

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 6 May 2017

Object: Jupiter – Non-Io-C

Observer: Unattended

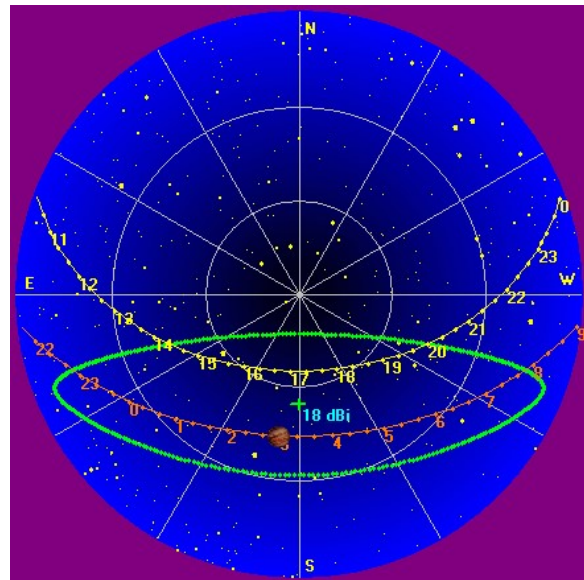
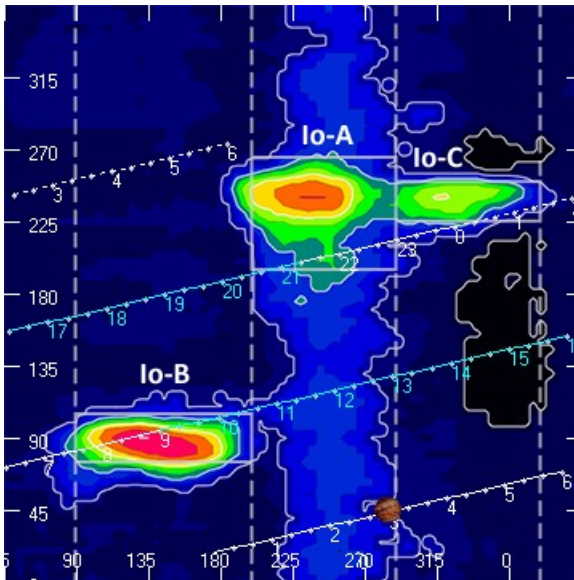
Start of pass:	0257 UT	Planetary K-index:	2
Jupiter Altitude (deg):	44.6	Jupiter Azimuth (deg):	172.3
Jupiter CML:	284.64	Jupiter Io Phase:	044.10
Jupiter RA (hr/min):	12:57	Jupiter Dec (hr/min):	-04:25
Hour Angle (hr/min):	-00:22	Polarization	RCP
Sun Altitude (deg):		Sun Azimuth (deg):	
Sun RA (hr/min):		Sun Dec (hr/min):	

End of pass:	0404 UT		
Jupiter Altitude (deg):	43.9	Jupiter Azimuth (deg):	194.7
Jupiter CML:	323.33	Jupiter Io Phase	053.08
Hour Angle (hr/min):	00:42		
Sun Altitude (deg):	-31.2	Sun Azimuth (deg):	341.1

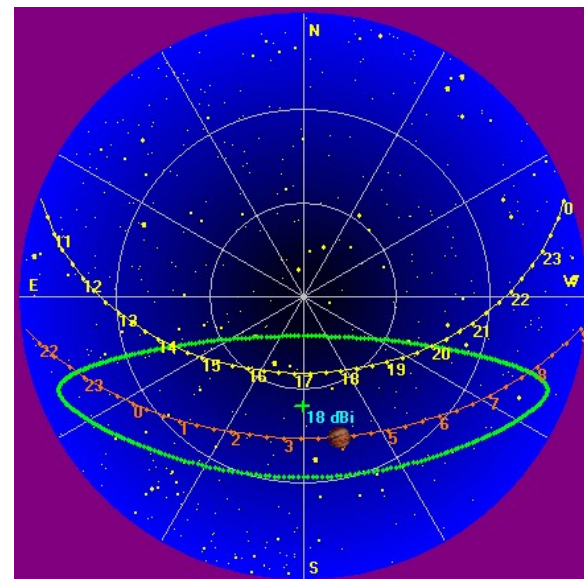
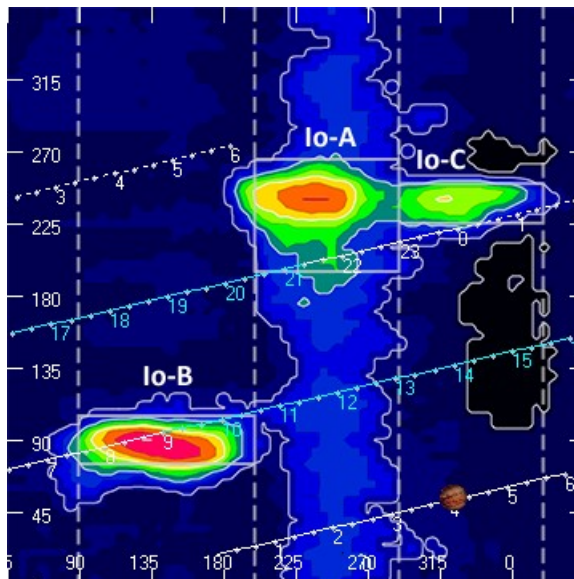
Observations made using:

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



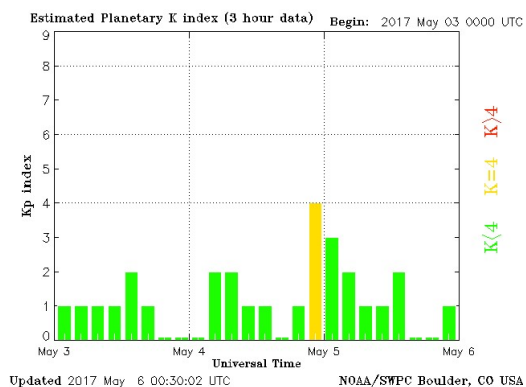
End of Pass

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360	38	RH	Late	
Io-C	(300-20)	(225-260)	36	RH&LH	Late	Also called "third source"
non-Io-C	300-360	0-360	32	RH&LH	Late	Voyager info

<https://www.radiosky.com/jupmodes.html>



HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Observing conditions were slightly better for this storm than the Non-Lo-A before it. The rain had subsided somewhat and the precipitation static wasn't as noticeable. Distant lightning are the bright narrow vertical lines.

A hard call to make, but ultimately decided this was a Non-Lo-C storm. The CML values end in the Non-Lo-C range, and the beginning is very close. The emission source is different than the Non-Lo-A that preceded it as seen in the modulation lanes and emissions.

RCP negative drift L-bursts with a period of negative drift S-bursts (possibly N-events) between 0326 UT and 0328 UT. The near horizontal lines seen in the L-burst emissions might be modulation lanes, or Faraday lanes. A polarized antenna shouldn't be seeing Faraday lanes but they are there and will remain undetermined.

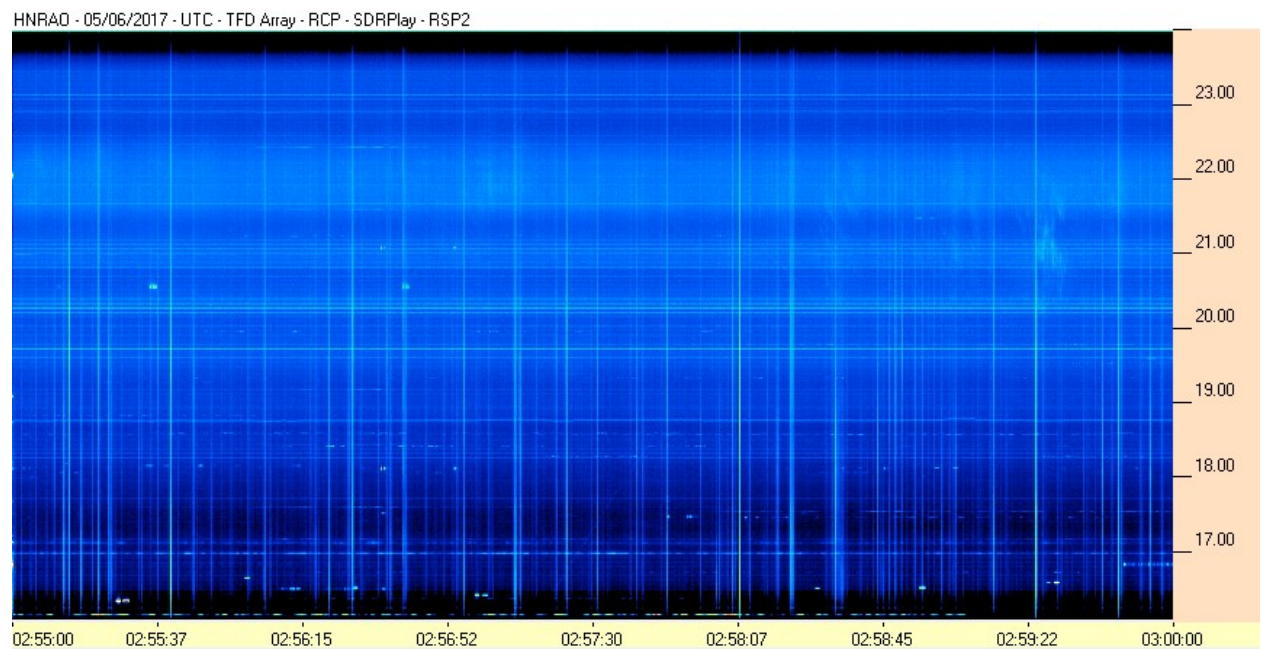
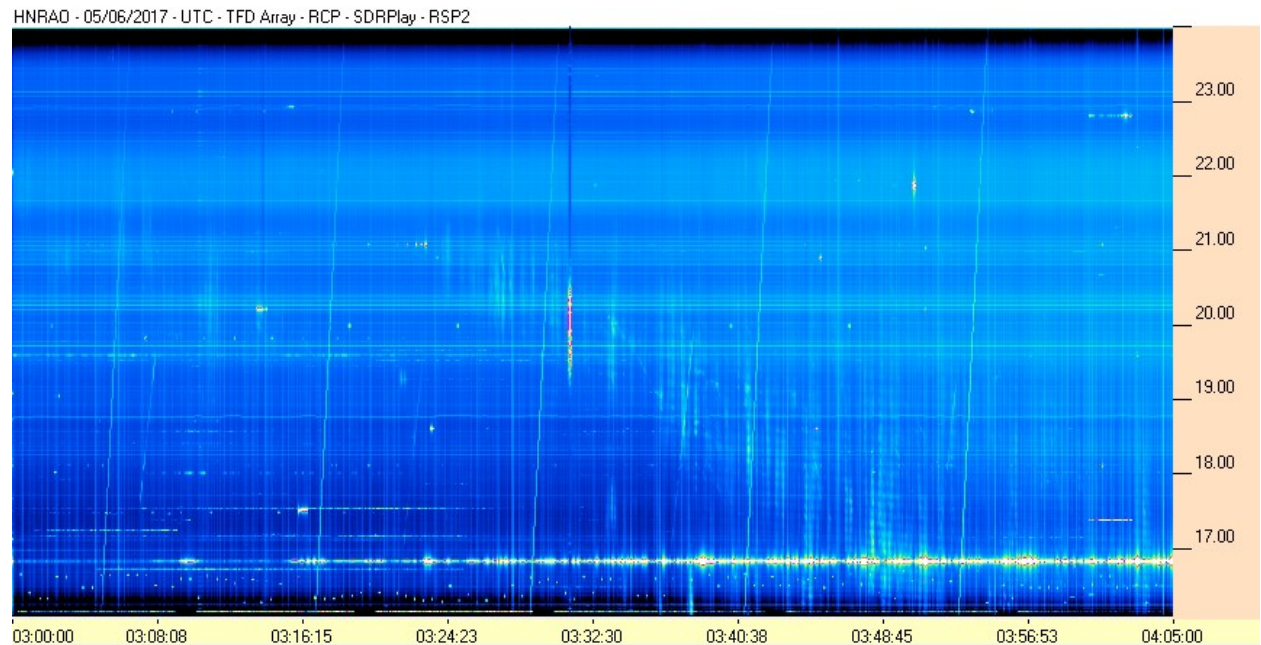
The negative drift S-bursts at 21 MHz look like a series of N-events, showing narrow band emissions.

The FSX-2/LWA and FSX-8S/TFD spectrographs observed this storm, and showed it to be all RCP emissions.

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



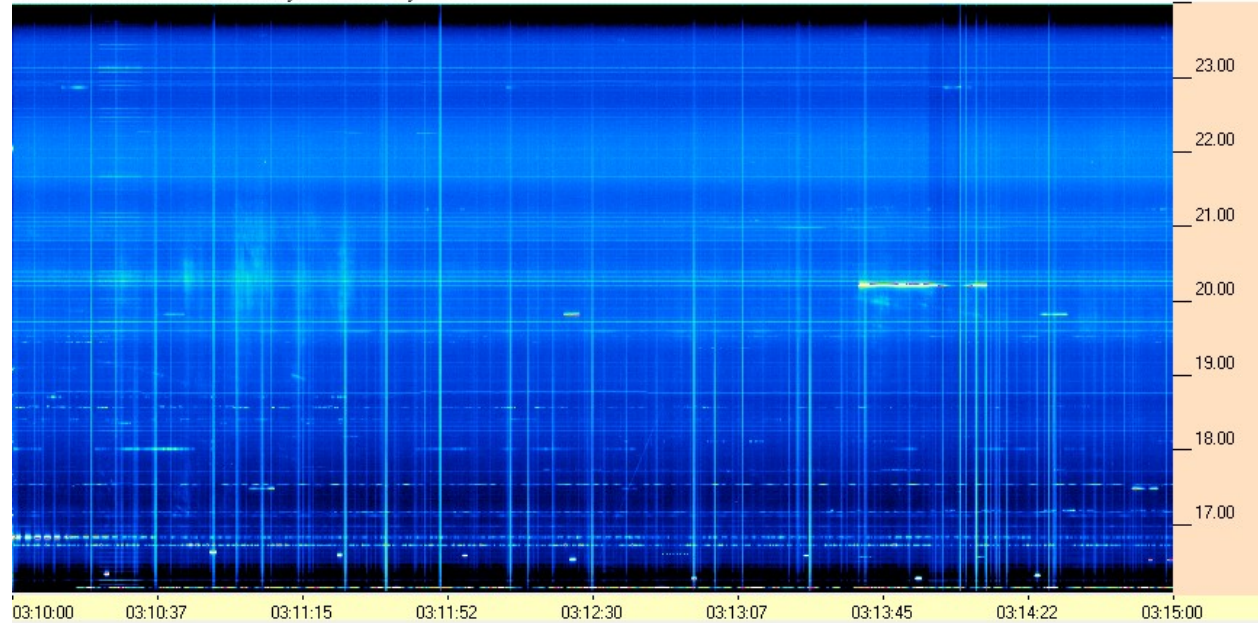
SDRPlay RSP2/TFD Pair



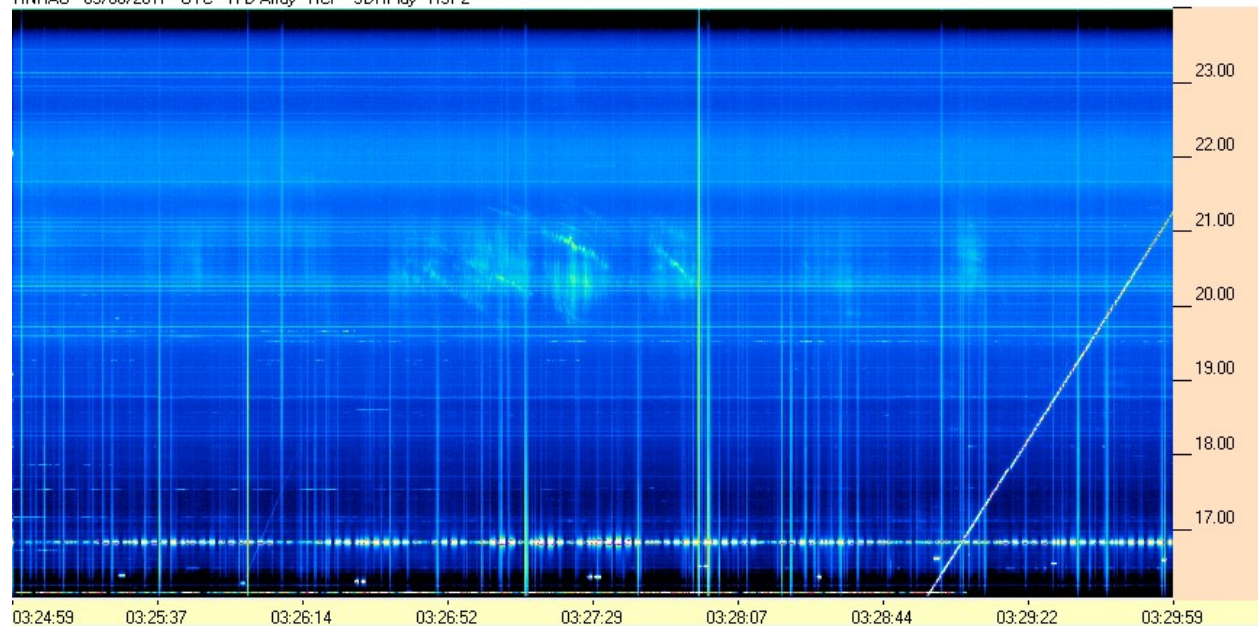
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



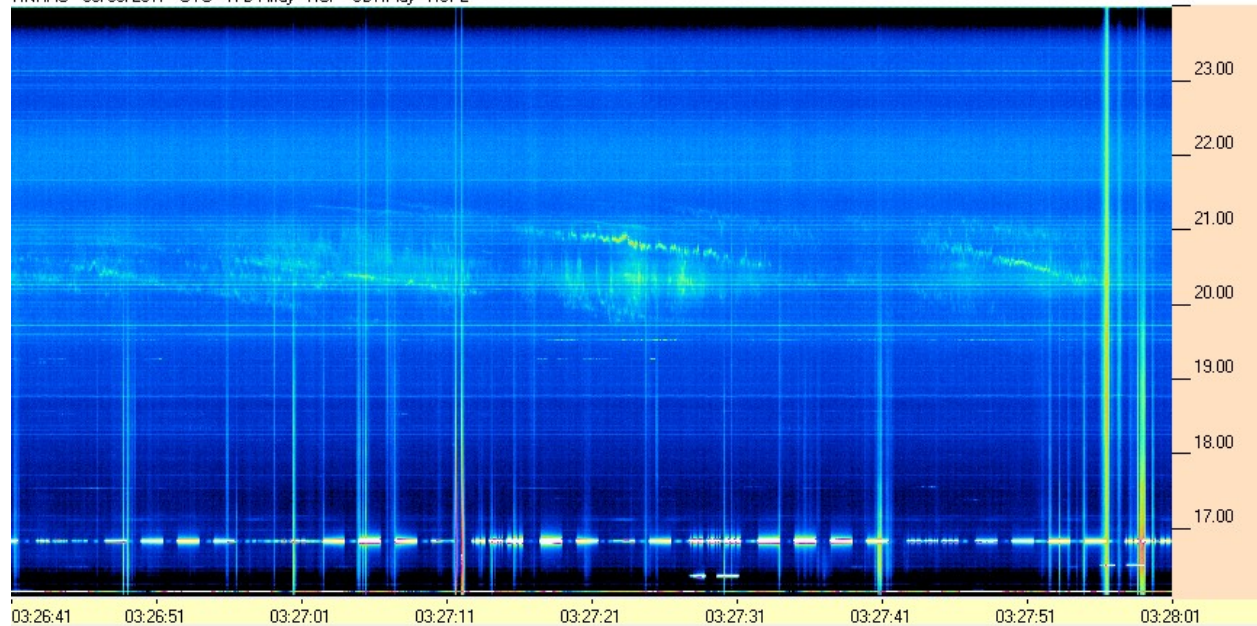
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



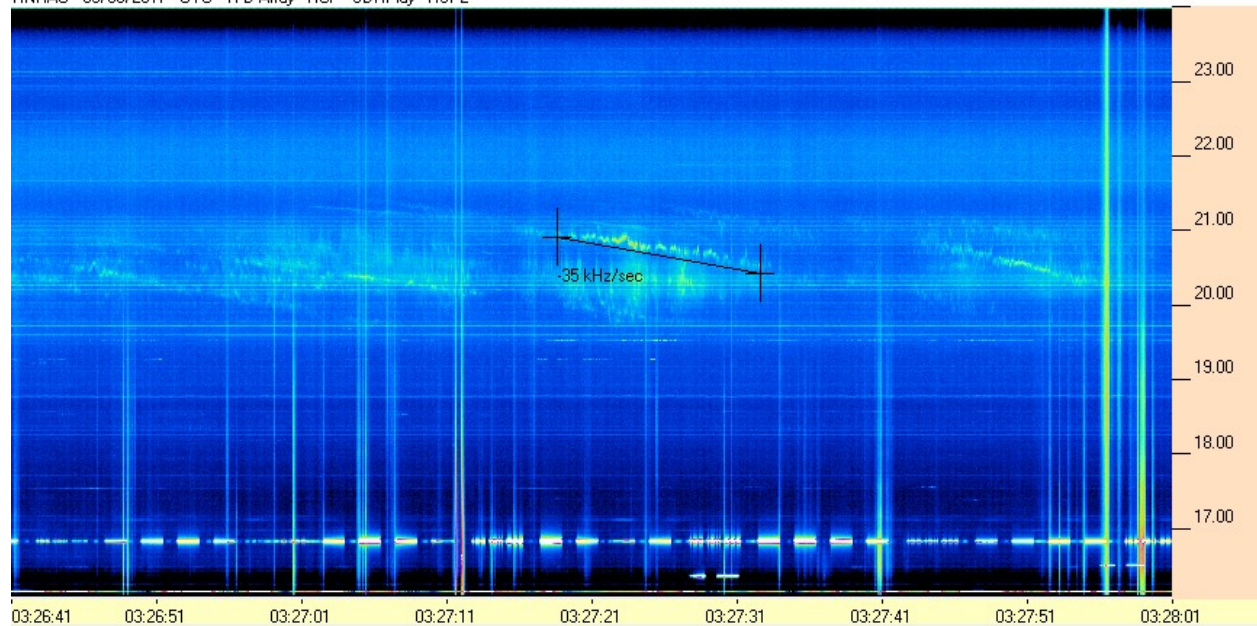
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



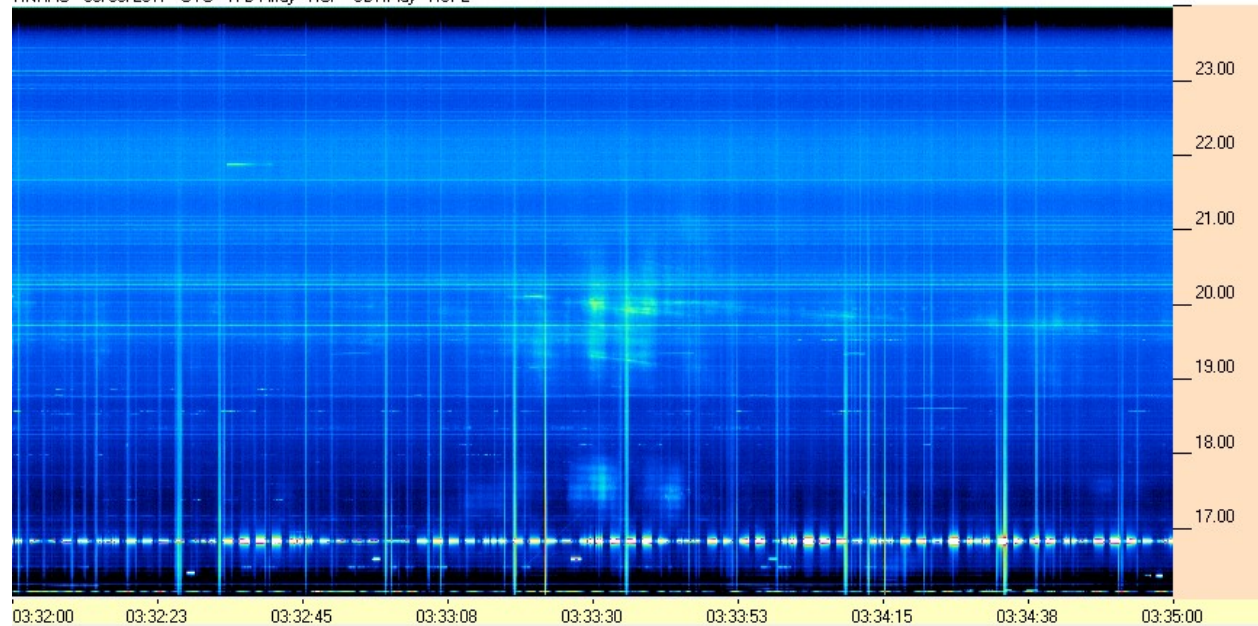
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



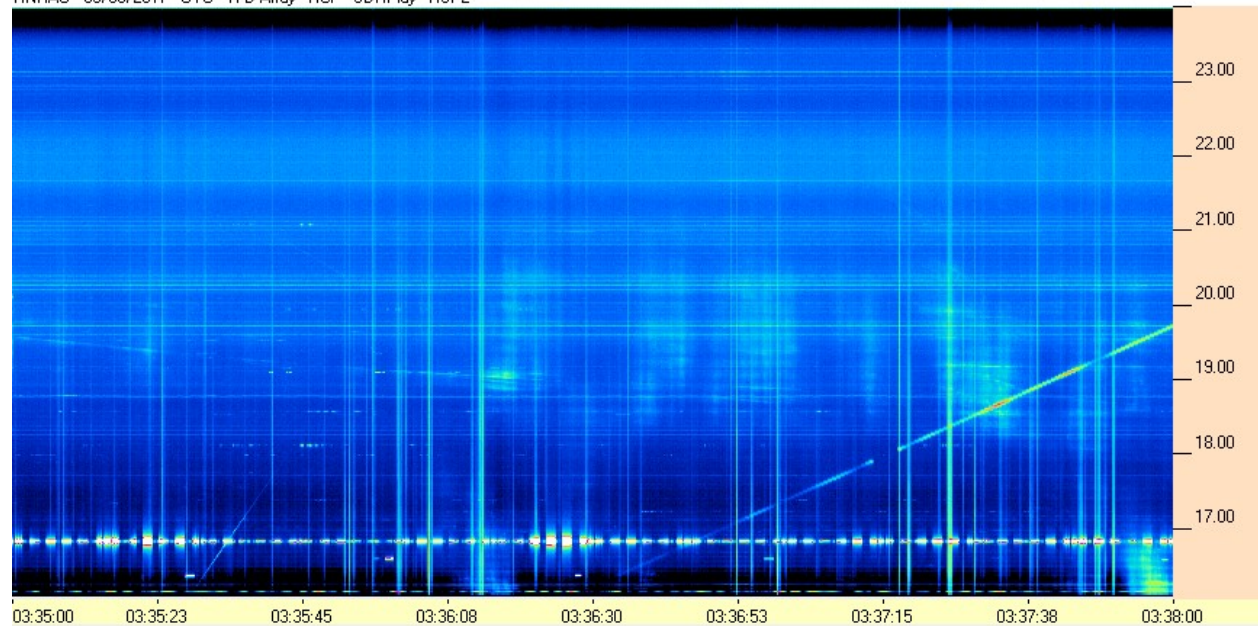
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



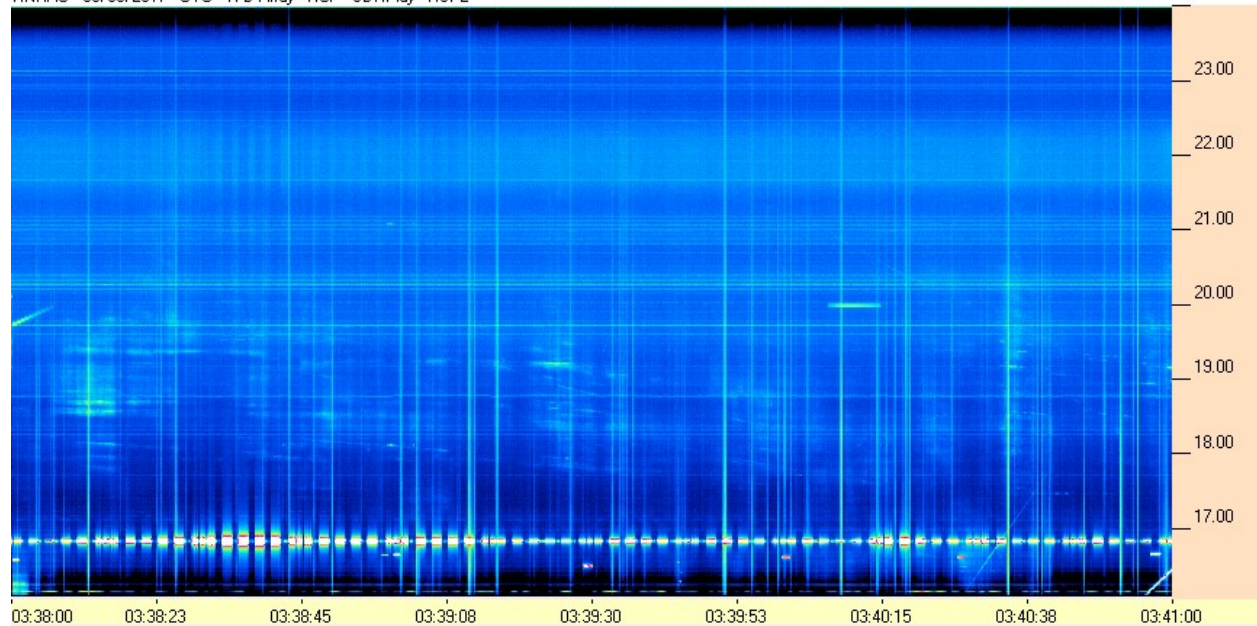
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



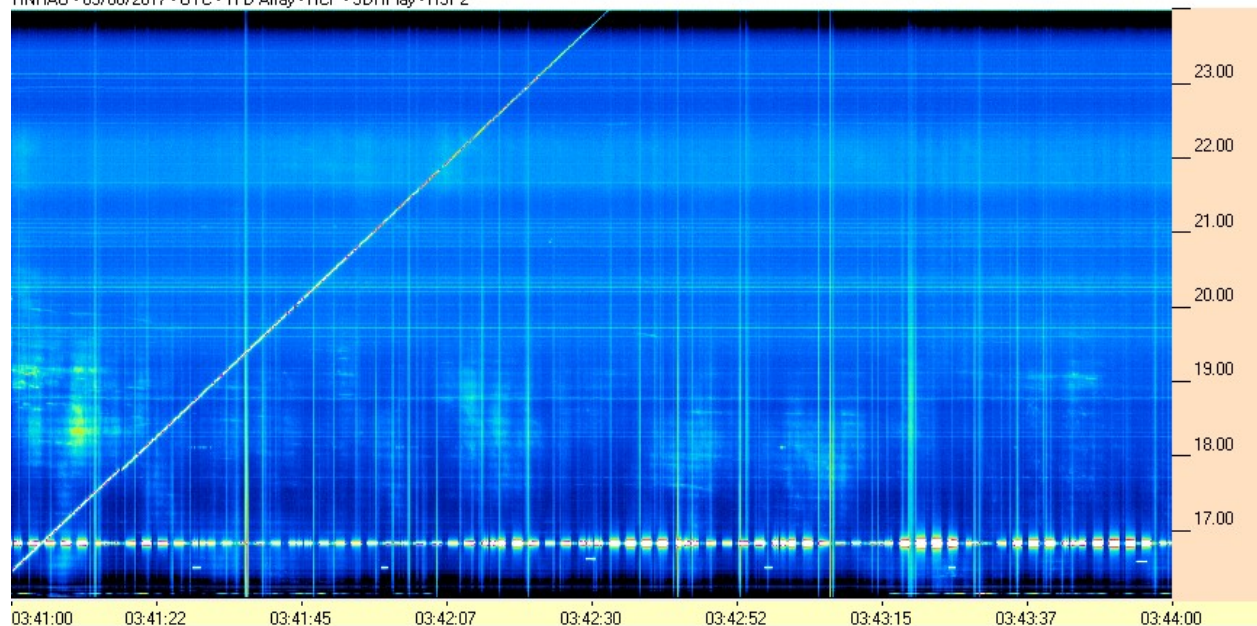
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



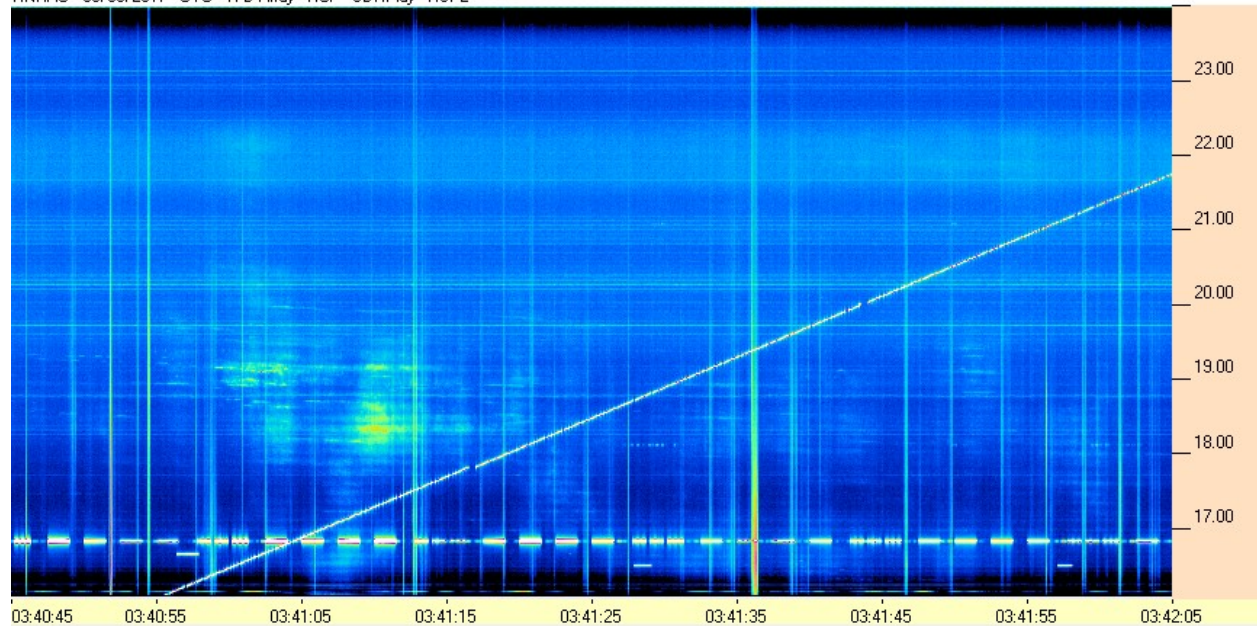
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



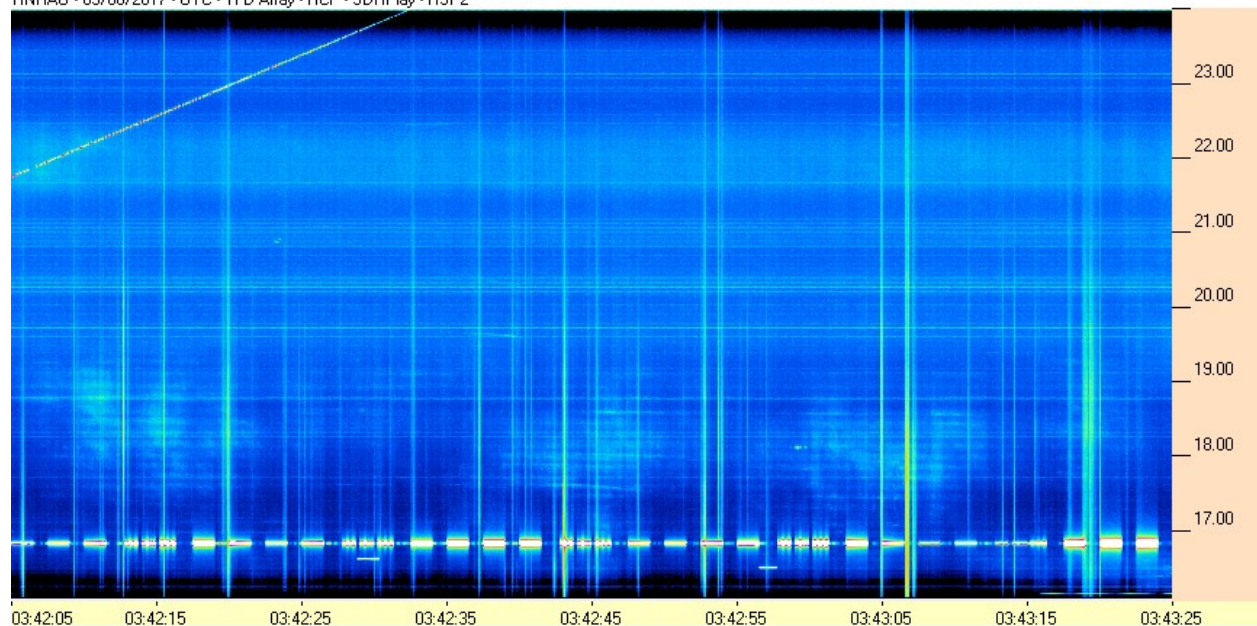
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



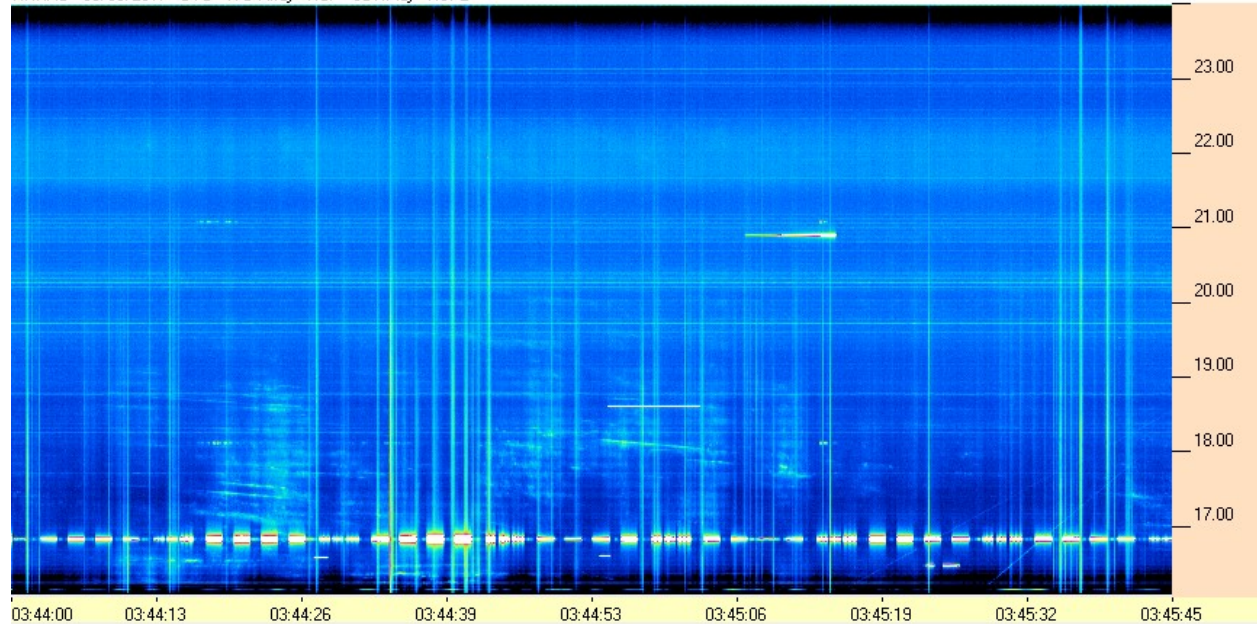
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



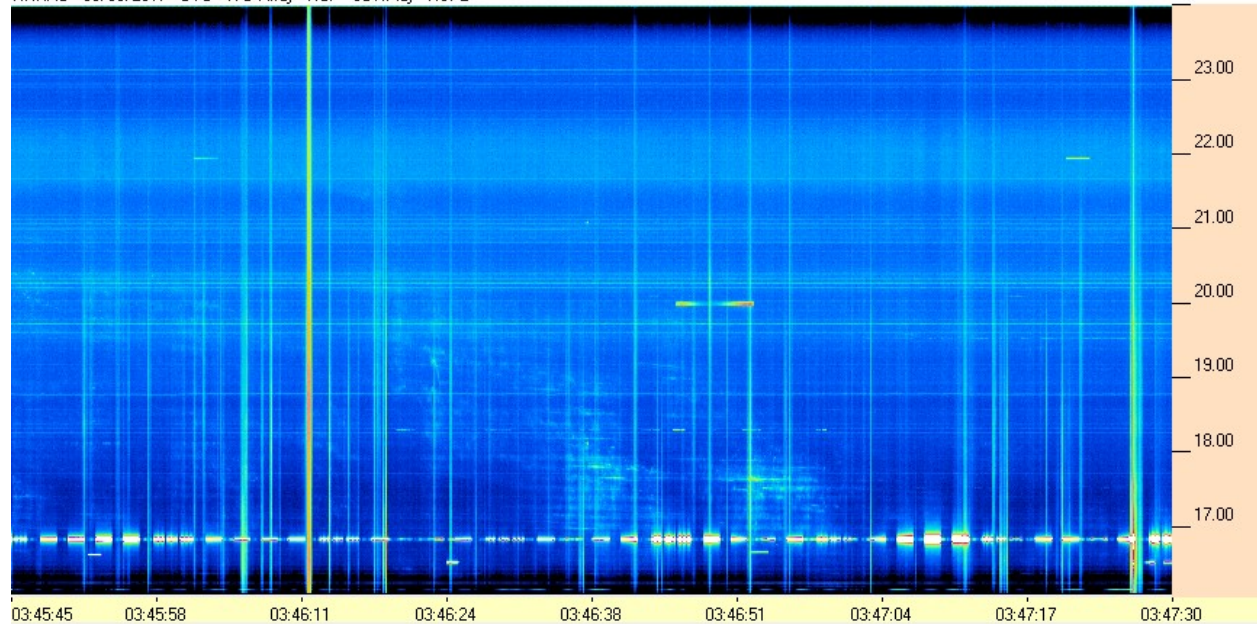
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



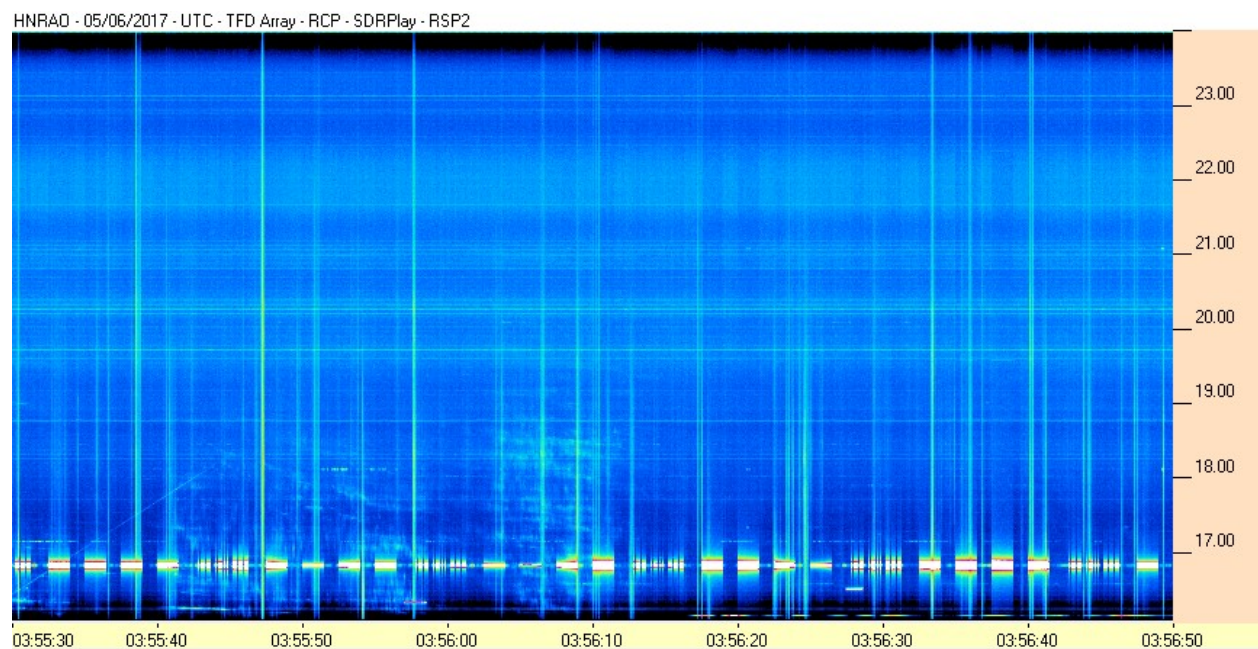
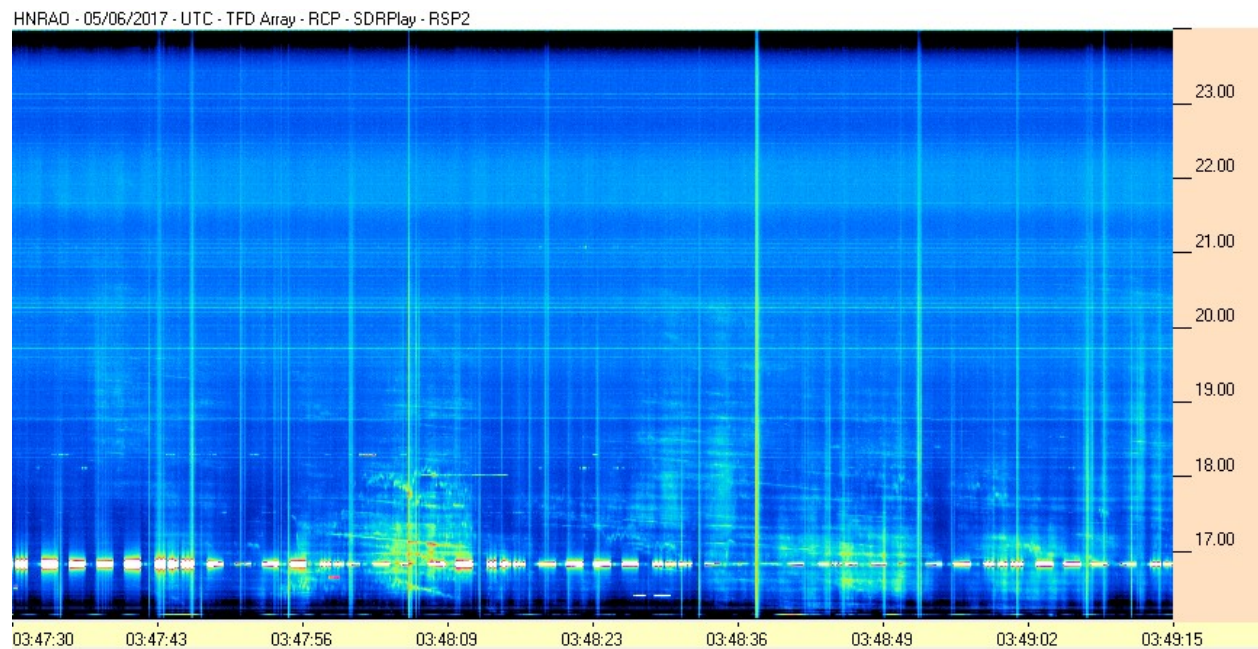
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



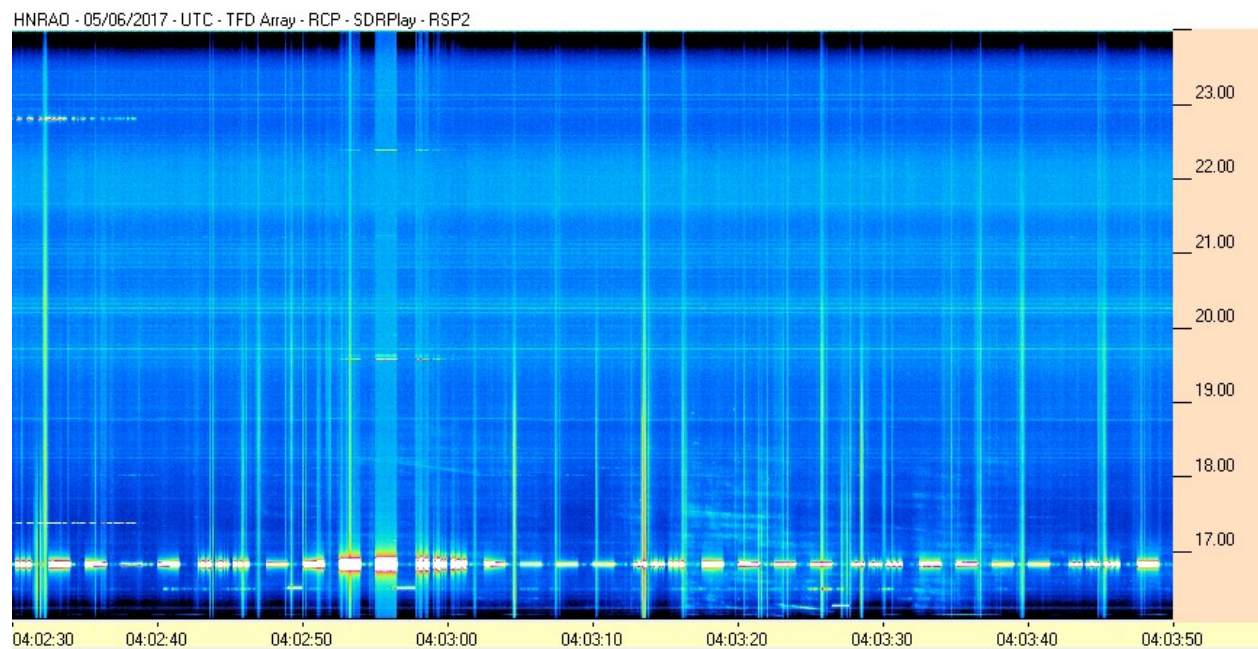
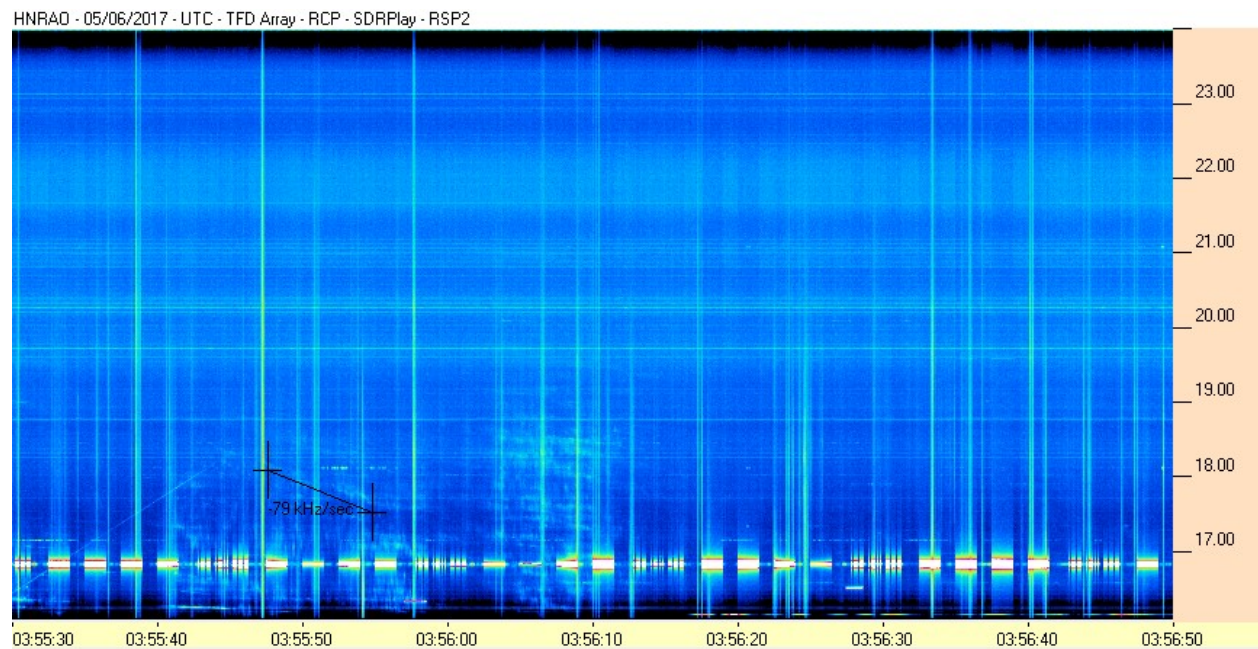
HNRAO - 05/06/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

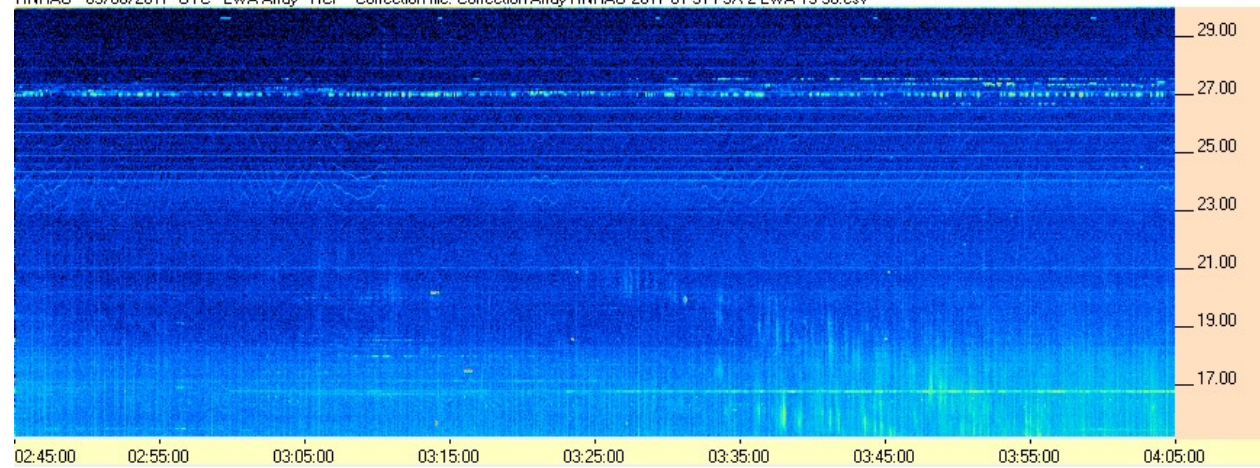


HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



FSX-2/LWA Pair

HNRAO - 05/06/2017 UTC - LWA Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-2 LWA 15-30.csv

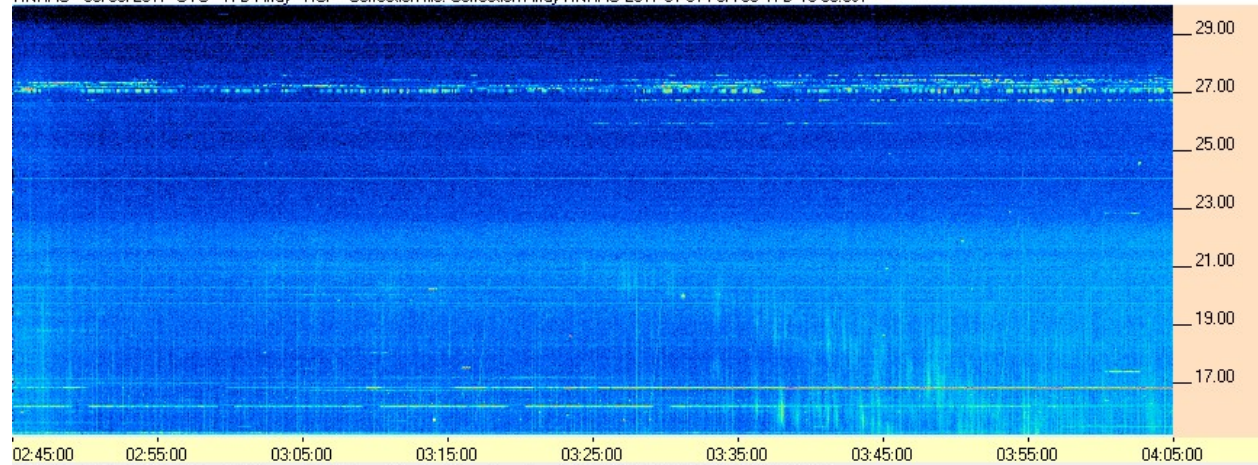


HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



FSX-8S/TFD Pair

HNRAO - 05/06/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



HNRAO - 05/06/2017 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv

