Vol. 50, no. 2

WASP

February, 2019

The Warren Astronomical Society Paper

From 1986

A Constellation of W.A.S. Members

Top Row:
Ken Wilson, Roger Civic, Ginger Kwentus, Larry Kalinowski, Gerry Alyea, Clarence Trott, Margaret Alyea, Judy Strong

Bottom Row:
Tim Skonieczny, Doug Bock, Lou Faix, Frank McCullough, Dave Harrington, Paul Strong

The WASP

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

Dale Thieme, Editor

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:
Cranbrook: Institute of Science
1221 North Woodward Ave
Bloomfield Hills, Michigan

Third Thursday meeting:
Macomb Community College
South campus, Bldg. J, Room J221
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.
Free use of W.AS. library. See librarian.

The Warren Astronomical Society Paper (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.

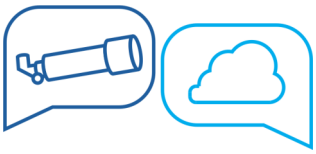
Stargate Observatory is owned and operated by the Society. Located on the grounds of Camp Rotary on 29 Mile Road, 1.8 miles east of Romeo Plank Road, Stargate features an 8-inch refractor telescope under a steel dome. The observatory is open according to the open house schedule published by the 2nd VP.

Library. The Society maintains a library of astronomy-related books and periodicals at the Cranbrook meeting location. See the librarian, Jonathan Kade, to check out a book.

Snack Volunteer Schedule

Feb 4	Cranbrook	Jerry Voorheis
Feb 21	Macomb	Dale Partin
Mar 4	Cranbrook	Gary Ross

If you are unable to bring the snacks on your scheduled day, or if you need to reschedule, please email the board at board@warrenastro.org as soon as you are able so that other arrangements can be made.



Discussion Group Meeting

Come on over, and talk astronomy, space news, and whatnot!

On Thursday, February 28th at 7pm, Alan and Cheryl Kaplan will host this month's discussion group. They will distribute information about how and when to get there at the Cranbrook and Macomb meetings this month. If you can't make the meetings but would like to attend, email publications@warrenastro.org and Dale Partin will pass your request along.

Snacks and beverages will be provided - no need to bring your own. Just bring yourself and the spirits of camaraderie and inquiry as we cover varied and sundry topics more or less related to astronomy.

In This Issue:

In Memoriam

Paul and Judy Strong

We regret losing two long-time members and strong supporters of the Society, Paul and Judith (Judy) Strong. Judy died unexpectedly in her sleep on December 28, 2018; Paul died after entering hospice care on January 5, 2019.

From Jonathan Kade

My understanding is that Paul and Judy joined the W.A.S. sometime in the 1960s. In our 25th anniversary retrospective from 1986, the late Frank McCullough wrote that Paul was one of our first major speakers during his presidency in 1970, at a time when attendance at W.A.S. meetings was as low as 8. Paul invited the club to move its meetings to Macomb Community College in 1971, and we accepted. Frank credited moving to a larger, open institution from the restricted, hard-to-find room at Lincoln High School with giving the W.A.S. a new lease on life. Paul's support wasn't limited to giving us a meeting space – Frank wrote, "Paul has always been great in promoting our club during and after his classes. He would walk the length of the campus just to get us a projector or help us run off [the WASP] (an expensive project)."

Paul continued sponsoring our presence at Macomb Community College's South Campus for decades. We moved away briefly in the mid-1970s, but moved back in 1977, and have been meeting there ever since. In 2004, Paul and Bill Koren even measured the speed of light live during a W.A.S. meeting! Paul was our primary sponsor at Macomb until 2011, when we moved to the MCC South Campus Library. In March 2015, we established the Paul Strong Scholarship at Macomb Community College in his honor. We annually award $500 to deserving students nominated by Physics and Science instructors.

Judy was an active member, serving as First Vice President from 1972-1973 and from 1979-1980. She was an accomplished eclipse observer, traveling the world with Paul, Dave and Glenna Harrington, and other W.A.S. members in pursuit of totality (and interesting experiences).

There's an amusing anecdote involving Judy in the February 1978 WASP, demonstrating some of the tribulations of being an eclipse fanatic: "Although we were ready for action, the clouds were not, and played games with us for a while. Moments before the eclipse, four-letter words were flying (as attested by MCCC students who listened to Judy Strong's obscenities to the clouds over her husband's tape recorder). But suddenly, as larger chunks of the sun were being eaten away by the moon's shadow, darkness crept upon us and the glorious "diamond ring" appeared – heralding TOTALITY!"

Memories from Dr. Dave Harrington:

"I met Paul and Judy in the club in 1970 while planning for chasing the March 7, 1970 eclipse, and remained close friends (and eclipse chasers) with them ever since. He was an excellent astrophotographer (along with other old-timers like Lou Faix) and was also a superb videographer. Judy and my wife, Glenna, were best friends, and it is ironic that they both passed away unexpectedly within three weeks of each other. It is also perhaps a measure of their devotion to each other that Paul and Judy both passed away within the same week."

Paul taught Astronomy and Physics at Macomb for 41 years and had been retired for seven years at his death. Judy was an active volunteer with the Macomb County Democratic Committee, and had spent the last three years caring for Paul as his health failed.

Photo above of Paul and Judy on their way to the Transit of Venus at Victoria Falls in Africa courtesy Dave Harrington.

Astronomical Events for February 2019

Add one hour for Daylight Savings Time

Source:

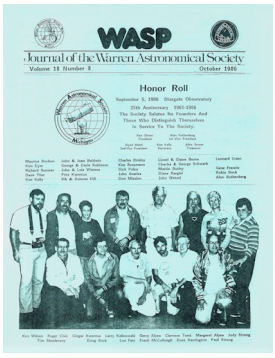
http://www.astropixels.com/ephemeris/astrocal/astrocal2019est.html

Day	EST (h:m)	Event
02	02:18	Saturn 0.6°S of Moon: Occn.
03	01:35	Moon at Descending Node
04	16:04	NEW MOON
05	04:26	Moon at Apogee: 406556 km
12	17:26	FIRST QUARTER MOON
13	22:29	Aldebaran 1.7°S of Moon
17	04:42	Moon at Ascending Node
17	22:05	Beehive 0.6°N of Moon
19	04:06	Moon at Perigee: 356762 km
19	08:08	Regulus 2.5°S of Moon
19	10:53	FULL MOON
25	03:00	Mercury at Perihelion
26	06:28	LAST QUARTER MOON
26	20:00	Mercury at Greatest Elong: 18.1°E
27	09:17	Jupiter 2.3°S of Moon

About the cover

In September of 1986, for the 25th anniversary of the W.A.S., a group of founders and long-time members posed for a photo that was published on the cover of the WASP (October 1986 issue).

The Title font is called Frankfurter and served for many issues in the 80s.



Top Row:

Ken Wilson	Editor
Roger Civic	2nd VP, Editor
Ginger Kwentus	Active Member and Expedition Planner
Larry Kalinowski	President, ATM*
Gerry Alyea	Founder, 3rd president, ATM
Clarence Trott	Founder, 1st president
Margaret Alyea	Founder
Judy Strong	1st VP

Bottom Row:

Tim Skonieczny	1st VP, Editor
Doug Bock	President, 1st VP, editor
Lou Faix	President, 1st VP
Frank McCullough	President , 1st VP, 2nd VP, Recording Secretary, First Editor of the WASP
Dave Harrington	President and 2nd VP
Paul Strong	Active member and procured Macomb College meeting site.

* Amateur Telescope Maker

President's Field of View

We are only a month into 2019 and we get a fantastic astronomical event, a Total Lunar Eclipse! Not only do we get to see the whole thing, but it's also 100% clear skies. There's just one catch, its January and clear so it's FREEZING! It was so cold that it gave an extra dimension to the entire event.

As I pulled into the observatory shortly after 9pm my cars manifold intake temperature display read zero, a wonderful start but hey, this is another opportunity to get some data on how far away the moon is, so ya gotta do it. Bob Trembley was already stuck in the snow, and he would not be the last. We managed to get him out, then it was time to set up. I have never been more pleased to not have a scope to set up, I brought my binoculars, but it was just too cold. After shoveling the roof, I opened the dome, Riyad entered and we finished getting the observatory up and running. We had a few people milling about so we turned to a pretty washed out M42, but I was able to see Trapezium e and f. At this point my feet where already freezing, time to put on toe warmers, and boy they made all the difference. I had brought some Lunar Posters from observe the moon night, but it was so cold the tape wouldn't hold them up, oh well. The Girl scouts came in several small groups, one arrived just before totality. They stayed just long enough for everyone to get a view through the scope and then they were gone. The Second group came during totality and stayed a little longer. We had a pretty continuous trickle of people coming in, staying for a half hour or so and then packing it in. Just at the end of totality everyone was packed up and gone, Brenda Walker helped me close down the observatory. We had about 35 visitors in total. Shutting down turned out to be worse than setting up. The lock box was a total nightmare, then, when I'm finally ready to leave, my car and the door won't close. The locking mechanism had froze up, but it closed enough to lock so I headed home. At this point I still have the last

(Continued on page 8)

Asteroid (26541) Garyross

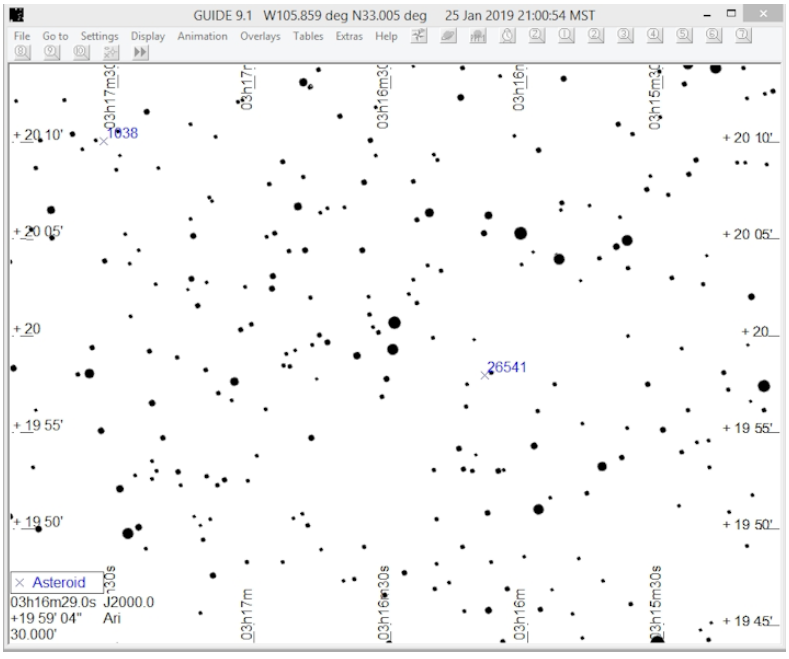
Elusive Asteroid Captured on Camera

Gerald (Jerry) Persha of the Grand Rapids Amateur Astronomical Association recently captured an image of the asteroid 26541 garyross. Jerry shared this accomplishment with us in an email:

"I had a short period last night before clouds would roll in so I took a shot for the infamous asteroid garyross. This would be the last opportunity for the season since it is rapidly dimming and it would be beyond 19th mag in a month. However, at this time it is a blazing 18.7.

The image is a combination of 200 second exposures spanning 24 minutes with 2x2 binning. I would have gone longer but for the clouds. The asteroid is moving at about 18 arc-seconds per hour and the image is in good agreement with the chart. I downloaded the latest MPC catalog a month before. The image was taken with my QHY-9m camera, no filter

(Continued on page 6)



(Continued from page 5)

on the mighty 10 Meade ACF. The little star above it is 15.4 magnitude.

On the chart the bright stars are 10 mag and the dimmest are around 17.5."

Gary Ross received this honor in the early 2000s (best guess, since the asteroid was discovered in 2000). Through the efforts of Lifetime WAS Member, Rik Hill, several WAS members (and the club itself) have asteroids named for them. Working on the Catalina Sky Survey, he has an inside track.

From the Minor Planet Center (MPC), we get this citation for the naming of the asteroid:

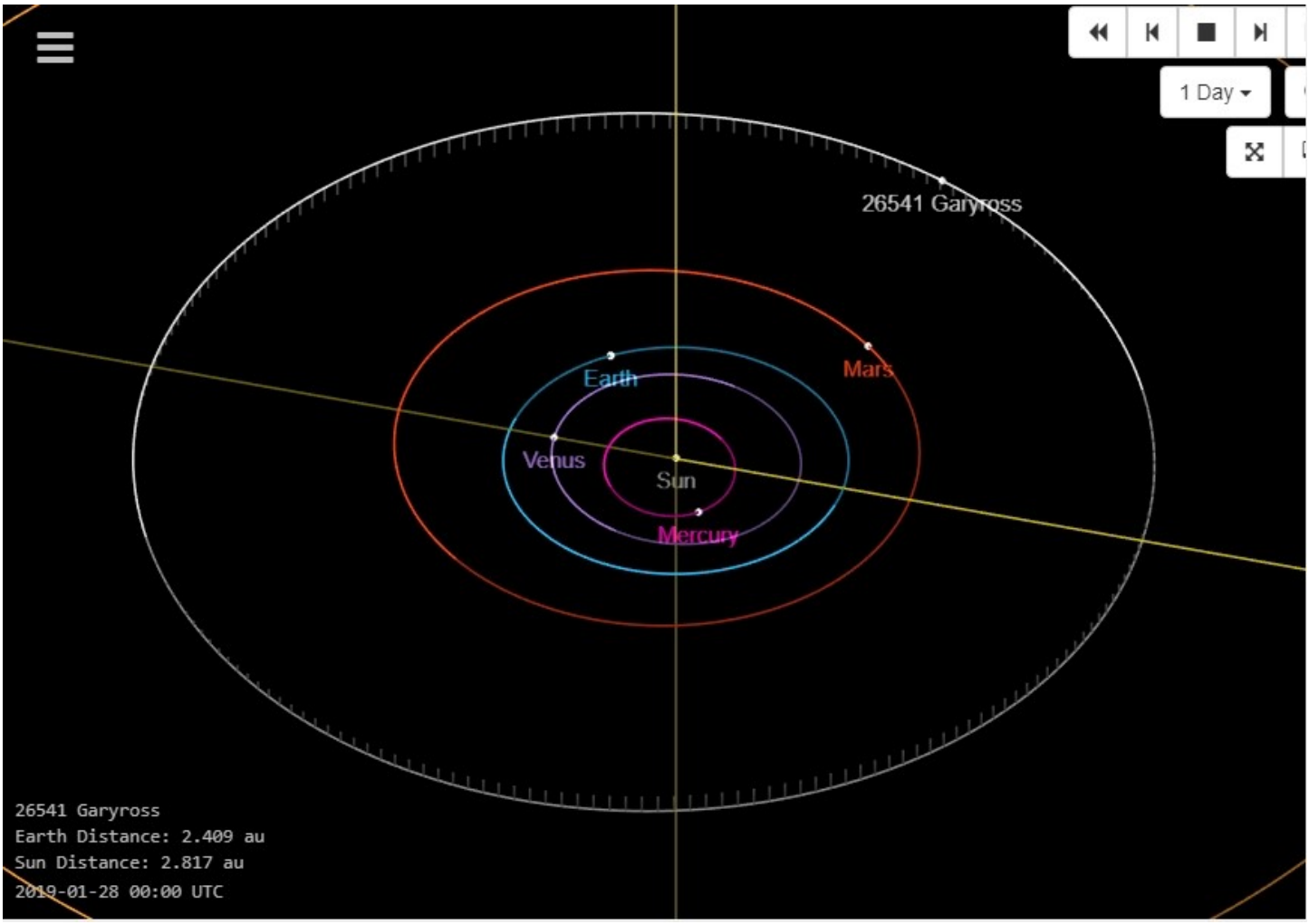
The following citation is from MPC 84378:

(26541) Garyross = 2000 DV15

Gary Ross (b. 1945) has served on the executive board of the Grand Rapids Astronomical Society and Warren Astronomical Society in southern Michigan. He has also been instrumental in the operation of the James C. Veen observatory in Lowell, Michigan, for over 40 years.

The discovery date: 2000 02 27.

The ephemeris for this asteroid can be obtained at the Minor Planet & Comet Ephemeris Service. Just type 26541 garyross in the search field. Good hunting.



Asteroid: Garyross (26541)

Distance from earth as of 1/25/2019: 2.379 AU or 355,869,000 km

Distance from sun: 2.82 AU

Discovery date: 2/27/2000

Preliminary designation: 2000 DV15

Discoverer's name: CSS (Catalina)

Current agreed to diameter: 6.2 km

Albedo: 0.202

Absolute magnitude: 13.6

Period of orbit: 5.09 years

1385 observations made to determine orbit

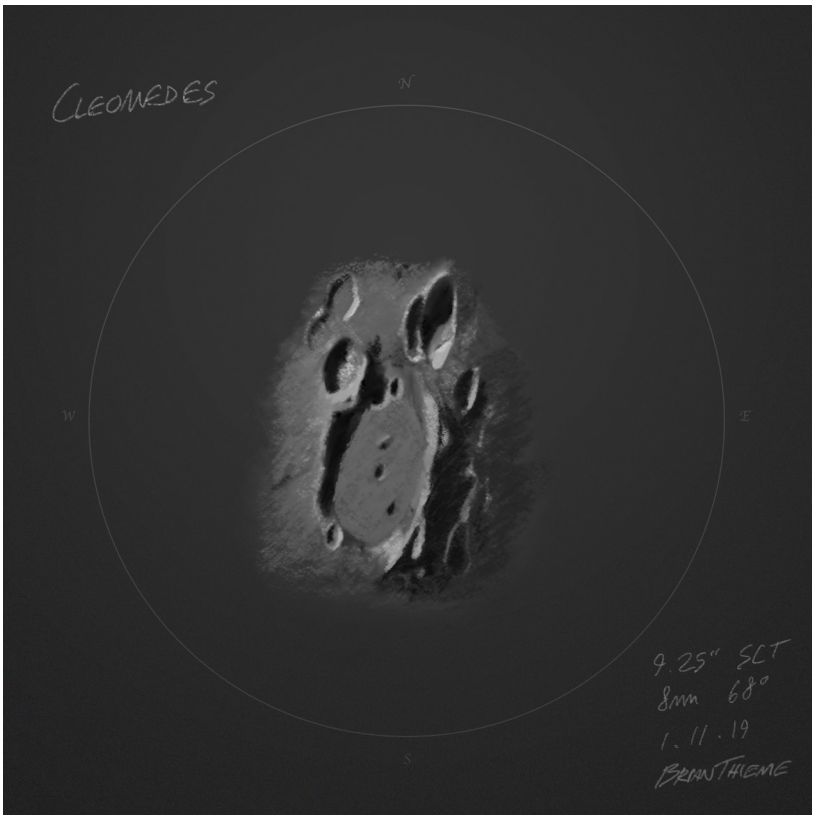
last observation made in orbit determination: 10/22/2018

orbit computed by MPCLINUX

W.A.S. Astro-Images

Above: Excellent shot of the starfield during the lunar eclipse by Bill Beers.

Right: Brian Thieme has embarked on a program of doing one sketch a month at the eyepiece for the WASP. No mean feat in winter months. Pictured is Cleomedes, a prominent north-eastern crater on the moon. 126 km diameter, 2.7 km deep and located at 27.7°N 55.5°E.



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! —
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.

16th Annual FAAC Astronomy Conference & Swap Meet

March 23, 2019
Henry Ford College Campus
Dearborn, MI

Co-hosted by the Henry Ford College Astronomy Club and the Ford Amateur Astronomy Club

The W.A.S. Library

Come visit the breath-taking WAS library, located in the scenic rendering-server room at Cranbrook Institute of Science! In our library, you'll find six shelves of books about:

- Observing every celestial object imaginable;
- Using and making telescopes;
- Popular and unpopular science;
- Science biography, science history, science fiction;
- Archives of our fifty-year history;

…and other stuff we can't classify.

To check out a book, you simply have to be a member in good standing. At Cranbrook, see our librarian, Jonathan Kade, at the break. To have a book delivered to Macomb, simply request a book from the library list from Jonathan. Where do you see the list? It doesn't exist yet! Hassle Jonathan to post it.

(Continued from page 4)

timing of the eclipse to make. I pull into my driveway, now the door won't open, it never ends! So I pulled out my binoculars and timed the end of the eclipse through my sunroof. All in all a good night.

So how did the numbers shake out? Well using the timings I got a range between 237,000 and 279,000 miles, not bad. I also took a photo that I used to get the ratio between the Moon and the Earth's shadow and got 219,000 miles. Averaging all that I say 245,000 miles. This is within the typical range that the moon is in so I'm pretty happy with the results. It is probably a bit far for a "supermoon", but remember, If the moon doesn't go straight through the center of the Earth's shadow, it skews the results and makes the moon seem farther away. So all things considered and nice figure. Using that figure the Moon is 2,248 miles in diameter (real figure 2,159 miles) and traveling about 2,044 mile/hour around the Earth (real figure is approx. 2,288). Using eclipses to determine distances is nothing new (about 2000 years old) but it sure is fun, if it hadn't been for the subzero temperatures I might have been able to convince someone to take measurements with me, maybe next time.

Jeff MacLeod,
President

Presentations

Monday, February 4, 2019
Cranbrook Presentations

Main Talk:
"Spacetime" by Tim Campbell

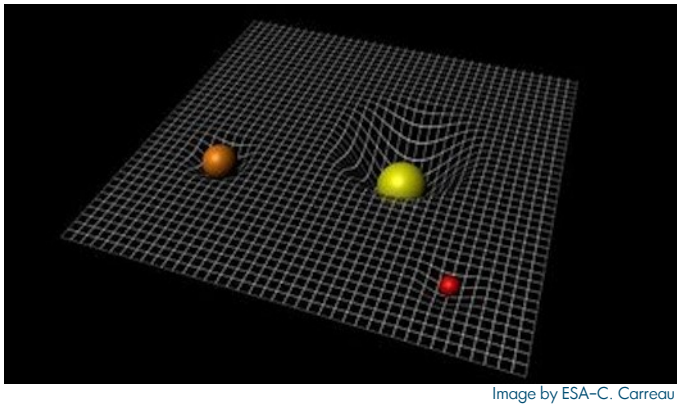


Image by ESA–C. Carreau

The presentation attempts to provide a simplified understanding of four-dimensional space-time and will provide some evidence to support it ... including methods to graphically work out space-time distortions without the use of math.

It starts with exploring historical ideas about light ... both the nature and speed of light, and how those ideas evolved through experiment to the understanding generally accepted today. This includes some of the strange aspects whereby different observers always measure the speed of light to be the same regardless of their reference frames — leading to the understanding that space-time is warped.

Tim Campbell has been interested in astronomy for as long as he can remember, but became completely hooked after observing Saturn's rings through a telescope when he was 19 years old.

He is also a member of the Ford Astronomy Club since 2011, enjoys public outreach, and is a planetarium presenter/operator at Henry Ford College.

No longer satisfied to merely enjoy viewing objects of the night sky, his interests & passions have steered toward understanding the physics of the cosmos.

Short Talk:
Roger Penrose's Conformal Cyclic Cosmology, presented by Erica Hoffman

We'll listen to Roger Penrose, mathematician, physicist, friend and colleague of Stephen Hawking, briefly explain his hypothesis of a cyclical universe, a model for the Big Bang that avoids inflation and singularities.

Erica Hoffman is an experienced automobile tinkerer, an expert in making strong coffee and chasing small humans, and a long-time member of the Warren Astronomical Society. She last presented "A Short History of Radio Astronomy" in December 2016.

Thursday, February 21, 2019
Macomb Presentation

Movie Night:
Celebrating Apollo 9 and the Lunar Module

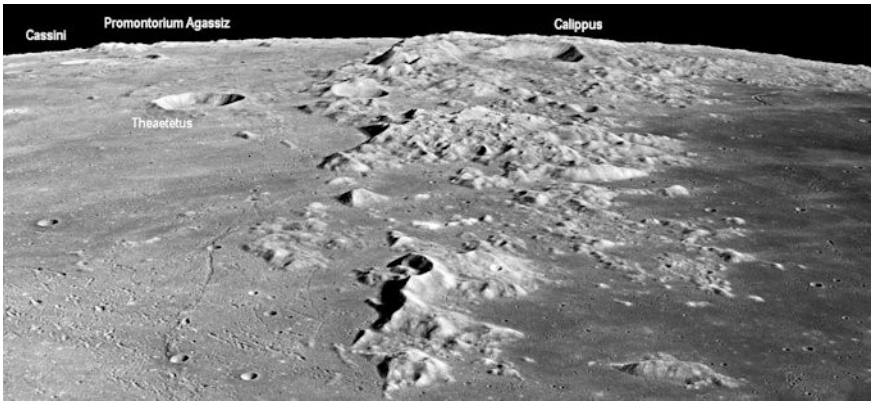
Image by NASA

We will celebrate the test flight of the Apollo Lunar Module, Apollo 9, whose fiftieth anniversary falls on March 3. Through film, we'll explore how the Apollo program's unique multi-rendezvous approach came to be, the engineering of the lunar lander, and its successful test flight in earth orbit on Apollo 9 - and briefly touch upon its second flight, Apollo 10, the exciting and dangerous dry run for landing on the moon.

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 Jonathan Kade at: firstvp@warrenastro.org.

Over the Moon
With Rik Hill



(56km) and then Autolycus (41km). In the middle bottom part of the Rima Fresnel system can just be seen.

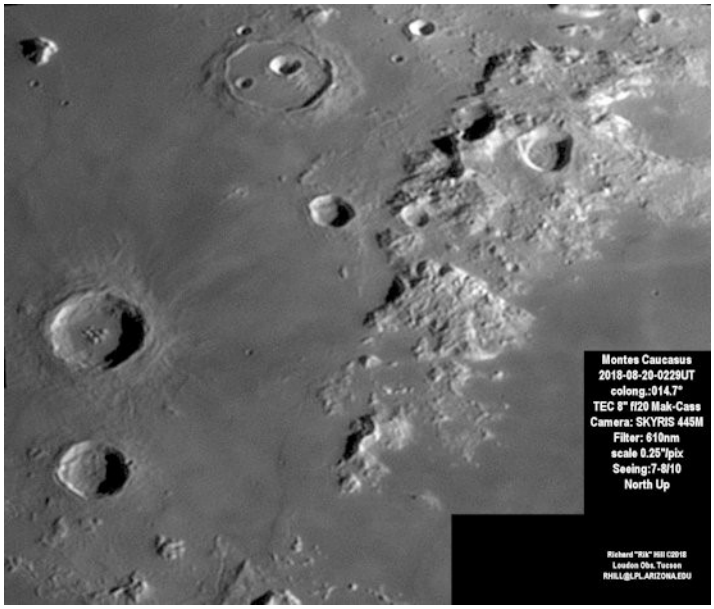
This image was stacked with AVIStack2 and finish processed with GIMP and IrfanView.

Rik Hill

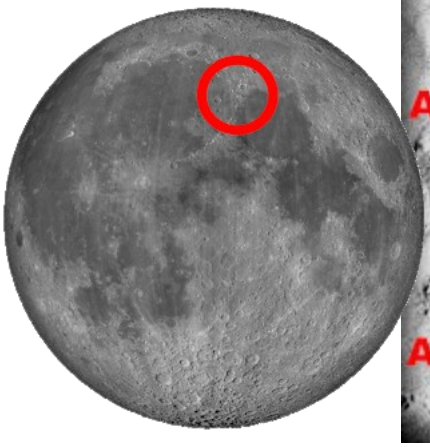
Left: Apollo's-eye view from the Apollo 15 mission.

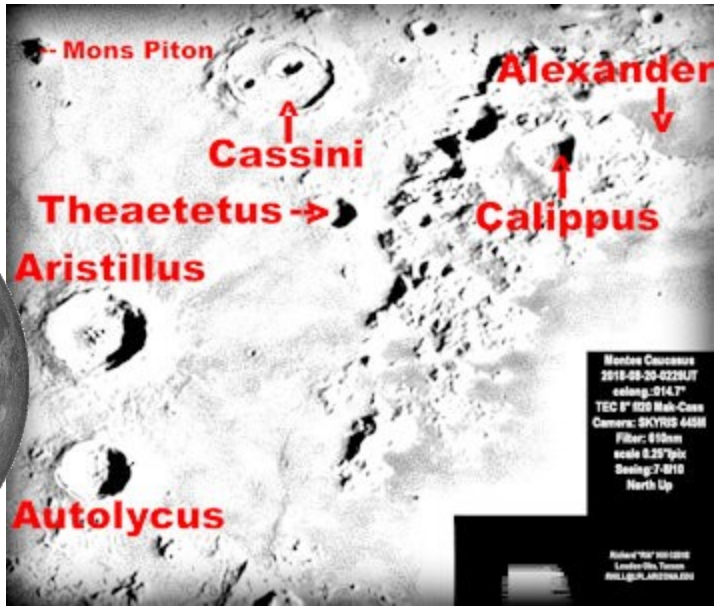
Montes Caucasus Triangle

My favorite mountains on the moon are the Montes Caucasus. Seen here as a triangular shaped patch of mountains dominating the right half of this image. The curious large crater at the top middle of the range is Calippus (34km) showing much post impact slumping and infilling. In the upper right corner is most of the large lacus-like crater Alexander (85km) partly cut off by the right edge of the image. Below Alexander on the mare you can just see the dark thread that is Rima Calippus. In the middle of the mountain range is a large flooded east-west pass that may delineate a fault. This pass opens to the west towards the very non-round, some call polygonal, crater Theaetetus (26km). Further south the peaks are more flooded with only their tips showing until at the southern point of the range is the beautiful unnamed "S" shaped ridge.



Just to the west of the mountains is the crater Cassini (60km dia.) seen at the top middle of this image sitting in the unofficial Palus Nebularum portion of Mare Imbrium. Inside Cassini are two distinctive craters, the larger being Cassini A (17km) and Cassini B (9km), There is also an interesting pair of rimae on the floor of Cassini roughly concentric with Cassini A making this crater very identifiable. Going farther to the west we see the isolated grand peak Mons Piton rising 2250 m above the Imbrium plain. South of this is the large crater Aristillus





Object of the Month

By Chuck Dezelah

NGC 2438

NGC 2438 is a planetary nebula in the constellation Puppis. It is notable not only for its relative brightness and fascinating shape, but also for its location. The nebula is super-imposed upon the well-known and attractive M46 open cluster, where to the casual viewer it appears to be the remnant of an extinguished member star. However, the placement of the nebula is merely a chance alignment; NGC 2438 is in the foreground at a distance of 3,300ly, while M46 is about 5,000ly away. The nebula has an integrated apparent magnitude of 10.0 and is Type 4+2 on the Vorontsov-Velyaminov classification system, indicating that it has a ring structure within an otherwise smooth and uniform disk. Possessing an angular diameter slightly greater than 1', it is fairly large compared to most planetary nebulae. It was discovered by William Herschel in 1786, fifteen years after M46 was first described by Charles Messier.

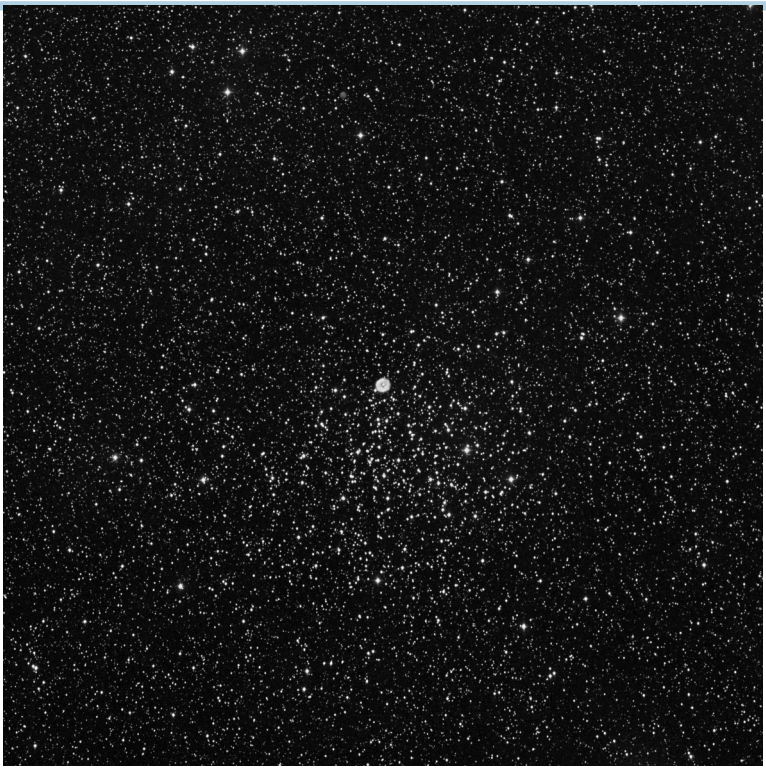
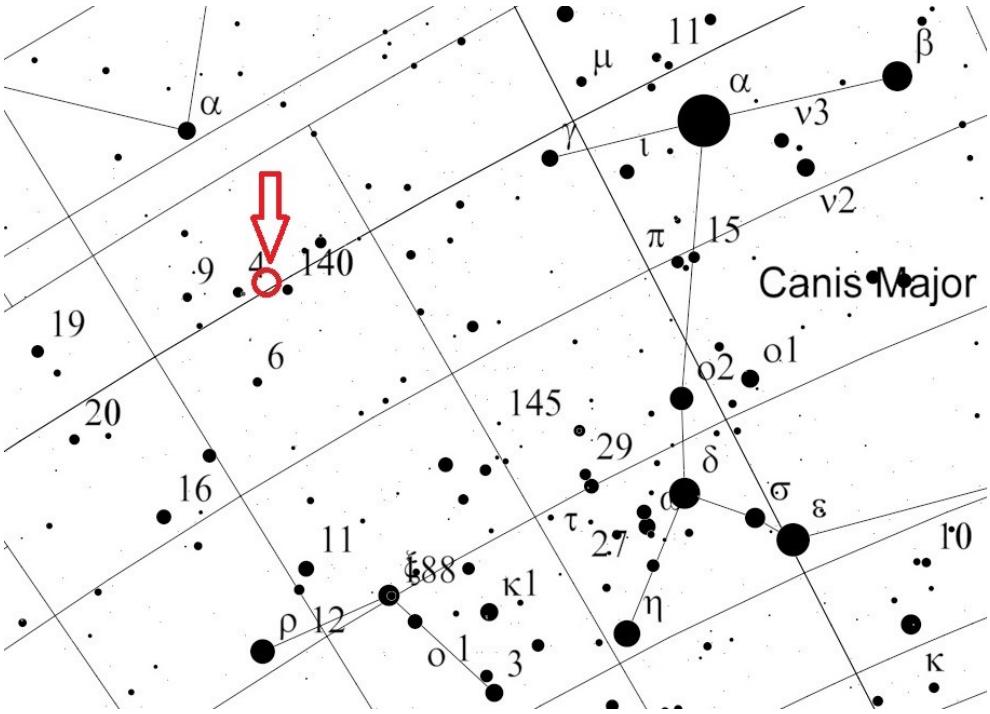


Image from Digitized Deep Sky

Although NGC 2438 is not difficult to locate, it can sometimes be a challenge to observe especially in light polluted conditions. It is recommended to first star-hop to M46, which is about 9° east of γ Canis Majoris (mag. 4.1) and about 5° south of a Monocerotis (mag. 3.9). Once M46 is in the field of view, the northeastern edge should be examined carefully; averted vision or the use of an OIII or UHC filter can be helpful if the nebula is not immediately visible. At low power, the nebula may resemble a pale greenish-hued bloated star. However, at 80x in a 6-inch or larger telescope, the nebula's "planetary" disk should be apparent. . Depending on the seeing conditions, magnification, and aperture used, the disk may reveal itself as subtly annular with a discernable central void and slight fading along the northwest fringe. It should be noted that another conspicuous open cluster, M47, lies only 1.3° to the west of M46; it is important to correctly identify the clusters before searching for NGC 2438.

Chart created from Cartes du Ciel



CRANBROOK INSTITUTE OF SCIENCE

Michigan's Museum of Natural History

FEBRUARY 2019

Notable Sky Happenings

Feb. 1 - 7

The Moon is between Saturn and Venus on the 1st with Jupiter at the upper right of Venus (SE predawn). The next morning the Moon is to the lower left of Saturn close to the horizon.

Feb. 8 - 14

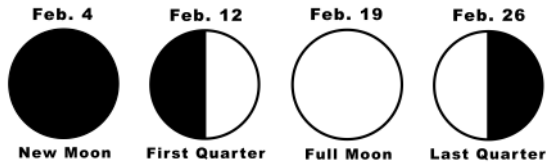
The bright star to the left of the Moon the evening of the 13th is Aldebaran, the “eye” of Taurus the bull.

Feb. 15 - 21

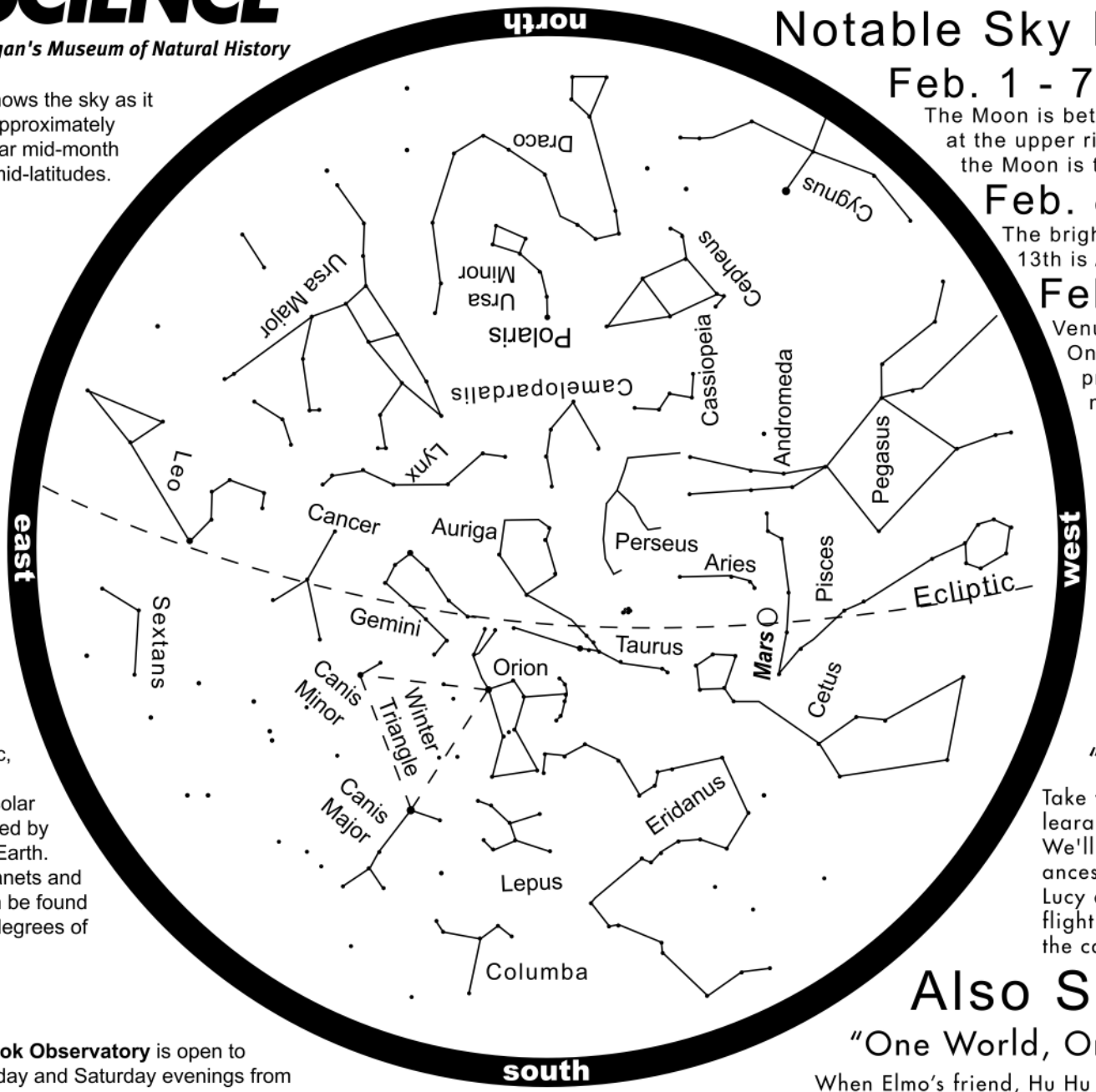
Venus is above Saturn on the 17th (SE predawn). On the 19th the Moon is to the right of Regulus (W predawn), This is also the second of three super-moons for 2019. It’s closest to Earth and may look slightly larger and brighter than normal.

Feb. 22 - 28

Moon is above Spica on the 23rd (SW predawn) and above Jupiter on the 27th (SSE predawn).



This chart shows the sky as it appears at approximately 8pm 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

“Dinosaurs at Dusk”

Take to the skies and discover the origins of flight! It's leara ning adventure of a father and his daughter, Lucy. We'll travel back in time to meet the pterosaurs and the ancestors of modern-day birds: the feathered dinosaurs. Lucy and her father look for clues about the origins of flight. When time runs out, they experience first-hand the cataclysmic "last day" of the dinosaurs.

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 and Saturday evenings from 7:30 - 10:00pm EST, and the first Sunday of the month from 1:00 - 4:00pm for solar viewing. Come have a look through our 6” telescope! For observatory information visit http://science.cranbrook.edu/explore/observatory

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

WAS History S.I.G.

February 1979

The cover features a photo of a model of Jupiter by Roger Civic. Inside is "The Apprentice Astronomers Notebook" by Lou Faix where he discusses a rubber sky. Then Brad Vincent experiences the Michigan Nebula in "How to Miss an Occultation Without Really Trying". Jeff Stanek & Carl Noble discuss astronomical equipment in "Consumers Corner". Additional articles in this issue: "Some Comments Regarding the Most Critical Period in Observing an Astronomical Event" by David L. Harrington and "Weather Prospects for the February 26, 1979, Total Solar Eclipse" by Timothy D. Skonieczny, Wyandotte Planetarium.

February 1989

Elizabeth Stabler created the design that graces the front of this issue.

Daniel Cwiertniewicz (1st Vice-President) tries to jump start the letter from the club president with "The President's Observatory". The prolific member contributor, Larry F. Kalinowski, gives us "Getting Started in Astrophotography (Part VII - Calculating Exposure Times)". The remainder of the issue is taken up with assorted charts and lists:

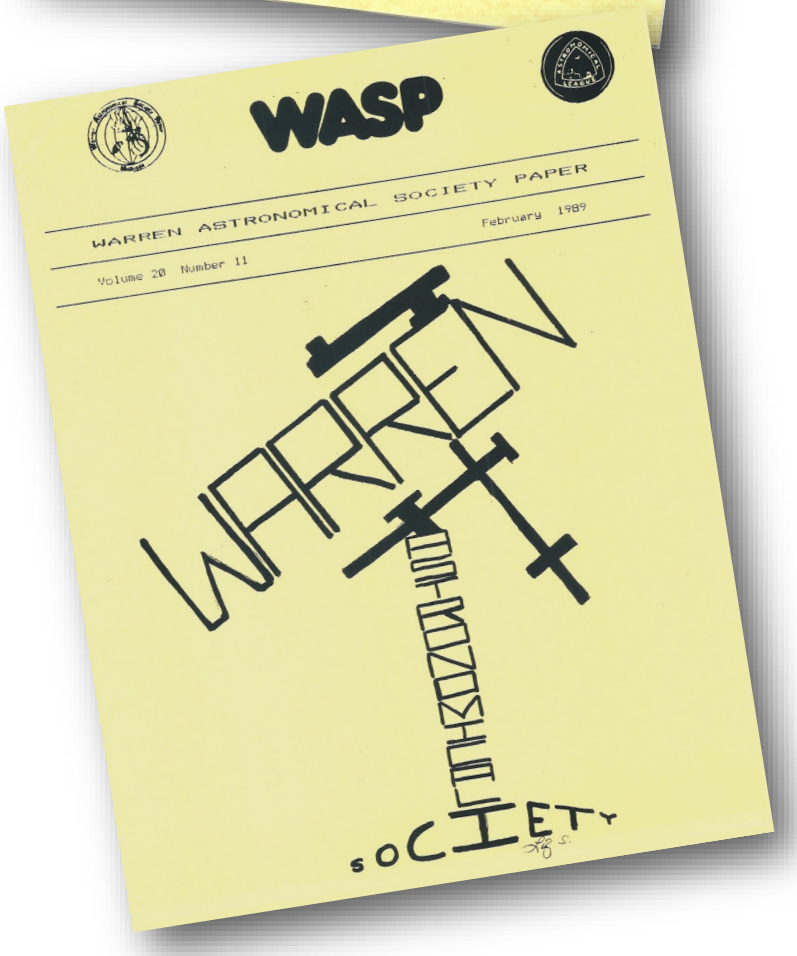
The Moons of Jupiter January 1989 by Marty Kunz
The Moons of Jupiter February 1989 by Marty Kunz
"Missing Bayer and Flamsteed Stars" by Ken Kelly Part IV
"Minor Planets for Jan. – Feb." (calculated by Ken Kelly)

- Ephemeris for (6) Hebe
- Ephemeris for (7) Iris
- Ephemeris for (3) Juno
- Ephemeris for (4) Vesta

From the Scanning Room

This month, I'd like to highlight the column contribution to the WASP by Lou Faix: "The Apprentice Astronomers Notebook" (AAN). The germ of an idea first appeared in August 1975, when Lou wrote "One Lousy Night" or Another Page from The Apprentice Astronomers Notebook. The alternate title became the column header, commencing in August 1977, where Lou announced his intentions. While not appearing in every issue, the Apprentice Astronomers Notebook showed up frequently enough to qualify as a column in my book. The last entry was a reprise of his initial 1975 article in the May 1981 issue.

Dale Thieme,
Chief scanner



Stargate Observatory

Monthly Free Astronomy Open House and Star Party

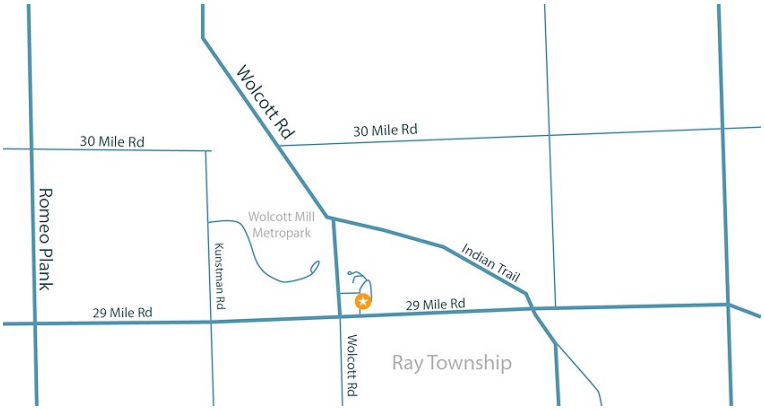
4th Saturday of the month!

Wolcott Mill Metropark - Camp Rotary entrance

- Sky tours.
- Look through several different telescopes.
- 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:

1. Closing time depends on weather, etc.
2. May be closed one hour after opening time if no members arrive within the first hour.
3. Contact the 2nd VP for other arrangements, such as late arrival time. Call (586) 634-6240 .
4. An alternate person may be appointed to open.
5. Members may arrive before or stay after the scheduled open house time.
6. Dates are subject to change or cancellation depending on weather or staff availability.
7. Postings to the Yahoo Group and/or email no later than 2 hours before starting time in case of date change or cancellation.
8. 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.
9. 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 Saturday, January 26, 2019

Open House was cancelled due to following weather related conditions, snow & ice on the road into the park and observatory grounds, rapidly falling temperatures, and poor weather conditions for observing.

Total Lunar Eclipse Sunday, January 20th - Monday 21st 2019

Snow on the road into the park and observatory grounds.
Low temperatures & windchill, but very clear skies.
Due to my work schedule, I could only be at the park for a short time.
During my stay, there was only 1 other club member at the park with a telescope.

February Open-House

Open-house is scheduled for Saturday , February 23, 2019. Sunset at 6:13pm, Astronomical Twilight ending: 7:47pm and Moonrise is 11:14pm.

Please arrive just after sunset (or sooner if you plan to set up a scope or do solar observing). A friendly reminder to be courteous if you arrive after dark, dim your headlights upon entry to the park, and no white light flashlights please. If you are setting up a large scope or have a lot of equipment to set up then you are permitted to park on the observing field, with your vehicle lights pointed away from the observatory and other telescopes.
Remember to dress warm and in layers!

David Baranski
2nd VP Observatory Chairperson 2019

Outreach Report

From Jan. 10-18, I was in Tucson helping with the Vatican Observatory Foundation's Faith and Astronomy Workshop. The lecturers were *fascinating*, the off-site trips were amazing, and I gave a live demo of NASA's Eyes on the Solar System. I also showed several attendees a virtual reality fly-over of Saturn's rings – something I'd like WAS members to see; More on that in a separate post.

We need volunteers for future Cranbrook events!

>> Feb. 8, 6-8 PM – Tiger Scouts Sky's the Limit
>> March 15, 6-11 PM – Boy Scout Astronomy

GLAAC

I attended an online meeting of Great Lakes Association of Astronomy Clubs (GLAAC) on Sun. Jan. 27; we used the Zoom videoconference software – it was *super easy* to use.

During the meeting, officer elections were held:
President: Joe Velez
Treasurer: Sandra Macika
Communications: Dr. Brian Ottum

The offices of Secretary, and Vice President are currently *EMPTY!*

GLAAC *really needs* help from member organizations! If you are interested in either of these GLAAC Officer positions, *please* contact outreach@warrenastro.org.

Bob Trembley will be assisting Dr. Ottum and GLAAC with social media.

Jan. 20 – Total Lunar Eclipse

Volunteers from the W.A.S. braved arctic-like conditions to operate Stargate Observatory and help out at Cranbrook during the total Lunar Eclipse on Jan. 20th. Stargate had several people and a troop of girl scouts *show* up. Cranbrook reportedly had 350 registered attendees, and possibly 175-200 walk-ins! Bob Berta reports that the WAS had about 8 scopes and at least 12 volunteers; apparently the WAS also made Fox late night news!

A meteoroid *impacted* on the Moon during the eclipse; captured on video, it spread like wildfire through the web and social media!

Read More: [Link] and [Link]

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Jan. 25 – Astronomy Overnight at Cranbrook

Ken Bertin reports that at there were 6 groups for 15 minutes each; boys or girls each group, quite young (5-11 years old) -12 to 15 in each group. The kids were instructed to avoid jostling the scopes; that was a problem *with* only one group of boys. Good questions from many of the kids, they were all interested. Followed up telescope use with the iPad to show them a better view of the objects. Jupiter, Saturn, M13, M42. Showed them Io, Europa, and Ganymede on the iPad as well and explained them. Went very well. Also, showed a quick photo of the Lunar Eclipse.

Jan. 26 – Stargate Open House cancelled

Due to *bone-chilling* cold and icy conditions surrounding the observatory. The area was reported to be ice-covered and hazardous.

Jan. 31 – Austin Catholic High School

Due to weather issues Bob Berta and Angelo DiDonato rescheduled their presentations for the STEAM program.

Future Outreach Events and Requests

We have had *numerous* requests from libraries for lecturers, displays, and entire astronomy programs! The theme for Summer Reading this year is '**A Universe of Stories**.' I'm expecting a *lot* of requests for summer Apollo and space lectures as spring approaches.

March 12, 6-9 PM – Astronomy Night at Endeavour School

Connie Martin-Trembley is hosting another one of these *massive* events at her school; we can *always* use more to help with more presenters, at the "Walk-the-Solar System," setting up telescopes outside, etc.

Several WAS members have already expressed interest in returning to this event this year:

Jeff Macleod: Apollo lecture
Angelo DiDonato: Lecture
Bob Berta: Lecture
Bob Trembley: Kerbal Space Program Lab, and Connie's gopher

May 6-12 – Auburn Hills Public Library

The AHPL would like have a program coinciding with the Astronomical League's Astronomy Week.

May – Auburn Hills Public Library Showcase

The AHPL would like the WAS to fill one of their showcases with information related to astronomy and the WAS in May or September. The cabinet is 13.5" deep, 44.5" wide, and 38" tall with 2 shelves. Jeff MacLeod has offered his Saturn V model, and I can think of any number of other things we could display.

Shelby Township Library

They have an adult programs every Wednesday evening at 7PM, and would like some space related lectures.

Jul. 10 – Jonathan Kade
Jul. 17 – **OPEN**
Jul. 31 – Ken Bertin
Aug. 31 – **OPEN**
Aug. 14 – **OPEN**

Detroit Public Library Main Branch

Wants a presentation about the moon landing near July 20th.

Also would like additional presentations:
Thursday mornings camp: 10:30 AM
Saturdays open 10AM–6PM

MacDonald Public Library, New Baltimore

Looking an individual or small group to lead an astronomy program geared toward teens and adults from June to August.

Misc Astronomy Events and Dates:

April – Global Astronomy Month (Astronomers Without Borders)
April 12 – Statewide Astronomy Night (SWAN) [Link]
April 12 – Yuri's Night [Link]
May 6-12 – Astronomy Week (Astronomical League)
May 11 – Astronomy Day (Astronomical League) [Link]
July 20 – Apollo 11 50th Anniversary [Link]

In other news:

May 3-5 – Penguicon Convention

I will be presenting (probably about OSIRIS-REx) and setting up telescopes, and demoing my Virtual Reality headset at Penguicon – an eclectic convention in Southfield – a mix of Science Fiction, Open Source, Maker, DIY and whatnot.

May 10-12 – MARCON 54 SF Convention

Connie and I will be the Science Guests of Honor for Marcon 54, a Science Fiction Convention in Columbus, Ohio; I expect to be fantastically busy this weekend. I've also helped arrange to have Br. Guy Consolmagno Skype-in for a lecture.

The convention is *very* receptive to *any* additional science-related programming I can help bring to the convention... like the kinds of things WAS members have presented...

- Bob Trembley
Blogger and Technology Support for the Vatican Observatory Foundation
2109 Outreach Officer for the Warren Astronomical Society
Volunteer NASA/JPL Solar System Ambassador
Volunteer OSIRIS-REx Mission Ambassador

Meeting Minutes

BOARD MEETING – January 7th

Members present; Jeff MacLeod, Ruth Huellmantel, Diane Hall, Jonathan Kade, Joe Tocco, Bob Trembly, Mark Jakubisin, David Baranski, Parker Huellmantel, Ken Bertin, Dale Partin, and Jerry Voorheis.

The meeting was called to order by Jeff MacLeod at: 6:30 PM

Officer's reports

David Baranski gave the 2nd Vice President's report. The observatory was discussed.
Jonathan Kade gave the 1st Vice President's report The speaker schedule is full except for May at Cranbrook and February at Macomb.
Mark Jakubisin gave the Treasurer's Report. Change of officers was discussed.
Secretary – Jerry Voorheis reported that the minutes are in the WASP.
Outreach – Bob Trembly reviewed upcoming events. WAS has an opportunity to put a display in Auburn Hills Library. There will be an astronomy night at Bob's wife's school for which speakers are wanted.
Publications – Dale Partin reported that the WASP is up with much help from Dale Thieme.
The Discussion Group will meet at the house of Gary Ross on January 22nd at 7:30 PM
Old Business
Change over of bank signature cards was planned for January 12th.
The planned WAS survey was discussed.
There was a discussion of getting a solar telescope for the observatory. It was tabled.
There were 11 WAS calendars to be sold.
New Business
The WAS library area has been transferred to a different Cranbrook department. Can the library continue at Cranbrook?
The death of a WAS member was reported.
The Lunar Eclipse event was planned for at Cranbrook and at Stargate.
The Ford .Astronomy Club is running their Expo March 23rd at Henry Ford Community College.
The meeting adjourned at: 7:29 PM

CRANBROOK MEETING – January 7th

Meeting called to order at 7:32 PM by Jeff MacLeod, President.
Roll call.
55 persons were present.
Ken Bertin presented In the News and In the Sky. Today was the 409th anniversary of Galileo's discovery of 3 moons of Jupiter on January 7th , 1610.
Jeff MacLeod gave the President's Report - He announced that the W.A.S . was not shut down. (Unlike the US federal government which was in partial shutdown)
Jonathan Kade gave the 1st Vice President's report. He announced the upcoming speakers and openings for speakers.
The 2nd Vice President's report: There was a good Open House with Scouts. The regular Open House was attended by one family. There will be a special Open House January 20th -21st for the Lunar Eclipse..
Mark Jakubisin gave the Treasurer's report..
The Secretary's report is in the WASP.
Bob Trembly gave the Outreach report.
Dr. Dale Partin reported that the WASP is published.
The Discussion Group will be hosted by Gary Ross on January 22nd.
Jonathan Kade spoke about deaths in the Paul Strong family.
Marty Kuntz reported that there was solar activity the past 2 weeks.
Diane Hall announced that GLAAC elections are coming.
Jonathan Kade spoke about the Astro League, merchandise and WAS calendars. It is time for members to pay their dues.
Observing Reports: Doug Bock reported seeing Comet 46B and doing galaxy work. Gary Ross reported that the transit of an exoplanet was observed.
The Short Presentation was given by Gary Ross - "Observing Neptune from Royal Oak"
Snack/Break Time.
The Long Presentation was given by Dr. Kevin McLaughlin - "How Satellites Work: The Compton Gamma Ray Observatory"
Meeting was adjourned at 10:05 PM.

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Treasurer's Report

Treasurer's Report for 1/31/2019

MEMBERSHIP

We have 59 current members, of which 12 are family memberships.

INCOME AND EXPENDITURES (SUMMARY)

We took in $1143.14 and spent/transferred $38.01. We have $20,930.04 in the bank and $679.13 in cash, totaling $22,104.17 as of 1/31/2019.

INCOME	
891.00	Memberships/renewals
15.00	Astronomical League
66.80	Snacks
165.00	Calendars
22.00	General Fund
00.00	Paul Strong Scholarship
EXPENSES	
25.00	Snacks
13.01	Supplies

Mark Jakubisin
Treasurer, 2019

Space Pirate Radio

Tune in to Captains Marty Kunz and Diane Hall for live radio Wednesday nights at 9:00 pm ET on Astronomy.fm

GLAAC REPORT 1/31/2019

Beginning Balance: $4,531.34
INCOME
No activity
EXPENSES
No activity
Ending Balance: $4,531.34

amazonsmile
You Shop. Amazon Gives.

If you're shopping on Amazon, make sure to use Amazon Smile. It costs you nothing, and if you select us as your charity, Amazon will donate 0.5% of every purchase you make to the Warren Astronomical Society.

(Continued from page 17)

MACOMB MEETING – January 17th

Meeting called to order at 7:31 PM by Jeff MacLeod, President.
Roll call. 23 persons were present.
Jeff MacLeod gave the President's Report. Applause for Bob Berta's accomplishments and contributions to the club.
Jeff MacLeod gave the 1st Vice President's report.
Jeff MacLeod gave 2nd Vice President's report. He announced the January 26th Open House.
Jeff MacLeod gave the Treasurer's report There are 145 WAS members.
The Secretary's report is in the WASP.
Jeff MacLeod and Diane Hall gave the Outreach report.
The publications report was given.
Brenda Walker gave a detailed Observing Report followed by applause.
Ken Bertin presented In the News and In the Sky.
Snack/Break Time.
The Long Presentation was given by Ken Bertin - "2018 – In the News" He introduced short presentations by the following WAS members: Dr. Dale Partin – "Mars", Bob Berta – "The Sun", Angelo DiDonato - "Outer Space", Jeff MacLeod – "Jupiter"', Diane Hall – "Spacecraft", Jerry Dunifer – "LIGO", Ken Bertin – "Top Stories"
Meeting was adjourned at 9:39 PM.

Jerry Voorheis
Secretary

The Warren Astronomical Society is a Proud Member of the Great Lakes Association of Astronomy Clubs (GLAAC)

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.

GLAAC Club and Society Meeting Times

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
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/newsletters/oacnews.html
Ford Amateur Astronomy Club: http://www.fordastronomyclub.com/starstuff/index.html
Sunset Astronomical Society: http://www.sunsetastronomicalsociety.com/
University Lowbrow Astronomers: http://www.umich.edu/~lowbrows/reflections/

WAS Member Websites

Jon Blum: MauiHawaii.org
Bob Trembley: Balrog's Lair
Bill Beers: Sirius Astro Products
Doug Bock https://boonhill.org

Jon Blum: Astronomy at JonRosie
Bob Trembley: Vatican Observatory Foundation Blog
Jeff MacLeod: A Life Of Entropy