

# IO - April 2012

Issue 2012-04  
Eugene Astronomical Society



Eugene Astronomical Society  
Annual Club Dues \$25  
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EAS is a proud member of:

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

Next Meeting: Thursday, April 26th

## Web Camera Imaging

by Jeff Phillips

At our March meeting Sam Pitts gave a talk on Basic Imaging. This month Jeff Phillips builds on that topic with a specific method: using an inexpensive webcam to capture some astonishing astrophotos.

The power of webcam imaging comes from the stacking software. By stacking hundreds of frames, it's possible to bring out detail with a small telescope that even professional observatories couldn't match in the days of film photography.

Tony George, who's on the Registax development team, says: "Think of it; just a few years ago the Hubble Space Telescope was the only telescope that could capture that level of detail consistently and now we amateurs are doing it."

See page 4 for some examples of Jeff's work. Come to our April meeting and learn how to do it yourself. **NOTE THAT THIS MEETING IS IN THE TRAINING ROOM NEXT DOOR TO THE ROOM WE USUALLY USE.**

In addition to Jeff's talk, Jacob Strandlien will present the astronomy news for the last several months. We also encourage people to bring any new gear or projects they would like to show the rest of the club. The meeting is at 7:00 on April 26th at EWEB's Training Room, 500 E. 4th in Eugene.

## Next First Quarter Friday: April 27

Our March 30 star party was rained out, as was most of the month of March, and our Saturday backup day was no better.

Backup day? Yep. Since our star parties do get clouded out so often, there was some discussion on our email list this month about scheduling a standing backup day for clouded-out First Quarter Fridays. We had a pretty clear consensus for choosing the Saturday immediately following the scheduled FQF, so that's now our official backup day. Jacob has provided a space on our web page where we can post up-to-date notices of star parties and cancellations and backup star parties, so with that and our email list we should be able to get the word out to interested people in a timely fashion.

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's the schedule for 2012:

April 27 (38% lit)

July 27 (70% lit)

October 19 (28% lit)

May 25 (24% lit)

August 24 (57% lit)

November 16 (15% lit)

June 29 (82% lit)

September 21 (43% lit)

December 21 (69% lit)

# March Meeting Report

On March 22nd Sam Pitts gave a talk on Basic Imaging. He talked about the equipment and techniques that people can use to take photos of the night sky, starting with film cameras mounted on basic tripods and moving through digital cameras and webcams attached to telescopes, all the way to cooled CCD cameras on top-end refractors and mounts. He covered a lot of ground in an hour and a half, yet still left webcam photography open for Jeff Phillips to cover in detail next month.

Our next meeting will be on Thursday, April 26th, at 7:00 PM in the EWEB north building's Training Room. This is the second room in the semicircular building to the north of the fountain at EWEB's main campus on the east end of 4th Avenue.

Here's our meeting schedule for 2012. Note that we don't get regular Thursdays anymore, nor are we in the same room every time. EWEB has had trouble scheduling its meeting space to meet all the demand, so we've had to take what we can get.

May 24 (Thursday, Community Room)

July 26 (Thursday, Training Room)

September 19 (Wednesday, Community Room)

November 21 (Wednesday, Community)

April 26th (Thursday, Training Room)

June 28 (Thursday, Training Room)

August 23 (Thursday, Community Room)

October 17 (Wednesday, Community Room)

December 20 (Thursday, Training Room)

## Jim Jackson Receives Planetary Nebula Certificate

At our March 22nd meeting, EAS member Jim Jackson received a certificate and pin from the Astronomical League for completing their Planetary Nebula Observing Program.

There are two levels of accomplishment in this program: basic and advanced. Jim earned the advanced level certificate, which required observing all 110 objects on the list. Jim also found 4 bonus proto-planetary nebulae, and he located all 114 objects manually with traditional star-hopping methods, using either an 11" or 18" dobsonian reflector. This took two years of sustained effort between July of 2009 and July of 2011.

Jim noted that since the list contains objects down to  $-40^\circ$  declination, he had to do some of his observations from Arizona while he was there last spring for a Messier Marathon.

Highlights included Gomez's Hamburger, Minkowski's Footprint, Oyster Nebula, Crystal Ball, Cleopatra's Eye, Medusa Nebula, Headphones Nebula, Minkowski's Butterfly, Bug Nebula, Box Nebula, Cheerio Nebula, and Moth Nebula.

Jim says, "I have done a number of Astronomical League programs, and this one ranks with (but is not as difficult as ) the Galaxy Groups and Clusters program as the most rewarding."

Congratulations, Jim!



## EAS Sells Unitron Scopes

The EAS board of directors and clubmembers in general have spent several months carefully considering what to do with the Unitron telescopes and related equipment that were donated to the club last summer. They're excellent telescopes, but too large for most mounts and too ungainly to be truly portable. They were way too much scope to give to beginners, it seemed likely that they would languish unused even in our lending library, and while we did sell one scope at our December swap meet, there seemed little interest from club members in actually owning and using the others.

On the other hand, the scopes were in such good shape that they were highly prized as collector's items. When word got around that we had them, we began receiving many inquiries about them. One Unitron aficionado made a generous offer for the entire collection, and the board recently accepted his offer. He had a local friend pick up the scopes, and the club now has extra money to buy more generally useful scopes for giveaways at star parties, to put into our lending program, or for promoting astronomy in other ways.

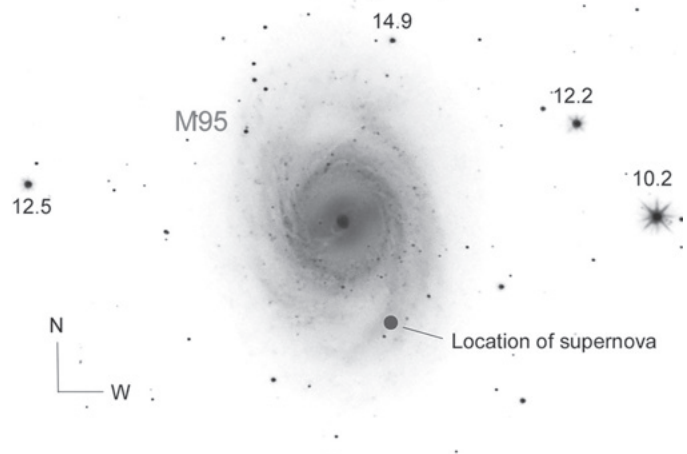
## Supernova in M95

On March 16th a new supernova appeared in M95, a barred spiral galaxy that along with M96 and M105 make up one of the two famous triplets of galaxies in Leo. This is the one under the belly of the lion, and is easy to find since it's only 3-4 degrees to the east of Mars all this month.

M95 is 38 million light-years away, so the supernova will never reach naked-eye brightness, but at 12th magnitude it's already visible in a modest scope and is still increasing in brightness.

The supernova is officially designated SN 2012aw. It's a type II supernova, the result of a massive star running out of fuel and collapsing, then its core rebounding in a spectacular explosion. Its ejecta has been clocked at 15,000 km/s — over 33 million mph. At that speed, the shock wave would cover the distance between the Sun and Earth in only three hours.

Here's a finder chart to help you locate the supernova, with nearby star magnitudes marked for reference. It will likely appear to be outside the galaxy as seen from town, since the outer reaches of the galaxy will not be visible against the skyglow. The supernova should be, though, and should appear about as bright as its host galaxy's entire core. (That's why they're called "super.")



## Thank You Castle Storage

For the last five 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.



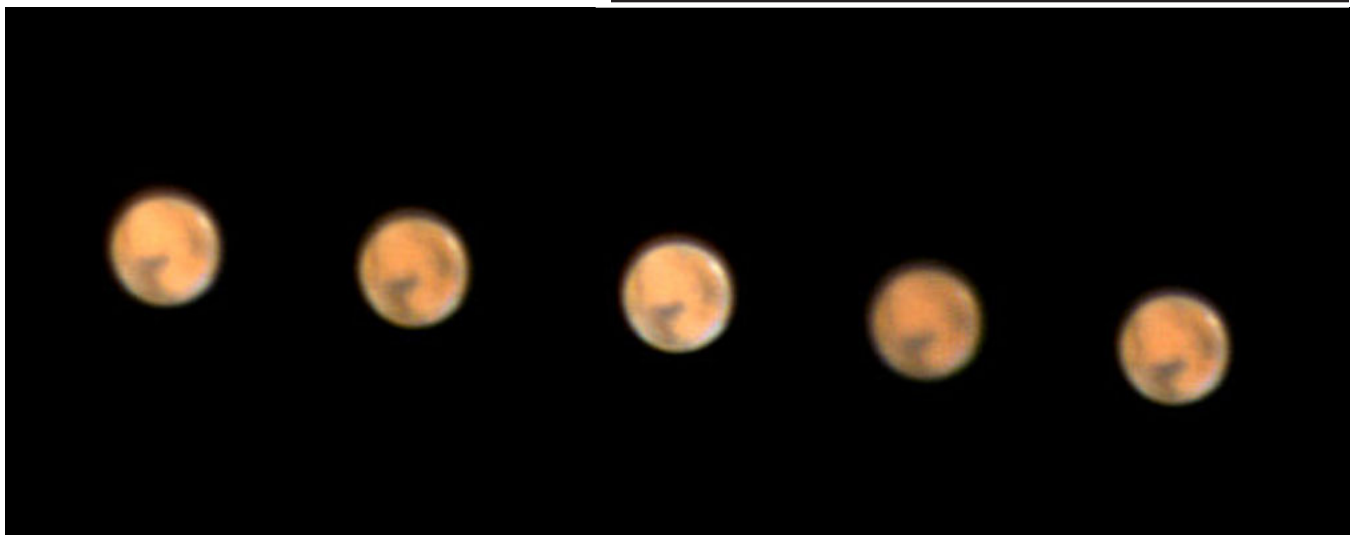
## March Moon and Planets

Jeff Phillips caught a few clear moments during our cloudy March to shoot these two excellent astrophotos. To the right we have the Moon between Venus (above) and Jupiter (below), taken with an A540 Powershot camera. This was nearly two weeks after the Venus/Jupiter conjunction, but they're still close enough to fit in a single image. Jeff used Registax to stack 20 frames with different exposures to bring out detail. Note the Earthlight on the upper 3/4 of the Moon.

The Mars images below were made with a Neximage webcam and a C6 SCT. They were taken over the course of about an hour, and show the rotation of the planet in that time.

These images are chock full of detail: You can clearly see Syrtis Major (the angled dark area in the lower left of each image), Sinus Sabaeus (the linear dark streak to the upper left of Syrtis Major), the Utopia region to the upper right, the north polar cap to the upper right of that, a distinct cloud bank over the Elysium volcano region on the lower right, and the south polar cloud hood to the lower left.

Come to Jeff's talk on April 26th to learn how to capture images like these for yourself!



## Observing Highlight: the Dog Star's Pup

Sirius has been known since 1862 to be a double star, and with an 8th-magnitude companion and a separation ranging from 3 to 12 arc-seconds, it should be a piece of cake to split. In reality, Sirius is one of the most difficult doubles in the sky. The shimmering glare of the magnitude -1.46 primary drowns out the 8.3-magnitude glow of its white-dwarf companion in all but the steadiest of skies, and even with good seeing the magnitude difference is too great for many people's eyes.

It can be done, though, in scopes as small as 4-6 inches. The trick is to minimize the glare of the primary so you can see the secondary. How do you do that?

The simplest method is to observe them at twilight, before the contrast between Sirius A and the background sky becomes so overwhelming. April is a great time for this trick, since Sirius is high in the sky at twilight this month. But don't go directly to Sirius. First, look at Rigel. It's a fairly easy split because the magnitude difference is so much less, but its separation is about the same. That'll give you an idea of what to look for in terms of distance apart. Use at least 250x, up to the highest power your scope and the atmosphere will support. Rigel's companion will give you a good idea of what this magic number is for your scope on the night you're trying it. Crank the power up until the companion starts to blur. Then go looking for Sirius B. It'll be just inside the shimmering disk of Sirius A...but it should pop out occasionally.

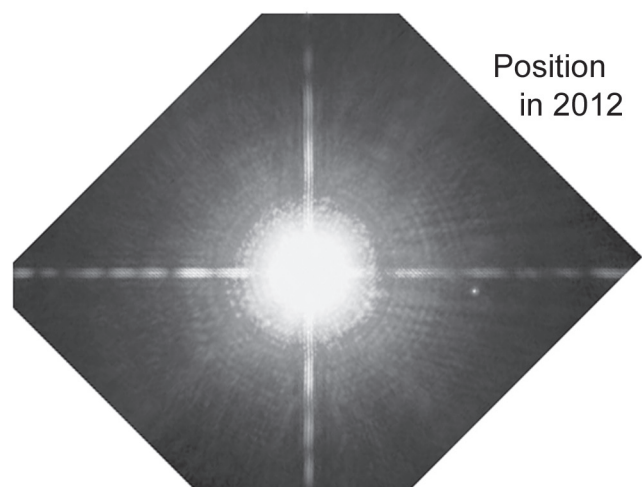
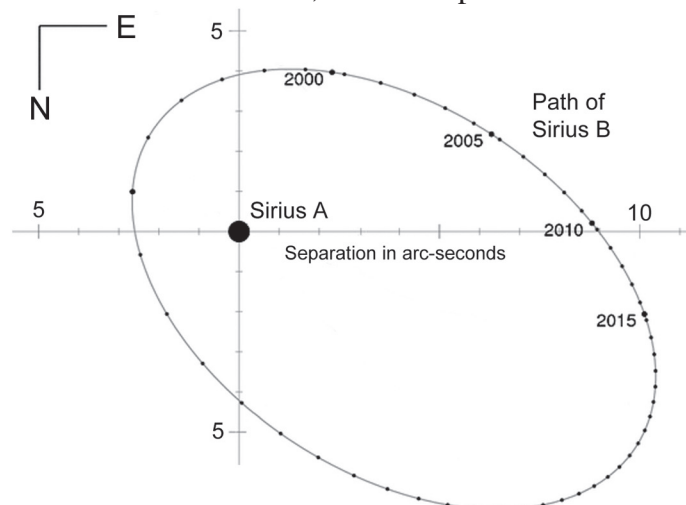
Another good method is to put a mask at the focal plane of your eyepiece so you can hide Sirius A behind the mask and look for Sirius B in the space immediately to the side of it. A thin strip of black electrician's tape works well for this. Don't stick it to the lens, though! You want it right at the focal plane, so the edge is crisp and sharp when you look into the eyepiece.

You can use the eyepiece's own field stop for the same purpose, shifting Sirius A off to the side so it's out of the field of view, but that puts the image in the eyepiece's worst optical zone, so the image might be overwhelmed by the eyepiece's internal aberrations. It's certainly worth a try, though.

Another trick is to make a hexagonal mask for the front of your scope. This will concentrate the natural diffraction from your scope's outer aperture edge into six spikes, which will make the bright star's disk smaller and allow you to put the companion in a clear gap between spikes.

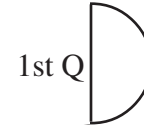
Fortunately for us, Sirius B is currently drawing farther from Sirius A in its 50-year orbit, so our chances of seeing it improve every year until 2025 or so. Also, Sirius B is almost directly east of Sirius A at the moment, so it trails the bright star as they drift across your field of view. If you have a mask at your eyepiece's focal point, you get an instant of opportunity when Sirius A hits the mask before Sirius B dives beneath it as well.

Whatever method you try (and it may take all of them!), be patient. Conditions have to be just right. But for double star fans, this is the pinnacle observation, well worth the wait.





# Observing in April



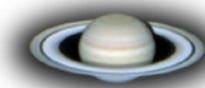
April 6	April 13	April 21	April 29
Mercury Rise: 5:58 AM	Mercury Rise: 5:44 AM	Mercury Rise: 5:33 AM	Mercury Rise: 5:24 AM
Venus Set: 12:00 Mid	Venus Set: 1:05 AM	Venus Set: 1:06 AM	Venus Set: 12:00 Mid
Mars Set: 5:35 AM	Mars Set: 5:04 AM	Mars Set: 4:32 AM	Mars Set: 4:01 AM
Jupiter Set: 10:04 PM	Jupiter Set: 9:45 PM	Jupiter Set: 9:23 PM	Jupiter Set: 9:02 PM
Saturn Rise: 8:41 PM	Saturn Rise: 7:50 PM	Saturn Rise: 7:15 PM	Saturn Set 5:53 AM
Uranus Rise: 6:23 AM	Uranus Rise: 5:56 AM	Uranus Rise: 5:26 AM	Uranus Rise 4:55 AM
Neptune Rise: 5:10 AM	Neptune Rise: 4:43 AM	Neptune Rise: 4:12 AM	Neptune Rise: 3:41 AM
Pluto Rise: 2:08 AM	Pluto Rise: 1:40 AM	Pluto Rise: 1:09 AM	Pluto Rise: 12:37 AM

All times: Pacific Standard Time (Nov 4, 2012-March 10, 2013) = UT -8 hours or U.S. Pacific Daylight Time (March 11-November 3, 2012) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
4/1/2012	14:06	03:44	06:53	19:40	05:13	21:21
4/2/2012	15:15	04:17	06:51	19:41	05:11	21:22
4/3/2012	16:27	04:47	06:49	19:43	05:08	21:24
4/4/2012	17:41	05:17	06:47	19:44	05:06	21:25
4/5/2012	18:57	05:47	06:46	19:45	05:04	21:27
4/6/2012	20:15	06:18	06:44	19:46	05:02	21:28
4/7/2012	21:34	06:54	06:42	19:48	05:00	21:30
4/8/2012	22:50	07:35	06:40	19:49	04:58	21:32
4/9/2012	24:00	08:24	06:38	19:50	04:56	21:33
4/10/2012		09:20	06:37	19:51	04:54	21:35
4/11/2012	01:01	10:22	06:35	19:52	04:51	21:36
4/12/2012	01:52	11:29	06:33	19:54	04:49	21:38
4/13/2012	02:35	12:36	06:32	19:55	04:47	21:40
4/14/2012	03:10	13:43	06:30	19:56	04:45	21:41
4/15/2012	03:40	14:48	06:28	19:57	04:43	21:43
4/16/2012	04:07	15:51	06:26	19:58	04:41	21:45
4/17/2012	04:32	16:53	06:25	20:00	04:38	21:47
4/18/2012	04:56	17:54	06:23	20:01	04:36	21:48
4/19/2012	05:21	18:55	06:21	20:02	04:34	21:50
4/20/2012	05:47	19:55	06:20	20:03	04:32	21:52
4/21/2012	06:16	20:54	06:18	20:04	04:30	21:54
4/22/2012	06:48	21:52	06:17	20:06	04:28	21:55
4/23/2012	07:26	22:47	06:15	20:07	04:26	21:57
4/24/2012	08:08	23:38	06:14	20:08	04:23	21:59
4/25/2012	08:57		06:12	20:09	04:21	22:01
4/26/2012	09:51	00:25	06:10	20:10	04:19	22:02
4/27/2012	10:50	01:06	06:09	20:12	04:17	22:04
4/28/2012	11:53	01:42	06:07	20:13	04:15	22:06
4/29/2012	12:58	02:15	06:06	20:14	04:13	22:08
4/30/2012	14:06	02:45	06:05	20:15	04:11	22:10

## Items of Interest This Month

- Venus goes from quarter to crescent this month
- Venus at its brightest this month; good chance to see during daylight
- Last good chance at Mars for two years
- 4/1 Mars is as big as the Full Moon!
- 4/2-4/3 Venus grazes Pleiades
- 4/6 Moon near Spica and Saturn
- 4/15 Saturn at opposition
- 4/21-4/22 Lyrid meteor shower (usually sparse)
- 4/22 Crescent Moon very close to Jupiter at sunset
- 4/27 First Quarter Friday Star Party**



## For Current Occultation Information

Visit Derek C. Breit's web site

<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