



The Warren Astronomical Society Paper

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

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2003 WAS OFFICERS

// December 2003

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

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

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

Astro Chatter

by Larry Kalinowski

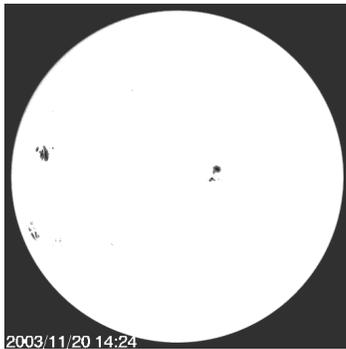


There's only going to be one meeting for the WAS this month, because the third Thursday (Dec. 18) will be used to present our yearly 2003 Awards Banquet. If you haven't yet signed up and paid the \$21.00 required for each person to attend, you're going to miss out on a lot of entertainment. Get your entrance fee paid by the second week in December or you won't get in. The banquet is being held at DeCarlo's Banquet Hall (formerly The Warren Chateau), on Ten Mile Rd., just east of Mound Rd. Food is usually served about 8:00 PM but I advise you to get there an hour early to partake of heavenly spirits, appetizers and vigorous hand shaking. That'll allow you some time to examine the table of raffle prizes that we get donated from astronomical vendors all around the country and purchase those tickets required for the prizes and the 50-50 raffle. There's also a prominent speaker for the evening. Thanks to Ken Bertin, our featured speaker will be Dr. Therese A. Kucera of The Goddard Space Flight Center. Dr Kucera is a solar astrophysicist. You'll have a chance to see the old officers depart (happily or otherwise) and the new officers with their shinning faces.

Finally, there's the awards ceremony. Hard workers and upcoming observers are rewarded for their efforts. Let's see if you agree with the award presenters. Send your registration check to The Warren Astronomical Society, P.O. Box 1505, Warren, MI 48090-1505. Bob Watt, our secretary elect for 2004, has informed me that some donated prizes have already arrived. A 12X18, hardcover, rotating, glow-in-the-dark, star finder, with 10 heavy pages depicting the sky and celestial objects to observe, by season. A red dot finder, that mounts on your telescope, a SuperCircuits, color, CCD, video camera, A Starry Night Demo program, and best of all, one copy each of the north and south versions of The program Real Sky. By the way, if you have anything to donate for the raffle prizes, like books, astronomical games, computer programs, useable hardware like finder-scopes and eyepieces, this is your chance to unload those items and clean out your closets. Give them to someone that will put them to good use and I hope you walk out the door that night with a prize in your hand.

They're back again. The two giant sunspots that stirred up electrical problems and Aurora have made it back around the Sun and are reported to be unscathed by the trip. Thanks to a call from Bill Whitney on November 19, I was able to get another peek at those

spots the following day, this time with a little more leisure. The sky cooperated fully, giving a clear look for as long as I wanted. By the time you read this, those spots will probably have moved around to the far side again, so we'll have to wait and see if they show up again for a third view.



It was a great night for an eclipse. It was cold but it was clear. About twenty people showed up for eclipse viewing at Stargate Observatory. Along with them were the boy scouts that were tenting on the other side of the property, which added another twenty-five or so. Most stayed until about 9:30 PM. Only the few that helped close up the observatory stayed until the Moon left the umbra. As far as eclipses go, it was a bright one. In fact, the southern portion of the Moon remained so bright that it was hard to tell when mid eclipse occurred. It looked like there was always that last ten percent of the Moon that still hadn't been eclipsed. As the phases occurred, all commented on the fact that the naked eye view of the line separating light from dark seemed quite fuzzy, while in the telescopes the line appeared more distinct. Everyone agreed on the color. Orange to dark red spread across the Moon during totality, with a touch of white at the bottom. Kind of like an overgrown Mars hanging in the sky with that prominent southern polar cap.

If you haven't put your name on the club jacket ordering list, please contact Nancy Rowe at nancyannrowe@sbcglobal.net. The winter jacket has the club logo on the back and your name on the front, for \$60.00. The spring windbreaker also comes with the back logo and name on the front, for \$35.00. The jacket color is dark blue with logo and name in yellow. Please indicate your size and name required on the front of the jacket when contacting Nancy. Small, medium, large, X-large and XX-large are available.

Lee Hartwell has informed me that his address and phone number has changed to 68702 Cornerstone Dr., Romeo, MI and 1-586-752-4962. Presumably, you can still reach him using his e-mail, lhartwell3@comcast.net. Lee is the guy that's looking for

more teachers to help him with the Astronomical Society Of The Pacific teachers package. It demonstrates how to find planets around stars other than our Sun. He demonstrated two sections of the package at the MCCC meeting last month, using the video tape that's supplied with the package.

The latest list of programs that are available from the WAS computer group is now posted on our website at www.boonhill.net. Just click on the word computer on the left side of the screen.

Mike Cyrek announced, at the November MCCC meeting, that he will be donating a three inch refractor to the WAS. He's doing some house cleaning and moving out stuff he no longer uses or needs. Mike says it's a Sears product. He wants someone to pick it up for the club. You can contact him at 313-366-3595 or cosmolcm@msn.com.

Correction. Rick Gosset is the ALPO (Association Of Lunar And Planetary Observers) solar coordinator, not the AAVSO (American Association Of Variable Star Observers) coordinator I mentioned in the last newsletter. Sorry AAVSO, but credit has to go where it really belongs.

Lou Faix, a recent retiree from the WAS and Detroit area, claimed seeing Northern lights in the Tucson, Arizona area where he now lives, on October 30. That's quite unusual for the south-west U.S.

The December first meeting at The Cranbrook Science Museum will feature Ken Bertin, our President Elect for 2004. Ken will continue his reports about those Other Astronomers that have turned the pseudo-science of astrology into the breathtaking science we now call astronomy.

In the October 2003 issue of Sky And Telescope, page 102, you'll see a rather comprehensive article about comets that are due in the spring of 2004. There are promising naked eye comets, possibly reaching first or zero magnitude. Comet Neat will favor northern hemisphere observers, while Comet Linear favors southern observers, however, both will be able to see each comet and southern observers will see both at the same time for a period. Interestingly, they both reach maximum brightness at about the same time, around the first and second week of May. While Neat moves northward for our pleasure, Linear moves ever southward, finally disappearing below our horizon. It looks as though we might be able to take advantage of the publicity that Comet Neat gets and possibly develop another large star party for the public in May or June. If GLAAC is looking for another comet theme and doesn't mind an early or mid-year time frame for the Kensington public star party, it could be another super-event in the making. The orbital elements are given for those of you who wish to plot courses with your planetarium programs. Use 2000 for the Epoch. 2004 seems to be a

great upcoming comet year. Two more lesser comets are also scheduled to make an appearance, bringing the early year comet count to five. See the paragraph below about Comet Tabur.

COMET NEAT C/2001 Q4
T = 2004 May 15.9549
q = 0.614562
e = 1.000478
Peri. = 157.7394
Asc. Node = 94.8566
i = 160.5820

COMET LINEAR C/2002 T7
T = 2004 April 23.0773
q = 0.961886 AU
e = 1.000708
Peri. = 1.2056 deg.
Asc. Node = 210.2767 deg.
i = 99.6422 deg.

Because of the two bright comets mentioned above, GLAAC has already decided to take advantage of their possibilities. They've scheduled the yearly Kensington "Astronomy On The Beach" star party for May 21 and 22. That's a Friday and Saturday. The planet Jupiter will be 60 degrees high in the southwest sky, with Saturn, Venus, Mars and a two or three day old Moon about twenty degrees above the western horizon.

The International Astronomical Union announced, in their circular (IAUC 8225) that a new comet has been discovered by an Australian, Mr. Vello Tabur. Mr. Tabur lives in the Australian Capitol Territory and was able to photograph it with a 140mm, f2.8 telephoto lens in conjunction with a CCD camera. Raw data revealed a coma with a visual magnitude of about 11. Refinement of the position data shows it will reach perihelion about April 24, 2004. The distance will be about 1.41 AU at that time. The brightest predicted magnitude is about 8.0, occurring in March. It'll make a close five degree visual approach to the Sun, then start moving northward until it becomes circumpolar for the rest of the year. It'll remain a horizon hugging object, making observations a little difficult for urban amateur astronomers.

Four more programs have been added to our club's library. The first is MOONS OF URANUS. That's right, now that you've mastered the moons of Jupiter and Saturn (we have programs to locate those moons too), it's Uranus' turn. The first five brightest moons of Uranus are shown in position around the planet for any date that you enter. You can change the orientation of your telescope field and each moon is color coded for easy identification. Planet and moons are shown with a telescope magnification of about 300. Along with the graphic showing the moon's positions is a comprehensive list of data for each moon. Available on a floppy disk. Installation tip: install on the C drive only.

The second program is MODAS. That's short for Modern Optical Design and Analysis Software. This program will appeal to telescope builders because it offers an opportunity to design any optical system with four or less optical surfaces. That includes Newtonians, Cassegrains, Maksutovs, refractors and even other types I'm not familiar with. Many previous designs are included in the data base. There's plenty of graphs and ray traces available, as well as graphics showing views of Focault, Ronchi and null tests at different knife edge settings. All you do is fill in the information like primary diameter, focal length, secondary obstruction size, knife edge settings and other info. This program is definitely not a beginner's introduction to optical testing. Another version that allows more optical elements is available from the author. It's only available on CD-ROM.

The third program is a game. It's called MOONSHOT. The first level lets you launch your Moon lander from Earth into a lunar orbit. The second level allows you to land the orbiter and the third level lets you return to Earth. You're limited in fuel consumption at each level and all flights occur in space, so this is not a phony "Star Wars" flying game. Similar in motion to Asteroids, you have to anticipate each thruster operation, just as a real space flight requires. It too, is only available on CD-ROM.

SATSCAPE is the fourth program. It'll show as many as 500 satellites on the screen at a time in a world map mode or a country mode. It also has a horizon mode for your indicated viewing site. You have to set up your location to get the correct horizon mode. The program will run in a 3D graphics mode if you have Win 98 or higher and a DirectX graphics setup, otherwise it will only run in a 2D mode. You can update satellite orbital elements while running the program because it automatically goes to the Internet for the latest elements. A voice option will call out approaching satellites and keep your rotatable antenna pointed in the proper direction if you're tracking via radio. It's available only on a CD-ROM.

December marks the beginning of the thirteenth year that my articles have appeared in the WASP. I'm looking forward to many more articles to come and hope you have enjoyed reading them as much as I've enjoyed writing them.

THE SWAPSHOP



This column is for those who are interested in buying, trading or selling items. Call 586-766-9720 (cometman@mybluelight.com) if you want to put an item for sale or trade in this section of the WASP. The ad will run for six months. The month and year, the ad will be removed, is also shown.

FOR SALE. Celestron, 8 in. Schmidt Cassegrain, 9 volt electric drive, PEC (periodic error correction), four speed quartz drive, heavy duty aluminum adjustable tripod, enhanced coatings and carrying trunk. Best offer over \$695.

Mike Best, starmikebest@aol.com. (7-04).

FOR SALE. Classic 6 in. Criterion RV-6 Dynascope., Newtonian reflector, 110v AC electric drive, aluminum pier with three feet, 6x30 two ring finder and rotating tube. Best offer over 395. starmikebest@aol.com (7-04).

FOR SALE. Refractor, 3 in., metal tube, 1 1/2 in. two ring finder scope, 2 in. tracking erecting eyepiece telescope, Eastman Kodak Aero-Ektar 7.12 in. (178mm) f.l., 5x5, F2.5 camera #EM6294 (\$150 estimated value), AC heated dew shield for the 2 in. tracking scope, wood, heavy duty, surveyors tripod, two fitted wooden cases, two boxes of machine equipment tools for telescope construction. No mount. Best offer over \$495. starmikebest@aol.com. (7-04).

FOR SALE. Globes of Mars. 12 inches in diameter. One shows the extreme highlands and lowlands, the other shows a more detailed surface. Asking \$50 each. James Oravec, 586-582-0899. Retired, mornings best time to call. (2-04).

FOR SALE. Amateur Telescope Making, books 1, 2 and 3, published by Scientific American, Albert G. Ingals, editor (1972, 1972 and 1961). Famous optical authors like Porter, Clark, Wright, Hale, Hastings, Kirkham, Mayall, Baker, Dall, Paul, Cook, Schmidt and Wilson, all contributing their experience to telescope making for the amateur. They talk about lenses, mirrors, mounts, film and mirror testing. Asking \$50 for the three book set. 586-776-9720. (2-04).

FOR SALE. Meade LX90 telescope with JMI focuser, 2 in. eyepiece, JMI hard case, JMI Moto-Focuser, Dew clip, solar filter, Dew shield, wedge, Skylight/dust filter, Update cable kit, 1.25 and 2 inch diagonal, a 26mm and Meade video eyepiece, AC adapter, and 5 inch color TV. Total value over \$2,850 without shipping and tax, asking \$2,000. 248-236-9983 or jameswynn@charter.net. (1-04).

FOR SALE. Nextstar 8 GPS telescope, one year old. The package includes telescope, tripod and two cases of accessories. The included accessories are; car battery supply adapter, Celestron ISO Pads, Celestron kit (includes 4, 6, 9, 15 and 32 mm Plossl eyepieces. A 2X Barlow, 7piece filter set, 5x12x10 locking, aluminum carry case, 20mm crosshair eyepiece, polarizing filter set #93608, 40mm Plossl, a second aluminum accessory case 6x13x18 with locks and dividers, Night Watch 3rd edition book, The Sky At Night, Nextstar 8 GPS manual and original telescope shipping carton). All items are in excellent condition. Asking price \$2,000, firm. Location is Port Huron, MI. Please e-mail if interested. mgmfan@aol.com. (1-04).

FOR SALE. Orion XT8 Dobsonian telescope, 8 inch, Orion Plossl 25mm and 9mm eyepieces, Orion Moon filter, Televue Plossl 15mm eyepiece, Vixen LV 5mm eyepiece, Orion 1.25 inch Shorty Barlow, Orion EZ Finder reflex site, Orion collimating eyepiece, medium size accessory case, Orion Red Beam LED flashlight. Cost over \$850, will sacrifice for \$450. Everything is in very good condition. Brian T. Koehler, St. Clair Shores, MI, 588-772-8238. E-mail bkok@wideopenwest.com. (12-03).

FOR SALE. Six inch tube Dobsonian telescope. Includes 6 inch, F8 parabolic primary mirror, 1.25 inch minor axis secondary mirror, 1.25 inch focuser with 0.96 inch adapter, 6X30 finderscope, four vane spider assembly, 8 inch diameter heavy wall Sonotube optical tube (white), Baltic birch solid core plywood construction, stained and clearcoated with polyurethane, Ebony Star with virgin Teflon altitude and azimuth bearings. Reduced to \$290. Call Steve Greene at 586-598-1199 (12-03).

FOR SALE. Two telescope mounting rings. Holds tubes with 12.5 to 13.25 inch outside diameter. Steel, painted black, hinged. Uses 1/4-20 mounting studs which can be removed and replaced with larger studs for heavier telescopes. Asking \$45. 586-776-9720 (1-04).

FOR SALE. Spider (four vane) for a Newtonian secondary. Fits tubes with an inside diameter from 12.5 to 13 inches. Steel, painted black, thin vanes, will accept diagonal holders with 5/16 inch diameter bolt or smaller. Asking \$10. 586-776-9720, (1-04).

FOR SALE. Compact video camera for astrophotography or surveillance. SuperCircuits PC23C with C-mount adapter for 1 1/4 inch eyepiece holder. Includes 25 feet of video cable, 12 volt power supply (must use 110v AC input) and instructions. Video chip is 1/3 inch, black and white CCD with 510x490 pixel arrangement. Good for solar, lunar and bright planet photography. This video chip is not suitable for stellar photography beyond fifth or sixth magnitude. 0.04 lux light sensitivity. Weight is 6.87 ounces. It does not include a lens. Just slide it into your eyepiece holder and focus the image on the TV screen. Asking \$45. 586-776-9720 (1-04).

FOR SALE. Micronta FET, analog, volt-ohm meter. Model 22-206. Six inch meter face with mirrored DC-ohms scale. Separate ohms and zero adjust. Measures ohms, DC and AC to 1,000 volts. DC amps to 300ma. Test leads included. Asking \$20. 586-776-9720 (2-04).

UPCOMING WAS EVENTS

<u>Dec 1</u>	<u>Mon</u>	<u>Cranbrook Meeting (7:30 pm)</u>
Dec 18	Thurs	2003 Christmas Awards Banquet

Scheduled Speaker 2003/4

By Ken Bertin

DATE	DAY	PRESENTER	SUBJECT
12/1/2003	MON	KEN BERTIN	OTHER ASTRONOMERS
12/18/2003	THU	NASA SCIENTIST	SOLAR ASTRONOMY
1/5/2004	MON	KEN MULLIN	PLANETS
1/15/2004	THU	GUY MAXIM	THE BEGINNING,END,& EVERYTHING..
2/2/2004	MON	NORM DILLARD	10 BRIGHTEST STARS
2/19/2004	THU	NANCY ROWE	AURORAE/RADIO PROPAGATION
3/1/2004	MON	PLANETARIUM	
3/18/2004	THU	DAVE D'ONOFRIO	PROCESSING CD IMAGES
4/5/2004	MON	STEVE UITTI	TBA
4/15/2004	THU	LARRY KALINOWSKI	TBA
5/3/2004	MON	MIKE BEST	S.E.T.I.
5/20/2004	THU		
6/7/2004	MON	JIM SHEDLOWSKY	IRIDIUM FLARES
6/17/2004	THU		
7/5/2004	MON	ALAN ROTHENBERG	TBA
7/15/2004	THU		
8/2/2004	MON	RIYAD MATTI	TBA
8/19/2004	THU		
9/13/2004	MON	PHIL MARTIN	TBA

December Calendar

7 th - 12:16 pm:	The Moon is at apogee (522,450 miles from Earth).
8 th - 3:37 pm:	Full Moon
9 th - 1:00 am:	Mercury is at greatest elongation (21°)
10 th - 5:00 pm:	The Moon passes 5° north of Saturn
11 th - 12:00 am:	Pluto is in conjunction with the Sun
2:00 am:	Asteroid Irene is at opposition
14 th - 10:00 pm:	Geminid meteor shower peaks
15 th - 11:00 pm:	The moon passes 4° north of Jupiter
16 th - 12:45 pm:	Last quarter Moon
22 nd - 1:00 am:	Ursid meteor shower peaks
2:04 am:	Winter solstice
6:50 am:	The Moon is at perigee (222,661 miles from Earth)
23 rd - 4:43 pm:	New Moon
25 th - 11:00 am:	The Moon passes 3° south of Venus
8:00 pm:	The Moon passes 5° south of Neptune
26 th - 8:00 pm:	Mercury is in inferior conjunction
27 th - 3:00 am:	The moon passes 5° south of Uranus

Calendar courtesy of Jim Mills – Check out his web site at: www.njnightsky.com

WARREN ASTRONOMICAL SOCIETY

TREASURER'S REPORT

10/1/03 THRU 11/1/03

Beginning Balance:	\$ <u>882.88</u>
Income Total=	\$ <u>453.85</u>
Expense total:	\$ <u>-664.80</u>
Ending Balance:	\$ <u>671.93</u>

Bill Beers – Treasurer



Jupiter

Stardust

by Patrick L. Barry and Dr. Tony Phillips

Philosophers have long sought to "see a world in a grain of sand," as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust-comet dust, that is.

If successful, NASA's Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.

And one wouldn't merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of years, these asteroid-sized "dirty snowballs" have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

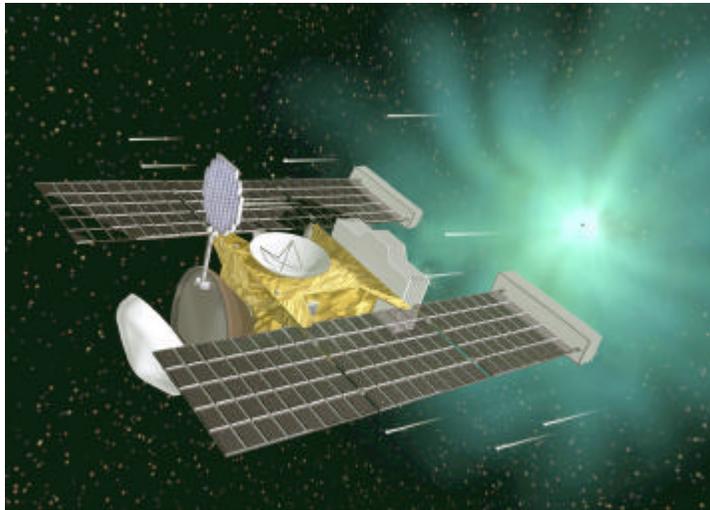
Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life.

Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced "Vilt" after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they're caught.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity into a Sun-approaching orbit-within reach of probes from Earth. Since then the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries.

To learn more about Stardust, see the mission website at stardust.jpl.nasa.gov. Kids can play a fun trivia game about comets at spaceplace.nasa.gov/stardust.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



NASA's Stardust mission will capture dust from comet Wild 2 and bring them back to Earth for study.

If you would like to renew your membership and have not already done so, or if you would like to become a member of the Warren Astronomical Society, please complete the following and submit with the appropriate US funds by Check or Money Order.

Membership	Definition	Dues (US Funds)
Student	One person under 18 years of age enrolled in grades 1-12	\$17.00
College	One person attending a College or University	\$22.00
Sr. Citizen	One person 65 years of age or older	\$22.00
Family	More than one person living at the same address	\$37.00
Individual	One person not fitting a category above	\$30.00

Fill in the WAS application and send it to our current Treasurer:

- ? **Bill Beers**
- ? **c/o Warren Astronomical Society**
- ? **P.O. Box 1505**
- ? **Warren, Michigan 48090-1505**

--tear here--

--tear here--

--tear here--

Warren Astronomical Society Membership Application

About You:

Name(s): _____

Address: _____

Telephone: _____

E-Mail: _____

Membership Type:

Individual \$30.00_____

Family \$37.00_____

College Student \$22.00_____

Student \$17.00_____

Sr. Citizen \$22.00_____

WARREN ASTRONOMICAL SOCIETY
P.O. BOX 1505
WARREN MICHIGAN 48090- 1505



TO:

The society holds meetings on the first Monday and the third Thursday of each month, starting at 7:30 pm.

First Monday meeting:

Cranbrook Institute of Science
1221 North Woodward Avenue
Bloomfield Hills, Michigan

Third Thursday meeting:

Macomb Community College
South Campus, Bldg B, Room 209
14500 Twelve Mile Rd
Warren, Michigan