

SPECTRUM

Northern Cross Science Foundation Newsletter

May 2020

NCSF holds first online General Meeting via the Zoom app

By Ernie Mastroianni

The NCSF April General Meeting was unlike any I've attended. In my basement office, I opened my laptop, clicked the Zoom link and a window opened. There was Jeff Setzer, appearing on the bridge of the Starship Enterprise-D. In a second window was Joyce Jentges, at home on planet earth. In a third window, me, in my subterranean domain.

As the meeting time approached, more faces populated my screen until about two dozen members logged on. They were peering out from living



rooms, kitchens, family rooms and home offices. Not everyone had their camera on, though they could hear and see others.

Jeff called the meeting to order and we proceeded much as we do in person. Gene DuPree reported a total of \$12,085 in our account. Jeff summarized the latest news on the NCRAL convention (we'll try again in 2022). We discussed the observatory closure and the likelihood of more cancellations.

Members discussed the Venus/Pleiades alignment, observations of the Starlink satellites, and how to find comet C/2019 Y4 (ATLAS), which broke up before a closer approach. (See the picture by Rick Kazmierski on page 4).

Story continues on page 3

Calendar

**May 7, Thursday
General Meeting**
Online via Zoom
7:30 pm

**June 4, Thursday
General Meeting**
Online via Zoom
7:30 pm

NCRAL meeting
Rescheduled to 2022

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:
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How to attend the May General Meeting on Zoom

Hello Friends,

Once again, the NCSF General Meeting will be online. If you're getting this newsletter, you are on our email list and that means 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 May 7, 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 let people in and 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

Seeking virtual astronomy events and workshops

Since our public and membership outdoor astronomy events are suspended for at least a little while, we would like to have some "virtual" astronomy events.

Ideas for events include a tour of NASA apps for smart devices, live workshops on astronomy software such as Sky Safari and Stellarium, live workshops on using astronomical image processing, live sessions powered by remote telescopes

that some of our members have access to, and more.

As these are of more specific interests, we will have them on nights other than our General Meetings.

Are you interested in seeing a specific topic or willing to host? (We can use Zoom and help you get set up). Let us know with an email or phone call to any NCSF Board of Directors member. -Jeff Setzer

Shooting a spectacular SpaceX night launch from just 10 miles away



Story and photos by Nolan Zadra

On March 6 just before midnight, Diantha and I witnessed our first night launch from Cape Canaveral: [Space X's Falcon 9 CRS 20](#) on a resupply mission to the International Space Station. We were 10.5 miles away on a very windy night with gusts over 20 mph. The launch had been delayed once due to technical issues, causing us to change our travel plans. We feared the high winds might delay it a second time but it launched as planned. Later, we found out that Space X purposely pushed the envelope to see if they could launch and land under such windy conditions.

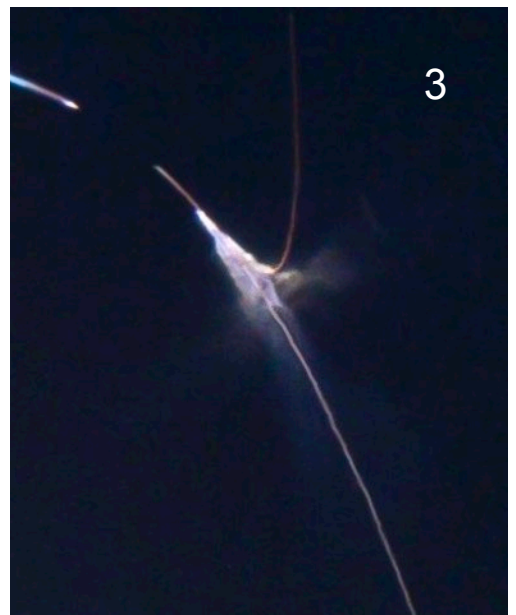
The attached pictures do not do justice to the experience. The separation of the

first and second stage produced an awesome, four-sided kaleidoscope-like exhaust cloud only partially seen in these photos. The booster's return to earth produced a delayed, extremely loud sonic boom that made me think there was an explosion. Witnessing the two burns of the returning first stage was amazing. It comes down faster than expected.

1. The first picture is a two-minute exposure with my Canon 16-35mm lens, set at 16mm, f/18, and ISO 100.

2. The second is a combination of two images, combining the launch and the booster's return to Earth.

The second image is odd because the first stage booster appears higher on its initial return-to-earth burn than the arc of the second stage climbing to orbit. It's an illusion: the second stage is headed downrange and over the horizon while it gains altitude, so the arc appears to go down. Said another way, the first stage returns by first gaining altitude and then falling back down, but it's much closer to where we were, so it looks like it is higher overhead than the second stage rocket which is actually much higher but arcing away from us.



3. Lastly and most spectacular from my standpoint is this tightly cropped view of the booster separation. It was taken with a wide-angle lens at a distance of about 60 miles, but remains sharp after some processing to reduce digital pixelation. Note the small orange upward arc to the right. You can actually see the remaining burn trail of the first stage that initially headed higher before it fell toward Earth and reignited for landing.

NASA and SpaceX poised for historic crewed mission to ISS on May 27

It's been nearly nine years since a US-built spacecraft took astronauts into orbit, but this lack of means is scheduled to end on [May 27 at 4:32 pm eastern time](#).

If all goes as planned, NASA astronauts [Bob Behnken](#) and [Doug Hurley](#), veterans of two space shuttle missions each, will strap into a [SpaceX Crew Dragon](#) capsule and ride a Falcon 9 rocket from Kennedy Space Center to the International Space Station. It will be the first crewed flight of the spacecraft. Hurley was on the final shuttle flight ([STS-135](#)), so he'll be riding two consecutive US-based spaceflights.

Since 2011, when the space shuttle was retired after 30 years of service, NASA astronauts have paid for a ride to the ISS on the venerable Russian Soyuz spacecraft, which first flew in 1966.

The Crew Dragon is part of the NASA's [Commercial Crew Program](#), in which SpaceX and Boeing were contracted to develop more efficient and cost effective spacecraft. The Crew Dragon, like the retired



NASA astronauts Bob Behnken and Doug Hurley (front) participate in SpaceX's flight simulator earlier this year. Below: The SpaceX Crew Dragon capsule in final processing at Cape Canaveral Air Force Station. SpaceX photos

shuttle, will be reusable, but will splash down in the ocean like the space capsules of the 1960s and 70s. Boeing's Starliner, also a reusable capsule design, will touch down on solid earth using air bags to cushion the landing.

Both spacecraft can carry up to seven astronauts, but crews of four will be typical, according to a NASA release.

Once Behnken and Hurley reach the space station, they'll perform tests on the docked Crew Dragon and take the new spacecraft back to earth via a water landing in the Atlantic .



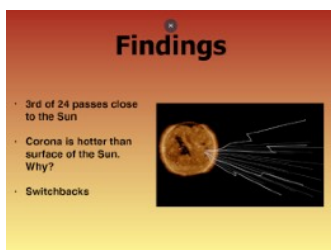
The launch will be televised online via [NASA TV](#).

More information can be found at [NASA.gov](#) and [spacex.com](#). -E.M.

Success for first virtual NCSF meeting *(from first page)*

Joyce had the honor of presenting the first ever online main program, an informative summary on NASA's Parker Solar Probe. The presentation (sample slides at right) went smoothly and a couple minor glitches were quickly fixed. A big thanks goes to Joyce and Jeff for their efforts.

After an hour, the orders came down from officer Setzer on the Starship Enterprise: Meeting Adjourned.



May Meeting Program:

How Telescopes Changed Our Understanding Of The Universe, by Jeff Setzer

We will examine how the invention of the telescope changed the way humanity viewed their place in the universe and opened the door to a new realm of discovery.

Looking ahead

Canceled:
Community Street Festival May 24
Port Washington

Canceled:
Wisconsin Observers Weekend (WOW) June 18-21,
Thursday to Sunday
Hartman Creek State Park
[WWW.new-star.org](#)

Canceled:
Alcon 2020 July 15-18
Albuquerque, New Mexico
Rescheduled to Aug 4-7, 2021
<http://alcon2020.info>

Check online for updates or cancellation:
Northwoods Starfest August 21-23, 2020
Friday to Sunday
Hobbs Observatory,
Beaver Creek Reserve
Fall River, Wisconsin
<https://www.cvastro.org/northwoods-starfest/>

Closed until further notice:
Plunkett Observatory

Opened 6 am - 7 pm only
Harrington Beach State Park
with capacity limits.

As of May 1, most Wisconsin state parks will reopen but with restricted hours, 6 am to 7 pm and closed Wednesday for maintenance.

As such, the parks remain **closed** to stargazing. Camping is closed through May 26. Check the Wisconsin DNR for updates
<https://dnr.wi.gov/covid-19/>

Do you have stories or photos for the newsletter? Send them to editor Ernie Mastroianni. Include dates, times and places.
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NCSF is a member of the [North-Central Region of the Astronomical League](#).

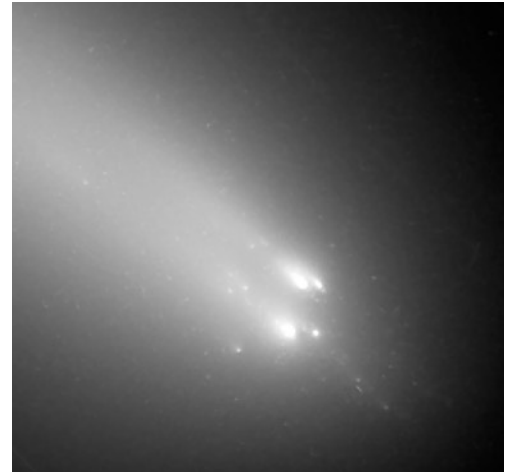


NCSF supports the [International Dark Sky Association](#)

Promising comet breaks up before its prime time

Despite a moon 95 percent full, Rick Kazmierski managed to photograph Comet ATLAS (C/2019 Y4) with his 70mm refractor on April 5 (above). The brighter part of the comet was small and not easily resolved in binoculars. The coma was larger but much dimmer. He stacked 12 exposures of 50 seconds each for this photo which reveals its tail.

But the comet, which had shown potential to becoming much brighter, began breaking up soon after. In a Hubble telescope photo (at right), the comet is in several pieces on April 20. UCLA astronomer David Jewitt obtained time on the telescope to document the comet's spectacular breakup. - E.M.

**SPECTRUM newsletter**

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<https://ncsf.info>

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Masthead photo: M81 and M82, from a light-polluted backyard in Whitefish Bay during the COVID-19 lockdown, by Ernie Mastroianni

