

IO – July 2004

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www.eugeneastro.org

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Secretary & Treasurer: Richard Boyd; IO editor, Sam Pitts, sampitts@aol.com:
Io (*EYE-oh*) is nearest to Jupiter and fastest orbiting of the four Galilean moons

Monday JULY 12, 2004 MEETING EUGENE ASTRONOMICAL SOCIETY New Meeting Location Special Date

EAS is once again back at the Planetarium, thanks to the gracious efforts of the EAS Board and warm hospitality of the "Science Factory. This is a joint collaboration with The Science Factory, in promoting Astronomy for Eugene, Springfield and all of Lane County. EAS members along with fellow amateur astronomers will work with the good folks at The Science Factory to provide Star Parties at the Planetarium. There are other opportunities available, additional volunteer work that will bring the Art & Science of astronomy closer to the public. Come to the meetings and find out more.

Our meetings will still be on the first Monday of each month. There is an exception this month (4th of July) and most likely in September (Labor Day). The July meeting will be on **July 12th at 7:00 PM**. Kevin Lane-Cummings will provide his "**The Ring World**" presentation with new data, as the Cassini probe will be in orbit around Saturn. **The Science Factory is at 2300 Leo Harris Parkway, behind Autzen Stadium.**

New EAS Board

The EAS membership has elected a new Board of Directors on June 7, 2004. The New Board members are: Rossco Wright, AC Illig, Tracy Stephensen, Richard Boyd and Jerry Oltion. The new Board would like to thank everyone for your support, and we promise to do our very best to keep the club running smoothly. The new President- Tracy Stephensen and Treasure-Rossco Wright . Welcome to the new board. Thank you to past Board Members and Officers, for bringing EAS so far in the past few years.

Magazine subscriptions go to Rocasyd@aol.com



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<http://lists.cmc.net/cgi-bin/mailman/listinfo/eugeneastro>

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The Astronomical League Deep Sky Binocular Club Certificate

Deep Sky Binocular Club Chair:

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Introduction.

Welcome to the Astronomical League's Deep Sky Binocular Club. The Deep Sky Binocular Club is a list of sixty selected non-Messier objects, and picks up where the Binocular Messier Club leaves off. The purpose of the Deep Sky Binocular Club is not to put your observing skills to the test by including the toughest objects observable with binoculars, but to allow you to observe and enjoy sixty of the most beautiful objects in the heavens: objects other than those discovered by Charles Messier.

Just because the Deep Sky Club comes after the Binocular Messier Club, doesn't mean you have to do your Messier observations before your Deep Sky observations. However, it is recommended that you get your Binocular Messier Certificate first, before the Deep Sky Certificate since, let's face it, Messier got most of the good (easy) objects. Even though the sixty objects in the Deep Sky Club are the best objects for small binoculars, it doesn't mean that they are all easy. For some of the objects, you will have to go to a good dark sky site, on a clear night with good seeing, and then observe those objects at the meridian for best results. But luckily this is easy to do with binoculars since they are so portable. All objects in the Deep Sky Club were observed with 7X50 Orion Explorer binoculars retailing at around \$117.00. For our northern observers, no object on the list is below minus 35 degrees declination, which is the declination of the most southerly Messier object, M7.

The Deep Sky Binocular Club.

To qualify for the Astronomical League's Deep Sky Binocular Certificate, you need only be a member of the Astronomical League, through either an affiliated



club or as a Member-at-Large, and observe the sixty selected objects using only binoculars. Any pair of binoculars may be used, but those with objectives between 50mm and 80mm in diameter are recommended. To record your observations, you may use log sheets similar to those found in the back of the Astronomical League's manual *Observe: A Guide to the Messier Objects*.

To obtain an award you must observe the following rules:

Rule 1:

Observe the 60 deep sky objects with binoculars and keep a record of your observations. Your notes must show:

- a. The object;
- b. Date of observation;
- c. Time of observation;
- d. Seeing conditions;
- e. Type of binocular;
- f. A short note describing your observation of the object.

Rule 2:

Have your observations examined by an officer of your society (usually the Awards Co-ordinator) or a suitably qualified second party if you are not a member of a society. Have this party forward a letter to the effect that you have made the necessary number of observations. This letter should be addressed to:

Mike Benson

Space Weather

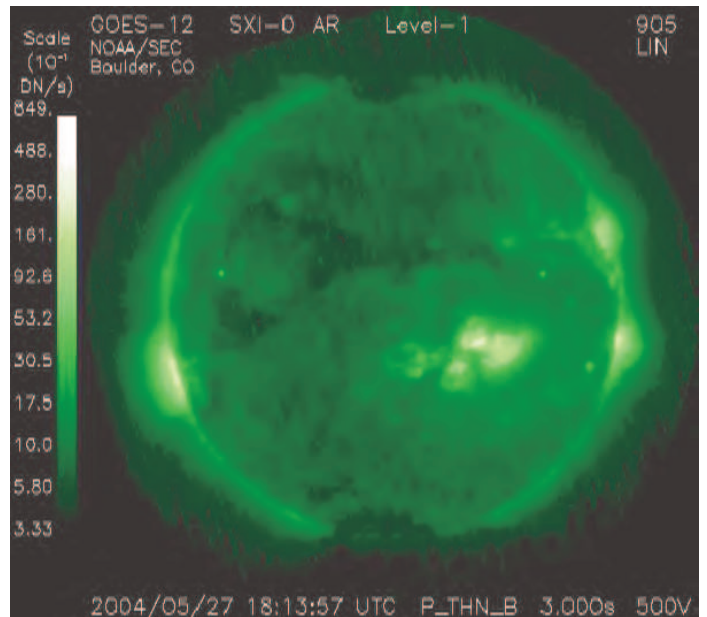
By Patrick Barry and Tony Phillips

Radiation storms, 250 mile-per-second winds, charged particles raining down from magnetic tempests overhead ... it sounds like the extreme weather of some alien world. But this bizarre weather happens right here at Earth.

Scientists call it "space weather." It occurs mostly within the gradual boundary between our atmosphere and interplanetary space, where the blast of particles and radiation streaming from the Sun plows into the protective bubble of Earth's magnetic field. But space weather can also descend to Earth's surface. Because the Earth's magnetic field envelops all of us, vibrations in this springy field caused by space weather reverberate in the room around you and within your body as much as at the edge of space far overhead.

In fact, one way to see these "geomagnetic storms" is to suspend a magnetized needle from a thin thread inside of a bottle. When solar storms buffet Earth's magnetic field, you'll see the needle move and swing. If you live at higher latitudes, you can see a more spectacular effect: the *aurora borealis* and the *aurora australis*. These colorful light shows happen when charged particles trapped in the outer bands of Earth's magnetic field get "shaken loose" and rain down on Earth's atmosphere.

And because a vibrating magnetic field will induce an electric current in a conductor, geomagnetic storms can have a less enjoyable effect: widespread power blackouts. Such a blackout happened in 1989 in Quebec, Canada, during a particularly strong geomagnetic storm. These storms can also induce currents in the metallic bodies of orbiting satellites, knocking the satellite out temporarily, and sometimes permanently. Partly because of these adverse effects, scientists keep close tabs on the space weather forecast. The best way to do this is to



best way to do this is to watch the Sun. The NASA/ESA SOHO satellite and NOAA's fleet of GOES satellites keep a constant watch on the Sun's activity. If a "coronal hole"--where high-speed solar wind streams out from the Sun's surface--comes into view, it could mean that a strong gust of solar wind is on its way, along with the geomagnetic storms it will trigger. And an explosive ejection of hot plasma toward the Earth--called a "coronal mass ejection"--could mean danger for astronauts in orbit. The advancing front of ejected matter, moving much faster than the solar wind, will accelerate particles in its path to near the speed of light, spawning a radiation storm that can threaten astronauts' health.

Look for coming articles for more about space weather and about NOAA's efforts to forecast these celestial storms. Meanwhile, read today's space weather forecast at <http://www.sec.noaa.gov/>. Kids can learn about the geostationary and orbits of the

GOES satellites at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml.

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A Night with John Dobson

The EAS board has agreed to co-sponsor with The Science Factory, a night with John Dobson on July 23rd. Mr. Dobson will speak, and, in return, our club will support a star party out behind The Science Factory. We will split donations received. As far as I know, we will not be limited to Dobsonian scopes (snort). Anyone that is interested in volunteering, please contact Tracy Stephensen at tracystephensen@comcast.net or 541-338-6647.

Picnic on Sunday July 18th from 1pm to 5 pm

The Friendly Area Neighborhood Association would like to invite representatives from EAS to attend a picnic on Sunday July 18th from 1pm to 5 pm. Those in attendance will be neighbors, and their three local schools--Adams and Hillside Elementary and Jefferson Middle school. They have asked if we can set up a table with club information, and possibly have a solar scope or two. The Friendly Area Neighborhood Association is for the area around the reservoir on 24th and Lawrence. I think it would be nice of us to help them out since they have been accommodating to us and our star parties there. Anyone that is interested in volunteering, please contact Tracy Stephensen

