

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 25 February 2017

Object: Io-C

Observer: JB

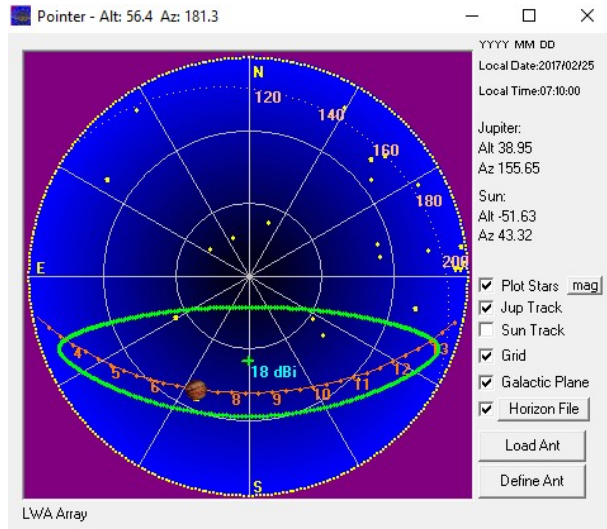
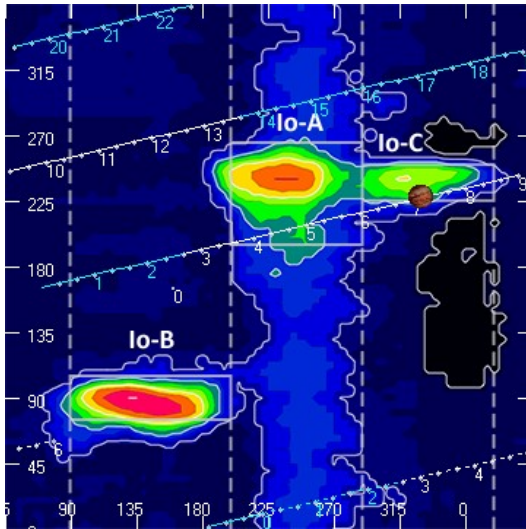
Start of pass:	0710 UT	Planetary K-index:	
Jupiter Altitude:	39.0 degrees	Jupiter Azimuth:	155.6 degrees
Jupiter CML:	329.85	Jupiter Io Phase:	227.31
Jupiter RA:	13:25	Jupiter Dec:	-07:19
Hour Angle:	-01:15	Polarization	LCP
Sun Altitude:	-51.6 degrees	Sun Azimuth:	043.3 degrees
Sun RA:	22:27	Sun Dec:	-09:41

End of pass:	0729 UT		
Jupiter Altitude:	40.3 degrees	Jupiter Azimuth:	161.5 degrees
Jupiter CML:	341.34	Jupiter Io Phase	230.02
Hour Angle:	-00:56		
Sun Altitude:	-49.0 degrees	Sun Azimuth:	049.4 degrees

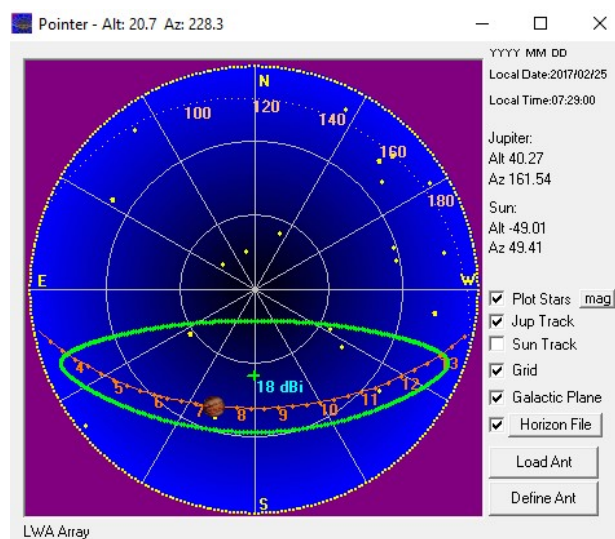
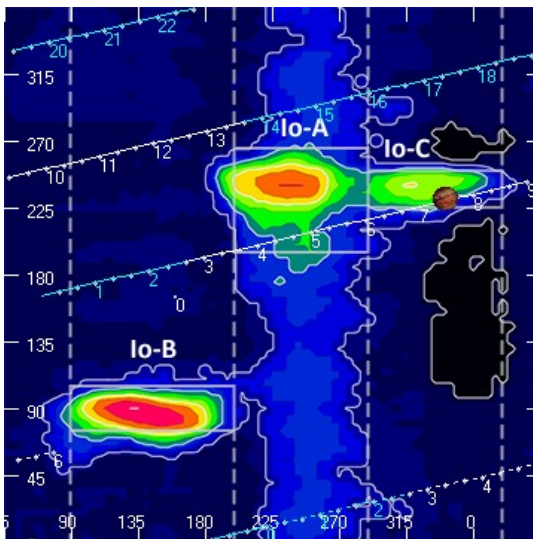
Observations made using:

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 @ 10'
 - a. 12' phase cable - phased for 2016-17 season
 - b. Calibrated 4 February 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 4 February 2017
5. SDRPlay – RSP1
 - a. Connected to various antenna arrays as needed.

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Beginning of Pass



End of Pass

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Observing conditions:

Rain with lightning and thunder in the area.

Power line noise very bad. Resulted in very poor spectrograph resolution on FSX-2/LWA and FSX-8S/TFD arrays.

Vertical lines on all three spectrographs were lightning discharges.

A low Io-C pass, followed a low Io-A pass. No detectable emissions from the Io-A pass. Negative slope emissions. Faraday lines present in SDRPlay RSP1/Dipole array due to linear polarization. Modulation lanes present. The most intense emissions were between 0727 UT and 0728 UT with several substantial bursts. It was during this time that L-bursts were recorded on SkyPipe at 20.1 MHz.

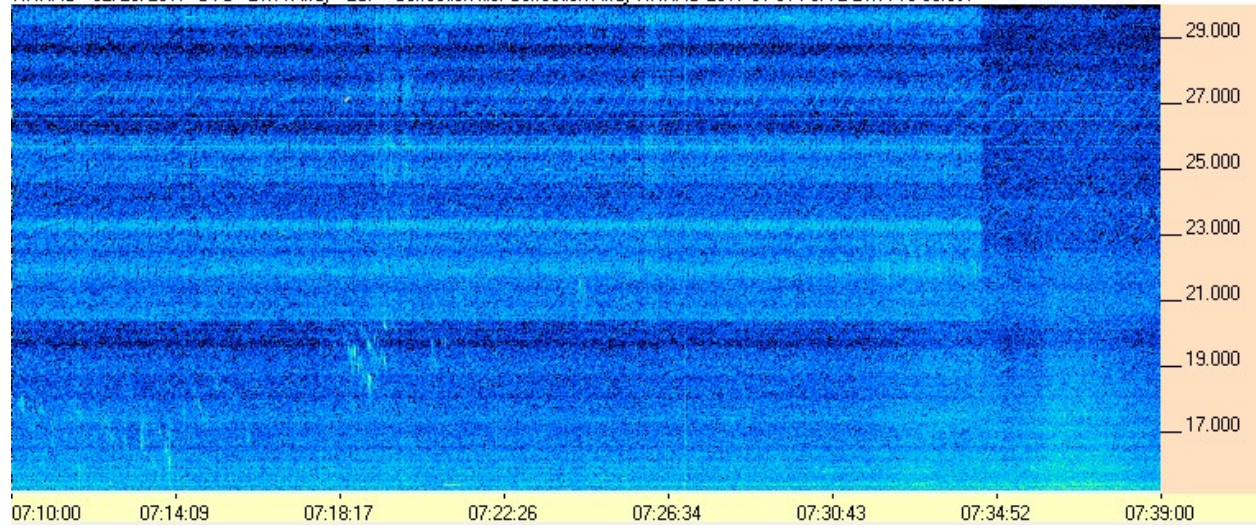
While the RFI line noise reduced the resolution on both the FSX-2/LWA and the FSX-8S/TFD arrays, the SDRPlay RSP1/JOVE dipoles were only slightly affected. This is primarily due to the way the two devices process the signals.

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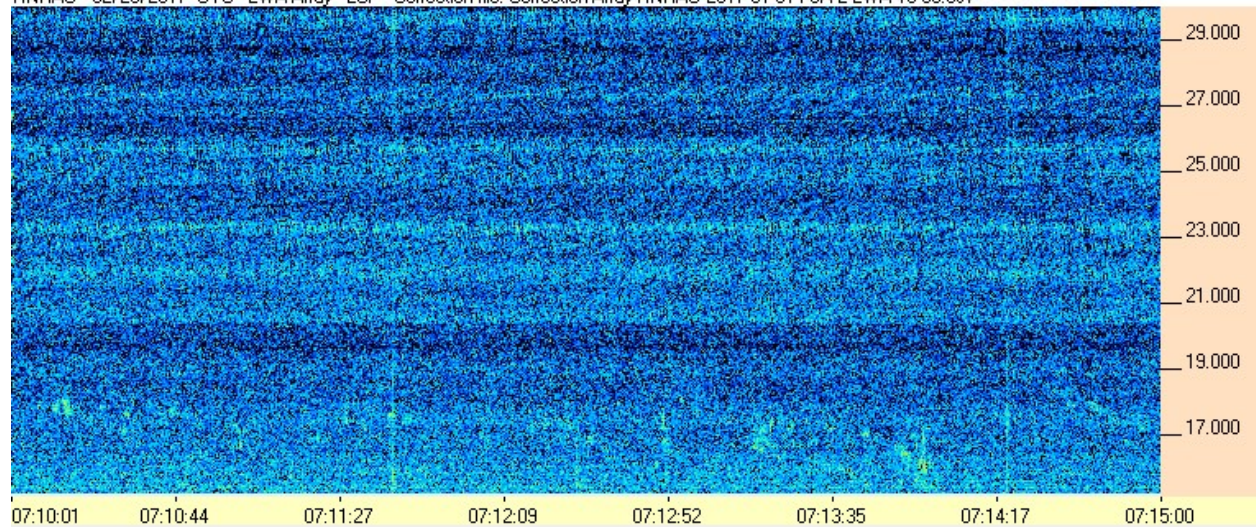


FSX-2/LWA Pair

HNRAO - 02/25/2017 UTC - LWA Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-2 LWA 15-30.csv



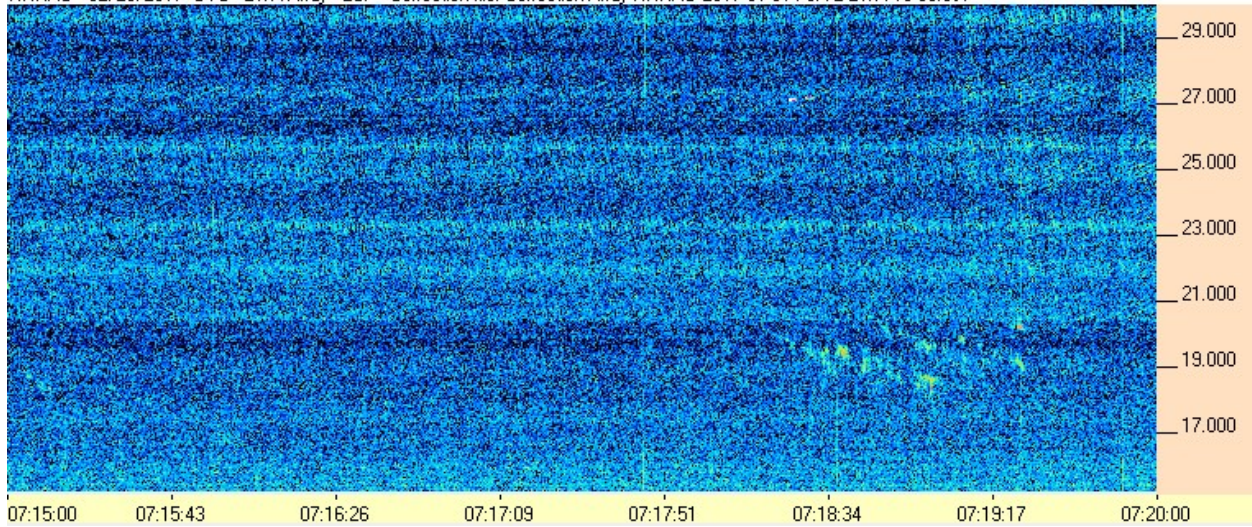
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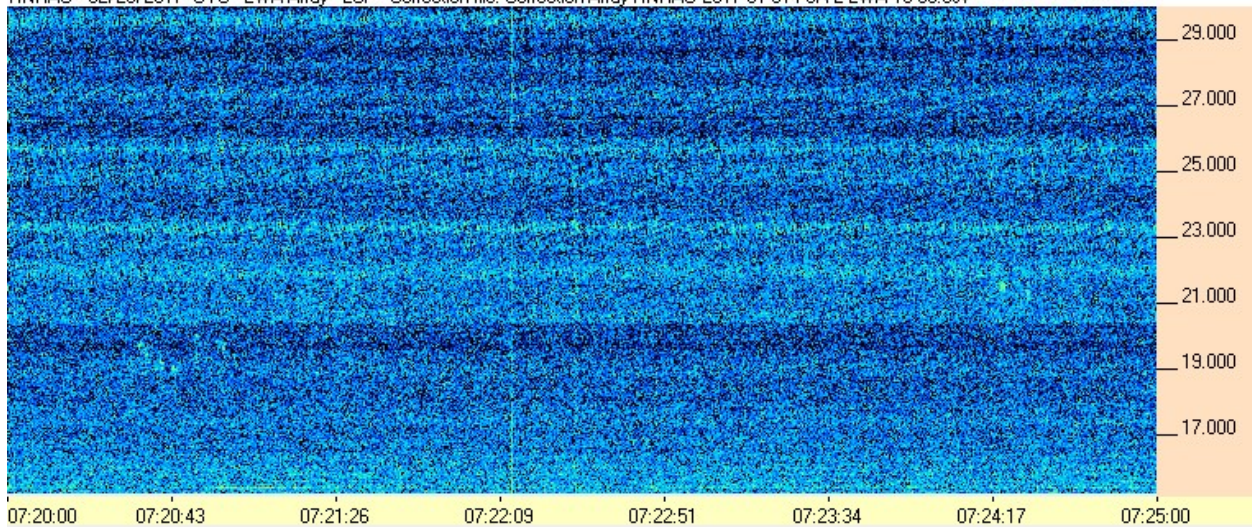
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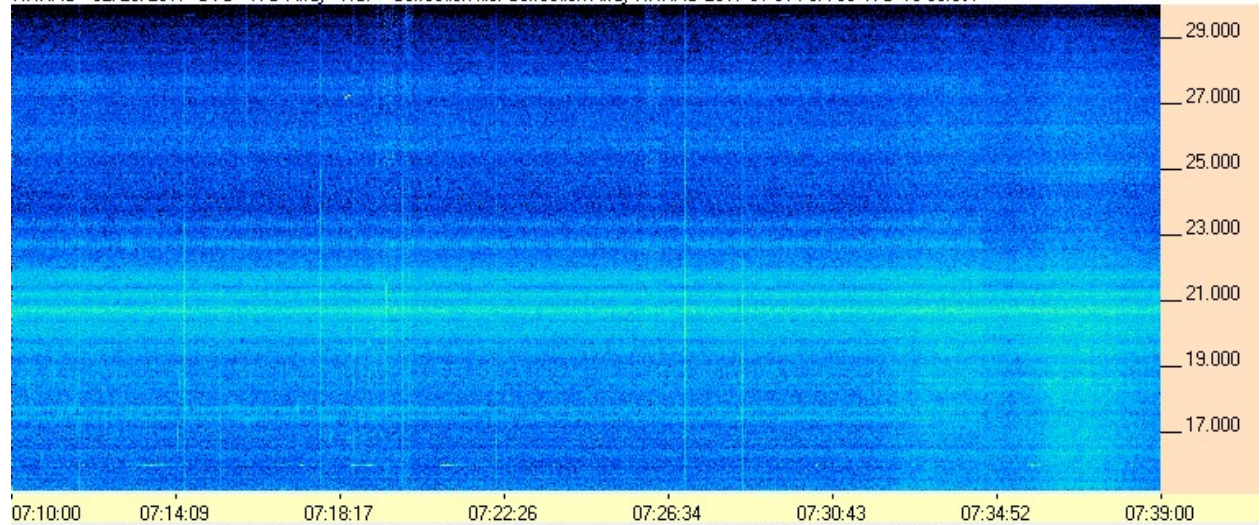


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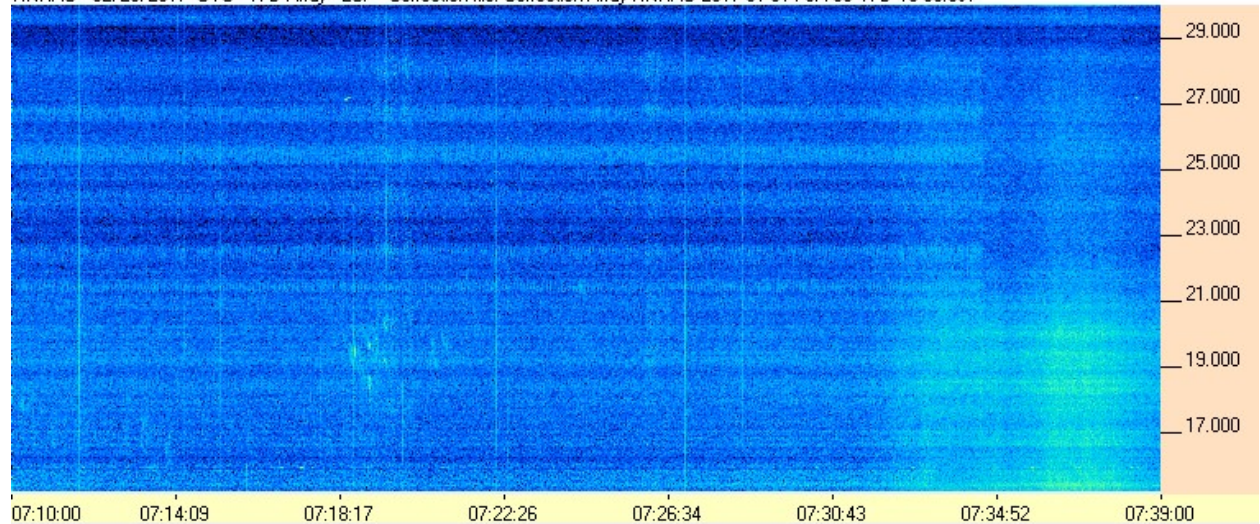


FSX-8S/TFD Pair

HNRAO - 02/25/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



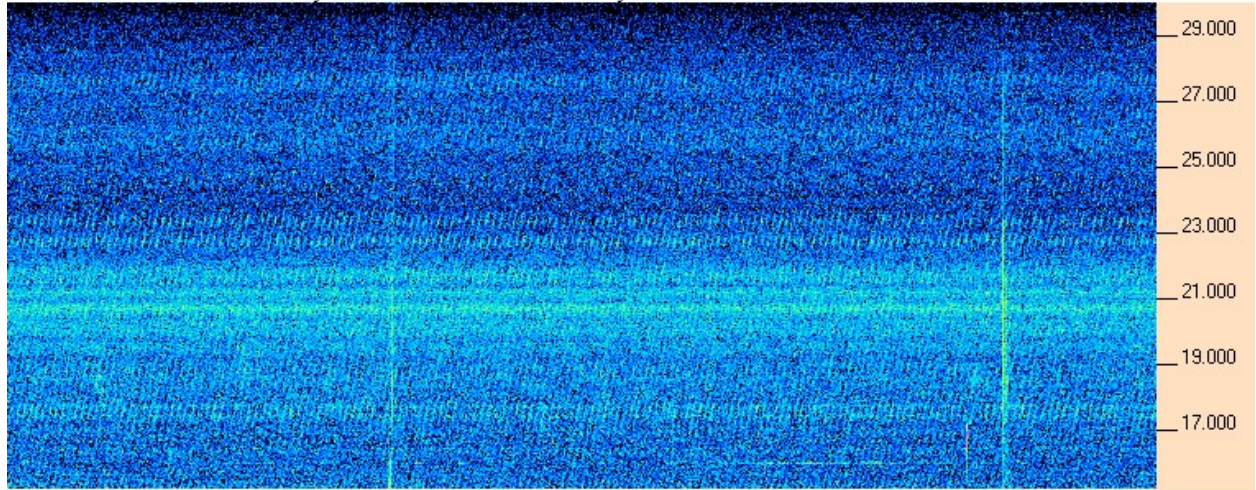
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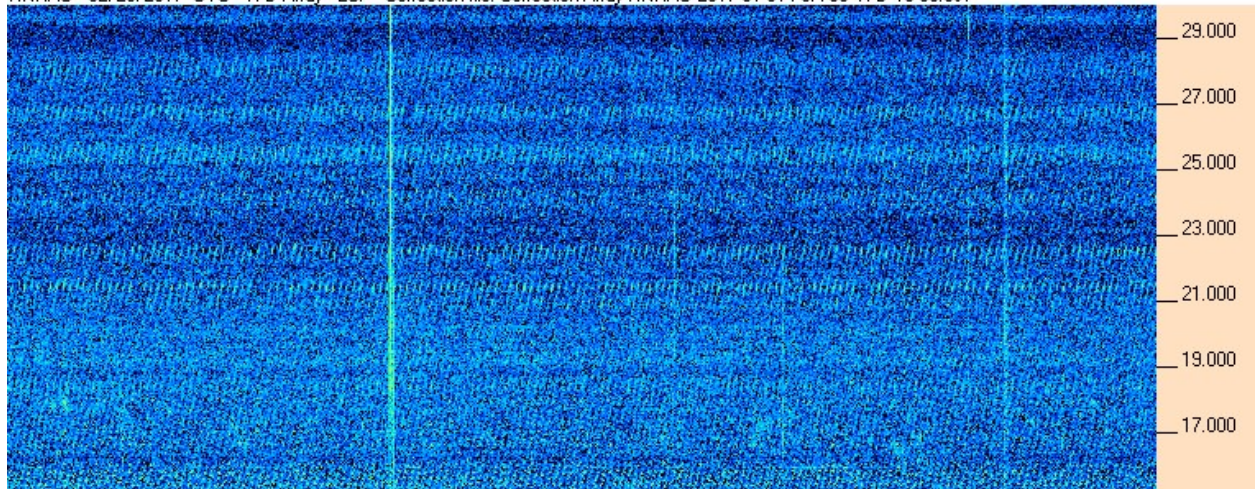


HNRAO - 02/25/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



07:10:01 07:10:44 07:11:27 07:12:09 07:12:52 07:13:35 07:14:17 07:15:00

HNRAO - 02/25/2017 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv

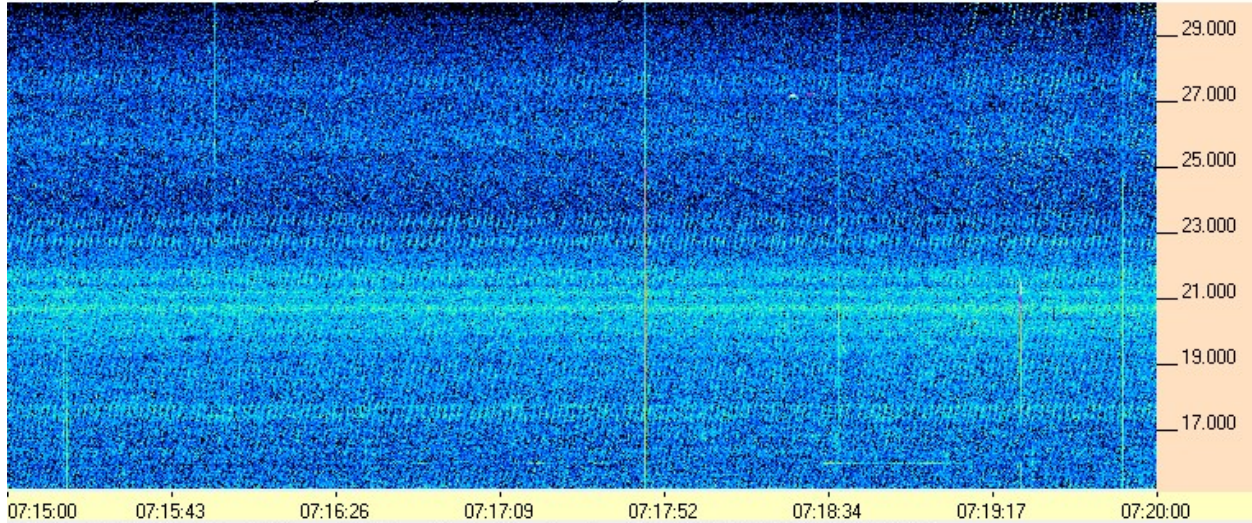


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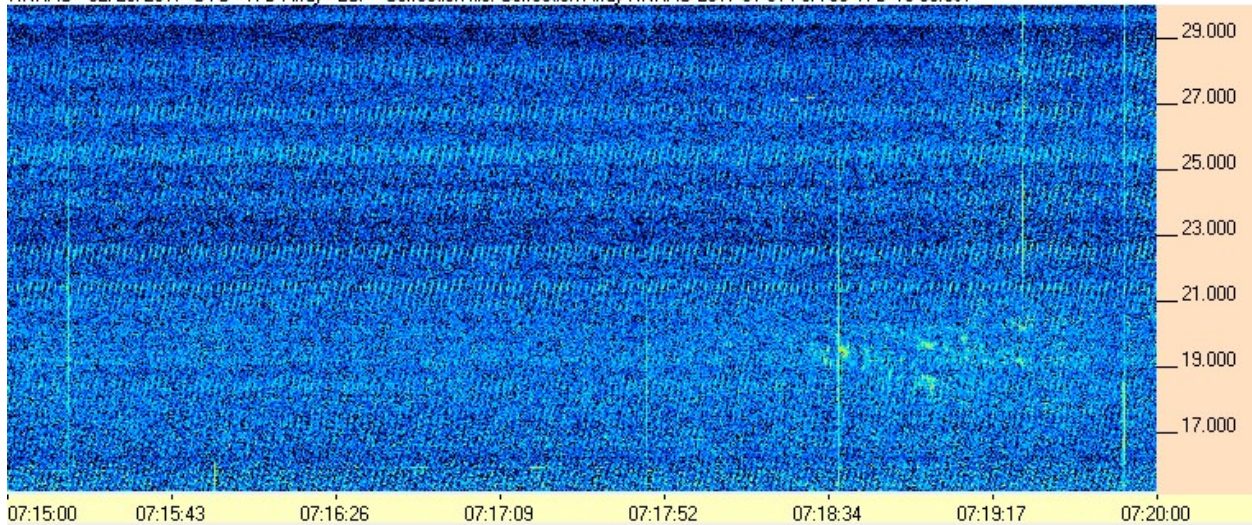
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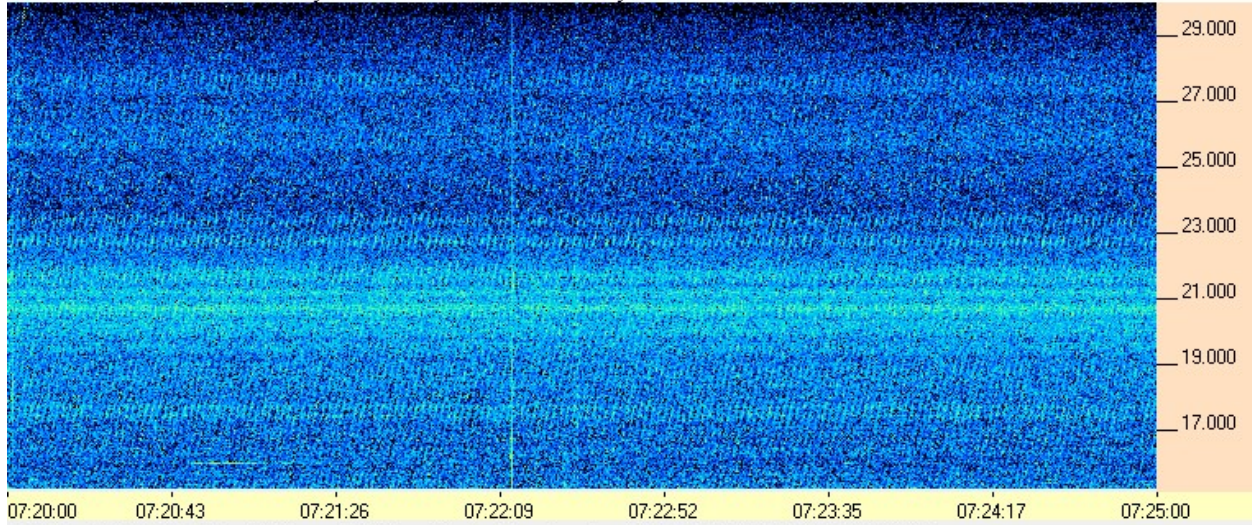
HNRAO - 02/25/2017 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



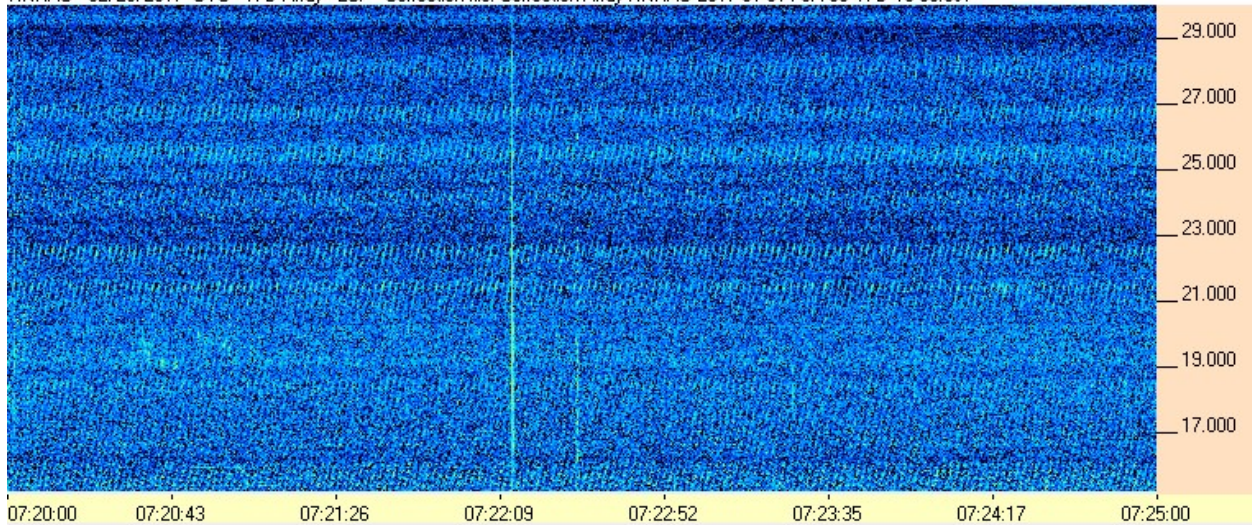
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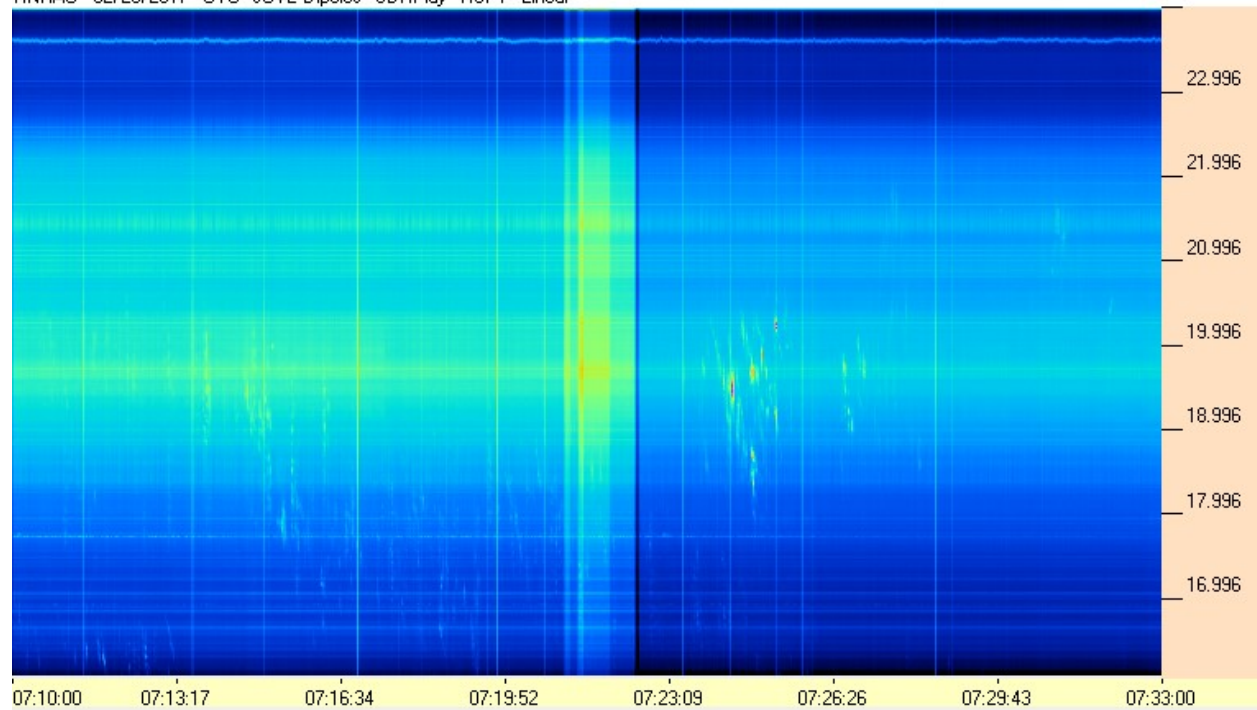


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SDRPlay - RSP1/JOVE Dipoles Pair

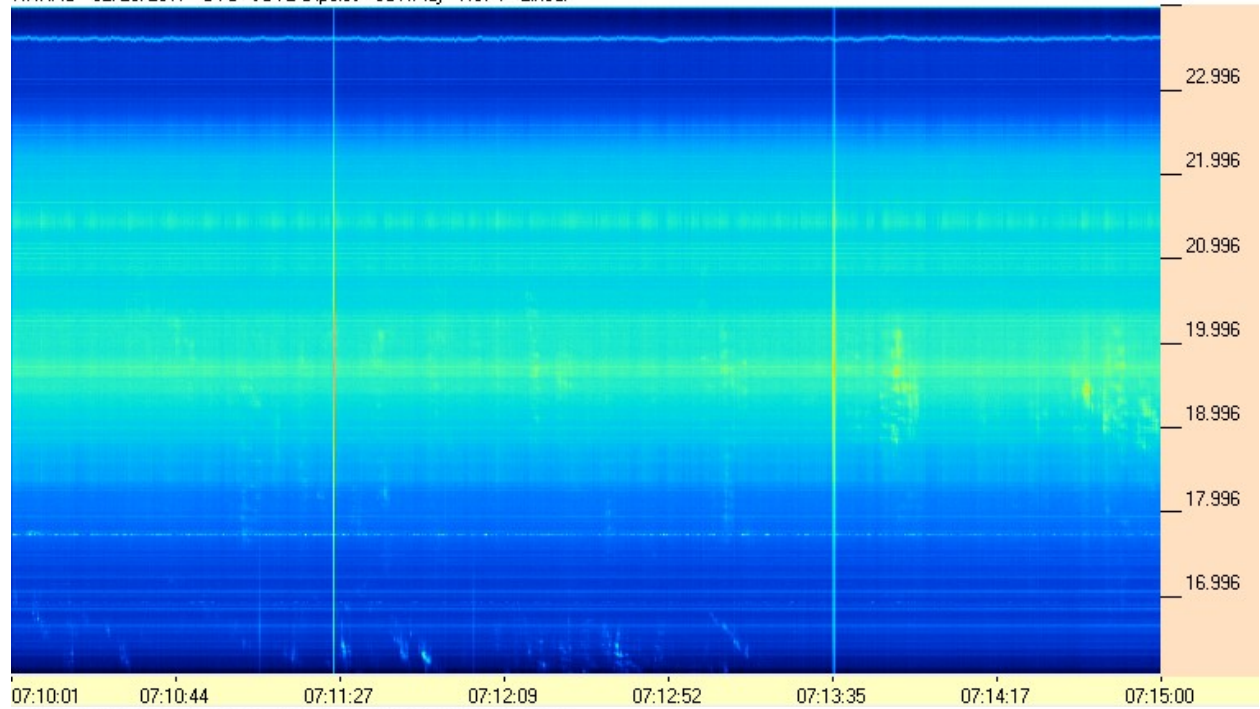
HNRAO - 02/25/2017 - UTC - JOVE Dipoles - SDRPlay - RSP1 - Linear



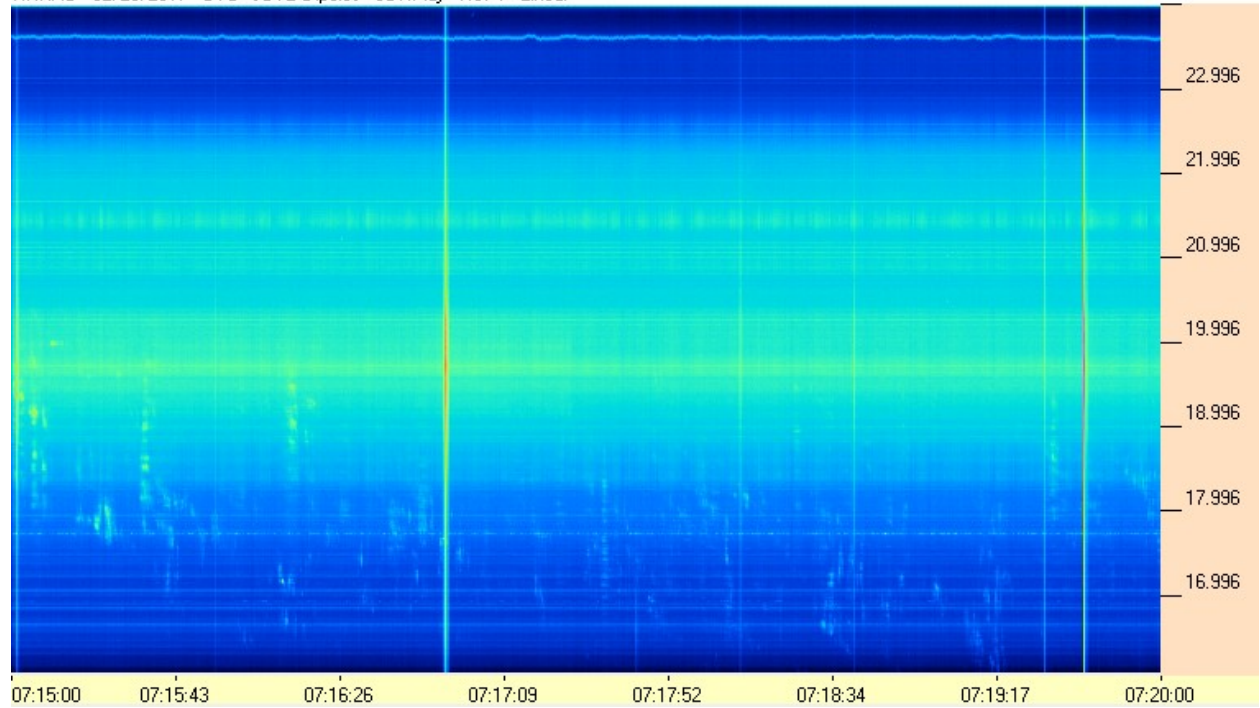
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HNRAO - 02/25/2017 - UTC - JOVE Dipoles - SDRPlay - RSP1 - Linear



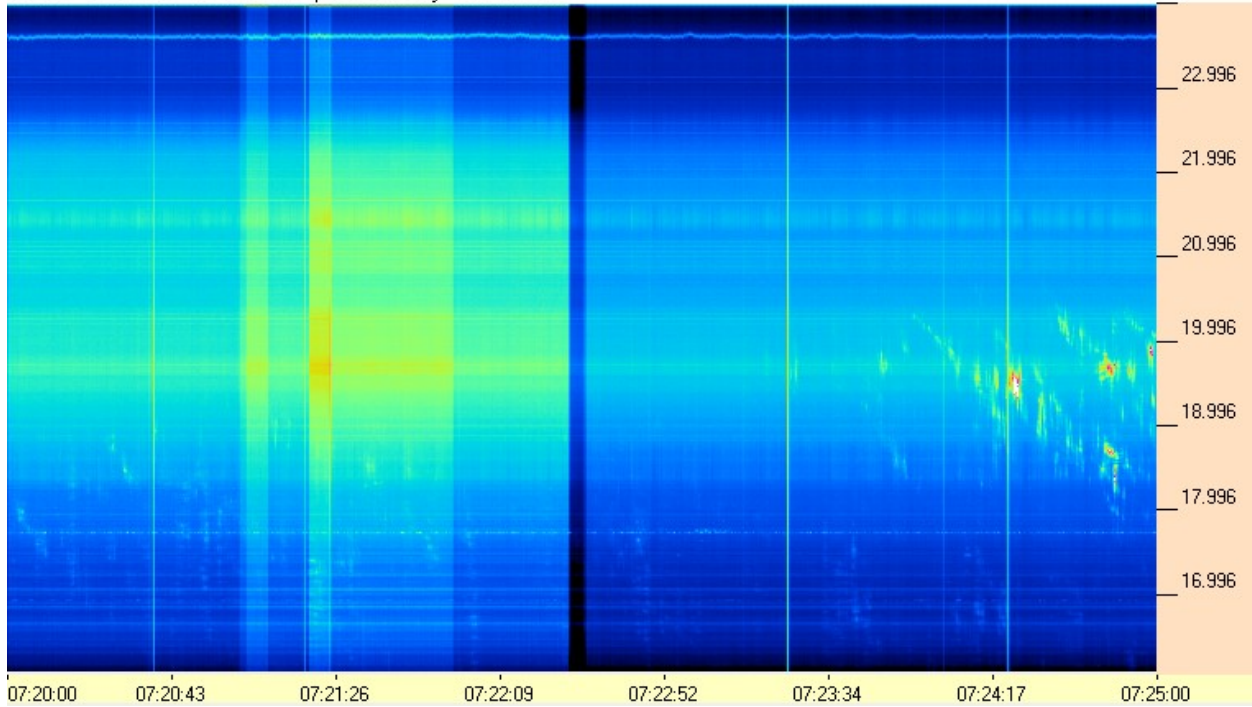
HNRAO - 02/25/2017 - UTC - JOVE Dipoles - SDRPlay - RSP1 - Linear



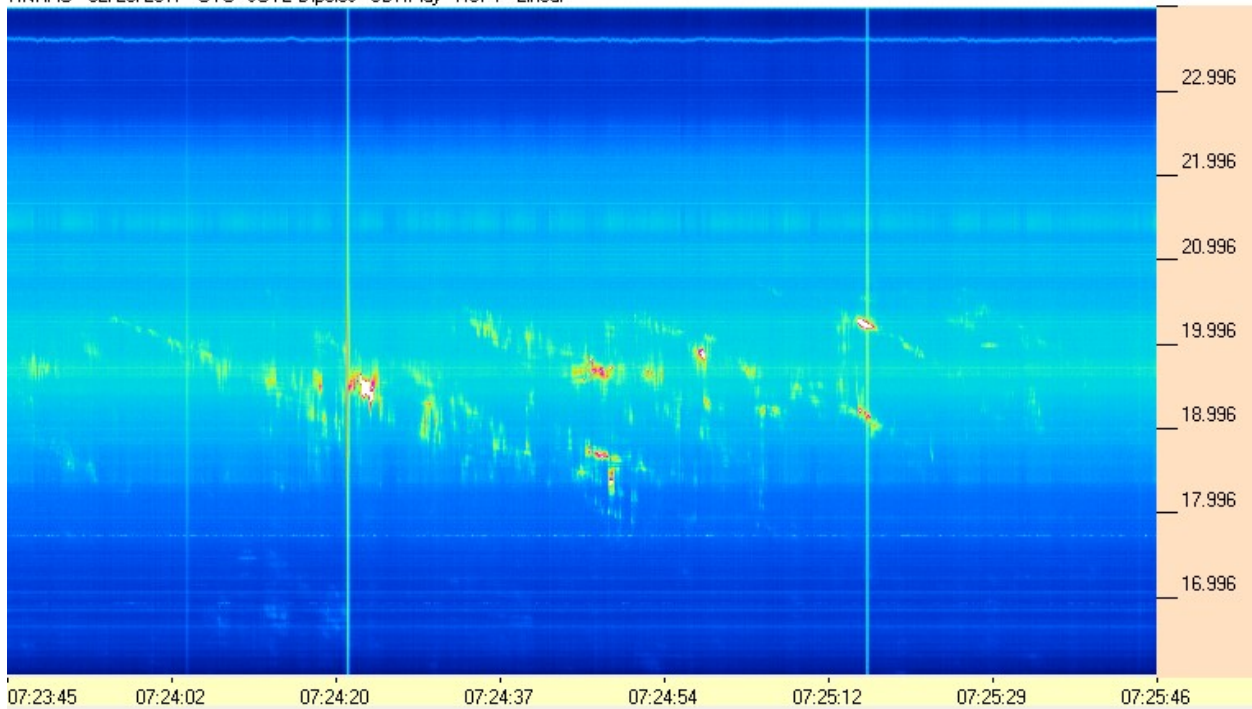
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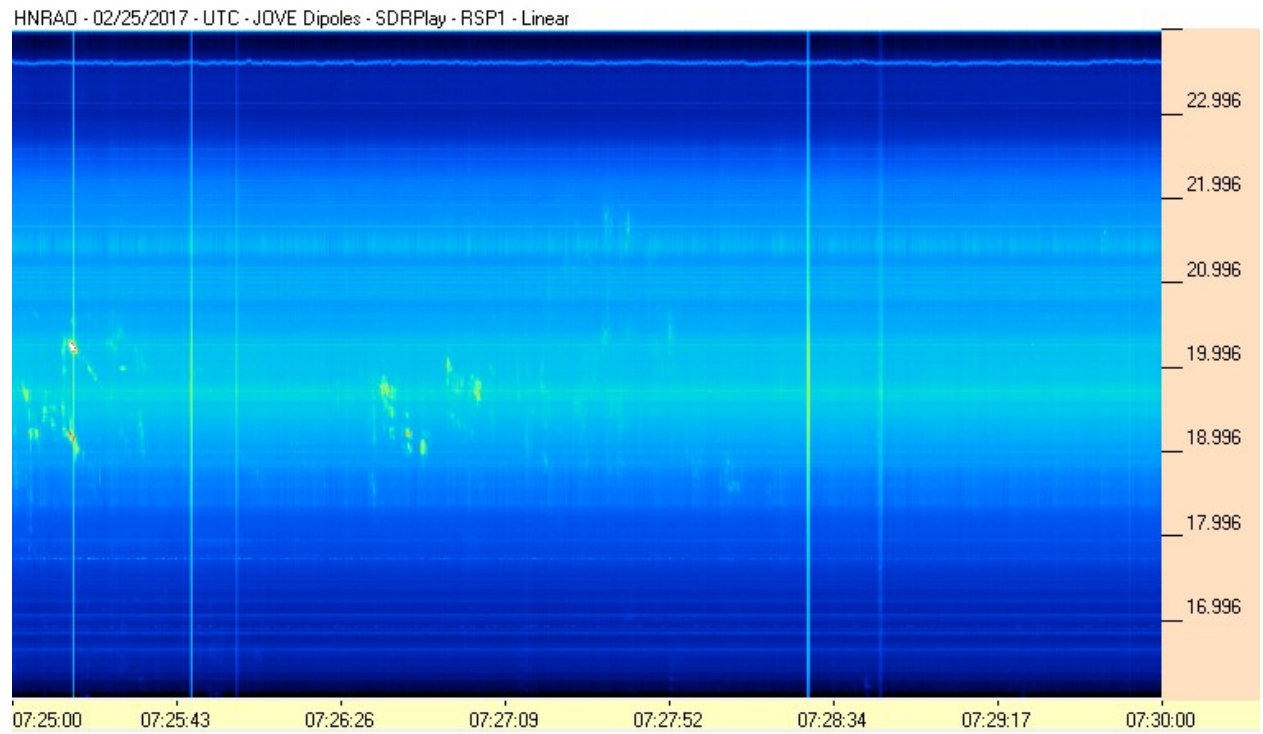
HNRAO - 02/25/2017 - UTC - JOVE Dipoles - SDRPlay - RSP1 - Linear



HNRAO - 02/25/2017 - UTC - JOVE Dipoles - SDRPlay - RSP1 - Linear



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