

SPECTRUM

Northern Cross Science Foundation Newsletter

November, 2019

Looking Up

The NCSF 2019 Public Viewing Season has ended. The Board of Directors would like to thank all members donating time and knowledge for public education.

The 2020 year will start with Ski and Hike events yet to be announced. Next year's public viewing schedule will be available come Spring of 2020.

New Event

November 11, Monday

Mercury Transit

Sunrise to Noon
Harrington Beach

(See Page-2 for Details)

November 11, Monday

NCRAL Meeting

7:30 p.m.

Home of Rick Kazmierski

Note Date Change

November 14, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

(Nominations for open Board positions.)

Business Meeting to Follow

November 21, Thursday

Board Meeting

7:30 p.m.

Home of Jeff Setzer

December 5, Thursday

General Meeting

7:30 p.m.

Business Meeting

(Nominations and election for Open Board Positions)

Annual Holiday Party

White Elephant Exchange

View the Mercury transit on November 11th

By Ernie Mastroianni

The planet Mercury will transit the Sun on Monday, November 11, and with a solar-filtered telescope, it will be visible as small disk drifting across the sun from sunrise until shortly after noon in the Milwaukee area. The 10 arcsecond disk will appear in lower left corner as the sun rises at about 6:40 am. The transit will have started just minutes before.

If you acquired a solar filter for the 2017 solar eclipse, then this is a perfect opportunity to use it again on another relatively rare and novel event.

Unlike the Venus transits in 2004 and 2012, when the planet was a much larger 58 arcseconds, Mercury will require a telescope to reveal its tiny disk. However, lots of solar eclipse glasses might still be around, so it would be interesting to learn if anyone can see the transit without magnified aid.

Transits of Mercury and Venus happen when these inner planets come directly between the earth and sun. Key events to observe during a transit are called contacts. The first contact is when the planet's leading edge touches the sun's disk. The second contact is the moment when the entire disk becomes visible against the sun. The third and fourth contacts are the same as the first two, but in reverse order. From Milwaukee, the first two contacts occur before sunrise.

The second and third contacts present an interesting phenomenon known as the black drop effect, which appears as a black column or thread that connects the limb of the planet to the sun's edge. It is caused by diffraction of the light as it bends around the planet's edge. While interesting to observe, it makes it difficult to determine the precise contact times.

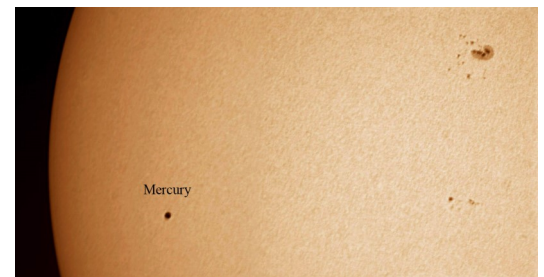
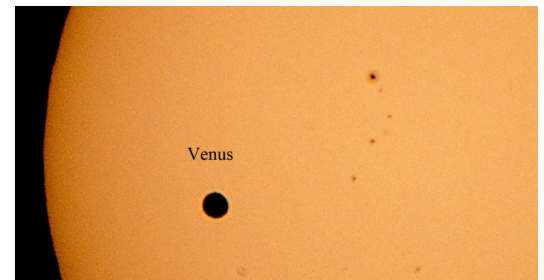


The black drop effect as seen during second contact of the 2012 Venus transit.

Geocentric Phases of the 2019 Transit of Mercury

Event	CST	P.A.
Contact I	6:35:27	109.8°
Contact II	6:37:08	109.8°
<u>Greatest Transit</u>	9:19:48	24.3°
Contact III	12:02:33	298.8°
Contact IV	12:04:14	298.7°

The contact times as reported by Fred Espenak on EclipseWise.com. These times can also vary by a couple minutes to observers around the world due to parallax.



Mercury and Venus in their roughly relative sizes during transits on May 9, 2016 and June 5, 2012. Both photos taken with a Questar 3.5. Mercury is a much smaller disk, 12 arcseconds across at that time, compared to Venus at 58. All photos by Ernie Mastroianni

This will be the fourth Mercury transit visible this century, preceded by those on May 7 2003, November 8 2006, and May 9, 2016. Fourteen transits in all occur in this century. The next one is November 13, 2032. The first Mercury transit observation was by French astronomer Pierre Gassendi, which he saw through a telescope in 1631. He knew to look for it based on Johannes Kepler's Rudolphine Tables, a star catalogue and planetary table published in 1627.

October meeting Minutes

By Kevin Bert

The October 2019 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 8:00pm and welcomed 19 members and guests. He noted that this is the last month for public events this year and snow would soon be here. Jeff then asked for standard reports.

Treasurer Gene Dupree tells us that there is a balance of \$10,447.44 in the regular account with a balance of \$394.18 in the Observatory account.

Secretary Kevin Bert reports that the most recent member to join was Brian Marquardt. Under the Astronomical League there was no news to report.

The observatory Director Dan Bert says that the observatory is operational and a leader is needed for the Fall Hike event at Harrington Beach.

Jeff Setzer reminded members that next month's meeting will be one week later than normal. Mark the 14th of November at the usual time. Jeff also had some astronomy news on our favorite constellation Cygnus. After further review from new orbiting satellites it was confirmed that Alberio is not a true binary star but a line of sight double. Make a mental note the next time you talk about it at a public event.

Mark your calendar for November 11th as a rare transit of the planet Mercury will take place across the sun. It will start at sunrise and last till nearly noon.

With no new business Jeff reminded members of upcoming events. October 12th is the Fall Hike and viewing night at Harrington Beach. The Binocular Star Party will be held on the 18th at Harrington Beach. Pike Lake has a telescope viewing event on the 19th.

With no further business Jeff closed the meeting at 8:30 pm. September meeting Minutes

Mercury Transit - Harrington Beach

By Mike Borchert

For anyone interested, the planet Mercury will transit and be visible as it moves across the sun on November 11, 2019. I will be at the observatory in Harrington Beach State Park the morning of. Weather permitting, you be the judge, there will not be a call list if the weather is marginal. You must be able to see the sun.

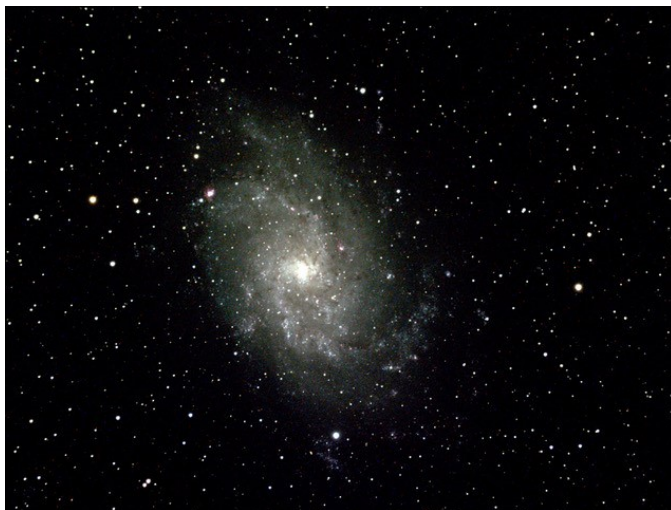
PLEASE, DO NOT LOOK AT THE SUN WITHOUT PROPER PROTECTION!

As soon as the sun rises the transit will be in progress, and continue until approximately 12, noon. The transit will be visible for approximately 5 ½ hours. I plan to be there most of the time. I will have the club's Coronado Telescope available. There are 2 scopes in the observatory available to take out into the parking lot, for solar viewing if anyone is interested. I will also have my small reflector with sun filter. Please dress accordingly, it will take place in the parking lot.

Harrington Beach Imaging

Over the last couple of years, I've been working towards obtaining dark sky astrophotography data and processing it into meaningful images. I feel I have finally had some success. At the Plunkett Observatory at Harrington Beach State Park late in August I was able to collect data from three popular deep sky objects: M33, M27, and M13.

Using the club's 5-inch refractor and SBIG camera, as well as my software, Mac computer, and ZWO guide camera, I photographed all three in one night of ideal weather. The follow-up processing the next day proved fruitful. All this being said, there are many more techniques and examples yet to be explored. I would like to credit my mentor, Ernie Mastroianni for his patience, teaching skills, and knowledge of astrophotography which help make this possible.
Mike Borchert



Note from Ernie: Mike produced these images entirely on his own, mastering the complexities of software programs that run telescope, camera and image processing. To target three objects and successfully capture all in one night is not an easy task. Much can and will go wrong, but everything must work perfectly.

November General Meeting

Astronomy 101 *by Kevin Bert*

"Cleaning Eyepieces"

Nearing the end of the year is a good time to clean your eyepieces. The majority of viewing for most observers is nearly over and eyepieces have accumulated a bit of grime, especially if you have attended some public events. Learn the proper way to get them back into shape for winter viewing or storage till warm weather returns.

Constellation of the Month:

Perseus



Main Program *Gene DuPree Library*

"Chicago Backstage Pass"

In this DVD, we get our own private tour through four of the finest scientific facilities that the Chicago area has to offer. This month we will be examining the Chicago Field Museum, with its rare meteorites and minerals that illuminate how we view the early solar system and tour one of the finest gem collections anywhere.



October Public Viewing Events

October 4, PVN Harrington Beach,

By Gene R. DuPree

It was cloudy when we left home around 6 pm. We arrived at the observatory, still having clouds, but it was looking clear to the north, and moving the wrong way direction. Members present were, Richard Sell, Rich S., Al S., and Mike B. There were 32 visitors, which included 13 girl scouts. We also had a new paying member.

October 5, PVN Harrington Beach

Jeff Setzer Leader

This event was cancelled due to clouds and rain.

October 12, LacLawrann Luminary Walk

By Rick Kaz

Although cloudy skies dominated the night, the LacLawrann Event was a success. Member Rick Dusenbery, Charlotte and Gene DuPree, and myself were in attendance. We set up on two tables in the visitors center and the DuPrees had free handouts for visitors. They also set up a scale representation of the Earth/Moon using a tennis ball and basketball spaced 21 feet apart. I set up my Meade 8 inch LX200 for visitors to examine and we all answered questions from about 50 visitors. Thanks to all attending.

October 12, PVN Harrington Beach

Robert Powell Leader

Rob reported opening the Observatory at 6:00 pm to greet guests from the parks Fall Harvest Hike. Clouds and rain caused the closure of the Observatory by 7:00pm. Even so, 12 visitors showed up.

October 18, Binocular Star Party

By Kevin Bert

Clear skies prevailed for the 2019 Binocular Star Party at Harrington Beach. Sky transparency was

not that good but several of the popular objects highlighted by last month's 101 class were easy targets. The Double Cluster continues to be one of my favorite targets. Ten members with a couple of guests were present to share binocular views. Thanks to all who attended and brought snacks to close out the evening. We all had a glimpse of the moon rising in the east as we left the parking lot for home.

October 19, PVN Pike Lake State Forest

By Gene R. DuPree

A cloudy sky, and a very good chance of rain. We were meeting with the St. Augusta, Richfield, grades 5 and 6 science class. Around 20 students and parents, arrived just before 7, and a few other visitors, who follow the Pike Lake activities. We brought a 6 inch reflector, and a 80mm refractor, on equatorial mounts. Charlotte and AL explained the operation of the two scopes and answered science related questions. The program ended before 8, just before it started to drizzle.

Mayville Library

By Gene R. DuPree

We had delivered the Mayville library telescope, in early October. On October 16, they had an open house, to acknowledge the donation of the scope and other items, from the Lions Club. This was to be a chance for the public to learn about telescope, and how it works. On the drive to Mayville we had light clouds, and more clouds moved in as we were setting up. We did get to see Jupiter and Saturn in between the clouds until the sucker holes disappeared. We had about 15 patrons and some of the Lions Club members. The Editor from the Pioneer press took some pictures and we are waiting for her article to be sent to us.

Related Info

Welcome New Members

Brian Marquardt

Leaders for Public Viewing

October 11, Monday

Mercury Transit

Harrington beach

Mike Borchert

Star Parties/Conferences

NCRAL 2020

May 1-2

Port Washington Country Inn and Suites

Hosted by Northern Cross Science Foundation.



W.O.W.

(Wisconsin Observers Weekend)

July 18 –20, 2020

Hartman Creek State Park

WWW.new-star.org



Northwoods

August 21-23, 2020

Hobbs Observatory

Beaver Creek Reserve

Fall Creek, WI.



2019 Board of directors

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SPECTRUM

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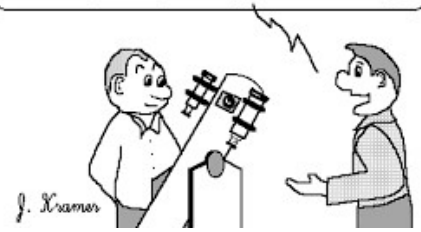
This Issue, along with back Issues of SPECTRUM, can be found on the NCSF Web Site.

A special thank you to the following members for their extra financial support in 2019.

Jerry Kohlmann Jr.
Powell
Victor Santiago
Rich Sauve
Alan Steinberg
Rick Wandsnider
Dave Wierzba
Gail Wierzba

As in past years, these members will be recognized on a plaque in the Observatory.

Forget all this electronics stuff. The way I figure it, two finders should make it twice as easy to find things.



Binocular Party Inspiration By Rick kaz

This year's Binocular Party was a big success and I learned a new trick in the process.

My binoculars are an old pair of Orion 11x80s. Although wide field, 11 power can be a little restrictive when searching for objects. I use a parallelogram mount which got me half way there, but knew a telrad or red dot pointer could finish the job. At the party, I saw several members using finders on the binoculars and decided it was time for me to find a way to do the same.



Mounting bracket epoxied to binoculars.



Red Dot Pointer mounted to bracket.

Next day I looked through my Astronomy accessories and found a red dot pointer with a mounting bracket. I looked for an open area on the binoculars parallel to the optics and epoxied the mounting bracket. It works beautifully and the pointer can be removed from it mounting so the binoculars can still be stored in it carrying case.

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:
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