

# SPECTRUM

Northern Cross Science Foundation Newsletter

August, 2019

## Looking Up

### Note

#### Meeting Date Change

##### August 8, Thursday

###### General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to Follow

##### August 9, Friday

###### Public Viewing

8:00 p.m. - 11:00 p.m.

Harrington Beach

##### August 10, Saturday

###### Public Viewing

8:00 p.m. - 11:00 p.m.

Harrington Beach

##### August 10, Saturday

###### Public Viewing

8:00 p.m. - 11:00 p.m.

Pike Lake Campground

##### August 15, Thursday

###### Board Meeting

7:30 p.m.

Home of Jeff Setzer

##### August 31, Saturday

###### Evening With Nature

Ice Age Visitors Center

7:00 p.m. - 11:00 p.m.

##### August 29, Thursday

###### NCRAL Meeting

7:30 p.m.

Home of Rick Kazmierski

##### September 5, Thursday

###### General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to Follow

## Visit to Griffith Observatory and the California Science Center by Ernie Mastroianni

On a recent trip to Los Angeles, I had a few open days and wanted to visit the famed Griffith Observatory and the California Science Center, home to the Space Shuttle Endeavour.

Without a car, I thought I'd be captive to pricey Lyft rides in the sprawling city known for traffic congestion. But with some pre-trip research, I found the Los Angeles public transportation system was more comprehensive and economical than I had thought.

Griffith Observatory is an iconic tourist spot, occupying a lofty perch with an expansive view of the city at 1,135 feet above sea level. It was completed in 1935 and hosts 1.5 million visitors a year.



*Griffith Observatory sits on a hill, about 5.5 miles away from the skyline of downtown Los Angeles.*

From my hotel in downtown Los Angeles, a walking-distance LA Metro subway stop allowed me to take a Red Line train to a shuttle bus, which took me directly to the observatory. The fare to get from my hotel to Griffith was only \$1.75 but took nearly 90 minutes. Admission to Griffith is free.

My biggest surprise was the crowd. On a clear, hot Saturday, thousands of people had the same idea. On this night (July 13), the monthly public observation night was in full swing, augmented by a special Apollo 11 anniversary event. The line to view the moon and planets through the observatory's 12-inch Zeiss refractor was up two hours long. But like a public observing night at Harrington Beach, volunteers here had their own telescopes. One big difference, though, is that unauthorized telescopes are not permitted here. Volunteers from the Los Angeles Astronomical Society, the Los Angeles Sidewalk Astronomers, and the Planetary Society bring their scopes for public viewing under the approval of Griffith.



*The 12-inch Zeiss refractor at Griffith Observatory. Lines to see through the scope were up to two hours long on July 13.*

I chose not to wait in line, but I did have plenty of opportunity to view the skies from the grounds, including sharp views of the moon through a 5-inch Astro-Physics refractor and a look at prominences through a Coronado telescope. You can find out more at [griffithobservatory.org](http://griffithobservatory.org).



*Author Ernie Mastroianni looks up from an Astro-Physics 5-inch refractor during public viewing night at Griffiths Observatory on July 13.*

A couple days later, I visited the California Science Center at the University of Southern California. From downtown, the museum is can be reached via the LA Metro's Expo line (\$1.75 fare) and the stop is directly across the street from the museum. For space flight enthusiasts, especially those who grew up during the Mercury, Gemini and Apollo era, there is much to see. But the Space Shuttle Endeavour is the show stealer.

(Con't on Pg-4)

## Astronomy and Astrophotography

By Mike Borchert

As it is explained to me there are 3 types or styles of astrophotography. There is deep space, I am working on it, thanks to Ernie M, still trying to crack that nut. There is planetary, which requires less precise equipment, different software, more suited to unguided telescopes. I am dabbling in that, trying to get the experience needed to look at the moon, and this summer, as Jupiter and Saturn are putting on quite a show. Then there is Milky Way photography, a style that has suited me in my frequent trips to visit my daughter in Phoenix.

Because Gayle and I fly, my equipment is limited from a total pounds and size point of view. This year I purchased, after a little discussion with fellow club members a small device that tracks my camera. I decided on an "Omegon MiniTrack LX2".

While this is in no way an endorsement of the product, I would like to discuss it. It weighs under 2 pounds, is 21 x 8 x 13 inches and can support a little over 4 pounds of camera and lenses. It does mount on your traditional camera tripod. The tracking motion is generated by a wound spring which last about an hour. The unit is Polar Aligned. While this alignment is not precise, it uses a 1/4 inch tube in which Polaris is sighted, you are ready to go in about 10 minutes. (There is a bracket that will hold a variety of laser pointers, and other sighting equipment. I chose to see how accurate it would be without that accessory). The unit is mounted to your tripod using the typical 1/4-20 screw that you use to mount your camera to. I purchased a ball mount swivel to attach my camera. After polar aligning, and pointing my camera, I was ready to go.

The true test came upon first test in my backyard. I took some exposures varying from 1-5 minutes. Depending on the type of camera chip and lens (min F-stop) the results vary. The manual is online to review, the calcula-

tions are there to see if the exposures are something you would be satisfied with. There was some mention of conditions resulting with what is explained in the manual as "a lot of overhang" would require more energy from the diving spring. I tried to line my camera and lens parallel to the unit, I did use the variable spring tensioner. Bottom line at somewhere around 5 minutes, 800 ISO or 5 minutes 1600 ISO, the stars started to trail when the images were magnified 200-400%.

How well the unit is built remains to be seen, I have not had it that long or taken that many trips putting it in my carry-on luggage, but my initial guess it is built rather well and there are no electronics. I am anxious to see how it helps my images back home at the observatory during dark sky nights in the parking lot as well as future trips, where ever they may lead. This unit works in the Southern Hemisphere as well, with a minor mechanical change over.

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## Summer photo targets via DSLR by Ernie Mastroianni

The Lagoon and Trifid nebulas (M8 and M20) and the iconic Dumbell Nebula (M27) are summer favorites for stargazers. They're brighter than most nebulae, are easy to find, and impress even casual observers. These objects also photograph well and do so without hours of exposure time or dedicated and complex astrocameras.

Editor Rick Kazmierski took this photo of the Lagoon Nebula and the neighboring Trifid with his modified Canon DSLR. The internal filter that covers the camera's sensor was replaced with one that allows more light from the hydrogen alpha regions of these areas to get through. He stacked 50 exposures of just 30 seconds each to record thousands of stars and detailed nebulosity. He shot it through a 70mm, wide field refractor at his home observatory.



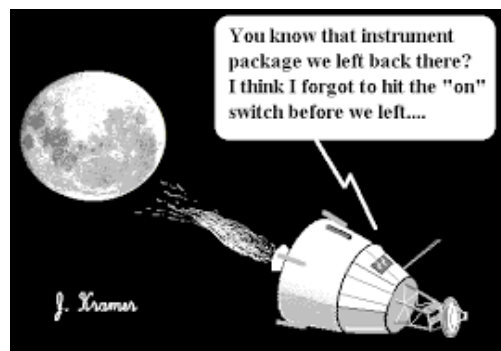
Photo by Rick Kazmierski

Member Jerry Kohlmann used his late model Canon DSLR to record the Dumbell Nebula. Though his camera is unmodified, he was able to capture some of the glowing red regions at the nebula's edge. He used the camera on the club's 5-inch refractor along with an adapter that connects the DSLR directly to the telescope's focuser. The club provides telescope photography adapters for Can-

on and Nikon cameras. Kohlmann took about a dozen frames at just a few minutes exposure each, along with matching dark frames, and processed them with Nebulosity and Photoshop software.



Photo by Jerry Kohlmann



## August General Meeting

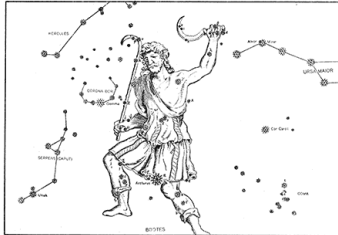
### Astronomy 101 *by Kevin Bert*

#### "Jupiter and Saturn dominate the evening sky".

How fortunate for observers who share views of these showpiece objects. Hear some of the details you can share with others at our August program.

#### Constellation of the Month:

### Bootes



### Main Program *by Ryan Wandsnider*

#### "Come and hear about how Ryan Wandsnider, a club member's son, had a high school experience that was out of the world!"

Each year Massachusetts's Institute of Technology (MIT) sponsors a robotics programming competition called Zero Robotics. High school students from around the world participate in a virtual competition to earn a chance to test their code on-board the International Space Station (ISS). This past January, Cedarburg High School, partnering with students from two other high schools and forming the coding team Naughty Dark Spaghetti went on to not only compete at the finals, but take first place, becoming the 2018 World Champions!"

## July Public Viewing Events

### June 29, Monarch Library System Event, at the Horicon Marsh Education Center.

*By Charlotte DuPree*

We were again asked to do solar viewing for this event. The a.m. started out perfectly clear, and by late morning the clouds started to arrive. Which was alright, as the feel like temp, the hottest day of the year, was 87. We were using the club's H-alpha Coronado solar scope, and our C8 with a solar filter, but there were no prominence's or Sun spots to be seen. Several families told us they had telescopes but did not know how to use them. We gave them our schedules, and told them to stop by Pike Lake on one of the nights we are there. Thanks to Jeff for his assistances.

### July 5, Harrington Beach State Park

*By Mike Borchert*

Had a big turnout July 5<sup>th</sup> for the Public viewing at Harrington. Mike Shactner, Rick Wandsnider and Mike Borchert opted to head up the viewing for the night. While we danced around the clouds all night, there were many possibilities that opened up. The moon as well as Jupiter presented themselves throughout the event. Rick W took the 9" Celestron out of the observatory to take some to the pressure off of the near 100 visitors that showed up. The 5" was acting up, and as the visitors always want to see something 'now', regardless if the sun is down or the sky is cloud free. Mike S was able to zoom in on the Ring nebula, and eventually Saturn presented itself. All in all, a satisfactory night was had. At one point a high school aged girl said seeing Saturn brought tears to her eyes, after only hearing about it in a science class. That is why we do what we do.

### July 6, PVN Pike Lake State Forest

*By Gene DuPree*

We had a clear sky and visitors before dark, waiting for the first object to appear. That was Jupiter, which is Scorpius. So Charlotte likes to explain that when you wish upon the first star you see at night, your wish doesn't always come true because it usually is a planet. We looked at some double stars, globular and open clusters, and nebula's. Saturn appeared from behind the trees, because Sagittarius is low in the sky. There were more than 50 visitors. Thanks to Rick D., Al and Jeff for their assistance.

### July 6, Harrington Beach State Park

*By Kevin Bert*

The July 6th Public Viewing Night at Harrington Beach State Park was clear and had over 100 participants enjoying views through the 20-inch Panarusk and 5-inch refractor. Dan Goetz helped me in the Observatory throughout the night as we viewed the moon, Jupiter, Saturn, and deep sky favorites. Thanks to members in the parking lot with personal scopes to help reveal wonders of the night sky.

### July 8, "A Day at the Library"

Joyce Jentges and I spent an hour at the Grafton Public Library. Children ages 5-10 joined us in a summertime get together to discuss meteors. The discussion went over the proposed half hour, with many questions and curiosity of Joyce's meteorite collection. The group challenged me with lots of questions that sometimes went off topic, in a humorous way. It was great to see the enthusiasm and curiosity, that is what fuels me. We challenged the group to get out and tell their parents that the first shiny "star" out there tonight was in fact Jupiter. Also mentioned that the library had a telescope loan program as well as our observatory hours just up the road. If you hear any children mention the program at the observatory, you now know why. *By Mike Borchert*

## Related Info

### Welcome New Member

Christopher Laudani

### Leaders for Public Viewing

#### August 9, Friday

Harrington beach

Leaders Needed

#### August 10, Saturday

Harrington beach

Leaders Needed

#### August 10, Saturday

Pike Lake

DuPrees

#### August 31, Saturday

Ice Age Center

DuPree

## Star Parties

### Northwoods

#### August 2 - 4

Hobbs Observatory

Beaver Creek Reserve

Fall Creek, WI.

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

### NCRAL 2020

#### May 1-2

Port Washington Country Inn and Suites

Hosted by Northern Cross Science Foundation.



## 2019 Board of directors

### President - Jeff Setzer

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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.

(Con't from Pg-1)

Admission to the science center is free, but the Endeavour is \$3. Advance reservations are required.



Visitors to the California Science Center view the Apollo capsule of the Apollo-Soyuz Test

In one wing, you can see the Mercury space capsule that took the chimpanzee Ham on a suborbital ride in 1961. Nearby is the Gemini XI capsule that took Pete Conrad and Richard Gordon on their 1966 mission to be the first to dock in orbit with another vehicle.

Also on display is the Apollo capsule that carried Thomas Stafford, Deke Slayton and Vance Brand on a 1975 historic rendezvous mission with astronauts on the Soviet Soyuz spacecraft. It was the very first multinational space mission, a tradition that continues to this day aboard the international space station.

And above the capsules is a full-scale model of the Cassini spacecraft, which orbited Saturn until 2017. Cassini is huge, about the size and weight of a 30-passenger school bus. Most people are familiar with the spectacular images of Saturn it took over the course of its mission, but I think few really knew how large this spacecraft was.

In its own separate building is the Space Shuttle Endeavour. Nothing prepared me for the emotional impact I felt when I first saw it. The shuttle sits on a stand only a dozen or so feet above the viewing floor. You can walk under it, around it and get quite close. It's massive, not pristine, and appears much as it probably did after returning from orbit. You can see scorch marks, tile abrasions,

faded paint, and other signs of wear and tear from 25 orbital missions. Some tiles appear newer. Some look original. All were put in place by the hand of an experienced aerospace worker. Perhaps it's this very real evidence that brings you closer to the program that carried astronauts to orbit for 30 years. Or that two of these shuttles, along with their astronaut crews, never made it back.

When Endeavour was retired after 25 missions in 2011, it toured the country on the back of a 747 and landed for the final time at Los Angeles International Airport in 2012. It was towed through the streets of Los Angeles in a byzantine route to USC, made necessary to find proper clearance for a cargo that Los Angeles streets were never designed to accommodate.



The Space Shuttle Endeavour fills almost the entire Samuel Oschin pavilion at the California Science Center.

It is now on display in the Samuel Oschin Pavilion at USC, a temporary site. The building spartan, but functional. But there is no way to view it from above floor level. But plans for the Endeavour intend it to be the centerpiece in the future Samuel Oschin Space and Science Center, where it will be mated with an original, but unflown external shuttle tank and two unflown solid rocket boosters. You can see more at [californiasciencecenter.org/about/our-future](http://californiasciencecenter.org/about/our-future).

So this mini-tour of space and astronomy-themed Los Angeles sites was spectacular and emotional, but was completed for a remarkably reasonable \$10 total. Just \$7 in total transit round-trip fare and \$3 for the Endeavour admission. But If you do choose to visit these sites by public transportation, allow plenty of time.

### 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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