

IO - April 2009

Issue 2009-04
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.

www.eugeneastro.org

EAS is a proud member of:

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

Next Meeting: April 23rd

The Development of Galaxies

by Dr. Greg Bothun

At our April 23rd meeting, Greg Bothun from the University of Oregon will give a presentation on the development of galaxies. How do galaxies form, and how do they evolve over time? Come listen to Dr. Bothun tell us about the most recent scientific discoveries on the subject.

Dr. Bothun runs Pine Mountain Observatory and developed the camera that was placed into service at the prime focus of the 32" telescope at Pine Mountain to conduct research into dark matter, which resulted in time at Keck and on Hubble. His research into dark matter has earned him the nickname/title of Dr. Darkmatter. He has written several books on this and other subjects.

Dr. Bothun has also been instrumental in working with Friends of Pine Mountain Observatory, the volunteer organization that opens the observatory to the public during summer weekends.

This should be an excellent evening's program. And as always, we encourage the sharing of astronomy-related questions, news, or projects with other members of the club.



Next First Quarter Friday: April 3rd

Our next First Quarter Friday star party will be April 3rd. This is in the midst of the international "100 Hours of Astronomy" celebration, so it could be a big event if the papers get the word out. 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 through December of 2009.

April 3, 2009

May 1, 2009

May 29, 2009

June 26, 2009

July 31, 2009

August 28, 2009

September 25, 2009

October 23, 2009

November 27, 2009

December 25, 2009

The Eugene Astronomical Society meets at EWEB

500 E. 4th Avenue in Eugene.

Our next meeting will be on Thursday, April 23rd, 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)

April 23

July 23

October 22

May 28

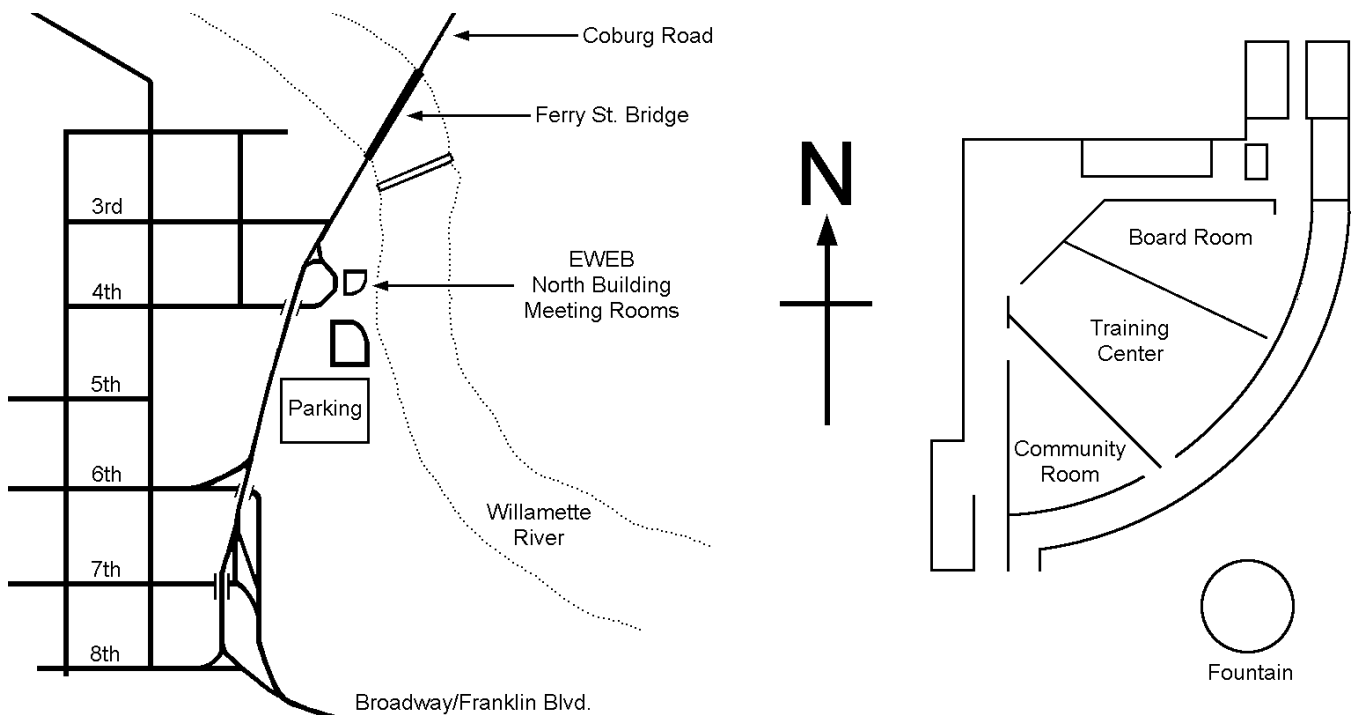
August 27

November 19

June 25

September 24

December 17



EWEB is located at 500 E. 4th Avenue.

EAS meets in the first room in the semicircular building to the north of the fountain.

CASTLE STORAGE

Unit _____
Code _____

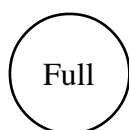
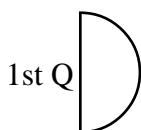
120 S. Danebo • Eugene, OR 97402 • 541.607.3800

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 April



April 2	April 9	April 17	April 24
Mercury Set: 7:55 PM	Mercury Set: 8:46 PM	Mercury Set: 9:37 PM	Mercury Set: 10:02 PM
Venus Rise: 5:55 AM	Venus Rise: 5:28 AM	Venus Rise: 5:03 AM	Venus Rise: 4:55 AM
Mars Rise 5:58 AM	Mars Rise 5:42 AM	Mars Rise 5:24 AM	Mars Rise 5:08 AM
Jupiter Rise: 4:56 AM	Jupiter Rise 4:31 AM	Jupiter Rise 4:03 AM	Jupiter Rise 3:39 AM
Saturn Set: 6:14 AM	Saturn Set: 5:46 AM	Saturn Set: 5:13 AM	Saturn Set: 4:45 AM
Uranus Rise: 6:16 AM	Uranus Rise: 5:49 AM	Uranus Rise: 5:18 AM	Uranus Rise: 4:52 AM
Neptune Rise: 5:10 AM	Neptune Rise: 4:43 AM	Neptune Rise: 4:12 AM	Neptune Rise: 3:45 AM
Pluto Rise: 1:51 AM	Pluto Rise 1:24 AM	Pluto Rise: 00:52 AM	Pluto Rise: 00:24 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
4/1/2009	10:41	02:09	06:53	19:40	05:13	21:20
4/2/2009	11:53	03:02	06:51	19:41	05:11	21:22
4/3/2009	13:09	03:45	06:50	19:42	05:09	21:23
4/4/2009	14:27	04:18	06:48	19:44	05:07	21:25
3/5/2009	15:43	04:46	06:46	19:45	05:05	21:26
4/6/2009	16:56	05:10	06:44	19:46	05:03	21:28
4/7/2009	18:09	05:32	06:42	19:47	05:01	21:30
4/8/2009	19:20	05:53	06:41	19:48	04:58	21:31
4/9/2009	20:31	06:16	06:39	19:50	04:56	21:33
4/10/2009	21:41	06:41	06:37	19:51	04:54	21:34
4/11/2009	22:49	07:10	06:35	19:52	04:52	21:36
4/12/2009	23:53	07:44	06:34	19:53	04:50	21:38
4/13/2009		08:25	06:32	19:54	04:48	21:39
4/14/2009	00:51	09:14	06:30	19:56	04:46	21:41
4/15/2009	01:40	10:10	06:29	19:57	04:43	21:43
4/16/2009	02:20	11:10	06:27	19:58	04:41	21:44
4/17/2009	02:53	12:14	06:25	19:59	04:39	21:46
4/18/2009	03:21	13:19	06:24	20:01	04:37	21:48
4/19/2009	03:45	14:24	06:22	20:02	04:35	21:50
4/20/2009	04:06	15:30	06:20	20:03	04:33	21:51
4/21/2009	04:26	16:37	06:19	20:04	04:30	21:53
4/22/2009	04:47	17:46	06:17	20:05	04:28	21:55
4/23/2009	05:09	18:59	06:15	20:07	04:26	21:57
4/24/2009	05:34	20:15	06:14	20:08	04:24	21:58
4/25/2009	06:04	21:33	06:12	20:09	04:22	22:00
4/26/2009	06:42	22:50	06:11	20:10	04:20	22:02
4/27/2009	07:31	23:59	06:09	20:11	04:18	22:04
4/28/2009	08:32		06:08	20:13	04:15	22:06
4/29/2009	09:43	00:58	06:06	20:14	04:13	22:08
4/30/2009	11:00	01:44	06:05	20:15	04:11	22:09

Other Items of Interest This Month

4/3 First Quarter Friday Star Party

4/13 early AM: Titan's shadow transits Saturn

4/16-30 Mercury visible in evening just after sunset

4/22 Moon occults Venus 5:20 AM

4/26 early AM: 5th magnitude star 44 Capricorni between Jupiter and Ganymede as Jupiter rises

4/26 Mercury at greatest eastern elongation; Moon and Mercury both near Pleiades

4/28 Titan's Shadow transits Saturn late PM to early AM 4/29

For Current Occultation Information

Visit Derek C. Breit's web site

"BREIT IDEAS Observatory"

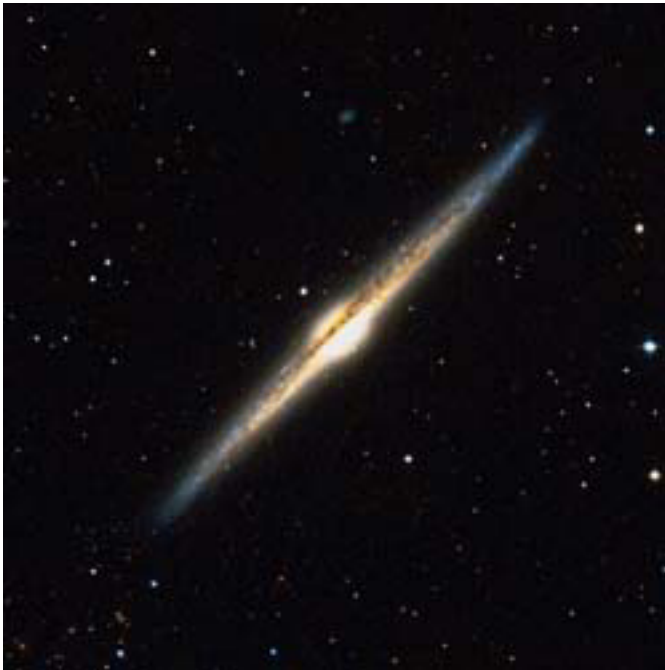
<http://www.poyntsource.com/New/Regions/EAS.htm>

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

Observing Highlight: NGC 4565 and M64 (The Black Eye Galaxy)

Last October we focused on a galaxy next to the South Galactic Pole. Six months later it's time to look toward the North Galactic Pole, and this time we get two galaxies for the price of one. NGC 4565, also known as the Needle Galaxy, is one of the finest edge-on spirals in the sky, spanning a quarter-degree (half a full Moon) and shining at 9.6 magnitude (fairly bright for a galaxy). M64 is smaller (1/6 degree), but at 8.5 magnitude it's actually easier to see. Both have prominent dust lanes; NGC 4565's neatly bisects the edge-on disk while M64's makes a distinctive arc around its core, giving it the appearance of a black eye.

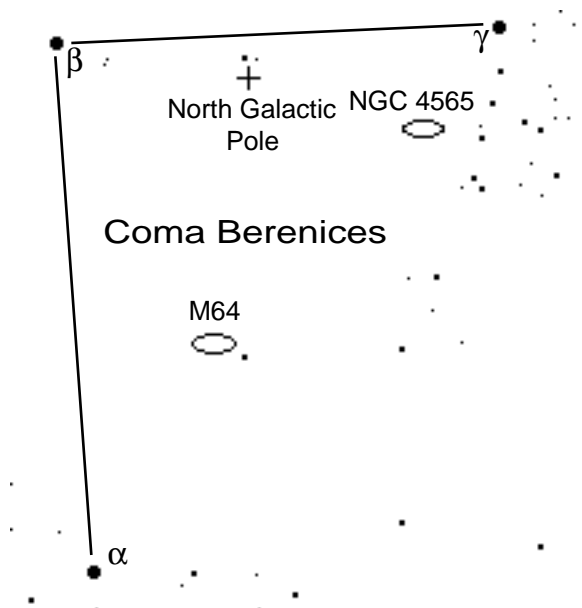


NGC 4565. Credit: Palomar Observatory/STScI/WikiSky

NGC 4565 is 31 million light-years distant and 100,000 light-years across. M64 is smaller — 40,000 light-years across — but closer: 17 million light-years. M64 has another peculiarity besides its lopsided dust lane: the outer region of the galaxy rotates in the opposite direction from the inner region. This is thought to be the result of a collision between a satellite galaxy and the main one.



M64. Credit: NOAO/AURA/NSF



How do you find these two beauties? Look for the cascade of 5th and 6th magnitude stars between Leo and Boötes. That's Coma Berenices, or Berenice's Hair. NGC 4565 lives about halfway down and to the left of her flowing locks. M64 is farther to the southeast and most easily found by going 1/3 of the distance between alpha (α) and gamma (γ) Coma Berenices.

For people with go-to scopes or setting circles, NGC 4565 has an R.A. of 12h 36.3m and a Dec of +25:59. M64 has an R.A. of 12h 56.7m and a Dec of +21:41.

While you're in the area, look for the many other galaxies nearby. Coma Berenices is filled with them.

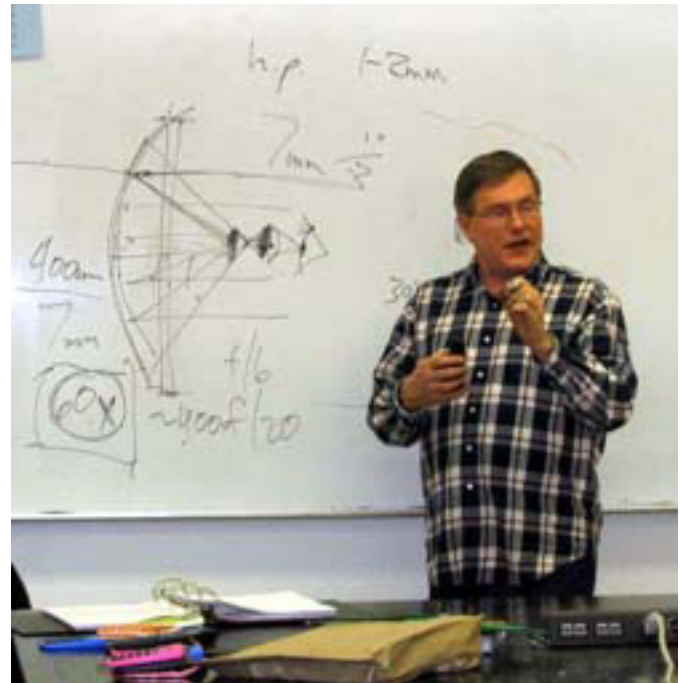
Mirror-Making Class Going Strong

The EAS is putting on a mirror-making class on Wednesday nights at North Eugene High School. Taught by Mel Bartels, world-renowned mirror-making guru, the class started out with a loud grating noise in February and is now going smoother and smoother as the students work through ever finer grits on their way toward perfect parabolas.

Several students are grinding their very first mirrors, while others are working on their fifth or sixth. Everyone is learning from Mel's experience and from each other's discoveries as they grind and polish.

Mirror sizes range from 6" to 16" and every thickness from 2.25" down to ridiculous. One occasional interloper, David Davis, is working on a mirror that's only 1/8" thick, fused to a foamed-glass backing to give it strength. Another student, Ashley Marquardt, is working on an experimental honeycomb-backed 8" blank that Mel donated.

Students have one more month to go. During



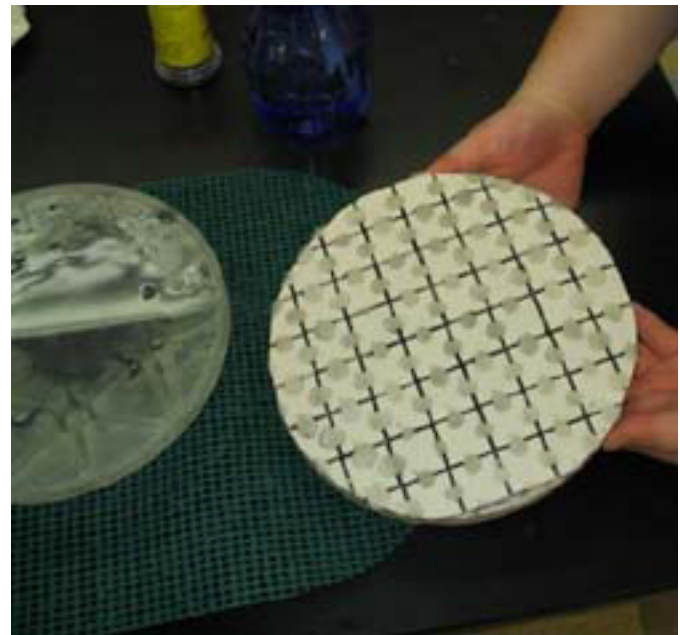
Mel Bartels explains how mirrors work



The class (plus a couple of knitters) in action. L-R: Del Smith, Craig Lalley, Charlotte Conlin, Kathy Oltion, Frank Szczepanski, Bob Moser, Ashley Marquardt, Sam Pitts, Frank Casebolt, Tom Conlin

that time, they intend to build a new type of testing apparatus, the Bath Interferometer, to give them a precise measurement of their mirrors' quality. This will be the first time Bath interferometers have been used in a classroom situation.

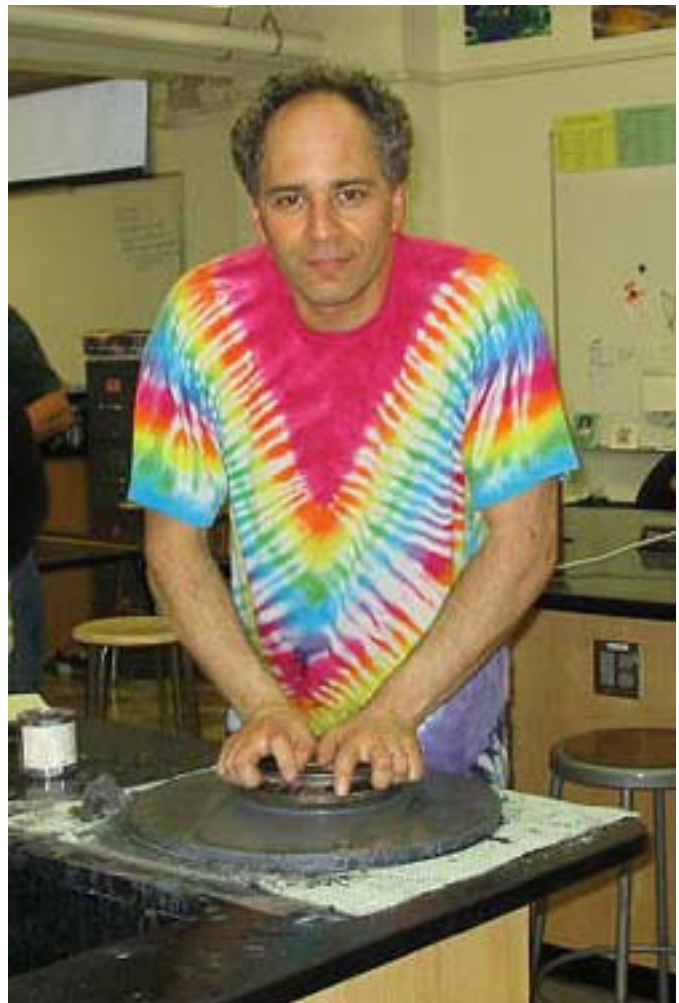
Several of the mirrors being ground in this class are intended for scopes to be given away, either to the club's lending library or to someone in the general public who will use them. That's a pretty cool way to observe the 400th anniversary of the invention of the telescope. Good show, grinders, and a big thank-you to Mel for taking the time to show us how to do it!



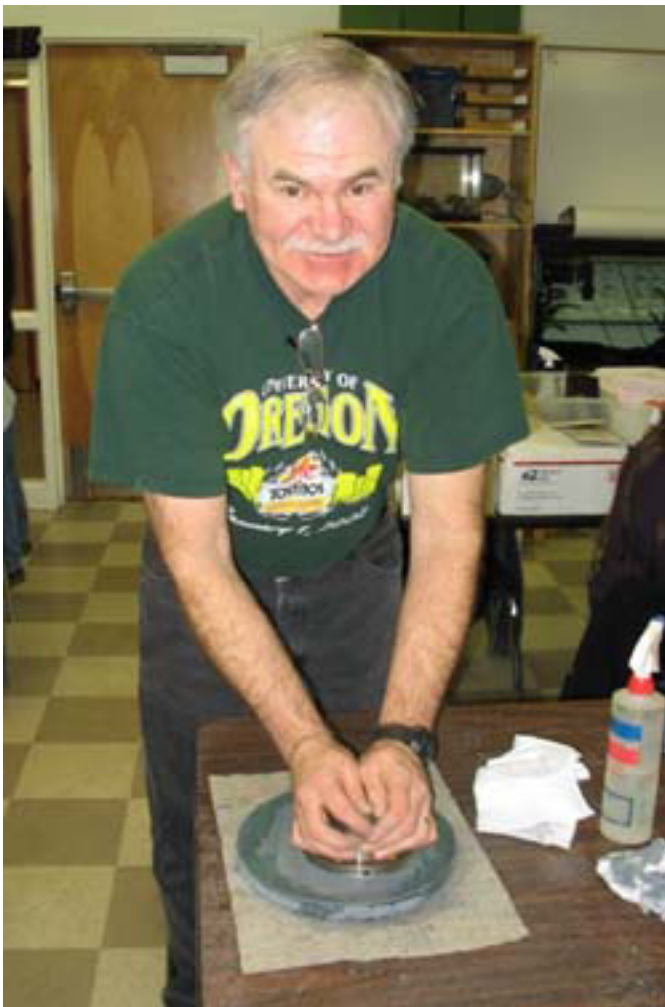
Ashley's experimental 8" mirror blank (note the hexagonal supports on back) and a beautiful grinding tool



John Robets grinds a 6" mirror



Steve Frankel grinds a 16" mirror



Del Smith grinds a 10" mirror



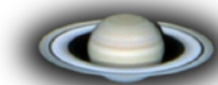
Craig Lalley grinds a 16" mirror

A New Scope for Louise

Tony Dandurand is finishing up his latest ATM project, a scope he's making for his wife, Louise. It's a 10" F5.6 dob named "Luna." Final finish work and a few minor tweaks remain, but he plans to have it finished in time to show it at our next meeting in April.

Here's a picture as it looks now. Beautiful work, Tony!

Remember that both of the 10" scopes that Tony rebuilt for the club's lending library (the "Little10" and the "Big Orange") are ready to loan out, and a third one (the 10" white Cosmos) is nearly there. All three are excellent scopes that will provide great views. Check them out!



The ISS's New Look

Adapted from an article at Science@NASA.gov

With the addition of another pair of solar panels last month, the International Space Station just got easier to see. Not that it's ever been difficult — when the ISS arcs overhead, it rivals Venus in magnitude. But now it has become easier to see in your telescope. That's because the new panels complete the solar array, putting four large reflectors on either side of the space station's long central boom. In a telescope, even one being hand-guided by an excited observer, that means two distinct rectangles at either end with a bright line joining them. EAS members observed just that configuration last Monday night (March 30th), even showing it to an interested passer-by.



Just before the recent addition, Ralf Vandebergh of the Netherlands took this photo of the station through a 10-inch Newtonian, hand-guided while he captured images with a video camera.

You don't need a camera to enjoy a close-up view of the space station. All you need is a low-power eyepiece and a steady guiding hand. Start when the station is low on the horizon. (It's apparent motion is much slower than when it's overhead.) Point your scope a little ways ahead of it, then watch in the eyepiece for it to sweep into view. It'll bob and weave around as you move the scope to follow it, but you can often stop moving for a few seconds and get a clear view as the station glides smoothly through.

The aspect angle changes as the station passes overhead, sometimes foreshortening the "H" shape or turning it into a "T" or even just a solid rectangle with a bright line (the space station's living quarters) sticking out. Have a look next time it passes over and see what you can see.

Space station overflight times can be found at www.heavens-above.com.

A Neat Supernova Video

Bill Murray found a neat video online illustrating the evolution of massive stars into supernovae and pulsars. It's a great explanation of how and why supernovae happen, and it loads quickly even on dialup connections. Check it out at: http://www.valdosta.edu/~cbarnbau/astro_demos/stellar_evol/evol_3.html

