HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 22 May 2017

Object: Jupiter – Non-Io-B

Observer: Unattended

Start of pass:	**0202 UT**	**Planetary K-index:**	
Jupiter Altitude (deg):	**45.3**	**Jupiter Azimuth (deg):**	**175.6**
Jupiter CML:	**138.59**	**Jupiter Io Phase:**	**052.61**
Jupiter RA (hr/min):	**12:52**	**Jupiter Dec (hr/min):**	**-03:58**
Hour Angle (hr/min):	**-00:12**	**Polarization**	**RCP**
Sun Altitude (deg):	**-15.2**	**Sun Azimuth (deg):**	**314.4**
Sun RA (hr/min):	**03:49**	**Sun Dec (hr/min):**	**20:01**

End of pass:	**0237 UT**		
Jupiter Altitude (deg):	**45.1**	**Jupiter Azimuth (deg):**	**188.1**
Jupiter CML:	**159.75**	**Jupiter Io Phase**	**057.52**
Hour Angle (hr/min):	**00:23**		
Sun Altitude (deg):	**-19.6**	**Sun Azimuth (deg):**	**321.7**

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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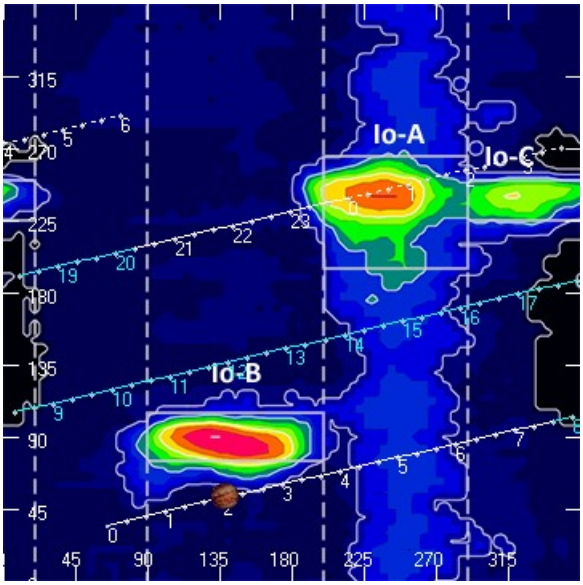
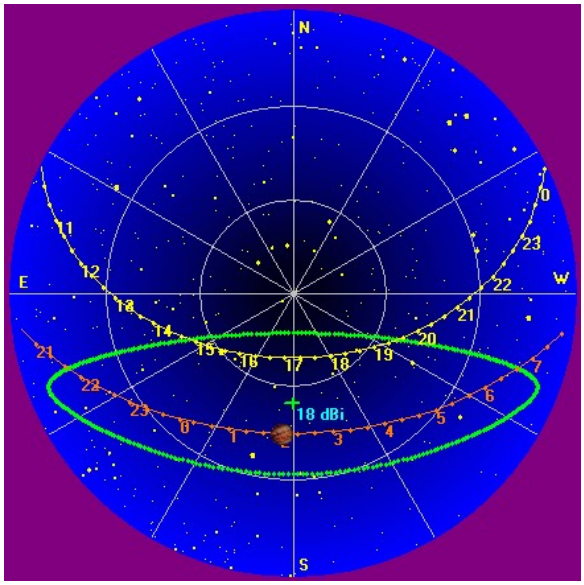
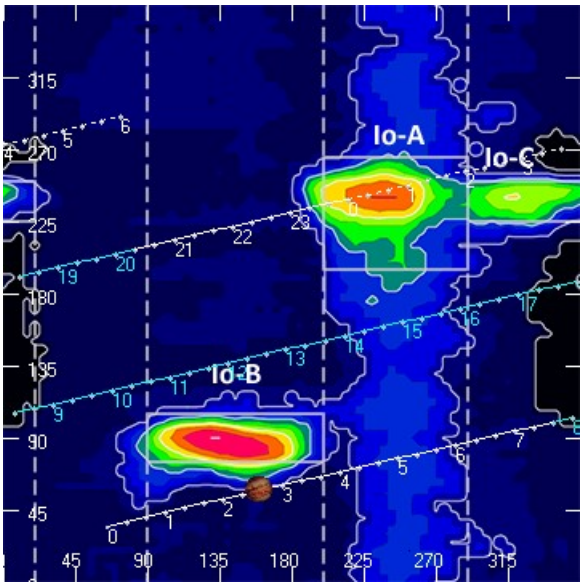
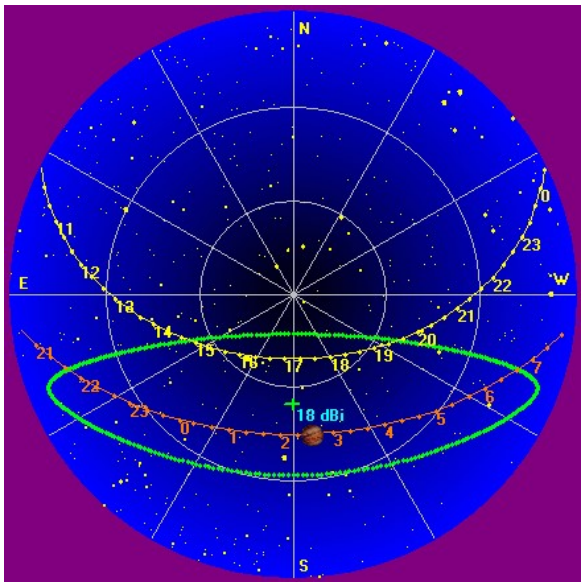




Beginning of Pass





End of Pass

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

Very poor observing conditions with the SDRPlay RSP2 spectrograph due to broadcast stations.

A brief and weak Non-Io-B. L-bursts with positive drift modulation lanes. Visible emissions seemed confined from 16 MHz to 18 MHz although some early L-bursts were as high as 24 MHz.

Both the FSX-2/LWA pair and the FSX-8S/TFD pair observed a brief part of this storm. The FSX-2/LWA pair recording the emissions stronger than the FSX-8S/TFD pair.

Nothing of note in this storm. No activity observed at the Radio JOVE frequency (20.1 MHz).

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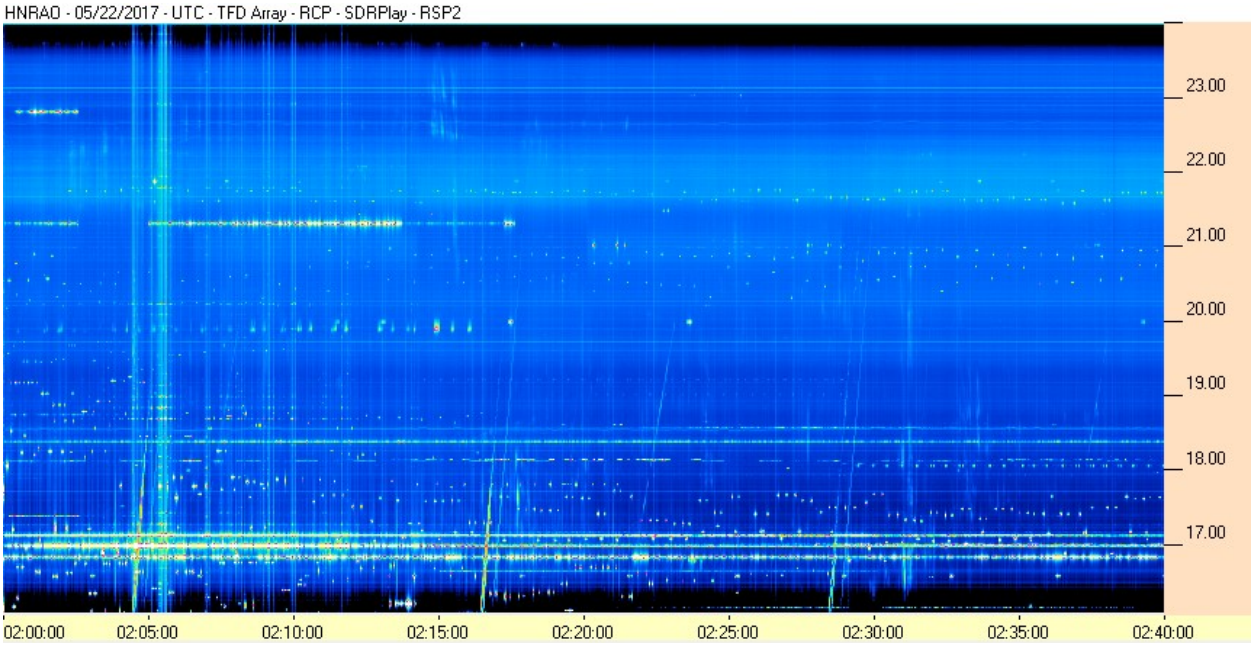
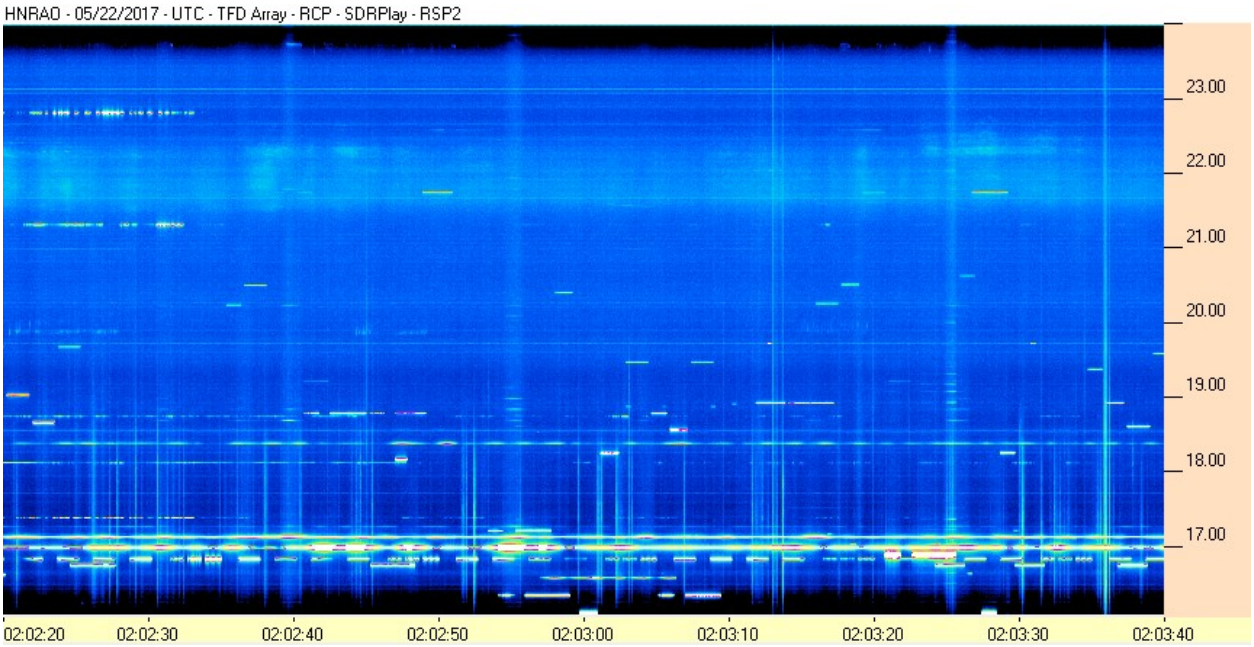
SDRPlay RSP2/TFD Pair





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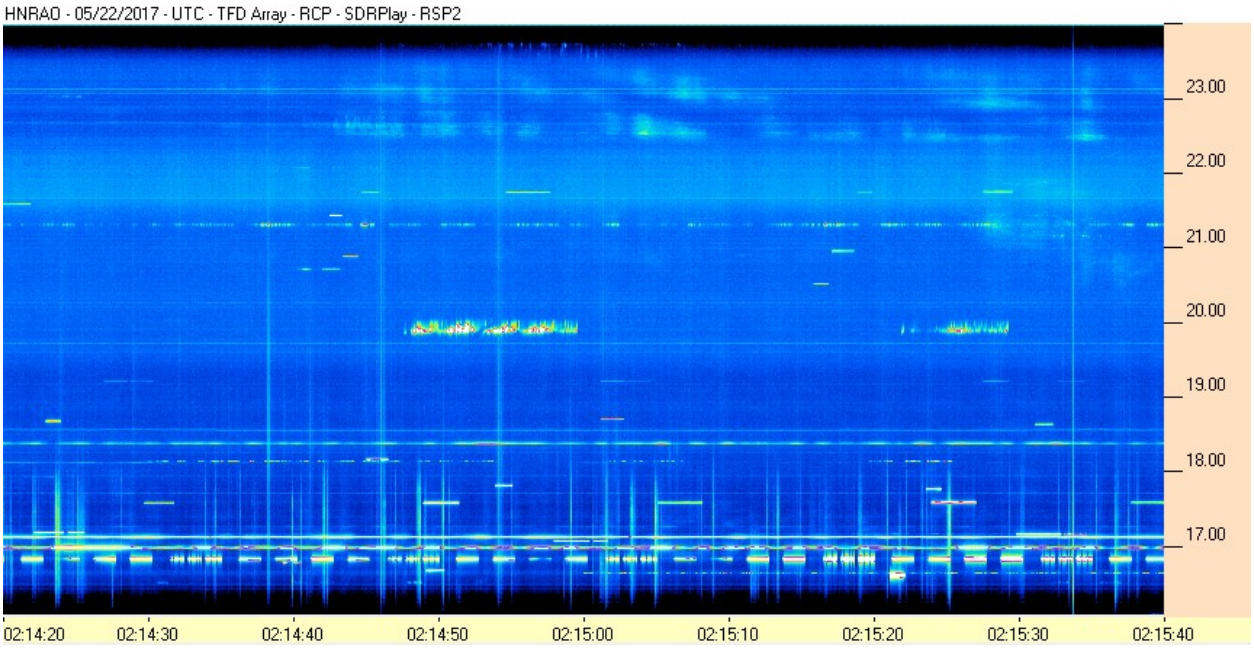

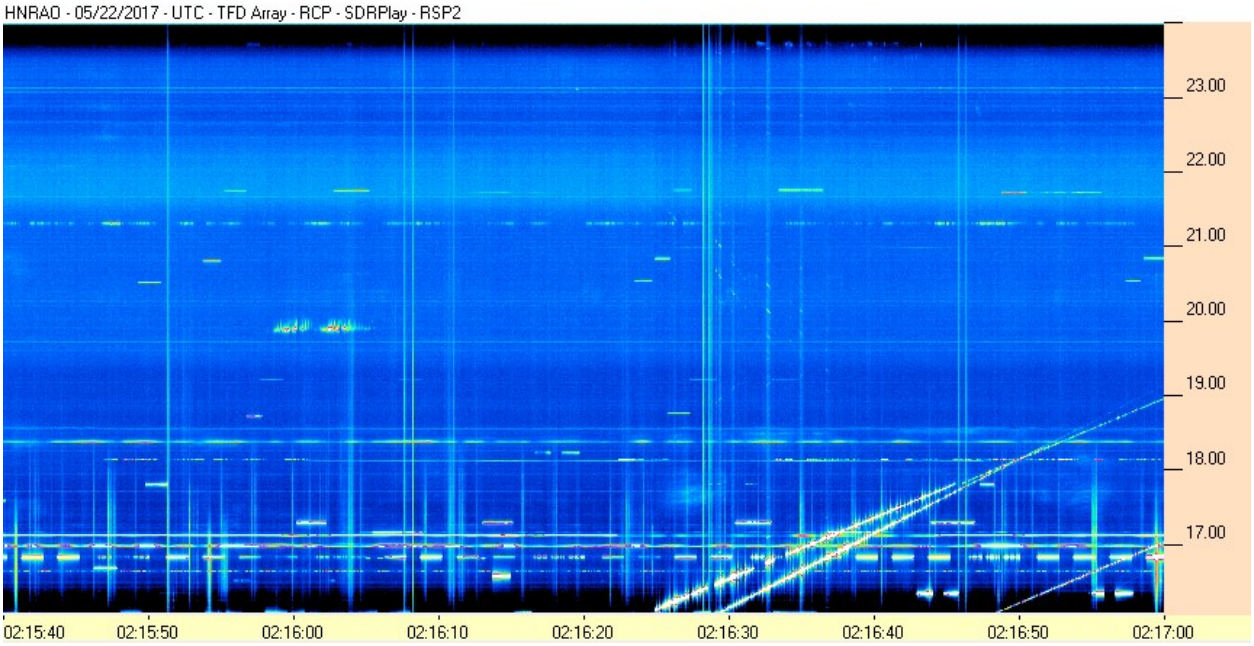

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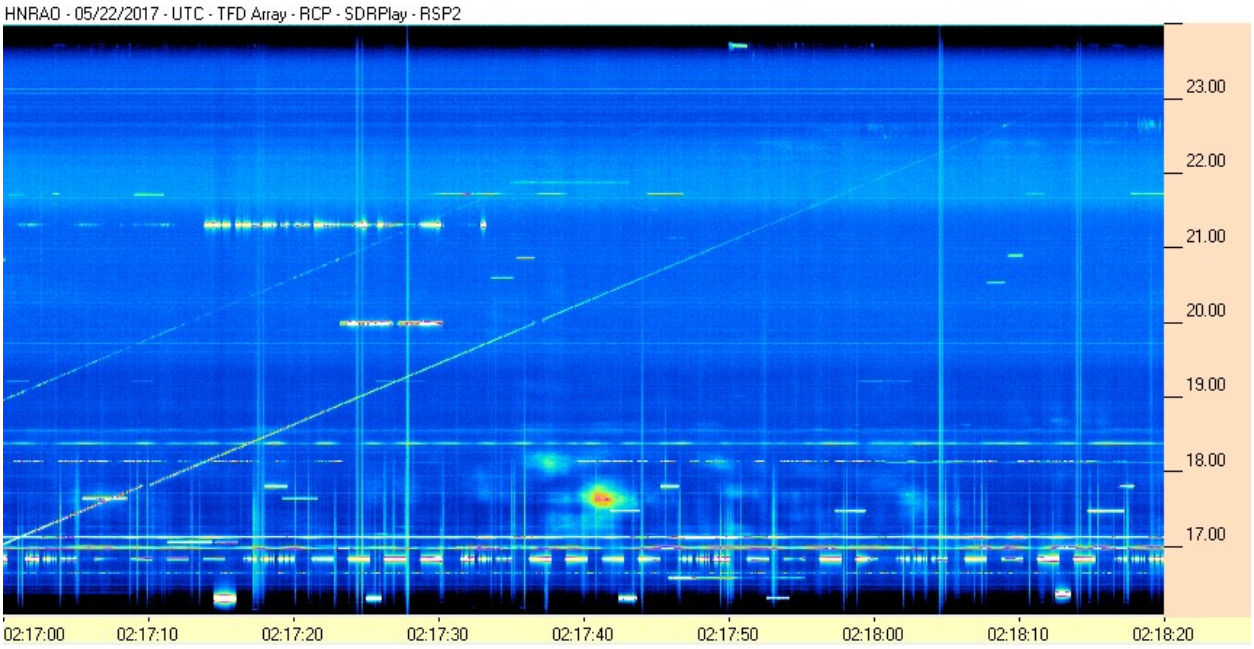

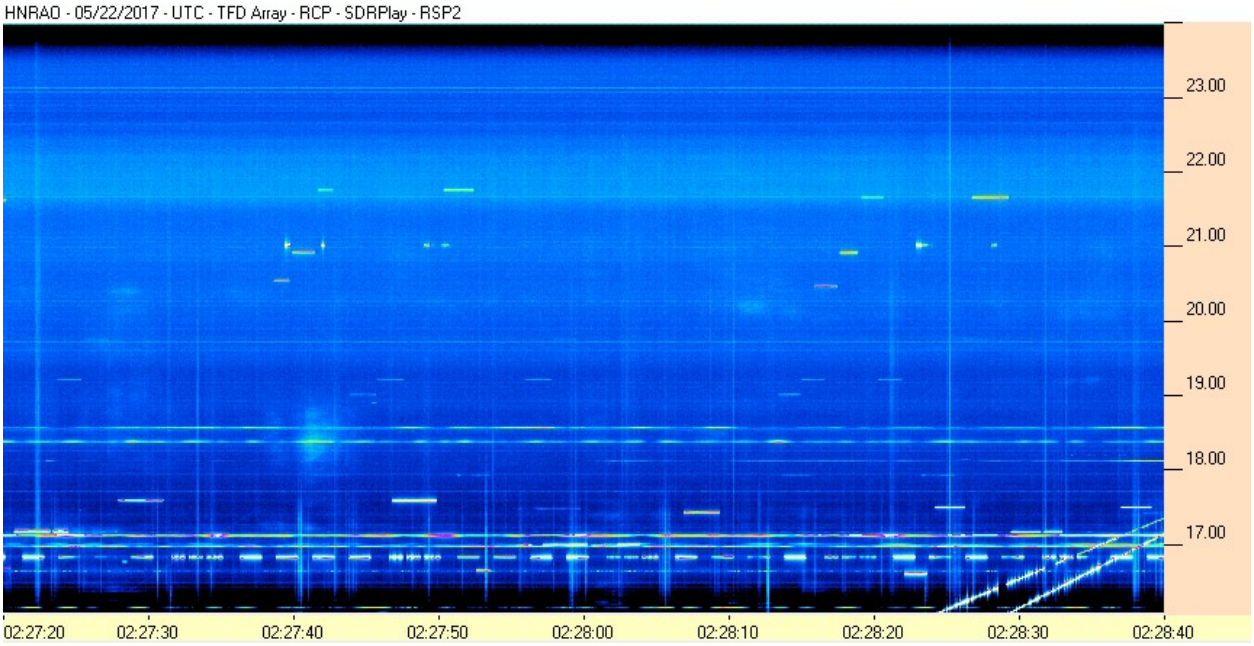

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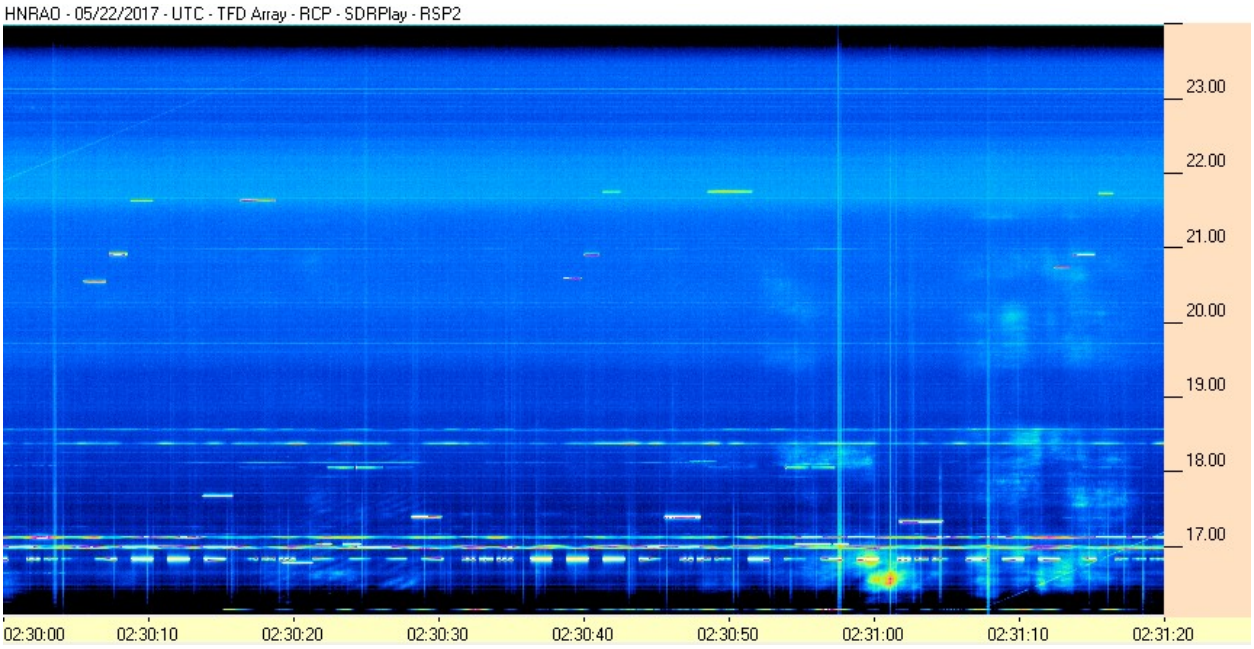

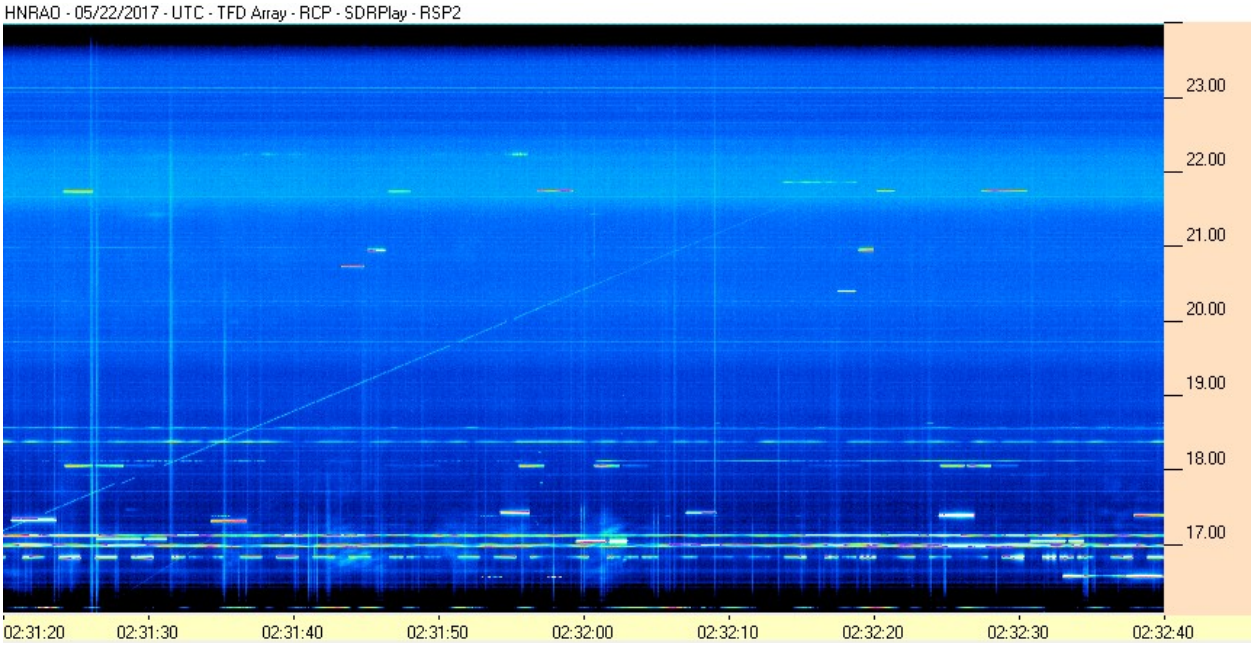

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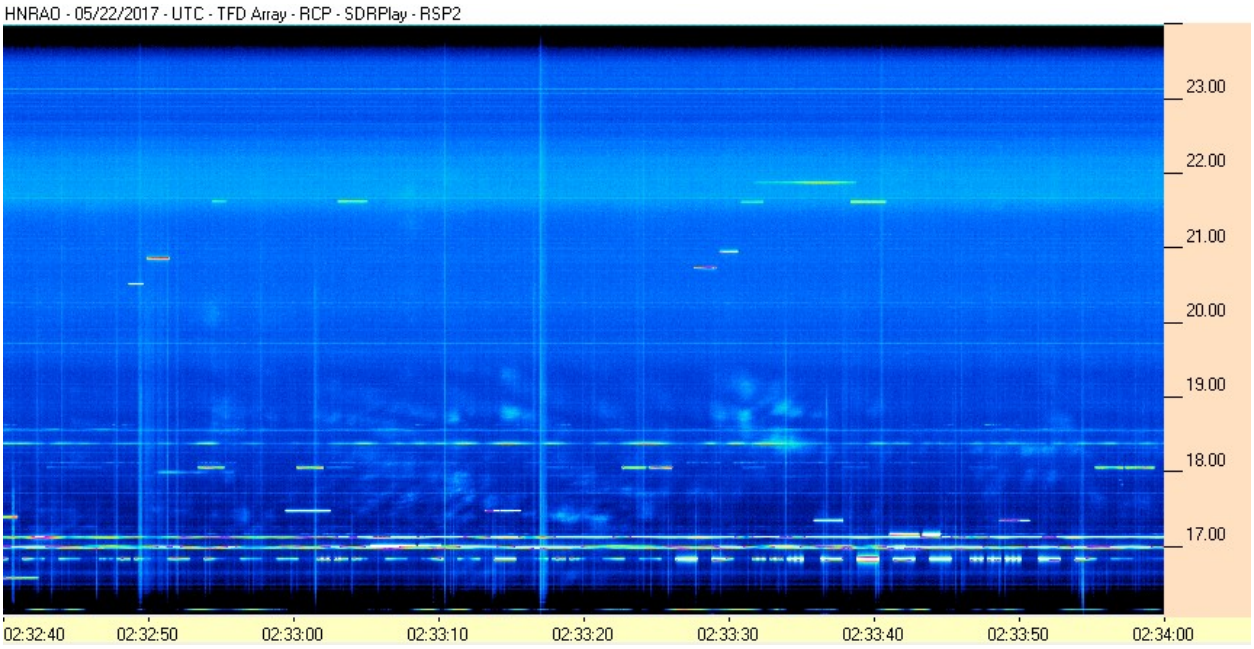

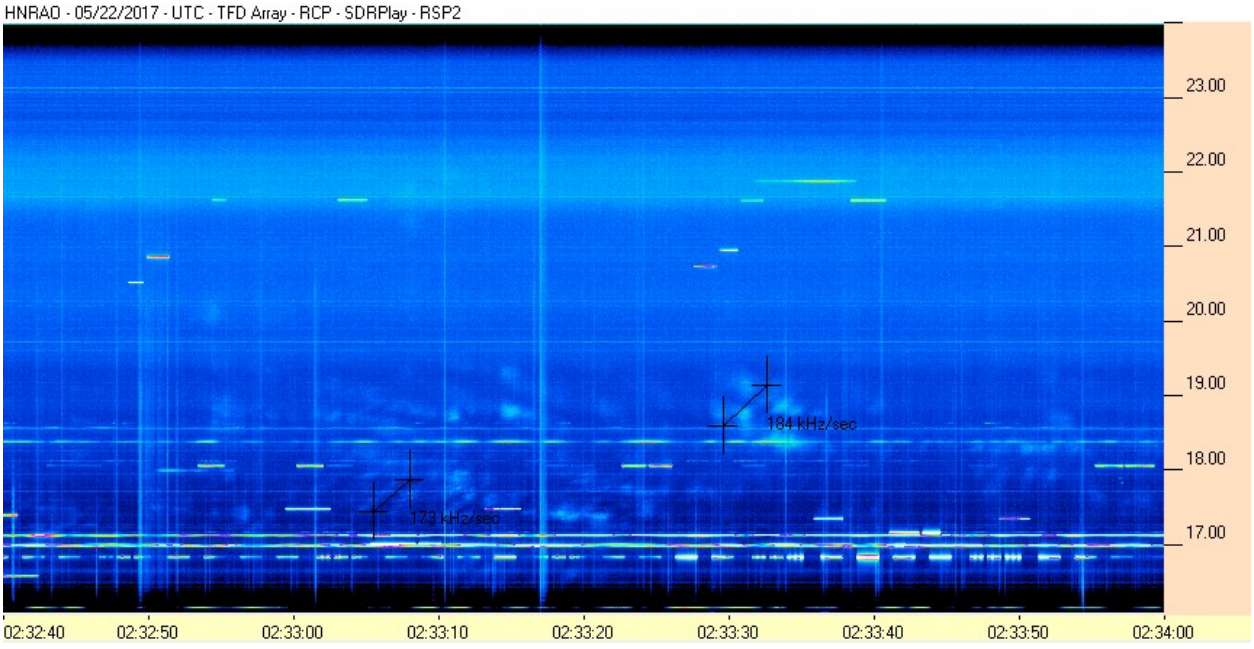

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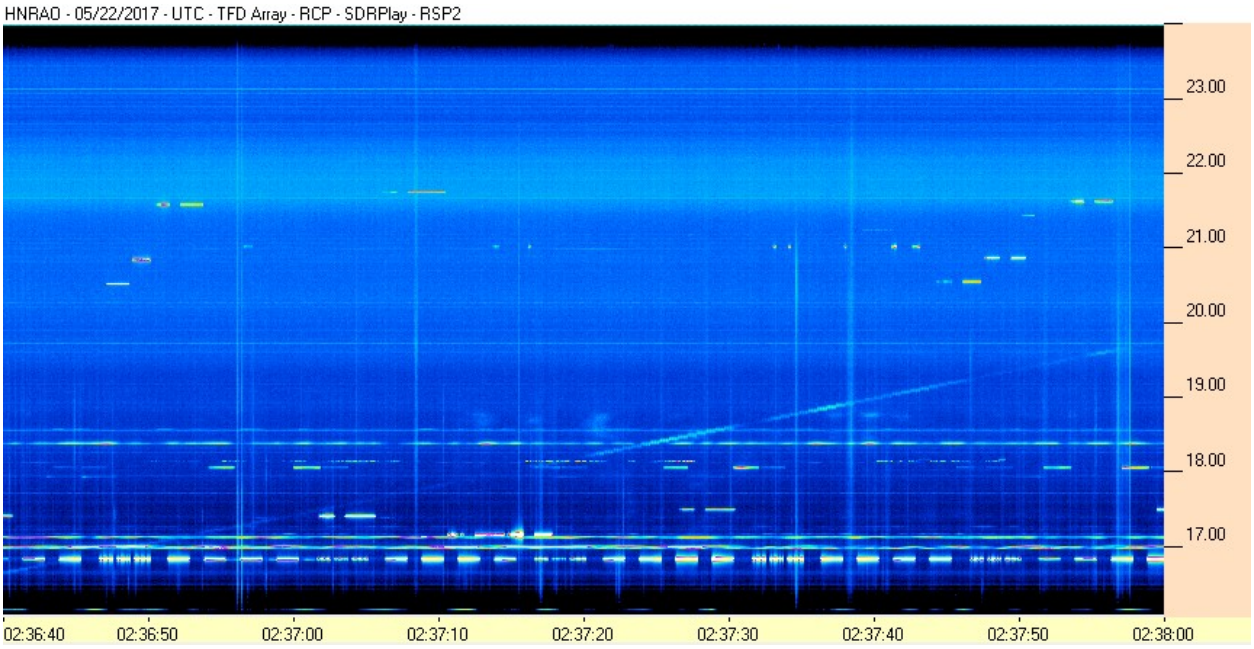
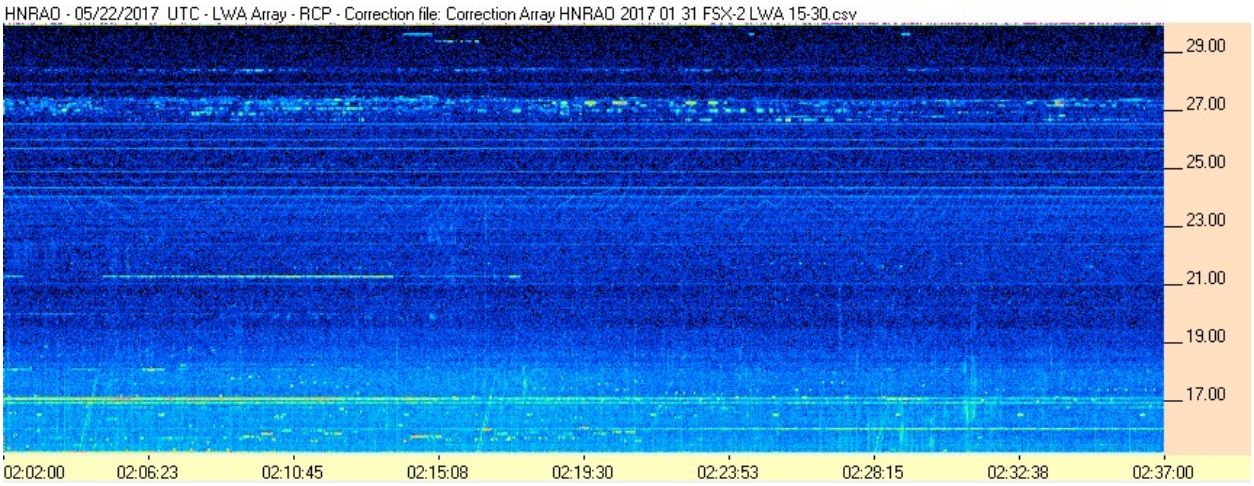
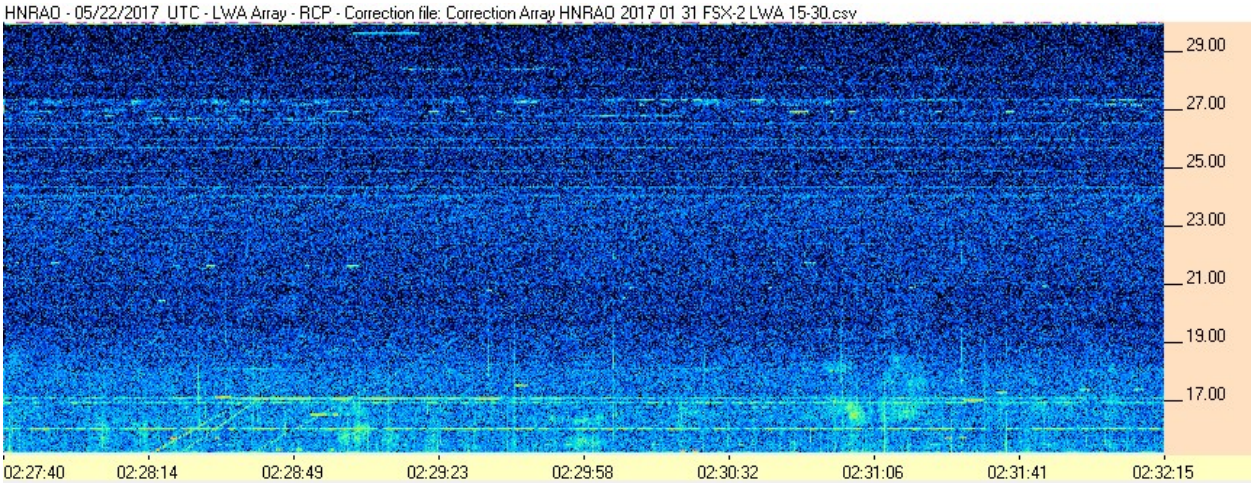


FSX-2/LWA Pair





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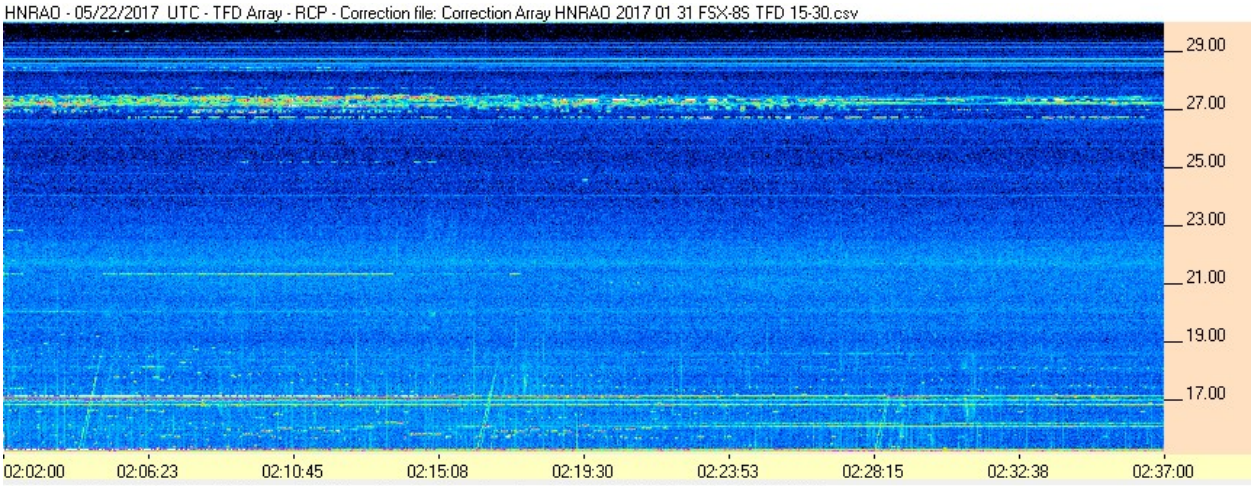
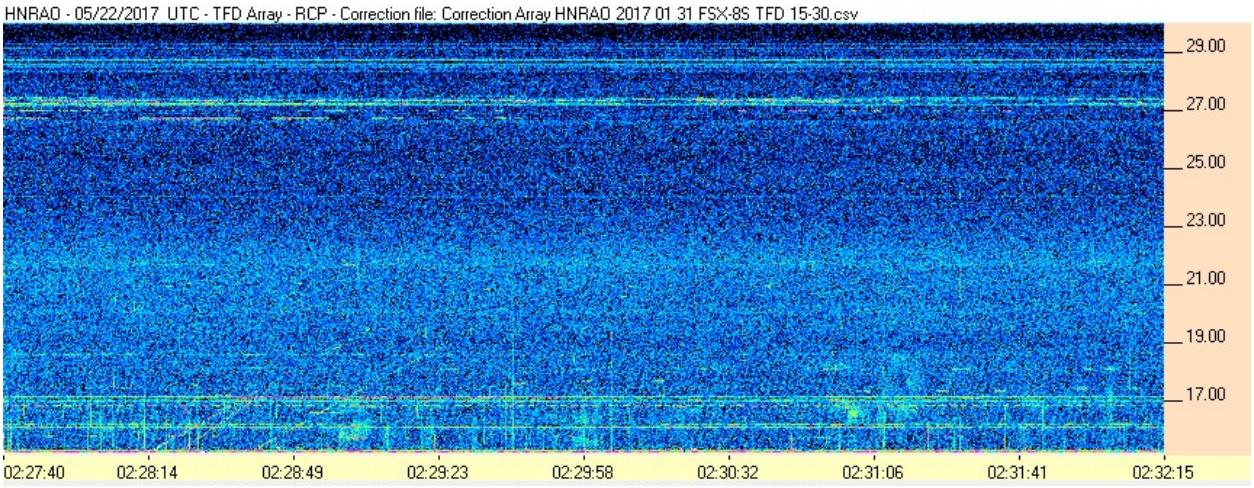
FSX-8S/TFD Pair




HNRAO - 05/22/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv
29.00
27.00
25.00
23.00
21.00
19.00
17.00
02:27:40
02:28:14
02:28:49
02:29:23
02:29:58
02:30:32
02:31:06
02:31:41
02:32:15
HNRAO - 05/22/2017 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv
29.00
27.00
25.00
23.00
21.00
19.00
17.00
02:27:40
02:28:14
02:28:49
02:29:23
02:29:58
02:30:32
02:31:06
02:31:41
02:32:15