SPECTRUM

Northern Cross Science Foundation Newsletter **March, 2017**

Looking Up

March 2, Thursday

NCSF Annual Banquet

Social Hr - 6:00 p.m.

Dinner - 7:00 p.m.

Fox & Hounds Restaurant

1298 Friess Lake Road

Hubertus, WI

March 16, Thursday

Board Meeting

7:30 p.m.

Jeff setzer

March 19, Saturday

Solar Viewing

Milwaukee Domes (See pg-2)

March 25, Saturday

Swap 'N' Sell

9:00 a.m .- 2:00 p.m.

Aviation Heritage Center

Sheboyban Airport

March 25 &26, Fri & Sat

Messier Marathon

Dusk

Harrington Beach

April 6, Thursday

General Meeting

7:00 p.m.- Astronomy 101
7:30 p.m.- Main Program

Business Meeting to Follow

April 20, Thursday

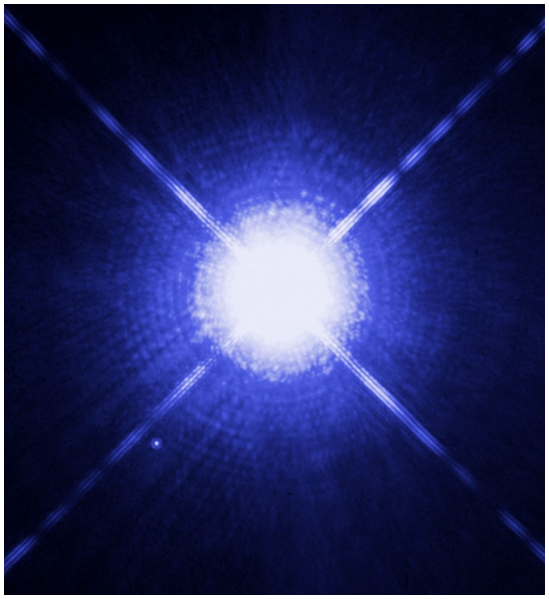
Board Meeting

7:30 p.m.

House of Jeff Setzer

Viewing Double Star Sirius

by Rick Kazmierski



This Hubble Space Telescope image shows Sirius A, the brightest star in our nighttime sky, along with its faint, tiny stellar companion, Sirius B lower left.

Sirius is in prime position for viewing during these cold winter months. Sirius is the brightest star in the sky with a visual apparent magnitude of −1.46 and is almost twice as bright as Canopus, the next brightest star. Sirius appears bright because of its intrinsic luminosity and its proximity to Earth. At a distance of 2.6 parsecs (8.6 ly), the Sirius system is one of Earth's near neighbors. Sirius is gradually moving closer to the Solar System, so it will slightly increase in brightness over the next 60,000 years. After that time its distance will begin to increase and it will become fainter, but it will continue to be the brightest star in the Earth's night sky for the next 210,000 years.

Sirius A is about twice as massive as the Sun and 25 times more luminous than the Sun, but has a significantly lower luminosity than other bright stars such as Canopus or Rigel. The system is between 200 and 300 million years old. It was originally composed of two bright bluish stars.

When viewing Sirius, what the naked eye perceives as a single star is a binary star system, consisting of a white main-sequence star termed Sirius A, and a faint white dwarf companion called Sirius B. The distance separating Sirius A from its companion varies between 8.2 and 31.5 AU. Sirius B, is very faint because of its tiny size, only 12,000 kilometres in diameter. Sirius B had once been the more massive of the two, but consumed its resources and became a red giant before shedding its outer layers and collapsing into its current state as a white dwarf around 120 million years ago. White dwarfs are the leftover remnants of stars similar to our Sun. They have exhausted their nuclear fuel sources and have collapsed down to a very small size.

Sirius is also known colloquially as the "**Dog Star**", reflecting its prominence in its constellation, Canis Major (Greater Dog). The heliacal rising of Sirius marked the flooding of the Nile in Ancient Egypt and the "dog days" of summer for the ancient Greeks, while to the Polynesians in the Southern Hemisphere the star marked winter and was an important reference for their navigation around the Pacific Ocean.

Some years ago I became interested in double star observing and completed the Astronomy League Double Star Program. Nice thing about double star viewing is that it can be done during those times of the months when the moon is waxing or waning gibbous. Even a full moon doesn't effect splitting doubles much. I became interested in splitting Sirius when I began the double star program. Its like the golden grail of double stars. It is also a significant challenge to amateur astronomers being that Sirius B is about 10,000 times fainter than Sirius A. The white dwarf's feeble light makes it a challenge to observe, because its light is swamped in the glare of its brighter companion as seen from telescopes on Earth.

Sirius A & B revolve around each other in an elliptical orbit every 50 years. The trick is to try and split them at their greatest separation. They are currently about 12" separation, an easy target for doubles of similar separation. A look at the diagram, (*page-3)* shows that this is the ideal time in its orbit to observe. It helps to find the exact location of Sirius B in relation Sirius A in the eyepiece and them place Sirius A just off the edge of the eyepiece field, allowing a better chance to see its companion. This can been found on the internet.

(Con't Pg 3)

February Meeting Minute

By Kevin Bert

The February Business meeting of the Northern Cross Science Foundation was held at the GSC Technology Center in Germantown. President Jeff Setzer called the meeting to order at 8:25pm and welcomed 17 members and guests. He then asked for standard reports.

Treasurer Gene Dupree reports $12,598.51 in the checking account. The Observatory account remains at $1,042.01. Members are encouraged to get in their 2017 dues and the deadline for signing up for the March 2nd banquet is February 18th.

Secretary Kevin Bert reports that Tom Tenorino is the latest member to join the club. A finalized 2017 roster will be available in the April Spectrum. The date for the Astronomical League 2017 Regional Convention in Rochester Minnesota is April 21 - 23. Look to ncral.wordpress.com for additional information as registration it now available.

Observatory Director Dan Bert reports the scheduled February 4th candlelight ski and hike was canceled. The February 11th hike will now be a daytime event.

Kevin Bert tells the membership that the Library Telescope had been ordered for the West Bend Library. The popularity of the Grafton library's telescope with nine people waiting in line to check it out, prompted the expansion of the program to another county.

Jeff Setzer replied to Rick Dusenbery's inquiry about the Grafton Boy Scout Troup. Jeff says that they have not yet contacted him about astronomy programs.

Joyce Jentges reports to the membership that the date to see Col Jeffrey Williams at the Spaceport Sheboygan is April 8th at 10:00 am. There is also a 1:30 pm presentation. The cost is $5.00.

Jeff Setzer covered upcoming 2017 events. February 4th is a night at the Reuss Ice Age Center. The 11th is a daytime hike and sun viewing event at Harrington Beach State Park with an evening candlelight Ski & Hike at Pike Lake State Park. Members telescopes would be appreciated at all these events. March 25th is the date for the 10th annual Swap and Sell in Sheboygan.

As a final reminder, it was also noted that the annual banquet will again take the place of the March meeting on March 2nd. 6:00 pm starts social hour with dinner at 7:00pm.

With no further business Jeff closed the meeting at 8:50 pm.

Respectfully submitted by Kevin Bert, Secretary.

An event of the Domes Education Center *by Charlotte DuPree*

Spring Equinox Celebration at the Domes, Sunday March 19th., 9am - 4pm, Mitchell Park Horticultural Conservatory, 524 S. Layton Blvd., Milwaukee. (27th. St., and National Ave.) Celebrate living green and the spring equinox in the Domes and the Greenhouse Annex! Demonstrations, talks and activities.

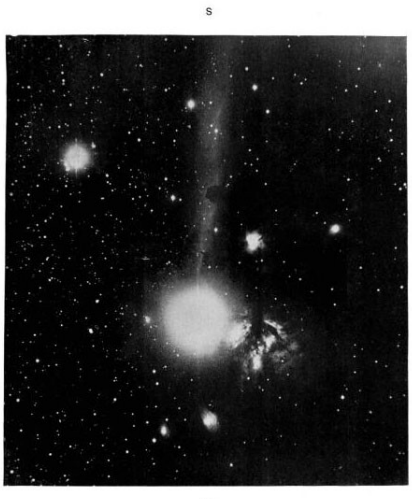
One of the activities will be solar viewing!! They are asking for anyone that would like to share their knowledge, and their joy, of watching the Sun to bring solar scopes or filters to share with their visitors. You can come and leave anytime during the day. Just show up with your equipment, no need to tell anyone that you will attend.

Horsehead season, then and now. *By Ernie Mastroanni*

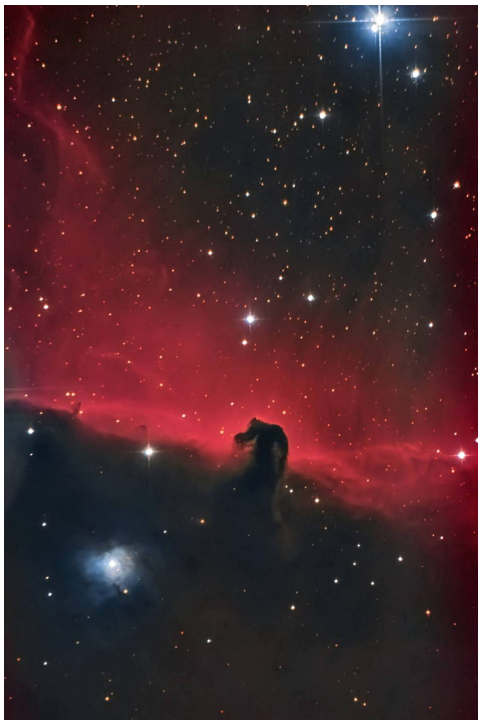
The classic profile of Orion's Horsehead Nebula, also known as Barnard 33, is seen in sharp relief against a wall of the bright dust cloud known as IC 434. Chad Andrist took 80 two-minute exposures through four different filters in early February from Harrington Beach State Park and Bong State Recreation Area with an 8-inch Newtonian telescope. At far left is the fourth magnitude star Sigma Orionis. At lower right is the reflection nebula NGC 2023. Despite a colorful photographic presence, the Horsehead is difficult to see without the aid of filters and a dark, transparent sky.

In 1900, a picture taken by amateur astronomer Isaac Roberts revealed the distinctive horse head shape of darker gas that blocks the light of the background nebulosity. Roberts was a well-to-do engineer, businessman and pioneer of early astrophotography based in Sussex, England. The image was published in the *Monthly Notices of the Royal Astronomical Society* in 1902. Roberts described it as "an embayment free from nebulosity dividing it [IC 434] in halves."

Astronomer E. E. Barnard cataloged this and other dark nebulae in a 1919 paper titled "*On the dark markings of the sky, with a catalogue of 182 such objects*" published in the *Astrophysical Journal*.



PHOTOGRAPH OF NEBULOSITY ROUND ζ ORIONIS
BY ISAAC ROBERTS, D.Sc., F.R.S.

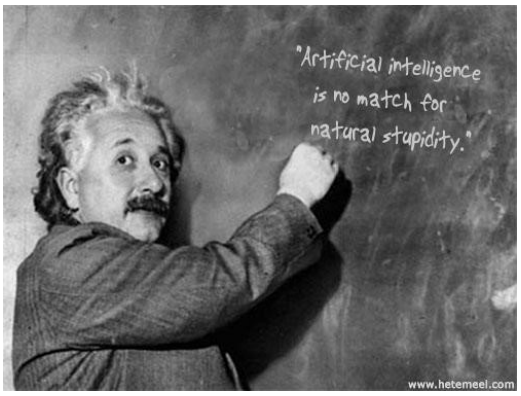


Horsehead Nebula and IC434
Photo by Chad Andrist

March General Meeting

"NCSF Annual Banquet"
(In lieu of the March Meeting)
Thursday - March 2, 2017
Social hr 6 p.m. Dinner at 7 p.m.
Fox and Hounds Restaurant
1298 Friess Lake Rd.
Gene DuPree 262 675-0941-Reservations

Hubertus, WI



February Public Viewing Events

Ruess Ice Age Center, February 4

By Charlotte DuPree

The day started out cloudy and windy with a hope of a clearing sky. When we arrived the decision was made not to try and set-up any scopes. After 20 years, or more, of doing ski and hikes we gave thought of actually doing a walk. We have no idea how everyone, on the trail was able to pass us so quickly! The snow was deep and we kept stepping into holes, and how I managed not to fall and break a leg I do not know. We never gave it any thought to bring the snow shoes.

Pike Lake State Forest, February 10

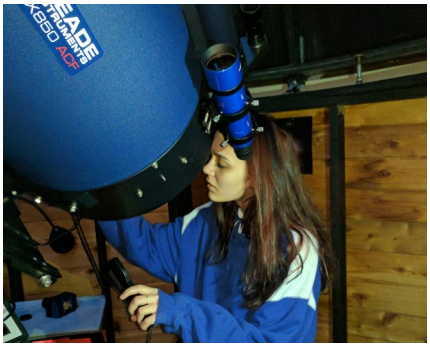
Charlotte DuPree

Another quality, cloudy night. Gene and Al were in the picnic shelter, handing brochures, and telling everyone about the August eclipse. The official attendance count was 1800. (Charlotte was AWOL with her family.)

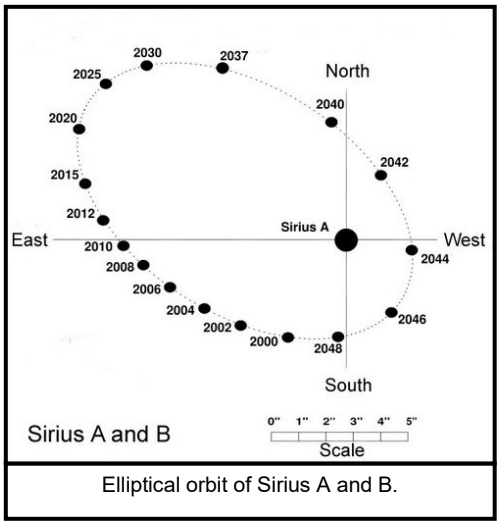
Harrington Beach, February 11

By Kevin Bert

The Day Hike was totally cloudy for the sun viewing event. Robert Powell led the event with Kevin Bert as assistant. Activity at the Observatory was light with a handful of cars in the parking lot and only one person looking inside to see what was happening. A bit of cleaning took place as was noted in the log book.



First view ever of crescent Venus.
Response, "Whoa"!



Elliptical orbit of Sirius A and B.

I must admit I have never split the double, but hope to do so this year. I probably wouldn't attempt it with anything less than an 8 inch scope, although I've heard its been seen with less. The double was discovered with an 18" refractor in 1862 and later confirmed by smaller telescopes. A clear calm night of good seeing is required. Let your telescope properly cool down before attempting. It can help to split a double star of similar separation so you to better understand what you are looking for. Also, use high magnification, 200X to 300X for best results.

I'd be interested in hearing if any of our members are successful.

RELATED INFO

NCSF Welcomes New Member

Richard Wandsnider

Leaders for Public Viewing

March 19
Milwaukee Domes
DuPrees

Star Parties 2017

NCRAL
April 21 - 23
Rochester, MN
Ncral2017.rochesterskies.org

WOW
June 22 –25
Hartman Creek State Park
WWW.new-star.org

Northwoods
August 25 –27
Hobbs Observatory
Beaver Creek Reserve
Fall Creek, WI.
www.cvastro.org

SPECTRUM
5327 Cascade Drive
West Bend, WI 53095

Jim & Gwen Plunkett OBSERVATORY

2017 Board of Directors

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10th Annual Swap-n-Sell
Saturday, March 25th
Aviation Heritage Center
Sheboygan Airport
9:00 a.m. - 2:00 p.m.

Speaker Schedule:

10:00 - Jeff Setzer, Northern Cross Science Foundation:
"The Library Telescope: A New Approach to Astronomy Outreach"
11:00 - Astronomy Trivia! Test your knowledge against other amateur astronomers
12:30 - Spaceport Sheboygan

Some More Great Thoughts

"The fewer the facts, the stronger the opinion."
- Arnold H. Glasow

"It is better to remain silent and be thought a fool, than to open your mouth and remove all doubts."
- "Abraham Lincoln "

"The secret of getting ahead is getting started."
- Samuel Clemens (aka Mark Twain)

I think I'll change my password to "incorrect" so whenever I forget it, the computer will say to me "Your password is incorrect." -Unknown

SPECTRUM
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NCSF is a member of the North-Central Region of the Astronomical League.

NCSF supports the ***International Dark Sky Association***

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

Monthly Meeting Information

7:00 p.m. Astronomy 101 Mtg.
7:30 p.m. Main Program
Location at the -

GSC Technology Center

W189 N11161 Kleinmann Dr

Germantown, WI 53022

Spectrum Newsletter
5327 Cascade Drive
West Bend, WI 53095

Please send your Questions, Suggestions, Articles, and photos to:
rickkaz@charter.net