

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 2 February 2017

Object: Jupiter – Io-A

Observer: JB

Start of pass:	0952 UT		
Jupiter Altitude:	41.7 degrees	Jupiter Azimuth:	178.3 degrees
Jupiter CML:	203.35	Jupiter Io Phase:	249.10
Jupiter RA:	13:27	Jupiter Dec:	-07:34
Hour Angle:	-00:05	Polarization	RCP
Sun Altitude:	-29.2 degrees	Sun Azimuth:	088.2 degrees
Sun RA:	20:57	Sun Dec:	-17:15

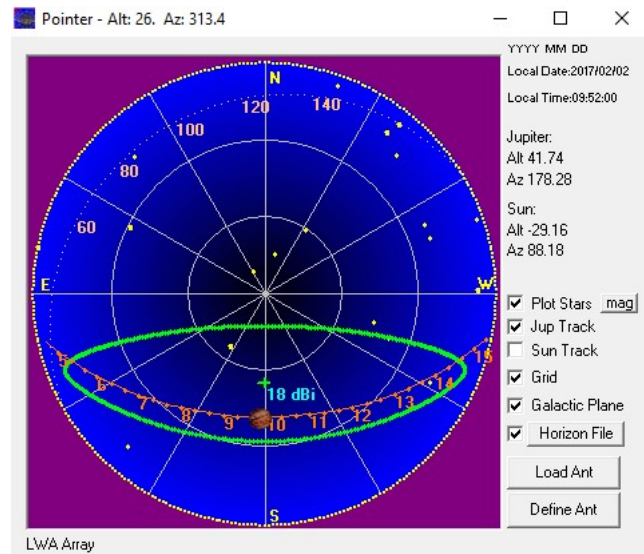
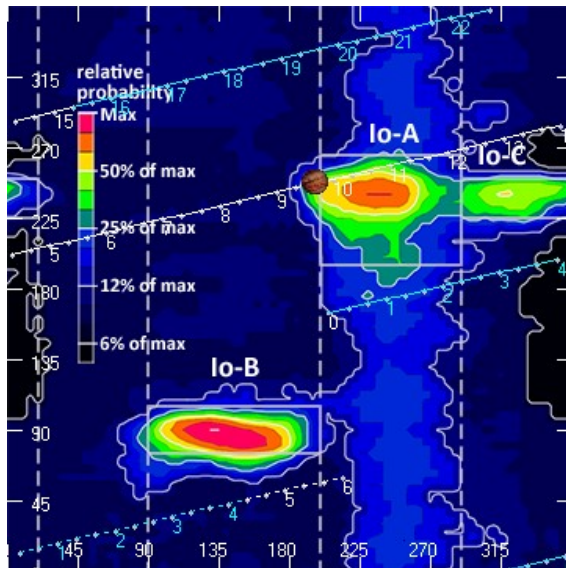
End of pass:	1040 UT		
Jupiter Altitude:	40.8 degrees	Jupiter Azimuth:	194.1 degrees
Jupiter CML:	232.37	Jupiter Io Phase	255.93
Hour Angle:	00:43		
Sun Altitude:	-20.1 degrees	Sun Azimuth:	095.9 degrees

 Observations made using:

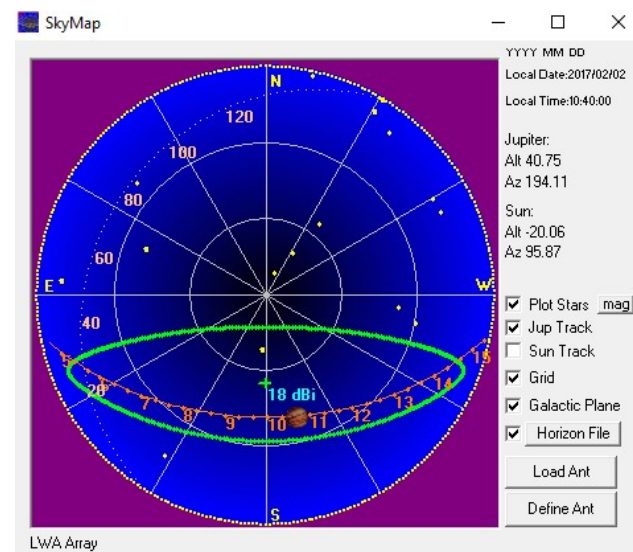
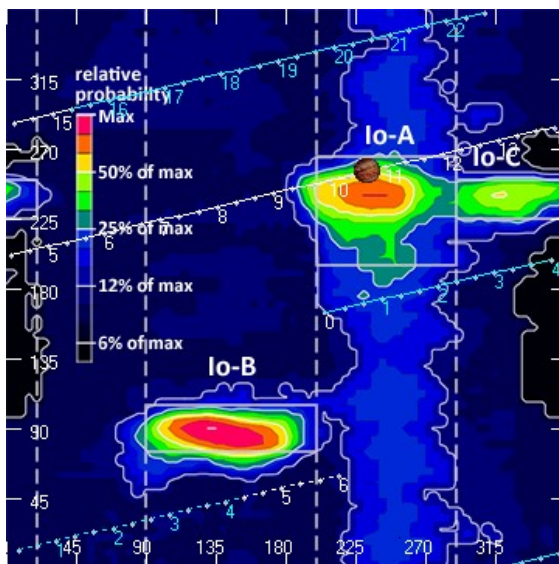
1. FSX-8S fed by the TFD array
 - a. Connect to array through HNRAO Multicoupler #1 and #2, port 2
 - i. HNRAO Multicoupler #1 – TFD/LCP
 - ii. HNRAO Multicoupler #2 – TFD/RCP
 - iii. Port 1 having 10 dB of gain, all other ports on Multicoupler have approximately 3 dB gain.
2. FSX-2 fed by the LWA array 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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Observing conditions

30 deg F
78% humidity
Partly cloudy

G1 (Minor) Storm Watch Continues for 1-2 February
Published: Thursday, February 02, 2017 01:05 UTC

The G1 (Minor) geomagnetic storm watch continues for the remainder of 1 February and was extended to include 2 February. Isolated periods of G1 storming are likely due to elevated solar wind speeds associated with a coronal hole high speed stream (CH HSS).

Solar wind

Speed: 657.2 km/sec density: 8.2 protons/cm³ Updated today at 0941 UT

RFI

FSX-2/LWA
Moderate to bad power line noise
FSX-8S/TFD
Moderate to bad power line noise

Conditions will make any fine detail observations nearly impossible

Unable to calibrate Radio SkyPipe so there will be no GB measurements made from this observatory tonight

0936 UT

Cal FSX-2/LWA

0938 UT

Cal FSX-8S/TDD

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Another weak emission event. Composed of L-bursts, from beginning until it's end. A positive rising arc starting below 15 MHz about 0952 UT, and rising to a peak frequency of slightly above 21 MHz about 1023 UT. Emissions began to drop in frequency until the end of the event when no more emissions were seen here at 1039 UT as they passed below 15 MHz. . The most notable feature of these emissions were the negative slope modulation lanes. Good examples were the emissions between 1014-1023 UT.

The observatory was plagued with the same powerline noise that it has during previous observations. A very strong period from 0955 UT through 1004 UT threatened to end the observing session before it began.

I made comments through the session on both observatories LGM and AJ4CO, Alachua, FL for comparison.

0954 UT

L-burst on AJ4CO
16-18 MHz RCP
Negative modulation lanes

0955 UT

L-bursts HNRAO
15-18 MHz

0957 UT

Horrible power line noise started.
Centered around 24 MHz on both spectrographs
Any Jupiter from 19 MHz – 28 MHz will be impossible

0959 UT

Weak L-bursts
L-bursts show from 0954 1000 UT

1000 UT

Much stronger L-bursts 15-19 MHz on FSX-2/LWA
Negative drift

1003 UT

L-burst 22 MHz

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Weak Jupiter showing on LGM
Good Jupiter on AJ4CO

1004 UT

Terrible line noise abruptly stopped. Typical behavior.

1006 UT

Strong L-bursts
19-15 MHz
Negative drift
Visible on both spectrographs

1014 UT

Weak L-bursts
Line noise making any positive identification of weaker emissions nearly impossible

1015 UT

Much stronger L-bursts
Some of the strongest I've seen this season
19-17 MHz
Negative slope modulation lanes
Good L-bursts on LGM and AJ4CO SkyPipe charts
No SkyPipe running here so I don't know

1019 UT

Another weak burst 17-15 MHz

1021 UT

L-bursts
Negative modulation lanes
21-15 MHz
Nothing on JOVE receiver
LGM and AJ4CO receiver strong SkyPipe activity

1022 UT

Continued near vertical L-bursts
Negative slope modulation lanes
1014-1023 UT good examples

1024 UT

L-burst 19-15 MHz
Emissions so far are all negative drift with negative slope modulation lanes
All emissions stronger on FSX-2/LWA
As usual AJ4CO has strong emissions.
HNRAO weak emissions and
LGM has weak to no emissions

1026 UT

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Weak cluster 19-15 MHz

1028 UT
19-15 MHz

1032 UT
Stronger L-bursts 18-15 MHz

1034 UT
Continued negative drift modulation lanes
RJP shows 55% probability

1039 UT
End of storm

1045 UT
Line noise increasing on FSX-2/LWA again

1051 UT
No activity on HNRAO, LGM or AJ4CO

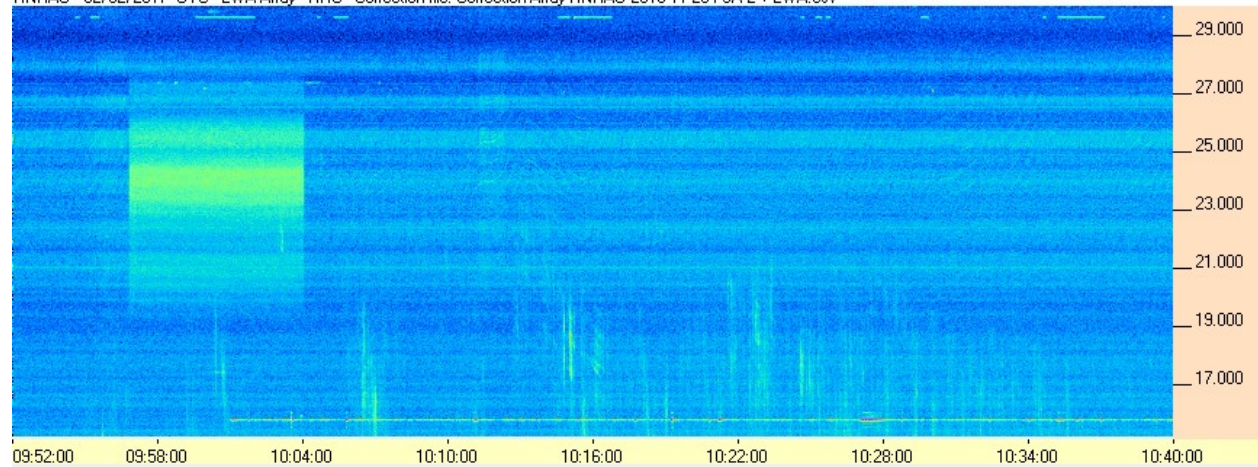
1214 UT
AJ4CO seeing Non-Io-C
Nothing here

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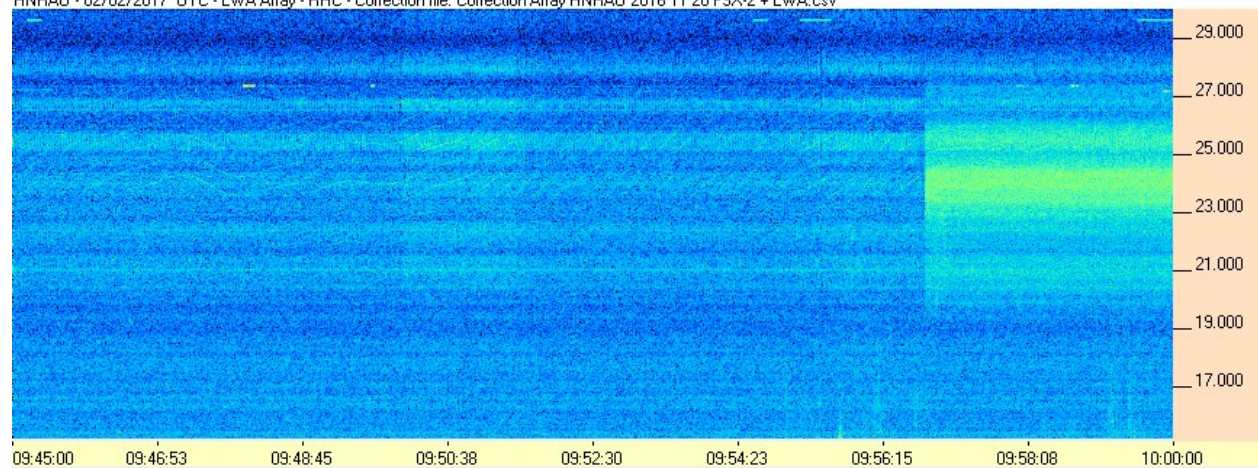


FSX-2/LWA Pair

HNRAO - 02/02/2017 UTC - LWA Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



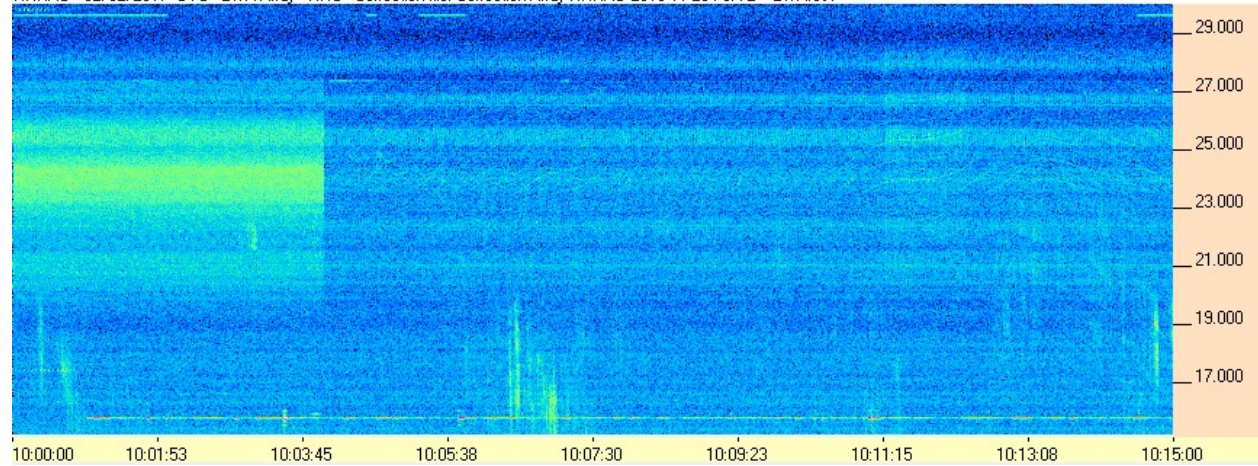
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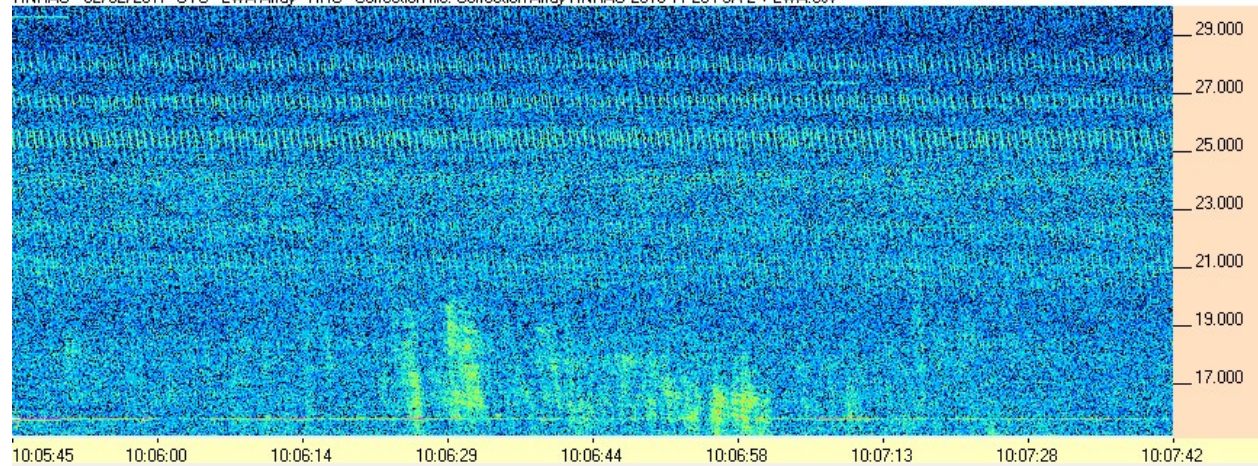
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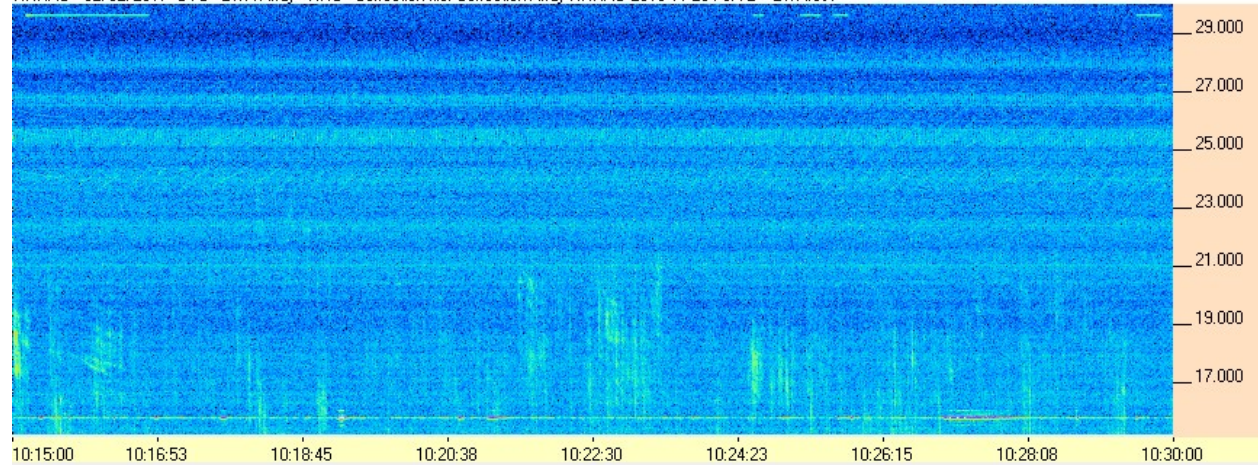
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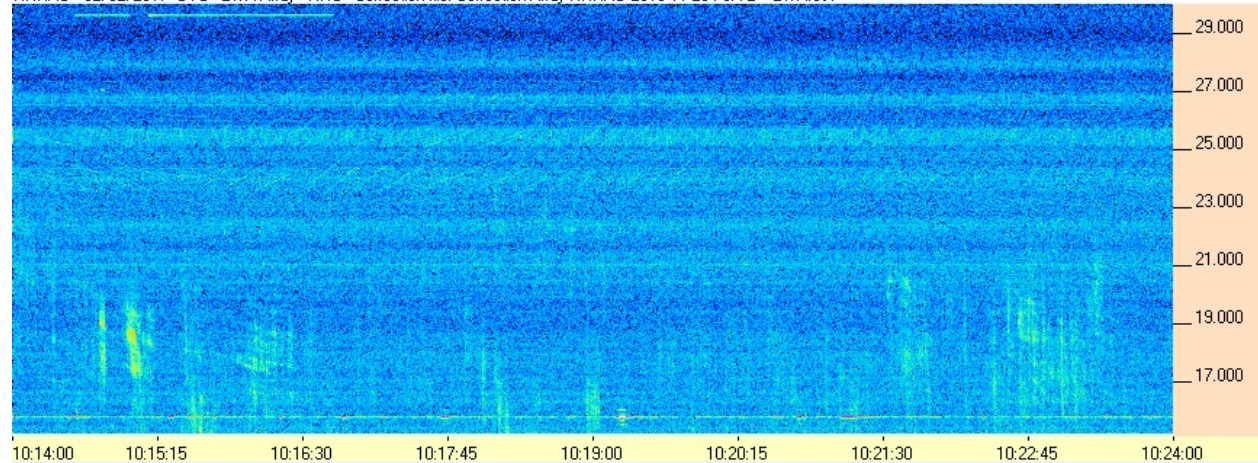
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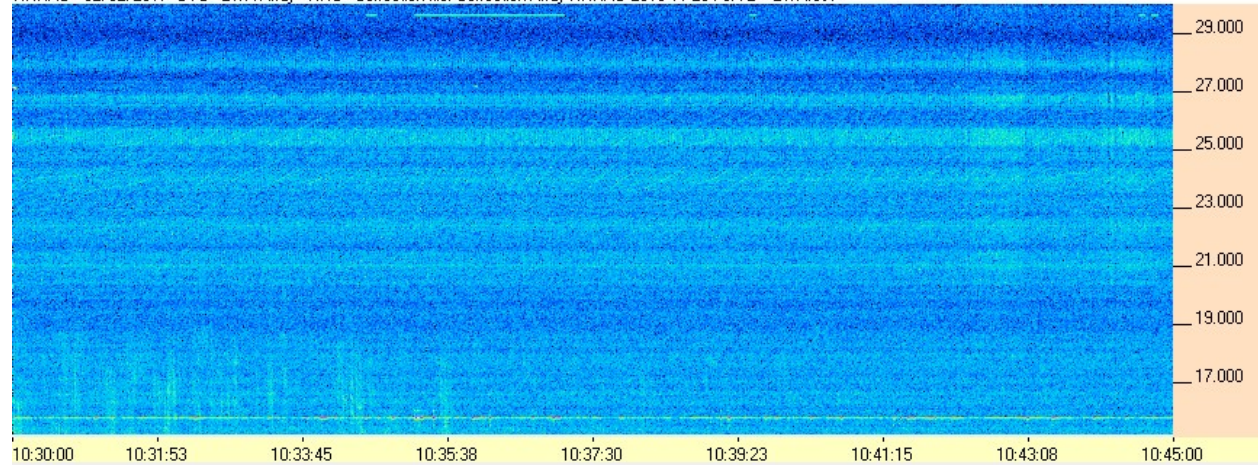
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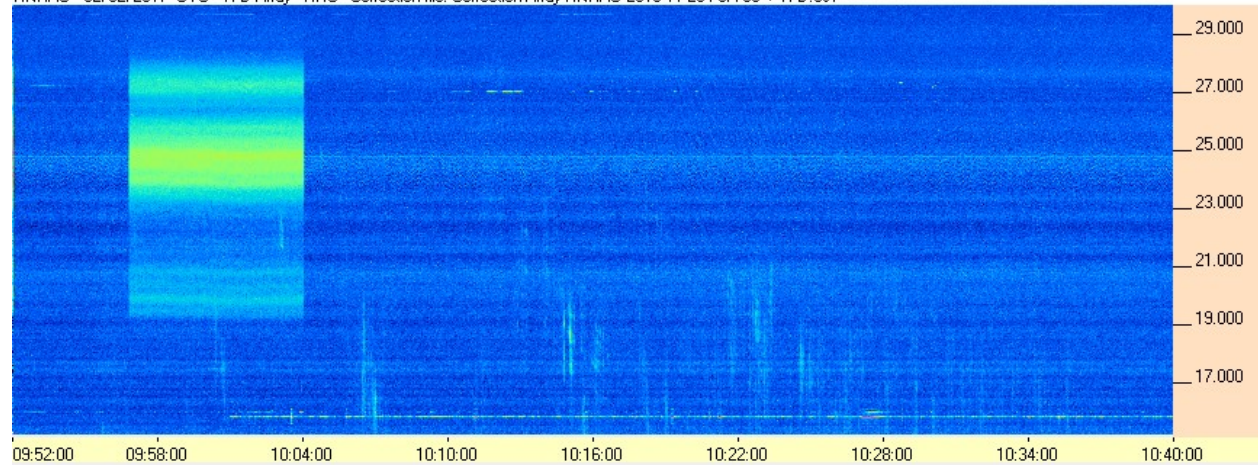


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FSX-8S/TFD Pair

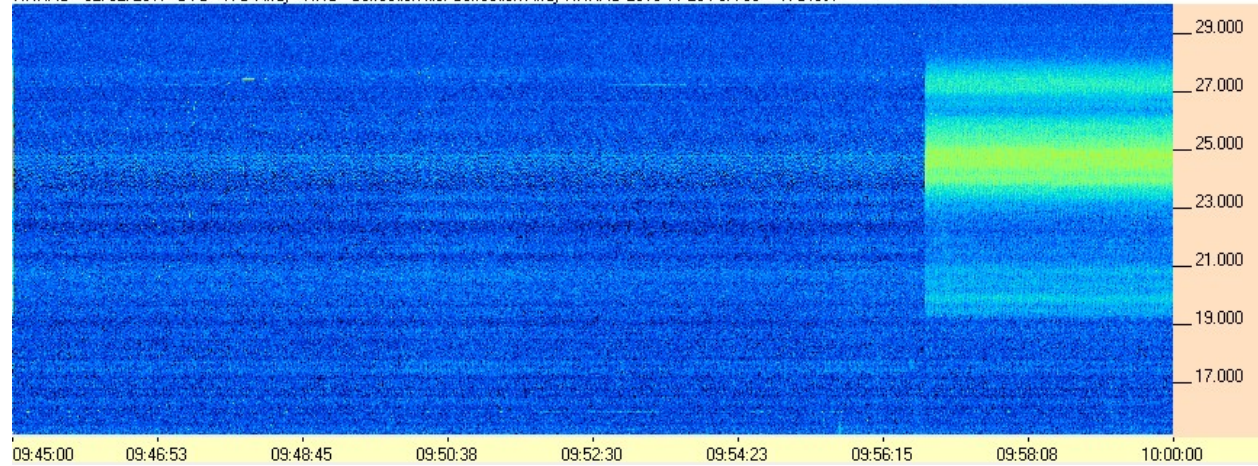
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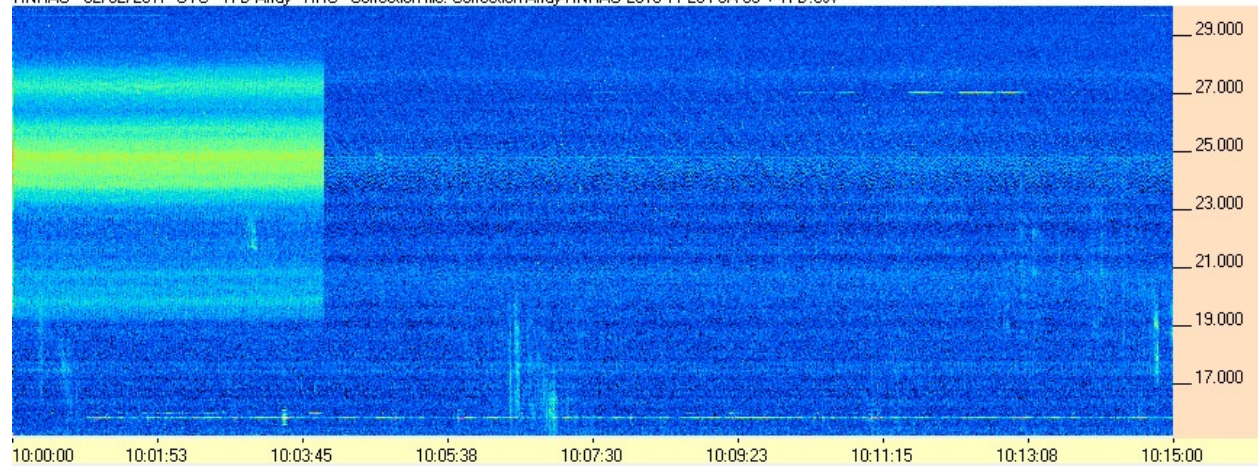
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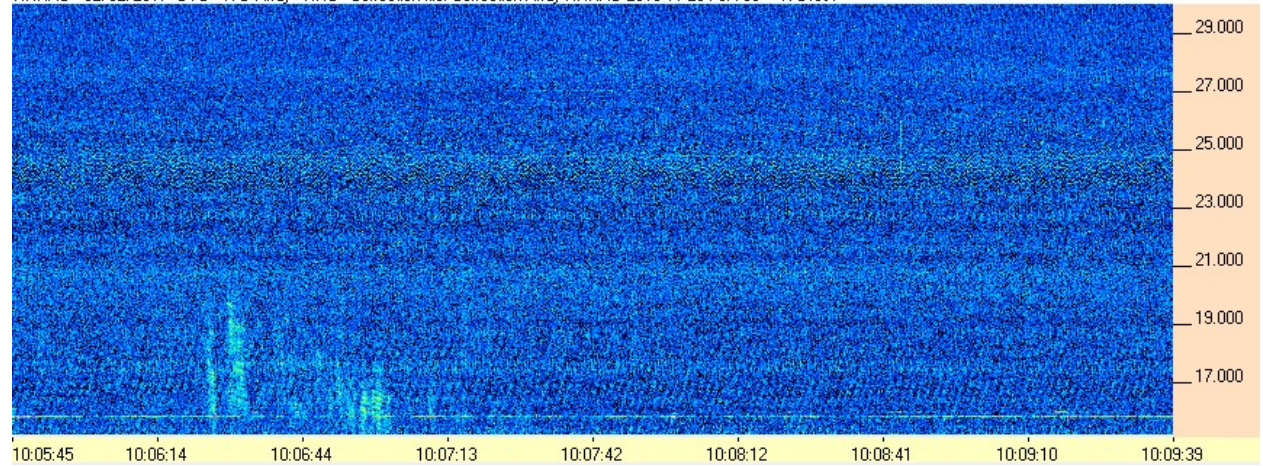
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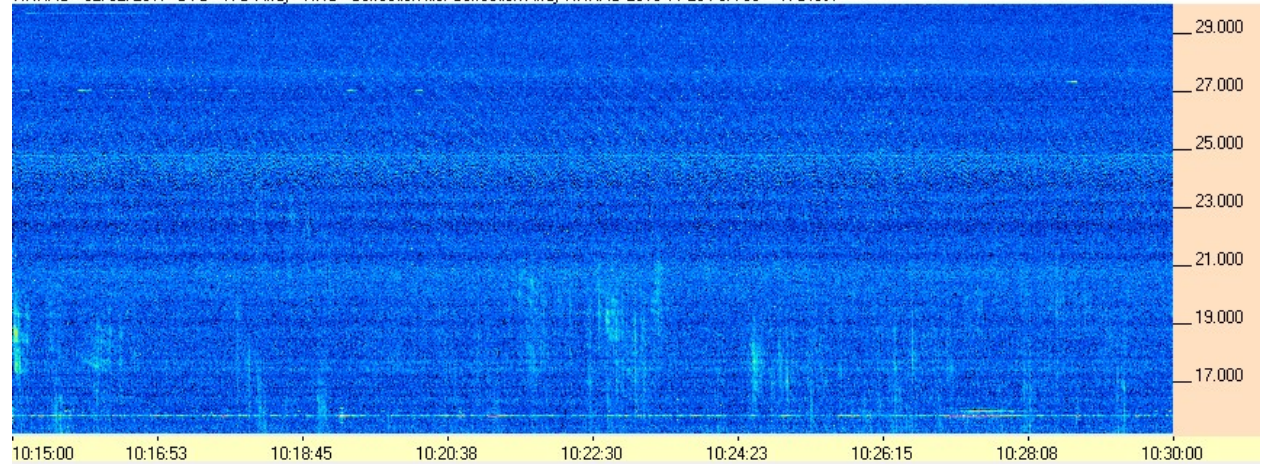
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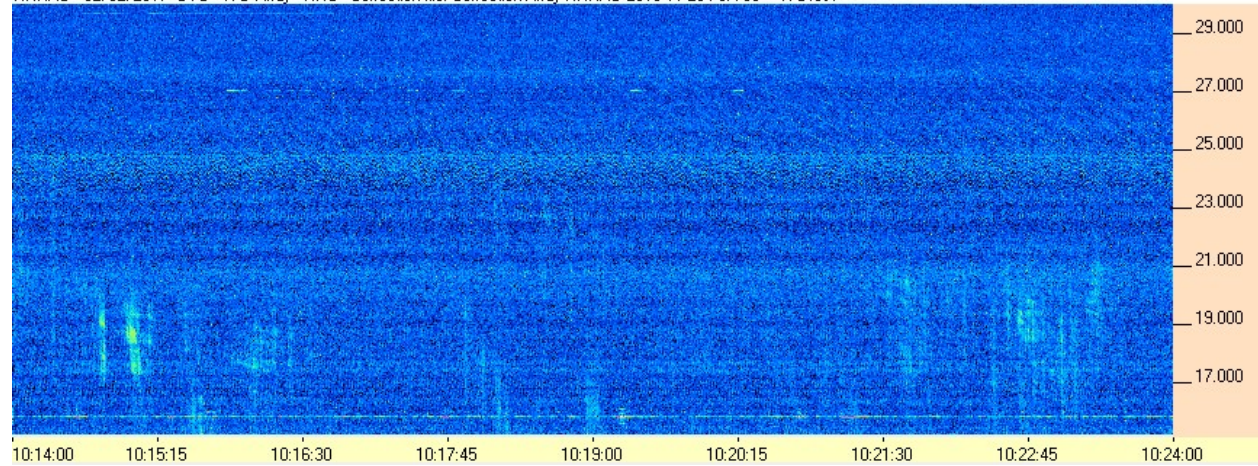
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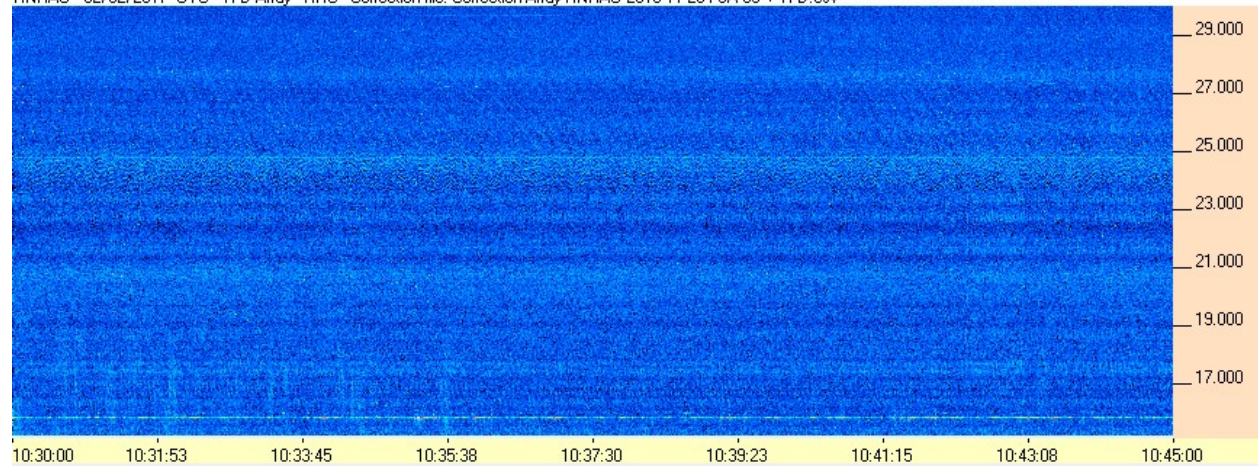
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