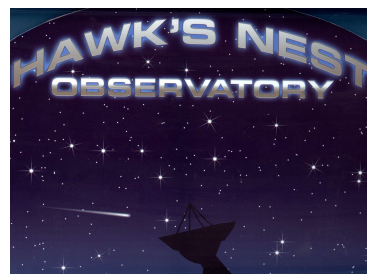


HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: February 15, 2019

Object: Jupiter – Io-A

Observer: JB

Start - Time UT:	1440	Planetary K-index:	
Jupiter Altitude (deg):	22.4	Jupiter Azimuth (deg):	206.1
Jupiter CML:	205.55	Jupiter Io Phase:	224.34
Jupiter RA (hr/min):	17:15	Jupiter Dec (hr/min):	-22:25
Hour Angle (hr/min):	01:44	Polarization	LCP
Sun Altitude (deg):	23.4	Sun Azimuth (deg):	134.7
Sun RA (hr/min):	21:48	Sun Dec (hr/min):	-13:18

End – Time UT:	1451	De:	-2.8
Jupiter Altitude (deg):	21.4	Jupiter Azimuth (deg):	208.6
Jupiter CML:	212.2	Jupiter Io Phase	225.88
Hour Angle (hr/min):	01:55	Duration (min):	11
Sun Altitude (deg):	24.9	Sun Azimuth (deg):	137.1
Max Frequency MHz	24	Min Frequency MHz	19

Data from Radio-Jupiter Pro 3.8.2

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	-3.66 dB	#3 Linear	Port 4 +3 dB	08/21/2018
SDRPlay RSP1	Experimental*					

JOVE dipoles phased @ 32 degrees for 2017-2018 season

TFD array phased @ 35 degrees for 2017-2018 season

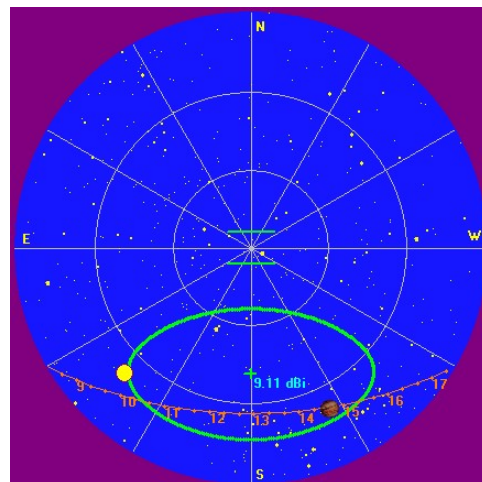
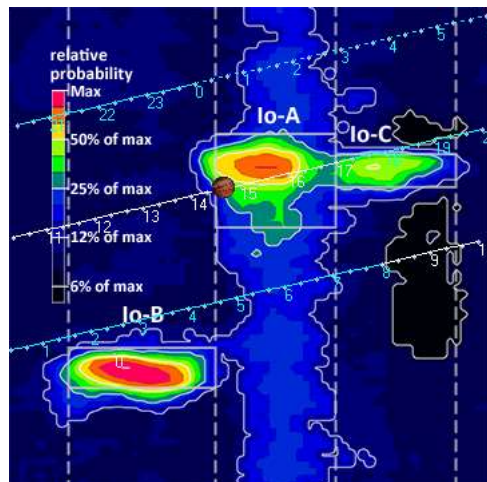
LWA antenna phased @ 35 degrees and orientation for observation: 45 degrees

* Used for testing and evaluating antenna systems

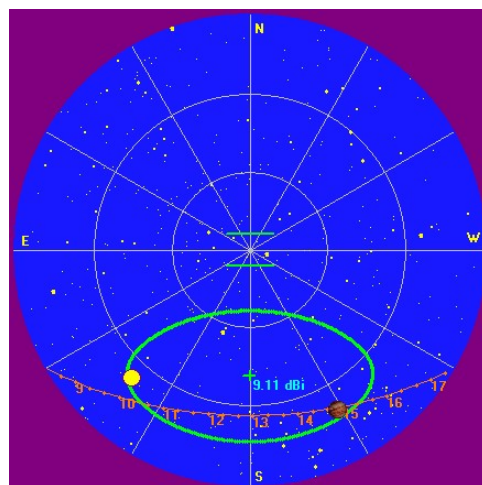
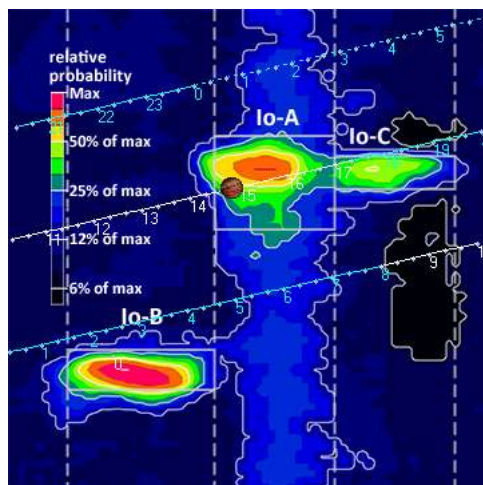
Software Radio Sky Spectrograph 2.8.50

Red = Offline

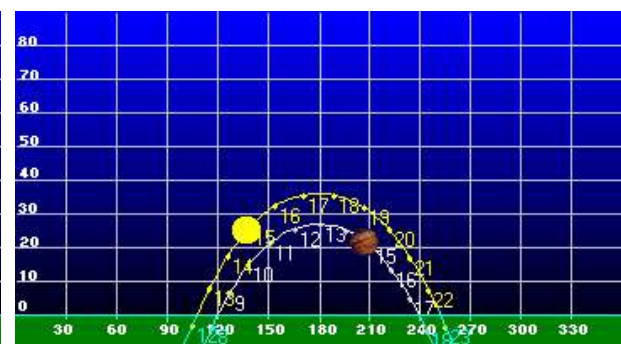
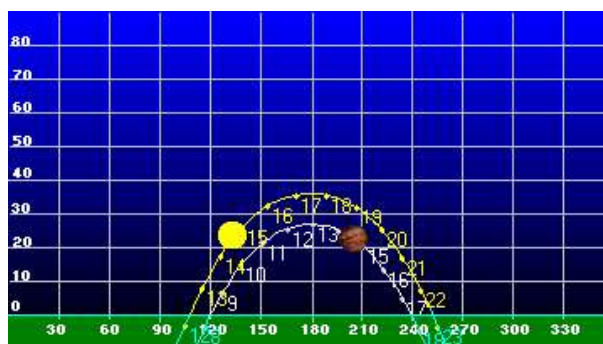
HNRAO Observing Log
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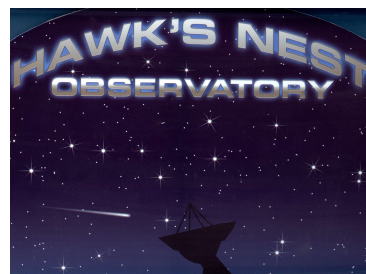
Beginning of Pass



End of Pass



HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



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	

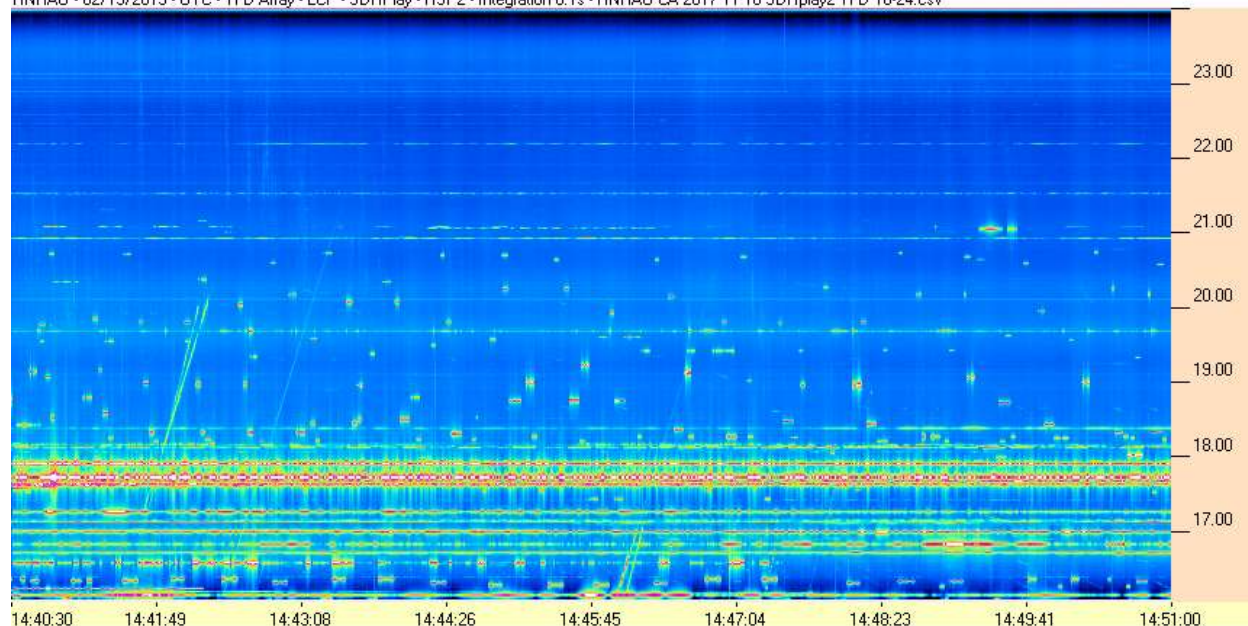
LCP emission only. No RCP observed in records. Negative drift (L4) modulation lanes. Possibility of LCP polarity rather than RCP due to off axis observation.

HNRAO Observing Log
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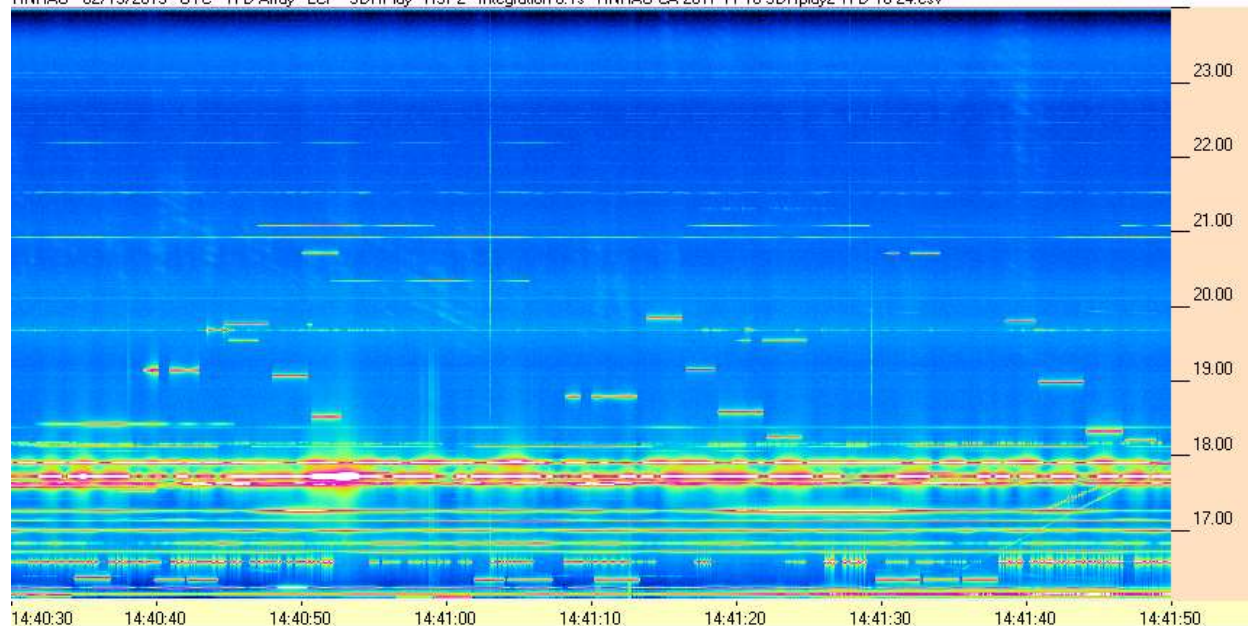


SDRPlay RSP2 – TFD Array

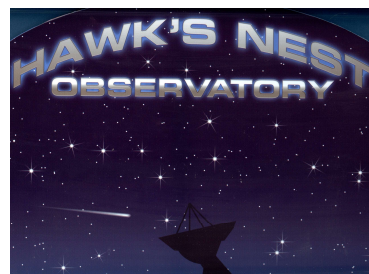
HNRAO - 02/15/2019 - UTC - TFD Array - LCP - SDRPlay - RSP2 - Integration 0.1s - HNRAO CA 2017 11 10 SDRplay2 TFD 16-24.csv



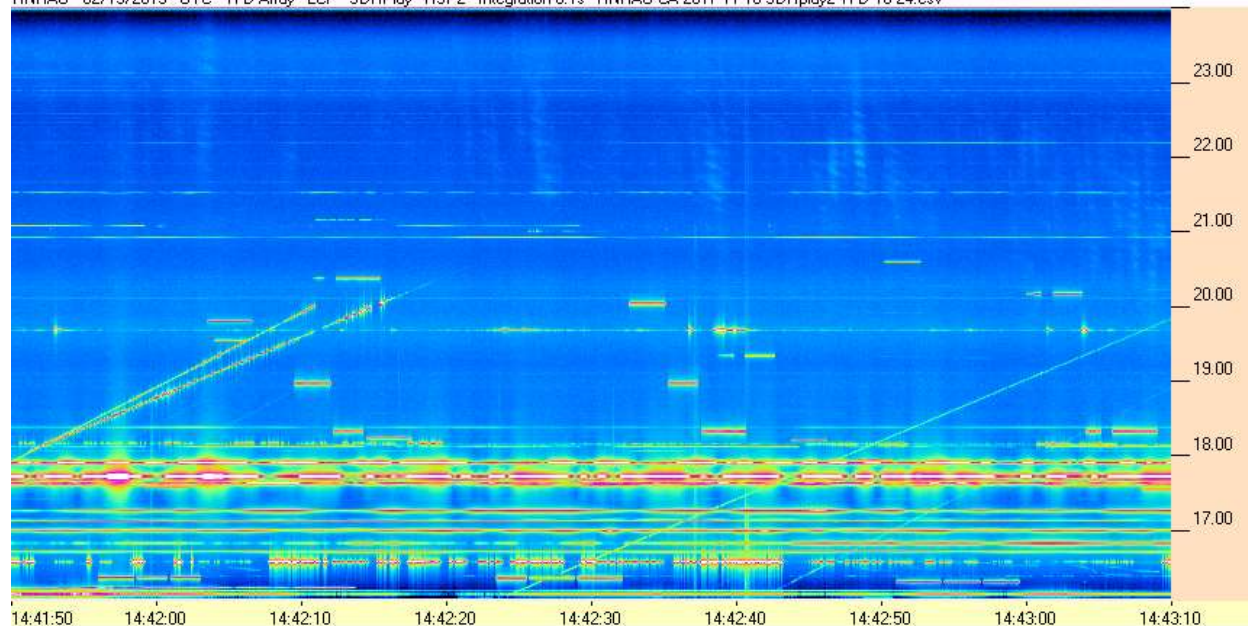
HNRAO - 02/15/2019 - UTC - TFD Array - LCP - SDRPlay - RSP2 - Integration 0.1s - HNRAO CA 2017 11 10 SDRplay2 TFD 16-24.csv



HNRAO Observing Log
40.673181 N – 80.437885 W
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HNRAO - 02/15/2019 - UTC - TFD Array - LCP - SDRPlay - RSP2 - Integration 0.1s - HNRAO CA 2017 11 10 SDRplay2 TFD 16-24.csv



HNRAO - 02/15/2019 - UTC - TFD Array - LCP - SDRPlay - RSP2 - Integration 0.1s - HNRAO CA 2017 11 10 SDRplay2 TFD 16-24.csv

