INSPIRING FUTURE DISCOVERIES

McDonald Observatory
University of Texas Astronomy Program

Join us to make a difference in science education.
American ingenuity has sent astronauts to the Moon, propelled robotic probes to the most distant reaches of the solar system, and unlocked many of the secrets of the universe.

Each of these efforts required a workforce that was well educated in science and mathematics — a workforce whose education supported productivity and the drive to learn, innovate, and discover.

McDonald Observatory and the University of Texas Astronomy Program are working to ensure the U.S. continues this great legacy of excellence and scientific discovery — and in turn strengthen tomorrow’s workforce.

What’s more, we’re looking for Leadership Partners to help us in this important work.

“The United States now stands in immediate danger of losing its edge. Each of the nation’s 16 million high school students must master complex skills and knowledge to be able to compete in the global economy.”

— Craig R. Barrett, Intel chairman
Continued achievement in vital fields such as space exploration, energy development, medicine, bioscience, and engineering will require even greater creativity — and a solid foundation in science and mathematics — for the U.S. to continue its tradition of leadership and innovation.

A report by the National Academy of Sciences, “Rising Above the Gathering Storm,” highlights how K–12 achievement in these subjects has declined in the U.S., threatening our competitiveness in the global market. The report recommends strong and immediate action to bolster science and math education among elementary and secondary students.

Because young people get excited about the stars — and because that excitement can lead to greater engagement with the sciences — McDonald Observatory is in a unique position to help elementary, middle, and high school students aspire to technical careers, often engaging them in the sciences for the first time.

**Rankings**

The Hobby Eberly Telescope at McDonald Observatory is the world’s fourth-largest telescope.

The University of Texas Astronomy Program is among the top 10 in the U.S.
For nearly 30 years, The University of Texas’ McDonald Observatory has made education and public outreach a mainstay of its mission.

From professional-development workshops for teachers to student field experiences and distance learning programs, McDonald Observatory is delivering innovative science instruction aligned with the National Science Education Standards (NSES) and the Texas Essential Knowledge and Skills (TEKS).

Integrating rigorous teaching standards with K–12 education is a feat that the nation’s chief advisors have called one of the most important goals of our time. McDonald Observatory and Texas Astronomy are leading the way to increase science literacy among today’s youth, ensuring the nation’s workforce remains prepared, knowledgeable, and highly skilled. With your help, we can do even more.

“Astronomy is a science of wonder and a key to the knowledge that changes lives. I know: It changed mine.”

— David L. Lambert
Director, McDonald Observatory
Increasing science literacy and improving K–12 education in the U.S. are as important to McDonald Observatory’s mission as is leading the way in astronomical research.

With the support of philanthropists, corporate and private foundations, the National Science Foundation, NASA, and the National Endowment for the Humanities, McDonald Observatory serves thousands of students and hundreds of teachers annually, instilling in them a love of science and the desire to learn more. Programs include:

**Teacher Professional-Development Workshops**
Each year hundreds of teachers come to the Observatory for continuing science education, earning State Board of Education Certification credits. Workshops supported from the Cynthia and George Mitchell Foundation Education Endowment, the Carolyn Keenan and Charlie Gaines Endowment, NASA, NSF, and other donors are enabling educators from rural, underserved areas to attend on scholarship. Workshops model best practices and are aligned with the Science, Technology, Engineering, and Math (STEM) Disciplines, the Texas Essential Knowledge and Skills (TEKS), and National Science Education Standards (NSES).

**Student Field Experiences**
More than 8,000 students a year participate in on-site and distance learning programs that promote inquiry-based physical science, spectroscopy, and optics lessons. Students are exposed to real-life science and engineering careers, as well as cutting-edge technology and engineering projects.
Bilingual Classroom Resources (English/Spanish)
McDonald Observatory’s rich volume of Spanish-language science content is vital to the effort to bolster science literacy in the U.S. Content meets the NSES and TEKS and focuses on low achievement areas in Earth Science. Because learning so often involves the whole family, McDonald Observatory’s bilingual resources and teacher guides are also available to parents who want to work alongside their students to encourage learning.

Online Resources
McDonald Observatory’s rich offering of Web resources, which average 750,000 page visits monthly, are available at no cost to educators, students, and families.

StarDate Online
stardate.org

Native American Star Lore
texasnativeskies.org

What are Astronomers Doing?
mcdonaldobservatory.org/research

Black Holes Encyclopedia
blackholes.stardate.org

Universo Online
radiouniverso.org

Classroom Activities
stardate.org/teachers/activities

Guide to the Solar System
stardate.org/resources/ssguide

Beyond the Solar System
stardate.org/resources/btss

Texas Undergraduate Program
www.as.utexas.edu/astronomy/education/ugradstudies.html
REACHING OUT

The founding vision of the W.J. McDonald Observatory was to “promote the study of astronomical science.” Today, the Observatory also seeks to educate the public about the sciences, as seen through the cosmos. McDonald Observatory gives a fascinating glimpse into astronomy to more than 100,000 visitors a year through its nighttime Star Parties, research telescope tours, and solar viewings. Another large part of McDonald Observatory’s outreach effort is seen through *StarDate* magazine and the StarDate and Universo Radio broadcasts.

**StarDate**

Founded with a grant by the National Science Foundation in 1978, StarDate Radio is the longest-running science radio broadcast in the U.S., with 2.2 million listeners who tune in to learn about astronomy and space science each day.

**Universo**

As the only science education resource of its kind, Universo is hailed as a valuable tool for promoting science literacy in Hispanic communities. The program also serves as a touchstone for McDonald Observatory’s science education programs and outreach to Spanish-speaking students and families in the U.S.

**Hispanic Heritage Month Education**

Building on the success of Universo, McDonald Observatory is addressing the achievement gap among the nation’s K–12 Latino students by developing K–12 Spanish-language resources about astronomy. Hispanic Heritage Education Month is a multi-media program that combines radio, print, and online resources to reach millions. To date, only 2 percent of the nation’s scientists and engineers are Latino. By celebrating the accomplishments of Hispanics in astronomy and space science, Spanish-speaking students are encouraged to reach for the stars.

_Students learn about the Sun’s relative motion in the sky as they experiment with shadows._
LEadership Levels

McDonald Observatory Leadership Partners will shape the future of Texas and the U.S. by sponsoring educational programs that make a difference for today’s youth:

$15,000 Student Field Experiences
Brings 4,000 students to the Observatory for on-site and videoconference astronomy lessons

$30,000 Teacher Professional-Development Workshops
Trains 30 teachers at the Observatory or 200 teachers via videoconference

$50,000 Hispanic Heritage Month Education
Annual sponsorship for one month of radio programming, print, and online components, reaching one million listeners daily. Creates culturally-relevant programming during the period September 15–October 15, with distribution to K–12 classrooms.

$75,000 Bilingual Classroom Science Resources
Bilingual classroom materials are made available to more than 800 teachers and several thousand students each year via the Internet, videoconferencing, and on site.

$100K to $3 Million Science Education Endowment
McDonald Observatory invests $2.2 million a year educating students and teachers in science and astronomy. A Science Education Endowment ensures the Observatory’s many K–12 educational programs and resources will be given a stable base of funding from which they may expand and grow. Naming opportunities exist.

McDonald Observatory Education Endowments
The Cynthia and George Mitchell Foundation Education Endowment
The Carolyn Keenan and Charlie Gaines Endowment for McDonald Observatory Education and Outreach
State governments, industries, and institutions of higher education must work together to help students develop skills, knowledge, and the inspiration to apply those tools to solving problems and improving American competitiveness.

For decades, McDonald Observatory and the Texas Astronomy Program have led the way in promoting science education among thousands of students and teachers. As the nation’s need for improved science and math education increases, McDonald Observatory is well positioned to fill the gap in Texas and the nation.

To become a partner in building a technically skilled workforce for our future, please contact:

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“The Texas economy continues to capture the national spotlight for its strong growth and job creation. ... In order to maintain our competitive advantage we must focus on critical areas in the workforce. ... We need to reach out to our students at an early age and involve them in the fields of math and science.”

— Rick Perry
Governor of Texas
ABOUT McDONALD OBSERVATORY
A unit of The University of Texas at Austin, McDonald Observatory is one of the world’s leading centers for astronomical research. Located in the Davis Mountains, McDonald boasts the darkest skies of any major observatory in the continental United States. Complementing the research mission, McDonald Observatory’s Education and Outreach Office produces award-winning, standards-based educational resources. The Frank N. Bash Visitors Center is a hub for informal K–12 science education, where teachers, students, and 100,000 other visitors annually come to learn about the cosmos. Contributions to McDonald Observatory help support the improvement of science education nationwide.