IN THE PRESIDENT’S FIELD OF VIEW

STARGATE’S DOME WILL TURN AGAIN but only if you help!

Marty Kunz, WAS Second Vice President, has announced an official date for the Stargate re-roofing project to begin: Saturday, July 4. The dome will be removed on Friday, July 3, and some preparatory work may begin. Marty cannot do the work alone, however, and so the Society is calling on *you* (yes, you!) to help in whatever capacity you can. Whether that’s tearing off the existing roof, helping to build a new roof, helping to apply the shingles, etc. is up to you. The day that we’re observing in our observatory again may not be far off - but you can help it arrive sooner.

For more information, contact Marty at 810-667-6988 or at firstvp@warrenastro.org, or post your questions to the mailing list.

The International Year of Astronomy 2009 is a global effort initiated by the International Astronomical Union (IAU) and UNESCO to help the citizens of the world rediscover their place in the Universe through the day- and night-time sky, and thereby engage a personal sense of wonder and discovery.
A Glimpse of the Early Universe
by R. Jay Gabany

http://www.cosmotography.com/images/subaru_deep_field_1.html

Perched at the summit of a dormant volcano on the big island of Hawaii, the Subaru Observatory (left) sits alongside the twin Keck enclosures awaiting the pending sunset.

Photo credit: National Astronomical Observatory of Japan

The Subaru Deep Field project

For many, the word Hawaii conjures visions of sun kissed beaches, magnificent tropical scenery or a respite from the harsher realities that accompany northern winters. But, for some with the interest, Hawaii also represents the finest location on our planet to ponder the mysteries of the heavens—perched almost 14,000 feet (4,200 meters) above sea level at the summit of a dormant volcano named Mauna Kea (“White Mountain”) sits the world’s largest astronomical observatory operated by eleven countries. On most clear nights, thirteen instruments scan the firmament in search of answers to humankind’s most ponderous questions—what is the Universe that surrounds us, how did it begin and what is the true nature of our relationship with it.

Mauna Kea is a unique astronomical observing site because the mountain top pokes above most of the Earth’s weather systems. This makes the atmosphere above the peak extremely dry and clear— the proportion of clear nights is among the highest in the world.

The stability of the atmosphere above Mauna Kea also permits more detailed studies than are possible anywhere else from the surface of our planet— the stars seldom twinkle and appear nailed to the celestial vault. It’s distance from city lights produces an exceptionally dark sky, allowing observation of the faintest galaxies that lie at the very edge of the observable Universe.

Many of the telescopes scattered across Mauna Kea’s peak are among the largest optical instruments in the world. This is the home of the twin Keck telescopes—each gathers light with primary mirrors composed of 36 hexagonal segments that work together as a single piece of reflective glass spanning almost 33 feet (10 meters) in diameter. Nearby sits the Gillett (also known as the Gemini North) facility with its 26 foot (8.1 meter) mirror and the slightly larger Subaru telescope that employs a 27 foot (8.2 meter) diameter reflecting surface to detect and measure star light.

Operated by the National Observatory of Japan, the Subaru telescope is the second most powerful scope on the mountain and the fifth largest optical instrument in the world as of spring 2009. Since scientific observations commenced in the late nineteen-nineties, investigators have announced hundreds of discoveries using the Subaru’s prodigious capabilities.

One of the initial results, produced shortly after the

The Warren Astronomical Society Paper (WASP) is the official monthly publication of the Society. Each new issue of the WASP is e-mailed to each member and/or is available online at warrenastro.org. Requests by other Astronomy clubs to receive the WASP, and all other correspondence should be addressed to the Publications Director, Larry Phipps, at publications@warrenastro.org. Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor by the 28th day 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. The preferred method of submission is electronically via e-mail with attachment to the editor. Alternative submissions include printed form delivered in person, or via US mail. 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.
Subaru’s first light, was a very deep near-infrared exposure that demonstrated the telescope’s capabilities by capturing some of the most distant galaxies yet recorded in 2001, when it was released.

The Subaru Telescope is the fifth largest optical instrument on Earth and uses a 27 foot primary mirror to collect faint star light.

Photo credit: National Astronomical Observatory of Japan

However, armed with a more powerful camera, scientists soon decided to produce a new picture that would reach farther out and reveal an even earlier period of the Universe- one that would rival the most distant view seen by the Hubble Space Telescope.

The project, called the Subaru Deep Field (SDF), showcased the capabilities of ground based instruments and the Subaru, in particular. But, first, the project had to overcome restrictions imposed by the observatory’s time allocation system to use the telescope.

Most research projects that require a large telescope must go through a competitive bidding process which limits time on the instrument to no more than a few nights during the upcoming year so that the scope is available for the greatest number of investigators. For example, astronomers are limited to just three nights every six months with the Subaru.

However, the SDF team recognized that pooling observing nights among a large number of researchers would enable them to gather the extremely long exposure their project required. So, for thirty nights over a two year period, the SDF team produced an incredibly deep picture by accumulating a few images each night then digitally adding them together.

This technique yielded a view that was equivalent to a single, almost, 50 hour exposure.

The SDF’s goal was not limited to the identification of the most distant galaxies. The team also wanted to analyze and interpret the impact of early galaxies on the evolution of the universe. To help accomplish this, the SDF team developed a special filter that only permitted light with specific, narrow wavelengths to reach their detectors. These wavelengths matched the expected radiation emitted by galaxies close to the limits of observability- those that existed in the very early Universe. Other exposures also enabled the astronomers to gather light through traditional broadband filters.

The result was a mountain of data particularly when you consider Subaru’s field of view- the telescope can see a portion of the sky that’s about the size of the full moon! This is possible because of the telescope’s low focal ratio (f/3) and the 80 mega-pixel images produced by the Suprime-Cam (Subaru Prime Focus Camera).

The data catalogs of exposures compiled during the SDF project were finally released for full public inspection and independent analysis during November 2004. So far, the SDF project has generated over thirty scientific papers (twelve are listed here). To the delight of the research team, one of the earliest findings announced the identification of one of the farthest known galaxies- an early star system 12.88 billion light years from Earth!
Having the appearance of a night time blizzard, the Subaru Deep Field image captured several hundred local stars and over 200,000 distant galaxies in a view that stretches back to a glimpse of the very young universe.  
*Photo credit: Subaru telescope, National Astronomical Observatory of Japan & R. Jay GaBany- Cosmotography.com*

The highlighted dot is actually one of the farthest galaxies yet discovered by direct observation- almost 13 billion light years from Earth.  
*Photo credit: Subaru telescope, National Astronomical Observatory of Japan & R. Jay GaBany- Cosmotography.com*

Since we know that light takes time to travel, we also understand that spotting a galaxy 12.88 billion light years in the distance means we are also looking almost 13 billion years into the past! Therefore, this discovery provided a glimpse of the Universe only 780 million years following the Big Bang- an epoch when all of the matter and time in the Universe suddenly went through a rapid and violent expansion from a source, many speculate, that was smaller than the period at the end of this sentence. So, the seemingly insignificant ruddy dot highlighted in the accompanying picture actually provides a peek at one of the first galaxies.

Interestingly, even though the researchers chose a small portion of the firmament that's noticeably vacant of bright, naked-eye stars, the long exposure image, nonetheless, captured a few hundred (millions of times closer) stars that reside within our own Milky Way galaxy. These form a thin intervening curtain when we peer out into the everlasting beyond our home star system.

You can spot the local luminaries by their large size and round, colorful halos. However, everything else in the picture, from the sanguine blue curlicue shapes to the smallest, most insignificant pin points are, each one, a galaxy- enormous islands of stars, like individual Universes, each separated from the other by distances so vast that even traveling at the speed of light would require a journey time spanning the collective lifetime of an entire species. Each of the points presented in this picture contains hundreds of billions of suns! The only reason for their diminutive appearance is because they are astonishingly distant! Click here for a large scale image.

Although slightly more distant galactic candidates have been recently identified, their discovery required the assistance of gravitational lensing from a galaxy cluster- an optical phenomenon predicted by Einstein's Theory of Relativity. For example, the gravity from a massive object (such as a galaxy cluster or black hole) can warp space and time, bending everything in it - including the paths followed by light rays from a bright background source. This alters the time taken for the light to reach an observer. The result can both magnify and distort the observer's view image of the background source.
Other extremely distant signals continue to be detected such as a gamma ray burst. reported in late April 2009, located about 13 billion light years in the distance.

Subaru’s Deep Field picture does not feature a serendipitous alignment of massive objects nor does it capture mysterious gamma ray bursts. It represents one of the clearest, deepest picture covering the greatest sky area of the very early Universe yet produced from the surface of our planet or an orbiting spacecraft.

Subaru Deep Field image is part of an exhibition called Discover the Universe taking place in Oslo, Norway between April and June, 2009.

Photo credit: Discover the Universe

This rendition of the Subaru Deep Field image uses only a portion of the data that the research team collected. For aesthetic purposes, only the three of the six filter channels with the highest signal were included.

Discover the Universe, Oslo, Norway

The image was prepared with the generous permission of the National Astronomical Observatory of Japan at the request of the organizers of the Discover the Universe exhibition taking place April through June, 2009 in Oslo, Norway. The author wishes to thank those who made his participation in this Year of Astronomy 2009 event possible - particularly Jan-Erik Ovaldsen, the acclaimed Norwegian astrophysicist, published author and astronomy evangelist and the administrators of the Subaru Observatory.

IN THE NEWS

Salmonella Spills its Secrets on the Space Shuttle

NASA Science News for May 6, 2009

NASA-supported researchers have figured out why Salmonella bacteria become more virulent when they travel on board spaceships. They’ve also learned how to calm the bacteria down again—a trick that could come in handy for fighting diseases here on Earth.

FULL STORY at http://science.nasa.gov/headlines/y2009/06may_salm onella.htm?list1076889

Check out our RSS feed at http://science.nasa.gov/rss.xml!

So the first Galileoscopes have begun to ship, and it sounds as if they might be the last for a while yet. If they don’t get an influx of new orders, they will have to shut down the line until later this year. There are advantages to a more entrepreneurial approach...

Press release:

"May 19, 2009: The current production run of Galileoscopes consists of 60,000 units, which will satisfy orders placed and paid for through the first week of May. They will start leaving the factory on Monday, May 18th, and will begin reaching customers in mid-June. Of these 60,000, about half are going to customers who bought small numbers of Galileoscopes via our website at www.galileoscope.org, and about half are going to others who placed large orders (100 or more kits) via our request-for- quotation system.
Most of these orders are from schools and other educational organizations, with very few orders from SPoCs. SPoCs and other IYA2009 event organizers who haven’t yet ordered Galileoscopes must place orders NOW and pay invoices promptly. If we don’t place another manufacturing order by the end of May -- something we cannot do without first receiving a large number of new orders from customers -- our production line will be shut down, and we won’t be able to deliver Galileoscopes for several months. Because we don’t have any source of capital other than prepaid orders from customers, we cannot manufacture Galileoscopes in advance in the hope of receiving orders later -- we can produce them only to fill orders already received and paid for. Thus it is imperative that anyone who needs Galileoscopes for events during the 2nd half of 2009 place their orders NOW to avoid a lengthy delay in receiving them. Furthermore, since the manufacturing cost depends strongly on the number of Galileoscopes ordered and the ability of our factory to keep the production line running smoothly, we will need to institute a price increase of US $5 per unit if a second production run is not started within the next two weeks.

Simply put: if you want Galileoscopes at the current price, and if you want them in 2009, you need to order NOW! Thus, it is imperative that all SPoCs make contact with potential buyers of Galileoscopes within their respective jurisdictions and have orders committed as soon as possible."

 Star Trek: The Exhibition
 The Detroit Science Center

Star Trek: The exhibit opened on February 13th, 2009 at The Detroit Science Center. It has been covered on local television stations, radio and the Detroit News and Free Press. The Detroit Science Center has enlisted local fans to serve as volunteers. The Star Trek Exhibition will run from Feb 14-Sept 7, 2009. For further information link to:
Detroit Science Center
5020 John R
Detroit, MI 48202
www.detroitsciencecenter.org

Thank you!
John A. Schroer – Planetarium Education Coordinator

WAS Annual Picnic
Saturday, July 25, 2009

The Warren Astronomical Society is inviting the Ford, 7 Ponds, Oakland and of course our own WAS members to a combination picnic and observing event on Saturday, July 25 at Rotary Park, located in the Wolcott Mill Metro Park. We are planning on starting at around noon with the picnic, socializing and solar observing and continue into the night for night time observing. WAS will provide lots of sodas, chips and a few other goodies (but no alcohol due to park rules). Due to the number of people expected we won’t be able to provide food for everyone...nor a grill to cook on if you bring your own meat, etc. We do have a VERY small gas barbecue people can use but recommend you bring your own personal BBQs, box lunches, etc. There is a very good deli and pizza store on Romeo Plank at 27 Mile Road in Ray Township that we frequent all the time. It is not that far from Stargate.

Rotary Park is a large park and there is plenty of parking space and room to set-up your telescopes. All club members and their families are invited to attend. The event will not be advertised to the public...but there may be some scouts camping there that would enjoy a look through our telescopes.

The club observatory is located in Rotary Park, 1.8 Miles East of Romeo Plank and that is part of the Wolcott Mill/Metro Park system. Besides the observatory there are free tours of the historic Wolcott Mill (grain mill), hikes along the North Fork of the Clinton River, which passes through the park, and the possibility of catching a fish or two in the parks dam near the observatory. We will have walking tours for those interested in seeing the parks attractions.

Bob Berta

Oakland Astronomy Club NEWSLETTER
JUNE, 2009

http://oaklandastronomy.ulmb.com/oacnews.html

Clear skies, Bill MacIntosh

Seven Ponds Astronomy Club:
Open Invitation

The Seven Ponds Astronomy Club extends its invitation to the Oakland Astronomy Club and Warren Astronomical Society members to our monthly meetings. Our club website is:
As the Sun's activity has a great influence on our electric Earth's atmosphere, and solar-terrestrial interactions, straight line paths is electromagnetic radiation; both in influence on how radio waves propagate in other than

John Lines -Seven Ponds Astronomy Club

Solar Update

Tad "In the Sun he sang with cheerful heart" Cook, K7RA, this week reports: It is so great to see some real Solar Cycle 24 sunspot activity this week. Instead of a phantom that pops into view one day and is gone the next, we have sunspot 1019, which has persisted for five days so far. Emerging on Sunday, May 31, the resulting daily sunspot numbers through June 4 are 15, 23, 19, 17 and 17. This is a Solar Cycle 24 spot, and at high latitude too -- an indication of a new cycle spot. Meanwhile, the low solar wind and quiet geomagnetic conditions continue.

Currently, spot 1019 is about to fade, although it is still a few days away from crossing the eastern limb to the far side. NOAA and the US Air Force expect geomagnetic conditions to continue to be quiet, and a planetary A index around 5 is predicted until June 29. Predicted solar flux values are 72 for June 5-6, then 74 on June 7-13. Geophysical Institute Prague predicts quiet geomagnetic conditions June 5-8, quiet to unsettled June 9-10 and quiet again June 11. Sunspot numbers for May 28-June 3 were 0, 0, 0, 15, 23, 19 and 17 with a mean of 10.6. The 10.7 cm flux was 67.7, 68.2, 68.5, 68.5, 72.5, 71.9 and 72.5 with a mean of 70. The estimated planetary A indices were 7, 5, 3, 3, 2 and 4 with a mean of 3.9. The estimated mid-latitude A indices were 5, 4, 2, 3, 2, 2 and 4 with a mean of 3.1. For more information concerning radio propagation, visit the ARRL Information Service Propagation page <http://www.arl.org/tis/info/propagation.html>. To read this week's Solar Report in its entirety, check out the W1AW Propagation Bulletin page <http://www.arrl.org/w1aw/prop/).

Propagation Forecast Bulletin
From Tad Cook, K7RA
Seattle, WA

NASA, NOAA RELEASES NEW PREDICTIONS FOR SOLAR CYCLE 24

An international panel of experts -- led by the National Oceanic and Atmospheric Administration (NOAA) and sponsored by NASA -- has released a new prediction for the next solar cycle: Solar Cycle 24 will peak in May 2013 with a below-average number of sunspots <http://science.nasa.gov/headlines/y2009/29may_noaaprediction.htm?list1300638>. "If our prediction is correct, Solar Cycle 24 will have a peak sunspot number of 90, the lowest of any cycle since 1928 when Solar Cycle 16 peaked at 78," said panel chairman Doug Biesecker of NOAA's Space Weather Prediction Center. This report clarifies a NOAA report from May 2009 that stated that Solar Cycle 24 would bring "90 sunspots per day on average" <http://www.noaanews.noaa.gov/stories2009/20090508_solarstorm.html>.

The latest forecast revises a prediction issued in 2007 <http://www.arl.org/news/stories/2008/01/07/100/>. At that time, a sharply divided panel believed solar minimum would come in March 2008 followed by either a strong solar maximum in 2011, or a weak solar maximum in 2012. "It turns out that none of our models were totally correct," said Dean Pesnell of the Goddard Space Flight Center and NASA's lead representative on the panel. "The Sun is behaving in an unexpected and very interesting way."

In 2007, experts varied in their predictions on when the solar cycle would peak and how strong it would be. In April of that year, NOAA, in coordination with an international panel of solar experts, predicted that the next 11-year cycle of solar storms "would start in March 2008, plus or minus six months, and peak in late 2011 or mid-2012" <http://www.swpc.noaa.gov/SolarCycle/>.


The National Association for Amateur Radio maintains a website to promote interest in Amateur Radio communications and experimentation, represents US Radio Amateurs in legislative matters, and maintains fraternalism and a high standard of conduct among Amateur Radio operators. Interestingly enough, a major influence on how radio waves propagate in other than straight line paths is electromagnetic radiation; both in Earth's atmosphere, and solar-terrestrial interactions. As the Sun's activity has a great influence on our electromagnetic field, amateur radio enthusiasts monitor sun activity regularly. For more information concerning radio propagation, visit the ARRL Technical Information Service Propagation page http://www.arl.org/tis/info/propagation.html. To read this week's Solar Report in its entirety, which includes updates on sunspots, solar flares, and Coronal Mass Ejections (CME), check out the W1AW Propagation Bulletin page http://www.arrl.org/w1aw/prop/.

July 1, 2009
In the cycle forecast issued in April 2007, half of the panel predicted a "moderately strong cycle of 140 sunspots, plus or minus 20, expected to peak in October 2011. The other half predicted a moderately weak cycle of 90 sunspots, plus or minus 10, peaking in August 2012. An average solar cycle ranges from 75 to 155 sunspots. The late decline of Cycle 23 has helped shift the panel away from its earlier leaning toward a strong Cycle 24. The group is evenly split between a strong and a weak cycle."

At a meeting of the American Geophysical Union in San Francisco in December 2007, David Hathaway of NASA's Marshall Space Flight Center, along with colleague Robert Wilson, said that Solar Cycle 24 "looks like it's going to be one of the most intense cycles since record-keeping began almost 400 years ago." They said they believe the next solar maximum should peak around 2010 with a sunspot number of 160, plus or minus 25. "This would make it one of the strongest solar cycles of the past 50 years -- which is to say, one of the strongest in recorded history." Four of the five biggest cycles on record have come in the past 50 years. "Cycle 24 should fit right into that pattern," Hathaway said.

Right now -- June 2009 -- the solar cycle is in a valley, the deepest of the past century. In 2008 and 2009, the Sun showed some of the lowest sunspot counts on record, as well as weak solar winds and a low solar irradiance, going more than two years without a significant solar flare. "In our professional careers, we've never seen anything quite like it," Pesnell said. "Solar minimum has lasted far beyond the date we predicted in 2007."

In recent months, however, Pesnell said that the Sun has begun to show some small signs of life: Small sunspots and "proto-sunspots" are popping up with increasing frequency. Enormous currents of plasma on the Sun's surface are gaining strength and slowly drifting toward its equator. Radio astronomers have detected a tiny but significant uptick in solar radio emissions. All these things are precursors of an awakening Solar Cycle 24 and form the basis for the panel's new, almost unanimous forecast.

Pesnell cautioned optimism, telling the ARRL that there is an "error bar of +/- 20." This means Solar Cycle 24's sunspot number could be as high as 110, or as low as 70. "Based upon my own personal research, I don't think we'll see 90 [sunspots in Solar Cycle 24]," he said.

When asked if such a low number foretold the beginnings of a Maunder Minimum <http://en.wikipedia.org/wiki/Maunder_minimum>, Pesnell said that a Maunder Minimum takes several cycles to appear: "Sunspots [in solar cycles] leading up to the Maunder Minimum took several cycles to disappear. I really can't predict what will happen in Solar Cycle 25. What we're seeing now is something that looks like a sunspot, but it looks as if someone has come along and 'stomped' on it, creating a multitude of little things. We don't have a name for this and we've never seen anything like it before."

There could be more surprises, panelists acknowledge -- and more revisions to the forecast. "Go ahead and mark your calendar for May 2013," Pesnell said.

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Texas Star Party
Roving Reporters

MAY 5, 2009: I'm just winding down from the Texas Star Party (I'm not even home in Michigan yet - still in Phoenix), and I've posted some of my QHY8 images in low res jpeg in FilsFotos.

TSP 2009 was fantastic for 3 nights - Sunday through Tuesday - and then we got clouded in. Despite that, this camera, coupled with a CGE1100 and Hyperstar3, gave me more in 2 nights than I normally get in a week with my SBIG ST-2K. Finally, pitch black skies and f/2.0 beats everything - dark skies always win.

As for the 3rd night, my RA/DEC cables failed (CGE1100's biggest blunder) and I lost Tuesday night. There's a fellow in Toronto that has a permanent fix - I'm going there next week.

Phil Martin

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DIARY OF ASTRONOMICAL
PHENOMENA - JUNE, 2009

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** WAS Meetings scheduled for 2009**

**Cranbrook Meetings:** Every 1st Monday
June 1, July 6, Aug 3, Sept 7, Oct 5, Nov 2, Dec 7

**Macomb Meetings:** Every 3rd Thursday
June 18, July 16, Aug 20, Sept 17, Oct 15, Nov 19, Dec 17

The next Macomb meeting is scheduled for Thursday, May 21st, and Cranbrook meeting is scheduled for Monday, June 1, 2009. After each meeting of the Warren Astronomical Society, some club members go to a restaurant for a snack and informal chat. All members are invited to join us there. We generally leave from the Macomb and Cranbrook meetings about 10 PM, and meet at the restaurant a few minutes later. We order food from the menu, sit around and chat for about an hour, and leave the restaurant between 11:30 PM and midnight.

After the Macomb meeting, club members meet at:

National Coney Island
28901 Groesbeck Hwy
Roseville, MI 48066-2334
just south of 12 Mile Rd.
Roseville
Phone: 586-772-1324

After the Cranbrook meeting:
Red Coat Tavern
31542 Woodward
on the east side of Woodward, two blocks north of 13 Mile, just north of Burger King in Royal Oak
Phone: 248-549-0300

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**Warren Astronomical Society**

**2009 Presentations**

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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.

At Cranbrook, on **June 1st**, "Fast" Mike Simonsen, long-time WAS member and Development Director of the American Association of Variable Star Observers, will be presenting on the contributions amateur astronomers have made and continue to make to real cutting-edge science.

The AAVSO was founded in 1911 as an organization of amateur astronomers, to observe from locations throughout North America variable stars to which the professionals could not allocate scarce and expensive resources. It was perhaps the prototype of distributed citizen science such as today's Folding@Home or Galaxy Zoo. Mike blogs frequently at Simostronomy and contributes to the AAVSO podcast. His presentations are uniformly excellent. Don't miss it!

At Macomb CC on **June 18th**, David Y. Bailey, our resident Einstein #1, will be presenting a discussion of the various types of stellar explosions. Dave is a brilliant and iconoclastic mind who is able to convey his very thought-provoking ideas at a level any science-minded layman can understand, with the help of great conceptual diagrams and usually without resorting to the math.

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**2009 Stargate Observatory Open House Schedule**

**NOTE:** Depending on weather at the time, open house dates are:

**June 27, July 25 (WAS Picnic), Aug 01,**
Aug 29, Sept 26, Oct 24, Nov 21, Dec 26

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 incase 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

Star Party Tips & Etiquette

* When attending a Star Party, you don't have to stay the whole time - though we ask that you aim your headlights away from the observing field when you park in case you have to leave early.
* Astronomical twilight will begin around 9 PM, so please plan to be at Bill's place by 8:30. Be careful with headlights on your way in, especially after sundown. Make sure to turn the dome lights off if possible, and park your car facing away from the observing field if you have running lights.
* Please don't use white light flashlights when others are observing. Others will have flashlights, but if you'd like to bring your own, you can easily make a red-light flashlight that will help you get around in the dark and is safe for night vision. I make reasonably decent ones with a red marker and an index card*, but you can read other ideas here.
* Observing is an outside activity, so dress accordingly - a little warmer than the temperature would indicate. Even in the summer, it can get surprisingly chilly at night. Like any other activity, the key to lasting is layers, layers, layers! Plan to have at least two layers for several garments: socks, pants, and a shirt. Core temperature is important too, so pay extra attention to keeping your torso warm - an insulated vest can work wonders.

If there's something specific you'd like to see, we'll do our best to make it happen. We may have safe, filtered solar telescopes to look at the sun in amazing detail before it gets dark; if you're interested in seeing our local star, let us know and we'll try to have a telescope available.

* Take a cheap drugstore flashlight - preferably not too bright to start with. The omnipresent Eveready $1 plastic flashlight works well. Screw off the plastic cap and pop out the clear plastic "lens" (aka bezel). You can paint the bezel with translucent nail polish, use a red permanent marker, or red cellophane. For better light blocking, you can trace the disk on a sheet of white paper or an index card. Cut out the disk of paper, line it up with the bezel, and screw the cap back on.

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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 - (publications@warrenastro.org). The ad will run for six months. The month and year the ad will be removed is also shown.

WANTED: Spidervane for 6” Criterion Dynascope. My name is Gary Klein, I am a former member of WAS. I am getting back into observing and photographing Celestial objects. On dusting off my 6” Criterion Dynascope, I found some damage to the tube. I began disassembling the finder scope and secondary mirror and spider. I ended up twisting off one of the mounting studs for the spider. It is beyond repair. I have unsuccessfully been on a search for a direct replacement of the spider. The secondary mirror is fine. It is a straight 4 legged spider. Contact Gary at: (586) 247-2460

Thanks. Gary K. [9-2009]

FOR SALE: This is a 8 or 9 year old Celestron Starhopper 6” Dob. I’ve used it up at our cottage for years and its given me many years of enjoyment. I am including a 25mm plossl eyepiece and a Red dot laser star spotter. I am the original owner and am selling it because I recently upgraded to a bigger scope. I am asking $300 but will take any reasonable offer. Call John 586-726-0741 [9-2009]
FOR SALE: Turn your 2X Barlow into a 2.5, 3, 4, or 5X device with my Barlow amplifier. Use it with your lowest power eyepiece and keep that eye relief and apparent field, no matter how much you magnify your image. No more squinting with a 4 or 6mm eyepiece. The Barlow amplifier is a simple extension tube available for $4. A 40 power eyepiece becomes a 200 power eyepiece with my 5X amplifier. Call at 586-776-9720 or e-mail me (cometman@mybluelight.com) and I'll bring your amplifier choice to the next meeting. If you buy the set of four amplifiers, I'll take $3.00 off the total price. For mail delivery, to your home address, add $1.50 for shipping.

[11-2009]

FOR SALE: Meade 16 inch, Schmidt-Cass telescope with field tripod. Asking $10,000. Call John at 586-242-8246.

[12-2009]

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Stargazing Manitoulin: July 17-21, 2009

Gordon's Park, a campground on Manitoulin Island has positioned itself as an "eco-resort", an astronomical and nature-oriented destination, and has announced their two 2009 star parties. Activities include a Campfire Welcome Reception, Public Observing Sessions, Laser Guided Sky Tours, Guest Speakers, Swap Meet, Show & Tell Session, Nature Interpretive Centre, Guided Fossil Hike, Mini Putt Challenge, Horseshoe Tournament, Children's Playground, and their Saturday Night BBQ Turkey Pot Luck Supper. Presenters for 2009 include Heather Theijsmeijer, Education Coordinator, Canadian Astronomical Society (CASCA) on "IYA2009: Canada Looks to the Skies" and Klaus Peltsch, Astronomy Professor, Algoma University on "An Update on the Search For Extrasolar Earthlike Planets."

Manitoulin Star Party - August 14 - 18, 2009


Diane and I attended the August event last year (along with John of the FAAC). Jerry and Lisa Kuchera have attended in the past. The event last year wasn't terribly large - about thirty people - but it was a lot of fun. We met some great people of all levels of astronomical experience and from all over the Great Lakes region. The skies are extremely dark and were beautiful... when it wasn't raining.

Manitoulin is beautiful and diverse, the Bruce Peninsula equally so, and the ferry to the island is great fun. Parts of the island, including Gordon's Park, have been designated a dark sky preserve by the Royal Astronomical Society of Canada (RASC). If you're interested in wildlife, fossils, Great Lakes geology, or just a fun camping trip, it's something to consider. It's very kid-friendly, so take that into account - though we had only around five attendees under sixteen.

Jonathan Kade

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The Cool Chemistry of Alien Life

Alien life on distant worlds. What would it be like? For millennia people could only wonder, but now NASA's Spitzer Space Telescope is producing some hard data. It turns out that life around certain kinds of stars would likely be very different from life as we know it.

Using Spitzer, astronomers have discovered the organic chemical acetylene in the planet-forming discs surrounding 17 M-dwarf stars.

Do alien planets around other stars have the right ingredients for a pre-biotic soup?

It's the first time any chemical has been detected around one of these small, cool stars. However, scientists are more intrigued by what was not there: a chemical called hydrogen cyanide (HCN), an important building block for life as we know it.
"The fact that we do not detect hydrogen cyanide around cool stars suggests that that prebiotic chemistry may unfold differently on planets orbiting cool stars," says Ilaria Pascucci, lead scientist for the Spitzer observations and an astrophysicist at Johns Hopkins University in Baltimore, Maryland.

That’s because HCN is the basic component for making adenine, one of the four information-carrying chemicals in DNA. All known life on Earth is based on DNA, but without adenine available, life in a dwarf-star solar system would have to make do without it. “You cannot make adenine in another way,” Pascucci explains. “You need hydrogen cyanide.”

M-dwarf and brown dwarf stars emit far less ultraviolet light than larger, hotter stars such as our sun. Pascucci thinks this difference could explain the lack of HCN around dwarf stars. For HCN to form, molecules of nitrogen must first be split into individual nitrogen atoms. But the triple bond holding molecular nitrogen together is very strong. High-energy ultraviolet photons can break this bond, but the lower-energy photons from M-dwarf stars cannot.

"Other nitrogen-bearing molecules are going to be affected by this same chemistry," Pascucci says, possibly including the precursors to amino acids and thus proteins.

To search for HCN, Pascucci’s team looked at data from Spitzer, which observes the universe at infrared wavelengths. Planet-forming discs around M-dwarf stars have very faint infrared emissions, but Spitzer is sensitive enough to detect them.

HCN’s distinctive 14-micron emission band was absent in the infrared spectra of the M-dwarf stars, but Spitzer did detect HCN in the spectra of 44 hotter, sun-like stars.

Infrared astronomy will be a powerful tool for studying other prebiotic chemicals in planet-forming discs, says Pascucci, and the Spitzer Space Telescope is at the forefront of the field. Spitzer can’t yet draw us a picture of alien life forms, but it’s beginning to tell us what they could—and could not—be made of. “That’s pretty wonderful, too,” says Pascucci.

For news of other discoveries based on Spitzer data, visit www.spitzer.caltech.edu. Kids can learn Spitzer astronomy words and concepts by playing the Spitzer “Sign Here!” game at spaceplace.nasa.gov/en/kids/spitzer/signs.
Diane Hall asked how best to promote the Edberg lecture - whether the terminology we were using was effective in getting the attention of the general public, and what the real audience for the lecture was.

The board discussed the logistics of the Astronomy Day events at Cranbrook. Larry noted that the signs were too small. Diane noted that activities spanned the whole building and made it difficult for the public to find everything. All agreed that communicating the event list and helping people find activities should be priorities going forward.

The board meeting adjourned at 7:28 PM.

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Warren Astronomical Society
Minutes of General Meeting
May 4, 2009
Cranbrook

The meeting was called to order at 7:32 PM.

Officers' reports:
Bob Berta reported that Astronomy Day was a successful event, at Cranbrook but especially at Stargate. He asked any members who could attend to purchase tickets for the Stephen Edberg lecture on exoplanets.

Gary Ross noted very emphatically that the Grosse Pointe North special event had been postponed due to a schedule conflict, and that Larry Phipps would be stepping into the gap.

Marty Kunz noted that we had almost one hundred visitors to the open house. He reviewed the events at Cranbrook including solar observing and lectures by WAS members.

Stephen Uitti reported the current bank balance at $5700.67.

Jonathan Kade reported on the merchandise order and on the completion of the Radio JOVE receiver.

Interest groups:
Double Star – The next meeting will be at the open house May 30.
Library – The library accepted a biography of George Ellery Hale from Ken Bertin.
Discussion Group – The next discussion group meeting is May 28.

Solar System – Jim Shedlowsky saw the Moon occult Venus in April.
Other observers were defeated by cloud cover.
Badges – Larry Kalinowsky awarded Jerry Kuchera a solar observing sketch and Jonathan Kade a badge for participating in the Spring Messier Contest.

Mini-presentation: Jon Blum presented an overview of the 2009 Texas Star Party, with photos of the W.A.S. members in attendance and some amazing astrophotography done there by our members. The W.A.S. group’s signs at their observing site prompted interest from many, including from a member who was active in 1969.

Ken Bertin delivered an exhortation to virtue to members who had not yet purchased tickets to the Edberg lecture.

Intermission: 8:40-8:54 PM

Presentation:
Frank "Rocketman" Uroda delivered an amazing audio-visual feature presentation, discussing his all-sky photography, the meteors and satellites he had recorded, and his large-scale model rocketry. His time-lapse all-sky movies of clouds moving and changing mesmerized the audience - one of the few times that clouds were so entertaining to our members!

41 people attended the meeting.

The meeting adjourned at 10:04 PM.

Warren Astronomical Society
Minutes of General Meeting
May 21, 2009
Macomb

The meeting was called to order at 7:40 PM.

Officers' Reports:
Bob Berta shared articles from local papers: a Free Press special feature on the recent Hubble repair, a local columnist who attacked astronomy and space science generally.

Gary Ross noted that we would be visiting Grosse Pointe North for a make-up event to replace the event originally scheduled for this meeting in March or April 2010. He noted that Jeff Dickerman of Optec would be our 2010 banquet speaker. The card is full into next May.

Marty Kunz reported that three different educational groups attended the Astronomy Day open house,
which had generally great attendance. He noted that the Stargate Observatory sign had been replaced gratis by Wolcott Mill Metropark. He mentioned a new astronomical internet radio site, http://www.astronomy.fm, that Cranbrook is participating in. The next meeting is May 30.

Stephen Uitti reported that the current balance at $5314.36. He reported that the club paid for the creation of an embroidery disc for the embroidered items offered by Diane Worth. He noted that all recent memberships had been processed.

Jonathan Kade delivered the first batch of new WAS jackets. He reported on updates to the website and mentioned some forthcoming upgrades.

Larry Phipps read a letter of thanks from Brian Klaus to the Society. Brian hopes to attend a meeting soon, and Larry might be able to drive him. The club applauded afterwards.

Diane Hall reported on promotion for the Edberg talk. Cranbrook’s official headcount for those in attendance was 133.

Special Interest Groups:
Library: John Lines donated a great DVD of Bob Berta’s SCT maintenance presentation from March, in which Bob disassembled and reassembled a Celestron SCT.

Solar: Naught!

Double Star: The next meeting is at the open house May 30.

Discussion Group: The group will "attend" an internet presentation and teleconference on the birth of open clusters by Dr. Steven Stahler. (Transcript at: http://is.gd/Ikfe)

Observing Awards: Larry Kalinowsky looked up Rick Gossett’s observing records on the Astronomical League website and awarded Rick W.A.S. badges for solar, lunar, and deep-sky observations.

New business:
A group of members of the FAAC, including Stephen Uitti, is recording a monthly astronomy show for local cable and other uses. They need guest stars, images, and content. Contact Stephen if you’re interested in helping.

Brief Presentations:
Phil Martin displayed a large canvas print of his photo of Orion’s sword, taken at TSP. He gave background on his telescope configuration and on the process of having the print made. Members were universally awed by the field of view and how well the canvas presented the image.

Jonathan Kade reviewed the Hubble repair mission, discussing a set of photos taken from the NASA TV feed of the mission.

Larry Phipps presented a rather less reverent look at the repair mission, featuring extremely rare and even more improbable photos. Unfortunately, this mission ended in tragedy.

Ken Bertin issued a new version of the history of the reflector telescope, which this time IS definitive. If they so choose, W.A.S. members may still give too much credit to Isaac Newton (whose telescope *is* our logo, after all).

Intermission, 8:15 PM-8:40 PM

Saving the day after the postponement of the Grosse Pointe North special event, Larry Phipps presented a revised and expanded version of his classic 2006 presentation "Tubehopping On the Interplanetary Superhighway." This "director's cut" was a trademark Phipps presentation, featuring high production values, helpful and entertaining multimedia, and complex information presented in a clear and compelling way. His update to the timelines of the space probes tied into Stephen Edberg's special presentation - sadly, many probes have been delayed years or indefinitely or outright cancelled. Those who saw it before were as captivated as those seeing it for the first time.

The meeting was adjourned at 10:01 PM. Thirty-six people attended the meeting.

WAS Annual Picnic
Saturday, July 25, 2009
Rotary Park, located in the Wolcott Mill Metro Park
12:00n to 1:00am