2008 WAS Officers
- President: Robert Berta
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- 1st VP: Gary M. Ross
  gmr@wmis.net
- 2nd VP: Marty Kunz
  solarmartykz@sbcglobal.net
- Secretary: Jonathan Kade
  jonathonkade@gmail.com
- Treasurer: Stephen Uitti
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- Dir. of Publications: Larry Phipps
  s2poppa@excite.com
- Dir. of Pub. Relations: John Kriegel
  johnkriegel@comcast.net

In addition, please be assured that we will continue to outreach to the community in general, as well as increase focus on reaching out to citizens with special needs in our efforts to bring the wonders of the universe to all who wish to journey with us.

WEBSITE ANNOUNCEMENT

In addition to the new look to the WASP, Jonathan Kade, our Secretary (and “Jonathan” of all trades) has been working on updating/upgrading our website. In his words: “I have the first draft of the updated website up at http://www.warrenastro.org. (Right now it’s using a WAS subdirectory, but that will hopefully be going away.) So far I’m reusing most of the existing site’s assets. I plan to transfer warrenastronomicalsociety.org to point to this server within the month; the only major changes will be making the events page live and up-datable, with an administration section that can be updated by any club member. Once that’s done, I will begin adding content (we badly need an outreach section, as Jim Shedlowski pointed out to me) and prettying it up. There will be new active content niceties in the next month as well (a contact form rather than an email link, astrophoto and WASP upload functionality, etc.).
President Bob Berta was recently on the move as he contacted the Macomb Daily for a little PR. "This will be a great exposure piece for the club". If you live in Macomb County, you may have seen the article in the Sunday, April 13 paper in a special section entitled "Macomb on the Move". "I hope to get some more requests for talks and presentations as a result of the article. I suspect we will get a good turnout for the May open house as a result of the article".

Bob is asking that the board members, as well as members at large, keep an eye out for other PR opportunities like this. He recently discovered a copy of a throw away two page newsletter called "Coffee News", which is distributed in Shelby Township and Utica, and is distributed all over the area at coffee houses, fast food places, etc. The flyer requested that clubs let them know of upcoming special events so this is an example of how we can use existing channels to get the word out to the public.

Lee Hartwell and Bob presented a talk at a grade school a couple of weeks back. The teacher is planning on coming to an open house and giving extra credit points to the kids who attend with their families.

Stephen's Ramblings
http://suitti.livejournal.com/

4-30-08
Feature Names in the Solar System
Over at the Planetary Society Blog, Emily has a great write up on Mercury doesn't have more women's names. And I agree with it, and have little or nothing to add to it. Except that I'm glad she wrote it, and not me. If I'd written it, I'd likely be blasted as sexist. I'm not as quick to absolve the IAU for foresight failure. It's their job. Instead of using the best ideas available, it's clearly politics as usual. Feh.

If, for example, the IAU had really thought about it, we'd have a reasonable definition for the word 'planet', and it would work for planets outside our solar system, and we'd also have a definition for the word 'moon', and also have a formula for when it's a double planet or a planet with a really large moon. Instead we got this last minute garbage where Pluto is a Dwarf Planet (it's still a 'Planet', right?), except that it now has a minor planet number. Hey, wake up! The Earth needs a minor planet number. By the current definition, we only have one planet - Jupiter.

And we wouldn't be honoring women with features on Venus that are so hard to see, requiring RADAR or narrow band IR. The phrase 'Separate but Equal' comes to mind.

Is there a crater on the Moon, visible in backyard telescopes that we can name after Emily?

4-25-08
Astro News
How to find wet exo-earths. Which one is the home of Yoda?
Where is Phoenix going to land? How to win the office pool.
http://www.planetary.org/blog/article/00001407/

Auroras Glow is Polarized and not just because it's mostly at the poles.

HST Releases Extreme Galaxy Gallery Coming to a monitor near you.
http://www.esa.int/esaSC/SEMCSESZEFF_index_0.html

Dinosaurs Dead 65.95 million years ago So we can start saying 66 million years ago, in round numbers. And I'd thought that the problem with astronomical dating had to do with the dearth of female astronomers.

Simple Super lenses Made Cheap because they're flat. So my 10" Dob could have the resolving power of a 100" scope. For the record, 100" scopes are generally not portable. For one thing, they won't fit into my car's back seat.

Mars Hydrothermal Springs Found from orbit with MRO. A lander might find life?
http://www.space.com/scienceastronomy/080424-mars-geysers.html

Finns Develop Solar Sail Need $8 million. I'm a finn too. Anyone have $8 million?
http://www.space.com/businesstechnology/080423-t w-finnish-solar-sail.html

To read more of Stephen's Ramblings, go to his live journal at:
http://suitti.livejournal.com/

Easy Astronomy Quiz

1. What is the closest star?
2. What is the brightest star in the sky?
3. What is the closest planet?
4. What planet is easiest to see during the day?
5. What planet has exactly one natural moon?
6. Which of the planets is easiest for an astronaut to get to?
7. What is the closest galaxy?
8. Describe a half moon.
(Answers on page 9.)
(Thanks to Stephen Uitti)

WAS Meetings scheduled for 2008

**Cranbrook Meetings:** Every 1st Monday
May 5  Jun. 2  Jul. 7  Aug. 4  Sep. 1
Oct. 6  Nov. 3  Dec. 1

**Macomb Meetings:** Every 3rd Thursday
May. 15  Jun. 19  Jul. 17  Aug. 21  Sep. 18
Oct. 16  Nov. 20  **Dec. 18 (Banquet Date)**

**The Bad Astronomer** will be at Cranbrook on the 9th of May, 2008 at 7:30 p.m. Tickets are $8. Phil Plait is really cool. Sign up on the web:
http://tinyurl.com/4emxcc
which is this URL:
http://science.cranbrook.edu/common/registration/de fault.asp?l1=1&l2=5&l3=&registration_id=1328
If you say "WAS member" in the "member number" box, it's $8, instead of $10. Of course, Cranbrook is a cool place, so feel free to give them $10 instead.

**VOLLBRECHT PLANETARIUM**

Cliff Jones reported that he has just completed an 8 week series of shows at Vollbrecht Planetarium, in Southfield - the Winter Series. Each hour and a half program consisted of a half hour talk, half hour power point show and a half hour of star show; each segment reinforcing the other. I would like to invite the WAS to hold a Cranbrook Monday meeting at Vollbrecht and include a show called "Hotter than Blue."

"I was interviewed for an article in the Southfield Sun on Vollbrecht Planetarium that appeared in this week's issue. There were misquotes but that's normal for such articles. We got the publicity anyway."
The article can be found on the web at:
http://www.candgnews.com/Homepage-Articles/2008 /4-2-08/VF-PLANETARIUM.asp

There were 3 pictures of Vollbrecht on the front page of the paper but only one on the web page above. "I'm doing a show on the planets for a group of Southfield 2nd graders (Young Astronauts). Southfield local cable is supposed to video it for their current events program. I don't know how much they will get with the lights out! There will be an interview afterwords - that will probably be the bulk of the show. We'll be advertising the Spring series of 8 shows presented by Mike Best".

VOLLBRECHT PLANETARIUM
IMPORTANT NOTICE:

PLEASE NOTE: The people at Sky and Telescope have changed their policy. They no longer want the WAS treasurer to renew subscriptions. You just send in your renewal at the club rate ($32.95), being sure to indicate that you are a member of WAS. Once a year they send the treasurer a list of people who have subscribed to Sky & Telescope for verification. This takes effect immediately.

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Minutes of Board Meeting
April 7, 2008 - Cranbrook

The meeting was called to order at 6:41 PM.


Officers’ reports:

Bob reviewed the status of the Phil Plait (Bad Astronomy author) presentation at Cranbrook. He noted that a high turnout at this event will help demonstrate to Cranbrook that there will be enough attendance of the Paul Goldsmith talk this fall to make it worthwhile. He hopes to have the other local clubs announce the talk to their memberships to boost turnout.

Gary requested that we purchase two documentaries from the Film Board of Canada library: ‘Universe,’ a 1970 Cannes award winner, and ‘The Cosmic Link.’ They would be in the range of $70 and run about seventy minutes. The board discussed potential less expensive sources before agreeing that we should purchase them as inexpensively as possible. Marty motioned to grant the request, Bob seconded, and the board voted unanimously to purchase the films.

Marty stated that he had completed the inventory of equipment and would be emailing an inventory list to the board. He replaced the water-damaged wooden desk with a new-to-us metal desk. He noted that the battery consumption of the 10" SCT with GPS is rather steep and requested that we purchase an AC adaptor, estimated price < $30, for it. Bob authorized the purchase.

Stephen reported the treasury at $5578.89 + new checks. He also noted that he was working on updating the membership roster. Non-profit status questions were asked: Is membership tax-deductible? What club activities are tax-deductible? What is the WAS tax ID, if we have one?

Jonathan agreed per Bob’s request to edit the March minutes to reflect that Paul Goldsmith’s talk this fall is not a certainty. He proposed that the edited minutes be accepted. Gary moved to accept the minutes, Stephen seconded the motion, and the board voted unanimously in favor.

Larry reported that he mailed out the last six months of the WASP to Alvin McDonald. He agreed to print out copies for our non-internet members for the Macomb meeting; Gary agreed to address and mail them if fewer than twelve copies needed to be sent each month.

Old business:

PR notification list - John Kriegel agreed to begin putting together a master list of media and school contacts. Larry suggested including WWJ (950 AM) in our list of contacts.

Web site – Jonathan noted that the club’s domain name registration fee seems not to have been lowered to reflect current norms. He suggested that we ask the hosting company for a reassessment. The board approved. He reported that he was making progress on the site reorganization and that the new site was available on a testing basis at warrenastro.org.

New business:

Bob told the board about the newspaper article he had contributed information about the Society to a Macomb Daily Sunday feature on activities for families.

Bob made note of two interesting programs we may be able to help Cranbrook with. Stanford University has a solar radio telescope data collection device that they are providing to a limited number of science museums; if Cranbrook is interested we may be able to get one for permanent installation there. Cranbrook will also be hosting science camps in June - one week-long unit focuses on astronomy and the Society may be able to provide volunteers if needed.

Larry announced that Cliff Jones does not think he can continue editing the WASP due to his changing work schedule. Larry will serve as interim editor for as long as Cliff cannot do it; he will head up a search for a long-term editor if necessary.

The board meeting was adjourned at 7:30 PM.
Warren Astronomical Society
Minutes of General Meeting
April 7, 2008 - Cranbrook
The meeting was called to order at 7:37 p.m..

Officers' reports:
Bob Berta noted that long-time member Jack Szu-
manski is ill and asked members to sign a get-well
card for him.

He reminded members that good attendance for the
Bad Astronomy talk by Phil Plait on May 9 will make it
easier for Cranbrook to justify hosting Paul Goldsmith
in October. He suggested that members inform any-
one who would be interested in the talk, which should
be oriented towards the general public.

Gary Ross reminded members again that the May
Macomb meeting has been moved to Grosse Pointe
North for a presentation by the Grosse Pointe High
Schools Radio Astronomy Team. He noted that the
April Macomb meeting would feature a talk by Jerry
Kuchera entitled 'Drawn to Mars.'

Marty Kunz announced the next Stargate open house
date as April 12. The weather should now allow for
work on the observatory roof to proceed. He noted
that the club picnic is June 7, the new moon; the next
week will be the open house. He also announced that
Cranbrook
could potentially be making significant upgrades to
the observatory.

Stephen Uitti reported approximately $5800 in the
treasury including new checks.

Jonathan Kade gave a recap of the previous meeting.

Interest groups:
Library – Steve noted a few recent additions to the
Library.

Solar – Marty announced that the sun is coming back
to life: he had observed a few spots and promi-
nences. But then it was back to zero. He noted that
the sun was getting more energetic, prompting Dale
Partin to ask why, if sunspots are cooler than the rest
of the sun, the sun is more energetic when they re-
appear. Marty explained that other phenomena asso-
ciated with solar activity contribute the additional en-

Discussion – Gary R. stated that he had heard tell of
science fiction discussion at the last meeting, and
would take drastic measures if such occurred again.

Hands-on – Riyad recounted the meeting of the
hands-on group two weeks prior at the open house.
They used Bob Berta’s video camera with auto-
stacking capability to view amazing detail in M42,
M51, M81/82, the Horsehead Nebula, etc. The cam-

General meeting:
Old business:
Bob recapped his progress in working with local li-
braries. The Macomb Library for the Blind and Physi-
cally Handicapped has invited us to provide presenta-
tions for developmentally challenged adults on two
occasions in the near future: May 22 and June 5, both
Thursdays, from 10:30 AM to noon; they will also be
contacting us about a program for the visually im-
paired. Bob and other members are continuing to
give presentations in local schools.

Jonathan announced the progress that had been
made on updating and reorganizing the website, in-
cluding the acquisition of the warrenastro.org domain.
He noted that the first set of updates were live in
"beta" form for testing and comments.

New Business:
Bob announced that the board, with Cranbrook's ap-
proval, would attempt to secure a Stanford solar radio
telescope for installation there.

In The News:
A barrage of news articles were discussed, ranging
from a black hole in Omega Centauri to the new
smallest known black hole (3.8 solar masses), from
the youngest known planet to the newly-located
source of the solar wind. Steve showed paper models
of Phobos and Deimos he had printed and con-
structed from the Planetary Society's blog.

After showing off a "Sleep is for Sissies" bumper
sticker from a southwestern astronomy club, Jon
Blum recounted some of his adventures on Maui. He
handed out Haleakala Observatory bookmarks.

Intermission: 8:40-8:59p

Presentation:
Bob Berta presented "Lick Observatory: A History of
Groundbreaking Astronomy," a talk that gave a fasci-
nating overview of the University of California tele-
scope system. It placed the advancements made by
the UC system over the last century into the context
of professional astronomy worldwide and provided insight into what was and may still be the world's greatest telescope network.

34 people attended the meeting.
The meeting adjourned at 9:55 PM.

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Warren Astronomical Society
2008 Presentations

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<td>18 - Dec</td>
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Please contact the 1st V.P. (program chairperson) to:
1. Schedule new presentation.
2. Alter scheduled presentations.
3. Add a subject title to your presentation.
4. Change the subject title of your presentation.

2008 Stargate Observatory Open House Schedule

NOTE: Depending on weather at the time, open house dates are:
May 10, Jun. 14, Jul. 12, Aug. 09, Sep. 06, Oct. 04, Nov. 08, Dec. 06

1. Normal closing time will depend on events, weather, and other variables.
2. The observatory may be closed one hour after opening time if no members arrive within the first hour.
3. Contact me for other arrangements, such as late arrival time.
4. An alternative person will be appointed to open the observatory if I cannot attend a scheduled date or opening time.
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 staffing availability.
7. An e-mail will be posted no later than 2 hours before starting time in case of date change or cancellation.
8. It is best to email me up to 2 hours before the posted opening with any questions you may have. I will not be able to receive e-mail after 2 hours before open time. Generally only strong rain or snow would prevent the open house...even if it is cloudy over I plan on being there. Often the weather is cloudy but clears up as the evening progresses.

Marty Kunz

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THE SWAP SHOP

This column is for those who are interested in buying, trading or selling items. At the present time, you may submit ads of items for sale to Larry Phipps, 313.532.4451 (52poppa@excite.com). The ad will run for six months. The month and year the ad will be removed is also shown.

FOR SALE: (there are no items for sale this month)
**ASTRONOMICAL EVENTS: MAY, 2008**

**Eta Aquarids - Monday, May 5, 2008**

This is mainly a southern hemisphere shower, but northern observers can see it, too. The best time to look, no matter where you live, is during the hours immediately before sunrise on Saturday morning. The Eta Aquarids are flakes of dust from Halley's Comet, which last visited Earth in 1986.

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**DEEP SPACE OBJECTS IN MAY**

**C3 - Spiral Galaxy in Draco**

This object is seldom imaged as an apparent size of over 20 arc-minutes and a very low surface brightness results in a very faint galaxy.

Right Ascension: 12h 16.7m  Declination: +69° 28m  Magnitude: 9

**C6 - "Cats Eye Nebula" Planetary Nebula in Draco**

C6 is situated almost exactly in the direction of the North Ecliptic Pole. While the nebula, with its 20 arc second diameter, is rather small, it has an extended halo of matter the progenitor star has ejected during its red giant phase. This halo measures 386 arc seconds (5.8 arc min) according to observations of A.G. Millikan

Right Ascension: 17h 58.6m  Declination: +66° 38m  Magnitude: 8

**C21 - Irregular Galaxy in Canis Venatici**

This irregular dwarf galaxy is part of the Canis Venaticorum group of galaxies some 12 million light years away. It is very similar to to the Large Magellanic Cloud in terms of structure and size.

Right Ascension: 12h 28.2m  Declination: +44° 06m  Magnitude: 9

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**M49 - Galaxy in Virgo**

This is an elliptical galaxy in Virgo just south of the main cluster of galaxies. M49 is round patch of light with bright center gradually fading to a round halo. M49 looks like a faint fuzzy star in binoculars.

Right Ascension: 12h 29.8m  Declination: 08° 00m  Magnitude: 10
ion, NGC 5195. Look for a pair of fuzzy patches of light. The slightly larger and brighter one is M51. Make sure to spend some time here as there is almost always some spiral structure to be seen, on good nights the detail possible is unbelievable. This is a difficult but very possible object in binoculars appearing as a hazy patch of light.
Right Ascension: 13h 29.9m     Declination: 47° 12m     Magnitude: 8

**M61 - Galaxy in Virgo**
This is a face on spiral galaxy just south of M49 in Virgo, but much fainter. Look for a faint, round fuzzy patch of light.
Right Ascension: 12h 21.9m     Declination: 04° 28m     Magnitude: 10

**M63 - "The Sunflower Galaxy" Galaxy in Canis Venatici**
Another spiral galaxy in Canes Venatici smaller and fainter than M51, but seen more edge on so the galaxy appears as an elongated patch of light with a bright star at one end. Further inspection will show a faint halo around this patch. A difficult object in binoculars.
Right Ascension: 13h 15.8m     Declination: 42° 02m     Magnitude: 8

**M64 - "The Blackeye Galaxy" Galaxy in Coma Berenices**
In a telescope this galaxy in Coma Berenices is a fairly bright, slightly oval shaped patch of light. Look for the dark lane which gives this galaxy the common name Black Eye. The galaxy appears as a faint fuzzy patch in binoculars.
Right Ascension: 12h 56.7m     Declination: 21° 41m     Magnitude: 9

**M85 - Galaxy in Coma Berenices**
This elliptical galaxy lies in Coma Berenices just north of the Virgo Cluster of galaxies. This appears as a bright, but small, patch of light with a bright stellar core.
Right Ascension: 12h 25.4m     Declination: 18° 11m     Magnitude: 10

**M94 - Galaxy in Canis Venatici**
Just past M63 is another galaxy in Canis Venatici. Look for a bright fuzzy star to find the core of M94, surrounded by a faint haze. A tough binocular object.
Right Ascension: 12h 50.9m     Declination: 41° 07m     Magnitude: 10

**M101 - "Pinwheel Galaxy" Galaxy in Ursa Major**
This is a large faint patch of light almost as big as the full moon. There are no real condensations so use low power and look for a brighter part of the sky, more of a change in contrast than an object at first glance, which is the galaxy. Dark skies really help in the search of this one and are a to find M101 in binoculars.
Right Ascension: 14h 03.3m     Declination: 54° 21m     Magnitude: 8

**M102 - "Spindle Galaxy" Galaxy in Draco**
This object can be found rather easily and with a small telescope a bright elliptical or spindle-shaped nebulous object with a brighter core is visible. Larger telescopes show more details, in particular the dust lane and the brighter ends.
Right Ascension: 15h 06.5m     Declination: 55° 45m     Magnitude: 10

**M104 - "Sombrero Galaxy" Galaxy in Virgo**
This is the well known Sombrero galaxy in Virgo. It is bright edge on spiral galaxy which looks like a bright, elongated streak. It is very possible to see in binoculars.
Right Ascension: 12h 40.0m     Declination: -11° 37m     Magnitude: 10

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**Stellar Compass for Space Explorers**

by Patrick L. Barry

In space, there's no up or down, north or south, east or west. So how can robotic spacecraft know which way they're facing when they fire their thrusters, or when they try to beam scientific data back to Earth?

Without the familiar compass points of Earth's magnetic poles, spacecraft use stars and gyros to know their orientation. Thanks to a recently completed test flight, future spacecraft will be able to do so using only an ultra-low-power camera and three silicon wafers as small as your pinky fingernail.

"The wafers are actually very tiny gyros," explains Artur Chmielewski, project manager at JPL for Space Technology 6 (ST6), a part of NASA's New Millennium Program.
Traditional gyros use spinning wheels to detect changes in pitch, yaw, and roll—the three axes of rotation. For ST6's Inertial Stellar Compass, the three gyros instead consist of silicon wafers that resemble microchips. Rotating the wafers distorts microscopic structures on the surfaces of these wafers in a way that generates electric signals. The compass uses these signals—and with images of star positions taken by the camera—to measure rotation.

Because the Inertial Stellar Compass (ISC) is based on this new, radically different technology, NASA needed to flight-test it before using it in important missions. That test flight reached completion in December 2007 after about a year in orbit aboard the Air Force's TacSat-2 satellite.

"It just performed beautifully," Chmielewski says. "The data checked out really well." The engineers had hoped that ISC would measure the spacecraft's rotation with an accuracy of 0.1 degrees. In the flight tests, ISC surpassed this goal, measuring rotation to within about 0.05 degrees.

That success paves the way for using ISC to reduce the cost of future science missions. When launching probes into space, weight equals money. "If you're paying a million dollars per kilogram to send your spacecraft to Mars, you care a lot about weight," Chmielewski says. At less than 3 kilograms, ISC weighs about one-fifth as much as traditional stellar compasses. It also uses about one-tenth as much power, so a spacecraft would be able to use smaller, lighter solar panels.

Engineers at Draper Laboratory, the Cambridge, Massachusetts, company that built the ISC, are already at work on a next-generation design that will improve the compass's accuracy ten-fold, Chmielewski says. So ISC and its successors could soon help costs—and spacecraft—stay on target.


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