

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 29 March 2017

Object: Jupiter – Io-C

Observer: Unattended

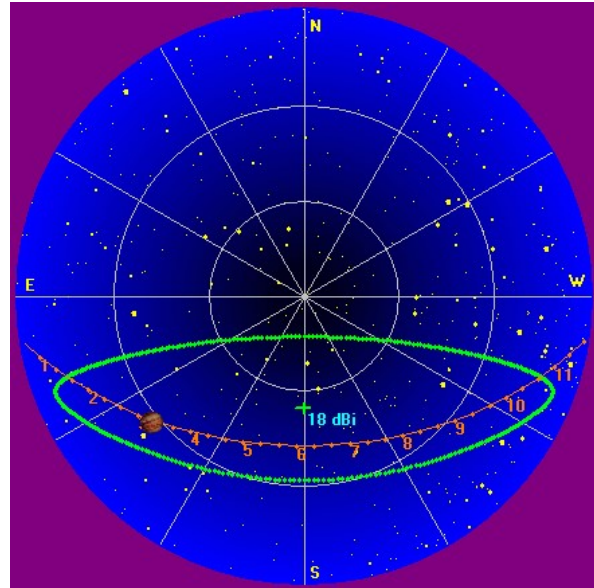
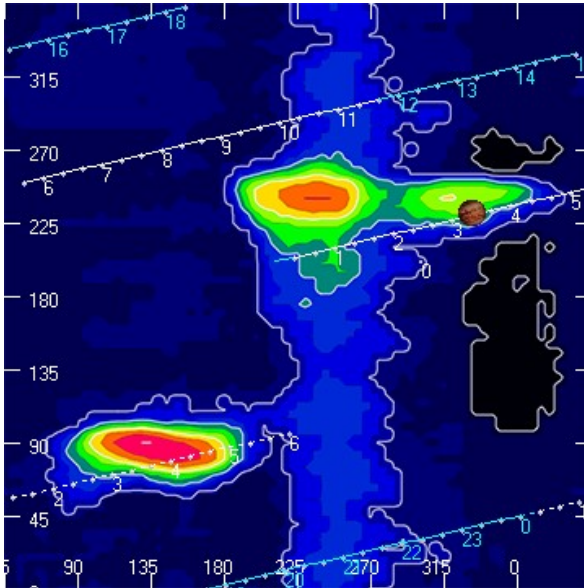
Start of pass:	0320 UT	Planetary K-index:	4
Jupiter Altitude:	29.3 degrees	Jupiter Azimuth:	130.0 degrees
Jupiter CML:	332.28	Jupiter Io Phase:	230.02
Jupiter RA:	13:14	Jupiter Dec:	-06:08
Hour Angle:	-02:49	Polarization	LCP
Sun Altitude:	-38.8 degrees	Sun Azimuth:	320.3 degrees
Sun RA:	00:25	Sun Dec:	02:40

End of pass:	0537 UT		
Jupiter Altitude:	42.6 degrees	Jupiter Azimuth:	169.3 degrees
Jupiter CML:	55.12	Jupiter Io Phase	249.55
Hour Angle:	-00:32		
Sun Altitude:	-46.4 degrees	Sun Azimuth:	006.3 degrees

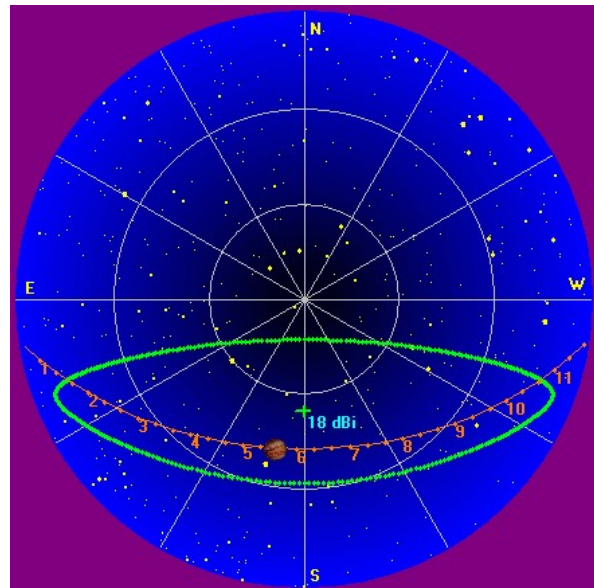
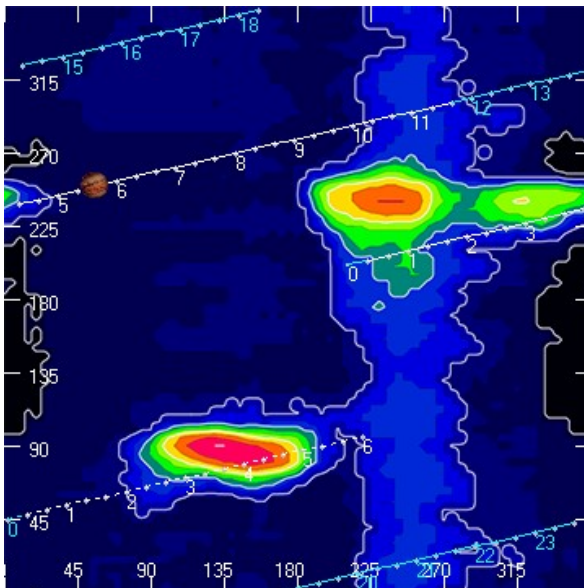
Observations made using:

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 @ 10'
 - a. 12' phase cable - phased for 2016-17 season
 - b. Calibrated 6 March 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 6 March 2017
5. SDRPlay
 - a. RSP1 (2) and RSP2 (1)

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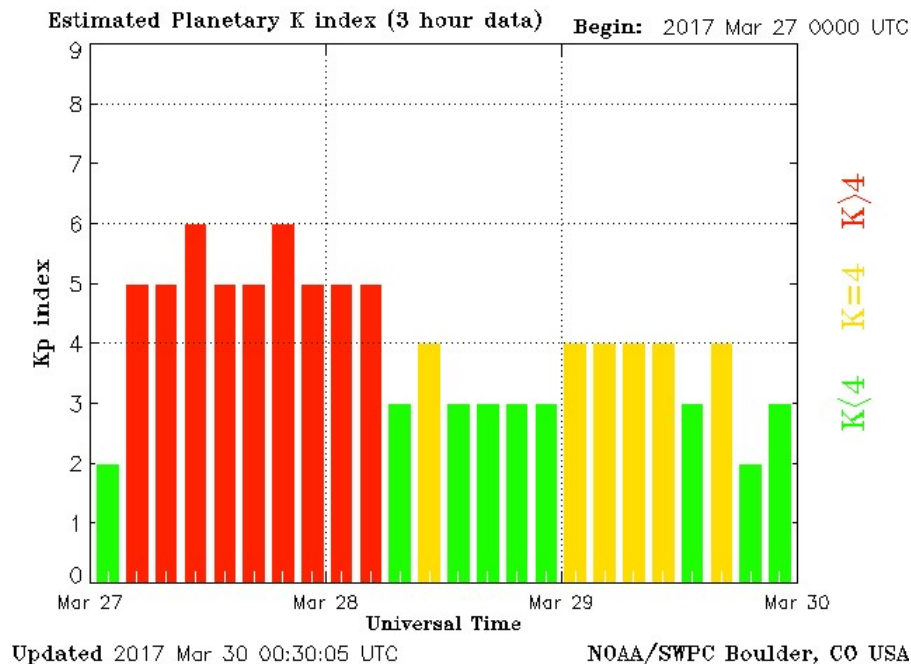


Beginning of Pass



End of Pass

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An Io-C storm containing some L-bursts at the beginning, then transitioning to some very strong S-bursts, and an impressive N-event at 0510 UT composed of S-bursts.

Emissions were observed here on the RSP1/TFD pair from 16 MHz to 18+ MHz. The FSX-8S spectrograph indicates activity as low as 15 MHz, perhaps lower.

Modulation lanes were difficult to resolve in this storm, but two measurements were made at -31 kHz/sec. and - 37 kHz/sec.

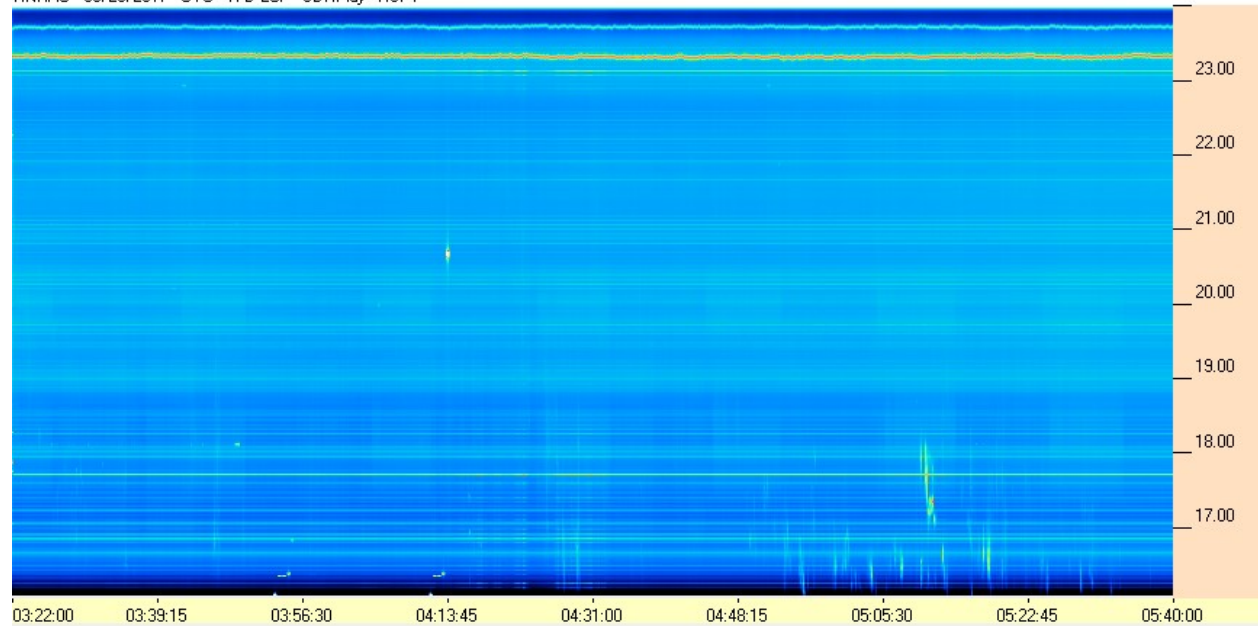
It might be noted that the strongest portion of the emissions were well beyond the accepted probability region for Io-C. The very strong N-event, for example, occurred in the 8% probability zone on the CML plane.

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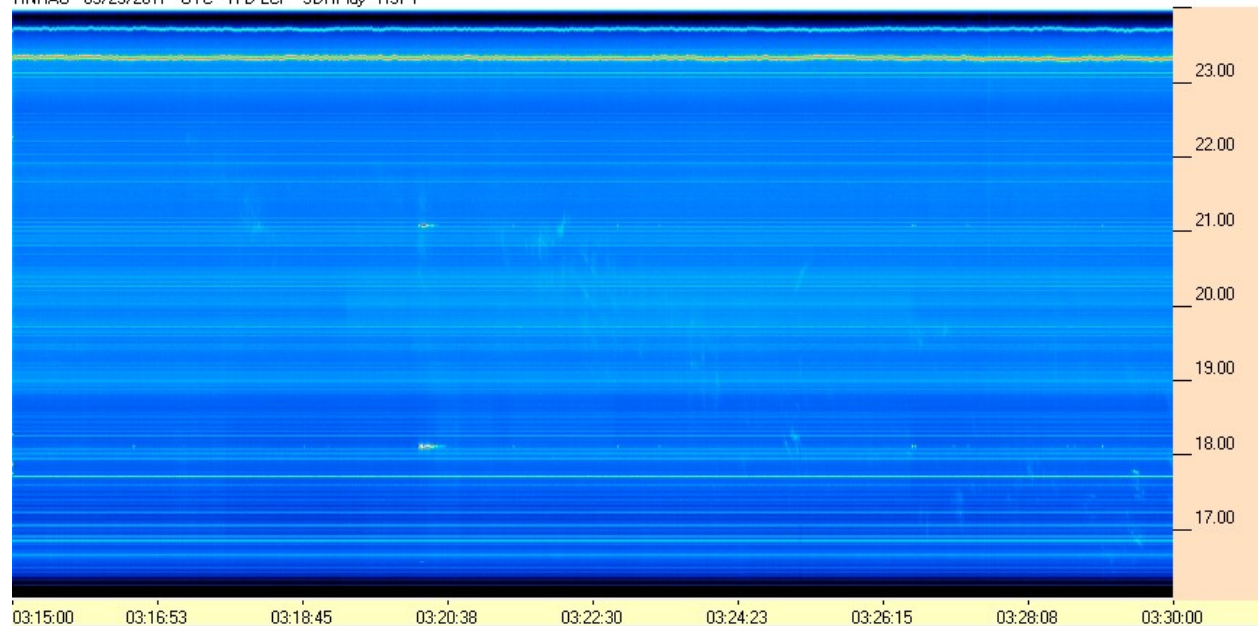


RSP1/TFD Pair

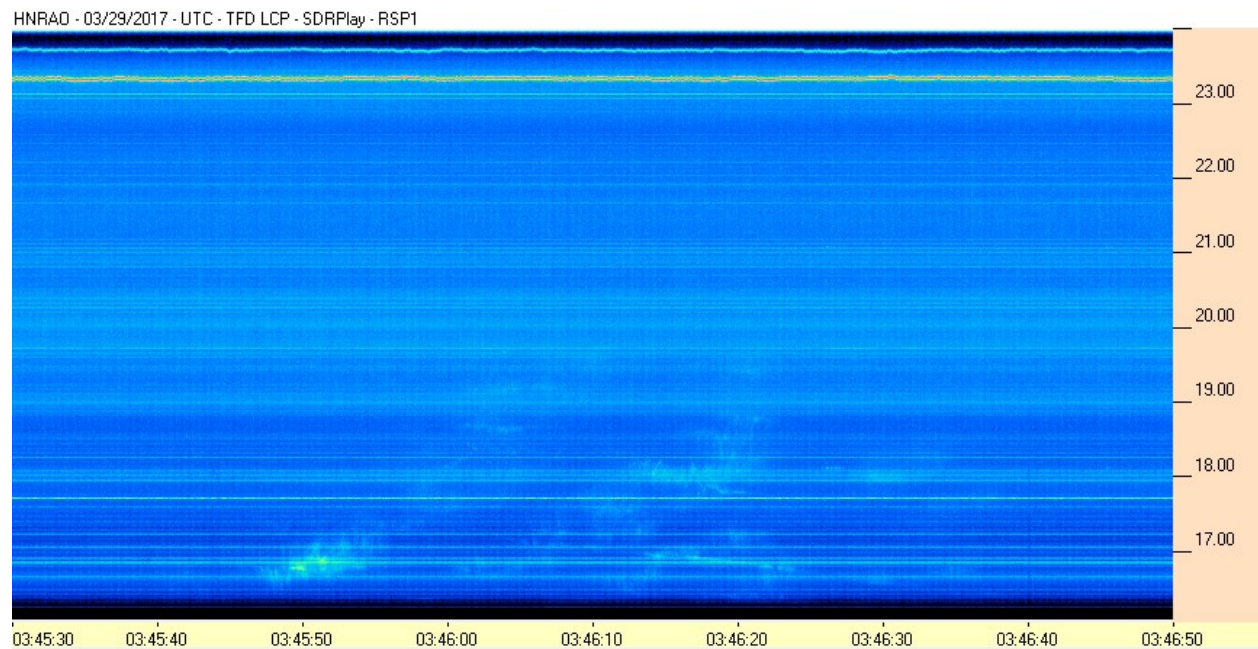
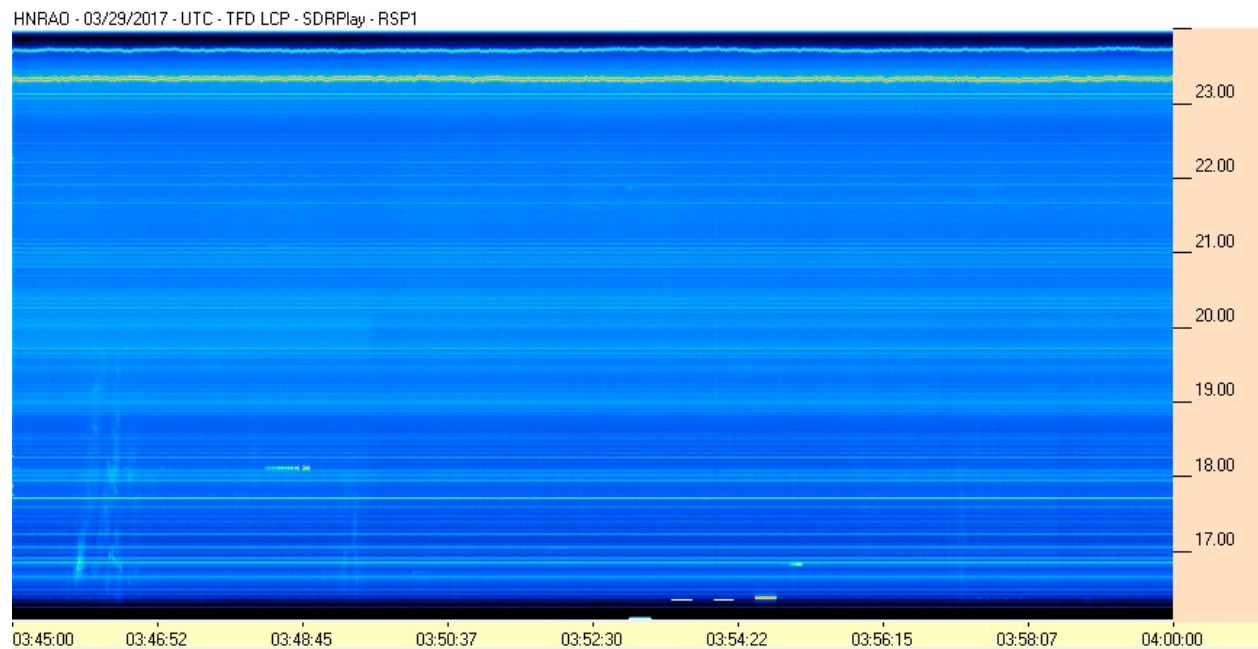
HNRAO - 03/29/2017 - UTC - TFD LCP - SDRPlay - RSP1



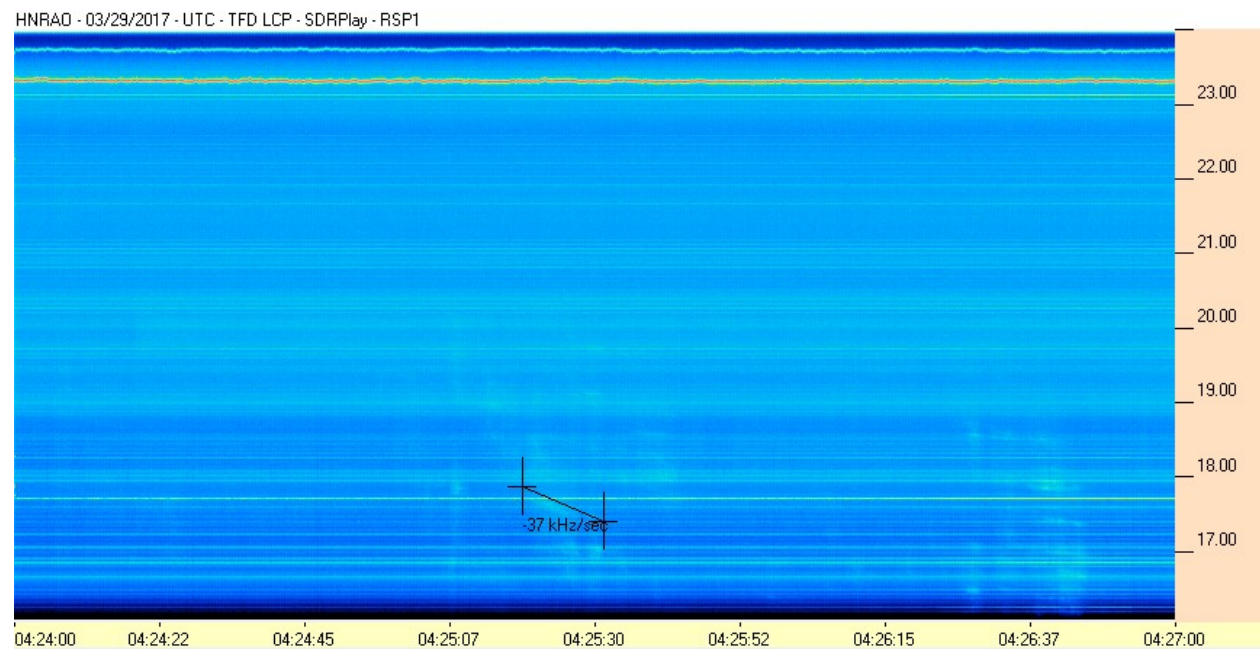
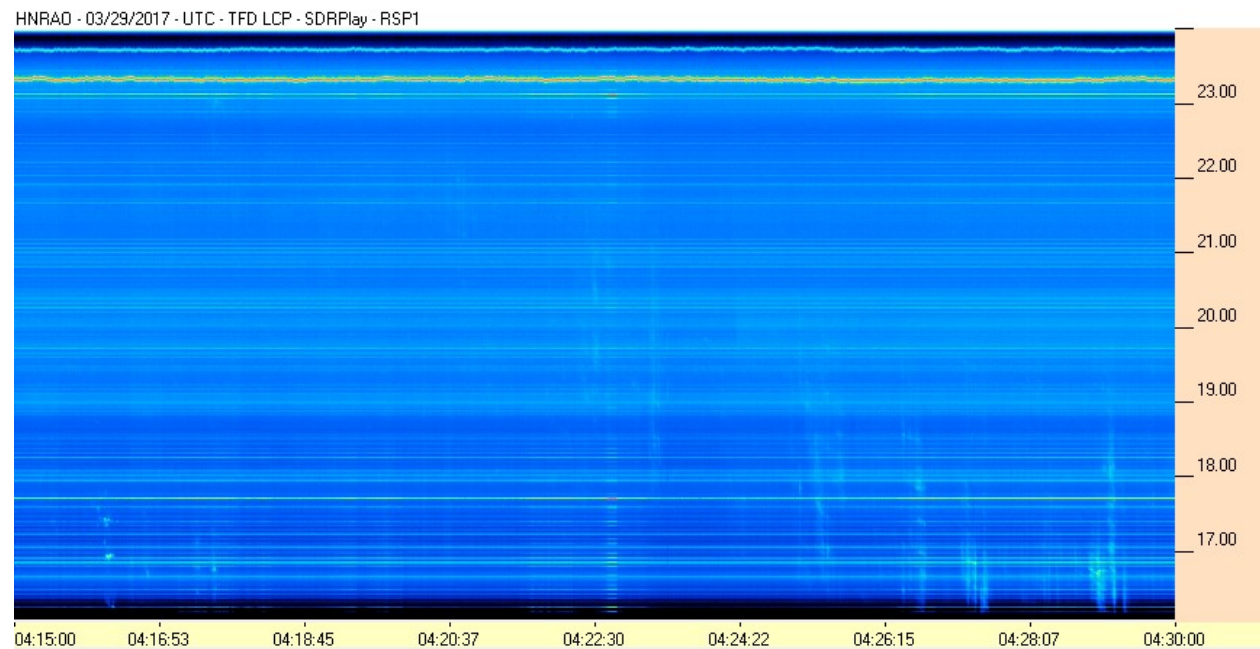
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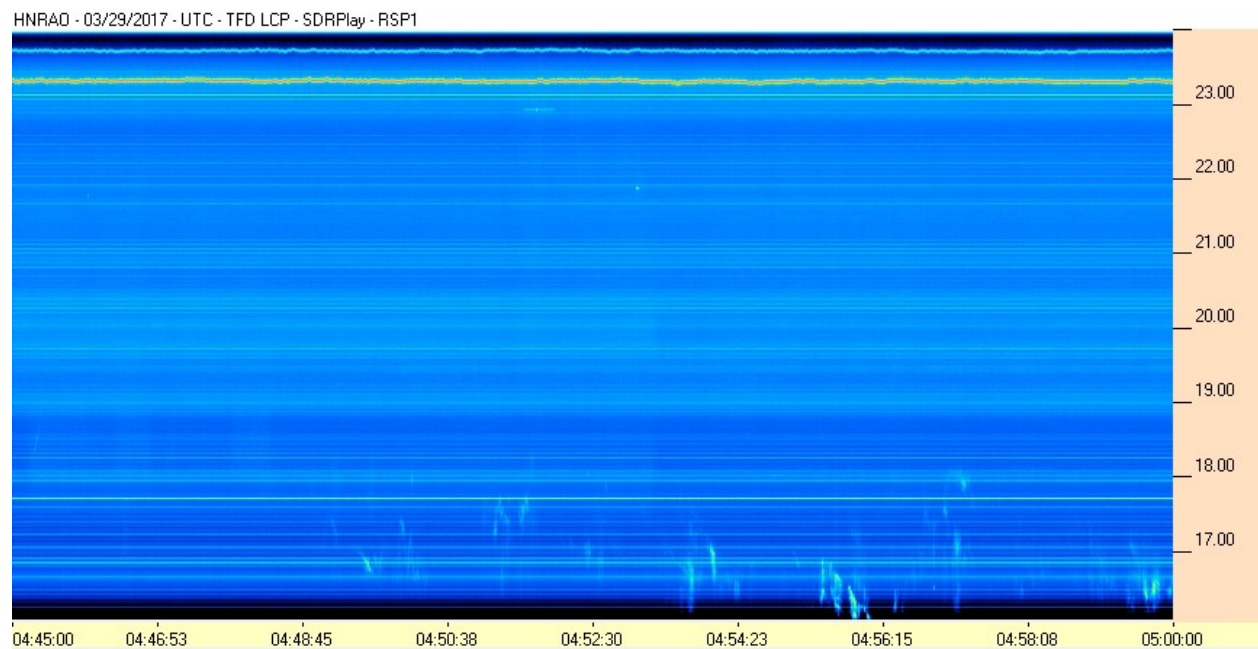
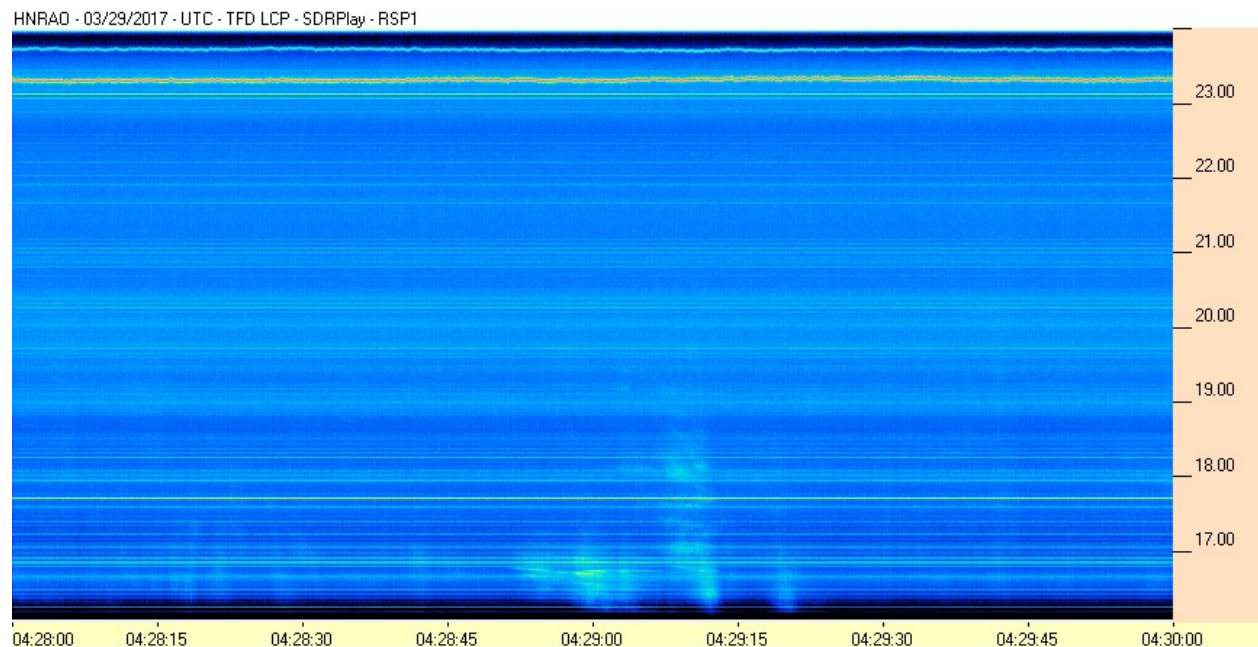
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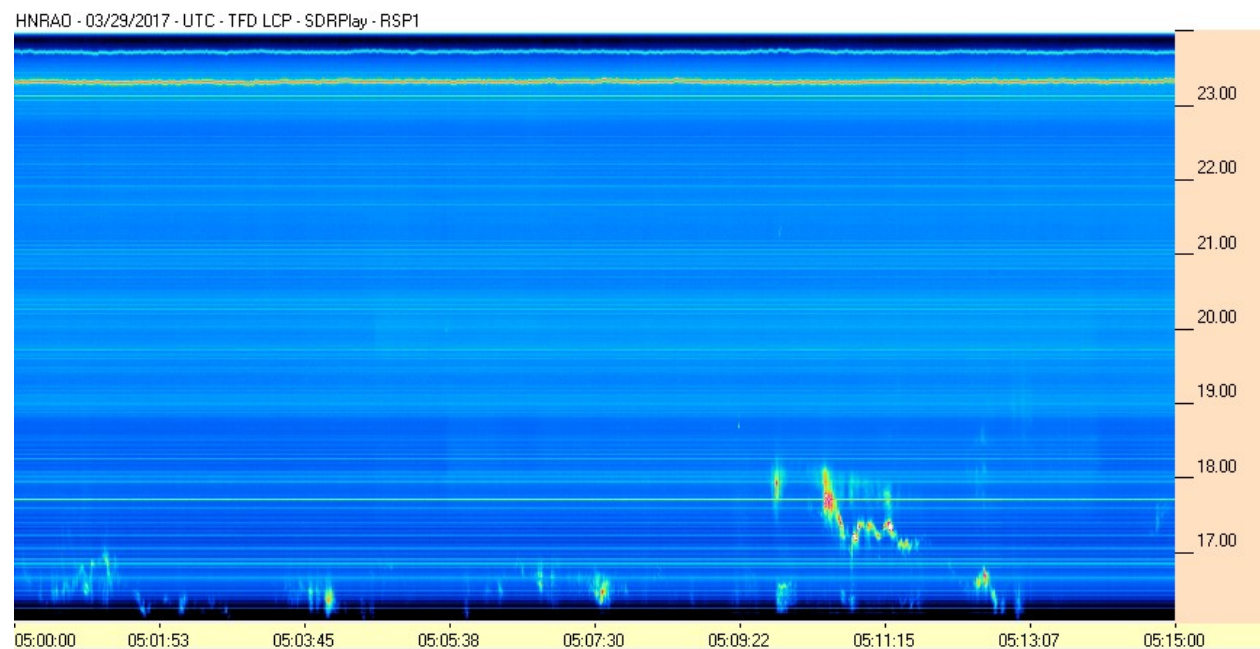
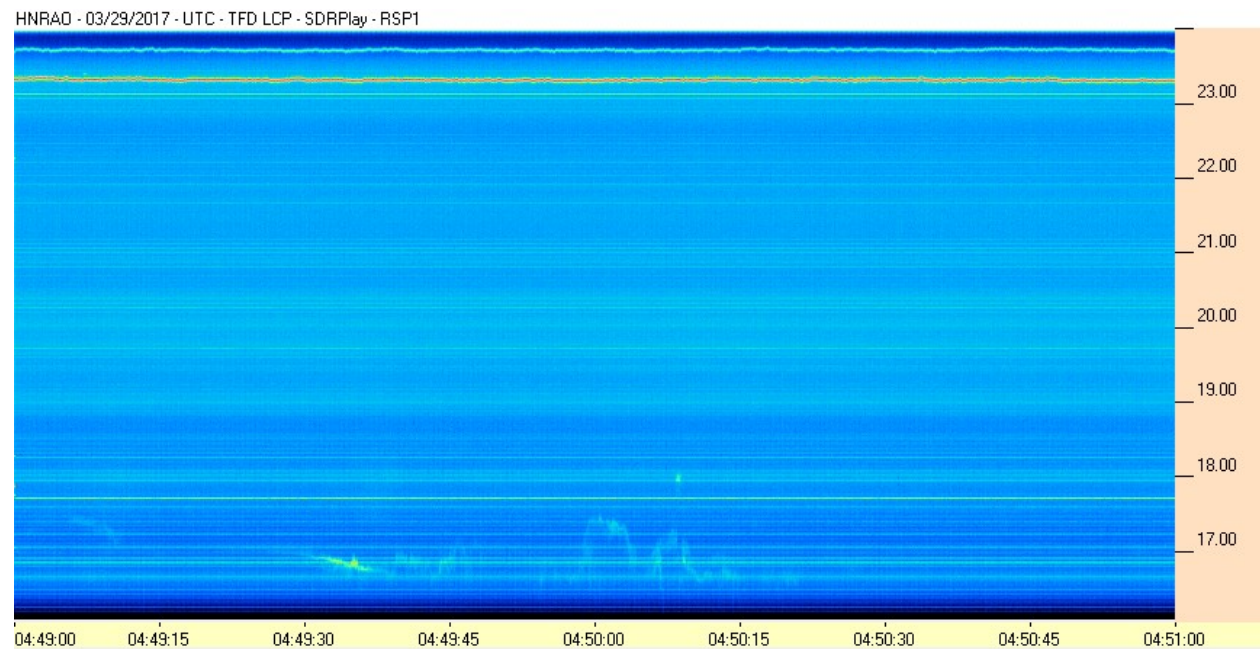
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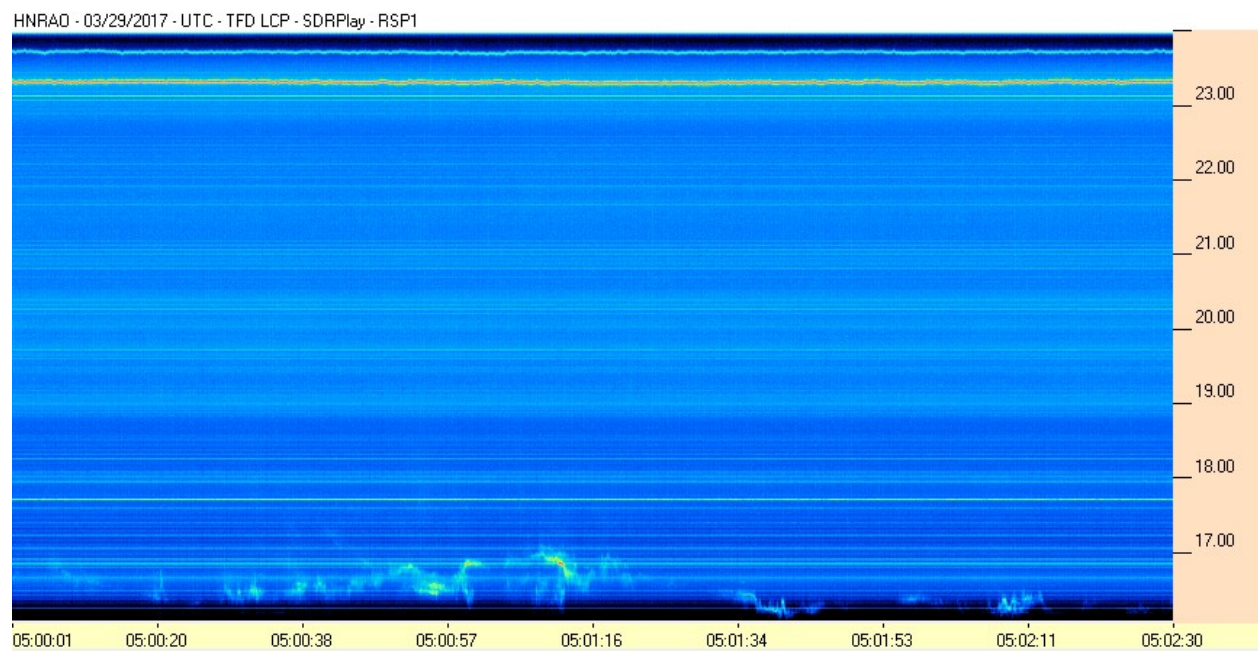
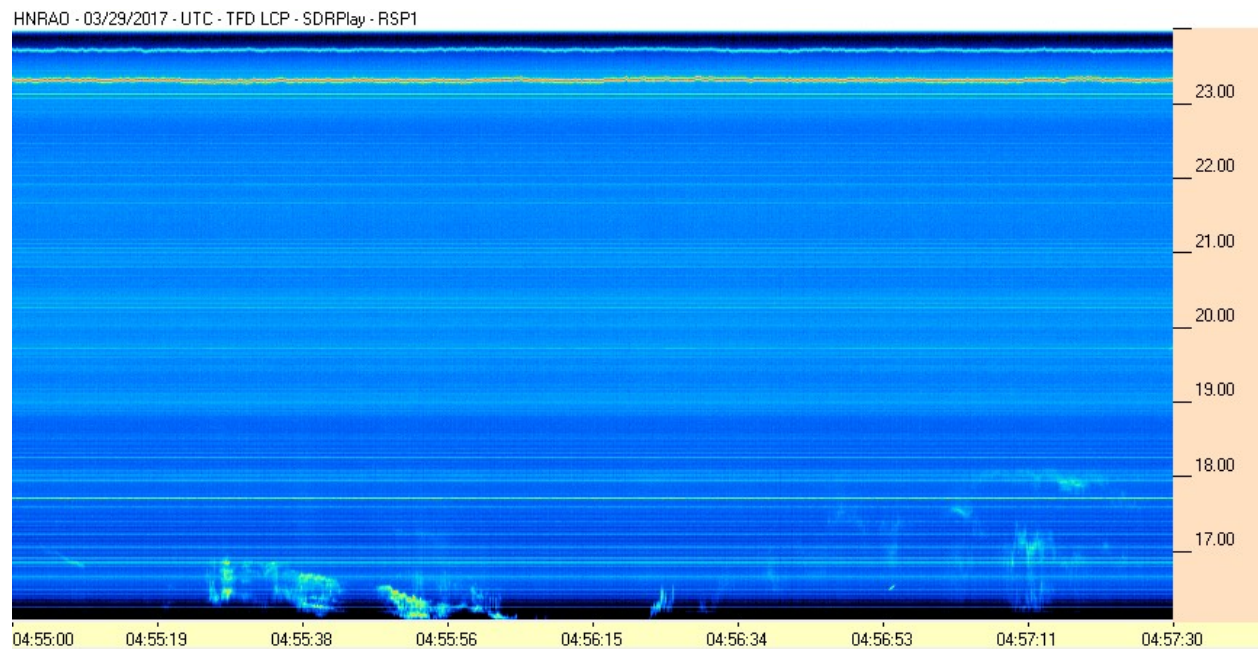
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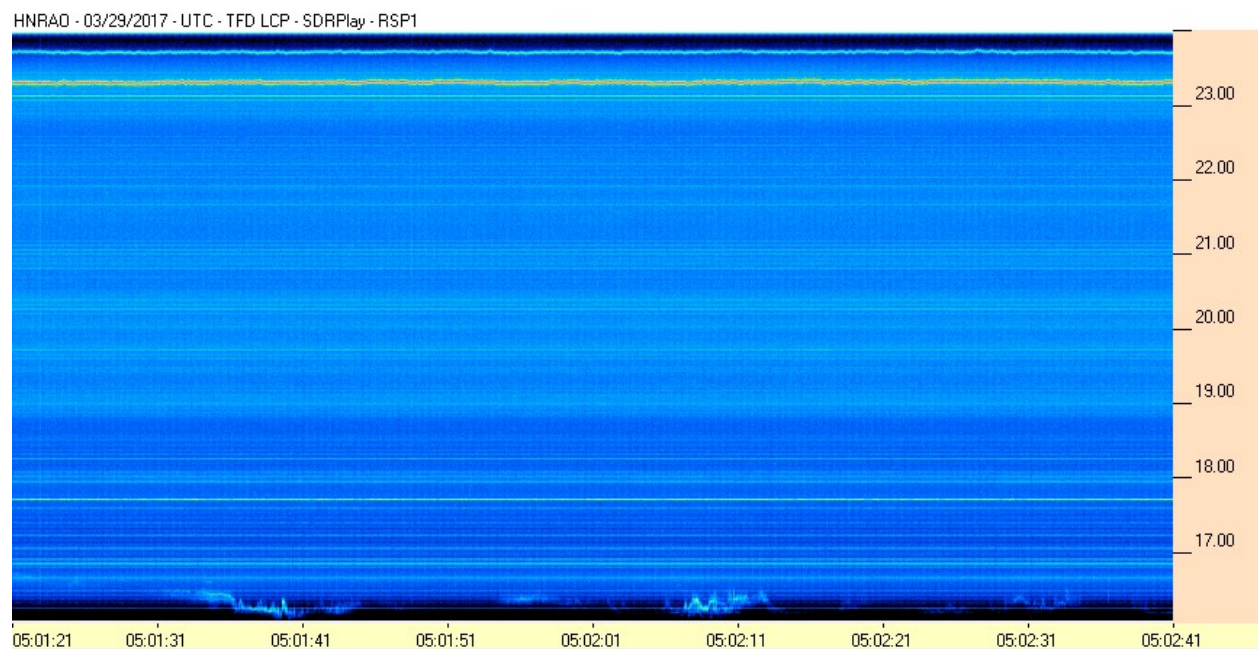
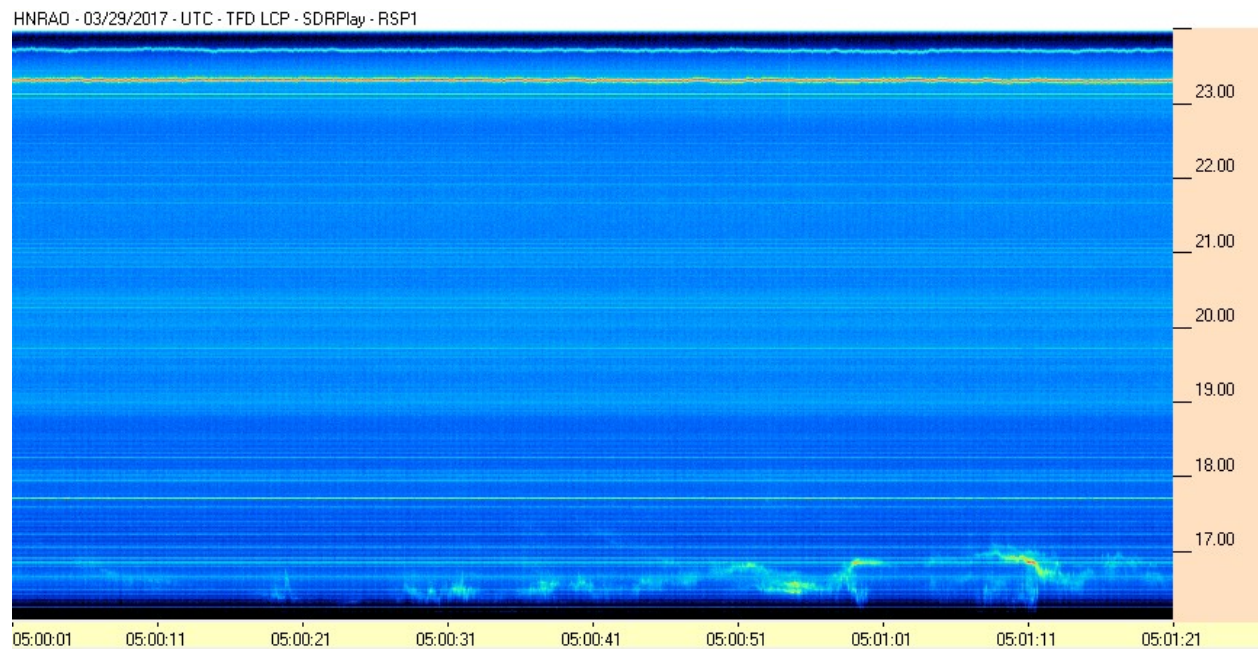
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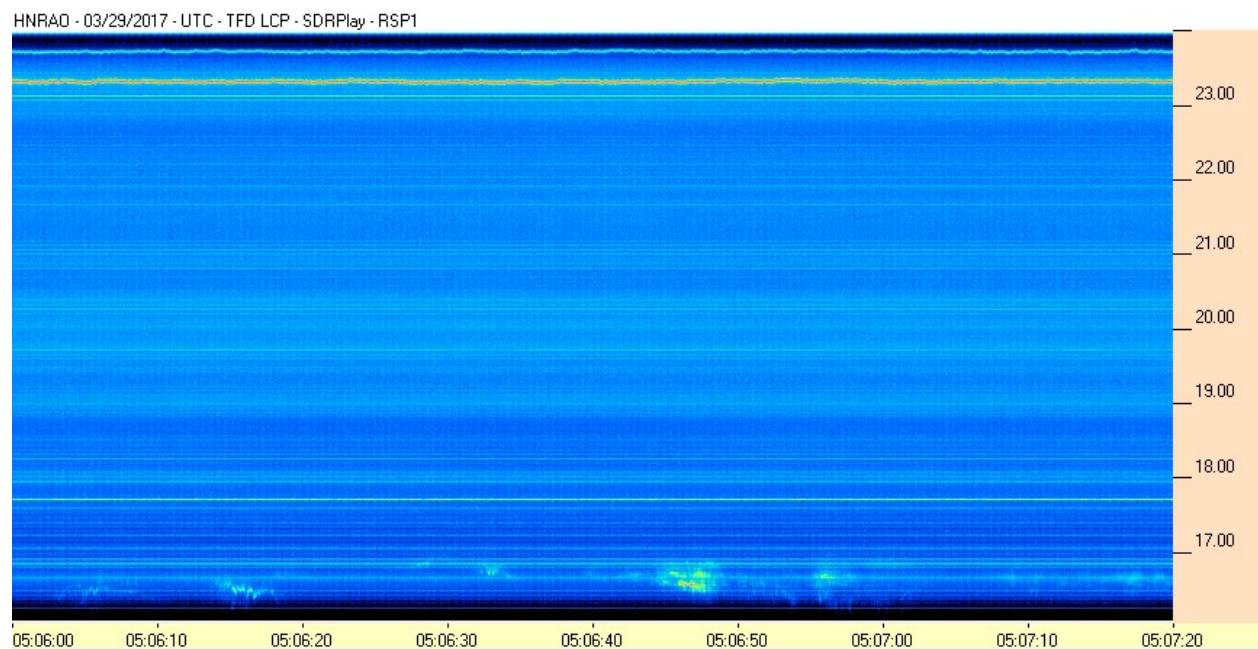
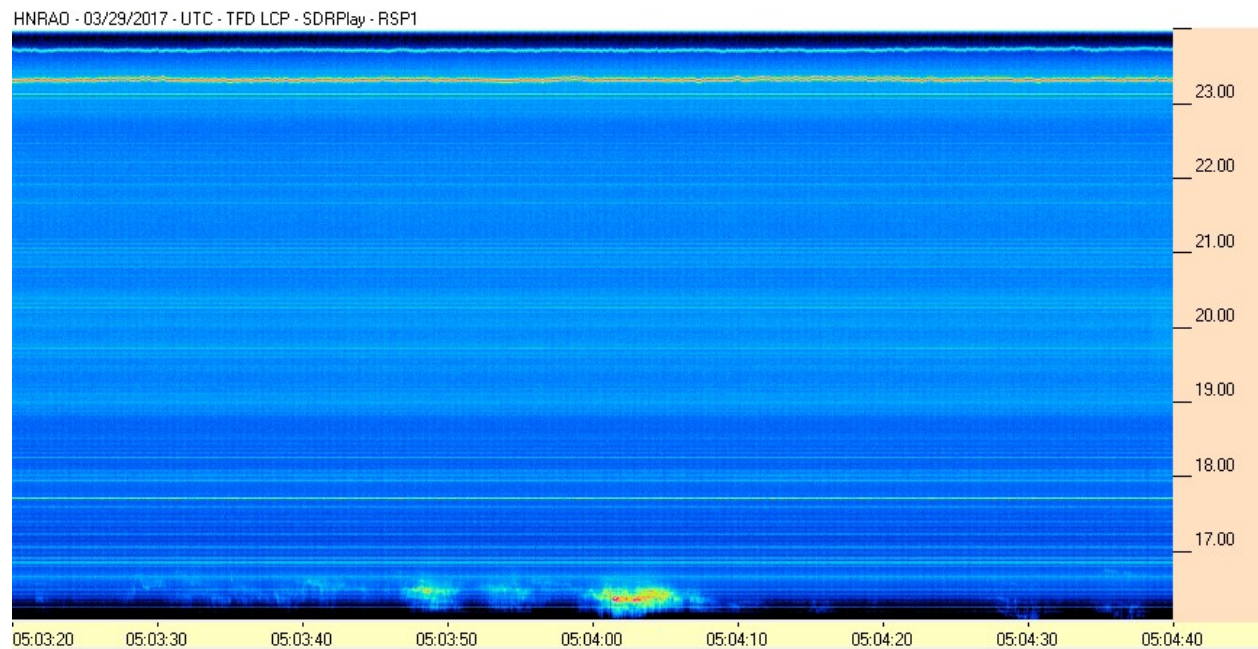
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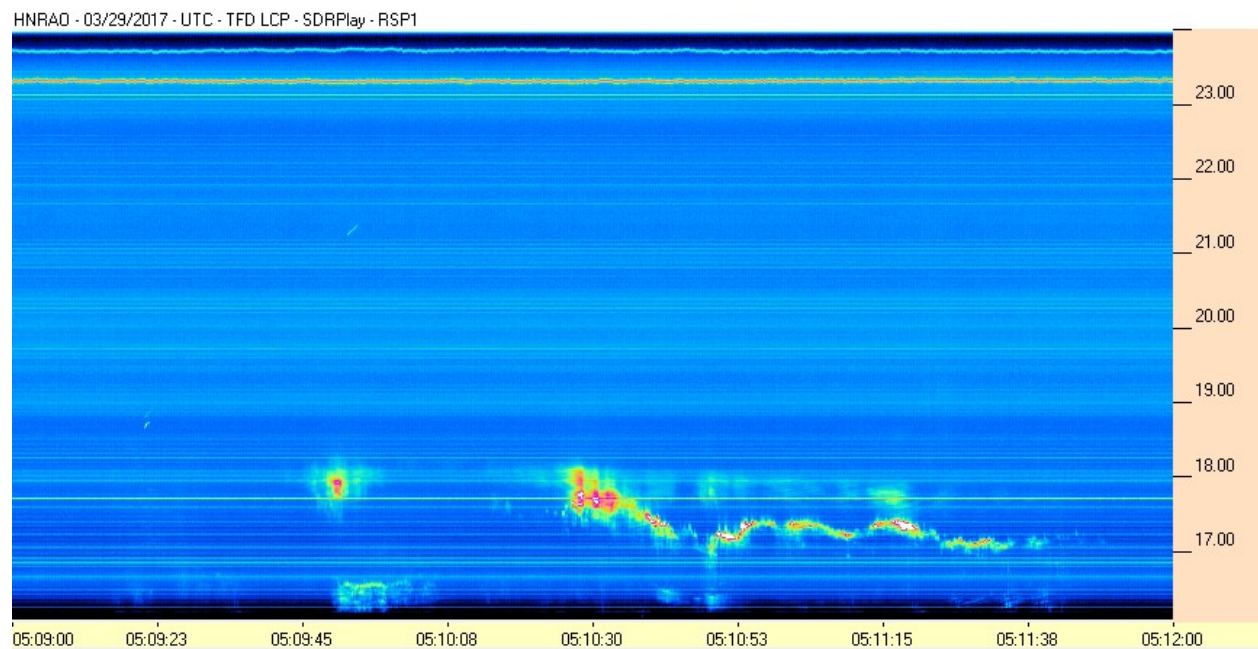
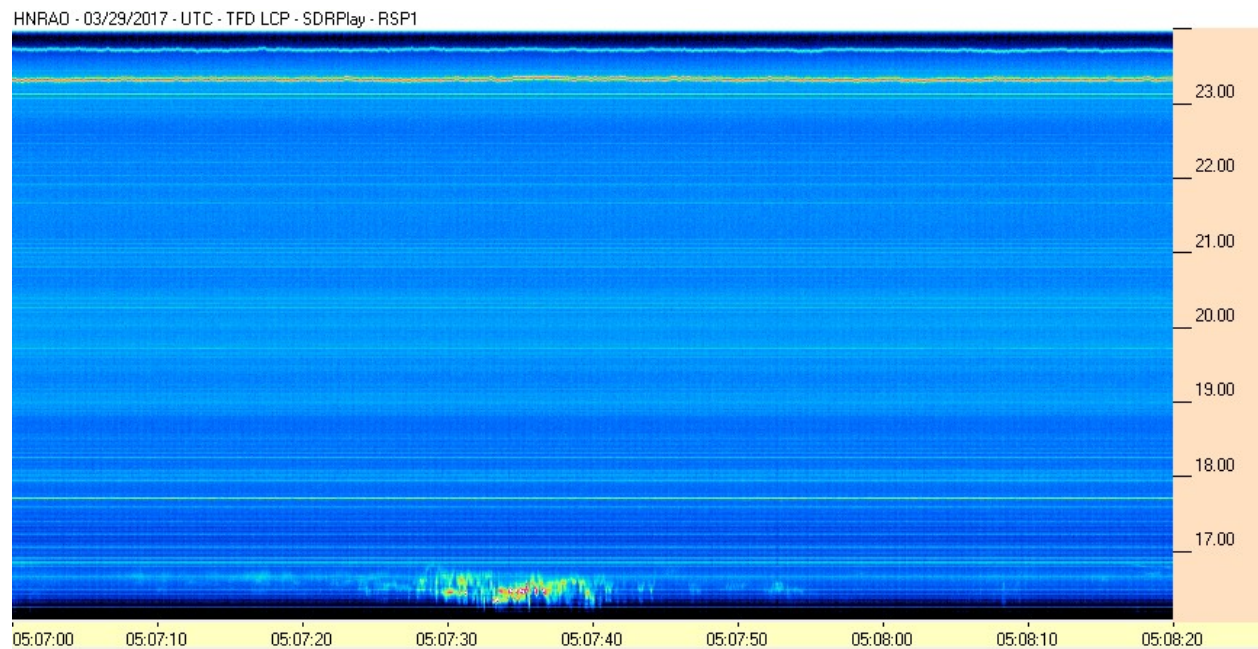
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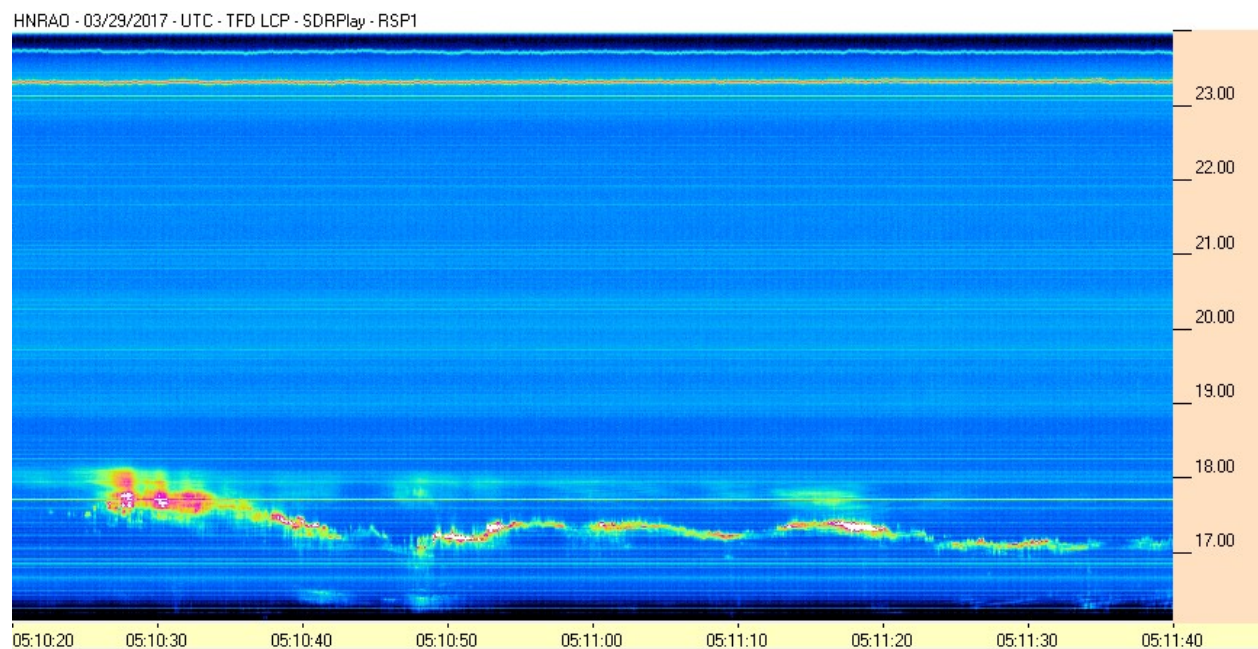
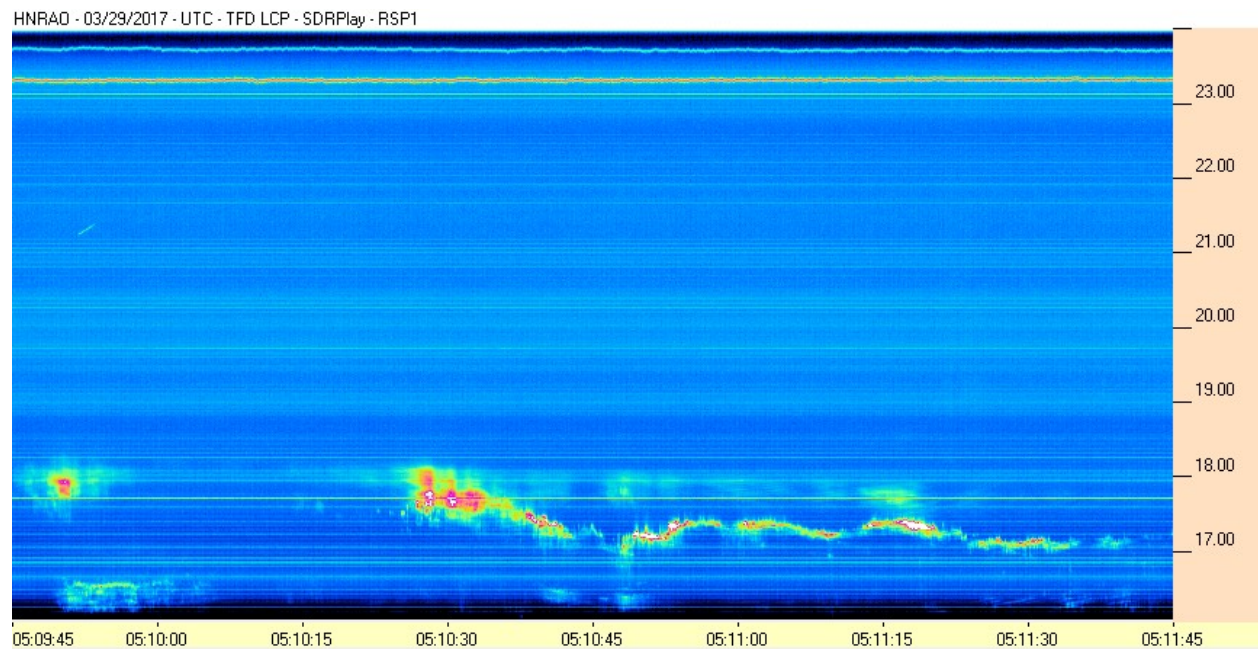
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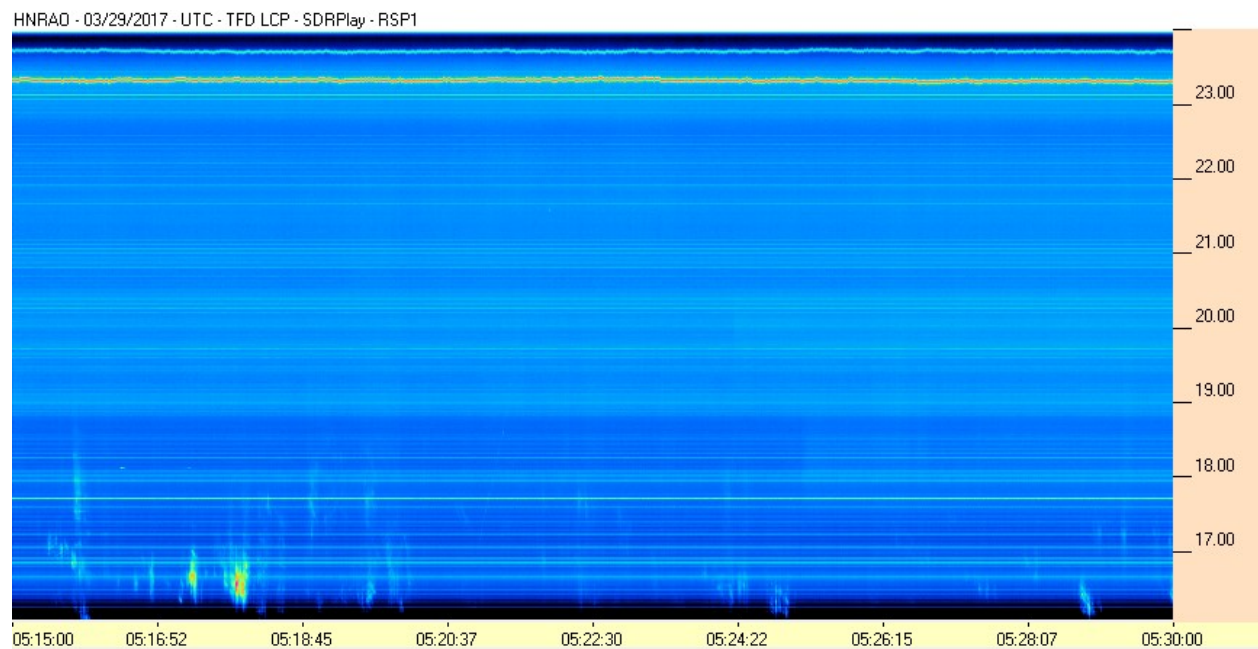
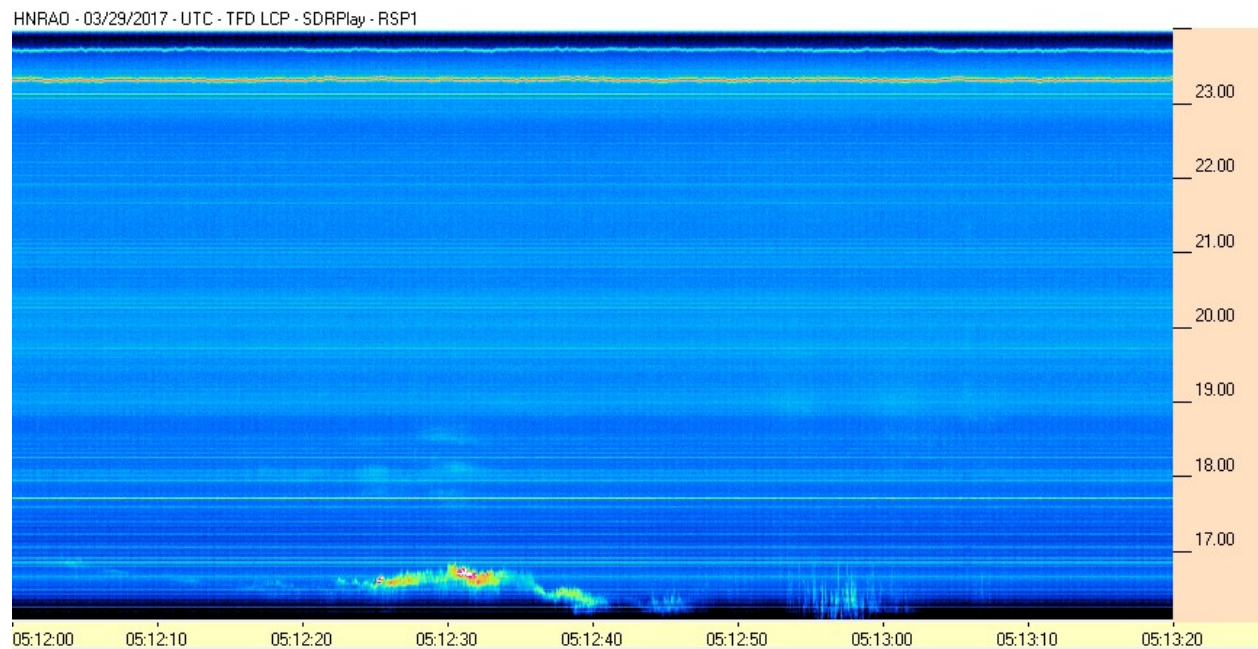
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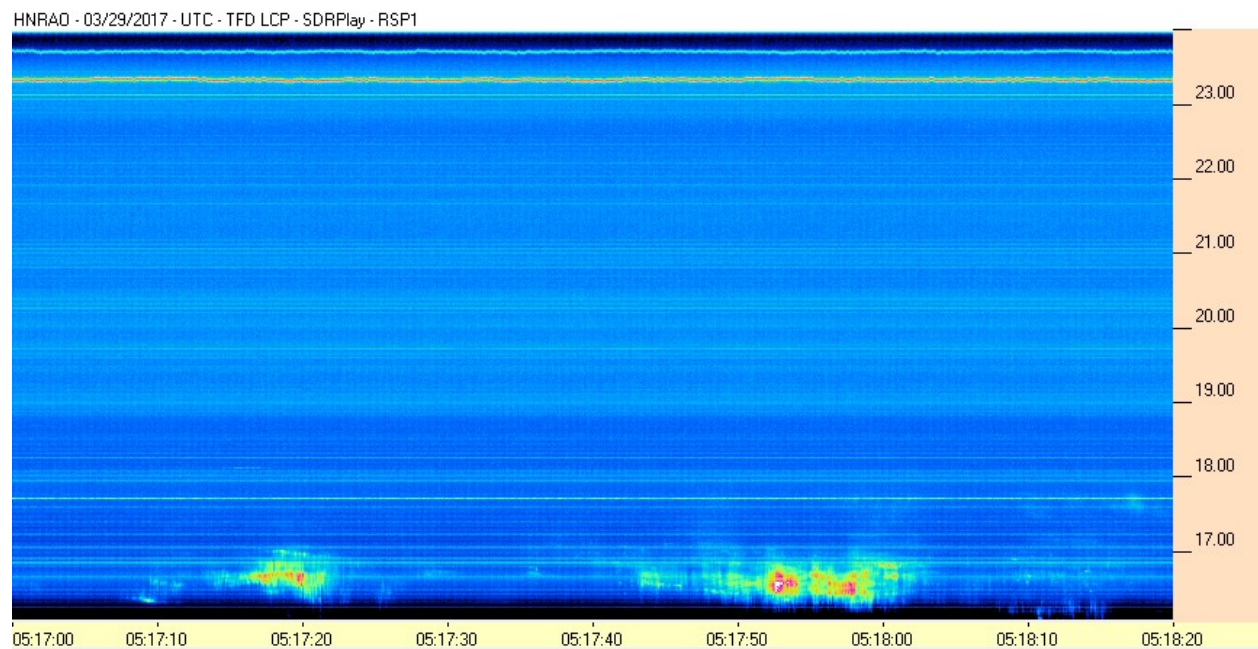
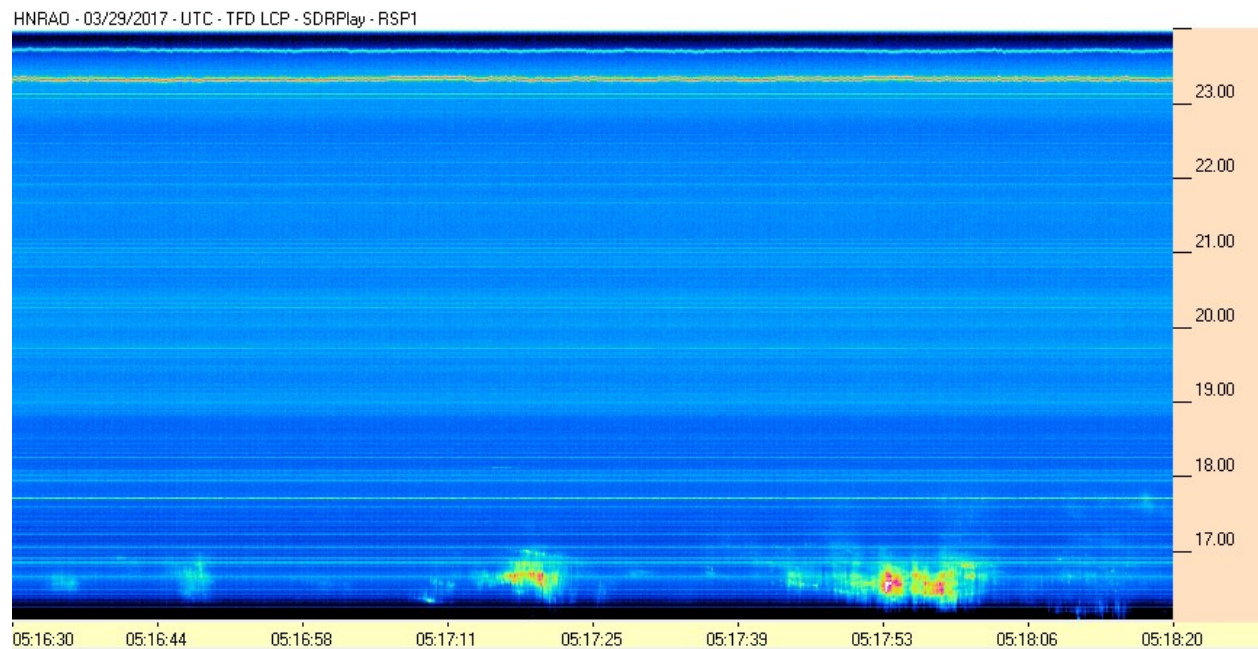
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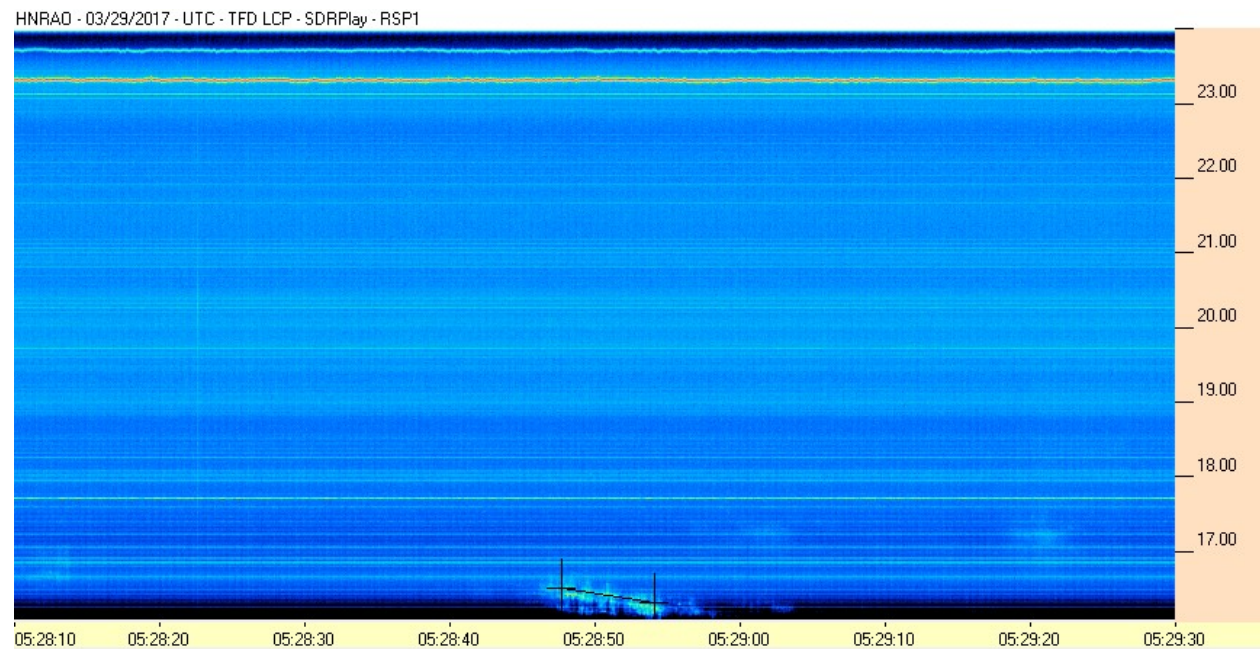


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-31 KHz/sec

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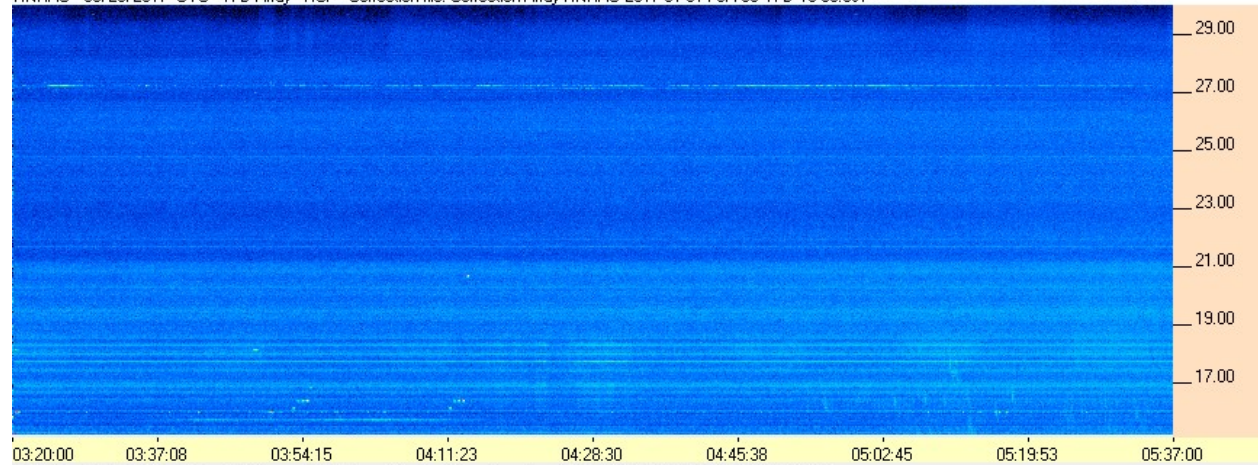


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FSX-8S/TFD Pair

HNRAO - 03/29/2017 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv



HNRAO - 03/29/2017 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv

