W.A.S.P.

Volume 55 Issue 1

January 2023

The Warren Astronomical Society Publication

The December 7 Mars Occultation

On December 7, 2022, while Mars peacefully moved into opposition (11:00pm EST), the Moon decided to take front stage and occult Mars (11:21pm EST.)

Despite cloudy conditions, Adrian Bradley reports, “I caught Mars just as it was coming out from behind the moon. Not the absolute sharpest full moon I've shot, but a meaningful one 'cause I had a real quick break in the clouds and **just** pulled this off. Look to the lower right of the moon, there's a small red dot sticking out behind it... that's Mars!

More about this event (and the close-up of this image) on page 13

The WASP

Published by
Warren Astronomical Society, Inc.
P.O. Box 1505
Warren, Michigan 48090-1505
Dale Thieme, Editor

2023 Officers

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The Warren Astronomical Society, Inc., is a local, non-profit organization of amateur astronomers. The Society holds meetings on the first Monday and third Thursday of each month, starting at 7:30 p.m.

First Monday meeting:	Third Thursday meeting:
Cranbrook: Institute of Science	Macomb Community College
1221 North Woodward Ave	South campus, Bldg. J, Room J221
Bloomfield Hills, Michigan	14600 Twelve Mile Rd.
	Warren, Michigan

Membership and Annual Dues

Student	Individual	Senior Citizen	for families
$17.00	$30.00	$22.00	add $7.00

Astronomical League (optional) $7.50

Send membership applications and dues to the treasurer:
c/o Warren Astronomical Society, Inc.
P.O. Box 1505
Warren, Michigan 48090-1505

Pay at the meetings

Also via PayPal (send funds to treasurer@warrenastro.org)

Among the many benefits of membership are

- Loaner telescopes (with deposit). See 2nd VP.
- Free copy of each WASP newsletter.
- Free use of Stargate Observatory.
- Special interest subgroups. See chairpersons.

The Warren Astronomical Society Publication (WASP) is the official monthly publication of the Society.

Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the end of each month. Any format of submission is accepted. Materials can either be transmitted in person, via US Mail, or by email (publications@warrenastro.org)

Disclaimer: The articles presented herein represent the opinion of their authors and are not necessarily the opinion of the Warren Astronomical Society or this editor. The WASP reserves the right to edit or deny publication of any submission.

Stargate Observatory is owned and operated by the Society. Located on the grounds of Camp Rotary on 29 Mile Road, 1.8 miles east of Romeo Plank Road, Stargate features an 8-inch refractor telescope under a steel dome. The observatory is open according to the open house schedule published by the 2nd VP.

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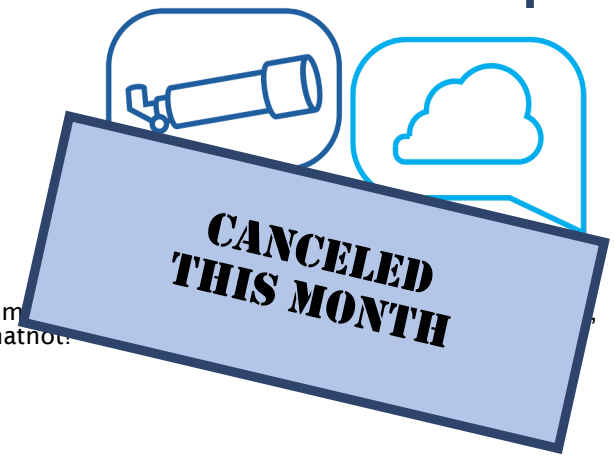
Discussion Group



Com , and whatnot!

Changing of the Guard - sort of

This year's elections resulted in a reshuffling, replacement and a vacancy.

Above: last year's officers (left to right) Riyad Matti-2nd VP, Adrian Bradley-Treasurer, Diane Hall-President, Bob Trembley-1st VP, Mark Kedzior-Secretary, Dale Thieme-Publications (Insert, top left) and Kevin McLaughlin-Outreach (Insert, top right).

Below: This year's officers, clockwise from top- Bob Trembley-President, Jeff MacLeod-2nd VP, Mark Kedzior-Secretary, Kevin McLaughlin-Outreach, Dale Thieme-Publications, Adrian Bradley-Treasurer, and Dale Partin, returning as 1st VP.

Field of View

On my wall across from my desk, are images from last year's NASA calendar: our Earth, asteroid Bennu - and a close-up of boulders on its surface, a couple beautiful nebulae, the surface of the Moon, and a galaxy. On my three computer screens are first-release images from the James Webb Space Telescope - I am surrounded by astronomical imagery.

Humanity has multiple operational gravitational-wave observatories, with more on the drawing board. We have space telescopes observing across the electromagnetic spectrum, and we are looking farther back into the universe's past than ever before.

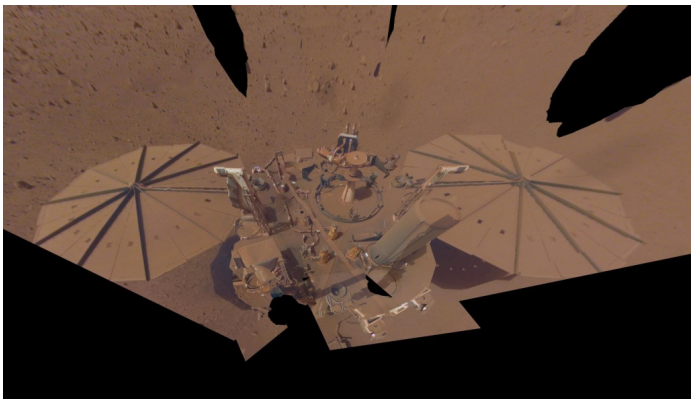
We've discovered that many of the moons in the outer solar system are water worlds, and may have conditions favorable for life - and we are planning on exploring that possibility. Oh, and it looks like Uranus is getting an orbiter - finally!

Taking all this in, I mentioned to Br. Guy what an amazing period we live in when it comes to the field of astronomy; several years ago, he mentioned that back in his PhD days, he knew everyone in the field. Today, there are so many students entering into astronomy and astrophysics, there's no way he could know them all - and that's fantastic!

I know for a fact that a few of those students were influenced by an encounter with one of our outreach volunteers. I'm hoping that this year we will be able to ramp-up our outreach activities again, and have a positive influence on more future scientists, astronomers and astrophysicists!

In other news, NASA's Mars InSight lander mission has come to an end. As seems to happen with many NASA missions, InSight far outlasted its original mission lifespan, finally succumbing to a buildup of dust on its solar panels. The last communication NASA received from InSight was Dec. 15th; NASA will keep listening for the lander to reawaken - and who knows, with all the dust devils we've seen on Mars, InSight's solar panels may get enough dust blown off to power back up.

InSight had a difficult time getting its seismometer "mole" to dig itself down into Mars' regolith; the story about how engineers worked the problem and finally did get the mole into the ground is an epic tale of problem solving, and one NASA should be proud of.



In social media posts by NASA discussing the demise of InSight, they were asked why a simple brush (like a toothbrush) was not attached to the end of the robot arm? NASA tried their best to explain the difficulties of systems integration, materials science, costs and such, but I'll wager that future missions with solar panels and a robot arm will include a brush…

It's unfortunate that the mission is now over, but the mission did exceed its parameters, and NASA budgets are finite.

-Bob Trembley,
President

Thank You to the 2022 Sponsors for our Door Prizes

CELESTRON

FARPOINT

OBERWERK

And Members:
Dale Partin and Dale Thieme

WAS Awards for 2022

Have Dob, Will Travel

Greg
NIZIO

The Blaine McCullough Award

Astronomy at the Beach just isn't itself without a very large telescope, and with the 24" Causland refractor in private hands, the Very Large Telescope accessible to the public is ours. Greg Nizio stepped up to ferry the Dob to and fro this September and helped provide our star party on the beach its crown jewel. He holds up the McCullough legacy of bringing astronomy to the people.

The Mike Simonsen Observing Award

"Fast Mike" Simonsen's passing last year left the category of "the finest observer in Michigan" open, and we realized we had the person to succeed that title among us. Formerly the soi-disant "second greatest observer in MI, One of the last of the old-line observers, began exploring the Wonders of the Universe with father's 8X30 binoculars mounted on a work bench, 2nd Eisenhower administration."

The Greatest Observer

Gary M.
ROSS

THE MAN BEHIND THE CURTAIN

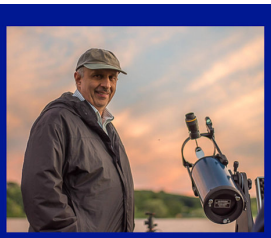
Don
KLASER

A Special Thank You

Don Klaser, amateur astronomer and our liaison at Cranbrook, retired from Cranbrook earlier this year after many years of service to the general public and to us.

Special recognition

Diane Hall, in her parting words as she leaves office, gave us this challenge: "Riyad's dedication to this club and to Stargate, through distance and time, through good times and bad, is the dedication that keeps a club like ours alive for the six decades we have endured. Riyad has already received the honors we as a club present. There is nothing we can properly do on a plaque or a certificate to honor him. I urge the future Board the way JFK urged Americans: before this decade is out, build that third building at Stargate and name it for Riyad."



BUILD THE FUTURE

Riyad
MATTI

Want to keep track of W.A.S. meetings and exciting astronomical events next year?

Order your 2023 Warren Astronomical Society calendar now!

These beautiful calendars feature W.A.S. member astrophotography photos, including:

- Bill Beers - M33 - Triangulum Galaxy
- Bob Berta - Pelican Nebula
- Doug Bock - IC434 - Horsehead Nebula
- GM Ross - Aurora from Pellston, MI in 1982
- Dale Hollenbaugh - Saturn
- Jeff Charles - Moon Craters
- Ken Heilig - Ready for solar observing outreach
- Gary Klein - Geminid Meteor Streak
- Ken Meloche - M42 - Orion Nebula
- Fred Pompei - Lunar Eclipse Meteorite Strike
- Steven Tennenberg - M8 - Lagoon Nebula
- Mike Young - Faint Milky Way between the trees

And Milky Way Over the Lake by Adrian Bradley on the front cover.

Two Ways to get Your Calendar

1 If you can pick up your calendar at a Cranbrook meeting, you can pre-order on PayPal or pay by check or cash at the meeting for $20 each (email publications@warrenastro.org beforehand that you are getting a calendar so we know how many are available).

The button below will take you to the PayPal payment page.

Buy Now
Pick up at Meeting

2 If you need your calendars mailed, then the cost is $20 + $5 flat rate shipping per order (regardless the calendar count) via PayPal or by sending a check to Treasurer, Warren Astronomical Society, PO Box 1505, Warren MI, 48090 (Again, email publications@warrenastro.org ahead of time.) Be sure to include your mailing address so we can get them to you.

Use the button below, shipping is added when you check out.

Buy Now
Mail it to Me

FOR SALE
MEADE 8” LX90 ACF F/10 SCT

For sale is a Meade 8” LX90 ACF f/10 SCT with tripod. Included in this package:

Audio Star Hand Control
8 x 50 Rear Focus Finder Scope
Accessory Case w/keys
90 degree Star Diagonal, 2x Barlow
Six 1.25” eyepieces (32, 26, 15, 9, 6, 4mm)
Color Filters (#12, 21, 25, 56, 58A, 80A)
Meade LXPS7 Power Supply
Celestron Sky Scout - Comes with original shipping container for OTA/Fork Mount

Retails for $3099 – asking $2000 – proceeds of sale will go to granddaughter in Florida (Ft. Myers) to help with costs from Hurricane Ian damage to her home.

Contact Cindy Babicz: cab8260@gmail.com or text/call 810-748-7080



Observing Reports

1 December

The Sun. Two groups, one a N. hemisphere "new cycle" of 6 small spots, roughly @ central merid. Group is small. Emerging on E. limb is apparently very large and active group, two segments now barely visible. Multiple umbrae in leading spot.

Transparency good, seeing good.

Instrumentation as before.

.....

COMMENTARY. East limb field probably to equal any group for Observer in Activity Cycle 25.

3-4 December

Z.C. 238, mag. 6.3-6.6, var. star CY Psc. Lunar occ'n by gibbous Moon (84%), disappearance. Failed.

Z.C. 247, mag. 6.1, same phenomenon. "reported as non-instantaneous. Observations are highly desired". Reconsidered.

Mars. 2 days after closest approach. -1.8 mag. per Observer's Handbook. Complex of Syrtis Major, S. Minor, Mare Tyrrhenum well displayed to east of the central meridian, ~ Mars longitude of 220 deg. Mare Cimmerium united on the left with afore-mentioned complex, with no division. Hellas very obvious and large. North polar cap not vis. Aetheria not vis.

CZ Orionis. U Gem class. 12.9 mag. out-burst.

Transparency poor. Seeing good.

16" f /10 S-C (Veen Obs'y)

.....

COMMENTARY. Despite value of 247 event, Observer deemed trees to W. = obstacle @ 25 deg. elevation. Previous Mars obs'n doubtful quality. Confusion with longitude of central meridian, but the impression of N. Polar Cap accurate.

4-5 December

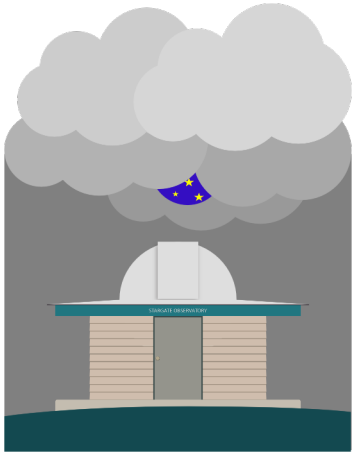
Mars. Difficult. The Syrtises and M. Tyrrhenum now off disc. Central Meridian at ~ 170-180 degrees Mars longitude. Nada visible on N. hemisphere. Mare Sirenum/ Electris and Phaethontis principal features of note but fleeting.

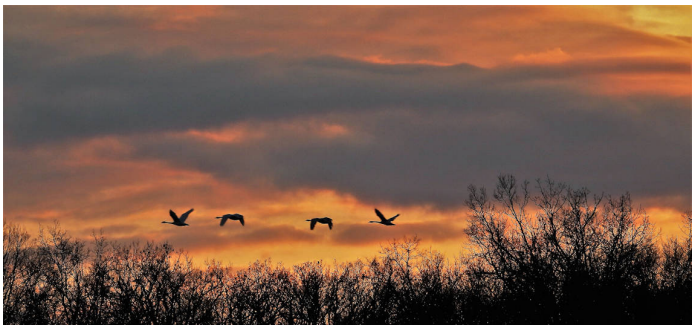
CZ Ori. Still in out-burst, in "12s". Obs'n troubled by moon-light.

AH Eri. Hopeless, invis. Datum nearly useless.

Transparency poor, seeing fair.

16 in. S-C @ Veen Obs'y. Various mags.





Geese and Treetops Silhouetted by Sunset

Date: 12/20/22 (at sunset)

Taken by: Ray Bosshard

Letters

To the editor,

In your December 2022 issue, you included an article by Adrian Bradley. It was titled "Excessively Argumentative Astronomers - a guide for visual astronomers". It was in response to my November 2022 article of essentially the same title. I was happy to see someone else address this issue and impressed. I found Mr. Bradley's expansion of the discussion to be well rounded and fair. I can't help but feel that there are some people who must argue about something and that EAA is just the latest *casus belli*. The December article went further into the subject and drew parallels between astronomy and bowling in a very inventive way.

The other night at our club's public star party, I met two visitors, a man, and his son, who commented that he was going to be using EAA. When I asked, he told me that he lives in Okmulgee. This small town of only 11,300 people is 38 miles south of Tulsa and should be dark enough for most astronomy. Sadly, it isn't anymore. In fact, the site we were standing at is between Tulsa and Okmulgee and our "dark sky site" is now anything but. The Astronomy Club of Tulsa Observatory has lost three notches on the Bortle scale in the thirty years since it was built.

I really appreciate Mr. Bradley producing this article in response to mine. I hope that between the two of them, people will take a dispassionate look at what could be very helpful technology for certain people and in certain situations. As I said in my article, EAA is not for me, but it is useful technology that's here to stay.

Brad Young
Astronomy Club of Tulsa

In Response

to G.M. Ross

On behalf of the Kalamazoo Astronomical Society, I would like to respond to G.M. Ross' letter that was published in the December 2022 issue of the WASP (p.7). I would have been unaware of his letter if not for a copy he emailed me along with the note "Season's Greetings."

Mr. Ross contacted us on 16 November 2022 proposing a presentation entitled In Defense of Astrology. If someone unknown to me contacted us with this proposal, I likely would have dismissed it out of hand and deleted it. However, I am familiar with Mr. Ross and his reputation as an excellent observational astronomer and long-time GRAAA member so I asked our Vice President, Jack Price (to whom the email was addressed), to give him the courtesy of a reply.

I organize all KAS programming and asked Jack to inform Mr. Ross that our programming through September 2023 was set and that our membership wouldn't be interested in a presentation on astrology. Perhaps, if Mr. Ross had included his presentation's abstract, as published in the October 2022 WASP, then I might have given it further consideration.

So, yes, if anyone contacts us with a talk entitled In Defense of Astrology, I'm going to reject it. Astrology is a fraud, a hoax, and completely indefensible. No further explanation should be necessary. KAS members know this, and it's safe to say WAS members do as well.

Let me explain it this way. I've taught introductory astronomy classes at many local colleges and universities. In one of my first lectures of the semester, I covered the ecliptic and constellations of the zodiac, this led into a 10-minute takedown of astrology. I held nothing back. It was so harsh in fact that, over the years, two students (out of hundreds) walked out. One returned and apologized, the other never returned! I eventually realized that class time could be better served covering more pertinent astronomical topics and removed it. I have the same exact approach when it comes to KAS programming.

Indeed, this stance is more important than ever as science is under attack. It can be something as ridiculous as the Flat Earth garbage or more serious matters such as climate change or vaccine deniers. The KAS will do its part to defend science and not appear to give something as ridiculous as astrology an audience. I do apologize if Mr. Ross was offended by our rejection, but it was nothing personal. We have the utmost respect for his skills as an amateur astronomer.

Please take a moment and check out our general meeting lineup in 2023. We have some great speakers with fantastic topics coming up! Members of the WAS are more than welcome to join us. Meetings are held in person and on Zoom on the first Friday of most months!

Finally, Mr. Ross noted in his letter that maybe two or three KAS members had no interest in the subject. I do not go to the membership every time someone proposes a program, but I've known some of them for over 25 years. However, we decided to take a vote at our Annual Meeting & Winter Solstice Dinner Party on December 3rd. Here is the result...

Richard Bell
KAS President

Astro Images

M31 - Andromeda Galaxy

First light with new RedCat 51

First light with Dale Hollenbaugh's new William Optics RedCat51. 250mm focal length at f/4.9. Also first light with his new William Optics Uniguide 32mm guide scope and ZWO ASI220MM Mini guide camera.

*** UPDATE*** New revision includes another three nights (13.5 hours worth) of one-shot color data and drizzled. Still want to add H-alpha at some point. *(this is the image printed above—Ed.)*

This initially was just going to be a quick test with an easy target, but the data looked clean, so he let it run for short while longer, taking 24 sub-frames of 120 seconds each for a total integration time of 48 minutes. He's amazed at how much good data he got from less than one hour of integration time.

The setup worked flawlessly. He bought a new ZWO EAF (his third) to permanently mount in the ProAstroGear BlackCat mounting bracket and that seemed to work quite well to focus, although he lowered the step size to the minimum 10 since the focuser was quick.

He installed a filter drawer, but the moon wasn't up so he didn't use a filter for this run.

M31 - Andromeda Galaxy

Imaging Telescopes: William Optics Redcat 51

Imaging Camera:	ZWO ASI2600MC Pro
Mount:	ZWO AM5
Accessories:	ProAstroGear Black-CAT Mount, ZWO ASIAIR Plus, ZWO EAF
Date:	Nov. 20, 2022
Frames:	162×300" (13h 30')
Integration:	13h 30'
Pixel scale:	3.103 arcsec/pixel
Orientation:	90.250 degrees
Field radius:	3.161 degrees

This is his new wide-field rig and he needs to get/make a container so he can take it on the road fully assembled. First light was extremely promising and he can't wait to image other targets that he can't see from his house.

On the processing side, he also tried some new tools and techniques. This was his first time using PixInsight for almost all of the processing. He normally uses AstroPixelProcessor to stack, register, normalize, remove light pollution, correct colors and stretch, then take into PixInsight.

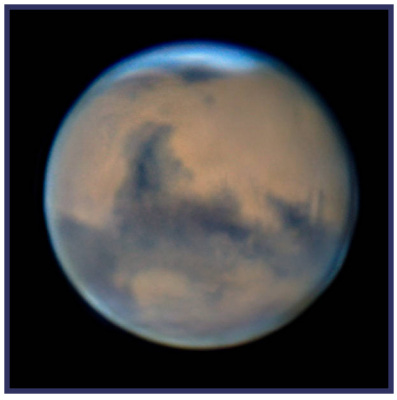
Also first time using new NoiseXTerminator, StarXTerminator and GradientXTerminator, as well as Bill Blanshan's star reduction scripts. Finally, he tried the new Spectrophotometric Color Calibration (SPCC) tool, as he previously adjusted colors in APP. He left the colors as SPCC gave him without any further color balancing and thinks it looks pretty natural. The only change to the color that he made was to increase vibrancy and saturation which is his preference.

In all, it took much longer to process this than the actual imaging time and he plans to add more data to this target with this setup, including some H-alpha data.

Right: Dale Hollenbaugh's new gear

But wait, there's more—

With Mars opposition approaching (when these images were taken) Dale pulled these gems out of the night sky:



Mars was approaching opposition on December 8th and Dale started getting these images. Left, on November 2nd, he says, "First photo of Mars in two years and easily my best photo of Mars ever."

Center was taken November 24th.

The one on right, December 2nd.

The Equipment Used:

Telescope Celestron EdgeHD 11"

Imaging Cameras ZWO ASI585MC

Mounts Celestron CGX-L

Filters ZWO UV IR CUT 1.25"

Accessories Baader Diamond Steeltrack Focuser, Tele Vue 2.0x 2" Powermate (PMT-2200), ZWO ADC, ZWO ASIAIR Pro, ZWO EAF

The fun doesn't end here, turn the page for a moon bonanza.

Moon Bonanza

Jupiter

Dale Hollenbaugh is always working the moons.

First up is Jupiter with double shadow transit of Europa and Ganymede, taken Nov 3, 2022, with his Celestron EdgeHD 11".

Dale says, “Europa and then Ganymede transited Jupiter and afterward their shadows transited the planet”

He made a video from separate frames that you can see here: https://www.astrobin.com/d8yel4/?nc=user#rB

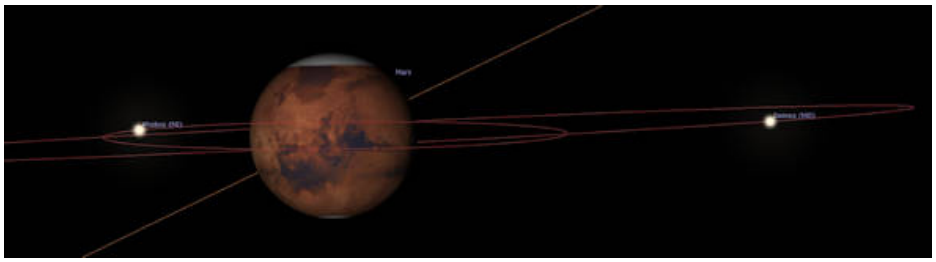
Left: In this example, we have an Oct 30, 2022 image of Jupiter with Europa, Ganymede & Io. The Great Red Spot also taking center stage.

Mars

Right: Here we have Mars with moons Phobos & Deimos (very faint) Taken with the Celestron EdgeHD 11".

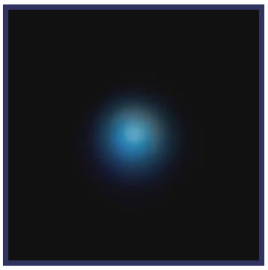
Dale says, “This is my first time trying for the two moons of Mars this year and they were positioned well away from the planet. I could barely see them in the live-view, but stacking and wavelets brought them out and this time with much less noise than last time.”

Below is a Stellarium representation of the moon positions at the time of imaging.



Neptune

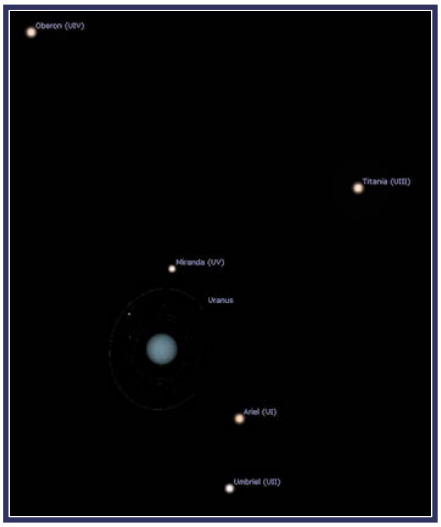
Right: Dec 2, 2022. Dale's first attempt at Neptune this year, then he went after Triton (far right) in his Celestron EdgeHD 11".



Uranus

Below: Nov 24, 2022. Dale says, "This is the first time I imaged Uranus this year and the first time that I've managed to resolve Miranda. Last year I only got four moons."

Far right is the Stellarium moon positions.



Closer to Home

Mars might have been hard to spot in the cover image. Below is a close-up showing Mars' egress.

Others weren't as fortunate as Adrian. Below right is Doug Bock's capture of the Moon and Mars getting eclipsed by the Michigan Nebula at Northern Cross Observatory.

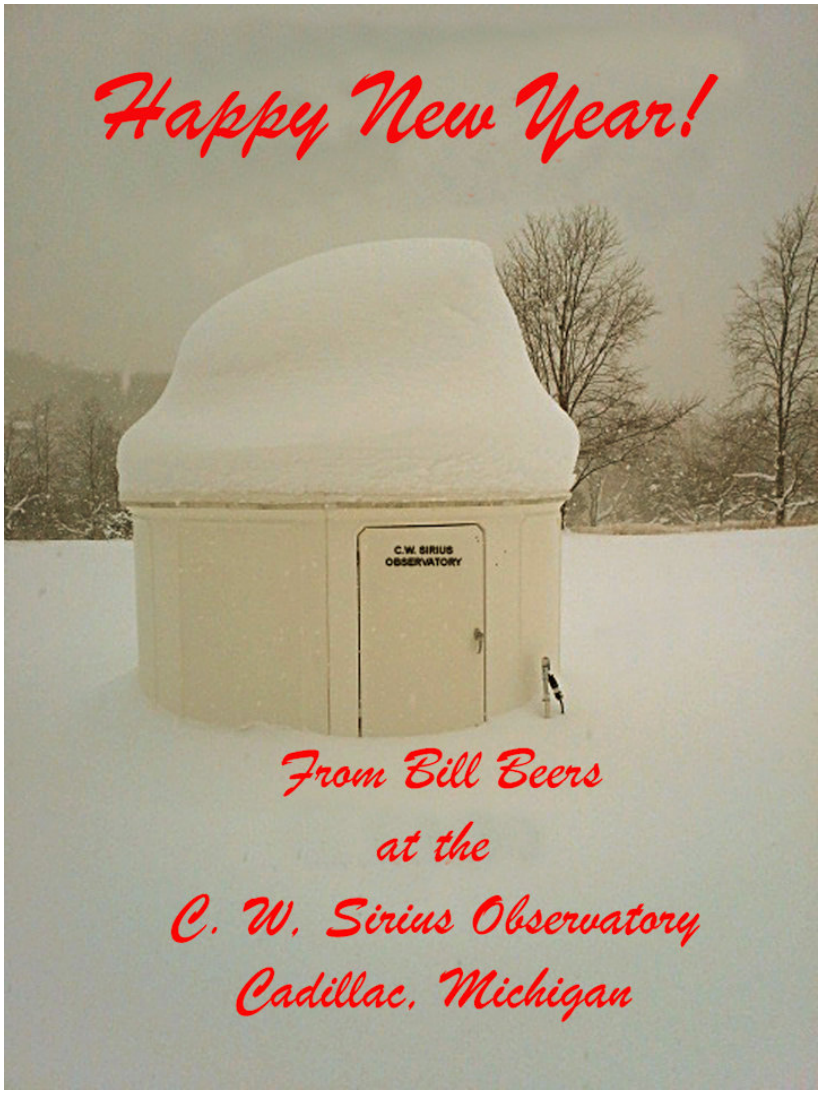
Even in Arizona, Rik Hill was fighting clouds. He has some videos of the ingress:

https://www.lpl.arizona.edu/~rhill/Moon-Mars-occultation/Moon+Mars_ingress_612nm_132M%2022-12-07%2019-31-59.mov

and egress:

https://www.lpl.arizona.edu/~rhill/Moon-Mars-occultation/Moon+Mars_egress_610nm_132M%2022-12-07%2020-26-33.mov

C.W. Observatory



About CW Sirius Observatory

C.W. (Cadillac West) Sirius Observatory is located 15 west of Cadillac Michigan. Owned and operated by WAS member Bill Beers. The dome is an 8' Clear Skies Inc dome which houses an 11" f/10 SCT telescope, a 102mm f/7 refractor telescope, Celestron CGEM DX mount, and uses an ASI ZWO 071 color CMOS camera, as well as a QHY8L color CCD camera. The telescope can be remotely operated from inside Bill's house.

Anyone interested in learning about astrophotography, or any questions regarding equipment, or how to take astrophotos using your iPhones, or any related questions, can contact Bill at: BEEZOLL@AOL.COM

Adrian Observes

Pondering Dark Skies

Here in Glennie, MI, in Alcona County, are skies that many would consider very dark, and guess that they would be between Bortle 3 and Bortle 2.

The SQM-L meter, which measures darkness in units of magnitudes per square arc-seconds, should read between 21.8 and 21.9 if that's the case. But my meter read 21.23. That puts it closer to the top end of a Bortle 4 zone. The sky glows with a combination of air glow from above and light pollution below.

There are other sites in Michigan that have suffered similar fates since 2015. Here we have a Bortle 4 site that used to be Bortle 3. In the distance you can see Pointe Aux Barques Lighthouse. This area should register a 21.6 but now averages 20.97 with a SQM-L meter.

Why does this matter??? Well, in 2015 the rural areas along the thumb and northern lower peninsula had very nice locations to see the night sky. Both pictures were taken with a camera that is more sensitive to longer wavelengths of light that we cannot see. Compare the look of this Cygnus region to the same look from a Bortle 2 site in Kenton, Oklahoma, where the meter *does* read 21.95. I used the same process of capturing a 2-minute exposure for the sky, a 2-minute exposure for the foreground, and layering them together in Photoshop… for all images shown.

Michigan is a beautiful state with beautiful scenery and 4 International Dark Sky locations to enjoy observing the night sky. But if we aren't careful, even these dark sky locations may become too bright to continue carrying a 'dark sky preserve' label on them. One last image of a dark sky location that is dangerously near the Bortle 5 zone is shown below: Lake Hudson State Park. What a sharp contrast in this region of the Milky Way, as it sits over Lake Hudson in the beach area of the park. You may also notice how much more prominent the 'light domes' are on the horizon of lesser dark sites.

Presentations

Virtual Cranbrook

January 2, 2023

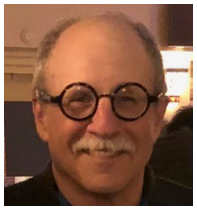
Main talk:

Astronomy News Roundup for 2022

By Ken Bertin

An ever changing cosmos and an extremely active astronomical community provided a parade of "star news" this past year. Ken Bertin will touch on the high points of the year.

About the speaker



Ken Bertin is a hobbyist astronomer for about 70 years, Past President and VEEP of WAS, Searle Award recipient and awarded a Lifetime WAS membership. He has traveled to observe 12 Total Solar Eclipses, 4 Annular eclipses, 6 Transits of Mercury, 2 transits of Venus, and 17 Lunar eclipses. He has written over a hundred presentations (mostly about historical figures in astronomy) , all of which have been presented to the WAS. He has and is also presenting to other astronomy clubs and organizations(such as senior groups, Mensa society and other type clubs), school at all levels and libraries and is currently presenting online.

Short Talk:

How a Young Woman With Significant Disabilities Became Interested in Astronomy

By Stacy Welborne

Stacy is 19 years old and has cerebral palsy and epilepsy. She became a volunteer NASA/JPL Solar System Ambassador last year. She will talk about about how she, a young woman with significant disabilities became interested in astronomy and wound up as an SSA. It includes information about women with disabilities in general in STEM and astronomy in particular.

About the Speaker:

Stacy Welborne is 19 years old and lives in Fowler, Indiana. Despite having cerebral palsy and epilepsy, Stacy has always been enthusiastic about astronomy. Among her earliest memories is the Venus transit in 2012 when a local astronomer projected the transit onto her hand, telling her that only through studying astronomy could she hold the Sun and Venus in her hand at the same time. From that moment on, she was hooked on the stars. Stacy's greatest astronomical achievement so far has been watching the 2017 total solar eclipse in TOTALITY in the hills of north-central Tennessee.

She's written a 36-week astronomy curriculum for upper elementary schools and also the 2022 Indiana Miss Amazing Teen and won 1st runner-up at Nationals in July. (Miss Amazing is a nation-wide leadership development organization for girls and women with disabilities cleverly disguised as a pageant because who doesn't love sparkly dresses and tiaras?)" When she's not stargazing, she enjoys reading, dancing, and space-focused movies.

Virtual Macomb

January 19, 2023

Long talk:

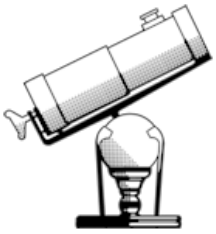
The Christmas Star

By Dr Dale Partin

With Christmas safely in our rear-view mirrors, Dr. Dale Partin covers the different theories and thoughts on the Star of Bethlehem, with the pros and cons of each.

About the Speaker:

Dale Partin has a PhD. from Carnegie-Mellon University. He formerly did advanced research in the auto industry. He has over 80 scientific publications and 38 patents. He is also a fellow of the American Physical Society and a member of Sigma Xi and the American Scientific Affiliation. He teaches astronomy at Macomb Community College here in Michigan. He has been a member of the Warren Astronomical Society since 1998 and has frequently served as an officer. He is currently the first vice president.



WAS PRESENTATIONS

If you would like to present either a short talk (10-15 minutes) or a full-length talk (45-60 minutes) at a future meeting, please email Dale Partin at: firstvp@warrenastro.org.

Skyward

"When sorrows come, they come not single spies,
But in battalions."

(Hamlet 4.5.76-77)

This column begins with a delightful quotation from Hamlet, where King Claudius reflects on the deaths of Hamlet's father, Polonius, and the madness of Ophelia. In this lonely period of my own life, the one constant I have is being able to continue doing the stargazing that I love so much. In recent months, the losses of Don Machholz, Constantine Papacosmas, and Wendee have tested the strength of observing the night sky as never before. But I must add to this the passing of my closest friend from my youth, Carl Jorgensen, on October 18. Of these four transitions that occurred late this year two of them—Don and Carl, both died from Covid. This is strong evidence that we are nowhere near being done with this dreadful illness.

Our lifelong friendship began in November of 1963. I had just returned from a 14-month stay at the Jewish National Home for Asthmatic Children in Denver. At the observatory of the Royal Astronomical Society of Canada in Montreal, Isabel Williamson introduced "young Carl Jorgensen" to "young David Levy" and our friendship never wavered over 59 stargazing years after that.

We both especially enjoyed observing shooting stars. In the late summer of 1965 Carl and I were counting Perseid meteors (that all seemed to radiate from the constellation of Perseus) when Carl began to sing to himself the lyrics of a newly released song. Carl went on and on under that clear sky. "Carl," I asked, "what are you singing?"

"Bob Dylan's new song, 'Like a Rolling Stone.'"

"How long is this song supposed to last?"

"About six minutes."

"Carl, you've been singing it for over half an hour." By the next time Carl and I met for observing, I had become a staunch Dylan fan as well.

In March 1976, those of us who liked comets were still reeling from the failure of Comet Kohoutek to live up to expectations. Another comet, found by Richard M. West, was supposed to be in the predawn sky, and Carl drove me out to see it. As we drove into a darker sky south of Montreal, I looked out past Carl's window and saw a magnificent comet rising in the east. Carl reacted to my exclamation: "OK, we'll find a spot, set up the telescope, and try to find it."

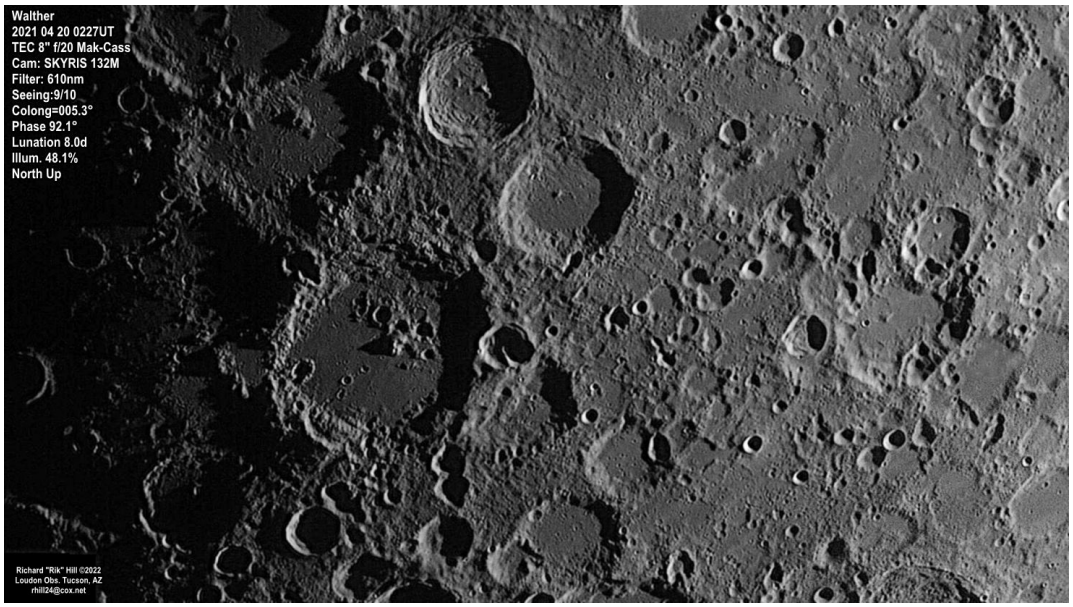
"Carl, just look to your left!" Carl glanced out his window, and nearly drove the car off the road. What an unforgettable morning that was.

Carl enjoyed a lifelong interest in double stars. His favorite (and mine) was a beautiful triple star in the constellation of Cepheus. Known as Struve 2816, it is a magnificent triple sun. It is easy to find and wonderful to watch.

It is particularly evocative now. "Doubt that the stars doth shine," Hamlet might have complained, but I think that even he would enjoy being with Carl to enjoy the sight of that lovely star.

The picture is of Carl Jorgensen and his eldest daughter, Christine, in front of the old Isabel K. Williamson observatory. Photograph by David H. Levy.

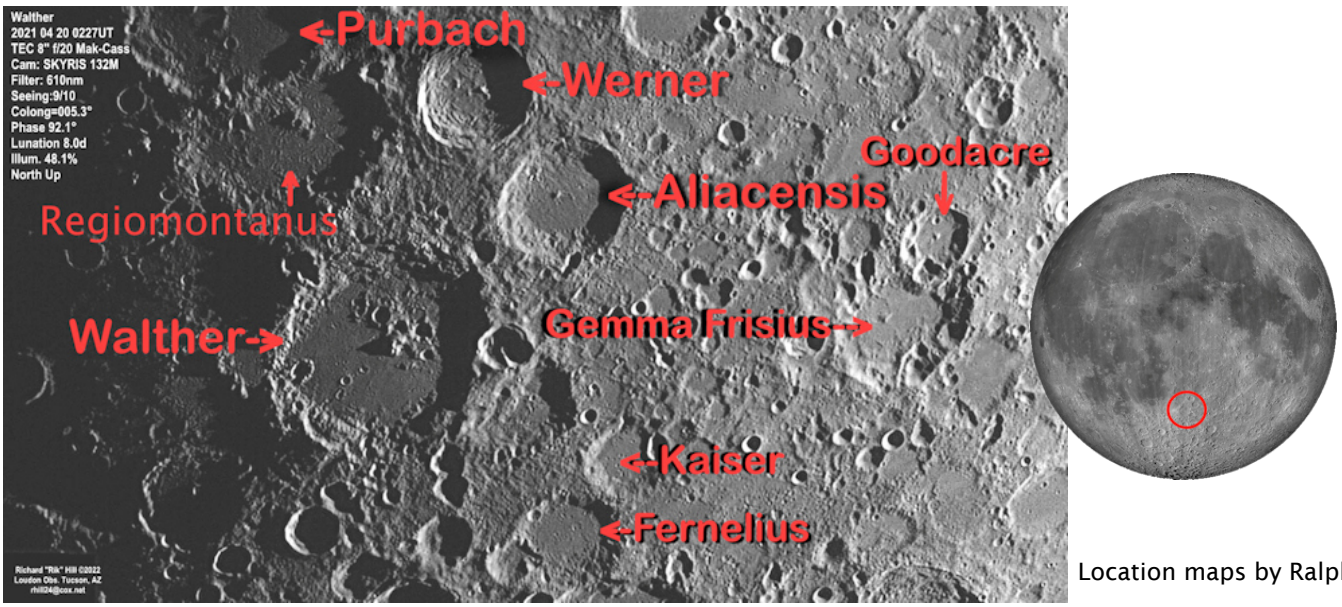
Where's Walther?



In the lunar highlands south of the crater Arzachel and the large crater Purbach is the even larger 134km diameter crater Walther (formerly known as Walter and Valtherus by Riccioli). It is a wonderful old crater of Nectarian age, 3.85-3.92 billion years old, and it shows its age. The walls are badly eroded by later, more recent impacts. In the northeast quadrant of the crater is a curious collection of craters and mountains, the latter may be ejecta from other nearby impacts. Note the nice shadow from the central peak like the shadow from a sundial gnomon on the large flat western floor. North and slightly west (left) from this crater is what's left of another even older crater, Regiomontanus (129km). It is Pre-Nectaraian (3.92-4.5 b.y.o.) and overlain by Purbach, a younger crater to the north. Most of the features in this highland area are Pre-Nectarian. The two smaller craters to the northeast (upper right) are Aliacensis (82km) below with the flat floor and Werner (71km) above, with the nice terracing. Aliacensis is also Nectarian but I have a hunch a little bit younger than Walther, while Purbach is Eratosthenian (1.1-3.2 b.y.o.) and much younger than any of the others.

To the southeast of Walther is a flat floored crater Furnelius (66km) and above and to the right of it is Kaiser (54km). The floors of both these craters are peppered with secondary craters of 1-3 km in size. There are a lot of odd shaped craters in this highland area that owe their unusual shapes to their modification by later impacts. Due east of Walther, almost to the edge of the image, is one medium sized crater with a smaller one on its northeast wall. The larger one is Gemma Frisius (90km) and the smaller is Goodacre (48km) a name familiar to lunar prowlers. You can spend hours exploring this area and still you will not have exhausted what's available.

This montage was made from two 1800 frame AVIs stacked with AVIStack2 (IDL), united with Microsoft ICE and final processed with GIMP and IrfanView.



Location maps by Ralph DeCew

History SIG

January 1994

This issue opens with “the first installment” of the “Observing Log from the Northern Cross Observatory” by Doug Bock, followed, of course by “Computer Chatter” wherein Larry F. Kalinowski sounds the death knell for film astro-photography, citing Roger Tanner’s new CCD imager.

Of special note is the interview with Jack Horkheimer, "Star Hustler", from The Skeptical Inquirer. An article worth revisiting.

January 2004

The 2003 WAS Banquet was reported on in “Astro Chatter” by Larry Kalinowski, who also ran “The Swapshop”. A thorough report from the treasurer in ”Money Well Spent” By Bill Beers.

The NASA Space Place article, “So Little Time, So Many Galaxies” By Dr. Tony Phillips and a membership form round out the issue.

From the Scanning Room

Of particular note to me was an entry in the Jan 1994 issue. It also contained an editorial from Douglas E. Goudie, announcing his stepping down from editing the WASP (which he did for nearly three years). He mentioned that he “endeavored to bring the WASP more fully into the "Electronic Age" by publishing by computer as completely as possible”. From my vantage point, I’d say he has succeeded. We even spent some years as an online only HTML version. Can’t get much more computerized than that.

The Jan 2004 issue brings up another editor of note: Cliff Jones. In 2003, for whatever reason, the WASP disappeared for several months (May-July.) In August, Cliff Jones stepped up to the plate and started it back up again. We’ve had a constant production of the WASP ever since.

Speaking of desktop publication (DP) of the newsletter, I want to address another aspect: I entered this position of editor on the strength of being an Office 365 user, which meant I had MS Publisher (MSP) at hand. Not everyone is a MS Office user, so I started looking around for other ways of getting the process done. An open-source DP was out there but Brian Thieme and I both tried it and found it quite painful compared to what we were used to. Then, in a conversation with Ralph DeCew, I found out about the Affinity software suite of Photo, Designer, and Publisher. Ralph uses Photo to make the location maps. While the programs work best as a suite if you are using Publisher (AP), it does work quite well as a standalone. With a one-time purchase (there is no subscription), it costs less than going the Microsoft route.

My one criterion was “could I recreate the newsletter layout that I already had in MSP in AP?”. The answer is pretty much. The tools AP has are a bit different, sometimes superior, from MSP and there was a learning curve but numerous tutorials on YouTube was a big help there, and so, today you are reading the first WASP edition produced in Affinity Publisher.

Dale Thieme,
Chief scanner

WASP

WARREN ASTRONOMICAL SOCIETY PAPER

Volume 26, Number 1 $1.00 for non-members January 1994

Observing Log from the Northern Cross Observatory

By Doug Bock

November 10, 1993 — This is the first installment of what I hope will be a regular article in the newsletter. I will be bringing you up to date with the last month's observing sessions, both organized and unorganized.

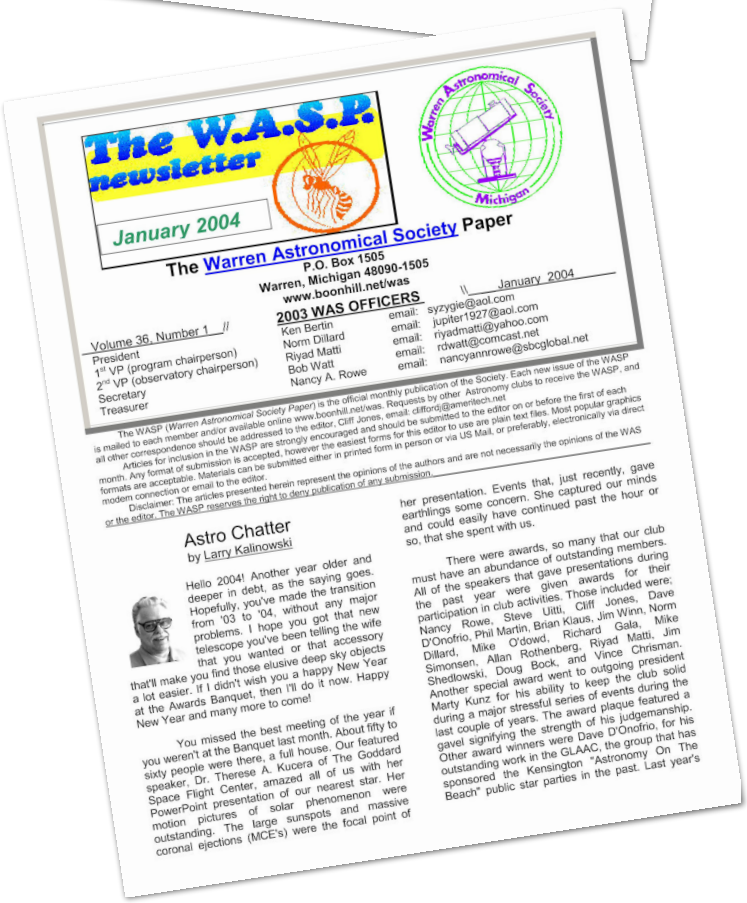
First some history of the Northern Cross Observatory: It was built shortly after I moved here in 1984. My search for an observing sight in 1981 – 1983 took me to Brighton State Park for most of my observing, but I tried places out near Howell, Dexter and Fenton. Back then, I was living in Detroit in a rented house and I used to load my eight-inch f/7 into a Fiesta when it was clear out and drive to the Brighton area. When we decided to move, I started looking for homes out in the South Lyon and Brighton area, but soon realized that I probably couldn't afford that area, so I started looking for land to build on. Land out there was expensive also. Finally, I mapped out a 60-mile radius from Detroit and decided that was as far as I would be willing to drive to work each day. After seeing a lot of property, I chanced across this piece near Fenton. It is 53 miles from work, so it is within the parameters I set up. The price was right so we bought it in the spring of 1983 and moved into the house we built in February of 1984. The skies were pretty dark back then and I used them almost every clear night that first year. Meanwhile, we started the Observatory project that summer and installed the telescope late that fall. I have a 12.5-inch f/6 in the building.

The building is a roll-off roof design that is tall enough to stand in and could house a scope as large as a 20-inch depending on the focal length. When the roof is in the open position, the false horizon is about the same as the actual horizon. The official dedication came during the 2nd Annual Summer Solstice Star Party. We named it the Northern Cross Observatory at that star party. This star party is just one of the events we host at our place.

Last month I hosted the Fall Star Party for the Warren Astronomical Society. We had about 20 people there with plenty of telescopes. A couple of 17-inchers, some 10s, a bunch of 8s and some smaller scopes. The Moon was just past first quarter and for the newer members it was fun looking at it through several scopes. The straight wall was a feature that many had not seen before and they just soaked that up through several scopes. Another object was Saturn early in the evening, and that brought lots of ooh's and ahhhs. I also found Uranus and Neptune for people to look at. Roger Tanner setup his 17-inch with all his computer stuff and after a good length of time was ready to start taking images of things with his CCD camera. That was a real crowd-pleaser also. I gave a small tour of deep sky objects through the 12-inch to those who wanted to see. After the Moon set we still had most of the crowd there and the sky got very dark, making deep sky observing much better. Roger went after Stephans Quintet with his CCD system. That was interesting for many people. I challenge those of you who don't know this object to look it up and try to find it sometime in dark skies. It's a toughy. 4:00 a.m. rolled around and I had to give up. I was tired since I was up observing the night before until 3:00 in the morning. But the party went on until dawn. When I rolled out of bed about 7:30 a.m., the last three cars were just driving off and Roger was coming inside to get some sleep. Getting sleep at my house on a Sunday morning is some trick with three kids in the house. I don't know how he did it. It was a great Star Party, and I was happy that we finally got some clear sky for one of them.

Last Monday, the 10th of November, was the next clear night we got, so I opened the observatory up at about 7:30 and went hunting for deep sky stuff again. The humidity must have been low since I didn't get any dew during the entire observing session. My daughter came out for about an hour, so I showed her Saturn, M13 (Hercules Globular Cluster), M31 (Andromeda Galaxy), M36, M37, M38 (open clusters in Auriga), M45 (the Pleiades), M15 (in Pegasus), M57 (Ring Nebula), M27 (Dumbbell Nebula) and the double cluster (NGC869? and NGC8717). (I can't remember the NGC designations for those two right off the top of my head. Must be loosing it.) *(NGC869 and NGC884 — Ed.)* After she went back inside, I decided to try some more challenging items. NGC7009 is a planetary that is fairly small and dim, but can be detected by its greenish hue. Another planetary was NGC7662 which is even smaller but has that characteristic greenish hue. I also looked at M74, M33 and M103. Another difficult object and a good test of the sky conditions was the Veil Nebula in Cygnus. Kind of fitting I should look at that object last. Anyhow, it was difficult to see. I hadn't looked at it for several years, so it was nice to see the skies here are still pretty good. I packed it in about 10:30 since I had to work the next day. I think that this would be a good challenge for some of you to take this list and give them a try. It was fun.

(Continued on page 8.)



The W.A.S.P. newsletter

January 2004

Warren Astronomical Society Michigan

The Warren Astronomical Society Paper

P.O. Box 1505
Warren, Michigan 48090-1505
www.boonhill.net/was

Volume 36, Number 1 January 2004

2003 WAS OFFICERS

President	Ken Bertin	email: syzygie@aol.com
1st VP (program chairperson)	Norm Dillard	email: jupiter1927@aol.com
2nd VP (observatory chairperson)	Riyad Matti	email: riyadmatti@yahoo.com
Secretary	Bob Watt	email: rdwatt@comcast.net
Treasurer	Nancy A. Rowe	email: nancyannrowe@sbcglobal.net

The WASP (Warren Astronomical Society Paper) is the official monthly publication of the Society. Each new issue of the WASP is mailed to each member and/or available online www.boonhill.net/was. Requests by other Astronomy clubs to receive the WASP, and all other correspondence should be addressed to the editor, Cliff Jones, email: clifford@ameritech.net.

Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the first of each month. Any format of submission is accepted, however the easiest forms for this editor to use are plain text files. Most popular graphics formats are acceptable. Materials can be submitted either in printed form in person or via US Mail, or preferably, electronically via direct modem connection or email to the editor.

Disclaimer: The articles presented herein represent the opinions of the authors and are not necessarily the opinions of the WAS or the editor. The WASP reserves the right to deny publication of any submission.

Astro Chatter

by Larry Kalinowski

Hello 2004! Another year older and deeper in debt, as the saying goes. Hopefully, you've made the transition from '03 to '04, without any major problems. I hope you got that new telescope you've been telling the wife that you wanted or that accessory that'll make you find those elusive deep sky objects a lot easier. If I didn't wish you a happy New Year at the Awards Banquet, then I'll do it now. Happy New Year and many more to come!

You missed the best meeting of the year if you weren't at the Banquet last month. About fifty to sixty people were there, a full house. Our featured speaker, Dr. Therese A. Kucera of The Goddard Space Flight Center, amazed all of us with her PowerPoint presentation of our nearest star. Her motion pictures of solar phenomenon were outstanding. The large sunspots and massive coronal ejections (MCE's) were the focal point of her presentation. Events that, just recently, gave earthlings some concern. She captured our minds and could easily have continued past the hour or so, that she spent with us.

There were awards, so many that our club must have an abundance of outstanding members. All of the speakers that gave presentations during the past year were given awards for their participation in club activities. Those included were: Nancy Rowe, Steve Uitti, Cliff Jones, Dave D'Onofrio, Phil Martin, Brian Klaus, Jim Winn, Norm Dillard, Mike O'dowd, Richard Gala, Mike Simonsen, Allan Rothenberg, Riyad Matti, Jim Shedlowski, Doug Bock, and Vince Chrisman. Another special award went to outgoing president Marty Kunz for his ability to keep the club solid during a major stressful series of events during the last couple of years. The award plaque featured a gavel signifying the strength of his judgemanship. Other award winners were Dave D'Onofrio, for his outstanding work in the GLAAC, the group that has sponsored the Kensington "Astronomy On The Beach" public star parties in the past. Last year's

CRANBROOK INSTITUTE OF SCIENCE

Michigan's Museum of Natural History

JANUARY 2023

Notable Sky Happenings

Jan. 1 - 7

The Moon is to the left of Mars on the 3rd (SSE evening). The Quadrantid Meteor Shower peaks on the night of the 3rd-4th. . Earth is closest to the Sun for the year on the 4th.

Jan. 8 - 14

The Moon is above and to the right of Spica on the 14th and to the left on the 15th (S predawn).

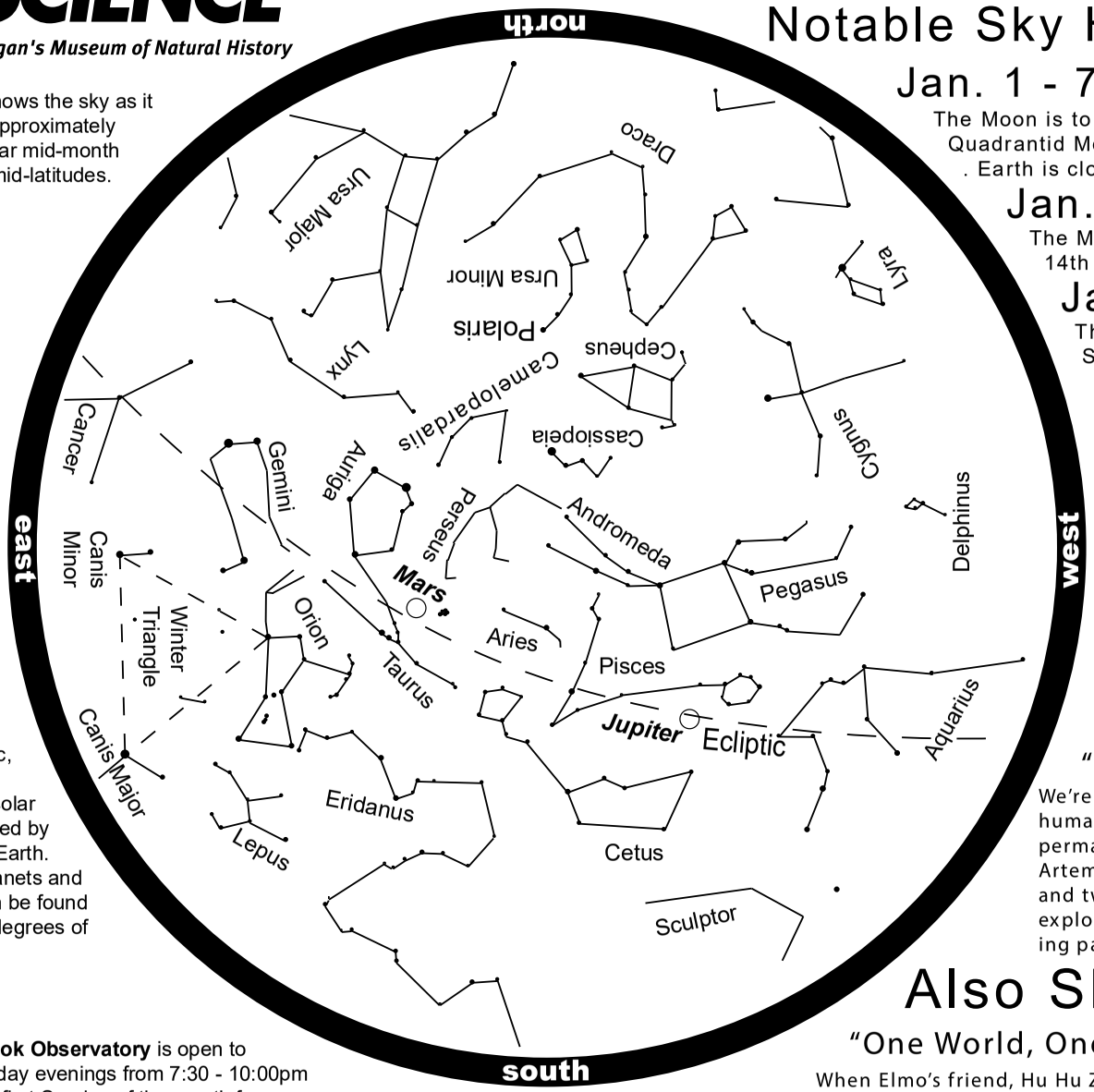
Jan. 15 - 21

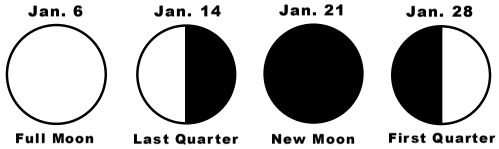
The Moon is to the left of Antares, the "heart" of Scorpius, on the 18th (SE predawn).

Jan. 22 - 31

Venus is to the left of Saturn on the 22nd (WSW evening twilight - use binoculars). Moon is below Jupiter on the 25th (SW evening), and to the right of Mars in the southeast the evening of the 30th.

This chart shows the sky as it appears at approximately 7pm EST near mid-month at northern mid-latitudes.





What is that dashed line? It's the ecliptic, the reference plane of the solar system, defined by the Sun and Earth. The major planets and the Moon can be found within a few degrees of this plane.

Now Showing

"Forward to the Moon"

We're ready to start a new chapter in the history of human exploration and take our first steps towards a permanent presence om the Moon. NASA's 21st century Artemis program, named after the Greek Moon Goddess and twin of Apollo, is the next step in our mission to explore the universe. A Moon base will be the launching pad for the next target: the planet Mars.

Also Showing

"One World, One Sky: Big Bird's Adventure"

When Elmo's friend, Hu Hu Zhu, visits from China. Big Bird, Elmo and Hu Hu Zhu take viewers on an exciting discovery of the Sun, Moon, and stars. They learn about the Big Dipper and the North Star and take an imaginary trip to the Moon where they learn that the Moon is a very different place.

The Cranbrook Observatory is open to the public Friday evenings from 7:30 - 10:00pm EST, and the first Sunday of the month from 1:00 - 4:00pm for solar viewing.

For observatory information visit http://science.cranbrook.edu/explore/observatory

For astronomy information visit http://science.cranbrook.edu

Bill Beers - M33 (Triangulum Galaxy)

January 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 New Year's Day	2 Cranbrook New Year's Day observed	3 Quadrantid Meteor Shower	4 Earth at Perihelion: 0.98329 AU	5	6 FULL MOON	7
8 Moon at Apogee: 406459 km	9	10	11	12	13	14
15	16 Martin Luther King Jr. Day	17	18	19 Macomb	20	21 NEW MOON, Moon at Perigee: 356570 km
22	23	24	25	26	27	28 Stargate Open House
29	30	31				

Stargate Observatory

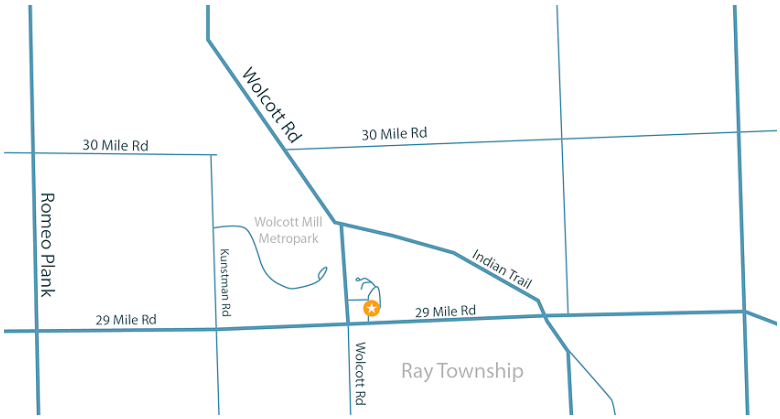
Monthly Free Astronomy Open House and Star Party

5:30 PM, 4th Saturday of the month!

Wolcott Mill Metropark - Camp Rotary entrance

Advisory: Concerns are circulating in the amateur astronomy community about a possibility of COVID-19 being passed from one person to another via contact of different persons' eyes with a telescope eyepiece. Sharing telescopes may be considered by some to be high-risk due to the possibility of eyes touching eyepieces. Masks are encouraged, mandatory for children.

- Sky tours.
- See different telescope types in operation.
- Get help with your telescope.
- We can schedule special presentations and outings for scouts, student or community groups.
- Contact: outreach@warrenastro.org
- Find us on Meetup.com



20505 29 Mile Rd (1.8 miles east of Romeo Plank Rd) Ray, MI 48096
82° 55'04" West Longitude, 42° 45'29" North Latitude

Observatory Rules:

- Closing time depends on weather, etc.
- May be closed one hour after opening time if no members arrive within the first hour.
- Contact the 2nd VP for other arrangements, such as late arrival time. Call 586-909-2052.
- An alternate person may be appointed to open.
- Members may arrive before or stay after the scheduled open house time.
- Dates are subject to change or cancellation depending on weather or staff availability.
- Postings to the Yahoo Group and/or email no later than 2 hours before starting time in case of date change or cancellation.
- It is best to call or email the 2nd VP at least 2 hours before the posted opening with any questions. Later emails may not be receivable (secondvp@warrenastro.org).
- Generally, only strong rain or snow will prevent the open house... the plan is to be there even if it is clouded over. Often, the weather is cloudy, but it clears up as the evening progresses.

Stargate Report

Stargate Observatory Open House Report for December 17, 2022

The observatory was opened at 5:16 pm and the sky was cloudy. Thanks to Mr. Brandon Lubera who attended the open house and donated three eyepieces and a Barlow. These eyepieces are a welcome addition to our observing tools. All equipment and both buildings are in good condition.

The sky did not improve, and it started snowing about 6:30 pm. The observatory was closed at 7:15 pm.

I would like to thank the WAS board and members for allowing me to serve as the 2nd VP and I offer my continued support for future events. Thanks also to members, like Doug Bock, who helped us during the difficult times in 2020 and most of 2021 to continue our open house events with virtual meetings. Now the members are once again attending the Stargate observatory open house events in person. We have had many well attended clear sky open house events recently and I am sure this trend will continue.

Mr. Jeff Macleod, 2023 WAS 2nd VP elect will set the open house schedule for next year.

Riyad I. Matti
2022 WAS 2nd VP.
Observatory Chairperson

Treasurer Report

Treasurer's Report for December 31, 2022

BOA account:

Balance: $29,123.22
Deposits: 00.00
Expense (Stargate equipment, Webex) 485.53

PayPal Account:

Balance: $471.44
Received: 223.17
(Renewals, calendar sales, giving fund)
Paid 217.64
(lecture fee, postage)

Total Paid Memberships 127

News from the Treasury:

Is it time to renew your membership? Every New Year, many memberships expire. Please let me know via email at treasurer@warrenastro.org to verify your membership status. When you receive your membership flyer in the mail, fill it out and send it to: Warren Astronomical Society, P.O. Box 1505, Warren, Michigan 48090-1505. We strongly recommend using PayPal for faster service, but we also accept checks and cash at the meetings"

Astronomical Events For January 2023

Add one hour for Daylight Saving Time

Source:

http://astropixels.com/almanac/almanac21/almanac2023est.html

Date	Time (h:m)	Event
1	10:25	Moon at Ascending Node
2	15:00	Mercury at Perihelion
2	20:24	Pleiades 2.6°N of Moon
3	14:35	Mars 0.5°N of Moon: Occn.
3	22:00	Quadrantid Meteor Shower
4	11:00	Earth at Perihelion: 0.98329 AU
6	18:08	FULL MOON
7	8:00	Mercury at Inferior Conjunction
7	8:40	Pollux 1.9°N of Moon
8	4:19	Moon at Apogee: 406459 km
14	16:59	Spica 3.9°S of Moon
14	21:10	LAST QUARTER MOON
16	1:32	Moon at Descending Node
18	4:32	Antares 2.1°S of Moon
20	7:00	Jupiter at Perihelion: 4.95101 AU
21	15:53	NEW MOON
21	15:58	Moon at Perigee: 356570 km
22	17:00	Venus 0.3°S of Saturn
23	2:22	Saturn 3.8°N of Moon
23	3:20	Venus 3.5°N of Moon
25	21:00	Jupiter 1.8°N of Moon
28	10:19	FIRST QUARTER MOON
28	11:05	Moon at Ascending Node
30	1:00	Mercury at Greatest Elong: 25.0°W
30	2:21	Pleiades 2.4°N of Moon
30	23:24	Mars 0.1°N of Moon: Occn.

The process for ordering a physical copy of Sky & Telescope has changed, and prices have gone up above $40 per year for a member of an astronomy club. Please let me know via email at treasurer@warrenastro.org if you would like more information.

Adrian Bradley,
Treasurer

News Flash

DR. DALE PARTIN APPOINTED AS WAS 2023 1st VICE PRESIDENT

On December 15, 2022, via electronic communication, former WAS officer Dr. Dale Partin, in expressing his concern that "it would be harmful to the WAS if we start having meetings with no speakers", approached the 2022 WAS Board and declared his willingness to serve as its 1st Vice President for 2023.

On December 16, 2022, via electronic communication, and with the above information being provided to the entire board, a motion was made by Dale Thieme that the WAS Board appoint DR. DALE PARTIN to assume the duties of office of 1st VICE PRESIDENT effective immediately – motion was supported by Bob Trembley. Via electronic communication, the motion was approved UNANIMOUSLY by the WAS 2022 Board.

THANK YOU, DR. DALE PARTIN!!

Respectfully submitted on behalf of the 2022 WAS Board,
Mark Kedzior
Secretary
Warren Astronomical Society

W.A.S.P. Photo and Article Submissions

We'd like to see your photos and articles in the W.A.S.P. Your contribution is ESSENTIAL!

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This is YOUR publication!
Send items to: publications@warrenastro.org
Documents can be submitted in Microsoft Word (.doc or .docx), Open Office (.ods), or Text (.txt) formats, or put into the body of an email. Photos can be embedded in the document or attached to the email and should be under 2MB in size. Please include a caption for your photos, along with dates taken, and the way you'd like your name to appear.

Meeting Minutes

WARREN ASTRONOMICAL SOCIETY ANNUAL SERVICE AWARDS "BANQUET" (with Live Streaming) @ CRANBROOK DECEMBER 5, 2022 7:30PM

Meeting called to order for the WAS 2022 Combined Annual Service Awards "Banquet"/December Cranbrook meeting with live streaming at 7:30PM by President Diane Hall. Number of persons in attendance - 23 (WebEx attendance – 12, with no YouTube streaming available for this evening @ 8:30PM).

President Diane Hall welcomed all in attendance and began the night's meeting with her comments ("Year in Review") on the work of the outgoing WAS 2022 Board, and the introduction of the incoming 2023 WAS Board (noting a vacancy in the office of 1st VP). She also expressed that with the live and virtual format of our monthly meetings, there is a need for an individual from our organization willing to volunteer to become our Audio/Visual Coordinator (aka "guru") to assist the board in the technology needed to continue the live/ virtual format that developed during our return to in person meetings from the pandemic. The WAS returned to in person meetings at Cranbrook in April, but still meet virtual for our Macomb meetings until further notice. Stargate Open Houses have seen robust attendance numbers return as the public returns. The WAS participated as a presence at the 2022 Astronomy at the Beach event at Island Lake State Park on September 16-17, featuring the return of our flagship 22" reflector - the "Big Dob"- with freshly cleaned optics, and stood ready front and center on the observing field, to bring the wonders of the night skies closer to the public as part of our outreach mission. Diane also reported "In Memorial" on the passing of club members, former WAS officer Jon Root (Jon's estate bequeathed funds to the WAS – the WAS Board voted unanimously to apply those funds towards construction of a new multi-purpose facility on the Stargate grounds, pending Metro Parks review and approval) and outreach volunteer Lee Hartwell, NASA presenter Harlan Neuville and Wendee Levy, beloved wife of our honorary member and columnist David Levy.

WAS SERVICE AWARDS for 2022:

Blaine McCullough Award - GREG NIZIO - "Have Big Dob, Will Travel"

Mike Simonsen Observer Award - GARY M. ROSS - "First Greatest Observer in Michigan"

Presented in Appreciation - DON KLASER - "The Man Behind the Curtain"

Special acknowledgment - "Build the Future" to outgoing 2nd VP Observatory Chair Riyad Matti and his "stellar" work at the Stargate Observatory, and efforts to begin process for construction of a new observing facility.

David Levy (from Arizona) wished all a happy holiday season and read an appropriate psalm from King David of Israel.

DONATED DOOR PRIZE DRAWING

(following break) @ 8:15 PM:

Secretary Mark Kedzior conducted the Door Prize Drawing, and thanked the following corporations and individuals for their generous donations to this event as follows:

- CELESTRON LLC: Celestron 130AZ Star Sense Alt-Az Reflector Telescope – Celestron 76MM First Scope tabletop reflector Robert Reeves Edition – Celestron NexYZ Smartphone Adapter -
- OBERWERK CORPORATION: 8 x 32 HD Binocular –
- OPTICAL STRUCTURES INC. (Farpoint Astro): Two (2) $25 Gift Certificates –
- DALE THIEME: Wall Portrait of "Sun-dog" taken by Steve Aggas -
- DR. DALE PARTIN: Large Wall Portrait/Photo of M31 Andromeda Galaxy.

Each attendee (both in person and virtual) was entered into the drawing with one chance each – the winners are as follows:

CELESTRON 130AZ Star Sense Alt-Az Reflector - ADRIAN BRADLEY

OBERWERK CORP. 8 x 32 HD Binocular - VICTOR MANSKE

CELESTRON NexYZ Smartphone Adapter - KEN LORD

CELESTRON 76MM First Scope Table Top Reflector - KEN BERTIN

FARPOINT ASTRO $25 Gift Certificate - DALE HOLLENBAUGH

FARPOINT ASTRO $25 Gift Certificate - DIANE HALL

"Sun Dog" Wall Portrait - JOHN SILLER

M31 Andromeda Galaxy Portrait - KATHRYN SIEGEL

KEYNOTE PRESENTATION:

1st VP/President-Elect Bob Trembley introduced (with bio) Professor Karim Jaffer, Public Events Coordinator for the RASC Montreal Centre, and John Abbott College in Montreal, Quebec, Canada, with his presentation "Two-Eyed Seeing: Ancient Stories and Observations of the Night Sky". In his presentation, Professor Jaffer described the partnership with First Nation Cultures to study and understand the astronomical observations made of the night sky, and their relationship and dependence on this knowledge to enable these cultures in their agricultural efforts of planting and harvesting, and the stories of various native cultures with their observations of prominent constellations and their significance to their individual cultures. Some items explained in detail were the "Mi'kMaw Moons Project" (Turtle "Makinak"), Biboonkeonini Wintermaker (constellation Orion), Navajo Constellations, and nativeskywatchers.com/resources.html site for planispheres of Native American cultures. He also described similarities between the Native American and other countries origins of stories of the night sky (Japan, China, etc.)

Questions and discussion followed his very informative presentation.

Meeting ended at 9:40 PM.

Respectfully submitted,

Mark Kedzior, Secretary, WAS

The Warren Astronomical Society is a proud member of the

Great Lakes Association of Astronomy Clubs

GLAAC is an association of amateur astronomy clubs in Southeastern Michigan who have banded together to provide enjoyable, family-oriented activities that focus on astronomy and space sciences.

Club Name & Website	City	Meeting times
Astronomy Club at Eastern Michigan University	Ypsilanti/EMU	Every Thursday at 7:30PM in 402 Sherzer
Capital Area Astronomy Club	MSU/Abrams Planetarium	First Wednesday of each month 7:30 PM
Farmington Community Stargazers	Farmington Hills	Members: Last Tuesday of the month Public observing: 2nd Tuesday of the month
Ford Amateur Astronomy Club	Dearborn	Fourth Thursday of every month (except November and December) at 7:00 PM
McMath-Hulbert Astronomy Society	Lake Angelus	Board and paid members-First Sunday of the month
Oakland Astronomy Club	Rochester	Second Sunday of every month (except May)
Seven Ponds Astronomy Club	Dryden	Monthly: generally the Saturday closest to new Moon
Sunset Astronomical Society	Bay City/Delta College Planetarium	Second Friday of every month
University Lowbrow Astronomers	Ann Arbor	Third Friday of every month
Warren Astronomical Society	Bloomfield Hills/Cranbrook& Warren/MCC	First Monday & third Thursday of every month 7:30 PM

GLAAC Club and Society Newsletters

Warren Astronomical Society: http://www.warrenastro.org/was/newsletter/
Oakland Astronomy Club: http://oaklandastronomy.net/
McMath-Hulbert Astronomy Club http://www.mcmathhulbert.org/solar/newsletter/
Ford Amateur Astronomy Club: http://www.fordastronomyclub.com/starstuff/index.html
University Lowbrow Astronomers: http://www.umich.edu/~lowbrows/reflections/

WAS Member Websites

Steven Aggas: http://apache-sitgreaves.org/

Bill Beers: Sirius Astro Products

Jon Blum: Astronomy at JonRosie

Doug Bock:

Facebook: Northern Cross Observatory https://www.facebook.com/NorthernCrossObservatory

Boon Hill and NCO Discussion https://www.facebook.com/groups/369811479741758

Flickr (astrophotography album): https://www.flickr.com/photos/141833769@N05/

YouTube channel: https://www.youtube.com/channel/UC-gG8v41t39oc-bL0TgPS6w

Bob Trembley:

https://www.vaticanobservatory.org/profile/rtrembley

Vatican Observatory Foundation Blog

This article is distributed by NASA's Night Sky Network (NSN). The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Spot the Messenger: Observe Mercury

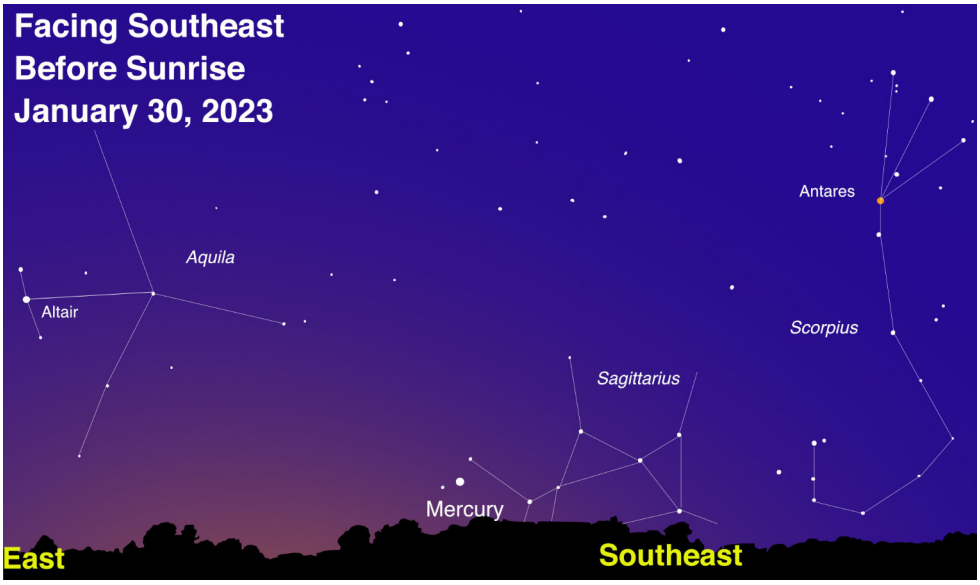
David Prosper

Most planets are easy to spot in the night sky, but have you spotted Mercury? Nicknamed the Messenger for its speed across the sky, Mercury is also the closest planet to the Sun. Its swift movements close to our Sun accorded it special importance to ancient observers, while also making detailed study difficult. However, recent missions to Mercury have resulted in amazing discoveries, with more to come.

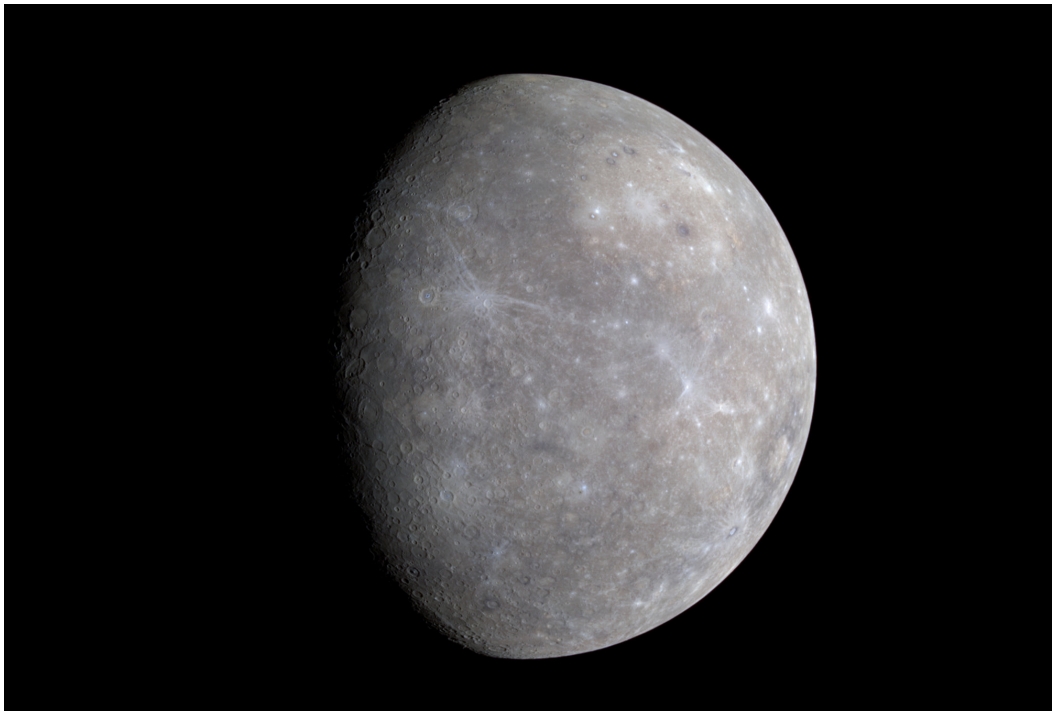
Mercury can be one of the brightest planets in the sky – but also easy to miss! Why is that? Since it orbits so close to the Sun, observing Mercury is trickier than the rest of the "bright planets" in our solar system: Venus, Mars, Jupiter, and Saturn. Mercury always appears near our Sun from our Earth-bound point of view, making it easy to miss in the glare of the Sun or behind small obstructions along the horizon. That's why prime Mercury viewing happens either right before sunrise or right after sunset; when the Sun is blocked by the horizon, Mercury's shine can then briefly pierce the glow of twilight. Mercury often appears similar to a "tiny Moon" in a telescope since, like fellow inner planet Venus, it shows distinct phases when viewed from Earth! Mercury's small size means a telescope is needed to observe its phases since they can't be discerned with your unaided eye. Safety warning: If you want to observe Mercury with your telescope during daytime or before sunrise, be extremely careful: you don't want the Sun to accidentally enter your telescope's field of view. As you may already well understand, this is extremely dangerous and can not only destroy your equipment, but permanently blind you as well! That risk is why NASA does not allow space telescopes like Hubble or the JWST to view Mercury or other objects close to the Sun, since even the tiniest error could destroy billions of dollars of irreplaceable equipment.

Despite being a small and seemingly barren world, Mercury is full of interesting features. It's one of the four rocky (or terrestrial) planets in our solar system, along with Earth, Venus, and Mars. Mercury is the smallest planet in our solar system and also possesses the most eccentric, or non-circular, orbit of any planet as well: during a Mercurian year of 88 Earth days, the planet orbits between 29 million and 43 million miles from our Sun – a 14-million-mile difference! Surprisingly, Mercury is not the hottest planet in our solar system, despite being closest to the Sun; that honor goes to Venus, courtesy its thick greenhouse shroud of carbon dioxide. Since Mercury lacks a substantial atmosphere and the insulating properties a layer of thick air brings to a planet, its temperature swings wildly between a daytime temperature of 800 degrees Fahrenheit (427 degrees Celsius) and -290 degrees Fahrenheit (-179 degrees Celsius) at night. Similar to our Moon, evidence of water ice is present at Mercury's poles, possibly hiding in the frigid permanent shadows cast inside a few craters. Evidence for ice on Mercury was first detected by radar observations from Earth, and followup observations from NASA's MESSENGER mission added additional strong evidence for its presence. Mercury sports a comet-like tail made primarily of sodium which has been photographed by skilled astrophotographers. The tail results from neutral atoms in its thin atmosphere being pushed away from Mercury by pressure from the nearby Sun's radiation.

NASA's Mariner 10 was Mercury's first robotic explorer, flying by three times between 1974-1975. Decades later, NASA's MESSENGER first visited Mercury in 2008, flying by three times before settling into an orbit in 2011. MESSENGER thoroughly studied and mapped the planet before smashing into Mercury at mission's end in 2015. Since MESSENGER, Mercury was briefly visited by BepiColombo, a joint ESA/JAXA probe, which first flew by in 2021 and is expected to enter orbit in 2025 - after completing six flybys. Need more Mercury in your life? Check out NASA's discoveries and science about Mercury at solarsystem.nasa.gov/mercury/, and visit the rest of the universe at nasa.gov.



Mercury reaches maximum western elongation on the morning of January 30, which means that your best chance to spot it is right before sunrise that day! Look for Mercury towards the southeast and find the clearest horizon you can. Observers located in more southern latitudes of the Northern Hemisphere have an advantage when observing Mercury as it will be a bit higher in the sky from their location, but it's worth a try no matter where you live. Binoculars will help pick out Mercury's elusive light from the pre-dawn glow of the Sun. Image created with assistance from Stellarium



Above: *Mercury is hot, small, and heavily cratered across its gray surface, as seen in this image from NASA MESSENGER. Mercury is the most heavily cratered planet in our solar system, since it lacks either a substantial atmosphere or geologic activity to erode surface features like craters, similar in certain aspects to the surface of our own Moon.*

Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Source: https://solarsystem.nasa.gov/resources/439/mercurys-subtle-colors/

Below: *On rare occasion, Earthbound observers can observe Mercury, like Venus, transiting the Sun. Mercury frequently travels between Earth and the Sun, but only rarely does the geometry of all three bodies line up to allow observers from Earth to view Mercury's tiny shadow as it crosses our star's massive disc. You can see one such event in this photo taken by Laurie Ansorge of the Westminster Astronomical Society on November 11, 2019. If you missed it, set a reminder for Mercury's next transit: November 13, 2032.*