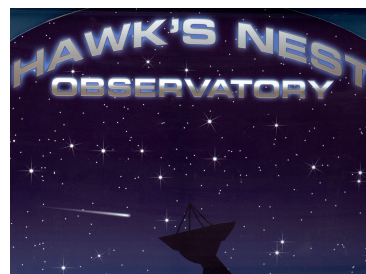


HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Date: 24 January 2017

Object: Jupiter Io-A/Io-C

Observer: Io-A Unobserved. Io-C JB

Start of pass:	0715 UT		
Jupiter Altitude:	23.9 degrees	Jupiter Azimuth:	124.7 degrees
Jupiter CML:	193.14	Jupiter Io Phase:	195.28
Jupiter RA:	13:25	Jupiter Dec:	-07:30
Hour Angle:	-03:17		
Sun Altitude:	-58.6 degrees	Sun Azimuth:	056.0 degrees
Sun RA:	20:19	Sun Dec:	-19:35

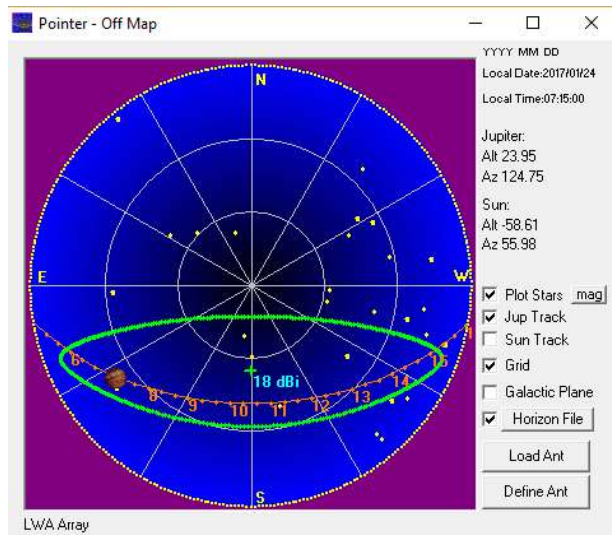
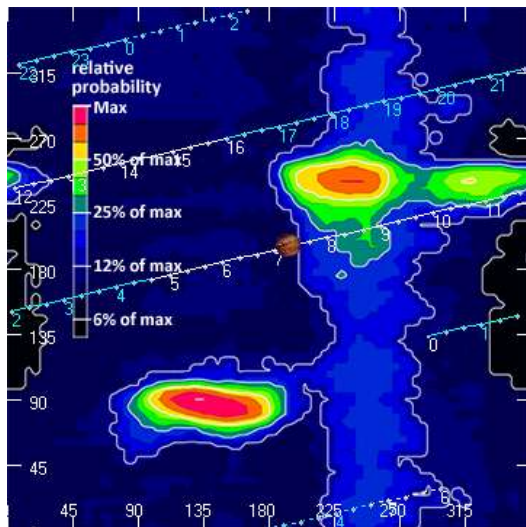
End of pass:	1102 UT		
Jupiter Altitude:	41.3 degrees	Jupiter Azimuth:	190.1 degrees
Jupiter CML:	330.37	Jupiter Io Phase	227.47
Hour Angle:	00:31		
Sun Altitude:	-17.0 degrees	Sun Azimuth:	101.4 degrees

 Observations made using:

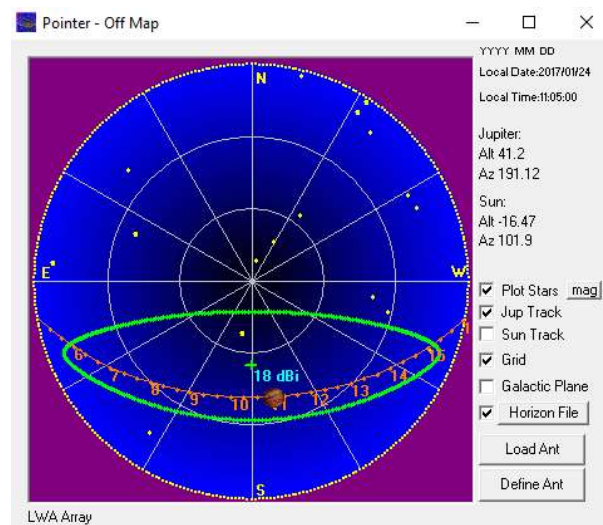
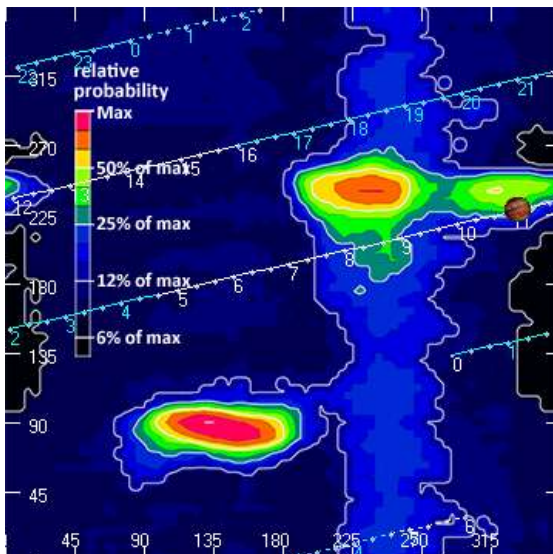
1. FSX-8S fed by the TFD array
 - a. Connect to array through HNRAO Multicoupler #1 and #2, port 2
 - i. HNRAO Multicoupler #1 – TFD/LCP
 - ii. HNRAO Multicoupler #2 – TFD/RCP
 - iii. Port 1 having 10 dB of gain, all other ports on Multicoupler have approximately 3 dB gain.
2. FSX-2 fed by the LWA array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

HNRAO Observing Log

40.673181 N – 80.437885 W
EN90sq



Beginning of Pass



End of Pass

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



A rather lackluster event. So far, no outstanding Jupiter emissions this season. Some of these Io-A emissions were barely above galactic background. The Io-A L-burst emissions began as a positive arc, reaching the apex about 0825 UT and ended at about 0900 UT. The frequency span observed here was from 16 MHz, peaking around 27 MHz, and ending below 16 MHz. The strongest emissions seen here were between 0840 UT and 0848 UT as a series of vertical L-bursts. Again, just slightly above galactic background.

The Io-C portion of the pass, as seen here with the FSX-2/LWA set to LCP, was very brief. Starting at about 1000 UT, it was no longer observed past 1012 UT. Consisting of a series of L-bursts, from 16 MHz to slightly above 18 MHz.

The FSX-8S, being a dual polarization spectrograph captured the LCP portion of the Io-C, and the following RCP emissions still in the Io-C CML. Possibly late Non-Io-A, but as no positive determination on the source.

The FSX-2/LWA pair recorded the storm in more detail and intensity due to its higher gain.

HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



Io-A
Unattended

All RCP

- **0724 UT**
 - First indication of emissions
 - Weak L-Bursts
 - 18-22 MHz
- **0807 UT**
 - Weak L-bursts 16-18 MHz
 - 007-0811 UT
- **0843 UT**
 - L-bursts
 - Very weak
 - 26-20 MHz
 - Negative slope
 - Nearly vertical
- **0846 end**

Io-C
Attended

- Switched FSX-2 to LCP
- **1000 UT**
 - LCP
- **1002 UT**
 - On FSX-2
 - 16-18 MHz
 - Much stronger on FSX-2/LWA
 - Galactic background 24 kK
- **1010 UT**
 - L-bursts
 - 18 MHz
- **1013 UT**
 - 13:08:45 LMST

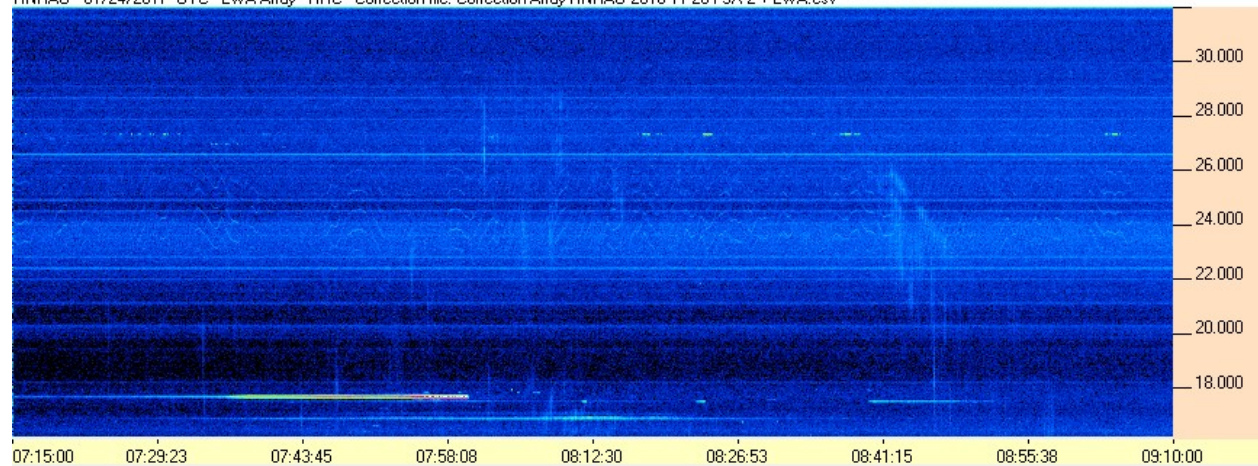
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



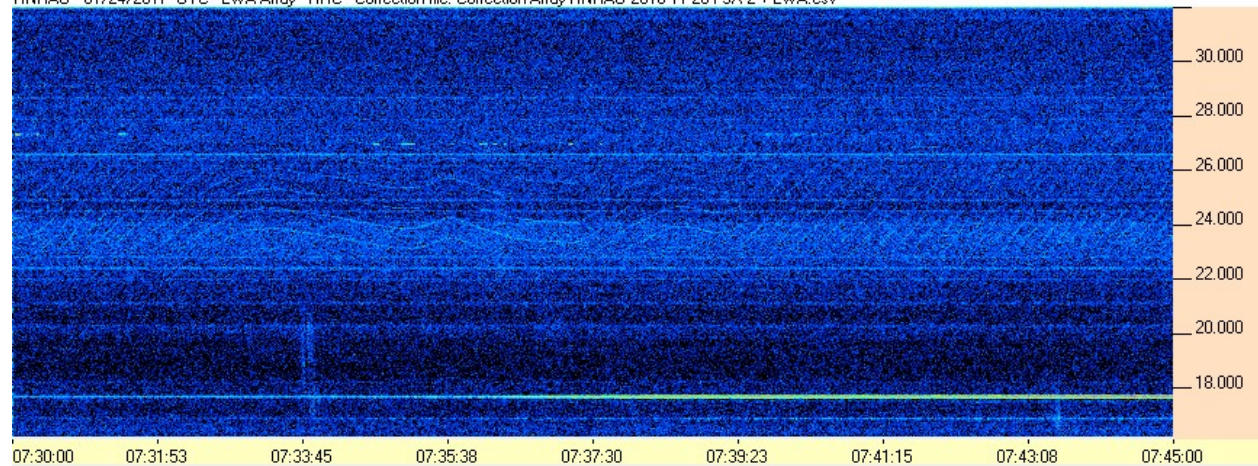
- **1100 UT**
 - One small RCP burst at 19 MHz
- **1102 UT**
 - More weak RCP 16-18 MHz

FSX-2/LWA

HNRAO - 01/24/2017 UTC - LWA Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



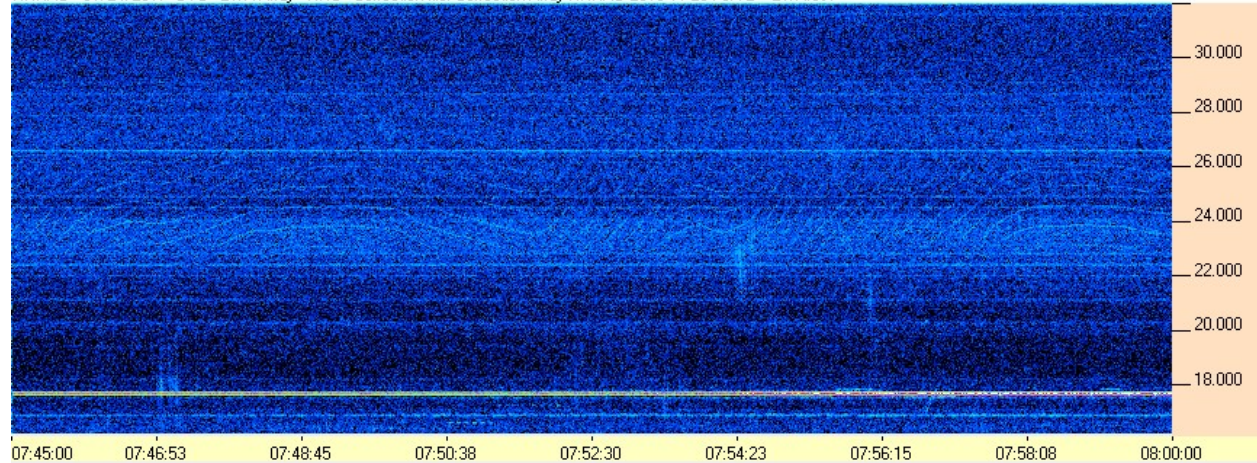
HNRAO - 01/24/2017 UTC - LWA Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



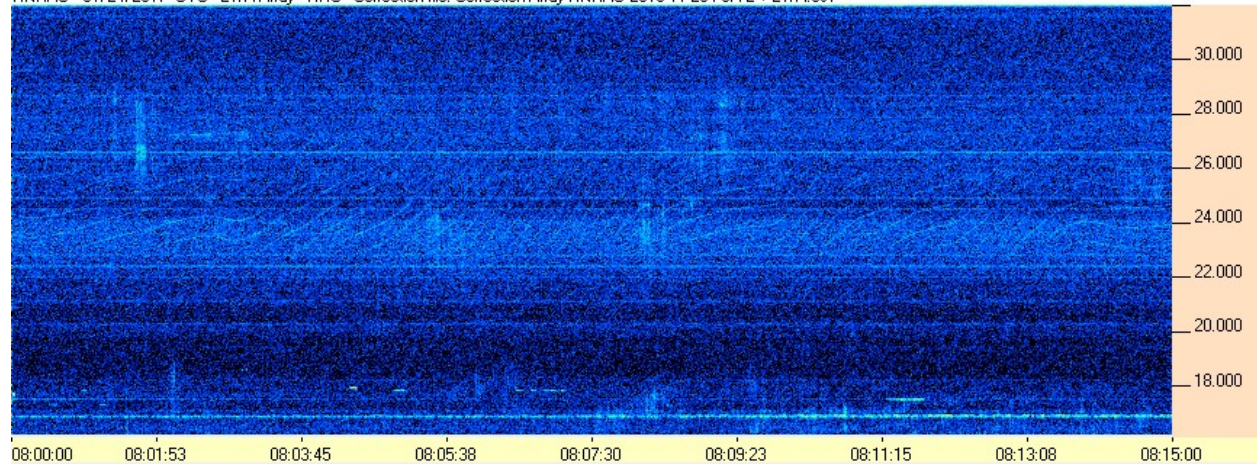
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 01/24/2017 UTC - LWA Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



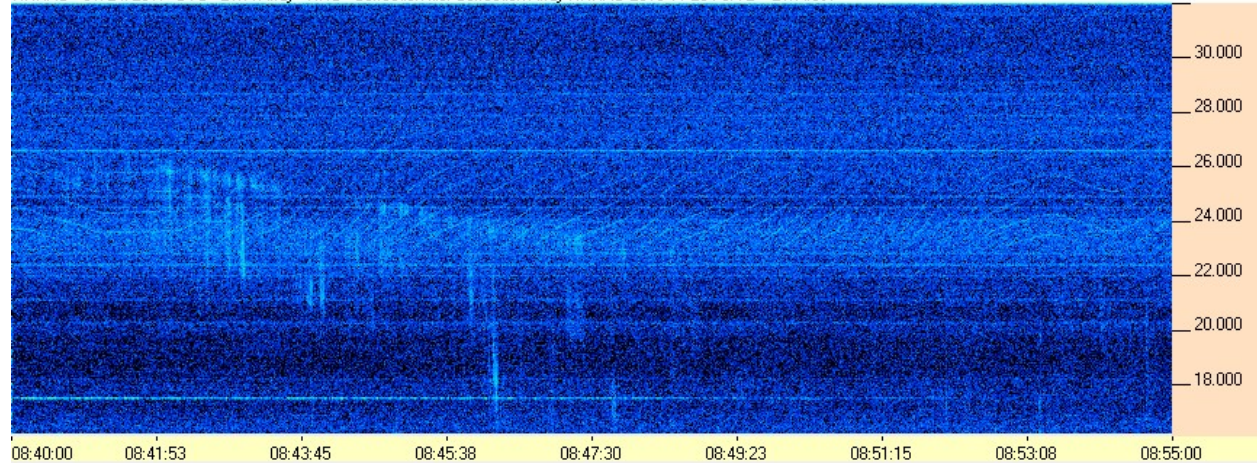
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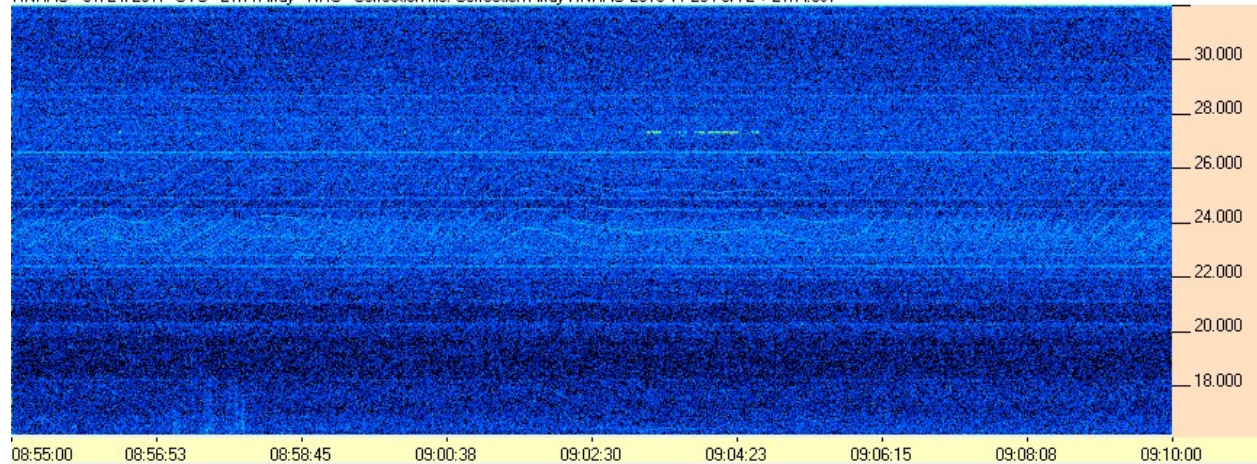
HNRAO Observing Log
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EN90sq



HNRAO - 01/24/2017 UTC - LWA Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



HNRAO - 01/24/2017 UTC - LWA Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv

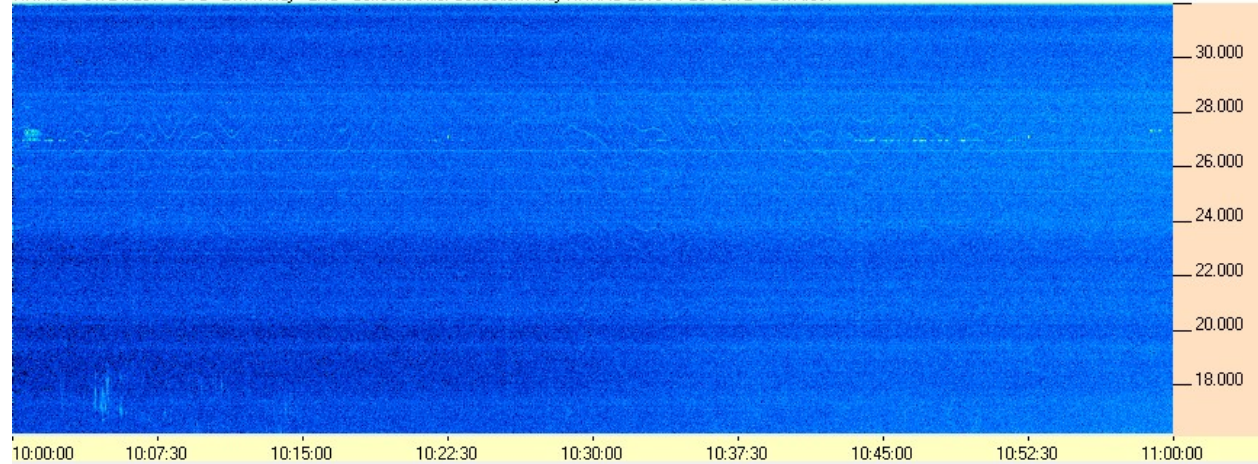


HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

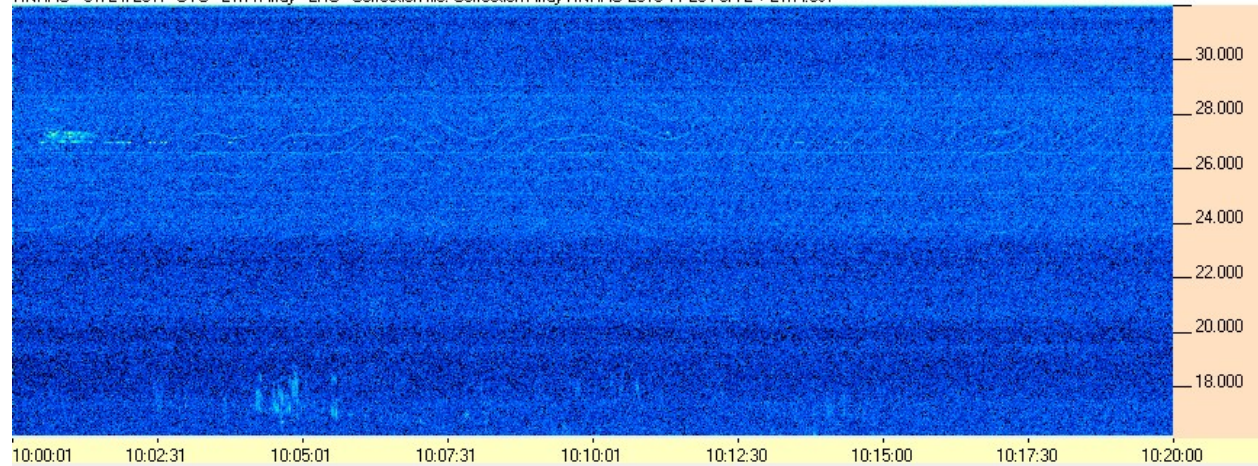


Io-C

HNRAO - 01/24/2017 UTC - LWA Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



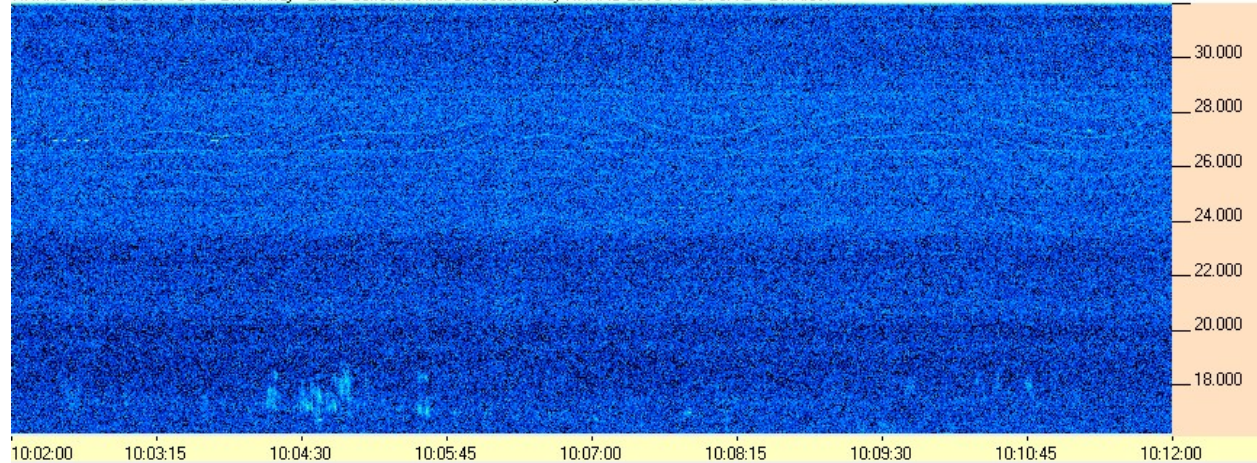
HNRAO - 01/24/2017 UTC - LWA Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



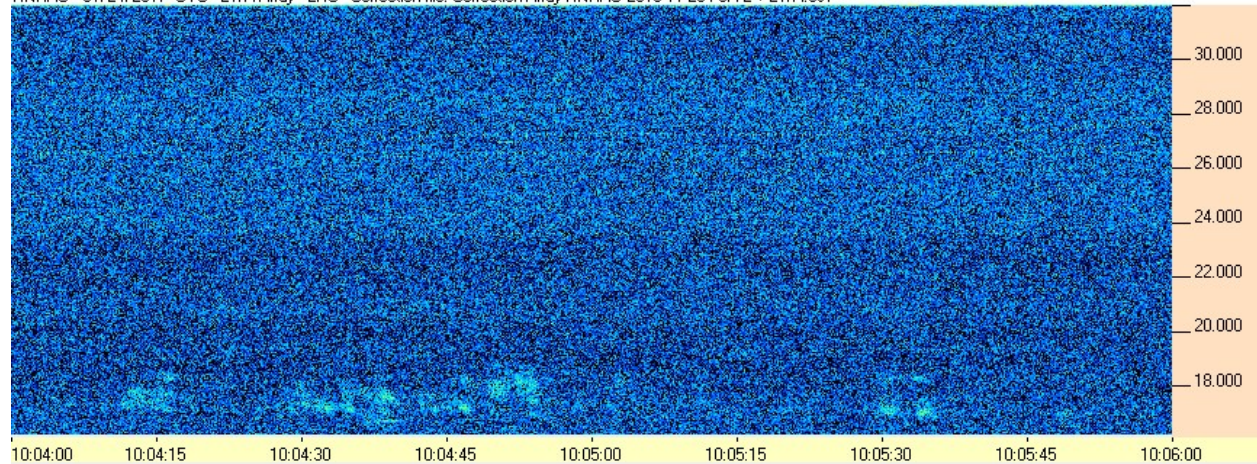
HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq



HNRAO - 01/24/2017 UTC - LWA Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



HNRAO - 01/24/2017 UTC - LWA Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-2 + LWA.csv



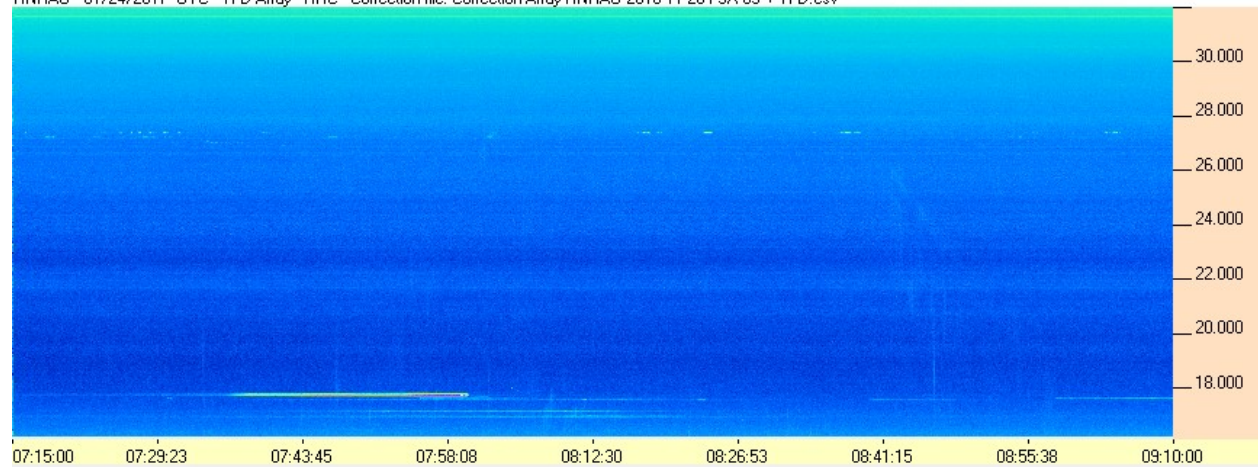
HNRAO Observing Log
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EN90sq



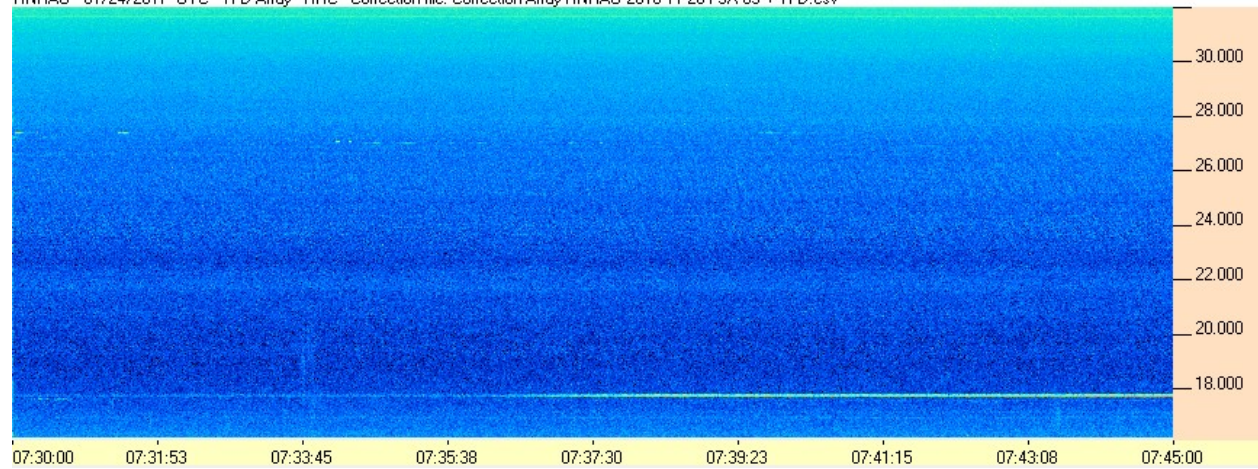
FSX-8S/TFD

Io-A

HNRAO - 01/24/2017 UTC - TFD Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv



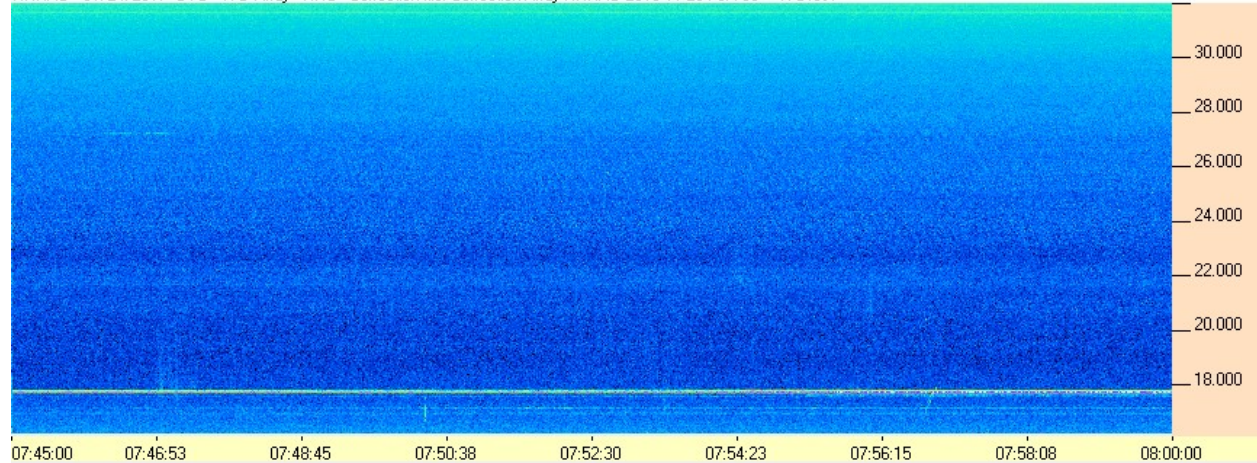
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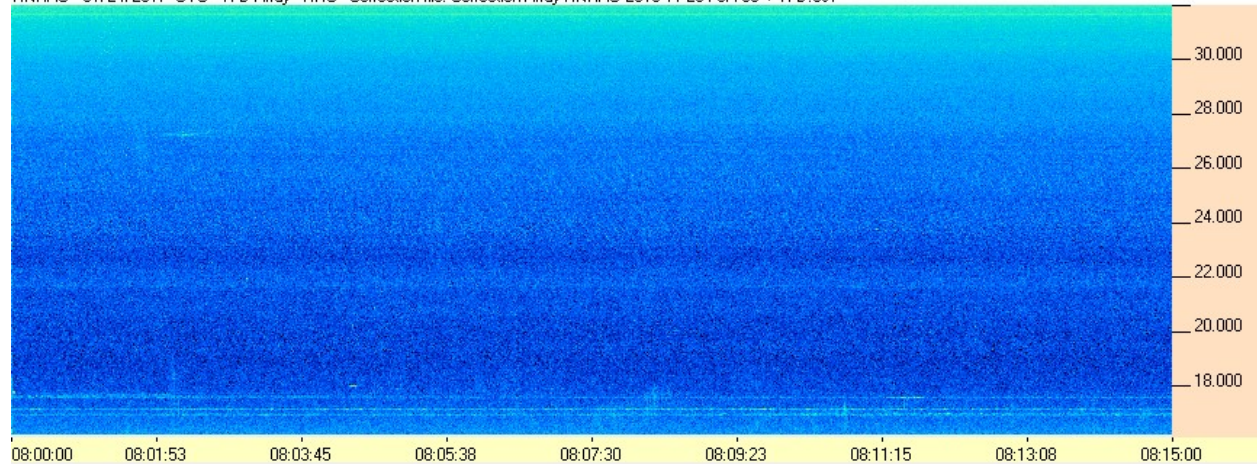
HNRAO Observing Log
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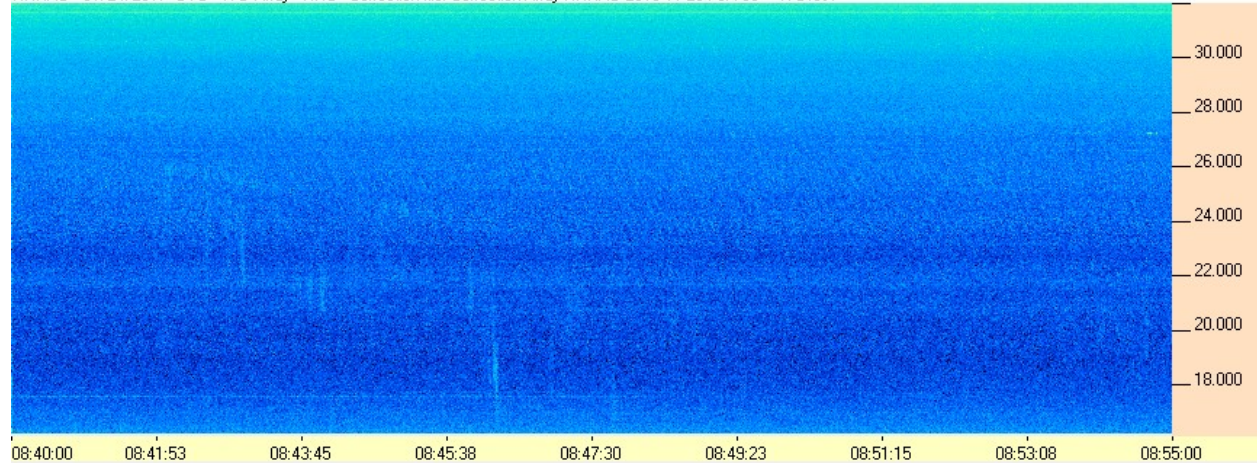
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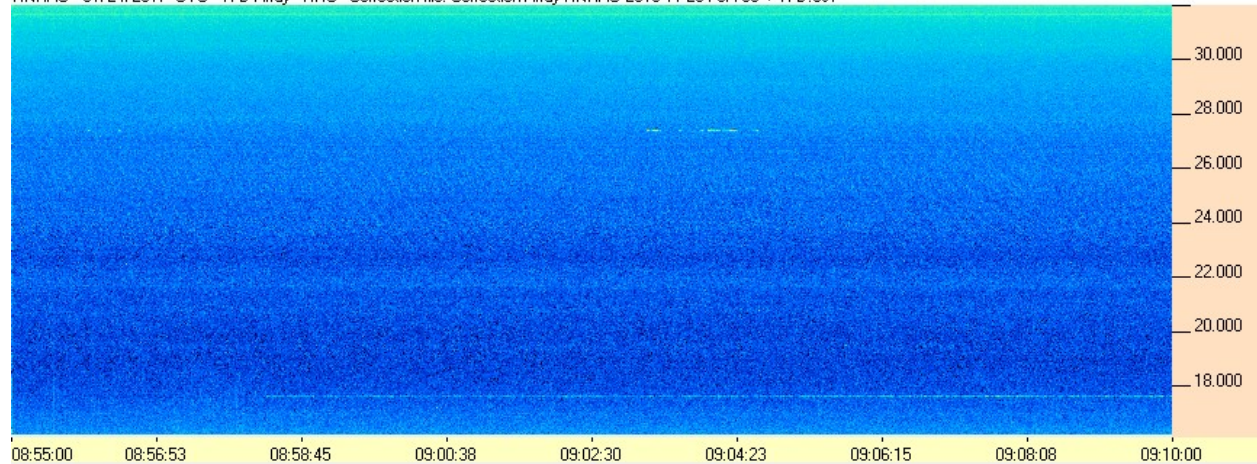
HNRAO Observing Log
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HNRAO - 01/24/2017 UTC - TFD Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv



HNRAO - 01/24/2017 UTC - TFD Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv

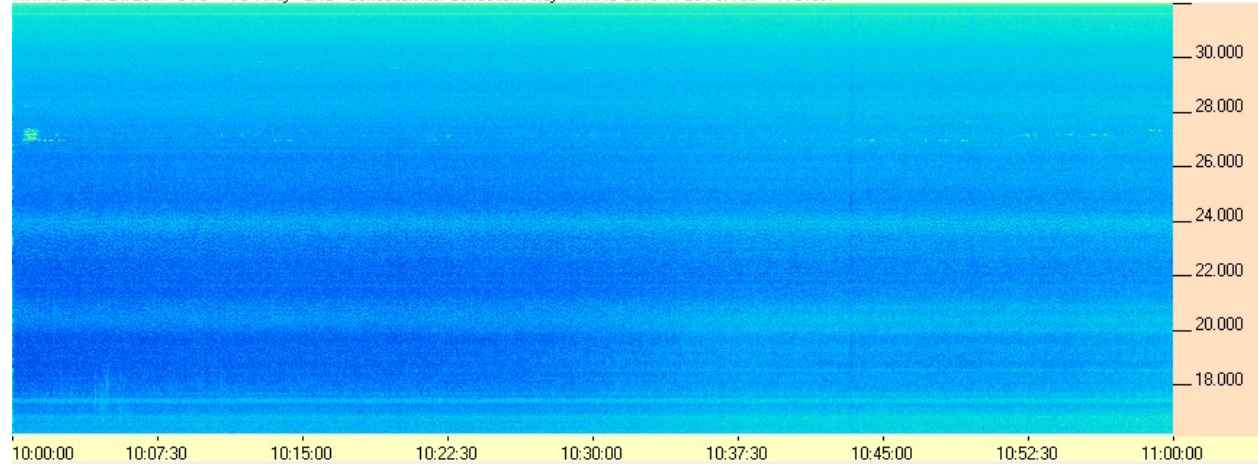


HNRAO Observing Log
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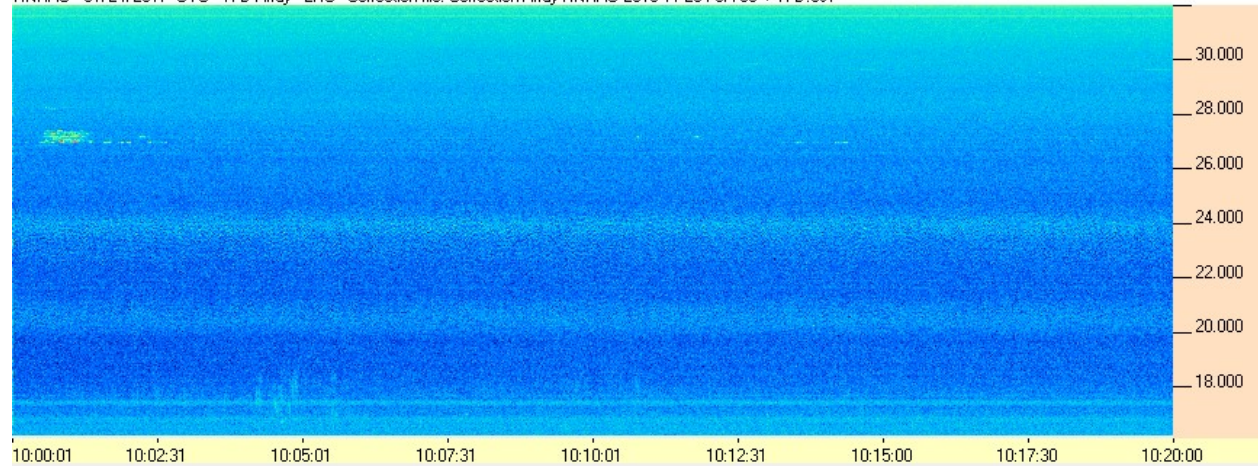


Io-C

HNRAO - 01/24/2017 UTC - TFD Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv



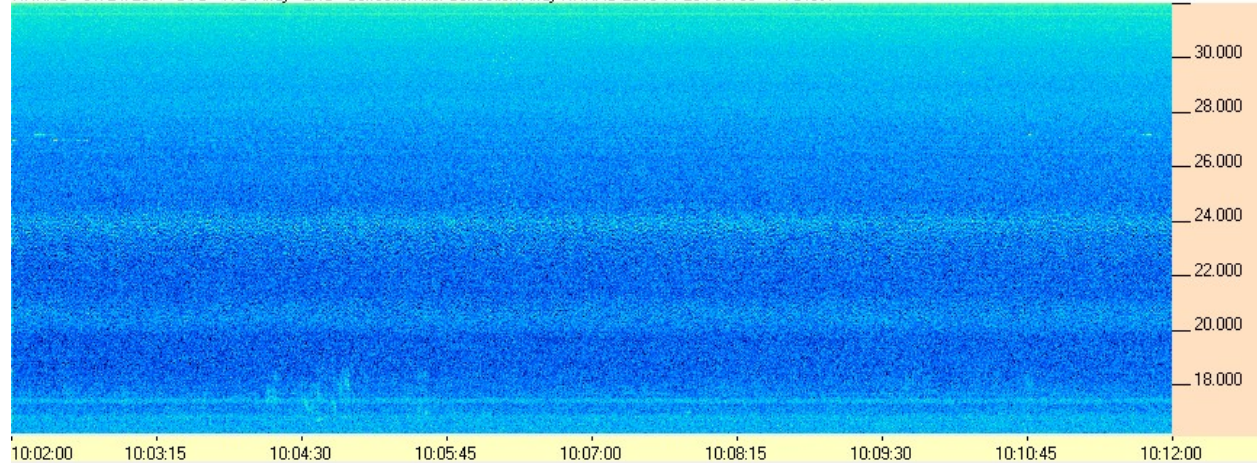
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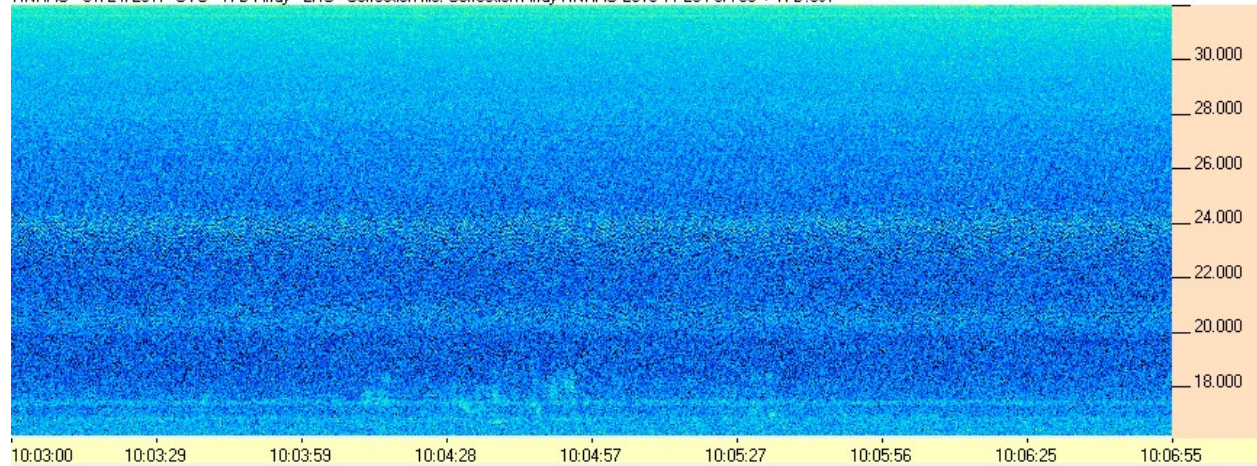
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HNRAO - 01/24/2017 UTC - TFD Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv



HNRAO - 01/24/2017 UTC - TFD Array - LHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv



HNRAO Observing Log

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EN90sq



Post Io-C

HNRAO - 01/24/2017 UTC - TFD Array - RHC - Correction file: Correction Array HNRAO 2016 11 20 FSX-8S + TFD.csv

