

SPECTRUM

Northern Cross Science Foundation Newsletter

March 2022



Horsehead and environs - This past month I was able to spend some imaging time on the more subtle nebula surrounding the Flame (NGC2024) and Horsehead (IC434) region. The two brightest stars are Alnitak and Alnilam in Orion's belt. This four-degree-wide field was captured with my 70mm Stellarvue refractor, with a field flattener at a focal length of 340mm. The final image combines 12 subframes of five minutes each with a narrowband filter. - Rick Kazmierski

February 3, 2022 NCSF Meeting Minutes

Jeff Setzer admitted members as they showed up for the February General Meeting on Zoom. The meeting started at 7:30 There was a short discussion on the ISS uplink that took place earlier at the Random Lake School District. Joyce Jentges discussed the event. All had gone extremely well.

The meeting progressed with the presentation for the night, which was Telescope Collimation, by Jeff Setzer. The presentation was being recorded for member download, and is available on the NCSF Slack channel. One topic of collimation discussed was Panarusky telescope at the observatory. It was explained that the mirror started out to be for a Cassegrain scope, so the hole in the middle of the mirror prevented a center point. Discussion has taken place over the years on remedying that. As of now, it is eyeballed. The business meeting followed.

Setzer announced the results of the Board of Directors appointment of the club's positions:

- **Jeff Setzer** – NCSF President
- **Joyce Jentges** – NCSF Vice President
- **Gene Dupree** – Treasurer
- **Mike Borchert** – Secretary and ALCOR.
- **Dan Bert** - Observatory Director
- **Ernie Mastroianni** *Spectrum* Newsletter Editor.

DuPree reported the club's general account a mount at \$11,123.30. (That figure taken from December's board meeting. Mike Borchert had no reports to be made and reported that he is learning the ropes as Secretary as well as the sitting ALCOR representative. If there are any questions, please do not hesitate to contact. Email: gmborchert@gmail.com

The Board will be putting a calendar together for 2022 at the next meeting. There will be no observing at the Pike Lake skiing event this year. There were no more questions or discussion and the meeting was ended. – *Mike Borchert*

Looking ahead

March 3, Thursday
General Meeting via Zoom
Main program:
Charles Messier and his list
By Jeff Setzer

March 19, Saturday
15th annual Swap-n-Sell
9 a.m. to 2 p.m.
Aviation Heritage Center,
Sheboygan Airport

May 13-14, 2022
NCRAL convention
Country Inn & Suites
Port Washington
<https://ncsf.info/ncral-vision-2022/>
Volunteers needed!
Contact [Jeff Setzer](#)

June 23-26
Wisconsin Observers
Weekend (WOW)
Hartman Creek State Park
Waupaca, WI
More events listed on page 2

Random Lake Schools host live event with astronauts

By Joyce Jentges

Random Lake students had an out-of-this-world experience on February 3rd, 2022. Teacher Cindy Barber, who teaches science for grades 3-6, arranged for the school to host an [International Space Station in-flight education downlink](#). The students submit questions for astronauts on board the International Space Station to answer via live television to a school assembly. Two hundred questions were submitted and 30 were chosen to be recorded and sent to NASA.

The live broadcast featured NASA astronauts Kayla Barron and Thomas Marshburn. During the 20-minute broadcast the astronauts answered selected questions from those submitted. The astronauts were very gracious and gave detailed answers.

In the hallway outside of the gym there was a display of space artifacts, courtesy of Brian Ewenson of Spaceport Sheboygan.

He was not able to attend the event as he was in Houston for convention, but was able to watch from Mission Control.

Bill Dirienzo, a physics professor at UW -Bay, Sheboygan campus, was on hand to watch over the artifacts and answer questions. He will also be speaking at the NCRAL convention we are hosting in May. In the afternoon I went back to the school and worked with the 5th and 6th grade classes.

They had to build a radiation shield to protect a Hershey's Kiss and then made bracelets with special UV beads that glow after exposure to sunlight.

I was privileged to be a part of this as I met with Cindy in May after she reached out to NCSF asking if we would be interested in getting involved.

Cindy and I met for a planning session and I got to look over the proposal/application before she submitted.

Also in attendance at this event were **Gene and Charlotte DuPree** and **Rick Dusenbery**. The four of us hosted an observing night in December for her science students and were invited as guests. To watch the downlink, here is a link to the official NASA video recording of the event. <https://www.youtube.com/watch?v=hkx908KmKs>.



Astronauts Barron and Marshburn answer student's taped questions during the live event.



Xuji, Chase, and Madison were among the Random Lake students whose questions were answered by the astronauts. They asked about bacteria (yes there is), gravity (it's called microgravity), and carbonated drinks (not allowed). The Sheboygan Press also documented the historic event, held in the packed gymnasium. Photos by NASA. See the Sheboygan Press story [at this link](#).

Upcoming stargazing events

June 23-26

Wisconsin Observers Weekend 2022

Hartman Creek State Park, Waupaca
Hosted by the [Northeast Wisconsin Stargazers](#) (NEWSTAR)

More info and registration at [this link](#).

July 24-29

Nebraska Star Party 2022

Merritt Reservoir Snake Campground
Near Valentine, Nebraska
More info and registration:

<https://www.nebraskastarparty.org/>.

August 26-28

Northwoods Starfest 2022

Hobbs Observatory in at Beaver Creek Reserve in Fall Creek, WI
Hosted by the [Chippewa Valley Astronomical Society](#)

More info and registration at [this link](#).



The dramatic colors and rich star fields of the Rho Ophiuchi Nebula make it a favorite target for astrophotographers. This view covers about 4 degrees on a side at the Scorpius-Ophiuchus border, taken with a Takahashi FSQ-106ED refractor.



DeLillo used light painting to illuminate these scorpion and grasshopper sculptures below the bright Milky Way in the southern California desert. He typically uses a 14mm lens at f/2.8 and exposures of about 30 seconds at ISO 3200 for his starry nightscape compositions.

Member Jim DeLillo pursues astronomy through landscapes and remote observing

While nearly all NCSF members own telescopes and (like me) view mostly under Wisconsin skies, member **Jim DeLillo** of Cedarburg observes from remote venues using the observatories of [Telescope Live](#). It's a subscription-based service that provides image data from telescopes around world. Remote imaging is a growing pastime for astrophotographers, and for Jim, an experienced fine-art photographer, the service is a natural extension of his landscape photography.

The image at left reveals the complex and colorful nebulosity around Rho Ophiuchus. It was made from images taken with a [4-inch Takahashi refractor](#) at the [Heaven's Mirror Observatory](#) in Australia. You can see bright Antares at center left, and the globular cluster M4 below it.

"Using [purchased] credits, I download one or more data sets consisting of either LRGB or narrowband filtered and calibrated images," said DeLillo. "It is a relatively simple process using astro-processing software like [PixInsight](#) or [Maxim DL](#)."

He reviews the files, rejects those that are not clean, then registers, combines, and integrates the LRGB files into a single color image. His final adjustments are made in Adobe Lightroom or Photoshop.

"Most of the time I use the default values in PixInsight. That seems to work pretty well. Color rendition is of an artistic taste." More of his photos, as well as articles on processing technique can be seen at <https://telescope.live/user/5511>.

DeLillo does not own a telescope. "I prefer the comfort of sitting inside, at my computer, directing \$200K-plus professional equipment in dark skies."

But he does go on location to shoot nightscapes and the Milky Way. One of his favorite venues is Borrego Springs, California, a desert park about two hours from San Diego. Dozens of huge and whimsical iron sculptures by artist [Ricardo Breceda](#) are scattered about the landscape.

When photographed at night, his images take on a distinctly alien vibe. You can read more about DeLillo's visit in an article he wrote for Desert USA at this link: <https://www.desertusa.com/photography/desert-stars.html>.

More of his photographs are online at <https://fineartamerica.com/profiles/jim-delillo>. - Ernie Mastroianni

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. All underlined websites are actively linked. Please email me with any more suggestions that you feel would be useful to NCSF members, and let me know if any links are no longer working. - *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>
 Milwaukee Astronomical Society:
<http://milwaukeeastro.org/index.asp>
 North Central region of the AL: <https://ncral.wordpress.com/>
 NCRAL newsletter archive:
<https://ncral.wordpress.com/newsletter-archive/>
 US list of astronomy clubs:
<https://www.astroleague.org/astronomy-clubs-usa-state>

Astronomy gear, vendors and online sellers

<https://www.bhphotovideo.com/>
<https://www.highpointscientific.com/>
<https://optcorp.com>
<https://www.telescope.com/>

Astrophotography

Astrobin (a paid site for astrophotography uploads):
<https://welcome.astrobin.com/>
 Rogelio Bernal Andreo <http://www.deepskycolors.com>
 Chad Andrist <https://www.astrobin.com/users/SparkyHT/>
 Jim DeLillo <https://www.astrobin.com/users/jimdelillo/>
 Harrington Beach Imagers Group (Ernie Mastroianni and Tom Schmidtkunz)
https://www.astrobin.com/users/Harrington_Beach_Imagers_Group/
 Trevor Jones <https://astrobackyard.com/>
 Rick Kazmierski <http://skyhawkobservatory.com>
 Jerry Lodriguss <http://www.astropix.com/index.html>
 N.I.N.A astrophotography suite:
<https://nighttime-imaging.eu/download/>
 Gabe Shaughnessy: <https://www.astrobin.com/users/AstroGabe/>
 Babak Tafreshi <https://babaktafreshi.com/>

Classifieds

<https://astromart.com/>
<https://www.cloudynights.com/>

Clear sky forecasts

Astrospheric <https://www.astrospheric.com/>
 Clear Dark Sky <https://www.cleardarksky.com/csk/>
 Clear Outside <https://clearoutside.com/forecast/50.7/-3.52>

Digital star atlases

Cartes du Ciel <https://www.ap-i.net/skychart/en/start>
 Stellarium <https://stellarium.org/>
 Sky Safari <https://skysafariastrometry.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/astropix.html>



Jupiter turbulence - This dramatic composite rendering of Jupiter's clouds was made by NASA software engineer Kevin Gill, using datasets from the Juno spacecraft currently in an elliptical orbit around Jupiter.

Credit: NASA/JPL-Caltech/SwRI/MSSS/Kevin M. Gill

NASA images and missions

James Webb telescope https://www.nasa.gov/mission_pages/webb/main/index.html
 Hubble telescope <https://hubblesite.org/>
 NASA JPL Curiosity <https://www.jpl.nasa.gov/missions/mars-science-laboratory-curiosity-rover-msl>
 NASA JPL Juno at Jupiter <https://www.jpl.nasa.gov/missions/juno>
 NASA JPL Mars 2020 <https://www.jpl.nasa.gov/missions/mars-2020-perseverance-rover>
 NASA Johnson Space Center on Flickr
<https://www.flickr.com/photos/nasa2explore/>
 NASA Images
<https://www.nasa.gov/multimedia/imagegallery/index.html>
<https://images.nasa.gov/>
 NASA video on YouTube
https://www.youtube.com/channel/UC_aP7p621ATY_yAa8jMqUVA
 NASA International Space Station
https://www.nasa.gov/mission_pages/station/main/index.html
 NASA Kennedy on Flickr
<https://www.flickr.com/photos/nasakennedy/>
 NASA Project Apollo Hasselblad scans:
<https://www.flickr.com/photos/projectapolloarchive/albums>

YouTube Astronomy and Space Exploration

Featuring videos on popular Messier objects
<https://www.youtube.com/user/deepskyvideos>
 Ed Ting's telescope reviews and more
<https://www.youtube.com/user/edting>
 Nebula Photos: astrophotography tips
<https://www.youtube.com/c/NebulaPhotos>

Dark matter puzzle

The galaxy cluster Abell 3827 is shown in this NASA/ESA Hubble Space Telescope photo. The strange blue structures surrounding the central galaxies are gravitationally-lensed views of a much more distant galaxy behind the cluster. Observations of the central four merging galaxies have provided hints that the dark matter around one of the galaxies is not moving with the galaxy itself, possibly implying dark matter interactions of an unknown nature.

- [From the ESO website](#)

**You Tube Astronomy, continued**

Helena's Astrophotography Channel

This young woman from Scotland is a rising star, great videos!

<https://www.youtube.com/channel/UCG5Hd14VipcinOzhll5aXhQ>

Astrobackyard: One of the best astrophotography communicators

https://www.youtube.com/channel/UCn3npsPixgoi_xLdCg9J-LQ

Patriot Astro, all things astrophotography 3 million subscribers

<https://www.youtube.com/c/patriotastro/videos>

NASA: general YouTube Channel

<https://www.youtube.com/c/NASA>

NASA JPL

<https://www.youtube.com/c/NASAJPL>

NASA Johnson

<https://www.youtube.com/user/ReelNASA>

Astroimaging Channel

<https://www.youtube.com/channel/UCiR5AmROq4YcXF8hCxxZQ-g>

NASA Live space station views

<https://www.youtube.com/watch?v=86YLF0og4GM>

NASA spaceflight (not official NASA)

<https://www.youtube.com/channel/UCSUu1lih2RifWkKtDOJdsBA>

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/>

NOIRlab: formerly National Optical Astronomy Observatory

<https://noirlab.edu/public/images/>

National Radio Astronomy Observatory <https://public.nrao.edu/>

Lowell Observatory: <https://lowell.edu/>

Observing

Clear Skies Observing Guides <https://clearskies.eu/csog/>

Current comets: <http://www.aerith.net/comet/weekly/current.html>

Fred Espanek's eclipse guide: <http://mreclipse.com>

Upcoming and seasonal events: <https://in-the-sky.org/>

ISS transits: transit-finder.com

CCD calculator: <https://new-astronomy-cddcalc.software.informer.com/>

Tonight's Sky localized <https://telescopius.com/>

Jupiter's Great Red Spot transit

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, blogs, commercial and foreign space agencies

Earth and Sky: <https://earthsky.org/>

NASA blogs: <https://blogs.nasa.gov>

NASA Spaceflight <https://www.nasaspaceflight.com/>

NASA Watch <http://www.nasawatch.com>

Spaceflight Now <https://spaceflightnow.com/>

Spaceflight Insider: <https://www.spaceflightinsider.com/>

Space News: <https://spacenews.com/>

Space Weather <https://spaceweather.com/>

Space Journal of Asgardia (a borderless nation of space enthusiasts) <https://room.eu.com/>

Universe Today <https://www.universetoday.com/>

Spaceflight: commercial and foreign space agencies

Blue Origin <https://www.blueorigin.com/>

Boeing <https://www.boeing.com/space/>

China National Space Agency : <http://www.cnsa.gov.cn/english/>

European Space Agency <http://www.esa.int/>

Lockheed Martin Space

<https://www.lockheedmartin.com/en-us/capabilities/space.html>

Roscosmos (Russian space agency): <http://en.roscosmos.ru/>

Sierra Nevada Corp. <https://www.sncorp.com/space-systems/>

SpaceX: <https://www.spacex.com/>

United Launch Alliance <https://www.ulalaunch.com/>

Virgin Galactic: <https://www.virgingalactic.com/>

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NCSF is a member of the [North-Central Region of the Astronomical League](#).



NCSF supports the [International Dark Sky Association](#)

**First steps on first light
from Webb telescope**

Engineers for the James Webb Space Telescope (JWST) successfully completed a first-light milestone last month by pointing it to an isolated star in Ursa Major.

The image of the single 7th magnitude star (HD 84406) appeared as 18 separate points of light because the 18 hexagonal segments of the telescope's 6.5 meter mirror are not yet in perfect alignment.

The team successfully determined which mirror segment was responsible for which image by wiggling each segment, one-by-one.

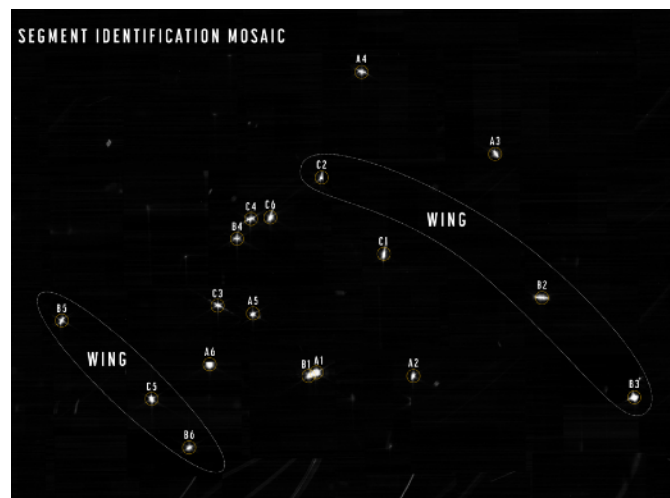
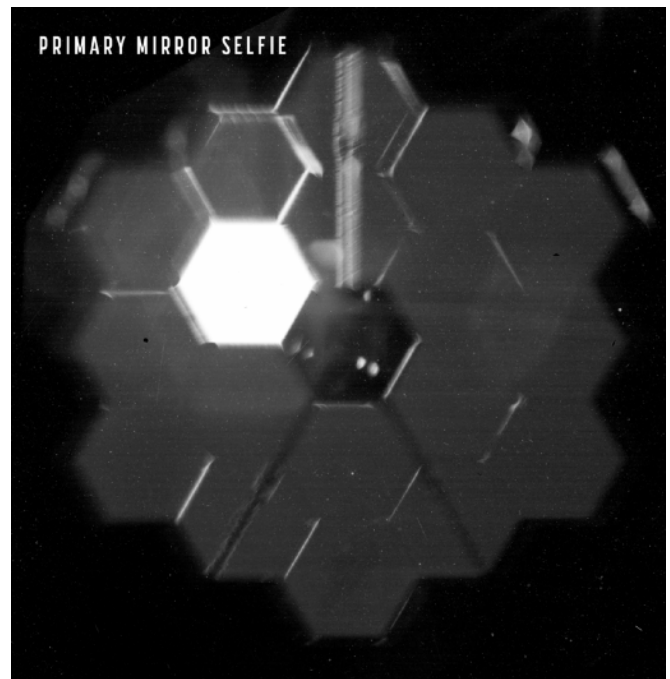
One JWST engineer posted news about her Webb work on Twitter. Her name: **Katie "mirror wiggler" Melbourne**.

The team also took a selfie-style photo of the JWST main mirror by using a special lens designed to take images of the primary mirror segments instead of images of space.

The sole bright segment was pointed at the star, while the others were not in same alignment.

This image gave the JWST team an early indication of the how the primary mirror was aligned to a camera.

-Ernie Mastroianni



NASA photos

**Spectrum newsletter**

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<https://ncsf.info>

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