HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 22 April 2017

Object: Jupiter – Non-Io-C

Observer: JB

Start of pass:	**0330 UT**	**Planetary K-index:**	**5**
Jupiter Altitude:	**42.7 degrees**	**Jupiter Azimuth:**	**161.9 degrees**
Jupiter CML:	**354.17**	**Jupiter Io Phase:**	**077.89**
Jupiter RA:	**13:03**	**Jupiter Dec:**	**-04:59**
Hour Angle:	**-00:53**	**Polarization**	**LCP**
Sun Altitude:	**-32.5 degrees**	**Sun Azimuth:**	**329.6 degrees**
Sun RA:	**01:53**	**Sun Dec:**	**11:35**

End of pass:	**0353 UT**		
Jupiter Altitude:	**43.8 degrees**	**Jupiter Azimuth:**	**169.6 degrees**
Jupiter CML:	**8.08**	**Jupiter Io Phase**	**081:12**
Hour Angle:	**-00:30**		
Sun Altitude:	**-34.5 degrees**	**Sun Azimuth:**	**336.0 degrees**

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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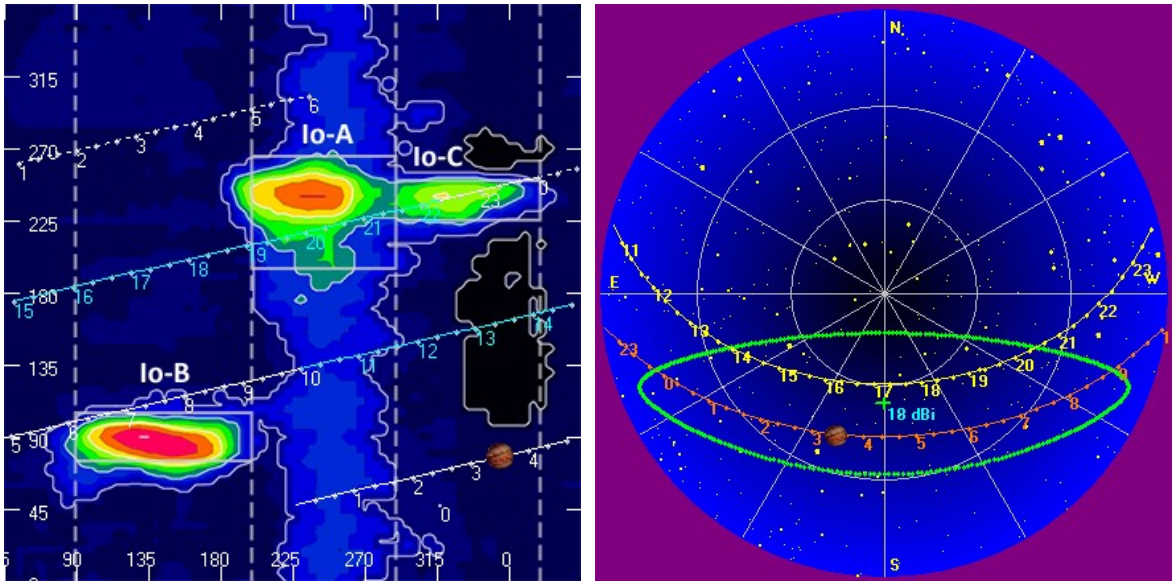
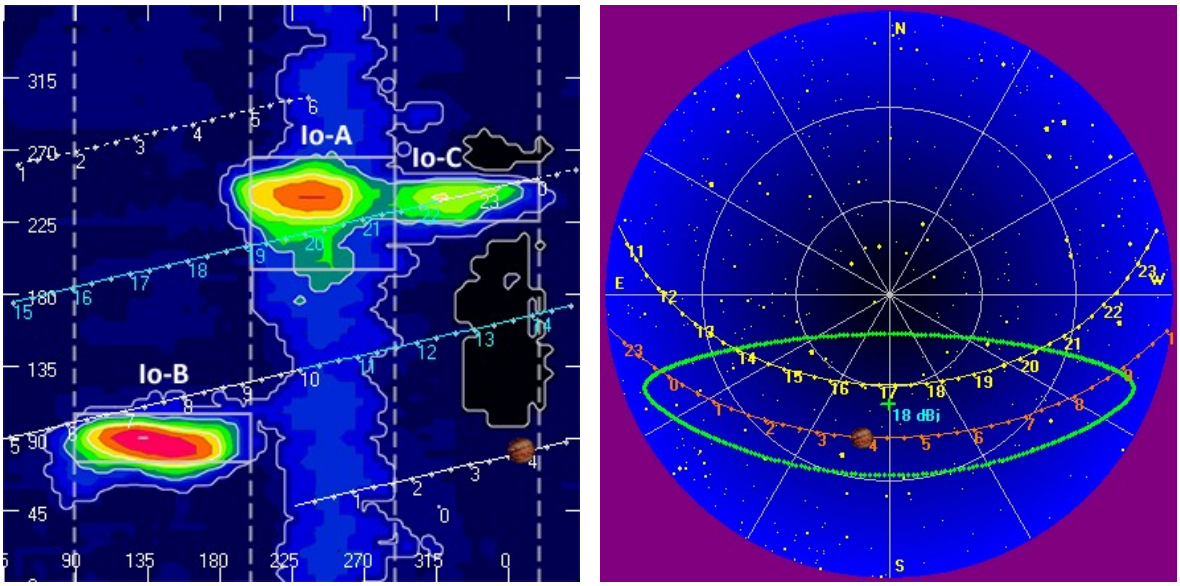


Beginning of Pass



End of Pass

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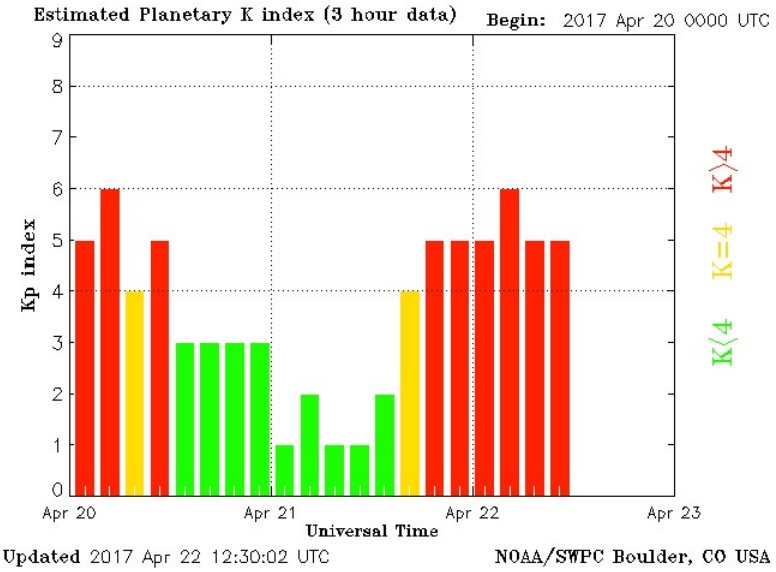

MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360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

A very brief Non-Io-C pass. LCP L-bursts which look to be positive drift between 16 MHz and 18 MHz. Positive drift modulation lanes present, but hard to measure due to the fact they were very short. One was clear enough to attempt a measurement and showed a positive drift rate of 162 kHz/sec. The accuracy of the measurement over so short of a distance and time span is questionable. It was, however, clear that the modulation lanes visible were positive drift.

The FSX-8S/TFD Pair did see it at 0358 UT, but without observing it with the RCP1 unit, would missed it.

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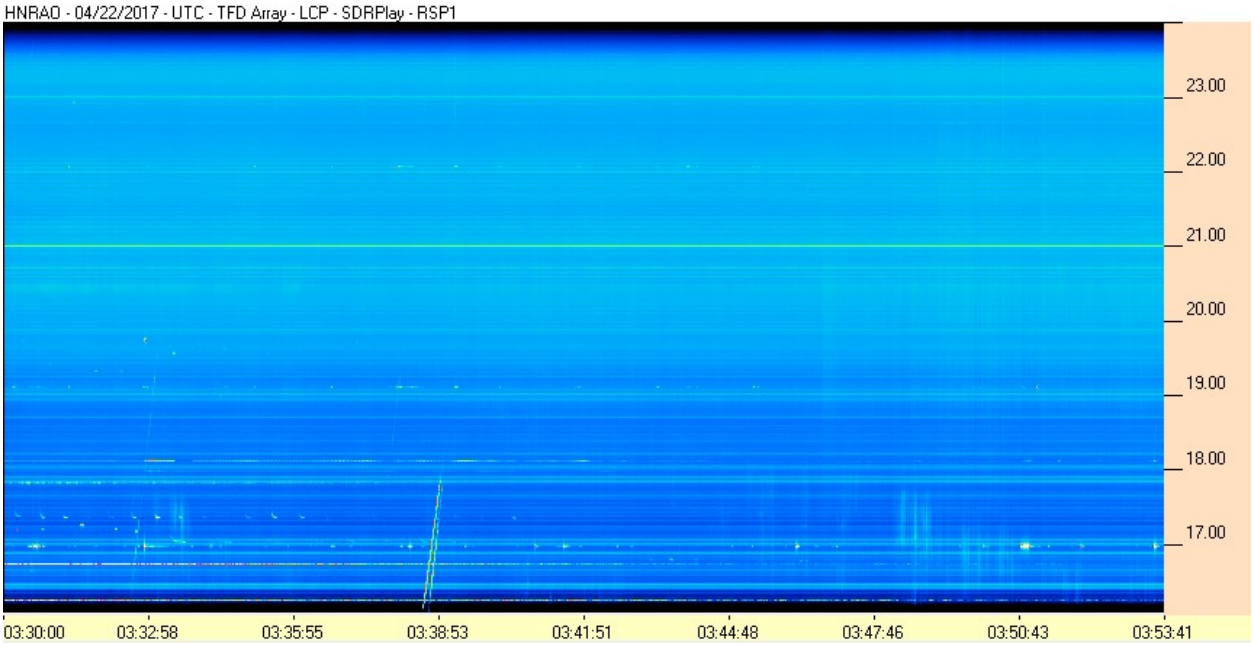
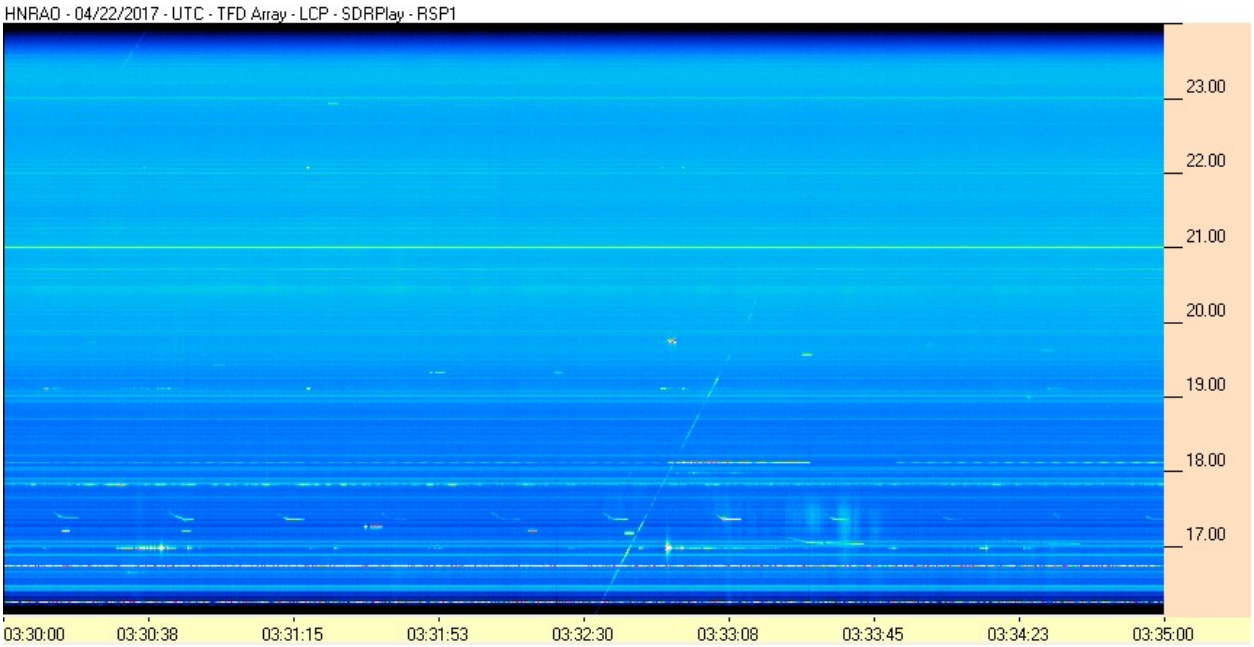
SDRPlay RCP1/TFD





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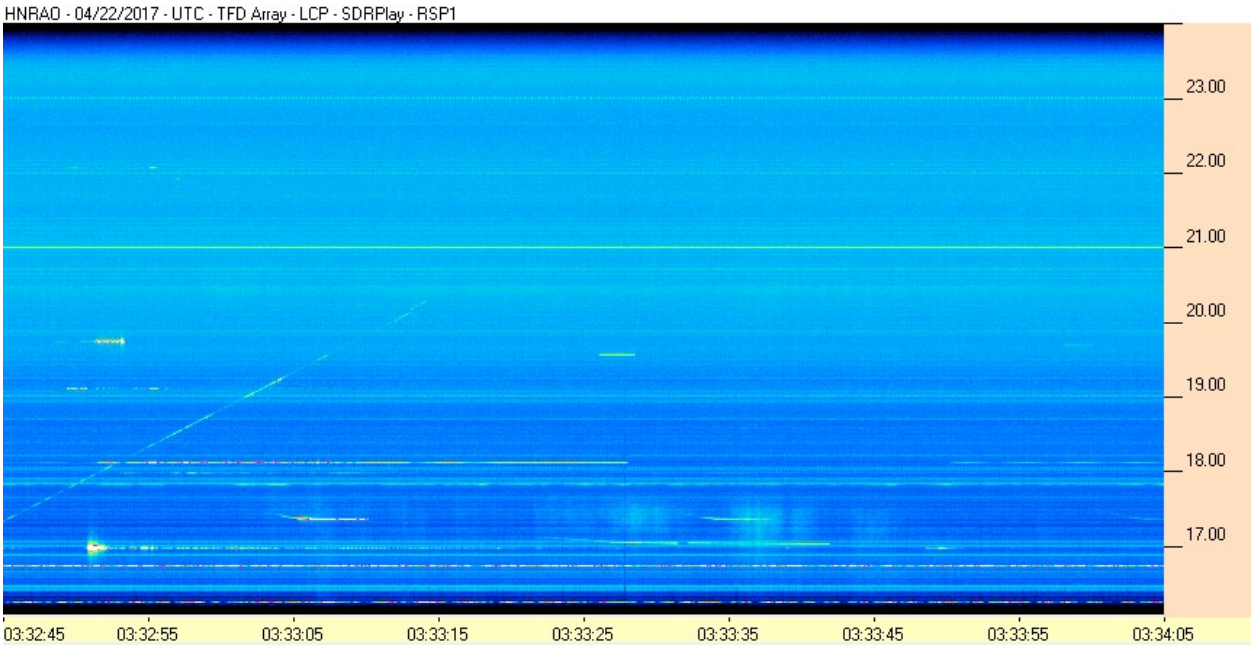

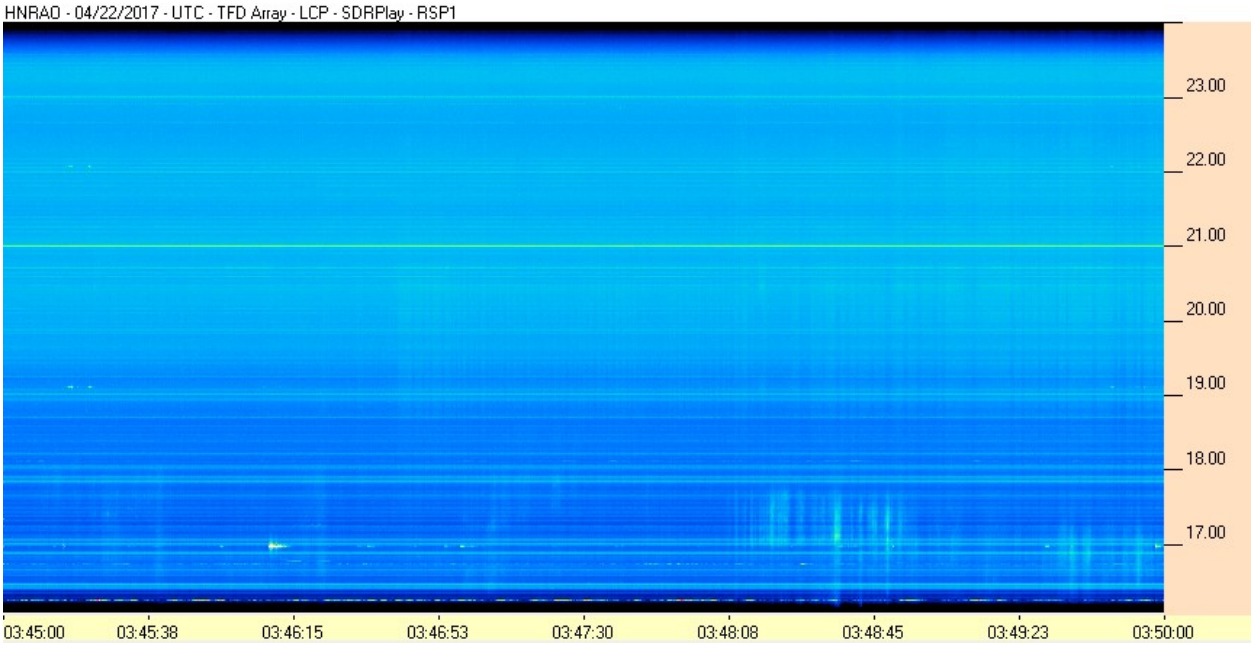

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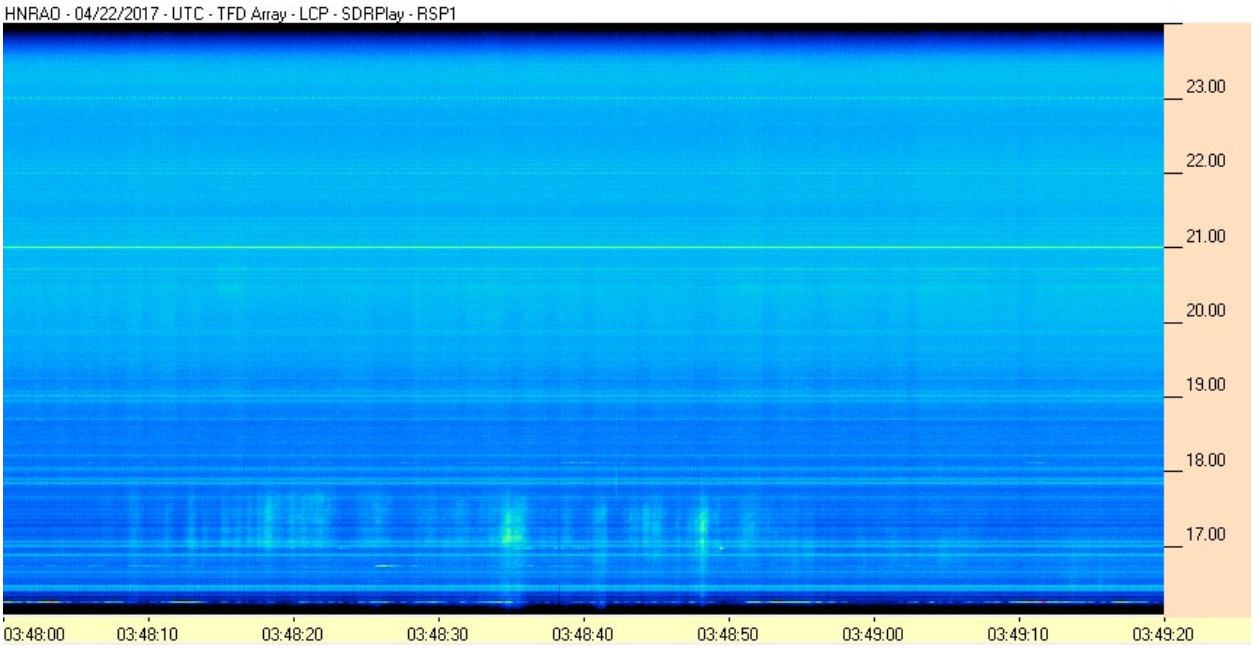

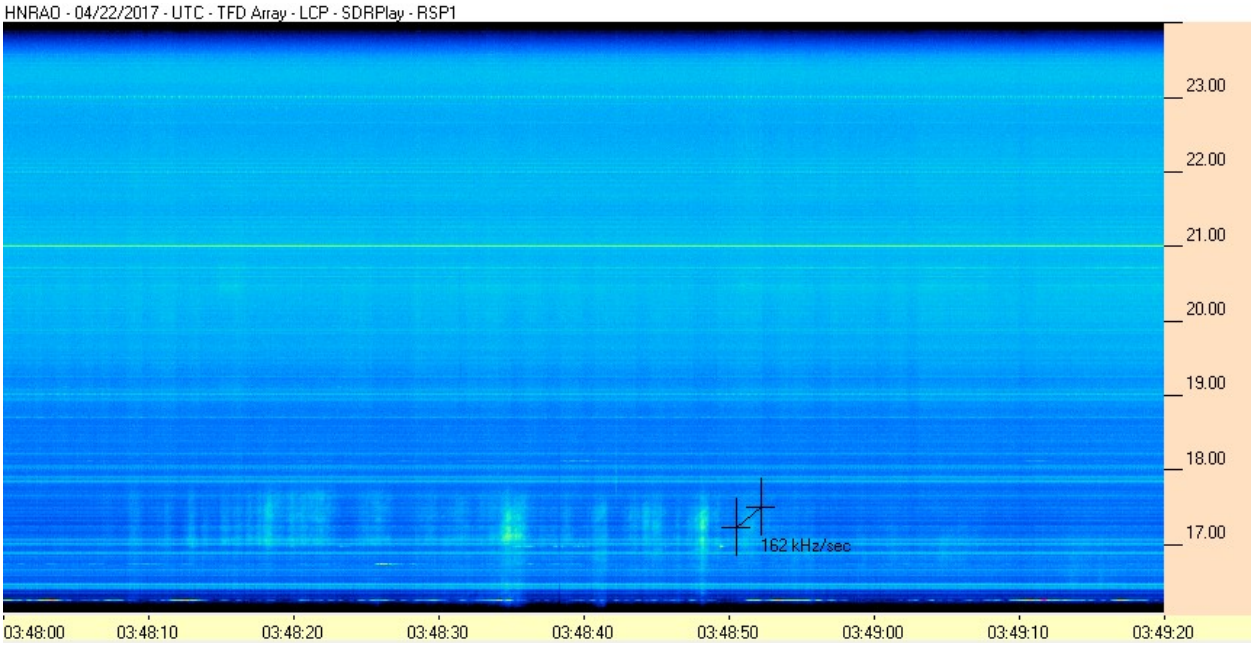

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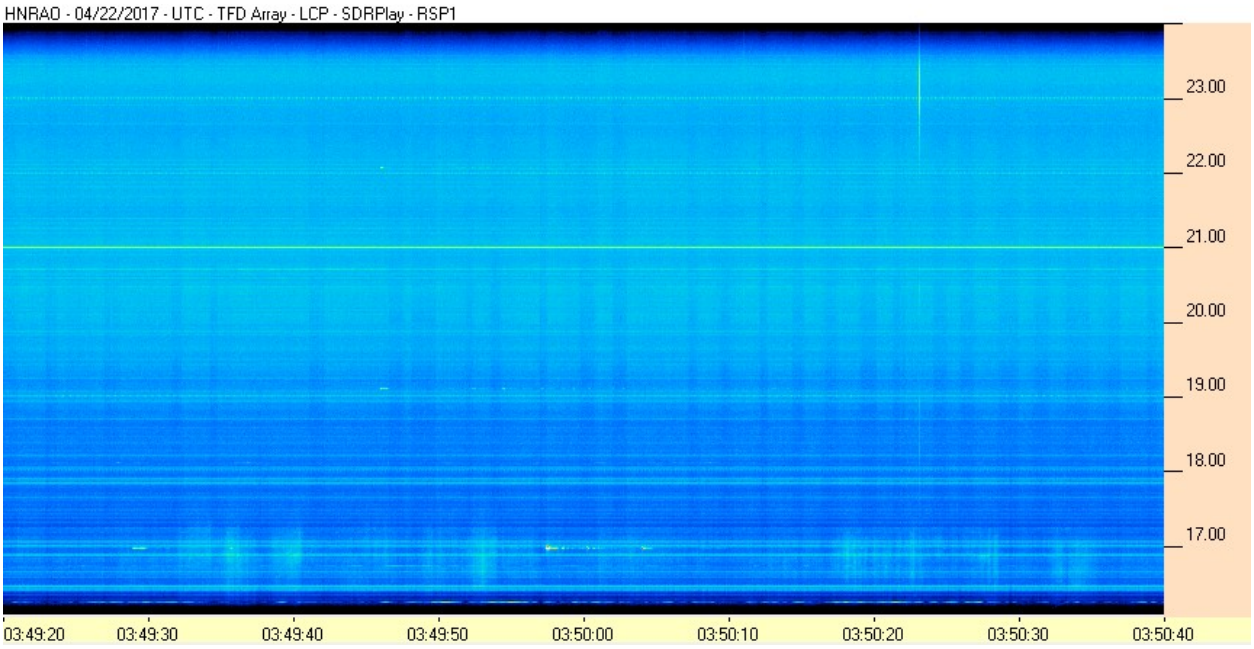

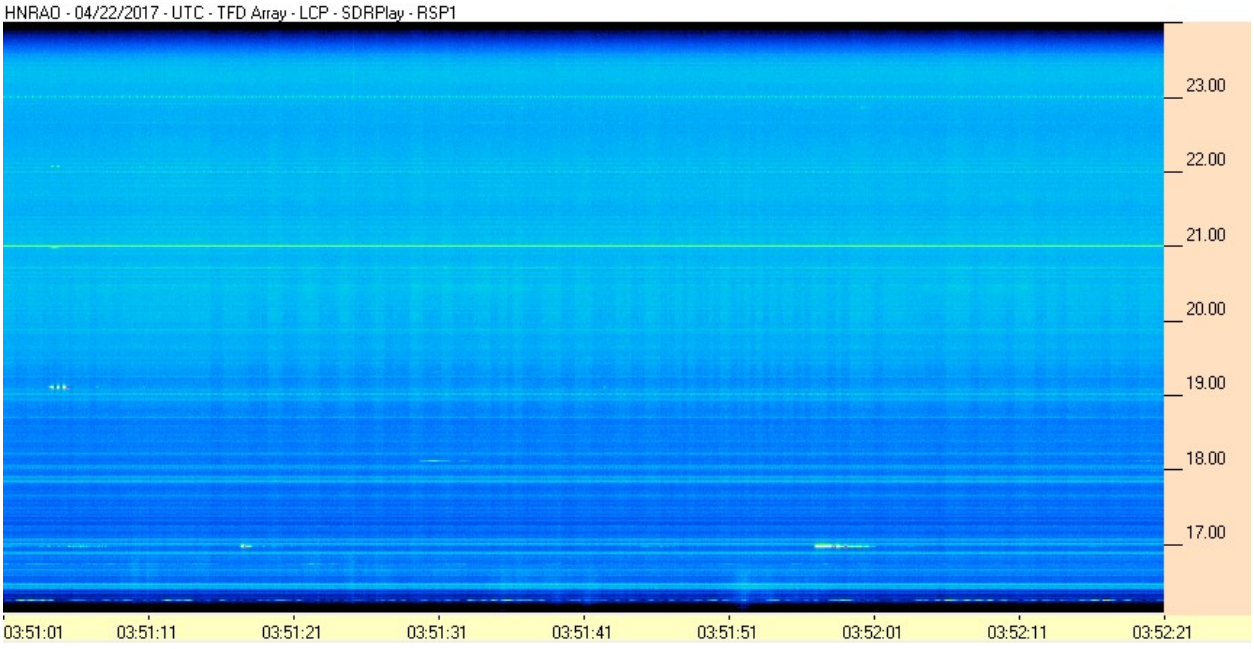

FSX-8S/TFD Pair

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