Society Meeting Times

Astronomy presentations and lectures twice each month at **7:30 PM**:

**First Monday** at Cranbrook Institute of Science.

**Third Thursday** at Macomb Community College - South Campus Building E (Library)

*Note: for the rest of 2018, we are meeting in room E308, in building E.*

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**November Discussion Group Meeting**

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

The Discussion Group meeting for November will be at Jon Blum's home on **Tuesday, November 20, at 7:00 PM**. Jon has been hosting this every November for several years, so come and be part of the annual photo. Jon will provide lots of snacks, so please don't bring any food or drinks. Jon's home is in Farmington Hills.

If you do not receive the address and directions in your email a week before this event, please email jon@jonrosie.com for this information.

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**Snack Volunteer Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Volunteer(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 5</td>
<td>Cranbrook</td>
<td>Jim Shedlowsky</td>
</tr>
<tr>
<td>Nov 15</td>
<td>Macomb</td>
<td>Riyad Matti</td>
</tr>
<tr>
<td>Dec 3</td>
<td>Cranbrook</td>
<td>Joe Tocco</td>
</tr>
</tbody>
</table>

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.

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**Space Pirates**

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

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In this issue:

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21 For Sale
Help keep the Society you love alive now and into the future by taking a leadership position! While the club is currently in solid financial and operational health, we need people willing to serve on the board and in the other positions in order to keep running all the programs our members and the general public enjoy.

All board positions now have candidates except Treasurer.

**Elected positions:**
- President (though Jeff is willing to serve again)
- First VP / Programs Chair (though Jonathan is willing to serve again)
- Second VP / Stargate Chair
- Treasurer
- Secretary (though Jerry is willing to serve again)
- Publications Director
- Outreach Director

**Appointed positions:**
- Librarian (must attend most Cranbrook meetings)
- Astronomical League Coordinator
- Merchandise Coordinator
- GLAAC Delegate(s) (the more the merrier!)
- Videographer / YouTube Manager
- Webmaster
- AV Support

Please email board@warrenastro.org if you are interested in serving as treasurer for 2019.
What a month it has been, October went by in a flash. The third week was probably the busiest week on record. I started doing planetarium shows at Wayne State, Monday, Wednesday, and Friday, the student astronomy society had a sidewalk Astronomy event on campus Wednesday night, and I presented on my 2017 eclipse trip at the Macomb meeting on Thursday.

The next week had a physics club meeting, a science under the dome lecture on seismic waves, and a seminar on neutrino interaction, this on top of all the normal stuff going on in mathematical methods, classical mechanics, and the day job. Lately I have been feeling a bit overwhelmed, but then I looked at all I have been doing and realized that I am overwhelmed, so I’m right where I am supposed to be. Steer into the skid! A Planetarium show for a high school class at 10am, No problem, more outreach events coming in, I got it covered. But the thing that is really stressing me out is getting a full board for next year. I have sent out dozens of emails and can safely say that we have all the positions for 2019 covered, except for one. We need a Treasurer.

There is a thing in psychology known as the bystander effect, it refers to the lack of an expected response from people in a crowd. The idea being that everyone assumes that someone else will take the appropriate action. The end result being that nobody takes action, and bad things tend to happen. They say that the first step in combating the bystander effect is to be aware of it, so I am making you aware of it. If you think someone else is going to step forward and be our treasurer, I am here to tell you they won’t. We need YOU, to be our treasurer. There is a good chance that

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**Astronomical Events for November 2018**

Add one hour for Daylight savings.


<table>
<thead>
<tr>
<th>Day</th>
<th>EST (h:m)</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>23:16</td>
<td>Regulus 2.1°S of Moon</td>
</tr>
<tr>
<td>05</td>
<td>13</td>
<td>S Taurid Meteor Shower</td>
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<tr>
<td>06</td>
<td>10</td>
<td>Mercury at Greatest Elong: 23.3°E</td>
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<tr>
<td>07</td>
<td>11:02</td>
<td>NEW MOON</td>
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<tr>
<td>08</td>
<td>23:58</td>
<td>Mercury 1.8°N of Antares</td>
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<tr>
<td>11</td>
<td>10:46</td>
<td>Saturn 1.4°S of Moon</td>
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<tr>
<td>12</td>
<td>12</td>
<td>N Taurid Meteor Shower</td>
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<tr>
<td>13</td>
<td>09:04</td>
<td>Moon at Descending Node</td>
</tr>
<tr>
<td>14</td>
<td>10:57</td>
<td>Moon at Apogee: 404341 km</td>
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<tr>
<td>14</td>
<td>18:14</td>
<td>Venus 0.2°S of Spica</td>
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<tr>
<td>15</td>
<td>09:54</td>
<td>FIRST QUARTER MOON</td>
</tr>
<tr>
<td>15</td>
<td>23:16</td>
<td>Mars 1.0°N of Moon: Occn.</td>
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<tr>
<td>17</td>
<td>18</td>
<td>Leonid Meteor Shower</td>
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<tr>
<td>23</td>
<td>00:39</td>
<td>FULL MOON</td>
</tr>
<tr>
<td>23</td>
<td>16:11</td>
<td>Aldebaran 1.7°S of Moon</td>
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<tr>
<td>26</td>
<td>01</td>
<td>Jupiter in Conjunction with Sun</td>
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<tr>
<td>26</td>
<td>07:10</td>
<td>Moon at Perigee: 366623 km</td>
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<tr>
<td>27</td>
<td>00:18</td>
<td>Moon at Ascending Node</td>
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<tr>
<td>27</td>
<td>04</td>
<td>Mercury at Inferior Conjunction</td>
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<tr>
<td>27</td>
<td>15:57</td>
<td>Beehive 0.8°N of Moon</td>
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<tr>
<td>29</td>
<td>04</td>
<td>Mercury at Perihelion</td>
</tr>
<tr>
<td>29</td>
<td>04:27</td>
<td>Regulus 2.3°S of Moon</td>
</tr>
<tr>
<td>29</td>
<td>19:19</td>
<td>LAST QUARTER MOON</td>
</tr>
</tbody>
</table>
on November 5th when we have elections, we will have no treasurer, and I don’t know what happens after that. Perhaps it will cause a crisis and a hero will emerge and save us. Maybe we will have to start outsourcing the office of treasury to a third-party accountant, I have not become disillusioned enough to look into how much that will cost the club. I will make it my top priority to solve this problem before the start of the year, but unlike some other president, I alone can NOT solve this problem.

Aside from that we have our annual banquet to look forward to. It is scheduled for Thursday, December 6th at DeCarlo's Banquet and Convention Center, located at 6015 East 10 Mile Rd Warren, MI 48091. We are looking for door prizes for the banquet so if you have anything you would like to donate to the club as a door prize please contact the board or talk to us at the November meetings.

Jeff MacLeod
President

W.A.S.
Astrophotography

M33 - Triangulum Galaxy
3 million light years from earth
Home to 40 billion stars
Bill Beers 10/2019

Photo credit: Bill Beers
Short talk: We will have our annual elections instead of the short talk!

Main Talk: “Breaking the Ice: How Sublimative Torques Alter and Destroy Cometary Bodies” by Jordan Steckloff, Ph.D.

To quote David Levy: “comets are like cats: they have tails, and they do precisely what they want.” Comets are small ice-rich solar system objects that sublimate vigorously near perihelion. These sublimating gases entrain fine dust grains as they escape, forming a gas and dust cloud that can be seen from the Earth. Recent spacecraft missions to comets have found that these small bodies have strange bilobate shapes, undergo outbursts (rapid, unpredictable brightening events), and form long striated dust features in their tails that somehow align with the Sun rather than the nucleus. Additionally, their dynamics appear to require some mysterious mechanism for activating their sublimative activity. In this talk, I describe how all of these features are the result of ice sublimation, the process that defines these irregularly shaped bodies.

Dr. Jordan Steckloff studies the dynamical, physical, and structural evolution of comets. He is also studying the thermodynamic evolution of liquid hydrocarbon pools on the surface of Saturn’s largest moon, Titan. He is also interested in the geophysical processes that alter the surface of Pluto and reorient its rotational axis. Recently, Dr. Steckloff has become interested in the dynamical evolution of small, ultra-short period exoplanetary bodies that have been detected by the recently departed Kepler spacecraft.

Dr. Steckloff received his Bachelor of Science from the University of Michigan in 2009, his Master of Science degree in Physics from Purdue University in 2012, and his his Ph.D. in Physics from Purdue University in 2015 for his dissertation entitled “On the Interaction of Sublimating Gases with Cometary Bodies.” Dr. Steckloff joined the Planetary Science Institute in 2016, and was promoted to Research Scientist in 2018.

Dr. Steckloff is active in the physics education research community, and currently serves on the American Association of Physics Teachers (AAPT) Committee on Space Science and Astronomy. He is currently developing student-centered, inquiry-based classroom activities that teach physics and planetary science by having students analyze and interpret scientific data. He also lectured introductory physics within the University of Michigan system.
Main Presentation: “A Whimper or a Bang: How the Universe Might End”
Jonathan Kade, first VP of the W.A.S., presented in 2016 about the Big Bang and alternative theories about the formation of the universe. Now he’s back to talk about some of the major models of how the universe will end.

You’ve heard of the Big Bang, but have you heard of the Big Crunch, the Big Rip, or the Big Freeze? How about vacuum collapse? These are some of the ideas scientists and cosmologists have presented for how the universe might end - and many of them relate very closely to many of the questions we still have about the Big Bang itself.

Jonathan will talk about how each event might happen, on what timescale, and what the implications for the future of our existence might be. If you’d like a slightly scary look at the future of the universe, please join us.

Jonathan Kade first joined the board in 2008, and has served for eight of the ten years since. He probably ought to retire from the board before you all get sick of him. He enjoys doing outreach in his spare time, especially in the City of Detroit.

We’re in a new room at Macomb Community College for the rest of 2018!

The library at Macomb Community College’s South Campus is getting some welcome renovations. However, they’re coming at a price to us: we can’t meet there again until next January.

The Warren Astronomical Society meets monthly on the third Thursday in classroom E308 in the E building at Macomb Community College’s South Campus.

Video walkthrough provided by Jonathan Kade: https://www.youtube.com/watch?v=3lQoaGTPFV0

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
Languishing Langrenus

Having to share a terminator with a fabulous crater like Petavius is hard. Such is the lot of Langrenus a magnificent 136km diameter heavily terraced crater about 500km north of its big brother. When the libration is such that both are exactly on the terminator along with Vendelinus (151km) between them, the large flat bottomed ringed plain at the bottom of this image, and Furnerius further to the south it makes a striking sight. Such was what I saw on the morning of Mar. 06 of 2007 after coming home from my work at the observatory on the mountain, as all these were on the sunset terminator. They were even visible in 10x50 binoculars! In this image there is a crater on the north rim of Vendelinus with a central peak in a rough “X” shape. This is Lame (87km) and to its left (west) still half in shadow with a nice central peak is Lohse (43km). From Langrenus to the right (east) are a pair of similar sized craters each with small central peaks. The closer one is Barkla (44km) and the farther with a bit nipped out by the image edge, is Kapteyn (51km). Above Langrenus is a prominent trio of craters still much in shadow. The larger one furthest to the west is Bilharz (44km) with Atwood (31km) to its right and above is Naonobu (36km).

Vendelinus is an ancient formation, perhaps as old as 4.5 billion years, while Langrenus is between 3.2-1.1 billion years old. Both are older than complex life on our planet! In 1992 the astronomer Dollfus reported glows that changes shape over time on the floor of Langrenus. These he attributed to gaseous emissions from the fissures in the floor of that crater.

So when you’re done with Petavius, head north and spend a few minutes with his little brother! This two image montage was made from two stacked AVIs using AVIStack2, spliced together with AutoStitch, then finish processed with GIMP and IrfanView.

Rik Hill
NGC 1342 is an open cluster in the constellation Perseus. It is sometimes referred to as the Stingray Cluster due to its roughly quadrilateral-shaped central region from which an arcing string of stars originates. The overall form is vaguely reminiscent of the barb-tailed cartilaginous bottom dweller familiar to those who frequent tropical shores. NGC 1342 has an integrated apparent magnitude of 6.7, an angular diameter of approximately 17', and a Trumpler classification of III3p. This category indicates that it is weakly detached from the field, lacks a concentrated core, contains stars of a wide range in brightness, and is “poor” in total number of stars. The cluster was discovered by William Herschel in 1799, is about 2,200 light years away, and was formed about 450 million years ago.

Finding the location of NGC 1342 is easy, even for relative beginners. It is approximately halfway between Algol (β Per, mag. 2.09 var.) and Zeta Persei (ζ Per, mag. 2.84), lying about 5.5° from the former and 7° from the latter. The cluster should be readily visible in instruments of most sizes from all but the most severely light polluted locations. In fact, it may be even faintly visible to the naked eye from dark sky observing sites. NGC 1342 is best viewed in telescopes of 4- to 8-inches in aperture at magnifications between 30 and 80x. As with most open clusters, lower power wide-field eyepieces will provide a pleasing view that allows the object to be well-framed and seen within the context of its surroundings. However, higher power can allow for more stars to be detected and subtle patterns within the cluster to be discerned. Of particular interest is a zig-zagging chain of stars extending to the northeast of the main body of the cluster—a feature that produces the stingray’s tail.

Chuck Dezelah

Photo source: Wikipedia, FoV = 0.25°

Source: Cartes du Ciel
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.

Nov. 15

New Moon

Nov. 23

First Quarter

Full Moon

Last Quarter

The Moon is to the lower left of Regulus in the ESE predawn sky on the 2nd. Daylight Saving Time ends at 2:00am on the 4th. Set clocks back one hour.

Saturn is at the lower right of the Moon in the SW after sunset on the 11th. On the 14th Venus is to the lower left of Spica (ESE predawn).

The bright star to the upper left of the Moon in the SSW evening sky on the 15th is Mars.

The Leonid meteor shower peaks on Nov. 17. Expect to see an average of 40 per hour.

Nov. 21

Travel back in time 2,000 years to explore the nature of the “Star” that guided the wise men to Bethlehem. We will examine astronomical events that were occurring at the time and see if any were remarkable enough to have sparked the journey.

(Extra shows for the holidays; please visit our Web page for the complete schedule.)

Mystery of the Christmas Star

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

This chart shows the sky as it appears in the northern mid-latitudes. 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 EST for solar viewing. Come have a look through our telescopes, see the planets and major stars, and explore constellations and the night sky!
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

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.
October Open-house
The Observatory was opened at 6:40 PM by Riyad Matti with three visitors stopping by along with Pat Brown.

The Observatory was closed at 8:00 PM under cloudy and rainy conditions.

November Open-house
The November Open-house is scheduled for Saturday the 24th. Sunset is at 5:02 PM with astronomical twilight ending at 6:41 PM just as a nearly full moon rises at 6:37 PM.

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.

Observatory update
No updates at this time.

Joe Tocco
Second Vice President

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.
LAST MONTH

10/17-10/18: Mark Kedzior did a two-night stint of Sidewalk Astronomy in honor of International Observe the Moon Night at the Woods Branch of the Grosse Pointe Library; details pending.

10/23/18: Jonathan Kade and Ken Lord joined Jennifer Dye of the Main Branch of the Detroit Public Library for sidewalk astronomy in honor of IOMN. The event was a success and we look forward more Urban Astronomy in 2019.

10/30/18: Japhet School in Clawson cancelled a stargazing night due to the weather. President MacLeod will be assisting them in a reschedule. Also on 10/30/18, Bob Berta and Angelo DiDonato had a successful indoor event with a Brownie Troop in Troy. Bob also reports another successful engagement of SOAR at the Macomb Community College Central Campus, with 35 attendees and very high ratings from the students.

UPCOMING EVENTS

11/13/18: Need Volunteers! Cub Scout Pack 342 in Troy would like to have an astronomy presentation at their 7 PM meeting. We’ve had a member express interest but would like something definite.

11/17/18: Need Volunteers! We will be hosting a Girl Scout Troop at Stargate and could use some presenters. Joe Tocco can open the dome.

11/30/18: Need Volunteers! Cranbrook Institute of Science is having an Astronomy Overnight featuring Cub Scouts & Girl Scouts from 6PM to 9PM that evening. “Any help” supporting the activities is appreciated.

12/7/18: Need Volunteers! Tiger Cub Sky’s the Limit at Cranbrook Institute of Science from 6-8 PM. This is usually a fast-paced event featuring small children; we could use two volunteers comfortable with operating telescopes indoors.

12/8/18: Need Volunteers! Boy Scout Troop 1627 will be camping at Stargate the night of December 8; Joe Tocco will be able to open the dome if skies are clear but we were hoping to line up a couple of presentations to show the troop, so please contact me if interested.

We have other events in the works for later this year and in 2019! I don’t plan to run for re-election as Outreach Chair for 2019, as I’ve been on the board for quite a few years now, but I look forward to supporting W.A.S. events as a volunteer next year including some exciting new events.

Diane Hall
Outreach

Photo credit: Brian Thieme
Treasurer’s Report

Treasurer’s Report for 10/31/2018

MEMBERSHIP
We currently have 136 members, of which 43 are family memberships.

INCOME AND EXPENDITURES (SUMMARY)
We took in $658.20 and spent/transferred $372.46. We have $20,403.33 in the bank and $242.95 in cash, totaling $20,646.28 as of 10/31/2018.

INCOME
52.00  Membership/Renewals
48.70  Snacks
16.05  General Fund
357.45 GLAAC Donations
4.00  Merchandise
180.00 Annual Banquet

EXPENSES
10.72  Snack Reimbursement
4.29  Reimbursement
GM Ross, supplies
357.45 GLAAC deposit

GLAAC REPORT 10/31/2018
Beginning Balance: $4,574.07

INCOME
Donations
Wayne State U.  300.00
Jack Brisbin  57.45

EXPENSES
No activity

Ending Balance: $4,931.52

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.

Ruth Huellmantel
Treasurer

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.
November 1982

The Double Cluster graces the cover of this issue. The photo credit (Frank McCullough) looks like it was written in post-publication. Better late than never? Of interest is the method: a 3" scope piggy-backed on the club's Cassegrain.

Doug Bock recounts a weekend up at his observing property, in the article, “In Search of Dark Skies.” In “The Flat Truth?”, Judy Butcher takes on the flat earthers. It never ends, I guess.

November 1992

This issue is light on member contributions: Sole article is “Computer Chatter” by Larry F. Kalinowski.

However, while leaning heavily on NASA Space Links, we do have some very interesting articles of historic interest: Hubble Space Telescope’s First 18 Months in Orbit Report; NASA Spacecraft Begins Gravity Mapping of Venus; Searching for Extraterrestrial Intelligence; Student Payload Successfully Launched on NASA Rocket.

Dale Thieme,
Chief scanner
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

<table>
<thead>
<tr>
<th>Club Name &amp; Website</th>
<th>City</th>
<th>Meeting Times</th>
</tr>
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<tbody>
<tr>
<td>Astronomy Club at Eastern Michigan University</td>
<td>Ypsilanti/EMU</td>
<td>Every Thursday at 7:30PM in 402 Sherzer</td>
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<tr>
<td>Capital Area Astronomy Club</td>
<td>MSU/Abrams Planetarium</td>
<td>First Wednesday of each month 7:30 PM</td>
</tr>
<tr>
<td>Farmington Community Stargazers</td>
<td>Farmington Hills</td>
<td>Members one Tuesday each month, public observing another Tuesday each month.</td>
</tr>
<tr>
<td>Ford Amateur Astronomy Club</td>
<td>Dearborn</td>
<td>Fourth Thursday of every month (except November and December) at 5:30 PM</td>
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<tr>
<td>Oakland Astronomy Club</td>
<td>Rochester</td>
<td>Second Sunday of every month (except May)</td>
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<tr>
<td>Seven Ponds Astronomy Club</td>
<td>Dryden, Michigan</td>
<td>Monthly: generally the Saturday closest to new Moon</td>
</tr>
<tr>
<td>Sunset Astronomical Society</td>
<td>Midland</td>
<td>Second Friday of every month</td>
</tr>
<tr>
<td>University Lowbrow Astronomers</td>
<td>Ann Arbor</td>
<td>Third Friday of every month</td>
</tr>
<tr>
<td>Warren Astronomical Society</td>
<td>Bloomfield Hills/ Cranbrook &amp; Warren/MCC</td>
<td>First Monday &amp; third Thursday of every month 7:30 PM</td>
</tr>
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</table>

GLAAC Club and Society Newsletters

Warren Astronomical Society: http://www.warrenastro.org/was/newsletter/
Oakland Astronomy Club: http://oaklandastronomy.net/newsletters/oacnews.html
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
**Meeting Minutes**

**BOARD MEETING – October 1st**

Members present; Jeff MacLeod, Ruth Huellmantel, Diane Hall, Jonathan Kade, Brian Thieme, Parker Heullmantel, Bob Trembly, Ken Bertin, Dale Partin, Marty Kunz, and Jerry Voorheis.

The meeting was called to order by Jeff MacLeod at: 6:38 PM

**Officer’s reports**

President’s Report - Jeff MacLeod reported that Astronomy on the Beach went well

Treasurer’s Report – Ruth Huellmantel reported that the WAS insurance has been renewed.

1st Vice President - Jonathan Kade reported that there are speakers through December 8th.

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

Outreach – Diane Hall reported on outreach activities.

Publications - Brian Thieme reported that the latest WASP is published.

**Old Business**

Money from Wayne State. Discussion of the tracking mount for the DOB.

A motion was made by Jonathan Kade to spend $200.00 for locks at Stargate. 2nd by Diane Hall. The motion passed.

New Business

Discussion of WAS Awards.

The Secretary was instructed to send out letters requesting prizes for the WAS Banquet.

Discussion of Banquet speaker possibilities.

Discussion of WAS Award candidates.

Diane Hall proposed getting block tickets to see the movie “First Man”.

The meeting adjourned at: 7:26 PM

**CRANBROOK MEETING – October 1st**

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

41 persons were present.

Ken Bertin presented In the News and In the Sky.

Jeff MacLeod gave the President’s Report - He proposed a movie night for the movie “First Man”.

Jonathan gave the 1st Vice President’s report.

Jeff MacLeod gave the 2nd Vice President’s report the Open House was good. The next Open House will be October 27th.

Ruth Huellmantel gave the Treasurer’s report.

She announced tickets for the December 6th Banquet.

The Secretary’s report is in the WASP.
Diane Hall gave the Outreach report.

Brian Thieme reported that the WASP is published.

Marty Kuntz reported 2 sunspots on the sun.

The Discussion Group will meet at Dr. Dale Partin’s house this month.

Observing Reports: Diane Hall saw Yerkes Observatory, Mars, Jupiter, the Blue Snowball, and M15

The Short Talk was given by Ken Bertin – “Steven Hawkings”.

Snack/Break Time.
Main Presentation was given by Dr. Jerry Dunifer - “A Tour of Chile with Sky & Telescope March 2017”.
Meeting was adjourned at 10:01 PM.

MACOMB MEETING – October 18th

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

34 persons were present.

Jeff MacLeod read the officer’s reports.

Observing Reports: Jeff MacLeod saw the Andromeda Galaxy while up north.

In the News and In the Sky were presented by Ken Bertin.

Snack/Break Time

The Discussion Group will meet at Dr. Dale Partin’s house this month.

The 1st short presentation was given by Sonnet Woolf, “2017 Solar Eclipse”.

The 2nd short presentation was given by Mike O’Doud, “Mars Electric Reusable Flyer”.

The 3rd short presentation was given by Jeff MacLeod, “Total Eclipse, The Not Told Story, August 21, 2017”.

Meeting was adjourned at 9:30 PM

Jerry Voorheis
Secretary

Photo credit: Joe Tocco
November’s crisp autumn skies bring great views of our planetary neighbors. The Moon pairs up with Saturn and Mars in the evenings, and mornings feature eye-catching arrangements with dazzling Venus. Stargazers wanting a challenge can observe a notable opposition by asteroid 3 Juno on the 17th and watch for a few bright Leonid meteors.

Red Mars gleams high in the southern sky after sunset. Saturn sits westward in the constellation Sagittarius. A young crescent Moon passes near Saturn on the 10th and 11th. On the 15th a first quarter Moon skims by Mars, coming within 1 degree of the planet. The red planet receives a new visitor on November 26th, when NASA’s InSight mission lands and begins its investigation of the planet’s interior. News briefings and commentary will be streamed live at: bit.ly/landsafe

Two bright planets hang low over the western horizon after sunset as November begins: Jupiter and Mercury. They may be hard to see, but binoculars and an unobstructed western horizon will help determined observers spot them right after sunset. Both disappear into the Sun’s glare by mid-month.

Early risers are treated to brilliant Venus sparkling in the eastern sky before dawn, easily outshining everything except the Sun and Moon. On November 6th, find a location with clear view of the eastern horizon to spot Venus next to a thin crescent Moon, making a triangle with the bright star Spica. The following mornings watch Venus move up towards Spica, coming within two degrees of the star by the second full week of November. Venus will be up three hours before sunrise by month’s end – a huge change in just weeks! Telescopic observers are treated to a large, 61” wide, yet razor-thin crescent at November’s beginning, shrinking to 41” across by the end of the month as its crescent waxes.

Observers looking for a challenge can hunt asteroid 3 Juno, so named because it was the third asteroid discovered. Juno travels through the constellation Eridanus and rises in the east after sunset. On November 17th, Juno is at opposition and shines at magnitude 7.4, its brightest showing since 1983! Look for Juno near the 4.7 magnitude double star 32 Eridani in the nights
leading up to opposition. It is bright enough to spot through binoculars, but still appears as a star-like point of light. If you aren’t sure if you have identified Juno, try sketching or photographing its star field, then return to the same area over the next several days to spot its movement.

The **Leonids** are expected to peak on the night of the 17\textsuperscript{th} through the morning of the 18\textsuperscript{th}. This meteor shower has brought “meteor storms” as recently as 2002, but a storm is not expected this year. All but the brightest meteors will be drowned out by a waxing gibbous Moon.

Stay warm and enjoy this month’s dance of the planets!

You can catch up on all of NASA’s current and future missions at [nasa.gov](http://nasa.gov)

With articles, activities and games **NASA Space Place** encourages everyone to get excited about science and technology. Visit [spaceplace.nasa.gov](http://spaceplace.nasa.gov) to explore space and Earth science!

![Path of 3 Juno](image)

*Caption: This finder chart shows the path of the asteroid 3 Juno as it glides past 32 Eridani in November 2018. The asteroid’s position is highlighted for selected dates, including its opposition on the 17th. Image created in Stellarium for NASA Night Sky Network.*
Brian Morency has two telescopes for sale. The first is a vintage 1950’s to 1960’s cardboard tube 6” reflector with an iron stand. The tube is about 4’ long, the focuser accepts 1.25” eye pieces and the finder scope is missing pieces and could use to be replaced. He would like to get $150.00 for this one.

The second is a c.1980's Meade 2080 LX3 8”. This one needs a little work It was purchased from an estate, set it up once, and couldn’t get the focuser to move and have not done anything with it since. The front lense is a little foggy and needs to be replaced. Otherwise it is in “as is” Condition. There is a heavy tripod and controller included. There is also a dew shield included that is not shown in the photos.

Brian paid $100.00 and would like to sell it for the same $100.00.

If anyone is interested, please contact:

**Brian Morency**
1+248-895-6847
mrbigb625@gmail.com

**Item Location:**
Royal Oak, MI