



# the Webfooted Astronomer

News from the Seattle Astronomical Society

February 2008

## Total lunar eclipse viewing on Feb. 20

**The regular SAS meeting scheuled for that date has been moved to Friday, Feb. 22.**

The regular meeting of the Seattle Astronomical Society for February has been moved to a new date to allow for a special total lunar eclipse viewing event on the evening of Feb. 20. The monthly meeting will be held on Friday, Feb. 22 instead. (See sidebar.)

The eclipse viewing will be held just north of the Green Lake Small Craft Center, near the southwest shore of the lake at 5900 West Green Lake Way North, starting around 5:30 p.m. Please note that this is NOT the same spot as our monthly Green Lake star parties, which are held at a spot near the Bathhouse Theatre; some trees near that spot would limit the view of the eclipse, which will begin very shortly after the Moon rises.

The Small Craft Center site will be most suitable for viewing the eclipse. The view to the east is wide open, there is ample parking nearby, and it's near the main trail, so there should be plenty of walk-up traffic.

The eclipse will begin at about 5:40 p.m., totality starts right around 7 p.m. and lasts for 50 minutes. The eclipse will be over just after 9 p.m. It will be the last total lunar eclipse visible from Seattle until December, 2010. Let's hope for clear skies!

For questions, check our Web site or contact Jingchun Chen at [programs@seattleastro.org](mailto:programs@seattleastro.org).

### NEXT MEETING NEW DAY, NEW ROOM THIS MONTH

February 22 — 7:30 p.m.  
University of Washington  
Physics/Astronomy Building,  
Room A-110

#### Paul Rodman Observation planning and logging

Have you ever felt that your time spent under the night sky had'st been productive due to lack of good planning?

At our February meeting SAS webmaster Paul Rodman will be speaking on the importance of planning your astronomical observing sessions and of "taking notes", two aspects behind enjoyable and successful stargazing events. Paul also will demonstrate how to do this using Astroplanner, a feature-rich software he developed that is very popular among amateur astronomers.

There will be door prizes!

# SAS Calendar

**February 13 — First quarter Moon**

**February 16 — 7 p.m.**

Seattle Astronomical Society Star Parties

- ◆ Green Lake, Seattle
- ◆ Paramount Park, Shoreline

**February 20 — Full Moon**

**February 20 — Total lunar eclipse**

**February 20 — 5:30 p.m.**

Total lunar eclipse viewing party, Green Lake Small Craft Center. Details on page 1.

**February 22 — 7:30 p.m.**

Seattle Astronomical Society Meeting  
Guest speaker: Paul Rodman, observation planning and logging. Details on page 1.

**February 23 — 6:30 p.m.**

Amateur telescope makers SIG meeting  
Contact: atm@seattleastro.org

**February 24 — Saturn at Opposition**

**February 27 — before sunrise**

Mercury near Venus in southeast

**March 1 — 6 p.m.**

Tiger Mountain Star Party (members only)

**March 5 — 40 min. before sunrise**

Venus, Mercury, and the Moon form a close triangle in the ESE.

**March 5 — 7 p.m.**

UW Observatory — Public viewing night

**March 7 — New Moon**

## Is time travel possible?

Every science fiction fan has pondered the weird implications of time travel. Can you travel into the future and find out the winning Super Lotto number — then come back and buy a ticket? Would doing so be cheating the laws of physics (to say nothing of ethics)? Astrophysicist Marc Rayman toys with such ideas in a new NASA Space Place Musings Podcast. Go to <http://spaceplace.jpl.nasa.gov/en/educators/podcast/> to subscribe to these Podcasts.

### SAS officers

**President**, Jon Bearscove  
[president@seattleastro.org](mailto:president@seattleastro.org)

**Board chair**, Thomas Vaughan  
[chair@seattleastro.org](mailto:chair@seattleastro.org); 206-772-1282

**VP Programs**, Jingchun Chen  
[programs@seattleastro.org](mailto:programs@seattleastro.org)

**VP Education**, Mike Langley  
[education@seattleastro.org](mailto:education@seattleastro.org)

**VP Membership**, Rod Ash  
[membership@seattleastro.org](mailto:membership@seattleastro.org)

**VP Publicity**, Greg Scheiderer  
[publicity@seattleastro.org](mailto:publicity@seattleastro.org); 206-714-0448

**Secretary**, Connie Griffith  
[secretary@seattleastro.org](mailto:secretary@seattleastro.org)

**Treasurer**, Maxine Nagel  
[treasurer@seattleastro.org](mailto:treasurer@seattleastro.org)

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Editor: Greg Scheiderer  
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# Legislature considers curbs on light pollution

**Bill dead for this session, but working group formed to develop new proposals**

*by Greg Scheiderer*

The Washington State Legislature is considering legislation aimed at curbing light pollution in the state, and while the measure is not likely to be approved this year, a strong response from the astronomy and environmental communities has given the notion some momentum for next year and beyond.

State Rep. Pat Lantz, D-Gig Harbor, is the prime sponsor of [House Bill 2534](#). The legislation as proposed would have required that all new public and private outdoor lighting installed after July 1 of this year be fully shielded, and that all outdoor lighting be in compliance by 2012. The bill also contained regulations on lighting of outdoor display lots and recreational facilities, and would have banned the sale of mercury vapor lighting.

The House Committee on Ecology & Parks held a hearing on the bill on Jan. 22. Astronomers and environmentalists made a strong case, but a number of people who testified raised concerns, including representatives of the Mariners, Seahawks, business, billboard companies, and the state Department of Transportation, which would have a lot of highway lights to replace. Ultimately, time was short, and there was not time to deal with these concerns before the Feb. 8 deadline to get the bill approved by the committee.

Rep. Dave Upthegrove, D-Sea Tac, the chair of the committee, told SAS VP Greg Scheiderer that he strongly supports the aim of the bill,

and will make it a priority for the work of his committee staff during the legislative interim, with the hope of having a bill ready to go for the 2009 legislative session.

A working group has also been formed to work out possible provisions of an improved light pollution bill. The group, spearheaded by Dave Ingram of the Boeing Employees Astronomical Society and Alice Few of Tacoma Astronomical Society, met for the first time Feb. 7 at the Museum of Flight in Seattle. Scheiderer and



*State Rep. Pat Lantz, a Democrat from Gig Harbor, sponsored HB 2534, which would establish curbs on light pollution. While the measure is dead for this year's session, Lantz says she'll sponsor similar legislation in 2009.*

SAS VP-Programs Jingchun Chen attended the meeting, as did representatives from the Eastside Astronomical Society, Dark Skies Northwest chair Bruce Weertman, UW astronomy Prof. Woody Sullivan, Graham Buchanan (an intern with Rep. Lantz's office), and a number of folks from companies and organizations with expertise in the engineering and marketing of lighting.

The working group plans to meet roughly quarterly and perhaps draw in even more experts, including representatives of the International Dark Sky Association.

*The Webfooted Astronomer* will continue to track this important issue.

# Dunbar delights as keynote speaker at SAS annual banquet

by Greg Scheiderer

Bonnie Dunbar started dreaming of flying to the stars when she was just a little girl in the Yakima Valley town of Outlook.

"I can remember looking out," Dunbar told a packed house at the annual Seattle Astronomical Society banquet Jan. 20. "There were no lights, growing up. After sunset you could see all the stars and the Milky Way used to just come up right out of the mountains. I was fascinated with the night sky. That was sort of my city, if you will, my city lights."

Dunbar, an astronaut who flew five space shuttle missions and is now the president and CEO of the Museum of Flight in Seattle, told tales of her family trying to spot Sputnik, and of watching for shooting stars and UFOs while sleeping outside on haystacks when it was too hot in the house.

"That generated my interest in space," Dunbar said. "I told my eighth grade teacher that I wanted to build space ships and maybe learn to fly in them. Mr. Miller suggested that I take algebra in high school, and I did at Sunnyside High School."

She did that and more, becoming an engineer and working for Rockwell International, helping to build the space shuttle Columbia. Dunbar became a NASA flight controller in 1978, was chosen as an astronaut in 1980, and observed the first launch of Columbia in 1981.

"I went back to talk to my eighth-grade teacher, Mr. Miller, and I could check one, saying, 'I got to build a spaceship – because I took algebra.' That was pretty exciting," she recalled.

Dunbar's keynote speech at the SAS banquet covered a wide range of topics, from childhood dreams to math and science education to the future of space exploration. She showed and narrated a fascinating "home movie" shot on her last shuttle mission, a docking trip to the Mir Space Station. The crew performed interesting experiments, including drinking spheres of weightless Kool-Aid that floated in the cabin! Coincidentally, the tenth anniversary of the launch of that mission was Jan. 22, just two days after the SAS banquet. Mir is no more. Such films are the last remaining look at the way it was.

In discussing the future of space exploration, Dunbar noted a couple of the items now on display at the Museum of Flight: a meteorite from Mars, and a Viking lander, two of which are sitting on the Red Planet, waiting.



*Dr. Bonnie J. Dunbar, right, with Anita Eclissi, 2007 VP of Programs for SAS, during the social hour of the SAS banquet Jan. 20 at Rock Salt Restaurant. Photo courtesy of Anita Eclissi.*

“Think about who might be walking up to that some day,” she urged her audience, making note that Russia, China, India, Europe, and Japan all have active space exploration efforts going. Dunbar believes humans will one day walk on Mars.

**“I got to build a space ship — because I took algebra!”**

“From my point of view it’s not a question of if, it’s when and who; who’s going to do it, because it will happen,” she said. “We as humans have been consumed with flight, and we’ve been consumed with the stars.”

She closed her talk with a quote from Robert Goddard, inscribed on a wall at NASA’s Goddard Space Flight Center. Commenting on why he continued his rocket research in the face of public skepticism and criticism, Goddard said: “It’s difficult to say what is impossible, for the dreams of yesterday are the hopes of today that become the realities of tomorrow.”

“I think all of you, more closely than many people, know what that all means as you spend your nights looking up at that big universe out there and know what all the possibilities are,” Dunbar said.

Asked at dinner why she left space flight behind, Dunbar said she really hasn’t.

“I live it every day now,” she said. “I just walk downstairs from my office, I look at the airplanes, I look at the new space exhibit, I look out at the runway. But the real passion for me coming back to the Museum of Flight was its educational mission.”

“It’s all about preserving the past and inspiring the future.”

## Banquet awards

Several SAS members were recognized at the society’s Jan. 20 banquet for going “above and beyond” during 2007. Honorees were:

Jingchun Chen — super-active new member!

Andrea Torland — banquet chair; thanks for another great event!

Paul Rodman — SAS webmaster who keeps our site ship-shape and up-to-date.

Anita Eclissi — outgoing VP of Programs, for a slate of great speakers and events in ‘07.

Jon Bearscove — SAS president for his great work this year, particularly on outreach.

## Thank you to our banquet sponsors

SAS thanks the following for door prizes or other support of this year’s banquet:

- ◆ Anacortes Telescope & Wild Bird
- ◆ Aurora Astro Products
- ◆ The Museum of Flight
- ◆ Oceanside Photo & Telescope
- ◆ Orion Telescopes & Binoculars
- ◆ Scope City
- ◆ Sky & Telescope magazine

Andrea Torland – banquet chair

Bruce Kelley – program design

Maxine Nagel – program photography

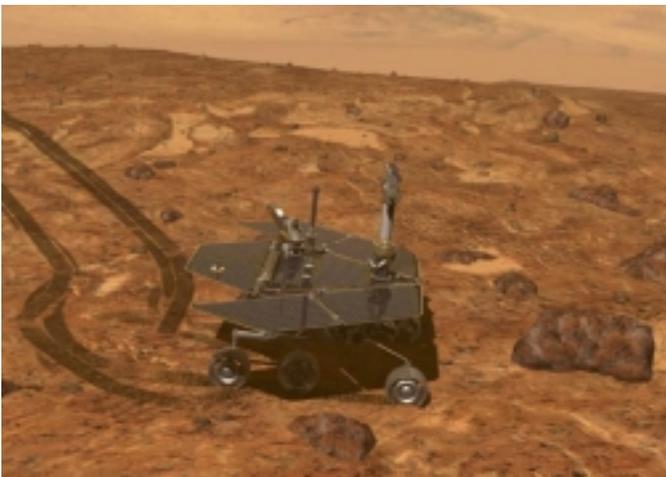
# No Mars rock unturned

by Patrick L. Barry

Imagine someday taking a driving tour of the surface of Mars. You trail-blaze across a dusty valley floor, looking in amazement at the rocky, orange-brown hillsides and mountains all around. With each passing meter, you spy bizarre-looking rocks that no human has ever seen, and may never see again. Are they meteorites or bits of Martian crust? They beg to be photographed.

But on this tour, you can't whip out your camera and take on-the-spot close-ups of an especially interesting-looking rock. You have to wait for orders from headquarters back on Earth, and those orders won't arrive until tomorrow. By then, you probably will have passed the rock by. How frustrating!

That's essentially the predicament of the Spirit and Opportunity rovers, which are in their fourth year of exploring Mars. Mission scientists must wait overnight for the day's data to download from the rovers, and the rovers can't take high-res pictures of interesting rocks without explicit instructions to do so.



*Are these rocks of any scientific interest? With the new AEGIS software, the Mars Rovers, Spirit and Opportunity, will be able to judge for themselves whether a scene is worth a high-resolution image. (Artist's rendering.)*

However, artificial intelligence software developed at JPL could soon turn the rovers into more autonomous shutterbugs.

This software, called Autonomous Exploration for Gathering Increased Science (AEGIS), would search for interesting or unusual rocks using the rovers' low-resolution, black-and-white navigational cameras. Then, without waiting for instructions from Earth, AEGIS could direct the rovers' high-resolution cameras, spectrometers, and thermal imagers to gather data about the rocks of interest.

"Using AEGIS, the rovers could get science data that they would otherwise miss," says Rebecca Castaño, leader of the AEGIS project at JPL. The software builds on artificial intelligence technologies pioneered by NASA's Earth Observing-1 satellite (EO-1), one of a series of technology-testbed satellites developed by NASA's New Millennium Program.

AEGIS identifies a rock as being interesting in one of two ways. Mission scientists can program AEGIS to look for rocks with certain traits, such as smoothness or roughness, bright or dark surfaces, or shapes that are rounded or flat.

In addition, AEGIS can single out rocks simply because they look unusual, which often means the rocks could tell scientists something new about Mars's present and past.

The software has been thoroughly tested, Castaño says, and now it must be integrated and tested with other flight software, then uploaded to the rovers on Mars. Once installed, she hopes, Spirit and Opportunity will leave no good Mars rock unturned.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

# Thanks for a great 2007

I would like to say one more enormous “thank you” to all of the guest speakers, tour guides, and volunteers, who contributed their knowledge, talents, and humor to SAS Programs while I was in office. Thanks also to everyone who attended these meetings and events!

**Anita Eclissi**  
2007 VP Programs

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February 21 – Unique Astronomy Filters with **Bruce Maxwell** and **Travis McNeal**, Luma Technologies and Sirius Optics.

March 21 – Rocket Engines in Redmond with **Dr. Dieter M. Zube**, project engineering manager at Aerojet.

April 4 & 12 – Special Event -- Tours of Aerojet in Redmond with **Dr. Dieter M. Zube** and **Dave Hartsell**, test operations manager at Aerojet.

April 18 – Panoramic Survey Telescope and Rapid Response System, with **Ed Mannery**, PanSTARRS optics engineer.

May 3 – Special Event – Space Day at the Museum Of Flight with volunteers **Zach Drew**, **Maxine Nagel**, **Burley Packwood**, **Andrea Torland**, and **Anita Eclissi**.

May 16 – The Space Elevator with **Michael J. Laine**, founder and president of LiftPort Group, the Space Elevator Companies.

June 20 – Members’ Show & Tell Bonanza: Modified Gadgets, Astro-photography, And Other Personal Astronomical Projects! **Mike Langley**, **Tom Field**, **Peter Hirtle**, **Jim Hermanson**, **Maxine Nagel**, **Don Wieckowicz**, **Anita Eclissi**, and **Jon Bearscove**.

June 30 – Special Event – Tour of the new space exhibit at the Museum Of Flight with **Clark Beck**, tour guide

July 18 – Supermassive Black Holes with **Dr. Eric Agol**, assistant professor of astronomy at the University of Washington.

August 15 – Show & Tell: Favorite Observing Sites And More! SAS members **Jon Bearscove**, **Mike Langley**, **Maxine Nagel**, **Tim Mcguire**, **Anita Eclissi**, **Jim Peterson**, **Scott Hill**, **Karl & Judy Schroeder**, **Greg Scheiderer**, and **Scott Cameron**

September 19 – Barnstorming the Planets with **Dr. Ron Hobbs**, public programs assistant at the Museum of Flight and JPL solar system ambassador.

October 4 – Special Event – Astronomy Day at the Museum Of Flight with volunteers **Mike Langley**, **Rick Libsack**, **Andrea Torland**, and **Anita Eclissi**.

October 17 – Custom-built Telescopes with **Sonny Tremoulet**, master telescope builder.

November 21 – DSLR astro-photography with **Tom Gwilym**, president of Eastside Astronomical Society and JPL solar system ambassador

December 19 – Our Local Moon And Mars with **Dr. Ron Hobbs**, public programs assistant at the Museum of Flight and JPL solar system ambassador

January 20, 2008 – Special Event – SAS Annual Banquet with **Dr. Bonnie Dunbar**, president and CEO of the Museum of Flight, NASA mission specialist astronaut.

*Editor’s note: Thanks, too, to Anita Eclissi for the many hours of legwork that went into setting up these great programs for us! —GS*

Details, page 1  
Observation  
Planning and logging  
Friday, Feb. 22  
DATE CHANGE  
NEXT MEETING

RETURN SERVICE REQUESTED  
SEATTLE, WA 98103-1746  
PO BOX 31746  
Seattle Astronomical Society  
*The Web-footed Astronomer*



*Aliens visited the annual SAS banquet in January, as is their wont. While the extra-terrestrials seem friendly, some of those Earthlings are SCARY looking!*  
Photos by Maxine Nagel.