

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 6 April 2018

Object: Jupiter – Non-Io-B

Observer: Unattended

Start - Time UT:	0845	Planetary K-index:	1
Jupiter Altitude (deg):	30.5	Jupiter Azimuth (deg):	197.4
Jupiter CML:	125.67	Jupiter Io Phase:	184.22
Jupiter RA (hr/min):	15:19	Jupiter Dec (hr/min):	-17:01
Hour Angle (hr/min):	01:02	Polarization	RCP
Sun Altitude (deg):	-23.6	Sun Azimuth (deg):	058.7
Sun RA (hr/min):	00:54	Sun Dec (hr/min):	05:45

End – Time UT:	0946		
Jupiter Altitude (deg):	25.7	Jupiter Azimuth (deg):	212.7
Jupiter CML:	161.95	Jupiter Io Phase	192.70
Hour Angle (hr/min):	02:03		
Sun Altitude (deg):	-13.3	Sun Azimuth (deg):	070.2
Max Frequency MHz	20	Min Frequency MHz	16

Observatory Configuration

Spectrograph Receiver	Antenna	Polarization	System Loss	Multicoupler	Multicoupler port	Calibrated
FSX-8S	TFD	RCP LCP	-7.95 dB -7.95 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	-7.95 dB	#2 RCP	Port 2 +3dB	Twice daily
SDRPlay RSP2	TFD	LCP	-7.95 dB	#1 LCP	Port 2 +3dB	Twice daily
JOVE 1	TFD	RCP	-7.95 dB	#2 RCP	Port 3 +3 dB	03/08/2018
JOVE 1	TFD	LCP	-7.95 dB	#1 LCP	Port 3 +3 dB	03/08/2018
JOVE II	Jove dipoles	Linear	-3.12 dB	#3 Linear	Port 4 +3 dB	02/20/2018
SDRPlay RSP1	Experimental*					

JOVE dipoles phased @ 32 degrees for 2017-2018 season

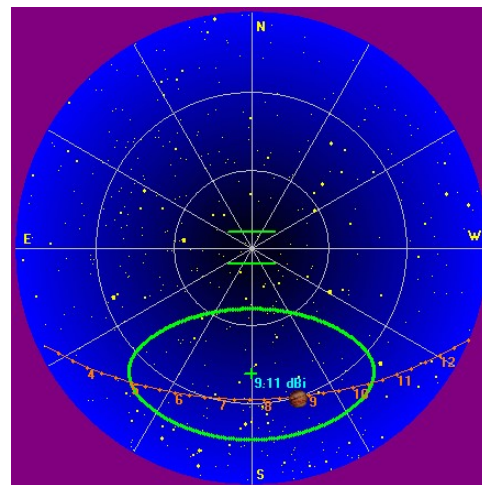
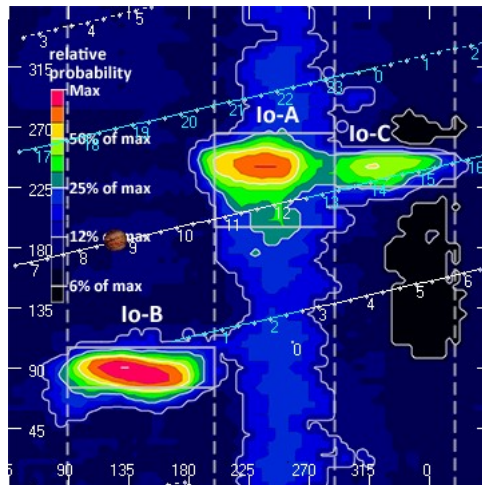
TFD array phased @ 35 degrees for 2017-2018 season

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

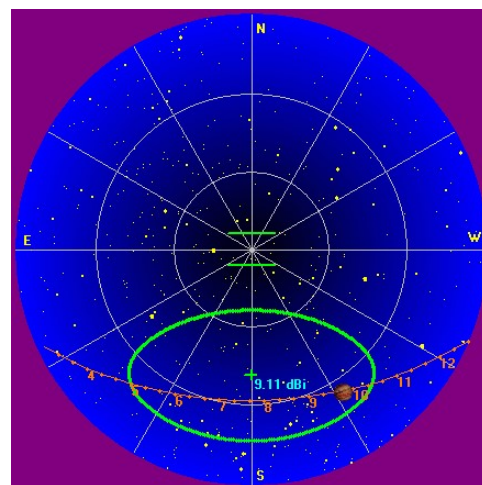
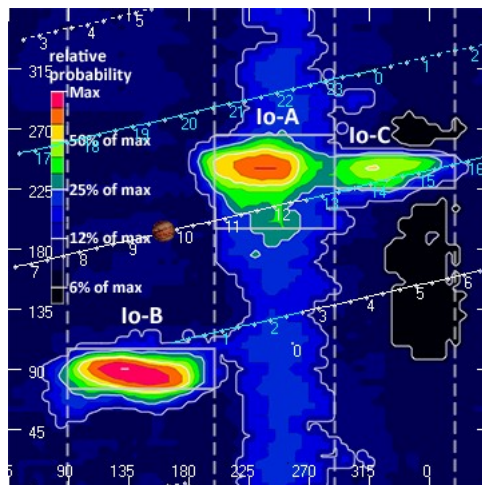
* Used for testing and evaluating antenna systems

Software Radio Sky Spectrograph 2.8.50

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Beginning of Pass



End of Pass

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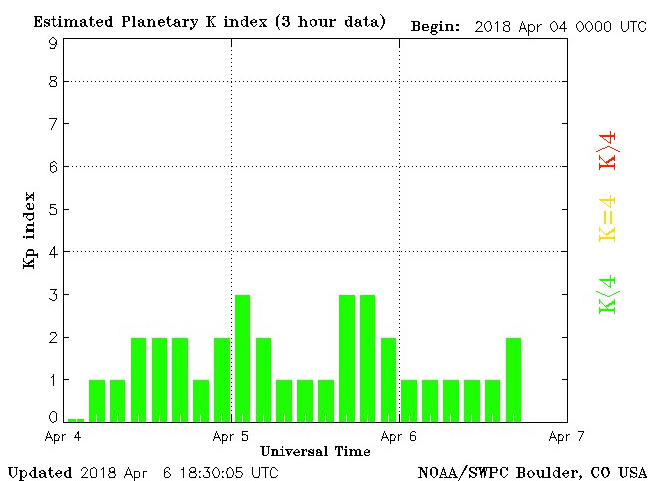


MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360	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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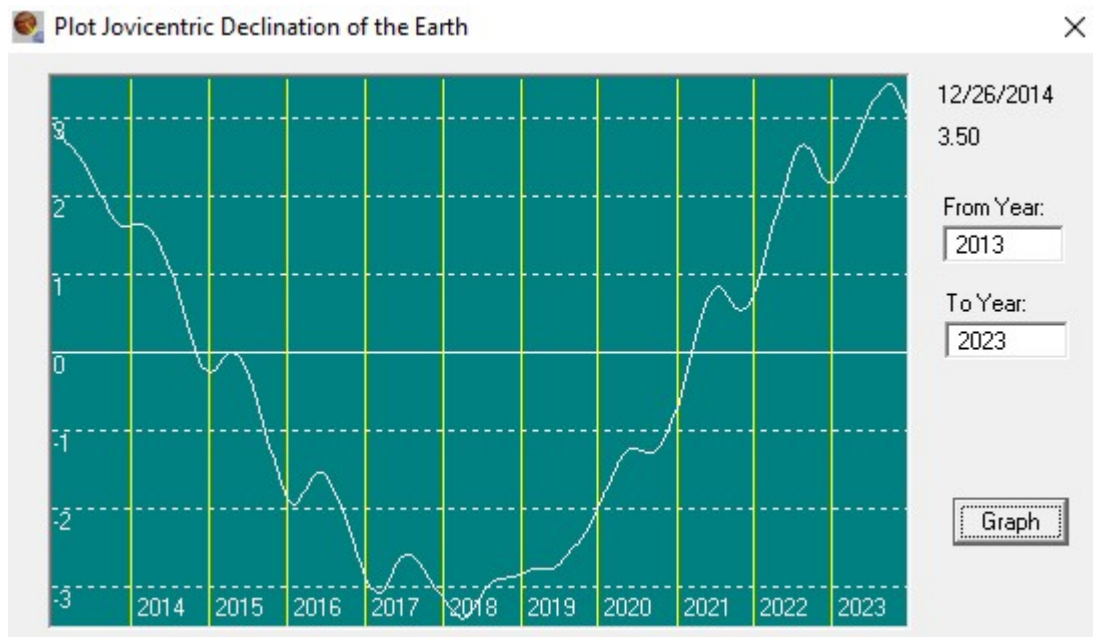
A Non-Io-B storm with L-bursts lasting for 60 min. Emissions were 1 dB or so above the GB. There were type L2 modulation lanes present which also exhibited apparent scintillation.

Emissions were not consistent throughout the hour, rather, came in small widely spaced groups.

There is nothing else of significance to report.

EOR

A De of -3.40 shows that it is at it's lowest point in 5 years and accounts for the poor observations of Jupiter. It also means that conditions will begin to improve for the remainder of this year and continue into 2019 and peak in 2023.



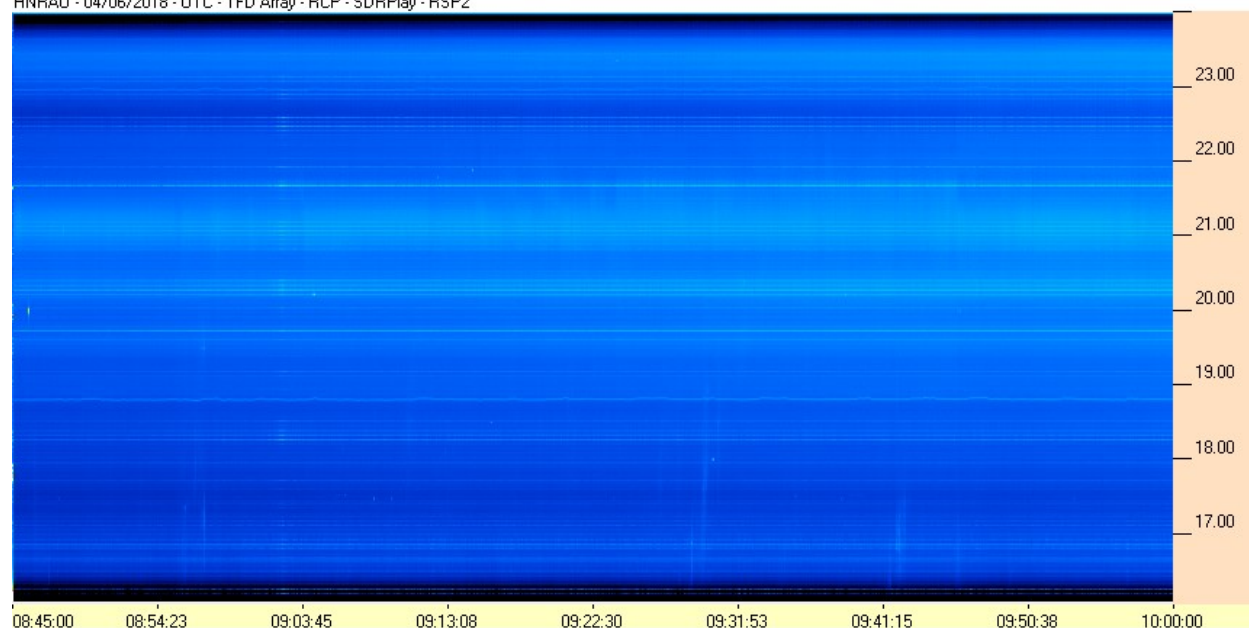
Plot from RadioSky, Radio Jupiter Pro. <http://www.radiosky.com/rjpro3ishere.html>

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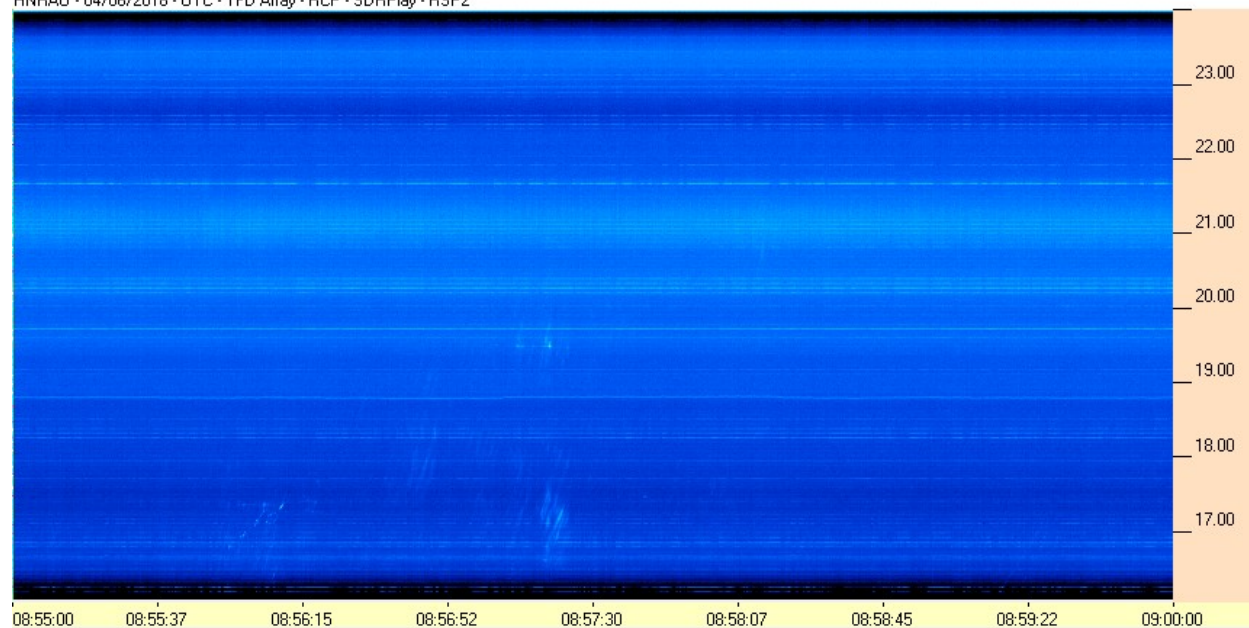


SDRPlay RSP2/TFD Array

HNRAO - 04/06/2018 - UTC - TFD Array - RCP - SDRPlay - RSP2



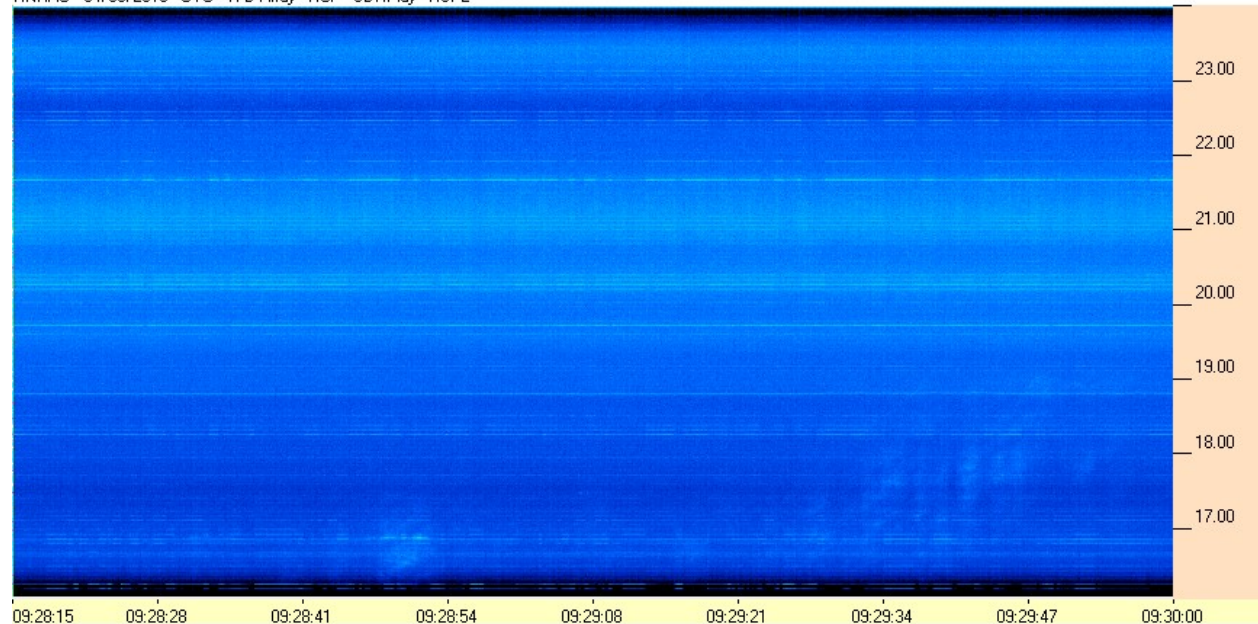
HNRAO - 04/06/2018 - UTC - TFD Array - RCP - SDRPlay - RSP2



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