HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 28 December 2016

Object: Jupiter – Non-Io-A

Observer: Unattended

Start of pass:	**1034 UT**		
Jupiter Altitude:	**37.7 degrees**	**Jupiter Azimuth:**	**149.5 degrees**
Jupiter CML:	**208.92**	**Jupiter Io Phase:**	**131.16**
Jupiter RA:	**13:17**	**Jupiter Dec:**	**-06:45**
Sun Altitude:	**-22.5 degrees**	**Sun Azimuth:**	**102.1 degrees**
Sun RA:	**18:23**	**Sun Dec:**	**-23:20**

End of pass:	**1043 UT**		
Jupiter Altitude:	**38.6 degrees**	**Jupiter Azimuth:**	**152.1 degrees**
Jupiter CML:	**214.36**	**Jupiter Io Phase**	**132.43**
Jupiter RA:	**13:17**	**Jupiter Dec:**	**-06:45**
Sun Altitude:	**-20.8 degrees**	**Sun Azimuth:**	**103.4 degrees**
Sun RA:	**18:23**	**Sun Dec:**	**-23:20**

Observations made using:

1. FSX-8S fed by the TFD array
    a. Initially connect to array through HNRAO Multicoupler #1 and #2, port 2
        i. HNRAO Multicoupler #1 – TFD/LCP
        ii. HNRAO Multicoupler #2 – TFD/RCP
        iii. Port 1 having 10 dB of gain, all other ports on Multicoupler have approximately 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’ – phased for 2016-17 season
    a. Calibrated 28 Nov. 2016
    b. Connected to dipoles through HNRAO Multicoupler #3, port 1.
4. Icom R75 receiver fed by experimental DDRR antenna directly.
    a. Calibrated 28 Nov. 2016

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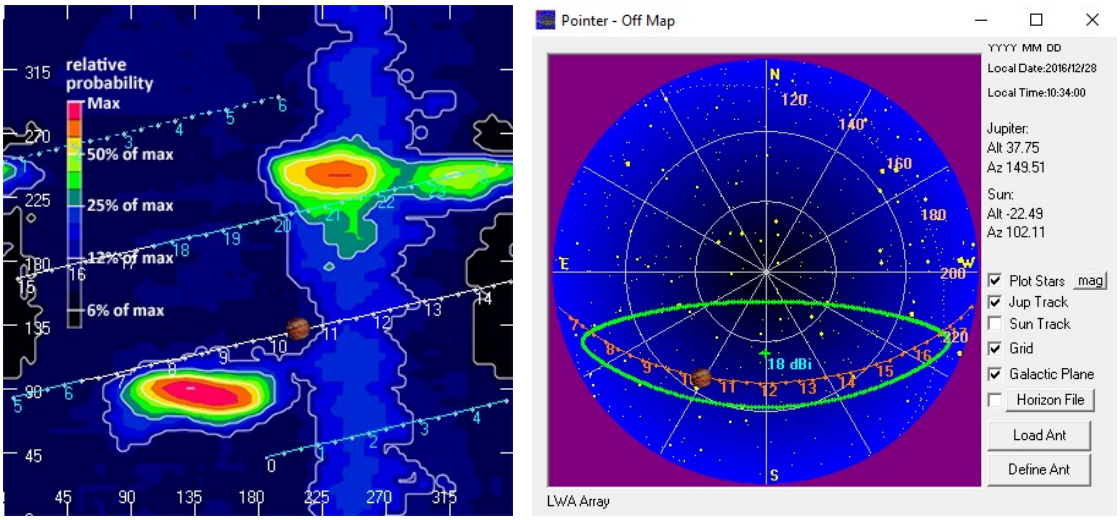
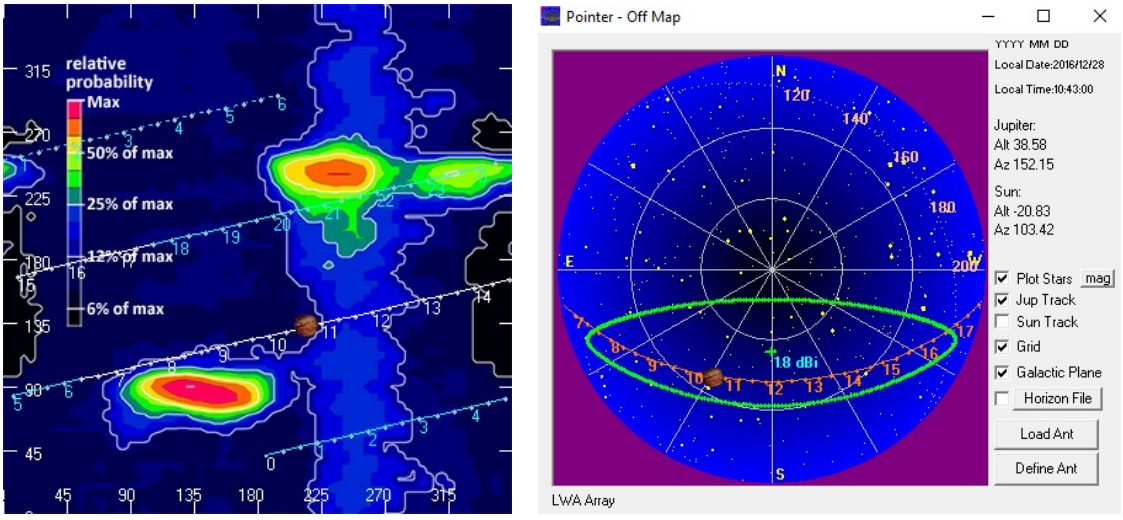


Beginning of Pass



End of Pass

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This was an unattended event. Both the FSX-2/LWA pair and the FSX-8S/TFD arrays were used in this observation. The FSX-2/LWA pair saw the emissions stonger.

A brief period of L-bursts in a Non-Io-A area for approximately 10 minutes.
Emissions were all RCP L-bursts. Only the initial burst was moderatly stong, the remainder were weak. Emisisons began at 24 MHz with a negative drift until the end of emissions between 17 and 16 MHz. Modulation lanes visible between approximately 1037 UT and 1038 UT.

Brief weak activity on the Radio JOVE receiver/dipole pair between 1033 UT and 1037 UT. Image below. File uploaded to Radio JOVE data archive 28 Dec. 2016

1) 1033 UT
   a) Strongest L-burst begin emissions.
   b) 24-21 MHz
   c) Begin negative drift emisions

2) 1034:43 UT
   a) Negative drift emisions end at approximately 17 MHz
   b) No emissions to follow for aproximately 15 seconds.

3) 1035 UT
   a) Next sequence of emissions begin.
   b) Beginning at approximately 22 MHz, near vertical L-burst emissions down to approximately 17 MHz ending at approximately 1035:27 UT

4) 1035:27 UT
   a) L-burst emissions remain at aproximately 17 MHz
   b) Modulation lanes visible
   c) Emissions fade at 1038:53 UT

5) 1041:50 UT
   a) Brief weak L-bursts between 19 MHz and 16 MHz

6) 1041:49 UT
   a) Weak emisions remain between 19 MHz and 16 MHz
   b) End of visible emissions approximitely 1043 UT

End of report

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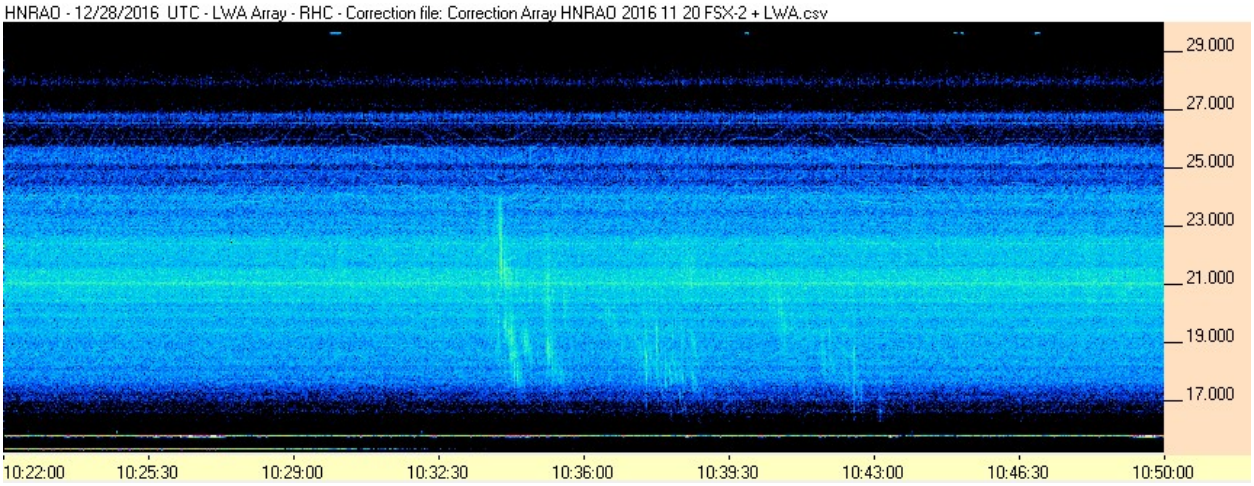
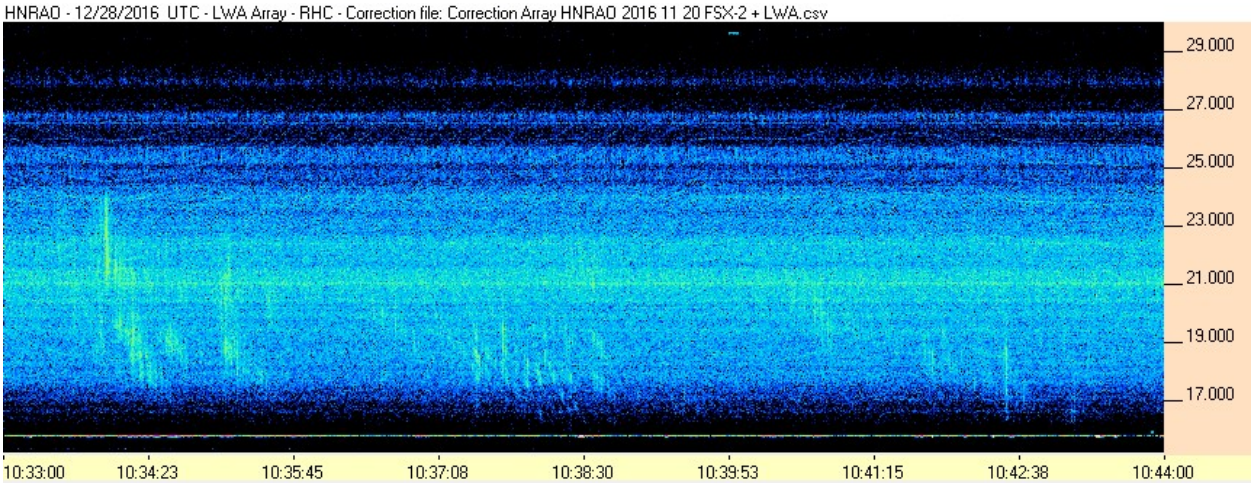
7) FSX-2





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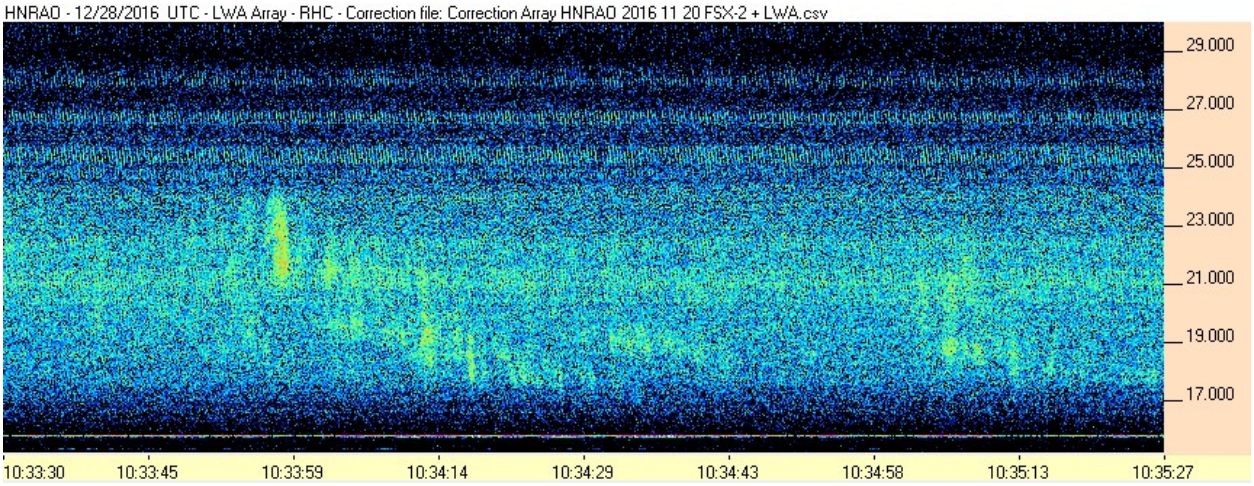

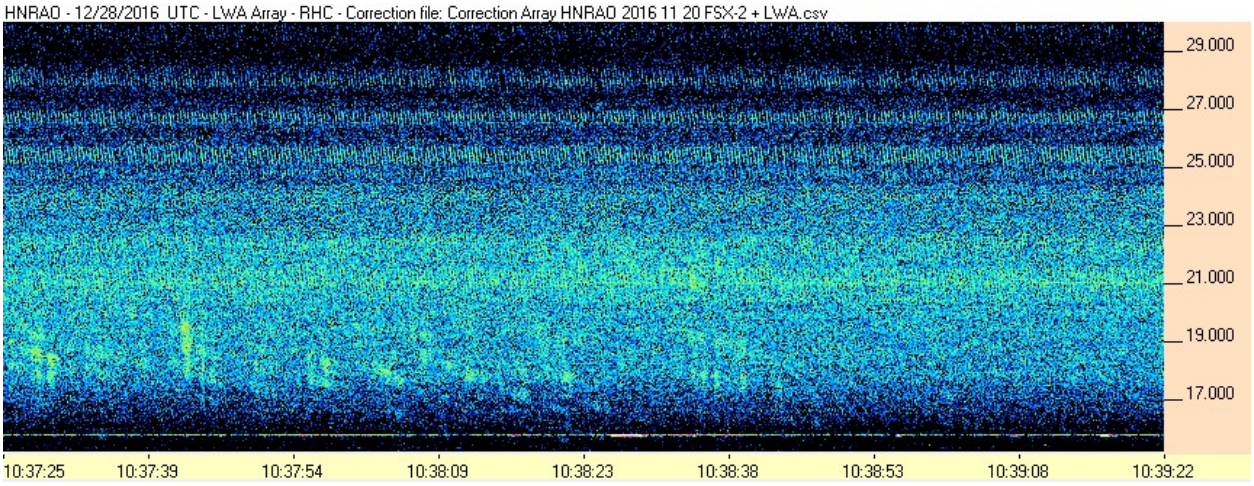

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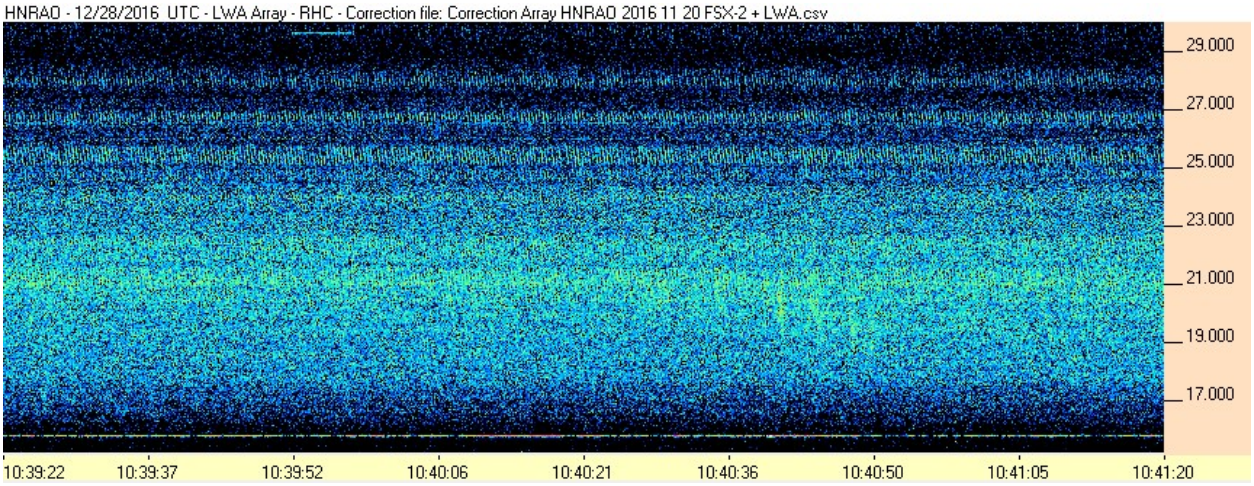

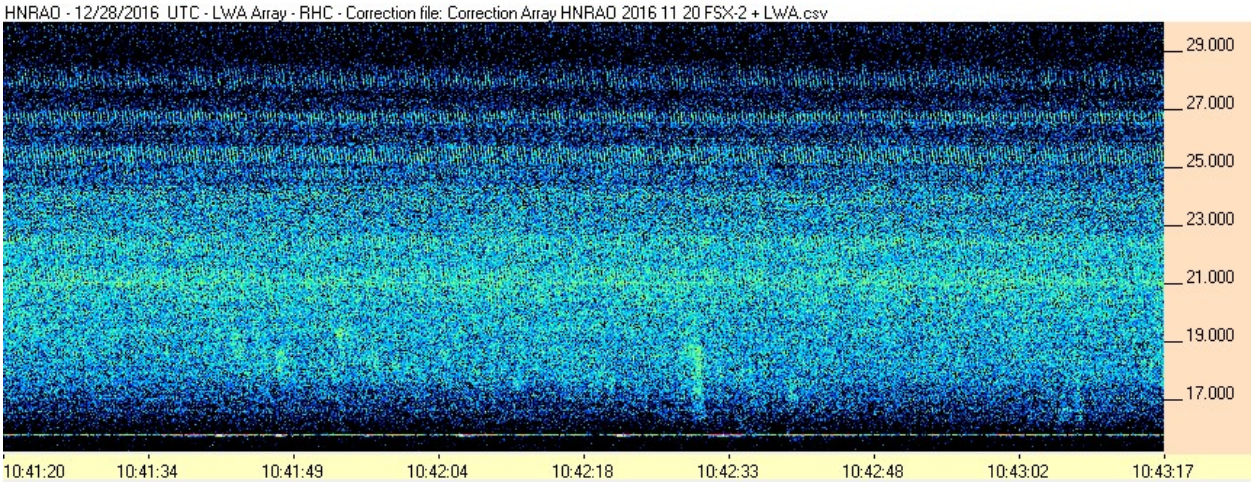

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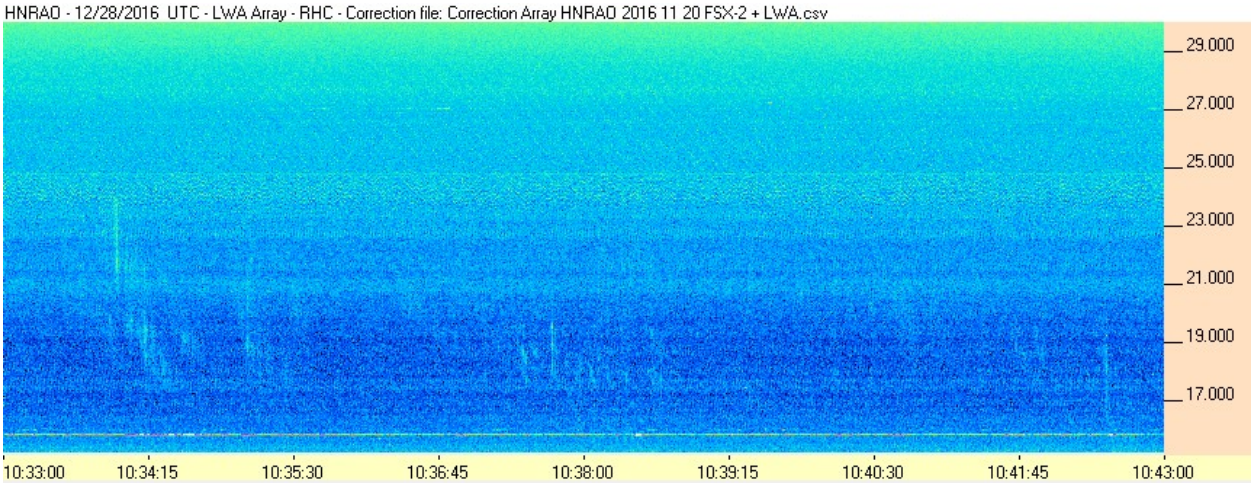
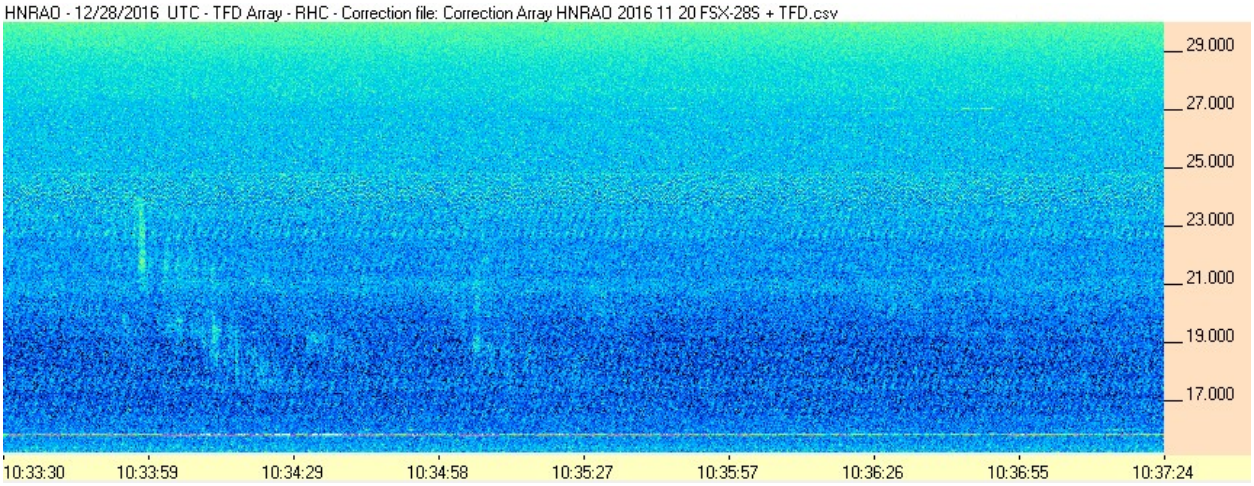
FSX-8S





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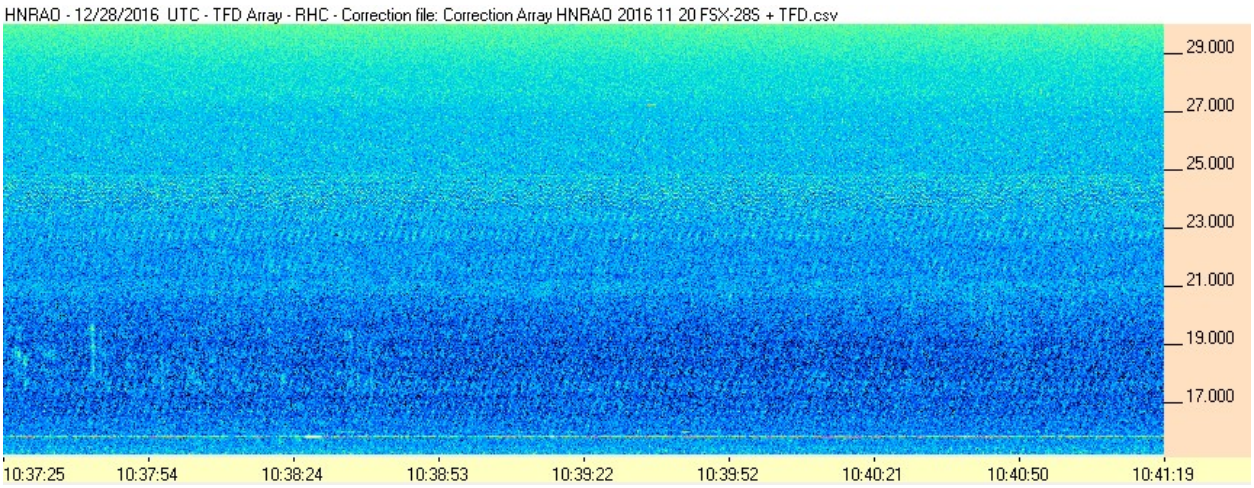

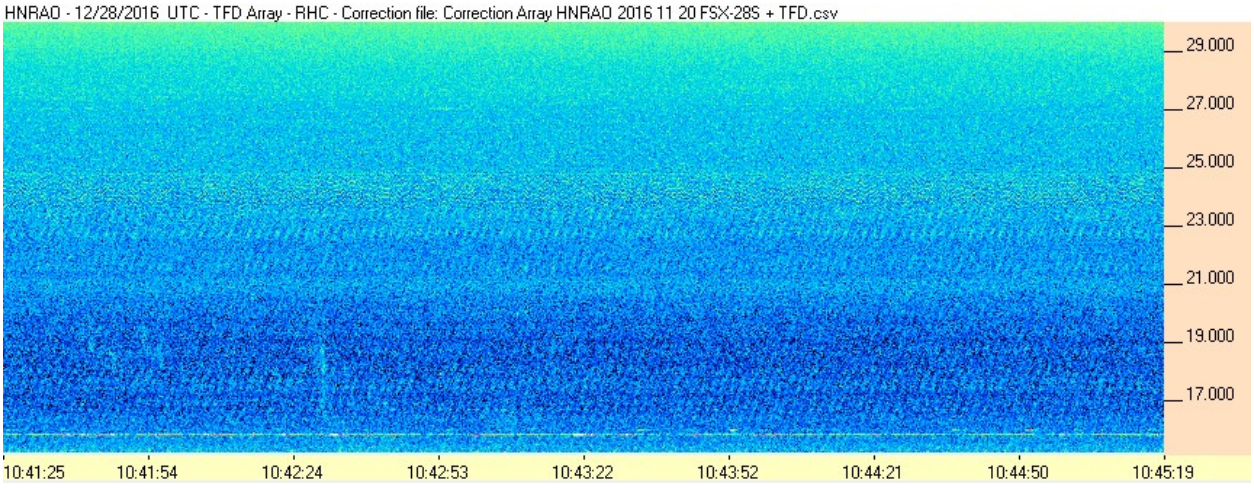

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SkyPipe