HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 11 March 2017

Object: Jupiter – Io-A

Observer: Unattended

Start of pass:	**0521 UT**	**Planetary K-index:**	
Jupiter Altitude:	**37.6 degrees**	**Jupiter Azimuth:**	**149.5 degrees**
Jupiter CML:	**231.39**	**Jupiter Io Phase:**	**186.05**
Jupiter RA:	**13:21**	**Jupiter Dec:**	**-06:54**
Hour Angle:	**-01:36**	**Polarization**	**RCP**
Sun Altitude:	**-53.2 degrees**	**Sun Azimuth:**	**011.0 degrees**
Sun RA:	**23:19**	**Sun Dec:**	**-04:22**

End of pass:	**0624 UT**		
Jupiter Altitude:	**40.3 degrees**	**Jupiter Azimuth:**	**159.4 degrees**
Jupiter CML:	**251.34**	**Jupiter Io Phase**	**190.74**
Hour Angle:	**-01:03**		
Sun Altitude:	**-51.3 degrees**	**Sun Azimuth:**	**024.1 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 @ 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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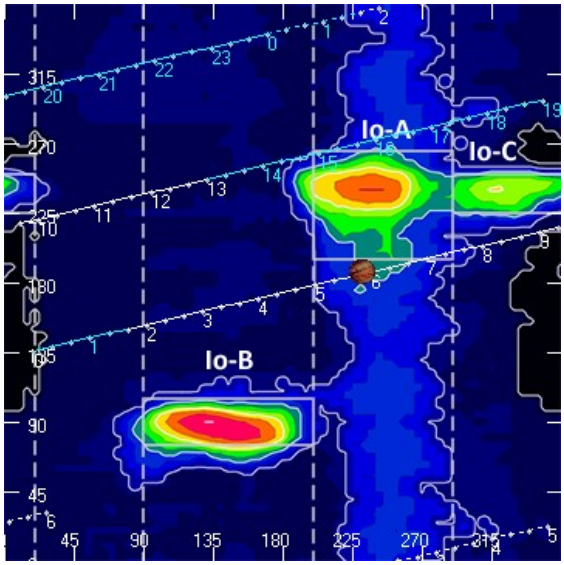
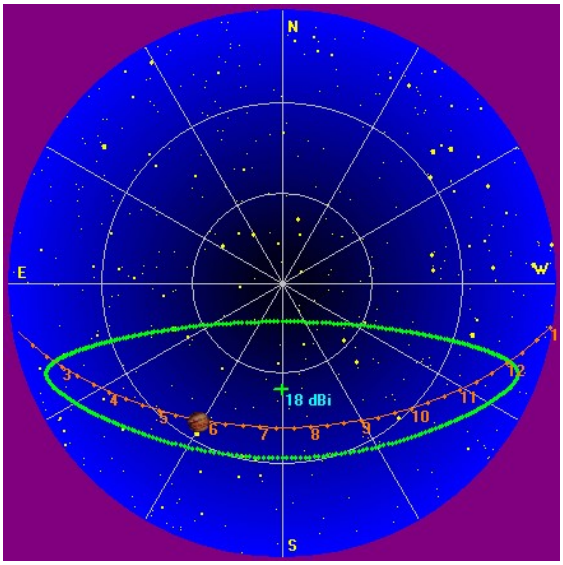
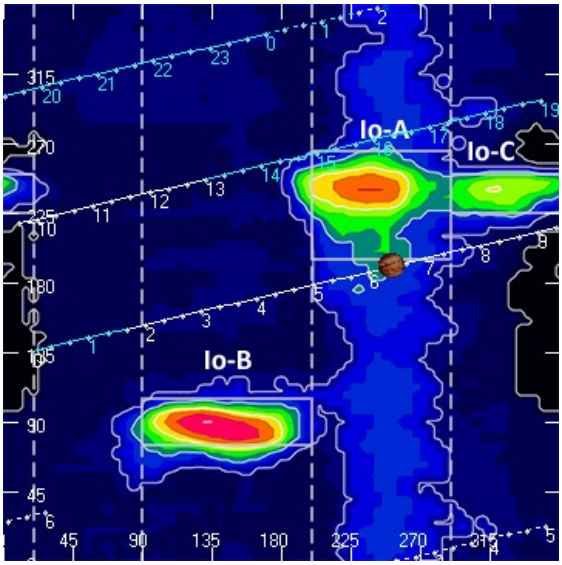
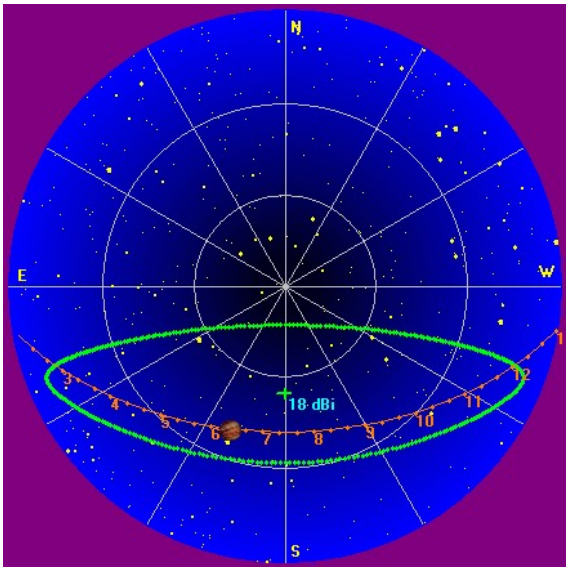




Beginning of Pass





End of Pass

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A good Io-A storm despite the two bouts of snowfall precipitation static here. Late vertex, RCP L-bursts with negative drift.

Negative slope modulation lanes from start until the end changed in slope from -81 kHz/sec measured at the start, to -99 kHz, -96 kHz, -102 kHz/sec, -121 kHz and finally - 136 kHz/sec at the end of the storm.

There were also cross hatched modulation lanes at 0609 UT and 0613 UT with a positive slope of 66 kHz/sec.

L-bursts recorded on SkyPipe @ 20.1 MHz.

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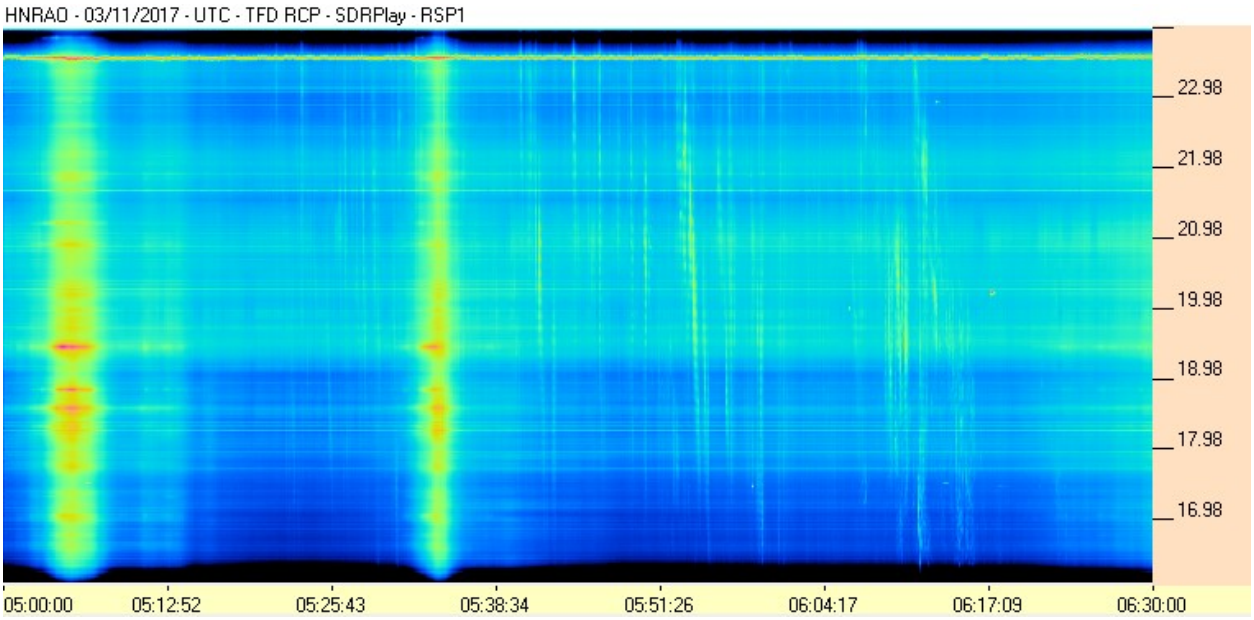
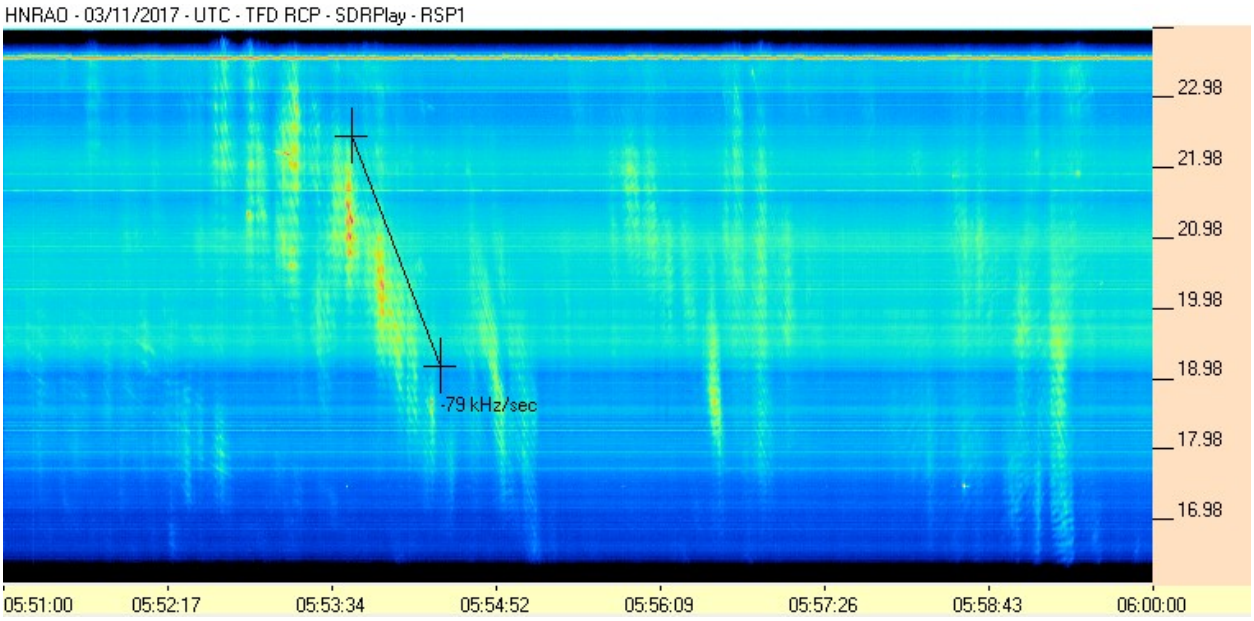
SDRPlay/RSP1 TFD Pair





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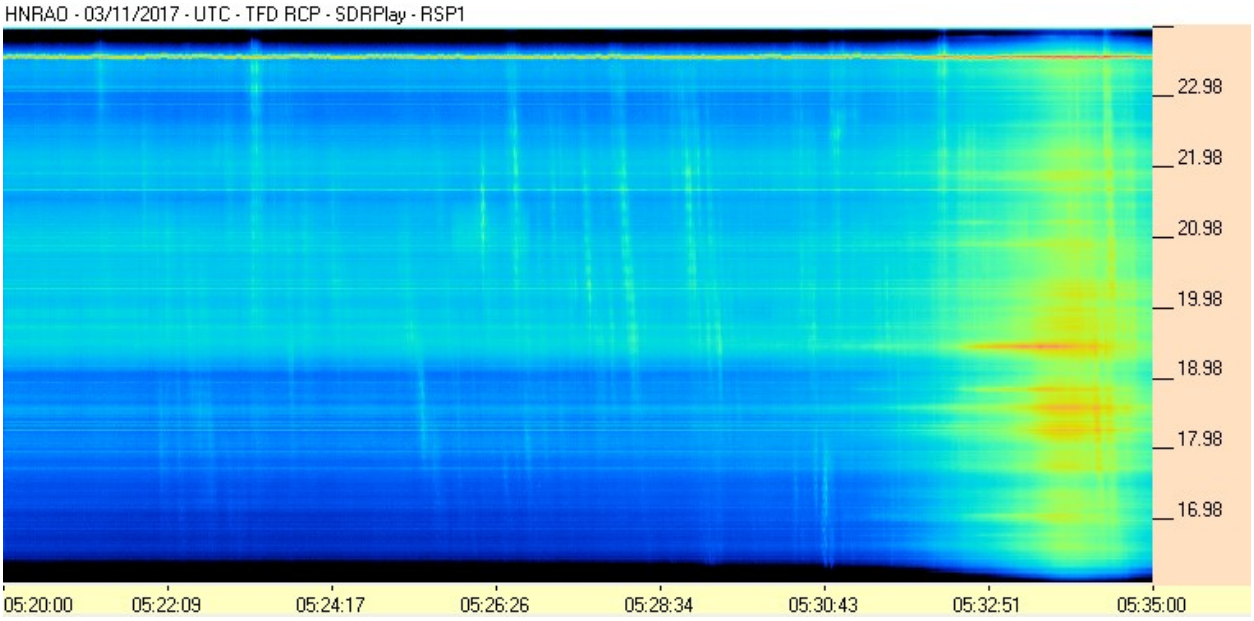

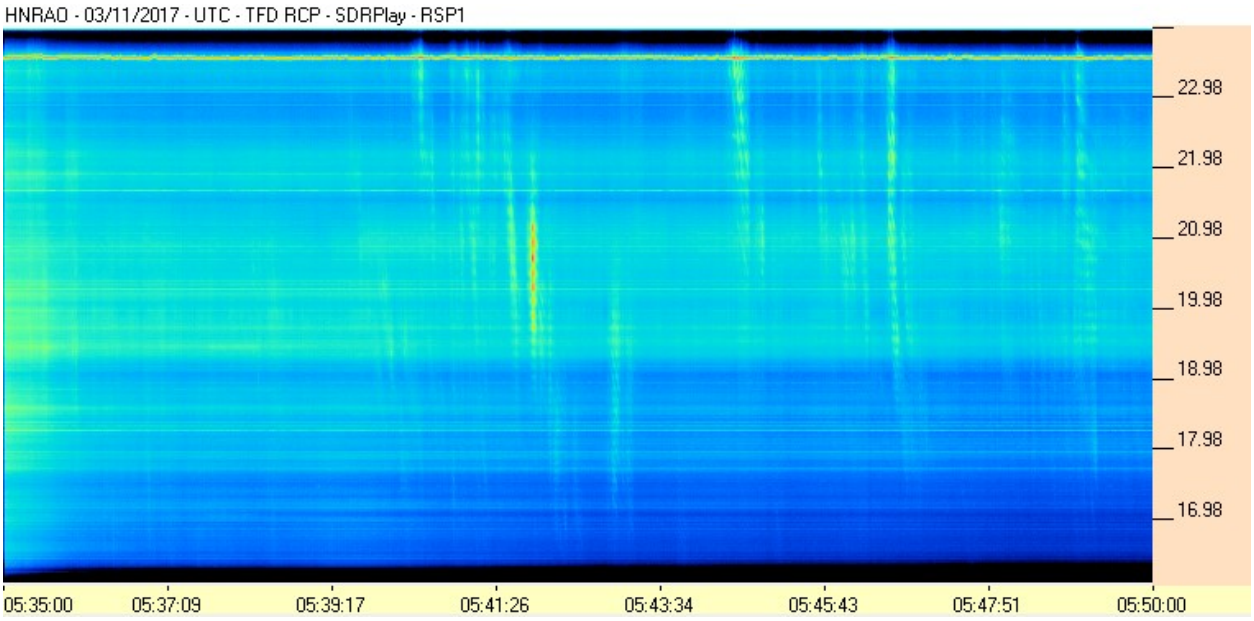

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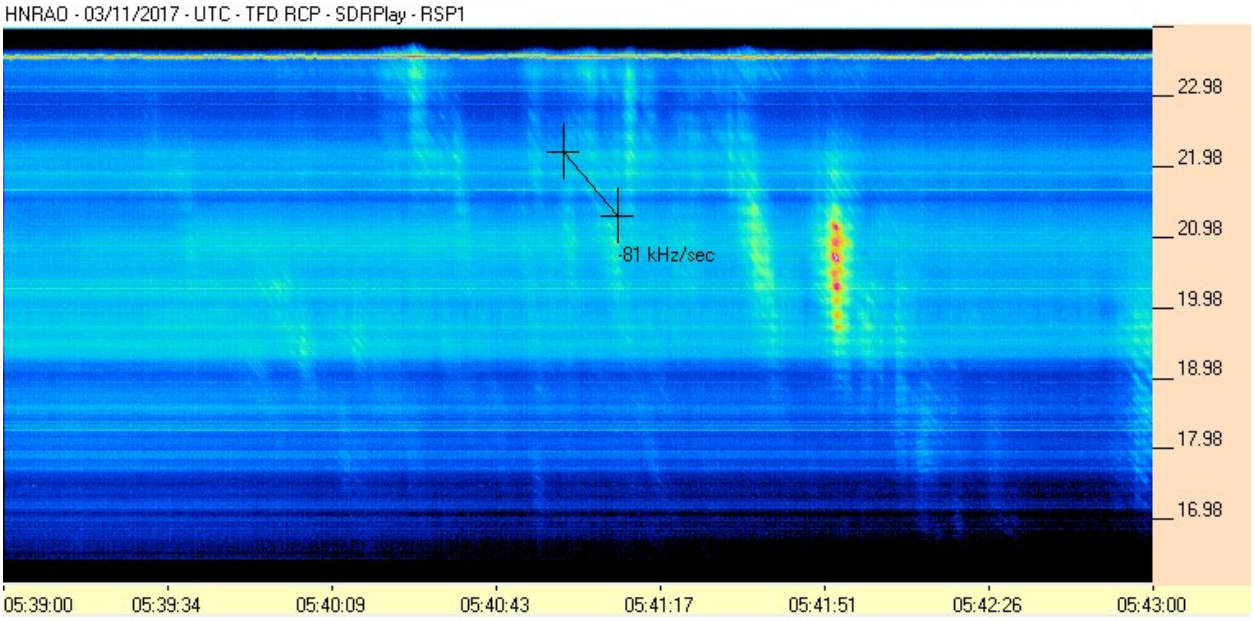

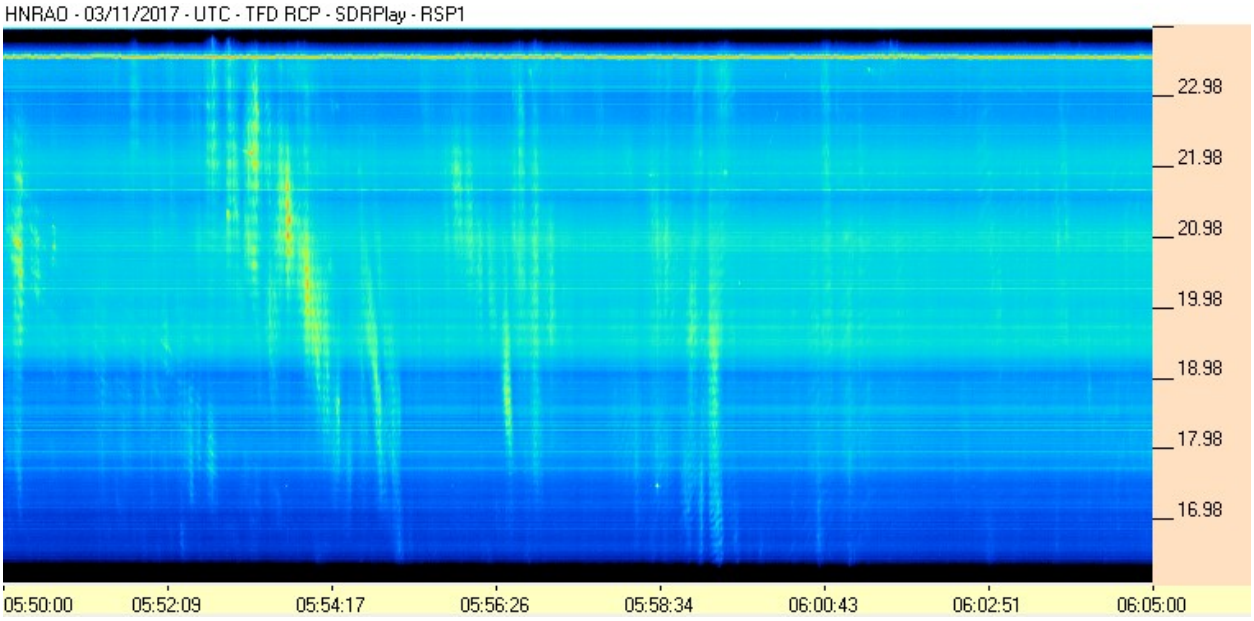

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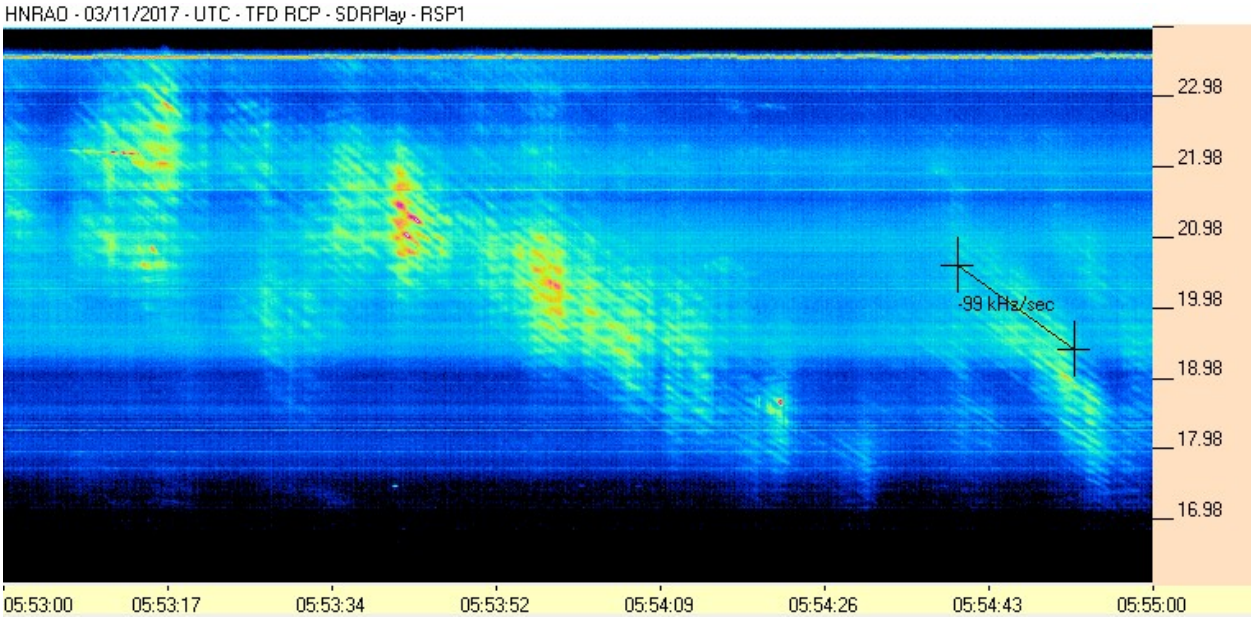

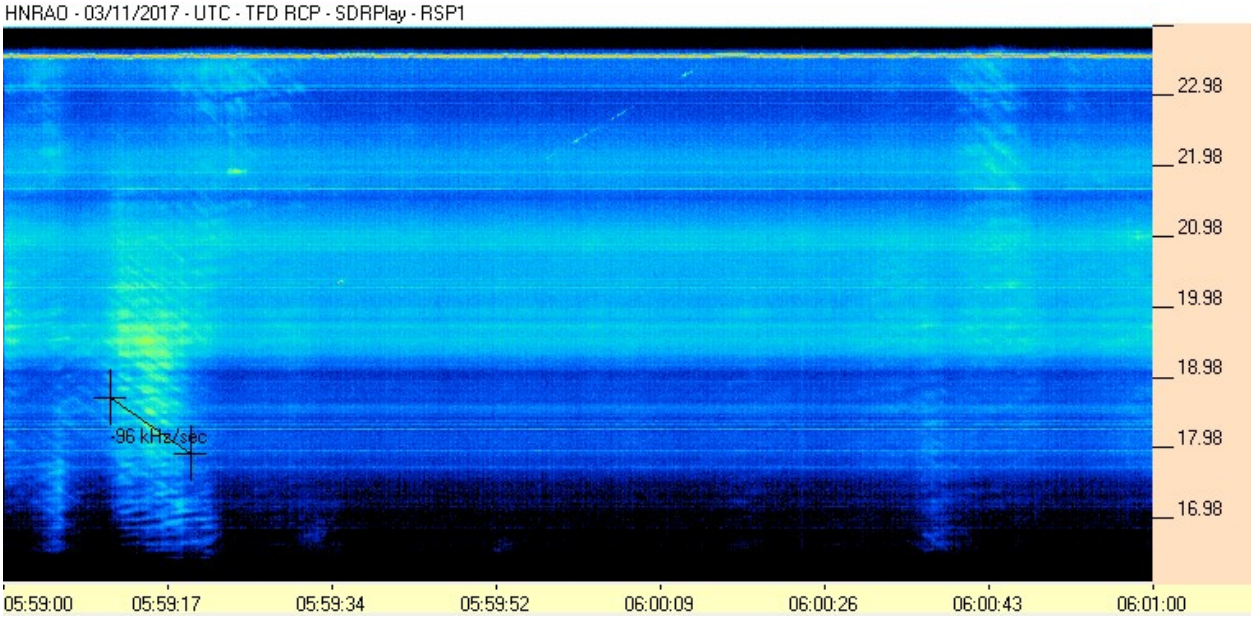

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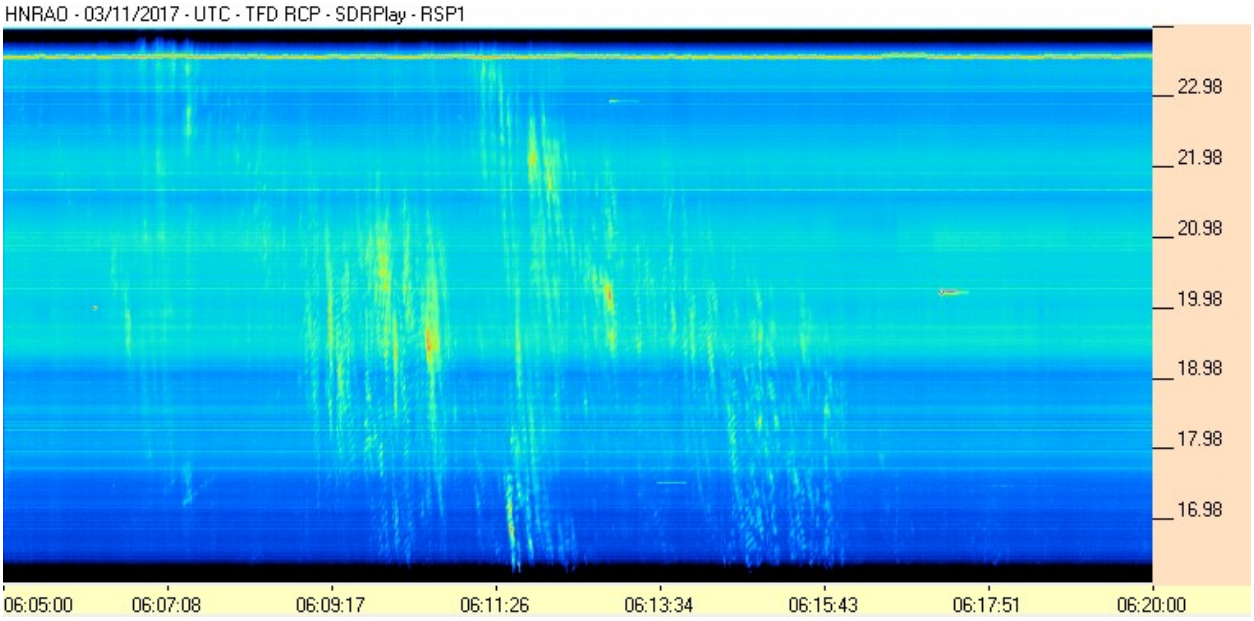

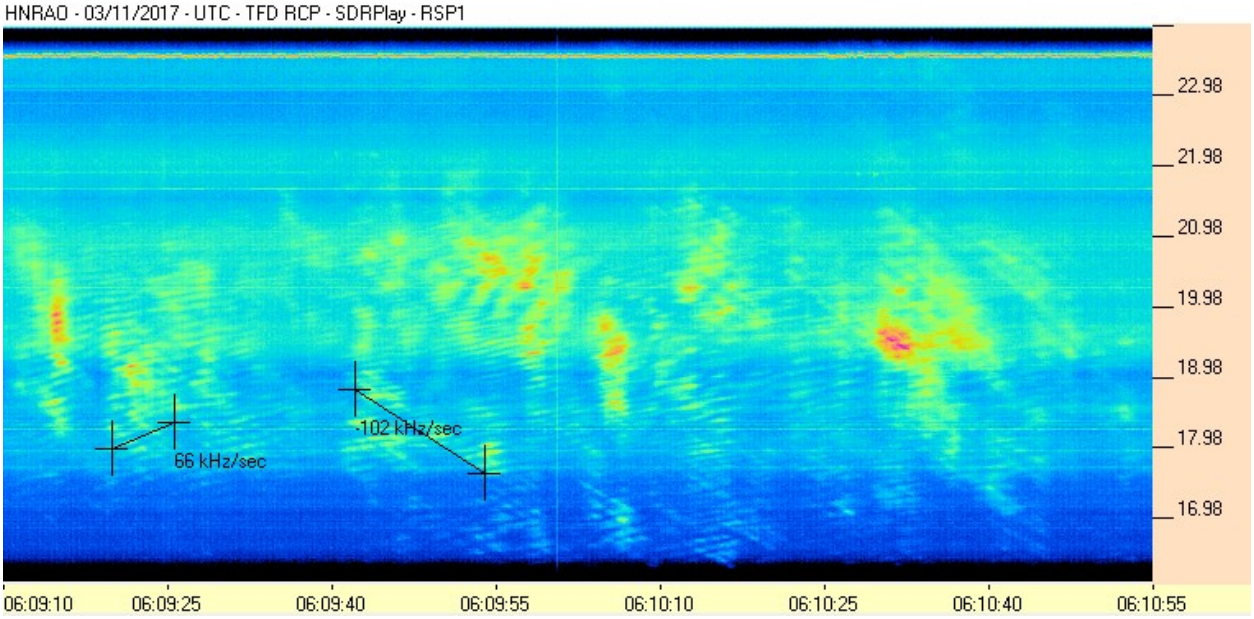

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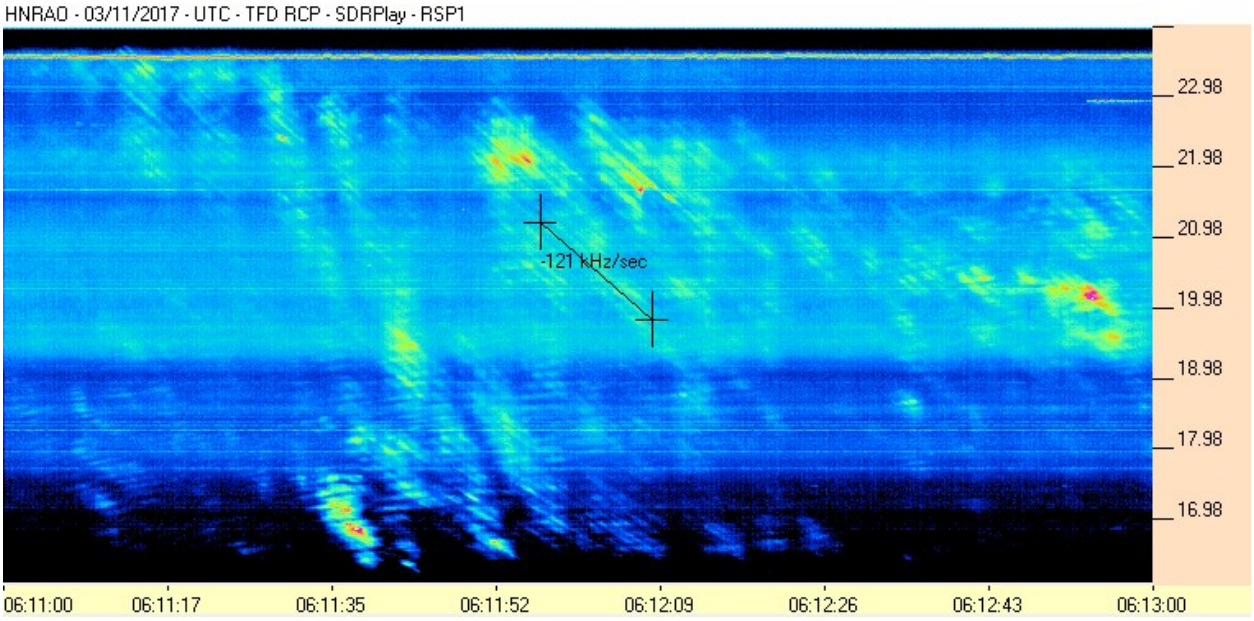

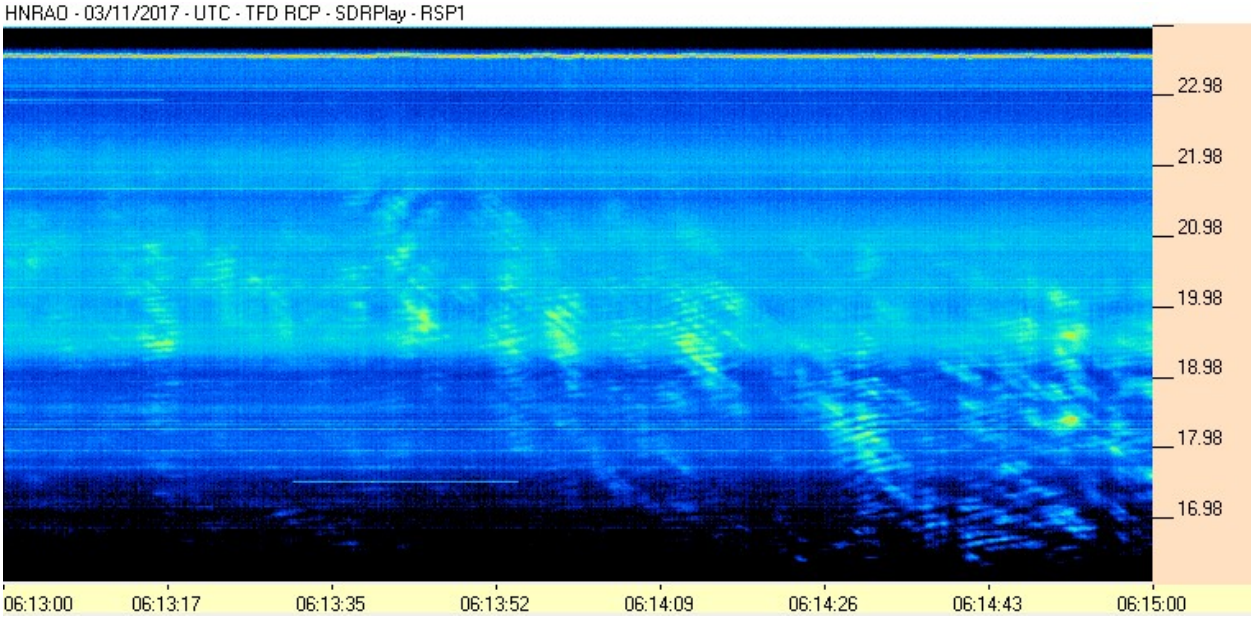

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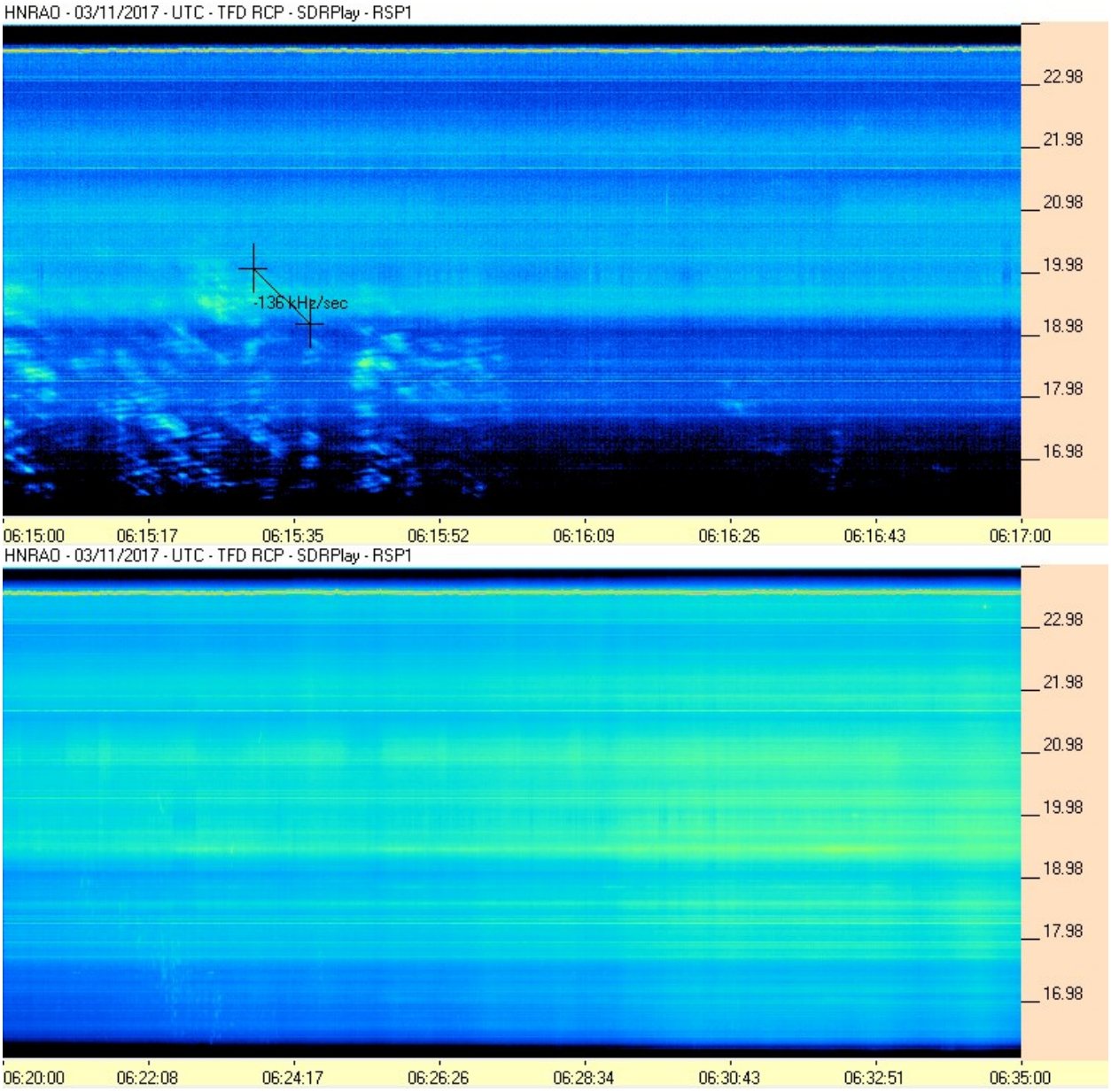

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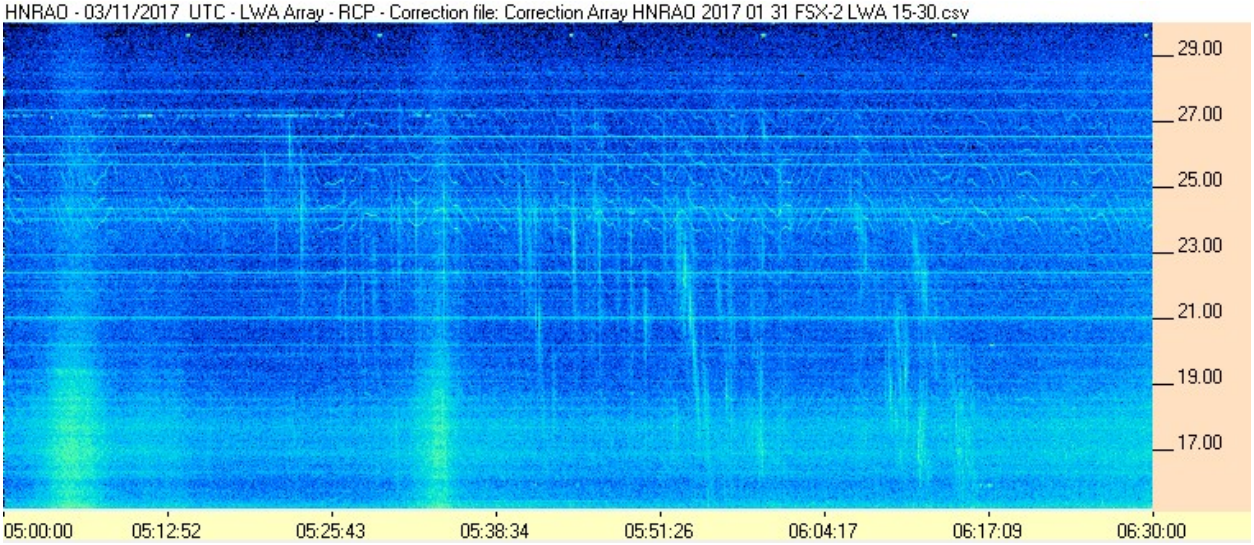
FSX-2/LWA Pair



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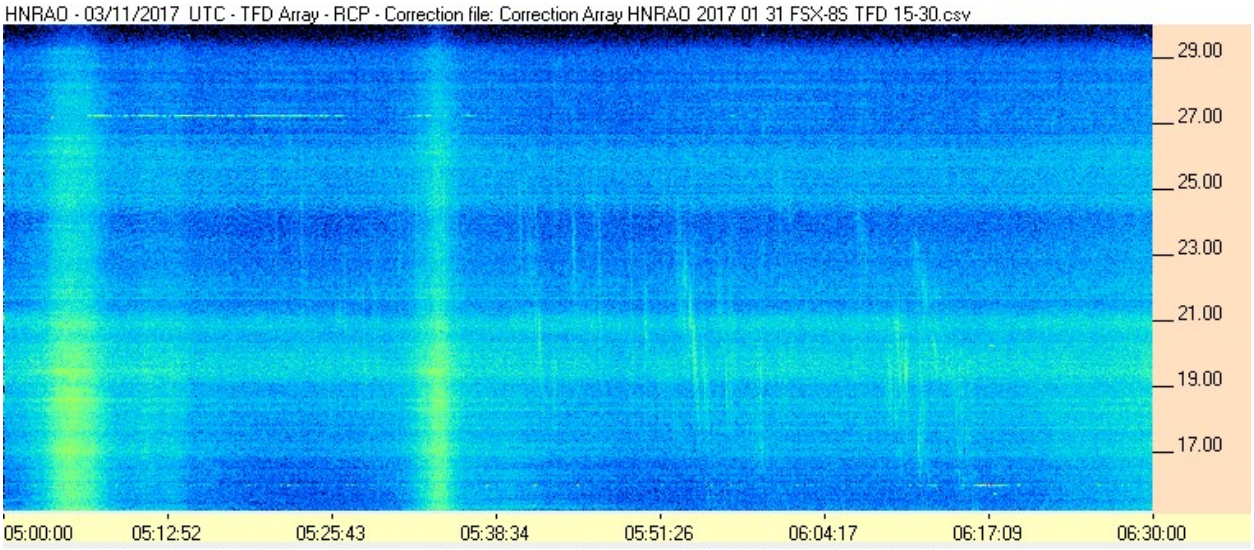
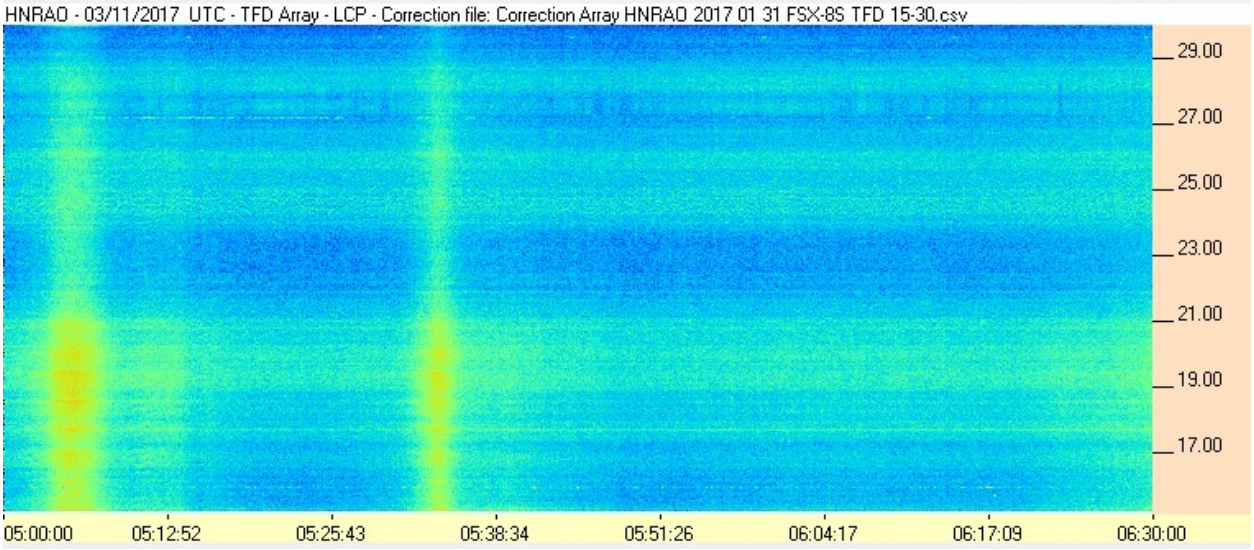
FSX-8S/TFD Pair





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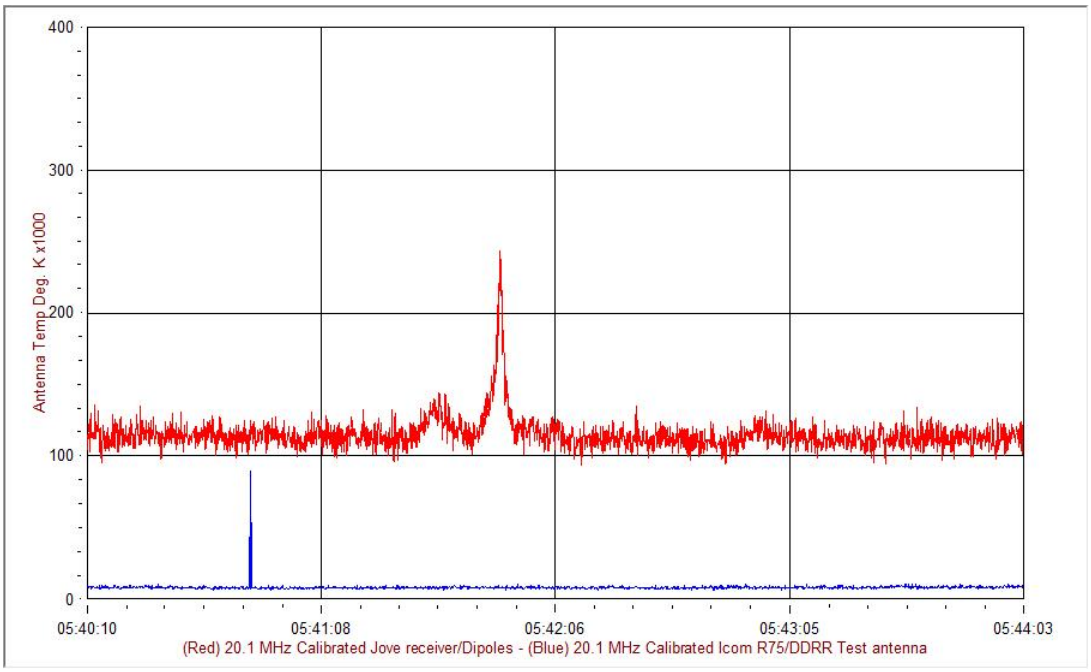
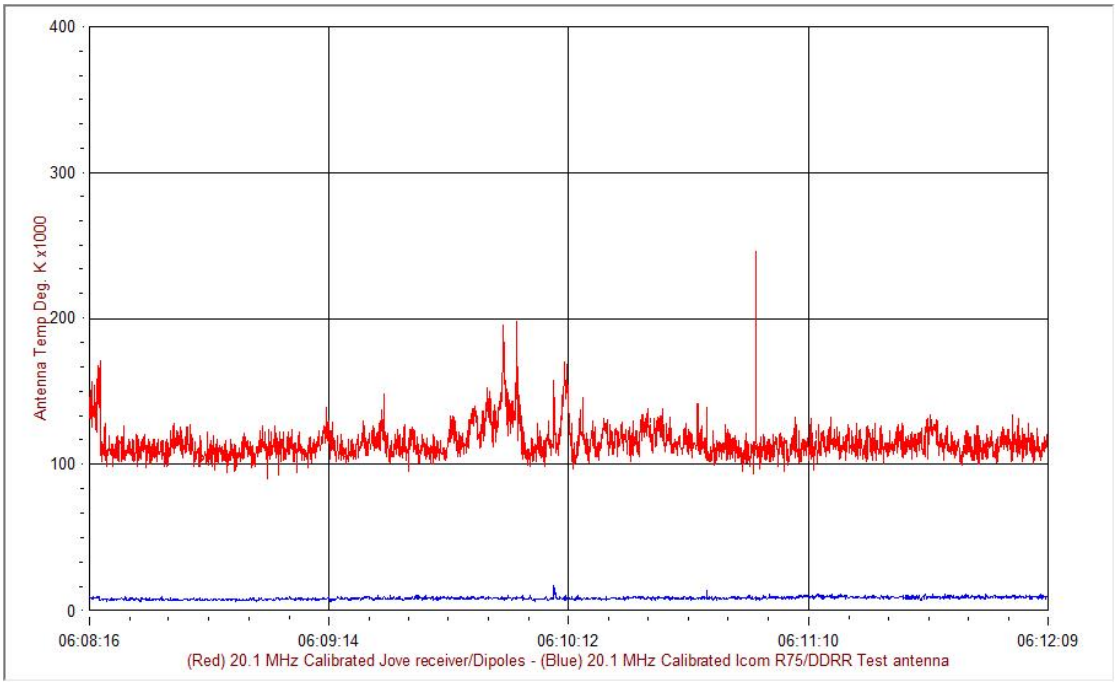
Radio JOVE/JOVE Dipoles Pair





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