

The Warren Astronomical Society Paper

P.O. Box 1505

Warren, Michigan 48090-1505

www.warrenastronomicalsociety.org

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Norm Dillard

Riyad Matti

Robert Berta

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Dr. Phil Martin

Steve Uitti

Marty Kunz

email: norman0827@yahoo.com

email: riyadmatti@yahoo.com

email: biker123@netzero.com

email: dpartin@comcast.net

email: drpdmartin@hotmail.com

email: suitti@uitti.net

email: solarmartykz@sbcglobal.net

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.

Special Notice

**Cranbrook meeting for September is on
September 10th
due to the Labor Day holiday.**

(Previous WASP issues erroneously had
September 3rd as the Cranbrook meeting date.
– please adjust your schedules accordingly)

Astro Chatter

by Larry Kalinowski



Our annual picnic was really true to form last month. The weather was nearly perfect. Only about eighty degrees in the afternoon and into the cool sixties in the morning. Hamburgers and hot dogs ruled the day and night, as a dozen telescopes and fifty people peered into the sky. On the stellar menu were a first quarter Moon and a nearly one hundred percent cloudless sky. Comet Linear

moved overhead at its lazy pace and meteors caught the eyes of many. If you missed it, I'm glad. There was more food to go around.

An award badge was presented to David D'Onofrio at the July 2nd, Cranbrook meeting. He received it for his many excellent CCD photographs taken and presented to our membership at many meetings at Macomb and Cranbrook. That's the third special astrophotographic award made in our club this year.

There were three more award badge winners at the July 19th, MCCC meeting. Bill Beers won the fourth special astrophotography badge for his excellent work. Blaine McCullaugh received his for the tedious job of grinding, polishing and figuring a thirteen inch mirror for a truss Dobsonian telescope. He found a ship's porthole window in his garage and decided it was destined to explore the universe. It was the first time he tried to make a mirror. The third award went to Gary Gathen for his quest to see a total solar eclipse, aboard ship, in the Pacific ocean.

The Perseid meteor shower will be occurring under very good conditions this year. The Moon will be cooperating completely because it's new on the twelfth and the shower peak will be on the night and morning of the twelfth and thirteenth. If you're quick at recording meteor streaks in the sky, it's possible to see the twenty-five meteors required for an award badge. This shower occurs over a range of three or four nights and conditions could be near perfect if the weather cooperates too. Our monthly public open house is scheduled for the eleventh, but I know there will be others out there over the weekend.

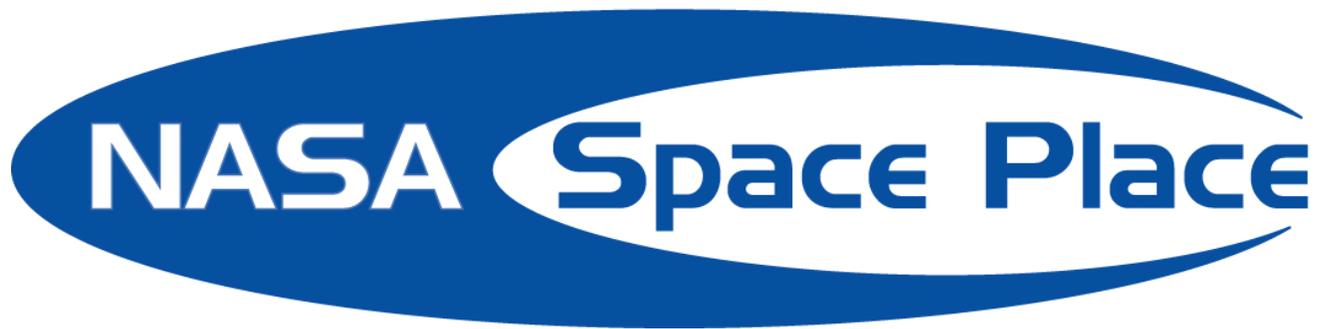
A total eclipse of the Moon is scheduled for Tuesday, August 28th. However, conditions for this one occur during morning twilight and as you know, most amateur astronomers prefer observing during the evening and night. The most interesting part of the eclipse is between 5:52 and 6:37AM. The end of the total portion of the eclipse won't be seen well, in the eastern part of the United States, according to Sky and Telescope magazine (August issue, page 51). Dale Partin gave a report to the members of the Cranbrook group about the close approach of Venus and Saturn on June 30. He and Riyad Matti took the time to calibrate an eyepiece at Stargate observatory and made measurements between the two planets to see how far apart they were, in degrees. Their measurement roughly showed a little over 0.7 degrees, which agreed quite well with predicted values. Many others at the meeting said they enjoyed viewing the close approach with their own telescopes.

During the week of July 7, I scanned the list of observable comets on the web at Harvard College and came across a LINEAR comet (Lincoln Near Earth Asteroid Research) C/2006 VZ13, that was estimated to be about tenth magnitude. It was well located nearly overhead and heading closer to perihelion on August 8, so it was bound to get brighter. I set up my Orion XT10 at the open house Saturday, aligned it on two stars and made sure that the comet part of the sky would be set up for me. My 'scope has the ability to switch to RA and Dec coordinates, even though it's an Alt-Az Dobsonian. It's awkward to use in EQ mode but I was determined to find that comet. I put in a wide angle eyepiece which gave me about 40X and started scanning for the predicted coordinates. As the numbers started

approaching the correct values on the hand held display, I could feel my heart pounding harder. Dobs are weird to use when you're pointing nearly straight up, similar to using an EQ mount around the Celestial North Pole. It's difficult to stay on an RA line and move up and down in declination because you have to move both axes at the same time on a Dob. After three or four minutes of awkward pushing and shoving, the correct coordinates appeared on the screen and I moved my head to the eyepiece. There it was! Dim but definitely there. I called others to the scope to take a look. Was it really the comet or just another fuzzy patch in someone's catalog? There didn't seem to be a tail or a nucleus. An hour later, I came back to the same fuzzy patch and found it had moved almost a quarter of a degree among the background stars, which confirmed the new visitor from outer space. A drawing and instrument parameters were duly recorded. By the time you read this, the comet will have moved into Virgo. In case you're wondering, I am shooting for the comet award badge.

By the way, our annual award Banquet, in December, is really going to be an expanded award event. All observing badge winners will be required to wear and display their badges at the banquet. I'm sure the board of directors will approve the requirement. Also, nominations are being accepted for Armchair Observer for 2007. Please give me your nomination(s) at any of the meetings or via e-mail (cometman@mybluelight.com). If you, or someone you know, would rather read about astronomy than be out under the stars, I want his or her name. In the past, the award winner had to be someone who hadn't looked into the sky for the past year, which I feel was a little too stringent. If you've got someone in mind, let me know. The source of the nomination will be kept a secret.

You can catch the asteroid Vesta as it passes 0.4 degrees north (below Jupiter in a reversing telescope) of Jupiter on the night of the 29th. It'll be about 7.3 visual magnitude. This should be an easy view for any size telescope in any part of metropolitan Detroit. Do the same thing I did with the comet mentioned above. Wait about an hour or so and view the same portion of the sky again. Vesta will have moved considerably. In case you haven't been keeping count, another moon has been discovered around



Omit Needless Bytes!

by Patrick Barry and Tony Phillips

Now is an exciting time for space enthusiasts. In the history of the Space Age, there have never been so many missions “out there” at once. NASA has, for example, robots on Mars, satellites orbiting Mars, a spacecraft circling Saturn, probes en route to Pluto and Mercury—and four spacecraft, the two Voyagers and the two Pioneers, are exiting the solar system altogether.

It’s wonderful, but it is also creating a challenge.

The Deep Space Network that NASA uses to communicate with distant probes is becoming overtaxed. Status reports and data transmissions are coming in from all over the solar system—and there’s only so much time to listen. Expanding the network would be expensive, so it would be nice if these probes could learn to communicate with greater brevity. But how?

Solving problems like this is why NASA created the New Millennium Program (NMP). The goal of NMP is to flight-test experimental hardware and software for future space missions. In 1998, for instance, NMP launched an experimental spacecraft called Deep Space 1 that carried a suite of new technologies, including a new kind of communication system known as Beacon Monitor.

The system leverages the fact that for most of a probe's long voyage to a distant planet or asteroid or comet, it's not doing very much. There's little to report. During that time, mission scientists usually only need to know whether the spacecraft is in good health.

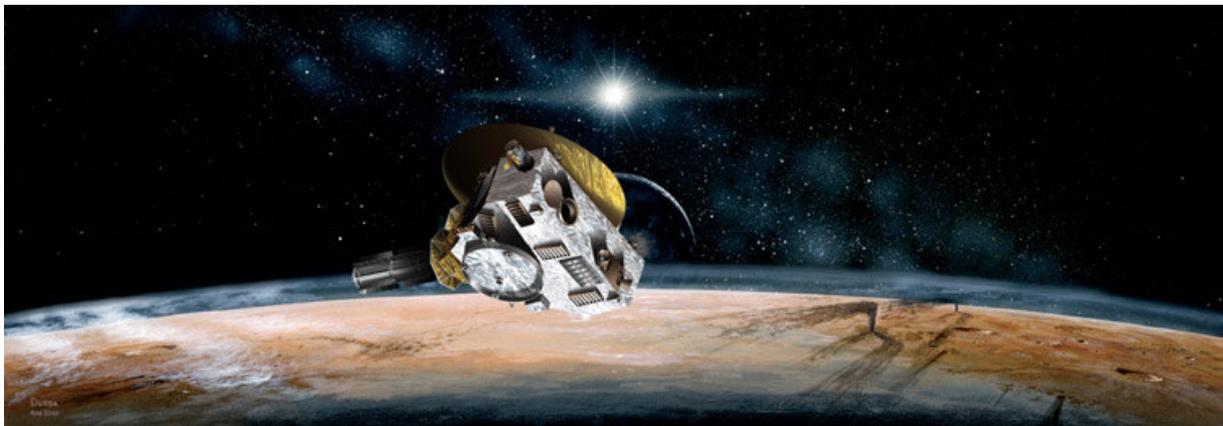
“If you don't need to transmit a full data stream, if you only need some basic state information, then you can use a much simpler transmission system,” notes Henry Hotz, an engineer at NASA's Jet Propulsion Laboratory who worked on Beacon Monitor for Deep Space 1. So instead of beaming back complete data about the spacecraft's operation, Beacon Monitor uses sophisticated software in the probe's onboard

computer to boil that data down to a single “diagnosis.” It then uses a low-power antenna to transmit that diagnosis as one of four simple radio tones, signifying “all clear,” “need some attention whenever you can,” “need attention soon,” or “I’m in big trouble—need attention right now!”

“These simple tones are much easier to detect from Earth than complex data streams, so the mission needs far less of the network’s valuable time and bandwidth,” says Hotz. After being tested on Deep Space 1, Beacon Monitor was approved for the New Horizons mission, currently on its way to Pluto, beaming back a simple beacon as it goes.

Discover more about Beacon Monitor technology, as well as other technologies, on the NMP Technology Validation Reports page, <http://nmp-techval-reports.jpl.nasa.gov>.

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



This artist's concept shows the New Horizons spacecraft during its planned encounter with Pluto and its moon, Charon. The spacecraft is currently using the Beacon Monitor system on its way to Pluto.

Credit: Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute (JHUAPL/SwRI)