SPECTRUM

Northern Cross Science Foundation Newsletter *July 2020*

NCSF member Richard Sauve was among the dozen or so stargazers who enjoyed a string of remarkably clear nights at Harrington Beach State Park in June. Ernie Mastroianni photo

Clear nights plentiful as Harrington reopens

After the pandemic shutdown and a run of bad weather, a string of remarkably clear nights in mid-June drew many club members to Harrington Beach State Park for multiple observing sessions. Although everyone kept socially distant, there was lively conversation among the group and many stayed until the early hours. Jeff Setzer traveled to the park four times, tracking down globulars and pursuing a seasonal Messier marathon.

Rich Sauve, another Harrington regular, brought his Meade 8-inch SCT, and Joyce Jentges made the drive three times to observe with her 10-inch Dobsonian, marveling at the unusual transparency of the sky as she explored the southern reaches of Sagittarius, an area not easily seen from Harrington Beach.

I went twice, shooting comet C/2017 T2 (PANSTARRS), the Crescent Nebula and tracking down Messier objects on my next visit. Detailed account of member observations begin on page 3.

- *Ernie Mastroianni*

June meeting report

By Ernie Mastroianni

The third consecutive NCSF General Meeting held virtually via zoom was held on Thursday, June 4 with president Jeff Setzer presiding. Discussion included updates on state parks reopening for stargazing hours including Harrington Beach State Park. The Plunkett Observatory remains closed, as are all other buildings and shelters on state park propterty.

Gene DuPree reported $12,305 in our account and paying $230 annual dues fee for our membership in the Astronomical League.

In new business, member Rob Powell suggested that the observatory downtime presents a good opportunity to clean the mirror of the Panarusky telescope and perform other observatory maintenance.

Jeff Setzer thanked newsletter editor Ernie Mastroianni for including a cover photo of the SpaceX Crew Dragon launch, which drew the interest of many NCSF members.

Setzer continued, presenting information on globular clusters in and around the constellation Ophiuchus. Also mentioned was a favorable pass of Starlink satellites which launched that day and passed over southeast Wisconsin shortly after the General Meeting ended.

Board member Mike Borchert then introduced guest speaker Tom Polakis, a retired aircraft engineer who maintains a sophisticated backyard observatory in suburban Phoenix.

Polakis specializes in data-driven observations and photometry. Despite the light pollution, (*see next page)*

July 2, Thursday
General Meeting
Online via Zoom
7:30 pm

General Meeting
Post-pandemic
7:00 p.m. Astronomy 101
7:30 p.m. Main Program
Location:
GSC Technology Center
W189 N11161 Kleinmann Dr.
Germantown, WI

Please email editor Ernie Mastroianni with dates and times of any upcoming NCSF events:
ernie.mastroianni@gmail.com

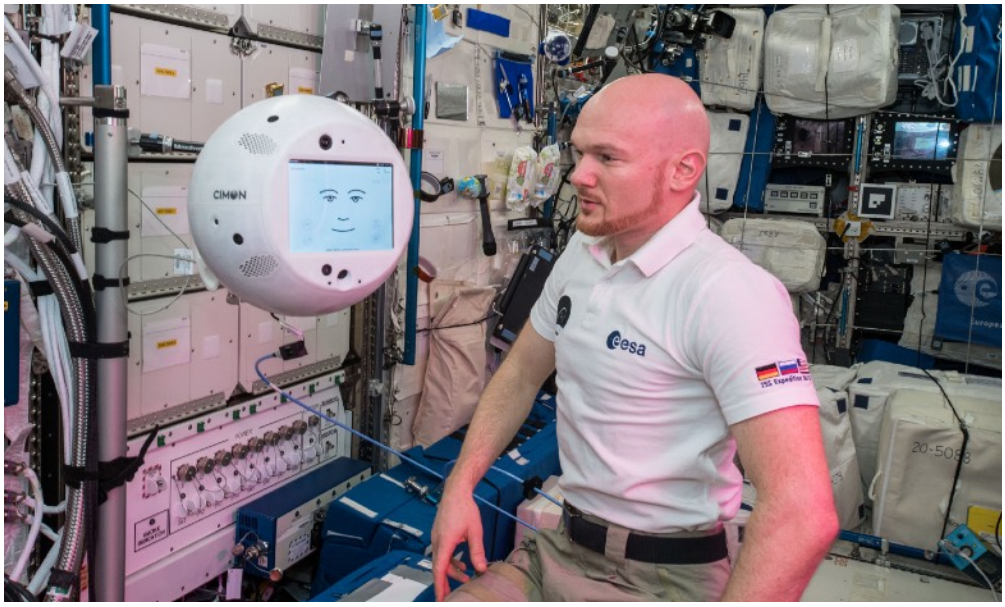
Astronauts try out a robot companion

NASA Nuggets
By Joyce Jentges

Robots are a useful tool for astronauts today because they can go places that we currently cannot, such as Mars. Astronauts aboard the International Space Station (ISS) have been experimenting with an interactive robot which will function as an astronaut assistant. CIMON is an experiment which will help astronauts with various functions and provide some companionship.

CIMON (Crew Interactive Mobile Companion), is a artificial intelligence robot currently on board the ISS. CIMON was designed by Airbus and uses artificial intelligence from IBM Watson to be an astronaut assistant. It is a 3D-printed ball, about the size of a basketball. The front has a large screen with a cartoon-like face. Weighing in at 11.5 lbs, the robot's main job is to increase astronaut productivity. It can move around the ISS by sucking in air and blowing it out with a system of tubes. The robot is able to help with procedures, show what tools are needed for a procedure, play music, show videos, and take live video. It can also document experiments, search for objects and maintain inventory.

The original CIMON was on board the ISS in the summer of 2018, along with ESA astronaut Alexander Gerst. The robot was specifically programmed to work with him. The first interaction did not go quite as planned. Gerst asked CIMON to play his favorite song, which it did, but then Gerst asked it to stop, then start taking live video. The robot did acknowledge the new command but continued playing music. After a further exchange, the robot asked "Be nice, please. Don't you like it here with me?" Then it responds, "Don't be mean please." The original CIMON has since returned to Earth.



ESA astronaut Alexander Gerst interacts with CIMON on the ISS in 2018. NASA photo

A new and improved CIMON-2 was taken to the ISS in December 2019. It should save the astronauts some time as right now, they need to float to an available laptop and look up the correct procedure.

The new and improved version is said to be more emphatic and has improved orientation. It is better able to interpret tone of voice and the designers hope that it can provide a level of companionship in space and help reduce stress.

This will be important in the future as we strive to have people living on the Moon and eventually Mars.

NCSF Vice President Joyce Jentges is an official NASA Solar System Ambassador. She'll write occasional stories about NASA missions.

May meeting, from front page

Polakis emphasized that the high number of consecutive clear nights at his home observatory location allows continuous monitoring of light curves of stars and asteroids.

His talk, titled "CCD from Inside the Light Dome", was technical but clearly and methodically explained.

For those who missed the meeting, the Polakis presentation (and the entire meeting) can be seen at the following link for a limited time.

See the June 6 email from Jeff Setzer for the password.

https://bit.ly/2NkSr6h.

How to attend the General Meeting on Zoom

The NCSF General Meeting continues to be online. If you're getting this newsletter, you will also receive an invitation from an online tool called Zoom. That email invitation will include a direct link to the meeting and a 9-digit meeting ID number. Here's what to do:

1. Around 7:20pm on July 2, use that link with any PC, Mac, Apple or Android mobile device to enter the meeting.
2. If you've never used Zoom on that device before, there will be a very short automatic installation that will occur.
3. Once the Zoom app comes up automatically, you will enter the meeting's waiting room. I will let you in shortly after you appear in the "lobby."

Zoom is a full teleconference tool, so if you're using a computer or device that has a webcam (most laptops, smartphones and tablet do) you will be able to turn that camera on using the Video Camera icon on the Zoom toolbar. When 7:30 rolls around I will begin the program, but I'll start the Zoom meeting about 15 minutes beforehand to help with any issues.

We will be doing this for every General Meeting on the schedule until we can all get back to the GSC Technology Center and meet in person.

- Jeff Setzer, NCSF President

July General Meeting program

Mars 2020: The Perseverance Rover
Presented by Joyce Jentges

In July NASA plans to launch a new rover to Mars. Join us as we discuss what makes this rover different than previous ones. Perseverance will look for past signs of microbial life.

Deep sky exploration returns with a long run of clear nights after COVID shutdown

By Jim Macak

June 13-14

This was my second night at Harrington this calendar year. I was in the observatory back on February 20.

Like several other NCSF members who were at Harrington Beach that night, I was very hungry to get out in the field for some observing again. My intent for this evening was to document a second viewing of some of the deep space objects on the Astronomy League Herschel 400 and Herschel II lists. Many are less interesting, fairly dim galaxies or open clusters but there are some objects that are much more alluring.

Observing Report

I always enjoy seeing two (or more) DSOs in one eyepiece field of view. An example from that night was NGC4618 (magnitude 11.8 in Ursa Major), which I described as “medium size, fairly round, diffuse, dim” and as seen with NGC4625, about 8 arc-minutes away at magnitude 12.9, dimmer, slightly smaller and also diffuse as observed at 66x.

I also reviewed a few of my all-time favorites from the Herschel 400 list.

Examples: NGC5907 (Splinter Galaxy) in Draco (near M102).

It was placed very high (at about 78° altitude) and, again at 66x, I described it as “large size, medium brightness, brighter core.”

NGC4490 (Cocoon Galaxy) in Canes Venatici: The first time I viewed this object was in August 2006 while on vacation in the supremely dark north woods of Wisconsin/Upper Michigan. My notes on the galaxy at that time included “Very interesting shape - look this up!” When I later checked it out I found that I had observed an interacting galaxy pair, the interacting partner being NGC4485. The interesting shape keeps me returning to these galaxies.

NCSF member Jim Macak checks his observing list. In the background is his 10” Meade LX600 SCT. Ernie Mastroianni photos

Jeff Setzer hunts for globulars with his 11-inch Starmaster.

June 17-18

There is no way I could ignore the promise of this night. The combination of the www.cleardarksky.com prediction of high transparency and very stable seeing lured me to Harrington Beach and I was not at all disappointed.

NGC6207 in Hercules: Observed at 66x, my description of “dim, small size, elongated, brighter core” would seem to make it yet another only mildly interesting galaxy on the Herschel 400 list. However, what makes this magnitude 11.6 galaxy somewhat special is it is just 25 arc-minutes away from M13 ,the Hercules Globular Cluster.

I’ve created my own lists of objects that I like to observe with non-astronomy buffs on nights that I invite family or friends to view with me. Socially isolated this night, I viewed several of the items on my June and July public lists for my own enjoyment: M27 Dumbbell Nebula), M57 (Ring Nebula), M81/M82, and others.

A multiple star system on my July list

See next page

Looking ahead

Harrington Beach State Park
Open 6 am - 11 pm
Wisconsin parks have reopened for regular hours. Active stargazers may remain after 11. The Plunkett Observatory is closed until further notice.

Check the Wisconsin DNR for updates on state park hours, which are subject to change on short notice.
https://dnr.wi.gov/covid-19/

August 6, Thursday
NCSF General Meeting
via zoom

Canceled
Northwoods Starfest 2020
https://www.cvastro.org/northwoods-starfest/

Jupiter and Saturn shine brightly in the southeast sky in the early hours of June 17. Transparency and seeing, especially in the low southern sky, were far above average for observers at Harrington Beach State Park. Ernie Mastroianni photo.

From previous page

includes SAO49337 (Omicron Cygni, HIP99675), which is the brightest star of an optical triple with very nice color contrasts. The brightest component (magnitude 3.7) is yellow and its closer companion (magnitude 7.0) appears green. These two stars are also fairly close (about 5 arc-minutes) to a blueish-white star (magnitude 4.8) and thereby form a very appealing optical triple. The view of all three was rock-solid under the stable seeing conditions of that night.

Well after midnight I was tracing the wonderful ghostly filaments of the East and West Veil nebulae (NGC6992, NGC6960), using a nebula filter at 120x magnification, when Jeff Setzer called out to me from where he was on the other side of the parking lot, saying something like "Jim, you should check Saturn and Jupiter: they are looking really great tonight."

Sure enough, the views of Jupiter and Saturn were very well supported by the excellent seeing that night.

Indeed, it was one of those very rare nights when I felt that my observation was limited by the quality of my optical equipment and not by the atmospheric conditions.

I could have used a better quality high-magnification eyepiece than what I have. Also, I think my telescope's collimation, though not bad by any means, was just a tiny bit off. By the time I viewed Jupiter, its Great Red Spot had rotated far to the side, but its wonderful cloud bands were very distinct. Views of Saturn were also superb.

I packed up sometime after 3 AM, as the sky was starting to brighten.

It was surely a night to remember!

The stars of Omicron Cygni are a colorful optical triple that are not physically associated. jeffisher10 photo via Wikimedia

From Jeff Setzer:

I was at HBSP on Saturday night (**June 13**), Sunday night, Tuesday night, and Wednesday night. Each run went until between 1:30am and 3:00am.

Saturday: All globulars in Ophiuchus and Serpens, along with some favorites in general. No formal list or logs: it was just getting the winter rust off. Packed up around 1:30am.

Sunday: "Well-Placed Globulars" list which was all the GCs above 30 degrees shining 12.7 mag and above. Also got a good look at C/2017 T2 (PANSTARRS), and added many favorites, totaling 45 observations and ending with M110 at 2:35am.

Monday: it was clear but I was too tired to go out.

Tuesday: NCRAL Seasonal Mini-Messier Marathon, Summer List. Added some other favorites and finished with looks at Jupiter, Saturn, and Mars. 36 observations In total, ending at 2:50am.

Wednesday: no list, just looking around bright summer objects and ones I hadn't seen the previous evenings. Used a UHC filter and saw a lot of nebulae, including Veil complex. Finished the morning with long looks at Saturn and Jupiter, with best seeing I've ever had at HB. Jupiter has tons of detail, including darker center spot and outer ring INSIDE the GRS. Saturn had details inside the main band and crepe ring clearly visible. 24 observations ending at 2:18am.

Thursday: not the best predicted conditions, and again, too tired to go out. That was the end of the incredible streak of clear nights.

From Ernie Mastroianni:

June 13: I was testing a new mount in the field for the first time and my first photography target was comet C/2017 T2 (PANSTARRS). It glowed at about 8th magnitude in the Big Dipper's bowl.

Astronomy and spaceflight links

Any comprehensive list of online astronomy links could fill dozens of pages, and as such, this list is selective and is subject to change in the future. Many are well known to members, others might be new. Please email me with any more suggestions that you feel would be useful to NCSF members. - *Ernie Mastroianni, editor*

Astronomy clubs, newsletters and websites
NCSF: https://ncsf.info
Astronomical League: https://www.astroleague.org/
The Reflector magazine:
https://www.astroleague.org/reflector
North Central region of the AL:
https://ncral.wordpress.com/
List of astronomy clubs in the US:
https://www.astroleague.org/astronomy-clubs-usa-state
NCRAL newsletter archive:
https://ncral.wordpress.com/newsletter-archive/
Milwaukee Astronomical Society
http://milwaukeeastro.org/

Astronomy gear, vendors and online sellers
https://www.bhphotovideo.com/
https://www.highpointscientific.com/
https://optcorp.com
https://www.telescope.com/

Astrophotographers
Rogelio Bernal Andreo http://www.deepskycolors.com
Chad Andrist https://www.astrobin.com/users/SparkyHT/
Bob Franke http://bf-astro.com/
Trevor Jones https://astrobackyard.com/
Rick Kazmierski http://skyhawkobservatory.com
Jerry Lodriguss http://www.astropix.com/index.html
Bill Snyder http://billsnyderastrophotography.com/
Babak Tafreshi https://babaktafreshi.com/

Classifieds
https://astromart.com/
https://www.cloudynights.com/

Magazines and online astronomy news
Sky & Telescope https://skyandtelescope.org/
Astronomy https://astronomy.com/
Astronomy Now https://astronomynow.com/
Skynews https://skynews.ca/
The Reflector https://www.astroleague.org/reflector
Sky at Night https://www.skyatnightmagazine.com/
Astronomy Picture of the Day https://apod.nasa.gov/apod/

NASA Research Centers
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Armstrong Flight Research Center
https://www.nasa.gov/centers/armstrong/home/index.html
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https://www.nasa.gov/centers/wstf/index_new.html
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Langley Research Center https://www.nasa.gov/langley
Kennedy Space Center
https://www.nasa.gov/centers/kennedy/home/index.html

Gemini North observatory, Mauna Kea, Hawaii. Ernie Mastroianni photo

Observatories
UW Astronomy http://www.astro.wisc.edu/
Gemini http://www.gemini.edu/
WM Keck http://www.keckobservatory.org/
European Southern Observatory
https://www.eso.org/public/
ESO images
https://www.eso.org/public/images/
National Optical Astronomy Observatory
https://www.noao.edu/image_gallery/
National Radio Astronomy Observatory
https://public.nrao.edu/
Ice Cube https://icecube.wisc.edu

IceCube Observatory, South Pole Station. NSF photo

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

NCSF supports the International Dark Sky Association

Astronomy and spaceflight links

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Observing
Clear Skies Observing Guides, a comprehensive collection of downloadable observing guides:
https://clearskies.eu/csog/
Current comets:
http://www.aerith.net/comet/weekly/current.html
Fred Espanek's eclipse guide
http://mreclipse.com
Latest Supernovae
http://www.supernova.thistlethwaites.com/snimages/

Outreach organizations
Planetary Society
https://www.planetary.org/
Night Sky Network from JPL/NASA
https://nightsky.jpl.nasa.gov
Citizen science participation
https://cosmoquest.org
NASA Solar System Ambassadors
https://solarsystem.nasa.gov/solar-system-ambassadors/events/

Sky calendars
https://skyandtelescope.org/observing/sky-at-a-glance/
https://astronomy.com/observing

Spaceflight news
https://spaceflightnow.com/
https://www.spaceflightinsider.com/
https://spacenews.com/
https://www.nasaspaceflight.com/
http://www.nasawatch.com
https://earthsky.org/
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https://room.eu.com/

Weather
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https://www.astrospheric.com/

Digital star atlases
https://stellarium.org/
https://skysafariastronomy.com/
https://www.ap-i.net/skychart/en/start

SPECTRUM newsletter

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