



Vol. 50, no. 3

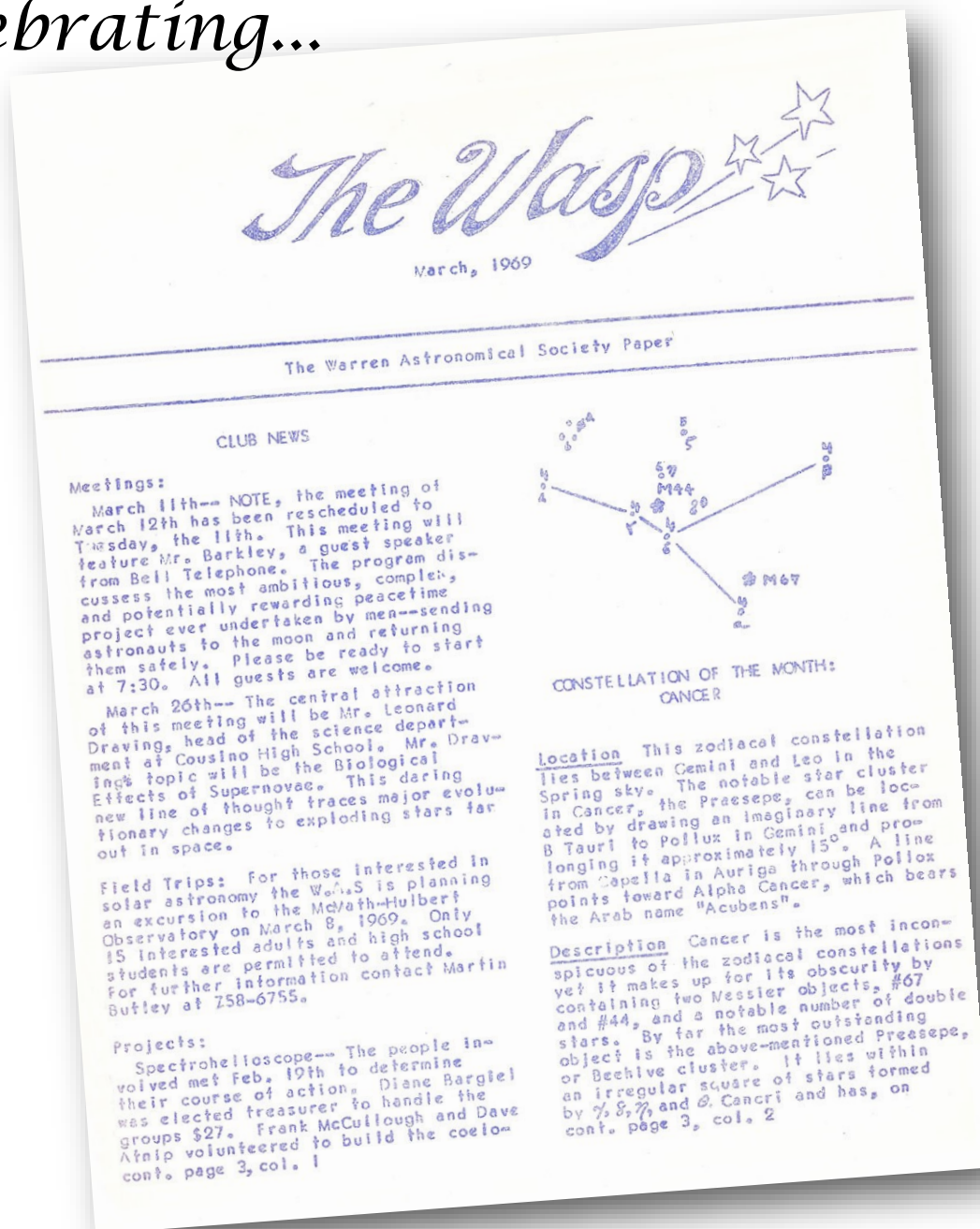
The W.A.S.P.



March, 2019

The Warren Astronomical Society Paper

Celebrating...



Fifty Years of Publication

The WASP

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



Dale Thieme, Editor

2019 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.
- Free use of W.A.S. 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.

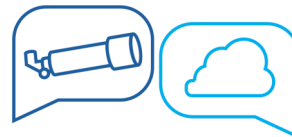
Stargate Observatory is owned and operated by the Society. Located on the grounds of Camp Rotary on 29 Mile Road, 1.8 miles east of Romeo Plank Road, Stargate features an 8-inch refractor telescope under a steel dome. The observatory is open according to the open house schedule published by the 2nd VP.

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

Mar 4	Cranbrook	Gary Ross
Mar 21	Macomb	Jerry Dunifer
Apr 1	Cranbrook	Jeff MacLeod
Apr 18	Macomb	Bob Trembley

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!

The Discussion Group will meet Tuesday, March 26 at 7pm in the Wayne State Planetarium.

The planetarium is located in room 0209, on the lower level of the Old Main building. Enter Old Main through the Cass Avenue entrance, go down the stairs, and walk straight ahead. The doors to the Planetarium will be on your right.

WSU Planetarium
Rm 0209 Old Main Bldg.
4841 Cass Ave.
Wayne State University
Detroit, Michigan 48201

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Letters

From an old editor of the WASP

(Doug and Robin Bock)

We used to be the editing team somewhere in the 78 to 82 range, but I'm not sure when exactly. It was for about two years, maybe before I was president and Robin was treasurer.

I remember typing up articles on a master, then taking them to a local print shop to make the copies. Then we would bring the multiple stacks to the meeting and ask people to line up and collate them and staple them, before we could pass them out. So, we would form an assembly line, each person going down the table pulling a page from each stack in the correct order, then hitting the stapler at the end of the table. This went on for about 10 minutes before the meetings started. Then people would come up and take a copy off the table.

Articles were usually submitted via mail, or handed over at meetings. The usual duplicated pages from month to month were just updated with the date. This would be the first page, and the second page containing the officers, contact lists, etc. I'd usually find a picture or graph to go on the front page for each month as well.

It was a fun time, but not as easy as using today's technology. *(Amen!—ed.)*

Doug Bock



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



President's Field of View

Wow how a month can fly! February was sort of uneventful, the weather could never seem to make up its mind about what season it wanted to be. Our observatory open-house was clouded out, but we had a great Cranbrook meeting and a nice movie night at Macomb. The Kaplans hosted the discussion group just the other day. Topics from the big bang to the death of the universe, entanglement, and the atmospheres of other planets were all discussed at length. It was a great time made even better by the great food the Kaplans had for us.

As for the future, for me spring break is right around the corner and I am looking forward to it because it will coincide with some fun astronomy events. Astronomy night at Endeavor Middle school is right around the corner on the 12th. This is an event started by Bob Trembley and his wife, they fill about half the school with astronomy activities like presentation from WAS members, a walk through the solar system, and Kerbal demos. It's a lot of fun and if you are interested in volunteering contact Bob at out-reach@warrenastro.org. Then we have the Ford Club swap meet on Saturday the 23rd. this is a great event, I go every year, and if I don't buy something (which has never happened) there is always great lectures to go to, pizza and pop and all my astronomy friends. So I highly recommend you attend. It will be held at the Henry Ford College Campus in Dearborn from 9am to 3pm. The WAS will also have a table just to advertise the club, see you there!

Jeff MacLeod,
President



Image: Joe Tocco



Telescope Support Systems



FAAC Astronomy Conference & Swap Meet

Saturday, March 23, 2019 9:00 am - 3:00 pm

General Astronomy

9:30 am: **NASA/JPL– Are We There Yet?** – John McGill
10:45 am: **Mars Rovers** – Shannon Murphy
12N: **Beginning Astrophotography** – Dr. Axel Mellinger
1:30 pm: **Search for Extra Terrestrials** – Dr. Dale Partin

Technical Talks

9:30 am: **Foraging for Refractors** – Clay Kessler
10:45 am: **HDR and Why?** - Gordon Hansen
12N: **Video Time Inserter** - Jeff Thrush
1:30 pm: **Astronomy PI** – Campbell & Finn

Planetarium Shows

10:00am, 11:30am & 1:00pm FAAC Members

Swap Meet

All Day...Earn Cash by Selling Those Items Sitting Around Collecting Dust!
Telescopes, Eyepieces, Cameras, Binoculars, Mounts, Software, Books, and Accessories, etc.

Participating Vendors

Telescope Support Systems, Wood Wonders, Sirius Astro Products, LX200 Electronics Exchange

Admission: \$5.00 (children 15 and younger – Free / must be accompanied by an adult)

Sales Table: \$15 in advance, or \$20 at the door as available, (one admission ticket included).

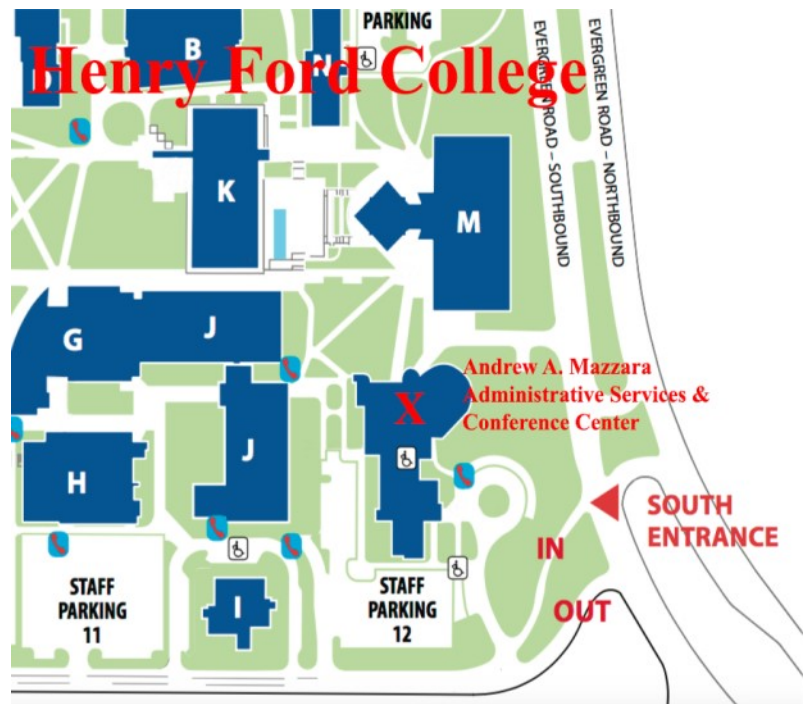
Advanced Table Registration ends Mar 1, 2019

Doors Open: 8:00am for setup.

Make Checks Payable: to FAAC for advance table registration.

Send payment to: Ford Amateur Astronomy Club, P.O. Box 7527, Dearborn, MI 48121-7527

Location: Henry Ford College, 5101 Evergreen Rd, Dearborn, MI 48128 (Andrew A. Mazzara Admin. & Conference Center... See X on map, Staff Parking Lots 11 & 12 will be open)



For More Information:

Contact Jim via email: w8tu@comcast.net or call (734) 751-6280 or Frank Ancona via email: FrankAncona34@yahoo.com or call (248) 345-0176



Saturn

Approx. 800 million miles from Earth

Bill Beers 5/17/15

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

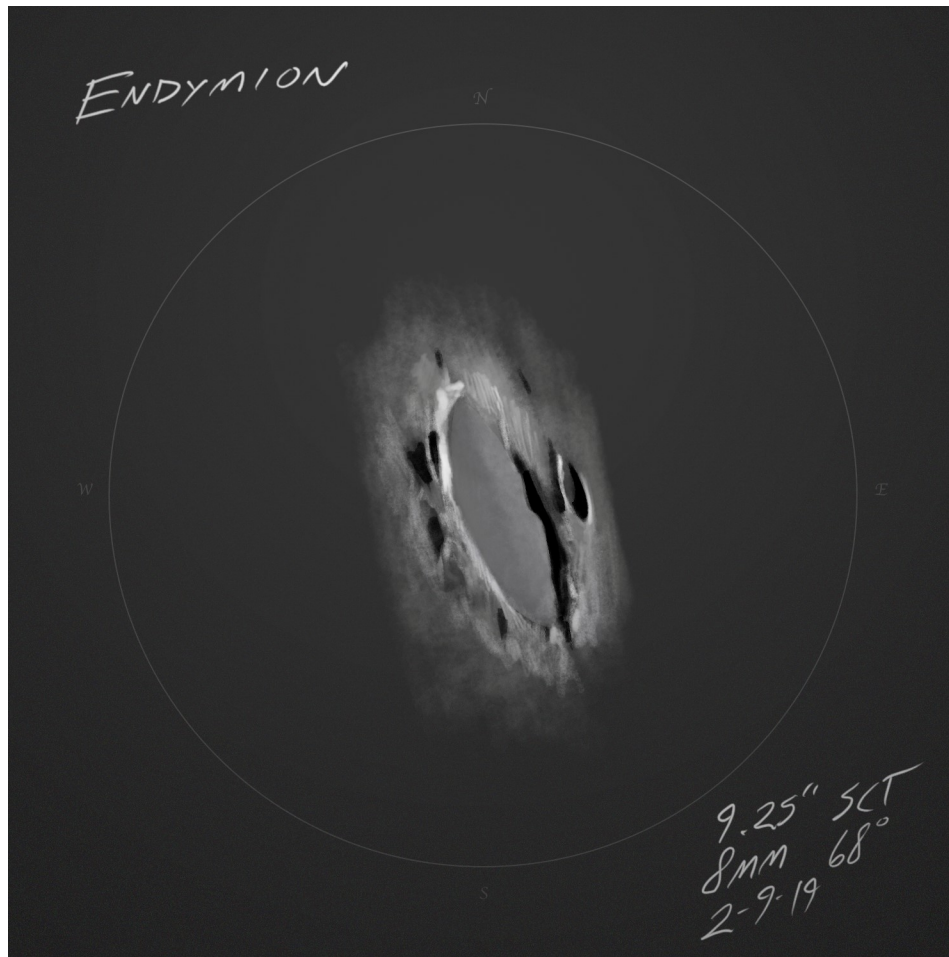
We'd like to see your photos and articles in the W.A.S.P. Your contribution is ESSENTIAL! – This is YOUR publication!

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.

Sketching at the Eyepiece

By Brian Thieme



February 7th would've placed this crater near the terminator, providing more definition of the steep walls, but Michigan had other plans. The sky opened up for moments at a time on the evening of the 9th, but not long enough to get anything but the largest features.

From Wikipedia

[https://en.wikipedia.org/wiki/Endymion_\(crater\)](https://en.wikipedia.org/wiki/Endymion_(crater))

Endymion is a lunar impact crater that lies near the northeast limb of the Moon. It is located to the east of Mare Frigoris, and north of the Lacus Temporis. To the southwest is the somewhat smaller crater Atlas. Because of its location, Endymion has an oval appearance from foreshortening. Beyond the crater along the lunar limb is the Mare Humboldtianum.

The floor of Endymion has been covered in low-albedo lava that gives it a dark appearance and makes it relatively easy to locate. The floor is relatively smooth, with only a few craterlets located within the rim. A string of three lie near the northwestern inner wall. There is a wrinkle ridge crossing the crater floor, and near the center is a low, eroded hill that may be the summit of a central peak that is now almost completely submerged by lava. Faint streaks of ray material from Thales to the north-northwest crosses the dark floor. The outer rampart is low, wide, and worn from impact erosion.

Brian Thieme

Presentations

Monday, March 7, 2019 Cranbrook Presentations



Main Talk

Portal to the Universe: So you want to build an observatory

by Doug Bock

Doug will tell us all about the history and evolution of his two personal observatories. Northern Cross Observatory, his home observatory, sits near the middle of the lower peninsula, while Boon Hill Observatory is in the dark skies of the greater Cadillac area. Each observatory has its important uses and an illustrious history of its own, and each offers useful lessons to amateur astronomers who sooner or later would like to build an observatory of their own, or even those curious about the technology behind the magic Doug creates with his wonderful astrophotography work.



Doug Bock's interest in astronomy started in 1965 when he had his first observation of Saturn and M13 through a 3" f/10 Newtonian reflector. Since then, he has built many telescopes and observatories through his life, and is an avid observer and astrophotographer.

He's been a member of the WAS since 1973. Doug has been President and 1st VP of the WAS and Editor of the WASP, and led the incorporation of the club in 1982. He's also an active member of the Ford Amateur Astronomy Club, the University Lowbrow Astronomers of Ann Arbor, the Seven Ponds Astronomy Club, and the General Motors Astronomy Club. He was one of the founders of the Great Lakes Association of Astronomy Clubs, served as Chairman and Vice Chairman of the Great Lakes Region of the Astronomical League, and was a member of the MSU club and editor of the Out of Focus newsletter.

In his professional life, Doug served as an IT and real-time systems specialist for 41 years until his recent retirement from Ford Motor Company. He is now a full-time professional amateur astronomer.

Short Talk

By Dawn's Earliest Light

by Gary Ross

In which it will be shown yet again that "fortune favours the prepared mind". Insomnia, a dreadful observing site, clouds, the Observer's Handbook, and the bagel joint synergistically come together. This address will have naught to



do with eleven dimensional string theory, quantum physics, dark energy, green black-eyed humanoids tastelessly rep-

(Continued on page 8)

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

(Continued from page 7)

resenting extra-terrestrials, or computer applications in amateur astronomy, for which the speaker cares nothing.

Zoology + atmospheric physics takes him back to living the Life of the Mind, ultimately a lost cause, where aquatic biology was always dearer than ornithology. A declining I.Q. discourages any research into the latter, these days.

Thursday, March 17, 2019 Macomb Presentation

This is the WASP

Fifty Years of the
Warren Astronomical Society Paper

By Jonathan Kade
and Dale Thieme

“The name of our club’s newspaper is the WASP

“The name is taken from the first letters of the words Warren Astronomical Society Paper

“This is the WASP”

So reads the cover of the August 1971 issue of our newsletter, whose 50th anniversary we celebrate this month. Join Dale Thieme and Jonathan Kade for a funny, revealing, at times emotional trip down our club’s memory lane. We’ll revisit some of the club’s silliest, most joyous, and most baleful moments as we look at 50 years of the highlights and lowlights of our club’s history, as captured in the pages of the WASP.

Scanmeister, WASP editor, and history group chair Dale Thieme first noticed the WAS as he handled mailed copies of the WASP in his postal career. He is responsible for preserving and making available more of the club’s history than anybody ever thought possible.

History group minion Jonathan Kade gathered and organized thirty years of WASPs from our club’s library when we moved it in 2011. He kicked off the great WASP scanning project that Dale brought to fruition. He still wishes he had contributed more to that process.

**DETROIT
PUBLIC
LIBRARY** | **CHILDREN’S LIBRARY &
BUSINESS, SCIENCE AND
TECHNOLOGY**
PRESENTS

METEORITES AND TEKTITES



Local astronomer Sandra J. Macika shows meteorites and tektites—Where they came from, types, how to identify, and more! Touch pieces from outer space, including parts of asteroids, the Moon, and Mars.

**Sunday, March 3, 2019
2:00-4:00 p.m.**

Friends Conference Room
This program is for everyone.

**Saturday, March 9, 2019
3:30-4:30 p.m.**

Children’s Library
This program is intended especially
for children.

Main Library
5201 Woodward Avenue
Detroit, MI 48202
313.481.1409

www.detroitpubliclibrary.org



Over the Moon

With Rik Hill

Right Smack Dab in the Middle

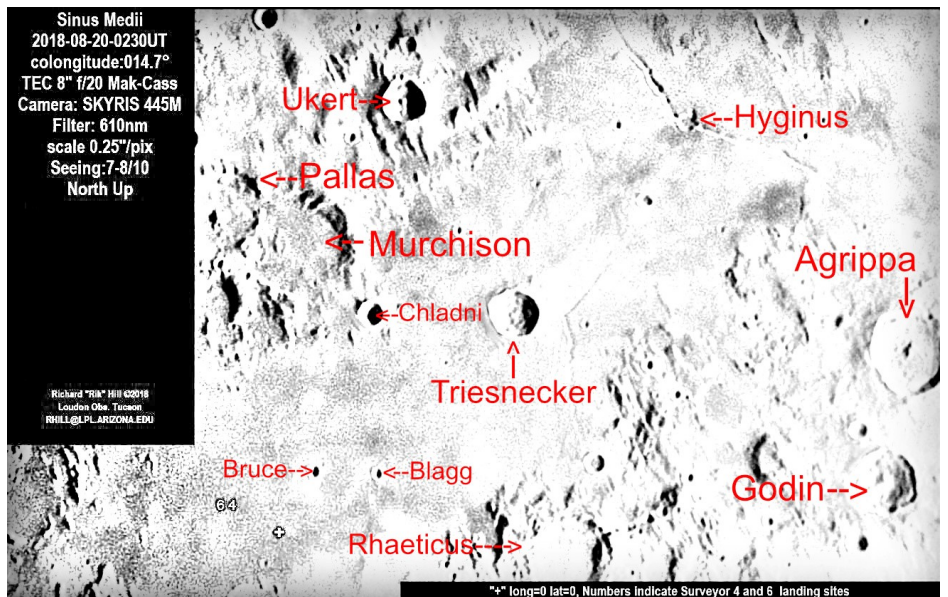
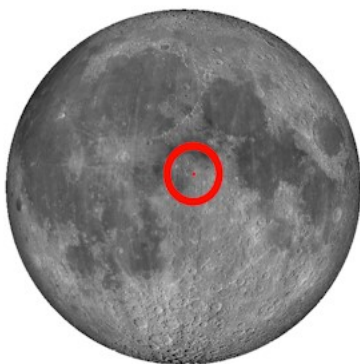


This is a familiar area to the lunar aficionado. The large flat plain in the middle of this image is Sinus Medii with the 27km diameter Triesnecker in the middle of that. To the right is the intricate system of Rimae Triesnecker. Above is another crack in the moon the Hyginus crater cleft as we called it in the old days, now Rima Hyginus with the crater Hyginus (10km) in the center. Below and right are two craters Agrippa (48km) above and Godin (36km) below. At bottom you can see most of the flat floored crater Rhaeticus (51km).

To the left of Triesnecker Chladni (14km) and beyond it the larger Murchison (60km) and further Pallas (51km). Above these you can see Ukert (24km) with its tiny central peak. In the southern part of Sinus Medii are two similar sized craters, Blagg (5km) to the right and Bruce (7km) on the left. These two lead to several interesting places on the lunar surface. Shown here with the "+" is the point where the latitude and longitude are both zero, right smack dab in the middle. This was also the target area for

three Surveyor spacecraft. The first, Surveyor 2 had an engine misfire that sent it off towards Copernicus where it crashed on Sept. 23, 1966. The second was Surveyor 4 that arrived in July, 1967 but ceased sending radio signals when it was landing and was not heard from again. The third time is a charm, at least in this case when Surveyor 6 landed just to the east of Surveyor 4 and sent back data successfully in Nov. 1967. The sites of Surveyor 4 and 6 are shown by the appropriate numbers on the image.

The two images that made up this montage were stacked from 2 1500 frame AVIs using AVIStack2 and finished process with GIMP and Irfanview.





Object of the Month

By Chuck Dezelah

NGC 3877



NGC 3877 is a spiral galaxy in the constellation Ursa Major. Although it does not have a common name amongst amateur astronomers, it is a surprisingly fascinating target despite being frequently overlooked. The galaxy has an integrated apparent magnitude of 11.0, angular dimensions of approximately $5.1' \times 1.1'$, and a Vaucouleurs morphological classification of SA(s)b, which designates an s-shaped spiral galaxy lacking a bar and with loosely wound spiral arms. NGC 3877 is one of about 50 galaxies that belong to the M109 Group, of which—*not* surprisingly—M109 is the most prominent. Members of this group are mostly within the boundaries of Ursa Major and are about 50 million light years distant. This galaxy was first reported by William Herschel in 1788.

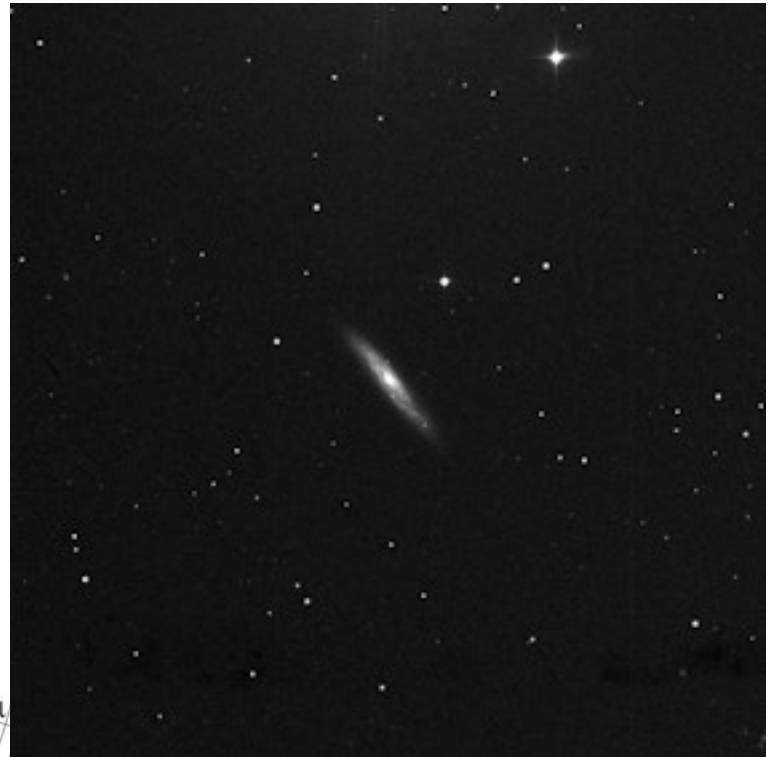
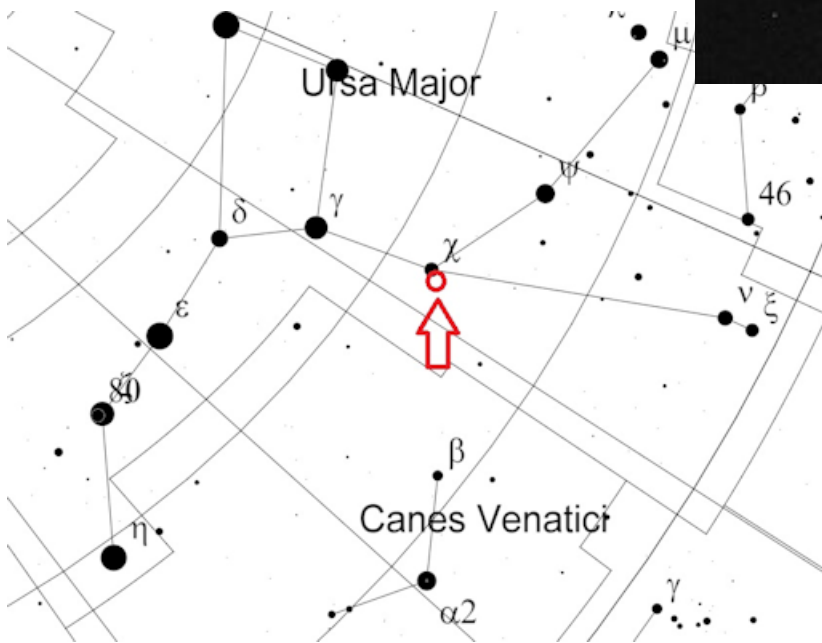


Image from Digitized Deep Sky

Chart created from
Cartes du Ciel



Locating NGC 3877 is nearly effortless, since it lies less than a half degree from Chi Ursae Majoris (χ UMa, mag. 3.7), a star that is easily identified due to its proximity to the bowl of the Big Dipper asterism. Detecting the galaxy, however, is somewhat more difficult, since it is fairly dim and can be washed out by light pollution, or even by the glare of nearby χ UMa. Under dark skies a 6-inch telescope is sufficient for observation, although 8-inch and larger telescopes are likely to perform better if viewing conditions are not optimal. At 50x, the galaxy should present itself as a faint elongated halo approximately $4' \times 1'$ in size with a brighter, well-concentrated core. Magnification in the range of 80–120x should provide a glimpse of greater detail, including some mottling suggestive of spiral structure within the halo. Apertures of 12-inches or greater with around 150x magnification should provide at least some ability to detect an outer envelope and a faint stellar nucleus at the galaxy's heart, as well as more defined detail throughout.



**Club Member
Name Tags**

Email publications@warrenastro.org for
your personalized name tag

The W.A.S.P. and Me

By Ken Wilson

I'm delighted to have this opportunity to recount some of my experiences as an early contributor and editor of the Warren Astronomical Society Paper (WASP). Although my era was relatively brief, it was formative for me.



I should probably begin with some personal backstory, especially since most of the current membership of the Warren Astronomical Society (WAS) joined after my career took me away from Michigan and the WAS. I got hooked on astronomy as a kid growing up in Detroit during the 1960s thanks to the nascent space program, a cub scout fieldtrip to Cranbrook's McMath Planetarium, and seeing Saturn and the Moon through telescopes of the Detroit Astronomical Society at the Michigan State Fair. Soon after, Santa supplied a 60mm Tasco refractor (from Polaris Telescope Shop in Dearborn) for Christmas to feed my addiction. Sadly, I found the finder-less, alt-azimuth scope lacking in many respects. Thanks to **Sky and Telescope** magazine and a telescope review in **Consumer Reports**, I fell for the \$195.95 Criterion RV6, 6" reflector and started saving every cent of my allowance to buy one. After almost two years of saving, the scope arrived in the spring of 1968 to our family's home, now in Warren. In spite of helpful guide books such as **The Sky Observer's Guide** and **New Handbook of the Heavens**, I realized I needed some extra help to get the most out of my new telescope.

That's when my search began for a local astronomy club. Bear in mind that this was long before personal computers, the web, and Google. After calling Cranbrook and being referred to the Detroit Astronomical Society, finally I got the phone number of Gerry and Margaret Alyea - contacts for the Warren Astronomical Society. They kindly gave me the meeting schedule and location (Lincoln High School). At the time, 1969, I was a high school freshman - ironically at Cousino Senior High School where the WAS once met and ground telescope mirrors! Since I was too young to drive, my mother had to serve as chauffeur. I was awestruck that other people in Warren were interested in astronomy. Not only that, some of them were my own age. For the next seven years or so, the WAS became my second family.

This is where the WASP entered my life. I joined the WAS just as Frank McCullough, Gene Francis, and Martin Butley were starting the WASP. Since Gene and Martin were soon to leave town for college, Frank was faced with the prospect of having to generate all of the WASP content by himself in order to keep the young publication going.

He realized that he was going to need help so he emphatically lobbied (begged) for contributions from the membership.

At the time, the club was my primary source of astronomical knowledge, especially about amateur astronomy. I benefitted greatly from the WAS but had given little back. I quickly realized that contributing to the WASP was one small way that I could return the favor, so I volunteered. Fortunately, my mother had a typewriter that I could use. Remember this was back in the dark ages before personal computers! And Frank was so desperate for WASP content, that anything I submitted was accepted. His desperation explains, at least in part, some of the early WASP content. For example, you'll find an article or two (not by me) on astrology and some very bad puns! This also meant that WASP content was not really 'edited' by the editor. No one checked grammar, spelling, or accuracy. There usually wasn't time for that and the printing 'technology' we had made revisions and corrections very difficult. Speaking of printing technology...

Let me tell you about how the WASP was published back in my day. Back then laser, ink jet, and even dot matrix printers were science fiction. Xerox machines were rare and expensive. The mimeograph existed but was very messy and not common in the schools. That left us with the infamous Ditto machine. Some of my older readers may remember the Ditto process from their school days in the 1960s and 1970s. If you want to read up on the gory details of this process, see "Spirit Duplicator" on Wikipedia. Although this system was commonly used in schools at time, Frank and I had to use various connections each month to borrow a machine to duplicate the WASP. Often it was Paul Strong, our sponsor at Macomb County Community College, who allowed us to use his department's machine. We provided paper and often the fragrant duplicating fluid needed, as well as the masters. The default ink color of the masters was a characteristic shade of blue, although other colors were available. The process was inherently low resolution and the quality quickly deteriorated as the number of copies increased. The machines were prone to jamming and wrinkling the masters and copies. And the final copies, when fresh off the press, had a distinctive, almost intoxicating aroma. Except for an occasional offset printed cover or rare Xeroxed articles brought in by members, all pages were printed using a Ditto machine.

(Continued on page 12)

(Continued from page 11)

At first the WASP was assembled beforehand and distributed at the meetings. Leftover copies were sent to members not in attendance or to other clubs. Later, when we started getting contributions at the last minute (i.e., at the meeting!), we started to collate and staple the WASP in the half hour just prior to the monthly general meeting. Early arrivals were pressed into collation and stapling duty.

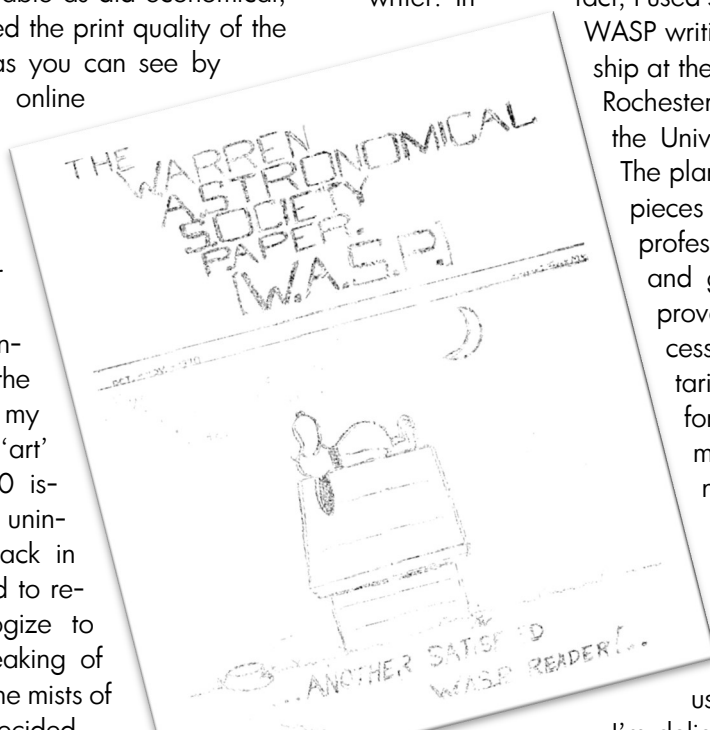
Long after I'd left the WASP masthead, personal computers with printers became available as did economical, quality photo copiers. This allowed the print quality of the WASP to improve enormously, as you can see by browsing the marvelous WASP online archive! Note, however, that some of the archived early issues have been retyped to make them more legible. They don't necessarily represent the poor quality of the original Ditto pages.

Back to the topic of WASP content. As I look back through the WASP archive, it appears that my first contribution was the cover 'art' for the October-November 1970 issue. Please note we were very uninformed about copyright laws back in those days! And I'm embarrassed to realize that I didn't even apologize to Charles Schultz or Snoopy! Speaking of WASP covers, for reasons lost in the mists of time, Frank and possibly others, decided that the WASP needed to have some sort of graphic cover every month. I'm not sure why. Perhaps it was because we had pretensions of becoming another **Sky & Telescope**? More likely it was because it added one more page of bulk to an often-slimpy newsletter. No matter the reason, it gave me (and others) another creative outlet. Eventually many of the covers were quite detailed B&W line art and even photos. To do them justice required higher quality printing than the fuzzy blobs provided by the primitive (though economical) Ditto process. This led us to having the covers (only the covers) printed on thicker index stock by a professional printer using an offset press.

Initially, to make up for my lack of knowledge, I became adept at 'creative repurposing' of content, as I now like to call it. For example, thanks to the annual **RASC Observer's Handbook**, I was able to tabulate a monthly listing of astronomical events called the **Astro Almanac**. Likewise, surveys of various astronomy books, revealed examples of astronomically themed poetry. And so, the **Poetry Corner** of the WASP was born. At one time (probably when Bobby Fisher was making headlines) the ancient game of chess

became a fad, even among WAS members. This led Dave Harrington to contribute chess problems - a much-needed touch of class to the WASP! Dave was also the source of a number of hilarious satire pieces, including a brilliant cover parody of **Sky & Telescope** magazine.

As I mentioned above, initially my work on the WASP was a way to give back to the club. Ultimately, I got back far more than I ever contributed. In addition to learning a lot about now moribund printing technology, writing for the WASP provided great practical experience to me as a writer. In fact, I used samples of some of my better WASP writing to help me win an internship at the Strasenburgh Planetarium in Rochester, NY after I graduated from the University of Michigan in 1976. The planetarium director showed my pieces to his wife, a college English professor. She liked what she saw and gave me her stamp of approval. Since then I've had a successful career working in planetariums and science museums for over 30 years. I've written many planetarium shows, newspaper columns, magazine articles (including for **Sky & Telescope** and **Astronomy**), and co-authored a book with Bob Miller on telescope making and use.



Umm, Mr. Schultz, about that cover...

I'm delighted to see that back issues of the WASP (including some of the dubious issues I had a hand in!) are posted on the web. I thank everyone who had a hand in doing that. I greatly enjoy taking nostalgic trips through the back issues and browsing through current issues to catch up on the WAS. It strikes me that the online WASP archive is a special, perhaps unintended, time capsule of WAS history. No doubt it's an incomplete history of the club and perhaps there are errors in the contents. But very few clubs have available online such an extensive record of their history. The WAS should be proud of that. A careful study of that WASP archive reveals a vital astronomy club that has survived many changes in amateur astronomy, membership, technology, institutions, and society as a whole.

I'll close by wishing the WASP a very happy 50th birthday and congratulate the WAS along with all present and past editors and contributors for keeping it alive and ever improving! Keep up the good work! I look forward to the WASP's next 50 years!

#####

History S.I.G.

March 1969

The first issue. Frank McCullough and friends thought a newsletter might be a good idea. Fifty years later, we still do. The front cover doesn't feature the artwork of Frank (that comes in later issues), aside from the freehand typography of the title.

Leading off is the "Club News", giving us an insight to the goings on of those early years.

Gene Francis co-authors "Constellation of the Month: Cancer" with Olcott, then we get "A Fresh Look at Telescoping" by G. Alyea and M Butley.

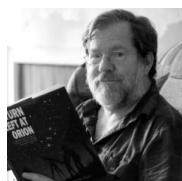
Gene Francis also writes about "Tycho Brahe: Last of The Great Naked Eye Astronomers".

The WASP Salutes Mrs. Jean Baldwin—this sort of entry in the WASP is something Frank did frequently, acknowledging contributions by the members to the club. He also provided more astronomically focused articles like: "Observational Astronomy".

"Notes from the Graphic Time Table"—Of course, what astronomy club newsletter would be complete without a What's Up in the Sky listing.

From the Scanning Room

Former World Chess Champion Garry Kasparov once wrote a book series, *My Great Predecessors*. In a slightly less ambitious vein, I'd like to acknowledge the editors of the past WASPs. "Gene Francis, Dave Ther, Martin Butley and Frank McCullough originated and printed the first WASP in March 1969 as a mimeographed paper for the few dozen members in the club at that time. Frank McCullough, the first editor, was the one who produced and printed the paper" (from [WAS at 25](#)). Frank continued to serve as editor until 1975, with another stint in 1982. Over the years, we've had 30 members serve in an editorial capacity. Some years had successive editors, tag team style, while others were edited by committee. The three top record holders for endurance are Cliff Jones—5 years, 5 months; Frank McCullough—6 years, 4 months; and Jeff Bondono—10 years. In 2006, as part of an initiative to have a large enough board to easily achieve a quorum for their meeting, the board added two elected positions (Publications and Outreach Officers). Since the officers are term-limited to two consecutive years, the Publication Officer/editors since served two-year stints except for one ne'er-do-well who high-tailed it to Florida after one year (not naming any names, of course.)



On the technical side, the production of the WASP newsletter started with mimeograph and the Ditto process (assembly required), continuing into the eighties where desktop publishing took over (and...clipart!).

The WASP had a brief foray in booklet mode (June 1976-June 1977), briefly endured a name change to VESPA—a Latin name for wasp (January 1977-October 1977), and dealt with the internet by going to HTML in the nineties. The HTML period, going from October 1995 to April 2003 was a mixed bag as many print versions were still published. After three months of no issues, Cliff Jones stepped in and started the print version again in August 2003 via PDF format. It has since continued in that format to this day.

Dale Thieme,
Chief scanner

Now, on to my great predecessors:

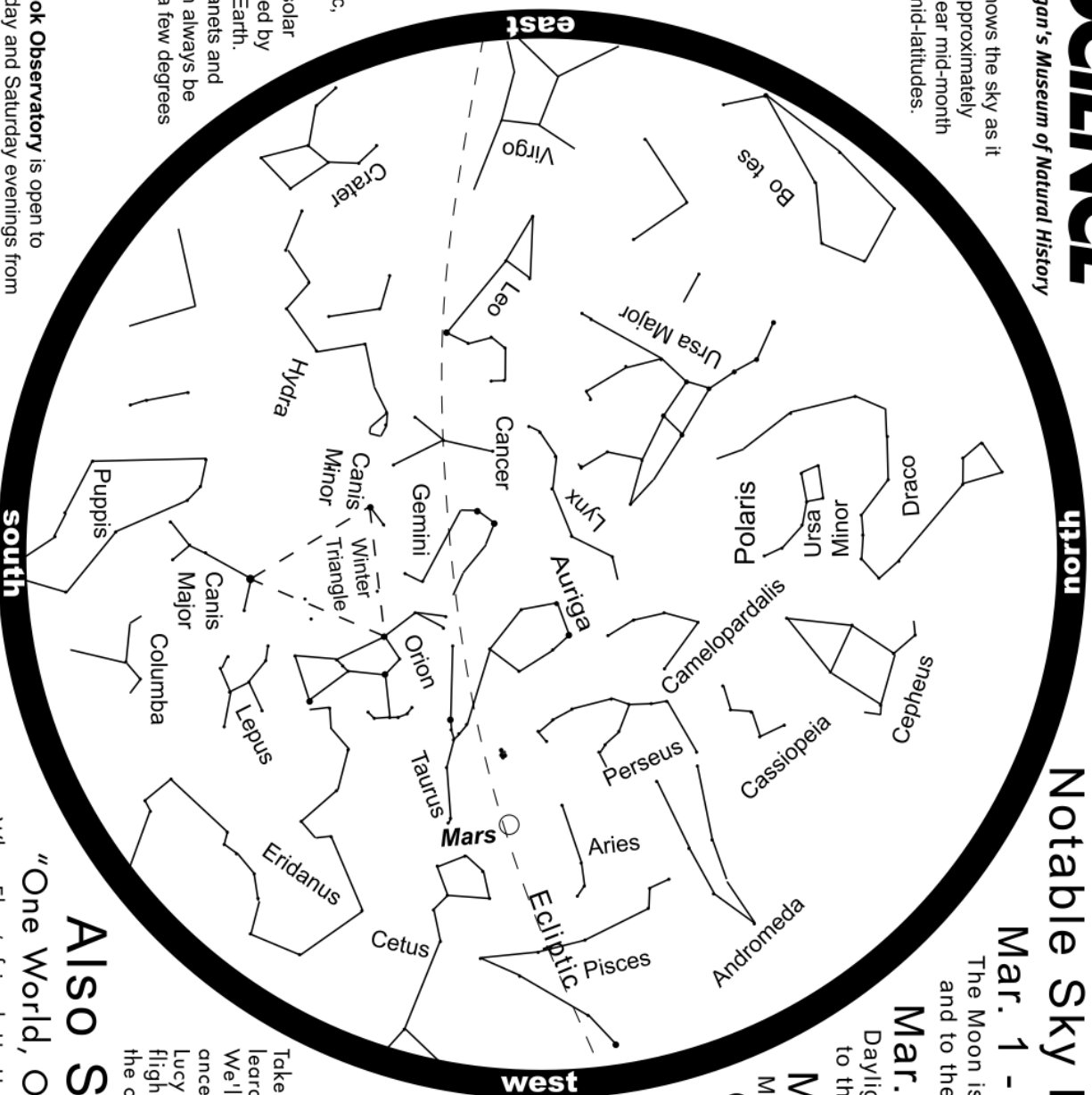
(Continued on page 14)

W.A.S.P. Editors

Through the Years

YEAR	EDITOR	YEAR	EDITOR
		1970-71	Frank McCullough
		1971-72	Frank McCullough
		1972-73	Frank McCullough
		1973-74	Frank McCullough, Ken Wilson
		1974-75	Frank McCullough, Ken Wilson
		1975-76	Ken Wilson, Carl Noble
		1976-77	Roger Civic
		1977-78	Roger Civic, Ray Bullock, Mike Newberry
		1978-79	Jeff Stanek, Brad Vincent
1969-70	Frank McCullough	1979-80	Tim Skonieczny
YEAR	EDITOR	YEAR	EDITOR
1980-81	Bob Wilson; Tim Skonieczny	1990	Jeff Bondono
1981-82	Doug Bock	1991	Nancy Rowe/Douglas E Goudie
1982 Fall	Frank McCullough, Judy Butcher	1992	Douglas E Goudie
1983	Judy Butcher	1993	Douglas E Goudie
1984	Judy Butcher	1994	Douglas E Goudie/Joe Mihalick/Toni Bondono
1985	Colleen Nicolai, Ken Kelly	1995	Toni Bondono
1986	Ken Kelly	1996	Toni Bondono (printed version), Jeff Bondono (online version)
1987	Ken Kelly	1997	Jeff Bondono
1988	Ken Kelly	1998	Jeff Bondono
1989	Ken Kelly; Jeff Bondono, Tom MacLaney, Daniel Cwierniewicz, Mike O'Dowd	1999	Jeff Bondono
YEAR	EDITOR	YEAR	EDITOR
2000	Jeff Bondono	2010	Steven Uitti (Pub.), Larry Phipps (ed.)
2001	Jeff Bondono (online version)	2011	Steven Uitti
2002	Jeff Bondono (online version)	2012	Debra Chaffins
2003	Jeff Bondono (online)/Cliff Jones*	2013	Debra Chaffins
2004	Cliff Jones	2014	Bob Trembley
2005	Vince Chrisman (publications), Cliff Jones (ed.)	2015	Bob Trembley
2006	Steven Uitti (Publications), Cliff Jones (ed.)	2016	Dale Thieme
2007	Steven Uitti (Publications), Cliff Jones (ed.)	2017	Brian Thieme
2008	Larry Phipps (Pub. Off.), Cliff Jones (ed.)	2018	Brian Thieme
2009	Larry Phipps (Publications, ed.)	2019	Dale Partin (Publications), Dale Thieme (Editor)
	*May-July: no issues; Cliff Jones restarted the WASP as a printed issue		

This chart shows the sky as it appears at approximately 10pm EDT 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 always be found within a few degrees of this plane.

The Cranbrook Observatory is open to the public Friday and Saturday evenings from 8:30 - 10:00pm EDT, 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>

MARCH 2019

Notable Sky Happenings

Mar. 1 - 7

The Moon is at the upper right of Saturn on the 1st and to the right of Venus on the 2nd (SE predawn).

Mar. 8 - 14

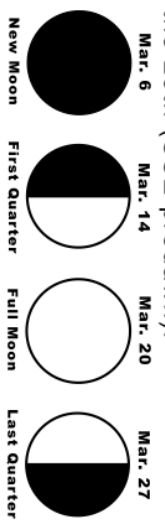
Daylight time begins on the 10th. The Moon is to the left of Mars on the 11th (W evening).

Mar. 15 - 21

Moon is to the left of Regulus on the 18th (ESE evening). March Equinox is at 5:58pm EDT on the 20th. Full Moon on the 20th is the last of three supermoons for 2019.

Mar. 22 - 31

The Moon is to the left of Jupiter on the 27th and at the lower left of Saturn on the 29th (SSE predawn).



Now Showing

"Dinosaurs at Dusk"

Take to the skies and discover the origins of flight! It's learning 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. For astronomy information visit <http://science.cranbrook.edu>





Stargate Observatory

Monthly Free Astronomy Open House and Star Party

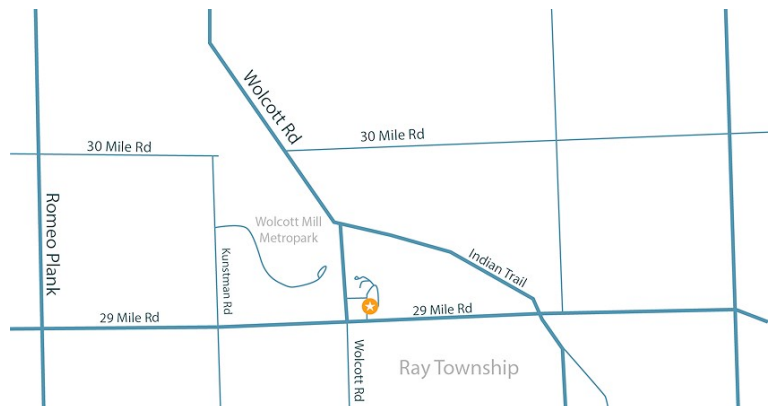
4th Saturday of the month!

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](https://www.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, February 23rd

Open House was held, however, stargazing weather conditions were less than desirable. The road into the park and the observation grounds were a mixture of melting snow & puddles. The evening had heavy clouds and by 8:00pm it was starting to rain. During the evening, Riyadh Matti and I started to create an inventory of eyepieces, filters, etc. that are at the observatory.

We also had 2 other visitors during the night.

March Open House

Next Open House is scheduled for Saturday, March 23rd. 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!

Sunset : 7:47pm

Astronomical Twilight Ending : 8:21pm

Moonrise : 11:05pm

David Baranski
2nd VP (Observatory Chairperson)

Astronomical Events for March 2019

Add one hour for Daylight Savings Time

Source:

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

Day	EST (h:m)	Event
01	13:40	Saturn 0.3°S of Moon: Occn.
02	06:03	Moon at Descending Node
02	16:28	Venus 1.2°N of Moon
04	06:25	Moon at Apogee: 406391 km
06	11:04	NEW MOON
06	20:00	Neptune in Conjunction with Sun
11	07:09	Mars 5.8°N of Moon
13	05:13	Aldebaran 1.9°S of Moon
14	05:27	FIRST QUARTER MOON
14	21:00	Mercury at Inferior Conjunction
16	11:22	Moon at Ascending Node
17	08:01	Beehive 0.5°N of Moon
18	18:59	Regulus 2.6°S of Moon
19	14:47	Moon at Perigee: 359381 km
20	16:58	Vernal Equinox
20	20:43	FULL MOON
26	21:28	Jupiter 1.9°S of Moon
27	23:10	LAST QUARTER MOON
29	00:11	Saturn 0.1°N of Moon: Occn.
29	08:08	Moon at Descending Node
30	22:06	Mars 3.1°S of Pleiades
31	19:14	Moon at Apogee: 405577 km

The W.A.S. Library

Come visit the breathtaking 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.

Outreach Report



This summer's nationwide reading program is "[A Universe of Stories](#)," and the W.A.S. has gotten a *lot* of requests from public libraries for lectures, events and "summer programs."

Warren Public Library Civic Center Branch - wants a presentation on astronomy this summer. 6:00 or 6:30 PM. Leave by 7:45 PM.

Contact: Paul Konkolesky pkonkolesky@cityofwarren.org. (586) 751-0770 ext. 5007

Warren Public Library System - wants a presentation on astronomy this summer

Contact: William Konkolesky
<beyondcosmic@gmail.com> (248) 515-9568

Detroit Public Library Main Branch - wants a presentation about the moon landing near July 20th

They would also would like additional presentations:

Thursday mornings camp: 10:30 AM

Saturdays open 10AM-6PM

Contact: Jennifer Dye jdye@detroitpubliclibrary.org. (734) 846-6266.

Auburn Hills Public Library - wants presenters or panelists for some astronomical adult programs during Astronomy Week. They also would like the same in June or July

Contact: Victoria Phelps reference@auburn-hills.lib.mi.us

MacDonald Public Library, New Baltimore - wants an individual or small group to lead an astronomy program geared toward teens and adults from June to August. We

have several volunteers; I need to get some firm dates.

Contact: Maria Gardella gardellm@libcoop.net. (586) 725-0273

The Auburn Hills Public Library 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. - Bob has created a Google Discussion Group and taking suggestions and loans of items for the display case.

Contact: CJ Juntunen JuntunenC@ahplibrary.org

Gary Ross reports that at the "Tiger Scouts Sky's the Limit" event at Cranbrook on Friday Feb. 8th there were four Scout cohorts, all small, with the usual delightful enthusiasm.

The **Boy Scout Astronomy** event at Cranbrook on March 15th only had 10 scouts sign-up, so W.A.S. volunteers will not be needed.

Mark Kedzior has been in contact with the Chesterfield Township Public Library about the requirements for a **Telescope Loaner Program**; the library is submitting for a grant, and would like to have the 'scopes ready for the summer reading program.

(Continued on page 19)

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

Dates for Observing the Moon - several libraries have asked when the Moon can be observed. Here are the dates for each month for crescent to first-quarter:

Month	Crescent	First Quarter	Full Moon	Sunset
March	Mon. 3/11	Thu. 3/14	Thu. 3/21	7:33 PM
April	Tue. 4/9	Fri. 4/12	Fri. 4/19	8:06 PM
May	Thu. 5/9	Sun. 5/12	Sat. 5/18	8:40 PM
June	Fri. 6/7	Mon. 6/10	Mon. 6/17	9:07 PM
July	Sat. 7/6	Tue. 7/9	Tue. 7/16	9:12 PM
August	Sun. 8/4	Wed. 8/7	Thu. 8/15	8:48 PM
September	Tue. 9/3	Fri. 9/6	Sat. 9/14	8:02 PM
October	Wed. 10/2	Sat. 10/5	Sun. 10/13	7:11 PM
November	Fri. 11/1	Mon. 11/4	Tue. 11/12	6:24 PM
December	Sun. 12/1	Wed. 12/4	Thur. 12/12	4:59 PM



Upcoming Astronomy events:

- April - Global Astronomy Month** (Astronomers Without Borders)
- April 12 - Statewide Astronomy Night** (SWAN) (Michigan) [\[Link\]](#)
- 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** [\[Link\]](#)

- Bob Trembley

Blogger and Technology Support for the [Vatican Observatory Foundation](#)
 2019 Outreach Officer for the [Warren Astronomical Society](#)
 Volunteer [NASA/JPL Solar System Ambassador](#)
 Volunteer [OSIRIS-REx Mission Ambassador](#)

Treasurer's Report

Treasurer's Report for 2/31/2019

MEMBERSHIP

We have 78 current members

INCOME AND EXPENDITURES (SUMMARY)

We took in \$1528 and spent/transferred \$59 We have \$21695 in the bank and \$532 in cash, totaling \$22,227 as of 2/31/2019.

INCOME

- \$1,123 Memberships/renewals
- \$23 Astronomical League
- \$121 Snacks
- \$165 Calendars
- \$21 Paul Strong Scholarship

EXPENSES

\$59 Snacks

Mark Jakubisin
Treasurer, 2019

GLAAC REPORT 2/31/2019

Beginning Balance: \$4,931.52

INCOME

- \$600 donation from UofM
- \$50 payment from SLAARC for table rental

EXPENSES

No activity
 Ending Balance: \$5,581.52

Meeting Minutes

BOARD MEETING – February 4th

Members present; Jeff MacLeod, Diane Hall, Jonathan Kade, Joe Tocco, Bob Trembly, Mark Jakubisin, David Baranski, Ken Bertin, Dale Partin, and Jerry Voorheis. The meeting was called to order by Jeff MacLeod at: 6:38 PM

Officer's reports

Jeff MacLeod gave the President's report.

Jonathan Kade gave the 1st Vice President's report The Macomb Community College campus is scheduled to be closed April 18th for Spring break, which is the date of our meeting. The speaker schedule is full.

David Baranski gave the 2nd Vice President's report. The lunar eclipse open house was good. The regular January open house was canceled.

Secretary – Jerry Voorheis reported that the minutes are in the WASP.

Outreach – Bob Trembly reported that he needs a helper.. Bob needs help with many upcoming events. There have been many requests for moon landing anniversary programs.

Old Business

The WAS survey was discussed. Discussion of getting a solar telescope was skipped. Signature cards were discussed.

New Business

Plans were made to get a table at the Ford club's swap meet The WAS Cranbrook library was discussed, Motion by Jonathan Kade to lower WAS annual dues to \$15 for students, \$20 for Seniors (60+), and \$25 for individuals, +\$5 for families. Effective July 1st for new members. Second by Jeff MacLeod. Motion Tabled. The meeting adjourned at: 7:28 PM

CRANBROOK MEETING – February 4th

Meeting called to order at 7:31 PM by Jeff MacLeod, President.

Roll call. 45 persons were present.

Ken Bertin presented In the News and In the Sky.

Jeff MacLeod gave the President's Report. GLAC needs a Vice President and a Secretary. The Lunar eclipse was reported on.

Jonathan Kade gave the 1st Vice President's report. He announced the upcoming talks.

The 2nd Vice President's report: The special Open House January 20th -21st for the Lunar Eclipse was good. The regular Open House was closed due to weather. The next Open House will be February 23rd.

Mark Jakubisin gave the Treasurer's report.

The Secretary's report is in the WASP.

Bob Trembly gave the Outreach report. Many opportunities are coming up.

Dr. Dale Partin reported that the WASP is published. It includes information about an Asteroid named after a WAS member.

Marty Kuntz reported that there was some solar activity. The Discussion Group will be hosted by the Kaplans Thursday, February 22nd.

Diane Hall spoke about opportunities at GLAC.

Jonathan Kade spoke about the Astro League, the WAS library and merchandise.

The Short Presentation was a video - "Roger Penrose's Conformal Cyclic Cosmology"

Snack/Break Time.

The Long Presentation was given by Tim Campbell - "Spacetime - Speed of Light and Distortions in Time"

Meeting was adjourned at 10:04 PM.

MACOMB MEETING – February 21st

Meeting called to order at 7:30 PM by Jeff MacLeod, President.

Roll call. 33 persons were present.

Jeff MacLeod gave the President's Report

Jeff MacLeod gave the 1st Vice President's report.

Jeff MacLeod gave 2nd Vice President's report. The Open House was canceled. The total lunar eclipse event went well. The next Open House will be March 23rd..

Jeff MacLeod gave the Treasurer's report

The Secretary's report is in the WASP.

Jeff MacLeod gave the Outreach report. There are many Upcoming opportunities.

The publications report was given.

Observing Report: Questions about the meteor that struck the moon during the lunar eclipse.

Ken Bertin presented In the News and In the Sky.

Snack/Break Time.

The Long Presentation was a movie presented by Jonathan Kade - "Celebrating Apollo 9 and the Lunar Module"

Meeting was adjourned at 9:31 PM.

Jerry Voorheis
Secretary

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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.

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:
Oakland Astronomy Club:
Ford Amateur Astronomy Club:
Sunset Astronomical Society:
University Lowbrow Astronomers:

<http://www.warrenastro.org/was/newsletter/>
<http://oaklandastronomy.net/newsletters/oacnews.html>
<http://www.fordastronomyclub.com/starstuff/index.html>
<http://www.sunsetastronomicalsociety.com/>
<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