



## The Warren Astronomical Society Paper

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### 2006 WAS OFFICERS

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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](http://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](mailto:cliffordj@ameritech.net)

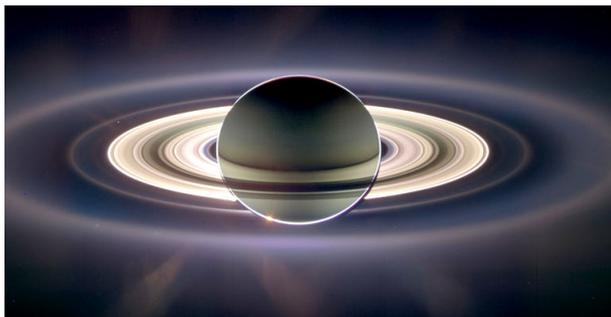
Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the first of each month. Any format of submission is accepted, however the easiest forms for this editor to use are plain text files. Most popular graphics formats are acceptable. Materials can 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



I have to show you the latest picture of Saturn. Thanks to a tip by Bill Whitney, he steered me to this latest and possibly greatest picture of the planet so far. The Sun is behind the planet, fully illuminating all the rings. New rings have been discovered because of this angle of illumination. Even the dark side of the planet is illuminated by the rings. If you want to see more pictures of Saturn showing more detail in the rings, Google yourself to Saturn's new rings. You'll be



amazed.

The most interesting event occurring in November is the transit of Mercury across the face of the Sun on Wednesday the 8th. For us in Michigan, the event starts in the middle of the afternoon with first contact, which happens at about 2:12PM. You won't be able to see the entire disk of Mercury until about two minutes later. Watch the Sun's limb around the eight o'clock position, if you consider the Sun's disk as the face of a clock. You must filter the solar disk or risk losing your eyesight. For those who have them, Hydrogen Alpha, Beta and Calcium filters will also work. Eyepiece projection is the only other method to use if you haven't a filter to use. Be sure to use an inexpensive eyepiece for projection because the buildup of heat may cause the glue used to cement lenses together, to melt. A welder's filter rated at #14 can also be used for telescopic observation if it's placed in front of the telescope and mounted so that only the light passing through the filter, enters the telescope. Mid transit occurs at 4:41, so we will all have a chance to view the planet provided the weather cooperates. It won't be very large.

About 10 arcseconds in diameter, compared to 58 when Venus crossed the Sun in 2004, so use high magnification, about 100 to 300X. The next transit of Mercury occurs on May 9, 2016. The next Venus transit is on June 6, 2012. I'd like to see some photos of the transit here in the WASP.

Meteor showers during November include the Leonids, the event that made spectacular news recently with thousands of meteors racing across the sky. This year's event isn't supposed to be so spectacular but there is a footnote for this shower that might show some promise for the eastern half of the United States. A year before the 1833 super shower there was a spurt of dust and debris that produced a few hundred meteors an hour. That '32 dusting just might repeat itself this year. However, since it has spread out considerably since then, it still holds the possibility of reappearing again this year on the night of the 18th, around 11:00PM. The count could reach one per minute with long trails caused by the radiant which will be low on the horizon.

My hats off to Rik Hill, a Michigan amateur astronomer who has made his mark in the comet history book by discovering Comet Hill C/2006 S1. Rik has spoken to the Warren society in the past. His specialty was variable stars and did a lot of his observing in the Bay City area as a member of a Bay City astronomical society. He now resides in Arizona and is a member of the Catalina near Earth asteroid search team. To date, the team has discovered 32 comets over the last few years.

Comet Swan (C/2006 M4) made a little splash in the sky last month, as a morning object and is moving to a better observing place during November's evening sky. It brightened to about mag. 6 during passage around the Sun in late September and will be well placed in the Northwestern sky during this month.



Brightness estimates for November are eighth or ninth magnitude, although a recent outburst may

make it brighter. During the first week in

November, the comet will be about 45 degrees above the SW horizon at 7:00PM, the end of evening twilight. Observers say it has a very greenish tint. See the November issue of Sky and Telescope, page 60.

Orbital elements for the comet are given below. Plug them into your favorite planetarium program or get a daily ephemeris and map showing the comet positions for 50 days beginning on November 1, at the next meeting.

T = 2006 Sept 28.7282  
q = 0.783040 AU  
e = 1.000265  
Peri = 62.5916 degrees  
Node = 148.7268 degrees  
i = 111.8221 degrees

While rambling through the Internet last month, I ran into a website designed by Richard Pogge, a teacher at Ohio State University. He teaches introductory astronomy using the program PowerPoint. His site contains all the graphics that he has created and he offers those graphics, without charge, to anyone that wishes to use them for other teaching purposes. You can reach his artwork at [www.astronomy.ohio-state.edu/~pogge/TeachRes/Artwork/index.html](http://www.astronomy.ohio-state.edu/~pogge/TeachRes/Artwork/index.html). You might consider copying those pictures on a CD or DVD because there are plenty.

Speakers for November include Ken Bertin and Dave D'Onofrio. Ken will be talking about the Herschel family. A husband and wife team that sparkled in the world of astronomy. That's at the Cranbrook science museum meeting on the 6th. Dave's subject is titled "Intelligent Design – Is It a Science?" That's at the MCCC South Campus, on the 16th, bldg. B, Room 209. Both meetings start at 7:30PM.

November's discussion/computer group meeting will be on fifth Thursday, the 30th, (because Thanksgiving falls on the fourth Thursday that we usually meet on) at Gary Gathen's home in Pleasant Ridge. He lives at 21 Elm Park Blvd., three blocks south of I-696 and about a half block west of Woodward Ave. Meeting will start at 8:00 PM. You can reach Gary at 248-543-3366, or me, at 586-776-9720 for any further information.

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





allow club members to “opt in” to a new list of members and contact information that will be made available to club members when it is completed. A form was circulated to allow people to opt in if they wanted to.

Marty showed a new WAS banner that will be used at many events in the future to advertise the club.

Jim Frisbie (from the Ford Area Astronomy Club) gave a talk entitled, “Observing Double Stars.”

31 people attended the meeting.

The meeting adjourned at 9:55 pm.

Respectfully submitted,

Dale Partin

### Editor’s Notices:

Here is a web address provided by Guy Maxim about Super Massive Black Holes;

<http://video.google.com/videoplay?docid=-3834632996973653146&hl=en>

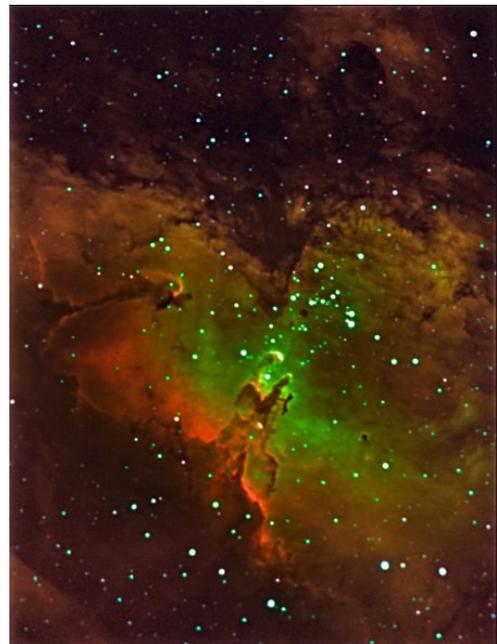
If you haven’t seen this clip already, and are interested in the latest info on super dense black holes, I suggest you click on the link and have a look. It runs longer than I normally would expect for a web clip. It’s loaded with subject detail and picture detail though I doubt it would project well on a large screen. I would like to transfer a copy to use in a power point program; however, I have yet to successfully copy a Macro Media file. Suggestions are welcome.

I recently attended the Great Lakes Planetarium Association Convention - 4 days of lectures by noted cosmological physicists, astronomers, and a NASA Mars Rover engineer. There were work shops on such topics as, “Using Tactile Planisphere in the Planetarium”, “Roaming the Universe in 3D”, “Building a Simple and Programmable Lens Shutter for your LCD Projector”, “Cosmic Analogies: The Good, the Bad, & the Ugly” (by University Cosmology grad. students), and the list goes on (but not in this article). There were 4 field trips (pick one) Thursday evening. (1) Challenger Learning Center: Tour, Mission on Mars Simulation, and demonstration of their Planetarium capabilities (no chairs – bean bag seating) (2) Valparaiso University: Campus tour including planetarium and

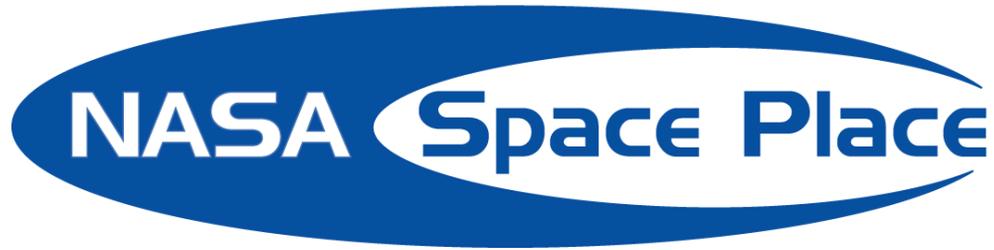
observatory (16” Cass) and their extensive library. (3) Northwest Indiana Symphony Orchestra performing “Cosmic Escape.” Everyone dressed up as space aliens for this one. And, (4) Two full dome shows at Pierce Middle School Planetarium. I chose (1) and got to land a transfer shuttle on Mars, send a probe to Phobos a rescue stranded astronauts. That was too much like work. I dozed on the bean bags when I got to the planetarium. The routine was, Up at 6:15, breakfast, on buses by 7:00 for the days activities, back to the hotel by 10:00 or 11:00 for socializing in a hotel hospitality suite. There was no time to enjoy the hotel facilities.

Pluto is still an issue with planetarians as well as astronomers. In one meeting we discussed various ideas on the reclassification of Pluto. One presenter had made an x-y chart, mass vs. distance from the Sun. Everything seemed to fit in a plan that would keep Pluto as a planet. It would also make the Moon a co-planet. However precise this system is I did not see it as an easy alternative to teaching kids about the solar system. I suggested that there should be 3 classifications of planets: 1. Terrestrial, 2. Gas Giants and 3. Kuiper planets. Pluto would be a Kuiper planet and that would be the type that is presently growing in number. Ceres is an asteroid since it is an object in the asteroid belt and things are still bumping around out there. If you want to call those objects planetoids, planetesimals, or minor planets – that’s fine too. How do you view our solar system?

Cliff



M16 by Phil Martin



## **The Planet in the Machine**

**By Diane K. Fisher and Tony Phillips**

The story goes that a butterfly flapping its wings in Brazil can, over time, cause a tornado in Kansas. The “butterfly effect” is a common term to evoke the complexity of interdependent variables affecting weather around the globe. It alludes to the notion that small changes in initial conditions can cause wildly varying outcomes. Now imagine millions of butterflies flapping their wings. And flies and crickets and birds. Now you understand why weather is so complex. All kidding aside, insects are not in control. The real “butterfly effect” is driven by, for example, global winds and ocean currents, polar ice (melting *and* freezing), clouds and rain, and blowing desert dust. All these things interact with one another in bewilderingly complicated ways.

And then there’s the human race. If a butterfly can cause a tornado, what can humans cause with their boundlessly reckless disturbances of initial conditions?

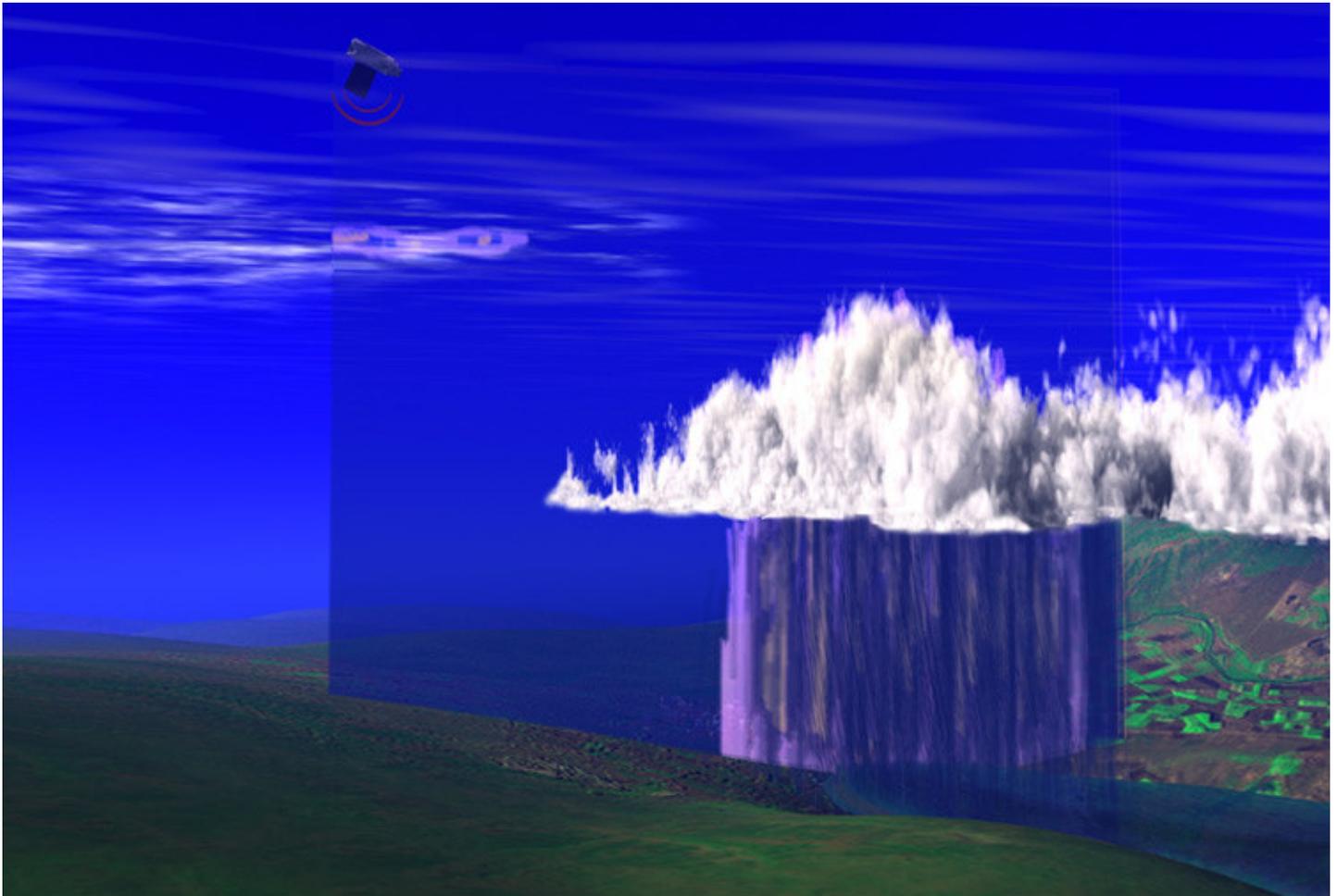
Understanding how it all fits together is a relatively new field called Earth system science. Earth system scientists work on building and fine-tuning mathematical models (computer programs) that describe the complex inter-relationships of Earth’s carbon, water, energy, and trace gases as they are exchanged between the terrestrial biosphere and the atmosphere. Ultimately, they hope to understand Earth as an integrated system, and model changes in climate over the next 50-100 years. The better the models, the more accurate and detailed will be the image in the crystal ball.

NASA’s Earth System Science program provides real-world data for these models via a swarm of Earth-observing satellites. The satellites, which go by names like Terra and Aqua, keep an eye on Earth’s land, biosphere, atmosphere, clouds, ice, and oceans. The data they collect are crucial to the modeling efforts.

Some models aim to predict short-term effects—in other words, weather. They may become part of severe weather warning systems and actually save lives. Other models aim to predict long-term effects—or climate. But, long-term predictions are much more difficult and much less likely to be believed by the general population, since only time can actually prove or disprove their validity. After all, small errors become large errors as the model is left to run into the future. However, as the models are further validated with near- and longer-term data, and as different models converge on a common scenario, they become more and more trustworthy to show us the future while we can still do something about it—we hope.

For a listing and more information on each of NASA’s (and their partners’) Earth data-gathering missions, visit [science.hq.nasa.gov/missions/earth.html](http://science.hq.nasa.gov/missions/earth.html). Kids can get an easy introduction to Earth system science and play Earthy word at: [spaceplace.nasa.gov/en/kids/earth/wordfind](http://spaceplace.nasa.gov/en/kids/earth/wordfind).

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



*CloudSat is one of the Earth observing satellites collecting data that will help develop and refine atmospheric circulation models and other types of weather and climate models. CloudSat's unique radar system reads the vertical structure of clouds, including liquid water and ice content, and how clouds affect the distribution of the Sun's energy in the atmosphere.*

*See animation of this data simulation at  
[www.nasa.gov/mission\\_pages/calipso/multimedia/cloud\\_calip\\_mm.html](http://www.nasa.gov/mission_pages/calipso/multimedia/cloud_calip_mm.html).*