

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 20 March 2017

Object: Jupiter – Io-A

Observer: Unattended

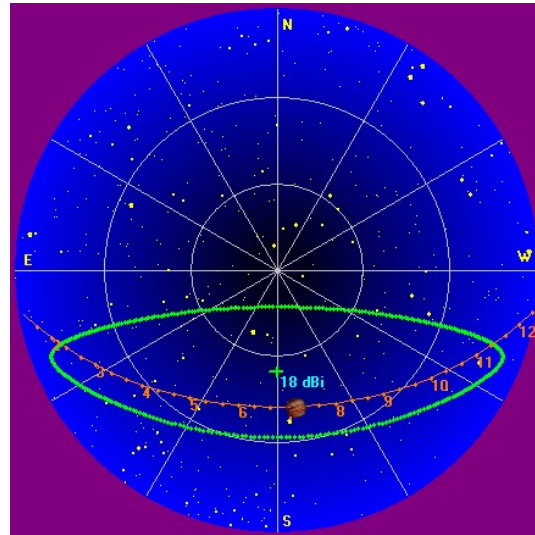
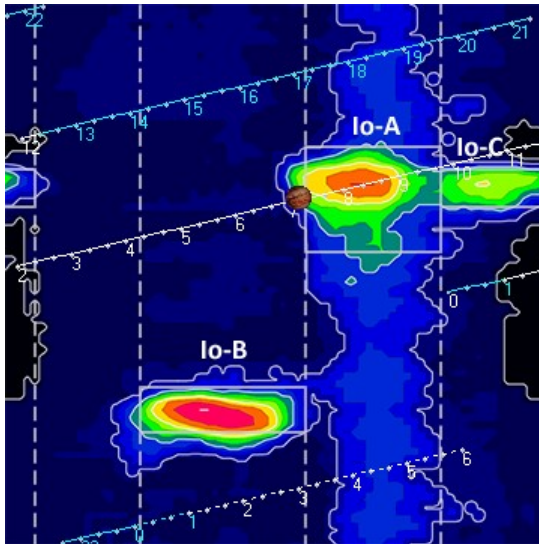
Start of pass:	0711 UT	Planetary K-index:	1
Jupiter Altitude:	42.5 degrees	Jupiter Azimuth:	187.9 degrees
Jupiter CML:	195.85	Jupiter Io Phase:	230.11
Jupiter RA:	13:18	Jupiter Dec:	-06:32
Hour Angle:	00:23	Polarization	RCP
Sun Altitude:	-43.1 degrees	Sun Azimuth:	038.8 degrees
Sun RA:	23:53	Sun Dec:	00:48

End of pass:	0904 UT		
Jupiter Altitude:	33.3 degrees	Jupiter Azimuth:	221.9 degrees
Jupiter CML:	264.17	Jupiter Io Phase	246.22
Hour Angle:	02:17		
Sun Altitude:	-26.0 degrees	Sun Azimuth:	066.4 degrees

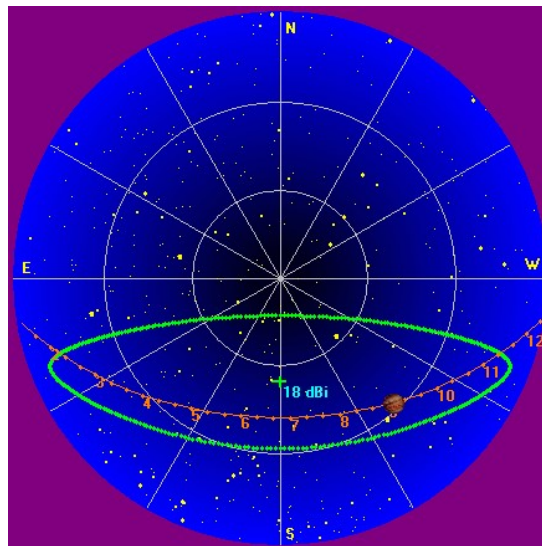
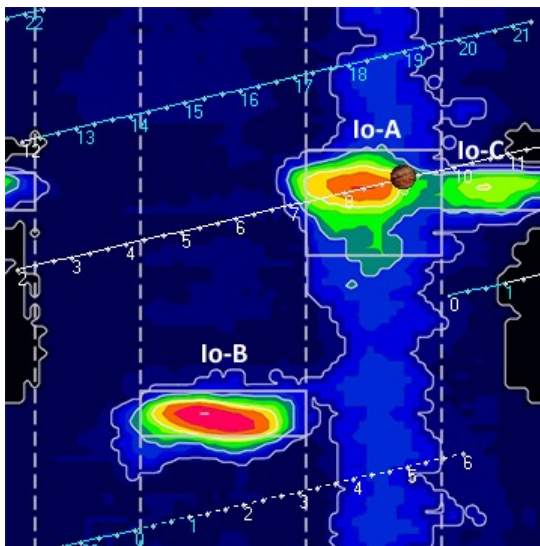
Observations made using:

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 6 March 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 6 March 2017
5. SDRPlay
 - a. RSP1 and RSP2

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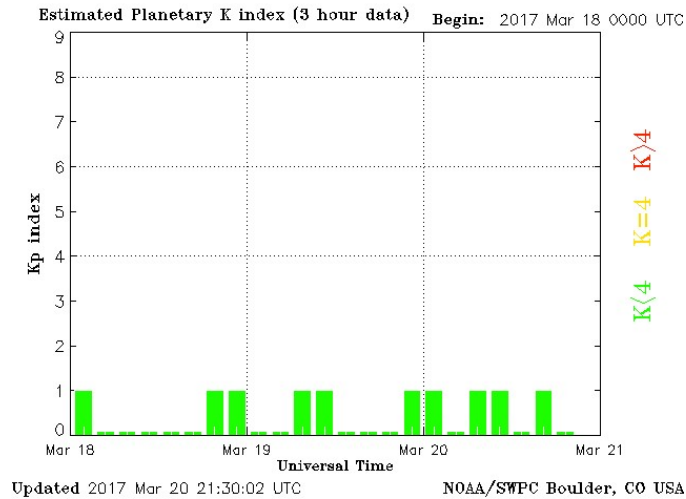


Beginning of Pass



End of Pass

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A strong Io-A storm composed of negative drift L-bursts and negative slope modulation lanes. Emissions observed here spanned 15 MHz to 27 MHz.

Cross hatched modulation lanes at 0721:30 UT and throughout the pass. 24 separate modulation lanes were measured. The negative slope modulation lanes varied throughout the pass, ranging from -77 kHz/sec to -180 kHz/sec. In any given cluster of L-bursts, the slope of the modulation lanes can vary. One group of measurements at 0750 UT showed a change of slope by approximately -90 kHz/sec in the course of one minute.

Shadow events are evident in the L-burst emissions throughout the pass. One example is evident at 0750 UT.

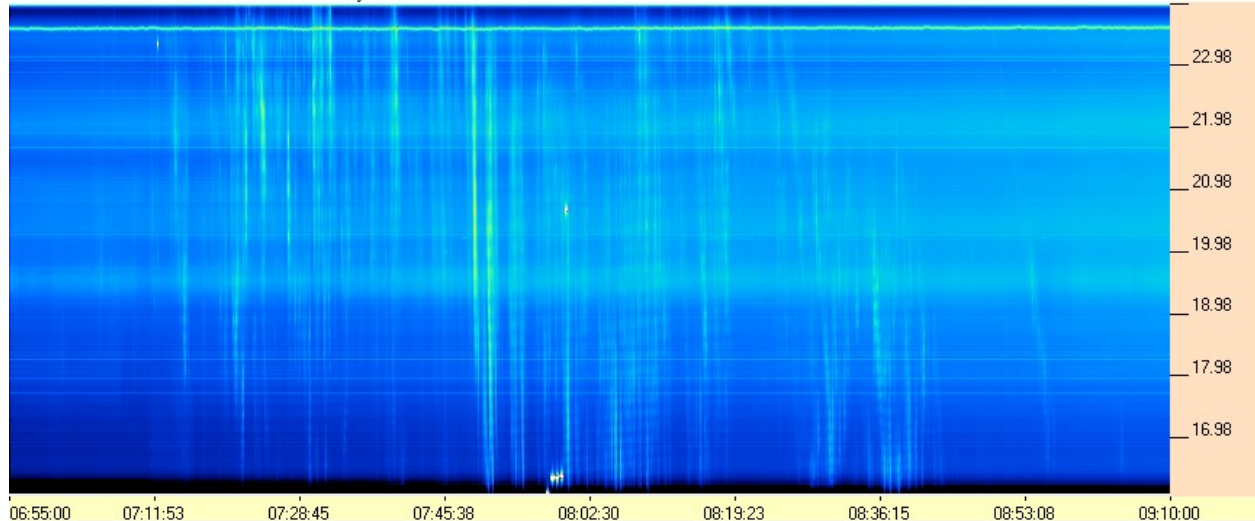
There was activity in the Radio JOVE frequency (20.1 MHz) with L-bursts recorded on SkyPipe.

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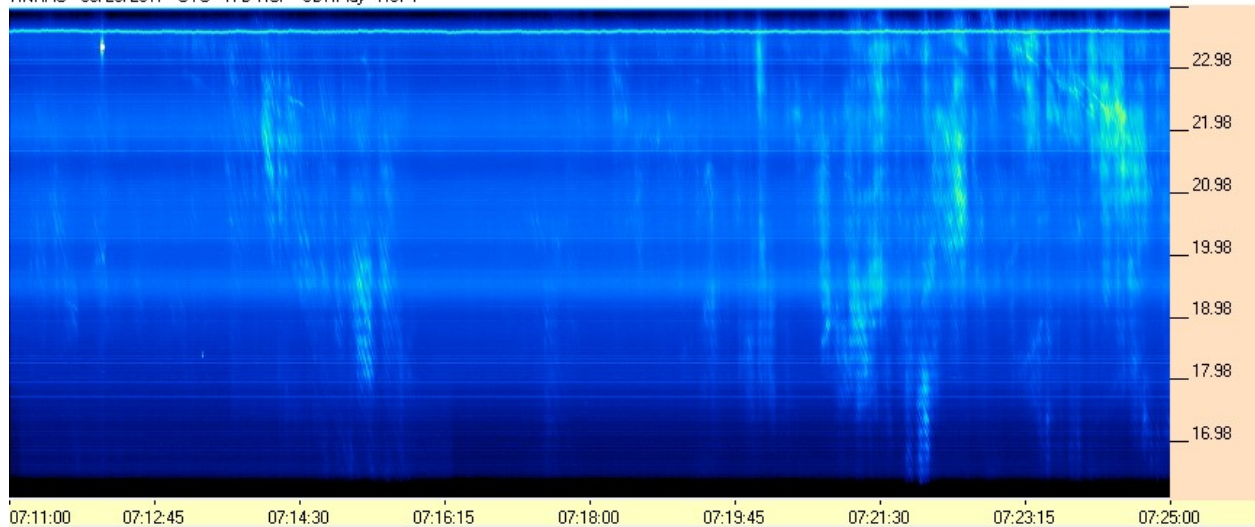


SDRPlay/RSP1 TFD Pair

HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



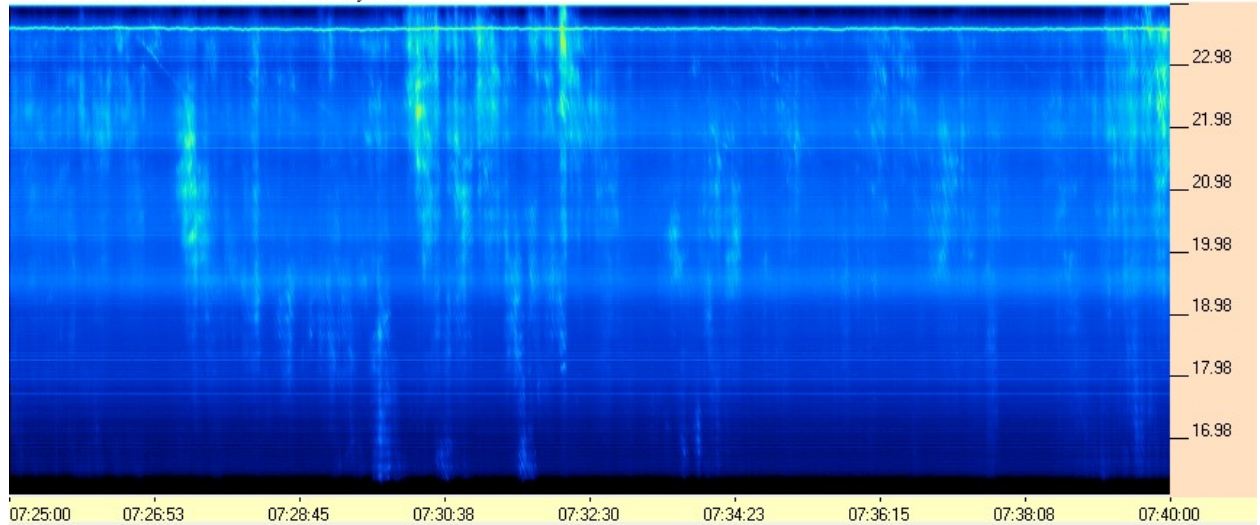
HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



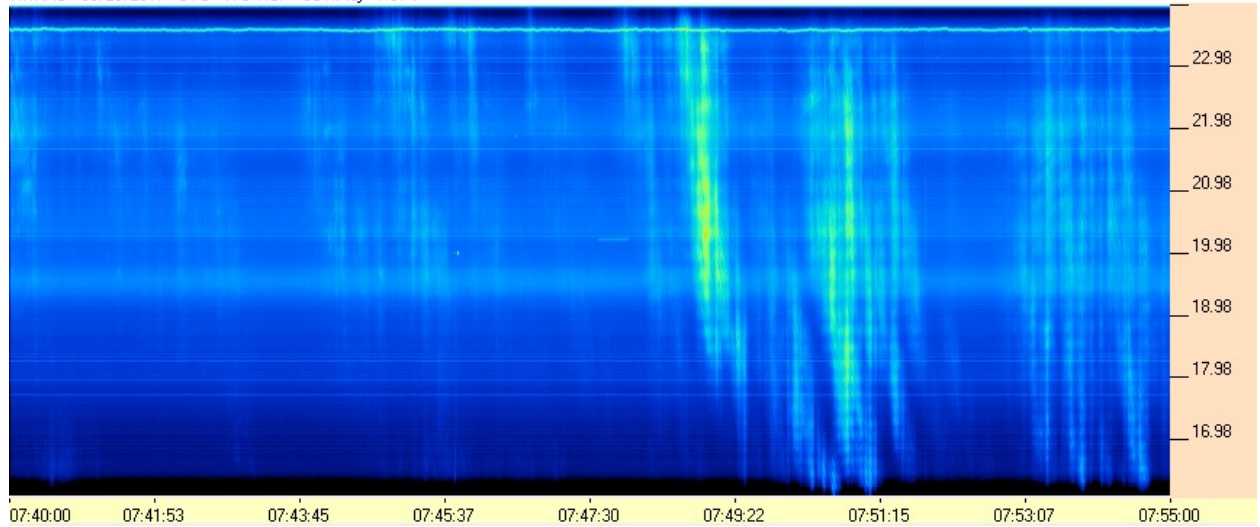
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HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



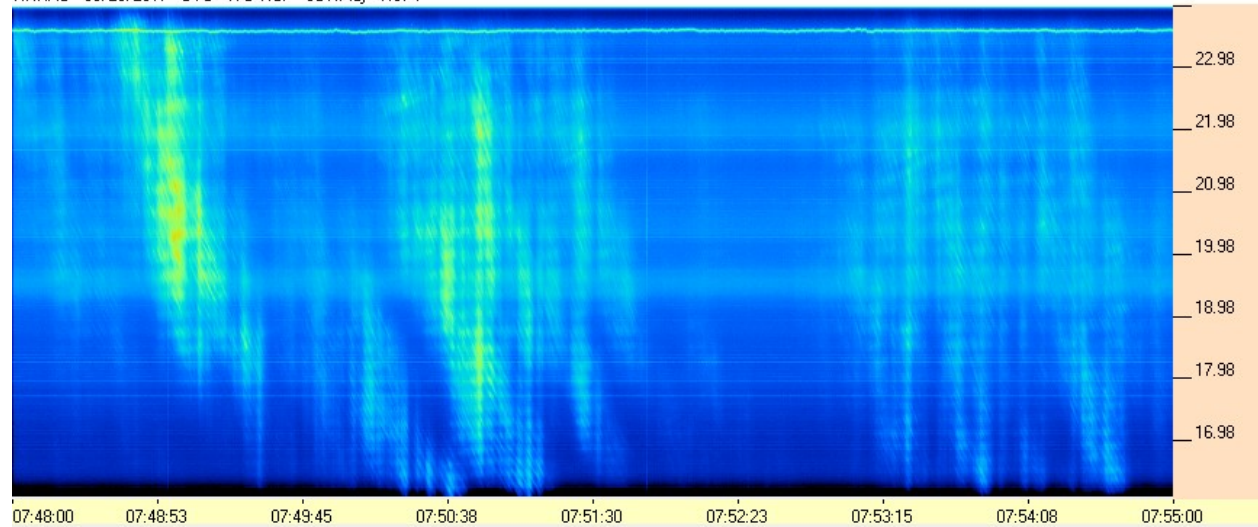
HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



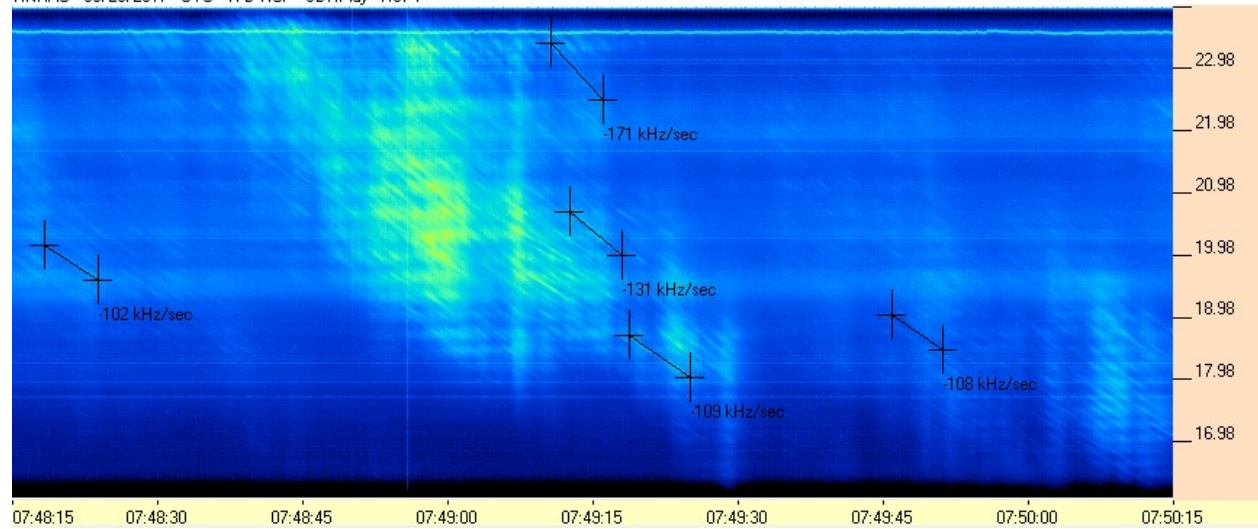
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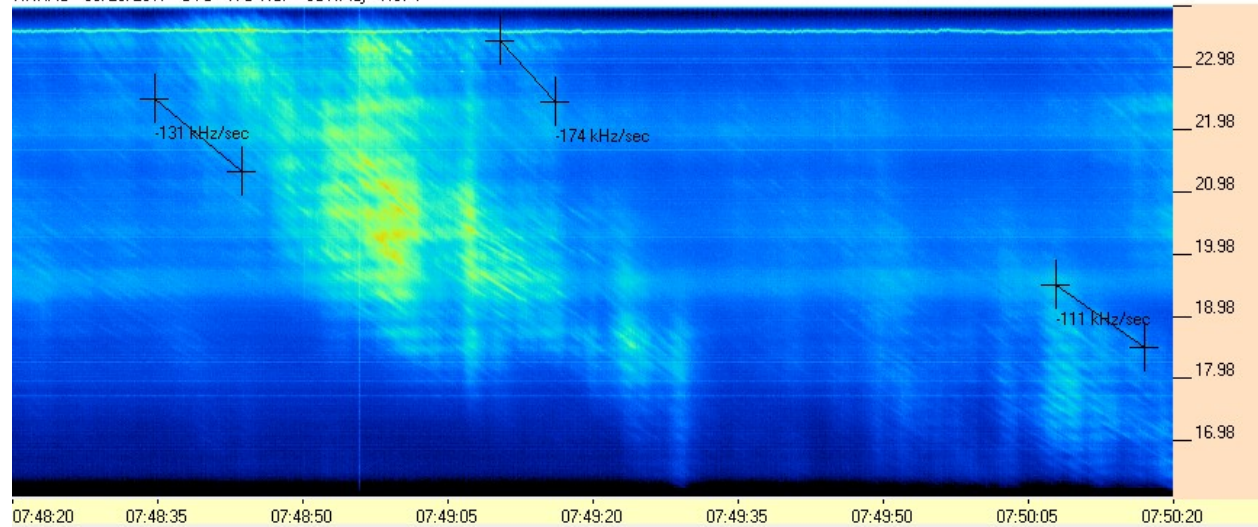
HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



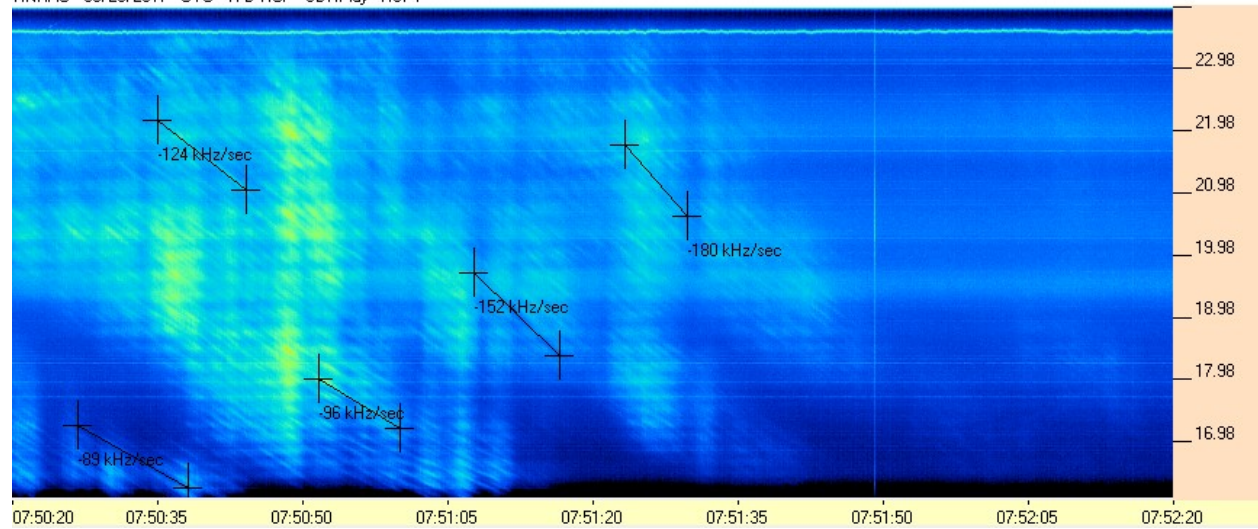
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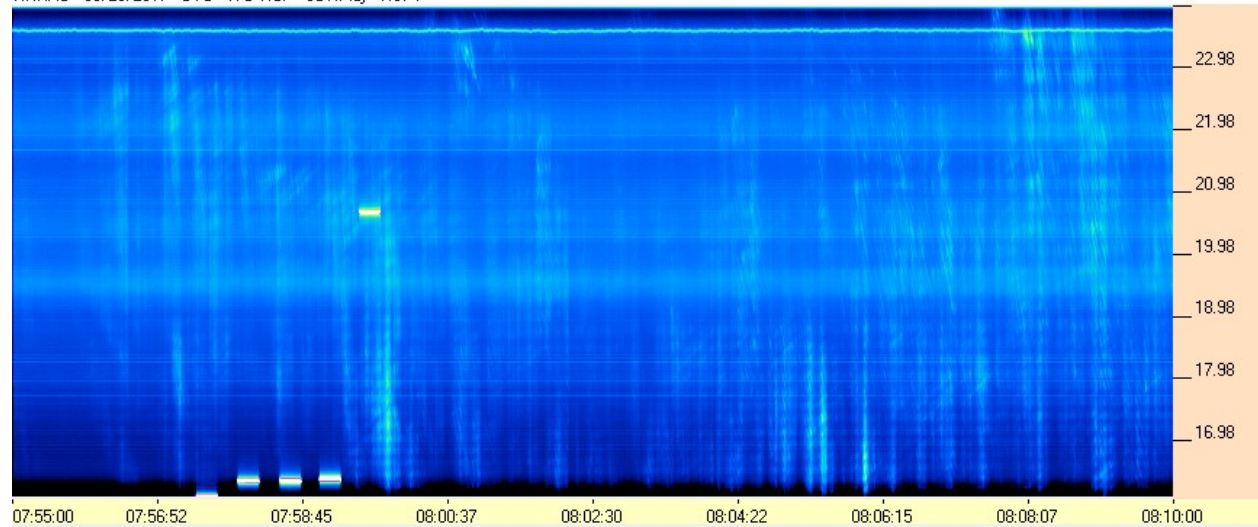
HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



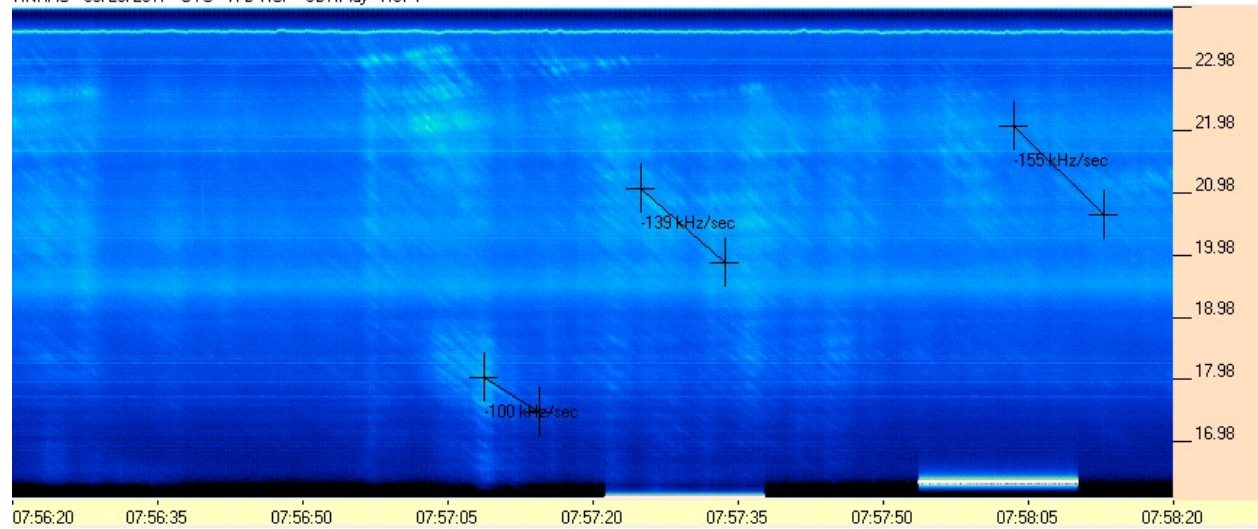
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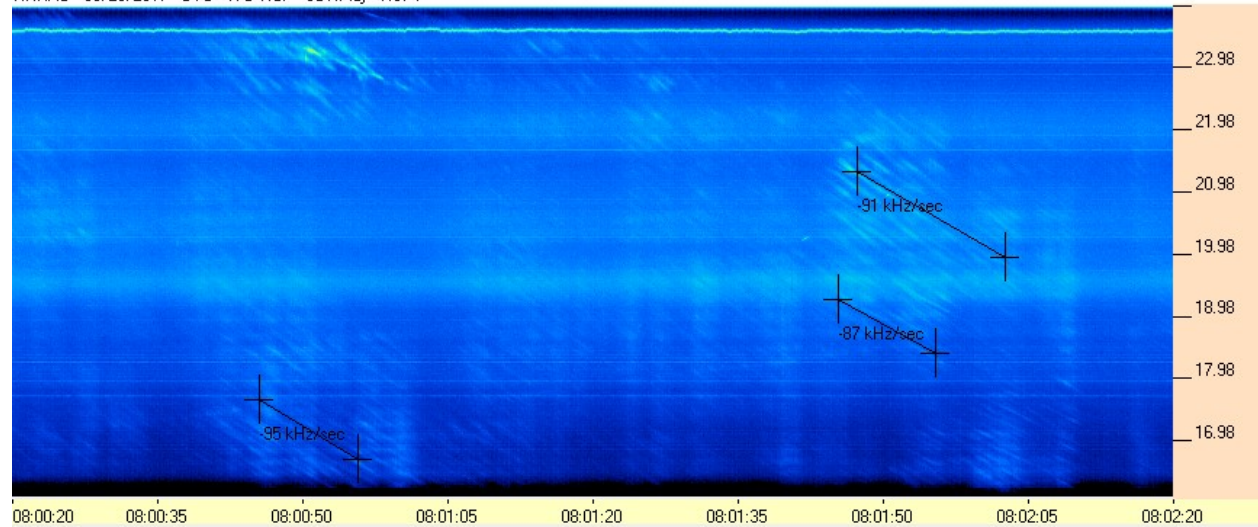
HNRAO - 03/20/2017 - UTC - TFD RCP - SDRPlay - RSP1



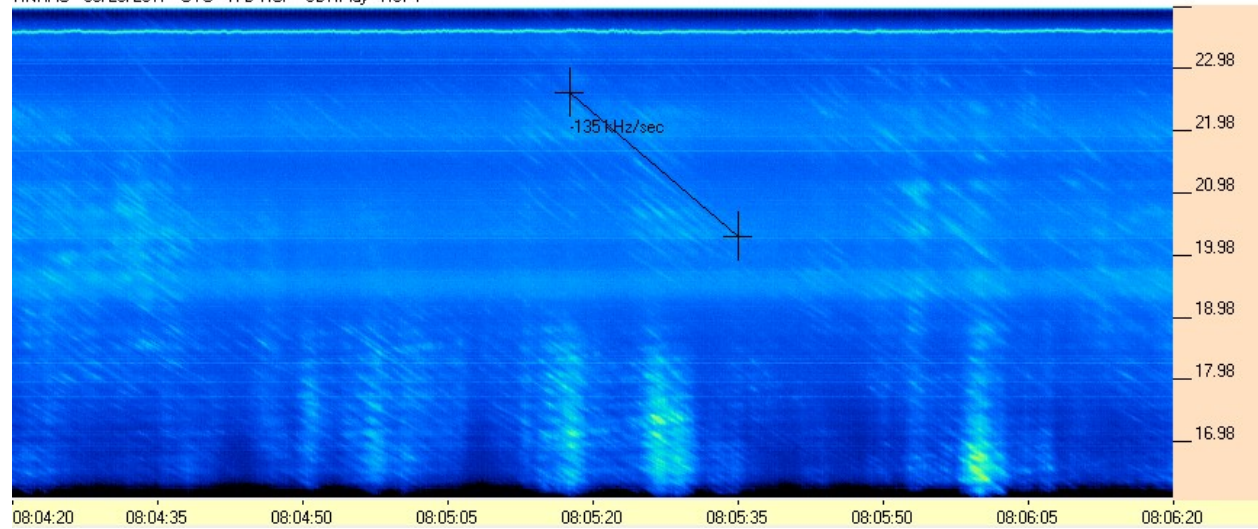
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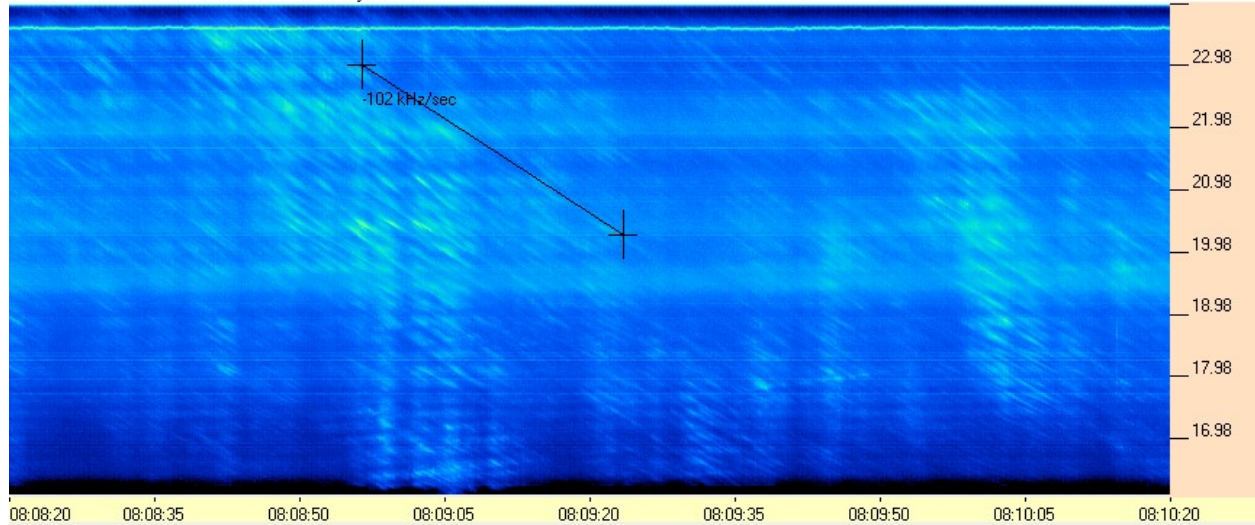
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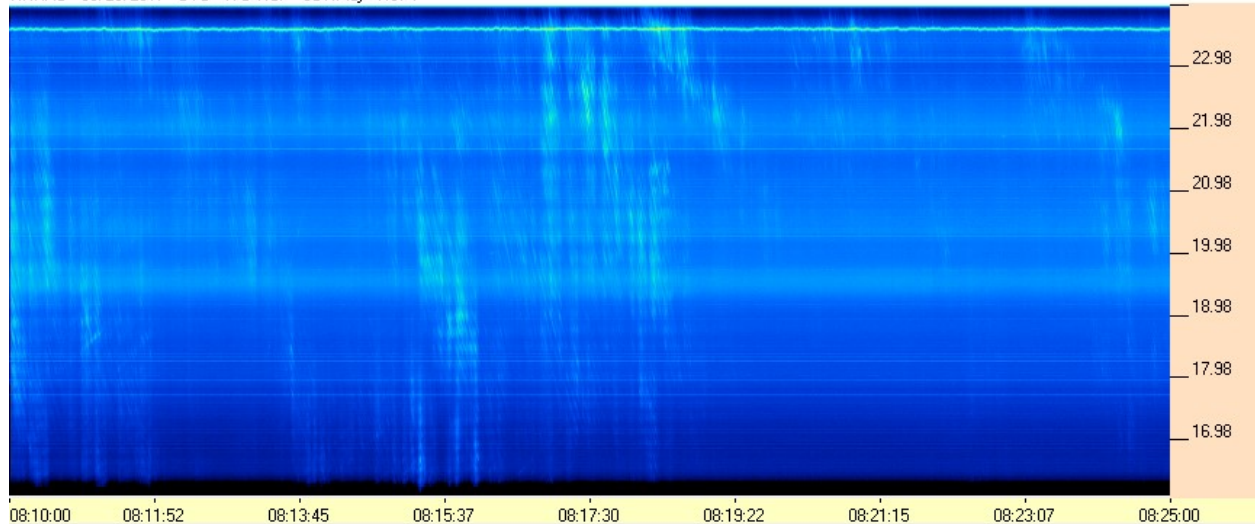
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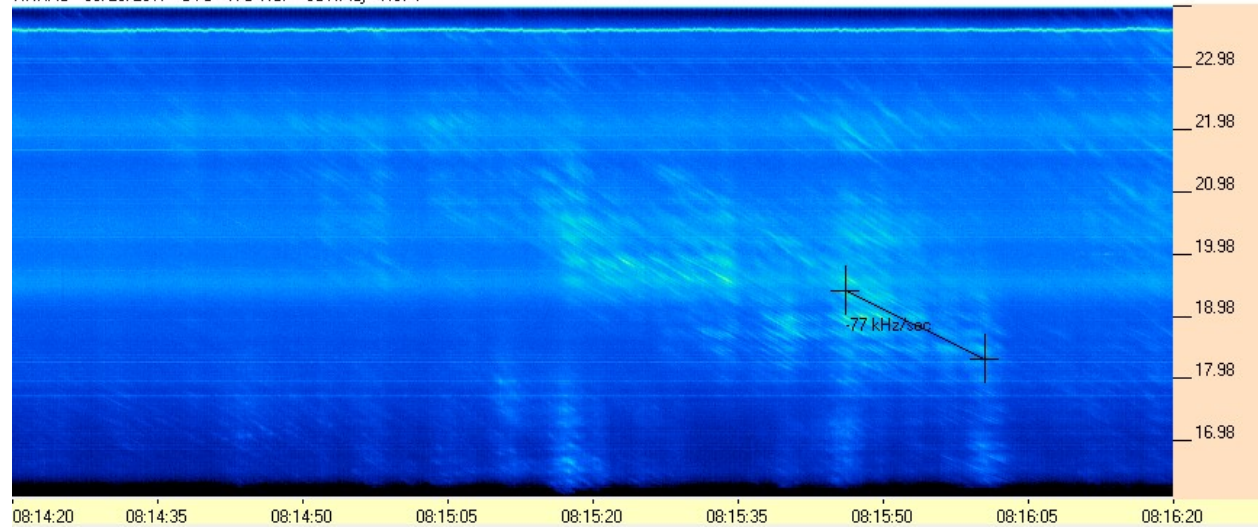
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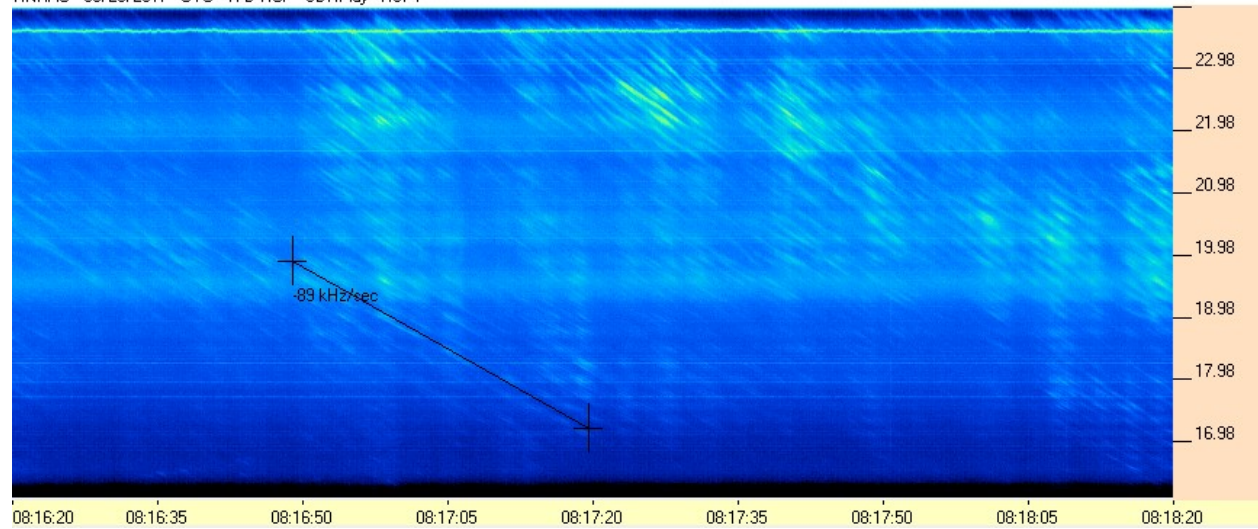
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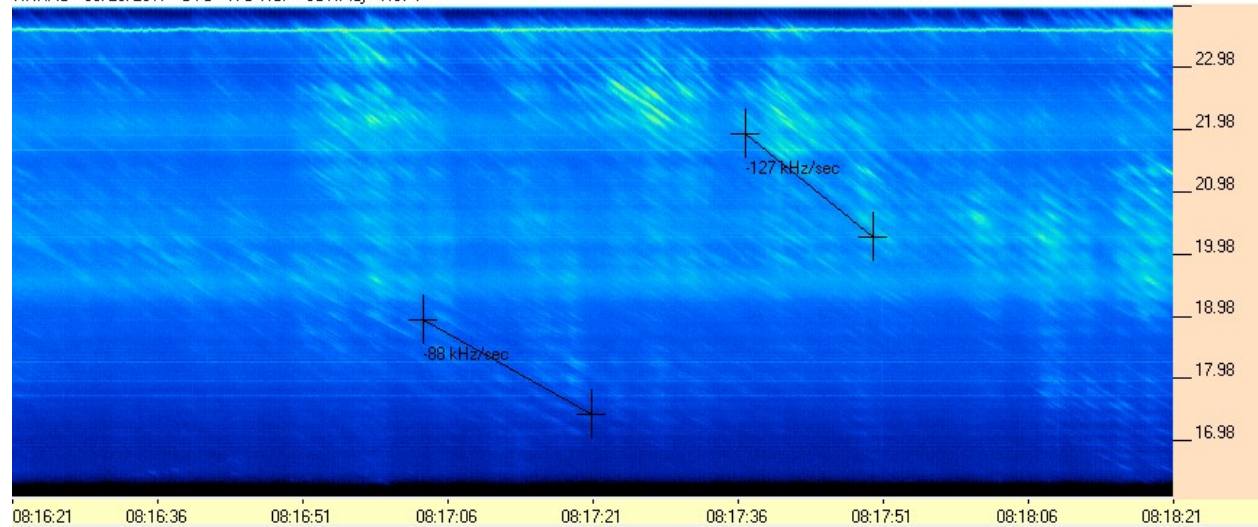
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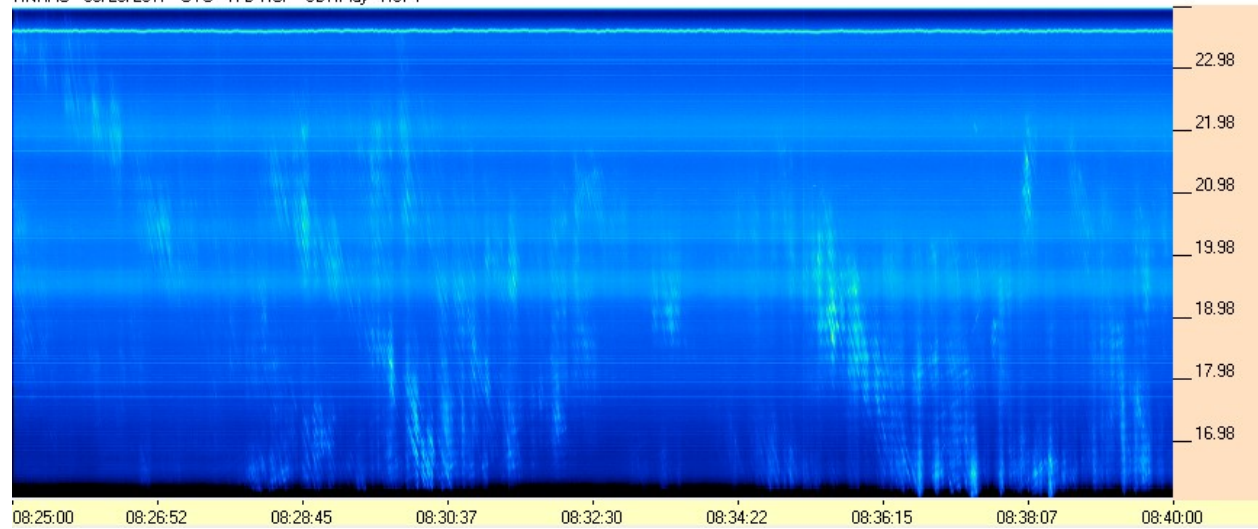
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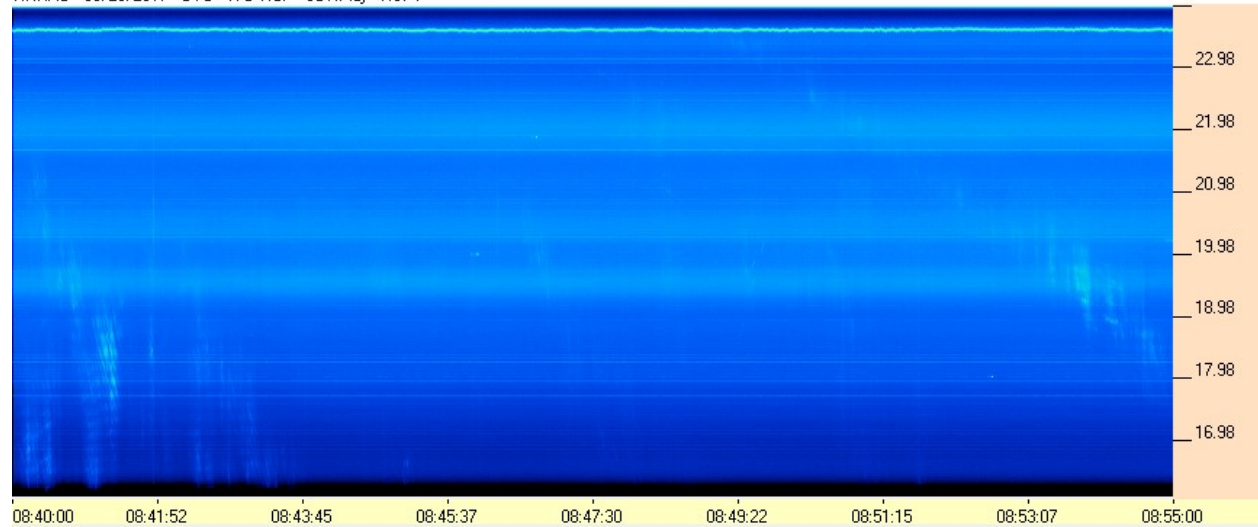
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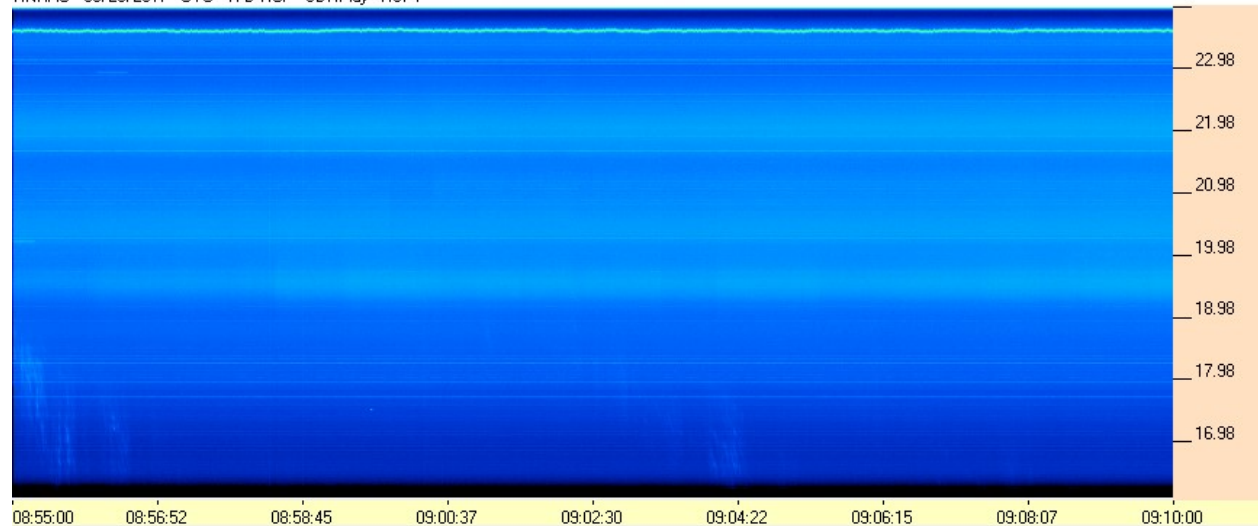
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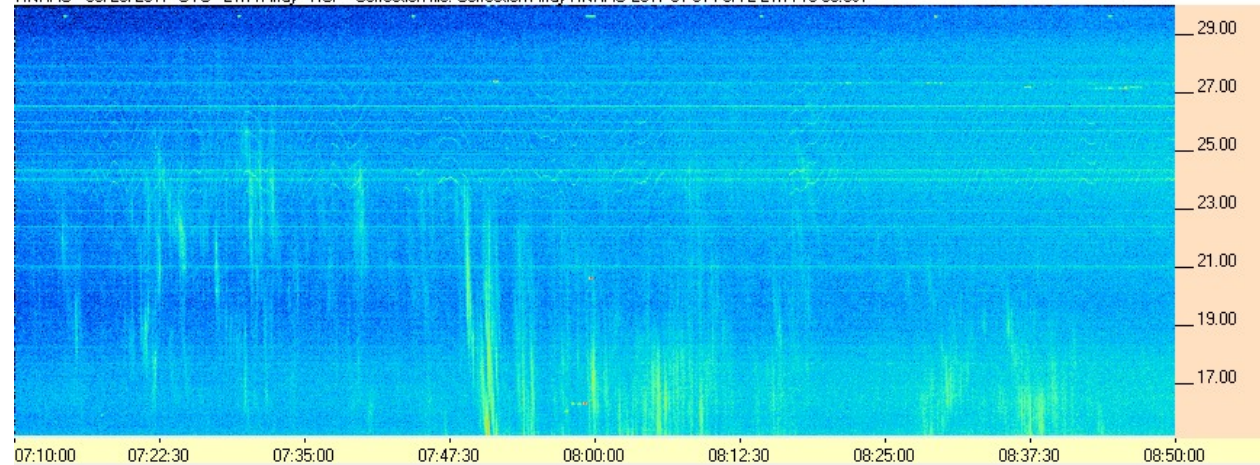


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FSX-2/LWA Pair

HNRAO - 03/20/2017 UTC - LWA Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-2 LWA 15-30.csv

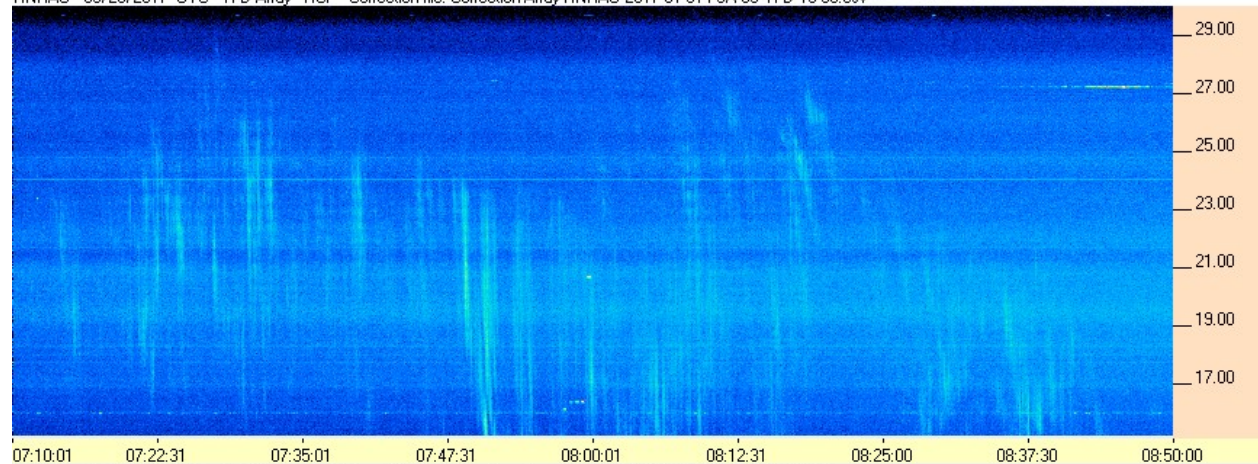


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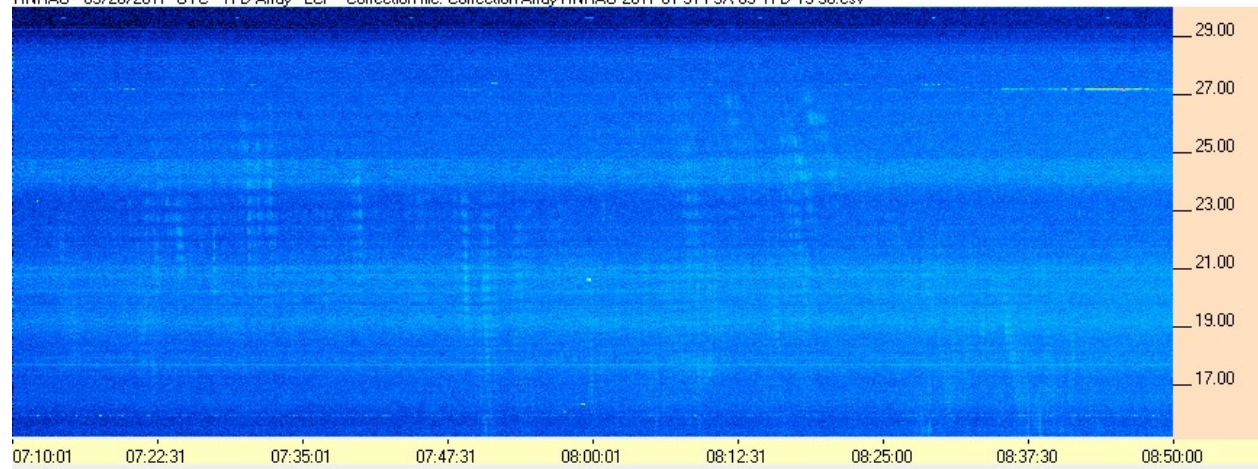


FSX-8S/TFD Pair

HNRAO - 03/20/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



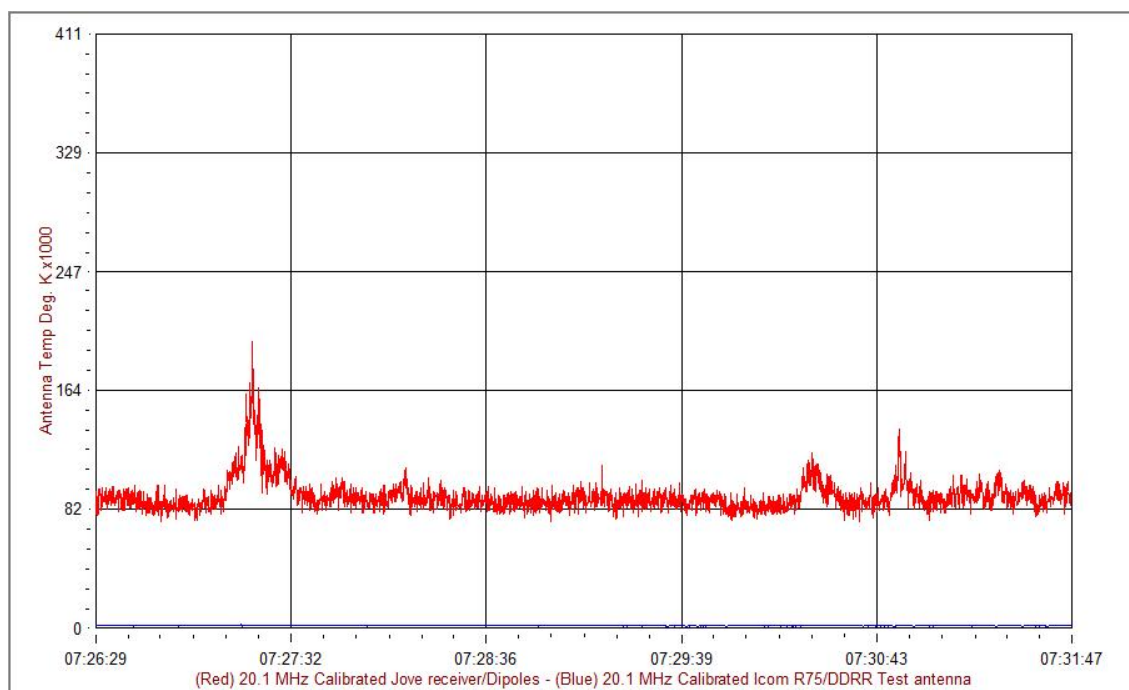
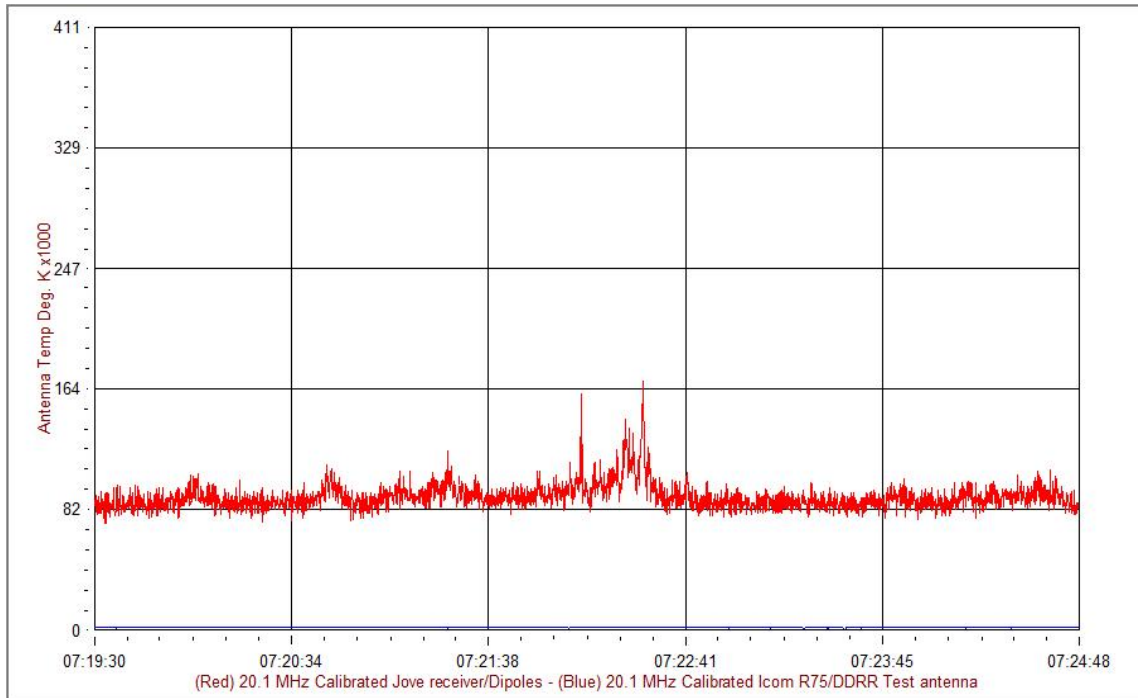
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Radio JOVE/JOVE Dipoles Pair



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