Feature image from this year's BOV Winter Meeting. Credit: Mahan Mirza Khanlari.

Thank You for Another Great Meeting

The Department of Astronomy and McDonald Observatory welcomed the Board of Visitors to The University of Texas at Austin campus on March 6-7 for its annual winter meeting. Over the course of two days, 130 BOV members joined science leaders, faculty, and students for an exploration of the cutting-edge research currently underway at UT Austin and the new windows it is opening to our universe.

The meeting started on Friday evening with a reception, dinner, and awards ceremony at the Texas Science & Natural History Museum. On Saturday, participants convened in San Jacinto Hall for program updates and science talks.

This year's talks discussed:

- How astronomers use chemistry to understand the evolution of far-off galaxies
- The violent end of stars around black holes
- Curious galaxies present at the dawn of time, known as Little Red Dots
- How chemical cartography can reveal the shape, composition, and evolution of the Milky Way

Our thanks to all who were able to attend this year's event. It's always a pleasure to connect and to share the pioneering work made possible by the Board of Visitors' generous support.

Membership Meeting & Opening Remarks

Membership Meeting

The BOV voted in three new members: Abbey and Corwin Ames, Grizelda and Tim Black, and Julia Kassay. Welcome!

The BOV also approved bylaw changes intended to increase the enrollment of younger members, formalize previously unwritten rules, and provide flexibility to the board when continuing its mission. This is the first revision to the bylaws since 2017.

Opening Remarks

Marty Heaner, BOV Chair

- Welcome to the 2026 winter meeting.
- Introduction to proposed bylaw changes (see Membership Meeting to learn more).
- Welcome to this year's new Board of Visitors members.

David Vanden Bout, College of Natural Sciences Dean

- Campus Master Plan:
  - Vanden Bout is heading a new campus master planning effort for the University.
  - It will transform UT Austin's physical footprint, including the addition of a hospital in north Austin and new science buildings on the main campus.
  - The plan is still in discussion but is expected to move forward.
- Our national government has prioritized space exploration as a strategic objective. In alignment, we are touting the power of McDonald Observatory as a source of inspiration and discovery. This includes an upcoming ad campaign in Washington DC's Union Station.
- This year's Texas Science Festival was the most attended to date. The event connects the public with the wide variety of research underway at UT Austin.
- This fall, the University is launching a new School of Computing within the College of Natural Sciences. It will unite strengths in computer, data, and information science.

Right: The 2026 BOV Winter Meeting took place on the UT Austin campus. Credit: UT Austin.

Opening Remarks

Karl Gebhardt. Credit: Cara Arlauskas, McDonald Observatory.

Karl Gebhardt, Astronomy Department Chair

- As powerful new instruments come online, we are positioned to take advantage of their substantial capabilities. This is thanks, in part, to the leadership roles our astronomers have stepped into on these projects.
- Faculty highlights:
  - Dan Jaffe is the new president of the Giant Magellan Telescope Organization.
  - Taft Armandroff is the new chair of the Giant Magellan Telescope Board of Directors.
  - Steven Finkelstein is chair of the Giant Magellan Telescope's Science Advisory Council.
  - Mike Montgomery is director of the Wootton Center for Astrophysical Plasma Properties.
  - Keith Hawkins is the new director of the Sloan Digital Sky Survey.
  - Caroline Morley studies the atmospheres of exoplanets in search of the signatures for life.
  - John Chisholm has created a new model for how globular clusters form. This may revolutionize our understanding of black hole development.
- We now have 128 declared undergraduate astronomy majors. Through the Harlan J. Smith Scholars program, they can get first-hand experience using McDonald Observatory's research telescopes. So far, seven groups of students have travelled to the Observatory through this program. It has been made possible thanks to the support of individual BOV members over the past year.
- Hobby-Eberly Telescope Dark Energy Experiment:
  - A recent press release shares how astronomers have used HETDEX data to map faint galaxies and other structures in the early universe.
  - Stay tuned for additional news from HETDEX, including its highly anticipated findings on the expansion rate of the early universe.

Opening Remarks

Taft Armandroff, McDonald Observatory Director

- Notable recent visitors:
  - UT Austin President Jim Davis
  - US Representative Henry Cuellar (TX 28th congressional district)
  - UT Athletics Director Chris Del Conte
- Giant Magellan Telescope:
  - Dan Jaffe recently became the new GMTO president. He is well qualified for the position, having developed instrumentation for the telescope and acted as vice president for research at UT Austin for nearly 10 years.
  - Fabrication of the telescope continues, with the azimuthal turntable currently under construction.
- The 2026 Spanish Total Solar Eclipse travel package will allow BOV members to experience this rare celestial event while aboard a cloud-evading yacht. The deadline to sign up is March 31. Please contact Christina Taliaferro of Royal Adventures or Anna Boxall if you are interested.

Special tour of the Harry Ransom Center's holdings covering the history of astronomy. Pieces included a copy of Nicolaus Copernicus's De Revolutionibus Orbium Coelestium from 1543 (right), works from the golden age of space fiction (bottom right), and more. Credit: Emily Howard, McDonald Observatory.

Science Talks

A Race Against the Clock: How the Earliest Galaxies Became Element-Rich So Quickly

Danielle Berg, Assistant Professor

Galaxies grow over time through star formation, with stars forging new elements in their cores. Because these elements form on different time scales and under different conditions, astronomers can use a galaxy's chemistry to calculate its age and evolution. In her talk, Berg discussed how observations from the James Webb Space Telescope reveal that galaxies present in the early universe appear more chemically mature than established models would predict. In particular, they contain far more nitrogen than expected for such young systems.

Berg explained how this surprising result points to extreme conditions in the early universe that allowed galaxies to evolve more quickly than previously thought. By studying these distant systems, as well as those nearby, astronomers are building a clearer picture of how galaxies and elements formed over time.

Speakers for this year's Science Talks. Left to right: Ph.D. student Hollis Akins, Assistant Professor Danielle Berg, Postdoctoral Fellow Megan Newsome, and Associate Professor Keith Hawkins. Credit: Emily Howard, McDonald Observatory.

Science Talks

Supermassive Black Hole Neighborhoods: Mapping Dust, Gas, and Rogue Stars in the Centers of Galaxies

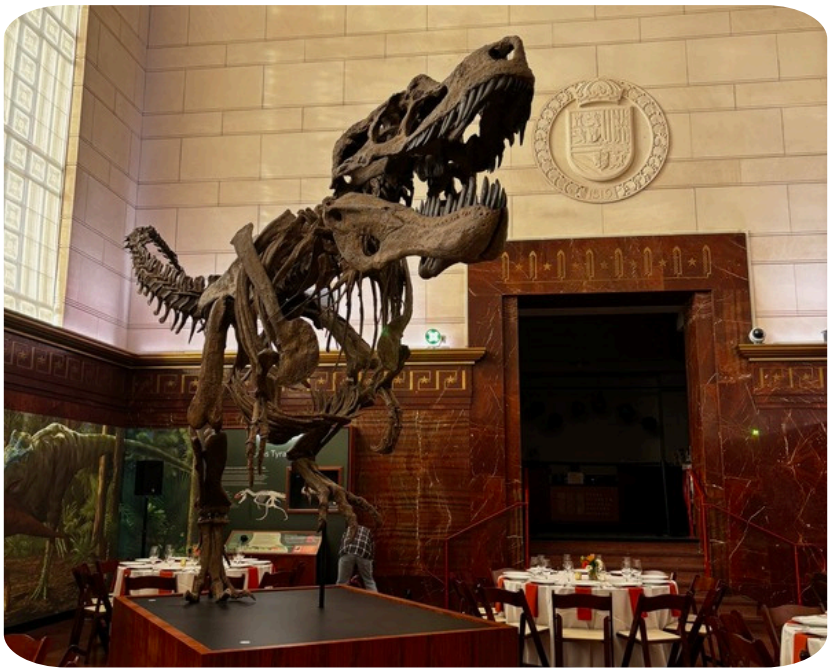
Megan Newsome, Postdoctoral Fellow

At the center of most galaxies lies a supermassive black hole, usually hidden from view by immense clouds of dust, debris, and gas. Newsome's work focuses on rare moments when those regions briefly reveal themselves: when a star wanders too close to a black hole and is torn apart by its powerful gravitational forces.

These short-lived events (often occurring over the course of days or months) create a dramatic flare, illuminating the otherwise obscured centers of galaxies. Newsome described how observations of these flares from McDonald Observatory's Hobby-Eberly Telescope are helping her and others understand the chemistry of stars and galaxies, the dense clouds of debris surrounding black holes, and the conditions that lead to the death of these wayward stars.

Right: Opening reception in the Texas Science & Natural History Museum's Paleontology Gallery. Credit: Cara Arlauskas, McDonald Observatory.

Below: The Great Hall of the Texas Science & Natural History Museum, where dinner was held on Friday evening. Credit: Cara Arlauskas, McDonald Observatory.



Science Talks

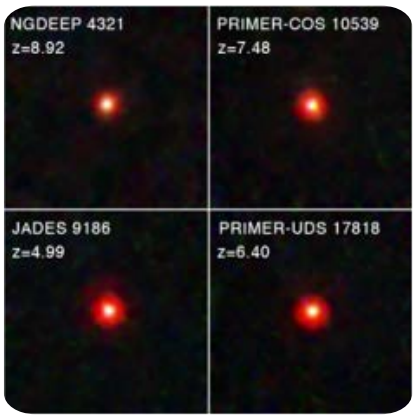
The Nature of JWST's "Little Red Dots": Mysterious Objects Harboring Monstrous Black Holes in the Early Universe

Hollis Akins, Ph.D. Student

Among the most unexpected discoveries from the James Webb Space Telescope is a population of compact, luminous galaxies known as Little Red Dots. When they were first observed, some suggested that cosmology was "broken." If all of the light coming from these objects was from stars, it implied that some galaxies had grown so big, so fast, that theories could not account for them.

Akins shared how a growing body of evidence now suggests that many Little Red Dots are early galaxies hosting supermassive black holes at their cores. But more research is needed. To better understand these galaxies, Akins is combing through JWST data and documenting their locations. This will allow others to conduct targeted follow-up observations, gaining insight on this unique class of galaxies and how they came to be.

Left: Artist representation of Little Red Dot CAPERS-LRD-z9. Present 500 million years after the Big Bang, it is home to the earliest confirmed black hole (found by UT Austin postdoc Anthony Taylor). The supermassive black hole at its center is believed to be surrounded by a thick cloud of gas. Credit: Erik Zumalt, UT Austin.



Right: Little Red Dots. These mysterious objects emerge in large numbers around 600 million years after the Big Bang and undergo a rapid decline in quantity around 1.5 billion years after the Big Bang. Credit: NASA, ESA, CSA, STScI, Dale Kocevski (Colby College).

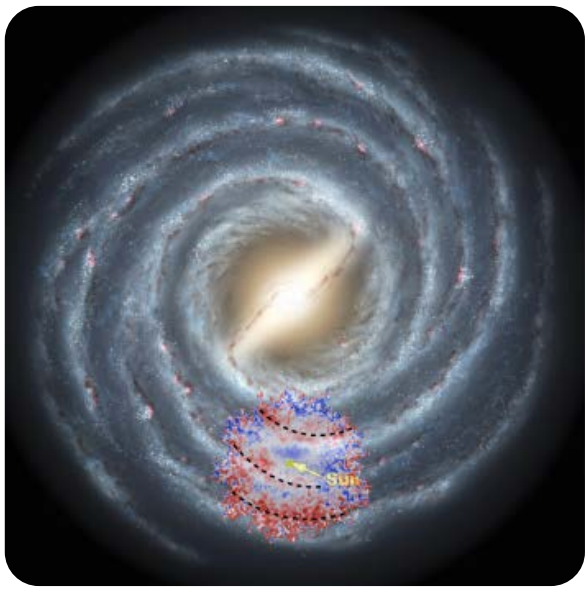
Science Discussion Groups

The Great Lecture: Galactic Archaeology — The History of Our Cosmic Home

Keith Hawkins, Associate Professor

Data from the Gaia space satellite, coupled with a technique called "chemical cartography," enables Hawkins to identify the location and properties of celestial objects based on their chemical composition. Applying this approach, he has charted the distribution of metals (any element heavier than hydrogen or helium) in our Milky Way galaxy. Because metals are forged in the interiors of stars, finding these elements allows Hawkins to identify the density and age of stellar populations. His work confirms that our galaxy is, indeed, spiral-shaped and that its oldest region is located towards the galactic center.

As lead of the Sloan Digital Sky Survey, Hawkins looks forward to using chemical cartography to map portions of the Milky Way on the far side of its central black hole, revealing the shape of this region's own spiral arms.



Watch the 2026 Great Lecture in Astronomy

Left: Hawkins's model of the Milky Way's nearby arms superimposed over a NASA illustration of the galaxy. Credit: K. Hawkins (UT Austin), NASA/JPL-Caltech/R. Hurt (SSC/Caltech).

Below: Hawkins discussing the chemistry of the Milky Way galaxy as part of this year's Great Lecture in Astronomy. Credit: Emily Howard, McDonald Observatory.

Save the Date
Board of Visitors
Summer Meeting

July 10-11, 2026
McDonald Observatory in West Texas

We look forward to seeing you again at the Board of Visitors Summer Meeting. It will take place July 10-11 at McDonald Observatory in Fort Davis, Texas.

Event details will be posted at sites.utexas.edu/bov/meetings as they become available.

Image credit: Ethan Tweedie Photography