

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: April 25, 2018

Object: Jupiter – Io-B

Observer: RF

Start - Time UT:	0807	Planetary K-index:	2
Jupiter Altitude (deg):	27.7	Jupiter Azimuth (deg):	209.1
Jupiter CML:	85.52	Jupiter Io Phase:	087.76
Jupiter RA (hr/min):	15:12	Jupiter Dec (hr/min):	-16:30
Hour Angle (hr/min):	01:47	Polarization	RCP
Sun Altitude (deg):	-23.2	Sun Azimuth (deg):	047.1
Sun RA (hr/min):	02:04	Sun Dec (hr/min):	12:35

End – Time UT:	0930	De:	-3.4
Jupiter Altitude (deg):	17.8	Jupiter Azimuth (deg):	228.0
Jupiter CML:	235.7	Jupiter Io Phase	09.40
Hour Angle (hr/min):	03:10	Duration (min):	123
Sun Altitude (deg):	-10.2	Sun Azimuth (deg):	063.4
Max Frequency MHz	24	Min Frequency MHz	16

Observatory Configuration

Spectrograph Receiver	Antenna	Polarization	System Loss	Multicoupler	Multicoupler port	Calibrated
FSX-8S	TFD	RCP LCP	-8.35 dB -7.59 dB	#2 RCP #1 LCP	Port 1 +10dB Port 1 +10dB	Twice daily Twice daily
FSX-2	LWA	RCP/LCP manual select		N/A	N/A	N/A
SDRPlay RSP2	TFD	RCP	-8.35 dB	#2 RCP	Port 2 +3dB	Twice daily
SDRPlay RSP2	TFD	LCP	-7.59 dB	#1 LCP	Port 2 +3dB	Twice daily
JOVE 1	TFD	RCP	-8.35 dB	#2 RCP	Port 3 +3 dB	04/20/2018
JOVE 1	TFD	LCP	-7.59 dB	#1 LCP	Port 3 +3 dB	04/20/2018
JOVE II	Jove dipoles	Linear	-3.12 dB	#3 Linear	Port 4 +3 dB	04/10/2018
SDRPlay RSP1	Experimental*					

JOVE dipoles phased @ 32 degrees for 2017-2018 season

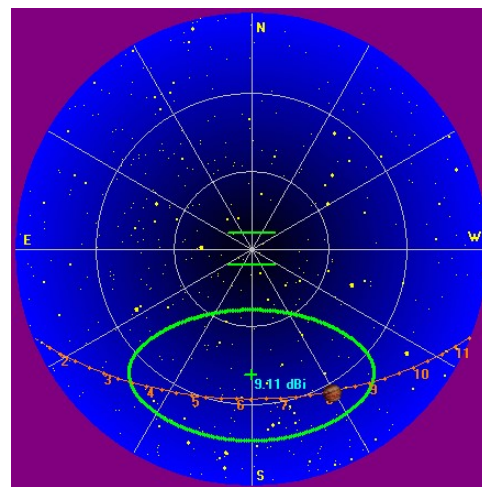
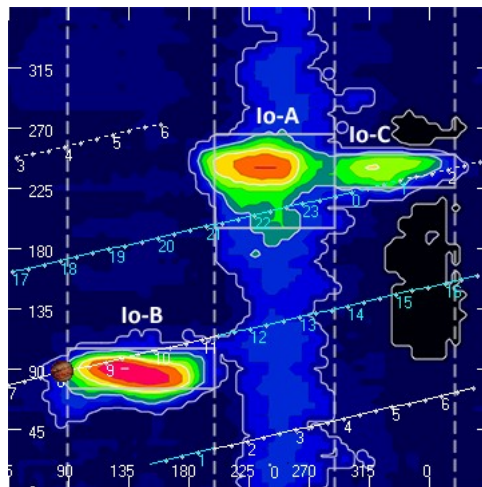
TFD array phased @ 35 degrees for 2017-2018 season

LWA antenna phased @ 35 degrees and orientation for observation: 45 degrees

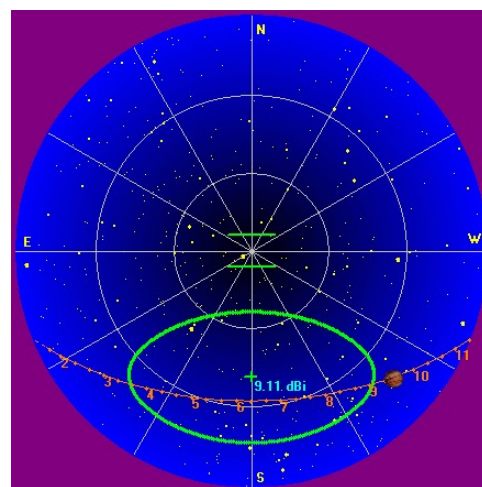
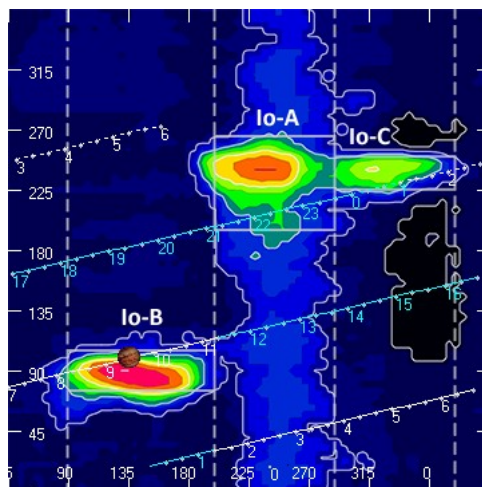
* Used for testing and evaluating antenna systems

Software Radio Sky Spectrograph 2.8.50

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Beginning of Pass



End of Pass

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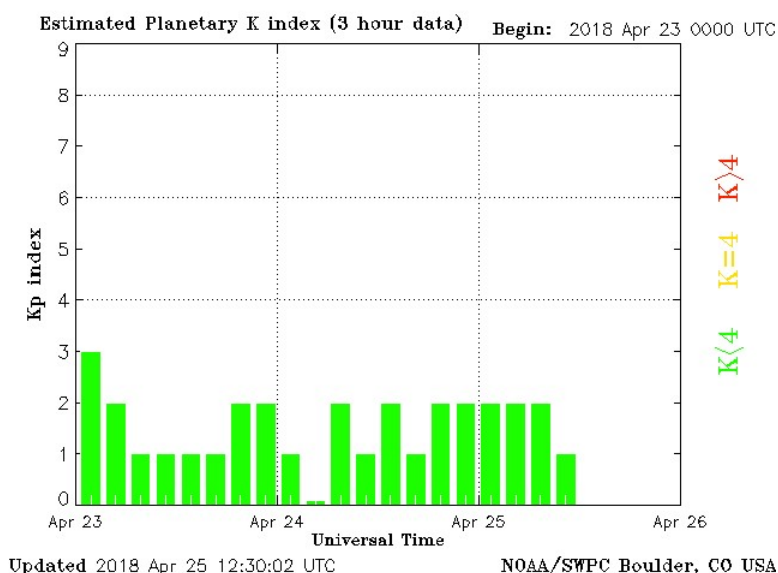


MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360	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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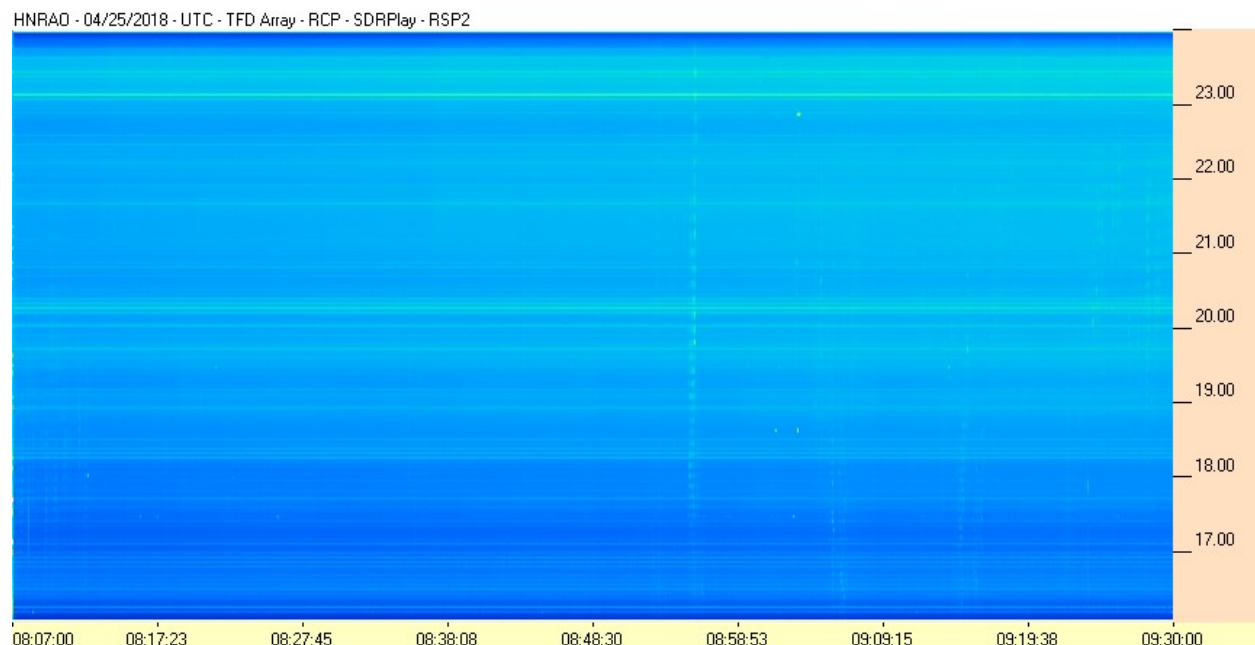
Very weak and diffuse L-bursts started this Io-B storm at 0807 UT. A long quiet period elapsed until a much stronger emission at 0855 UT. This was the strongest emission observed. This burst is also seen in the LCP record and could be due to Jupiter being off axis or bleed over in the hybrid ring. L2 modulation lanes were first observed at 0843 UT but were too weak to measure. There was bright horizontal banding with very shallow drift rates of around -13 kHz/sec. As Io-B exhibits L2 modulation lanes, there is no explanation for this. The remainder of this storm consisted of weak to very weak L-bursts.

One lone burst at 0855 UT reaching near 75 kK was observed with the Jove II receiver and Jove dual dipoles.

An unremarkable storm as observed from this location.

EOR

SDRPlay RSP2 / TFD Array

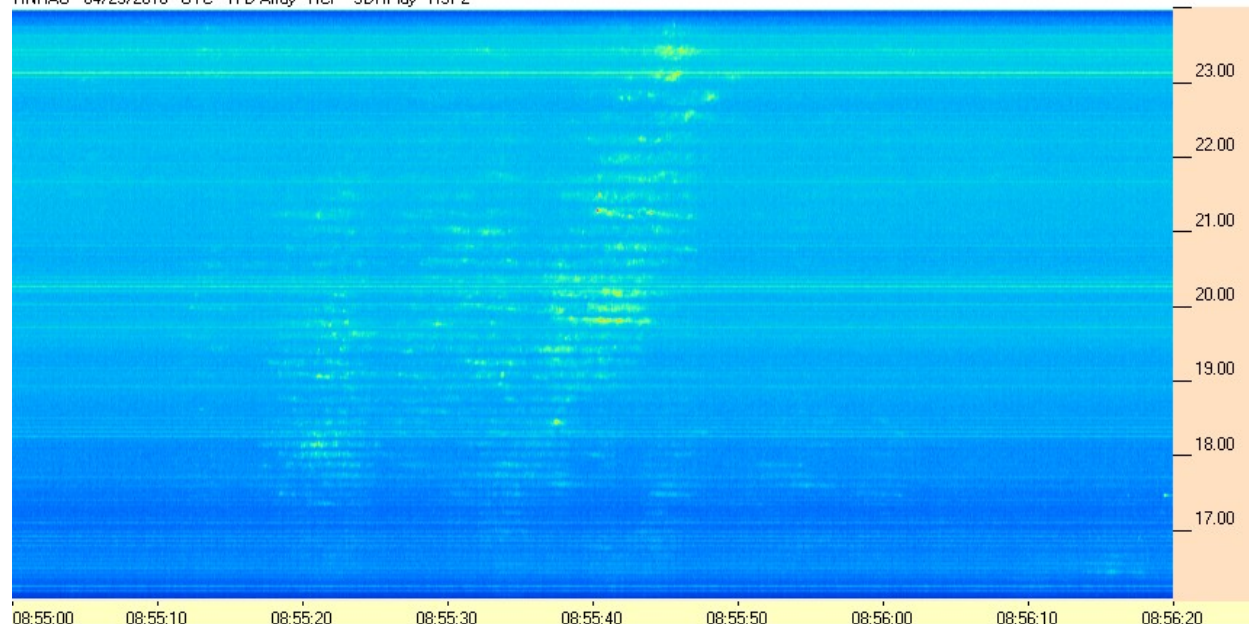


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HNRAO - 04/25/2018 - UTC - TFD Array - RCP - SDRPlay - RSP2



Jove II Receiver / Jove dual dipoles

