

V I E W

PISGAH ASTRONOMICAL RESEARCH INSTITUTE

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Lasker Scanning Lab dedicated at PARI

The Barry Lasker Scanning Laboratory has been established at PARI and will be used to scan and preserve historic astronomical photographs for use by scientists and students from around the world.

Dr. Barry Lasker (1939-1999) was a founding member of the Working Group on Sky Surveys and worked at the Space Telescope Science Institute (STScI), which operates the Hubble Space Telescope. Dr. Lasker led the team that cataloged the night sky so the Hubble Telescope could be accurately guided and oriented for the stunning photographs that have transformed our vision of the universe. A critical element of Dr. Lasker's work was the innovative redesign and construction of two microdensitometers, or glass plate scanners, that have been donated to PARI and are now the centerpiece instruments in the Lasker Lab. Located in PARI's Astronomical Photographic Data Archive, the Lasker Lab will be used to scan collections of astronomical photographs dating back to the mid-1800s so they can be preserved and made available to scholars via the Internet.



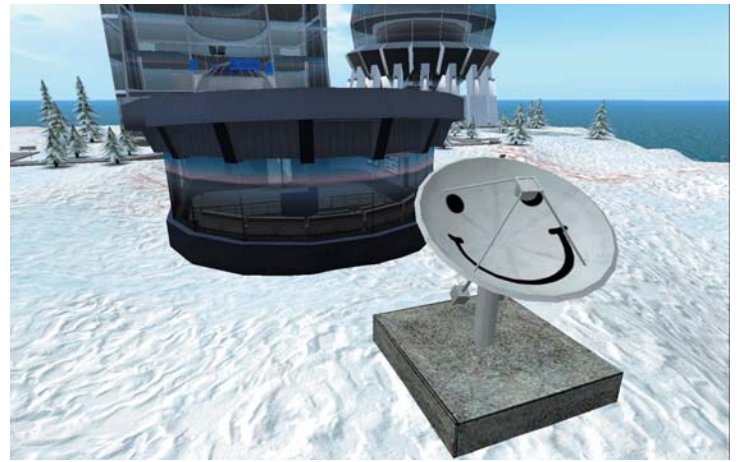
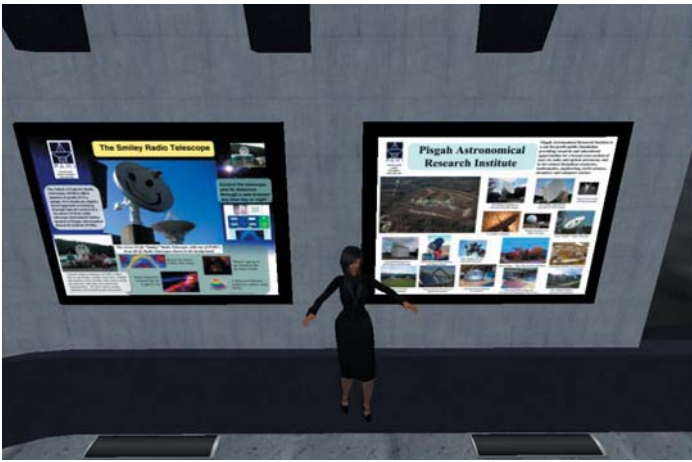
The GAMMA II microdensitometer, one of the finest such instruments in the world, was constructed under the supervision of Barry Lasker and used to scan celestial images that are used to guide the Hubble Space Telescope.



Ray Lucas of the Space Telescope Science Institute holds a portrait of Barry Lasker during the dedication of the Lasker Scanning Laboratory. Also participating in the ceremony were Bob Hawkins of EMC Corporation, PARI President Don Cline and NC State Senator John Snow.

PARI Calendar

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| January 4-8 | AAS Meeting, Long Beach, CA |
| January 9 | Evening at PARI |
| January 24-25 | NCMNS Astronomy Days, Raleigh, NC |
| February 13 | Evening at PARI |
| March 7 | PFI Astronomy Workshop |
| March 13 | Evening at PARI |
| March 19-21 | NSTA Conference, New Orleans, LA |
| March 30 | Space Science Lab Applications Available |



PARI in Second Life

PARI will soon join NASA, NOAA, and other science organizations and universities on the SciLands island in the online 3-D virtual world Second Life. Thanks to a partnership with Pleiades Consulting of Nova Scotia, Canada, a Virtual Astronomy Lab (VAL) will be available to teachers, students and astronomers worldwide. VAL users will have access to a radio observatory where they can operate a virtual Smiley that will display real-time data that is streamed from the 4.6m telescope at PARI.

PARI's StarLab reaches thousands

Since 2001, more than 53,000 visitors have explored the StarLab Portable Planetarium. StarLab has traveled across North Carolina from Fayetteville to Cherokee county as well as nearby South Carolina counties. PARI educators and astronomers have organized more than 2,000 programs, and now offer presentations and programs for all ages on celestial coordinates, the Earth's wind patterns, and constellation stories from around the world.

Christi Whitworth, PARI education director, extends the work of Astronomer Bob Hayward, reaching thousands of students across NC & SC.



Friday of each month, the public is invited to a discussion and presentation about recent events in astronomy, to take a tour of PARI, and when the weather is clear, an outdoor observing session. Past topics have included The Birth of Stars, Buying a First Telescope, Climate Change and Light Pollution. The December program will feature a presentation on An Astronomical Look at the Star of Bethlehem.

PARI Welcomes Bob McMahan to Board of Directors

Dr. Bob McMahan, the founding dean of the Kimmel School and professor of engineering at Western Carolina University, has joined the PARI Board of Directors.



Before coming to Western NC, Dr. McMahan was the senior advisor to the governor of North Carolina for science and technology, and the executive director of the North Carolina Board of Science and Technology. Dr. McMahan has led a number of state initiatives that enhanced the visibility of science, technology, and research for education and economic development.

Evening at PARI

Our monthly Evening at PARI program has become very popular and is achieving record turnout. Attendance has been increasing month after month with our largest audience of 85 people attending the August Evening at PARI that featured singer songwriter Stan Clardy. On the second

Friends of PARI annual meeting

More than 50 people attended the Friends of PARI Annual Meeting, which featured a keynote speech by Dr. Bob McMahan, dean of the Kimmel School of Engineering at Western Carolina University. The evening included a recap of events at PARI during the past year,



refreshments, behind-the-scenes tours, a viewing of PARI's Astronomical Photographic Data Archive and recognition of PARI's distinguished supporters.

The Friends of PARI President's Award was given to Christi Whitworth, PARI education director. Christi joined PARI in July 2006 and now manages PARI's popular StarLab portable planetarium, the Friends of PARI volunteer program and the Evening at PARI. She has taken planetarium presentations to thousands of students in Western North Carolina, hosted school groups touring PARI, developed Homeschool programs, worked on teacher development workshops and helped manage the production of many PARI publications.



Honored as 2008 Distinguished Supporters were: Dr. Charles Alcock, Harvard Smithsonian Center for Astrophysics; Thurburn and Cathie Barker, Friends of PARI volunteers; Mrs. Ardelia Barrier, benefactor; John Boehme, Friend of PARI volunteer; Dr. Wayne Christiansen, PARI board member; Don and Jo Cline, PARI board members; Dr. Joe Daugherty, Friend of PARI volunteer; John Halsey, Friend of PARI volunteer; Bob Hawkins, EMC Corporation; Dr. Bob Hayward, PARI astronomer; Ken Jacobson, PARI board member; Edward Mansi, Cablesight/Strategic Management Associates; Dr. Robert McMahan, dean, Kimmel School of Engineering, Western Carolina University; Dr. Matt Mountain, Space Telescope Science Institute; Dr. Joe and Karen Phillips, Friend of PARI volunteers; Robert Simcoe, Friend of PARI volunteer; Senator John Snow, PARI supporter; D. Carr Thompson, Burroughs Wellcome Fund; and Christian Walls, UNAVCO-PBO.

Friends of PARI is a group of volunteers dedicated to furthering PARI's science education initiatives by contributing program assistance, donations and financial assistance.



Friends of PARI annual meeting (continued)



What's In A Name? Beyond the Solar System

astronomer's corner

Dr. Bob Hayward, Astronomer/Educator

What is the most famous star in the sky? Why, of course, it is Polaris, or the North Star, or the Pole Star, or α Ursa Minoris A, or 1 Ursa Minoris, or HR 424, or HD 8890, or BD +88 8, etc., etc. Wow! As we can see, stars can have a multiplicity of names or designations depending on what catalog they appear in. Let's see if we can dissect these names for Polaris, or the North Star, or.....

Bright stars have common names often originating from the Latin or Arabic. Thus, Polaris comes from the Latin. Of course, this star is famous as the one star that stands nearly above the north pole of the Earth and so is commonly called the Pole Star or the North Star. During the so-called "Dark Ages" in Europe Arabic astronomy flourished and many of the common names for stars come from the Arabic.

As astronomy became more precise, various catalogs were developed by individual astronomers or groups at observatories. While some of these have fallen out of use, new catalogs with specific purposes are still being developed. Some of the more well-known historical catalogs are illustrated in the designations for Polaris above. In 1603 Johann Bayer published his Uranometria in which he used Greek letters coupled with constellation names to designate stars from brightest down. Thus, since Polaris is the brightest star in Ursa Minor (the lesser bear or little dipper), it is α (alpha) Ursa Minoris A. Since it is the brighter component of a double star, it has a letter "A". In 1712 John Flamsteed published his Historia Coelestis Britannica, an earlier version of which, labeled stars within constellations from west to east. Thus, Polaris is 1 Ursa Minoris in this system. Other catalogs labeled stars in various ways and so they have other designations as well: Polaris becomes HR 424 in the Harvard Revised Catalog, HD 8890 in the Henry Draper Catalog and BD +88 8 in the Bonner Durchmusterung. And we could go on and on. In naming other types of objects there are two catalogs commonly in use. The first is the famous Messier Catalog. Charles Messier was a French comet hunter in the 1700's. When one first sees a comet in the outer regions of the Solar System, it appears as a faint fuzzy object moving against the background of the constellations. But there are many other faint fuzzy objects out there that are generally clouds of gas (nebulae), star clusters or external galaxies. To keep himself from mistaking these objects for comets, Messier made a list of them. He did discover a few comets but is most remembered for this list of beautiful celestial objects that he wanted to avoid. These objects are designated by an "M" number. For example, the famous Great Galaxy in Andromeda is commonly known to astronomers simply as M31.

As more and fainter objects were discovered, various catalogs were developed. Most commonly used today is the New General Catalog. Published in 1888 by J. L. E. Dreyer, the NGC expanded on an 1864 General Catalog by Sir John Herschel. Objects in this catalog are designated by an NGC number. Thus, M31 is also NGC 224.

Beyond this there are, of course, many different catalogs developed for specific purposes. These are usually published by individual astronomers or observatory staffs for use by colleagues studying the same type of celestial wonders.

Reference: http://www.iau.org/public_press/themes/naming/

Bob Hayward's column is a regular feature of our newsletter. For additional information, or if you'd like to ask Dr. Bob a question, e-mail askDrBob@pari.edu or, write Dr. Bob at One PARI Dr., Rosman, NC 28772.



Friends of PARI Volunteers

Friends of PARI volunteers Thurburn Barker and Joe Phillips are on campus regularly and have devoted a great deal of their time directing visitor activities, mentoring students, and assisting with multiple projects including the Space Science Lab. Joe Phillips, the outgoing president of Friends of PARI, has been instrumental in bringing volunteers up to speed while becoming docents for our Wednesday tours. Thurburn Barker, who was selected as Friends of PARI president for 2009, is the volunteer director of the Astronomical Photographic Data Archive and has led PARI's team in researching and uncovering data through APDA. Thurburn also leads volunteer activity in the Archive. Both have made a significant contribution to the success of PARI's volunteer programs and the overall visitor experience.



PARI needs your help!

PARI is a public, not-for-profit foundation. Financially, we are dependent upon contributions and grants for our educational and research programs, and for the many operating expenses associated with maintaining the campus and our facilities.

If you have recently contributed, we thank you for your support. If not, please help support PARI and our mission with a contribution. PARI is a 501 c(3) organization and all donations are tax deductible to the full amount allowed by law.

A financial contribution automatically makes you a member of Friends of PARI. Membership levels and benefits include:

Student Member	\$10.	Member level for full time students. E-mail copy of the PARI Newsletter.
Associate Member	\$50.	Receive Quarterly Issues of the PARI Newsletter.
Member	\$100.	All of the above plus a PARI key chain with light.
Family Member	\$200.	For a family of 4, all of the above plus a PARI coffee mug. Use of the PARI Astronomy Library.
Supporter	\$500.	All of the above plus a PARI hat and a PARI lapel pin.
Mentor	\$1,000.	All of the above plus an invitation to one of the quarterly night astronomy sessions at PARI.
Advisor	\$2,000.	All of the above plus use of the Internet controlled remote optical imaging Space Observatory.
Benefactor	\$5,000.	All of the above plus "Guest Astronomer Program." Spend a day working with the astronomy staff, learning how to operate a radio telescope.

All donors at the level of \$5,000 and above will receive recognition on a plaque at PARI.

Please provide the requested information below and mail it with your contribution to:

[Pisgah Astronomical Research Institute](#)
[One PARI Drive](#)
[Rosman, North Carolina 28772](#)

Name: _____

Address: _____

City State Zip _____

email address _____



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The Pisgah Astronomical Research Institute (PARI) is a 501 (c)(3) not-for-profit foundation established in 1998. Located in the Pisgah Forest 30 miles southwest of Asheville, NC, the PARI campus is a dark sky location for astronomy and was selected in 1962 by NASA as the site for one of the first U.S. satellite tracking facilities. Today, the 200 acre campus houses radio and optical telescopes, earth science instruments, 30 buildings, a fulltime staff and all the infrastructure necessary to support STEM (science, technology, engineering and math) education and research. PARI offers educational programs at all levels, from K-12 through post-graduate research. The institute is affiliated with the 16-campus University of North Carolina system through PARSEC, a UNC Center hosted at PARI, and is a member of the NC Grassroots Museum Collaborative. For more information about PARI and its programs, visit www.pari.edu.

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