

SUG Minutes – 7 Jun 2016

In attendance

Nathan, Jim T, Tom, Dick, Baptiste, Jim S, Chuck, Francisco, Wes, Dave

Station Reports – **New Info in RED**

Tom – Starting to get into lightning season, everything running well.

Dick – Vines have taken over the feed on the LPDA.

Whit –

Nathan – SDRPlay working well with RSS. Made a nice Io-B observation of S bursts with this instrument.

Jim B –

Wes – Line noise has abated for now. Using his Autek analyzer to measure all feed line losses.

Chuck – Students are reducing data and sending to Jove archive. MTSU IT dept should have a port open through the firewall so Chuck can serve RSS data in real time.

Francisco – FSX-7S working well at home. Jaydeep visited RHO to look at future location of the TFD array. Francisco will send spectrogram of a possible N event for comparison.

Dave – Having some sporadic problems keeping the DPS saving data for extended periods; presently chasing the problem.

All observers are urged to keep an engineering log and update their system drawings for the SUG site.

Discussion – New Info in RED

Update on the progress of the correction array instruction manual.

Waiting on Dave to test the latest release of RSS 2.8.16.

Latest Version of RSS

Latest version of RSS is 2.8.16.

RFI examples for the SUG web site.

Examples received, waiting on Dave to mount the examples on a page on the SUG web site.

CML-Io Phase Plane zone labels

Dave asked if it was truly important to label every bit of emission with a firm, definite label of Io-This or non-Io-That, suggesting that what really matters are the emission characteristics not the zone labels. Chuck put forth that it is in fact important and that better label definitions would come from analysis of our data. Shing and concurred, citing the lack of any good review paper, suggesting that this is a gap that could be filled by the SUG. Dick suggested that we shouldn't get too hung up on labels as the phase plane is just a map of probabilities and not much else. Francisco suggested two phase planes, one for RCP and one for LCP. Dave mentioned that efforts are underway to do precisely that.

Jovian DAM emission morphology terminology

Jim B mentioned that a recent non-Io-A storm was interesting because the individual bursts had a positive frequency drift, while the overall envelope had a negative frequency drift. Dave wondered if this was abnormal or normal; nobody offered any strong opinions one way or the other.

Dave asked what the proper use of the terms envelope, arc, and burst are. Discussion with Jim T, Chuck, and Dick indicates that the emission envelope is the overall shape of the storm on the time/frequency plane, with separate arcs therein. Bursts form the arcs, but no hard and fast definition of "burst" seems to exist. Chuck mentioned that several terms are explained in the Physics of the Jovian Magnetosphere book.

HEC grant

No news about any funding that might affect spectrograph stations. Apparently there is major emphasis on observations to be made during the upcoming eclipse. Comment from above (the OMB) was that this is a must-do, must-succeed project (but silence on funding for doing it or succeeding at it). Francisco suggested a portable spectrograph and portable TFD array to be placed in the path of totality. Shing mentioned the need to come up with concrete performance goals and suggested that everyone participate to the

best of their ability. No discussion on performance goals or any spectrograph related issues.

Update on literature search progress

No progress.

PRE 8

Chuck mentioned that another Planetary Radio Emissions conference, PRE 8, will be held in Graz, Austria in October. He and Francisco and possibly Dave will attend.

Archiving

Jim Sky has returned from his meeting with the PDS and will never be the same due to information overload. The plan is for the PDS to send portable hard drives to observers, whereupon observers will load the drives with all raw data since 01 Jan 2016, then return the drives to the PDS. Data will be in the form of 12- or 24-hour data files. Hard drives have not yet been received by SUG stations. Jim S will see if they have been sent.

Observers will load the hard drives with their 2016 spectral data, any associated ancillary (auxiliary and context) data (see notes from last SUG telecom in black below), then fill the rest of the drive with prior years' data until the drive is full. It is okay to keep the native RSS directory hierarchy when copying to the PDS hard drives.

Excel files should not be used in the ancillary data – please use CSV files instead. The idea is to ensure that the file format is still readable 50 years from now, so the simpler the better.

The vetting process for the data is unclear at this time. The PDS desires someone not associated with the SUG or Jove program, but who is versed in the field, to vet the data. Masafumi has been mentioned as a possible person who could do it. It is thought that vetting will take place annually. Discussion ensued about how it would be good to find out what is required to pass the vetting process sooner rather than later. Baptiste offered that the vetting process is probably to ensure that the data is not saturated and that it is of possible scientific use and that the metadata and notations are consistent for a given data file. Still, it is not completely known for sure what the PDS requires for “validity.” Baptiste and Jim S are looking into this question.

Baptiste offered that perhaps the Jove team can validate its own data, but an individual observer CANNOT validate their own data – in other words, we would validate each others' data. Dick offered that this is going to turn into a heavy workload for all observers, to which Jim Sky and Baptiste put forth that some tools could be written to make the process much easier than trading a bunch of SPS files and looking at them. Jim S will look into such easier methods and report back.

Baptiste mentioned that there will likely be two kinds of data: calibrated and uncalibrated. Calibrated will be in terms of antenna temperature. It was agreed that if a researcher wants flux density, this is where the aux data will come into play, so they can calculate it.

It is felt by all that feedback from the PDS will illuminate many of these open questions once they start to get SUG data.

Efforts also underway to better define the two types of ancillary data, namely “auxiliary data” and “context data.” Jim reported that aux data should include beam steering and similar information while context data should be a document containing information similar to our SUG station diagrams. It is not yet clear whether the aux and context data need to be of uniform format across all SUG observatories, but it appears that having such uniformity would certainly help the conversion process (taking place in Paris) and any researcher looking at the data.

Before the telecon, Jim sent an email to everyone containing a diagram of the data flow between Jove/SUG observers, the PDS, and VO Paris.

Baptiste has sent a list of station and instrument abbreviations to the SUG list; observers will let Baptiste know if these abbreviations are okay.

Renaud Savalle (who Dave met during his trip to Nancay) is working on the SPD to CDF conversion utility.

SUG Schedule

Given the amount of action with archiving, Juno, HEC, and new SDR instrumentation, all agreed to stick to the biweekly telecon schedule.

**Next SUG Telecon Tues, 21 Jun 2016 at 5:00 pm EDT (2100 UTC)
(844) 467-6272, 352297#**