HNRAO Observing Log
40.673181 N – 80.437885 W
EN90sq

Date: 11 March 2018

Object: Jupiter – Non-Io-A

Observer: Unattended

Start - Time UT:	**0958**	**Planetary K-index:**	**2**
Jupiter Altitude (deg):	**31.6**	**Jupiter Azimuth (deg):**	**188.1**
Jupiter CML:	**213.05**	**Jupiter Io Phase:**	**302.72**
Jupiter RA (hr/min):	**15:24**	**Jupiter Dec (hr/min):**	**-17:21**
Hour Angle (hr/min):	**00:29**	**Polarization**	**RCP**
Sun Altitude (deg):	**-19.2**	**Sun Azimuth (deg):**	**078.9**
Sun RA (hr/min):	**23:19**	**Sun Dec (hr/min):**	**-04:24**

End – Time UT:	**1013**		
Jupiter Altitude (deg):	**31.1**	**Jupiter Azimuth (deg):**	**192.2**
Jupiter CML:	**222.12**	**Jupiter Io Phase**	**304.86**
Hour Angle (hr/min):	**00:44**		
Sun Altitude (deg):	**-16.4**	**Sun Azimuth (deg):**	**081.5**

Observatory Configuration

Spectrograph Receiver	Antenna	Polarization	System Loss	Multicoupler	Multicoupler port	Calibrated
FSX-8S	TFD	RCP LCP	7.70 dB 7.70 dB	#2 RCP #1 LCP	Port 2 +3dB Port 2 +3dB	Twice daily Twice daily
FSX-2	LWA	RCP/LCP manual select		N/A	N/A	N/A
SDRPlay RSP2	TFD	RCP	-7.70 dB	#2 RCP	Port 3 +3dB	Twice daily
SDRPlay RSP2	TFD	LCP	-7.70 dB	#1 LCP	Port 3 +3dB	Twice daily
SDRPlay RSP1	Jove dipoles	Linear	-3.19 dB	N/A	N/A	N/A
JOVE II	Jove dipoles	Linear	-3.19 dB	N/A	N/A	02/20/2018
JOVE 1	TFD	RCP	-7.70 dB	N/A	N/A	03/08/2018
JOVE 1	TFD	LCP	-7.70 dB	N/A	N/A	03/08/2018

JOVE dipoles phased @ 32 degrees for 2017-2018 season
TFD array phased @ 35 degrees for 2017-2018 season
LWA antenna orientation for observation: 67.5 degrees

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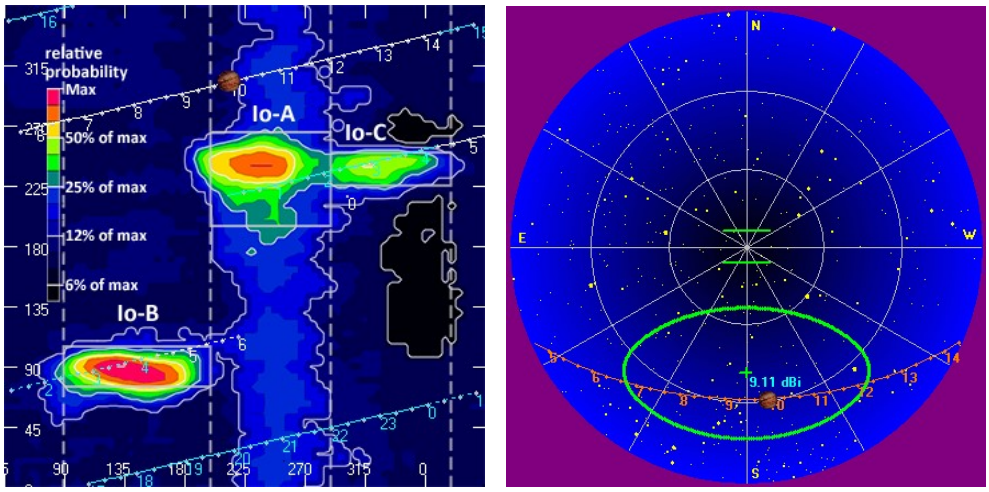
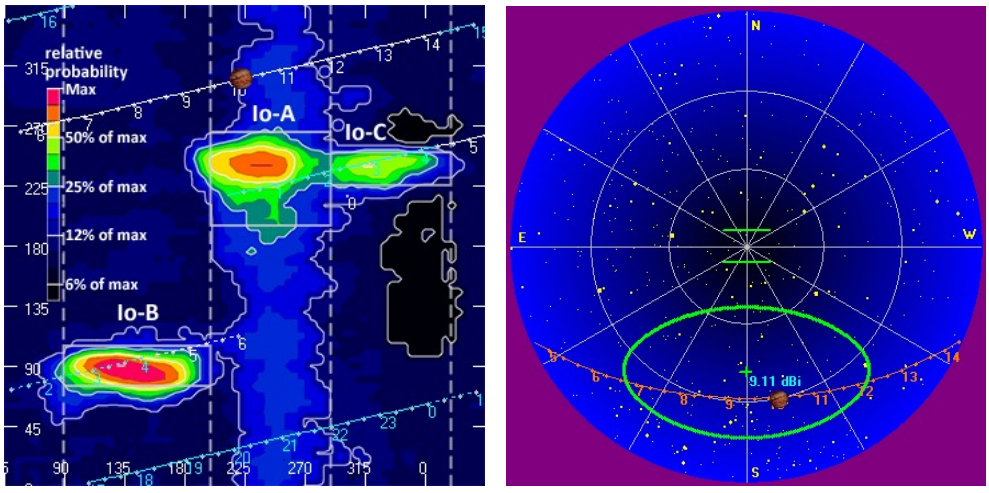


Beginning of Pass



End of Pass

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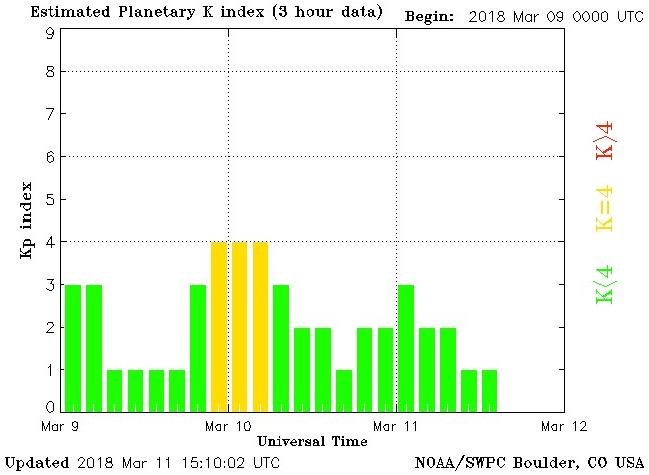
MODE	CML RANGE	Io RANGE	MAX F	POLAR	ARC	NOTES
Io-D	0-200	95-130	18	LH	Early	Also called "fourth source"
Io-B	(105 - 185)	(80-110)	39.5	RH	Early	Also called "early source"
non Io-B	80-200	0-360	38	RH	Early	Voyager info
Io-A	(200-270)	(205-260)	38	RH	Late	Also called "main source"
non-Io-A	(230-280)	0-360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

Modulation Lanes Designations*	
L - Burst	S-Burst
L1 – No lanes	S1 – No lanes
L2 - Positive slope	S2 – Positive slope
L3 - Cross hatched	S3 – Cross hatched
L4 – Negative slope	S4 – Negative slope
*Modulation Lanes in the Dynamic Spectra of Jovian L-bursts, J.J. Riihimaa, Astron. & Astrophys. 4, 1970	



A very brief Non-Io-A storm lasting 15 minutes. RCP L-burst emissions between 15 MHz and 19 MHz. There were a few modulation lanes visible and measurable.

Emissions never reached above 19 MHz so there is no Radio Jove/Jove dual dipoles/SkyPipe record.

Emissions were seen by FSX-8S/TFD, FSX-2/LWA and SDRPlay RSP2/TFD. Of the two FSX spectrographs, the FSX-2 spectrograph saw the emissions marginally stronger than the FSX-8S. The SDRPlay RSP2/TFD resolved the emissions the best.

After the strong Non-Io-A from last year, this year, so far, have been the opposite.

Jupiter is nearing its maximum altitude for this season @ 32 degree above the southern horizon.

EOR

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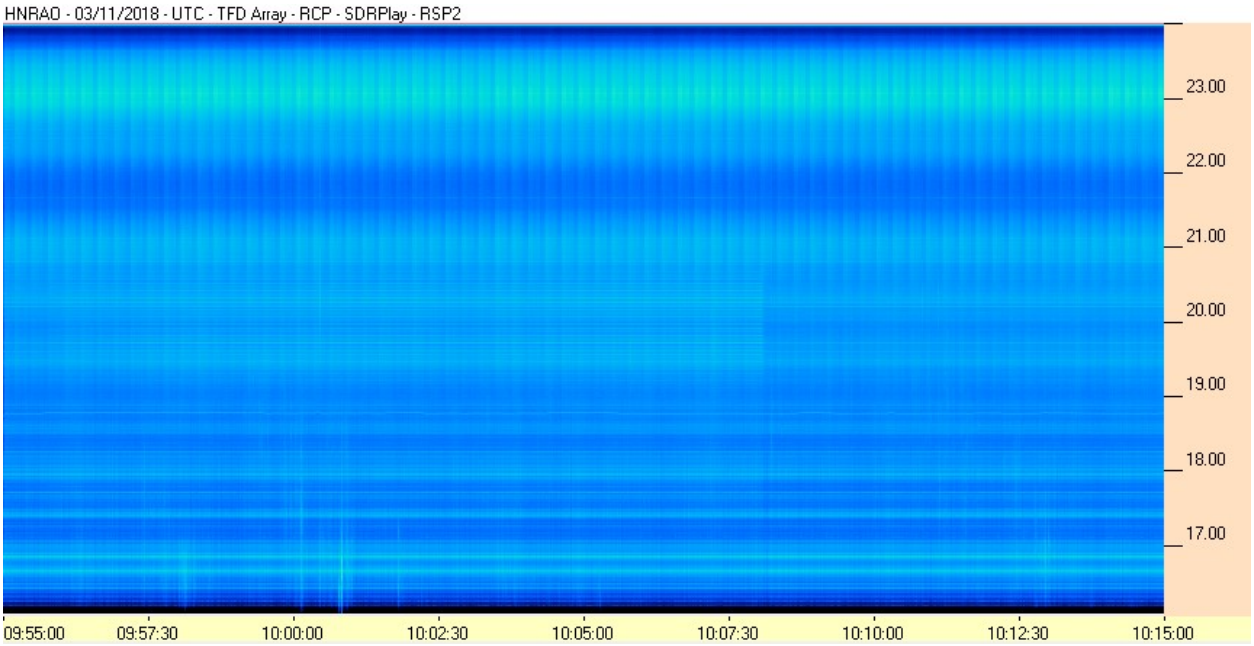
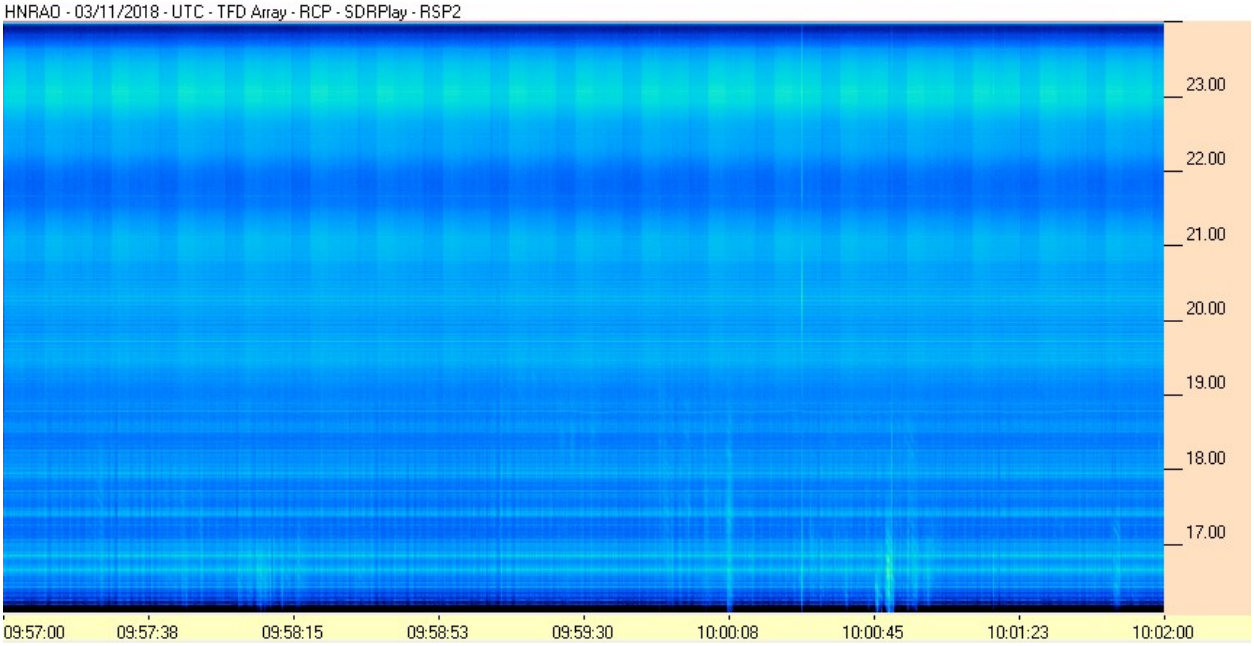
SDRPlay RSP2/TFD





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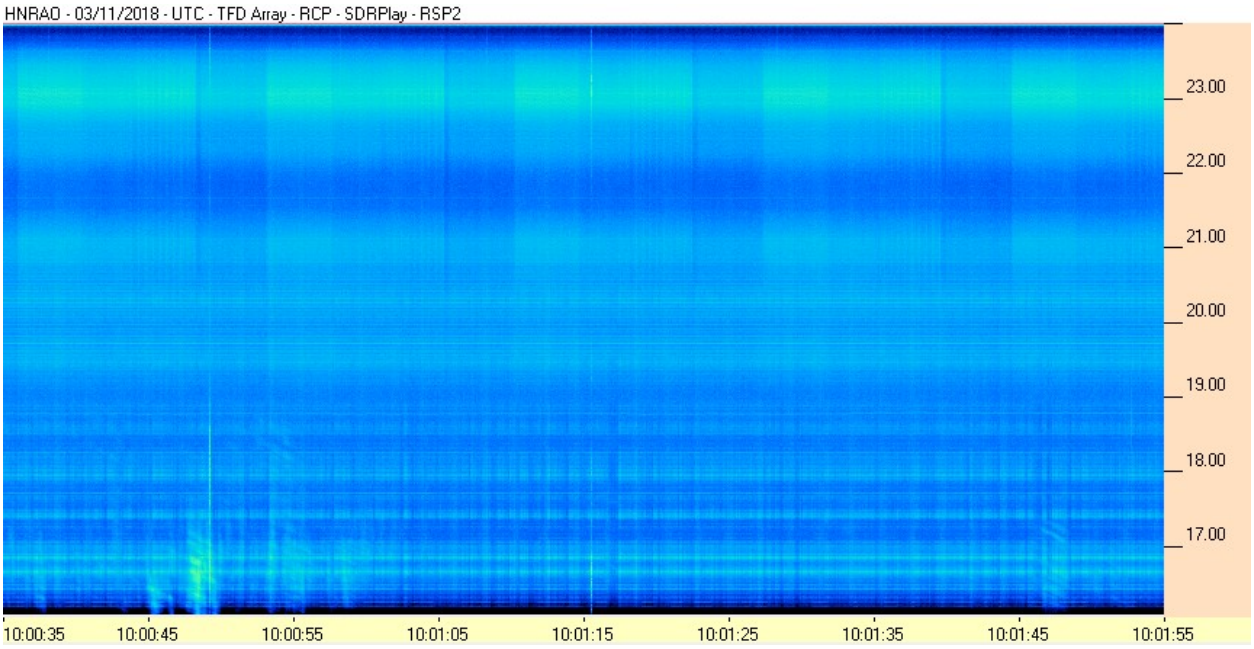

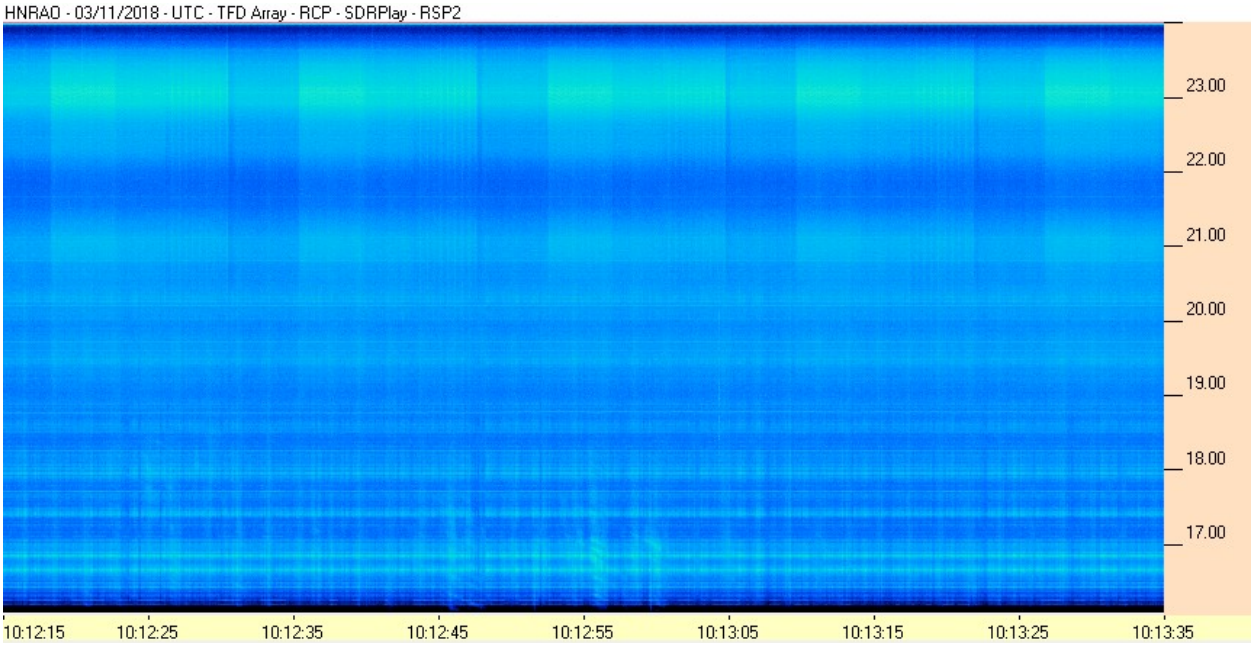

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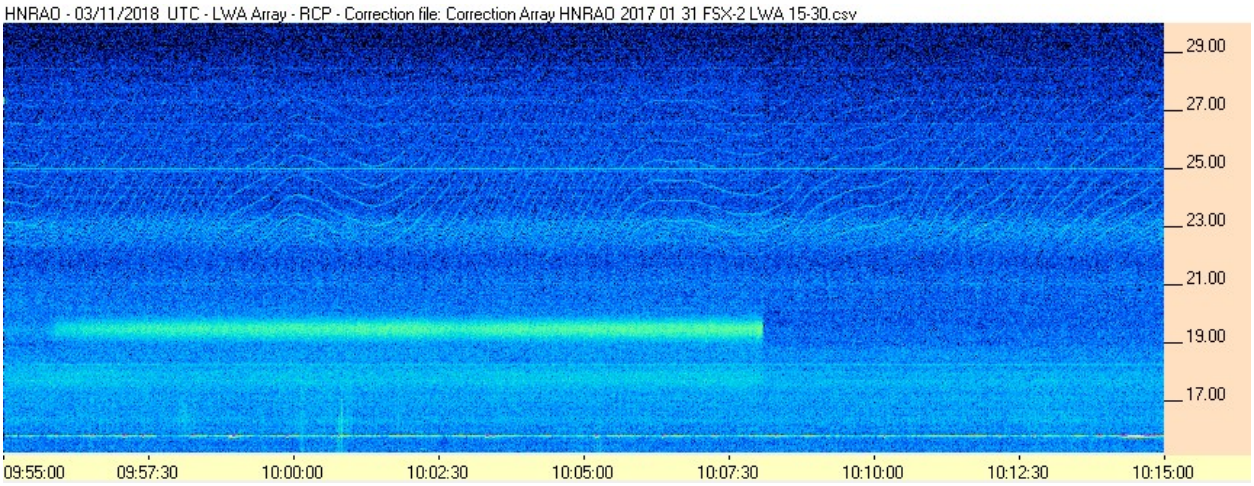
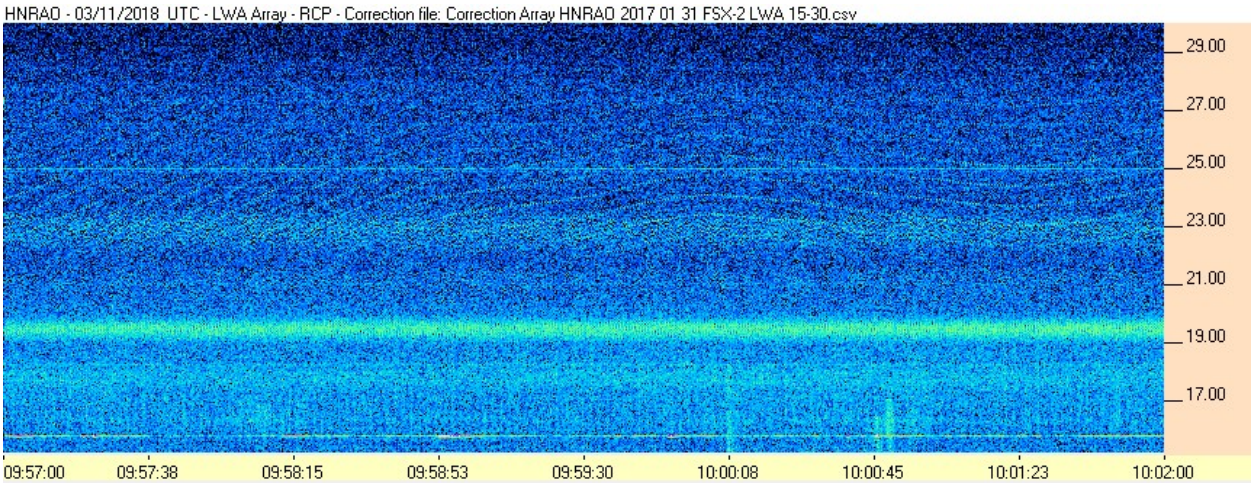
FSX-2/LWA





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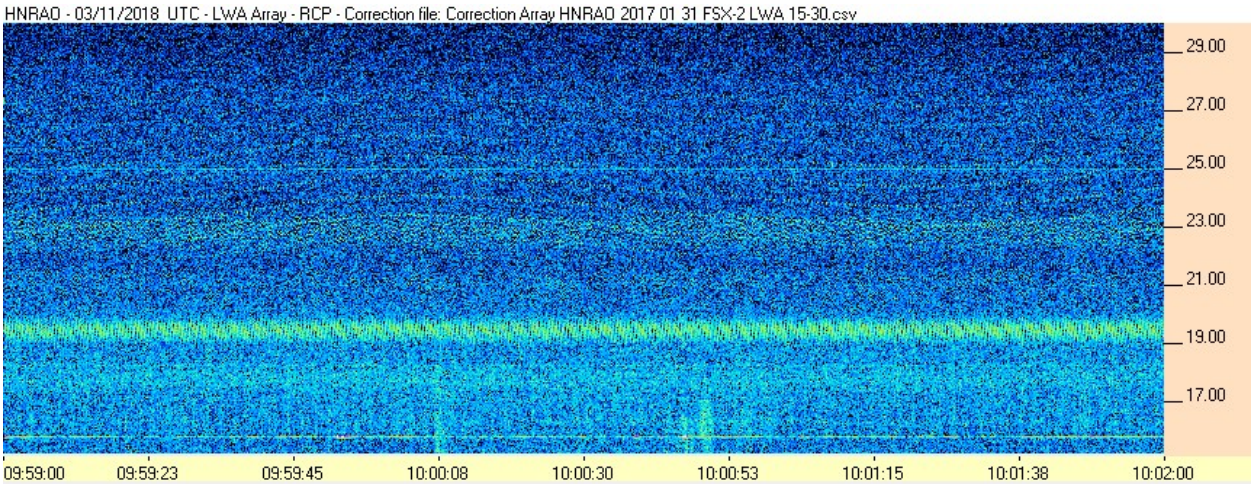
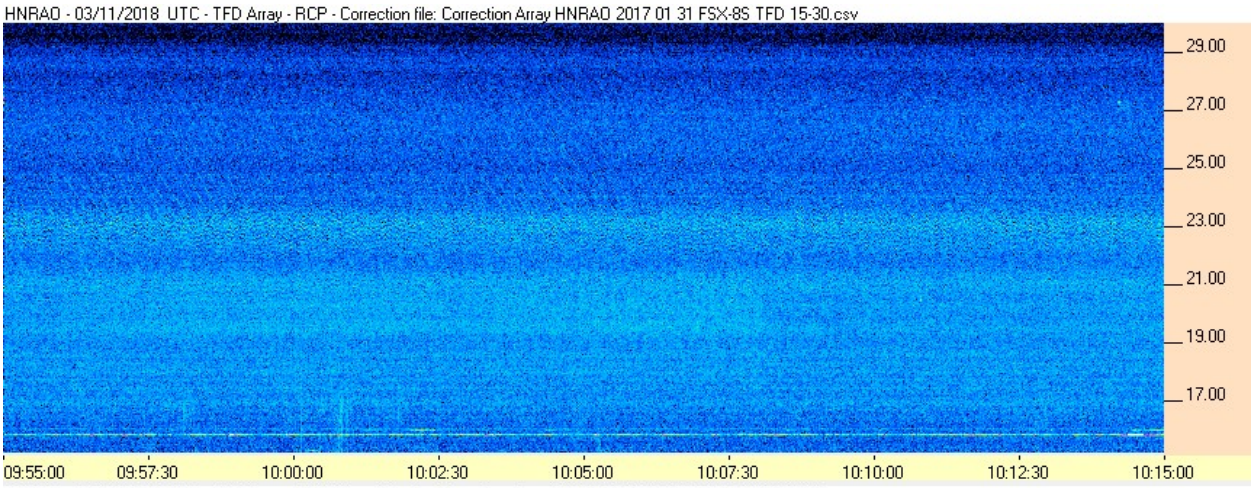


FSX-8S/TFD



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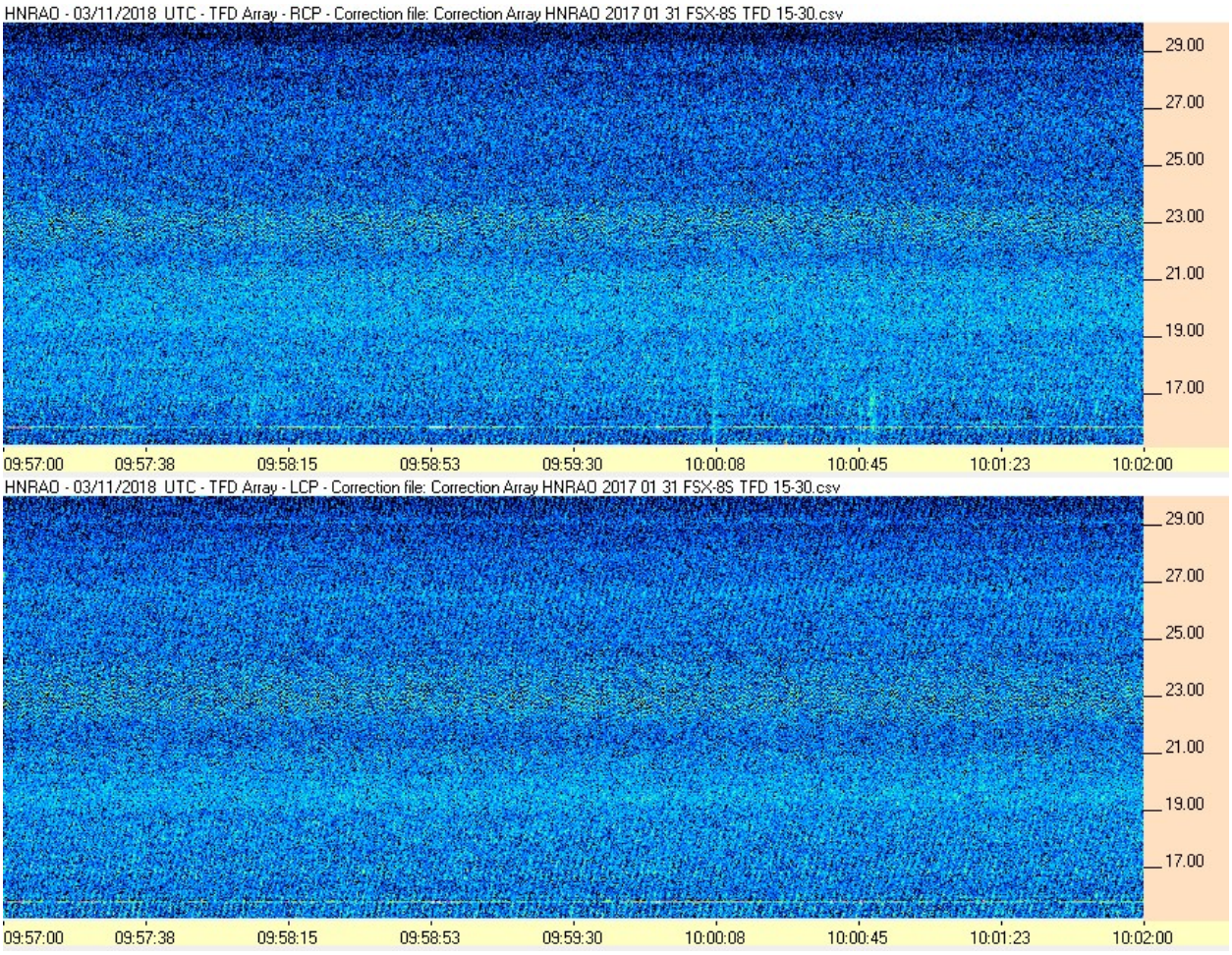

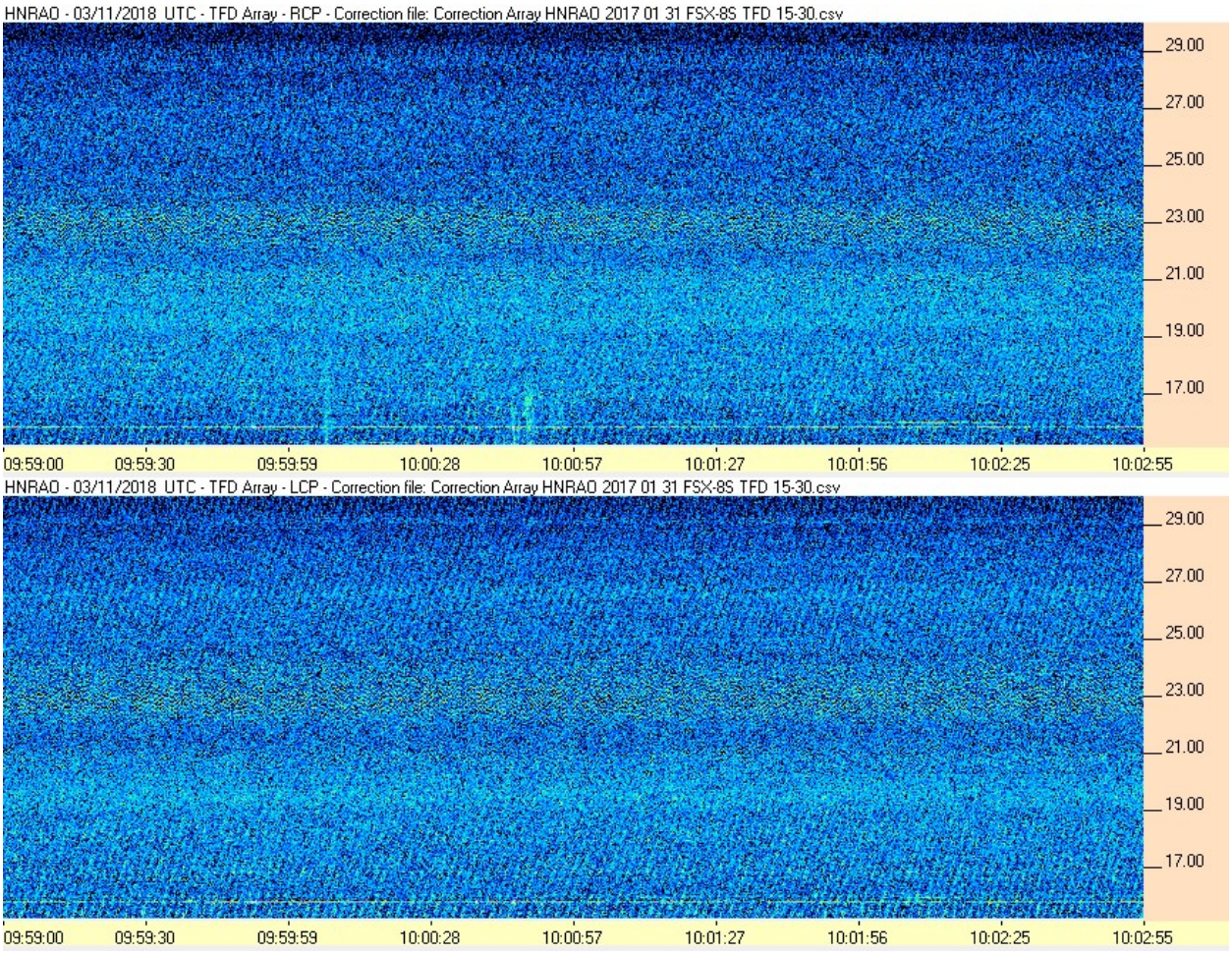
HNRAO - 03/11/2018 UTC - TFD Array - RCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv
29.00
27.00
25.00
23.00
21.00
19.00
17.00
09:59:00
09:59:30
09:59:59
10:00:28
10:00:57
10:01:27
10:01:56
10:02:25
10:02:55
HNRAO - 03/11/2018 UTC - TFD Array - LCP - Correction file: Correction Array HNRAO 2017 01 31 FSX-8S TFD 15-30.csv
29.00
27.00
25.00
23.00
21.00
19.00
17.00
09:59:00
09:59:30
09:59:59
10:00:28
10:00:57
10:01:27
10:01:56
10:02:25
10:02:55