IO - June 2009

Issue 2009-06

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

www.eugeneastro.org

EAS is a proud member of:

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

Eugene Astronomical Society
www.eugeneastro.org

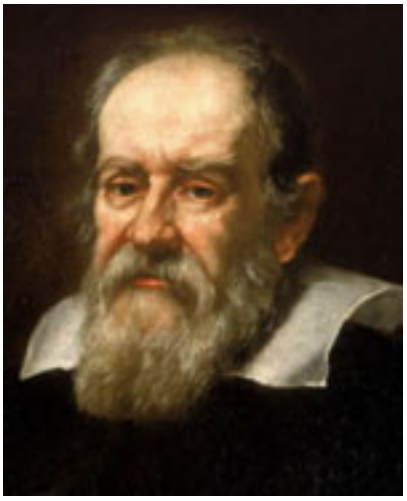
Next Meeting: June 25th

The Life and Times of Galileo

by Jerry Oltion

400 years ago, Galileo pointed a telescope at the night sky and revolutionized astronomy. Jerry decided to build a replica of that telescope, and in the process he learned some interesting things about the man behind it. Did Galileo really invent the telescope? Did he actually drop two different weights from the leaning tower of Pisa in order to demonstrate the invariance of gravity? Why did the Catholic Church react with such hostility to his support of the Copernican theory of the solar system? What other contributions to science did Galileo make? Come hear what Jerry learned about the most controversial person in the history of astronomy, and possibly in the history of science itself.

In addition to Jerry's talk, Jacob Strandlien will present the astronomy news for June. And as always, we encourage the sharing of astronomy-related questions, news, or projects with other members of the club.



Galileo Galilei

Next First Quarter Friday: June 26th

Our next First Quarter Friday star party will be June 26th. May's party was a great success, and word is sure to spread as the summer months bring us more reliable observing weather. So mark the 26th on 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 2009.

June 26, 2009
July 31, 2009
August 28, 2009
September 25, 2009
October 23, 2009
November 27, 2009
December 25, 2009
(Yes, Christmas night!)

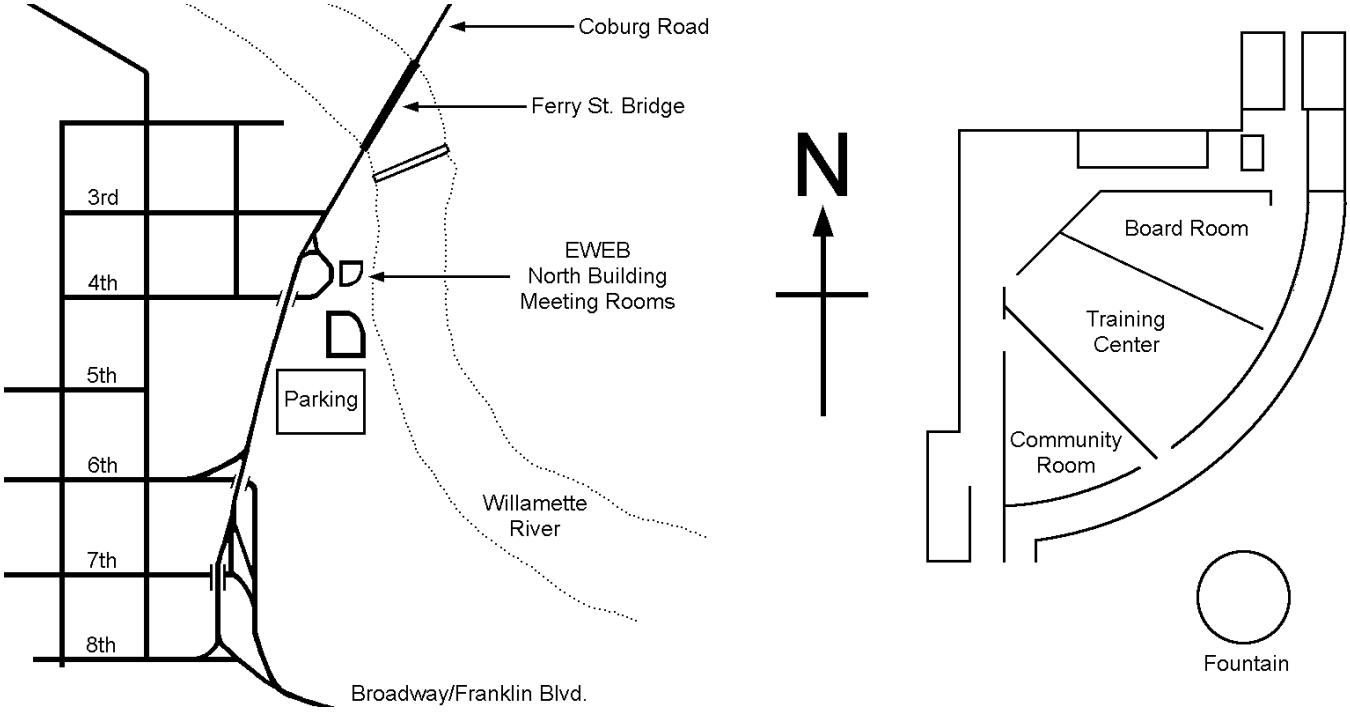
The Eugene Astronomical Society meets at EWEB

500 E. 4th Avenue in Eugene.

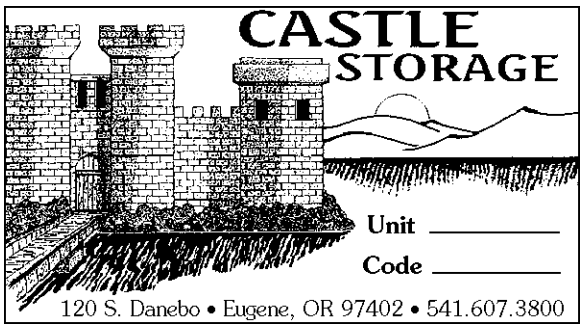
Our next meeting will be on Thursday, June25th, at 7:00 in the north building's Community Room. This is in the semicircular building to the north of the fountain at EWEB's main campus on the east end of 4th Avenue.

Meeting dates for 2009: (All meetings are at 7:00 in the Community Room)

June 25	August 27	October 22	December 17
July 23	September 24	November 19	

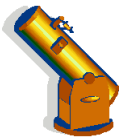


EWEB is located at 500 E. 4th Avenue.
EAS meets in the first room in the semicircular building to the north of the fountain.



Thank You Castle Storage

For over a year now, 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 June

Full | Last Q | New | 1st Q

June 7	June 15	June 22	June 29
Mercury Rise: 4:38 AM	Mercury Rise: 4:24 AM	Mercury Rise: 4:20 AM	Mercury Rise: 4:29 AM
Venus Rise: 3:27 AM	Venus Rise: 3:16 AM	Venus Rise: 3:08 AM	Venus Rise: 3:02 AM
Mars Rise: 3:28 AM	Mars Rise: 3:11 AM	Mars Rise: 2:57 AM	Mars Rise: 2:43 AM
Jupiter Rise: 00:56 AM	Jupiter Rise 00:25 AM	Jupiter Rise 11:54 PM	Jupiter Rise 11:26 PM
Saturn Set: 1:51 AM	Saturn Set: 1:21 AM	Saturn Set: 00:54 AM	Saturn Set: 00:27 AM
Uranus Rise: 2:02 AM	Uranus Rise: 1:31 AM	Uranus Rise: 1:03 AM	Uranus Rise: 00:36 AM
Neptune Rise: 00:53 AM	Neptune Rise: 00:21 AM	Neptune Rise: 11:50 PM	Neptune Rise: 11:22 PM
Pluto Rise: 9:24 PM	Pluto Rise 8:52 PM	Pluto Rise: 8:23 PM	Pluto Set: 5:41 AM

All times: Pacific Standard Time (Nov 2, 2008-March 8, 2009) = UT -8 hours or U.S. Pacific Daylight Time (March 8-November 1, 2009) = UT -7 hours.

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
6/1/2009	14:59	02:03	05:32	20:49	03:14	23:07
6/2/2009	16:08	02:24	05:32	20:50	03:13	23:09
6/3/2009	17:17	02:47	05:31	20:50	03:12	23:10
6/4/2009	18:25	03:13	05:31	20:51	03:11	23:12
6/5/2009	19:31	03:43	05:31	20:52	03:10	23:13
6/6/2009	20:32	04:19	05:30	20:53	03:09	23:14
6/7/2009	21:27	05:03	05:30	20:53	03:08	23:15
6/8/2009	22:13	05:54	05:30	20:54	03:07	23:16
6/9/2009	22:52	06:51	05:29	20:54	03:07	23:18
6/10/2009	23:23	07:52	05:29	20:55	03:06	23:19
6/11/2009	23:49	08:56	05:29	20:56	03:05	23:19
6/12/2009		09:59	05:29	20:56	03:05	23:20
6/13/2009	00:12	11:03	05:29	20:56	03:04	23:21
6/14/2009	00:32	12:06	05:29	20:57	03:04	23:22
6/15/2009	00:52	13:11	05:29	20:57	03:04	23:23
6/16/2009	01:11	14:18	05:29	20:58	03:04	23:23
6/17/2009	01:33	15:28	05:29	20:58	03:03	23:24
6/18/2009	01:57	16:41	05:29	20:58	03:03	23:24
6/19/2009	02:28	17:58	05:29	20:59	03:03	23:24
6/20/2009	03:07	19:15	05:29	20:59	03:03	23:25
6/21/2009	03:57	20:26	05:29	20:59	03:04	23:25
6/22/2009	05:02	21:26	05:30	20:59	03:04	23:25
6/23/2009	06:18	22:13	05:30	20:59	03:04	23:25
6/24/2009	07:40	22:50	05:30	20:59	03:05	23:25
6/25/2009	08:02	23:19	05:31	21:00	03:05	23:25
6/26/2009	10:21	23:45	05:31	21:00	03:06	23:24
6/27/2009	11:37		05:31	21:00	03:06	23:24
6/28/2009	12:49	00:07	05:32	20:59	03:07	23:24
6/29/2009	14:00	00:29	05:32	20:59	03:08	23:23
6/30/2009	15:09	00:52	05:33	20:59	03:09	23:23

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

Other Items of Interest This Month

All month: Good time to look for Pluto
All month: Jupiter within 0.5° of Neptune
6/6 Moon rises just after occulting Antares
6/15, 8:35 PM until Saturn sets: Titan's shadow transits Saturn
6/16, 1:48 AM: Ganymede partially eclipses Io
6/19, 1:34 AM: Callisto eclipses Io
6/20, 2:39 AM: Callisto partially eclipses Io
6/23, 9:45 PM: Titan goes into Saturn's shadow
6/26 First Quarter Friday Star Party

For Current Occultation Information

Visit Derek C. Breit's web site

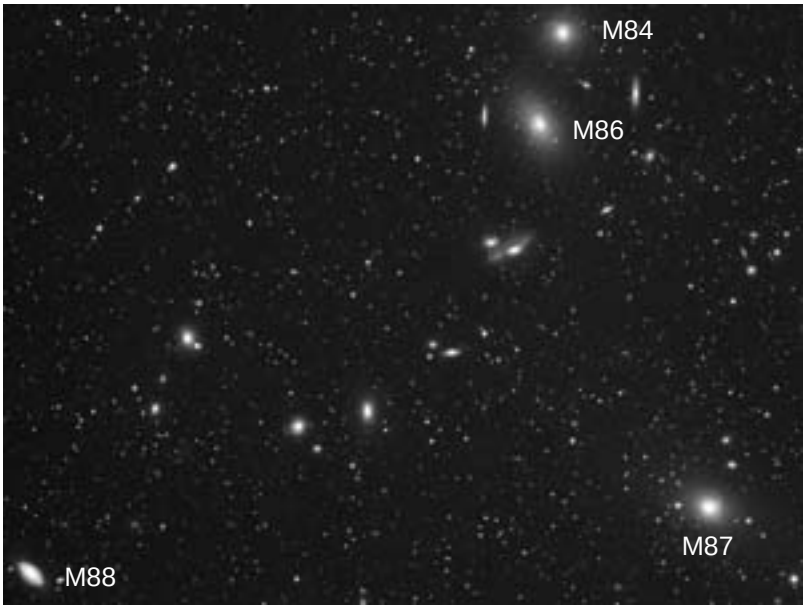
"BREIT IDEAS Observatory"

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.

Observing Highlight: Markarian's Chain

Spring is galaxy time, with hundreds of fuzzy island universes visible in Coma Berenices and Virgo. By summer, both of those constellations are headed into the west, but the Virgo Cluster is still high enough in June for one last good look. The undisputed gem of the cluster has to be Markarian's Chain, a large"J" of over a dozen galaxies stretching from west to northeast and covering about 2 degrees of sky.



Markarian's Chain, Courtesy NASA

Markarian's Chain is bright enough for most of its members to show up in a small scope, and it rewards larger apertures with still more galaxies. EAS members were able to see 12-15 galaxies in the chain with a 10" scope during a dark-sky visit to Eagle's Ridge in mid-May.

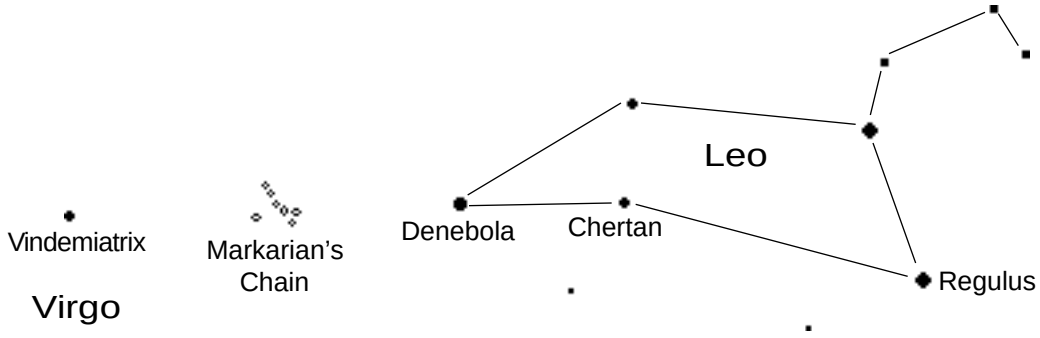
The two large galaxies at the top of the J are Messier objects: M84 (top) and M86. M87, one of the most massive galaxies known, is not part of the chain but lies only a degree or so away from the J to the southwest. Several more Messier objects lie to the east and southeast of the hook of the J.

Markarian's Chain was named after the Armenian astrophysicist, B. E. Markarian, who discovered it in the mid 1970s. The J isn't just a chance alignment of galaxies. At least seven galaxies in the chain appear to move coherently, although others do appear to be superposed by chance.

How far away are these galaxies? The Virgo Cluster, of which Markarian's Chain is just a small part, lies approximately 65 million light-years away. We get an unobstructed view of it because we're looking directly out of the disk of the Milky Way, so there are relatively few dust and gas clouds to dim the view.

To find Markarian's Chain, start in Leo and draw a line from Chertan through Denebola and keep on going that same distance (halfway to Vindemiatrix in Virgo). That will put you in the neighborhood of M84 and M86. From there, scan around at low power until you see the long line of galaxies stretching onward to the northeast.

GoTo people should probably start with M84 and follow the chain from there. If you use R.A. and Dec, the center of the chain lies at R.A. 12:29 and Dec. +13.



Two More Club Scopes Ready to Loan

EAS telescope lending coordinator Tony Dandurand has finished repairs on two more of our club telescopes, bringing our scope lending library up to seven telecopes, each in good repair and outfitted with eyepieces, finders, and many other extras for a complete viewing package.

The two most recent additions are old favorites that just needed a little TLC. The 10" f/4.5 Cosmos Dobsonian pictured at left has served many club members well over the years, but had grown a bit wobbly over time and the primary mirror was becoming noticeably spotty. Tony tightened it up and the club got the mirror recoated, and now the scope is good as new. It has a 1.25" rack and pinion focuser and comes with three eyepieces (25mm, 12.5mm, and 6.4mm plossls), a telrad finder, a curved spider to eliminate diffraction spikes, and an open tube for quick cooling. This is a sweet scope, and is small enough to fit in just about any vehicle. Its total weight is ~55 pounds.

The other scope is one of our two “big guns,” a 12.5" f/6 Dobsonian built by Frank Szczepanski. It’s a marvel of woodworking, using two 12-sided tubes mated end-to-end for ease of transport and easy assembly in the field. Its 12.5" of aperture brings the "wow!" to deep sky observing, and its fine optics (and stable motions) can deliver serious magnification for lunar, planetary, and double star enjoyment. Clever construction (built-in handles on all 3 sections) makes this sizable scope easier to deploy/assemble than it appears.

The “Big White Dodecagon” has a 1.25" rack and pinion focuser and comes with three eyepieces (32mm, 17mm, and 10mm), and an 8 x 50 straight-through finder. Its total weight is ~105 pounds.

The EAS has five other scopes ready to loan out as well, including the totally rebuilt “Little 10” truss-tube Dob. Learn more about them on our website at www.eugeneastro.org, and **check them out!** These are your scopes. Even if you’ve already got another scope of your own, try one of these for a change of pace.

Reservoir Ramp Under Construction

Six years after the EAS proposed putting a handicapped-access ramp onto the top of the College Hill Reservoir, that ramp is finally becoming a reality. The Eugene Water and Electric Board, the Friendly Area Neighborhood Association, and EAS have finally worked out an agreement and have broken ground on the project. Several EAS members volunteered their time and effort over the weekend of May 30-31 to help local contractor Greg Giesy excavate the ground so concrete could be poured. The project is scheduled for completion in early July.

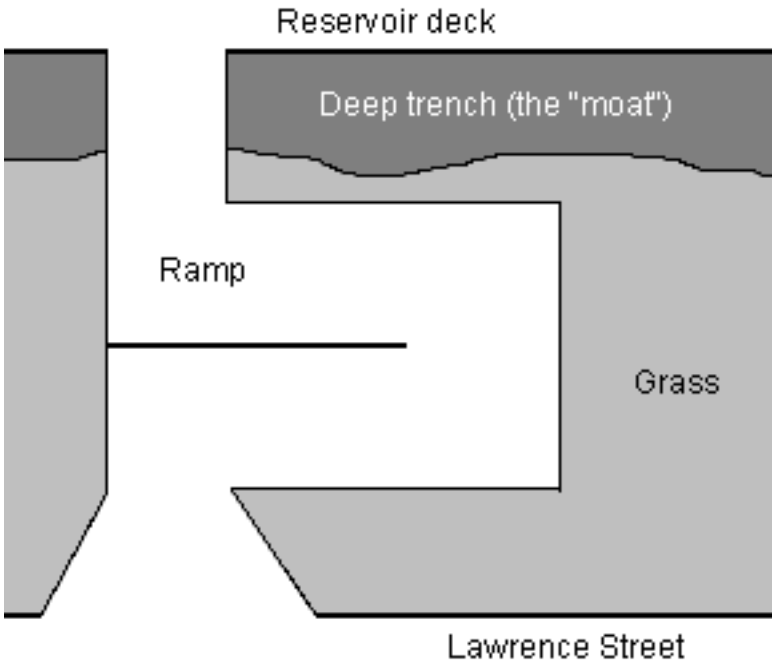
Bill Murray and Jerry Oltion help out. Photo by Greg Giesy.

The ramp was a contentious issue right from the start. After it was proposed, EWEB officials became concerned about additional use of the reservoir deck and worried that any modification to the reservoir would require that the entire structure would then have to conform to current building standards, which include anti-terrorism provisions that would essentially prevent anyone from using the reservoir top at all. They proposed quietly letting the issue die until a better political climate came along, which the EAS did, but by then word had gotten out and several advocates for the handicapped took a hard-line approach, stating that they would rather see the reservoir closed to the public than not be handicapped-accessible.

EWEB commissioners, also concerned about liability and valdalism, called their bluff and announced plans to fence off the reservoir completely. They further justified the closure by saying that an accessible reservoir presented a terrorist threat. But they didn't count on the reaction of the Friendly Area Neighborhood Association, nor the EAS. We attended every EWEB board meeting and spoke about the huge loss to our community that fencing the reservoir would cause, the negative effect on local property values, and the many advantages of leaving the reservoir open to the public, with or without a ramp. We countered their anti-terrorism arguments with arguments of our own, suggesting that closing the reservoir over fear of terrorism was just the type of overreaction that the terrorists wanted, and we offered direct, practical solutions to each of their additional arguments. FAN pursued the issue relentlessly, rallying city-wide support for our cause.

A couple of EWEB board members were on our side right from the start. The others became convinced that they were barking up the wrong tree. FAN and EWEB eventually settled on two modifications to the reservoir deck: covering the flexible joints between concrete slabs with metal so vandals couldn't puncture the seals, and putting a fence around the pump-house. Work on that began last fall and continued through the winter.

EWEB also agreed to allow a ramp, once they realized the degree of public support for it and determined that adding one didn't constitute a modification to the reservoir structure itself. (Apparently neither did covering the joints or fencing off the pumphouse.)



Alas, no plan can go forward without some kink in it, and the ramp has a serious kink: in order to deter motorcyclists from driving onto the reservoir (never mind that a motorcyclist can just drive up the stairs already), the ramp will have a tight U-turn in it (see diagram). This precludes rolling anything larger than a wheelchair onto the reservoir, which may pose a problem for EAS members with large telescopes. Several attempts to talk EWEB out of the U-turn or to allow us a gate for straight-on access have gotten nowhere, and now that the contractor is breaking ground it's apparent that we won't get that access.

So it's a mixed victory. We get to continue using the reservoir, and now handicapped people can join us, but the ramp that started the whole flap will probably not be much of an improvement over the stairs for equipment access. Also, the resurfacing of the deck that accompanied the joint work left a much lighter colored (light gray) top for us to set up on, which may combine with the city skyglow to make observing more difficult. The work crews have only finished the south third of the deck, and we haven't tried setting up on the lighter surface yet, so this may not be as big a problem as we expect. And it will probably weather and darken over time. Considering how close we came to losing the reservoir entirely, we'll be happy to continue using it even if we have to squint when we look down.

Altogether, it's good news. We get to continue using the reservoir and hosting our First Quarter Fridays there, and people in wheelchairs can now join the parties. Since that was our primary objective six years ago, we have cause to celebrate. Thus summer, let's let the good times roll...in for a look upward.

May's Good Run of Observing

May was surprisingly good for stargazing this year. Normally we consider ourselves lucky if we get one good weekend out of the month, but May gave us two dark sky weekends, several mid-week days, and a First Quarter Friday that couldn't be beat. Jim Jackson led the charge to Eagle's Ridge most nights, accompanied by anywhere from two to a dozen others each night. On Saturday the 16th we had telescopes set up all the way across the parking area and up to the top of the ridge to the north. We had scopes up to 20" in diameter that night, and there was a constant stream of people moving from scope to scope to enjoy the view through each other's equipment.

One of the most popular objects was of course M13, which yielded to magnifications in excess of 400, and the Ring Nebula, which teased us with glimpses of its central star through the big guns. Those of us with smaller scopes tested our mettle on NGC 5053, a faint but fairly large globular cluster very close to M53 in Coma Berenices. It was an averted-eye object in a 10" scope, and required considerable imagination in smaller apertures. For many of us, it was our first Herschel II object.

June is traditionally the month when the "summer drought" begins and we can (almost) count on decent weather. Let's hope our early good fortune didn't use up all our luck! Here's to another month of exceptional nights out under the night sky.

Hubble Gets a Rebuild

May was a good month for telescopes. Tony Dandurand repaired two more of our club scopes and put the finishing touches on one he built for Louise. Jacob Strandlien finished "Tree Scraper," his 16" truss-tube Dobsonian. Jerry Oltion got off his duff and put some serious work on the trackball he promised Kathy last year. And NASA rebuilt one of its scopes, too.

The Space Shuttle *Atlantis* headed into orbit on May 11th and rendezvoused with the Hubble two days later. Over the next 5 days, astronauts John Grunsfeld, Andrew Feustel, Michael Massimino, and Michael Good installed two new instruments: the Cosmic Origins Spectrograph and the Wide Field Camera 3. They also replaced a Fine Guidance Sensor, all six gyroscopes, and two battery modules to allow the Hubble to continue to function at least through 2014. The crew also installed new thermal blanket insulating panels to provide improved thermal protection, and a soft-capture mechanism that will aid in the safe de-orbiting of the telescope by an unmanned spacecraft at the end of its operational lifespan.

Three of the astronauts had previous experience servicing Hubble. Grunsfeld, an astronomer, has serviced Hubble twice, performing a total of five spacewalks on STS-103 in 1999 and STS-109 in 2002. Altman was commander of STS-109. Massimino served with both Altman and Grunsfeld on STS-109, and performed two spacewalks to service the telescope on that mission.

Like most scope repair jobs, this one had a few hitches. The Hubble presented the astronauts with balky bolts, awkward access, a handrail that had to be wrenched free by brute force, a gyroscope that wouldn't fit, and replacement circuit boards that didn't completely fix the Advanced Camera for Surveys. The astronuts dealt with each of these situations in turn, and despite the setbacks the mission was declared a complete success, extending the telescope's expected lifetime to at least 2014 and probably beyond. Since the James Webb Telescope is not planned to be launched until 2014 and has limited visible-light capability, "beyond" would be very good.

The Hubble telescope is widely credited with raising the public's awareness of astronomy and science in general. Its importance to science is not just seen in the dramatic images it provides, but also in the volume of work it has generated — an average of fourteen scientific articles are published each week based on data gathered from the telescope. Thanks to the *Atlantis* mission, we can expect that to continue for several more years.