

SPECTRUM

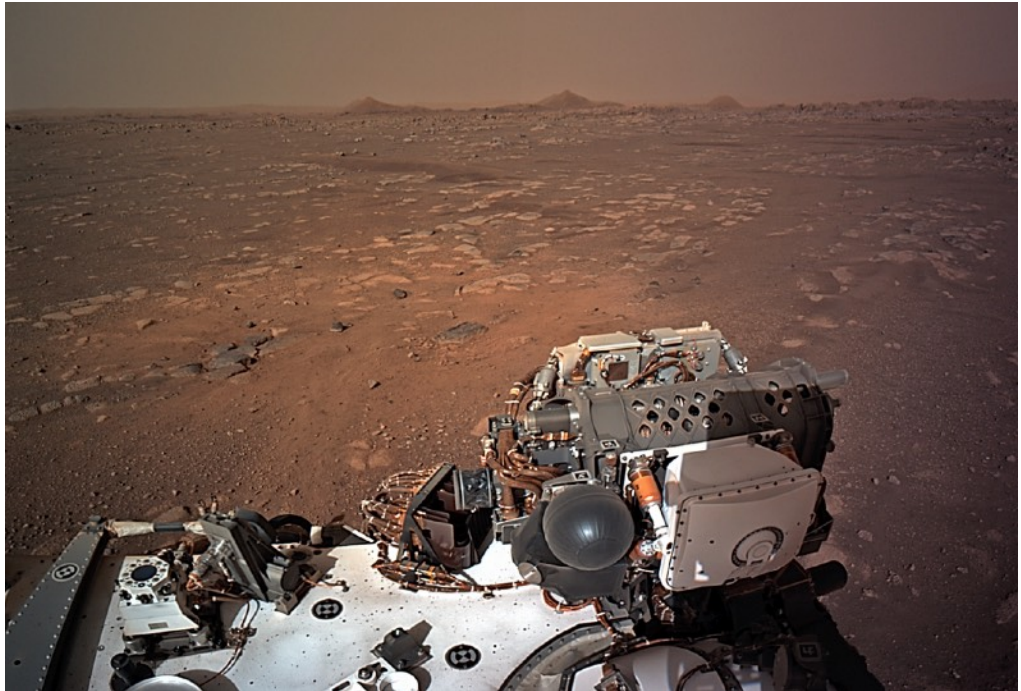
Northern Cross Science Foundation Newsletter

March 2021

Perseverance makes a pinpoint landing on Mars

Below: The spacecraft's heat shield pops away after the parachute (complete with a [coded message](#)) unfurls in the thin Martian atmosphere. Shortly after, NASA uploaded a [spectacular video](#) of the complex landing sequence, dubbed the "seven minutes of terror".

NASA/JPL-Caltech photos



Above: Perseverance at Jezero Crater with its yet-unfolded robotic arm at right. The rectangular white box at lower right is the [PIXL experiment](#).

Left: The [moment of landing](#) was photographed by the HiRISE camera on the Mars Reconnaissance Orbiter from 435 miles away. [See all raw images here](#).

More photos, page 2

February meeting report, March program

NCSF Vice President Joyce Jentges began the February 4 Zoom General Meeting with her thorough report of the upcoming (and now successful) landing of the Perseverance on Mars. She focused on the difficult and complex process of landing a machine the size of a compact car onto Mars (127 million miles and 11 light minutes away) without real-time human intervention.

As we now know, the process was a complete success as evidenced by the photos and videos online and in this newsletter. Hopefully, we'll see more photos in the upcoming months and watch the helicopter Ingenuity fly.

Most importantly, we may learn if the planet has ever supported life.

NCSF treasurer Gene DuPree reported \$12,673.32 in the club account. He also thanked all those who have already paid their annual dues, and urged those members who have not yet renewed to do so. The new method of paying via Paypal is working out, he said.

The popular [Swap-n-Sell](#), an annual event held at the Aviation Heritage Center of the Sheboygan Airport, has been postponed until October 23, said Diane Van Minsel, the president of the Sheboygan Astronomical Society. The event, where astronomy gear is traded and purchased, is normally held in March. "We are really hoping the Covid will be a minimal risk by that point so that the event can go on! Keep your fingers crossed!" said Minsel. [See page 4](#)

March 4, Thursday

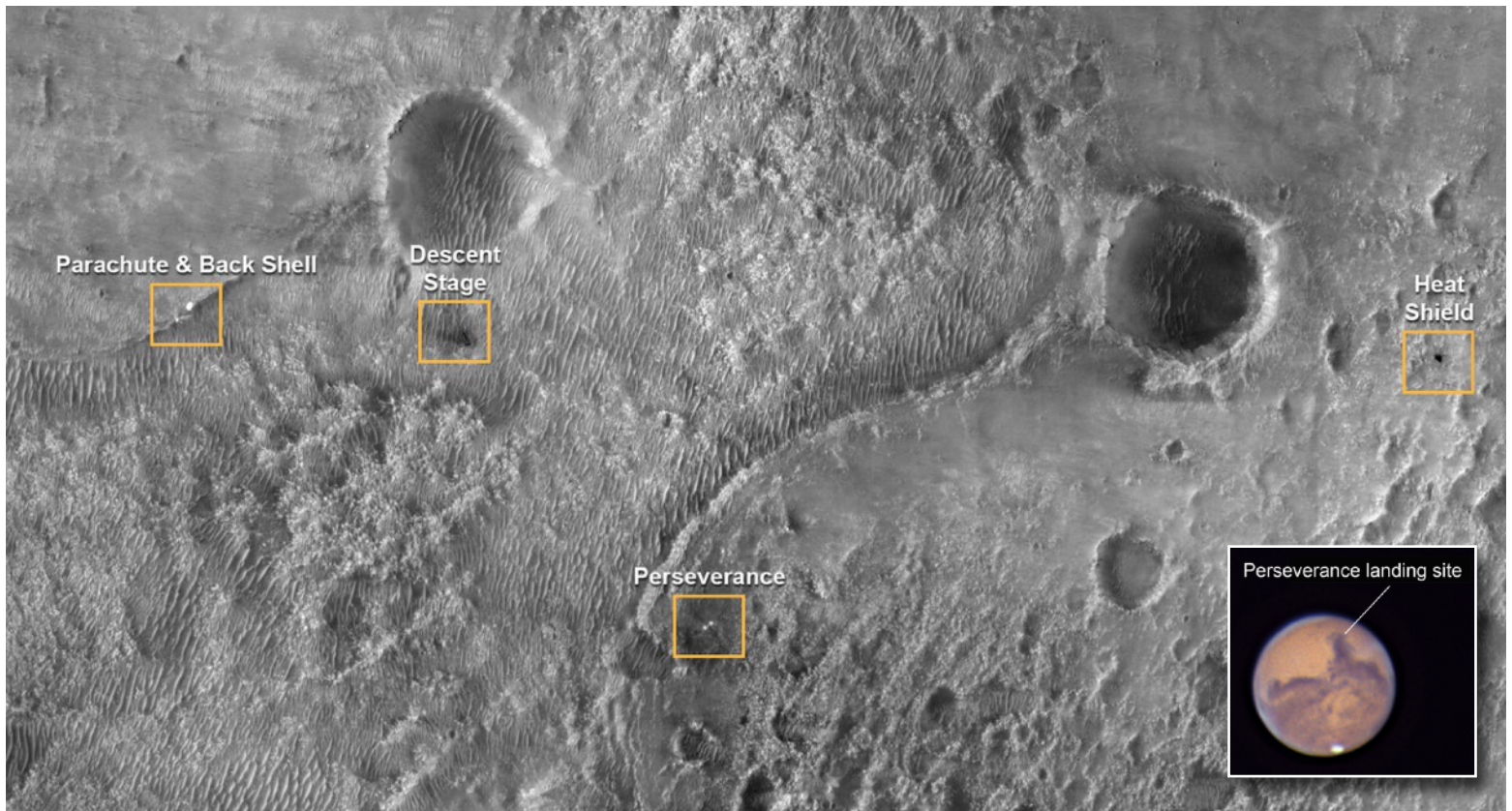
General Meeting

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



The various spacecraft elements are labeled in this image taken from orbit. Each box is about 200 meters across. The inset shows the landing site near the prominent Syrtis Major feature. *NASA/JPL-Caltech/University of Arizona, inset by Ernie Mastroianni*



Clockwise from above: Just seconds from touchdown, the rover is suspended from the descent stage's sky crane as dust kicks up from the rocket exhaust.

The [calibration targets](#) for the Mastcam-Z scientific cameras are a simple yet essential part of the imaging science. They allow researchers to calibrate the cameras to a known color to assure accurate image rendition across multiple wavelengths and lighting conditions. Also included is a sundial and what NASA calls festooning: [artistic embellishments](#) that include the mission motto and graphics, developed in part by the Planetary Society.

Two of the six Perseverance wheels sit in contact with the gritty Martian terrain. See the Mars 2020 [website](#) for more info.



Deadline for NCSF dues payment, update on observing and public events

If you've not already paid your annual NCSF membership dues, payment must be made by the end of March. After that, you'll be removed from the roster and email list, thus ending your receipt of the Spectrum newsletter and virtual meeting invites.

The Wisconsin Department of Natural Resources still has a moratorium on public events through April 30, and we will be getting an update before then as to what will happen after April 30. They are, however, allowing shelters to be reserved, and we have an inquiry to see if the observatory would be included in that policy; if so, we could open the observatory to members-only use.

The NCSF Board has made a calendar of potential public events starting on Sunday of Memorial Day weekend, but we will not publish anything until such time as we can actually hold those events at Harrington Beach and Pike Lake.

As soon as the "switch" is turned on for public events at DNR properties, we will publish starting from that point forward.

For now, the events are listed on the NCSF Member Events Google Calendar but they will be moved to the NCSF Public Events Google Calendar (on our website) when the time comes.

- Jeff Setzer



Member Rob Powell observes M42 through the Panarusk telescope in 2015. Ernie Mastroianni photo

Messier Marathon, a March tradition that began in the 1970s

By Ernie Mastroianni

One of the best observing challenges happens in March, when all 110 Messier objects can be observed (theoretically) in one night. These rewarding deep sky targets include some of the brightest clusters, galaxies, and nebulae. French astronomer Charles Messier, an avid 18th-century comet hunter, compiled the list so that he and others would not mistake these fuzzies for comets.

According to messier.seds.org, seasoned amateurs Tom Hoffelder and Tom Reiland of Pittsburgh realized in 1976 that all could be seen in just one March night. But neither could confirm more than 103 during their first attempt to do so in 1977. It wasn't until 1985 that Gerry Rattley eventually nailed them all in 1985 from Dugas, Arizona.

The ideal viewing window runs from mid-March to early April. You'll need an unobstructed horizon, especially in the south and west. Harrington Beach State Park is ideal. This year, the best nights are from March 10-March 16.

Bring a checklist

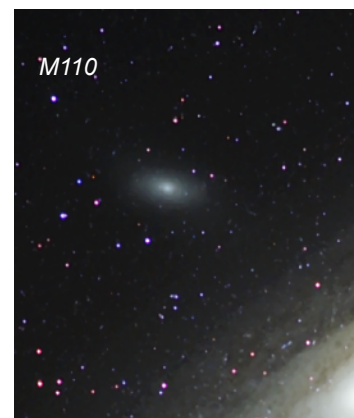
An organized checklist is essential. Begin in the south and western sky to find objects before they set, and then methodically pick your way east as the night progresses. A good chronological list has been published by the Denver Astronomical Society and can be found [here](#). It includes the right ascension, declination, magnitude and size of each target.

You'll need a telescope, preferably at least 6 inches in aperture, though smaller scopes and binoculars will reveal many but

not all the objects. A good star chart, printed or electronic, is also necessary. I prefer a printed chart. Electronic screens, even one dimmed and red-lighted, still degrade my night vision.

To-go or not to-go

If you have a go-to computerized mount, the search goes quicker, leaving you more time at the eyepiece. But if you hope to receive an official Astronomical League Messier observing award, a go-to scope is against the rules.



My last serious attempt at a Messier marathon was on April 4, 2008. I joined a number of NCSF club members at Harrington Beach on a wonderfully transparent night. I had a 10-inch reflector on a non-computerized mount along with 10x50 and 20x77 binoculars. My observing partner (NCSF member Jerry Kohlmann), had a 12-inch Portaball, an exquisite instrument that revealed remarkable detail in everything we saw.

Galaxies and more galaxies

Our observing clicked along until we reached the Virgo and Coma galaxy clusters.

It was difficult to sort the NGC galaxies from the Messier objects. Through a large aperture scope, numerous galaxies would appear in one wide angle field. Identifying them grew tricky after midnight.

I ran out of steam at about 2 am after logging 58 objects. I decided not to wait until the summer riches of Sagittarius and Scorpius rose. Still, felt satisfied and happy. Never before had I seen so many galaxies. Tracking them down by star hopping gave me a base of knowledge that stays with me.

You're not alone out there

You can also be part of a larger group to share your observations. The makers of the new [Unistellar eVscope](#) are hosting a world-wide Messier marathon star party and hope to set a world record. You don't need to own one of their scopes, but you do need to sign in to participate. [A PDF with info can be found here](#). Contact val.klavans@unistellaroptycs.com. You can also have your observations become part of an official record at messier.seds.org.

Contact them at the link provided on the page.

Go virtual

If you want a virtual experience, check out the Mt. Lemmon Skycenter in Arizona. They'll hold a [virtual Messier Marathon](#) starting the evening of March 13 with views through their 32" telescope via their YouTube channel.

So pick a clear night. Stay as long as you like. You probably won't see all 110. But the idea is to see as many as you can, see something new, and keep a record of your observations.

-Ernie Mastroianni photos

Pike River Starfest accepting reservations for July



By Gerry Kocken

Pike River Starfest is entering its 7th year at a northern Wisconsin location with the darkest skies of any star party in the state. Last year's event, held in May, produced a reading of 21.85 on the Sky Quality Meter at 11:30 p.m. two days in a row. This year, the event takes place on Wednesday night July 7th through Sunday morning July 11th. The site is located at N14720 US Hwy 141, Amberg, Wisconsin.

The private campground can accommodate approximately 30 camp sites. Tents and mobile homes are welcome. Portable toilets on site. There is no power for any campsite, however there is power for charging



batteries at the on-site office building/conference room. If a person chooses to camp next to the building, power will be supplied. There will be three picnic tables available. Water and soap for doing dishes, clean water for rinsing, along with clean towels will be supplied.

A camp stove and grill will also be available. Midnight snacks will be served, similar to [Northwoods Starfest](#). In the event of cloudy weather, a fire pit for a bonfire is available. In event of

rain, guests can enjoy the conference room, which comes with a full library of astronomy books and TV with a DVD player. The room will also be used for serving midnight snacks.

During the days, you can enjoy hiking, tubing and trout fishing on the Pike River (a Class A trout stream), golf, whitewater rafting on the Menominee or Peshtigo Rivers (within in a 35-minute drive), tours of the [Iron Mountain Iron Mine](#) in Norway, (a 25-minute drive), or any of Marinette County's 15 waterfalls. Dave's Falls is within walking distance of the camp sites, just a half-mile. The county parks charge a daily fee to enter, but allow you to enter as many parks you want in one day. There are also several history museums in the area. There are two hotels in the area, nine miles south in Wausaukee and nine miles north in Pembine. Showers are available two blocks north at the Italian Inn for \$5.

Registration is \$10 per night per person. Pre-registration is required. Fees will not be returned in event of weather or cancellation. When campsites are filled registration will be halted. First come, first served. Registration is due by June 15. After that dues will increase to \$15 per night per person until June 30. Please indicate what nights you plan on attending and how many individuals in your party. Registration fees should be sent to Gerry Kocken, PO Box 142, Amberg, Wi. 54102. For additional information or questions, please contact me at gerryk@kockenwi.com or phone (920) 676-6363.

Standard rules for star parties will be enforced.

Looking ahead

April 1, Thursday

General Meeting

Online via Zoom

7:30 pm

NEAF

Northeast Astronomy Forum

April 10 and 11, 2021

Online only

<https://www.neafexpo.com>

NCRAL convention

May 7-8, 2021

Canceled

Pre-WOW

June 4-9 2021

Hartmann Creek State Park

Wisconsin Observers Weekend

June 10 - 13, 2021

Hartmann Creek State Park

<http://www.new-star.org/index.php?Itemid=82>

Pike River Starfest

July 7-11, Amberg, Wis.

Contact Gerry Kocken

gerryk@kockenwi.com

Nebraska Star Party

August 1 - 6, 2021

Merritt Reservoir Snake Campground

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

Northwoods Starfest

August 6-8 (pending COVID conditions)

Hobbs Observatory, Fall Creek, Wis.

<https://www.cvastro.org/northwoods-starfest/nwsf-information/>

Sheboygan Swap-n-Sell

October 23, 2021

Aviation Heritage Center,

Sheboygan Airport

General Meeting Presentation

from page 1

Thursday's general meeting topic will be on astrophotography. Board member Mike Borchert will be discussing his journey in taking pictures of the sky. It will be geared to all ages, all members, at all levels of the club. The discussion will be more philosophical than technical and open to questions and answers.

Borchert will cover astrophotography aspects from wide field point-and-shoot photos to deep space objects with the club's refractor and his own equipment.
- Ernie Mastroianni

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



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

Imaging report

NCSF member Tom Schmidtkunz took this nicely-detailed monochrome image of the Horsehead and Flame nebulas in Orion last December. Schmidtkunz is a seasoned user of remote telescopes, a practice where the photographer is not at the same location as the telescope. There are many remote observatories now online and offering their telescopes for amateur use. In this case, Tom used the [New Mexico Skies observatory](#) at an elevation of 7,300 feet. Tom took two hours of exposures, consisting of 24 five-minute sub frames with a Takahashi 4" f/5 fluorite refractor and a hydrogen-alpha filter.

"It would appear that the best resolution comes with h/a only", said Tom. "I have noticed this with the work of others, who are more proficient at processing techniques."

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<https://ncsf.info>

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