**Location:** Safford/Thatcher AZ environs & Magdalena NM for Sunday option  
**Maximum:** 15 people

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**Earth & Sky:**

**The Hanging Canals & Mount Graham Telescopes**

*An engineer’s dream trip! Explore these wonders in a 2- to 3-day event near Safford, AZ.*

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**Day 1 Friday May 15: Hanging Canals of the Safford Basin**

We will meet at a designated spot in Thatcher AZ in the morning, and join engineer and canal surveyor Don Lancaster for an understanding of these newly-discovered Mogollan-, Hohokam-, Mimbres- and Salado-affiliated canal networks in the bajadas of the Safford Basin landscape. We will caravan with your SUV or AWD vehicle to several locations and take easy hikes to see some of these distinct water-directing structures.

Using satellite and topographic mapping, along with pedestrian surveys, Don and archaeologist James Neely located an extensive network of hanging canals. Portions of this canal system were purposely cut into the sides of some of the steep mesas, and traverse the erratic topography to bring water to field areas below.

Uniquely constructed and remarkably engineered without leveling instruments beyond the canals themselves, these well-preserved canals are distinct from, and clearly rival, both the local riverine canals and those of the Phoenix Basin.

Unlike the Hohokam canal system, these obtain water directly from the Pinaleno Mountains runoff and artesian springs, rather than from rivers. They also cross erratic and rocky terrain rather than a more level riverine floodplain, and many perch or hang on the sheer sides of the mesas they were cut from.

Lithic tools and pottery have been found nearby. Reasons for the engineering and construction of these canals are still unknown. Over 100 canal study areas are currently active. The total length of this canal system is exceeds 150 miles. Some may date as early as 800 AD, but most originated from @1250 until 1450. For additional info [https://www.tinaja.com/preprint-bcsb1.pdf](https://www.tinaja.com/preprint-bcsb1.pdf)

Lunch is in Pima.
After lunch: Eastern Arizona College, the Mills Collection, Thatcher AZ.
This is an extensive collection of significant Native pottery and artifacts, donated by two avocational archaeologists, Jack and Vera Mills. It showcases many items from the Salado Period (1250 to 1450 AD), a culture which inhabited this Safford Basin region. People from the Ancestral Puebloan, Hohokam, Mogollan also lived, traded or passed through this area.

Dinner is in Safford.

After dinner: Introduction to astronomy and stargazing, Safford, AZ.
We will get a brief orientation to the night sky from amateur astronomer Paul Schulz, and peer through the 20” telescope at Eastern Arizona College’s Discovery Park Campus. This will set the stage for the adventure at the Mt. Graham Observatory the next day.

Day 2 Saturday May 16: Mt. Graham International Observatory
Breakfast on your own. Bring your lunch to eat on Mt. Graham.

We will meet in Safford in the morning, and board a bus for the 40 mile journey up Mt. Graham, experiencing the changing geology and ecology during the 7,500 foot ascent.

Summiting at 10,500’ elevation, we will visit each of the three instruments—the Vatican Advanced Technology Telescope, the Heinrich Hertz Submillimeter Radio Telescope, and the Large Binocular Telescope, the largest telescope in the world. Docents will take us inside the instruments and explain their use and capacity.

Attendance is limited, so the tour is personal, with plenty of attention to questions and specific preferences. There are restrooms and oxygen, if needed.

The Discovery Park Campus in Safford coordinates the tour, which lasts all day. There are certain health restrictions which they have in place. Please contact Dale Bellisfield for further details 201-759-5134.
Day 3 Sunday May 17, optional: Very Large Array Radio Astronomy Observatory

Breakfast on your own.

From Safford, we will caravan for the 4 hour drive to Magdalena, NM for lunch.

After lunch, we will visit the Karl G. Jansky Very Large Array, a radio astronomy observatory. The observatory consists of 28 radio telescopes, each 82 feet across, which can be arranged in several configurations. These instruments work together as a single instrument to provide higher resolution than any other type of telescope. Its multi-purpose design allows investigation of many astronomical objects, including quasars, pulsars, black holes, etc.

At the site, we'll take a self-guided walking tour, which will include the Radio Sundial, the Whisper Dish Gallery, the Radio Astronomy Gallery, and then see the base of one of the 230-ton working antenna. From there, we go to the observation deck for the big view, and return to the Visitor Center.

Note: All electronic devices must be in airplane mode and powered off at this observatory. Turn them on briefly for photos (still in airplane mode), then turn them back off again.

Dinner on your own.

Return home (5 ½ hours to Camp Verde), or stay overnight and continue your adventure Monday at the Bosque de Apache National Wildlife Refuge, about 70 miles from the Large Array, or Socorro, about 50 miles away.

We suggest lodging in Safford for Friday and Saturday, Magdalena Sunday. Best rates may be available via Expedia.com, Hotels.com, Orbitz.com or Reservations.com, rather than directly with the facility. Safford: Safford Inn 928-428-0035, Best Western Desert Inn 928-428-0521 Magdalena: High Country Lodge 575-854-2062, Western Motel & RV Park 575-418-7278