

## 2017-07-10 DSES Technical Planning Meeting Minutes

**Location and Time:** The DSES Annual Members Meeting was held on **Monday July 10 at 5:30PM MST** at the Cumulus Media conference room at 6805 Corporate Dr. # 130, Colorado Springs, CO 80919.

**Attendance:** Bob Sayers, Gary Agranat, Dr. Richard Russel, Ed Corn, Steve Plock, Dave Molter, Bill Miller, Ray Uberecken, Floyd Glick, and Myron Babcock

**Attending Remote:** None joined by Team Viewer remotely.

**As usual if I have omitted anyone or miss represented anyone or anything here please feel free to correct me.**

### Agenda:

1. Next Trip , Sunday, July 23<sup>rd</sup>.
2. Last Trip, Sunday July 2<sup>nd</sup>. Report by Ed Corn and Steve Plock

See the accompanying : <http://dses.science/dses-plishner-work-trip-report-july-02-2017>

3. Last month I was not in town for the technical meeting and so produced no minutes and I am behind on posting the minutes from several previous meetings but will post them to the <http://dses.science/> website. Thanks to Gary Agranat for posting trip reports, upcoming events and other information to the website that he authored.
4. Last month we lost one of our members as a Silent Key. **Lesley James Borst, Les.** <http://www.legacy.com/obituaries/gazette/browse> Les was always very interested in what we were doing at the site, and joined the group last year but failing health prematurely prevented his participation in the site refurbishment and operational activities. All of us who knew him will miss him greatly.
5. We need more hurricane fencing to keep the tumble weeds out of the bunker ramp so if anyone comes across some 6 foot galvanized chain link at a very low price or free, snag it for the bunker ramp fence.
6. Ray and Steve reported on James Smith, W0EEA's Silent Key Station. Jim had 160meter to 41GHz continuous coverage with max legal power limit on all bands. Ray and Steve bought some of his equipment including some Henry amplifiers but were amazed at the scale and scope of his unique ham station.
7. Steve says he will bring the 2605 amplifier that he bought to the open house and let Gary work 6 meters @800 watts.
8. Myron's ATT Wi Fi hot spot failed in the comm. trailer cutting off our communication to the computer and instruments for the last several weeks. The failure is suspected to be over temp of the comm. trailer during the hot days of summer. Steve brought it back and

Myron checked it out and it works now. We need to reduce the temperature in the comm. trailer.

9. Need solar vents to evacuate the trailer when the sun heats it. Motion to purchase carried. Bill will purchase for reimbursement. Lowes has one for about \$198. Will go ahead and purchase it and install it on the next trip.
10. Myron reported on the cash status and we will have several big purchases for Propane and Batteries that were previously approved by the board that will reduce the reserves but provide critical infrastructure for the site operation.
11. Batteries, 2 x 6 volt batteries need replacing. Bill and Ed have the cores to redeem for credit toward 2 new 6 volt batteries. These will be appropriated against the original approval of the whole battery bank which would be about \$1000.
12. Ed will also add a 30 watt solar panel to the Generator shack to keep the starting batteries charged and also run the LAN router and any instrumentation needed there. He will move one of the 12 volt batteries to the Generator shack and add the \$55 solar system to generator shack. This will be appropriated from the Battery funding.
13. We have decided to do a PortaPotty rental for the open house. This will cost about \$250 for the 3 day event at the Plishner Site starting on August 11<sup>th</sup>.
14. **We will be Open to the public Saturday, August 12<sup>th</sup> from 5:00 to Midnight.** We should have Hot Dogs and Drinks. Overnight camping will be for members only. If anyone else wants to camp they can become a member and pay dues beforehand.
15. Gary sent this update for posting on ARRL for the open house announcement below for August 11 Precedes Meteor Shower weekend.

08/11/2017 | DSES Annual Radio Telescope / Astronomy Open House

**Aug 11-Aug 13, 1400Z-2359Z, K0PRT**, Haswell, CO. Deep Space Exploration Society. 50.160 14.253 7.238. QSL. Deep Space Exploration Society, 4164 Austin Bluffs Parkway #562, Colorado Springs, CO 80918. Astronomy open house at our 60 foot dish antenna site in Kiowa County. Hosted during the Perseid Meteor Shower, with educational activities for the public including optical and radio observing. We may use other amateur radio frequencies, including on 6 meters, if available. [dses.science](http://dses.science) . **Open to the public Saturday 5:00PM to Midnight.** Overnight members only.

16. We need to contact the mayor of Haswell and the Eads newspaper editor to advertise the open house. Myron contacted Michael Lowe and Michael said he would be happy to make contacts.
17. Our new business address is:

Deep Space Exploration Society  
4164 Austin Bluffs Pkwy. #562  
Colorado Springs, CO 80918-2928

18. Ray gave an update on the dish control that he and Ed Johnson are working on. They will make a trip tentatively on July 23<sup>nd</sup> to test it. Goal is to get full tracking of the dish working.
19. Ed, Steve Rich, Bill and anyone else that would like to join the crew are planning to also go down on Sunday the 23<sup>rd</sup> and prep the site for the upcoming open house among other work.
20. Ray repaired the three band feed and is ready to reinstall it on the dish. An SMA Relay was replaced and it worked perfectly on Ray's bench. We should be able to start using 1296MHz for ham operation and moon bounce once reinstalled.
21. Discussion on beacons. We need a distant beacon to check dish operation. Could locate a high power beacon on all three bands near Colorado Springs or an extremely low powered 3 band beacon, possibly solar powered in the local area. Haswell, the old homestead, Eads, etc. Ray has a design for a low powered beacon and Don has some readymade 435Mhz only units.
22. The SpectraCyber receiver: [http://www.ncra.tifr.res.in/rpl/facilities/4m-srt/SCI\\_IIManual.pdf](http://www.ncra.tifr.res.in/rpl/facilities/4m-srt/SCI_IIManual.pdf) The SpectraCyber is from Radio Armature Supply Co. There may be a second one within the membership so if you have seen it, send us a note. The SpectraCyber receiver is basically nothing more than a narrow spectrum analyzer centered on the neutral hydrogen 1420Mhz frequency with 500KHz of scanning capture bandwidth. The 1420Mhz is down converted to 70Mhz filtered and converted to RS232 with software to display on a windows PC.  
Our Challenge from Ray is to design a new one with better capabilities. Use a TS2000 with SW or an SDR and write SW that would perform the function of receiving the 1420 Mhz signal. The goal is to provide better Amplitude, Frequency and Bandwidth accuracy and if possible make this available to the amateur radio astronomy community.
23. Ray presented his new 1420Mhz feed antenna which is a dual polarity resonant cavity with couplers, a Dicke switch and preamps. Ray has schematics for this and has it about 50% complete and waiting on additional parts.
24. Floyd discussed Cornell University's 1420 Radio source data base which is cataloged in milli-Janskys, mJy. Good source of data to find high sources we can observe.
25. Rich explained his experimental setup with a 17.6dBi yagi antenna. He also explained the Jansky equation once again and using Radio Skypipe from Radio Eyes and radio sources above 1400 mJy .
26. Gary discussed the website <http://dses.science/> and the email forward from [Plishner.info@Gmail .com](mailto:Plishner.info@Gmail.com) which forwards to Gary's email address. There is also the DSES Facebook page and uploading PDF documents and images.
27. Rich discussed the Pulsar Simulator ray built and how he set up analyzing very weak signal Pulsar reception using a spreadsheet and data/time binning process to sort and stack the data from the Pulsar simulator to detect the signal.
28. Next Trip will be Sunday July 23<sup>rd</sup>.
29. The Open House will be from Aug 11<sup>th</sup> to Aug 13<sup>th</sup>.
30. Many members will attempt to observe the total Solar Eclipse from Wyoming on August 21<sup>st</sup>.
31. There will not be a science meeting on the 4<sup>th</sup> Monday, July 24<sup>th</sup> because Dr. Rich Russel will be at the NRAO observatory in Green Bank, West Virginia presenting the papers he has written for the SARA conference.

That concludes the minutes from the technical meeting on July 10<sup>th</sup>.

73, and keep looking up!



Bill Miller

KCOFHN

DSES Secretary