

IO – October 2003

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Eugene Astronomical Society, Annual Club Dues \$25, President: Jean Grendler, School Star Party Coordinator , 683-9382, moegren@msn.com
Vice-President & Treasurer: Sue Moe , suemoe@worldnet.att.net, Telescope lending program: Rossco . Web Master Dave, Nexstar11.com ;
IO editor, Sam Pitts, sampitts@aol.com :*Io (EYE-oh) is nearest to Jupiter and fastest orbiting of the four Galilean moons*

NOTICE OF ANNUAL MEETING - EUGENE ASTRONOMICAL SOCIETY

The Eugene Astronomical Society Annual Meeting will be held during the first part of the regular membership meeting on Monday, October 6, 2003. Since there are no elections this year and the corporation is fairly new, this will be a short meeting, consisting mainly of reports. The EAS Board of Directors has adopted a Vision Statement and will make it available to full membership at the annual meeting.

Two official committees of EAS have been formed or recognized since EAS incorporated. They are: The Rob Adams Telescope Committee and the EAS Advisory Committee. The committee members from both of these committees have delegated both chair positions to me.

The Advisory Committee, made up of EAS members, will meet at 6pm before regular club meetings until further notice and the board will make a decision on December 31, 2003(or shortly thereafter) as to whether to continue this committee.

The Rob Adams Telescope Committee meets as needed. This committee has done some outstanding work this year and will make a report at the annual meeting.

The topic of the regular membership meeting is: Astrophotography, Imaging with film. Sam Pitts, an accomplished astrophotographer and EAS member will give a presentation aimed at helping members gain an understanding of terms used with astronomical telescopes and camera lenses. Many new and seasoned EAS members are getting involved in photographing the night sky (and the sun) and members are invited to display their work on free standing display boards during this meeting. After the presentation part of the meeting members and guests are invited to mingle and ask questions.

Hope to see you at the meeting! - Jean Grendler, president EAS

"Good-bye Mars"

Eugene Astronomical Society partners with The Science Factory/Planetarium for quite an event on Saturday, October 4th! The theme is "Good-bye Mars". The event features planetarium shows, entry to the science museum, an interactive computer lab, and of course, the **EAS Star Party!** The event runs from 7pm til 10pm. Set up is at or before 6:30pm. The whole community is invited, lots of PR is happening! The Science Factory staff will manage the "gate" and control the access as there is an entry charge. EAS will share in the proceeds from this mutually beneficial, collaborative, and FUN event!

Please sign up to bring a scope or help in other ways:

moegren@msn.com

Thanks to those already on the list!

-Jean Grendler, EAS president

NW Astronomy Email List Provides Forum for Discussion

Want to get together with friends who share your interest in astronomy? Got questions about your new telescope? Thinking about joining a special interest group? Want to let others know about the cool things you observed last night? The NW Astronomy list is open to anyone to join. Dave Cole, the EAS Webmaster, moderates this list. The list provides an excellent forum for enthusiasts, including EAS members and non-members, to meet and share their interest in amateur astronomy. The list is becoming popular with members of other clubs around the state, too! While you might at times see some EAS announcements on the list, generally plans made via this list are simply groups of people getting together to go viewing or some other hobby related pursuit. To join this list, visit the EAS website: www.eugeneastro.org

Join the user List! Keep in-touch with Members and Events!

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

IO – October 2003

www.eugeneastro.org



Astronomical League Sunspotters Club Certificate

Sunspotters Club Chair:

Scott Kranz
106 N Darrowby Drive
Raymore, MO 64083-9181
(816) 331-5796

E-mail: <mailto:s.kranz1@comcast.net>



Introduction

The purpose of this program is to encourage solar observing with an eye toward educating the amateur astronomer on solar features and their evolution. By following this regimen the observer will learn the various features of solar activity, learn how these change during their passage across the disk, and learn how to develop a regular observing program.

Rules and Regulations.

Before you start any solar observing program, make absolutely certain that you have **safe filters** and a **safe set-up**. Only use filters from reputable sources, and never use a "solar filter" that screws into an eyepiece. As Richard Hill states in *Observe and Understand the Sun*: "*Observing the sun is the only inherently dangerous observing an amateur astronomer can do. Be aware of this at all times and take all necessary precautions. If you do not know a filter or procedure is safe then do not use it! Always err on the side of safety. An eye once damaged is forever damaged. Filters that let too much INFRARED light through can burn an eye if used visually. There is NO PAIN when this happens. Burned retinas can not be repaired. Excessive ULTRAVIOLET light has been shown to cause cataracts. So be very careful.*"

In the League's Sunspotter program, you will make two sets of drawings. The first set is five detailed sketches of sunspot groups. The second set is 20 or more sketches of the whole solar disk during two solar rotations (one rotation is about 30 days).

Artistic skill is not a requirement! Just diagram what you see as well as your skills allow. Use a number 2A lead pencil for best results.

Your five sunspot sketches must be done on five different days. These sunspot group drawings must be accurately labeled as to time, observing conditions, equipment used, and sunspot class. On each drawing, several features must be identified. The attached Sunspot Drawing Form shows the features you need to sketch and label. In order to see and identify all of the items, you will need to observe a rather complex sunspot group of Modified Zurich class D, E, or F. You may need to observe the sunspot group close to the limb to pick out all the details.

In the second set of drawings, you will sketch the whole disk of the sun throughout the passage of large sunspot groups during two different solar rotations. On the Solar Disk Drawing Form, outline the sunspot penumbrae and shade in the umbrae on the large circle. Classify all the sunspot groups on the disk and show the McIntosh classification letters on the small circle. Do a sunspot count, compute the Wolf Number, and fill out all the other blanks on the form. One of your sketches (in either the first or second set of drawings) should show the "Wilson effect". We realize that weather conditions may prevent daily observing, but at least half of the days for any given rotation should be observable. You should have a minimum of 20 whole disk drawings for the two rotations.

To qualify for the League Sunspotter Club, you must be a member of the Astronomical League, either as a member of a club affiliated with the League, or as a Member-at-Large of the League.

Continued page 3

IO – October 2003

www.eugeneastro.org

When your observations and drawings are completed, have them examined by an officer of your society, or a qualified, experienced second party if you do not belong to a Society. Have this person write a note verifying the work. Send this note and copies of the observations to the Astronomical League Observing Awards coordinator referred to above. The Sunspotters Club Certificate will be forwarded to your club officer for formal presentation, and your name will appear in the *Reflector*. Members-at-Large should send copies of their observations directly to the Astronomical League Observing Awards coordinator.

The Sunspotters Club is based on the League publication *Observe and Understand the Sun*. This manual includes material on sunspot classification and heliographic coordinates, as well as solar observing, telescopes, filters, and photography. It is available through the [Astronomical League Sales Office](#). Check the most recent issue of the League's newsletter *The Reflector* for the League Sale's address and the price of the Observe Guide.

Terms and definitions you may need to know:

Faculae: relatively large (greater than an arc minute) irregularly shaped light area; sometimes serpentine in shape. Sunspots are usually located in Facula.

Granulation: fine grain structure of the solar photosphere. Grains appear to be one to two arc-seconds in diameter.

Light bridge: a bright ribbon or band that may appear to connect two sunspots.

Limb darkening: the effect of perspective where the edge of the solar disk appears darker than the center because it is a sphere.

McIntosh Sunspot Classification System: Adds classes for the type of the largest sunspot and sunspot distribution to the Modified Zurich Class. Pages 7-11 of the *Observe the Sun* has a good discussion and figures to help you classify groups by this three-letter system. (For example, a small lone sunspot with a penumbra might be coded as Hsx. A very large complex group might be Fkc.)

Modified Zurich Sunspot Class: A seven class (A-F, H) system of describing a sunspot group. The size of the group and distribution of penumbrae, if any, are factors.

Penumbra: a gray area which frequently, but not always, appears around an individual sunspot or group of sunspots.

Penumbral fibril: fiber like lines that may appear to radiate out from an umbra into the surrounding penumbra.

Penumbral fragment: a penumbra without a sunspot.

Penumbral grain: granular or small patchy structure that may be visible in the penumbra.

Pores: tiny, less than one arc-second, dark areas which are not as dark as a sunspot.

Solar north: Solar north is not the same as terrestrial north. During the course of an earth year, the sun's axis tilts over 26 degrees east and west of the earth's axis, and about 7 degrees toward and away from earth. These variations are due to a combination of the axial tilts of the Earth and Sun. Diagrams such as those on pages 13 and 14 of the *Observe the Sun* manual will help you estimate Solar north for the day of your observation.

Solar rotation: the sun does not rotate as a solid body. The equator rotates in about 25 days, the polar area in about 30 days. Use about 28 days for a solar rotation at typical sunspot latitudes.

Sunspot Group: A group may be anything from a single isolated sunspot to a complex elongated cluster of spots.

Umbra: The dark black area of a Sunspot.

Wilson effect: This effect of perspective is seen when a sunspot is near the solar limb. The umbra appears displaced within the penumbra, usually toward the center of the sun.

Wolf Sunspot number (R): a traditional method of counting sunspots. Count the individual sunspots. Count the number of groups. (An individual sunspot can count as a group if it is sufficiently separated from other spots or groups.) The Wolf number is ten times the number of sunspot groups plus the number of spots.

About the September, 1997 revision:

The revised Sunspotter award requirements consolidate the former two-part program into one program and one certificate. The sketching and required data have been simplified, some definitions have been added, and new sample forms have been provided.

Enjoy your daytime observing!

IO – October 2003

www.eugeneastro.org

Eugene Celebration Parade Float Well Received by Crowds & Media



Lots of hard work by a great work group headed up by board member AC Illig created a fantastic float that featured a backyard astronomy scene highlighted by EAS' Rob Adams Telescope. Action Rental donated the use of a 20' trailer for the event. AC arranged for a sound system and Monty Python's Galaxy Song enlightened spectators along the streets of downtown Eugene. Margaret, the Wizard and The Alien entertained the crowd, proving that membership in EAS is "open to anyone." We made the news on one TV station and got quite a review by the parade announce at one point. Thank you and kudos to all the members who helped or came out to watch the parade! This event and the work parties leading up to it provided a fun forum for members and their families to meet and share astronomy related interests and support their club! Guy made a video, view it at the upcoming meeting! Look for Alan and Dave's photos on the EAS website!

Back to School Star Party a Success!

On Friday, September 12 EAS held a "Back to School" Star Party at College Hill Reservoir. The event featured an early session for area educators to come and discuss school star parties and classroom visits. Teachers were treated to loads of classroom materials, magazines, posters, lithos, bookmarks and other astronomy related goodies to help them in introducing astronomy to their students (and themselves). We made many new contacts at area schools. Our contact at the Lane ESD helped in this effort by printing and delivering flyers to all the area teachers' school mailboxes. We appreciated the continued support and collaboration with the Lane ESD and look forward to helping with a teacher training at the ESD in early October.

EAS president, Jean Grendler, dedicated time to contact agencies, organizations and businesses that donate or furnish free resources. She collected and stores such resources to be given out to the community at EAS events and classroom visits. The literally tons of materials available for the public at Astronomy Day, at the EAS table at star parties and meetings are collected through her efforts. A good part of her garage and home is dedicated storage space for this effort. A labeling effort was started before EAS' participation in the Mars Society Convention at the Eugene Hilton in August. Pressure sensitive labels have been designed and printed by Jean to be attached to most of this material so people who take this material home or back to their classrooms will know how to contact EAS in the future. Thousands of pieces of literature and other handouts now bear this label and thousands have been disseminated to the public and educators.

Visitor donations at EAS Star Parties are growing. Several hundred members of the public attended the "Back to School" Star Party. EAS is fortunate to have some very dedicated members staffing our club table, and these volunteers have the benefit of having some beautiful handouts to entice visitors to come by.

Without the support and participation of EAS members, none of this could happen. Compliments from the public keep coming in! EAS member's generosity in giving time and sharing instruments earns each and every one a "gold star" and a huge thank you!

IO –October 2003

www.eugeneastro.org

EAS CLUB CALENDAR-Updated 9/23/03

- September 27** – Saturday - Mt. Pisgah Arboretum Star Party (Joint fundraiser for EAS and Mt. Pisgah Arboretum) EAS will have educational talk in the “Quonset Hut” and telescope viewing in the field area near the hut. 7PM. Donation \$3 per person, \$6 per family. EAS will have access to power and there will be less dust in this area, but the sky will be limited by the trees. The trees will shelter the scopes from light from cars coming and going. We will use what sky we have and do our best! Set up is early (6:00pm) so we can get our cars in and unload scopes before the talk begins.
- October 4** –Saturday – EAS Star Party follows an evening planetarium show at The Science Factory. The theme is “Bon Voyage Mars!” 7-11pm
- October 6** – EAS club meeting (Annual Meeting) 7pm North Eugene High School Room 319 Astrophotography Presentation covering all the basics of imaging with film. Gain an understanding of terms used with astronomical telescopes and camera lenses. Presenter: Sam Pitts Members are invited to display their photographs after the presentation.
- November 3** – EAS club meeting 7pm North Eugene High School Room 319 Image Processing - the Digital Darkroom presenter: Dave Cole
- December 1** – EAS club meeting 7pm North Eugene High School Room 319 Introduction to CCD a brief program by Sam Pitts followed by Dessert Potluck and member swap & sale tables. Members- bring your astronomy related stuff to sell or trade!

For further information contact: Jean Grendler, Eugene Astronomical Society President at: 683-9382 or moegren@msn.com

Rob Adams Telescope

The new focuser for EAS' Rob Adams Telescope has been installed. Thanks to the generosity of members and businesses who have contributed funds and time/work, this scope now sports a JMI Focuser! Thanks also to JMI for the reduced cost of the focuser and special attention paid to making it to suit the needs of the particular telescope! Special thanks to Lumicon for resurfacing the diagonal's mirror at NO charge! It is back and giving great views! Sean's Astronomy Shop helped in this effort by giving EAS a special price on a 2" diagonal to use while the Lumicon was being repaired. All of these efforts kept the Rob Adams Telescope in working order throughout the summer making “the corporation's Adams telescope available for public viewing” as per the purpose statement in the EAS by-laws.

See our Treasure Sue Moe

Subscribe to Sky & Telescope and/or
Astronomy Magazine
Take advantage of our club's 10% discount
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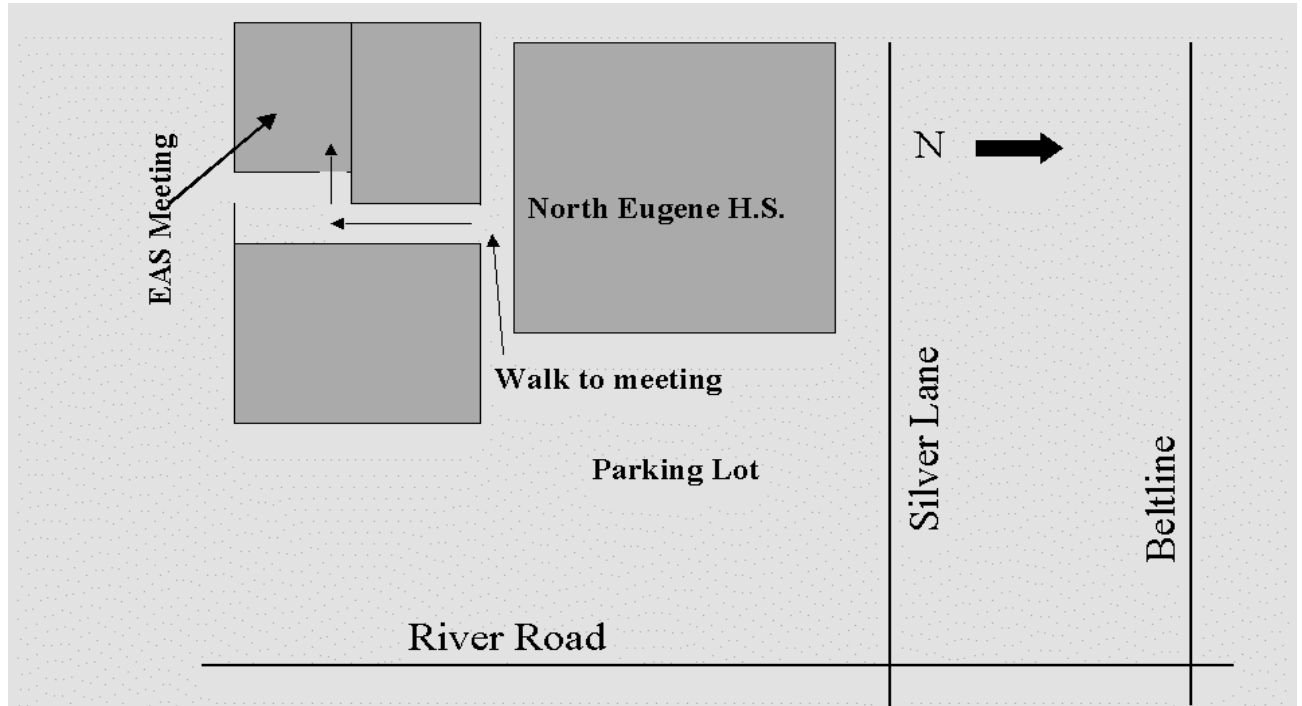
Image of the Month

Please submit your Astronomy photos, images or drawings to Dave Cole so he can select one to post on the EAS Web-Site. I can digitize 35mm negatives or prints so they can be used. -Sam

Web Master Dave : Nexstar11.com

IO – October 2003

www.eugeneastro.org



Mirror Grinders Group to Begin

Renowned telescope maker and EAS member, Mel Bartels has generously agreed to lead an EAS Mirror Grinders/Telescope Makers Class. North Eugene High School Principal Peter Tromba met with EAS Board Member/Secretary Sue Moe, who is the Science Department Co-Chair at the school, and agreed that the school would sponsor the group as a kind of “science club”. This means EAS Mirror Grinders has a home for the duration of the class. It also means that both EAS and NEHS will sponsor a student in the mirror grinders group. Thanks, Sue! This is a great collaborative effort with the school and provides members

During a recent visit with Mel, he shared with me that he has constructed about a hundred telescopes. Mel shared an interest in getting students involved in mirror grinding. Recently, Mel has brought his big-mirrored telescope to star parties and helped EAS wow visitors with great views of Mars, and he has given talks for EAS’ Astronomy Day 2003 and EAS’ Mars Society Convention Star Party in August. He is part of the Rob Adams Telescope Committee and the EAS Advisory Committee. Thanks, Mel!

Look for more info on time and dates for the EAS Mirror Grinder Class. More planning will be needed to determine a meeting place for the “telescope making” part of the class, but we have ideas....

October 4 Star Party

The Science Factory Hands-On Children's Museum and the Eugene Astronomical Society (EAS) are pleased to announce a joint Star Party to be held October 4, 2003. The "Goodbye Mars Star Party" will take place that Saturday from 7 to 11 p.m. and will celebrate the departure of Mars from its closest approach to Earth in 60,000 years. The Planetarium at The Science Factory will present short programs at 7:00 and 7:30 to introduce visitors to the constellations in the night sky, and members of EAS will have their telescopes on hand to give close-up looks at Mars, the Moon, double stars, galaxies and more. There will also be interactive exhibits and astronomy software to try out in The Science Factory. The event will take place at The Science Factory, located at 2300 Leo Harris Parkway, across from Autzen Stadium in Alton Baker Park. Admission to the entire event is a special price of \$5. Members of The Science Factory get a discounted price of \$3.

IO – October 2003

Fundraising Events

Fundraising events are doing well for EAS and our partner organizations. EAS will share in the “gate” at the Mt. Pisgah Arboretum Star Party on September 27th and the “Good-bye Mars” Star Party and Event at The Science Factory/Planetarium scheduled for Saturday, October 4th. Both of these collaborative efforts involve all the organizations helping with PR and promotion costs. Staff from these organizations will do “crowd control” and staff the entry gates (collect money). These organizations are providing the venue at no cost to EAS. This is much like the extremely successful fundraiser EAS held at North Eugene High School. For the event at the planetarium, an agreement was reached after EAS President Jean Grendler suggested that we wanted to reach out to and include families and students who are “economically challenged” or from “under-served populations”. It was decided that Jean/EAS would design and print 100 “student passes” to be distributed among area schools. Subsequently these passes have been produced and distributed. This was accomplished at no cost to EAS.

It takes a time commitment to discuss and reach these agreements with our collaborators and partners. The EAS Board of Directors is committed to developing these kinds of relationships that are mutually beneficial and aid in EAS fulfilling its purpose as outlined in paragraph 2 of Article 1 of the EAS By-laws. The BOD appreciates member support in this area of the EAS mission: “to promote astronomy” in our community.

Volunteers Needed for School Star Parties and Classroom Visits

‘Tis the season for school star parties again. As we wind down from a very successful season of public star parties and events, we are booking school star parties and classroom visits. Member volunteers are needed for solar viewing opportunities, special interest talks in classroom and telescope operators at school star parties. EAS needs a small group to bring telescopes for a younger crowd early on the evening of October 9th for an organization called HONEY (help our new ethnic youth) and more scope operators are needed for the Adams School Star Party on Friday, October 10th. On Monday and Tuesday, September 29th and 30th, solar viewing for elementary school students is scheduled at a Santa Clara area school. EAS is scheduling schools in Junction City, Springfield, Eugene, Bethel and outlying areas as long as there are crews to make them happen. These school star parties and visits directly meet EAS’ primary purpose under Article 1 of the By-laws: “...providing educational programs about astronomy to schools and other organizations.” Please contact Jean, the EAS School Star Party Coordinator, if you want to volunteer or need more information about the various events: moegren@msn.com

EAS Telescope Lending Program Needs Small Dobs

Rosco, the EAS Telescope Lending Program “Scopemaster” has a vision that I like and support. The EAS telescope collection is in need of small dobs and decent quality refractors on easy stable altaz mounts. Currently, we have two “hobby killers” and not much else to lend to the true beginner with which to learn about the night sky, especially to learn “star hopping” techniques. Currently, members who check out scopes also need to be willing to make a time commitment to bring these scopes to EAS star parties and functions. That’s not too much to ask of members who are more experienced and check out our bigger scopes, but it is sometimes intimidating for a real beginner. Rosco wants to build up our inventory of “unbreakable” beginner scopes and also create an area at EAS Star Parties where youth and newcomers are encouraged to “touch” and “push” and find objects on their own. What a concept! As people’s skill levels grow, they might “graduate” to being “EAS scope operators” and check out the larger scopes in the EAS collection, with the expectation that they bring the scope to EAS events. Many of us have way too much money invested in our own equipment to feel comfortable sharing anything but the eyepiece views with the public and that is nothing to feel bad about. We spend a lot of time advising visitors to “look with their eyes”, especially children. However, Rosco’s concept provides for a relatively safe, user-friendly way to introduce the public to the fun of observing and the joy of finding your target! We thought that perhaps someone who wanted the experience of grinding a mirror or building a telescope, but didn’t need a small scope in their collection, might do it and donate the finished product to the club!/? Perhaps you know someone who has a small dob that they wish to donate? Please contact the EAS BOD about any proposed donations. The BOD must evaluate any proposed donation to the corporation prior to acceptance to ensure that it meets the needs of the program. Many thanks to Rosco for his good work with the EAS Telescope Lending Program. Thank you - Jean

IO – October 2003

What's Out Tonight

Midnight Sky Directly Over Head

