

IO - September 2010

Issue 2010-09
Eugene Astronomical Society

Eugene Astronomical Society
Annual Club Dues \$25
President: Sam Pitts - 688-7330
Secretary: Jerry Oltion - 343-4758
Additional Board members:
Jacob Strandlien, Tony Dandurand,
John Loper.

www.eugeneastro.org

EAS is a proud member of:

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



Next Meeting: Thursday, September 23rd

The Viewing End of the Telescope by Sam Pitts

For our September meeting, Sam Pitts will talk about the end of the telescope we put our eyes to. He'll cover eyepieces, diagonals, focusers, filters, and whatever else we attach to the scope to manage the light between the primary and our eyes. Questions abound about eyepiece selection, dielectric coatings, field of view, etc., and there are as many myths as answers. Sam will give a short talk and then a few experienced EAS members will join him for an open forum with the audience, wherein they will attempt to cut through the mystery and give us the straight story on this often misunderstood end of the telescope.

In addition to Sam's talk, Jacob Strandlien will present the astronomy news of the month, and as always there will also be time for any of us to bring items for show & tell. If you've got a new scope or piece of equipment you'd like to show off, bring it! The meeting is at 7:00 in EWEB's Community Room, 500 E. 4th in Eugene.



Next First Quarter Friday: September 17th

Despite being on a Friday the 13th, our August First Quarter Friday was another big success, with several scopes and dozens of observers. The sky was clear and temperatures were moderate. The Perseid meteor shower provided an additional spectacle for those waiting in line for views through the telescopes.

September's First Quarter Friday is the night before "International Observe the Moon Night," (see p.5), so let's make a special effort to show people the Moon as well as other sights, and remind them that lunar exploration is an ongoing endeavor even now, 35 years after the Apollo program.

First Quarter Fridays are laid-back opportunities to do some observing and promote astronomy at the same time. Mark your calendar and bring your scope to the College Hill Reservoir (24th and Lawrence in Eugene) and share the view with whoever shows up.

Here are the dates for First Quarter Fridays through December of 2010:

September 17
October 15

November 12
December 10

August Meeting Report

At our August 26th meeting we had four presentations.

Ted Drummond showed us his new Williams Optics refractor on an equatorial mount. It looks like a very nice scope, and should rival some of our other high-end scopes for crisp, fringe-free views.

Eric Gross talked about small, inexpensive short-tube refractors, specifically the Celestron C102 f/5 wide angle scope, which he feels offers a surprisingly good balance between affordability, portability, and crispness of view.

Jacob Strandlien gave us the monthly space and astronomy news.

Rick Kang talked about globular clusters, which are surprisingly mysterious even in these days of the Hubble telescope and supercomputer modeling. Globular clusters host some of the oldest stars in the Universe and contain no gas and dust to form new stars, yet they also contain a few hot new stars called “blue stragglers.” Are these the result of collisions between older stars? Nobody knows. Likewise, most globular clusters don’t seem to have black holes at their centers, despite being like the cores of small galaxies in many other respects. And some recently formed open clusters look to be in the process of collapsing to form new globular clusters. Is that how all globulars originated? Nobody knows.

Rick showed some beautiful photos of globular clusters, illustrating their varied shapes and densities. The Milky Way has about 150 of these tightly packed balls of stars, most of them visible in the summer months because they’re more numerous near the galactic core. Have a look while you still can; by October most of them will be dropping into the west by sunset.



Our next meeting will be on Thursday, September 23rd, at 7:00 PM in the EWEB north building’s Community Room. This is the first room in the semicircular building to the north of the fountain at EWEB’s main campus on the east end of 4th Avenue.

Meeting dates for 2010: (All meetings are at 7:00 in the Community Room)

September 23

November 24 (Wednesday)

October 28

December 23



Thank You Castle Storage

For the last two years, Castle Storage has generously provided EAS a place to store its telescopes and equipment. EAS would like to thank Castle Storage for their generosity and support for our group. Please give them a call if you need a storage space, and tell your friends. They are great people and offer secure and quality storage units.



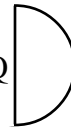
Observing in September



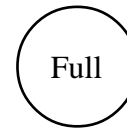
Last Q



New



1st Q



Full

September 1	September 8	September 14	September 23
Mercury Rises: 7:06 AM	Mercury Rises: 6:04 AM	Mercury Rises: 5:29 AM	Mercury Rises: 5:30 AM
Venus Set: 9:08 PM	Venus Set: 8:49 PM	Venus Set 8:30 PM	Venus Set: 8:02 PM
Mars Set: 9:18 PM	Mars Set: 9:00 PM	Mars Set: 8:46 PM	Mars Set: 8:25 PM
Jupiter Rise: 8:34 PM	Jupiter Rise: 8:05 PM	Jupiter Rise: 7:40 PM	Jupiter Set: 6:53 AM
Saturn Set: 8:51 PM	Saturn Set: 8:25 PM	Saturn Set: 8:03 PM	Saturn Set: 7:30 PM
Uranus Rise: 8:27 PM	Uranus Rise: 7:59 PM	Uranus Rise: 7:35 PM	Uranus Set: 6:57 AM
Neptune Set: 5:39 AM	Neptune Set: 5:11 AM	Neptune Set: 4:46 AM	Neptune Set: 4:10 AM
Pluto Set: 1:31 AM	Pluto Set: 1:03 AM	Pluto Set: 00:39 AM	Pluto Set: 00:04 AM

All times: Pacific Standard Time (Nov 1, 2009-March 13, 2010) = UT -8 hours or U.S. Pacific Daylight Time (March 14-November 7, 2010) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
9/1/2010	23:42	14:52	06:36	19:48	04:52	21:31
9/2/2010		15:49	06:37	19:46	04:54	21:29
9/3/2010	00:43	16:39	06:38	19:45	04:55	21:27
9/4/2010	01:52	17:22	06:39	19:43	04:57	21:25
9/5/2010	03:09	17:58	06:40	19:41	04:58	21:22
9/6/2010	04:29	18:29	06:41	19:39	05:00	21:21
9/7/2010	05:50	18:58	06:43	19:37	05:01	21:18
9/8/2010	07:10	19:25	06:44	19:36	05:03	21:16
9/9/2010	08:30	19:53	06:45	19:34	05:04	21:14
9/10/2010	09:50	20:23	06:46	19:32	05:06	21:12
9/11/2010	11:08	20:57	06:47	19:30	05:07	21:10
9/12/2010	12:22	21:37	06:48	19:28	05:09	21:07
9/13/2010	13:30	22:24	06:49	19:26	05:10	21:05
9/14/2010	14:30	23:17	06:51	19:24	05:11	21:03
9/15/2010	15:21		06:52	19:23	05:13	21:01
9/16/2010	16:03	00:15	06:53	19:21	05:14	20:59
9/17/2010	16:37	01:17	06:54	19:19	05:16	20:57
9/18/2010	17:05	02:20	06:55	19:17	05:17	20:55
9/19/2010	17:30	03:22	06:56	19:15	05:18	20:53
9/20/2010	17:52	04:24	06:57	19:13	05:20	20:51
9/21/2010	18:12	05:25	06:59	19:11	05:21	20:49
9/22/2010	18:33	06:26	07:00	19:10	05:22	20:47
9/23/2010	18:54	07:27	07:01	19:08	05:24	20:45
9/24/2010	19:17	08:29	07:02	19:06	05:25	20:43
9/25/2010	19:44	09:33	07:03	19:04	05:26	20:41
9/26/2010	20:15	10:37	07:04	19:02	05:27	20:39
9/27/2010	20:52	11:41	07:05	19:00	05:29	20:37
9/28/2010	21:38	12:43	07:07	18:59	05:30	20:35
9/29/2010	22:34	13:41	07:08	18:57	05:31	20:33
9/30/2010	23:38	14:32	07:09	18:55	05:33	20:31

Items of Interest This Month

All month: Jupiter's best appearance in 47 years

9/6 - 9/21 Zodiacal light visible in east before dawn.

9/10 Mars, Spica, Venus, and Moon near one another at dusk

9/17 First Quarter Friday Star Party

9/17 - 9/19 Jupiter and Uranus within 1°

9/21 Both Jupiter and Uranus at opposition

9/22 Autumn begins at 8:09 PM Pacific time

9/23 Venus at its brightest (-4.8 mag)



For Current Occultation Information

Visit Derek C. Breit's web site

"BREIT IDEAS Observatory"

<http://www.poyntsource.com/New/Regions/EAS.htm>

Go to Regional Events and click on the Eugene, Oregon section. This will take you to a current list of Lunar & asteroid events for the Eugene area. Breit continues to update and add to his site weekly if not daily. This is a site to place in your favorites list and visit often.

All times are for Eugene, Oregon, Latitude 44° 3' Longitude 123° 06' for listed date

Oregon Star Party Report

by Jerry Oltion

This year's Oregon Star Party was one of the best ever. The sky was clear the whole time, with good seeing and transparency. The temperatures during the day stayed in the 80s, and the temperatures at night were in the 50s and 60s. Several EAS members were there to enjoy it, along with 650 other amateur astronomers from all over the world.

Those who went up early got a thrill on Tuesday night when a thunderstorm roared through, but the rain dampened the soil and kept the red dust to a minimum for the next four days, so there was definitely a silver lining to that cloud.

This year provided the best Perseid shower I've ever seen. We saw 20-40 per hour, and several fireballs left persistent trails behind. We also watched a double shadow transit cross the face of Jupiter. Ganymede's shadow was distinctly larger than Io's, even in a small scope.

The organizers of OSP provide observing lists for people who want to learn new objects and test their ability to find obscure targets. Kathy went after objects on the level 1 observing list, while I went after the level 2 list. It was fun to look for things we'd never seen before, track them down and really study them under such great observing conditions. Jim Jackson tackled the level 3 list and was one of only three people to complete it. (I found the easiest object on that list, but only by using Jim's charts.)

The 20" scope we bought from Mel Bartels has a long history at the OSP, and hence many admirers came by for looks through it. Practically anything looks spectacular through a 20" scope: we had a line of people waiting to take a look at NGC 40, an often overlooked planetary nebula in Cepheus, because we could see so much structure in it.

Mel unveiled another of his innovative telescope designs: a 13" f/3 that folds down into a package no bigger than a small suitcase. It's not much taller when unfolded. It was strange to find oneself bending down to look through a 13" scope even while it was pointed at the zenith. And the f/3 focal ratio didn't adversely affect the view at all. With a paracorr ahead of the eyepiece there was none of the coma you'd expect to see from such a short focal ratio, even in an Ethos eyepiece's 100-degree field.



Mel's 13" f/3 folding scope



Camping out at OSP

Mel's scopes weren't the only ones receiving attention. Tom Clark of *Amateur Astronomy* magazine fell in love with Kathy's trackball telescope and wrote an article on it for a future issue.

Kathy and I rented a van this year so we wouldn't have to pack our stuff so tightly in the Volkswagen, and that turned out to be a great decision. Not only did it give us plenty of cargo space, it allowed us to keep our stuff in order once we got there, so we didn't have to hunt around for things in the dark. And it allowed us to bring home yet another telescope we hadn't taken up with us.

Right. We wound up with another scope. At the door prize drawing, I won an 8" Orion Skyquest dob, brand new and still in the box. I can just imagine how we'd have gotten that home if we'd been driving the Volkswagen.

The club got another scope, too. The Rose City Astronomers offered the EAS an 8" Schmidt-Cassegrain for our lending library. It's one of the classic orange-tube SCTs from the '70s. We still need to work out the details of picking it up, but it will eventually go into the lending program.

So it was indeed an excellent OSP from start to finish. Here's one measure of how great it was: instead of taking a few months for the memory of the hot, dusty, dry days and cold nights to fade, I'm already eager to go back again next year.

Jupiter Gets Whacked Again

On August 20th at 18:22 UT, two amateur astronomers in Japan independently recorded an apparent impact on Jupiter. Masayuki Tachikawa of Kumamoto City was first to report the event. His movie of the impact shows the fireball scintillating along with other features on the planet — persuasive evidence that this was a genuine event on Jupiter. Soon after Tachikawa made his report, Tokyo amateur astronomer Kazuo Aoki realized that he had recorded the fireball, too (right).

The most likely explanation: A small comet or asteroid hit the giant planet. This is the third time in only 13 months that amateur astronomers have detected signs of impact on Jupiter. The earlier events occurred on July 19, 2009, and June 3, 2010.



September 18 is International Observe the Moon Night



2009 was a very big year for lunar exploration. The Lunar Reconnaissance Orbiter (LRO) began orbiting the Moon, returning more amazing images and more digital data in its first year than any other planetary mission in history. Meanwhile, the Lunar CRater Observation and Sensing Satellite (LCROSS) crashed into the Moon's south polar region in an unprecedented search for water below the Moon's surface.

Astronomers Without Borders is partnering with NASA and others to bring the excitement of observing and learning about Earth's closest neighbor in space to the public. They've chosen September 18, 2010 as "International Observe the Moon Night" and are asking astronomy clubs worldwide to help get the public out to observe the Moon on that night.

Since our First Quarter Friday star party is the night before (September 17th), that seems like a perfect time to do our part. So during our star party let's remember to show people the Moon as well as other sights, and remind them that lunar exploration is still an ongoing thing.

Sacandaga Dark-Sky Campout Report

by Jerry Oltion

The Eugene Astronomical Society held its second annual dark-sky campout on August 3-8 at Sacandaga Campground, 25 miles southeast of Oakridge on the middle fork of the Willamette River. This year's campout was a serial affair, with Tony and Louise Dandurand holding down the fort while other EAS members came for a day or two at a time. Jim Jackson arrived first, followed by Tony and Louise, Jerry and Kathy Oltion, Steve, Tanya, and Alexander Frankel, and Rossco Wright.

The camp site was excellent. Tall fir trees shaded the periphery, perfect for pitching tents and keeping cars and telescopes in the shade by day, while a central picnic table and fire ring provided community space for dining and visiting.

The observing site was equally wonderful. An open, grassy field just a hundred feet or so from the campsite provided a great view of the night sky. Jim and Tony and Louise set up in the middle of the field the first two nights for a 360-degree panoramic view. On subsequent nights people set up closer to the fence for south views and a shorter equipment haul.

Summer dark-sky observing is typically a globular cluster festival, and this weekend was no exception. Kathy found nearly a dozen in Sagittarius alone, just by scanning the sky at random to see what she would stumble across.

Jerry and Tony found several new carbon stars (new to them, at least), and a few new galaxies as well.

It was also a great chance to revisit old standbys under excellent sky. M13 glittered like a pile of diamond dust overhead, and the Ring Nebula looked so bright we wondered if it was a flying saucer buzzing us. Even Jupiter seemed to give up a little more detail under dark sky than it typically does from town. Its single band showed festoons and shading, and the polar caps were distinct.

There's room for many more campers and many more telescopes than we had this year. Next summer you should consider going, too. Don't miss out on all the fun!



Camping at Sacandaga



Kathy, Tony, and scopes in the field at Sacandaga Campground



EAS 2nd Annual Dark Sky Campout

by Tony Dandurand

This year we brought a some different equipment to the 2nd EAS Dark Sky Campout: my new 6" f/5 alt-az mounted reflector, scope mounted laser pointers, and new night-sky specific eyeglasses. Each proved their worth in this dark sky outing.



The mid-field observing site

When we arrived at 10pm Tuesday night, Jim Jackson was already there, searching out the elusive and impossibly dim. I carried the 6" out into the field for quick looks before sleep. With a low(est) power field of view of almost 2-1/4 degrees, it was perfect for the wide clusters IC 4665, and NGC 6633 off the shoulder of Ophiuchus. The small Sagittarius star cloud (M24) in this combination gets my vote for most stars visible in one eyepiece. The Veil Nebula was surprising easy, and it was great to see such large portions of it at once.

Starting the 2nd night, Louise & I rolled out our larger scopes and had our 1st extended use of scope mounted laser pointers. I like 'em! Telrads, Quickfinders, or using an optical finder without them requires eyeballing along the scope to some degree. This gets more difficult the higher in the sky you're looking. Once the lasers were aligned, we often found

objects just by pointing the laser where you knew the objects to be. If they're not in the main scope, they surely are in the optical finder. My chiropractor and I approve.

A few years back, Sky & Telescope ran an article about night myopia and eyeglasses for naked eye astronomy (most humans are somewhat more nearsighted in the dark than in the light). Jerry Oltion has had a pair for some time and advised their use; I got a pair the day before this campout. My optometrist said my daily photo-grey glasses probably filter 15% or more light even at their most clear state. These new single vision glasses have anti-reflection coated lenses, and are 1/2 diopter stronger for far-sighted vision.

I tested them one night, looking for dimmest stars in an area with my day glasses, then these. I definitely could see dimmer stars with them, and one night had my 1st unambiguous sighting of the North American Nebula by naked eye. The slightly clearer, sharper, one power view was nice. Cost was less than \$200 (I reused some prior glasses' frames), less than many eyepieces bought to improve certain views.

A few dozen objects logged, mountain lake swims every day, clean mountain air, stars aplenty. A fine, fun campout.



The nearer observing site with the camp beyond



Earth and Moon from 114 million miles

On May 6, 2010, while searching for “Vulcanoid” asteroids (small, rocky bodies in orbit between Mercury and the Sun), the MESSENGER spacecraft took this photo of the Earth and the Moon. The spacecraft was 114 million miles from Earth at the time.



Earth and the Moon are in fact much more widely separated than the photo implies. At this image scale, the Moon would be on the opposite side of the frame if the two bodies were at an equal distance from the camera. Instead, the Moon is behind the Earth, foreshortening the distance to where they appear much closer than they are.

This photo was taken with the Wide Angle Camera (WAC) of the Mercury Dual Imaging System (MDIS). The WAC has a 10.5° field of view, about the size of your fist held at arm’s length.

Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

The Role of Turbulence in Star Formation

from Science@nasa.gov

Astronomers have found a new phenomenon in the turbulent wake of a tiny galaxy that is plunging into the Virgo cluster. IC 3418 is speeding toward the center of the Virgo cluster at 1,000 kilometers per second. The space between cluster galaxies is not empty; it is filled with a gaseous atmosphere of diffuse, hot hydrogen. Thus, IC 3418 experiences a stiff wind that sweeps interstellar gas right out of the little galaxy—gas that trails far behind in a choppy, twisting wake. Eddy currents swirling in that turbulent wake trap the gas, compressing it enough to allow new stars to form.

“It’s a fascinating case of turbulence [rather than gravity] trapping the gas, allowing it to become dense enough to form stars,” says Janice A. Hester of the California Institute of Technology in Pasadena. “Astronomers have long debated the importance of gravity versus turbulence in star formation. In IC 3418’s tail, it’s all turbulence.”



IC 3418 and its turbulent wake of newborn stars