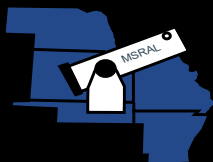


The Prairie Astronomer

January 2022 Volume 63, Issue #1

Giant Storms and High Clouds

IN THIS ISSUE: Jezero Crater
Mentorship Program
Webb Telescope



Night Sky Network



The Newsletter of the Prairie Astronomy Club

The Prairie Astronomer



NEXT MEETING AND PROGRAM

January 25: The New Universe of Visualizations in Planetariums, 7:30pm via Zoom

Jack Dunn had an active career leading Planetariums for 45 years starting in college as a student at Midland College (now Midland University) in Fremont, NE under Dr. Gilbert C. Lueninghoener. Although retired, he is still active in the Planetarium community, in the International Planetarium Society and the Southeastern Planetarium Association. And he volunteers for his wife Liz's planetarium in Columbia, SC. Planetariums have come a long way since the early star plate projectors and the pinhole projection of stars that dominated the 20th century domes. The introduction of computer generated imagery projected in video started slowly but increased exponentially after the beginning of the 21st century. The latest systems today can explore data sets in intimate detail. And they are not limited to astronomical data. More importantly, this function has quickly filtered down to systems in smaller domes which operate with much less funding.

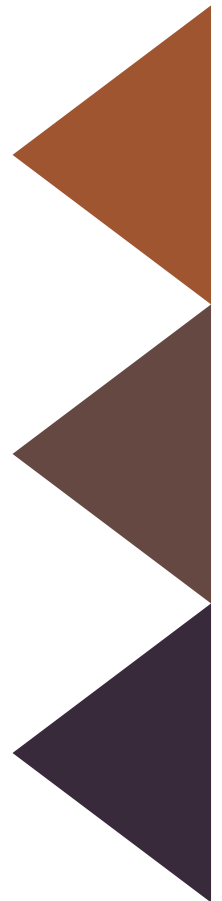
FUTURE PROGRAMS

February: Dave Knisely will talk about using filters

CONTENTS

3	Mentoring Program	13	Jezero Crater
5	President's Message	17	JWST
7	Mantrap Skies ARP38	20	From the Archives
10	Holiday Gathering	21	Member Profile
11	Focus on Gemini	23	JWST Lens Cap
12	February Observing	24	Club Information

Cover: This image shows two of Jupiter's large rotating storms, captured by Juno's visible-light imager, JunoCam, on Juno's 38th perijove pass, on Nov. 29, 2021. Credits: Image data: NASA/JPL-Caltech/SwRI/MSSS, Image processing: Kevin M. Gill CC BY



CALENDAR

PAC Meeting
 January 25, 7:30pm, via Zoom. Jack Dunn will provide an update on new technologies that have changed planetarium shows.

PAC Meeting
 February 22, 7:30pm at Branched Oak Observatory
 Program: Filters, presented by Dave Knisely

PAC Meeting
 March 29, 7:30pm

PAC Meeting
 April 26, 7:30pm

2022 STAR PARTY DATES

	Date	Date
January	28	2/5
February	25	3/4
March	25	4/1
April	22	29
May	20	27
June	17	24
July	22	29
NSP	7/24	7/29
August	19	26
September	23	30
October	21	28
November	18	25
December	16	23

Dates in **BOLD** are closest to the New Moon.

CLUB OFFICERS

President	Bob Kacvinsky kacvinskyb@yahoo.com
Vice President	Jason O'Flaherty jflaher@gmail.com
2nd VP (Program Chair)	Bill Lohrberg wmlohrberg89@gmail.com
Secretary	Jim White jrwhite2188@gmail.com
Treasurer	John Reinert jr6@aol.com
Club Observing Chair	Jim Kvasnicka jim.kvasnicka@yahoo.com
Outreach Coordinator	Mike Kearns mkearns@neb.rr.com
Website and Newsletter Editor	Mark Dahmke mark@dahmke.com



Shop through Amazon Smile to automatically donate to PAC:
smile.amazon.com/ch/47-6044523



www.prairieastronomyclub.org

Mentoring Program

Bob Kacvinsky

For several years we have been discussing the need within PAC to set up a mentorship program to help new members become comfortable with Astronomy hobby and PAC. Part of the challenge is helping members feel welcome. Astronomy as a science is exciting, but also can be a little intimidating to members who are still learning. PAC has veteran members with decades of knowledge and experience and then newer members who are just sticking their toes into the hobby.

Our goal of the mentorship program is to help bridge the gap between our experienced members and those that want to learn about our hobby. You are receiving this message because you are seen as experienced and knowledgeable about Astronomy, Observing, and public volunteering. We have added 15 new members over the 20 months and due to Covid they have had only limited exposure to PAC. As we begin to open back up for both private and public events we want to help these members feel comfortable to get involved. As PAC reactivates we have a

perfect opportunity to initiate this mentorship program.

We need your help to make this program successful. Please consider accepting this invitation to become a mentor.

Basic Guidelines / Expectations:

- Plan to connect with your mentee at least once a quarter (3 months) to discuss their Astronomy interests. This can include meeting at a PAC meeting, phone call, attending a PAC outreach event together or attend a club Star Party.

- Be willing to answer questions or provide guidance on Astronomy questions. If you don't know the answer then simply reach out via the Nightsky Network to the Mentorship Leader group or anyone you feel might know the answer. Our goal here is not to create a lot of work, but simply offer a way to newer members to feel comfortable to get their questions answered.

- Encourage initially that all personal contacts be made in a public setting or via phone or email.

- Attempts will be made to match up similar observing platforms - ie Dobs, SCTs, AstroPhotography, Solar, Binocs, etc. If we miss the mark please reach out to me and I will try and reassign a better match.

Objective is to have the basic framework and "teams" set up by the end of March and ready for when we typically start becoming active with Star parties.

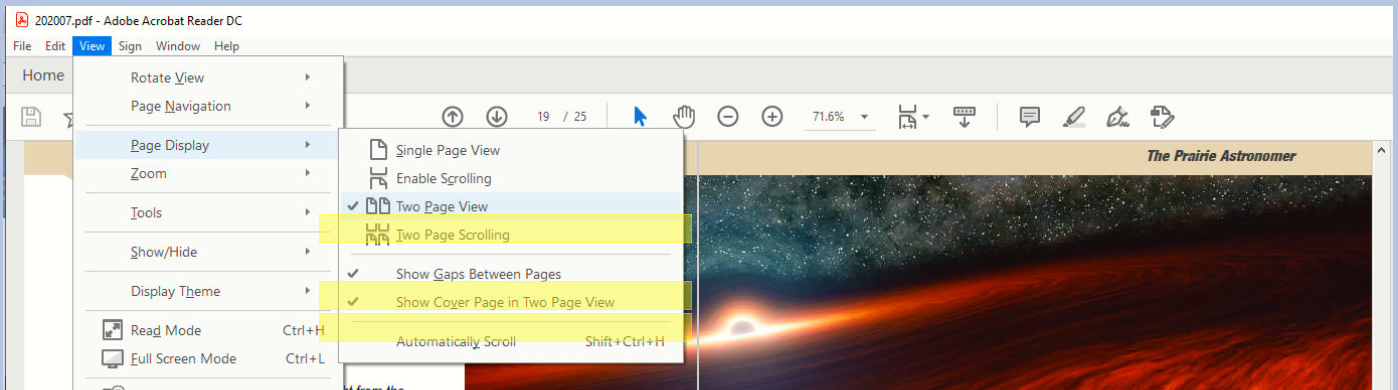
You will be receiving more information in the coming weeks but I wanted to first invite you to participate. PAC has been a great lifetime hobby for many of us but PAC can only survive if we pass on the knowledge and experiences we have all had to the next generations. Please Accept this invitation to be a mentorship leader.

Dark and Clear Skies to All,
Bob Kacvinsky
kacvinskyb@Yahoo.com
402-840-0084

Notices

New Newsletter Format

How to Adjust Adobe Acrobat Settings for Two Page View



To view this newsletter in magazine spread format in Acrobat, select View -> Page Display-> Two Page View. Acrobat will then show two pages side by side. Also make sure the checkboxes "Show Cover Page in Two Page View" and "Show Gaps Between Pages" are checked. If you have it setup correctly, the cover page will be displayed by itself and subsequent pages will be side by side with the odd numbered pages on the left.

PAC Newsletter Archive

Back issues of the Prairie Astronomer from 1962 to present are now available online:

<https://www.prairieastronomyclub.org/newsletters>

PAC-LIST

Subscribe through [GoogleGroups](#) or contact Mark Dahmke to be added to the list. You'll need a Google/gmail account, but if you want to use a different email address, just associate that address with your google account to access Google Groups. Once subscribed, you can view message history through the GoogleGroups website.

To post messages to the list, send to this address: pac-list@googlegroups.com

The President's Message

Bob Kacvinsky



Happy New Year to you and your families. I hope this article finds you healthy and ready to turn the page on a new year. Last year at this time we were planning/hoping that by March or April we would put Covid behind us and get back to our typically PAC activities. Here we begin this year with similar hopes.

Thank you to all who attended the holiday PAC gathering on December 21st. It was nice to get together again in the light to visit and catch up on everything. Let's hope this is a foretaste of the upcoming year.

Our next meeting will be **January 25th. 7:30 PM.** Program presented by Jack Dunn on the newest technologies being incorporated into planetarium shows. Jack will share how innovations have completely changed the planetarium experiences from what most of us know. We will be meeting via Zoom to take advantage of the

remote presentation and meet expected Covid restrictions.

For the February 22nd PAC club meeting we are planning to meet at the Branched Oak Observatory just SE of Branched Oak SRA. We will send directions as we get closer. Dave Knisely will be providing a program on using filters to enhance viewing. There are many different types of filters and selecting the right one can dramatically improve the contrast ability to distinguish details on many objects.

This month you will be receiving an invitation to participate in the newly developed mentorship program. Please consider participating in the program by responding to the email invitation. The primary objective of the program is to help facilitate communications between more experienced members and newer members to the Astronomy hobby.

In the early 1990's when my daughter and I joined PAC, we were struggling finding objects in our new 8" Orion Dob. We could find the moon, and possible a planet or two but beyond that it was frustration. I hear this same story repeatedly from newer members. We joined PAC to get help but still felt "intimidated" about attending a Star Party. We did not want to feel "dumb." Maybe some of you may have similar concerns.

What happened at our first star party changed our view completely. We met members Dave and Joey Churilla who not only helped us set up but also helped get our mirrors aligned and ready for viewing. As darkness came upon us the real support began with Dave and Joey continuously helping us learn to find objects. It was a night that completely changed our experience from

frustration to wonderment. It only took a couple of star parties before we were able to successfully search and find many Messier objects on our own. Our hope at PAC is to pay that same experience forward with every newer member to observing.

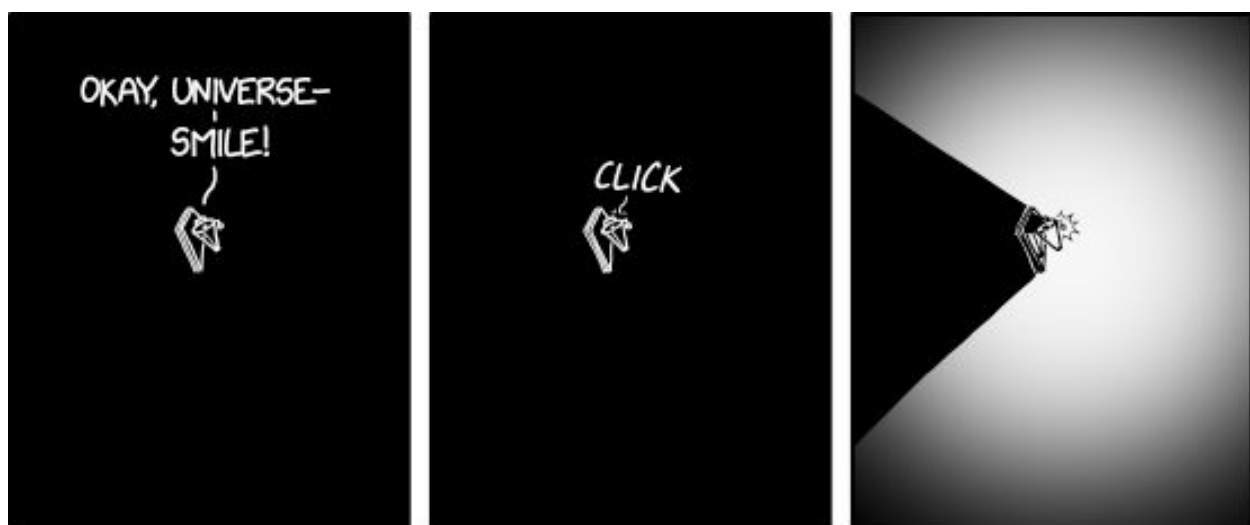
After 30 years and 10 Observing programs, I still enjoy going to star parties to find objects with friends and sharing views with others as searching to find an obscure object, comet, or dim fuzzy. Yet, the greatest experience is helping a new member getting their telescope set up and finding their first few "wows." Paying it forward is something I've experienced at every star

party, but it only can happen if newer members can feel comfortable to attend. PAC mentorship can help bridge the gap between our more experienced members and newer members. Remember that the definition of an expert is someone who knows just one thing more than another. Let's help each other gain that expert knowledge.

The PAC Board voted to support the mentorship program. Our goal is to get partnering teams established by the end of February so as warmer weather approaches, we can begin gathering at upcoming star parties. If you are looking for a good observing starting

point, connect with Jim Kvasnicka, PAC Observing Chair, for suggestions. There are over 50 observing programs with several designed for getting started such as a simple Lunar Program or the common Messier List. Let's work together to help enhance everyone's ability to experience the wonders of the night sky.

Dark and Clear Skies to you,
Bob Kacvinsky
PAC-President
kacvinskyb@yahoo.com
402-840-0084



ASTRONOMY FACT: THE PURPOSE OF THE JWST SUNSHIELD IS TO PROTECT THE SUN AND THE EARTH FROM THE TELESCOPE'S POWERFUL FLASH.



Rick Johnson

ARP 38

Arp 38 is a photogenic face on spiral in Draco about 60 million light-years distant. Arp put it in his class for spirals with low surface brightness companions on the arm. One major problem here. The companion probably doesn't exist. NED shows no other galaxy in the area. It appears the "companion" is most likely just star knots to the northern side of the galaxy. Arp's comment reads: "Small ring in arm on north side, part of large ring on following side shows in H-alpha only." This would be the position of the star knots. Kanipe and Webb make no mention of the companion in their book. They just repeat Arp's comment.

The only other mention of a companion that I found is in a paper by B. A. Vorontsov-Velyaminov from 1975 titled "Atlas of Interacting Galaxies, Part II and the Concept of Fragmentation of Galaxies. This is the VV catalog in which Arp 38 is entry 444. There they say:

"One of the rare cases where the companion at the end of a spiral arm is also a spiral. Here, a chain of H II regions encircles the massive condensation thus forming a small spiral ripening at the periphery of the larger one and liable to gemmate." Again this reads more like a feature of the galaxy rather than a separate one except for the part where they state it really is a spiral. But do they mean a spiral form rather than a galaxy?

Arp 38 does have some plumes to the north that likely indicate some interaction in the past. I suppose the bright knot to the north could be mistaken for a galaxy. A very basic combine of a couple filters is seen at <http://cseligman.com/text/atlas/ngc6412hst.jpg> There the "companion" appears to be just a very large HII region and star cluster. I suppose if it ate a dwarf galaxy with lots of HII regions this might be the some of the remains. This



The Mantrap Skies Image Catalog

Rick Johnson, a founding member of the Prairie Astronomy Club, passed away in January, 2019. His legacy lives on through his comprehensive catalog of over 1600 images at www.mantrapskies.com.



could explain the plumes as well.

There seems some disagreement about how to classify this spiral. NED says SA(s)c while the NGC project says SBc making it a barred spiral. It sort of looks barred in my image at first glance. But looking closer in the enlarged image what appears to

be a bar to the north is really star knots at the start of a spiral arm that comes out of a circular core region. There is no sign of a bar like structure to the south. This is even more evident (of course) in the Hubble Space Telescope image above. It was discovered by William Herschel on December 12, 1797 but isn't in

either of the Herschel 400 observing programs.

The image is out of the area of the Sloan survey so there is little data on the field. While NED lists a couple dozen galaxies in the field none have much data and nothing about distance. No annotated image was prepared due to this lack of data.



Photos from PAC's Holiday Gathering at Tanner's, December 21st



Focus on Constellations

Gemini

Jim Kvasnicka

Gemini the Twins is one of the twelve constellations of the Zodiac. The brightest stars are in two parallel rows, each representing one of the Twins. The bright stars at the NE end of the rows mark the Twin's heads and bear their names, Castor and Pollux. The Milky Way runs through the feet of Gemini so the constellation contains a wide variety of objects. Gemini's two finest objects are the large open cluster M35 and the bright Planetary Nebula NGC 2392 the Eskimo Nebula.

Showpiece Objects

Open Clusters: M35, NGC 2129, and NGC 2266

Planetary Nebulae: NGC 2392

Multiple Stars: 15
 Geminorum, 20
 Geminorum, 38
 Geminorum, Lambda
 Geminorum, Delta
 Geminorum, Alpha
 Geminorum, Kappa
 Geminorum

Mythology

Although Leda was the mother to both Castor and Pollux they had different

fathers. Pollux was the son of Zeus who seduced Leda in the form of a swan. Since he was a son of a god Pollux was immortal. Castor was the son of Leda's husband Tyndareus. Their sister was Helen of Troy and both brothers fought in the Trojan War. They also sailed with Jason and his Argonauts in the Quest for the Golden Fleece. The Twins fell in love with beautiful sisters who were already betrothed to suitors. The Twins challenged the suitors in battle and slew them, but Castor was mortally wounded. Overcome with grief, Pollux would have committed suicide to be with his brother, but since he was immortal it proved impossible. Finally, Zeus placed both their souls

together in the sky as symbols of brotherly love.

Number of Objects Magnitude 12.0 and Brighter

Galaxies: 3

Globular Clusters: 0

Open Clusters: 12

Planetary Nebulae: 7

Dark Nebulae: 0

Bright Nebulae: 0

SNREM: 1



By Till Credner - Own work: AlltheSky.com, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=20042019>

February Observing

Jim Kvasnicka



This is a partial list of objects visible for the upcoming month.

Planets

Venus: In the morning at magnitude -4.9.

Mercury and Mars: Both in the morning, Mercury at +0.3 and Mars at +1.4 magnitude.

Jupiter: Very low in the southwest to start the month before slipping from view.

Saturn and Neptune: Not visible.

Uranus: In Aries at +5.8 magnitude.

Messier List

M1: The Crab Nebula in Taurus.

M35: Open cluster in Gemini.

M36/M37/M38: Open clusters in Auriga.

M42: The Orion Nebula

M43: Emission nebula just north of M42.

M45: The Pleiades.

M78: Emission nebula in Orion.

M79: Class V globular cluster in Lepus.

Last Month: M33, M34, M52, M74, M76, M77, M103

Next Month: M41, M44, M46, M47, M48, M50, M67, M81, M82, M93

NGC and other Deep Sky Objects

NGC 2244: Open cluster embedded in the Rosette Nebula in Monoceros.

NGC 2264: The Christmas Tree cluster in Monoceros.

NGC 2301: Open cluster in Monoceros.

NGC 2362: The Tau Canis Majoris Cluster.

NGC 2392: The Eskimo Nebula in Gemini.

NGC 2403: Galaxy in Camelopardalis.

Double Star Program List

32 Eridani: Yellow and white stars.

55 Eridani: Yellow and pale yellow pair.

Gamma Leporis: Pair of yellow stars.

Epsilon Monocerotis: White primary with a pale yellow secondary.

Beta Monocerotis: Three bluish white stars.

Kappa Puppis: Equal pair of white stars.

Alpha Ursa Minoris: Polaris, yellow-white and white stars.

N Hydrae: Equal yellow stars.

Challenge Object

NGC 2280: Dim elongated 2' x 1' galaxy in Canes Major.

NASA's Perseverance Mars Rover Makes Surprising Discoveries

The findings by rover scientists highlight the diversity of samples geologists and future scientists associated with the agency's Mars Sample Return program will have to study.



*An enhanced-color composite image of the delta at Jezero Crater on Mars
Credit NASA/JPL-Caltech/ASU/MSSS*

Scientists with NASA's Perseverance Mars rover mission have discovered that the bedrock their six-wheeled explorer has been driving on since landing in February likely formed from red-hot magma. The discovery has implications for

understanding and accurately dating critical events in the history of Jezero Crater – as well as the rest of the planet.

The team has also concluded that rocks in the crater have interacted with water multiple times

over the eons and that some contain organic molecules.

These and other findings were presented today during a news briefing at the American Geophysical Union fall science meeting in New Orleans.

Even before Perseverance touched down on Mars, the mission's science team had wondered about the origin of the rocks in the area. Were they sedimentary – the compressed accumulation of mineral particles possibly carried to the location by an ancient river system? Or where



they igneous, possibly born in lava flows rising to the surface from a now long-extinct Martian volcano?

"I was beginning to despair we would never find the answer," said Perseverance Project Scientist Ken Farley of Caltech in Pasadena. "But then our PIXL instrument got a good look at the

abraded patch of a rock from the area nicknamed 'South Séítah,' and it all became clear: The crystals within the rock provided the smoking gun."

The drill at the end of Perseverance's robotic arm can abrade, or grind, rock surfaces to allow other instruments, such as PIXL, to study them. Short for Planetary Instrument for X-ray Lithochemistry, PIXL uses X-ray fluorescence to map the elemental composition of rocks. On Nov. 12, PIXL analyzed a South Séítah rock the science team had chosen to take a core sample from using the rover's drill. The PIXL data showed the rock, nicknamed "Brac," to be composed of an unusual abundance of large olivine crystals engulfed in pyroxene crystals.

"A good geology student will tell you that such a texture indicates the rock formed when crystals grew and settled in a slowly cooling magma – for example a thick lava flow, lava lake, or magma chamber," said Farley.

"The rock was then altered by water several times, making it a treasure trove that will allow future scientists to date events in Jezero, better understand the period in which water was more common on its surface, and reveal the

early history of the planet. Mars Sample Return is going to have great stuff to choose from!"

The multi-mission Mars Sample Return campaign began with Perseverance, which is collecting Martian rock samples in search of ancient microscopic life. Of Perseverance's 43 sample tubes, six have been sealed to date – four with rock cores, one with Martian atmosphere, and one that contained "witness" material to observe any contamination the rover might have brought from Earth. Mars Sample Return seeks to bring select tubes back to Earth, where generations of scientists will be able to study them with powerful lab equipment far too large to send to Mars.

Still to be determined is whether the olivine-rich rock formed in a thick lava lake cooling on the surface or in a subterranean chamber that was later exposed by erosion.

Organic Molecules

Also great news for Mars Sample Return is the discovery of organic compounds by the SHERLOC (Scanning Habitable Environments with Raman & Luminescence for Organics & Chemicals) instrument. The carbon-

Mars, continued.

containing molecules are not only in the interiors of abraded rocks SHERLOC analyzed, but in the dust on non-abraded rock.

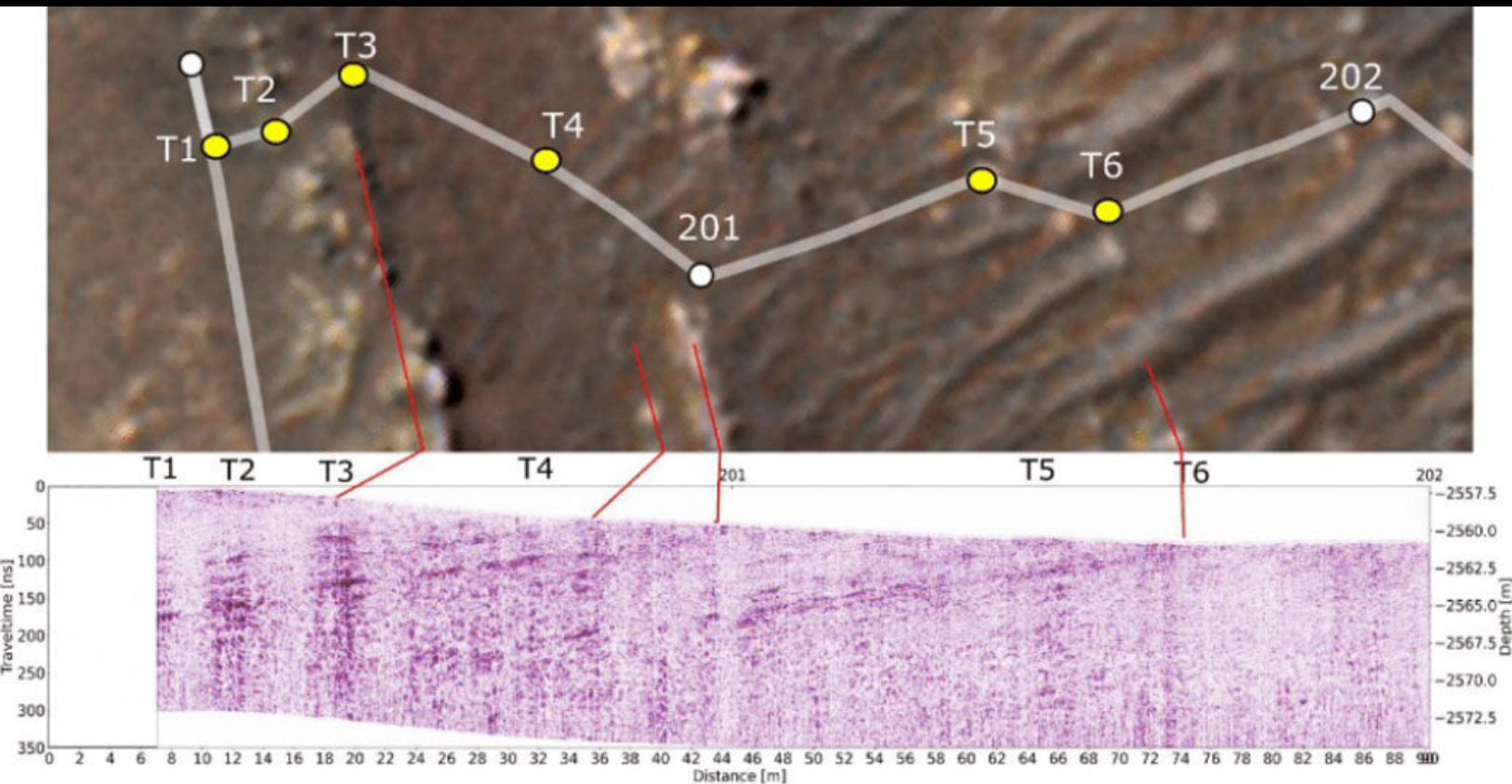
Confirmation of organics is not a confirmation that life once existed in Jezero and left telltale signs (biosignatures). There are both biological and non-biological mechanisms that create organics.

“Curiosity also discovered organics at its landing site within Gale Crater,” said

Luther Beegle, SHERLOC principal investigator at NASA’s Jet Propulsion Laboratory in Southern California. “What SHERLOC adds to the story is its capability to map the spatial distribution of organics inside rocks and relate those organics to minerals found there. This helps us understand the environment in which the organics formed. More analysis needs to be done to determine the method of production for the

identified organics.”

The preservation of organics inside ancient rocks – regardless of origin – at both Gale and Jezero Craters does mean that potential biosignatures (signs of life, whether past or present) could be preserved, too. “This is a question that may not be solved until the samples are returned to Earth, but the preservation of organics is very exciting. When these samples are



This graphic depicts Perseverance's entry into "Séftah" from both an orbital and subsurface perspective. The lower image is a subsurface "radargram" from the rover's RIMFAX instrument; the red lines indicate link subsurface features to erosion-resistant rocky outcrops visible above the surface. Credit: NASA/JPL-Caltech/University of Arizona/USGS/FFI

Mars, continued.

returned to Earth, they will be a source of scientific inquiry and discovery for many years,” Beegle said.

‘Radargram’

Along with its rock-core sampling capabilities, Perseverance has brought the first ground-penetrating radar to the surface of Mars. RIMFAX (Radar Imager for Mars’ Subsurface Experiment) creates a “radargram” of subsurface features up to about 33 feet (10 meters) deep. Data for this first released radargram was collected as the rover drove across a ridgeline from the “Crater Floor Fractured Rough” geologic unit into the Séítah geologic unit.

The ridgeline has multiple rock formations with a visible downward tilt. With RIMFAX data, Perseverance scientists now know that these angled rock layers continue at the same

angle well below the surface. The radargram also shows the Séítah rock layers project below those of Crater Floor Fractured Rough. The results further confirm the science team’s belief that the creation of Séítah preceded Crater Floor Fractured Rough. The ability to observe geologic features even below the surface adds a new dimension to the team’s geologic mapping capabilities at Mars.

More About Perseverance

A key objective for Perseverance’s mission on Mars is astrobiology, including the search for signs of ancient microbial life. The rover will characterize the planet’s geology and past climate, pave the way for human exploration of the Red Planet, and be the first mission to collect and cache Martian rock and regolith (broken rock and dust).

Subsequent NASA missions, in cooperation with ESA (European Space Agency), would send spacecraft to Mars to collect these sealed samples from the surface and return them to Earth for in-depth analysis.

The Mars 2020 Perseverance mission is part of NASA’s Moon to Mars exploration approach, which includes Artemis missions to the Moon that will help prepare for human exploration of the Red Planet.

JPL, which is managed for NASA by Caltech in Pasadena, California, built and manages operations of the Perseverance rover.

NASA's Webb Telescope Reaches Major Milestone as Mirror Unfolds

NASA's James Webb Space Telescope team fully deployed its 21-foot, gold-coated primary mirror, successfully completing the final stage of all major spacecraft deployments to prepare for science operations.

A joint effort with the European Space Agency (ESA) and Canadian Space Agency, the Webb mission will explore every phase of cosmic history – from within our solar system to the most distant observable galaxies in the early universe.

“Today, NASA achieved another engineering milestone decades in the making. While the journey is not complete, I join the Webb team in breathing a little easier and imagining the future breakthroughs bound to inspire the world,” said NASA Administrator Bill Nelson. “The James Webb Space Telescope is an unprecedented mission that is on the precipice of seeing the light from the first galaxies and discovering the mysteries of our universe. Each feat already achieved and

future accomplishment is a testament to the thousands of innovators who poured their life's passion into this mission.”

The two wings of Webb's primary mirror had been folded to fit inside the nose cone of an Ariespace Ariane 5 rocket prior to launch. After more than a week of other critical spacecraft deployments, the Webb team began remotely unfolding the hexagonal segments of the primary mirror, the largest ever launched into space. This was a multi-day process, with the first side deployed Jan. 7 and the second Jan. 8.

Mission Operations Center ground control at the Space Telescope Science Institute in Baltimore began deploying the second side panel of the mirror at 8:53 a.m. EST. Once it extended and latched into position at 1:17 p.m. EST, the team declared all major deployments successfully completed.

The world's largest and most complex space science telescope will





When the James Webb Space Telescope's primary mirror wings unfold and lock into place in space, the observatory will have completed all major spacecraft deployments.

Credits: Northrop Grumman

Webb, continued.

now begin moving its 18 primary mirror segments to align the telescope optics. The ground team will command 126 actuators on the backsides of the segments to flex each mirror – an alignment that will take months to complete. Then the team will calibrate the science instruments prior to delivering Webb’s first images this summer.

“I am so proud of the team – spanning continents and decades – that delivered this first-of-its kind achievement,” said Thomas Zurbuchen, associate administrator for the Science Mission Directorate in NASA Headquarters in Washington. “Webb’s successful deployment exemplifies the best of what NASA has to offer: the willingness to attempt bold and challenging things in the name of discoveries still unknown.”

Soon, Webb will also undergo a third mid-course correction burn – one of three planned to place the telescope precisely in orbit around the second Lagrange point, commonly known as L2, nearly 1 million miles from Earth. This is Webb’s final orbital

position, where its sunshield will protect it from light from the Sun, Earth, and Moon that could interfere with observations of infrared light. Webb is designed to peer back over 13.5 billion years to capture infrared light from celestial objects, with much higher resolution than ever before, and to study our own solar system as well as distant worlds.

“The successful completion of all of the Webb Space Telescope’s deployments is historic,” said Gregory L. Robinson, Webb program director at NASA Headquarters. “This is the first time a NASA-led mission has ever attempted to complete a complex sequence to unfold an observatory in space – a remarkable feat for our team, NASA, and the world.”

NASA’s Science Mission Directorate oversees the mission. NASA’s Goddard Space Flight Center in Greenbelt, Maryland, manages the project for the agency and oversees the Space Telescope Science Institute, Northrop Grumman, and other mission partners. In addition to Goddard, several NASA centers

contributed to the project, including Johnson Space Center in Houston, the Jet Propulsion Laboratory in Pasadena, Marshall Space Flight Center in Huntsville, Alabama, Ames Research Center in Silicon Valley, and others.

For more information about the Webb mission, visit:

<https://www.nasa.gov/webb>

From the Archives

January, 1972

PAC President, Earl Moser

The President's Report

It has been nearly eleven years since the formation of the Prairie Astronomy Club, and I thought it best to write up a club history at this time, before some of the vital information is lost in the dark ages of years past.

I got my information from some of the charter members and other long time club members. Most of the information, however, was gleaned from dozens of back issues of our club newsletter.

The oldest copy is dated April, 1962. Using the club library, and Jess Williams, and my own collections I came up with 92 copies of the newsletter from April,

Editor's Note:

You can find the [January 1972 issue](#) of the newsletter, including Earl's history of PAC in our online newsletter archive.

As of 2022 the following newsletters are still missing (or were never published):

1962 till December, 1971.

There are 25 copies, missing yet. They are the months of June, September, and November, 1962; all of 1963 except February, October and November; January through April, June, July, and November of 1964; May 1965, July, 1968; September 1969; November 1970; and July, 1971.

Perhaps there was no newsletter in some of those months, but some of you out there may have some of missing copies.

I would like to hear from you and perhaps we can have some duplicates made.

The dates of Important

June, 1962;
All of 1963 except for February, July and November;

January through April, June, July, and November of 1964;

According to Earl's report, these three issues from 1966 present in someone's collection, but have since gone missing:

events concerning the club are as complete and accurate as I can recall.

If there are any missing or incorrect dates let me know and I will have the corrections noted in a future newsletter.

The lists of charter members and club officers are open for corrections too, so let me know if any are needed. In the list of club officers, the date noted is that of the year and approximate month in

which the year's election was held.

A "?" indicates that I forgot who held that particular office and can't seem to find out.

Feb, June, July 1966.

Also there are some missing issues after 1972: Sept 1975; Sept 1978; Sept 1984; August 1993; Sept 1995.

If you have any of these issues, please let me know.

Club Member Profile: Bob Kacvinsky



Bob has been the President of PAC since 2019

I grew up on a dairy farm in very northern Wisconsin about a mile off of Lake Superior. I graduated from the University of Wisconsin with a BS in Agricultural Business Management. I recently retired after 41 years as an Agronomist with Syngenta. My wife Diane and I moved to Lincoln in 1989 with our daughter Rebecca and son Carl. I brought my first telescope, an 8" Orion Dob, in 1993 after my daughter attended space camp in Hutchinson, KS. She and Carl both had a strong science interest, and it gave me the right excuse to get a telescope. We joined PAC around that time when we determined that we could not find many objects and needed some help. I enjoyed observing with my kids through their early HS years. My daughter continued her interest after graduating with an Astronautical Engineering degree and works in Huntsville, AL.

Between 2005 and 2019 (pre Covid) I have been blessed to make 15 mission trips to Honduras, Tanzania, and Rwanda doing several Ag projects and teaching composting, vegetable production, and family nutrition. For a few years I worked to create a dairy, beef, poultry, and tilapia project in Honduras supporting local schools and villages. My church in Lincoln has established a garden and all of the production goes to the local Food Bank. I enjoy putting my Ag background to good use. With Covid my mission projects have been shelved, but between PAC, church activities and family my life is filled.

Joining PAC...

I think I joined PAC in 1993 after my daughter and I decided we were going to build our own telescope. After referencing the "How To Build a Telescope" we found on the PAC site, we decided that it was a lot

smarter to just purchase. After struggling with how to use the telescope we went to a PAC Star Party and met Dave and Joey Churilla who helped us finally figure out how to find objects with the telescope. The rest was history.

Why I joined PAC

Growing up on a farm in northern Wisconsin where dark clear unpolluted skies were the norm I've always been fascinated with the science of Astronomy. I do miss the winter auroras that were a weekly occurrence growing up. Seeing the colors of an aurora being reflected off a fresh field of snow is special.

Telescopes

I started out with an 8" Orion Dob that I bought for my daughter who now has that original telescope. It was her telescope, so I "had to" let her have it and was "forced" to replace it with

Bob Kacvinsky, continued.

a 12" Hardin (supplier of Orion) Dob which I still have as my public observing telescope. In 2014 I got aperture fever and upgraded to a 16" Meade Lightbridge Dob telescope. It is too bad that when you can finally afford a bigger telescope is about the time that you need a bigger telescope because your eyesight is weakening.

Star Parties

Since 2000 I've only missed NSP twice, one due to a family conflict and 2020 when I blew out me Achilles tendon. I look forward every year to NSP as my one vacation to spend with close friends who enjoy being a bit nerdy. The part I truly enjoy the most is helping new observers, especially young people although more and more people

are becoming younger than me, with learning how to use their telescopes. I remember how exciting it was when someone helped me and my daughter discover the beauty of the night skies. My passion has been to pay that gift forward. Now that I'm retired, I am hoping to try out the Rocky Mountain Star Stare this year and check out some high elevation observing.

Observing Programs

In the early 2000's Jim Kvasnicka and I were at a PAC Star Party at Olive Creek, and we were looking at Messier objects. During the night we discussed that we should keep track of our observations. After almost 20 years I was honored to join Jim at ALCON in Minneapolis to receive our

Master Observing Awards for completing 10 AL observing programs. I'm presently working on the Hershel II Program including 400 objects. I'm hoping it will not take me the 6 years it took to finish the first Hershel program. Observing programs provide a ready-made observing plan that helped guide me to both familiar objects and the excitement of discovering/seeing for the first time a new object. If you have ever been out at night and wondered "what's up there?" then the AL Observing Programs are a great solution.

I have been fortunate over the years to be part of PAC. What started out as a way to share a hobby has grown into a fellowship with great friends.

PAOS (Aft Optics Subsystem) Cover Removed



July 15, 2021: A very important item on the checklist was completed. Webb's "lens cap" was removed. Ball Aerospace technician Larkin Carey can be seen carefully removing Webb's "lens cap" from the Aft Optics Subsystem which has kept the observatory's sensitive instruments clean, contaminant-free, and protected from stray light throughout the integration and test process.

Image credit: NASA/Chris Gunn

CLUB MEMBERSHIP INFO

REGULAR MEMBER - \$30.00 per year. Includes club newsletter, and 1 vote at club meetings, plus all other standard club privileges.

FAMILY MEMBER - \$35.00 per year. Same as regular member except gets 2 votes at club meetings.

STUDENT MEMBER - \$10.00 per year with volunteer requirement.

If you renew your membership prior to your annual renewal date, you will receive a 10% discount.

Club members are also eligible for special subscription discounts on Sky & Telescope Magazine.

CLUB TELESCOPES

To check out one of the club telescopes, please contact a club officer. Scopes can be checked out at a regular club meeting and kept for one month. Checkout can be extended for another month if there are no other requests for the telescope, but you must notify a club officer in advance.

100mm Orion refractor: Available
 10 inch Meade Starfinder Dobsonian: Available
 13 inch Truss Dobsonian: Needs repair
 10 inch Zhumell: Needs mount

Buy the book! The Prairie Astronomy Club: Fifty Years of Amateur Astronomy. Order online from Amazon or lulu.com.

ADDRESS

The Prairie Astronomer
 c/o The Prairie Astronomy Club, Inc.
 P.O. Box 5585
 Lincoln, NE 68505-0585

info@prairieastronomyclub.org

The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: Regular \$30/yr, Family \$35/yr. Address all new memberships and renewals to: The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585. For other club information, please contact one of the club officers listed to the right. Newsletter comments and articles should be submitted to: Mark Dahmke, P. O. Box 5585, Lincoln, NE 68505 or mark@dahmke.com, no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.

