HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 26 April 2017

Object: Jupiter – Non-Io-A

Observer: JB

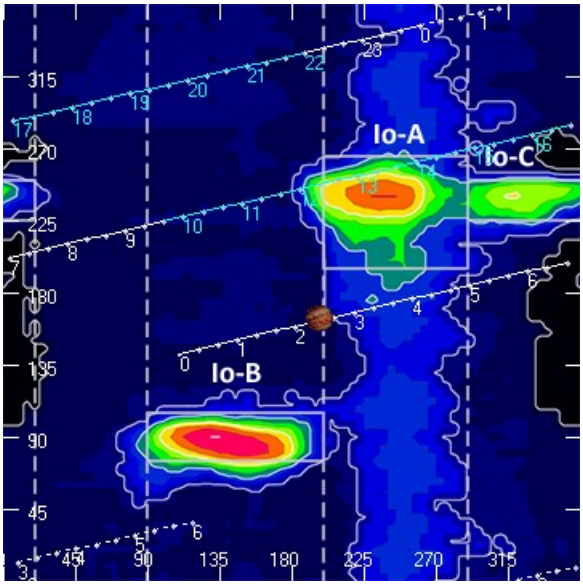
Start of pass:	**0226 UT**	**Planetary K-index:**	**3**
Jupiter Altitude:	**39.1 degrees**	**Jupiter Azimuth:**	**147.3 degrees**
Jupiter CML:	**198**	**Jupiter Io Phase:**	**163.19**
Jupiter RA:	**13:01**	**Jupiter Dec:**	**-04:48**
Hour Angle:	**-01:40**	**Polarization**	**RCP**
Sun Altitude:	**-24.0 degrees**	**Sun Azimuth:**	**314.9 degrees**
Sun RA:	**02:08**	**Sun Dec:**	**12:55**

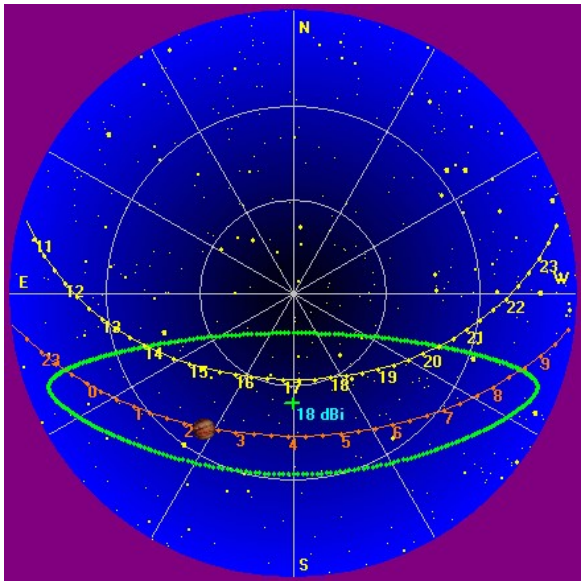
End of pass:	**0419 UT**		
Jupiter Altitude:	**44.4 degrees**	**Jupiter Azimuth:**	**184.8 degrees**
Jupiter CML:	**266.32**	**Jupiter Io Phase**	**179.26**
Hour Angle:	**00:14**		
Sun Altitude:	**-35.0 degrees**	**Sun Azimuth:**	**344.1 degrees**

Observations made using:

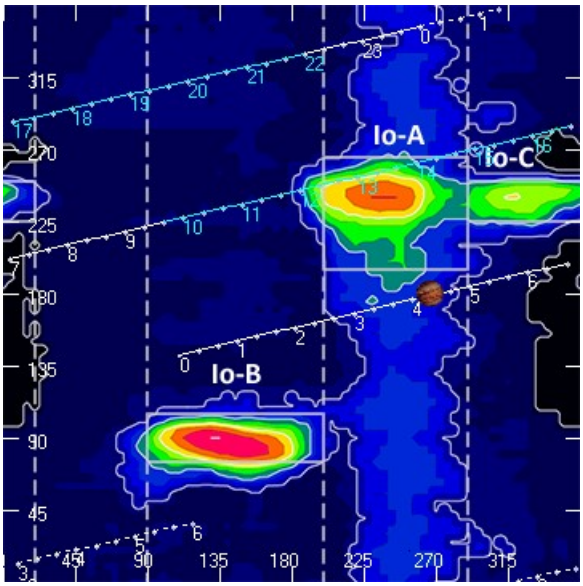
1. FSX-8S fed by the TFD array
    a. 7.7 dB loss between TFD and Multicouplers.
    b. Connect to array through HNRAO Multicoupler #1 and #2, port 2
        i. HNRAO Multicoupler #1 – TFD/LCP
        ii. HNRAO Multicoupler #2 – TFD/RCP
            1. Port 1 having 10 dB of gain, all other ports have 3 dB gain.
2. FSX-2 fed by the LWA array directly
    a. LWA element configuration – 90 degrees
3. JOVE 2 receiver fed by phased JOVE dipoles @ 13’
    a. 12’ 6” phase cable - phased for 2016-17 season
    b. Calibrated 19 April 2017
    c. Connected to dipoles through HNRAO Multicoupler #3, port 1.
        i. 3.165 dB loss between Multicoupler and dipoles.
4. Icom R75 receiver fed by experimental DDRR antenna directly.
    a. Calibrated 19 April 2017
5. SDRPlay
    a. RSP1 (2) and RSP2 (1)

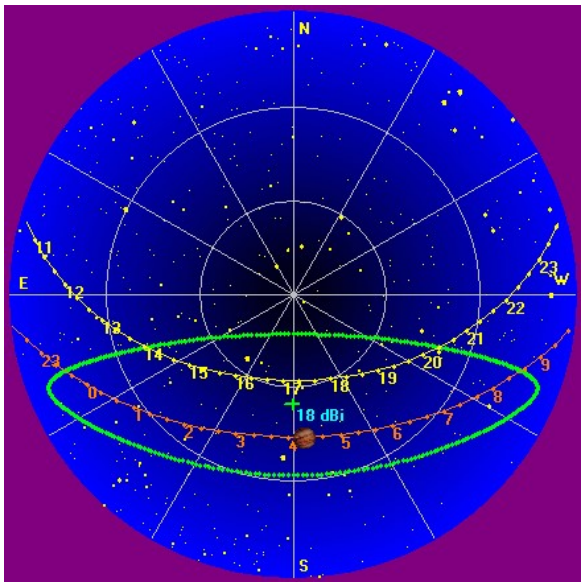
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq





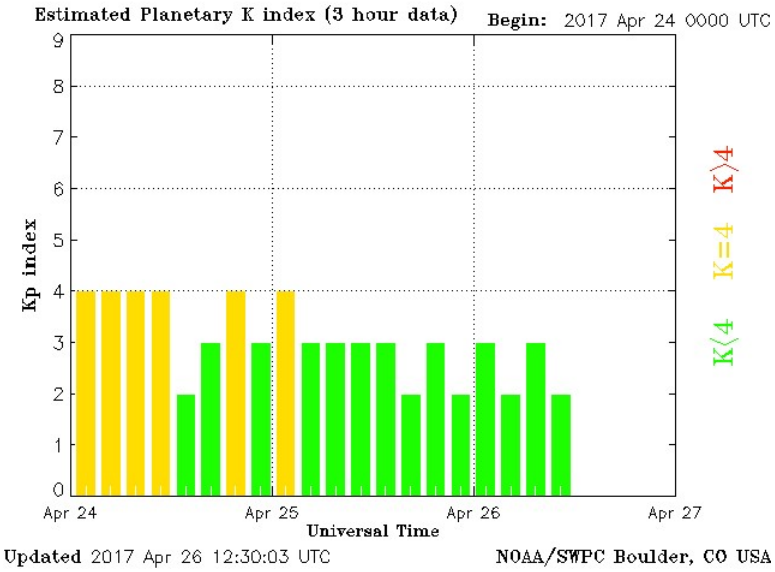
Beginning of Pass





End of Pass

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



A strong Non-Io-A storm which began while shortwave broadcast stations were still strongly affecting the SDRPlay RSP2 spectrograph. Negative drift L-bursts along with negative drift modulation lanes spanning 15 MHz to 29 MHz.

Modulation lanes throughout the storm. As noted previously, drift rates change with frequency, increasing as frequency increases. Also, modulation lanes are not straight line, but rather slightly curved, giving rise to the change in drift rate noted above.

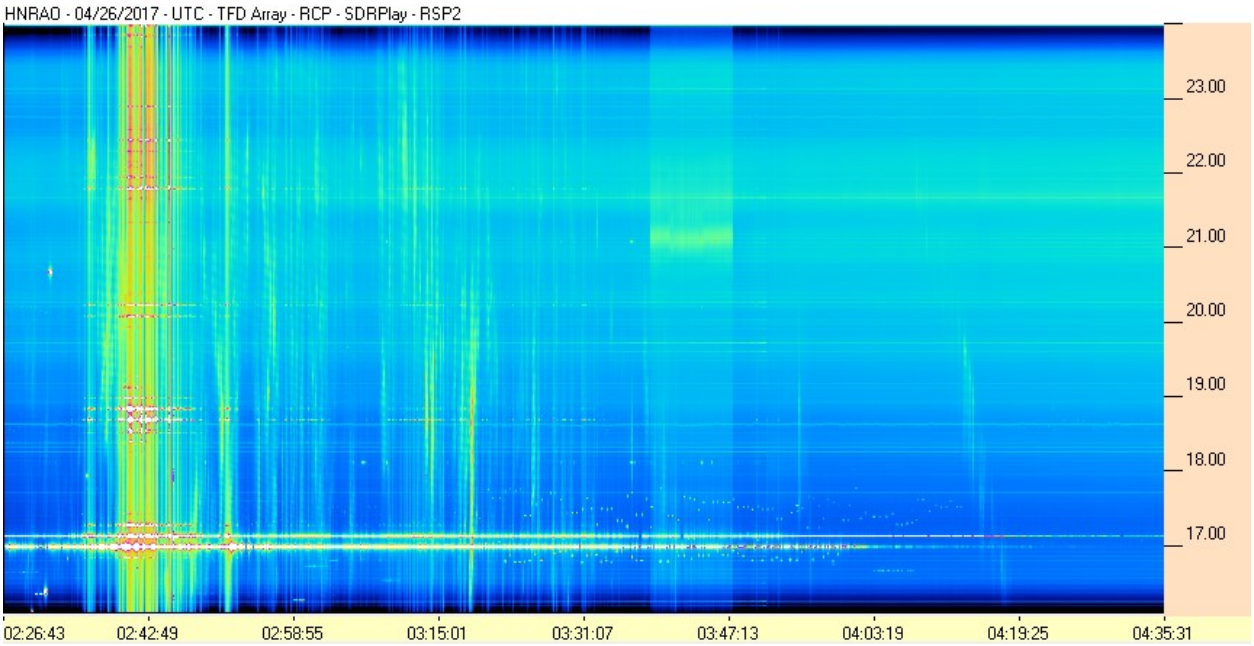
Cross hatched modulation lanes appeared later in the storm between 0313 UT and 0325 UT.

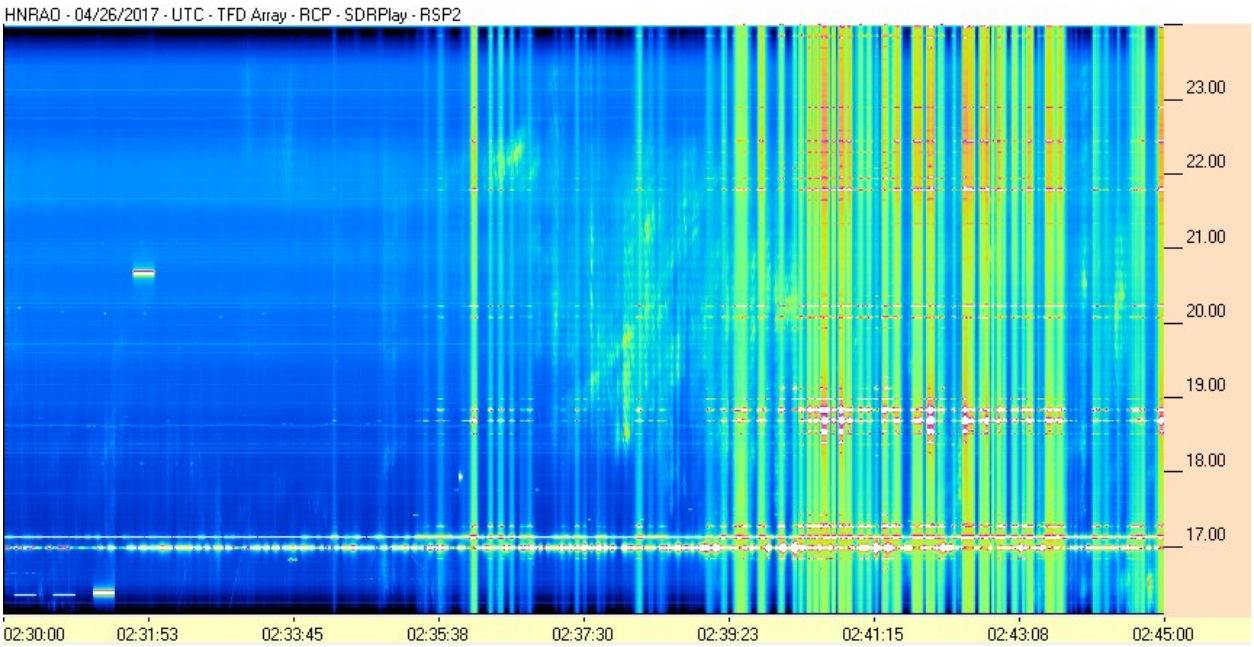
Emissions observed on the FSX-2/LWA pair and FSX-8S/TFD pair. The FSX-2/LWA pair resolved emissions better than the FSX-8S/TFD pair.

L-bursts were recorded with the JOVE II receiver/JOVE dipole pair at 20.1 MHz.

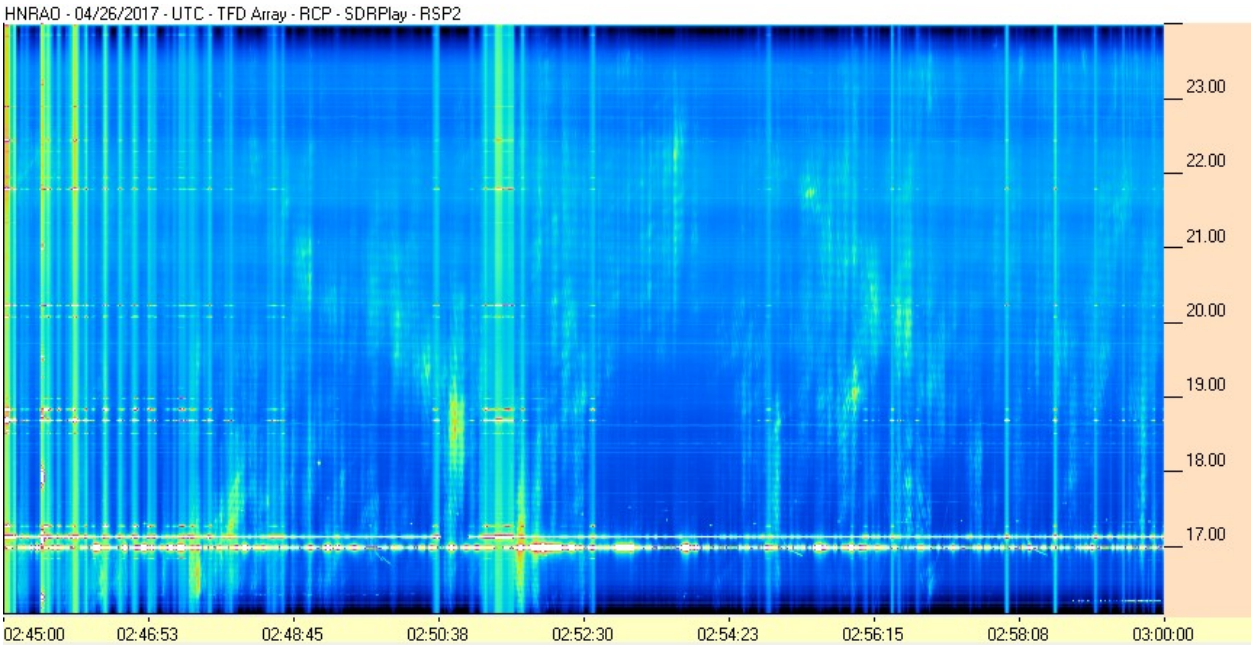
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

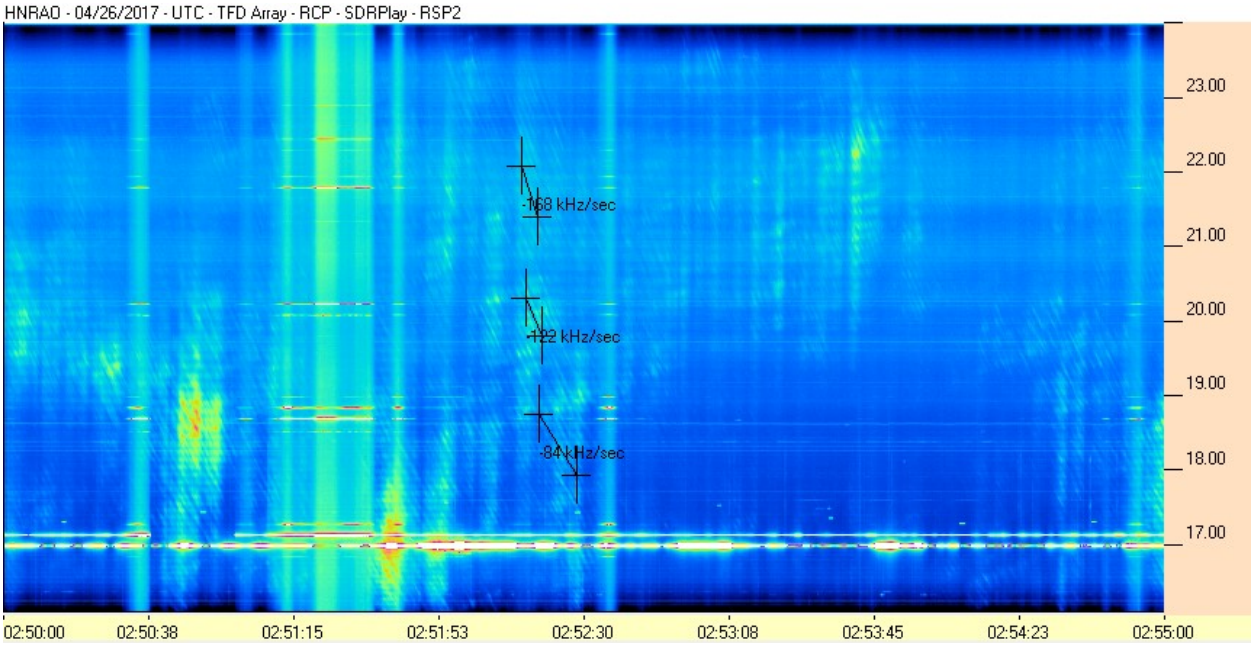
SDRPlay RSP2/TFD Pair



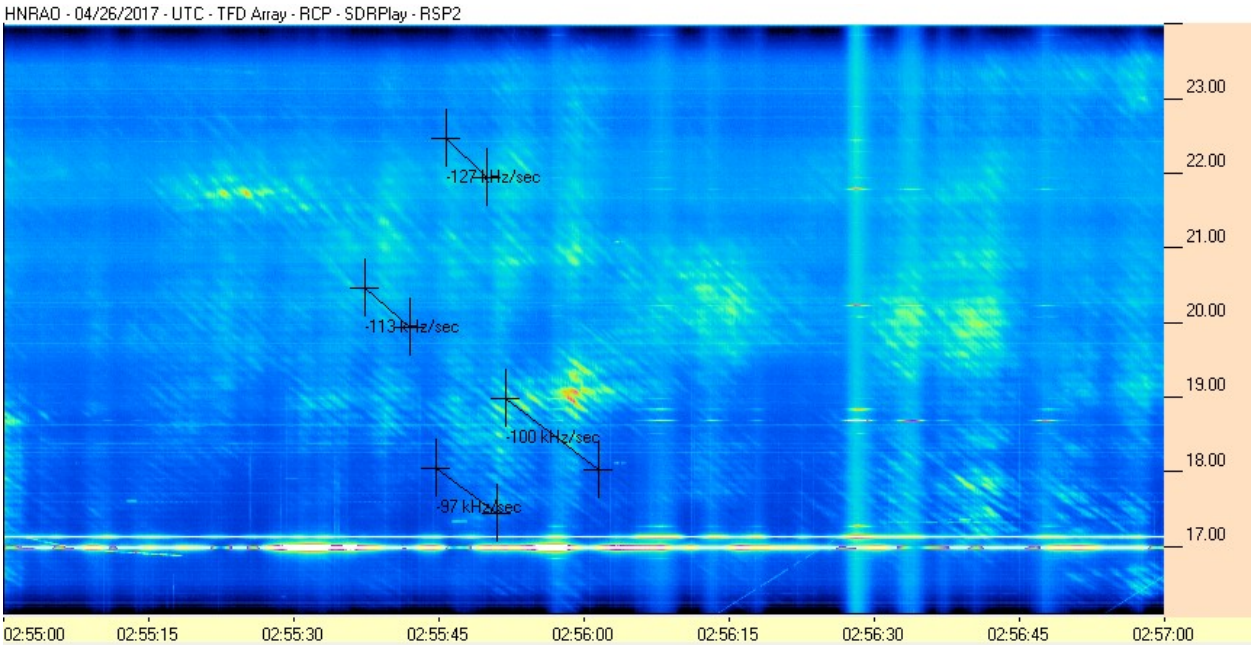


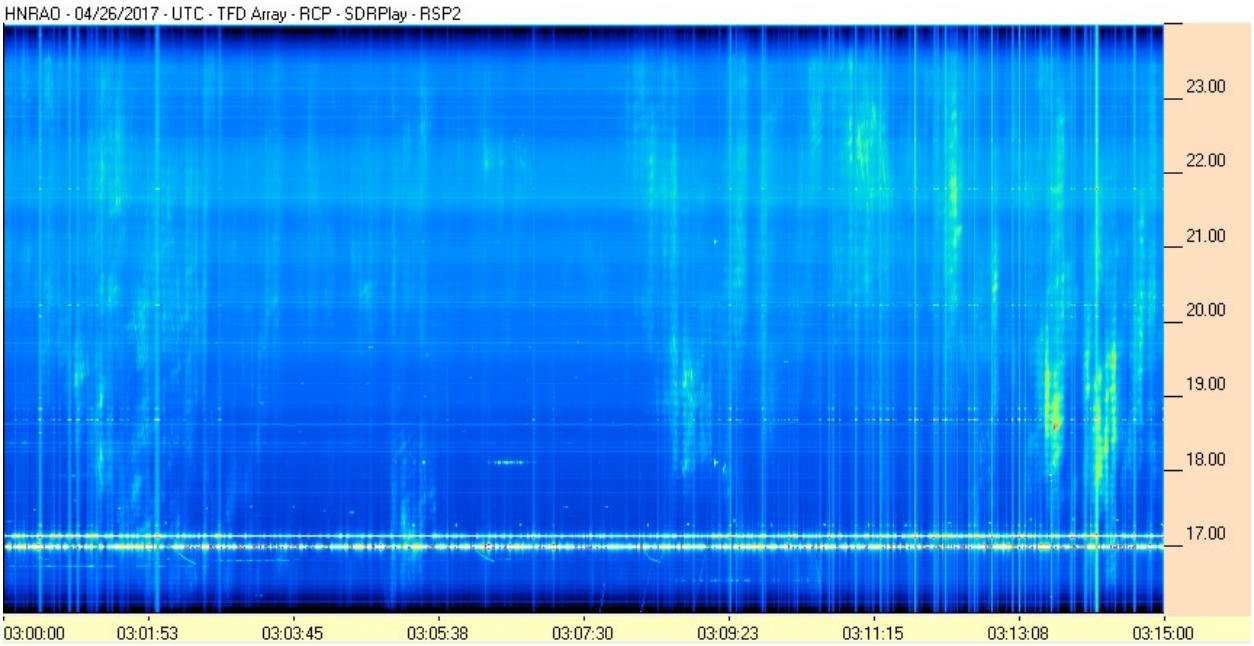
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



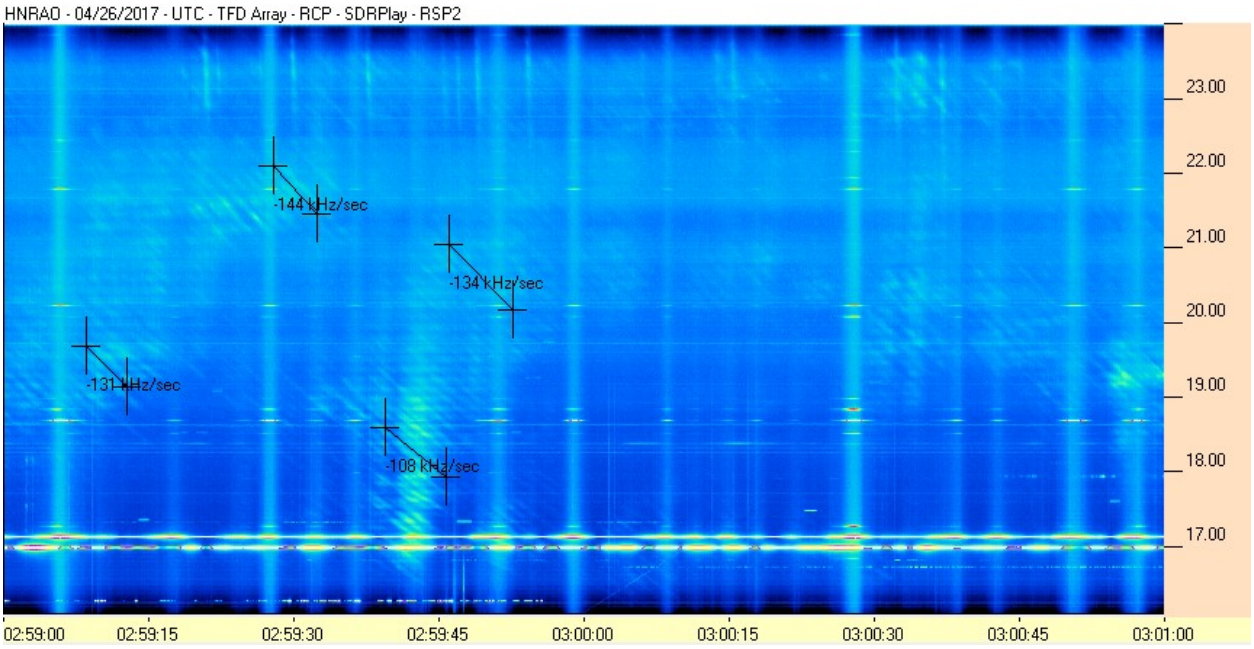


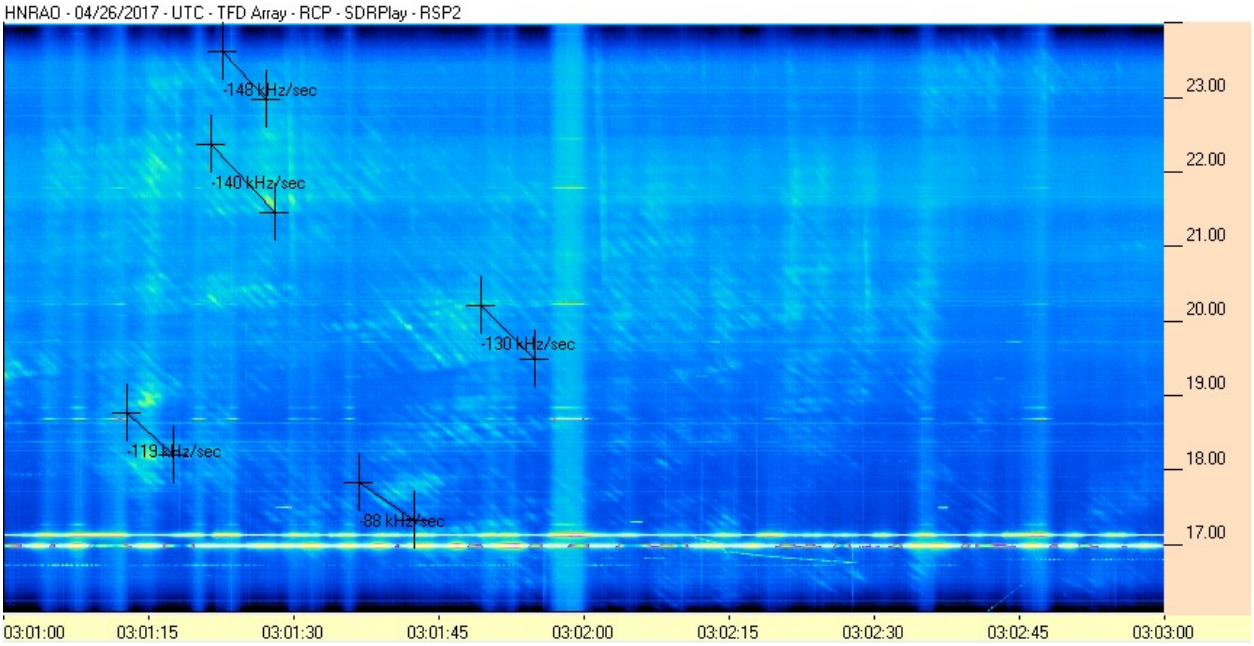
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



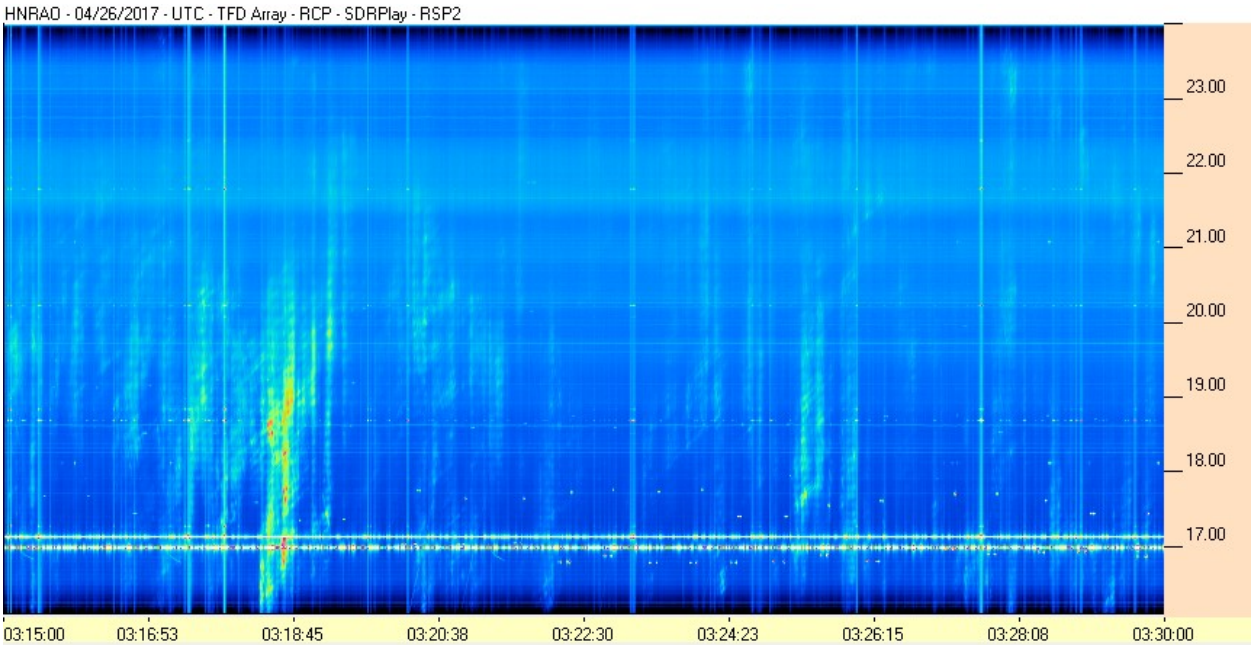


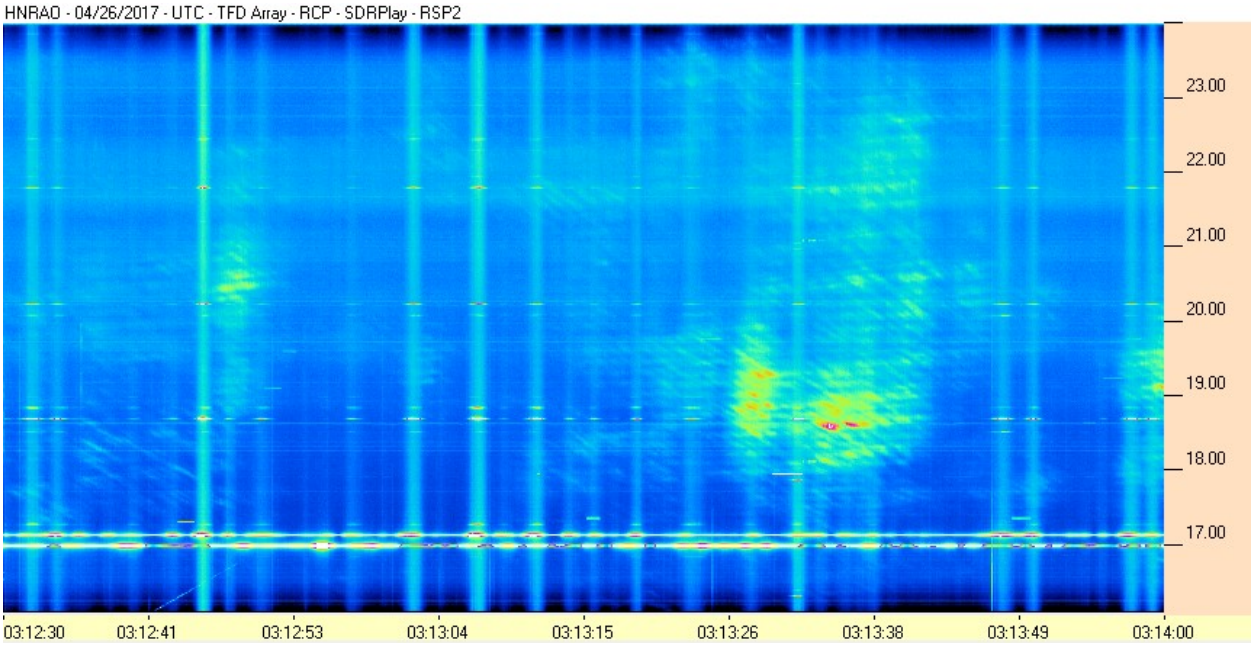
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



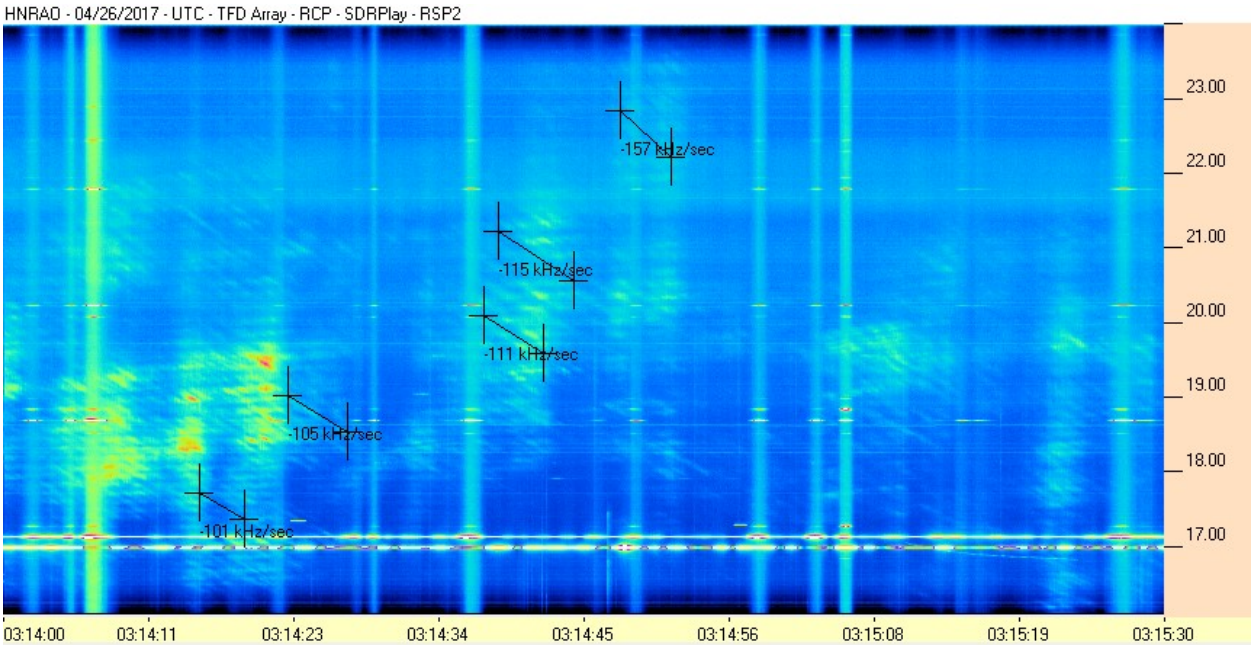


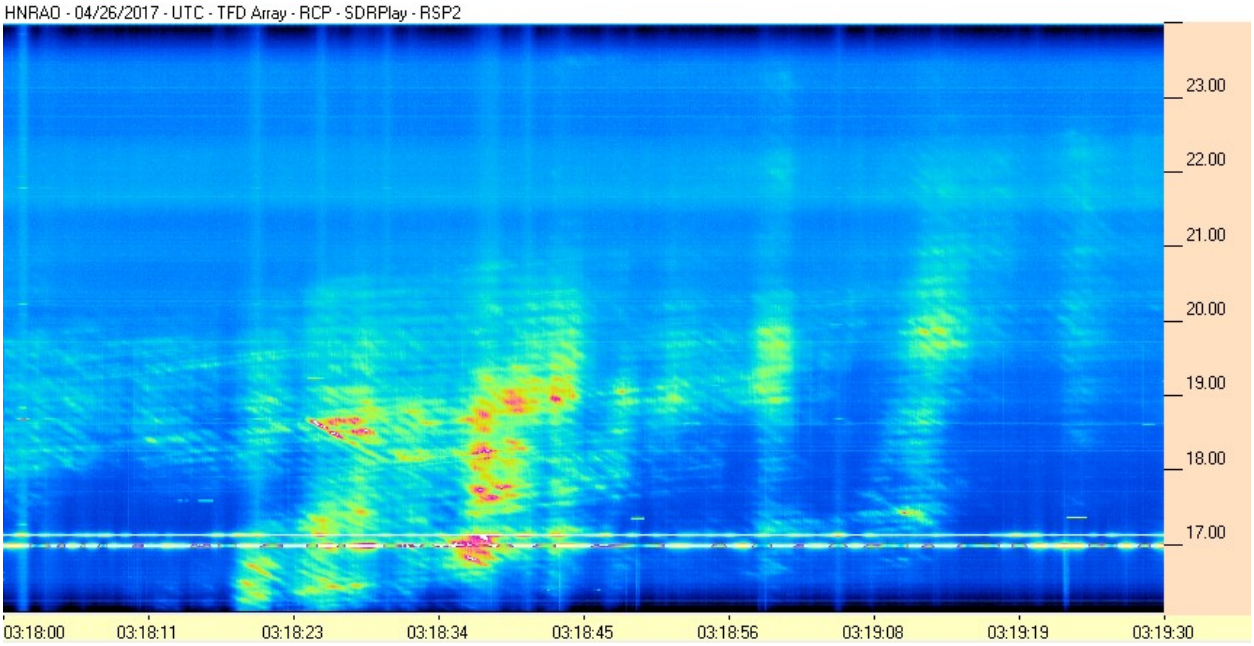
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



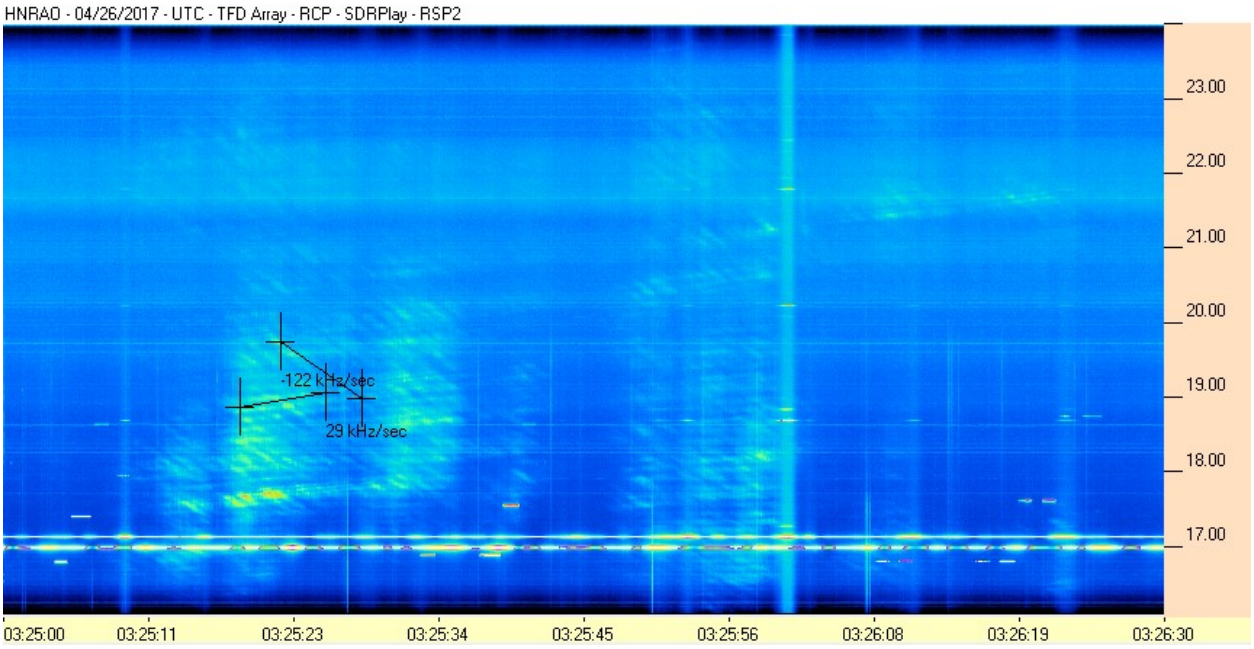


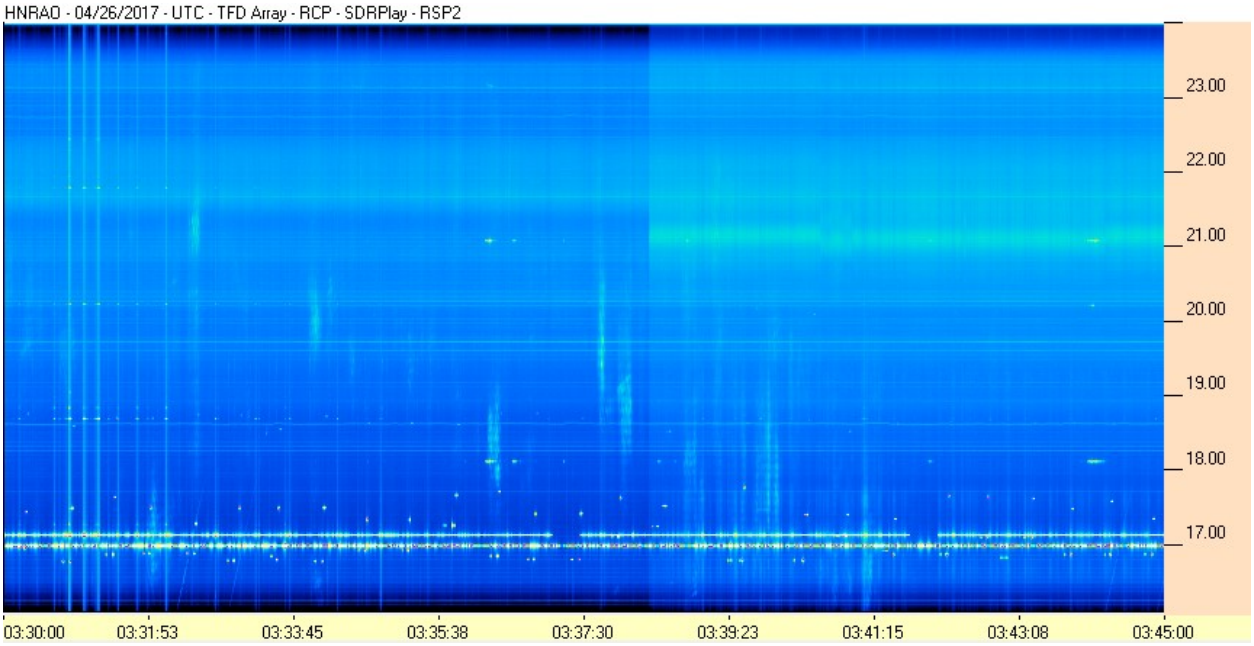
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



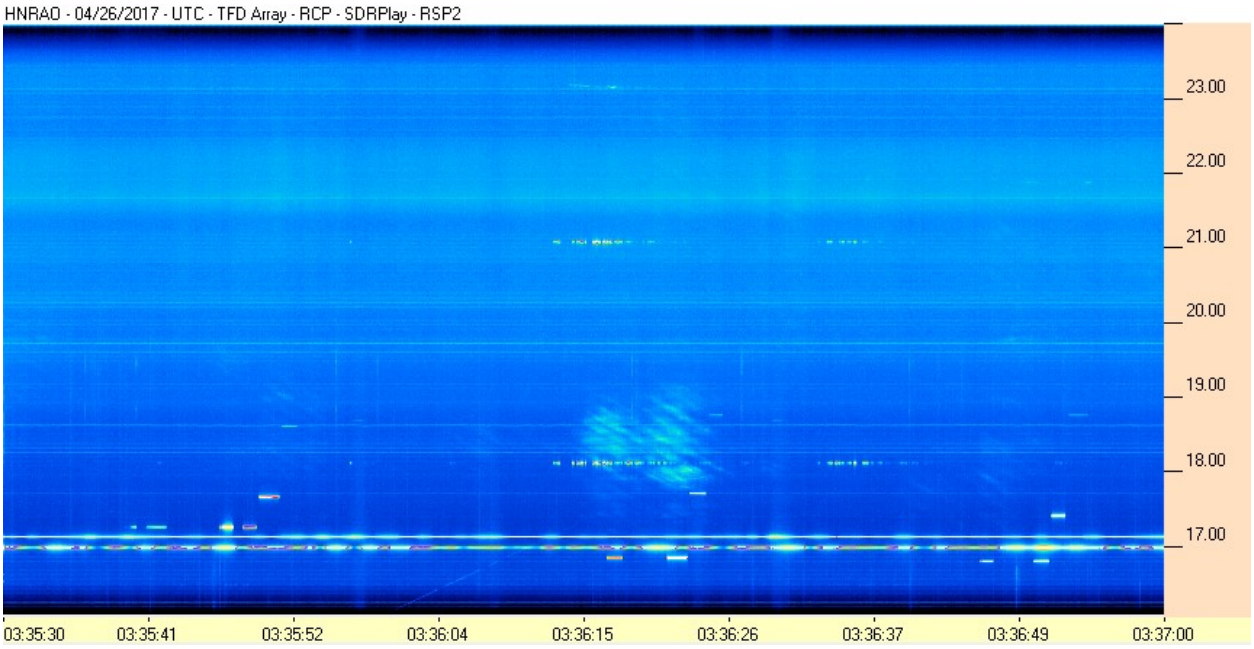


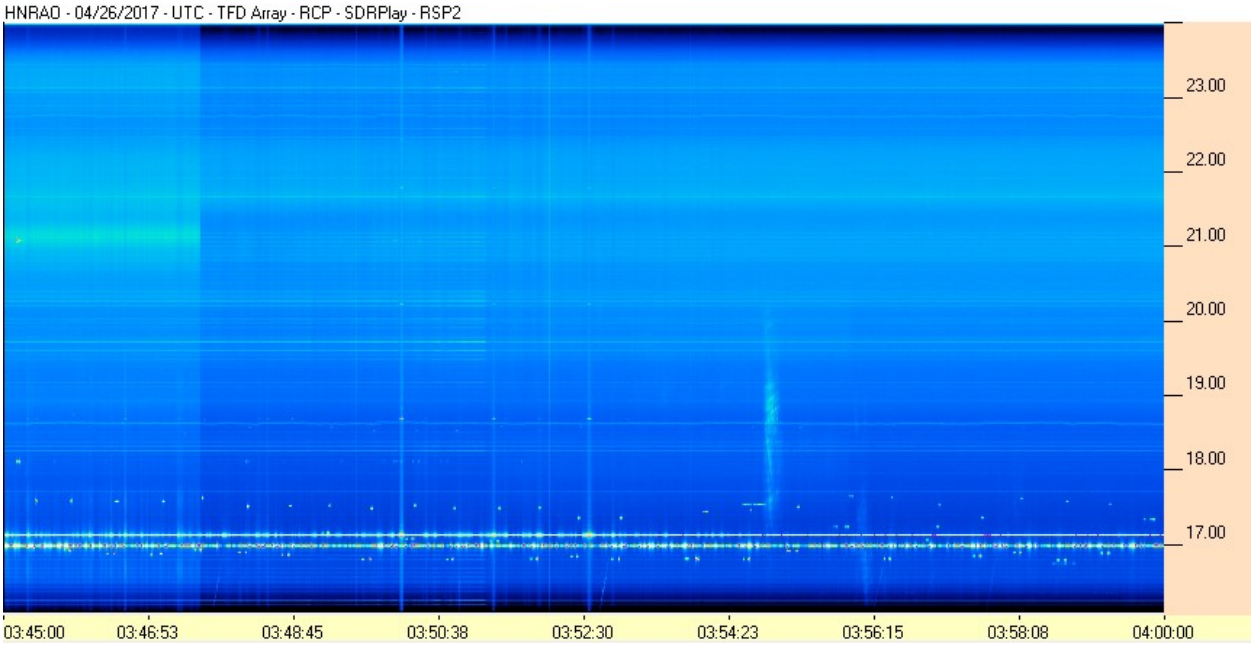
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



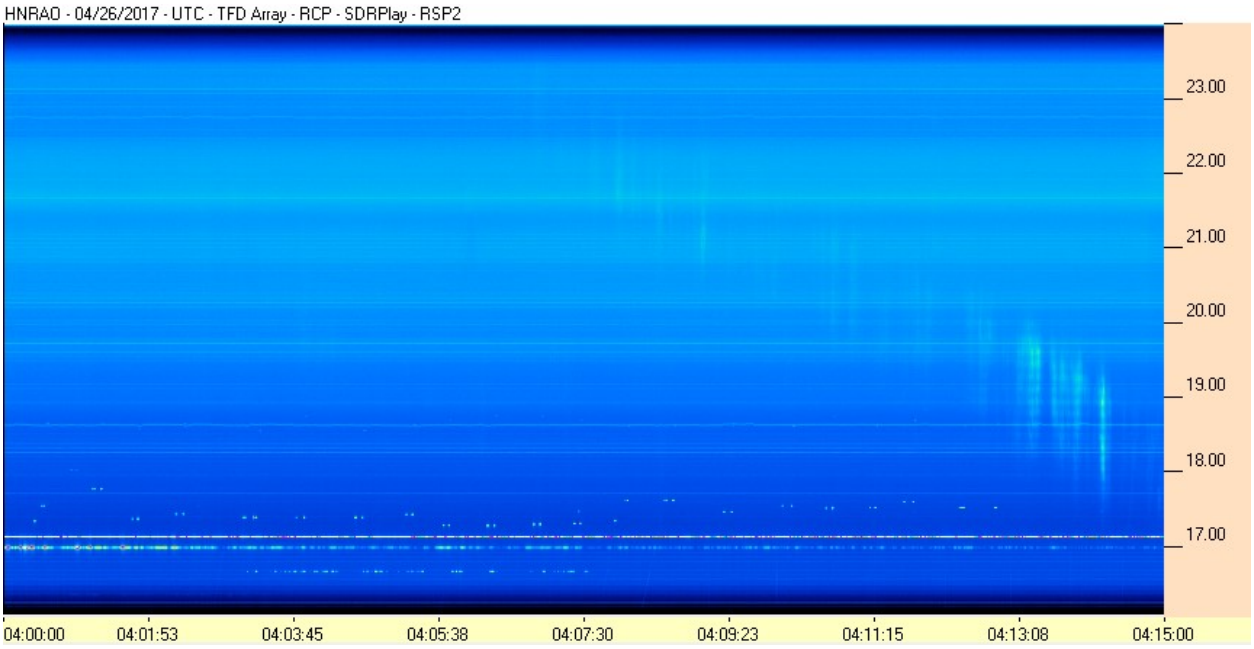


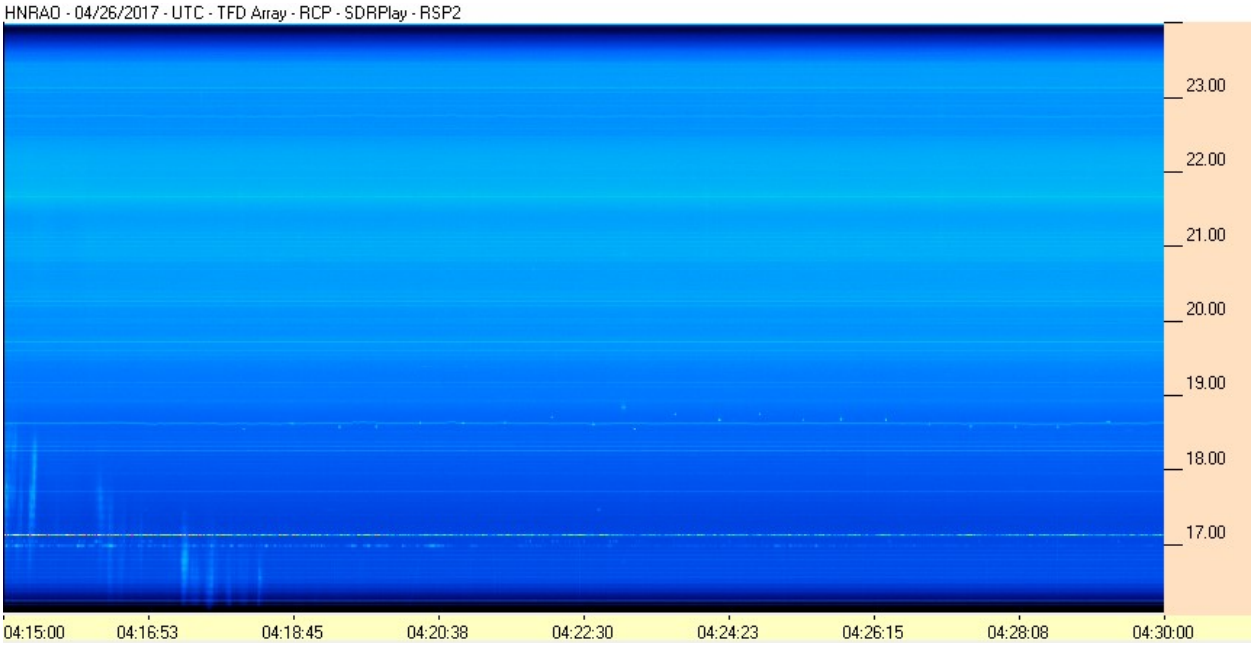
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



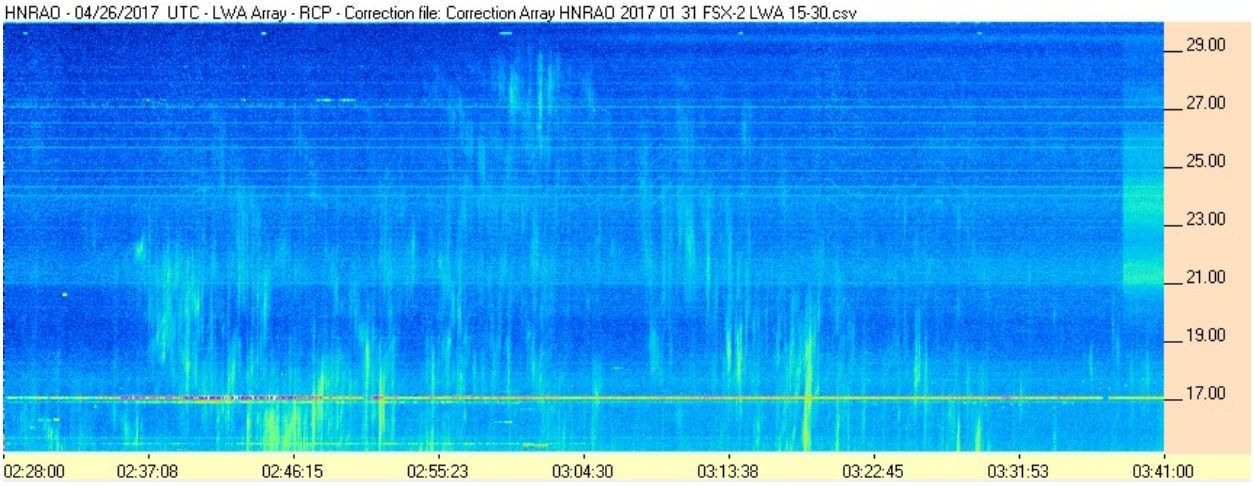


HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

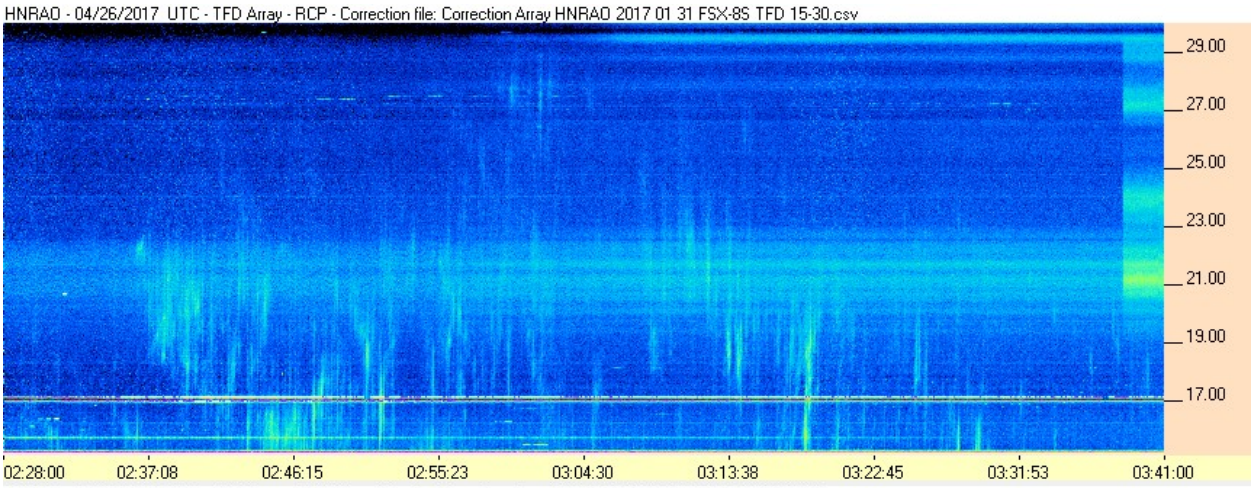




FSX-2/LWA Pair

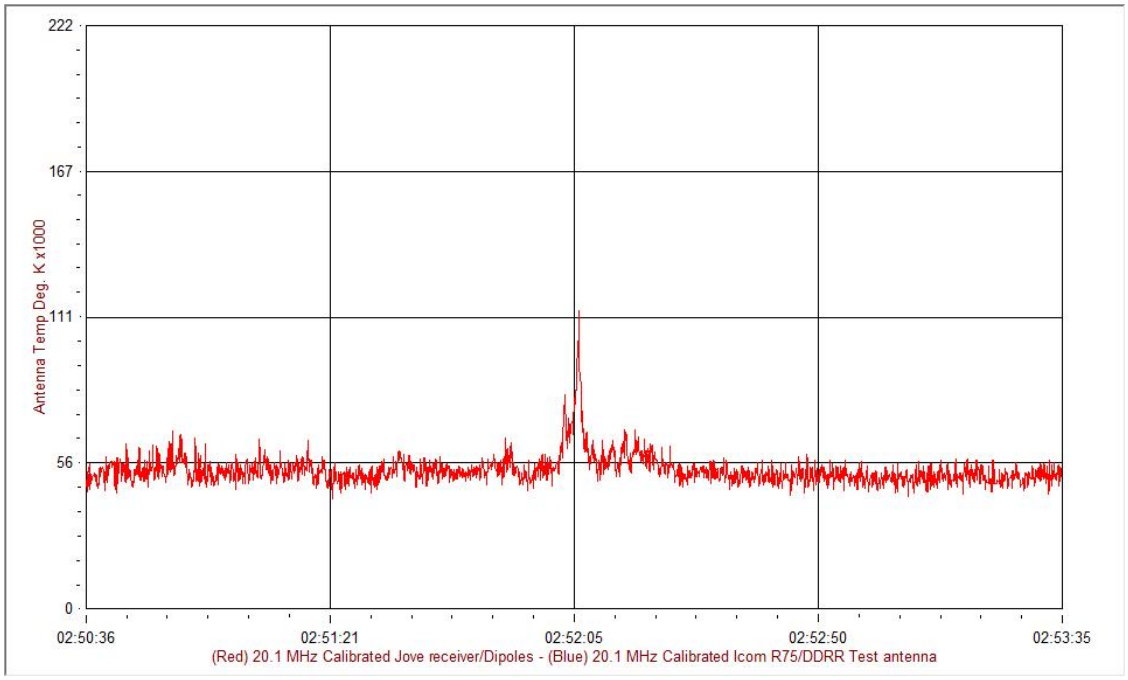


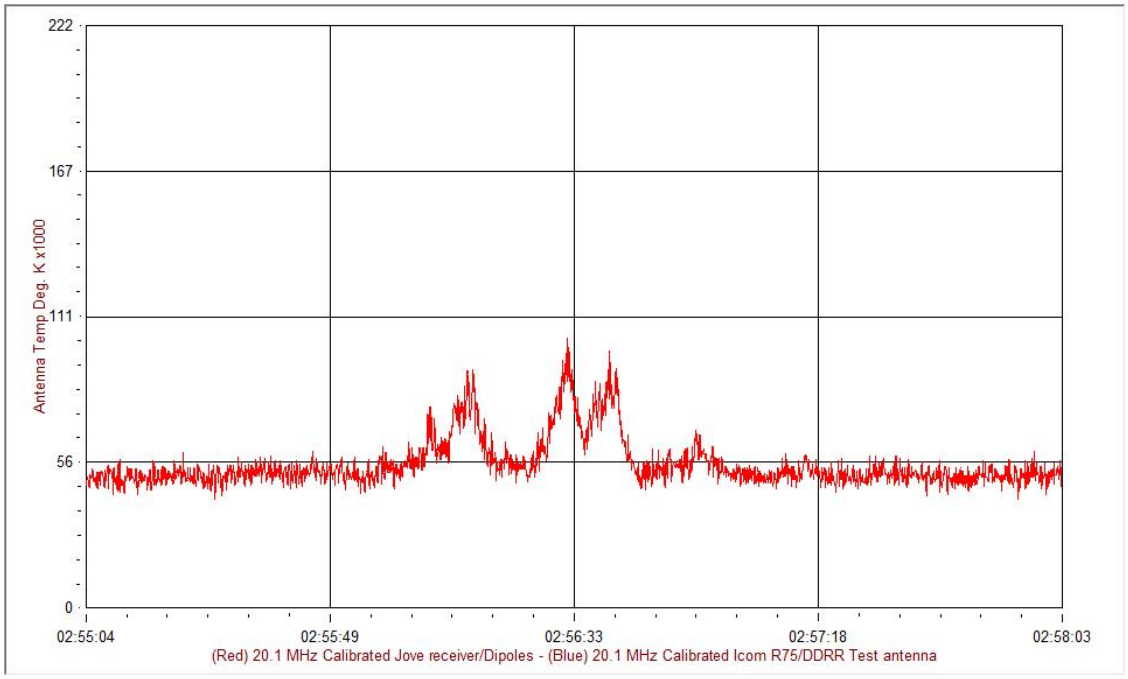
FSX-8S/TFD Pair

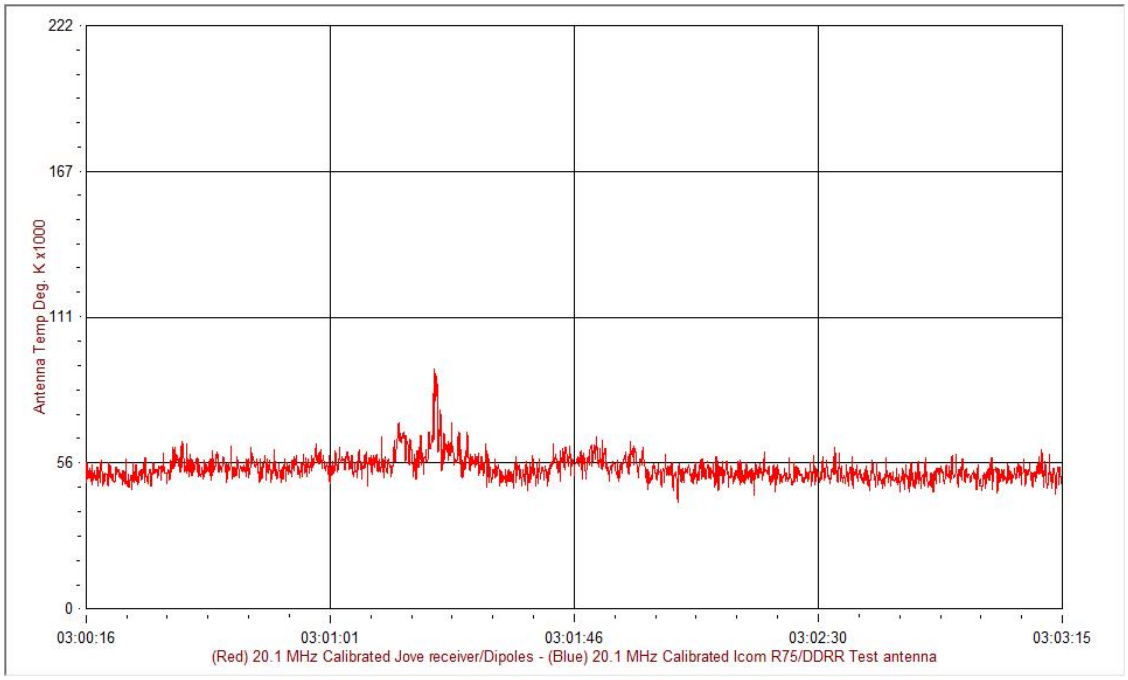


JOVE II Receiver/JOVE Dipoles

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq






222
167
111
56
0
Antenna Temp Deg. K x1000
03:00:16
03:01:01
03:01:46
03:02:30
03:03:15
(Red) 20.1 MHz Calibrated Jove receiver/Dipoles - (Blue) 20.1 MHz Calibrated Icom R75/DDRR Test antenna