

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date:30 May 2017

Object: Jupiter – Io-C

Observer: JB

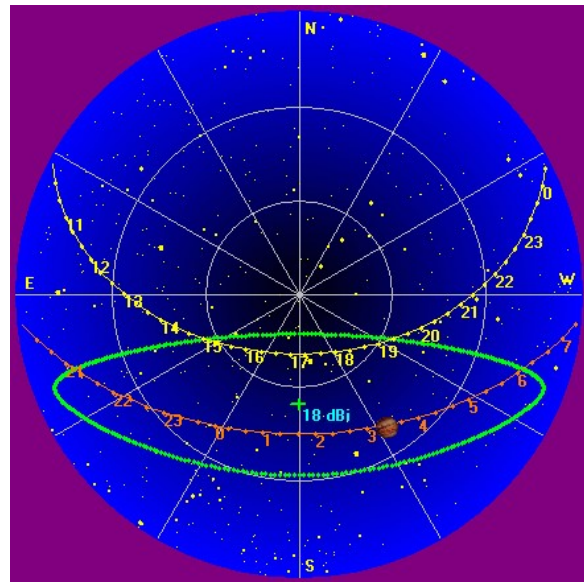
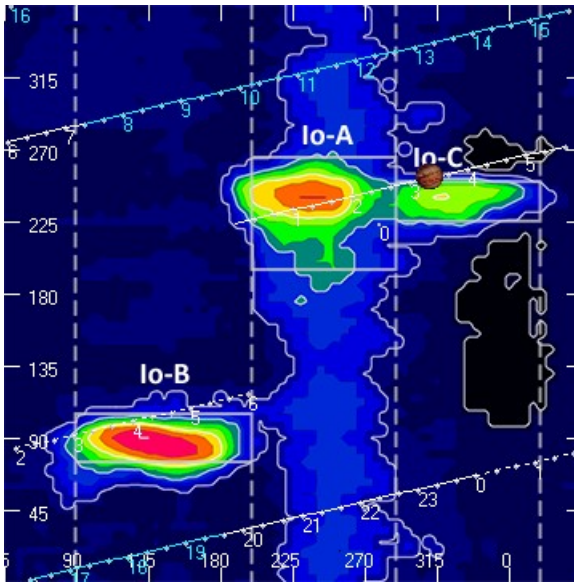
Start of pass:	0321 UT	Planetary K-index:	4
Jupiter Altitude (deg):	39.9	Jupiter Azimuth (deg):	213.4
Jupiter CML:	310.49	Jupiter Io Phase:	252.59
Jupiter RA (hr/min):	12:51	Jupiter Dec (hr/min):	-03:51
Hour Angle (hr/min):	01:40	Polarization	LCP
Sun Altitude (deg):	-22.7	Sun Azimuth (deg):	332.1
Sun RA (hr/min):	04:21	Sun Dec (hr/min):	21.30

End of pass:	0412 UT		
Jupiter Altitude (deg):	33.7	Jupiter Azimuth (deg):	227.2
Jupiter CML:	341.32	Jupiter Io Phase	259.83
Hour Angle (hr/min):	02:31		
Sun Altitude (deg):	-26.3	Sun Azimuth (deg):	344.6

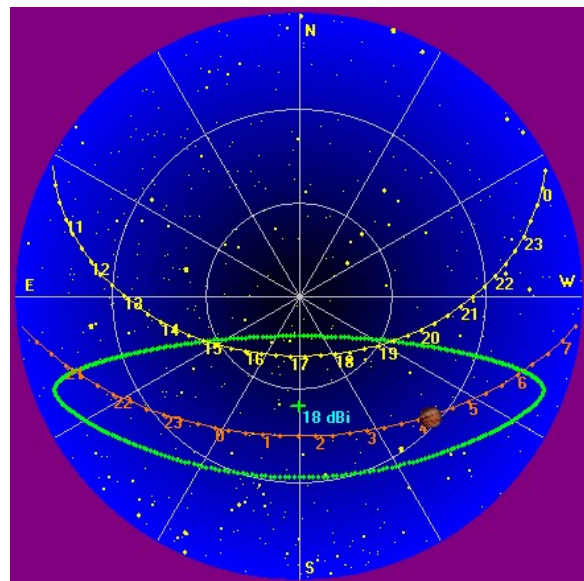
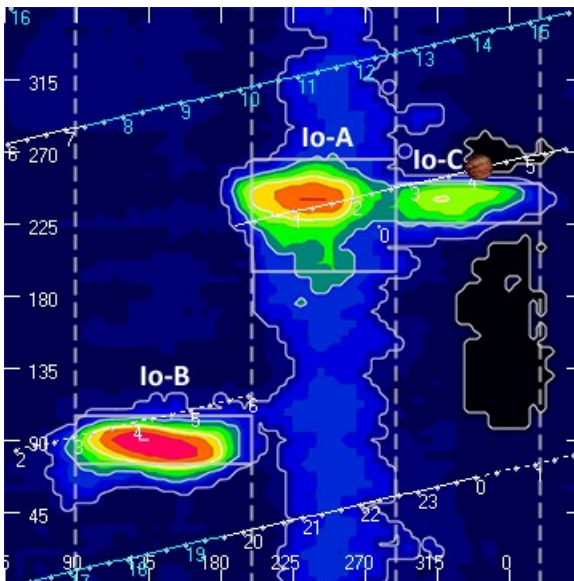
Observations made using:

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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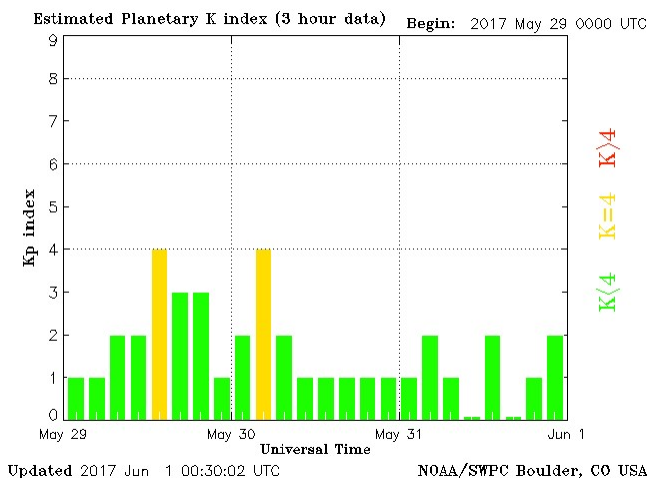


Beginning of Pass



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>

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An LCP Io-C storm with positive drift L-bursts and S-bursts spanning 15 MHz to 18 MHz. Observing conditions at the beginning of the storm were better than the end because of distant lightning, seen as vertical lines in the spectra.

Negative drift modulation lanes were present but difficult to measure due to the narrow frequency range of this storm. An attempt was made on several. Values of -86 kHz/sec and -89 kHz/sec at two locations are consistent at that frequency.

Very strong S-burst clusters appeared at several points during the pass, some strong enough to push the RSP1 into saturation at the settings used for the observations.

The FSX-8S/TFD pair also observed this storm, but not at the intensity or resolution obtained by the SDRPlay RSP1 spectrograph.

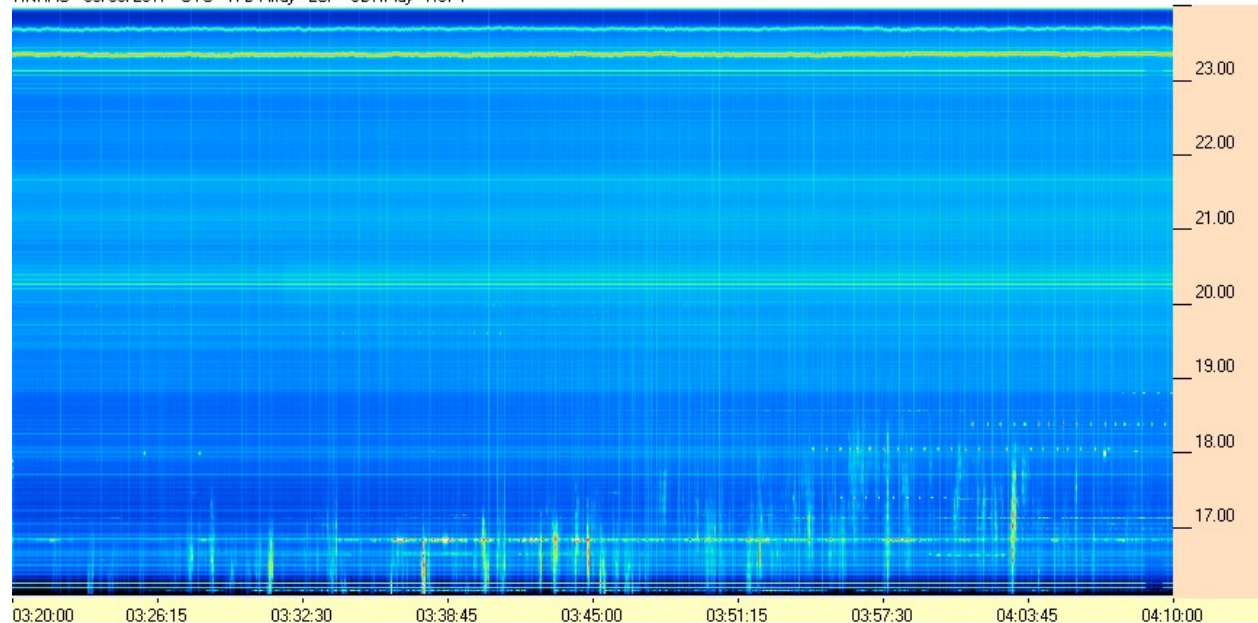
No emissions reached the Radio JOVE frequency of 20.1 MHz.

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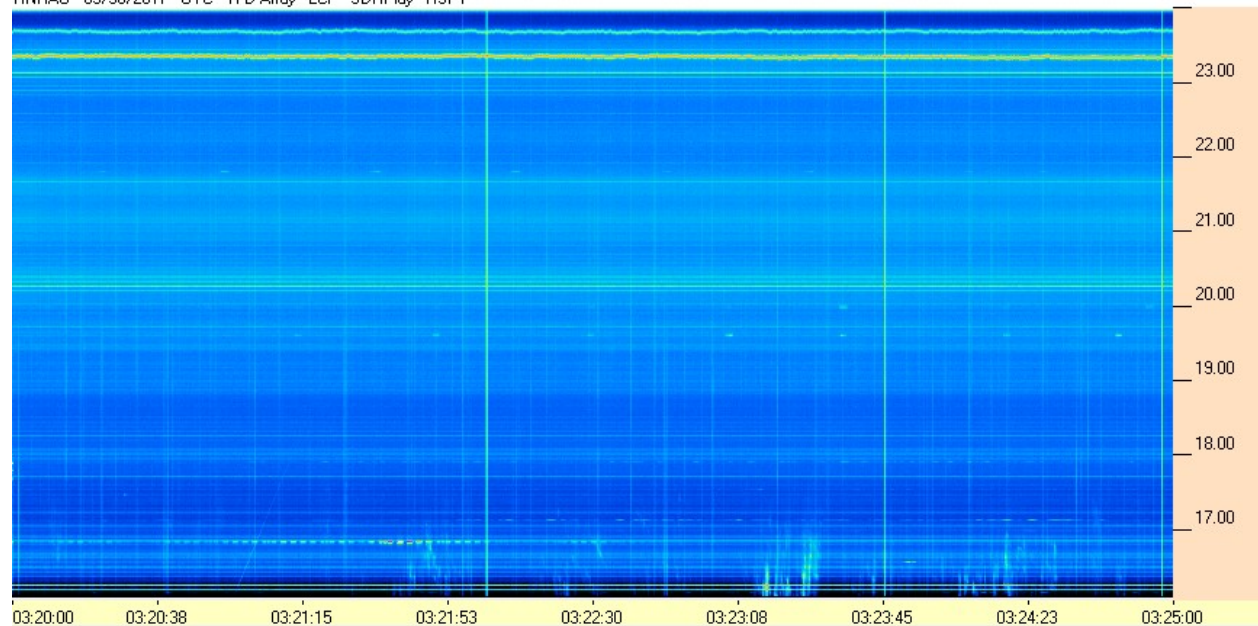


SDRPlay RSP1/TFD Pair

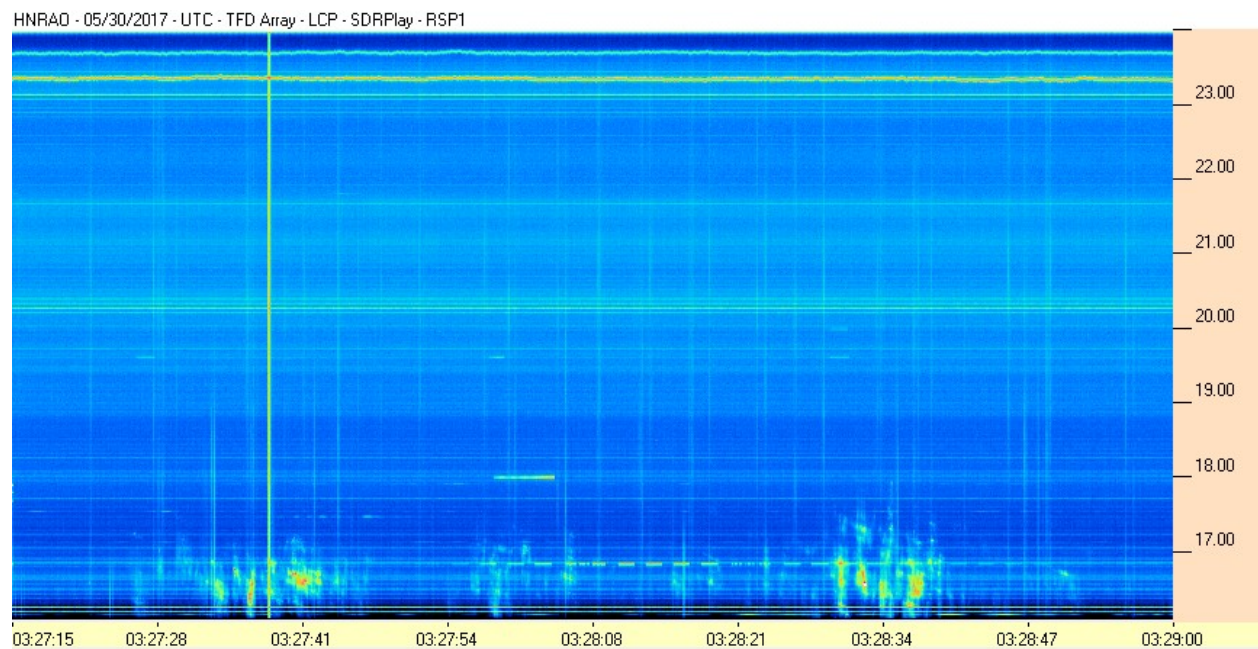
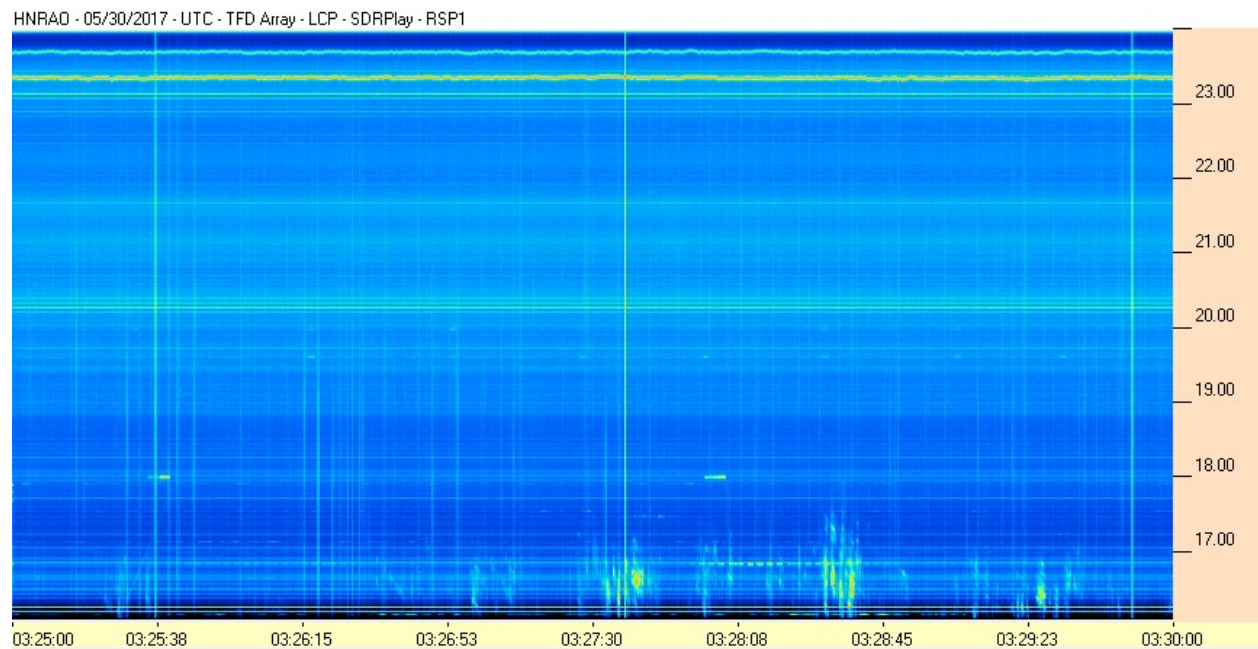
HNRAO - 05/30/2017 - UTC - TFD Array - LCP - SDRPlay - RSP1



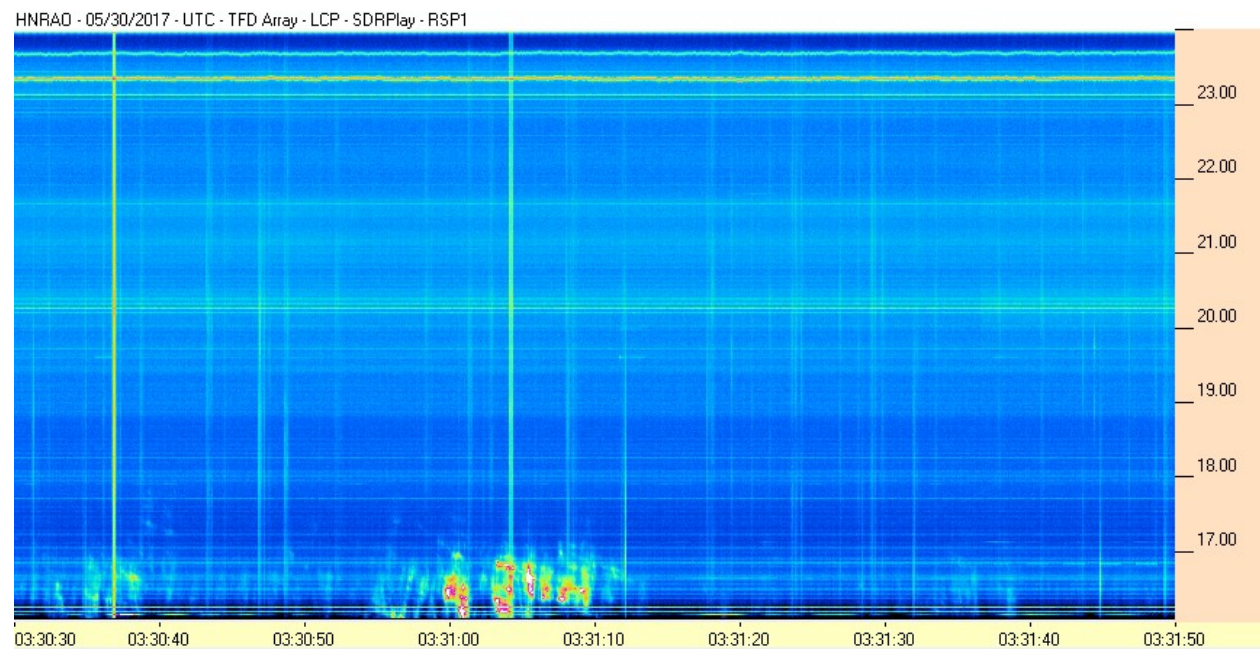
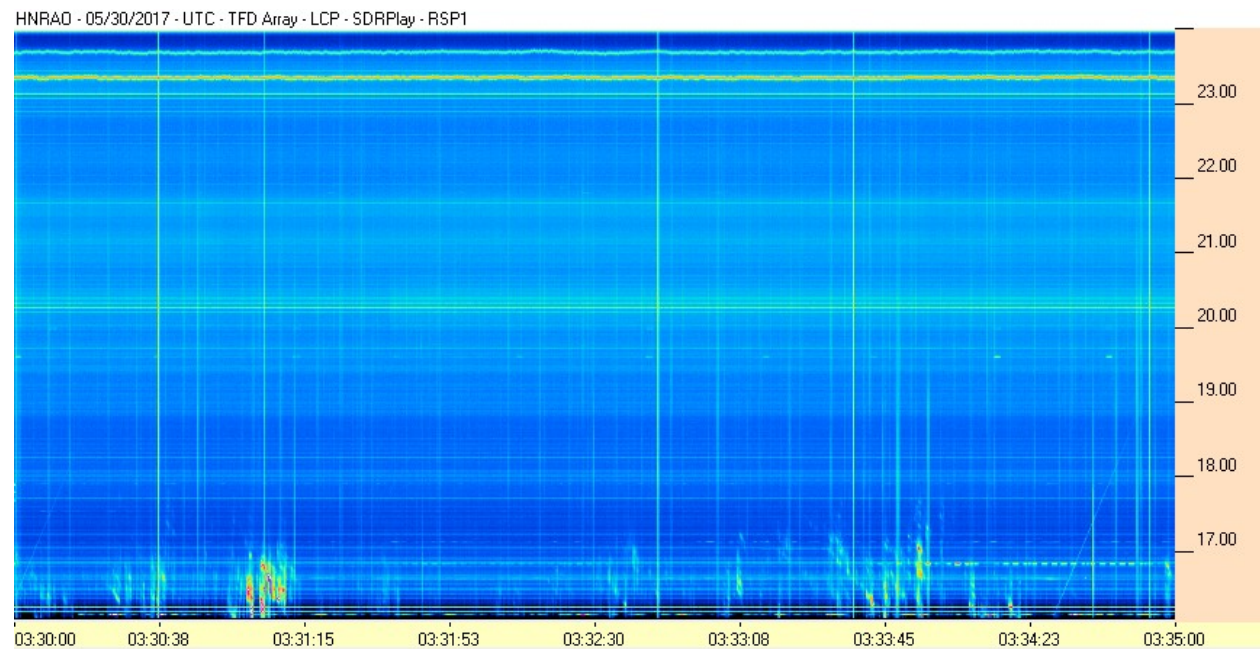
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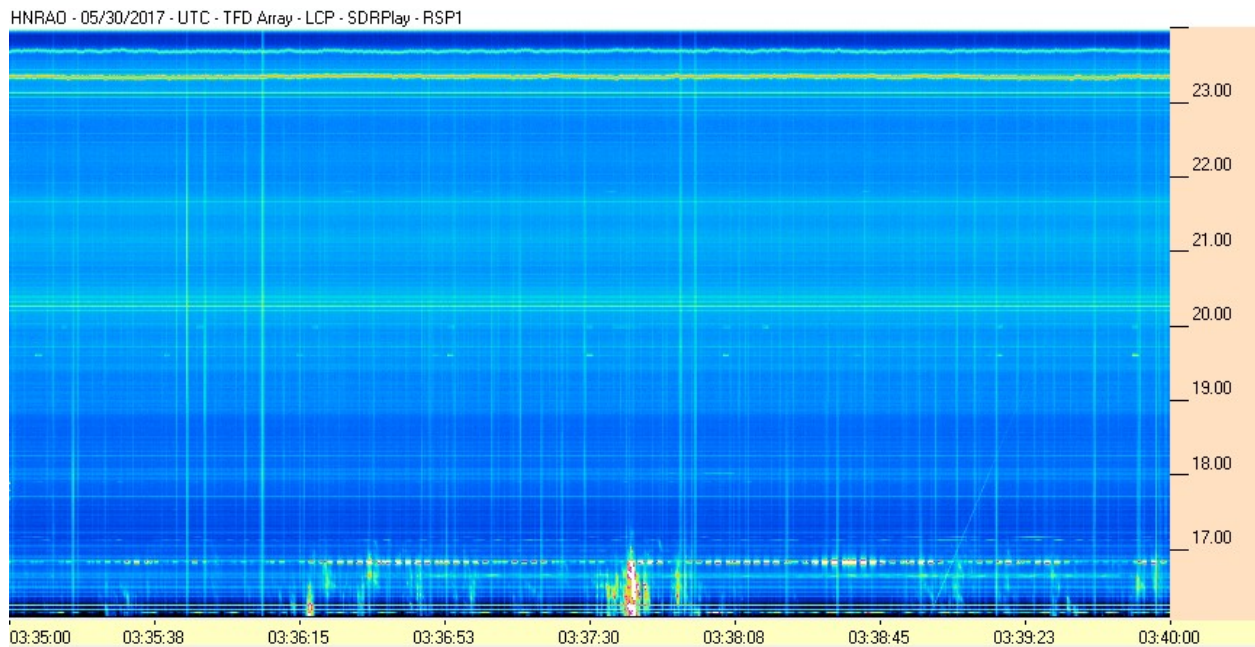
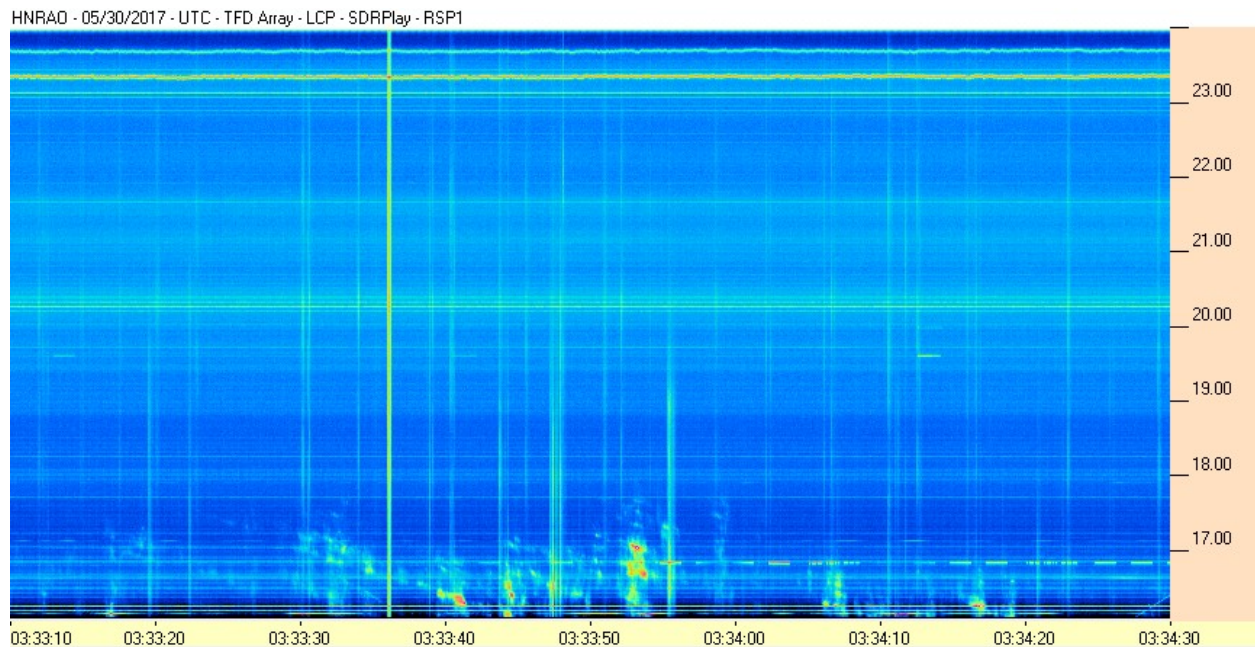
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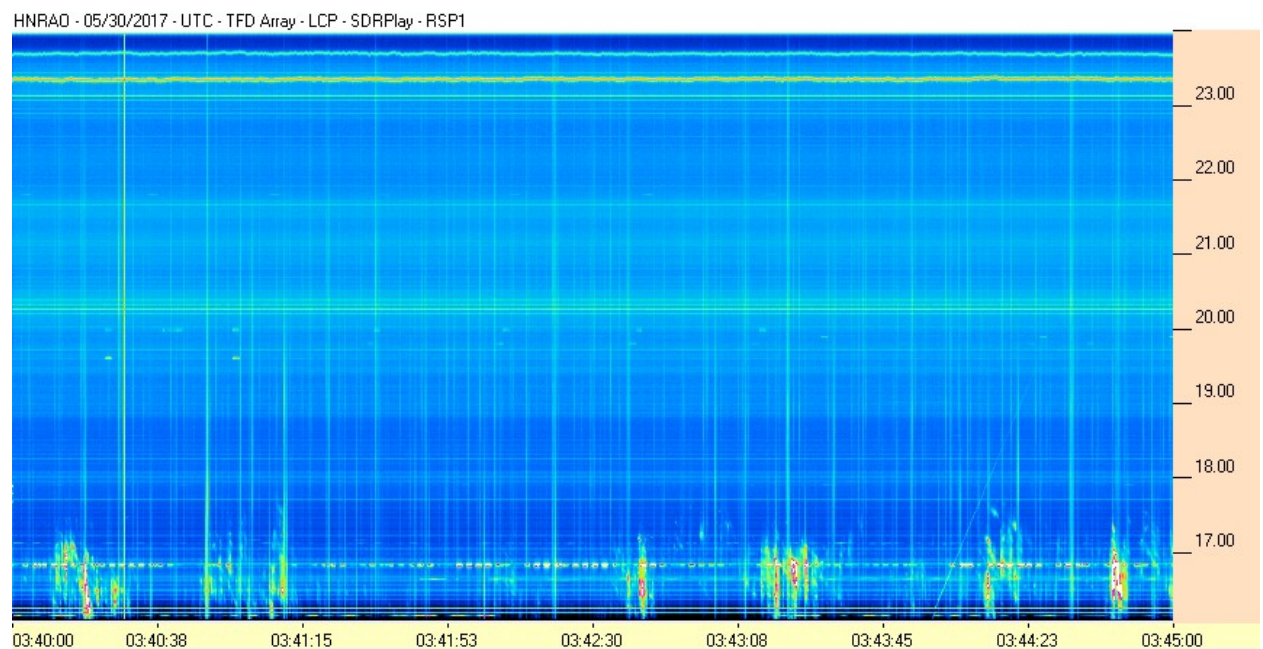
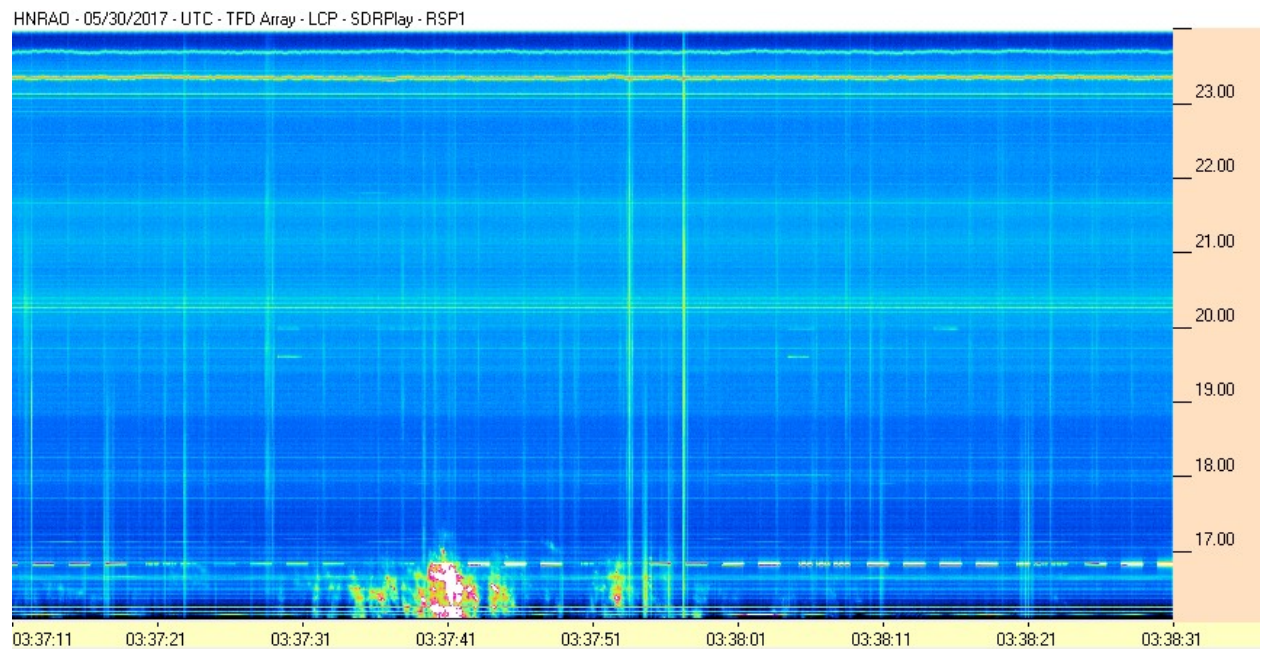
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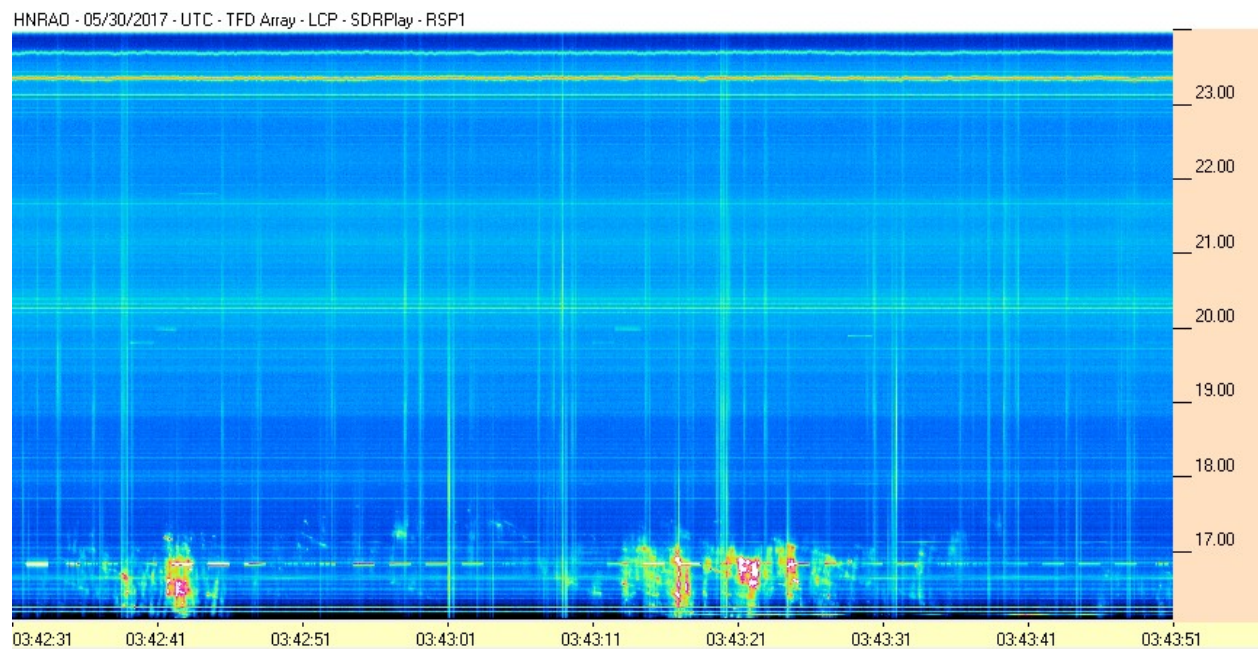
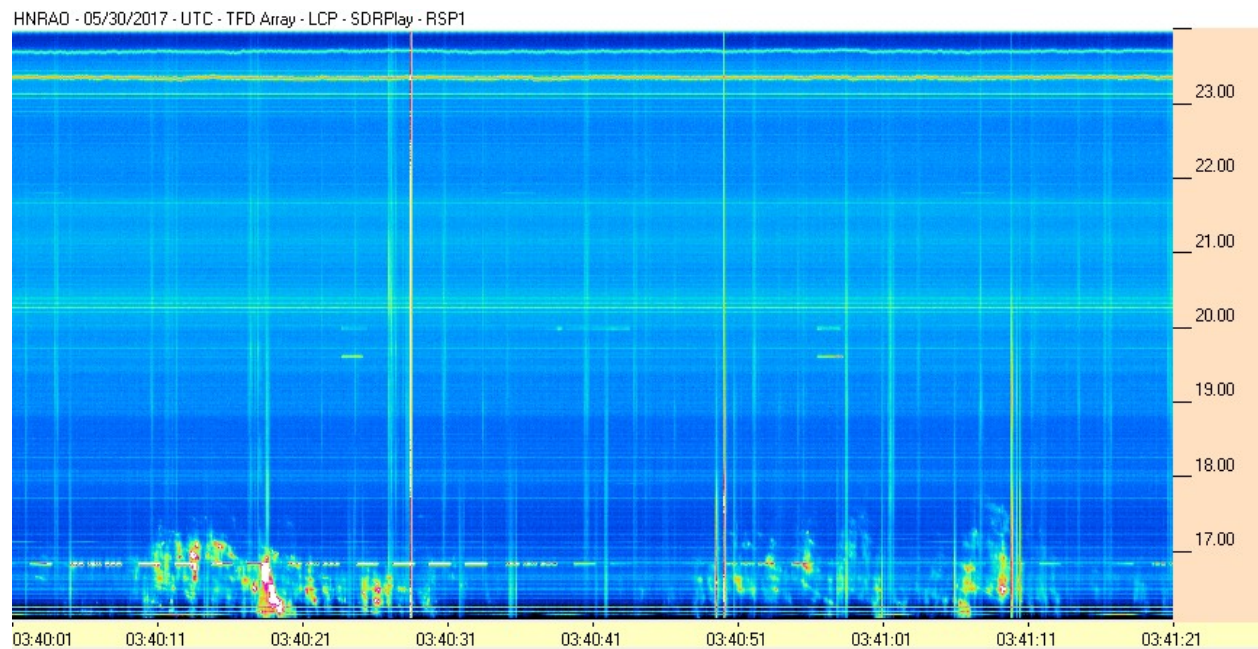
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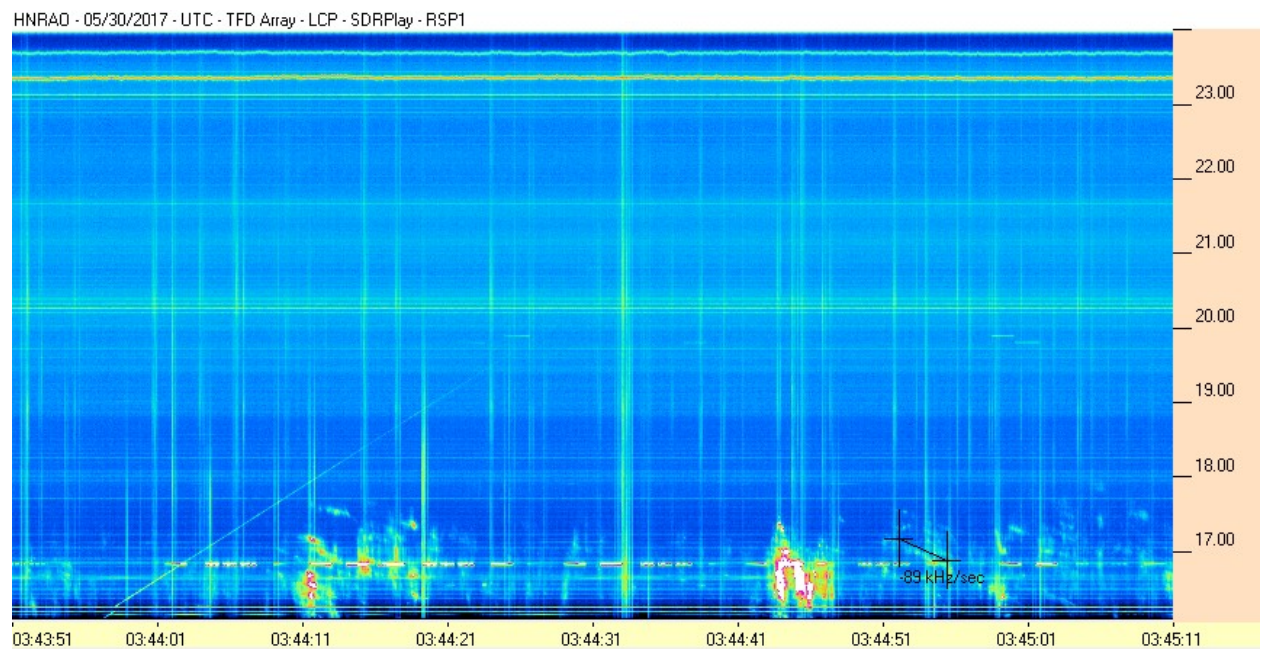
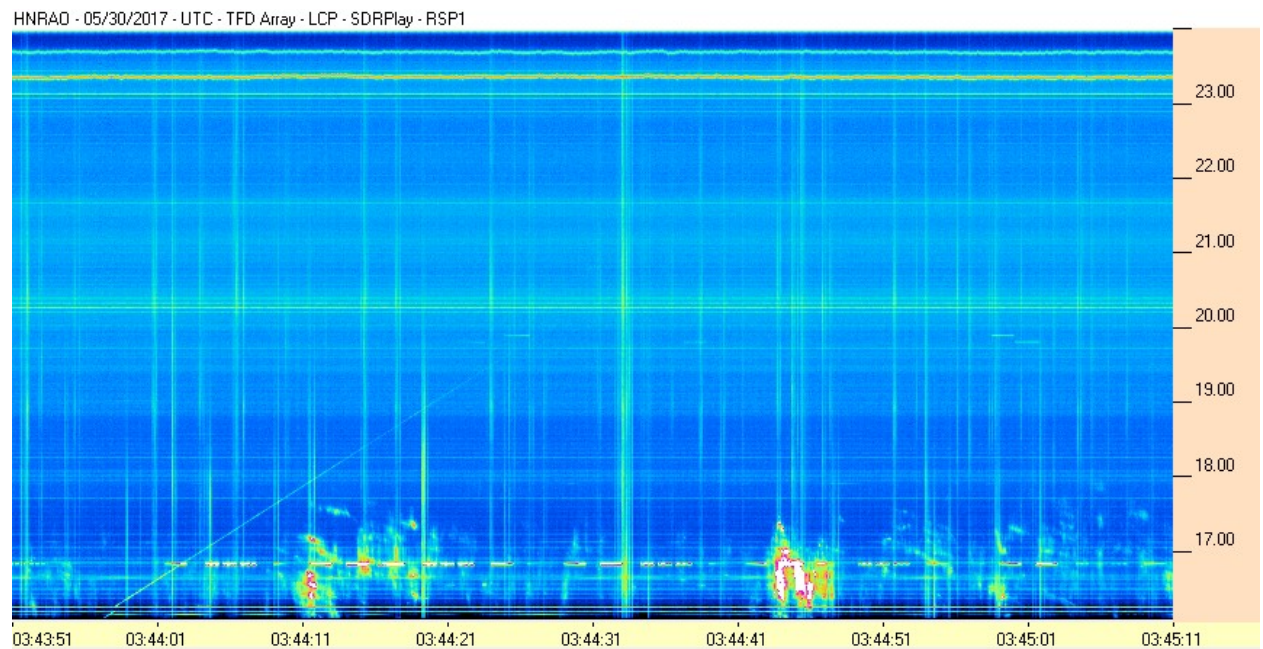
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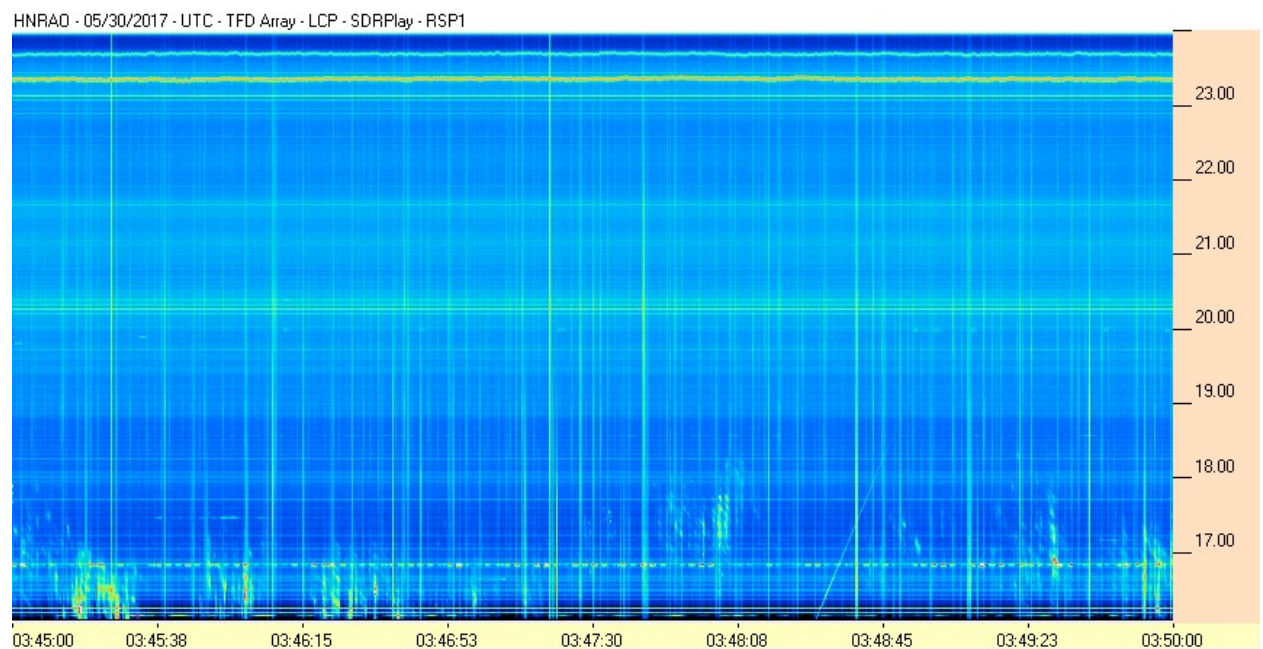
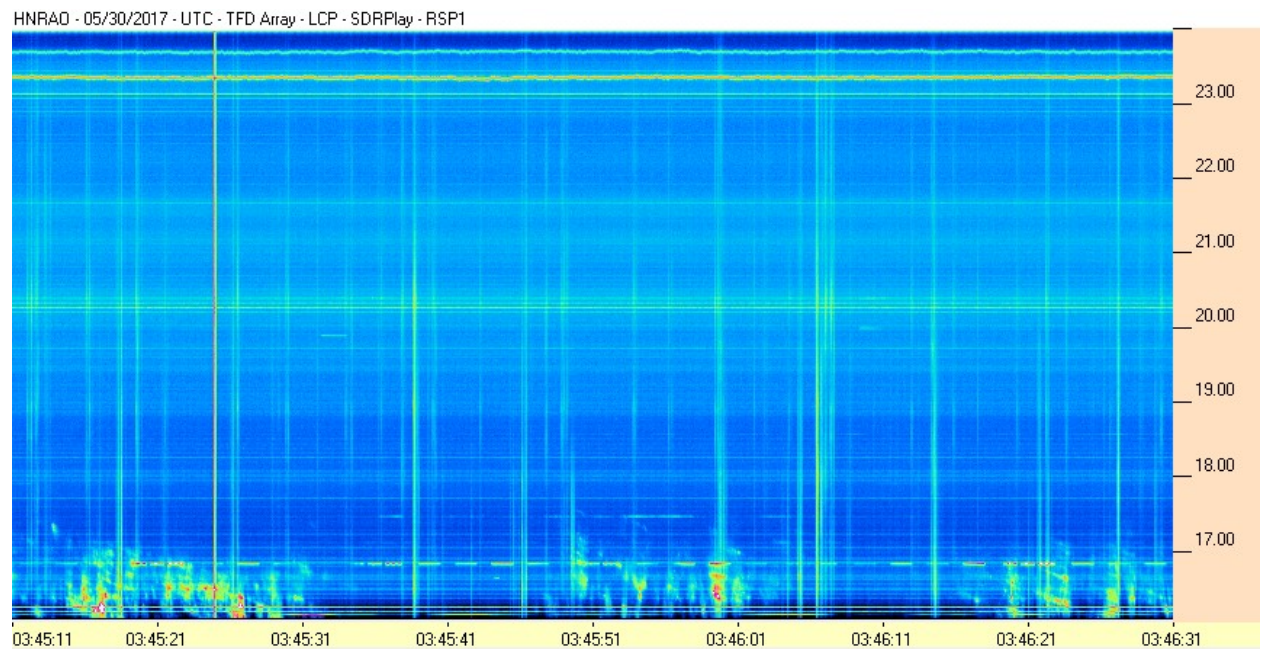
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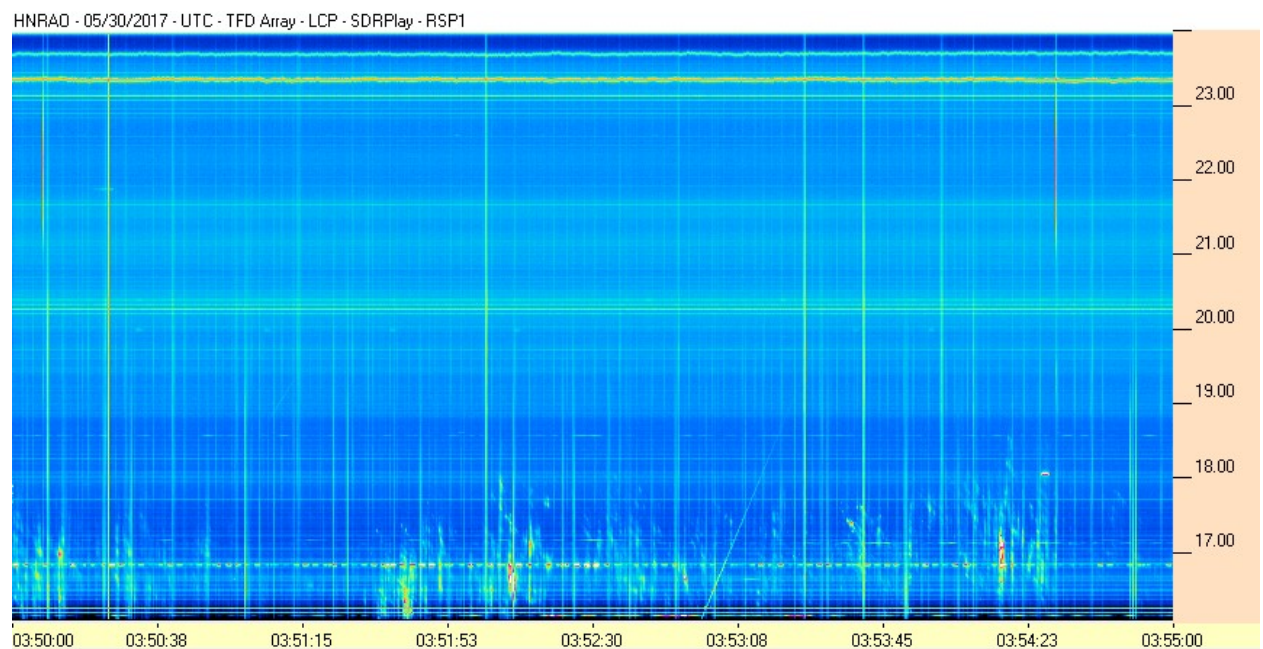
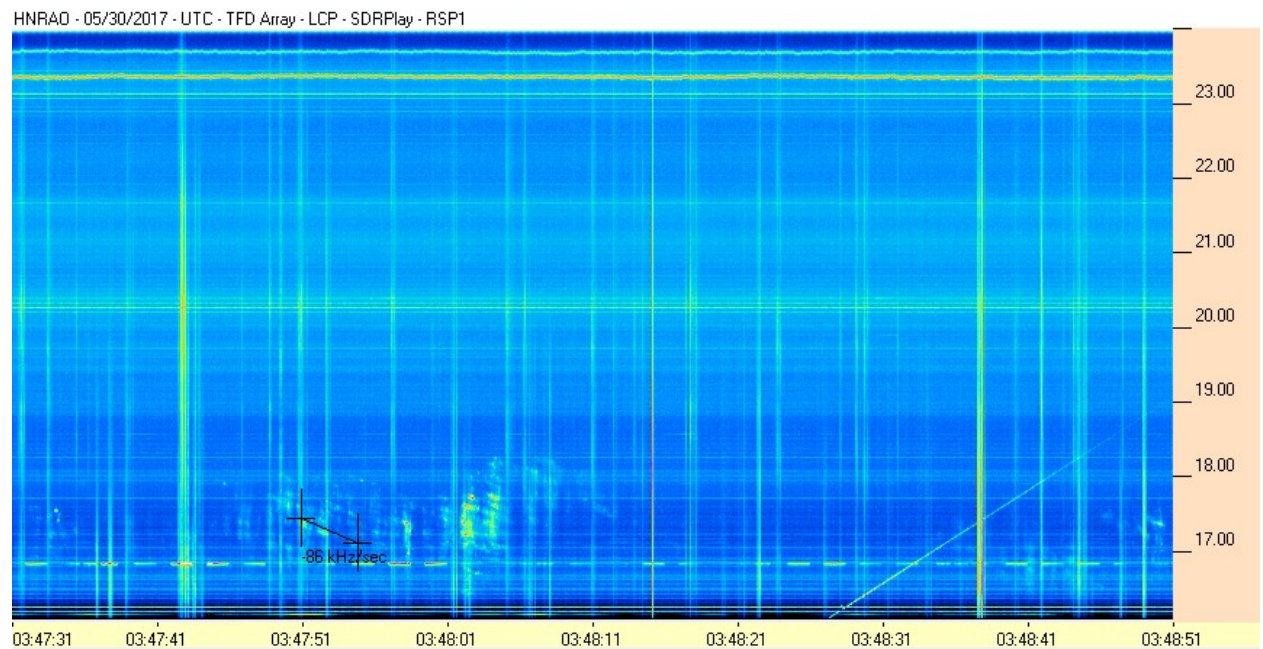
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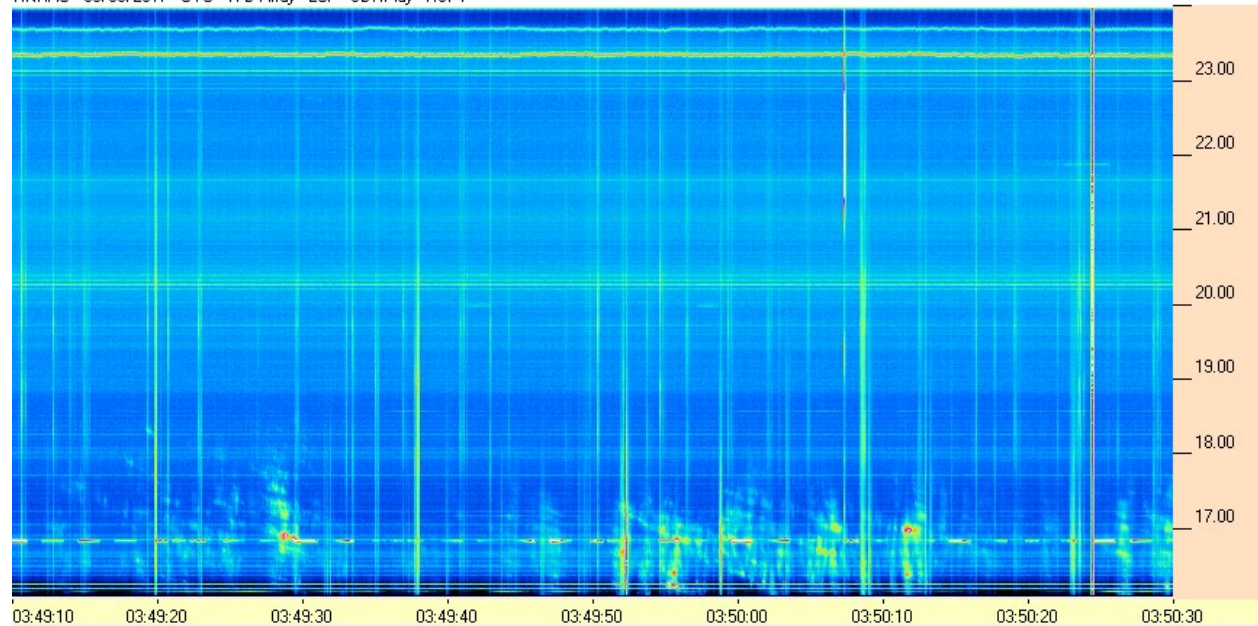
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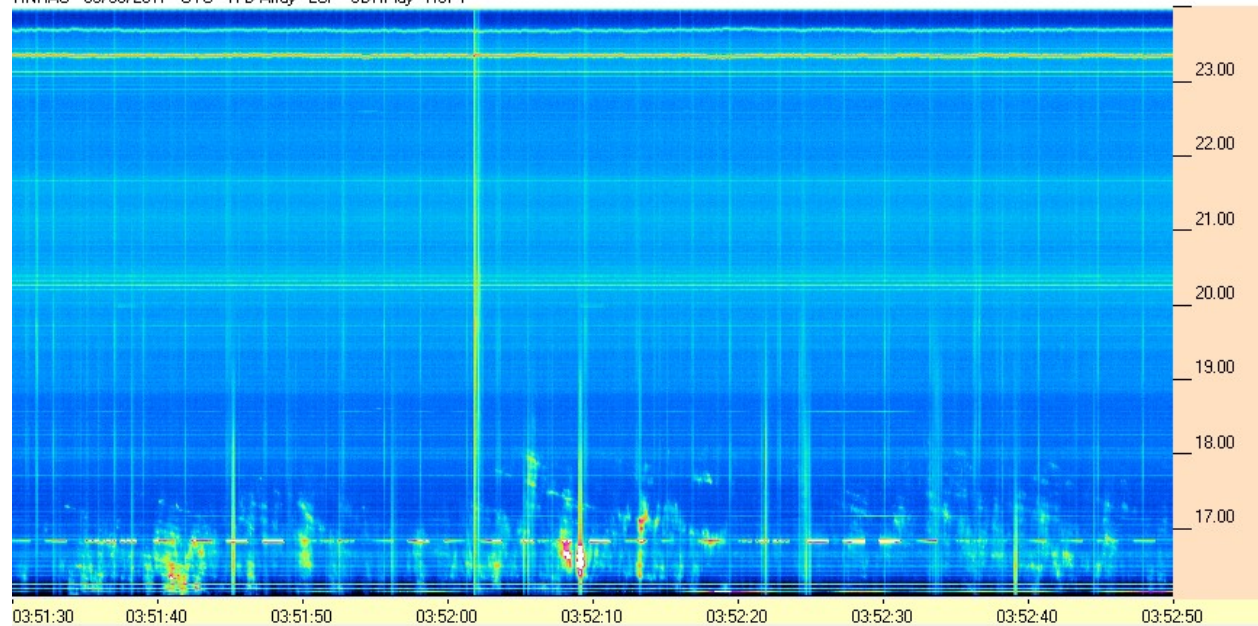
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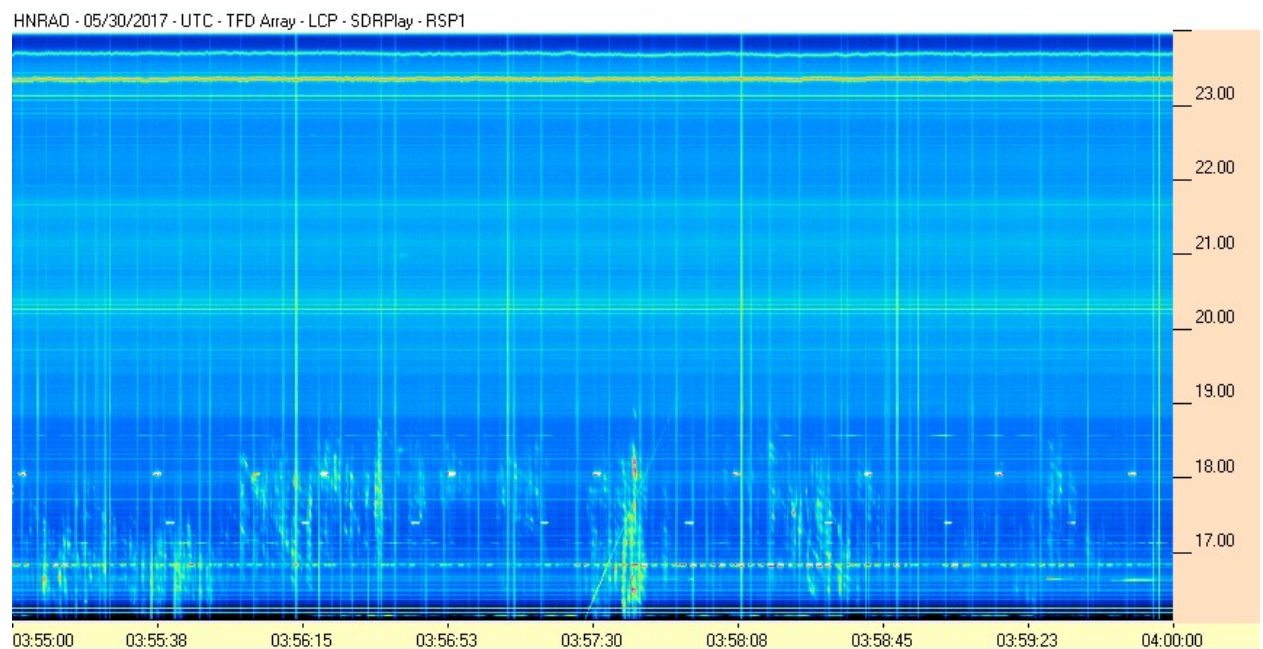
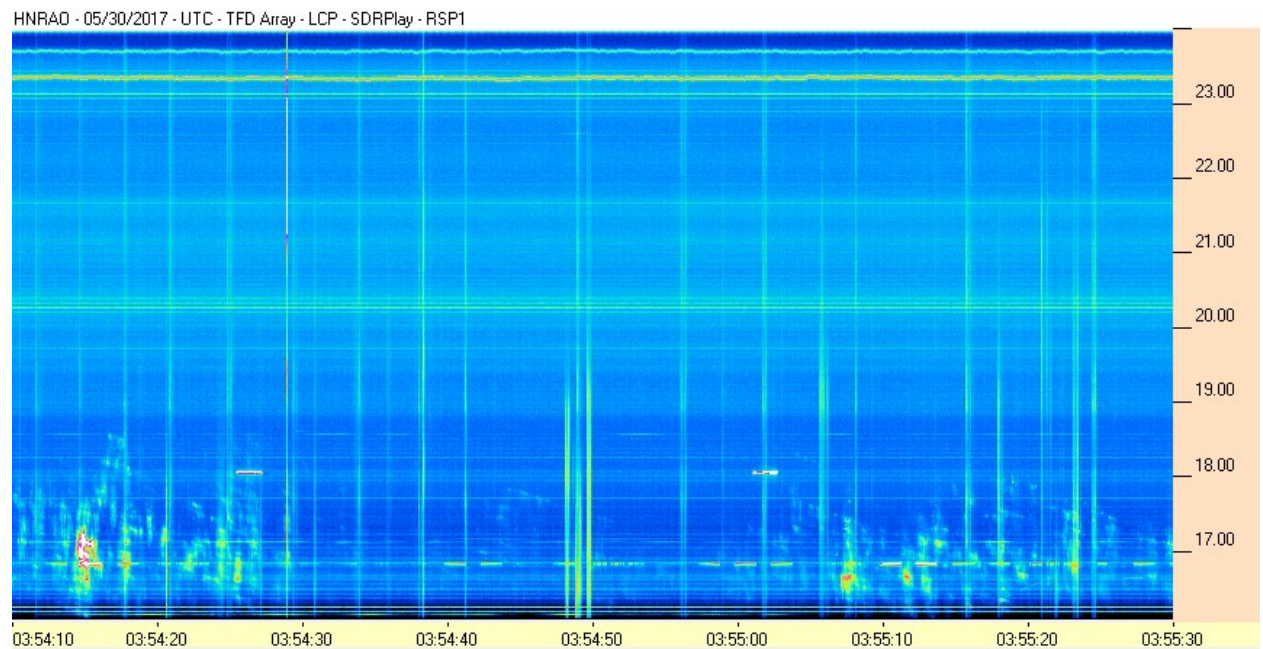
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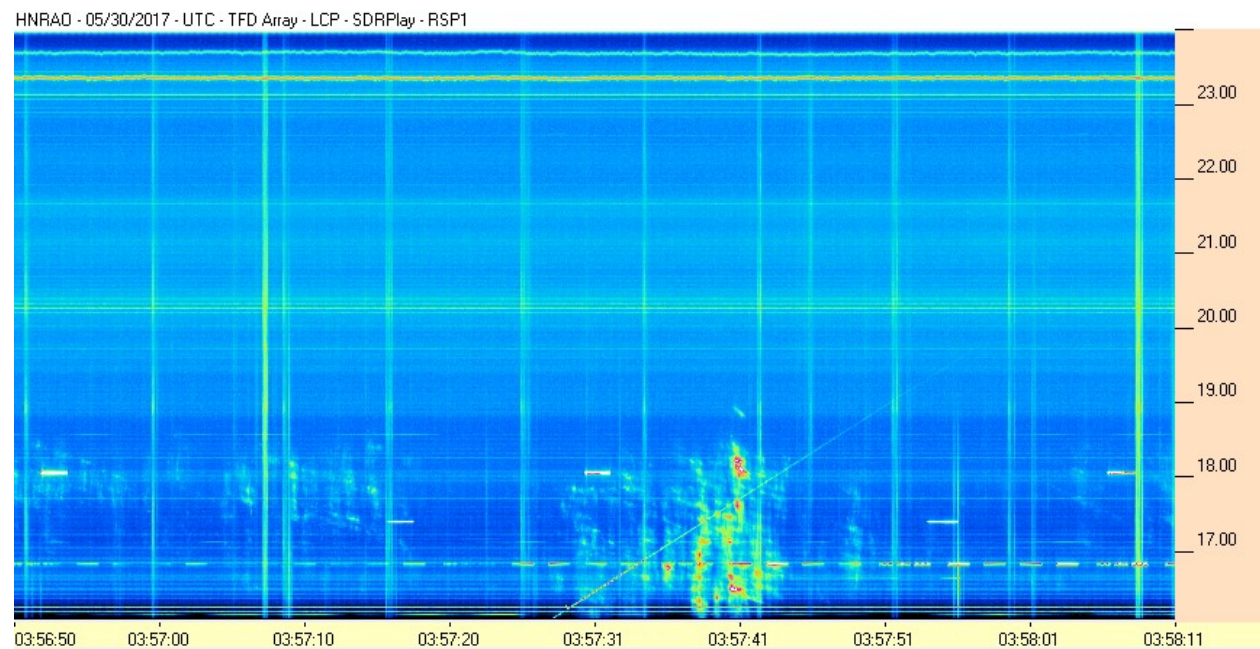


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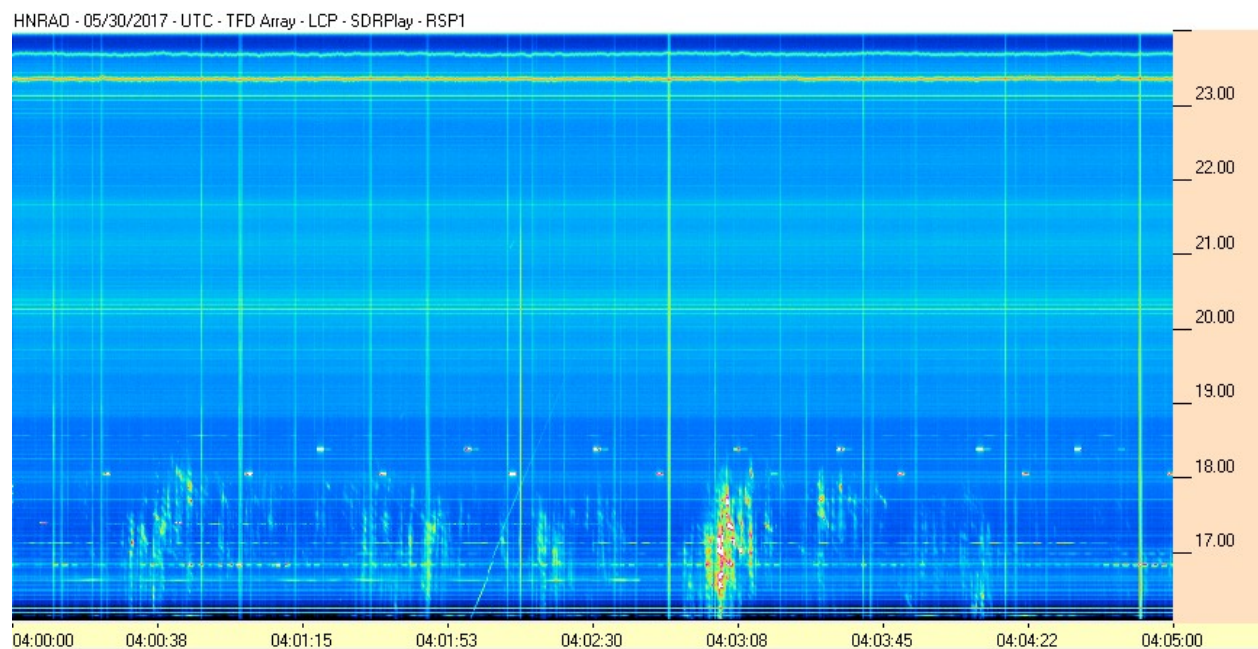
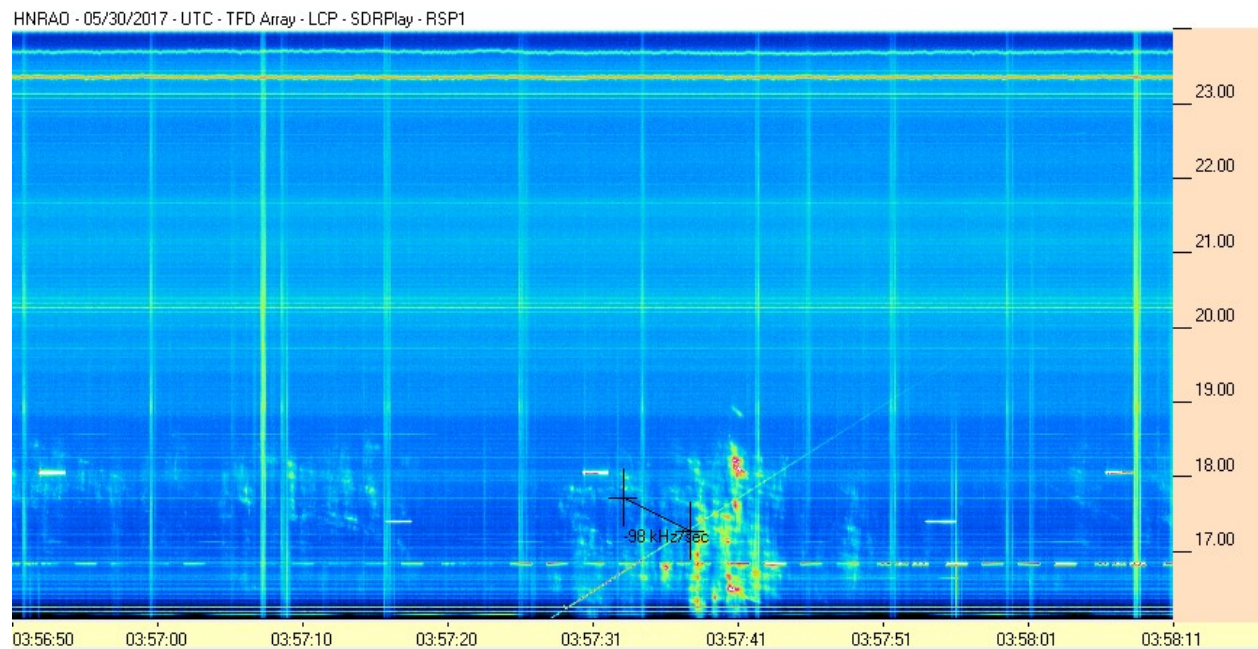


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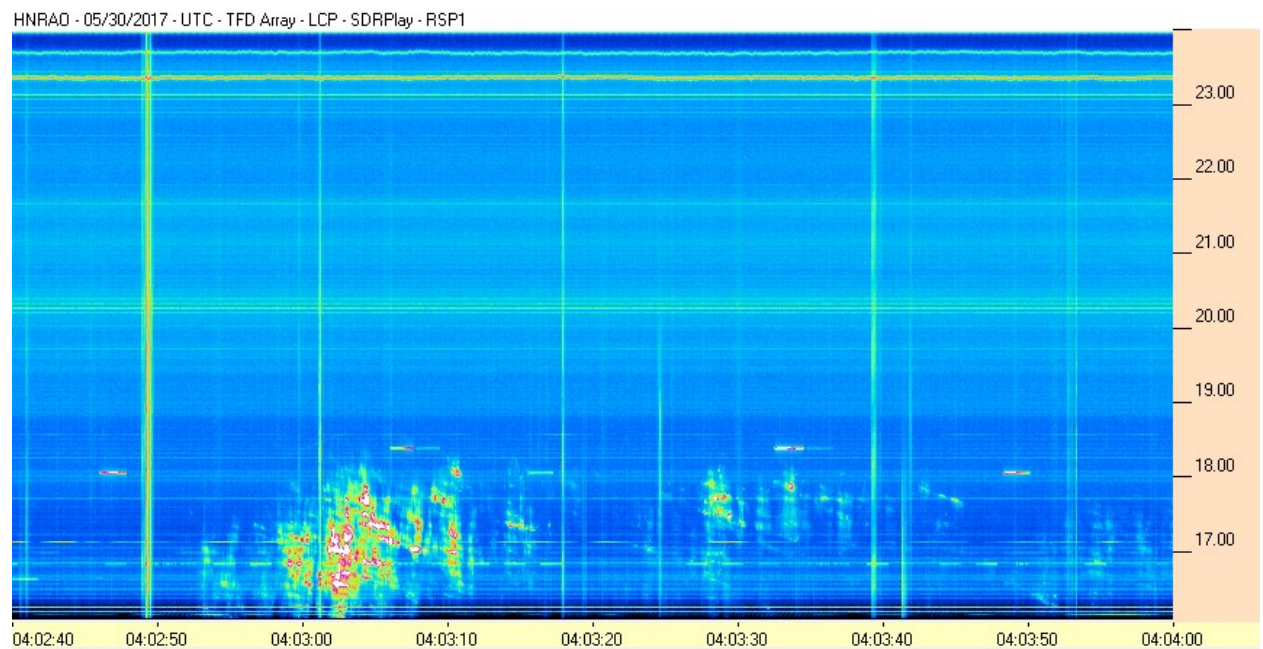
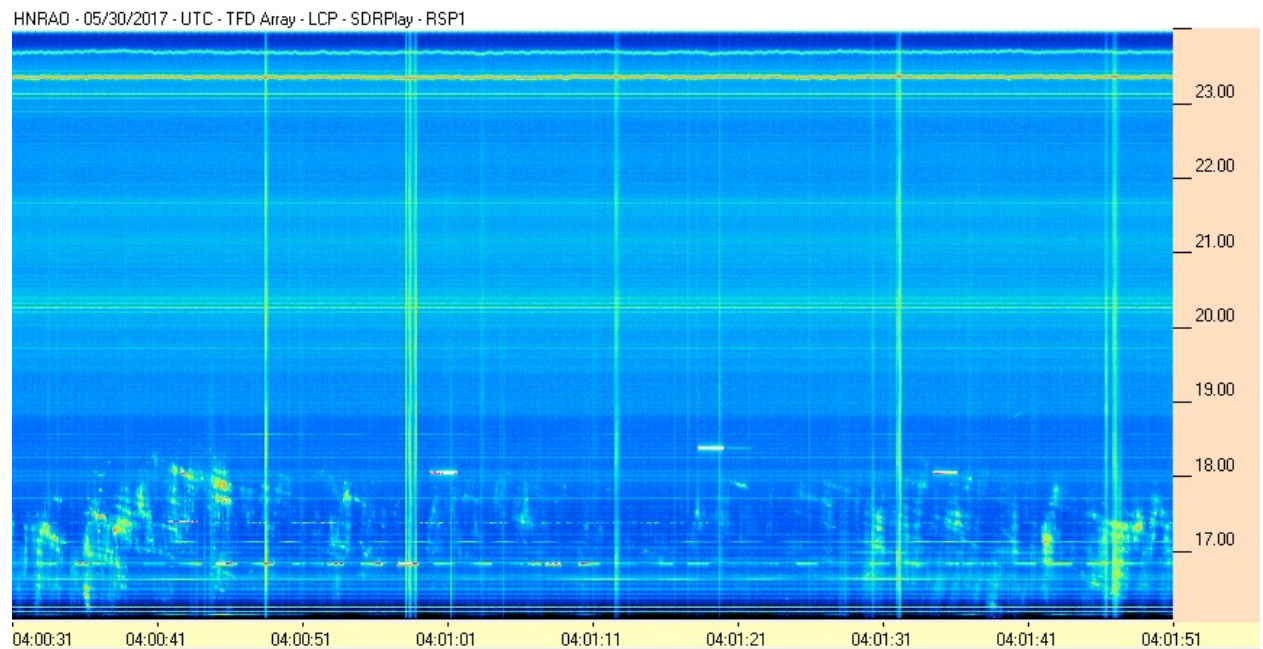




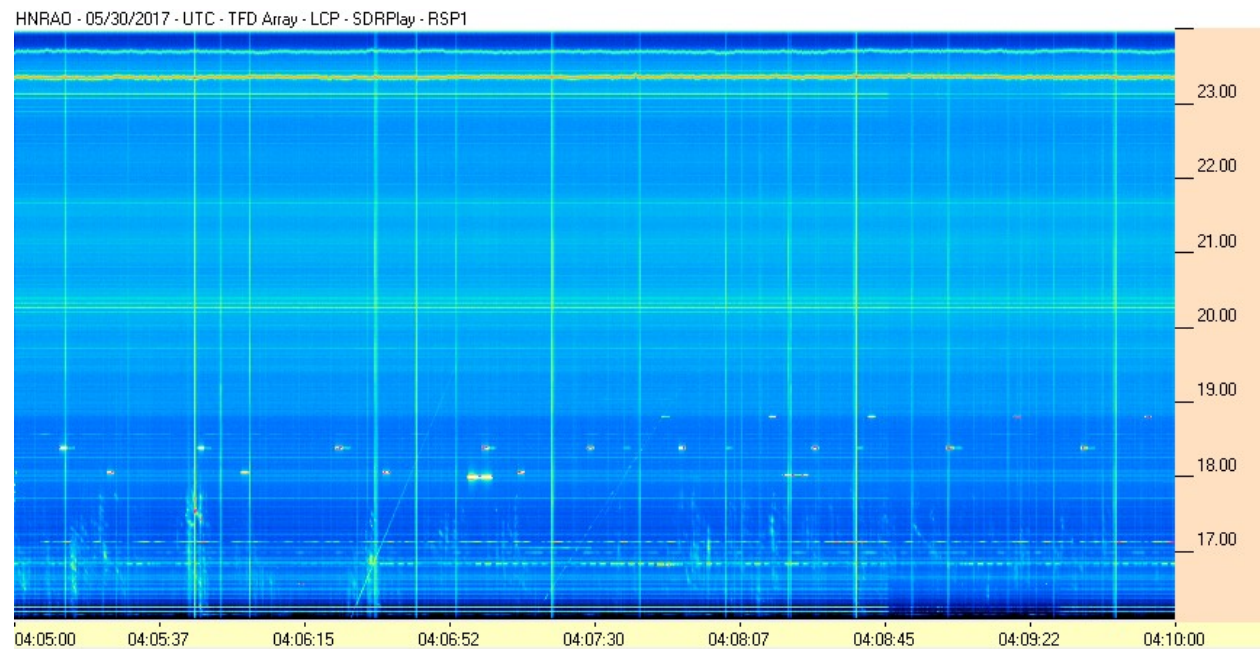
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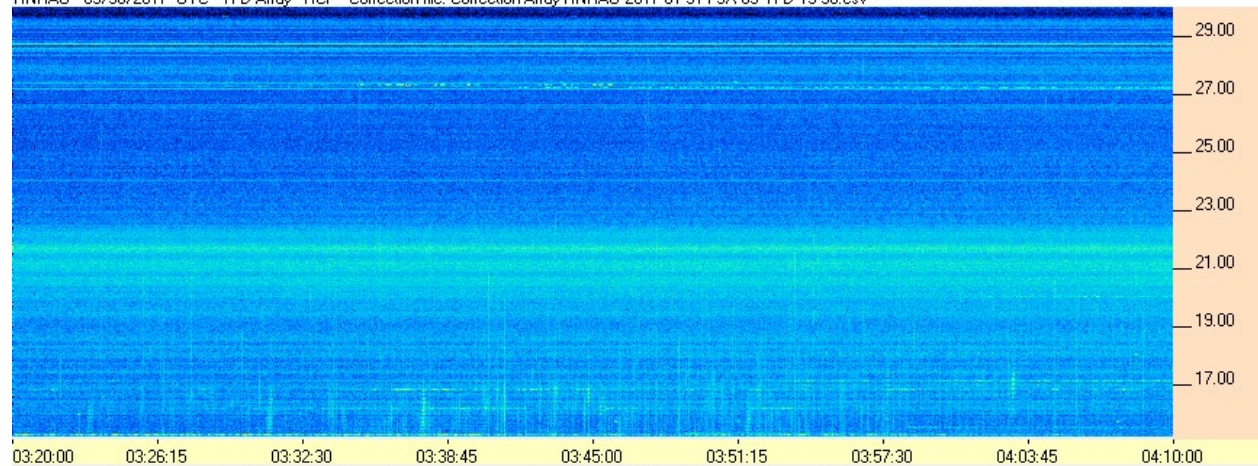


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FSX-8S/TFD Pair

HNRAO - 05/30/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



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