

IO – June 2003

www.eugeneastro.org

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: Jeff Phillips 685-0973, phichu@epud.net ,
**Io (EYE-oh) is nearest to Jupiter and fastest orbiting of the four Galilean moons.*
Web Master Dave, Nexstar11.com ; IO editor, Sam Pitts, sampitts@aol.com

EAS - June 2nd Meeting 7:00 PM

NORTH EUGENE HIGH SCHOOL - ROOM 319

Monday, May 5 EAS Meeting 6:30 PM "Early Bird Special" - Help for new scope owners. Eugene Astronomical Society Club Meeting "Early Bird Special" – 6:30 PM Telescope help for new owners. Club members volunteer to arrive early and help new owners who bring their scopes. Not a comprehensive clinic, but an opportunity to meet club members and get some general help with your scope. First come, first served. **Regular Meeting – 7 PM to 9 PM** Meeting begins with introductions and announcements. We will debrief Astronomy Day. Club business includes next steps to incorporation. Information on upcoming collaborations with other community groups. Committee reports. Star Party announcements. Program: Outdoor viewing, weather permitting. In the event of bad weather, educational/informational astronomy related program would be substituted. Bring store bought snacks to share at break.

ASTRONOMY DAY THANK YOU!

A huge round of "thank you's" is in order to recognize the work of all the EAS and student volunteers who helped make Astronomy Day 2003 a huge success! All the crew chiefs, telescope operators, greeters, activity room crew, Starlab planetarium operators, info stuffers, set up crew, take down crew, decoration help, presenters, announcers, video help, volunteer drivers, packers, cleaners, people who asked for donations, AV crew, and vendor coordinator and the vendors, volunteer coordinators, building supervision, poster distributors and neighborhood liaison, people who met with the media, people who contributed funds, prizes and bought "goodie basket" tickets and helped support this effort in any way: I thank all of you for making Astronomy Day 2003 a huge success!

It was such an honor to have EAS' Astronomy Day event selected by the Space Science Telescope Institute to participate in the unveiling of the Hubble Image! North Eugene High School principal, Peter Tromba, praised EAS in his opening remarks. His approval of the use of the building for next year's Astronomy Day was indicated! The collaboration with the Lane ESD for the loan of the Starlab planetarium added an extra special event for guests, and guaranteed a show in the event of clouds or rain! It also provided EAS members Rick and Linda Collins and myself with some training that will continue to be a benefit to EAS. Dotson's Astrophotography contest brought a wide range of community members to the event, and I hope brought some customers to Dotson's in return. Dotson's made a beautiful display and the photos will be on display in their Willamette St. location for those who missed the show and the enjoyment of the public. Many EAS members participated and won prizes with John Flinn, the Aurora Man, taking the grand prize! The interactive display brought by the Science Factory was a hit as well as the "comet making" demos that Samara did in our Children's Activity Room. The Children's Activity Room was very well attended and the vendors were generous with their donations for the kids drawings, quite a nice telescope and binoculars being among the prizes.

Having Rob Adams with us for the re-dedication ceremony of EAS' Rob Adams Telescope was very special, indeed. Larry Dunn did a great job with his dedication speech and Rob got to see many old friends.

Among our vendors this year were: Hardin Optical, Sean's Astronomy, The Universe Productions and Dot Dotson's. Also joining us in the display hall was The Sunriver Nature Center and Observatory and The Mars Society. To say that I was overwhelmed by the generosity of our vendors would be an understatement. Please give them your patronage.

AstroGraphics Publishing, Celestron and Orion Telescope and Binocular also donated wonderful prizes, even though they did not attend. Safeway Stores, Heidi's Hallmark and Abby's Pizza contributed to our door prize baskets, too. Again, let's give these businesses our support.

Individual members contributed prizes, as well. Thank you to Sam Pitts for his beautiful photograph and I put in some meteorites and items for the Children's prizes. One person who has been quietly contributing to this event that I would like to recognize is my mother, Gretchen Grendler, who contributed many prizes, including calculators, to the Children's prize basket and many items that have been put into our fundraising "Goodie Baskets" over the past few months.

We have new sandwich board sign boards donated by AC and painted by Barb, and again Barb brought the cool parking sign.

Thank you to everyone, we will take a moment for recognition at our upcoming meeting, and I would ask members to mention those who they noticed for their contributions and anyone that I missed! EAS members and helpers are TERRIFIC!

- Jean Grendler

IO – May 2003

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The Astronomical League
The World's Largest Federation of Amateur Astronomers

EARTH ORBITING SATELLITE OBSERVERS CLUB

EOSOC Tutorial

Just as an observer striving to complete the Messier list can *see* those objects without really *understanding* exactly what it is they are observing, so too can a satellite observer *see* satellites without *understanding* what it is that he or she is observing. Unfortunately, this approach will sidestep much of the significance and value of starting this program in the first place. Therefore, it is wise to begin with a brief study of orbital mechanics from an "armchair observers" perspective.

Before you go searching for the "back" button on your browser, please bear with us. This tutorial is NOT a mathematically intensive analysis of orbit determination, but rather a basic summary of the concepts that will give meaning to the observing lists shown above. While not *required* to complete these observing programs, it will provide a foundation upon which you can build your knowledge and understanding of spacecraft geodesy.

Introduction

The observing tasks for the EOSOC award are listed below.

- Active Payloads - Observe four (4) different active payloads, e.g. weather satellites, communications satellites, scientific payloads, etc. that are currently operational. Examples include the Hubble Space Telescope.
- Manned Spaceflight - Observe two (2) different manned spacecraft. These must be spacecraft that are occupied by humans at the time of observation, and might include any of the U.S. space shuttles, space stations, or Soyuz spacecraft. Note that observing the space shuttle Endeavor on two separate missions is not allowed for this task, the satellites must be different objects (however, shuttles Endeavor and Atlantis are valid).
- Multinational Satellites - Observe satellites from four (4) different countries (other than the USA). These spacecraft must be owned by the country noted, but don't have to have been launched by the country that owns the spacecraft (Russia and the USA regularly launch payloads for other countries).
- Rocket Bodies - Observe four (4) rocket bodies. These are usually noted by "R/B" in the satellite name in the element set.
- Iridium Flares - Observe four (4) Iridium flares. At least one of these must be during daylight or civil twilight.
- Multi-pass - Observe two (2) satellites on two separate passes, each pair of passes must be observed in a single night.
- Formation - Observe two (2) sets of formation flights. These will usually be a space shuttle or Soyuz spacecraft flying in formation with the ISS just before or after docking. The two spacecraft should be on the same orbital path, and separated by no more than 30-40 degrees.
- Aged Element Sets - Observe two (2) satellites with element sets of different ages. For each satellite, one observation must be with an element set less than one week old, and the second observation must be with an element set at least three weeks old. The purpose is to see the effects of using old element sets, and their effect on the arrival time of the satellite. Taking accurate observation times is especially important in this task.

Notes: A single pass of a satellite can only be used to satisfy a single task. I.e., a single observation of the space shuttle can be used in a manned spaceflight task, an active payload task, or perhaps in a formation task, but only one.

Continued Page 3



IO – June 2003

www.eugeneastro.org

EOSOC

Continued:

Collecting Observations

We've attempted to make the process of collecting observations as easy and direct as possible. The first thing to do is to download the observation report form (in Adobe PDF or Microsoft Word format), and print off one per observing task, 28 in total. If you have Microsoft Excel, you might also choose to download the EOSOC Observation Checklist. We'll discuss the observation checklist later. The observation reporting forms must be completed by each participant, and submitted in order to get credit for each observation. Please note: make copies of your logs, we are not able to return logs submitted for EOSOC credit. There are a number of fields that must be completed on each observation report form. Some are obvious, like name and date of observation, but others deserve additional clarification. The process of verifying observations is time-consuming, and we require this information to make our verification process as quick as possible.

Observers Name - Please enter your name here, as you would like it to appear on your certificate.

Date of Observation - Specify the date of the observation, INCLUDING the timezone in effect at the time (EDT, PST, etc.). You are also welcome to use Greenwich or UTC if you like. When you include your time hacks on the sketch, please use the same timezone noted in this field.

Satellite Name and ID - Enter the common name of the satellite AND the satellite id (either the catalog number appearing in the **first field of line 1** of the element set, or the XXXX designator appearing in the **second field of line 1** of the element set). For example, "Cosmos 2533 R/B, 25063U".

Date of Element Set Used - Enter the date of the element set file used for this object. You can include either the date of the element set file, or optionally the date the file was downloaded.

Location of Observer - Enter your observing location. Be sure to use decimal degrees, and not degrees/minutes/seconds.

Instrument Used - Please check the appropriate item.

Comments - Include any comments that would clarify the observation, for example, the satellite brightness, whether it was flashing, if it faded out, satellite was X seconds late, etc.

Observation Number - This field is especially important if you choose to use the optional Excel observation checklist. Please assign a number from 1 to 28, corresponding to the objective on the checklist. If you don't use the Excel checklist, this field is optional. Satellites should contain only one satellite passage, except the formation flights, which should have both satellites on the same observation reporting form.

Sketch of Observation - You must include a full sky sketch of the satellite pass. Please include the following items in your sketch:

1. A solid line showing the path of the satellite across the sky (use a dashed/dotted line for flashing satellites)
2. At least two time "hacks" indicating where the satellite was in the sky at those times. As mentioned earlier, the time written on the sketch should be in the timezone noted in the "Date of Observation" field above.
3. One or two reference constellations to indicate the path of the satellite with respect to the background stars.

Observation Objective - Check which item in the program list is being satisfied by the observation recorded on each form. Note that each form should contain only one satellite passage, except the formation flights, which should have both satellites on the same observation reporting form.

Observation Checklist

An optional observation checklist is provided for your convenience. This file, in Microsoft Excel format, can be used to assist in keeping track of the observations you are collecting. It has a number of formulas and logical checks in place to help prevent duplicate observations, or allocating a single observation to more than one observing task, etc. To use this spreadsheet, simply enter the target information in the observation table at the top (table 1), and transfer the observation number to the task table at the bottom (table 2). The built-in logic will identify any duplication problems, and will notify you when all tasks are complete. If you use this checklist, please include a printout of the completed checklist with your observations logs when you submit for your award.

Propagation Software

There are a wide range of planetarium programs and specialized satellite tracking programs available to those interested in tracking satellites, some of which are listed on the EOSOC Resources page. We have created propagation program called "EOSOC Tracker" that is tailored for the needs of EOSOC. You can download this free program from the EOSOC Resources page. A word of caution here... this program is currently undergoing development, and changes are being made on a regular basis. Be sure to check back for updates.

Visit the WEB SITE Links at EAS Home Page

OREGON STAR PARTY
AUGUST 28-31, 2003

Email: info@oregonstarparty.org
OSP: PO Box 2035, Gresham, OR 97030.
(503) 306-2992

IO – June 2003

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MEMBERS HAVE OPPORTUNITY FOR INPUT ON BYLAWS AT JUNE MEETING

EAS members are advised that the June 2, 2003 EAS meeting will be their opportunity for input on the language of the Bylaws. The Articles of Incorporation for EAS were filed with the state with an effective filing date of May 19, 2003. Bylaws should be adopted by the Board of Directors at this meeting to make the corporation is fully operational.

In order to facilitate efficient discussion of the bylaws at the meeting, members are asked to organize their comments, questions, objections or suggested changes regarding the Bylaws by article and section number.

At the meeting we will review and discuss the Bylaws sequentially, article by article and section by section. The board will make any revisions in the draft Bylaws that are agreed upon at the meeting. I will request a vote by the Board adopting the Bylaws.

Attorney member Ted Walker will help facilitate this discussion and we have much to thank him for as he has volunteered his time and expertise during this time of transition.

Members have had the opportunity to obtain hard copies of the draft Bylaws at the May EAS meeting, and the draft has been posted and available on our EAS website, in the left column see the heading "Minutia" and click on it: www.eugeneastro.org

It is necessary to take the time at the meeting necessary to answer all questions, hear concerns and suggestions by members. Our posted agenda will be changed to accommodate this. Our organization will be able to achieve its goals by structuring itself in this way and I appreciate everyone's patience and support.

- Jean Grendler, EAS President

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



Rob Adams Scope Dedication



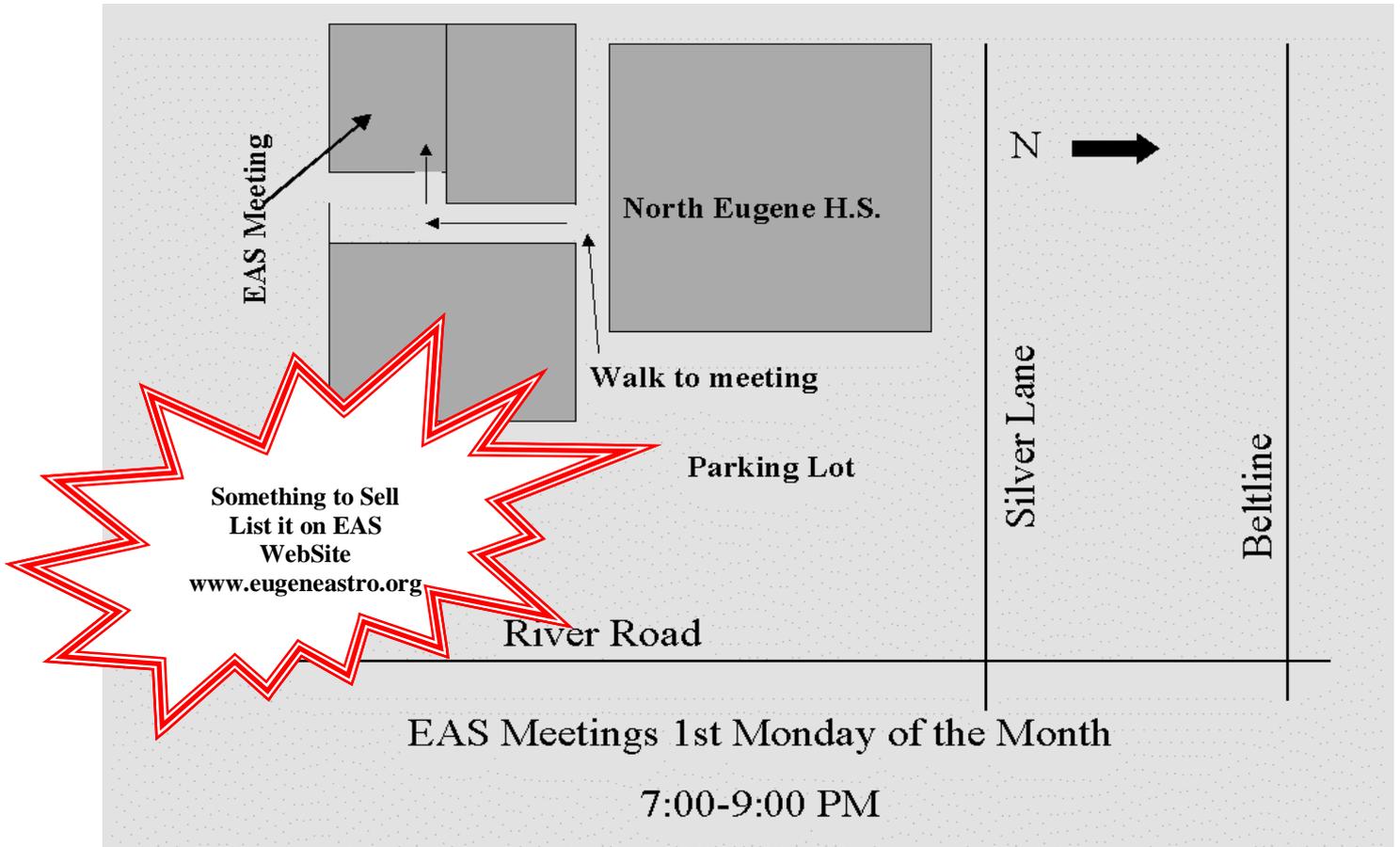
Mel Talking about Mars Approach



Solar Viewing at Astronomy Day

IO – June 2003

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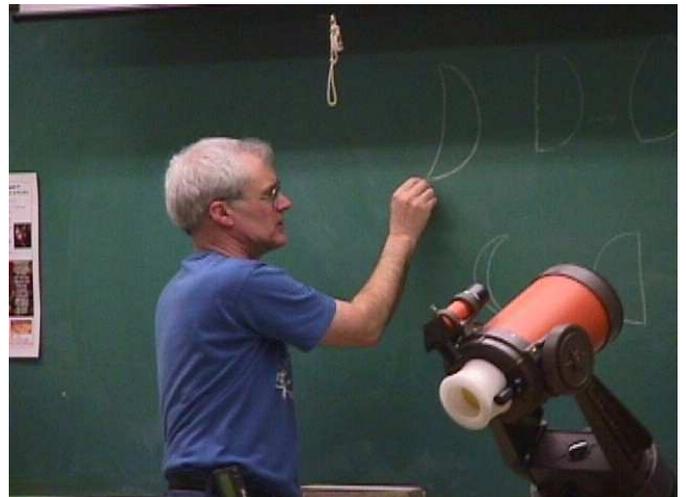


Come to a meeting and share your hobby with others!

EAS welcomes all amateurs' astronomers or those who just have an interest in Astronomy, to come and participate in our meetings. Our members are more than willing to introduce you to the wonders of the night sky.
See you there!

See our Treasure Sue Moe

Subscribe to Sky & Telescope and/or Astronomy Magazine
Take advantage of our club's 10% discount
You also get a 10% discount at the S & T Store



Larry Talking about The Moon
(Astronomy Day 2003)

IO – June 2003

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EAS STAR PARTIES FOR JUNE

Friday, June 6th School/Community Star Party at Delight Valley School

Members set up behind the school at 8:30 PM or earlier. Event is from 9 PM till 11 PM Direction from Eugene are: south on I-5 to the Saginaw exit. Turn right, go approx. 1/8 mile to school on the right. School officials are excited about us coming to do this star party and have the whole community of Cottage Grove looking forward to it! We can always enjoy more member participation at these events! These are the members who have signed up so far: Frank Szcz, Barb, Mel, Rossco, AC, Randy, Jeff, Jean and Sue. Please let us know if you can help by email to: moegren@msn.com or phone at 683-9382, or sign up at the next meeting.

*Note: the possible "in town" school star party did not get scheduled. Thanks to those who volunteered. Come to Delight Valley with us??

Saturday, June 21 Public Solar Viewing Party at College Hill Reservoir. **Summer Solstice Event** for the community and EAS. Time of event: 10:30 am till 12:30 PM. Members set up at 10 am. (Solstice is at 12:10 PDT approx.). These are the members who have signed up so far: Tracy S, Frank S, Rossco, AC, Jean and Sue. Who came to the last eclipse event with the great projection display? Will that person please volunteer again? We need someone to be dedicated to safety coordination. No x-ray film at this event, please! No unsafe scopes, filters or methods. I have a video eyepiece now, and will be able to display the sun on a monitor (if we get electricity up there) and have a Lumicon h-alpha filter for my 8" Ultima. We have to have some folks volunteer to do crowd monitoring, safety and greeting or I can't set this equipment up and share it, as those safety and crowd related jobs will then fall to me and the other officers. If I can't attend my equipment, our own rules say I can't have it set up, so please, help us recruit more helpers so I can safely share my "toys" with you and the public.
Thanks - Jean

Table Mountain Star Party

Pre-Registration Form online: March 23, 2003
The deadline for receiving pre-registration for this year is June 27, 2003 The deadline for receiving Late-registration for this year is July 11, 2003. **Table Mountain will be held on: July 24-26, 2003** Key note speaker is Al Nagler

Note: you may be contacted directly by Marcie Roundtree concerning these same topics.

Pardon my mass mailing to those of you I gleaned from your web sites. Just a heads up that the Pre-Registration Form will be on line from our web site at: <http://www.tmspa.com>

Registration info and form will be online March 23, 2003:

<http://www.tmspa.com/registration.html>

WE WILL NOT be mailing the Registration forms and Brochure this year using club lists. Please pass on the web site info and pass on the word to your club members.

Feel free to download our form and brochure and freely print, send to your email list or how ever you choose.....

If a hard copy would be of help or some other info or assistance feel free to contact me or Marcie (LMRound830@aol.com) Other contacts are located on our history page.

See you at Table

Frank Gilliland
TMSP Volunteer Coordinator and Web Guy
tmspfrank@earthlink.net

PS: Any one who wants to be involved in any volunteer activities feel free to contact me directly.

New Site to Observe From

Many Club members and friends made a trek up Lost Creek to a new site Friday Night May 23, 2003. 12 plus scopes including the Rob Adams 16" and a fantastic 20" Dob. It was enjoyable night for all. Unfortunately there was a high cloud layer that hampered observing but glimpses of fine seeing at 2000' and magnitude 5.5+ were had. Join the EAS General User List: eugeneastro@lists.cmc.net for up to date info.