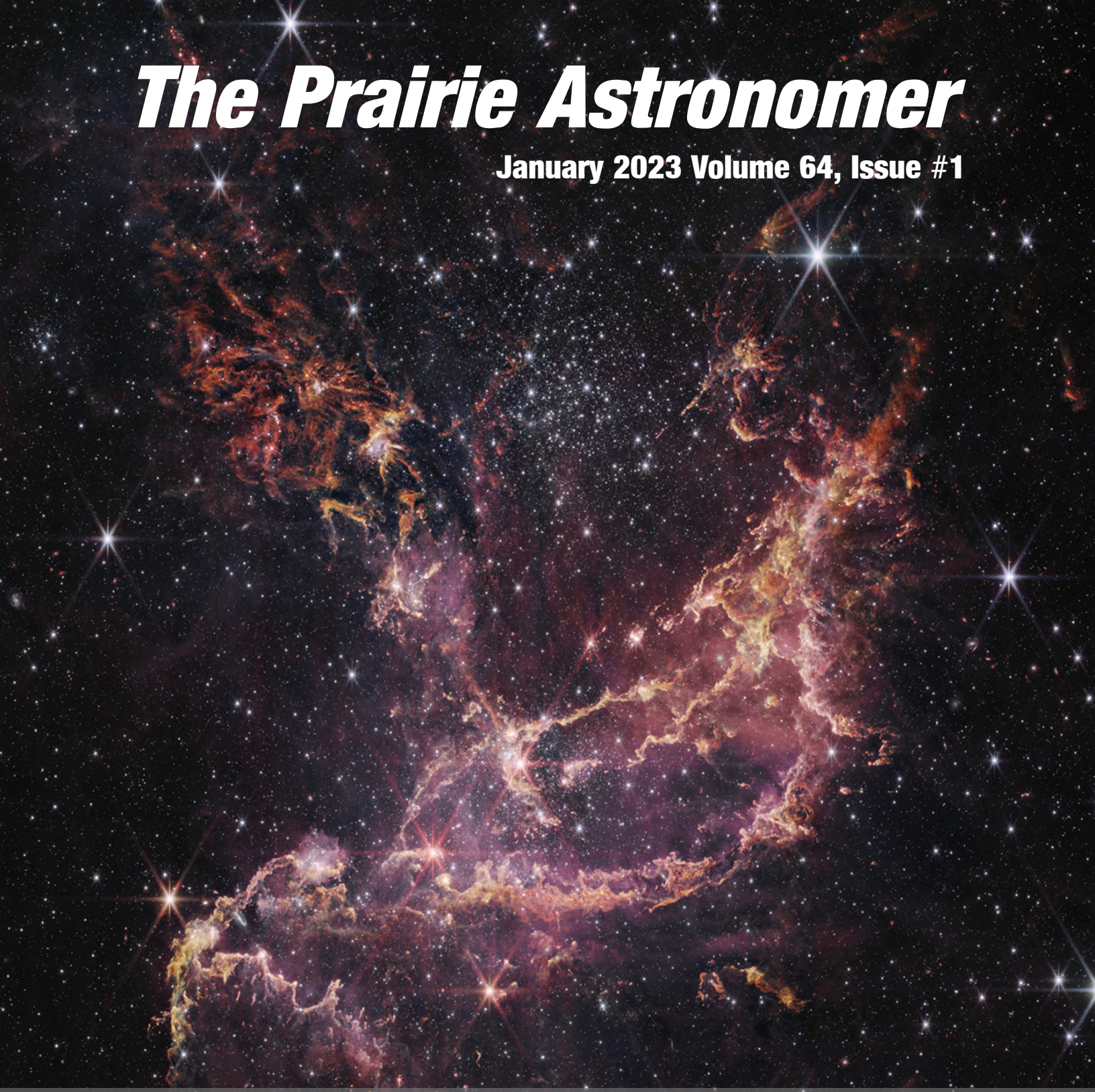
The Prairie Astronomer

January 2023 Volume 64, Issue #1



IN THIS ISSUE:

Night Sky Network

The Newsletter of the Prairie Astronomy Club

The Prairie Astronomer

The next regular meeting is January 31st at 7:30pm at Hyde Observatory

NEXT MEETING AND PROGRAM

The Northern Lights and a Trip to the Arctic

Mark Dahmke will talk about the Aurora Borealis and his trip to Svalbard.

UPCOMING PROGRAMS

May: Annual Club Dinner
June: Solar Star Party

CONTENTS

Cover: NGC 346, shown here in this image from NASA's James Webb Space Telescope Near-Infrared Camera (NIRCam), is a dynamic star cluster that lies within a nebula 200,000 light years away.

Background photo: Brett Boller

CALENDAR

PAC Meeting
January 31, 7:30pm at Hyde Observatory
Program: The Northern Lights and a Trip to the Arctic - Mark Dahmke

Special Program: How to Use Your Telescope
February 10th at 5:15pm Branched Oak Observatory

PAC Meeting
February 28th 7:30pm at Hyde Observatory
Program: Stuff that Never Flew - David Hostetter

PAC Meeting
March 28th, 7:30pm at Hyde Observatory

2023 STAR PARTY DATES

	Date	Date
January	13	**20**
February	10	**17**
March	17	**24**
April	14	**21**
May	12	**19**
June	9	**16**
July	7	**14**
NSP	7/16	7/22
August	11	**18**
September	8	**15**
October	6	**13**
November	3	**10**
December	8	**15**

Dates in BOLD are closest to the New Moon.

CLUB OFFICERS

President	Jason O'Flaherty jflaher@gmail.com
Vice President	Brett Boller proboller86@yahoo.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	Christine Parkyn cpparky@gmail.com
Website and Newsletter Editor	Mark Dahmke mark@dahmke.com

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Night Sky Network

www.prairieastronomyclub.org

The President's Message

Jason O'Flaherty

Happy New Year to all of you. It's nice to start a year off without carrying a mask in my back pocket for a change. This will be a short letter because I have been out of touch with the Astronomy club for the past month due to illness (maybe I shouldn't have put my mask away yet).

Last month, we had a holiday dinner at Tanners instead of our December meeting. I hope things went well with our numbers and ordering food. I'll ask for some feedback at our next meeting. Coincidentally, our next two meetings fall on the very last days of each month.

This month, we return to our standard operating procedure with an in-person meeting on January 31st. Our very own Mark Dahmke will be giving a presentation about his trip to Svalbard, Norway, to see the Northern Lights. Knowing Mark, there should be plenty of great photos and videos from one of the northernmost settlements in the world.

We also have our February presenter lined up already, thanks to Bill Lohrberg. Dave Hostetter, the former Curator of the Planetarium at the Lafayette Science Museum, will be giving a presentation titled "Stuff that never flew," so mark your calendars for that as well.

After discussing with some board members and volunteers, we postponed our "How to use your telescope class" this past Friday, January 20th, due to the predicted snowstorm a few days before. It turned out to not be as bad as predicted, but I'm glad we made the change for the safety and comfort of our members and guests. We have rescheduled the class to our next Star Party date, Friday, February 10th, at Branched Oak Observatory. If that day gets canceled due to weather again, we'll shoot for the following Friday, February 17th.

Check the website and our Facebook page for continued updates.

Lastly, Secretary John Reinert has sent out club dues notices. I just renewed mine using the new Online Payment Portal Mark Dahmke set up on our website, and it worked perfectly. I had my payment through PayPal completed in under 30 seconds. Just ensure you select the correct payment amount for your situation. If you pay before your annual renewal date, you are entitled to 10% off and should select the Early Renewal option; otherwise, choose the full amount. In my haste to try it out, I didn't read well enough and ended up making a $3 donation by paying the full amount (no need to reimburse me, John). The payment portal can be found here:

President's Message, continued.

https://www.prairieastronomyclub.org/pay-dues-online/.

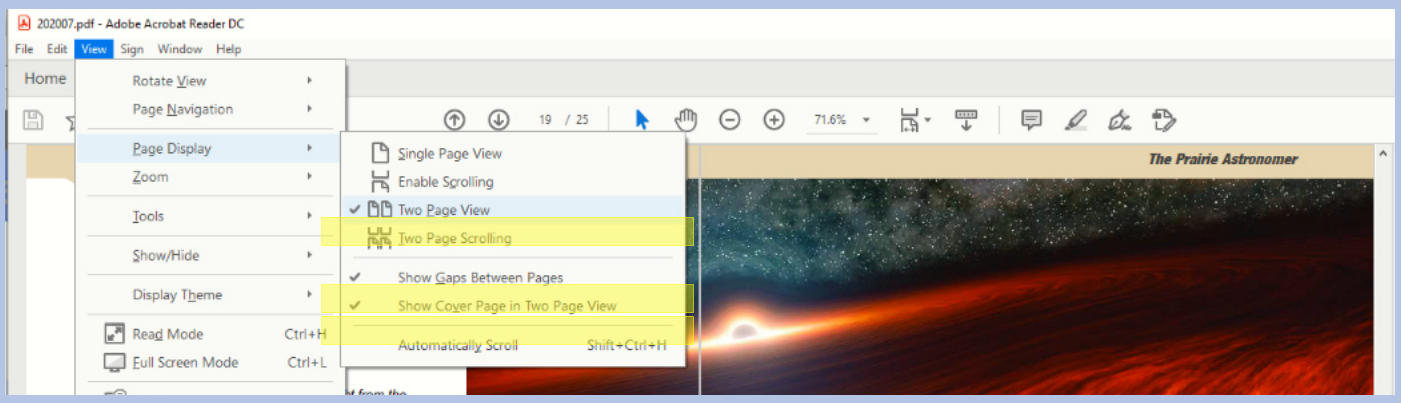
There are some public outreach opportunities coming up in the spring. Our outreach coordinator, Christine Parkyn, has been working on setting up volunteers. I have passed your information to her if you responded Yes or Maybe to volunteering in our annual survey.

Thank you to everyone for making this a welcoming and enjoyable club to participate in. I hope everyone has a great year and that the skies are always dark and clear. I'll see you at our next meeting. - Jason

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

Pay Dues Online

https://www.prairieastronomyclub.org/pay-dues-online/

If you're already a member and are renewing within 30 days of your anniversary date, select the early renewal option for a discount.

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

BOO Groundbreaking for New Multi-purpose Center, January 17th

The entire staff and board of directors at Branched Oak Observatory would like to thank the members of the community and our fantastic business partners for attending and participating in the groundbreaking ceremony for our new Multi-Purpose Center. We hope you all had a fantastic time!

This new building will be a lecture hall, a meeting room, a library, traveling exhibit space, and so much more. Like our classroom that came before it, this new space will allow us to create all-new educational opportunities for the local community and beyond.

Special thanks to Jeff Pankoke and Danielle Banzhaf of Acre Design, Jason Tauer and AJ McVey of Blucor Construction, Steve Kunkel of Bluecor and Stonebrook Exterior, and Jason Ball- President, Lincoln Chamber of Commerce.

ARP 51

The Mantrap Skies Image Catalog

Rick Johnson

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.

This is a redo of this pair of Arp galaxies in western Cetus about 2 degrees northeast of Arp 50. At -13 degrees declination I rarely get very good seeing for this pair. Seeing was poor in my 2008 attempt and fair for this one. Seeing it is better and my research was rather weak last time I'm redoing it. I must have entered something wrong as the galaxies aren't centered.

Arp 51 is the small spiral to the lower right of the odd pair of galaxies, Arp 144. Like Arp 50 it is in Arp's category for spirals with high surface brightness galaxies on an arm. The spiral is an IR galaxy in the 2MASS catalog also known as PGC 475 and MCG -02-01-024. Some catalogs incorrectly call it NGC 7828 which is part of Arp 144. NED has no distance data on it. The companion is ChaBG 069 (Chavira blue galaxies catalog) which NED shows as both a galaxy and as part of a galaxy. So which is it? A knot in an arm or a separate galaxy? Notes at NED on both the spiral and the object refer to it as simply an "object". Like for Arp 50, it is near a pulled out arm which is suggestive but certainly not conclusive. To me,

ARP51, continued.

it appears to be a background galaxy unrelated to the spiral. This is just the way it looks to me, of course. What do you see? Arp made no comment on this one.

Arp 144 is in Arp's category for material emanating from elliptical or elliptical-like galaxies. I can't understand what he means by this. Obviously, this is two interacting galaxies one an elliptical-like and one a mess. Arp 144 is about 250 million light-years distant. It is composed of at least two galaxies, NGC 7828 and NGC 7829. The latter is the elliptical-like galaxy as it is classed as S0 pec. NGC 7828 is incorrectly shown as Arp 50 in The Sky's database, maybe this accounts for my pointing error. It is classed as Im pec. So does Arp see NGC 7828 "emanating" from NGC 7829? or is it just the halo of stars around NGC 7829's core that is "emanating"? The Kanipe-Webb book is silent on this which isn't surprising. Arp left no comment to guide us either. Adding to the confusion one note says: "The spiral or a pair of galaxies are perturbed by a compact elliptical galaxy." So this source says NGC 7828 may be two galaxies. I find no other mention of this but it seems possible to me. Both galaxies were discovered by Francis Leavenworth in 1886.

Now, what about the very blue star-like object in NGC 7828? Is it a foreground star or is it a very blue knot of stars in the galaxy? The object is listed as a star in the Hubble Guide Star Catalog but the cores of NGC 7828 and 7829 are also listed as stars in the catalog. So this doesn't help any. NED doesn't show anything at this position so is of no help. The PSF in my image is galaxy like rather than a star so I will say it is part of the galaxy.

Adding to the confusion I found this: "According to a note in the IC II, NGC 7829 is a star [13 mag]." Visually 7829 does appear rather starlike and this note dates back to visual descriptions so isn't surprising.

Arp's images of these two are taken from the same 30 minute exposure on 103a-D film under seeing 3 (1" to 1.5") conditions. Much better than I had though some of the star knots in NGC 7829 seen in his image are barely visible in mine with 2.5" to 3" seeing. Good for so low in the sky.

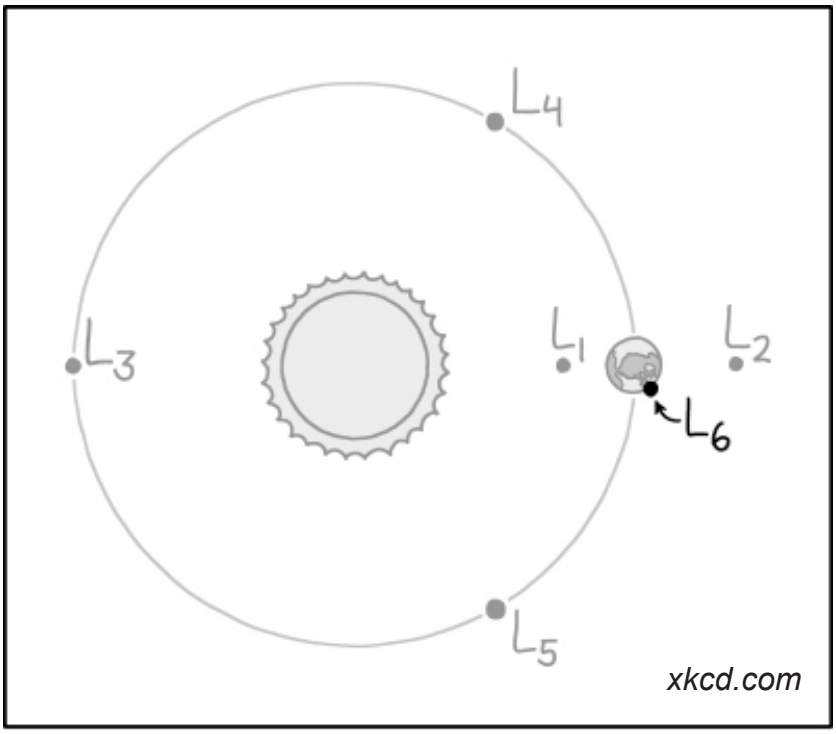
Yes, I know it looks a bit like the Star Trek Enterprise is shooting a massive photon torpedo out its backside. A bit late as much of the starboard side of the saucer section seems to be missing.

The field is well outside the Sloan survey but a few galaxies in the image have distance

data so I did prepare an annotated image for those few entries.

The entry for 6dF J0006212-131716 is labeled a galaxy but considering it is star-like and listed with a redshift of z=2.878448 which puts it over 11 billion light-years out I have to think it is really a quasar. 6dF stands for the 6 degree Field Survey. Another odd catalog is the LSCB which is the Low Central Surface Brightness catalog. LEDA = Lyon Extragalactic DAtabase for numbers above 73197. Numbers lower than this are just duplicates of the PGC catalog.

I labeled some of the brighter or more interesting looking galaxies. Only three besides Arp 144 have redshift data and one of those is mentioned above. Most are from an automatic plate measurement survey so has little information other than magnitude.



HUGE SPACE NEWS: ASTRONOMERS HAVE DISCOVERED A NEW LAGRANGE POINT JUST OUTSIDE CLEVELAND.

Focus on Constellations: Canis Major

Jim Kvasnicka

Canis Major, the Big Dog, along with Canis Minor are the two hunting dogs of Orion who help him track and fetch game. Canis Major is located southeast of Orion, standing beside the hunter's feet. The Big Dog has his eye, Sirius, fixed on Lepus the Hare, crouched at Orion's feet. Canis Major contains Sirius, the brightest star in the sky at a magnitude -1.4. The constellation covers only 380 square degrees but is not lacking for deep sky objects. It is rich in open clusters including Messier 41. There are several complex nebulosities and galaxies, a planetary nebula, and numerous double stars. Canis Major is best seen in the month of February.

Showpiece Objects

Open Clusters: M41, NGC 2362 (Tau Canis Majoris Cluster), NGC 2360

Double Stars: h3945, Mu Canis Majoris, Pi Canis Majoris, 17 Canis Majoris

Mythology and History

Canis Major is the larger of Orion's two hunting dogs. The Arabic title for the constellation was The Dog of the Giant. The ancient Egyptians believed the flooding of the Nile was caused by the power of the star Sirius. The name Sirius comes from the Greek meaning "scorching". Sirius, the Dog Star, was associated with the Sun. During the hot summer months the ancients believed the heat of Sirius was added to the Sun. To this day we call the hottest portion of summer the "dog days."

Number of Objects Magnitude 12.0 and Brighter

Galaxies: 10

Open Clusters: 20

Planetary Nebulae: 2

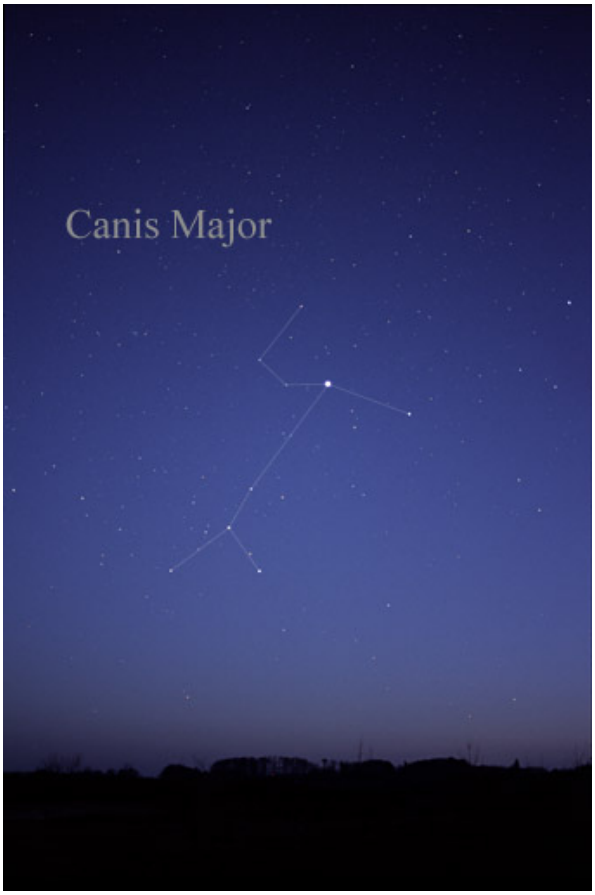


Image credit: By Till Credner - Own work: AlltheSky.com, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=20042019

February Observing

Jim Kvasnicka

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

Planets

Venus: In the evening at magnitude -3.9.

Mars: In Taurus at magnitude -0.3 with a disc 10.7" wide.

Jupiter: Low in the WSW in Pisces at magnitude -2.2 with a disc 36.1" wide.

Saturn: Very low in the WSW, it reaches conjunction on February 16th.

Uranus and Neptune: In Aries and Aquarius.

Mercury: At dawn shining at magnitude -0.2.

Comets

C/2022 E3 ZTF: Expected to reach peak magnitude of +5.0 on February 1st.

Messier List

M1: The Crab Nebula in Taurus.

M35: Open cluster in Gemini.

M36/M37/M38: Open clusters in Auriga.

M42/M43: The Orion Nebula with M43 just to the north.

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.

Club Member Profile: Christine Parkyn

Christine joined PAC in 2013

I am a nuclear engineer for Nebraska Public Power District, working at Cooper Nuclear Station in Brownville. I'm also on the EMT squad at Cooper.

My husband and I have a blended family of 5 kids. We have 2 grandkids. We live south of Nebraska City.

Other than astronomy, I like to read and I train in karate/kobudo at Sei Shin Kan in Lincoln. I also like volunteering, we have 2 military kids and I volunteer with Blue Star Mothers and also volunteer at Hyde. Now that we only have 1 kid at home, I spent some time upgrading my EMT license this year and started learning to play the piano and code in python.

I'm from Wisconsin originally, did engineering school at UW Madison, then worked in New Jersey before joining NPPD.

My husband encouraged me to join a club and I was already familiar with Lincoln from karate so went with PAC. We attended a couple meetings and I really liked that there was a mix of science and equipment/observing programs. I am mainly interested in visual observing.

I have an Orion 10 inch reflector on a dob mount, which is my newer and main scope. We have an Orion 8 inch on dob mount that I take out when I am too lazy to take out the 10 inch. Also we have an older ETX 125, brand new Coronado PST, and a couple sets of binoculars.

I loved naked eye stargazing as a child and got to see Halley in 1986, but was mainly interested in the physics side when I got to high school and college. My dad got me the ETX 125 after I moved to Nebraska and I got more into just visual observing when I had time around work and kids. Moon, planets, and now starting to get into the Messier list and solar observing. We

moved to a rural area a few year ago so I have great dark skies!

I went to NSP once with a Girl Scout event years ago. Have had some local star parties with some Nebraska City astronomy buffs. I'm determined to get to NSP in 2023! I liked the opportunity to see other people's equipment setup and observing techniques. I've learned a lot that way.

I finished the Beyond Polaris Observing Club and have the binocular part of Lunar Observing done. Just starting the Messier list.

I am the new Outreach Coordinator for PAC and am looking forward to helping out in that role.

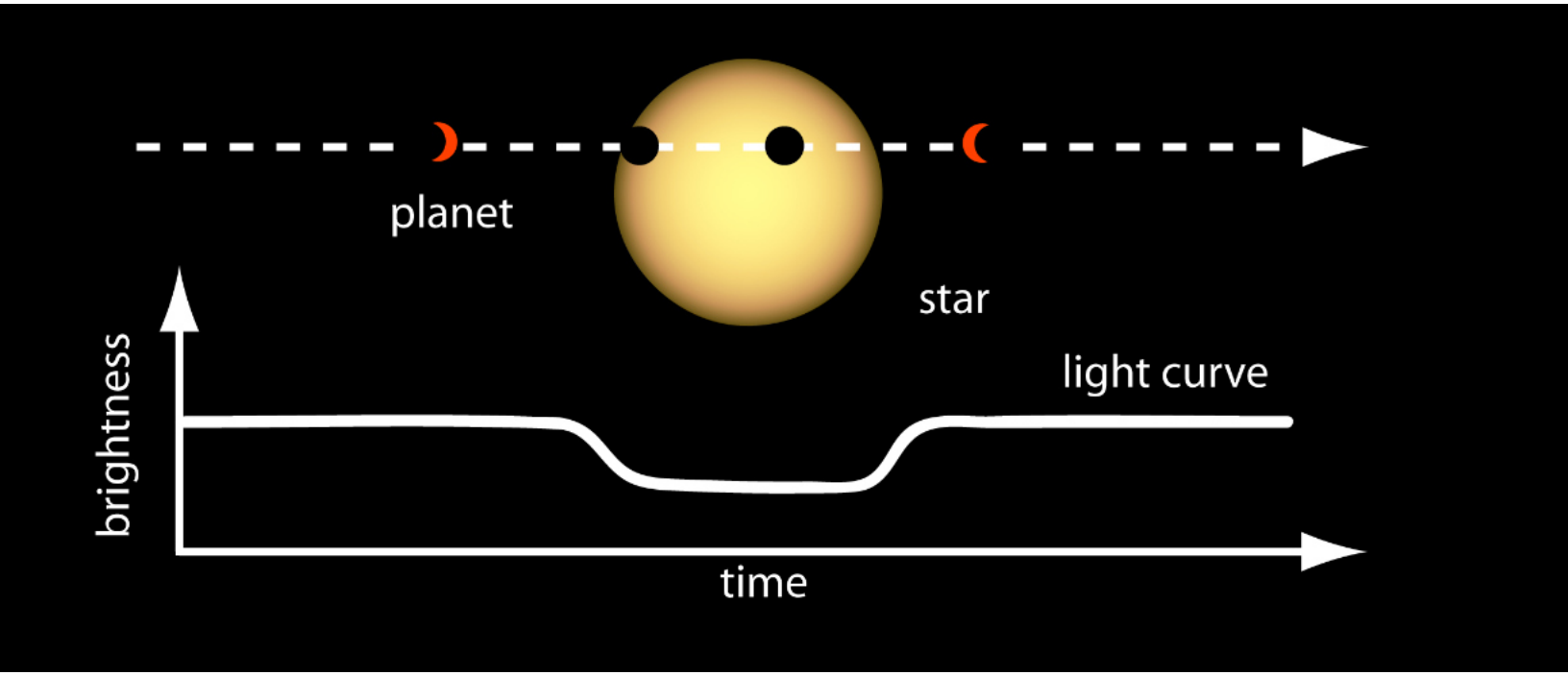
NASA Wants You to Help Study Planets Around Other Stars

The Exoplanet Watch project invites you to use your smartphone or personal telescope to help track worlds outside our solar system.

More than 5,000 planets have been confirmed to exist outside our solar system, featuring a wide array of characteristics like clouds made of glass and twin suns. Scientists estimate there could be millions more exoplanets in our home galaxy alone, which means professional astronomers could use your help tracking and studying them.

This is where Exoplanet Watch comes in. Participants in the program can use their own telescopes to detect planets outside our solar system, or they can look for exoplanets in data from other telescopes using a computer or smartphone.

Exoplanet Watch began in 2018 under NASA's Universe of Learning, one of the agency's Science Activation programs that enables anyone to experience how science is done and discover the universe for themselves. Until recently there were limits on how many people could help look through the data collected by other telescopes, but now this program is easily available to anyone. By



A planet passing in front of its parent star creates a drop in the star's apparent brightness, called a transit. Exoplanet Watch participants can look for transits in data from ground-based telescopes, helping scientists refine measurements of the length of a planet's orbit around its star. Credit: NASA's Ames Research Center

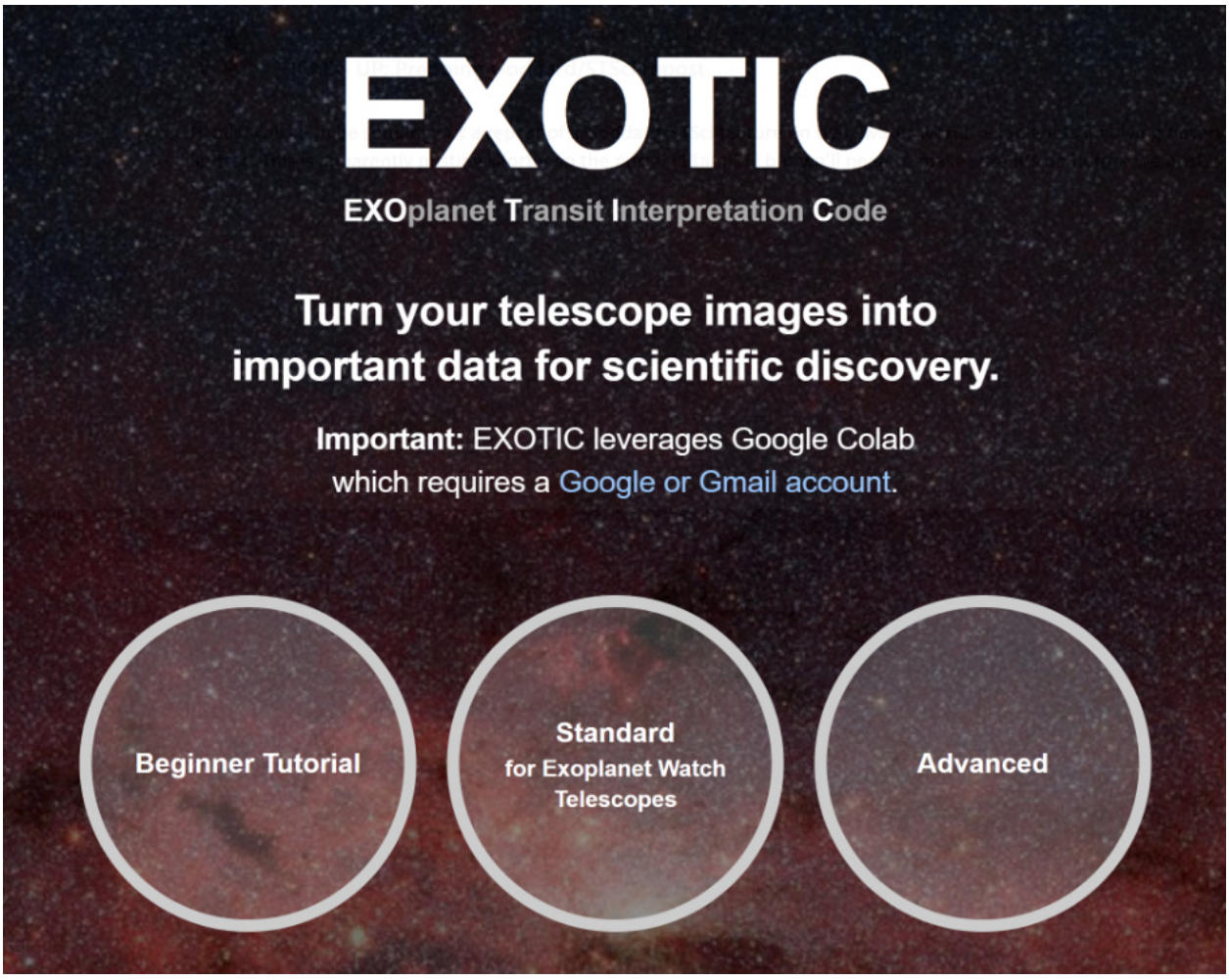
Help Study Planets, continued.

following the site's instructions, participants can download data to their device or access it via the cloud, and then assess it using a custom data analysis tool.

"With Exoplanet Watch you can learn how to observe exoplanets and do data analysis using software that actual NASA scientists use," said Rob Zellem, the creator of Exoplanet Watch and an astrophysicist at NASA's Jet Propulsion Laboratory in Southern California. "We're excited to show more people how exoplanet science is really done."

Helping Without a Telescope

Participants without telescopes can help astronomers comb through data that's already been taken. The project has 10 years of exoplanet observations, collected by a small ground-based telescope south of Tucson,



Participants in NASA's Universe of Learning Exoplanet Watch will use the EXOplanet Transit Interpretation Code (EXOTIC) software to analyze data. No experience is necessary, and the project website includes tutorials and guides. Credit: NASA/JPL-Caltech

Help Study Planets, continued.

Arizona. This year, the project will start collecting additional data from two other telescopes at the Table Mountain facility in Southern California, which JPL manages.

These telescopes look at nearby stars and search for what scientists call exoplanet transits: regular dips in a star's brightness caused by a planet passing between the star and Earth. Essentially, a transit is an observation of a planet's silhouette against the bright glare of its star.

Multiple NASA telescopes look for exoplanet transits as a way to discover new planets, but Exoplanet Watch participants primarily observe transits by planets that have already been discovered to gain more information about their orbits. The time between exoplanet transits reveals how long it takes an exoplanet to orbit its parent star; the more transits that are measured, the more precisely the length of the orbit is known. If the timing of the orbit isn't measured precisely, scientists who want to study those planets in more detail with large ground-based or space-based telescopes can lose valuable observing time while they wait for the planet

Citizen scientist Bryan E. Martin uses his personal telescope to observe exoplanet transits with NASA's Universe of Learning Exoplanet Watch. There is no minimum size telescope necessary to participate, and those without a telescope can still analyze exoplanet transit data. Credit: Bryan E. Martin

Help Study Planets, continued.

to appear. Having volunteers sort through the data will save significant computing and processing time.

Exoplanet Watch participants will also look for variations in the apparent brightness of stars – changes caused by features such as flares (outbursts of light) and star spots (dark spots on a star's surface). In transit measurements, these changes make a planet appear smaller or larger than it actually is. This work will help scientists anticipate the variability of a particular star before they study its exoplanets with large, sensitive telescopes like NASA's James Webb Space Telescope.

Helping With Your Own Telescope

Photograph of a person stands on a concrete patio wearing a hat and a blue coat, next to a black and red telescope. In the background is a desert landscape, with mountains in the distance.

Want to take your own data? Although the number of targets you can see increases with the size of the telescope used, there's no minimum size requirement. For example, Exoplanet Watch can help you detect exoplanet transits for hundreds of nearby stars with just a 6-inch (15-centimeter) telescope.

Exoplanet Watch combines observations of the same target by multiple sky watchers in order to get a higher-fidelity measurement. Combining observations is also useful if the planet's transit lasts longer than the time a star is visible in the sky for a single observer: Multiple participants at different locations around the globe can collectively watch the duration of a long transit.

That was the case with a planet called HD 80606 b, which Webb will observe this year. A recent study of this planet led by Kyle Pearson, the Exoplanet Watch deputy science lead at JPL, combined observations from more than 20 Exoplanet Watch participants.

The volunteer effort on HD 80606 b will free up almost two hours of time on Webb for other observations. And on missions that aim to observe hundreds or thousands of exoplanets, the number of minutes saved by refining planet transit measurements can add up and free a significant amount of observing time, according to Zellem.

One of the program's policies requires that the first paper to make use of the observations or analysis done by volunteers will list those volunteers as co-authors, which was the case with the study led by Pearson. "I hope this program lowers barriers to science for a lot of people and inspires the next generation of astronomers to join our field," said Zellem.

Help Study Planets, continued.

More About the Project

Exoplanet Watch is a citizen science project managed by JPL, a division of Caltech in Pasadena, California, as part of NASA's Universe of Learning.

The ground-based data for the project was collected by the MicroObservatory Robotic Telescope Network, supported by NASA's Universe of Learning and managed by the Center for Astrophysics | Harvard & Smithsonian in Cambridge, Massachusetts. Volunteer-generated data is uploaded to the American Association of Variable Star Observers' (AAVSO) Exoplanet Database.

NASA's Universe of Learning is a competitively selected member of the NASA Science Activation program. The Science Activation program connects NASA science experts and real content and experiences with community leaders to do science in ways that activate minds and promote deeper understanding of our world and beyond.

This work is supported by NASA under award number NNX16AC65A to the Space Telescope Science Institute, in partnership with Caltech/IPAC, Center for Astrophysics | Harvard & Smithsonian, and JPL.

For more information about Exoplanet Watch, visit:

https://exoplanets.nasa.gov/exoplanet-watch/

For more information about NASA's Universe of Learning, visit:

https://www.universe-of-learning.org/

For more NASA citizen science projects, visit:

https://science.nasa.gov/citizenscience

NASA's Webb Uncovers Star Formation in Cluster's Dusty Ribbons

NGC 346, one of the most dynamic star-forming regions in nearby galaxies, is full of mystery. Now, it is less mysterious with new findings from NASA's James Webb Space Telescope.

NCG 346 is located in the Small Magellanic Cloud (SMC), a dwarf galaxy close to our Milky Way. The SMC contains lower concentrations of elements heavier than hydrogen or helium, which astronomers call metals, compared to the Milky Way. Since dust grains in space are composed mostly of metals, scientists expected there would be low amounts of dust, and that it would be hard to detect. New data from Webb reveals the opposite.

Astronomers probed this region because the conditions and amount of metals within the SMC resemble those seen in galaxies billions of years ago, during an era in the universe known as "cosmic noon," when star formation was at its peak. Some 2 to 3 billion years after the big bang, galaxies were forming stars at a furious rate. The fireworks of star formation happening then still shape the galaxies we see around us today.

"A galaxy during cosmic noon wouldn't have one NGC 346 like the Small Magellanic Cloud does; it would have thousands" of star-forming regions like this one, said Margaret Meixner, an astronomer at the Universities Space Research Association and principal investigator of the research team. "But even if NGC 346 is now the one and only massive cluster furiously forming stars in its galaxy, it offers us a great opportunity to probe conditions that were in place at cosmic noon."

By observing protostars still in the process of forming, researchers can learn if the star formation process in the SMC is different from what we observe in our own Milky Way. Previous infrared studies of NGC 346 have focused on protostars heavier than about 5 to 8 times the mass of our Sun. "With Webb, we can probe down to lighter-weight protostars, as small as one tenth of our Sun, to see if their formation process is affected by the lower metal content," said Olivia Jones of the United Kingdom Astronomy Technology Centre, Royal Observatory Edinburgh, a co-investigator on the program.

As stars form, they gather gas and dust, which can look like ribbons in Webb

Star Formation, continued.

imagery, from the surrounding molecular cloud. The material collects into an accretion disk that feeds the central protostar. Astronomers have detected gas around protostars within NGC 346, but Webb's near-infrared observations mark the first time they have also detected dust in these disks.

"We're seeing the building blocks, not only of stars, but also potentially of planets," said Guido De Marchi of the European Space Agency, a co-investigator on the research team. "And since the Small Magellanic Cloud has a similar environment to galaxies during cosmic noon, it's possible that rocky planets could have formed earlier in the universe than we might have thought."

The team also has spectroscopic observations from Webb's NIRSpec instrument that they are continuing to analyze. These data are expected to provide new insights into the material accreting onto individual protostars, as well as the environment immediately surrounding the protostar.

These results are being presented Jan. 11 in a press conference at the 241st meeting of the American Astronomical Society. The observations were obtained as part of program 1227

The James Webb Space Telescope is the world's premier space science observatory. Webb will solve mysteries in our solar system, look beyond to distant worlds around other stars, and probe the mysterious structures and origins of our universe and our place in it. Webb is an international program led by NASA with its partners, ESA (European Space Agency) and the Canadian Space Agency.

JAMES WEBB SPACE TELESCOPE

SMALL MAGELLANIC CLOUD | NGC 346

NIRCam Filters | F200W F277W F335M F444W

From the Archives

January, 1983

Epoch – 1982

Now that the year 1982 has come to an end it might be appropriate to look at some of the events that shaped astronomy in the past year.

The most distant object in the universe was found by a team of American, Australian, and British using two large radio telescopes and a 3.9 meter optical telescope they discovered PKS 2000-330.

The object is 100 trillion times more luminous then our sun. Can you imagine the Aurora! It is located 12 billion light-years from Earth.

Paul Birch, radio astronomer at the University of Manchester in England discovered from a study of radio emitting galaxies that the entire universe is slowly rotating.

Focusing his research on the bell shaped lobes of radiation that turn up on radio maps of galaxies he has determined that the universe turns at the rate of one revolution every 60 trillion years.

(I love those celestial time tables.) At this rate it will complete one turn when it reaches 4000 times its present age.

In June one of astronomer Edward Guinan's students reprocessed some water soaked 14 year old computer punch cards. A close examination revealed that Neptune may have a ring system.

The data was gathered in 1968 and showed that the light of a star eclipsed by Neptune was again dimmed one and a half minutes later after it reappeared from behind Neptune.

Confirmation of this will have to wait until 1989 when Voyager 2 sweeps by and hopefully will shed some light on this 'dimming' situation.

In October after the 200 inch Palomar telescope received a clean and shine session it discovered Halley's comet 140 million miles out beyond Saturn's orbit and closing fast.

It was a year that saw greater competition between America's Space Transport System (the Shuttle) and the Soviets Salyut space station.

Although the Shuttle is a back and forth Space Ferry while the Salyut system is more of a permanent space station set-up the Soviets are looking at a shuttle system for the future.

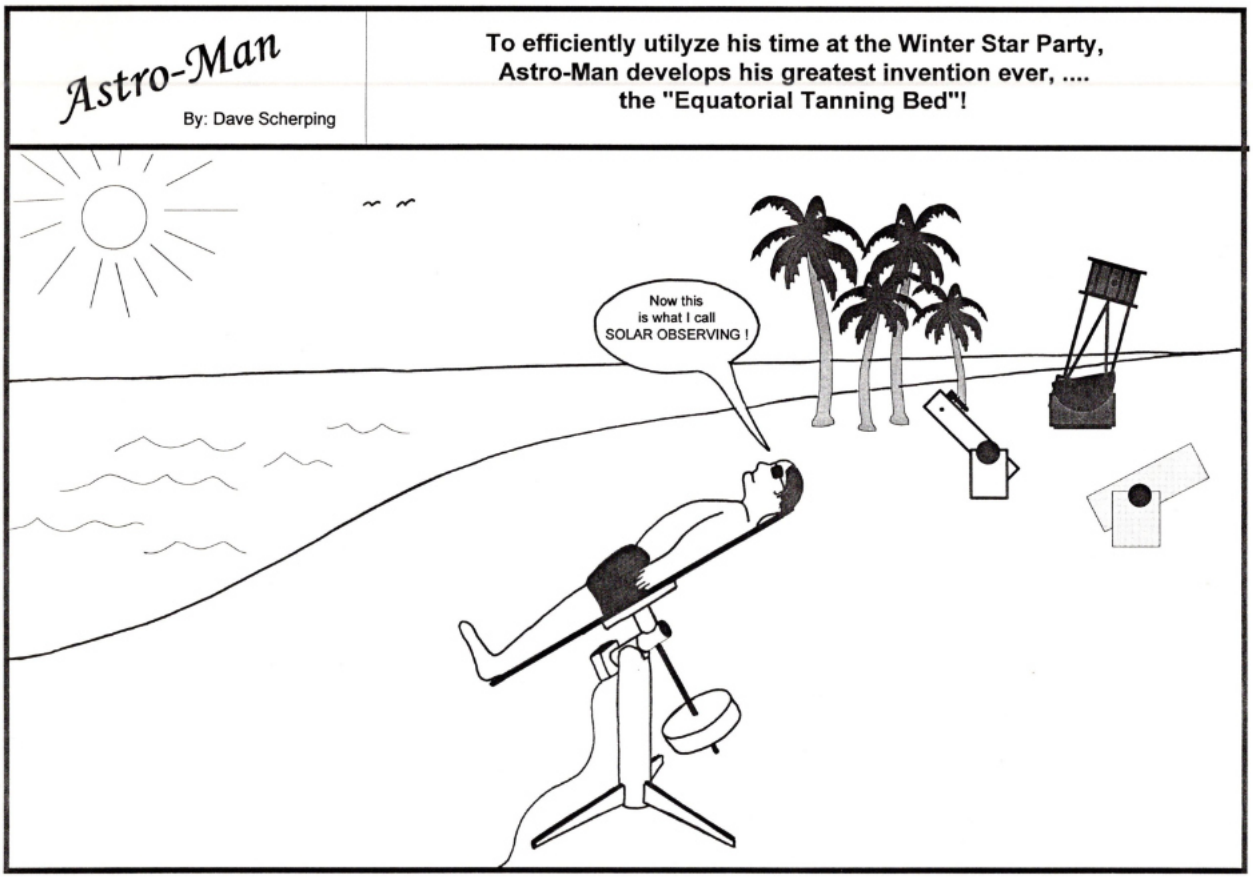
Obviously for their planned manned flight to Mars that will come before the end of the decade. That's right you heard it here first.

The fifth and most recent Shuttle mission was the first to actually

Archives, Continued.

haul up gear on a pay for the ride basis.

Land sakes alive maybe NASA will find that there is a profit side to their Profit and Loss operating statement. The fifth mission was a success from a commercial standpoint in that both satellites were launched from the Shuttle with no problems. NASA also stated that 22 Americans will ride the Shuttle this year. They also plan to relax their rules to allow staff from the companies furnishing experiments for the Shuttle to ride along (now wher's my chemistry set). They also reasoned that anyone in reasonable health could be a candidate and that empty seats could be available to fly by the end of the decade.



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.

ADDRESS

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

info@prairieastronomyclub.org

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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.