The W.A.S.P. newsletter

November 2007

The Warren Astronomical Society Paper

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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 e-mailed to each member and/or available online www.warrenastronomicalsociety.org. 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

The big news for this month is Comet Holmes. A dinky little comet discovered in 1892, made history repeat itself. It was discovered during another outburst at that time. Normally floating around the solar system at seventeenth magnitude, it suddenly outburst to mag 2.8 at the end of October and is still getting brighter at this writing. Can you imagine what a change in brightness it is, going from seventeenth to nearly third magnitude. In about a week, it brightened nearly one million times. The comet is moving away from the Sun and Earth now, so the tail leads its travel back to the realm of Jupiter where it was dislodged from its original orbit. The picture was taken by Jack Dembicky at Sunspot New Mexico, on Oct 25. Its an RGB shot with one second exposures, taken with a 3.5 meter telescope.

Five students are given credit for discovering over 1,300 previously undetected asteroids. Some of the bodies do cross the Earth's orbit, so they will be put on the close watch list. The five students are undergrads in the University Of Washington. Their guiding light was Professor Andrew Becker, who helped and taught the students how to use software in their research. The telescope used was an 8.2 foot Sloan telescope, located at Apache, NM. The Minor Planet Center at Harvard Observatory, verified the finds, and all the students will get the chance to name their discoveries.

Iapetus, one of Saturn's many moons, has an extremely bright half and an extremely dark half surface appearance that has not been explained since its discovery by Cassini in 1671. The leading face in its travel around Saturn, is as

dark as asphalt, while the trailing half is bright as snow. The Cassini-Huygens space probe, circling Saturn, has shown that the dark side scoops up dark material given off by other satellites and helps warm the leading half. The moon is 907 miles in diameter and orbits Saturn at a distance of about two million miles.

Congratulations to Dr. Phil for his amazing photo of the Witch Head nebula. If you haven't seen it, I'm sure the picture will be somewhere in this issue. You can bet the photo will be in the new club calendar.

New officers were elected at the last MCCC meeting. Their duties take effect in 2008. Those elected were Bob Berta, president, Gary Ross, 1st Vice president (program chairman), Marty Kunz, 2nd Vice president (observatory chairman), Stephan Uitti, treasurer, John Kade, secretary, Larry Phipps, publications and John Kriegel, outreach chairman.

Those long observing nights are coming back again. Back for evening observers anyway. Daylight Savings Time ends on the first Sunday of November 4, this year, so move that clock back one hour. Dust off that 'scope and take it out of your closet (or garage). It's time to scan the universe again.

I've been trying some double star observing this year and find it's a welcome challenge, even in my light polluted skies in Roseville. The sky is usually rated about second magnitude but my ten inch 'scope will get me to tenth magnitude, making many doubles an interesting find. Close doubles are always a challenge but what's even more interesting is the pairs that have one bright star and one dim star are easier to separate than two bright stars. The bright stars overwhelm each other, making separation harder. So the dimmer the pairs are, the easier they are to separate. You'll find double star hunting quite enjoyable under any lighting conditions.

Eleven people showed up for the September discussion group meeting. It was a Gary Ross night, talking about lunar librations and Orion's Trapezium. A test was thrown in our members laps. It involved the inspection of the stars that are within the boundaries of that asterism. How many stars can you detect within that lopsided square? Let Gary know what your count is. Comet Holmes made news that night too.

November's discussion group meeting place hasn't been determined yet. The problem is Thanksgiving. When a meeting place is settled, it'll be announced via e-mail.

All space photos are courtesy of SPACE.COM and SPACEWEATHER.COM, unless otherwise noted.

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THE SWAPSHOP

This column is for those who are interested in buying, trading or selling items. Call 586-776-9720 (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. Three sets (A,B&C) of 3X5 AstroCards with illuminated, red light viewer. Great for star hoping, if you don't have a GO-TO or electronic setting circles. $25.586-776-9720 (cometman@mybluelight .com). (3-08).

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WEB SITES OF INTEREST

Dear WAS members,

Here are 3 web sites that Gary Gathen exposed to those members that attended the WAS Discussion Group meeting last night. They are a must for Moon aficionados!

Dick Gala

- http://www.jgiesen.de/moonlibration/index.htm
- http://www.phy6.org/stargaze/Smoon4.htm
- http://astronomy.physics.tamu.edu/Java/Tools/Lunar/Libration/index.html

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WAS SUB-GROUPS

Want to delve more deeply into a specific field of interest in astronomy? Joining a sub-group just may be the answer. Please contact the chairperson listed by the subgroup of interest for more information, meeting times and location. Current sub-groups are:

Discussion/Computer Group - Larry Kalinowski
Lunar/Planetary/Double Stars - Alan Rothenberg
Deep Sky Group - Phil Martin
Solar Group - Marty Kunz
Hands on Group - Riyad Matti

WAS Meetings scheduled for 2007

Cranbrook Meetings – Every 1st Monday

Nov. 5 Dec. 3

Macomb Meetings – Every 3rd Thursday

Nov. 15 Dec. 20 (Banquet Date)

Warren Astronomical Society

2007 presentations

Date	Day	Presenter	Subject
5-Nov	Mon	John Lines	7 Ponds Nature Center (TBD)
15-Nov	Thurs	Larry Kalinowski	"Let Me Demonstrate"
3-Dec	Mon	Neb Duric	Radio Astronomy-Origin of Cosmic Rays (Imaging program Leader at WSU)
20-Dec	Thurs	Mike Simonsen	(Banquet) Astronomy Hobby or Obsession?

Warren Astronomical Society

2008 presentations

Date	Day	Presenter	Subject
7-Jan	Mon	PBS DVD	Seeing in the Dark
17-Jan	Thurs	Justin Nomura	Philosophy of the Universe
4-Feb	Mon	Gary Ross	K's Folly
21-Feb	Thurs	Larry Phipps	TBD
3-Mar	Mon	Mike Simonsen	Variable Star observing (TBD)
20-Mar	Thurs	Stephen Uitti	TBD
7-Apr	Mon	Ken Bertin	E. E. Barnard
17-Apr	Thurs	Norm Dillard	The largest Stars

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.

Thank you for your support,
Riyad I. Matti
W.A.S. 1st V.P. (program chairperson) 2006/2007

November, 2007 Calendar

Thursday, Nov 1 • 5:18 p.m.: Last Quarter Moon
Saturday, Nov 3 • 9:00 a.m.: The Moon passes 0.03° south of Regulus (Occultation in South West U.S.); 11:00 p.m.: The Moon passes 1.8° south of Saturn
Monday, Nov 5 • 3:00 p.m.: The Moon passes 3° south of Venus
Thursday, Nov 8 • 6:00 a.m.: The Moon passes 7° south of Mercury; 4:00 p.m.: Mercury is at greatest western elongation (19°)
Friday, Nov 9 • 7:32 a.m.: The Moon is at apogee (252694 miles from Earth); 10:00 a.m.: Asteroid Ceres is at opposition (in constellation Cetus); 6:03 p.m.: New Moon
Sunday, Nov 11 • 4:00 p.m.: The Moon passes 0.4° south of Antares
Monday, Nov 12 • 5:00 p.m.: The Moon passes 5° south of Jupiter
Saturday, Nov 17 • 8:00 a.m.: Asteroid Amphitrite is at opposition (near Pleades); 5:32 a.m.: First Quarter Moon; Leonid meteor shower peaks
Sunday, Nov 18 • 8:00 p.m.: Asteroid Flora is at opposition (in constellation Taurus)
Friday, Nov 23 • 7:13 p.m.: The Moon is at perigee (221,950 miles from Earth)
Saturday, Nov 24 • 9:30 a.m.: Full Moon
Thursday, Nov 27 • 1:00 a.m.: The Moon passes 1.7° north of Mars
Friday, Nov 28 • 5:00 p.m.: Venus passes 4° north of Spica
Friday, Nov 30 • 3:00 p.m.: The Moon passes 0.3° south of Regulus

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2007 Stargate Observatory Open House Schedule

NOTE: Pending open house dates are: Nov 10th and Dec 8th. Dependent on weather.

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 clouded over I plan on being there. Often the weather is cloudy but clears up as the evening progresses.

Bob Berta
W.A.S. 2nd V.P. (2007)

Meeting Minutes

Warren Astronomical Society
Minutes of BOARD/Club Meeting
October 1, 2007
Cranbrook

The meeting was called to order at 6:30 pm.

Attendance:
Norman Dillard, Phil Martin, Stephen Uitti, Riyad Matti, Marty Kunz, Bob Berta

The minutes from the September meetings were approved.

The treasurer's report of $4548.14 was approved.

Stephen reported that WAS had income from the Perseid event of $36.00. There was also income from the Kensington Star Party of $175.75.

Riyad reported that half of the 2008 calendar for speakers filled.

The annual banquet was discussed. There will be a family style meal. Efforts will be made to have a piano.

Marty reported on nominations for officers to date, as follows.

President: Bob Berta
1st VP: Gary Ross
2nd VP: Marty Kunz
Treasurer: Stephen Uitti
Secretary: ? Publications: ? Outreach: ?

Those who wish to run for an office in WAS should let Marty know.

Upcoming events: Oct 7 Scouts at Stargate. Bill Beer's Cadillac Star Party. Oct. 10-14. Stargate open house on Oct. 13. The next open house will be on Nov. 10th. A discussion with someone at Wolcott Mill Metropark of other events that could be held at Stargate this year was reported.

Marty Kunz reported on repairs to the roof of Stargate observatory.

Other items discussed included the club's 501c status, events for handicapped people, a speaker for Cranbrook, sponsored by GLAAC, the fact that the club's 8 inch SCT is missing, some corrections to the WAS Yahoo web site, awards for the club banquet, a Scouting University, and that Bob will order a copy of "Seeing in the Dark" for the club, with reimbursement.

The meeting was adjourned at 7:30 pm.

Respectfully submitted (via notes from Stephen Uitti),
Dale Partin

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Warren Astronomical Society
Minutes of club meeting
October 1, 2007
Cranbrook

The meeting was called to order at 7:30 pm.

A visitor named Gary Figi was present. He teaches high school photography near Kensington. The school has an astronomy club.

The officer reports were given.

The next open house will be on October 13 and November 10. Some upcoming events include the Mid-Atlantic Star Party, Bill Beer's Star Party, The Fish Lake Star Party and the Hidden Hollow Star Party. Approximately 4,000 people attended the Kensington Star Party. Other items from the board meeting were summarized for the club.

Marty Kunz is collecting nominations for WAS officers for next year.

Phil Martin gave a presentation entitled, "Evolution, the Real Science".

31 people attended the meeting.

The meeting adjourned at 10:00 pm.

Respectfully submitted (via notes from Stephen Uitti),
Dale Partin

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Warren Astronomical Society
Minutes of club meeting
October 18, 2007
Macomb

The meeting was called to order at 7:39 pm.

The officer reports were given. The treasurer reported a balance of $4661.35.

An award was given to Larry Kalinowski for observing 50 double stars.

Marty said that repairs on the Stargate observatory are "in the works".

Stephen Uitti has volunteered to be the person responsible for operating the visual projection equipment in our Macomb meeting room. Others are asked to refrain from operating it because it is easily put out of order.

The club's 8 inch SCT that had been missing was located.

The next open houses will be on November 10 and December 1.

The annual election of club officers was held. The people elected to various offices are shown below.

President: Bob Berta
1st Vice President: Gary Ross

2nd Vice President: Marty Kunz
Treasurer: Stephen Uitti
Secretary: Jonathan Kade
Publications: Larry Phipps
Outreach: John Kriegel

Guy Maxim gave a presentation entitled, "Through a Glass Darkly – Dark Matter and Dark Energy, An Overview".

30 people attended the meeting.

The meeting adjourned at 9:51 pm.

Respectfully submitted,

Dale Partin

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IMPORTANTE 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.

Dr. Phil Martin – Treasurer

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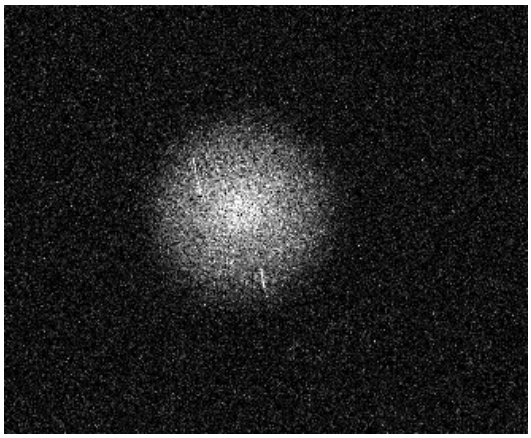
Member's Astro Pics

I was out last night (Tue, 10-30-07) with my ETX125 and my Canon digital camera. Below is a photo that I took of Comet 17P Holmes. Strange things happened as I was taking sequential shots every 1 minute at 15 seconds each. Two streaks of light appeared around the comet and after a couple of minutes they moved off. I hope that they come out in the photos. Artifacts or UFOs??
DUM DE DUM DUM!! Dick Gala



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The following is an article of interest submitted by Mr. Bob Berta and written by Mr. R. Jay GaBany.

What are they?

In his 1980 bestseller, Cosmos, astronomer Carl Sagan famously wrote that there are more stars in the heavens than all the grains of sands covering the world's beaches. His apparent prescience was based, in part, on the premise that a hand full of sand contained approximately 10,000 separate grains. Sagan presented this estimate when astronomy's principal tools were still fixed very firmly to the Earth. It would be another decade before the Hubble Space telescope gave us a view of the heavens, undisturbed by the blurring effects of our atmosphere, that would enable scientists to make a more accurate calculation.

So, was Carl correct?

First, consider how many grains of sands cover the earth's beaches. Researchers at the University of Hawaii have actually taken a mathematical stab at this number by dividing the volume of an average sand grain by the volume of sand covering the Earth's shorelines. The volume of sand was obtained by multiplying the length of the world's beaches by their average width and depth. The number they calculated was seven quintillion five quadrillion (that's 7.5 followed by seventeen zeros or 7.5 billion, billion) sand grains!

Next, consider how many stars fill the Universe. Well, if you were located at or very near the Earth's equator, you would be able to observe about 6,000 individual stars over the period of a year with unaided vision. Of course, there are far more than this visible with binoculars or a small telescope. But, the vast majority that can be seen through small optical instruments would be confirmed within our-own Galaxy because the huge distance to even the nearest galactic neighbor makes spotting their individual stars almost impossible, even through the largest telescopes. So, the best way to count the total number of stars in the Universe is to reckon the population of stars in our own Galaxy and multiply that by the number of galaxies that exist throughout space.

To derive an estimate of the stars in our own galaxy, astronomers have to consider both the number of stars we can see at great distance and the number of fainter stars, such as dwarf stars, which are difficult to observe. Red dwarf stars, as

an example, are believed to be the most numerous type of star but they are also very dim. It is also estimated that there are about 200 red dwarf stars for every Sun-like star. Anyway, by taking star counts in relatively small-sized samples of the sky, factoring for dwarf stars and extrapolating the apparent area encompassed by the samples, recent computations have placed the number of stars in the Milky Way at around 400 billion, plus or minus 200 billion- hey, what's a few billion between friends :)

But, the Milky Way is just one galaxy. The Hubble Space Telescope is capable of detecting about 80 billion galaxies based on analysis of its pictures. For example, where ever the Hubble points, in all directions, thousands of never before seen galaxies are seen extending far into the distance.

So, if we assume that our Galaxy is more or less typical and use the lower estimate, 200 billion, for its total stellar population then multiply that by the number of galaxies within reach of the Hubble Space Telescope, researchers have concluded that there are at least 70 sextillion (that's 7 followed by twenty-two zeros or 70 thousand million, million, million) stars in the observable universe - this is the latest number as proposed in mid-2003.

To put it another way, there are 10 stars for every grain of sand, eleven times the number of cups of water in all the Earth's oceans, ten thousand times the number of wheat kernels that have ever been produced on Earth and ten billion times the number of cells in a human being!
This is a staggering number- and it's most likely a very, very low estimate because the number of galaxies filling the Universe is thought to be much larger than those the Hubble can see!
All of this is pertinent to the new images that I am sharing with you. They are a follow-up to the last pictures I produced and depict two more wondrous star forming regions, both about 5,000 light years distant, in the direction of the constellation Sagittarius- looking towards the heart of our Galaxy.

The first features, on the right, the Trifid Nebula and on the left, M8, which is also known as the Lagoon. The picture is very wide; in fact you could fit several moons across its width. Between the two nebulae is a portion of the Milky Way's vast star clouds- most of the distant stars are about three times further away than the nebulae. An application that I use to prepare these images reported that this picture contains slightly over 29,000 individual stars, by the way!

Lagoon & Trifid Nebula

Earth is not located near the center of our Galaxy- we are positioned about half-way to the edge of the Milky Way's flattened, spiral shape and therefore any view of its central region is occluded by vast clouds of dust that hang along the spiral arms we must look through. Thus, a large proportion of the stars in this picture appear reddened. Many of the bright blue stars are newly formed, most likely, from the two nebulae seen in this image and are thus much closer to us.

Close Image of Trifid Nebula

The Red (Hot?) Planet

by Patrick L. Barry

Don't let Mars's cold, quiet demeanor fool you. For much of its history, the Red Planet has been a fiery world.

Dozens of volcanoes that dot the planet's surface stand as monuments to the eruptions that once reddened Mars's skies with plumes of glowing lava. But the planet has settled down in its old age, and these volcanoes have been dormant for hundreds of millions of years.

Or have they? Some evidence indicates that lava may have flowed on Mars much more recently. Images of the Martian surface taken by orbiting probes show regions of solidified lava with surprisingly few impact craters, suggesting that the volcanic rock is perhaps only a million years old.

If so, could molten lava still occasionally flow on the surface of Mars today?

With the help of some artificial intelligence software, a heat-sensing instrument currently orbiting Mars aboard NASA's Mars Odyssey spacecraft could be just the tool for finding active lava flows.

"Discovering such flows would be a phenomenally exciting scientific finding," says Steve Chien, supervisor of the Artificial Intelligence Group at JPL. For example, volcanic activity could provide a source of heat, thus making it more likely that Martian microbes might be living in the frosty soil.

The instrument, called THEMIS (for Thermal Emission Imaging System), can "see" the heat emissions of the Martian surface in high resolution—each pixel in a THEMIS image represents only 100 meters on the ground. But THEMIS produces about five times more data than it can transmit back to Earth.

Scientists usually know ahead of time which THEMIS data they want to keep, but they can't plan ahead for unexpected events like lava flows. So Chien and his colleagues are customizing artificial intelligence software called ScienceCraft to empower THEMIS to identify important data on its own.

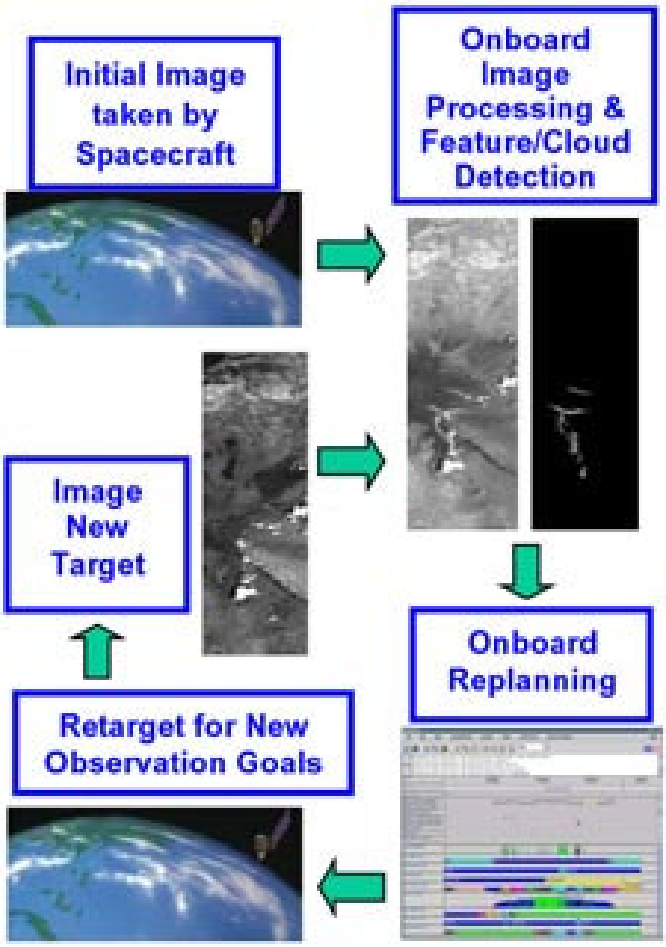
This decision-making ability of the ScienceCraft software was first tested in Earth orbit aboard a satellite called Earth Observing-1 by NASA's New Millennium Program. Earth Observing-1 had already completed its primary mission, and the ScienceCraft experiment was part of the New Millennium Program’s Space Technology 6 mission.

On Odyssey, ScienceCraft will look for anomalous hotspots on the cold, night side of Mars and flag that data as important. "Then the satellite can look at it more closely on the next orbit," Chien explains.

Finding lava is considered a long shot, but since THEMIS is on all the time, "it makes sense to look," Chien says. Or better yet, have ScienceCraft look for you—it's the intelligent thing to do.

To learn more about the Autonomous ScienceCraft software and see an animation of how it works, visit http://ase.jpl.nasa.gov .

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



Just as changing cloud patterns on Earth were identified using Earth Observing-1's Advanced Land Imager along with ScienceCraft software, the THEMIS instrument with ScienceCraft on the Mars Odyssey spacecraft can avoid transmitting useless images.