

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 19 March 2018

Object: Jupiter – Io-D

Observer: Unattended

Start - Time UT:	0756	Planetary K-index:	3
Jupiter Altitude (deg):	30.3	Jupiter Azimuth (deg):	162.9
Jupiter CML:	264.3	Jupiter Io Phase:	113.68
Jupiter RA (hr/min):	15:23	Jupiter Dec (hr/min):	-17:18
Hour Angle (hr/min):	-01:02	Polarization	LCP
Sun Altitude (deg):	-37.5	Sun Azimuth (deg):	051.5
Sun RA (hr/min):	23:48	Sun Dec (hr/min):	-01:17

End – Time UT:	0828		
Jupiter Altitude (deg):	31.6	Jupiter Azimuth (deg):	171.7
Jupiter CML:	283.64	Jupiter Io Phase	118.17
Hour Angle (hr/min):	-00:29		
Sun Altitude (deg):	-32.5	Sun Azimuth (deg):	059.1

Observatory Configuration

Spectrograph Receiver	Antenna	Polarization	System Loss	Multicoupler	Multicoupler port	Calibrated
FSX-8S	TFD	RCP LCP	7.70 dB 7.70 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	-7.70 dB	#2 RCP	Port 2 +3dB	Twice daily
SDRPlay RSP2	TFD	LCP	-7.70 dB	#1 LCP	Port 2 +3dB	Twice daily
JOVE 1	TFD	RCP	-7.70 dB	#2 RCP	Port 3 +3 dB	03/08/2018
JOVE 1	TFD	LCP	-7.70 dB	#1 LCP	Port 3 +3 dB	03/08/2018
JOVE II	Jove dipoles	Linear	-3.19 dB	#3 Linear	Port 4 +3 dB	02/20/2018
SDRPlay RSP1*	Experimental					

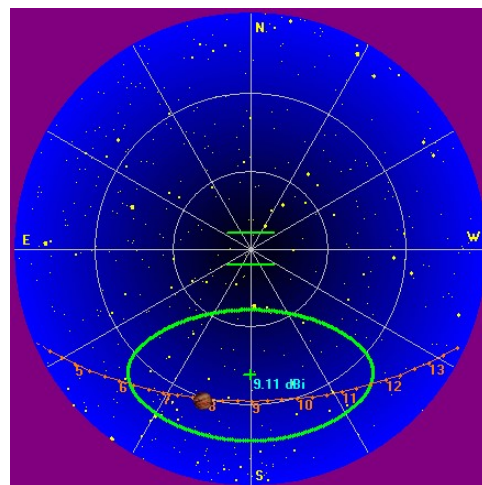
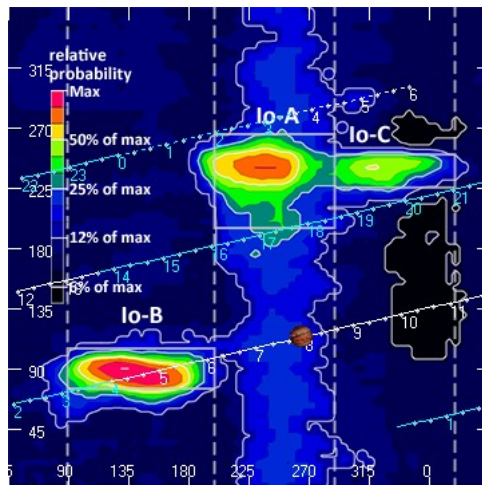
JOVE dipoles phased @ 32 degrees for 2017-2018 season

TFD array phased @ 35 degrees for 2017-2018 season

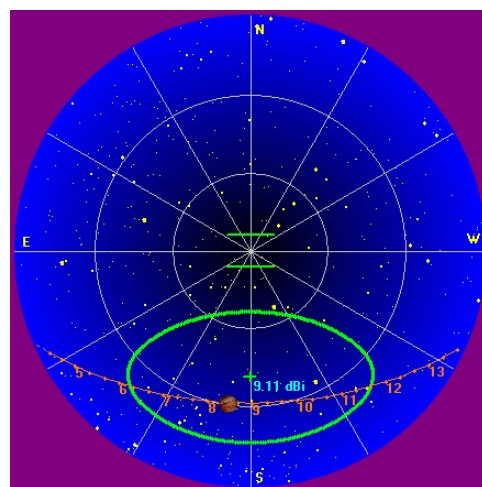
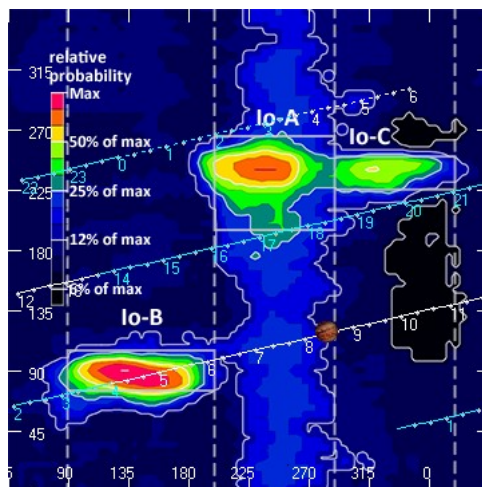
LWA antenna phased @ 35 degrees and orientation for observation: 45 degrees

* Used for testing and evaluating antenna systems

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Beginning of Pass



End of Pass

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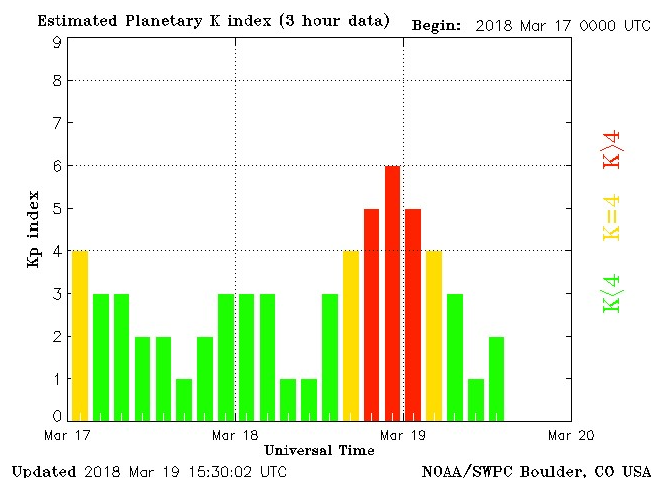


MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360	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 little to note. Brief, weak Io-D storm lasting 32 minutes. The only spectrograph to resolve the storm was the SDRPlay RSP2 on the TFD array. All LCP L-burst emissions between 16 MHz and 17.5 MHz. The strongest burst was at 0827:50 UT. No discernible modulation lanes.

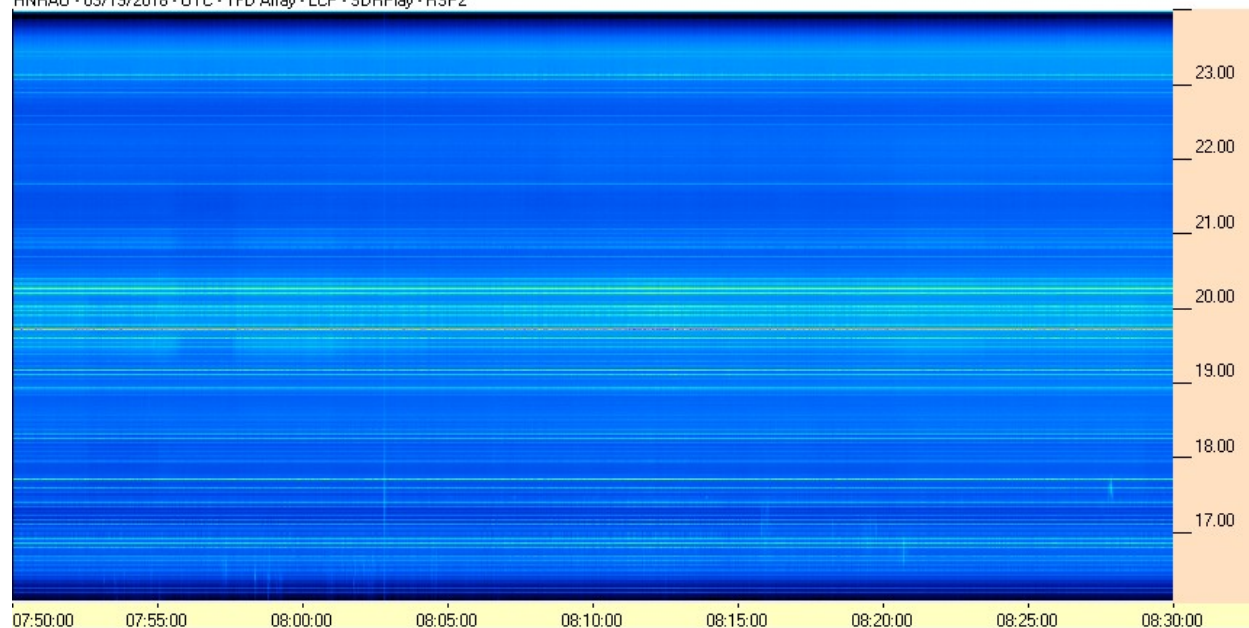
EOR

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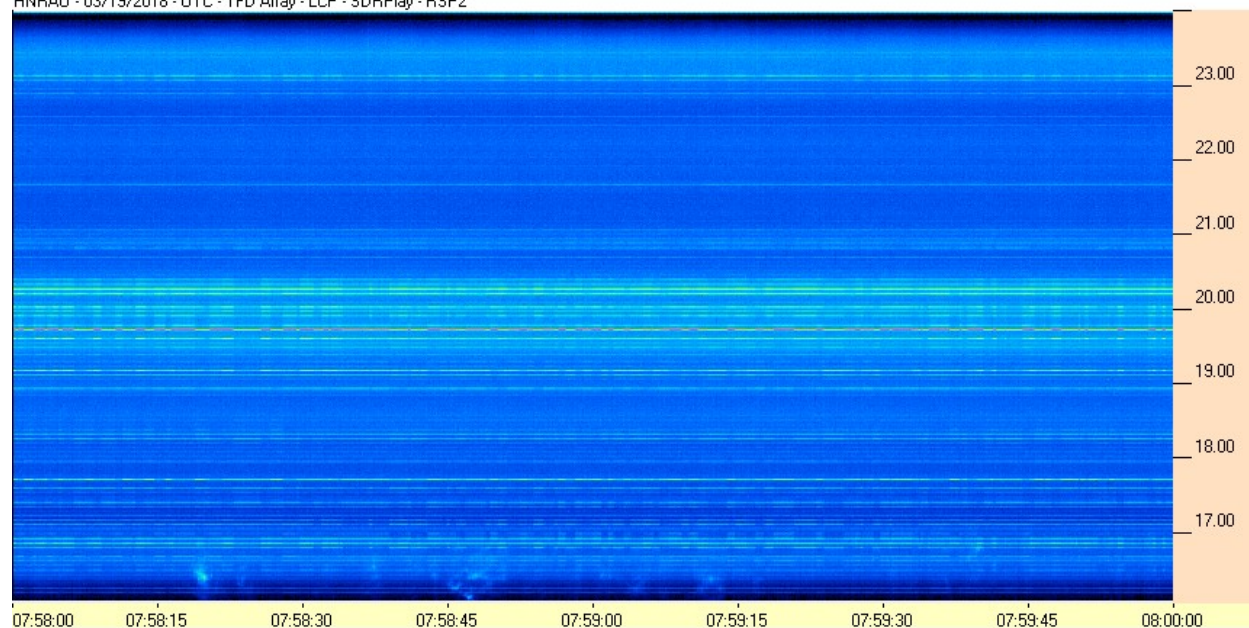


SDRPlay RSP2/TFD/LCP

HNRAO - 03/19/2018 - UTC - TFD Array - LCP - SDRPlay - RSP2



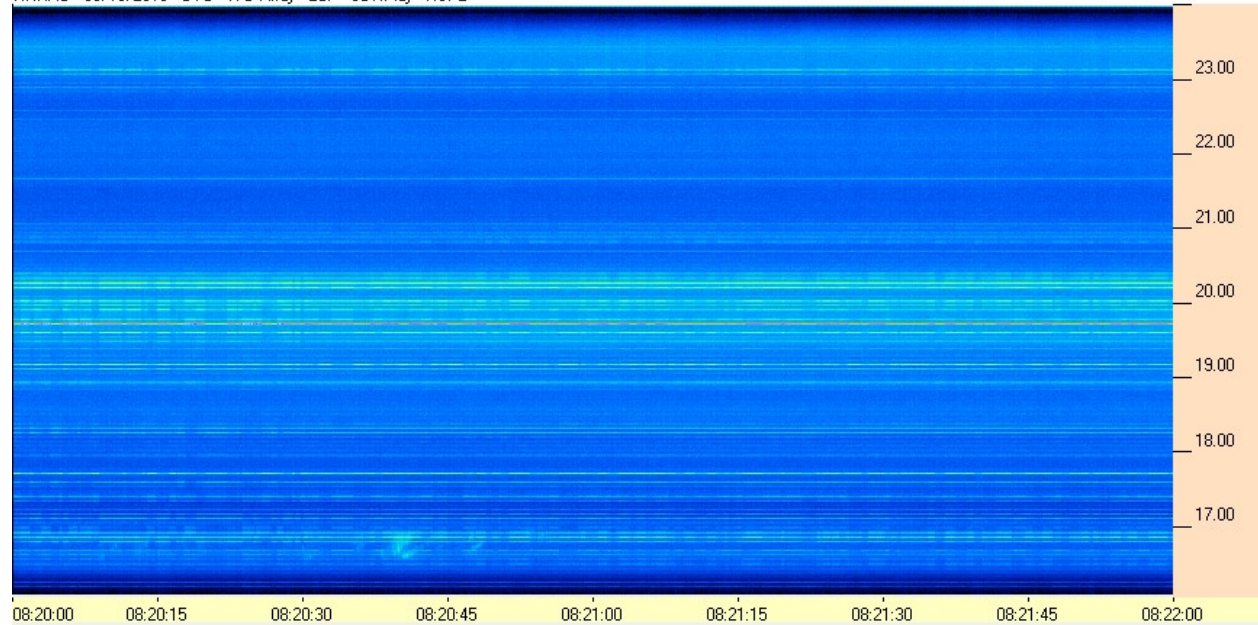
HNRAO - 03/19/2018 - UTC - TFD Array - LCP - SDRPlay - RSP2



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HNRAO - 03/19/2018 - UTC - TFD Array - LCP - SDRPlay - RSP2



HNRAO - 03/19/2018 - UTC - TFD Array - LCP - SDRPlay - RSP2

