

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 3 May 2017

Object: Jupiter – Non-Io-A

Observer: Unattended

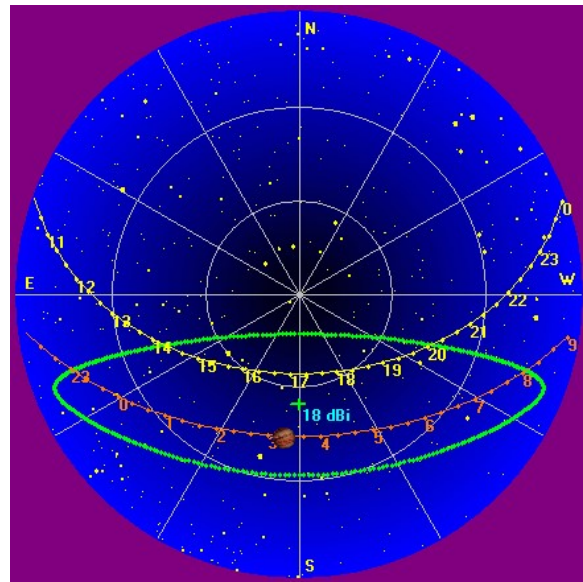
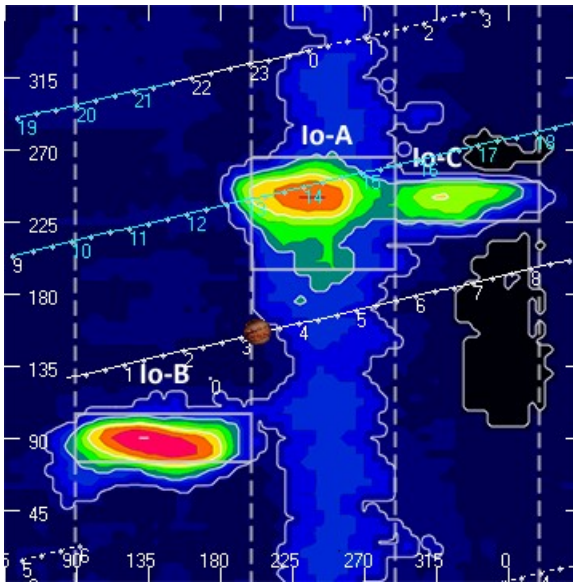
Start of pass:	0318 UT	Planetary K-index:	1
Jupiter Altitude (deg):	44.6	Jupiter Azimuth (deg):	174.1
Jupiter CML:	203.73	Jupiter Io Phase:	155.66
Jupiter RA (hr/min):	12:58	Jupiter Dec (hr/min):	-04:31
Hour Angle (hr/min):	-00:17	Polarization	RCP
Sun Altitude (deg):	-28.3	Sun Azimuth (deg):	328.7
Sun RA (hr/min):	02:34	Sun Dec (hr/min):	15:08

End of pass:	0327 UT		
Jupiter Altitude (deg):	44.8	Jupiter Azimuth (deg):	177.2
Jupiter CML:	209.17	Jupiter Io Phase	156.94
Hour Angle (hr/min):	-00:08		
Sun Altitude (deg):	-29.2	Sun Azimuth (deg):	330.9

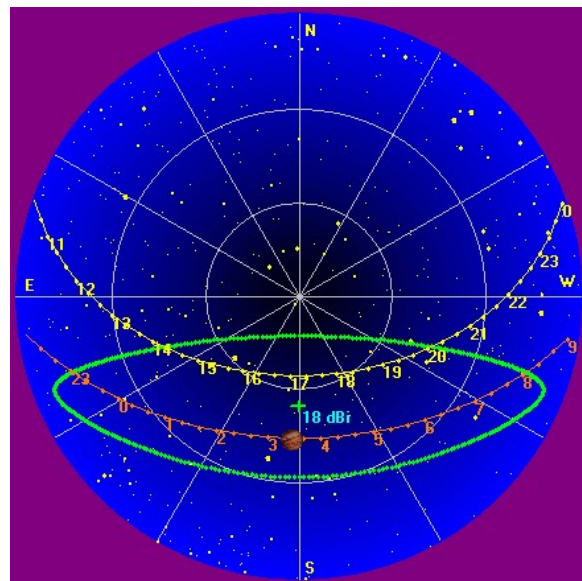
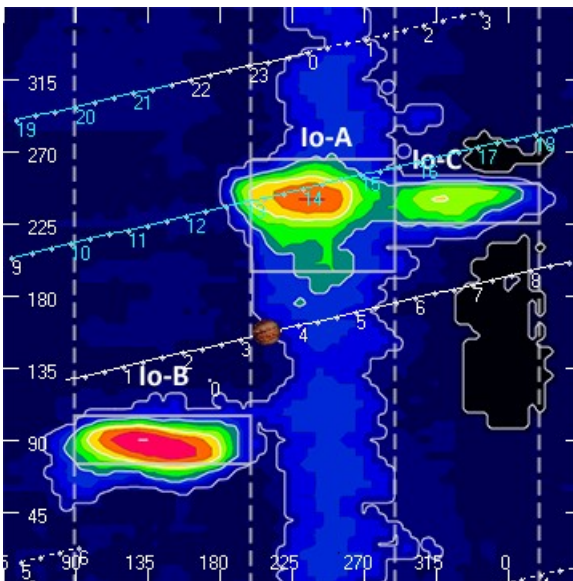
Observations made using:

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)

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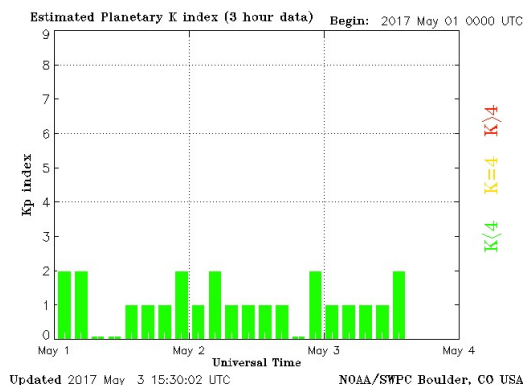


Beginning of Pass



End of Pass

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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>

By CML it appears this is a Non-Io-A storm, although it's slightly outside the accepted values of the chart above. An extremely weak and brief period of emission. Emissions spanned the range of observed frequencies with the SDRPlay RSP2 spectrograph from 16 MHz to 24 MHz.

Not observed with the FSX2/LWA Pair, nor the due to weakness of emissions and power line RFI so emission drift rate could not be determined.

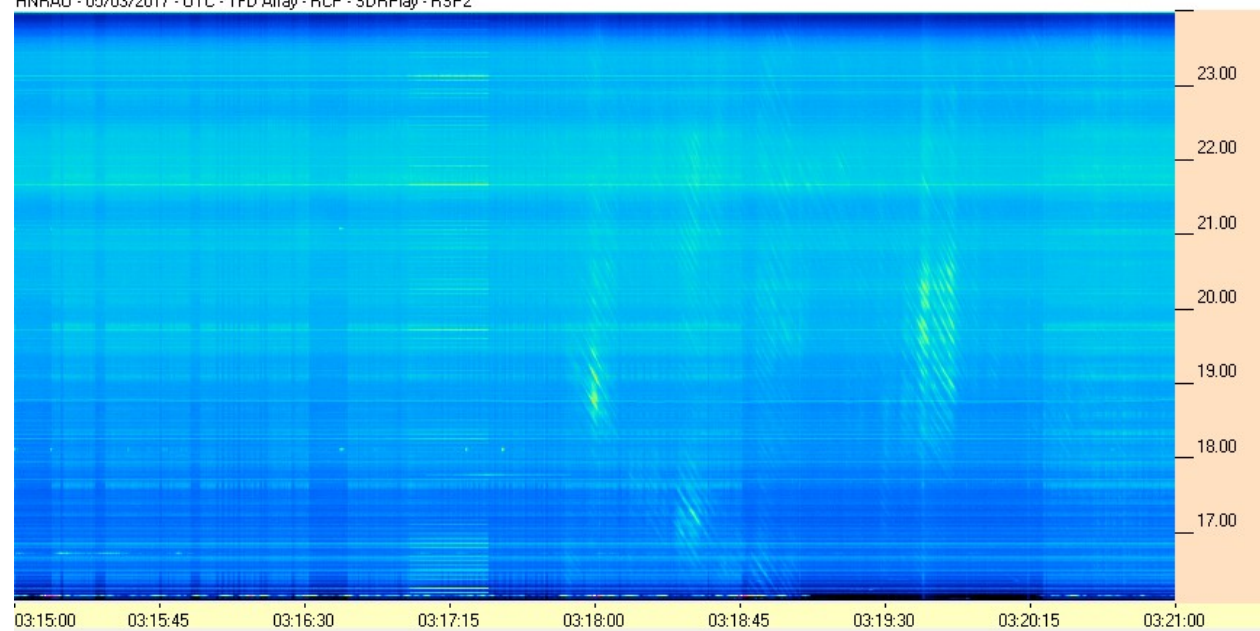
Negative drift rate is apparent and measurements were made. The modulation lanes, as has been seen in previous storms, increase in drift rate with increasing frequency, and have a slight curve at the higher frequencies which account for the increased drift rates at higher frequencies.

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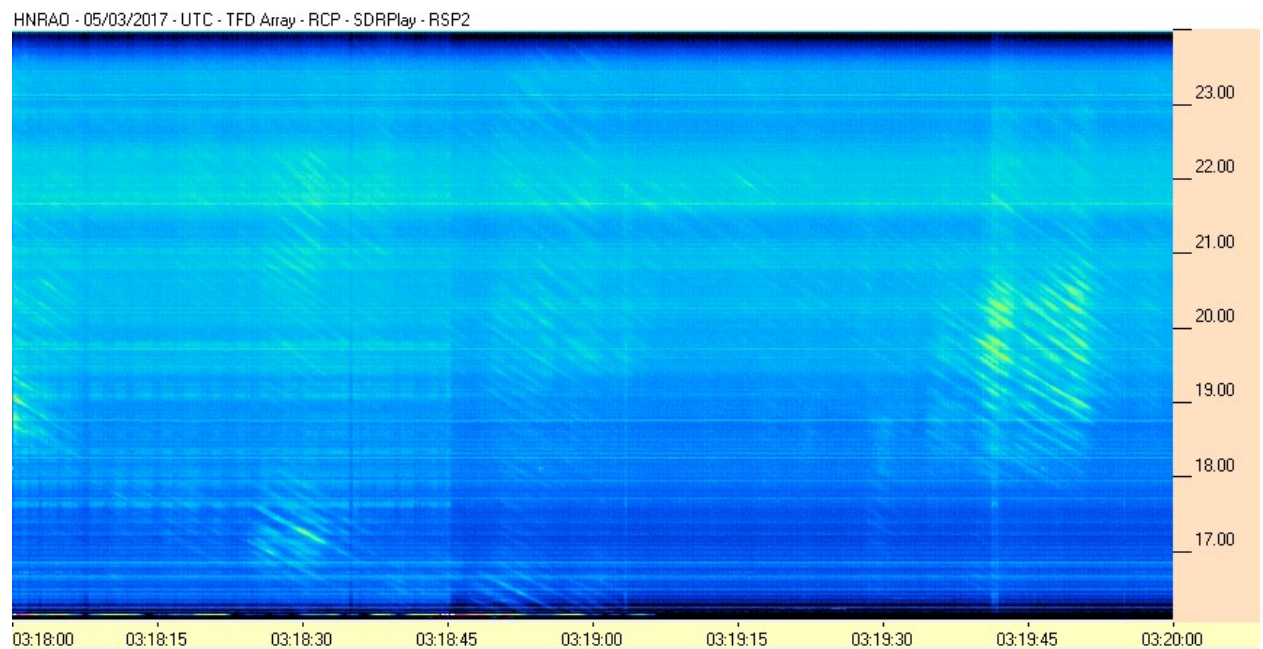
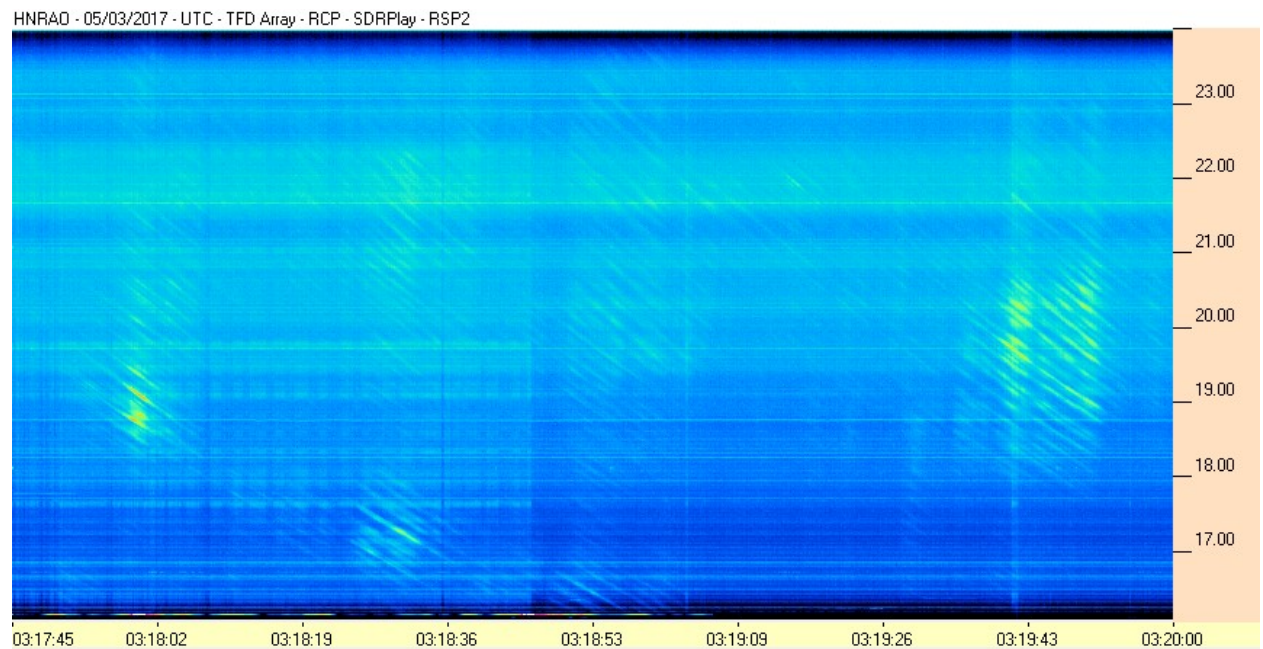


SDRPlay RSP2/TFD Pair

HNRAO - 05/03/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2

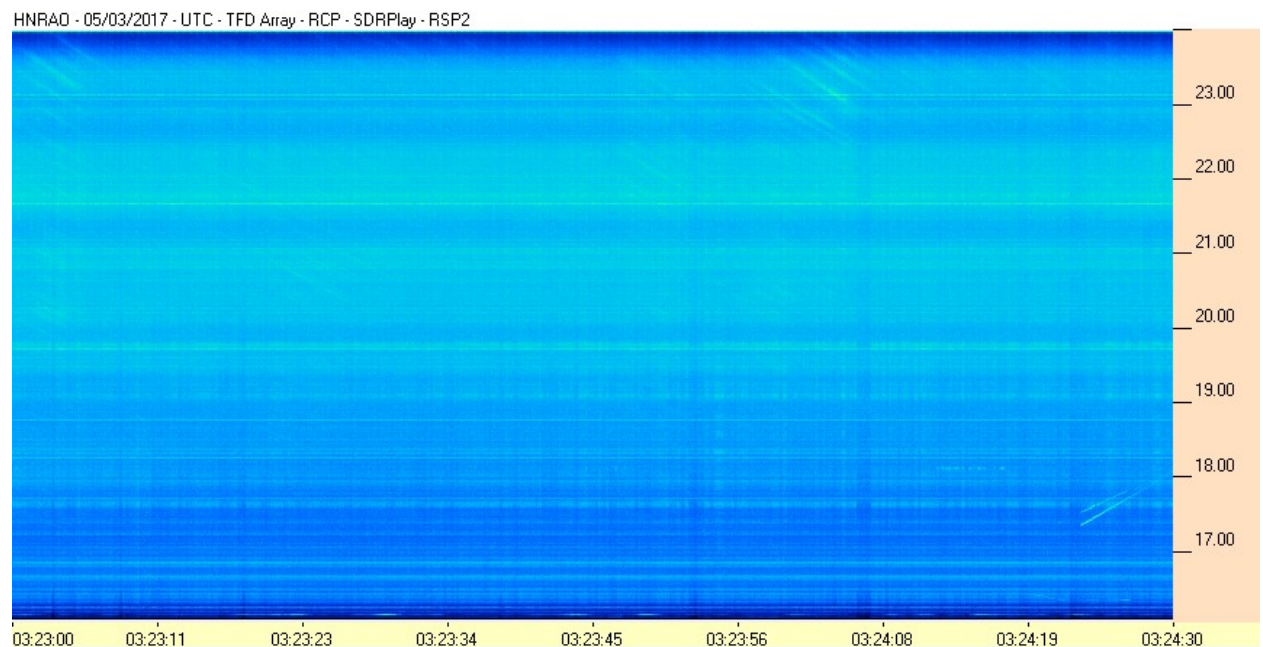
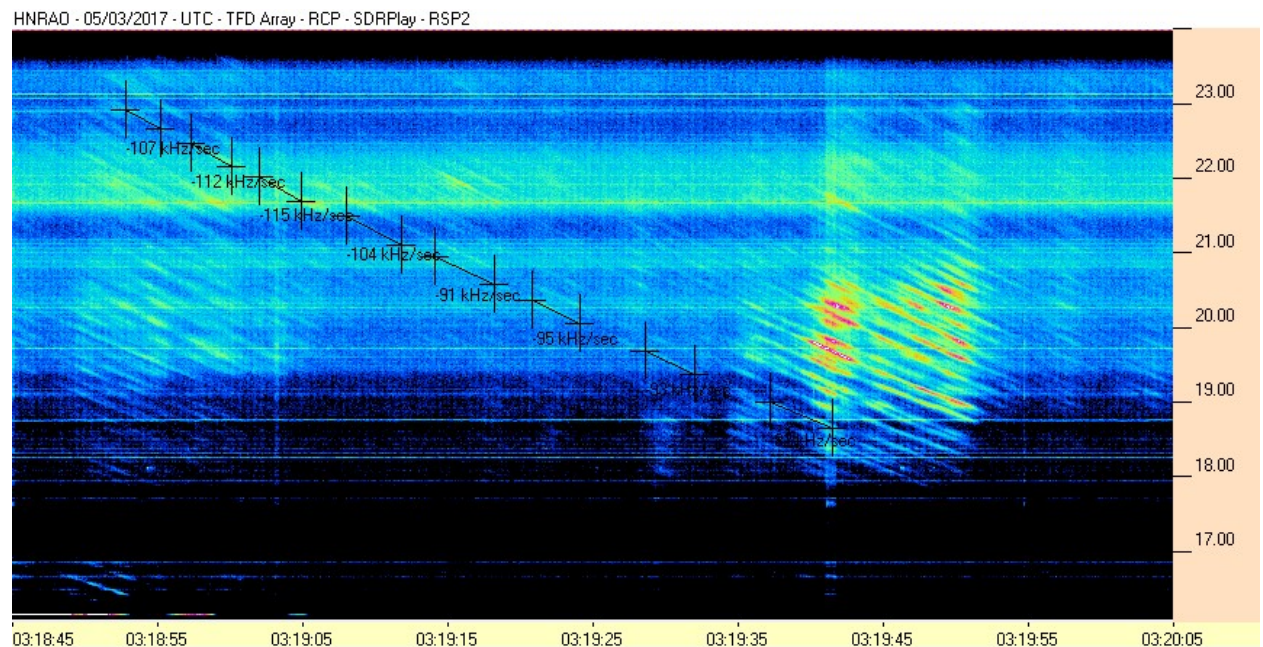


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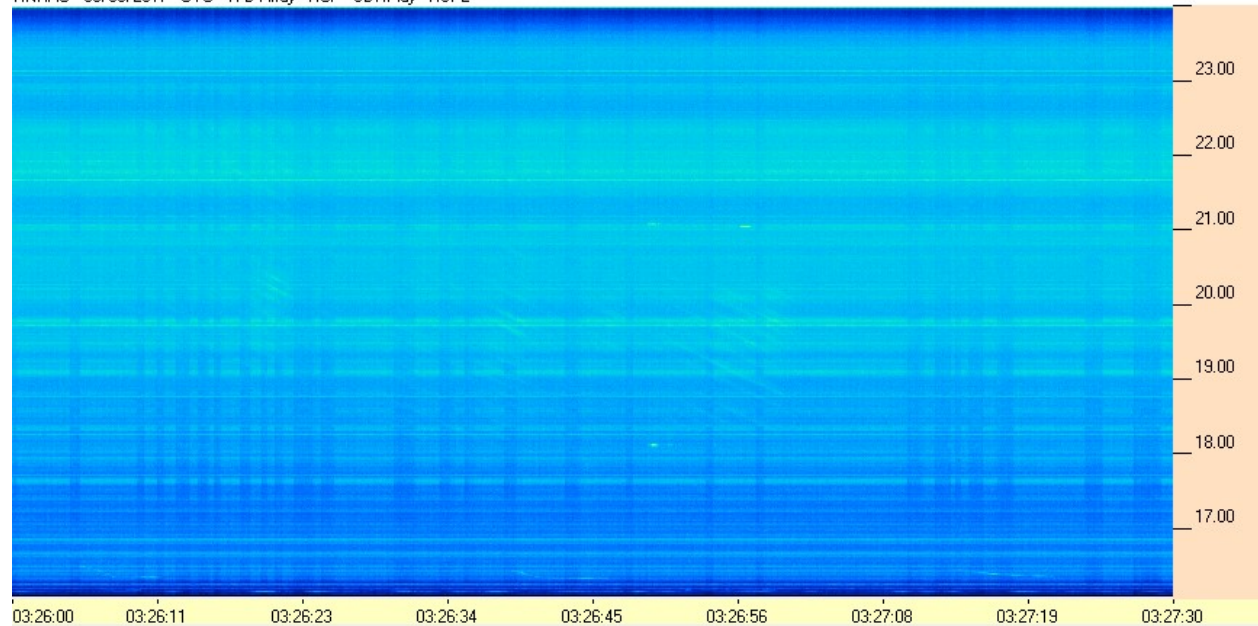
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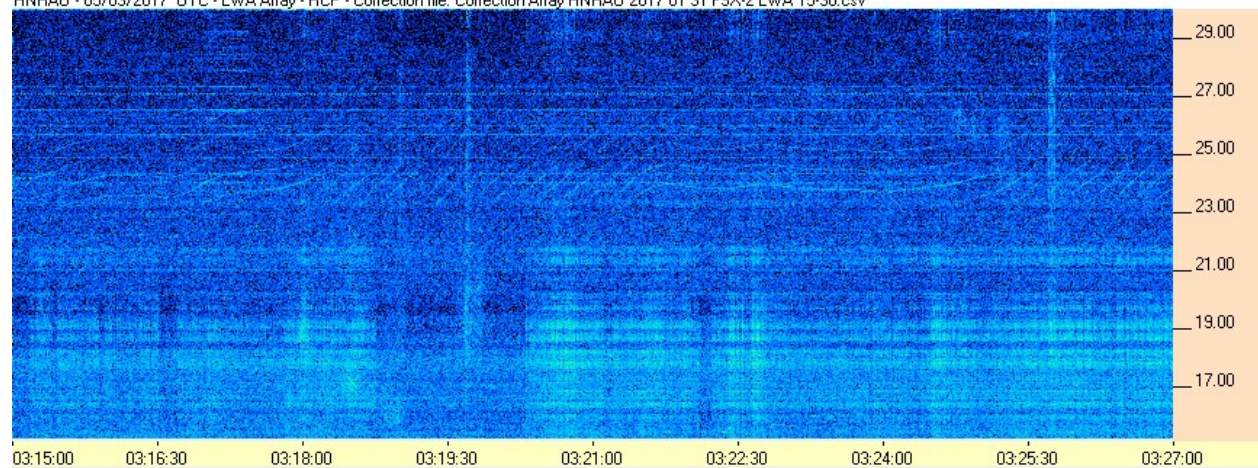


HNRAO - 05/03/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



FSX-2/LWA Pair

HNRAO - 05/03/2017 - UTC - LWA Array - RCP - Correction file: CorrectionArray HNRAO 2017 01 31 FSX-2 LWA 15-30.csv



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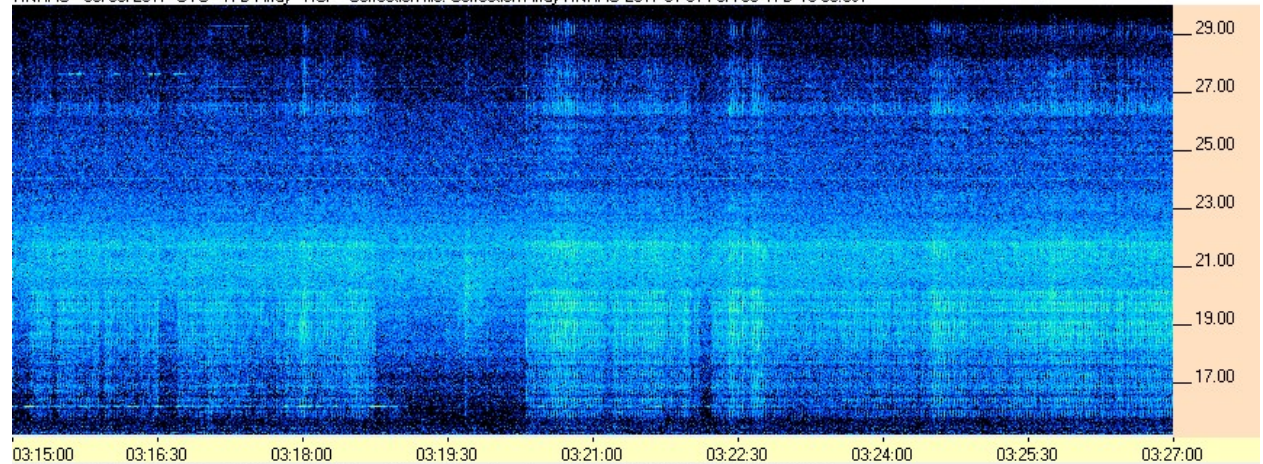


FSX-8S/TFD Pair

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HNRAO - 05/03/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



HNRAO - 05/03/2017 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv

