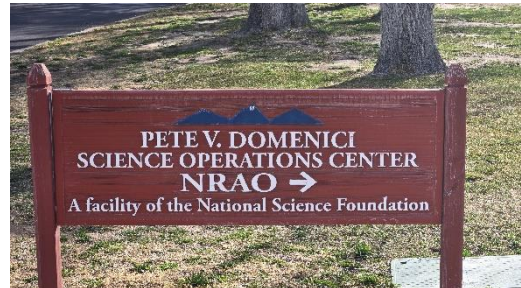


# The DSES was Represented at the 2025 Western Conference of the Society of Amateur Radio Astronomers

by Bill Miller, DSES VP

## Overview and Event Summary:

On March 14<sup>th</sup> through the 16<sup>th</sup>, Bill Miller represented DSES at the 2025 Society of Amateur Radio Astronomers Western Conference. The event was held at the NRAO Science Operations Center on the campus of the New Mexico Institute of Mining and Technology in Socorro, New Mexico. Papers by society members were presented on Friday and Saturday. A tour of the Very Large Array of radio telescopes (VLA) was organized for Sunday, March 16<sup>th</sup>.



Accommodations were made at the Socorro Best Western Hotel. Evening activities included dinner out at several local restaurants and bars, giving attendees more time to socialize and further discuss their knowledge of the art and science of amateur radio astronomy.

The conference was a great experience, and I would encourage all of our members to write papers and presentations for the SARA conference events or at least attend and gain knowledge from the other presenters. The 2025 SARA Eastern Conference and Global Radio Astronomy Symposium will be held at the Green Bank Observatory, West Virginia, 7-11 June 2025. It will also be presented on Zoom.

## Conference Schedule and Attendance:

Thirteen individual papers and presentations on various subjects were presented over the two day conference event. See the list here:

<https://www.dropbox.com/scl/fi/ldrt4vd526lhtsjxfwq4/2025-SARA-Western-Conference-Schedule.pdf?rlkey=pp05yddode4tx6h6bola9dhfr&dl=0>



The conference was also held in a virtual Zoom call with 23 participants online as well as 15 more in physical attendance.

### **DSES Presentation:**

On Saturday afternoon, Bill Miller gave a presentation on the Deep Space Exploration Society's facilities and activities. The presentation lasted about an hour with questions and ran into overtime due to several issues with the conference room projection and Zoom conferencing system.



This is the SARA Zoom recording of the presentation:

[https://www.youtube.com/watch?v=CPBcDKdOGLs&list=PLCEbOD5\\_znsIB33p\\_InLLonYlcorleIZU&index=6](https://www.youtube.com/watch?v=CPBcDKdOGLs&list=PLCEbOD5_znsIB33p_InLLonYlcorleIZU&index=6)

The presentation slide deck can be found here:

<https://www.dropbox.com/scl/fi/62onxb0o1ote368il7604/2025-DSES-Site-for-SARA-Conference-edit.pdf?rlkey=vqz48qc8e6ixg4d7n5u3m7tfo&dl=0>

### **DSES Presentation Abstract:**

On the Eastern plains of Colorado is a unique facility for amateur radio astronomers, and amateur radio enthusiasts. The Paul Plishner Radio Astronomy and Science Center where the centerpiece is an 18-meter (60-foot) radio telescope is owned and operated by the Deep Space Exploration Society (DSES).

This presentation will cover the history of the telescope and give conference attendees a photographic tour of the site while highlighting the unique resources that the DSES offers its members and STEM outreach to interested students of all ages. This will include a visual tour of our brand-new operations center building funded by a grant from the ARDC. The presentation will cover our many radio and radio astronomy experiments including our remote amateur radio station facility and Earth-Moon-Earth (EME or “Moon Bounce”) operations and contests as well as our latest endeavor to try for Earth-Venus-Earth (EVE) communication.



## VLA Tour:

On Saturday afternoon March 15, Jason Burnfield, the coordinator and NRAO Engineer assigned to the conference, provided a tour of the NRAO Operations Center engineering labs. On Sunday March 16, Jason provided the onsite tour of the Very Large Array starting at the VLA visitors center about 50 miles west of Socorro. Jason was great, showing the conference attendees everything that he could of the facility, and explaining all of the details. Jason used his own time to host us and



did an excellent job. Unfortunately, it was a Sunday with only a skeleton crew at the visitor center, so we couldn't tour the control room, the Low Frequency Array or the maintenance facilities that I was fortunate enough to see on a previous trip 7 years earlier. The conference that I intended to attend scheduled for 2020 was cancelled at the onset of the Covid-19 pandemic.

One new addition to the compound was the first prototype of the next generation Very Large Array (ngVLA) radio Telescope. The old VLA has 27 independent twenty-five meter radio telescopes in a moveable Y configuration that has four set array positions with the longest baseline configuration at 13 miles from the center.

From Google Ai: "The ngVLA (Next-Generation Very Large Array) is a planned upgrade to the current Jansky Very Large Array (VLA), offering significantly improved sensitivity, resolution, and uv coverage, operating at frequencies from 1.2 to 116 GHz, while the VLA operates at 1 to 50 GHz." Other web reference from Harvard.edu; "The ngVLA will consist of three arrays working in parallel: i) a Main Array of 214 x 18-m antennas clustered at the current VLA site but spread



within and beyond New Mexico that will provide baselines of 0.01-1000 km; ii) a Short Baseline Array of 19 x 6-m antennas located at the Main Array centre (+ 4 MA antennas with total-power capabilities) for high sensitivity to low surface brightness emission, and; iii) a Long Baseline Array of 30 x 18-m antennas located across the U.S. from Hawaii to the Virgin Islands, as well as western Canada, for extremely high resolution imaging with a maximum  $\sim 8,800$  km baseline.”