

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 13 June 2017

Object: Jupiter – Io-A

Observer: Unattended

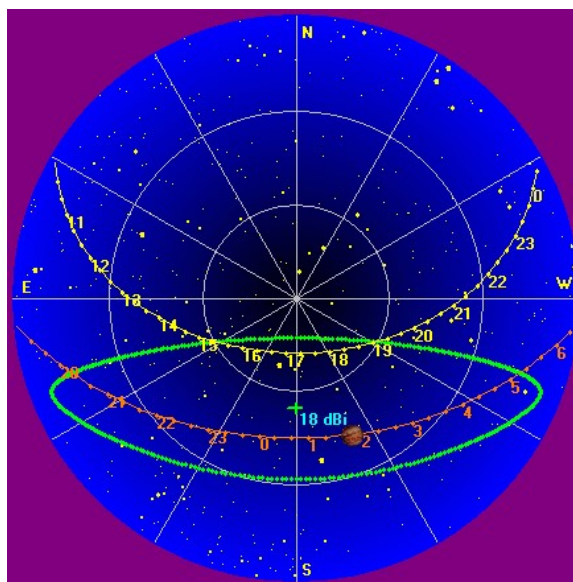
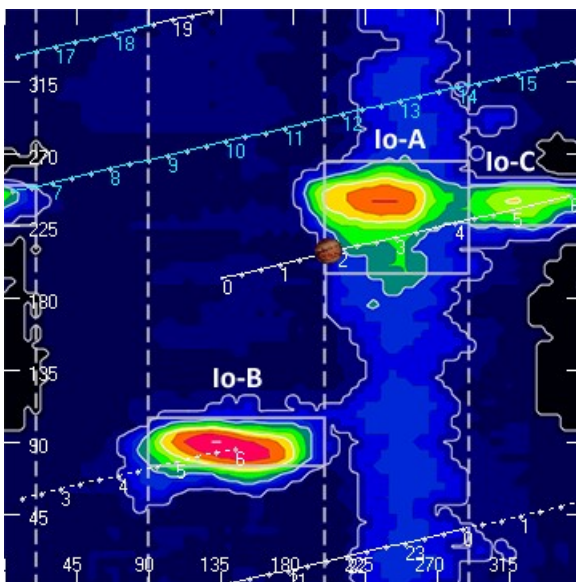
Start of pass:	0150 UT	Planetary K-index:	3
Jupiter Altitude (deg):	43.1	Jupiter Azimuth (deg):	202.4
Jupiter CML:	202.17	Jupiter Io Phase:	208.29
Jupiter RA (hr/min):	12:50	Jupiter Dec (hr/min):	-03:49
Hour Angle (hr/min):	01:05	Polarization	RCP
Sun Altitude (deg):	-10.6	Sun Azimuth (deg):	313.4
Sun RA (hr/min):	05:18	Sun Dec (hr/min):	23:06

End of pass:	0253 UT		
Jupiter Altitude (deg):	36.8	Jupiter Azimuth (deg):	221.3
Jupiter CML:	240.25	Jupiter Io Phase	217.26
Hour Angle (hr/min):	02:08		
Sun Altitude (deg):	-18.3	Sun Azimuth (deg):	326.1

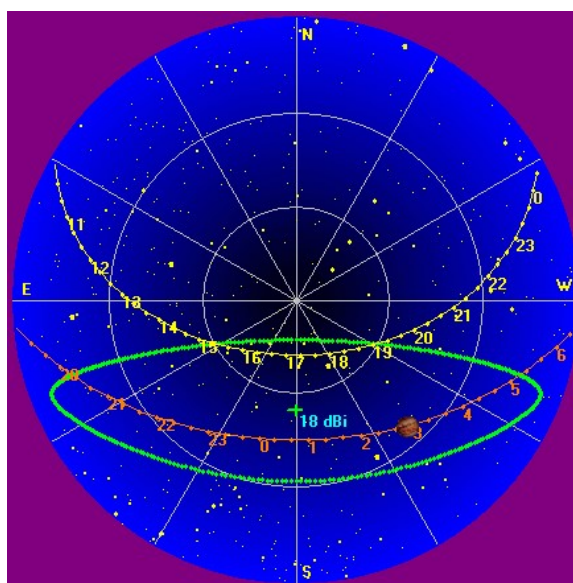
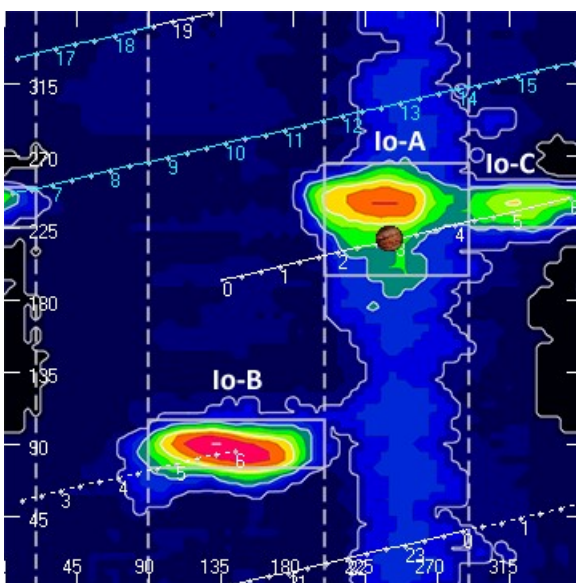
Observations made using:

1. FSX-8S fed by the TFD array
 - a. 7.7 dB loss between TFD and Multicouplers.
 - b. Connect to array through HNRAO Multicoupler #1 and #2, port 2
 - i. HNRAO Multicoupler #1 – TFD/LCP
 - ii. HNRAO Multicoupler #2 – TFD/RCP
 1. Port 1 having 10 dB of gain, all other ports have 3 dB gain.
2. FSX-2 fed by the LWA array directly
 - a. LWA element configuration – 90 degrees
3. JOVE 2 receiver fed by phased JOVE dipoles @ 13'
 - a. 12' 6" phase cable - phased for 2016-17 season
 - b. Calibrated 1 June 2017
 - c. Connected to dipoles through HNRAO Multicoupler #3, port 1.
 - i. 3.165 dB loss between Multicoupler and dipoles.
4. Icom R75 receiver fed by experimental DDRR antenna directly.
 - a. Calibrated 19 April 2017
5. SDRPlay
 - a. RSP1 (2) and RSP2 (1)

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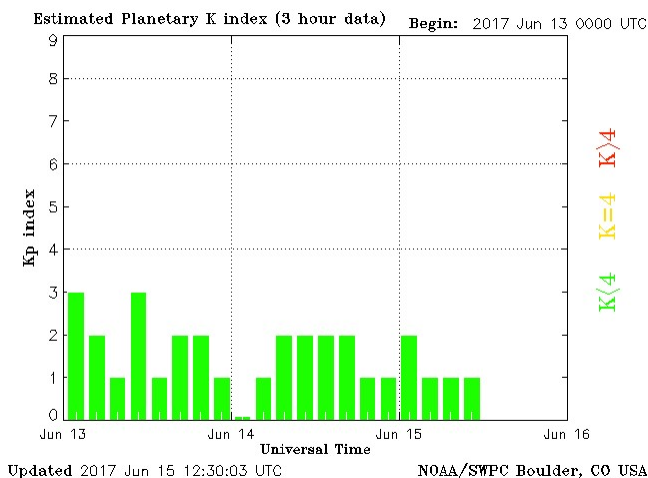


Beginning of Pass



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>

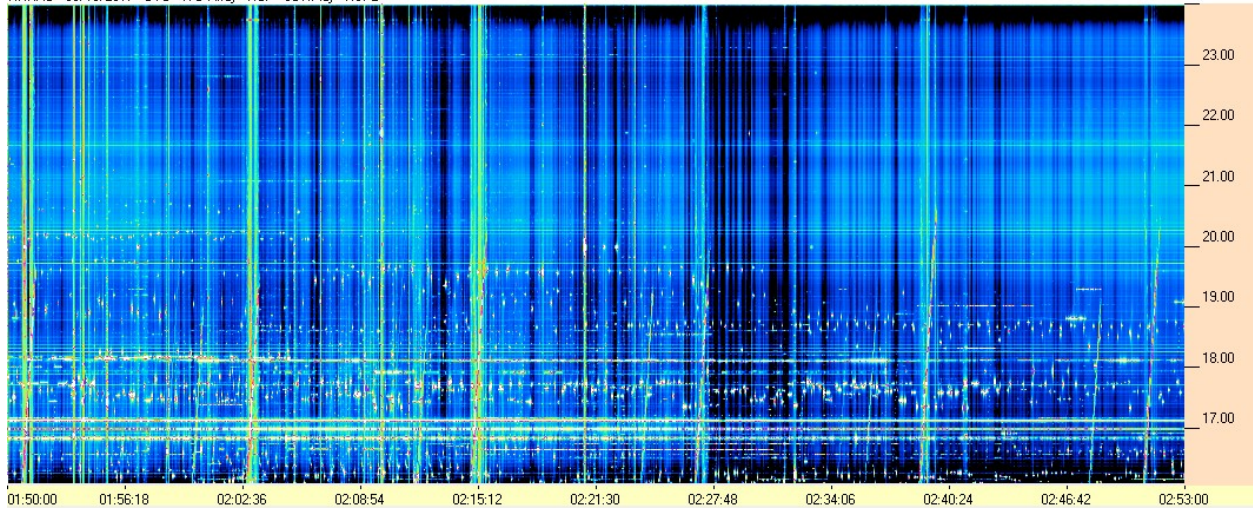
An Io-A storm visible through broadcast stations and distant lightning. Slightly above GB, L-bursts with negative drift modulation lanes were present and measurable. A table of measured modulation lanes follows at the end of this report. As has been observed through this apparition, the modulation lanes drift rate increases with increasing frequency.

Nothing else of note.

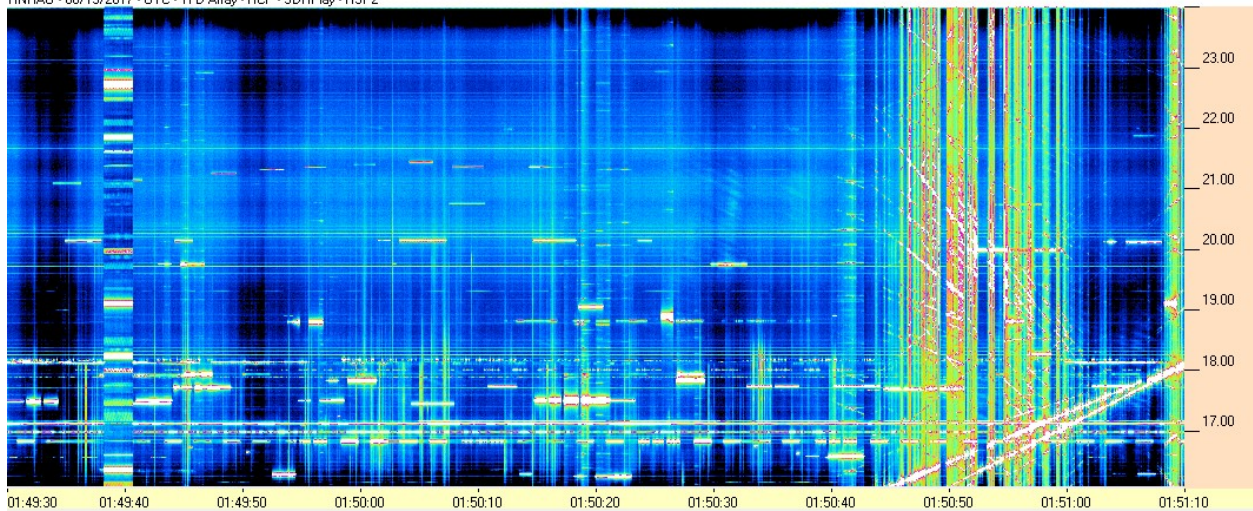
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HNRAO - 06/13/2017 - UTC - TFD Array - RCP - SDRPlay - RSP2



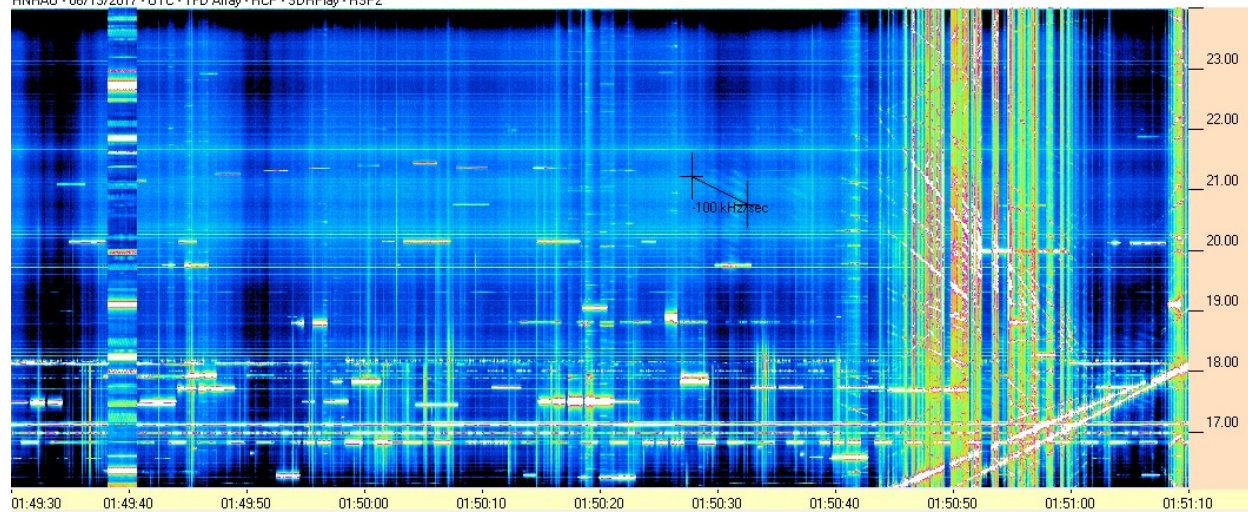
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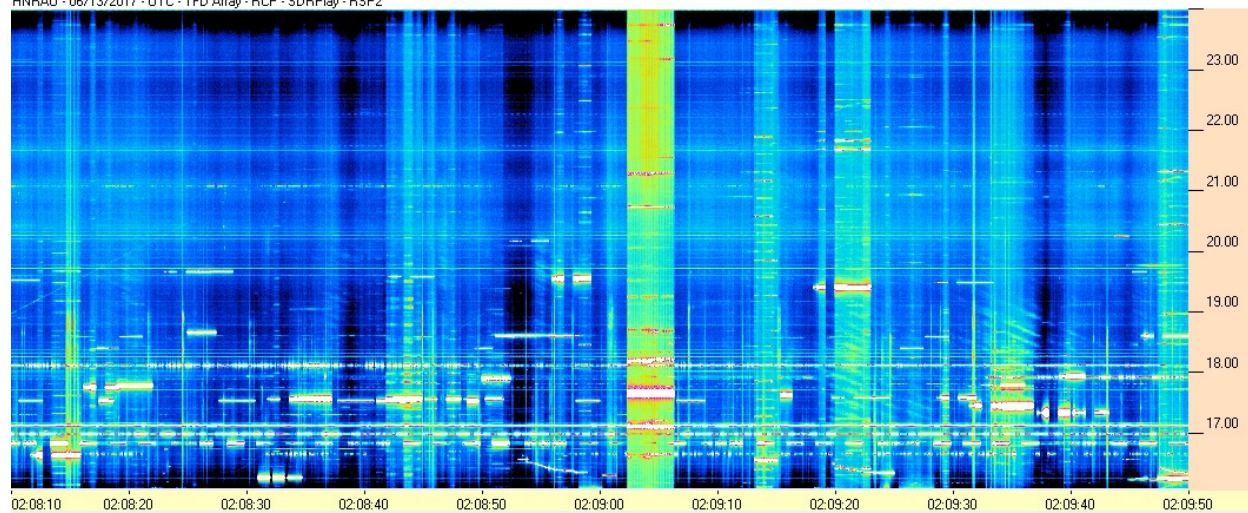
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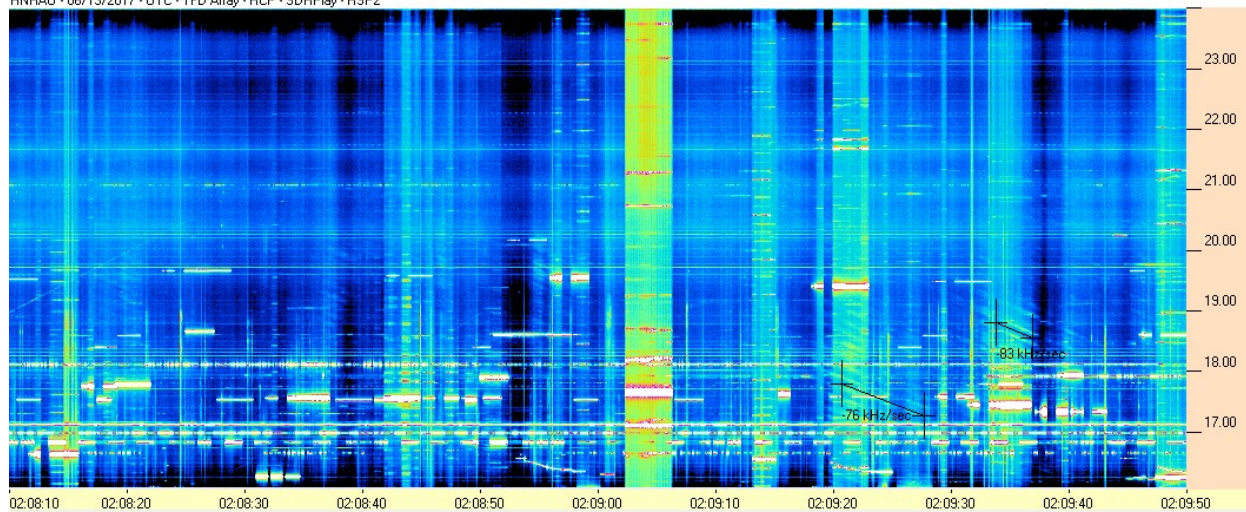
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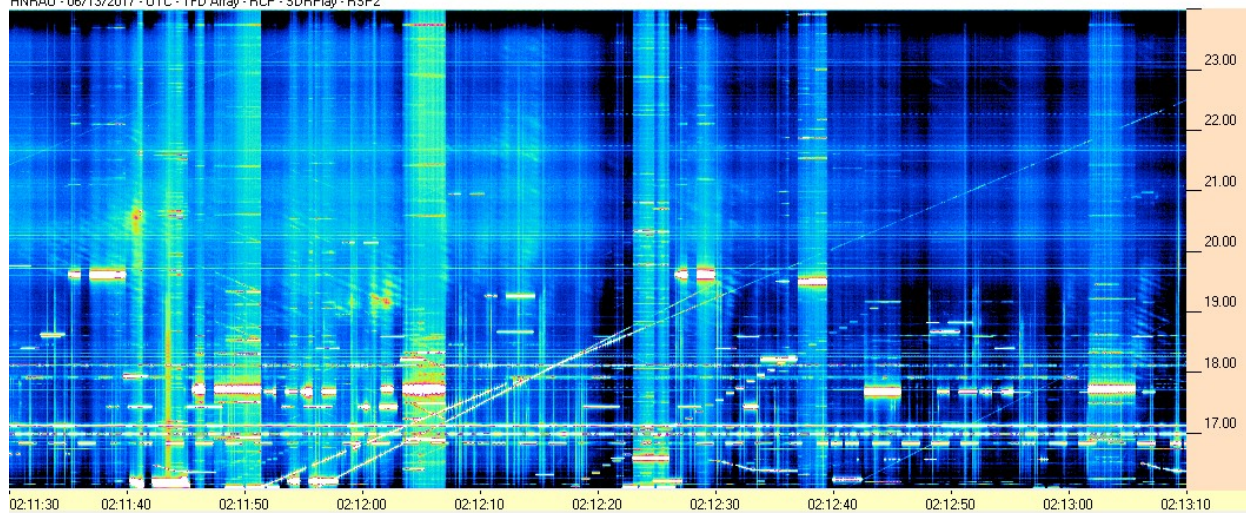
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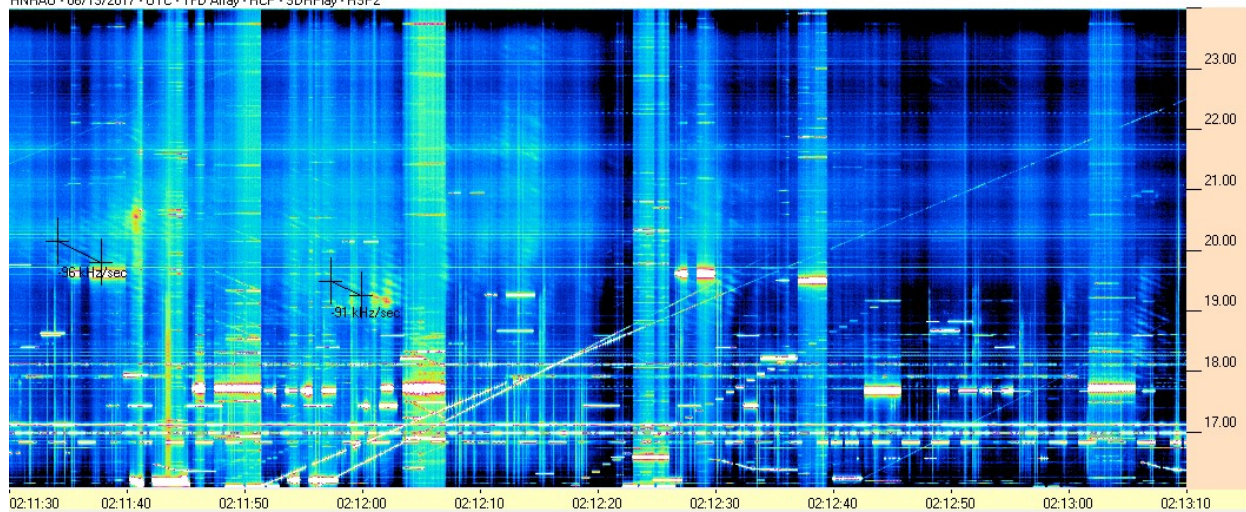
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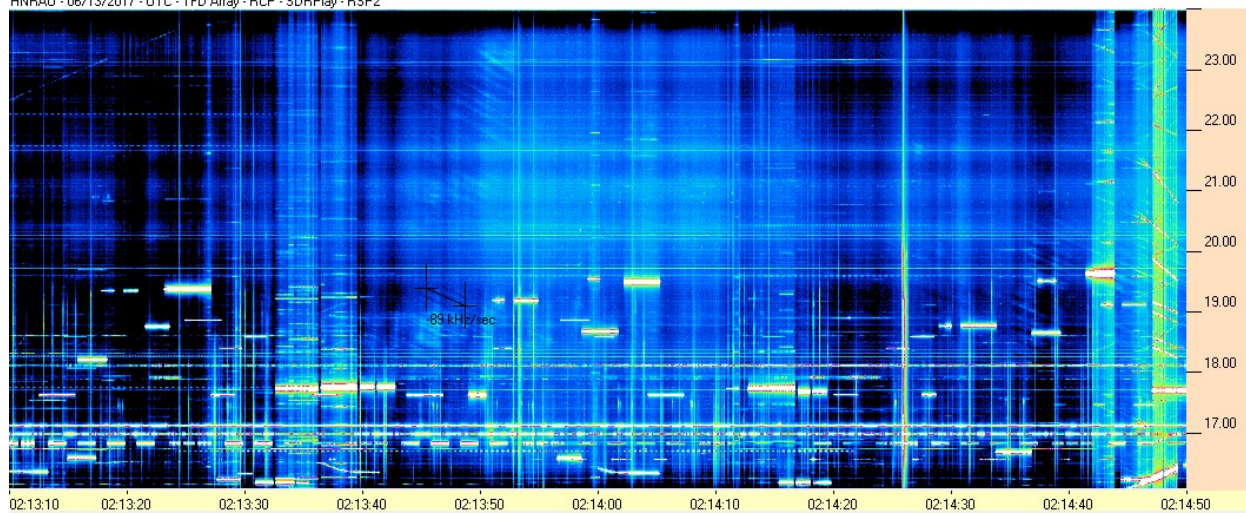
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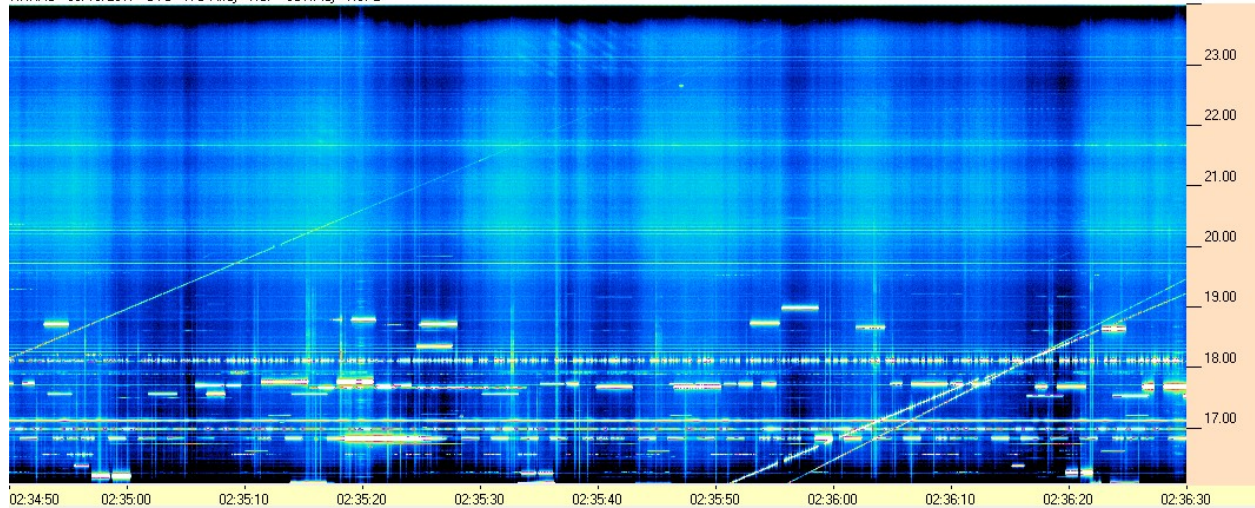
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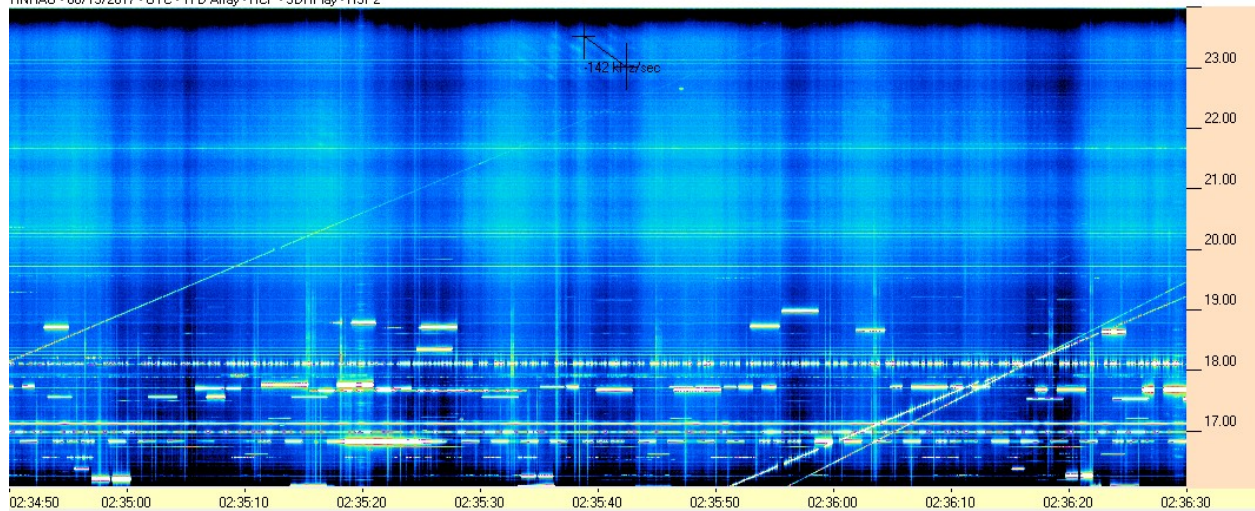
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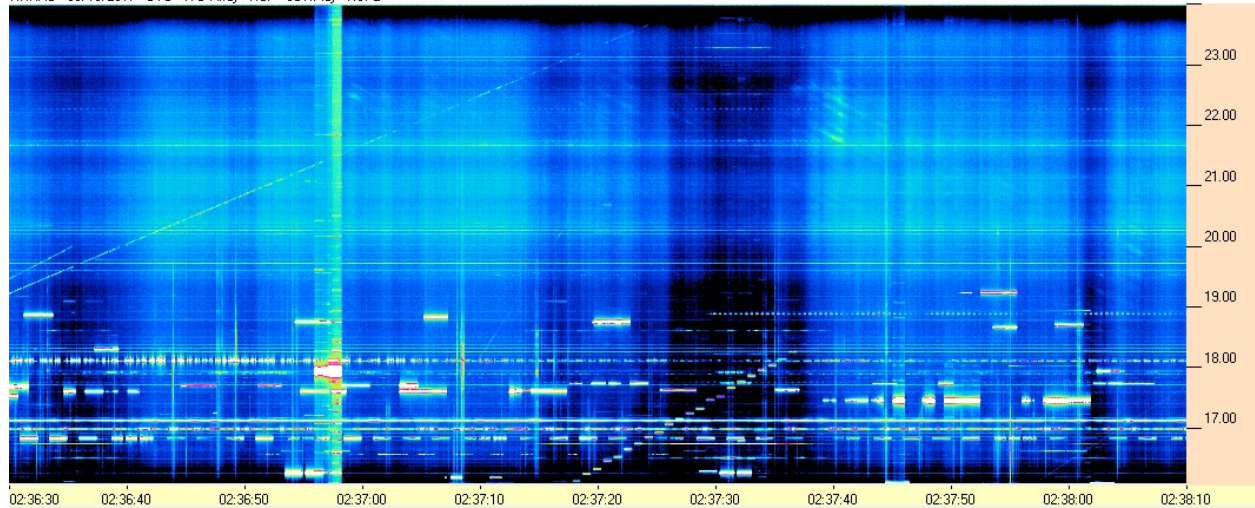
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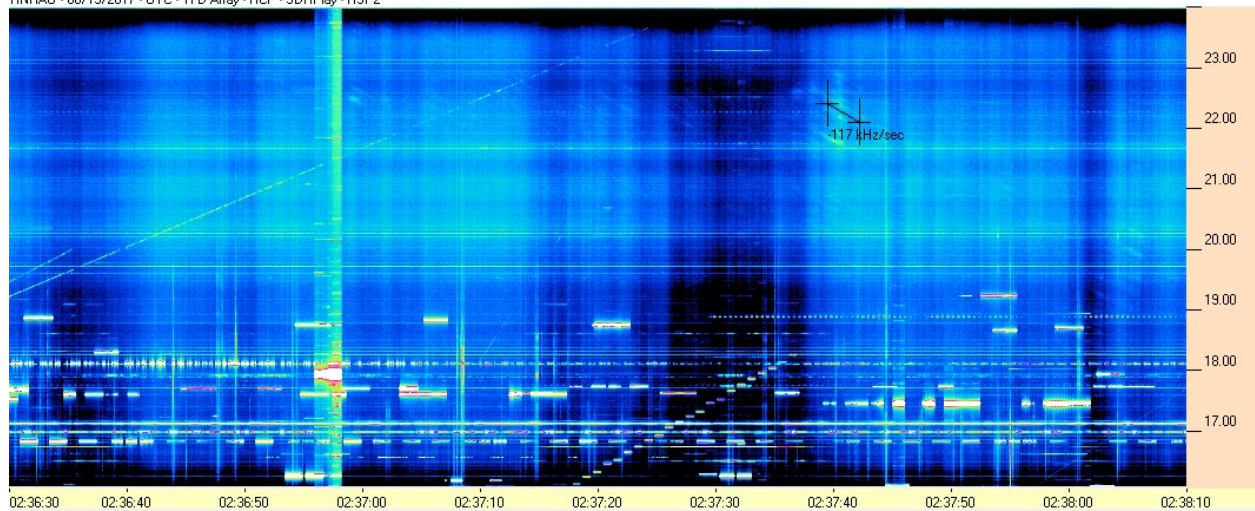
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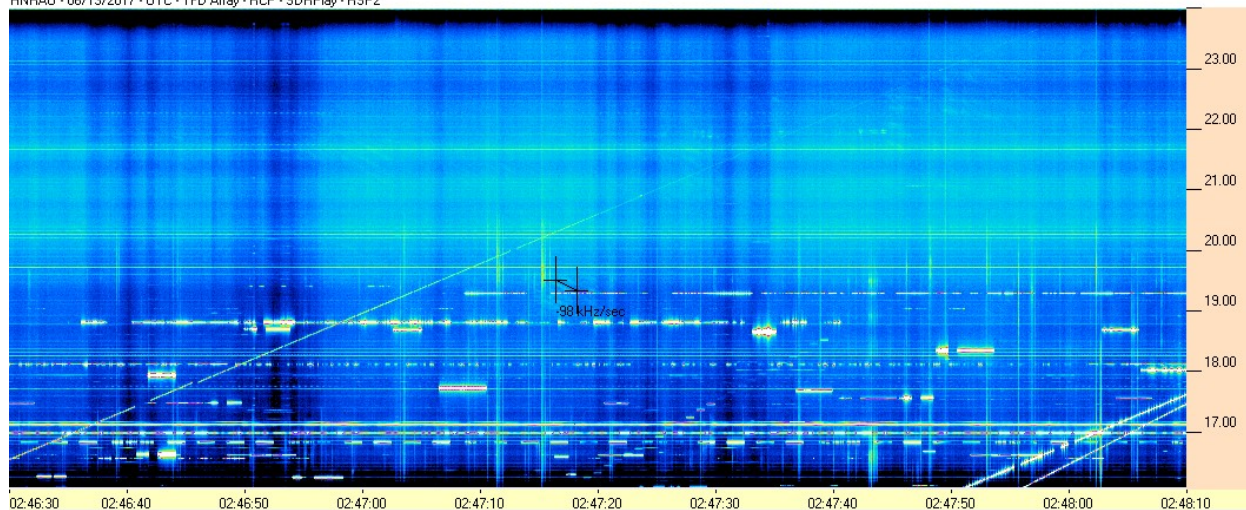
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Antenna	Start	Stop	Mid	Freq 1	Mid Freq	Freq 2	Slope kHz/sec
RHC	6/13/2017 02:35	6/13/2017 02:35	6/13/2017 02:35	23001	23	23512	-142
RHC	6/13/2017 02:37	6/13/2017 02:37	6/13/2017 02:37	22076	22	22391	-117
RHC	6/13/2017 01:50	6/13/2017 01:50	6/13/2017 01:50	20718	21	21190	-101
RHC	6/13/2017 02:11	6/13/2017 02:11	6/13/2017 02:11	20305	20	20502	-109
RHC	6/13/2017 02:11	6/13/2017 02:11	6/13/2017 02:11	19754	20	20108	-96
RHC	6/13/2017 02:47	6/13/2017 02:47	6/13/2017 02:47	19282	19	19459	-98
RHC	6/13/2017 02:12	6/13/2017 02:11	6/13/2017 02:11	19203	19	19439	-91
RHC	6/13/2017 02:13	6/13/2017 02:13	6/13/2017 02:13	19046	19	19341	-89
RHC	6/13/2017 02:09	6/13/2017 02:09	6/13/2017 02:09	18495	19	18751	-83
RHC	6/13/2017 02:09	6/13/2017 02:09	6/13/2017 02:09	17196	17	17727	-76