

2024 Deep Space Exploration Society Open House Final Report by W.K.Miller, DSES VP, KCOFHN

For the past nine years, except for one year during the pandemic, **the Deep Space Exploration Society** has hosted an open house at the Paul Plishner Radio and Space Sciences Center near Haswell, Colorado. This year, on Oct. 5th, we held a special open house and grand opening of our new operation center building, made possible by a grant from the (ARDC) Amateur Radio Digital Communications Foundation.

Preparation for the open house had been going on for some time, but a final push was made in the last week to get everything ready to host the public and members of the amateur radio community. The open house is always a catalyst for finishing many of the site projects conceived during the year. Local volunteers helped us with some of the preparations. Avraham Fasick from Crowley filled the cistern with water, and Louis Brown from Eads mowed the brush and weeds in the parking area and along the lane. Michelle Nelson, the mayor of Haswell and her family brought plenty of tables and chairs from the Haswell Community Center and provided an excellent benefit BBQ lunch for all the visitors. We can't thank them enough for this local volunteer work.

Member Involvement: Many local DSES members came out in the weeks before and many more on Thursday and Friday before the event to do the final housekeeping and clean up around the building and the site in preparation for the public event. A BIG THANK YOU to all who showed up to help in making this 9th Annual Open House a great success. We may have missed some working quietly behind the scenes but workers include: Bob Haggart NOCTV and Myron Babcock KL7YY who replaced the steps and entry platform on the Communications Trailer. Paul Sobon NOOT and Doug Leber KF0PCD who did a deep cleaning and organization of the bunker. Ray Uberecken AAOL, RC Teal AI0RC, Bill Miller KCOFHN, and Roger Oakey W3MIX pulled wire and coax and hooked up the new operations center console to the dish in the last two weeks leading up to the event. Our Automation Engineers: Glenn Davis, and Lewis Putman made a special trip on Friday to check out the dish control system to ensure it would work flawlessly on Saturday. Bill Miller, who had been working on the final details of the building, plumbing, and wiring for weeks finished the activation of the heat pumps to give everyone a comfortable inside 70-degree environment, while the outside temperature reached over 95 degrees. Ray Uberecken brought his small tractor mower and finished mowing areas around the building, parking lot, and dish. Roger Oakey used his truck to drag railroad ties up and down the lane to level it. Roger and Rick Wildman KEOGVU hauled and placed railroad ties as curbing in front of the new building and next to the guy wire support posts to prevent accidental damage by vehicles. Paul Sobon, RC Teal, LD Steiner W0XLD, Derek Brown KOATV, Doug Leber, Ray Uberecken and others assisted in the lowering of the Cushcraft A-3 tri-bander and repairing the coax to get it back on the air.



Rick Wildman KEOGVU and Kathy Wildman AE0UX, Bruce Kirkpatrick KE0VR, Jim Burnett WBOGMR, Roger, Bill Thomas WT0DX, and Doug Leber cleaned the windows inside and out, cleaned the floors, removed the trash and window AC units, assembled the new shelves in both the garage and radio room,

and cleared and cleaned all the rooms including kitchen and bathroom. Rick KOGD and Elaine KOARR Hambly who generously stored our equipment in their barn for the last year while the building was being finished and transported to the site when ready. Mike Parsons, KOFYR's YouTube video blog on our 2024 open house linked at the end of this report.

4-H Benefit BBQ Lunch



On Friday Michelle Nelson the mayor of Haswell, Colorado and her family brought supplies, tables and chairs for the BBQ lunch benefitting the local 4-H club. She also had the 4-H members come out and staff our entry gate and get names and head count for each car that entered the site. During



the event, they sold over ninety excellent pulled pork BBQ lunches with all the fixings. The crowd loved this, and it was a great team effort of the 4-H and DSES organizations playing off each other while both benefitted from the event.

On Friday, Bill Miller and RC Teal activated and tested the mini split heat pump AC units to make sure we could stay cool the next day of the event when temperatures reached 95 deg. A local sanitation company was contracted to deliver three portable outhouses in addition to our new building bathroom to accommodate the crowd. The 28 MHz to 1296 MHz 375 watt EME transverter and tracking SW were tested and signals were reflected from the moon.



Several DSES members brought their travel trailers and motor homes and plugged in for the event while others stayed in the nearest hotel in Eads, Colorado.

On Saturday, the first guests arrived at about the same time as moonrise, around 10 AM, and we started operating EME shortly thereafter.

Site Tours: During the open house, many of our core members familiar with the site assisted visitors and operated the dish control consol in the new operations center and the amateur radio station in the



underground bunker as well as gave tours of the whole facility. Visitors were impressed by the facilities, especially the new building and underground bunker.



After seeing the bunker and the old communications trailer, they understood why we needed a new building.

Amateur Radio Demos: LD Steiner, Bill Thomas, and others operated our KOPRT club station, an all HF band, full power, all mode, remote internet-controlled Amateur radio Station in the bunker on SSB.



There was an impressive pile-up on 10 meters, with many east coast stations reporting our signal at 5-9 +20 over. This was a fantastic public demonstration of amateur radio as they toured through the bunker and heard many stations strongly coming back to us. We plan to move this radio station to the building as soon as we get the towers erected.

EME Demonstration: In the operations building, Roger, RC, Ray, Bill, and others demonstrated EME or moon bounce on SSB at 1296 MHz, using the 60 ft dish, an ICOM IC705 and 375 Watt Transverter at the dish feed antenna. Our system can track the moon, planets, and all celestial coordinates in fine 16-bit resolution. We tracked the moon all day and for an hour after sunset to moonset. We had a number of young adults and children who got to hear their voices travel at the speed of light with only a 2.5-second delayed echo from the moon. When this was explained to them, they were awestruck. In the synergy of the event, a fellow ham guest, Lynn Skinner, KC0YQF, after experiencing this, took over some of the demonstrations and wanted to show all the kids in the room. They all lit up and followed her instructions to talk off the moon using the organization's call sign, KOPRT.



https://www.dropbox.com/scl/fi/3no1cw6ksgws9s5vn54cz/20241005_105300.mp4?rlkey=bkdbmwkf80exbh2lac269nbto&dl=0

https://www.dropbox.com/scl/fi/2flytxy5s7j2oxeckdlos/20241005_105723.mp4?rlkey=lwe06hwcr7u8u3h2026wd01ek&dl=0



A high school teacher from the nearby town of Eads, Colorado brought a school vehicle out with about six high school students from his science class. They were instructed on the moon bounce process by Roger Oakey.



There were several latecomers to the event who just got in before closing down the dish and we demonstrated EME to them before



the moon set. There were several telescopes set up for optical viewing, but the wind came up and we had to shut down the dish and the telescopes.

One little boy got there with his family just in time to hear his echo off the moon and I think he will never forget it!

<https://www.dropbox.com/scl/fi/py0gjz9ec4jh4gqrvi9a7/Video-Oct-05-2024-1-38-57-PM.mov?rlkey=ea68ucgm6uui1fv0aqv85u9ox&dl=0>

In closing, the Open House was a complete success. We had over one hundred visitors, the BBQ made a profit for the 4-H benefit, we got to show off our new operations center building and many local folks got to experience Amateur Radio and EME for the first time. They got to see what we are all about and the event generated a lot of local goodwill. We also hope that we inspired a number of children and young people as well as adults in S.T.E.M. and radio science.

A big thank you to those who stayed until Sunday morning to help clean up the building and site after the event including: Myron Babcock, DSES President, who not only worked to the very end but cooked a great pancake breakfast for all who stayed over, Bill Miller, DSES VP, who worked until closing and got a few more small repairs and projects done, Paul Sobon VP of Marketing, Bill Thomas Webmaster, Derek Brown, LD Steiner, Kathy Wildman, Rick Wildman, Roger Oakey, and Jim Burnett. My apologies if I failed to acknowledge anyone who made this open house great.

**Our Special Thanks for the Generous Grant from
The (ARDC) Amateur Radio Digital Communications Foundation
Which made the operations building possible.**

And to these vendors and contractors for their valuable work:

- Kyle Barnett, Barnett Construction, Eads, Co. Groundwork, Cistern, Septic and Concrete Finishing
- All Rite Paving & Redi-Mix Inc., La Junta, Co.
- Eagle Carports and Buildings of Clovis, New Mexico, Metal Building Shell
- Revival Restorations Contractor, Josh Lofton and Crew, of La Junta, Co. Interior Build-out and Finish
- Taylor Plumping, Lamar, Co.
- Colorado Cornered Seamless Gutters, Wiley, CO.
- SprayWorx, Inc.– Superior Foam Insulation, Pueblo West, Co.
- H&H Electric, Eads, Co., Cory Miller Electrician
- Raynor Overhead Door, Lamar, Co
- Rider Metals, Wiley, CO.
- InfoAge Science and History Museums, Wall Township, New Jersey, Principal Eng. Martin Flynn, Donation of equipment racks and network equipment.
- Paul Sobon NOOT for donation of the All Band, All mode, Full Power, Remote Controlled Amateur radio station.
- Southeast Colorado Power Association, Utility Power Hookup
- EsTech Internet Service Sponsored By BLT, Bottom Line Technologies, Columbia, MD
- Engineering Design Services & AMD Training

- Louis Brown, Eads, Co. Volunteer Brush Mowing and Tractor Work
- Avraham Fasick, Crowley, Co. Volunteer Water Delivery

For additional photos, and videos see:

<https://www.dropbox.com/scl/fo/bm4a023rvncfozfxfoyce/AHIVox3GYRftquigDdpXEK4?rlkey=i83p3bfq76a90mg9975cplmjk&dl=0>

Also See Ham-Solo, Mike Parsons, KOFYR's YouTube video on our 2024 open house.

<https://www.youtube.com/watch?v=I9II8LBS75E>