

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: July 11, 2019

Object: Jupiter – Non-Io-A

Observer: Unattended

Start - Time UT:	0445	Planetary K-index:	
Jupiter Altitude (deg):	23.0	Jupiter Azimuth (deg):	205.0
Jupiter CML:	234.53	Jupiter Io Phase:	335.83
Jupiter RA (hr/min):	16:59	Jupiter Dec (hr/min):	-22.28
Hour Angle (hr/min):	01:39	Polarization	RCP
Sun Altitude (deg):	-26.4	Sun Azimuth (deg):	351.2
Sun RA (hr/min):	07:13	Sun Dec (hr/min):	22:23

End – Time UT:	0514	De:	-2.7
Jupiter Altitude (deg):	20.4	Jupiter Azimuth (deg):	211.7
Jupiter CML:	252.06	Jupiter Io Phase	339.94
Hour Angle (hr/min):	02:09	Duration (min):	29
Sun Altitude (deg):	-26.9	Sun Azimuth (deg):	358.7
Max Frequency MHz	20	Min Frequency MHz	16

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 I	TFD	RCP	-8.35 dB	#2 RCP	Port 3 +3 dB	04/20/2018
JOVE I	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	4/19/2019
SDRPlay RSP1	Experimental*					

JOVE dipoles phased @ 32 degrees for 2018-2019 season

TFD array phased @ 35 degrees for 2018-2019 season

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

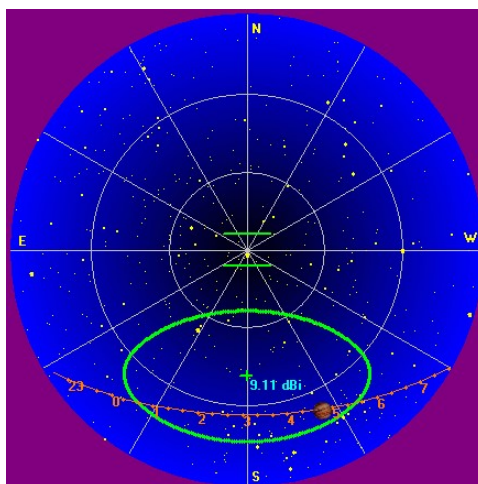
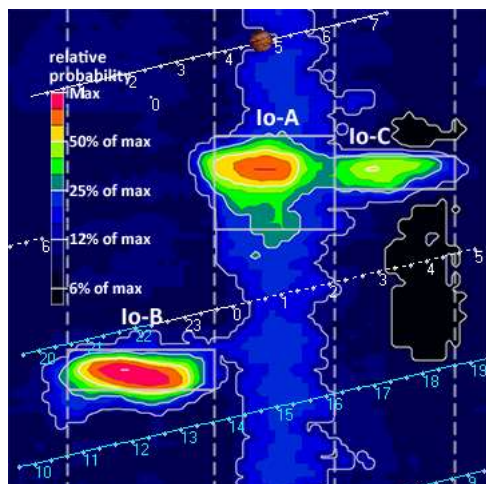
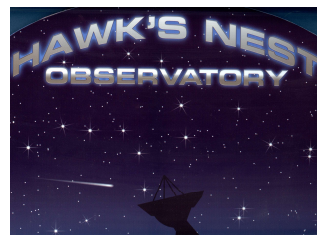
* Used for testing and evaluating antenna systems

Software Radio Sky Spectrograph 2.8.50

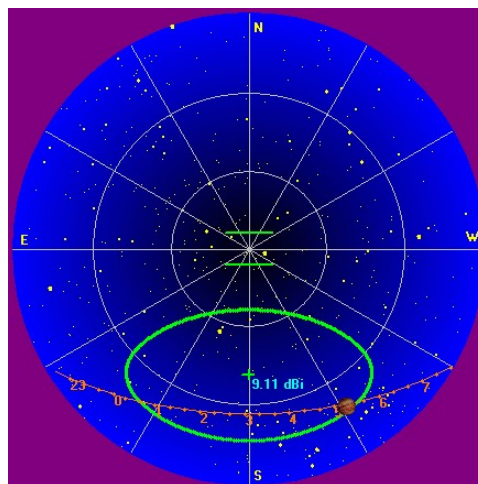
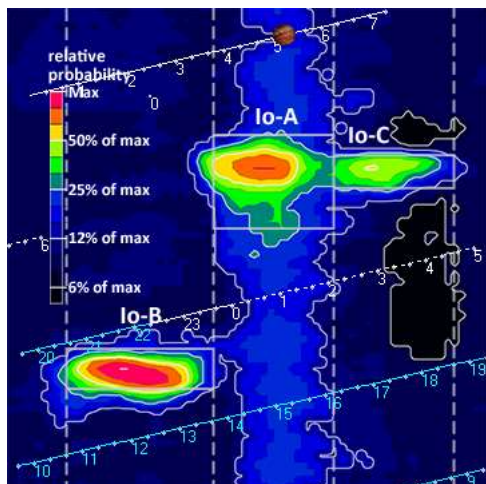
Red = Offline

All times are synced with a local GPS locked NTP server.

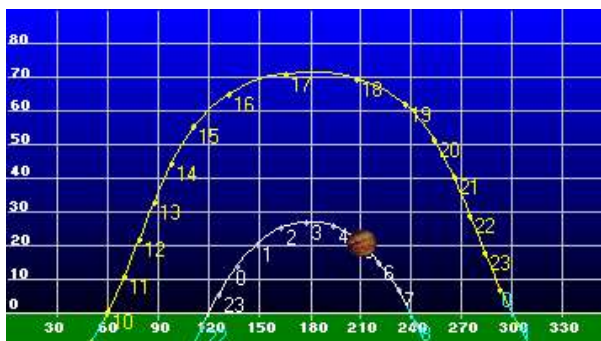
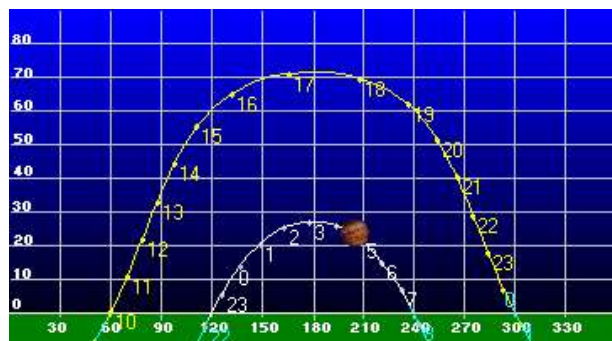
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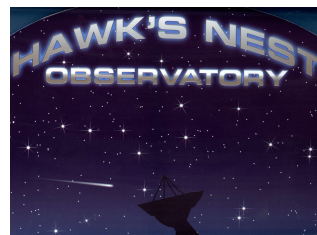
Beginning of Pass



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	

All spectrographs and antennas functioning normally. No known issues.

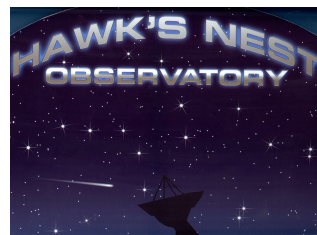
Emissions only observed with the SDRPlay RSP2 / TFD Array.

A Non-Io-B storm consisting of L-bursts with L-4 modulation lanes. It's very faint, but an arc can be seen in the rise and fall of emissions. Emissions were perhaps 1-2 dB above GB.

Nothing else of note.

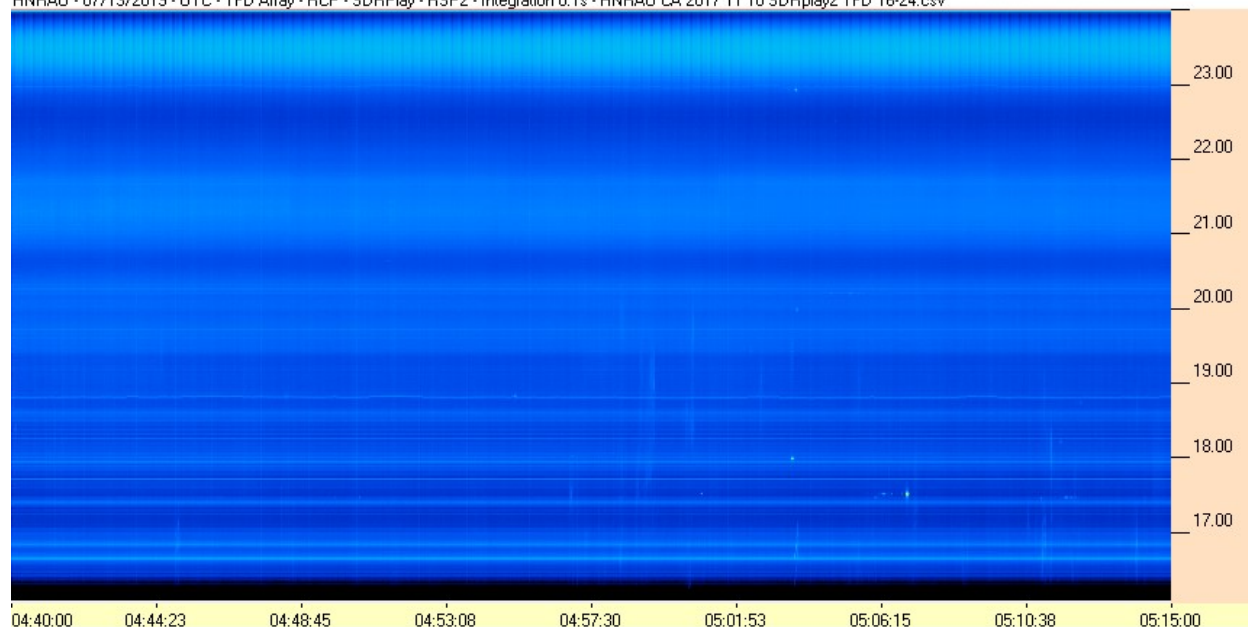
EOR

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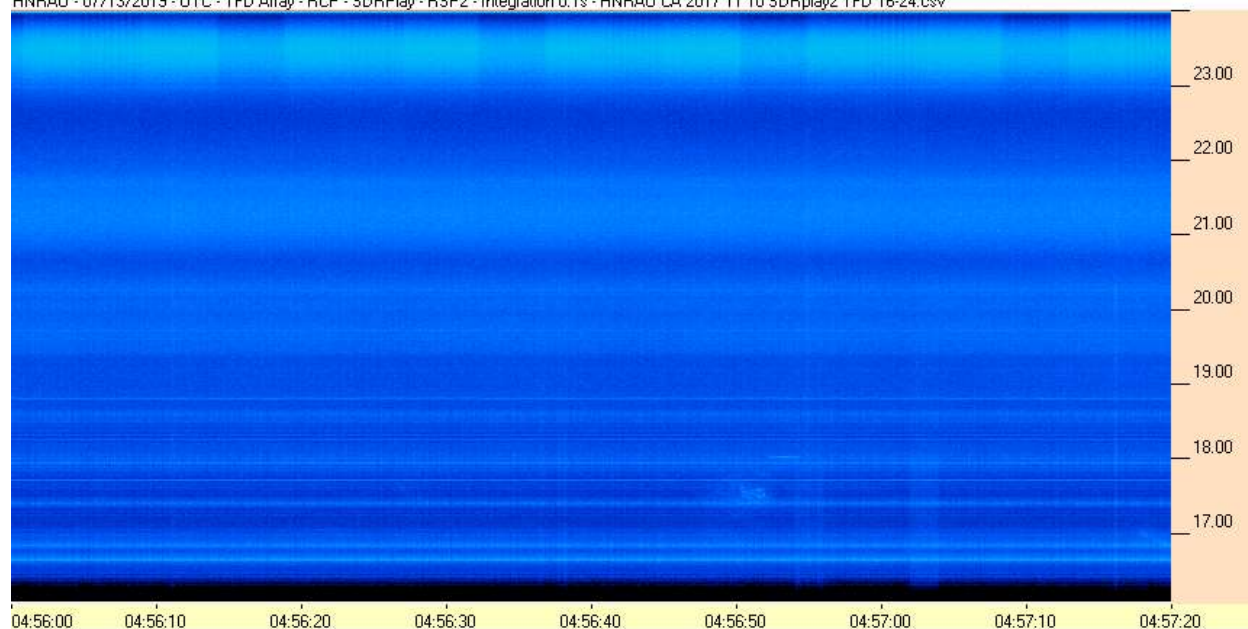


SDRPlay RSP2 / TFD Array

HNRAO - 07/13/2019 - UTC - TFD Array - RCP - SDRPlay - RSP2 - Integration 0.1s - HNRAO CA 2017 11 10 SDRplay2 TFD 16-24.csv



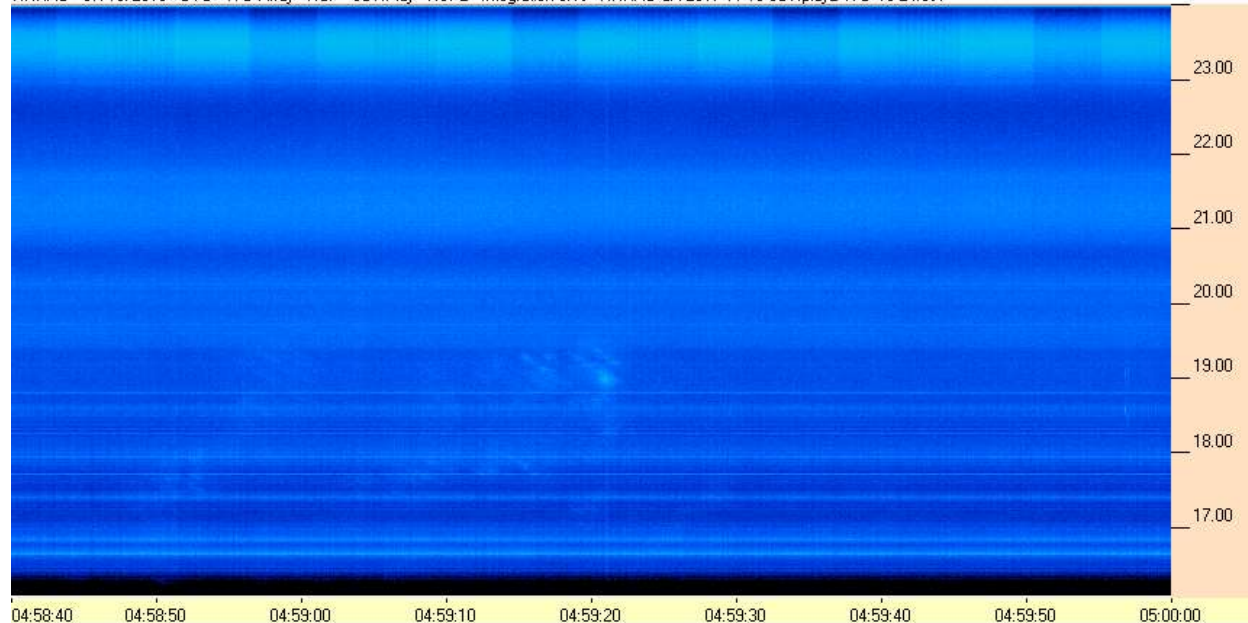
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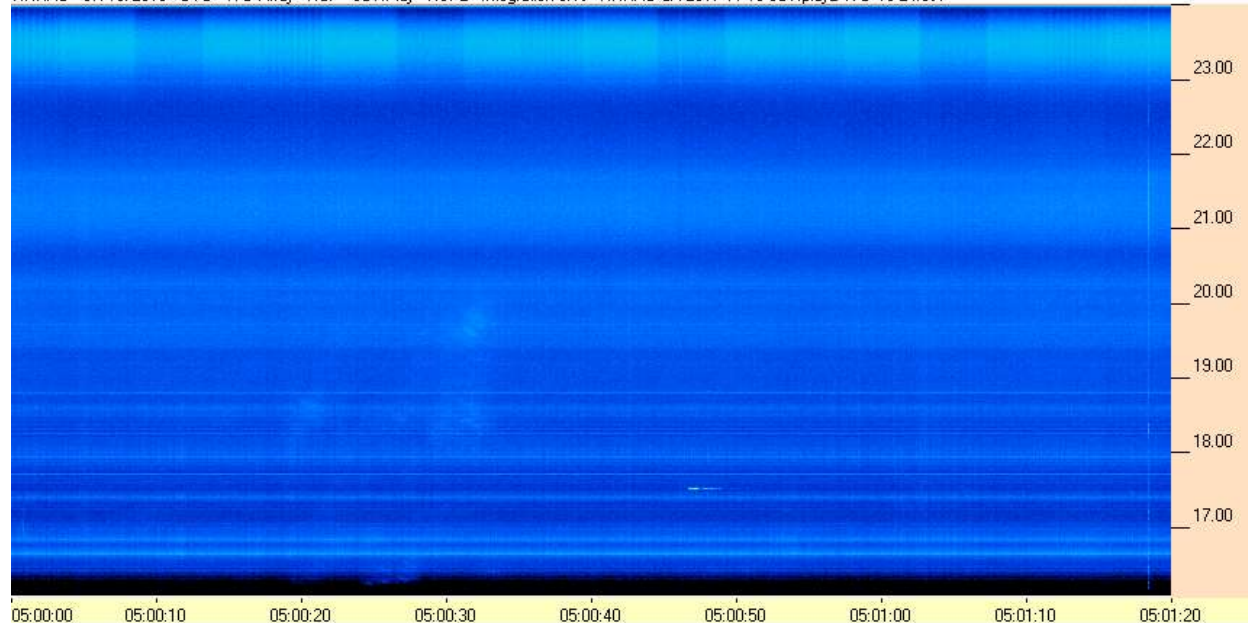
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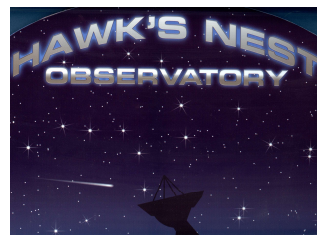
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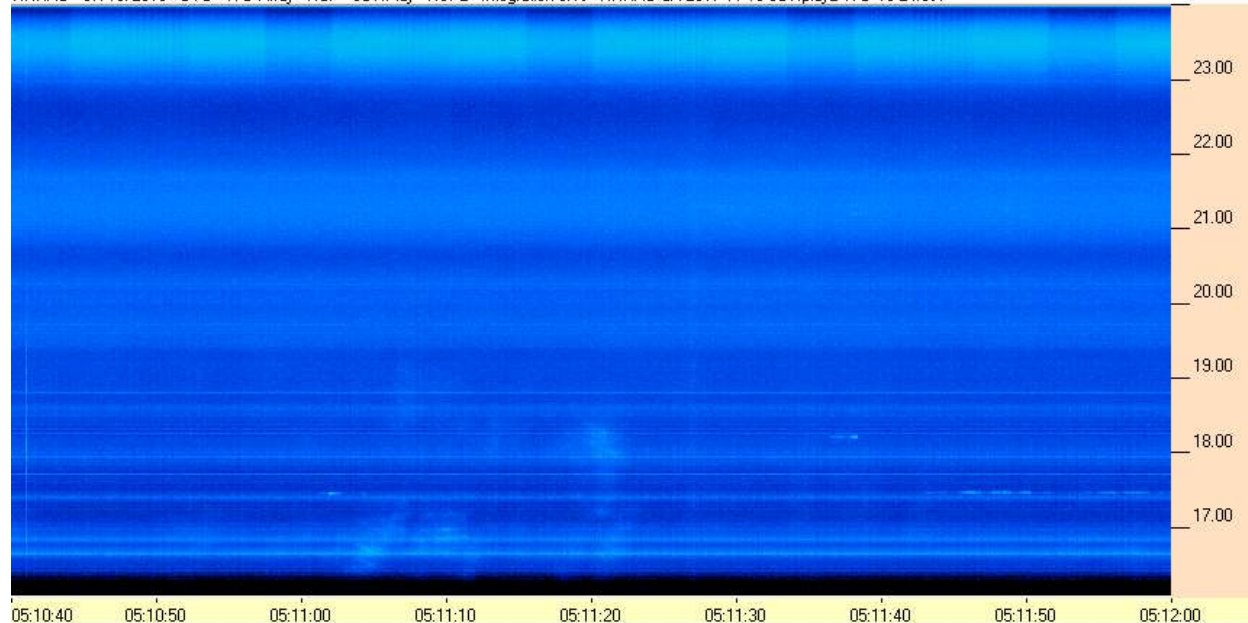
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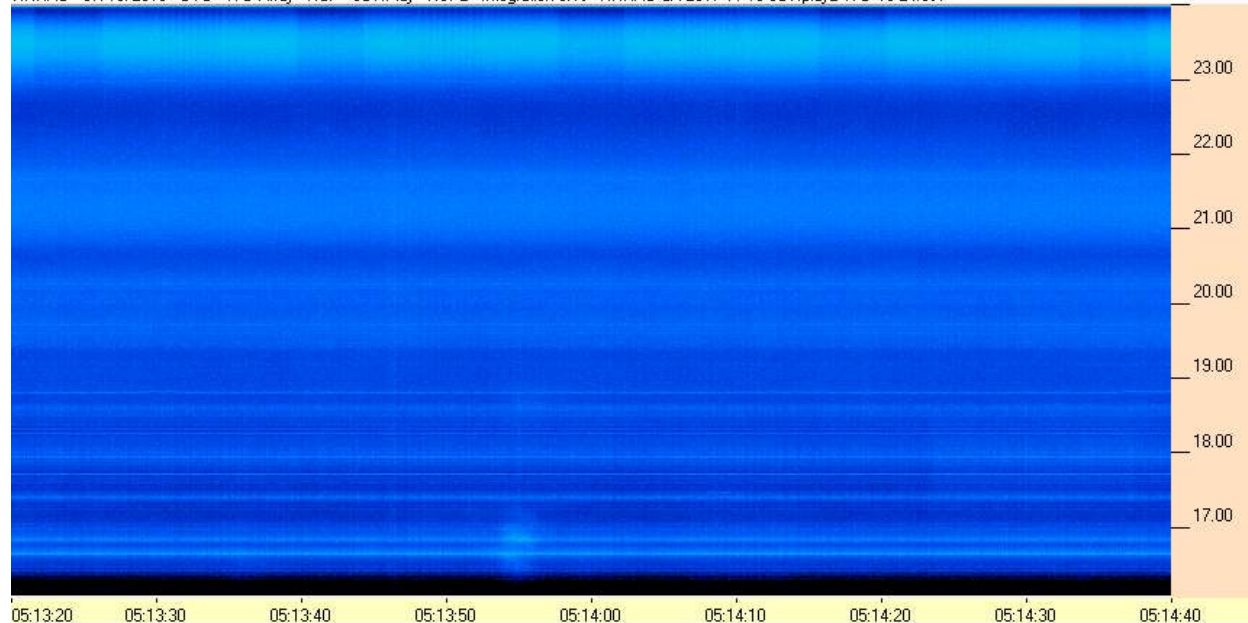
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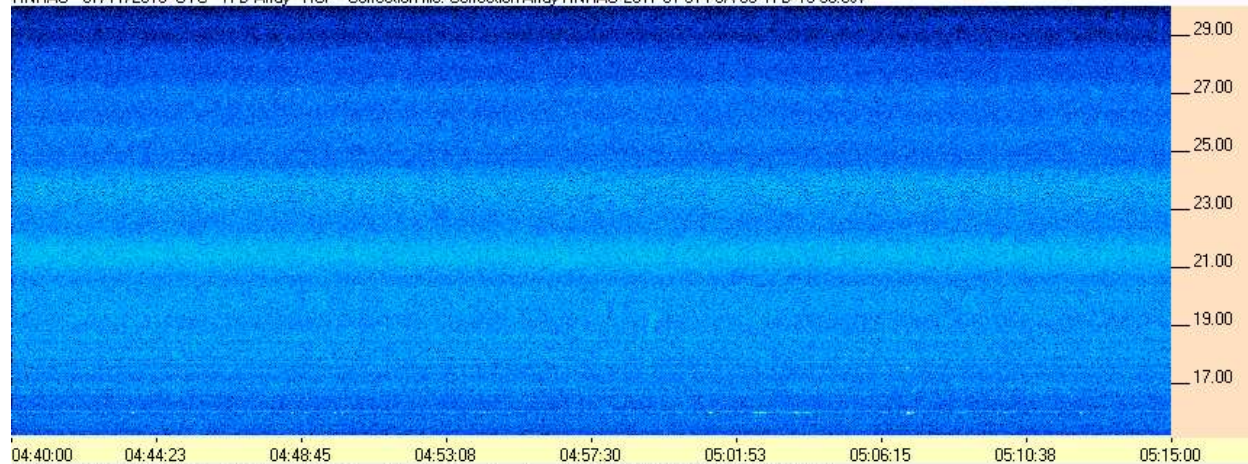


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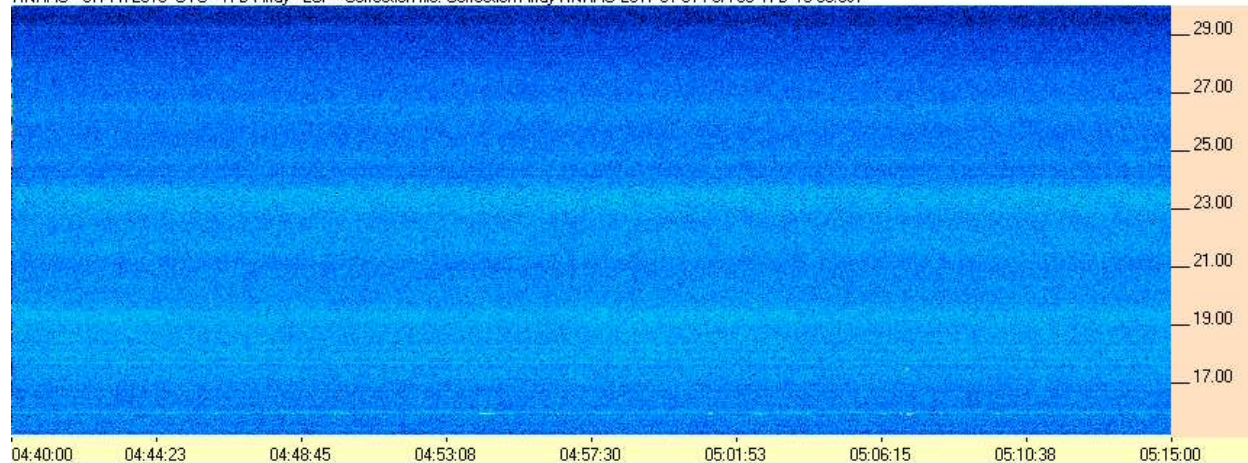


FSX-8S / TFD Array

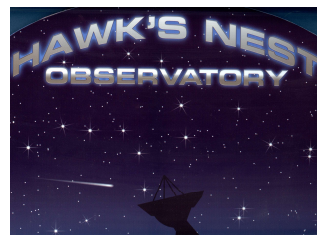
HNRAO - 07/11/2019 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



HNRAO - 07/11/2019 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



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FSX-2 / LWA Array

HNRAO - 07/11/2019 UTC - LWA Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-2 LWA 15-30.csv

