HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 15 February 2018

Object: Jupiter – Io-B

Observer: Unattended

Start of pass:	**0800**	**Planetary K-index:**	**2**
Jupiter Altitude (deg):	**18.6**	**Jupiter Azimuth (deg):**	**134.4**
Jupiter CML:	**127.69**	**Jupiter Io Phase:**	**082.99**
Jupiter RA (hr/min):	**15:20**	**Jupiter Dec (hr/min):**	**-17:12**
Hour Angle (hr/min):	**-03:01**	**Polarization**	**RCP**
Sun Altitude (deg):	**-47.1**	**Sun Azimuth (deg):**	**061.4**
Sun RA (hr/min):	**21:48**	**Sun Dec (hr/min):**	**-13:18**

End of pass:	**0906**		
Jupiter Altitude (deg):	**26.3**	**Jupiter Azimuth (deg):**	**149.3**
Jupiter CML:	**167.59**	**Jupiter Io Phase**	**092.27**
Hour Angle (hr/min):	**01:54**		
Sun Altitude (deg):	**-35.4**	**Sun Azimuth (deg):**	**076.2**

Observatory Configuration

Spectrograph Receiver	Antenna	Polarization	System Loss	Multicoupler	Multicoupler port	Calibrated
FSX-8S	TFD	RCP/LCP	7.7 dB	#1 LCP #2 RCP	Port 2 / +3dB Port 2 / +3dB	Twice daily
FSX-2	LWA	RCP/LCP manual select		N/A	N/A	N/A
SDRPlay RSP2	TFD	RCP	-7.70 dB	#1 LCP	Port 3 / +3dB	Twice daily
SDRPlay RSP2	TFD	LCP	-7.70 dB	#2 RCP	Port 3 / +3dB	Twice daily
SDRPlay RSP1	Jove dipoles	Linear	-3.19 dB	N/A	N/A	12/29/2017
JOVE II	Jove dipoles	Linear	-3.19 dB	N/A	N/A	12/29/2017
JOVE 1	TFD	RCP	-7.70 dB	N/A	N/A	
JOVE 1	TFD	LCP	-7.70 dB	N/A	N/A	

JOVE dipoles phased for 2017-2018 season
LWA antenna orientation for observation: 67.5 degrees

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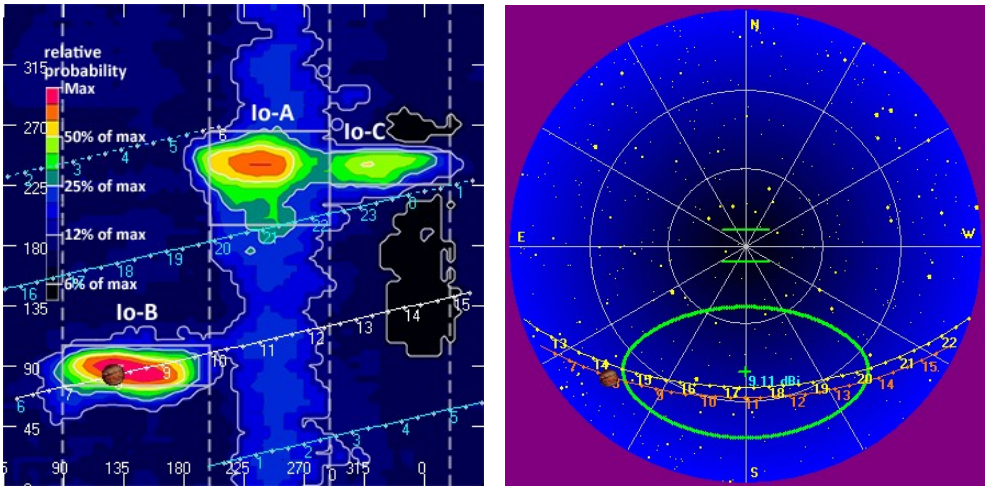
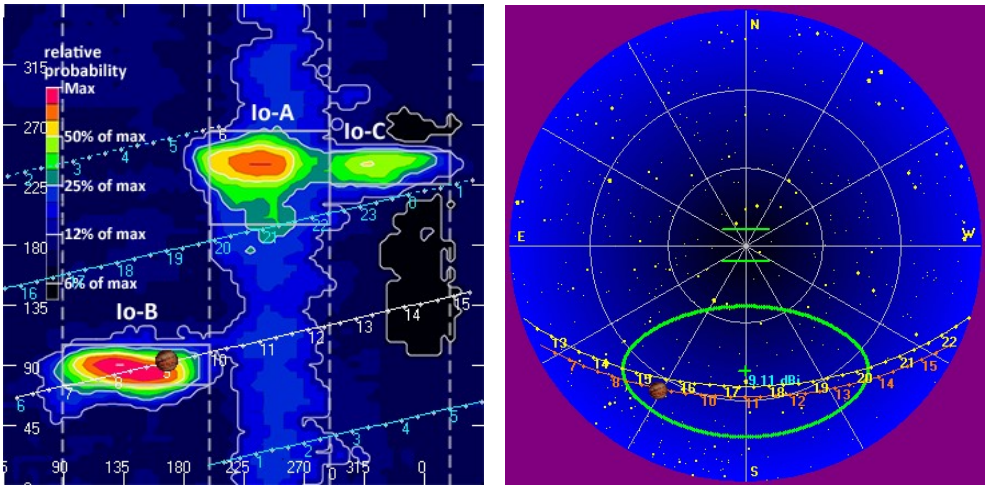


Beginning of Pass



End of Pass

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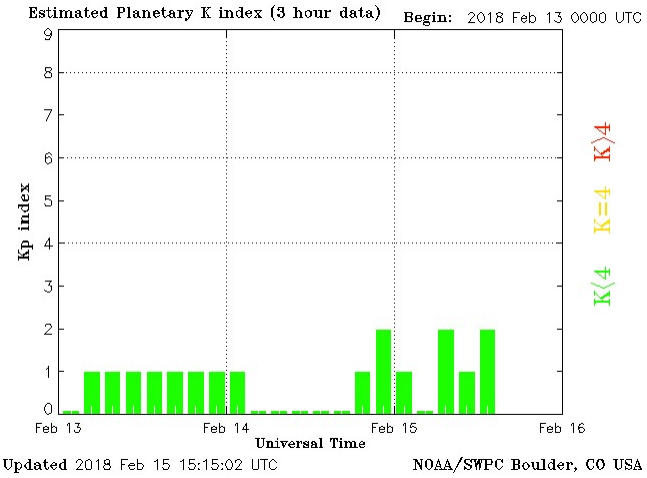

MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360	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

Modulation Lanes Designations*	
L - Burst	S-Burst
L1 – No lanes	S1 – No lanes
L2 - Positive slope	S2 – Positive slope
L3 - Cross hatched	S3 – Cross hatched
L4 – Negative slope	S4 – Negative slope
*Modulation Lanes in the Dynamic Spectra of Jovian L-bursts, J.J. Riihimaa, Astron. & Astrophys. 4, 1970	

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This was an unattended observation.

A near center Io-B pass. Emissions were RCP S-burst dominant from 16 MHz through 24 MHz. The only L-burst seen was at the very end of the storm.

All spectrographs were recording at the time the storm occurred. There were no observable LCP emissions. Jupiter was observed with the SDRPlay RSP2 using the TFD array, FSX-8S/TFD array and the FSX-2/LWA array and the SDRPlay RSP1 using the Radio JOVE dipole array

The linear Jove dipole record displayed Faraday lanes. There was a very brief period of positive slope S-burst modulation lanes at 0831 UT.

There was a period of intense S-burst activity at 21 MHz between 0800 and 0831 UT.

Activity was also recorded with the Radio JOVE receiver/dipole combination at 20.1 MHz. The SkyPipe chart follows at the end of this report.

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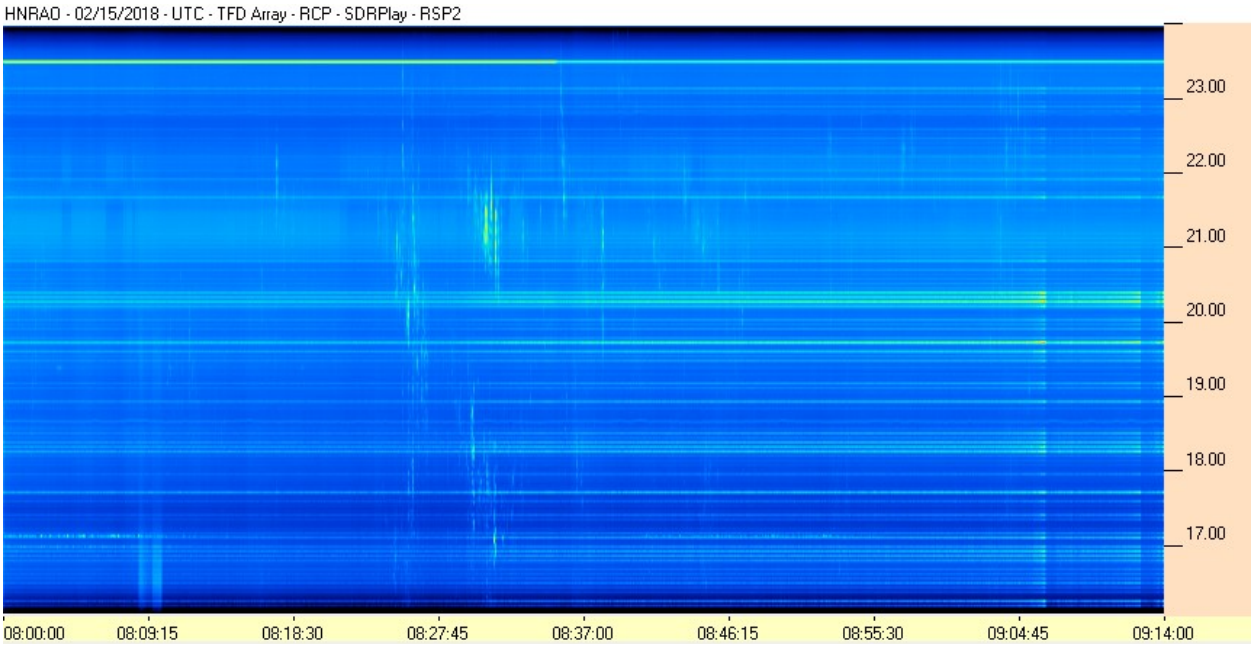
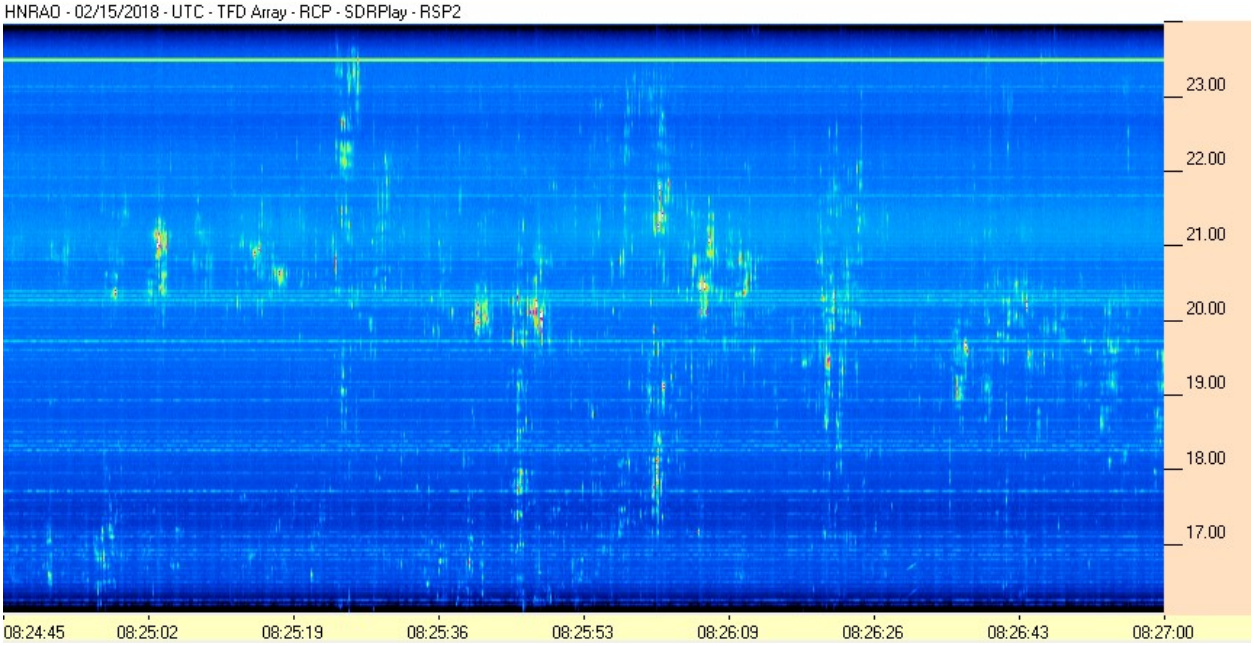
SDRPLay RSP2/TFD RCP





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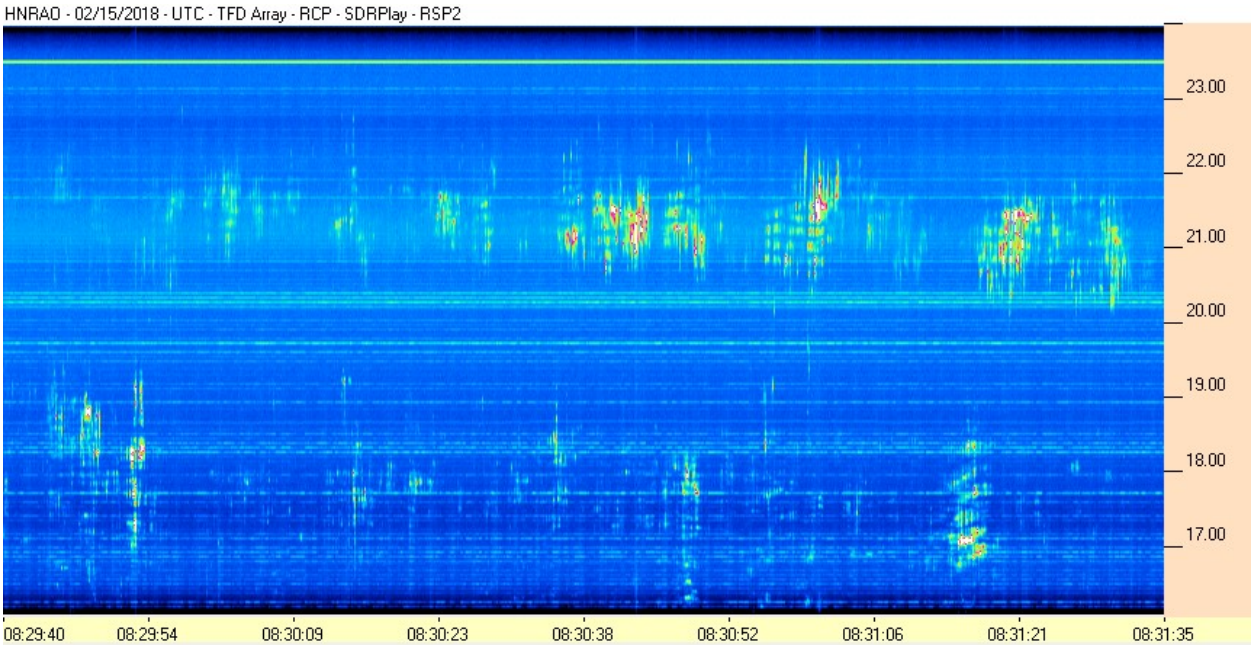

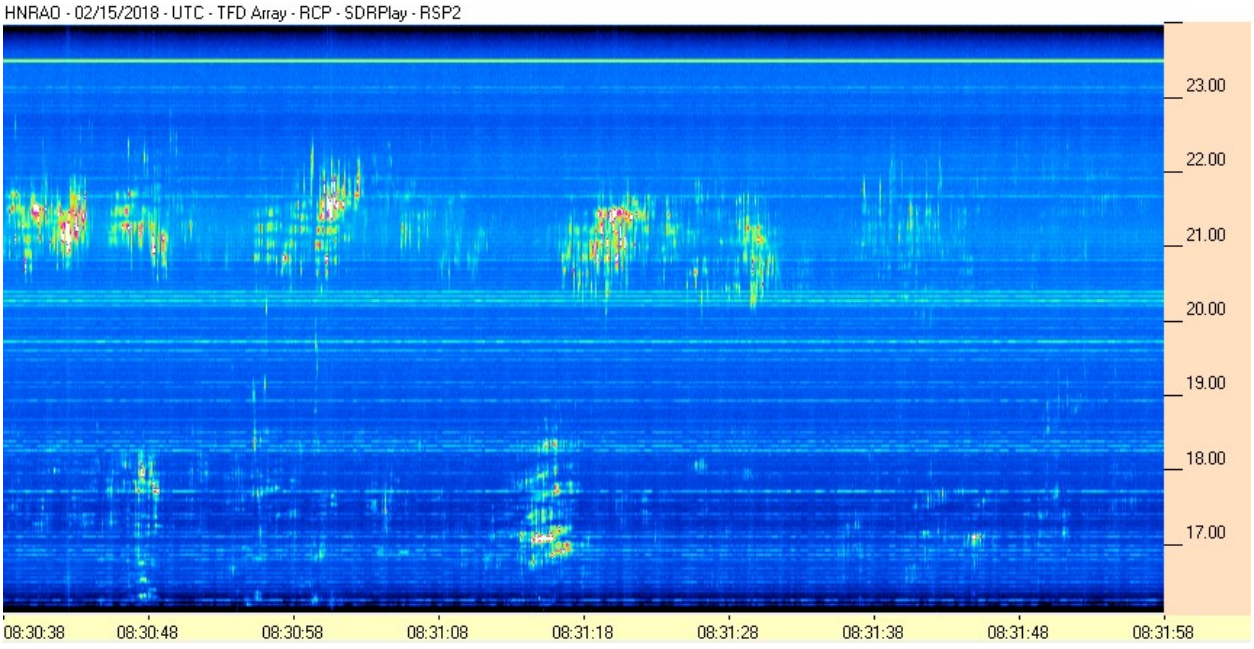

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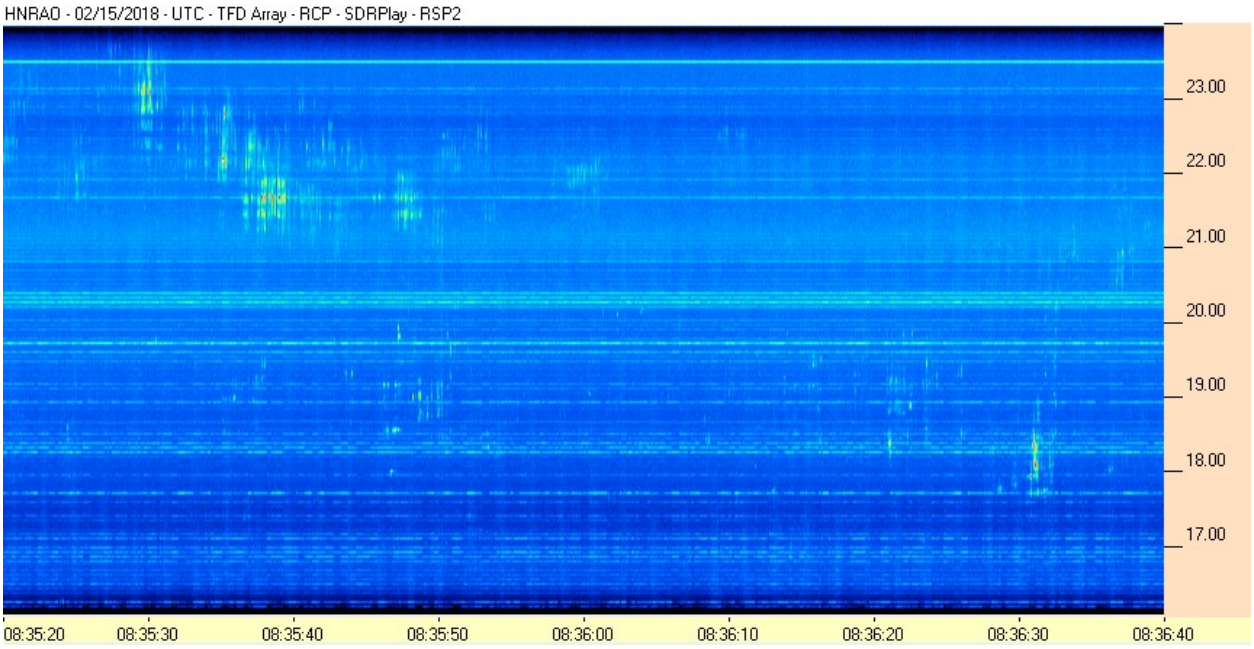

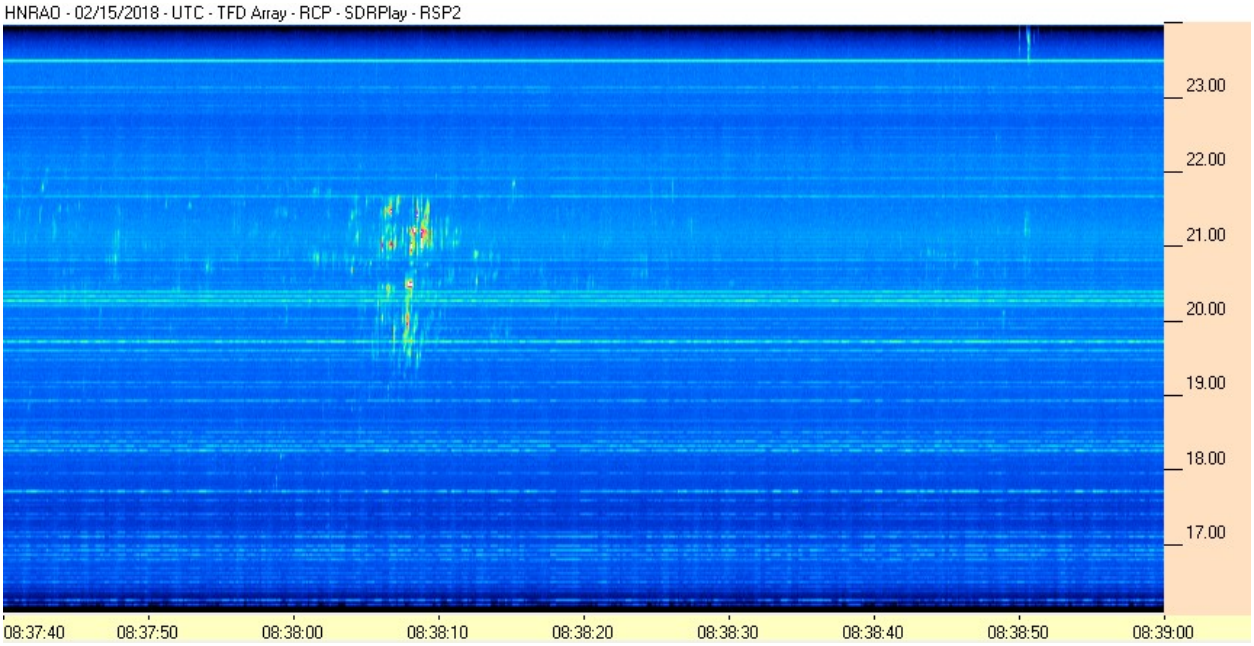

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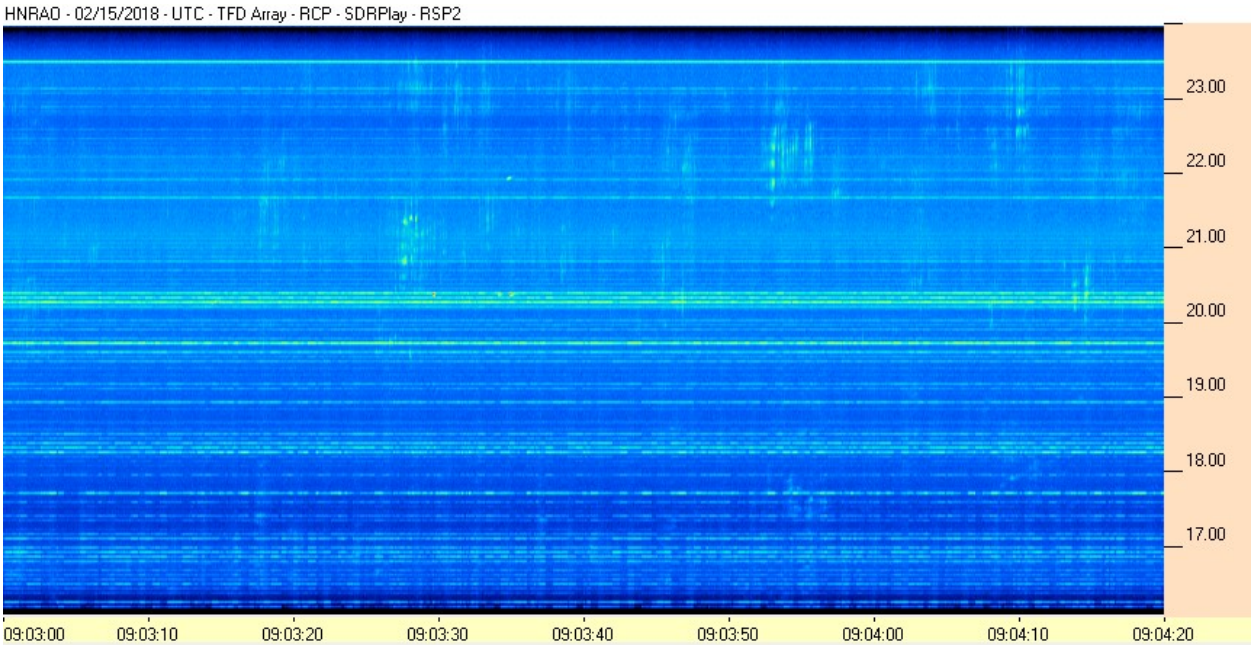

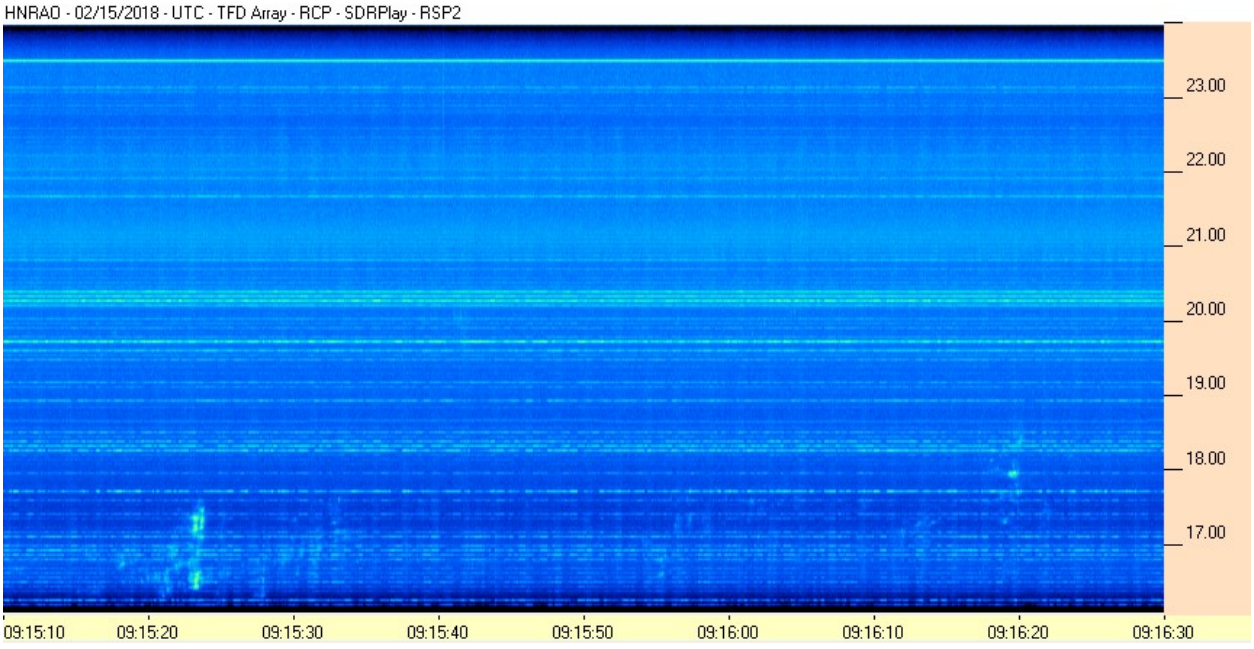

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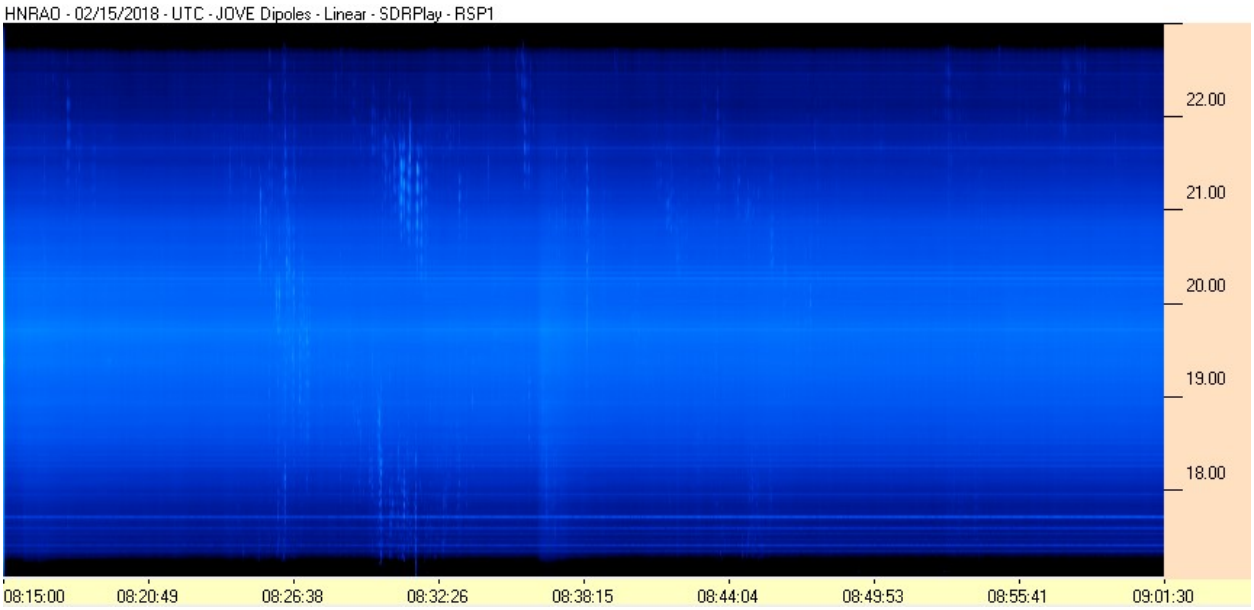
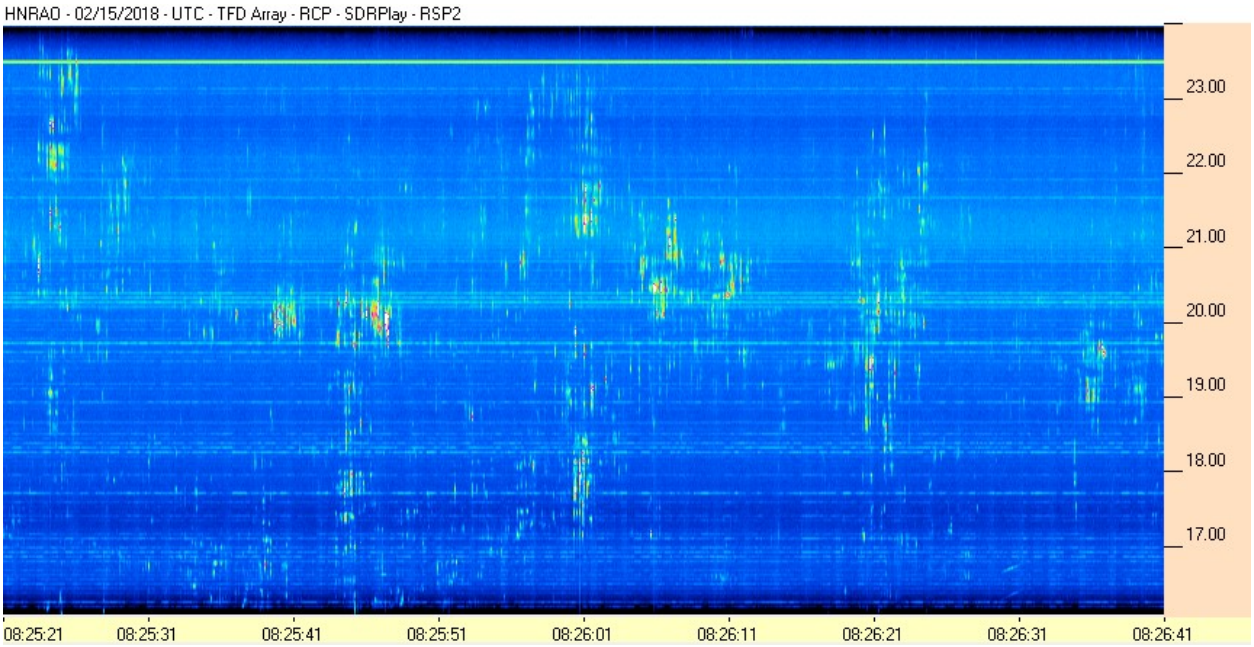
SDRPlay RSP1/JOVE Dipoles





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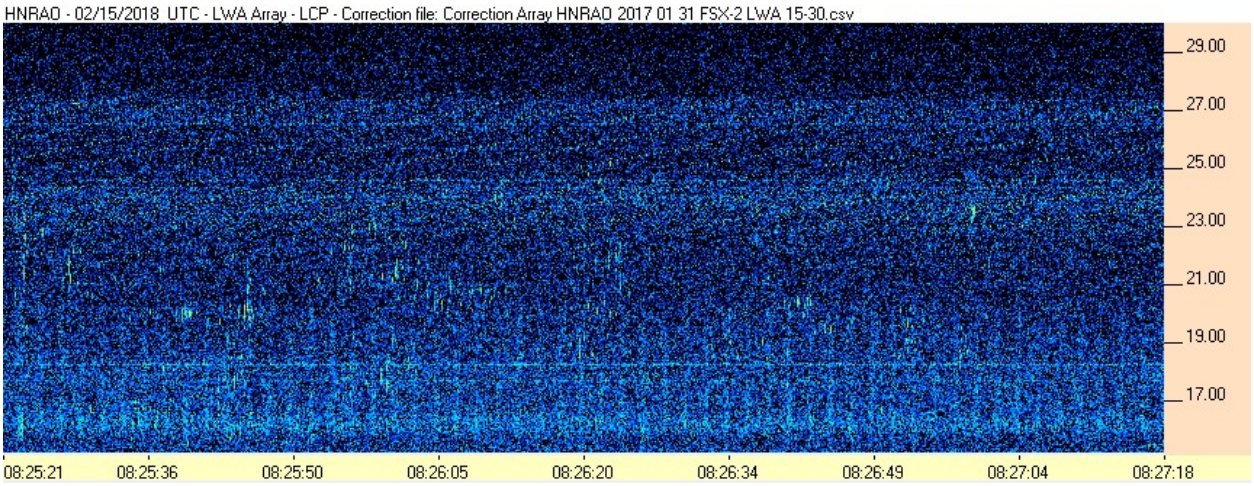
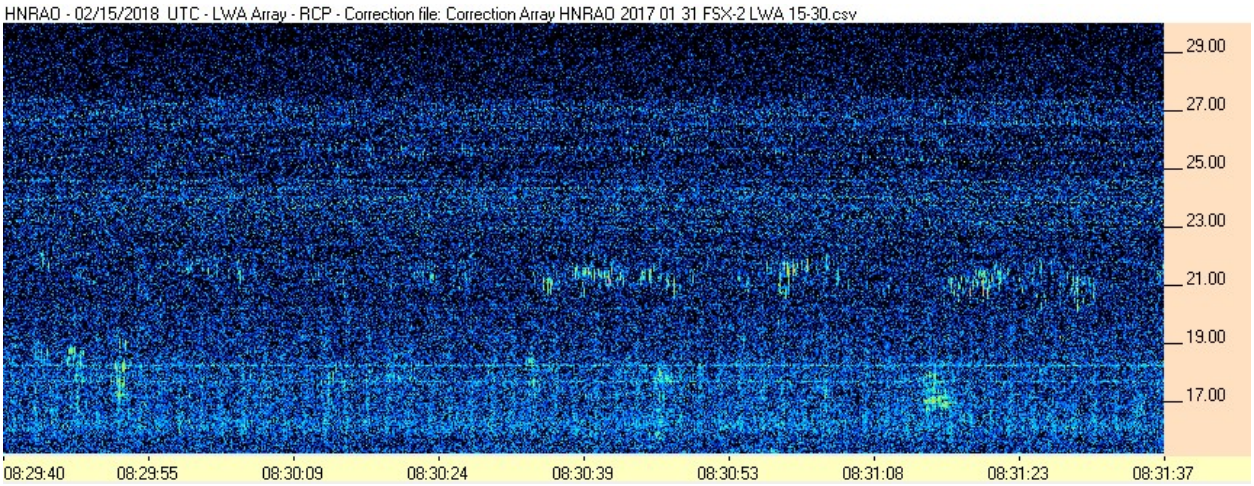
FSX-2/LWA Array





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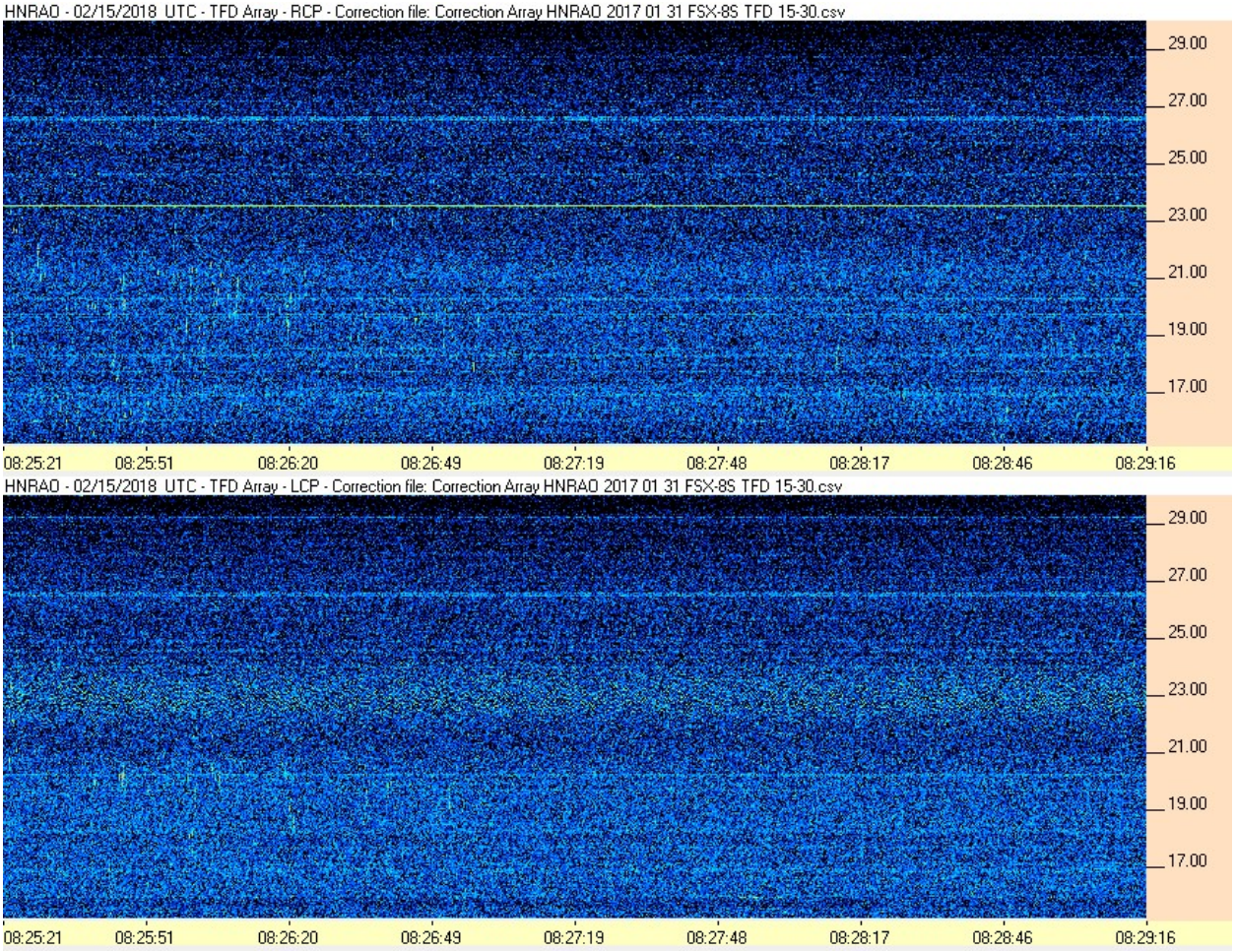
FSX-8S/TFD Array



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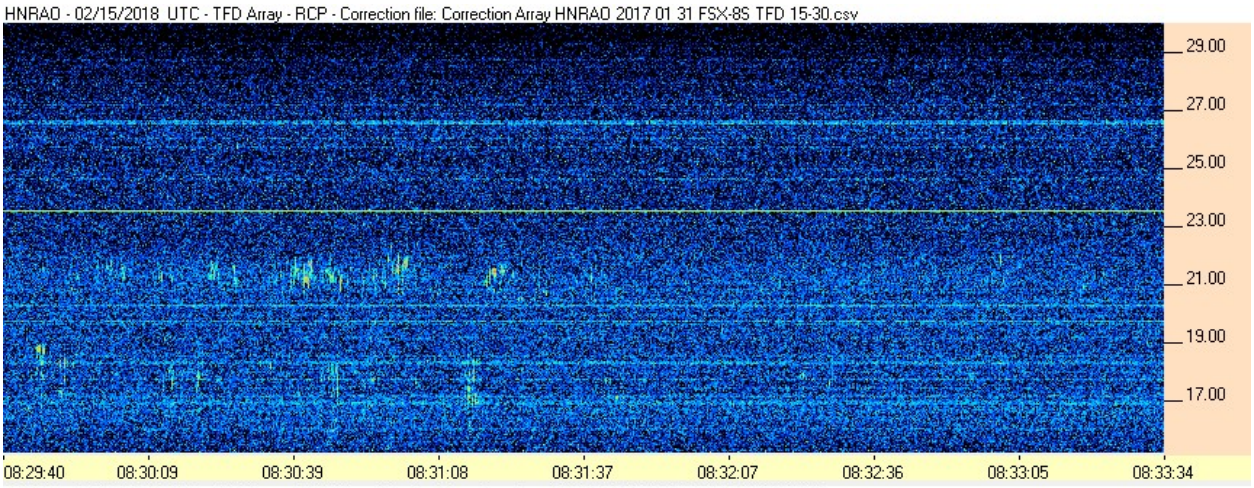

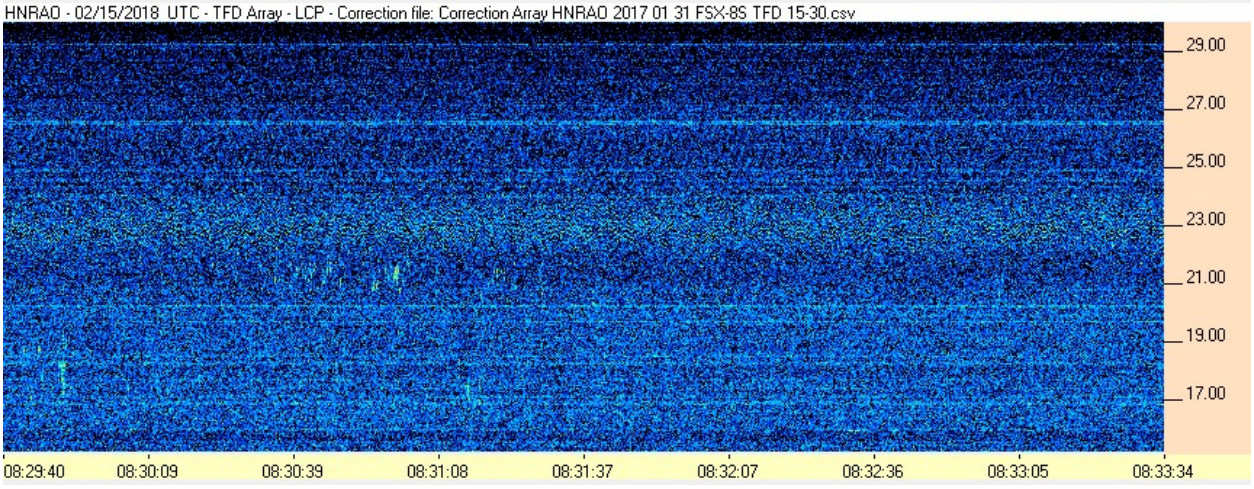

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Radio Jove Receiver/Jove Dipole Array