

DSES Meeting Agenda and Minutes for DSES 10 February, 2020 Engineering and Ops Meeting.

Attendance: Phil Gage, Rich Russel, Johnathan Ares, Glenn Davis, Ray Uberecken, Floyd Glick, Bob Haggard, Bob Sayers, Dave Molter, Gary Agranat, Lewis Putnam, Bill Miller

Attending Remotely Via Team Viewer: Myron Babcock, Skip Macaulay

- **Collected Dues from:**

Lewis Putnam (non-voting), Rich Russel (voting).

Bob Sayers with an addition to bring him up to voting member status.

- **Treasurer's Report: Myron Babcock**

Checking \$2655.26

Savings: \$5741.52

Property taxes are paid, total of \$9.41

Expenses: Electricric ?, Tel 38.40, DSL estimate is \$40.00

Number of Paid Members: 25 voting, 12 non-voting, plus 5 life members.

Meeting and Trip Schedule:

- DSES Technical and Operations Meeting; 2nd Monday of every month at IHop on Constitution east of Academy, Colorado Springs.
- DSES Science Meeting; 4th Monday of every month Dr. Richard Russel's residence.
- Next Site trip – Scheduled 3rd Saturday of the month would be Saturday Feb. 15th.
 - Who is going and for what?
 - Lewis Putnam and Glenn Davis tour and measurement
 - Rich may go Saturday for pulsar observation, and Bill and Bob Haggard would like to go if he does.
 - Gary will repair the tri-band ham radio Yagi antenna.
- March 27th through March 29th is the Western Region SARA conference at Socorro, NM.
 - See SARA conference web page: <http://www.radio-astronomy.org/node/323>.
- Board of Directors Election.
 - Need to finish and post the new bylaws changes related to the Board of Directors (BOD) schedule to our website. Bill sent the Ver 3.1 Bylaws markup to Gary and Floyd for review incorporation and posting.
 - Have 4 board seats open in 2020.

- In keeping with the new Bylaws schedule changes voted by the board last year the rough schedule is as follows:
 - Open nominations when I sent out the call several weeks ago and close in 20 days, February 14th.
 - Release the ballot to the members by February 19th.
 - Hold board election in the following 10 days, completing March 1st.
 - The 3 BOD members not up for election shall count the ballots and make results known to the membership by March 3rd.
 - Schedule the “all member annual meeting” in early March. Decided this meeting should be in midday on second Saturday of March at a convenient restaurant so more working and northern members can attend. In that meeting the Board votes to assign officers from the elected BOD.
- Last election and officer appointments in 2019: Dave Molter, Floyd Glick-Secretary, Bill Miller President,
- Turning seats 2020: Myron Babcock – Treasurer, Gary Agranat – Vice President, Steve Plock – At large, Dr. Richard Russel-At large.

Nominations so far: Bob Sayers, Bob Haggard, Gary Agranat, Myron Babcock. Ray Uberecken said that if we didn't have enough board nominees, he would accept a nomination. Steve Plock and Richard Russel have asked to not be considered for nomination.

- Science Fair, Bill:
 - We are registered for two special category awards at \$50 each with certificates and at least two judges for the **2020 Pikes Peak Regional Science and Engineering Fair** will be held on Saturday, February 22, **2020**, at UCCS.
 - The team hosted a high school student, Xander Duvall and his mother at the last science meeting at Rich Russel's house, and Rich gave him a data set and tools to do a science project on radio astronomy. Gary and others provided information mentorship.
- SETI Status
 - Next observation in end of Feb. with three observatories at Greenbank, New Hampshire and Haswell. Probably by the end of the month. Need to check with Skip Crilly and Steve Plock.
 - We will have to change the feed back to a 1420MHz feed for this.
- Pulsar Observations
 - Ray Uberecken
 - New Dish Feed Mount Status
 - Ray and Bill made several trips to the site and installed Ray's new articulated bayonet type feed mounting system
 - 408MHz Antenna done and mounted
 - Feedlines checked and replaced.

- Ray is working on a 1420 MHz feed that is compatible with the new mounting system. Until that is finished will have to change out with Steve's 1420 feed for Hydrogen line and SETI work used to date.
 - Ray shows the new connection box for the feed connection.
 - Rich has the software and HI feed on this antenna with Ettus Research SDR.
- Telescope time and priorities
 - SETI near 1420MHz
 - Pulsars 408MHz feed
 - Moon bounce on 1296 ready except for the feed antenna being built in Alaska. About a month away.
 - Shifting Hydrogen Line to the 9-foot dish at Riches House.
 - May still do HI on the big dish and do stuff like Raster Scan of single objects once tracking and raster are perfected.
- Bunker, Site and Dish repairs
 - Smoke and fire detect
 - Propane detector, can use the smoke detector
 - Intercom line to Pedestal repair
 - 120 feet of coax to the feed
 - Finish the Elevation Synchro, fix short to earth.
 - Hot water heater in the Bunker
 - Wiring is complete
 - Ham Station
 - Call in 146.46MHz much improved out to Sugar City with the new antenna. Need the connected telephone set in Comm Trailer repaired to work with it.
 - Rebuild the hidey hole to a 6-bunk insulated room.
- System 1 status
 - Glenn wants to get Lewis Putman down to the site.
 - Glenn, Phil and Dave fixed the problem with the elevation discontinuity at about 39deg.
 - Need a Raster scan Capability
- System 2 status
 - Bill needs to get with Ed Johnson to see the loss of drive control due to LAN or windows latency.
 - May need a physical simulator. Bill is working on but needs another encoder.
 - Talking to Dave Molter after the meeting. We might have a back current leakage issue on the elevation that would make it difficult to control the down movement of the dish. Need to check this out.
- Rich: Update on 9 ft dish observations and paper in the SARA journal, Velocity verses galactic longitude
- Ray added a remote electronic inclinometer to Rich's Dish

- Johnathan Ares Data Analysis
 - Dicke Switch
 - Integrated in an amplifier
 - Bob Sichel's design from Northrup paper on Dicke Switch.
<http://www.radiosky.com/dicke.html>
 - Get accurate measurement of Janskies
- All member meeting on 2nd Saturday or Sunday of March during the day. Bill will arrange and set up. May want a Northern CS site or could use the Golden Corral
- We discussed having a plan of action in case Betelgeuse becomes a supernova. We would like to get a baseline observation of Betelgeuse before it goes supernova. A Super Nova Early Warning System is organized by Brookhaven National Labs, which would report neutrino detections. Neutrinos could lead several hours before the shockwaves propagate through the star, before the supernova becomes detectable in other ways.