



GENERATIONS: PAST, PRESENT, AND FUTURE OF THE TELESCOPE



NCRAL 2010

April 16-17, Bloomington-Normal, Illinois

Hosted by the Twin City Amateur Astronomers, Inc.

Generations: Past, Present, and Future of the Telescope



Friday, April 16, 2010

3:00 p.m.	Registration desk opens at conference hotel (closes at 7:30 p.m.)	
	Challenger Learning Center Programs	Retro Astronomy Program
6:00 p.m.	Mission to Mars – mission 1 has been consolidated with the 8:00 p.m. showing due to low numbers	Dinner at Steak & Shake in Normal (on your own)
7:30 p.m.		<i>Earth versus the Flying Saucers</i> (1956, 83 min.) at the Normal Theater (Admission fee \$6, pay at door)
8:00 p.m.	Mission to Mars – mission 2	<i>Encounter the Night</i> at the Illinois State University Planetarium (Admission fee \$4, pay at door)
9:15 p.m.	<i>By prepaid reservation only</i>	


Saturday, April 17, 2010

7:30 a.m.	Registration desk opens just off conference hotel lobby; astrophotography contest set up now through 10 a.m.	
8:15 a.m.	Welcome by Master of Ceremonies Dr. Daniel Miller, Twin City Amateur Astronomers	
8:30 a.m.	<p><i>Galileo and His Telescopes</i></p> <p>Dr. Carl J. Wenning Department of Physics Illinois State University, Normal, IL</p> <p><i>Galileo's struggles with the Catholic Church – starting with the publication of Sidereus Nuncius in 1610 and culminating in his 1633 trial by the Roman Inquisition – are well known but rarely understood. What often is missing is the post-reformation context and the personal intrigues of those who conspired against him and denounced him to the Church for personal reasons. Galileo's science was never in question. What was in question was whether or not he was guilty of heresy.</i></p> <p>About our speaker: Carl Wenning was director of the Physics Teacher Education program at Illinois State University from 1994-2008 when he retired after 30 years at the University. He started his service to ISU in 1978 as planetarium director. Later, he served as instructor of physics and astronomy at ISU as well as Illinois Wesleyan University. Wenning received Illinois State University's Outstanding University Teacher Award in 2000. Wenning holds a Bachelors degree in Astronomy from the Ohio State University, a Masters degree in Planetarium Education from Michigan State University, and a Doctorate in Curriculum & Instruction from Illinois State University. Wenning is an avid amateur astronomer and a member of the Twin City Amateur Astronomers. Wenning is one Astronomical League observing program away from earning his Master Observer award. He has a strong interest in the history of astronomy, and has completed exhaustive research relating to the 1896 Emerson McMillin Astronomical Observatory in Columbus, OH, and the Twin City Amateur Astronomers who celebrated their 50th anniversary on February 4, 2010. He is perhaps best known in astronomical circles for promoting the "inverted Ponzo illusion" explanation of the moon illusion.</p>	

9:30 a.m.	<p>A Video Tribute to Clyde Tombaugh. <i>Clyde Tombaugh and the Discovery of Pluto</i> is Dr. Tombaugh's personal remembrance of his youthful interest in astronomy, a description of the events leading to his employment at Lowell Observatory, and the technology he used to discover Pluto. The DVD was made possible by a grant from the Vesto M. Slipher Committee, support by New Mexico State University Astronomy Graduate Students' organization, and New Mexico State University Department of Astronomy. The program was produced and directed by Tom Hockey.</p>
10:00 a.m.	<p>Break and distribution of door prizes; astrophotography contest voting begins (see registration pack for ballot)</p>
10:30 a.m.	<div style="text-align: center;"> <p><i>The James Webb Space Telescope</i></p> <p>Jimmy Simek, Facilities Operations Specialist NASA Glenn Research Center Cleveland, OH</p> </div> <div style="float: right; width: 200px;">  </div> <p><i>Everyone knows about the NASA space programs. I'll give a brief history and some insight to the 'Aeronautics' part of NASA's activities at the Glenn Research Center. Next, I'll provide a quick overview of telescopes over the years and changing technologies. This will lead up to a synopsis of the James Webb Space Telescope, its science themes, major elements, instruments, and operations. My talk will cover what the mission is, how it will carry it out, and where it will make that happen.</i></p> <p>About our speaker: Mr. Simek is a Facilities Operations Specialist in the Facilities and Test Directorate. He joined the staff of the National Aeronautics and Space Administration's Lewis Research Center in January 1977. [In March 1999, the Lewis Research Center was renamed the John H. Glenn Research Center at Lewis Field.] He began his NASA career as an apprentice electronics technician and became a journeyman electronics systems mechanic, where he worked in several propulsion systems laboratories, wind tunnels and engine research facilities. His awards and honors include Research Team awards for use of sophisticated electronics, and he was recognized in individual and team awards in the telecommunications area. He has also been recognized for making contributions to real property accounting and the total quality initiative with Special Act or Service awards. Mr. Simek is currently involved in oversight of facilities operations where he provides direction for task management and quality assurance of work efforts for maintenance and repair activities. This is vital to assure safe, reliable, operational facilities and systems to support Research and Development missions of the Center. Jim enjoys communicating about NASA activities and programs to business groups, schools and professional organizations through his community involvement in the NASA Speakers Bureau.</p>
11:30 a.m.	<p>Group photo; registration desk closes</p>
11:45 a.m.	<p>Lunch break (on your own); astrophotography contest voting continues</p>
1:00 p.m.	<div style="text-align: center;"> <p><i>Astronomy's Greatest Generation</i></p> <p>Michael Bakich, Senior Editor <i>Astronomy Magazine</i> Kalmbach Publishing, Milwaukee, WI</p> </div> <div style="float: right; width: 200px;">  </div> <p><i>Amateur astronomy — the study of the sky without that pursuit leading to gainful employment — has enjoyed decades of popularity in America. From a less-than-auspicious beginning in the early 20th century, our hobby now flourishes. Even in our society, which offers more activities than ever before, people are taking time to look up at the sky and marvel. This talk will trace amateur astronomy's amazing past and look forward to its promising future.</i></p>

	<p>About our speaker: Michael received a B.S. in astronomy from the Ohio State University in 1975 and an M.A. in planetarium education from Michigan State University in 1977. Michael worked in seven planetaria and serves as a planetarium consultant. He joined <i>Astronomy</i> in February 2003. Michael has written three books for Cambridge University Press and one for Springer-Verlag. The latter, <i>1,001 Celestial Wonders to See Before You Die</i>, has a scheduled release this spring. Michael has conducted many astronomy related tours, including two to Mexico to study Mayan ruins, a cruise to observe Halley’s Comet in 1986, and half a dozen total solar eclipse trips. In 2010, he will lead a group that will be on Easter Island for the July 11 eclipse. Michael enjoys woodworking and book collecting. His collection of 19th-century astronomy books numbers more than 450 first editions — one of the largest private collections anywhere. Michael lives in Milwaukee with his wife Holley, who is an artist and graphic designer.</p>
2:00 p.m.	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p style="text-align: center;"><i>Seeing the Invisible: What We Can Learn from Non-optical Telescopes</i></p> <p style="text-align: center;">Dr. Daniel L. Holland Department of Physics Illinois State University, Normal, IL</p> <p><i>The human eye developed to see a very narrow band of the total electromagnetic spectrum that is centered on the primary radiation output of the sun. Since all objects with finite temperature radiate with a spectrum that depends on their temperature, and since different frequencies of light are interact differently with the interstellar gasses, there are many objects and processes in space that are invisible to the naked eye. To rectify this, NASA has launched orbiting observatories that can see objects that emit electromagnetic radiation ranging from the infrared to gamma rays. In addition, ground based observatories observe frequencies down into the radio frequencies. By examining objects in all of the various frequency bands, we can develop a much better understanding of the universe. In this talk, we will review the principle findings from a number of the orbiting observatories, with a particular attention on the Spitzer Infrared Observatory and the newly launched WISE observatory.</i></p> <p>About our speaker: Daniel Holland received his PhD in theoretical plasma physics from UCLA in 1990. Following graduation, he was awarded a National Research Council Post-doctoral Research Fellowship in space physics at the Naval Research Laboratory in Washington DC. He came to Illinois State University in 1993 where his research has focused on observational signatures of nonlinear particle dynamics in the earth’s magnetotail. NASA, the Office of Naval Research, the Research Corporation and numerous Illinois State University Research Grants have funded this work. In addition to his regular teaching and research duties, Dr. Holland has been active in public outreach activities as Dr. Dan the Science Man and as a NASA Solar System Ambassador.</p> </div> <div style="width: 35%; text-align: center;">  </div> </div>
3:00 p.m.	Break with distribution of door prizes; astrophotography contest voting continues
3:30 p.m.	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p style="text-align: center;"><i>The Itty Bitty Radio Telescope</i></p> <p style="text-align: center;">Dr. Daniel Miller, Twin City Amateur Astronomers</p> <p><i>When discussing amateur astronomy, one typically thinks of optical telescopes. However, when we use optical scopes, we are limiting ourselves to only a small region of the electromagnetic spectrum. In the past few years, the National Radio Astronomical Observatory has made a strong push to educate the public about radio astronomy. In doing so, they have demonstrated how amateur astronomers can build “Itty Bitty” radio telescopes. I have built one of these telescopes and will show how it can be incorporated into an outreach program as well as show the quality of data that can be collected from an 18-inch dish.</i></p> </div> <div style="width: 35%; text-align: center;">  </div> </div>

3:50 p.m.	<p style="text-align: center;"><i>The Universe through a Camera: An Introduction to Inexpensive Astrophotography</i></p> <p style="text-align: center;">Bobby Arn, Twin City Amateur Astronomers</p> <p><i>For centuries, telescope have been used to explore the heavens, but even the most powerful telescopes are not good enough to explore the sky. Cameras give us an ability to not only explore, but record trillions of objects. Even simple Point-and-Shoot or DSLR cameras give us greater ability to explore space than the naked eye, or the first telescopes. Anyone with a digital camera and access to a computer can already start to take images of the night sky - with no additional equipment or knowledge of astronomy needed! This talk will highlight the process of taking stunning images of the universe around us on a very modest budget - mostly with equipment many people already own!</i></p>	
4:10 p.m.	<p style="text-align: center;"><i>So, you want to build an observatory?</i></p> <p style="text-align: center;">John Werner, Twin City Amateur Astronomers</p> <p><i>The presenter believes most serious amateur astronomers have considered the potential advantages of a permanent structure to house their telescope and accessories. Building an observatory from scratch is a learning experience, often humbling, but ultimately very rewarding. John will provide guidance in choosing the right design, location, and construction steps for building your personal observatory.</i></p>	
4:30 p.m.	<p>NCRAL Annual Business Meeting</p> <p style="text-align: center;">☆ Includes special presentation about NCRAL 2011 by Bob Lundt from the Neville Public Museum Astronomical Society of Green Bay, WI.</p>	
5:30 p.m.	<p>Astrophotography contest voting ends; end of daytime activities</p>	
6:00 p.m.	<p>NCRAL annual banquet begins with social hour and cash bar - Grand Hospitality Room off hotel lobby</p>	
7:00 p.m.	<p>Banquet meal served – main meeting room (appropriate name tag required for admission to banquet meal)</p>	
8:00 p.m.	<p>NCRAL officer comments; presentation of NCRAL Service Award</p>	
8:15 p.m.	<p>Collection of name tags; announcement of astrophotography contest winner; Grand Prize Drawing</p>	

<p>8:30 p.m.</p>	<p style="text-align: center;"><i>The 2009 Hubble Space Telescope Servicing Mission and Beyond</i></p> <p style="text-align: center;">Dr. Charles D. (Tony) Keyes Hubble Instrument Scientist Space Telescope Science Institute, Baltimore, MD</p>  <p><i>The Hubble Space Telescope (HST) was deployed in orbit by the astronauts aboard space shuttle Discovery in April 1990. Since that time five return visits have serviced, repaired, and updated the instrumentation aboard HST. The fifth, and presumably final, servicing mission -- known as SM4 -- took place in May 2009 and was the most intense and challenging of them all. The astronauts of space shuttle Atlantis on flight STS-125 installed two new state-of-the-art scientific instruments - the Wide Field Camera 3 and the Cosmic Origins Spectrograph, repaired and restored to service two important workhorse instruments, and replaced a number of critical telescope support assemblies leaving HST in its most scientifically-capable state ever. We will present an overview of the SM4 servicing including its Illinois connection, subsequent on-orbit observatory verification activities, the capabilities of the new instruments, and a look into initial results from the revitalized observatory - all illustrating that, as we approach the completion of twenty years of its mission, HST is poised to have its most scientifically productive years ahead of it.</i></p> <p>About our speaker: Charles D. (Tony) Keyes grew up in nearby Maroa, obtained his B.S. in physics from the University of Illinois, Urbana, and received his Ph.D. in astronomy from the University of California Los Angeles in 1982. After remaining at UCLA as an Adjunct Assistant Professor and Staff Researcher for several years, he moved to the Space Telescope Science Institute in 1991 where he has worked ever since to support Hubble as an Instrument Scientist. Tony has led both the instrument science support team for one of the original science instruments, the Faint Object Spectrograph (FOS), and the development effort for the innovative Cosmic Origins Spectrograph (COS). Following the recent servicing mission to repair HST and install the new science instruments, Tony led the on-orbit instrument verification and calibration program for COS. Tony's areas of scientific research include study of the structure and chemical composition of planetary nebulae and the evolutionary state of a peculiar class of interacting binary stars known as the symbiotic stars.</p>
<p>10:00 p.m.</p>	<p>Informal observing at Sugar Grove Nature Center, Shirley, IL, clear sky prevailing.</p>