrington Beach State Park

(See page 2 for details)

August 1 - 2, Friday and Saturday

Public Viewing

8:00 p.m.

Harrington Beach State Park

August 2, Saturday

Public Viewing

8:00 p.m.

Pike Lake State Forest

A Ring of Stars Around the Sun...by Brian Ventrudo

Most new stars in the Milky Way form along its spiral arms, the diffuse white star clouds we see encircling the celestial sphere. Strange, then, that some of the brightest stars in our sky seem slightly offset from the band of the Milky Way. In the constellation Scorpius, for example, you see bright stars well north of the plane of the galaxy. The bright stars of Orion, at the opposite end of the sky, are found to the south. A coincidence? No, it turns out. These stars of are part the Gould Belt, a ring of bright young stars around the sky that formed under mysterious circumstances quite recently in the history of our galaxy.

John Herschel first noticed a profusion of bright stars in an arc through Orion, Canis Major, and what was then called Argo Navis (now Puppis, Carina, and Vela) while observing from South Africa. He published his work in 1847. This arc was eventually named after Benjamin Gould, the first American to earn a doctorate in astronomy, who mapped the band of stars all the way around the sky during observations made from Argentina in 1874. Both Gould and Herschel noticed the band of stars was tilted by nearly 20° from the plane of the Milky Way.

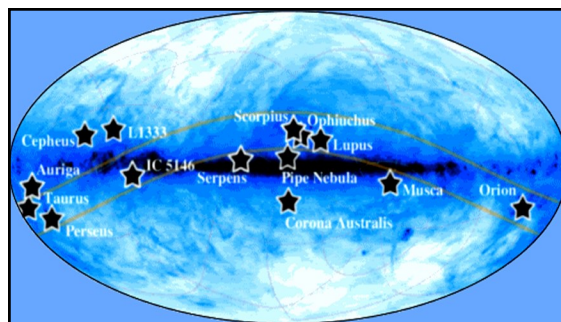
Even casual stargazers can see the brightest stars of the Gould Belt. Many of the bright blue-white stars of Orion and Canis Major are members, as are many stars in the southern constellations Vela, Carina, and Centaurus. The belt crosses the plane of the Milky Way in Crux, then continues into Lupus, Scorpius, and north through Ophiuchus and past Lyra into the area of Perseus and Cassiopeia.

Gould Belt stars are formally distinguished by their brightness, age, and location. Most of the hot and bright O and B-type stars in our skies of apparent magnitude 5.3 or brighter are members of the belt. In real terms, the starry ring extends in an elliptical disk about 2,400 x 1,500 light years across. The center of the Gould Belt lies about 325 light years away from the Sun in the direction of Perseus.

Astronomers believe the first stars of the Gould Belt formed about 30 million to 50 million years ago. Many of the first stars produced in the belt have already detonated as



supernovae, triggering further star formation which still proceeds apace, most vigorously in the famous Orion Nebula in the sword of the constellation Orion. So brilliant Vega, for example, which lies not far from other bright stars of the Gould Belt, cannot be a member because it's more than 500 million years old. But Rigel, just 8 million years old, is a likely one of a later generation of stars formed from the residual gas and dust that formed the first Gould Belt stars. The red supergiant star Antares and its bright blue-white neighboring stars are also associated with the belt.



How did the Gould Belt form? No one knows for sure. A supernovae can trigger star formation by compressing local gas and dust clouds, but astronomers suspect a single supernova would not pack enough force to create the Gould Belt. One long-standing hypothesis suggests a large cloud of intergalactic dust smacked into the plane of the Milky Way at a shallow angle. The collision provided material and mechanical compression to create the first Gould Belt stars. A recent study even suggests a cloud of dark matter passed through the Milky Way, and its gravitational influenced triggered a wave of star formation.

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June Meeting Minutes

By Kevin Bert

The June Business meeting of the Northern Cross Science Foundation was held at Unitarian Church North. President Jeff Setzer opened the meeting at 7:45pm and welcomed 23 members and guests. He asked for standard reports.

Treasurer Gene DuPree stated checkbook balance of \$15,508.81 and Observatory balance of \$1,055.06.

Secretary Kevin Bert reports that the newest member to join our club is Pete Doering. The Astronomical League's national convention, (ALCON), will take place July 10-12 in San Antonio. Two officer positions are open for the Astronomical League. President and Vice President positions have candidates running unopposed. Rick Kazmierski motioned for a unanimous vote for both candidates by acclamation. The motion was seconded and carried so the vote will be forwarded to the League.

Observatory Director Dan Bert noted that some landscape work was needed. A shrub sheers would be needed to tame the wild bushes.

Rick Kazmierski reports that the Imaging committee sized up position of an imaging setup in the south end of the observatory. Preliminary results looked promising. No-

lan Zadra will set a date for members to meet and take the next step.

Under New Business Rick Dusenbery noted his recently purchased book called "Objects in the Heavens." He was very pleased with it and was happy to show any interested member. The cost is \$24.95

Jeff Setzer covered upcoming events for June. This Saturday at Pike Lake State Park is Discovery Day and sun viewing is on the schedule from 8:00am to Noon. Sunday is the annual free park day at Harrington Beach with solar viewing from 1:00 pm to 5:00 pm. A member's event called Sun-Day on Saturday will be held on the Summer Solstice, June 21, at Kevin Bert's home in Grafton. With no further business Jeff closed the meeting at 8:35 pm.



Brilliant Astro-Physicist, Director of the Hayden Planetarium, host of Fox's 'Cosmos: A Spacetime Odyssey' is coming to the Riverside! Join Dr. Tyson for a captivating, entertaining, one of a kind conversation about our universe. Tickets are still available.

Thursday, December 11

Doors 7pm // Show 8pm

The Riverside Theater

The Small Scope Star Party Saturday, July 26, 2014

7:00 p.m.

Harrington Beach State Park

By Kevin Bert

A special night is once again being set aside for you, your family and friends to gaze through those amazing little instruments that are often neglected. It may be the simple refractor or other similar aperture-challenged telescopes but all are welcome at the fifth "Small Scope Star Party," (SSSP), on Saturday July 26th at Harrington Beach State Park. No feelings of aperture inadequacy here as you might at other star parties. Feel right at home and have a chance to learn from other members as advice runs freely. A starting time of 7:00 pm. will allow time to set up and enjoy the variety of scopes before it gets dark. Expect views of Venus at dusk over the western horizon, while Saturn and Mars linger in the evening sky. A new moon will allow for hours of deep sky viewing.

Our goal is to have all members attend and you are in no way obligated to bring a telescope. Members are encouraged to bring as many small scopes as possible. I know some of you have two or more lurking in attics, closets and basements. Even if they are only tube

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Things to See In the July 2014 Night Sky By Don Miles

Jupiter: Early in the month you may get a fleeting glimpse as it sets right behind the setting Sun. Even before mid-month, it will be getting too close to view as it's on its way around the "back" side of the Sun, so not viewable. By mid-August, it will re-appear as a morning object rising right before the Sun.

Mars, Saturn, & Pluto: Mars (0.0 mag) is up as high as it will get already at sunset, and sets earlier and earlier as the month progresses (1:15am/11:30pm). It remains in the constellation Virgo, but will steadily work its way eastward. On the night of the 13th, Mars will pass less than 1-1/2 degrees above the bright (1.0 mag) star Spica. Saturn (0.4 mag) is rising as the Sun sets, and early in the month transits by about 9:30pm. It will remain virtually stationary in the constellation Libra. It sets about (2:30/12:30am), and will be an excellent object to view throughout the summer and into fall. Pluto is already up at sunset at (14.1 mag), and still in the constellation Sagittarius. It reaches opposition the night of the 4th, so is highest in the sky at midnight, and will set at sunrise.

Neptune & Uranus: Neptune rises about (11:30/9:30pm) in the constellation Aquarius and is at (7.9 mag). Uranus rises about

(1am/11pm), and is at (5.8 mag) in the constellation Pisces. Besides seeing the bluish tinge in Neptune and the greenish tinge in Uranus, they both just look like stars. These "stars" just happen to be part of our local neighborhood, which makes them worth finding if for no other reason. **Venus & Mercury:** Brilliant Venus is the first to rise, and does by about (3:30/4am). It's at (-3.9 mag) this month, and will continue to keep pace with the rising Sun staying about this same distance ahead of the Sun until early September. After early September, Venus will rise later and later until mid-October when it's getting too close to the Sun to comfortably viewed. It will take almost two months to pass behind the Sun, and then be an evening object again. Mercury is a morning object this month, rising about (4:45/5:15am). It will reach its Greatest Western Elongation the morning of the 12th, (which means Mercury will have reached its greatest separation to the West from the Sun, and after which; will begin working its way back towards the Sun again).



Moon:

July 5th: First Quarter

July 12th: Full Moon

July 18th: Last Quarter

July 26th: New Moon

Special Events

There are only a couple meteor showers this month, and as usual, the Moon will wash out the majority. There are two meteor showers this month not compromised by the Moon, and those are the Southern Delta Aquarids, and the Capricornids. They both happen to peak around the same couple of nights, but the Aquarids has a longer window of start/end dates. They start as early as mid-July and end around mid-August peaking the night of the 28th around 20/hour. These are moderate speed (25.5 miles per second) showers that are yellowish in color. The Capricornids are also yellowish, peak the night of the 29th at 15/hr, but are slower than the Aquarids (15mps). The thing that makes this shower worth watching (even though the quantities aren't that large), is that these are frequently known to include fireballs.

July General Meeting

Astronomy 101 by Kevin Bert

The Astronomy 101 class for July is entitled "Telescope Types," by Kevin Bert. Here is a quick review of the basic types of telescopes and some of their advantages and disadvantages.



Constellation of the Month:
Ursa Major

Main Program by Rick Kazmierski

"Composite Image Processing"

Last month's Main Program was rescheduled for July's meeting following equipment problems.

"After imaging the April lunar eclipse, I wanted to try something different with the image processing, working in Photoshop, I was successful in producing an eclipse composite using a technique I hadn't considered before and will share the process at the July meeting."

(Continued from page 1)

The Gould Belt has a strong influence on the appearance of our night sky. There are likely many other such "belts" in our galaxy, and astronomers have observed similar rings of stars in other nearby galaxies as well.

Publisher's Note: Image at top of page is used with permission of David Kingham. This image, called "Oxbow Bend Reflections", shows Gould Belt stars in Scorpius north (right) of the Milky Way. See more of David's images at:

www.davidkinghamphotography.com

June Public Events

Friends of Pike Lake, June 7th

Reported by Charlotte DuPree

On Discovery Day we set-up for Solar viewing with our Club's Coronado scope and our Solar Dob. We had a steady flow of visitors. There were lots of Sunspots and Prominences. Thanks to Rick & Georgine, Al, Rick D.

Harrington Beach, June 8th

Reported by Charlotte DuPree

FREE DAY at the State Parks, June 8. We set-up for Solar viewing with the club Coronado scope, the C9.25, and the Solar Dob. We had a steady flow of customers. There were lots of Sunspots and Prominences. Thanks to Al, Rick D. and Kevin.

Sunday on Saturday, June 21st

Reported by Mickey Kazmierski

The annual Sunday on Saturday members event was once again hosted at the home of Kevin and Kathy Bert. Although the weather didn't cooperate much, with cloudy skies and drizzle, all attending had a great time. Kevin grilled, everyone brought a dish to pass and a lot of tempting desserts. In addition to our club members, the rest of the Bert Family were all there to join us, including the newest addition to the family. "Eddie", Kathy and Kevin's first grandchild. And we know he will follow in his grandpa's footsteps as a future NCSF Member!

The afternoon continued with a demonstration by Kevin of the Sky Commander Push To System he is installing on his 17.5 inch Dob. Rick Kazmierski showed off his newly constructed "All Terrain Telescope Dolly". Towards the end of the party we did catch a quick glimpse of the sun, a short window between storm systems.



RELATED INFO

Public Viewing Leaders

July 5

Harrington Beach State Park
Gene & Charlotte DuPree

July 9

Bayshore Towne Center
Leader - Jeff Setzer

July 12

Pike Lake State Forest
Leaders - Gene & Charlotte DuPree

July 19

Horicon Marsh Visitors Center
Leaders - Gene & Charlotte DuPree

August 1

Harrington Beach State Park
Leaders Needed

August 2

Pike Lake State Forest
Leaders Needed

August 2

Pike Lake State Forest
Leaders - Gene & Charlotte DuPree

Star Parties 2014

Northwoods Starfest

August 22-24th
Hobbs Observatory
Fall Creek, WI

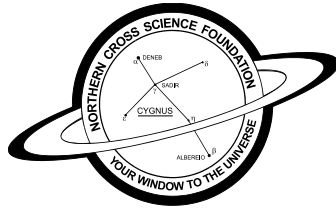
Jim & Gwen Plunkett

OBSERVATORY

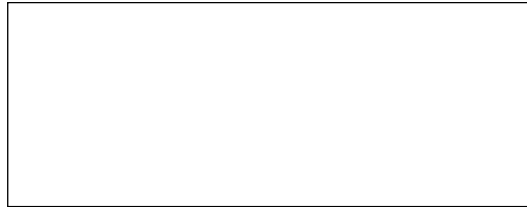


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Happy Birthday NCSF !



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SSSP Continued from Pg 2

assemblies, bring them all! I hope to see the parking lot full of them either set up or only on display. The night will be treated very much like a members night. Scaled up enough to call it a party, scaled down, (in aperture), enough to appreciate the joy, (and sometimes frustration), of small scopes. Though this event is for members be aware that some campers from the park might stop in to check out the activity. Members should use the parking lot to set up and the observatory will remain closed to focus on the small scope theme.

We will open up the observatory and have an 11:00pm snack. Members can assist by bringing food and beverages if you wish. If it turns out to be a night to look at your scope instead of through it because of clouds, please consider still bringing your scope so those in attendance can still appreciate it.

SSSP RULES

Like other classy events, a few ground rules need to be set up. This is to insure that no bloated aperture light buckets ruin the setting. This is strictly a visual equipment event.

Please don't set up photographic accessories.

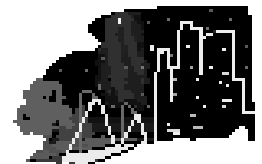
- 1) No telescopes over 6.0-Inch in aperture are permitted to be set up
- 2) Larger scopes, stopped down do not qualify
- 3) Telescopes of any optical configuration, (Reflector, Refractor, Catadioptric), are acceptable
- 4) No binoculars please
- 5) No photon amplification equipment allowed. Visual use only!
- 6) Items for sell or trade are permitted. (And Encouraged)

SPECTRUM

Is published by the Northern Cross Science Foundation, Inc. A nonprofit organization based in Southeastern Wisconsin and is a Member of the North-Central Region of the Astronomical League.



The NCSF supports the International Dark sky association.



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This Issue, along with back Issues of SPECTRUM, can be found on the NCSF Web Site.

<http://www.ncsf.info>

Monthly Meeting Information

7:00 p.m. Astronomy 101
7:30 Main Program
Unitarian Church North
13800 N. Port Wash. Rd.
Mequon, WI 53097