

SUG Minutes – 21 Feb 2017

In attendance

Dick, Wes, Jim B, Mark, Larry, Chuck G, Jim S, Shing, Tom, Chuck H, Andy, Dave

Station Reports – New Info in RED

Tom – Nothing new.

Dick – Nothing new.

Whit –

Jim B – Still with the RFI. Ordered an SDRPlay RSP1 to do mobile RFI sniffing. Noted that the SDRPlay-RSS interface kills the mic/line-in jack on a laptop. Trying to get two receivers on one SkyPipe chart calibrated; Jim S suggested not moving the volume control during the calibration of the second receiver.

Chuck H – Ran out of HDD space; removed some old files to make room. Changed phasing on the Jove array to look toward zenith.

Larry – New FSX and 2-element TFD array installed (parallel EW wires). Hunting RFI. Adjusted array delay line length to account for downhill slope at the array.

Andy – Collecting data, hoping for funding to expand to a TFD array and new spectrograph. Working on moving previous years of collected data to the PDS.

Wes – Everything running well.

Francisco –

Chuck G – Running and Airspay and SDR#. Building a traveling wave vertical antenna in a remote site in Oklahoma (about 2hrs north of the very noisy neighborhood in Dallas).

Dave – Auto calibrator offline for modifications. Both Jove receivers now tracking each other in amplitude very well. Noted that RFI can sometimes be RCP or LCP dominant; unknown why this happens.

Discussion – New Info in RED

Faraday Banding

Dave attempted to explain why Faraday banding occurs due to the changing of the polarization ellipse's position angle with respect to a linear antenna's wires. This can also happen in a circularly polarized array constructed of linear elements, especially when the source is low on the horizon and at a position that creates a response imbalance between the two orthogonal sets of wires. This is why Dave sometimes sees Faraday banding in the TFD array – and some times does not (if the low elevation source is, say 45 degs azimuth to both sets of orthogonal wires, both responses are equally lousy and not imbalanced and the array remains circularly polarized).

CML-Io Phase Plane

Again with the phase plane, Dave mentioned that viewing spectrograms down to 15 or 16 MHz will make an Io-C event go longer than it does when seen only at 18 MHz. Chuck brought up the fact that Jovian DAM is far easier to see in a spectrogram than it is in single-frequency strip charts that were analyzed to derive the current phase plane probability map used in RJP.

Tom posted a note asking about the apparent prevalence of Io-C beyond the “normal” high probability zone defined by the currently used phase plane probability map. Shing pointed out that these are probabilities, not brick walls. Dave mentioned that the current probability map is based on 38 years of UFRO data from 1957 to 1995, but only at 18, 20 and 22 MHz. Chuck added that it was for all polarizations combined. Shing asked if a new analysis of the phase plane probabilities is indicated. Dave opined that yes, it probably does. Dave also mentioned that there are several phase plane probability maps published and that they all look slightly different.

Dave asked if the high probability zones moved with D-sub-e; Jim T said they move slightly but that this could be the emission source moving or the peak probability moving on the phase plane, we don't know which.

Shing mentioned that perhaps the solar wind has an effect on the shape of the emission cones, distorting them at times, which might make the onset and cessation of emission change relative to CML-III.

A brief article about the phase plane and emission arcs has been published in the most recent issue of the Jove Bulletin.

<http://radiojove.gsfc.nasa.gov/library/newsletters/2016Dec/>

Solar Comparison

Dick wrote up and sent around a comparison of the 11 Feb 2017 solar burst at 1800 UTC. Analysis of antenna temperatures normalized for antenna beam pattern, beam steering, and location of the sun with respect to the beam show an approximate 6 dB variation between stations. Dave wondered how much of this we can blame on the ionosphere. Dick wondered how much might be due to assumptions and approximations made during the beam pattern analysis.

Shing noted that there is a 5 to 10 second difference in arrival time between Tom's spectrogram and Dave's. Tom said he sets his system clock by hand once a day and that it should be within 2 seconds of UTC.

This Type III solar burst is also unusual in that it has a positive sloped leading edge on the time-frequency plane, preceded by faint negative frequency drift streamers.

Archiving

Jim S has released a new version of the PDS copy utility, which will load an observer's data onto the portable PDS hard drive and remember which files were loaded so as not to duplicate them on the next go around. See email from Jim S on 20 Feb 2017 for PDF instructions and download link. <http://radiosky.com/Copy2PDSDriveInstall.exe>

Mark mentioned that one can send the PDS hard drives direct to him in Los Angeles. Jim S mentioned that if the drive organization is in doubt, one can send the drive to him in Kentucky and Jim will re-organize it into the organization format the PDS expects.

Jim B asked how often data uploads are expected; Jim S said that the idea the PDS is used to is quarterly updates, but noted this may be too often for Radio Jove.

PDS online Radio Jove data repository: <http://ppi.pds.nasa.gov/radiojove/>

Jim S has successfully loaded a 200+ MB file to the Jove Archive. The file size limit is now supposed to be 300+ MB. Jim B noted that there is no specific place to load an SPS file in the Jove archive. Dave noted that one can stick it anywhere, but that it would be nice to have a spectral data label.

Software

Latest version of RSS is 2.8.27

http://radiosky.com/spec/Spectrograph_Update_2_8_27.exe

Latest version of RSP is 2.7.15

http://radiosky.com/skypipe/RSP11_Update_2_7_15.exe

**Next SUG Telecon Tuesday, 21 Mar 2017 at 5:00 pm EST (2100 UTC)
(844) 467-6272, 352297#**