

MID-STATES REGION OF THE ASTRONOMICAL LEAGUE 2006 CONVENTION



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THE SAINT LOUIS ASTRONOMICAL SOCIETY



Founded 1936

JUNE 16-18, 2006
WASHINGTON UNIVERSITY ST. - LOUIS

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Welcome

As the MSRAL 2006 Chair, it brings me great pleasure to welcome you to the convention on this 70th anniversary of the founding of the St. Louis Astronomical Society. We have a great slate of presenters including Sidewalk Astronomer John Dobson and exemplary planetary scientist Ray Arvidson as well as other speakers and of course, an impressive list of vendors. We hope you take home inspiration armed with good information and most likely, some goods from the myriad of door prizes that will be offered. If there is anything we can do to make your stay here in St. Louis even better, please don't hesitate to ask! Welcome again!

Clear Skies

Jim Small
Chair, MSRAL 2006

2006 MSRAL Convention Presentations

John Dobson

John Dobson has been called the "Pied Piper of Astronomy," the "Star Monk," and the "MacGuyver of Astronomy." He is arguably one of the most influential personalities in amateur astronomy in the last 50 years. He has almost single-handedly revolutionized backyard astronomy by bringing it out to the street, making it accessible for anyone who has ever looked up in wonder, and asked "Why?"

Having graduated from the university as a chemist, he wanted to see for himself what the Universe looked like, so John built his first telescope in 1956. It was a 2", made from a lens he got in a junk store and an eyepiece from an old pair of Zeiss binoculars; through it, he could see the rings of Saturn. One of his fellow monks told him that it was possible to grind a telescope mirror, so John then made his first mirror out of a marine-salvage 12" porthole glass. When he looked at the third-quarter moon with his finished telescope, he was surprised and deeply moved by what he saw. His first thought was, "Everybody's got to see this."

So began John's long commitment to public-service in astronomy.

The desire that drove John to make more and larger telescopes, and to put himself in increasing peril of expulsion by monastic authorities, was to give everybody the opportunity to see the Universe first-hand. He put discarded wagon wheels on his telescopes to facilitate wheeling them around the residential neighborhood surrounding the monastery - delighting kids and adults with the views of the night sky.

Naturally, when people started to look through John's telescopes some of the neighbors and their kids wanted John to help them make their own telescopes. He realized that this would make his life more difficult because his AWOL hours from the monastery would increase. Nevertheless, he continued and expanded his activities, till he was asked to leave the monastery in the Spring of 1967, after 23 years as a monk. Ironically, the "last straw" event was a mistake, they thought John was absent with his telescope but in fact he was weeding the lawn outside the wall, out of sight. He was not expelled because the monks were against his telescope making, but because it was perceived to be taking time away from his monastic duties.

With no "profession" and an overwhelming desire to show the night sky, John decided to dedicate the rest of his life to public service astronomy and hitchhiked to San Francisco. Then as now, John had many friends, and they helped to keep him fed, clothed, and sheltered. He retrieved some of his telescopes from Sacramento and set them up at the corner of Broderick and Jackson streets in San Francisco every clear night. Thousands of people looked through the telescopes while John talked to them in detail about what they were seeing. (This practice is still an integral part of Sidewalk Astronomy: astronomical information must be supplied by the telescope operator so the viewers can understand what they see.) Eventually, John was able to support himself by teaching classes in telescope-making and astronomy at the Jewish Community Center and at the California Academy of Sciences.

In 1968, some of the kids who had made telescopes under John's guidance, and who joined him in setting up scopes at Jackson and Broderick, started a public-service organization named the San Francisco Sidewalk Astronomers. As the organization grew, larger telescopes were made and taken out to the streets. By 1970, the Sidewalk Astronomers had a 24-inch telescope which was freeway portable. The possibility of showing deep sky objects to large numbers of people through very large telescopes led the growing band of Sidewalk Astronomers to National Parks and Monuments, Native American reservations, and out of the country to places where "dark skies and the public collide."

Because of his influence, millions of people all over the world have looked through the telescopes of the Sidewalk Astronomers (the San Francisco was dropped when chapters started forming worldwide). John has helped to simplify the art of mirror making enabling thousands of children and adults with no previous experience or special training in optics to experience the joy of turning slabs of glass into powerful eyes into the heavens with their own hands. The "Dobsonian" mount has made large, "user friendly" telescopes affordable and accessible to the general public. Thousands of people have made their own sturdy, low-cost telescopes under John's direction or on their own by using his simple design.

Telescopes with light-weight mirrors previously considered unusable, long focal ratios previously considered unmanageable, and apertures previously considered unthinkable are now in the hands of lovers of astronomy around the globe. With so many home-made Dobsonians showing up everywhere, commercial telescope makers joined the trend and now most offer relatively inexpensive

Dobsonians. Because of the popularity of home-made and commercial Dobsonians, it is impossible to measure the impact John has made on amateur astronomy and because of the changing role of amateur astronomy in discovering comets and other celestial objects, it is equally impossible to measure the true contribution his inspiration has made to our knowledge of our Universe.

Timothy Ferris, in his book, *Seeing in the Dark*, states, "the amateur astronomy revolution was incited by three technological innovations - the Dobsonian telescope, CCD light-sensing devices, and the Internet." When asked about the "Dobsonian Revolution", John usually replies that all previous revolutions were fought with cannons on Dobsonian mounts.

In 2004, *Advaita Vedanta and Modern Science* was retitled, *BEYOND SPACE & TIME - Is there an uncaused cause behind the Deep Field?* and is now available. Another new title *THE MOON IS NEW*, a novel, is also in the publishing process and should be out early in 2005.

John has recently been shown in two documentary films. In the first, "UNIVERSE - The Cosmology Quest", John appears along with Sir Fred Hoyle, Dr. Halton C. Arp, Dr. Margaret Burbidge, Dr. Geoffrey Burbidge, Dr. Jayant Narlikar and a host of other astronomers, cosmologist, and philosophers questioning the currently popular Big Bang Cosmology. The second film, to be released in the summer of 2005, *A Sidewalk Astronomer* is a profile on John in tribute to his contribution to amateur astronomy. Completely unscripted, it provides a unique insight into a likewise unique individual.

John still spends most of his time traveling and spreading the art of telescope making and sharing his views on cosmology to amateur astronomy clubs around the world, as their guest. He spends a short two months of the year at his home in San Francisco and another two months at the Vedanta Center in Hollywood (his second home). The rest of the time he is in Oregon, Connecticut, Chile or even Siberia. While John is no longer a monk, he still lives very simply, spending most of his time in the homes of amateur astronomers.

John Dobson's life has been a tremendous inspiration to a great many people. John and the Sidewalk Astronomers continue to serve the public with large telescopes, providing free "star parties" and slide shows under dark skies and city lights, encouraging the citizens of this planet to think and wonder about the Universe and give them a chance to see its beauty with their own eyes.

To members of the Sidewalk Astronomers, John continues to provide guidance and inspiration. His unending desire to always keep learning and discovering things for himself has affected all of those around him. One of his favorite sayings is "If you figure something out for yourself, it doesn't make no never-mind who figured it out first, its yours." His life of enthusiastic, selfless public service and his genuine love and concern for this planet and those that live on it are the foundation and guiding principle of our organization. *Edited from <http://www.sidewalkastronomers.us>*

Ray Arvidson

The Mars Exploration Rover Mission

Raymond Arvidson received a Ph.D. from Brown University in 1974. He is presently James S. McDonnell Distinguished University Professor and Chair, Department of Earth and Planetary Sciences, Washington University in St. Louis, where he has been employed since 1974. He is also a fellow of the McDonnell Center for the Space Sciences. He directs the Pathfinder Program in Environmental Sustainability.

He was the Team Leader of the Viking Lander Imaging Team from 1977-1982, Associate Editor of the *Journal of Geophysical Research* from 1982-1984, Co-Editor of *Geology* from 1988-1990, and has served on numerous NASA and National Academy of Sciences Committees. He has served as the Planetary Geology Division Chairman of the Geological Society of America and President of the Planetology Section of the American Geophysical Union. In addition to teaching in the Department of Earth and Planetary Sciences, he was the science coordinator for Washington University's mission operations for two global balloon flight attempts made by Steve Fossett. He was an Interdisciplinary Scientist on the Mars Global Surveyor Mission and is currently a member of the Project Science Group of Mars 2001 Odyssey Orbiter Mission. As head of NASA's Planetary Data System Geosciences Node since 1989, Arvidson has been instrumental in the formatting and archiving of planetary data. He has been Director of NASA's Regional Planetary Image Center at Washington University since 1980. Currently he is the Deputy Principal Investigator for the Athena Payload on the highly successful Mars Exploration Rover Mission which launched in 2003. He is a science team member for the OMEGA hyper-spectral imager on Mars Express, Co-Investigator on the CRISM hyper-spectral imager on the 2005 Mars Reconnaissance Orbiter, and the Co-Investigator of the Robotic Arm on the 2007 Mars Scout Mission, Phoenix.

He is a Fellow of the Geological Society of America, the American Geophysical Union and has received numerous NASA Public Service Awards, a Washington University Distinguished Faculty Award, and the Cushing Oration of the American Association of Neurological Surgeons. In 1998 he was elected Washington University Advisor of the Year and received the Missouri Governor's Award for Excellence in Teaching. He was chosen as Student Union Professor of the Year and one of the recipients of the Outstanding Graduate Faculty Mentor Award. In 2001 he received the Arthur Holly Compton Award for Faculty Achievement. He has published over 100 articles and books dealing with remote sensing of Earth, Mars, and Venus.

Louis S. Berman

ScopeSeeing!

To paraphrase "Unusual Telescopes" by author Peter L. Manly, "The important parts of a telescope are a few grams of reflective aluminum; everything else is simply mechanics!" If telescopes merely exist to gather light then he is surely correct. My contention, however, is that they also exist to inspire and astound. And for me, at least, the mechanics are totally fascinating. To that end, I plan to visit every major telescope extant and ultimately write a book on the subject. Within the last 16 months I've visited the

Chabot, Palomar, Lick, Yerkes and McDonald Observatories (MDO) among others. Notably, at MDO, I led the very first visual observation of our brand "new" 10th planet (2003 UB313; informally named Xena). The point of my presentation is that you can do this too! I will examine the process from selecting an observatory to negotiating for observing time to wrangling your colleagues; everything you need to organize a successful trip. I'll also show a couple of travelogues from my own trips to get you stoked.

Louis has been an avid amateur astronomer for more than 30 years. Recently, he led the very first visual observation of our "brand-new" 10th planet 2003 UB313. A native New Yorker, Louis recently served as the SLAS Secretary for the past two years. He is currently writing a book on telescope tourism to be titled "Scopeseeing". Professionally, Louis is a computer scientist who has served as Chief Technology Officer for three companies, most notably NPI Traders (a private hedge fund where he is also a founding partner). Louis moved to Philadelphia 8 days ago with his wife Marie Anne Chiment, an internationally noted set / costume designer.

David Hall

Eyepiece Transmission Report

This report describes the motivation, test methods, and test results of the authors' eyepiece transmission experiment. This experiment examined the sources for light loss in astronomical eyepieces and how manufacturers use thin-film coatings to reduce the light loss. The authors employed a low-power green laser to measure transmission through various eyepieces popular among amateur astronomers. The results of this ongoing experiment are summarized by eyepiece design and manufacturer.

David Hall designs laser electronics at Northrop Grumman-Cutting Edge Optronics in St. Charles, MO. David's co-author, John Duchek is a research chemist recently retired from Tyco-Healthcare in St. Louis.

Jim Melka

An Amateur's Observations of Mars with a 12-inch telescope and the Mars Orbiter Camera

Jim will discuss the technique of observing Mars and performing color imaging and image enhancement with reasonably priced software tools using a web-camera connected to a notebook computer. Some highlights and results of the 2005-2006 Mars apparition will be presented. He will also present results from using the Mars Orbiter Camera to view positions on Mars requested via the MOC Public Target Request Web Site owned by the MGS MOC Team at Malin Space Science Systems.

Jim Melka has been an amateur astronomer since about 1954 and has enjoyed studying and imaging Mars since 1971. He started the first amateur Mars photo patrol in 1973. Jim has also photographed Mars for Lowell Observatory using a 24-inch Cassegrain telescope on Mauna Kea in 1988 and contributed observations to the Mars section of ALPO since 1971. He performs imaging of Mars now by eyepiece projection using a ToUcam 840 Pro webcam mounted on a 12-inch Newtonian reflector.

Jim Roe

Musings on the Red Shift of Distant Galaxies.

"Everybody Talks About the Big Bang, but Nobody Does Anything About It"

Jim has been an amateur astronomer for a very long time and has been noted for his work with asteroids and has several discoveries to his credit. Jim is currently a force for amateur astronomy in St. Charles County and is working on an observatory installation in cooperation with several entities in the county. He and his wife Evonne are both heavily involved with societies in Eastern Missouri, including the Alliance for Astronomy,

Henric Klawczynsky

X-ray and Gamma-Ray Observations of Supermassive Black Holes

Supermassive black holes with masses between a million and several billion solar masses are thought to linger at the centers of many galaxies. Black holes that swallow matter are among the brightest sources of electromagnetic radiation in the Universe, as matter before being swallowed orbits the black holes and heats to incandescence. Here, we review science motivations for studying supermassive black holes. Furthermore, we present results from observations of mass accreting black hole systems with the ground based gamma-ray experiment VERITAS (Very Energetic Radiation Imaging Telescope Array System). VERITAS is a system of four 12m diameter telescopes located on Mt. Hopkins (Az) that can detect gamma-rays in the energy range above 100 GeV.

Education

1994 M.Sc., University of Hamburg, Physics

1997 Ph.D., University of Hamburg, Physics

Professional History:

2002-present Professor at Washington University

2000-2002 Research Associate and Instructor at Yale University

1997-2000 Research Associate at the Max-Planck-Institute for Nuclear Physics

Ground Based Gamma-Ray Astronomy with VERITAS <http://veritas.sao.arizona.edu/>

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Mid-States Region of the Astronomical League Convention Schedule

TIME & DAY	HOST OR SPEAKER	EVENT	LOCATION
FRIDAY			
3:00pm-10:00	Jim Small	Registration	Mudd Hall
3:00pm-6:00	Jerry Loethen	Vendor Setup	Mudd Hall
6:30pm-9:00	Mark Jones	Star-B-Q	Swamp
9:00pm-11:00	Martin Israel	Crow Observatory Tour featuring the 6" Alvin Clark Refractor	Crow Hall
SATURDAY			
8:00am-12:00	Cook Feldman	Registration	Mudd Hall
8:00am-9:00	Jim Small**	Business meeting, Club Reports, Elections	Conf. Room
8:00am-3:00pm	Jerry Loethen	Vendor Exhibits Open	Conf. Room
9:00am	Henric Klawczynski**	X-ray and Gamma-Ray Observations of Supermassive Black Holes	Conf. Room
10:00 am	Jim Melka**	An Amateur's Observations of Mars with a 12-inch Telescope and the Mars Orbiter Camera	Conf. Room
10:40am	Jim Roe**	Musings on the Red Shift of Distant Galaxies	Conf. Room
11:20am	David Hall**	Eyepiece Transmission Report	Conf. Room
12:00pm-1:30	Lunch		Mudd hall
1:00pm-1:30	Group Photo		Swamp
1:30pm	Louis Berman**	ScopeSeeing	Conf. Room
2:30pm	Mike Malolepszy**	Transient Lunar Phenomena or Not?	Conf. Room
3:30pm-4:30	John Dobson**		Conf. Room
5:00pm-6:30	Ray Arvidson	NASA Data Center and Earth and Planetary Sciences Tours	Meet at Mudd Hall
6:30pm-7:30	Cook Feldman	Banquet; Awards Ceremony	Wohl Student Center
7:30pm	Karen Loethen	Open Seating for Banquet	Wohl Student Center
7:30pm	Ray Arvidson**	The Mars Exploration Rover Mission	Wohl Student Center
9:00pm	Jim Small	Closing Comments	Wohl Student Center
SUNDAY			
8:00am-10:00		Checkout	Mudd Hall
8:00am-10:00		Vendor Checkout	Mudd Hall

Door Prizes will be drawn after the following sessions marked **

The organizers reserve the right to make such changes to the program and speakers as may be necessary due to conditions outside their control."