**HNRAO Observing Log**
**40.673181 N – 80.437885 W**
**EN90sq**


**Date: 18 May 2017**

**Object: Jupiter – Non-Io-A**

**Observer: Unattended**

| | | | |
|---|---|---|---|
| **Start of pass:** | **0149 UT** | **Planetary K-index:** | **3** |
| **Jupiter Altitude (deg):** | **44.3** | **Jupiter Azimuth (deg):** | **165.6** |
| **Jupiter CML:** | **249.17** | **Jupiter Io Phase:** | **317.46** |
| **Jupiter RA (hr/min):** | **12:53** | **Jupiter Dec (hr/min):** | **-04:03** |
| **Hour Angle (hr/min):** | **-00:41** | **Polarization** | **RCP** |
| **Sun Altitude (deg):** | **-14.2** | **Sun Azimuth (deg):** | **311.6** |
| **Sun RA (hr/min):** | **03:33** | **Sun Dec (hr/min):** | **19:08** |

| | | | |
|---|---|---|---|
| **End of pass:** | **0156 UT** | | |
| **Jupiter Altitude (deg):** | **44.6** | **Jupiter Azimuth (deg):** | **167.7** |
| **Jupiter CML:** | **252.8** | **Jupiter Io Phase** | **318.31** |
| **Hour Angle (hr/min):** | **-00:35** | | |
| **Sun Altitude (deg):** | **-15.1** | **Sun Azimuth (deg):** | **312.8** |

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 19 April 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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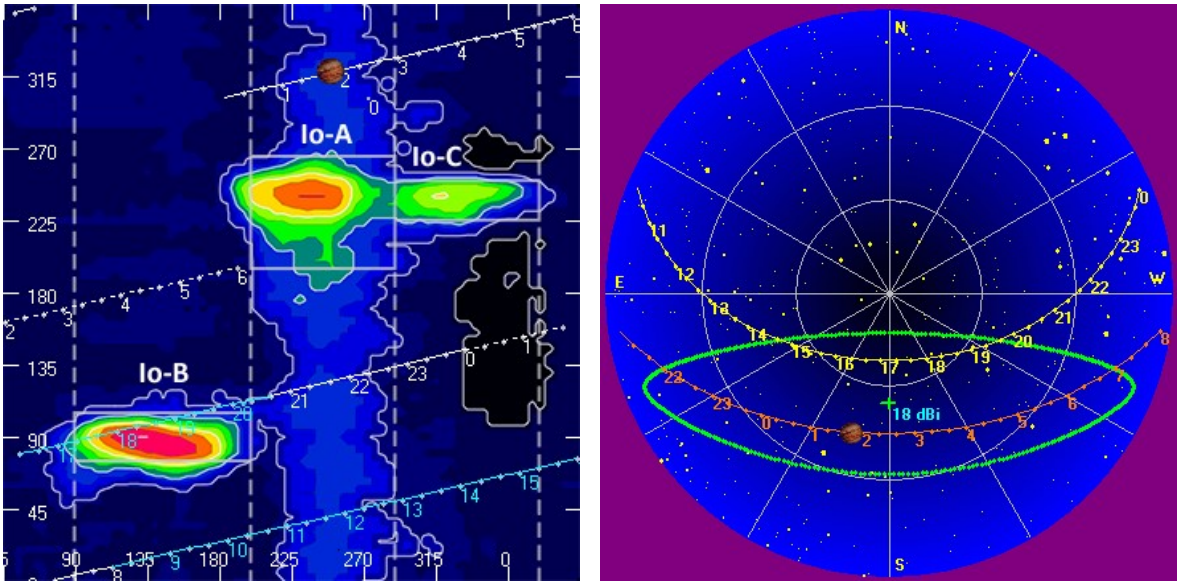
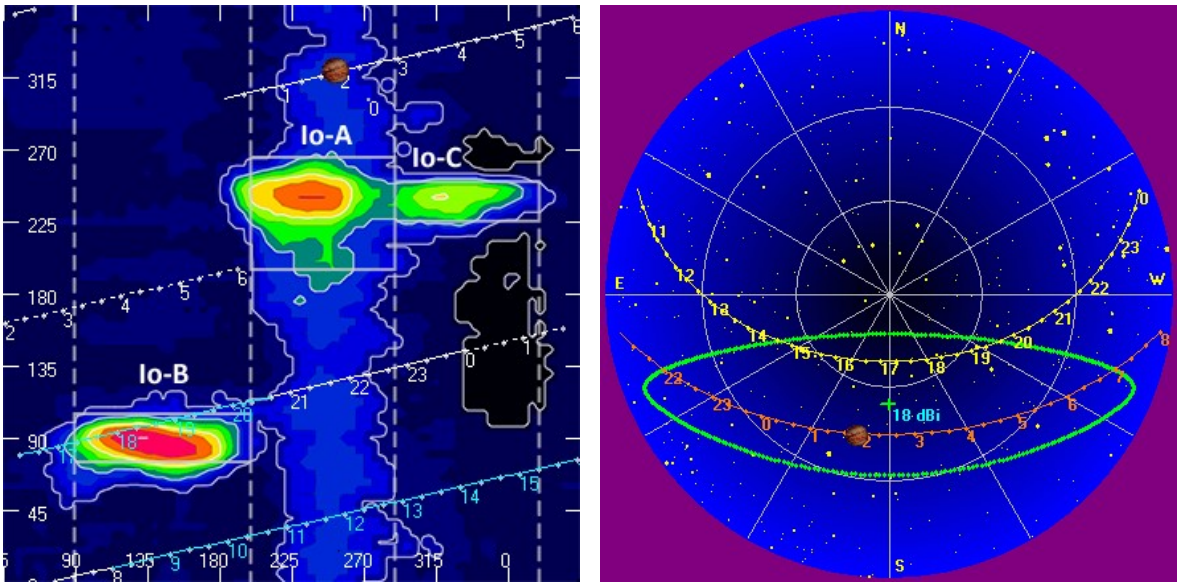



**Beginning of Pass**




**End of Pass**

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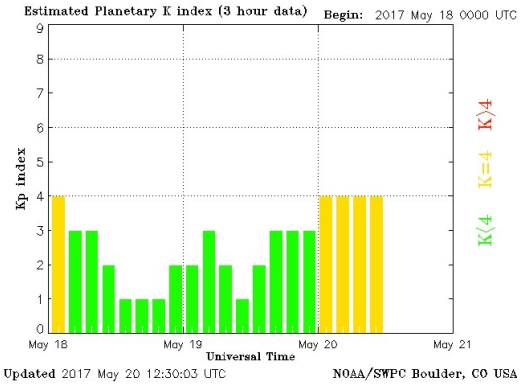


| MODE | CML RANGE | Io RANGE | MAX F | POLAR | ARC | NOTES |
|---|---|---|---|---|---|---|
| Io-D | 0-200 | 95-130 | 18 | LH | Early | Also called "fourth source" |
| Io-B | (105 - 185) | (80-110) | 39.5 | RH | Early | Also called "early source" |
| non Io-B | 80-200 | 0-360 | 38 | RH | Early | Voyager 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**

Very little to note about this Non-Io-A storm. Lasting approximately 7 minutes. Negative drift L-bursts with negative drift modulation lanes. Only one modulation clear enough to measure at -108 kHz/sec drift rate.

The SDRPlay RSP2/TFD pair, with its increased sensitivity, could resolve this event but the ionosphere was not quiet enough to see fine details even though Jupiter was near transit.

The FSX2/LWA spectrograph was able to resolve this storm, however, the FSX-8S/TFD pair saw it just slightly above galactic background.

The Radio JOVE/dipole pair was reconfigured to measure the galactic background at zenith and did not record anything.

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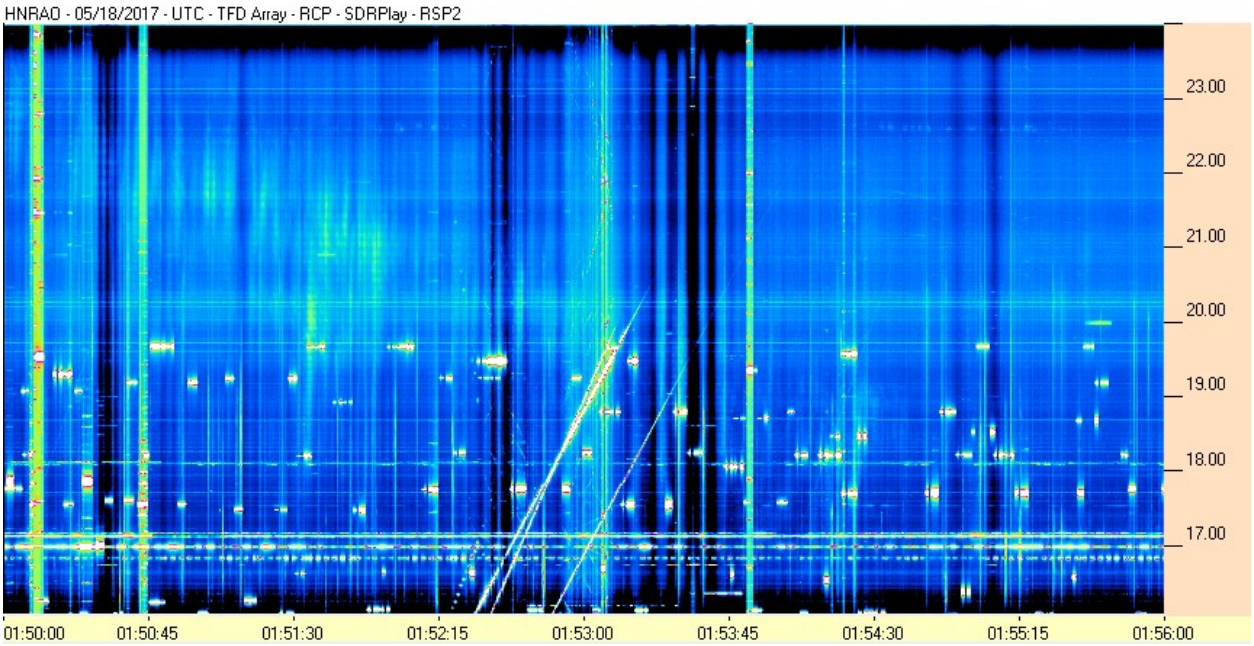
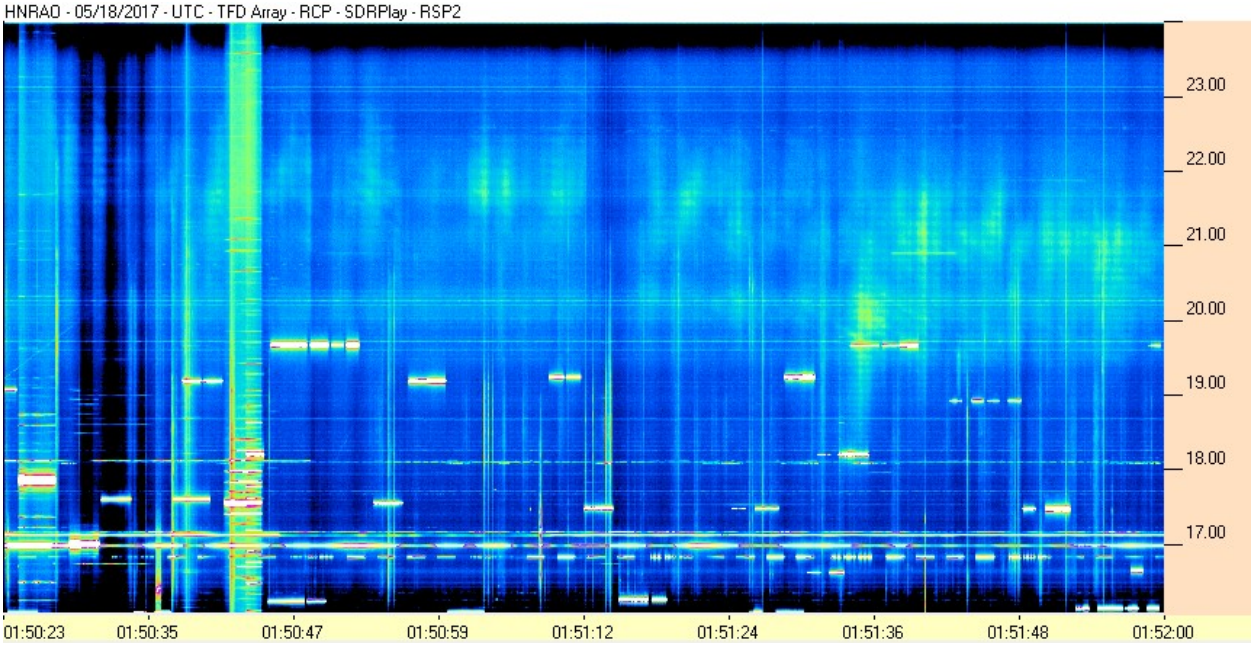
## SDRPlay RSP2/TFD Pair



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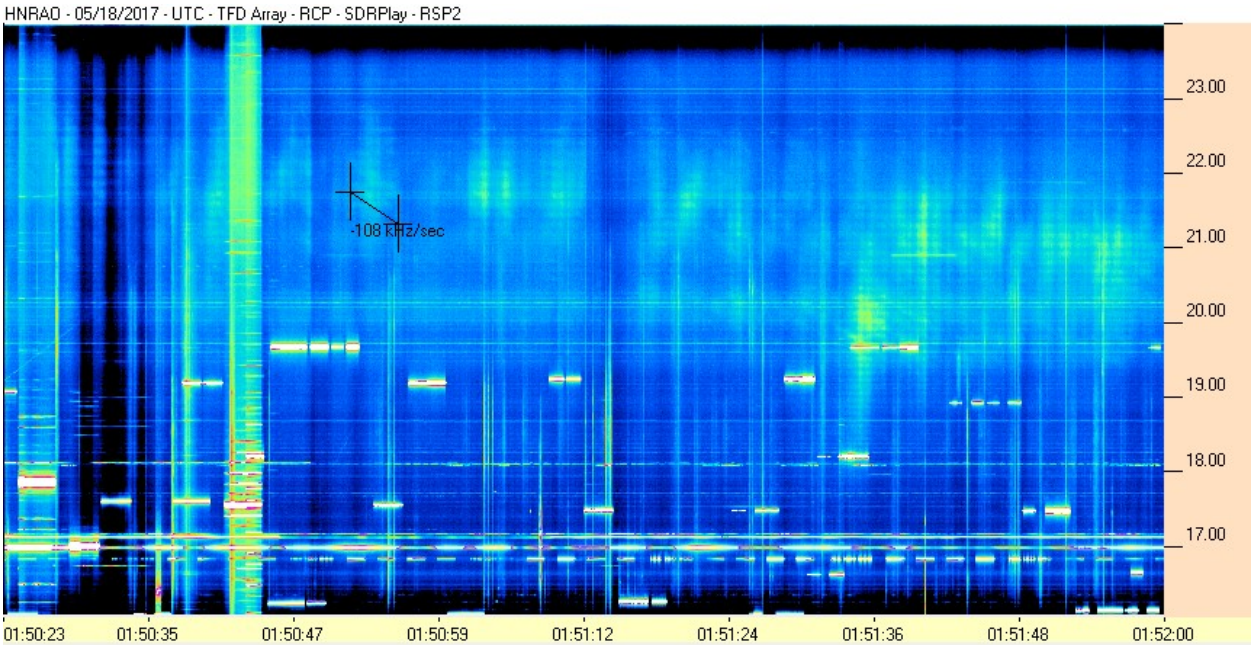

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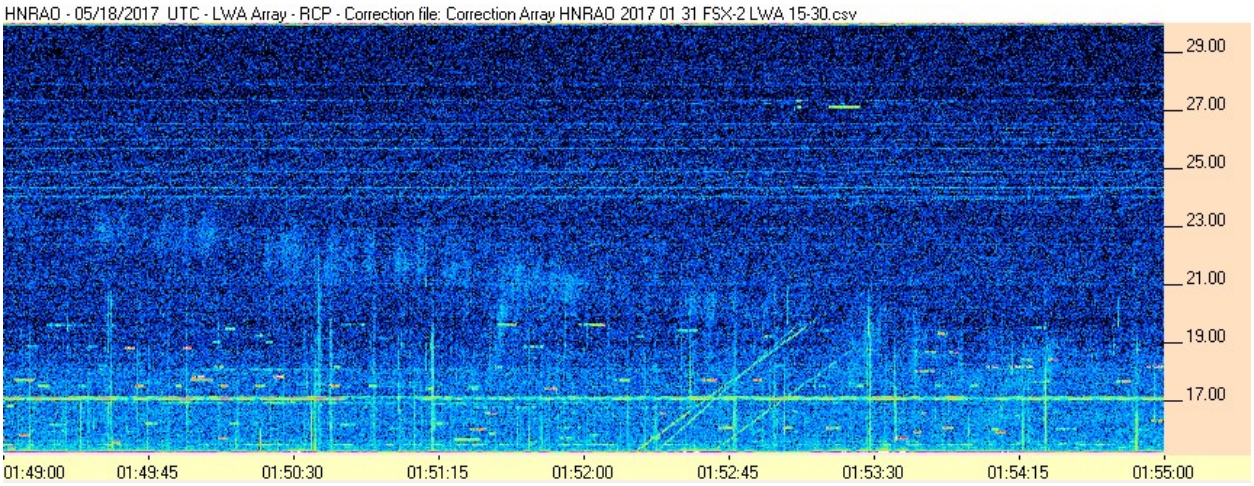
## FSX-2/LWA Pair



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**FSX-8S/TFD Pair**