HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 17 May 18, 2017

Object: Jupiter – Non-Io-B

Observer: Unattended

Start of pass:	**0312 UT**	**Planetary K-index:**	**3**
Jupiter Altitude (deg):	**44.5**	**Jupiter Azimuth (deg):**	**193.0**
Jupiter CML:	**148.19**	**Jupiter Io Phase:**	**124.63**
Jupiter RA (hr/min):	**12:53**	**Jupiter Dec (hr/min):**	**-04:04**
Hour Angle (hr/min):	**00:37**	**Polarization**	**RCP**
Sun Altitude (deg):	**-24.4**	**Sun Azimuth (deg):**	**329.1**
Sun RA (hr/min):	**03:29**	**Sun Dec (hr/min):**	**18:55**

End of pass:	**0329 UT**		
Jupiter Altitude (deg):	**43.6**	**Jupiter Azimuth (deg):**	**198.7**
Jupiter CML:	**158.47**	**Jupiter Io Phase**	**127.04**
Hour Angle (hr/min):	**0054**		
Sun Altitude (deg):	**-25.9**	**Sun Azimuth (deg):**	**333.2**

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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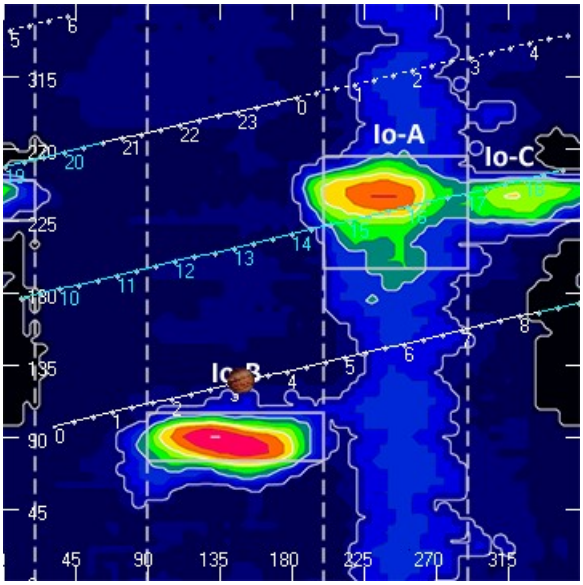
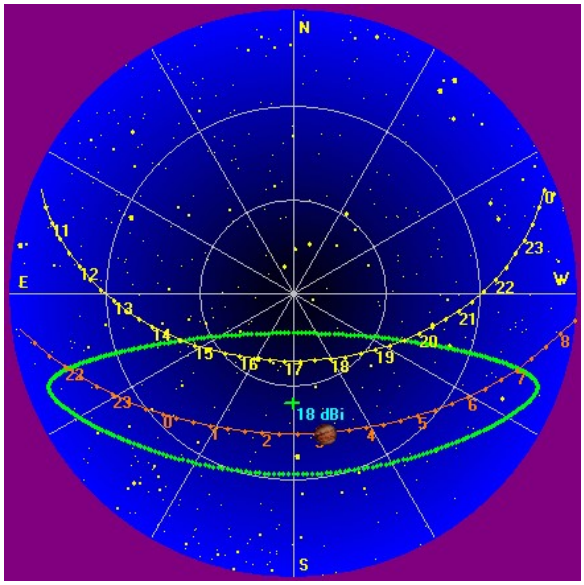
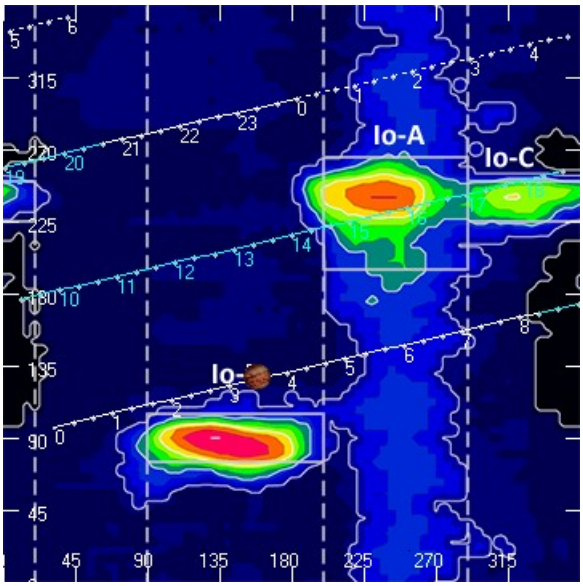
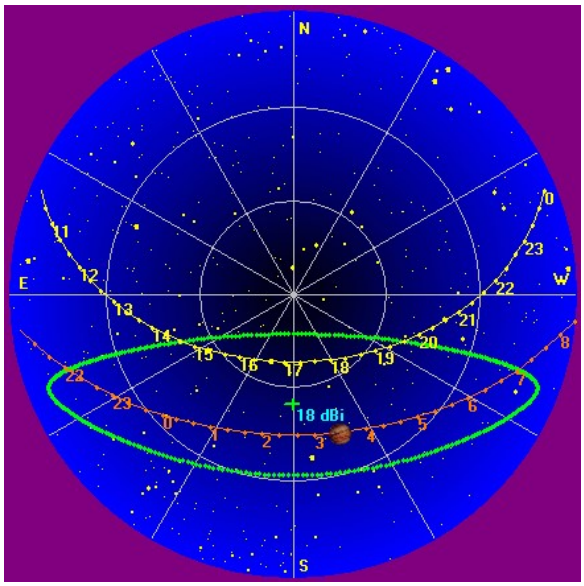




Beginning of Pass





End of Pass

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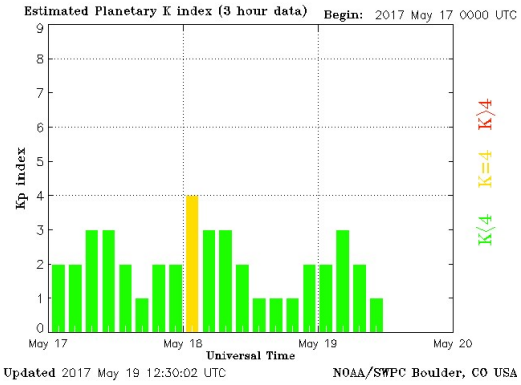

MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360	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

A brief, weak, Non-Io-B storm. RCP emissions between 16 MHz and 22 MHz as observed by the SDRPlay RSP2. Positive drifting L-bursts. No modulation lanes identified, which was a surprise as they've been very prominent throughout this apparition. At 315:20 UT, there are possible modulation lanes in the single burst, but not positively identified.

Emissions were observed with both FSX spectrographs, but not strong enough to have identified as Jupiter emission without confirmation with the SDRPlay RSP2 spectrograph.

Emissions too weak to register with the Radio JOVE receiver/dipole pair.

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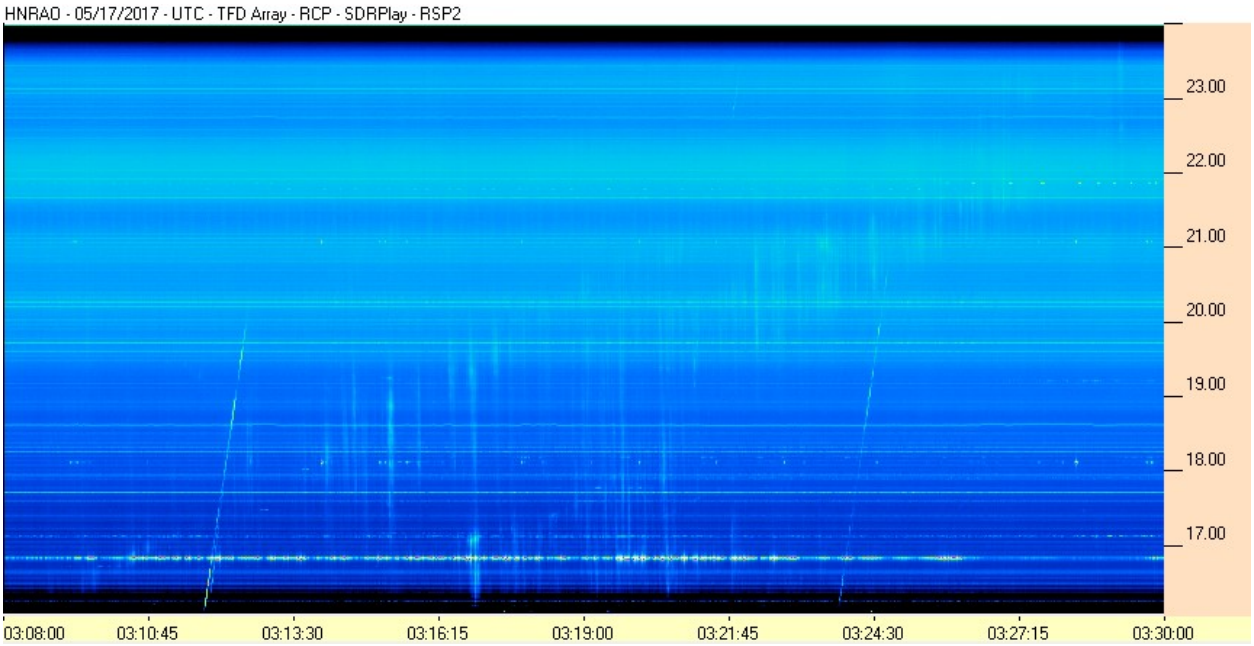
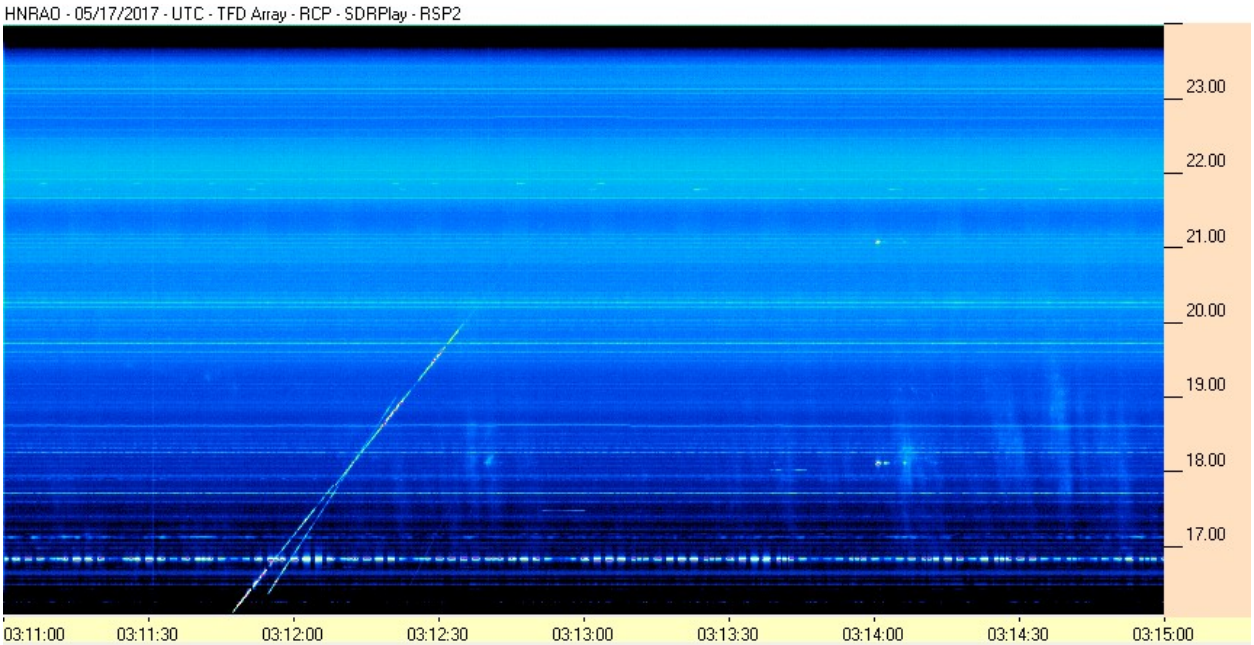
SDRPlay RSP2/TFD Pair





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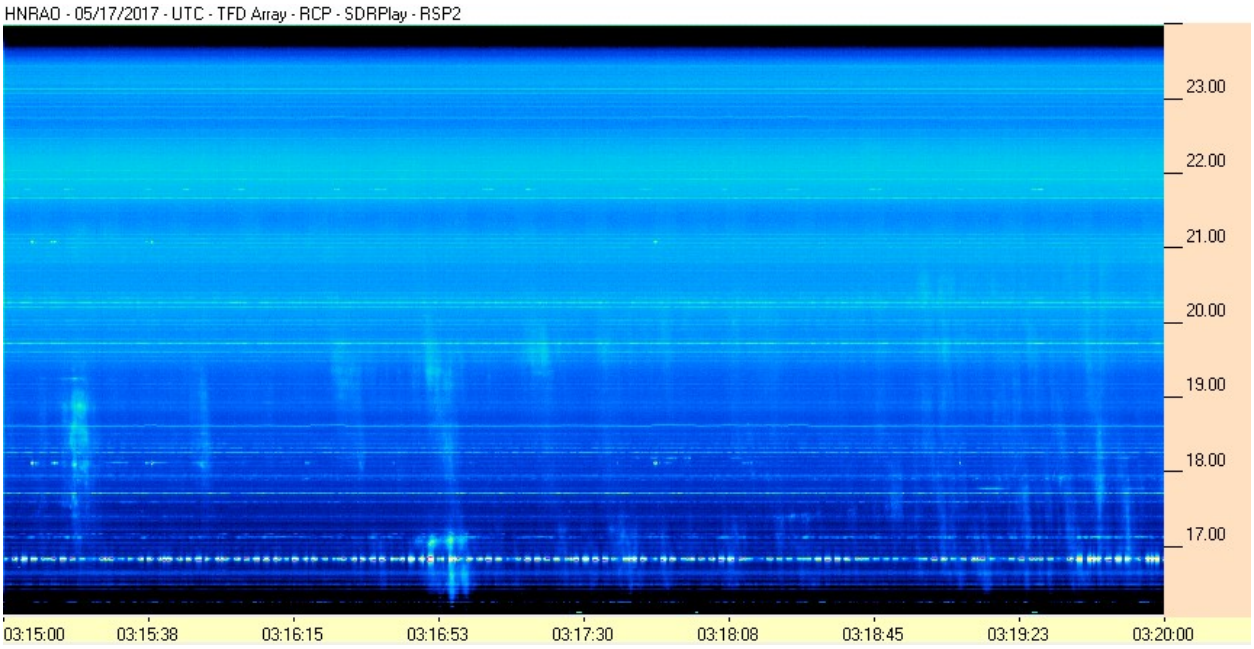

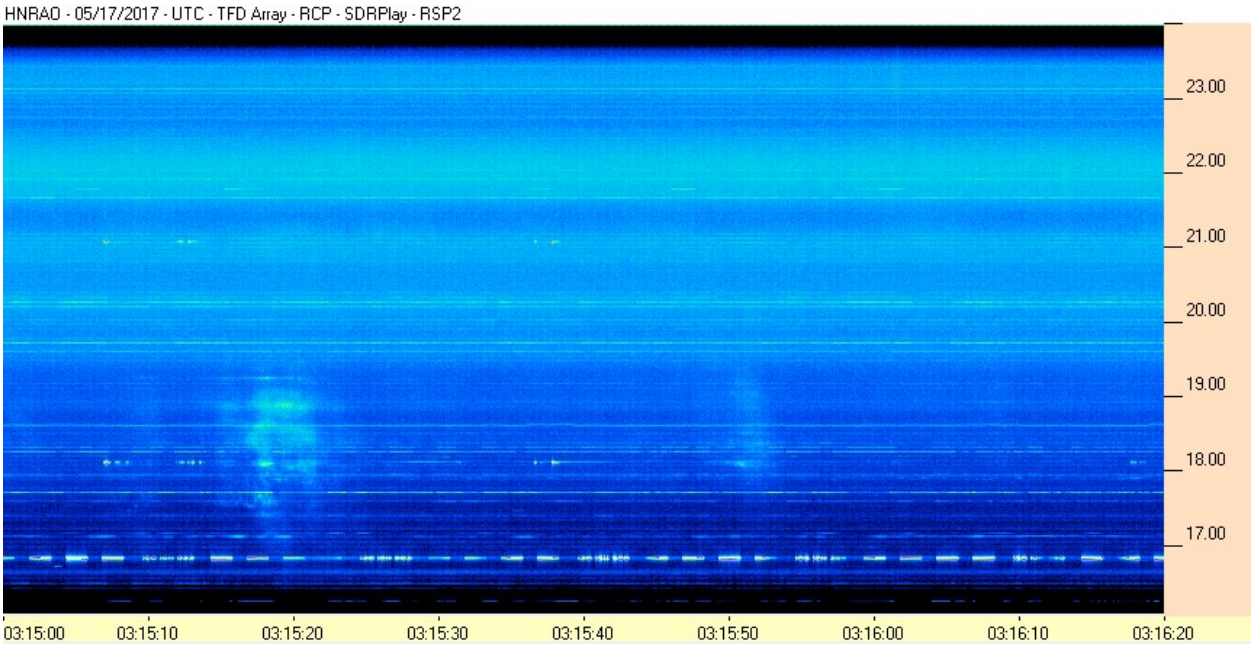

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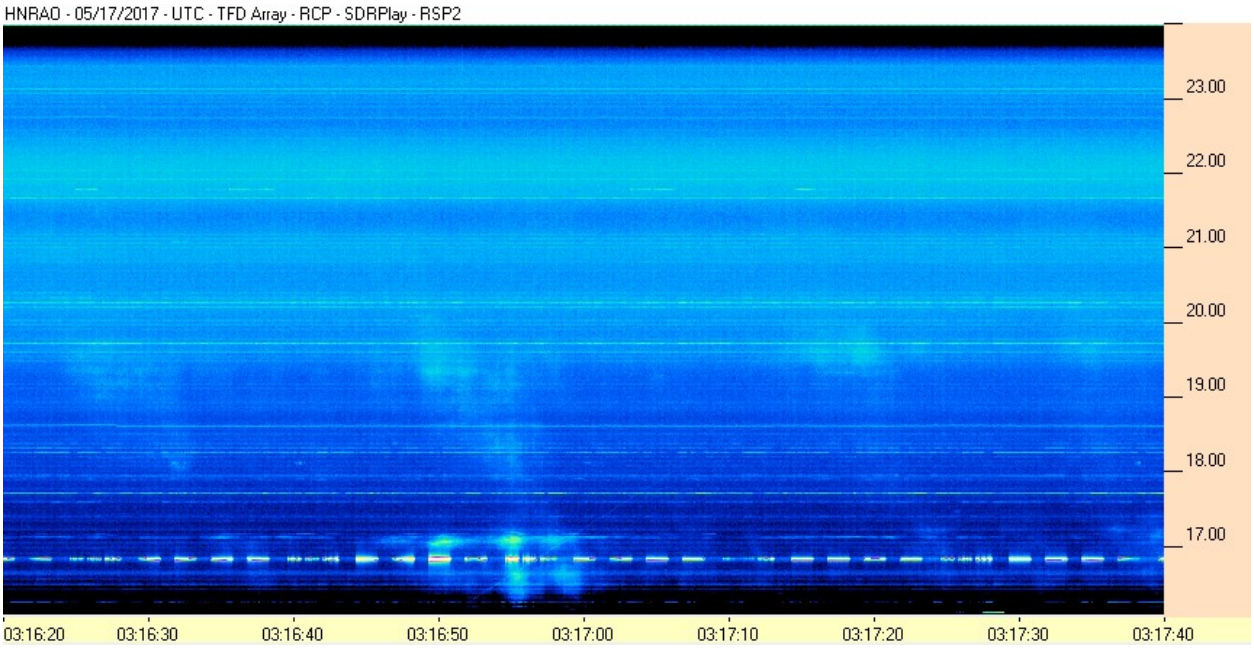

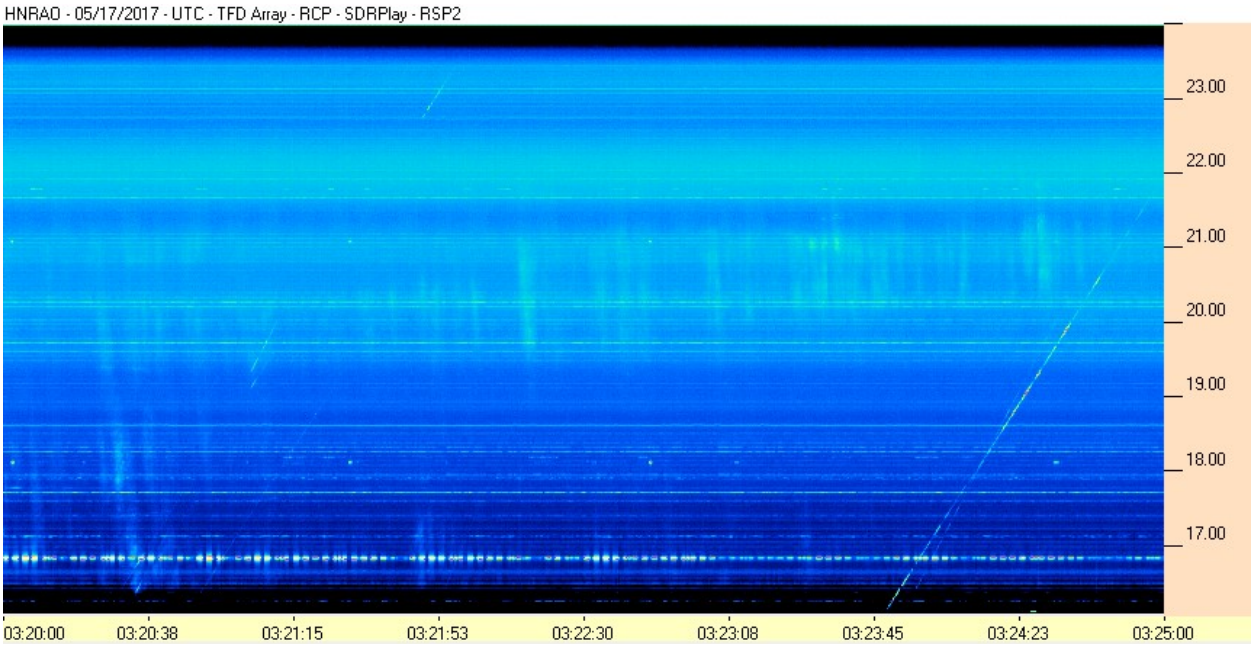

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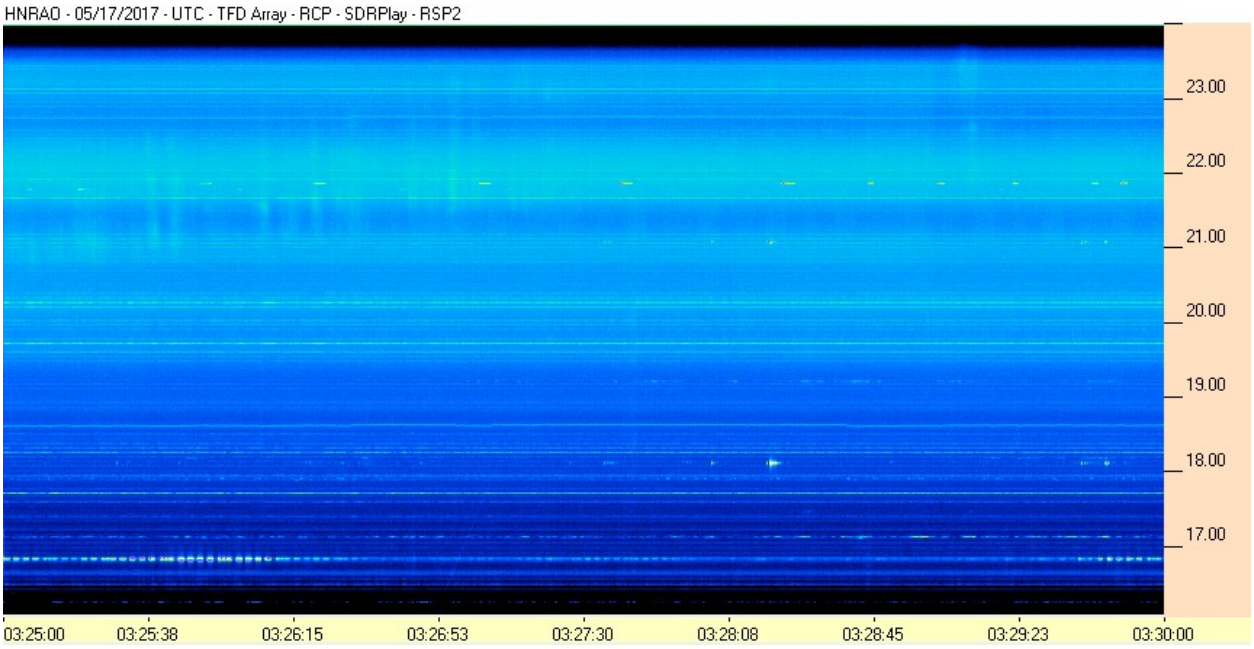

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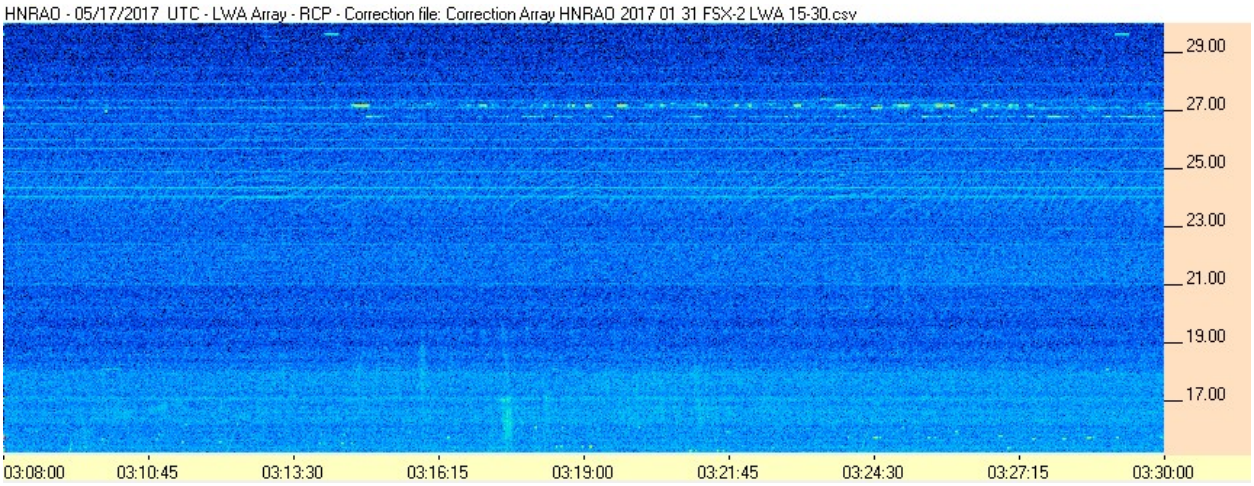
FSX-2/LWA Pair



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FSX-8S/TFD Pair