



# the Webfooted Astronomer

Seattle Astronomical Society • December 2003

## December Meeting

*Speaker:* Al Misiuk

Optical Filters

Wednesday, December 17  
7:30 p.m.

Physics-Astronomy Building  
Room A102  
University of Washington  
Seattle

Come early at 7 p.m. for coffee  
and snacks and to visit with  
your fellow members!

## Dec. Meeting:

### Al Misiuk Discusses Optical Filters

Al Misiuk is an amateur astronomer and an Optical Engineer for Sirius Optics Company, a company based in Kirkland that makes optical filters. He will give a presentation on the complex manufacturing process and characteristics of thin film optics, and how coatings for filters are chosen to permit transmission of specific wavelengths to enhance an image's contrast. Sirius Optics provides a wide range of filters including a planetary contrast filter, a nebulae filter, the Mars 2003

filter, and a variable filters which has a composite coating for peak transmission in the red, green and blue wavelengths. If you didn't get hooked on filters this summer for viewing Mars, then come and learn more about filters to enhance you observations of Jupiter and Saturn this Winter.



# Seattle Astronomical Society

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## From the President's Desk...

by Stephen Van Rompaey

In accordance with the SAS Bylaws we held our annual election of club officers during the November meeting and elected the following officers for the 2004 board:

SAS Board Chair:	Mary Ingersoll
President:	Stephen Van Rompaey
VP Programs:	Rick Libsack
VP Publicity:	Mark de Regt
VP Education:	Mike Langley
VP Membership:	Janice Edwards
Secretary:	Thomas Vaughan
Treasurer:	Jim Peterson

I would like to welcome Janice Edwards to our board and I look forward to working with the current board members in the year to come.

As I mentioned in last month's newsletter, the SAS Board decided that the club needed to raise its annual membership dues. The primary motivation for this decision was the increase in the Astronomical League's annual dues from \$3.50 to \$5.00, but the board has also noticed that we have just been covering our expenses this past year. The club's primary expenses are copying

membership and informational brochures about the SAS and producing the monthly newsletter. The last time the SAS raised its dues was in January 1995 and we feel that it's necessary to raise our Individual/Family Membership dues from \$25 to \$30 a year. Student membership dues will be kept at \$10 annually. The SAS Bylaws require that increases in club dues must be voted on by the club's members. So, I plan to hold the vote on increasing our dues at the beginning of our December meeting and this increase will go into effect starting on January 1, 2004.

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year.**

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I want to remind everyone that checks for the Awards Banquet must be received by Kathy Steyaert by January 7. **THE JANUARY NEWSLETTER WILL NOT REACH MAILBOXES UNTIL AFTER THIS DEAD-**

*continued on page 4*

**LINE, SO THIS IS THE LAST MAJOR REMINDER YOU WILL RECEIVE BEFORE THAT DATE.**

Ron Wodaski, the author of "The New CCD Astronomy," will be our speaker and it should be an excellent presentation, especially for those who are interested in learning

about imaging. You can find additional information about Ron at his website: <http://www.newastro.com/wodaski/>. Some of the door prizes already on hand include a Meade 14mm Ultra Wide Angle eyepiece, filters from Sirius Optics, and copies Ron Wodaski's book. Be sure that when you mail in your check that it is made out to "Kathy Steyaert" and NOT the SAS, and don't forget to indicate which entree you want (salmon, prime rib, or vegetarian lasagna).

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**Checks for the Awards Banquet must be received by Kathy Steyaert by January 7.**

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During the past couple of months the SAS Board has been considering the idea of adding a public star party in "south Seattle." By "south Seattle" we loosely mean somewhere in the Renton area, but we are open to considering other areas. We have many members who live south of Seattle and I have been contacted by some of them asking about the possibility of holding observing activities closer to where they live.

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**During the past couple of months the SAS Board has been considering the idea of adding a public star party in "south Seattle."**

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Thomas Vaughan has investigated a couple of parks in the cities of Kent and Renton, and found that they lacked reasonable public access or that the cities were concerned about their use after dark. At this point, we don't have a site that we think would be worth the effort of the club to develop as a monthly public star party. We realize, however, that there may be a number of parks or other places in the south that may

work well and that we are unaware of them. So, **I would like to invite any members who live south of Seattle to contact the board with sites that you think would work for public star parties**, especially if you would be willing to attend these star parties on a regular basis.

# 2004 Awards Banquet

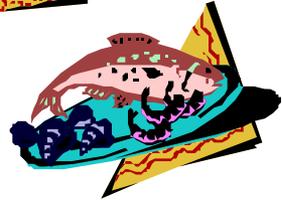
**When:** January 24, 2004

**Time:** 6:00-6:30 p.m. — No host bar  
6:30 p.m — Dinner served promptly

**Where:** Rock Salt on Latitude 47° Restaurant & Catering  
1232 Westlake Ave North  
Seattle, WA 98109

**Cost:** \$30.00 per person

**Entrees:** Roasted King Salmon  
Prime Rib  
Vegetarian Lasagna



**Your entree will come with:**  
Caesar Salad  
Baked Potato  
Bread & butter  
Coffee or Tea  
Dessert

## Reserve Your Spot Today

★★ NO RESERVATIONS WILL BE ACCEPTED ★★  
★★ AFTER JANUARY 7, 2004 ★★

★★ ANYONE WITHOUT A PRIOR RESERVATION ★★  
★★ WILL NOT BE ADMITTED ★★

**Send your entree choice and a check for  
\$30 per person (made out to Kathy Steyaert) to:**

Kathy Steyaert, Banquet Chairperson  
20609 SE 271st Street  
Covington WA 98042  
(425) 432-2714



# Stardust

by Patrick L. Barry and Dr. Tony Phillips

Philosophers have long sought to “see a world in a grain of sand,” as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust — comet dust, that is.

If successful, NASA’s Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.

And one wouldn’t merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of

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***As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph.***

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years, these asteroid-sized “dirty snowballs” have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet

blue. And comets contain complex carbon compounds that might be the building blocks for life.

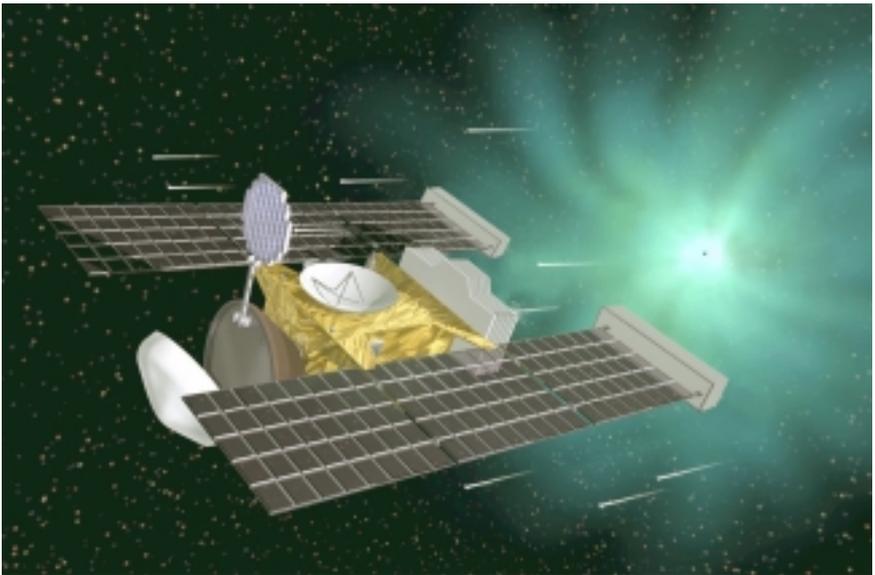
Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced “Vilt” after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will

use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they're caught.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity into a Sun — approaching orbit — within reach of probes from Earth. Since then the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries.

To learn more about Stardust, see the mission website at [stardust.jpl.nasa.gov](http://stardust.jpl.nasa.gov). Kids can play a fun trivia game about comets at [spaceplace.nasa.gov/stardust](http://spaceplace.nasa.gov/stardust).

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



*NASA's Stardust mission will capture dust from comet Wild 2 and bring them back to Earth for study.*



# December 2003

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3 UW Public Viewing Night 7 p.m.	4 UW Astronomy Colloquium: Harvey Richer, UBC 4 p.m.	5	6 Amateur Telescope Makers SIG Meeting 6:30 p.m.
7		8	9	10	11	12
14	15		16	17 Monthly SAS Meeting UW Room A102 7:30	18	19
21	22 SAS Board Meeting 7 p.m.		23	24	25	26
28	29		30	31		27 Green Lake and Paramount Park Star Parties

# January 2004

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	 7 UW Public Viewing Night 7 p.m.	8	9	10 Amateur Telescope Makers SIG Meeting 6:30 p.m.
11	12	13	14	 15	16	17
18	19	20	 21 UW Public Viewing Night 7 p.m.	22	23	24 SAS Annual Banquet 6 p.m. 
25	26 SAS Board Meeting 7 p.m.	27	28	 29	30	31 Green Lake and Paramount Park Star Parties

Remember: **All Banquet reservations must be in by January 7 — no exceptions!!**



# November Minutes Magnificent Mars

by Thomas Vaughan

Speaker: Ken Croswell

## Announcements

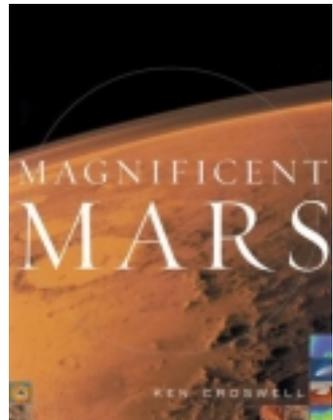
The meeting began with these announcements.

- ★ A reminder: the 2004 Awards Banquet is fast approaching! Reservations are due to Kathy Steyaert by 7 January.
- ★ 2004 Elections. The slate of candidates was presented. It is the same as this year's slate, with the exception that Janice Edwards is nominated for VP of Membership. The slate was approved. See the website for the full list of officers.

## Talk: Magnificent Mars

Ken Croswell gave a talk, highlights from his recent book "Magnificent Mars." Ken was also on-hand after the meeting to sign copies of the book.

Ken's talk followed the four major themes of the book, focusing on the four elements Earth, Air, Fire, and Water as he examined Mars' composition and the possibility of finding life there. The highlight of the talk was the many spectacular images, taken from high-resolution NASA surveys, and in many cases retouched by experts to give the highest resolution and detail. All of these images were from Ken's book.



Ken started by noting Mars' size: it is 1/9 the mass of earth, giving it 1/4 the surface area. Mars is farther away from the sun, giving it a longer year: 687 Earth days in a Martian year (Martian days are almost equal to Earth days at 24 hours). Ken speculated that Jupiter was probably responsible for Mars' smaller size, and this has been supported by computer simulations of planetary evolution.

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***One of the recent discoveries is that Mars still has active volcanos, and even a molten core (although it has no magnetic field).***

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Because of Mars' smaller size (and therefore less powerful gravity), it has had problems keeping its atmosphere. Although we don't yet know for sure, Ken had evidence that suggested that Mars had a fairly dense, wet atmosphere during the first billion years or so of its life. Since then, impacts and the solar wind have stripped away most of the atmosphere.

One of the recent discoveries is that Mars still has active volcanos, and even a molten core (although it has no magnetic field). Ken suggested that volcanos were in large part responsible for the early atmosphere of Mars, and that as volcanic activity has died down, so the atmosphere has not been replenished.

The final part of the talk focused on the most exciting and controversial aspects of Mars: the presence of water (past or present). Ken had detailed topographic maps of Mars, showing where water might have accumulated in the past, and where it might be hiding now. In general, we are finding a lot of surface features (gullies, slides) that are best explained by the presence (within the last several million years) of liquid water.

There was a spirited question and answer session at the end of the talk.

# Mars Analog Research Stations (MARS): Mars on Earth

taken from <http://www.marssociety.org/mdrs/mdrs01.asp>



Mars is within reach! A world with a surface area the size of the combined continents of the Earth, the Red Planet contains all the elements needed to support life. As such it is the Rosetta stone for revealing whether the phenomenon of life is something unique to the Earth, or prevalent in the universe. The exploration of Mars may also tell us whether life as we find it on Earth is the model for life elsewhere, or

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***A global program of Mars exploration operations research, the MARS project will include four Mars base-like habitats located in deserts in the Canadian Arctic, the American southwest, the Australian outback, and Iceland.***

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whether we are just a small part of a much vaster and more varied tapestry. Moreover, as the nearest planet with all the required resources for technological civilization, Mars will be the decisive trial that will determine whether humanity can expand from its globe of origin to enjoy the open frontiers and unlimited prospects available to multi-planet spacefaring species. Offering profound enlightenment to our science, inspiration and purpose to our youth, and a potentially unbounded future for our posterity, the challenge of Mars is one that we must embrace.

Indeed, with so much at stake, Mars is a test for us. It asks us if we intend to continue to be a society of pioneers, people who dare great things to open untrodden paths for the future. It puts us to the question of whether we will be people whose deeds are celebrated in newspapers, or in museums; whether we will continue to open new possibilities for our descendants, or whether we will become less than those who took on the unknown to give everything we have to us. Mars is the great challenge of our time.

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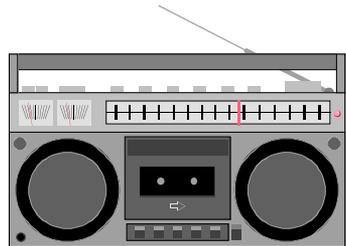
In order to help develop key knowledge needed to prepare for human Mars exploration, and to inspire the public by making sensuous the vision of human exploration of Mars, the Mars Society has initiated the Mars Analog Research Station (MARS) project. A global program of Mars exploration operations research, the MARS project will include four Mars base-like habitats located in deserts in the Canadian Arctic, the American southwest, the Australian outback, and Iceland. In these Mars-like environments, we will launch a program of extensive long-duration geology and biology field exploration operations conducted in the same style and under many of the same constraints as they would on the Red Planet. By doing so, we will start the process of learning how to explore on Mars.



## **“It’s Over Your Head” Covers All Things Astronomical**

“It’s Over Your Head,” a weekly astronomy radio program that was for many years staffed by EAS/SAS volunteers, is now produced by Celestial North, Inc., a non-profit astronomy education organization formed by the staff of “It’s Over Your Head.” The show covers all things astronomical, and also promotes EAS, SAS and other local astronomy and space related events and activities. “It’s Over Your Head” airs each Wednesday morning at 7:20 a.m. on KSER 90.7 FM radio, and again on Saturday mornings at 10:30 a.m. Go to <http://www.CelestialNorth.org>, and click on “It’s Over Your Head” to find out how to listen to the program live via the web, and access the audio (mp3) and text (pdf) archives of past programs.

Do you have a topic you’d like us to explore, a question you’d like to have answered, or maybe a possible correction or clarification of something you heard on “It’s Over Your Head”? How about an upcoming event you want publicized on the radio and/or the web? Or maybe you’d like to help out with the show in some way. Contact us anytime via email at [mail@CelestialNorth.org](mailto:mail@CelestialNorth.org), or by phone at (360)331.7796.



# SAS Logo Shirts Now Available!

Don't be caught in the dark without one!

Shirts are available in most sizes and colors. White logo will be printed on dark shirts, black logo on light shirts.



Styles available:

- A** t-shirt short sleeve \$12.00\*
  - B** t-shirt long sleeve \$15.00\*
  - C** sweatshirt hooded w/front pocket \$20.00\*
  - D** sweatshirt no hood, no pocket \$18.00\*
  - E** golf shirt short sleeve \$17.00\*
- \* add \$2 each for shirt sizes XXL and larger**

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\* Your order can be mailed to you by Priority Mail.

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<input type="checkbox"/> Donation (optional)	\$ _____

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