

Recent Advances In Stimulated Electromagnetic Emission Observations With HAARP HF Heating



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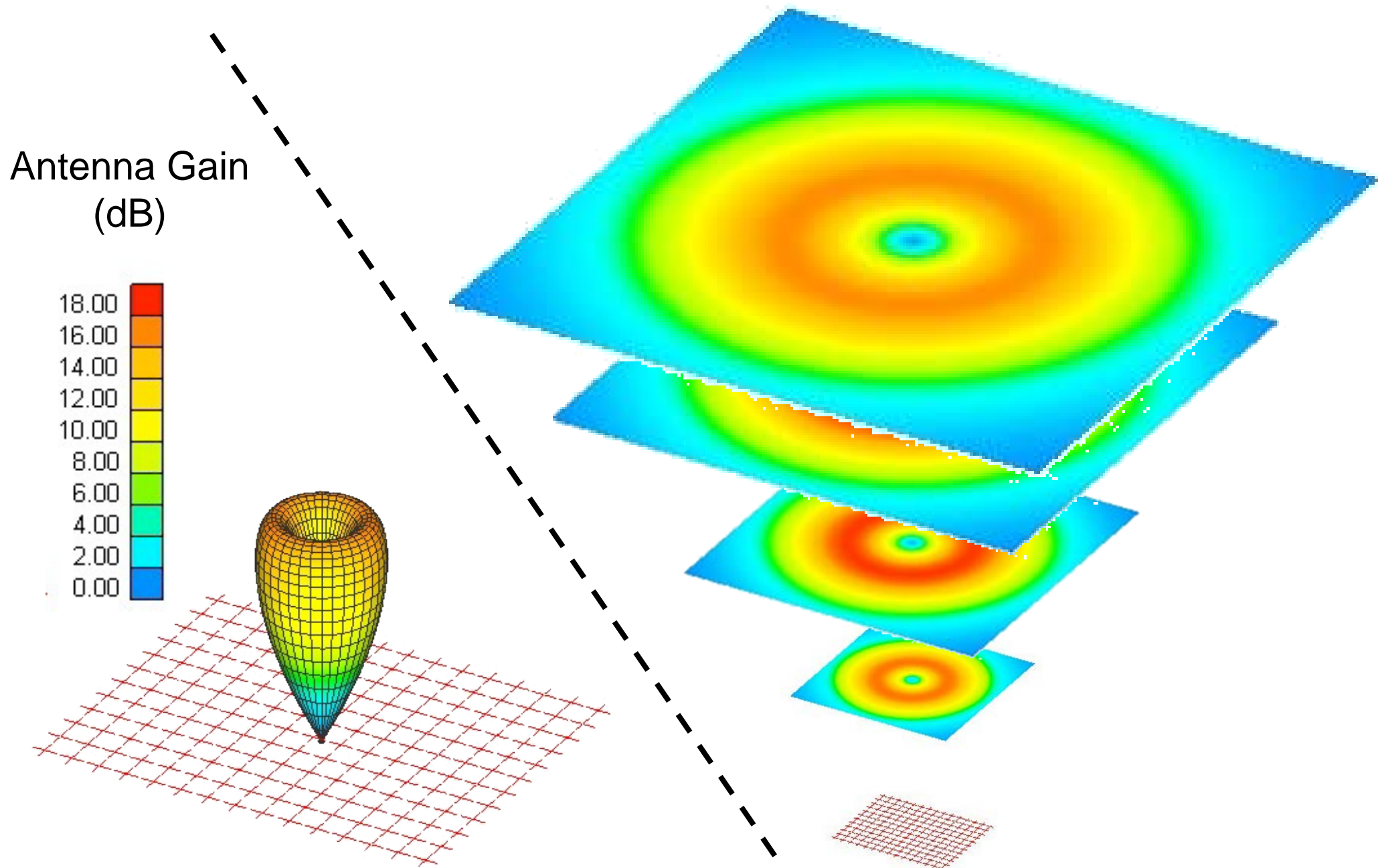
Robert Michell

-UMD/NASA Goddard

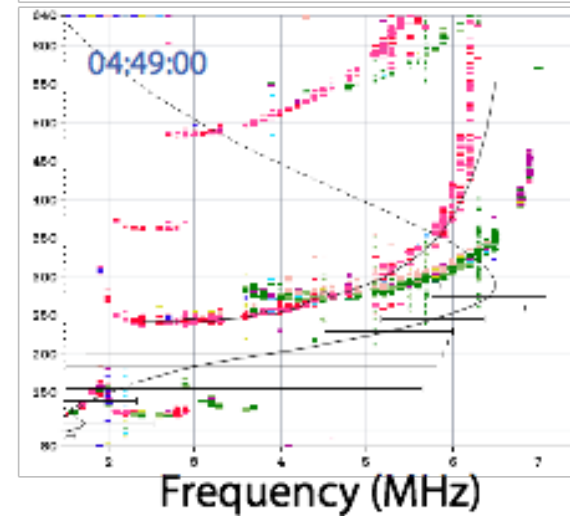
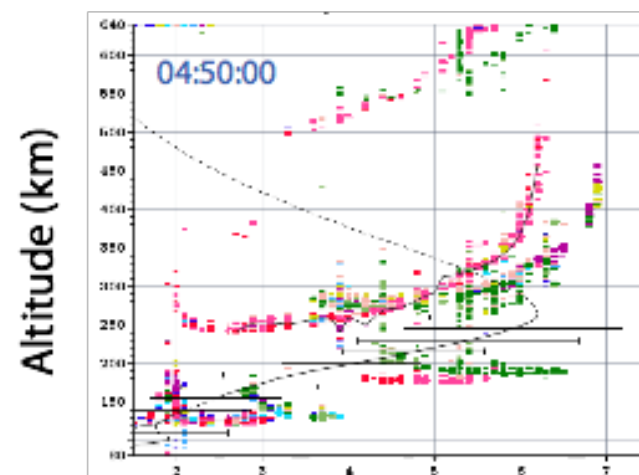
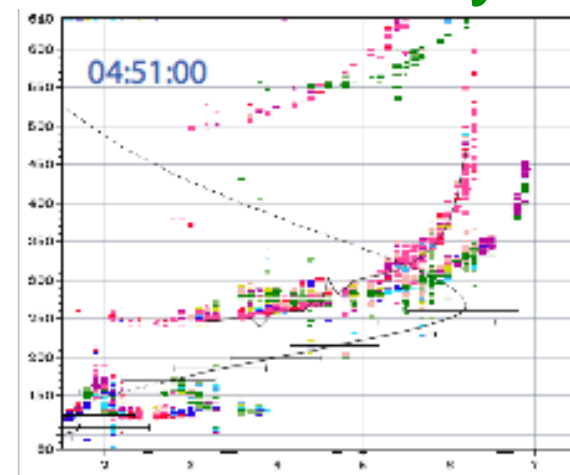
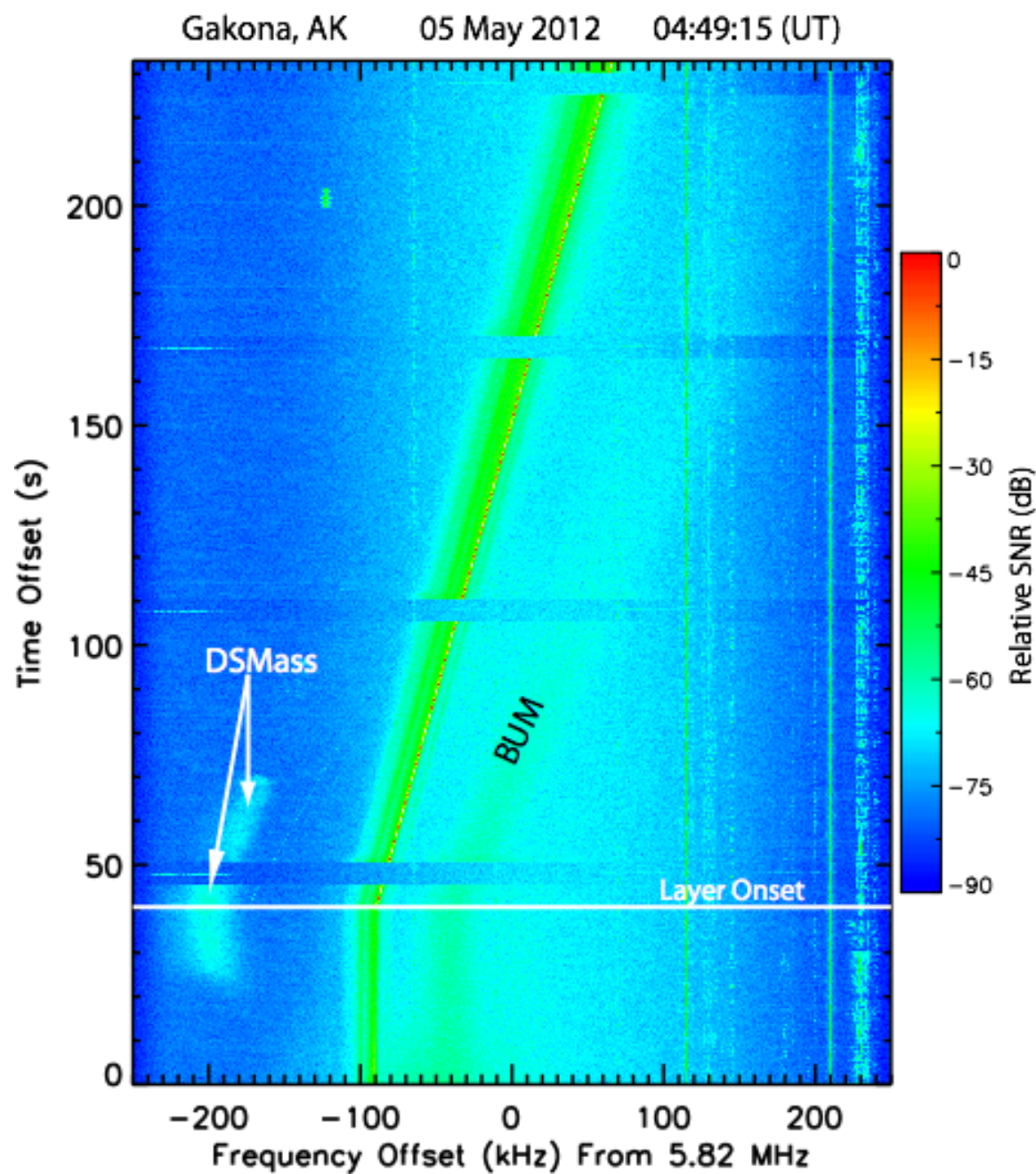
Wayne Scales

-Virginia Tech

HAARP Array Generates a Hollow Beam

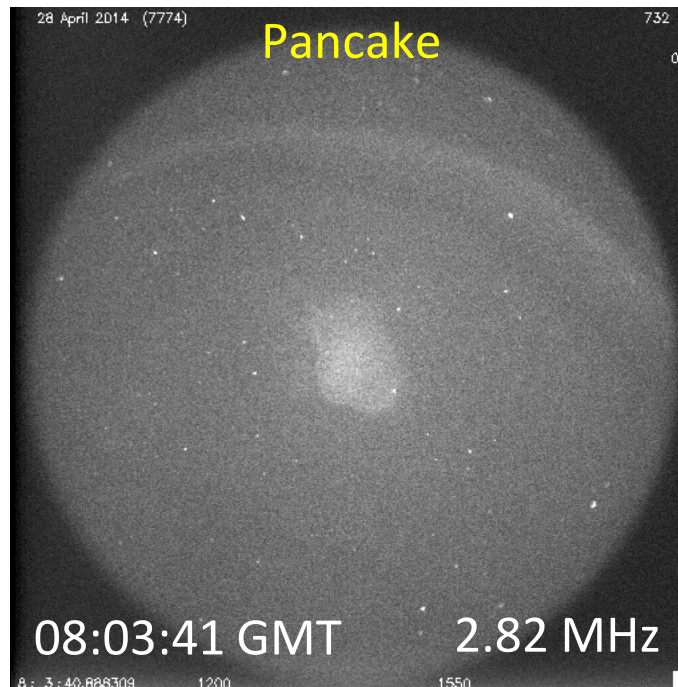
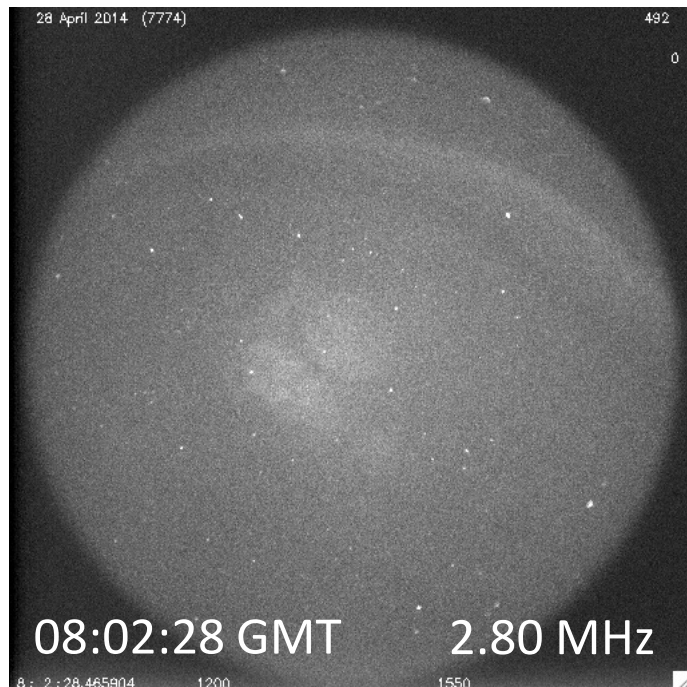
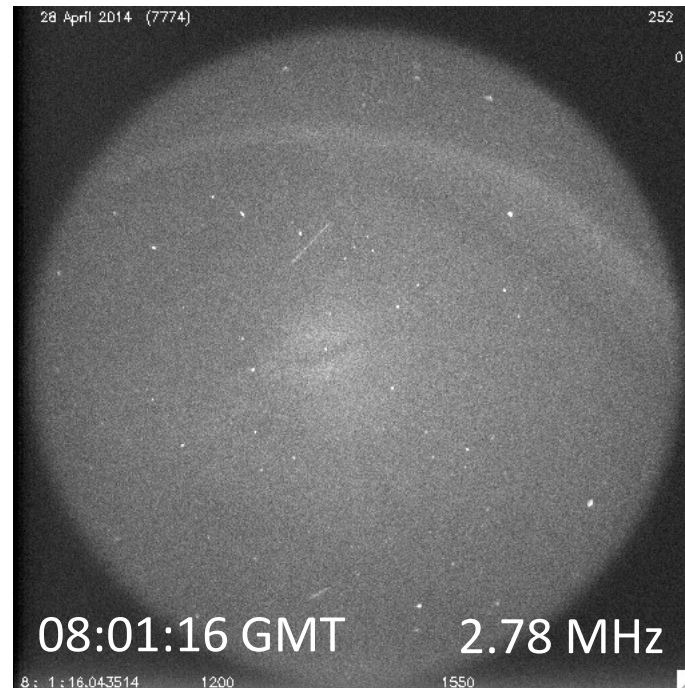
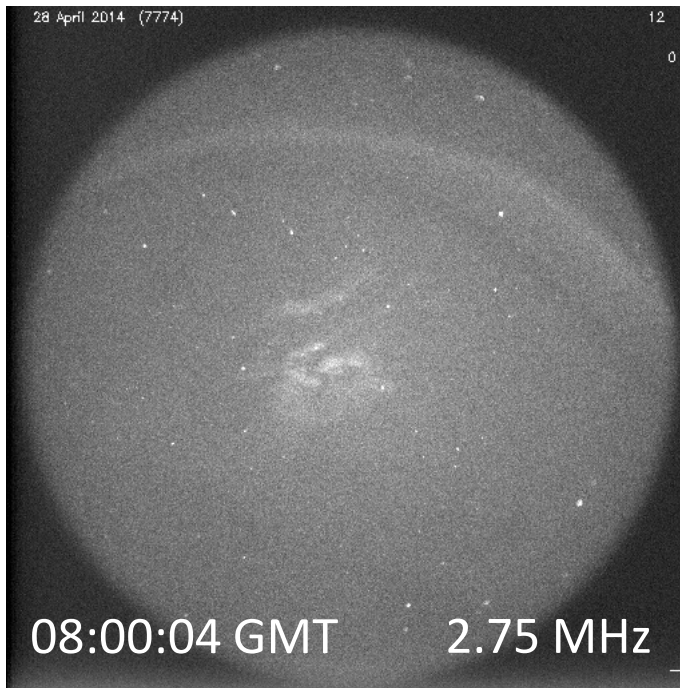


SEE Near the 4th Gyro Harmonic and Artificial Layers

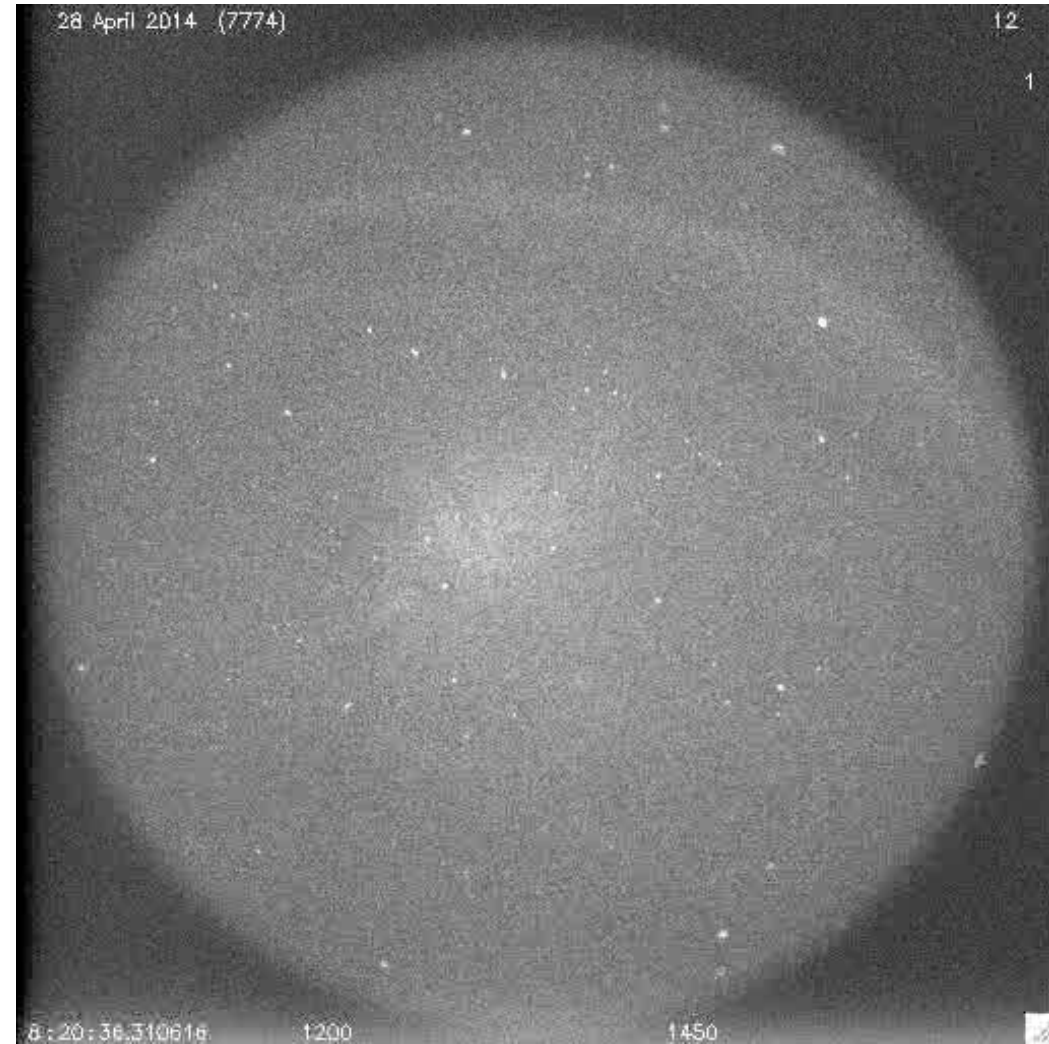
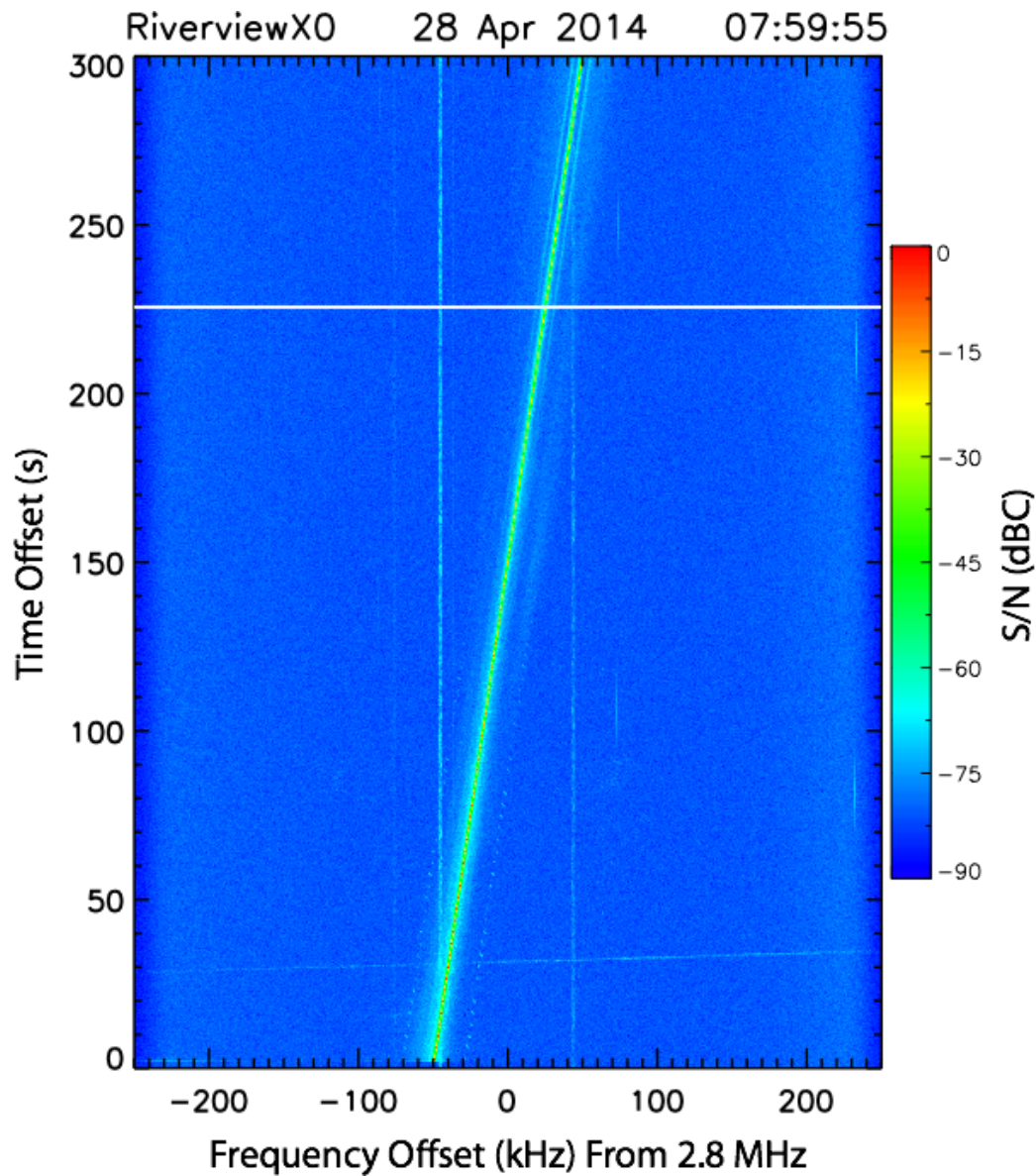


28 April 2014, 777.4 nm Images

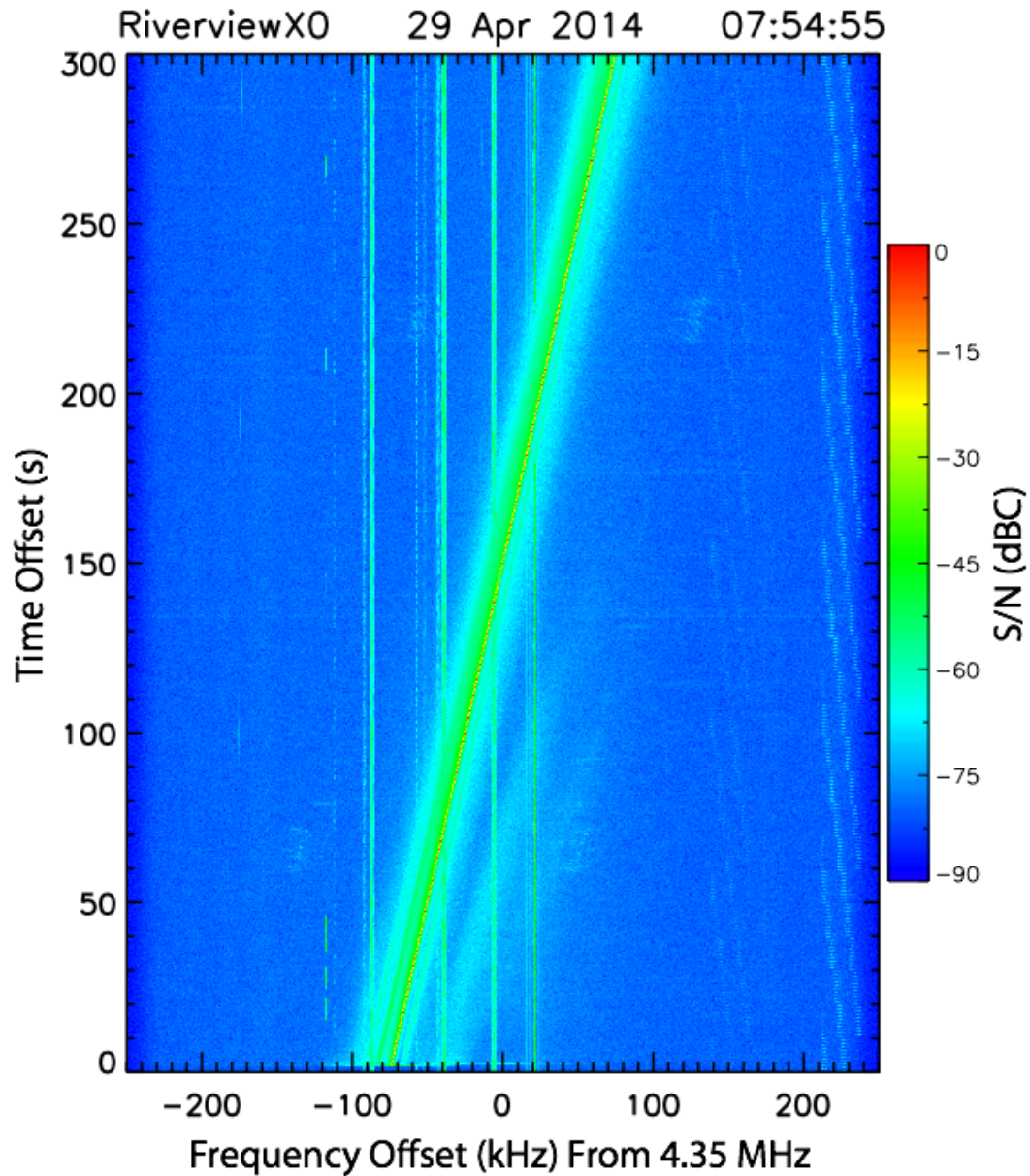
2.75 to 2.85 MHz 5 Minute Sweep



Optical "Pancake" Layers

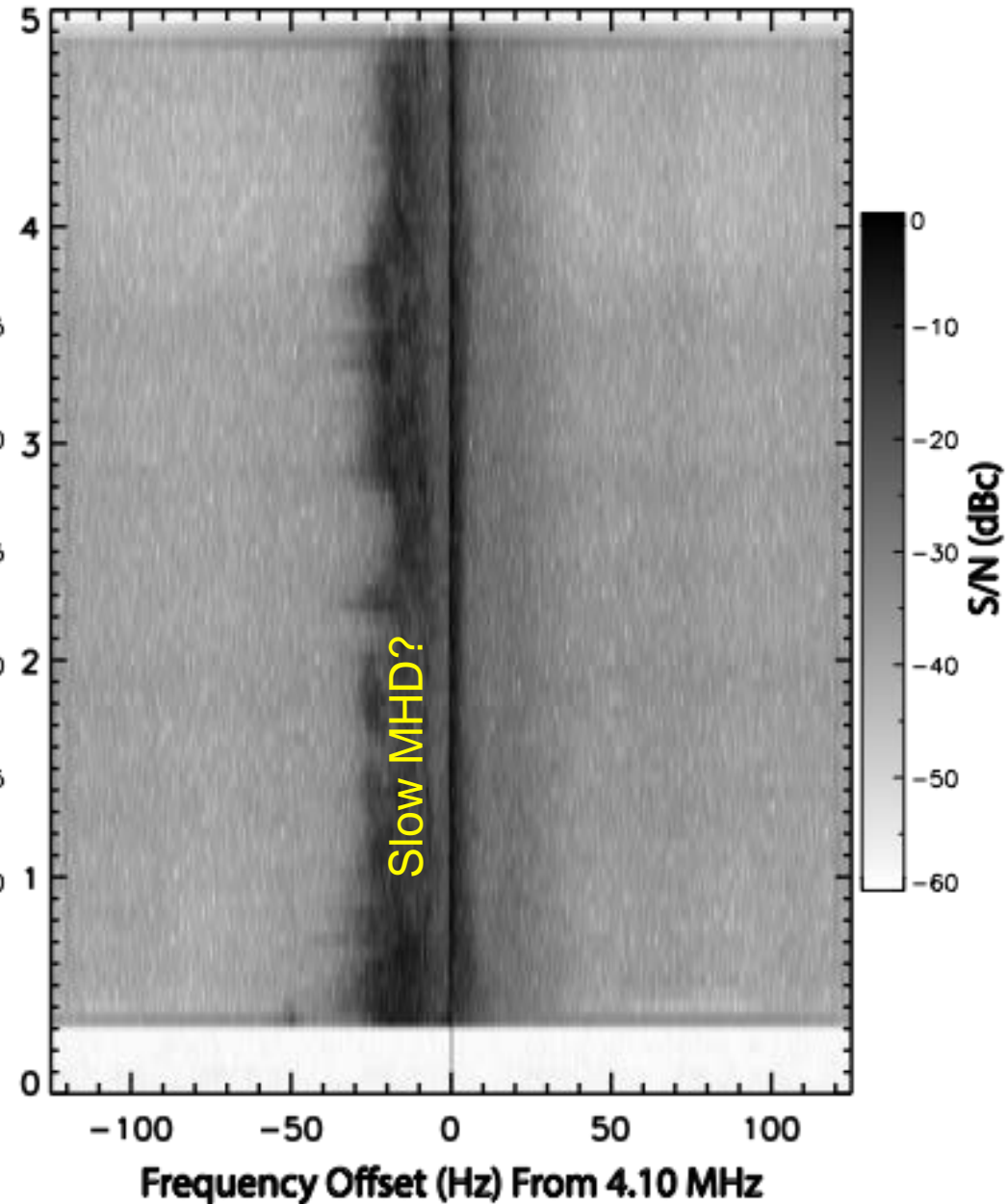
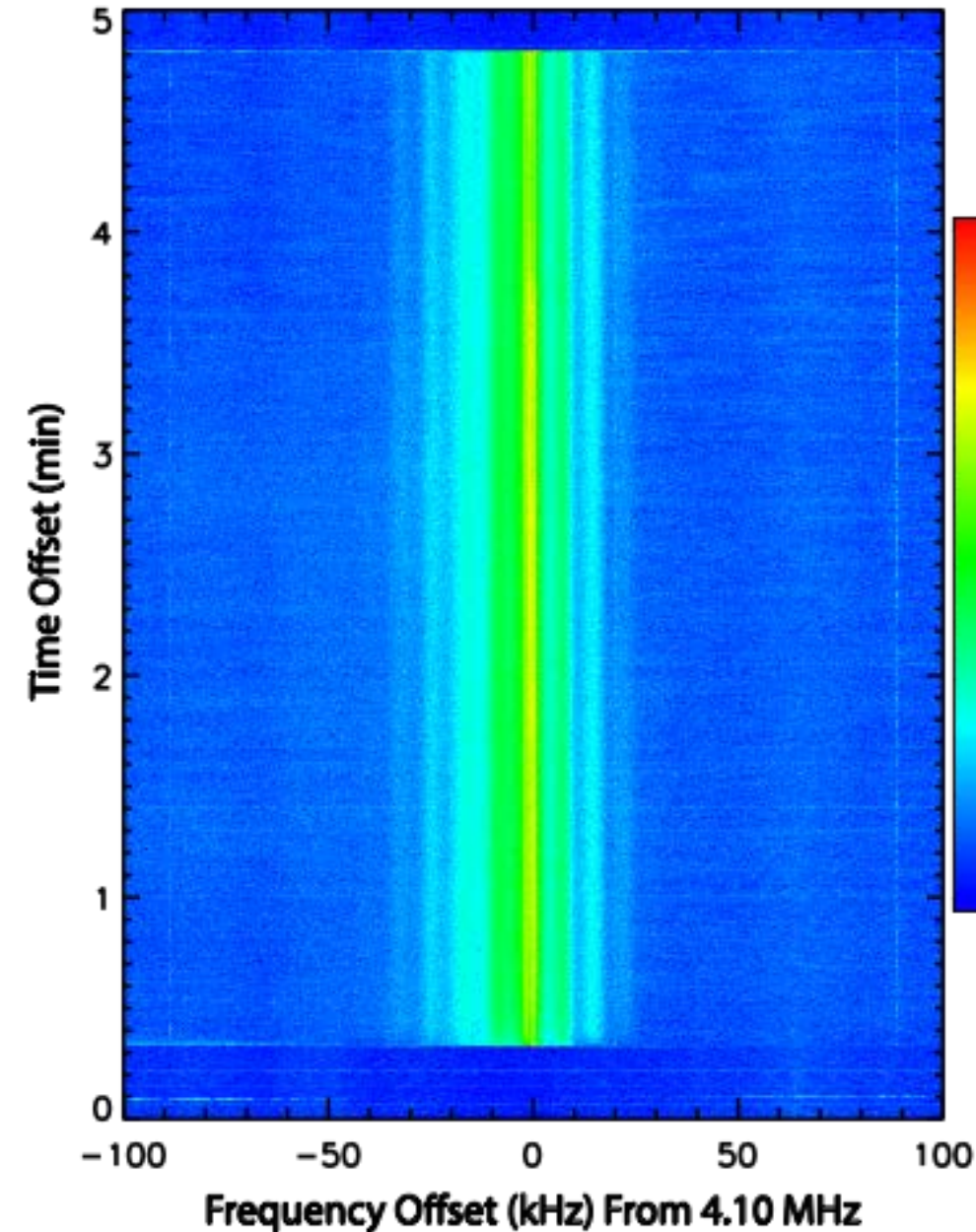


No Optical "Pancake" Layers



Optical "Pancake" LF SEE

Riverview X0 22 Apr 2014 07:54:34

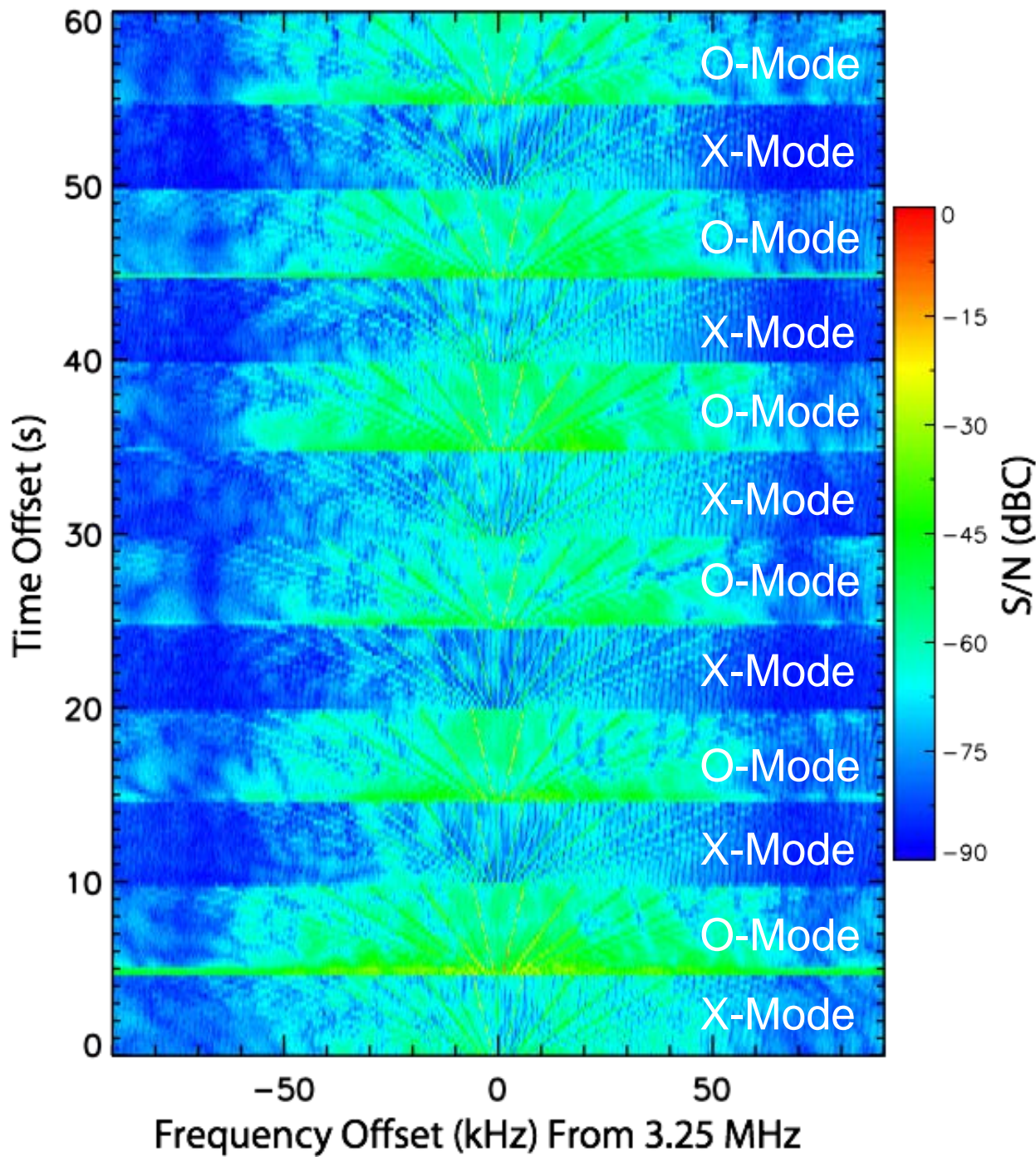


Psychedelic SEE

Gakona, AK

17 Feb 2012

04:05:00

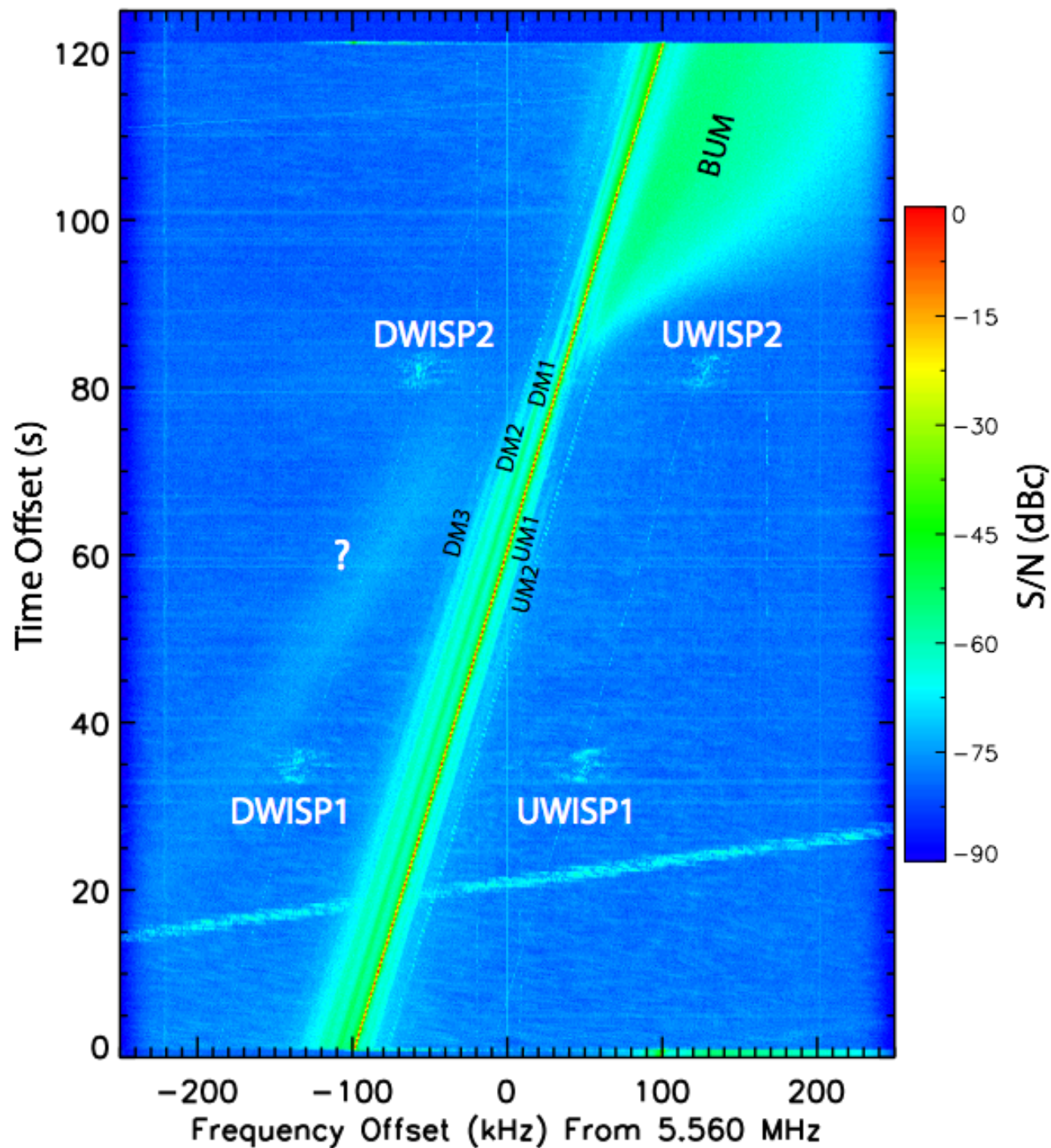


WISP SEE

RiverviewX0

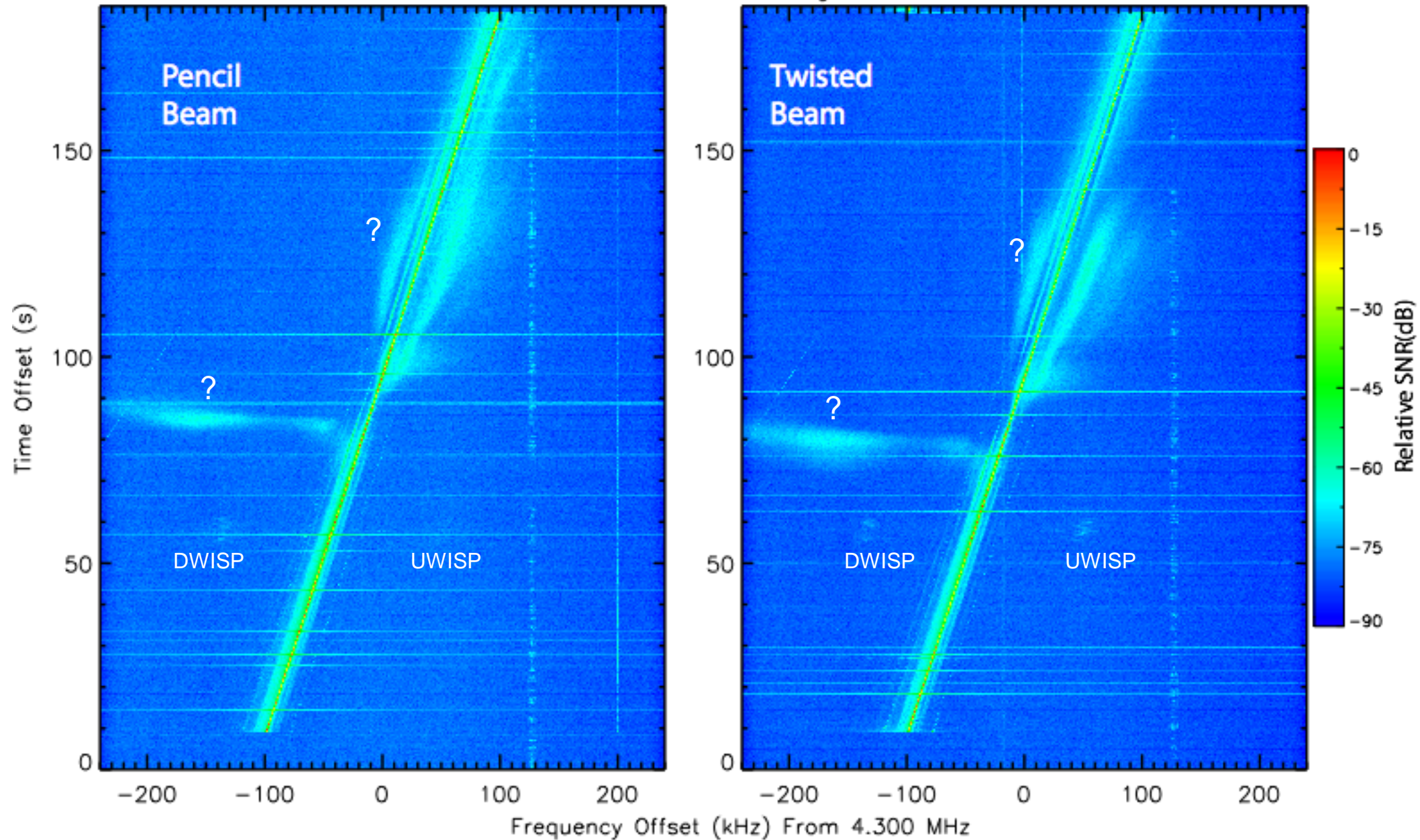
04 Jun 2014

08:01:54



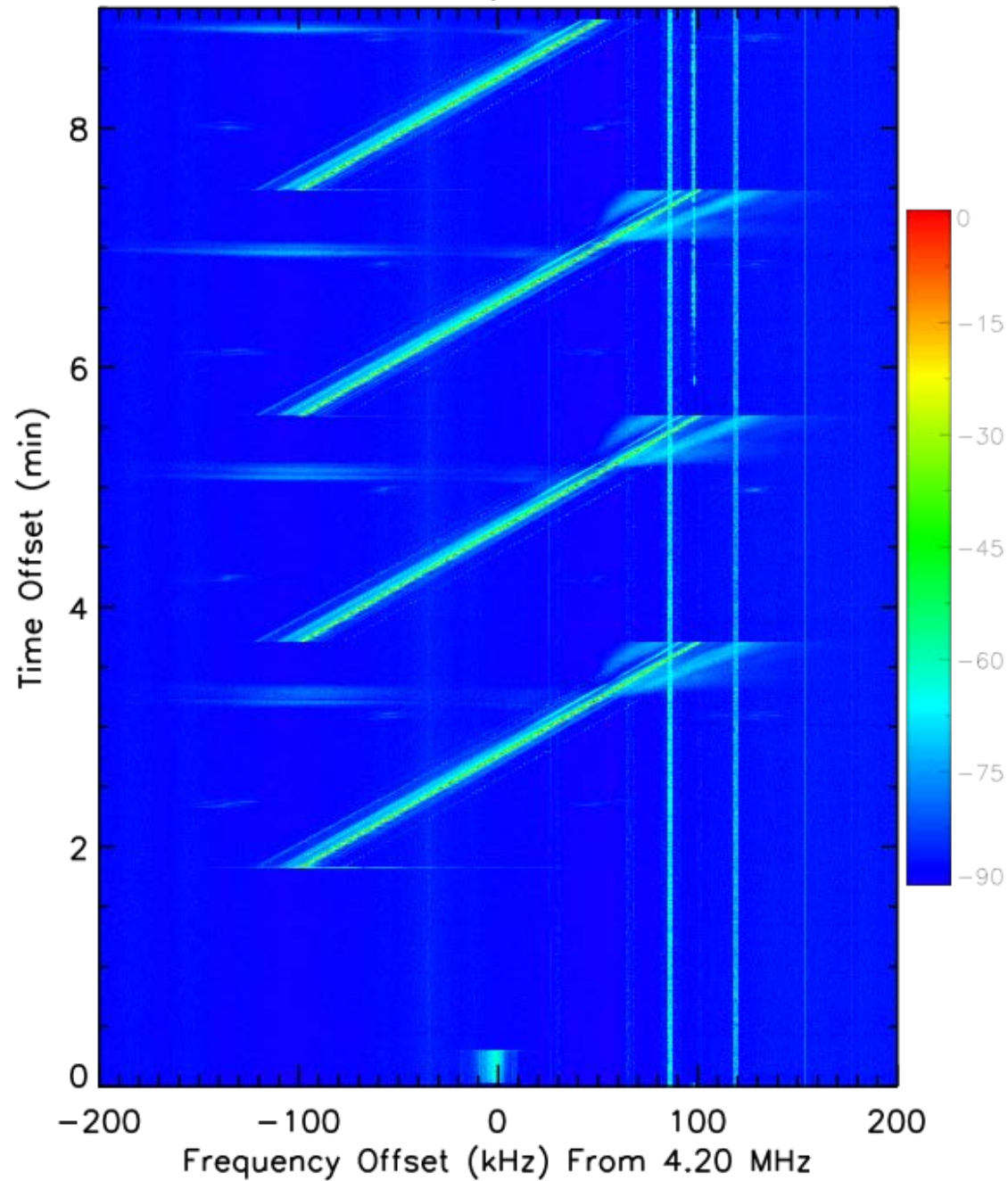
DSMass Variant SEE

04:50:55 Chistochina, AK 09 Aug 2012 04:54:55



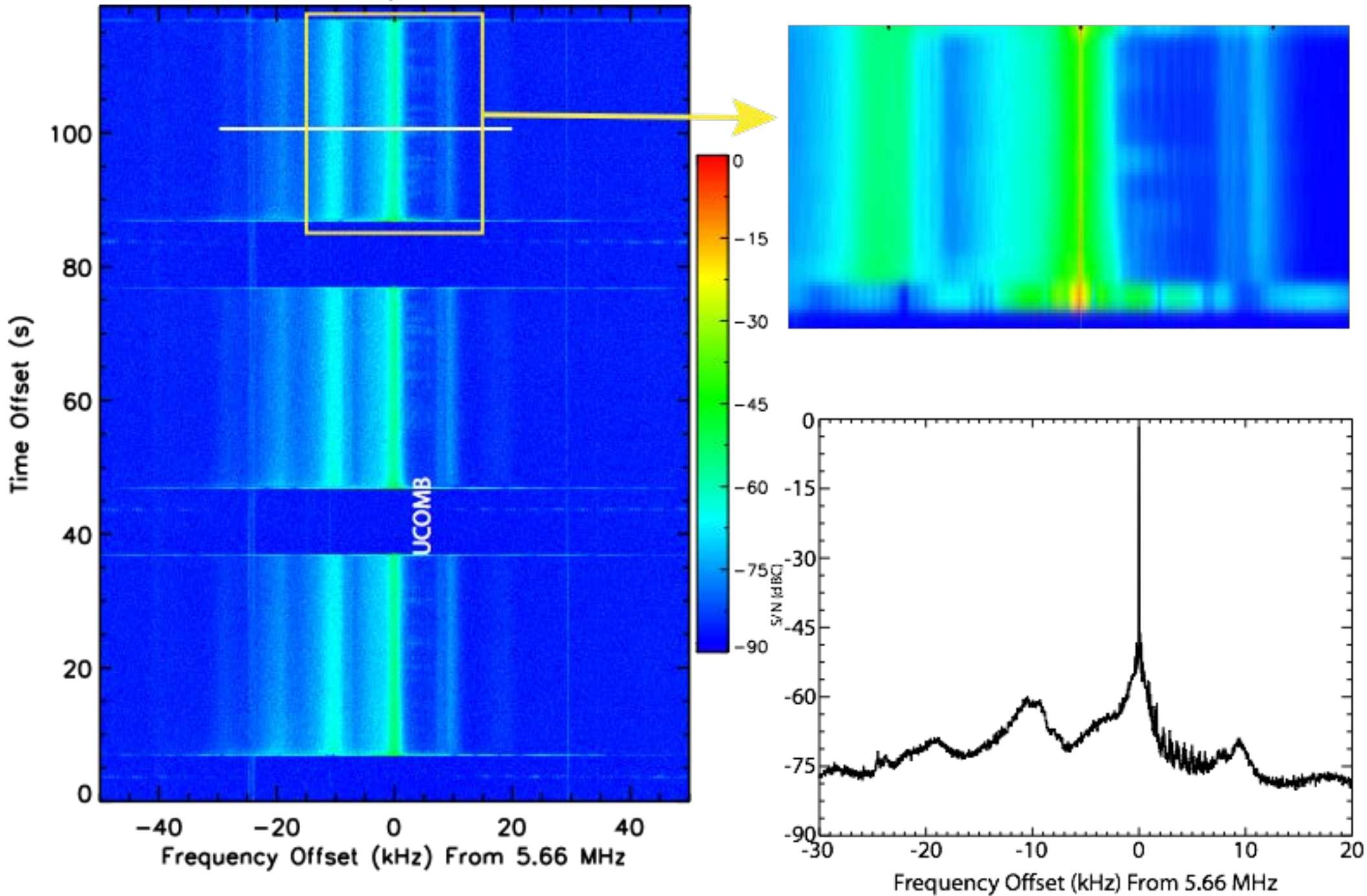
DSMass Variant SEE

RiverviewX0 21 Apr 2014 04:50:02



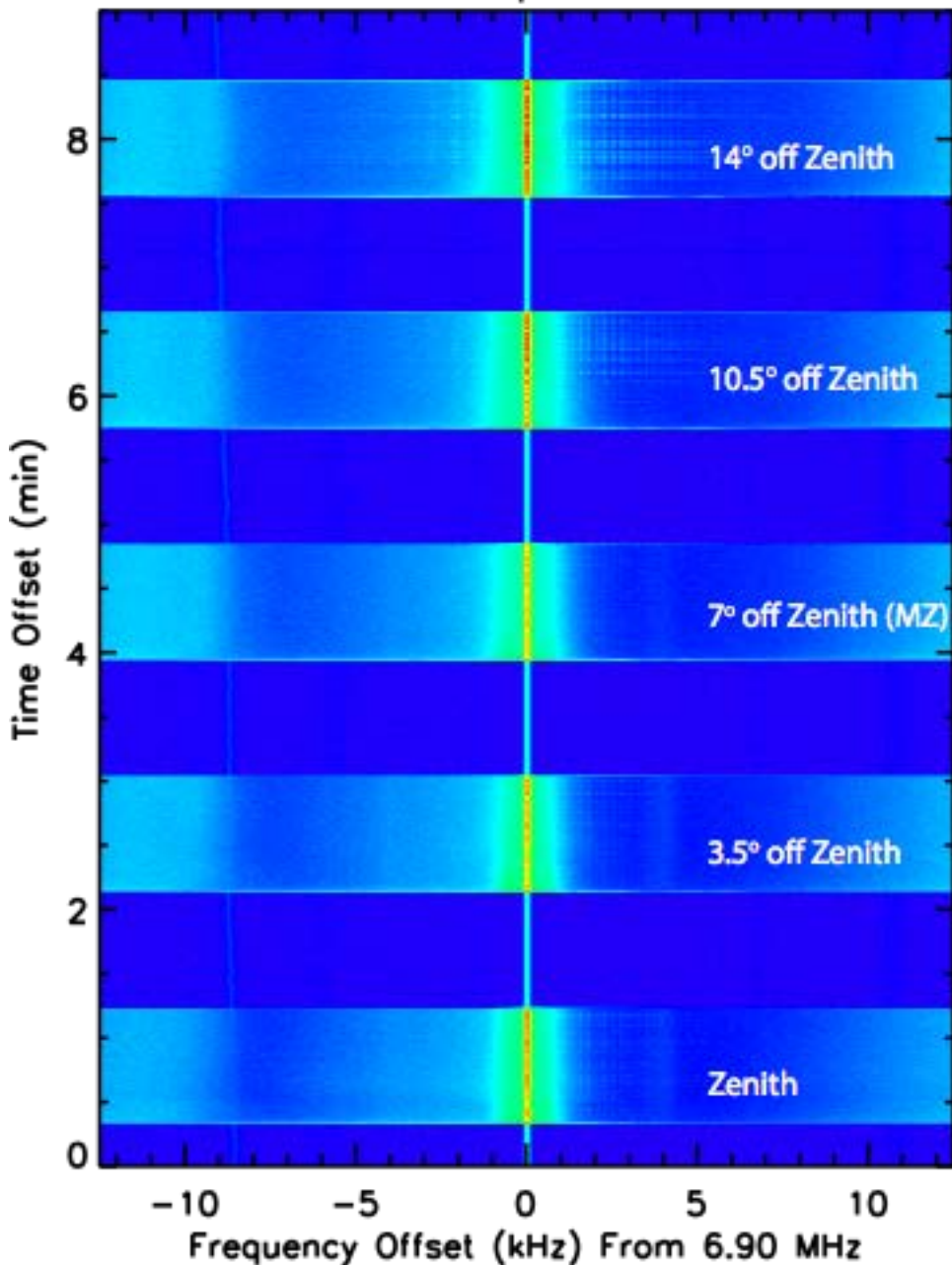
Low-Frequency Periodic SSEE

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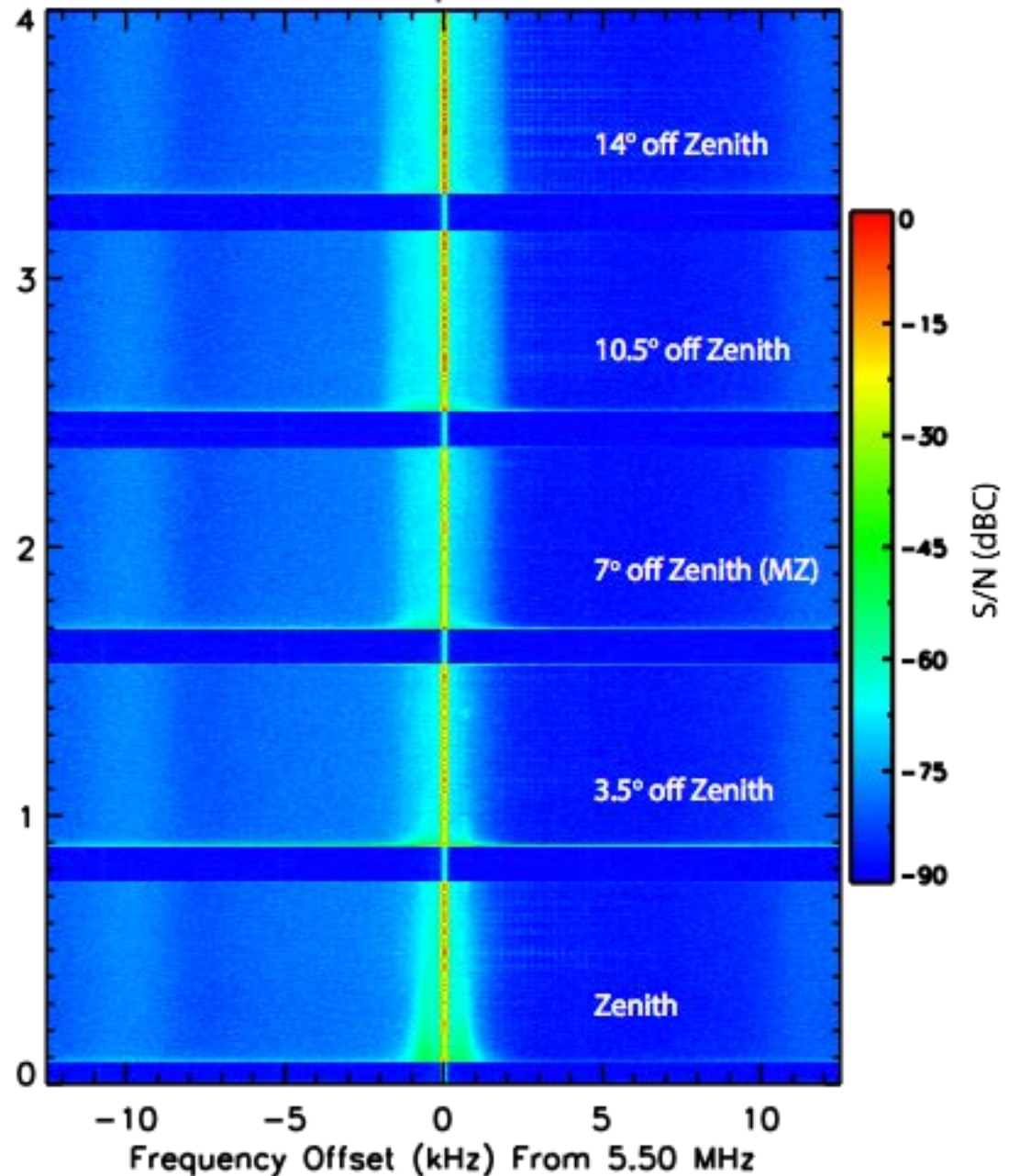


Low-Frequency Periodic S/E

RiverviewX0 19 Apr 2014 01:09:33



RiverviewX0 19 Apr 2014 00:44:50

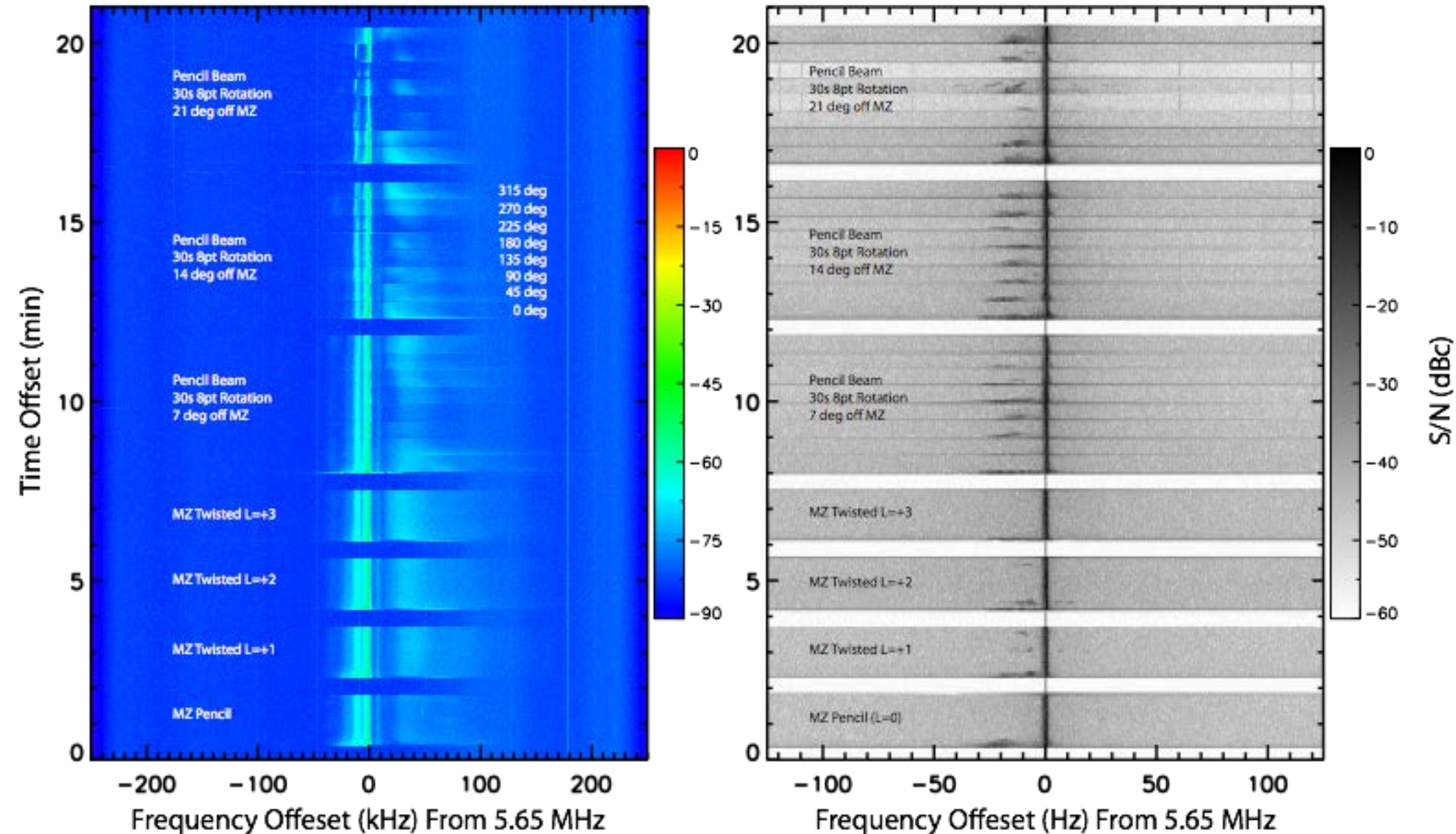


SEE Rotation Variation

Gakona, AK

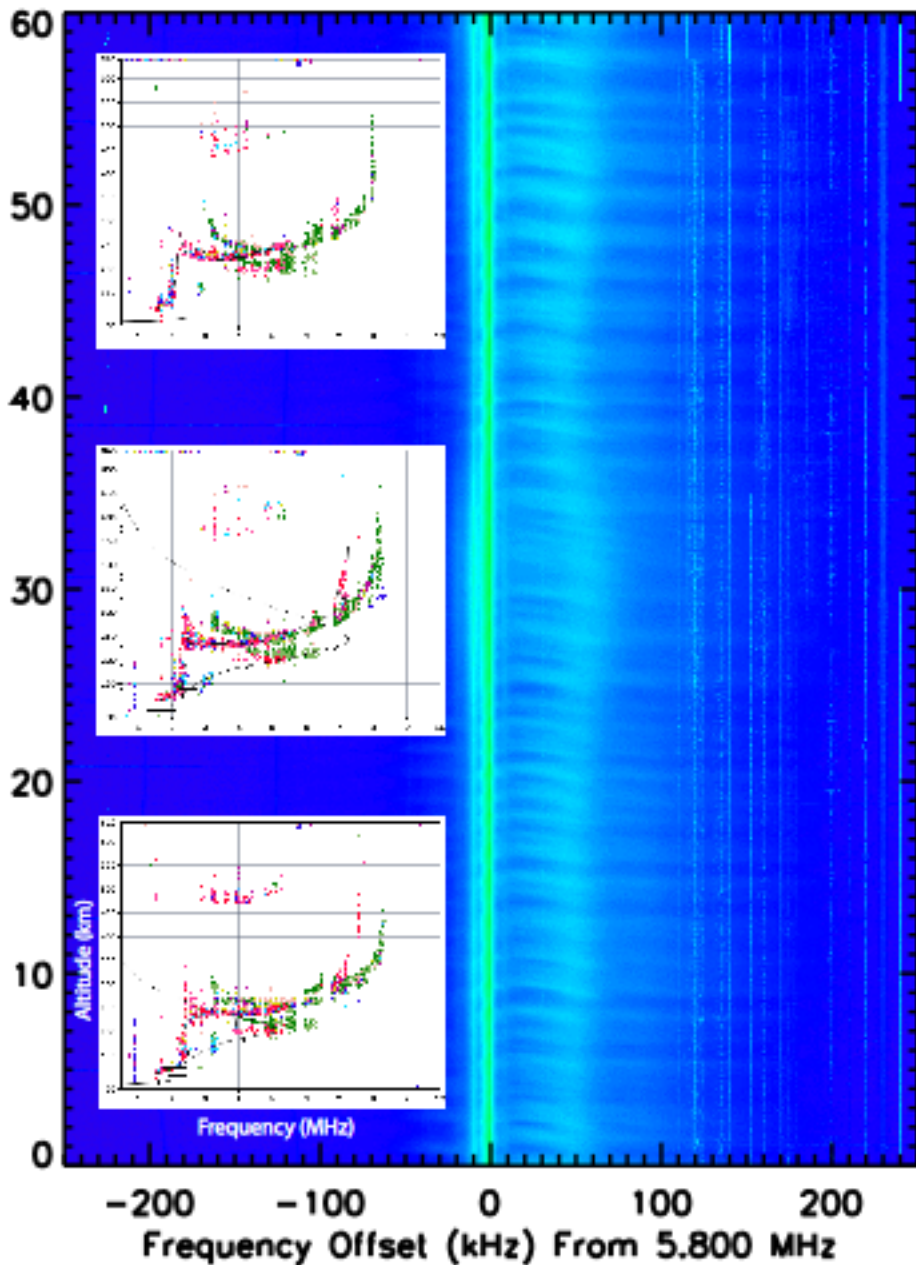
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20:21:34

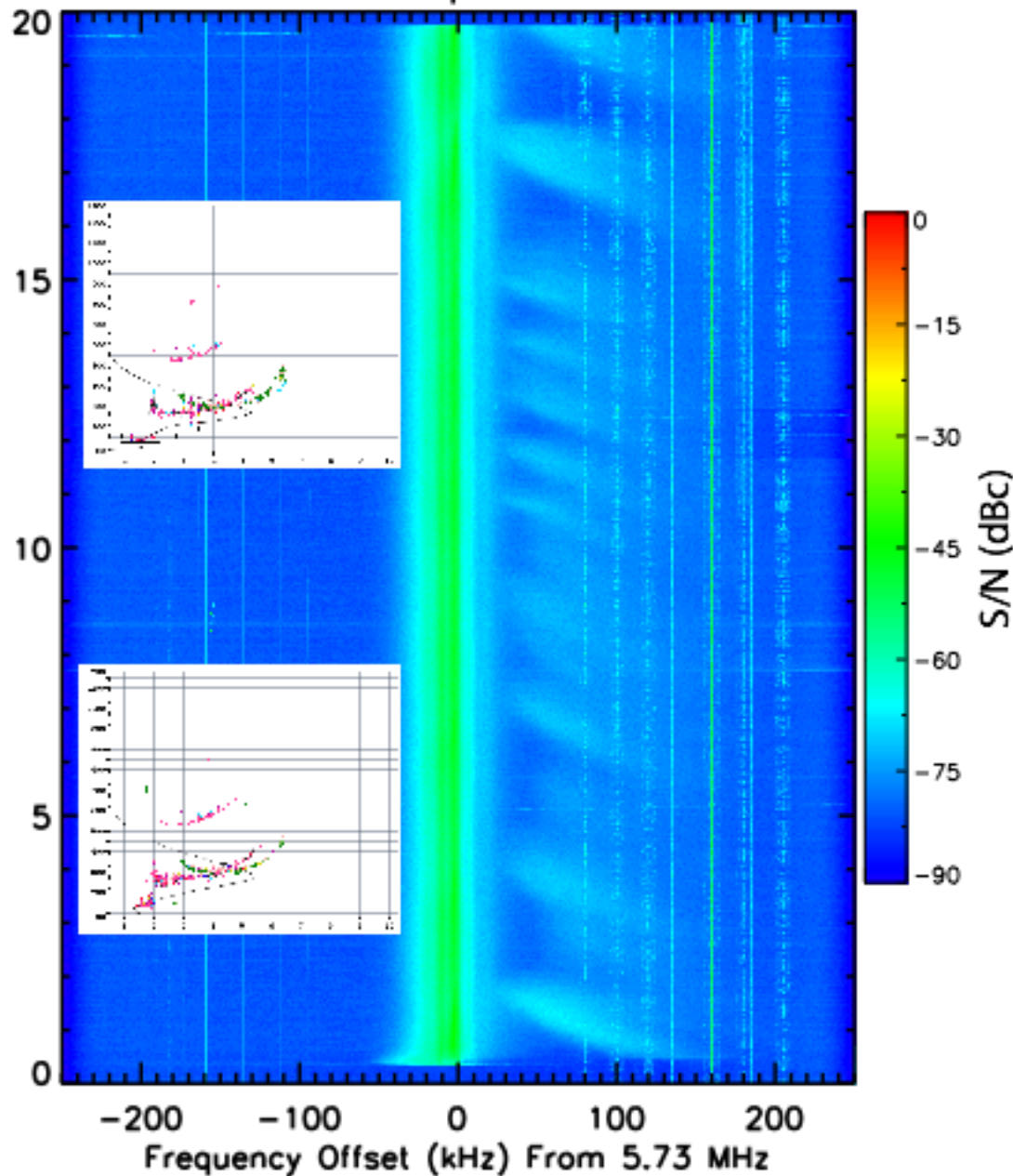


Variegated SEE

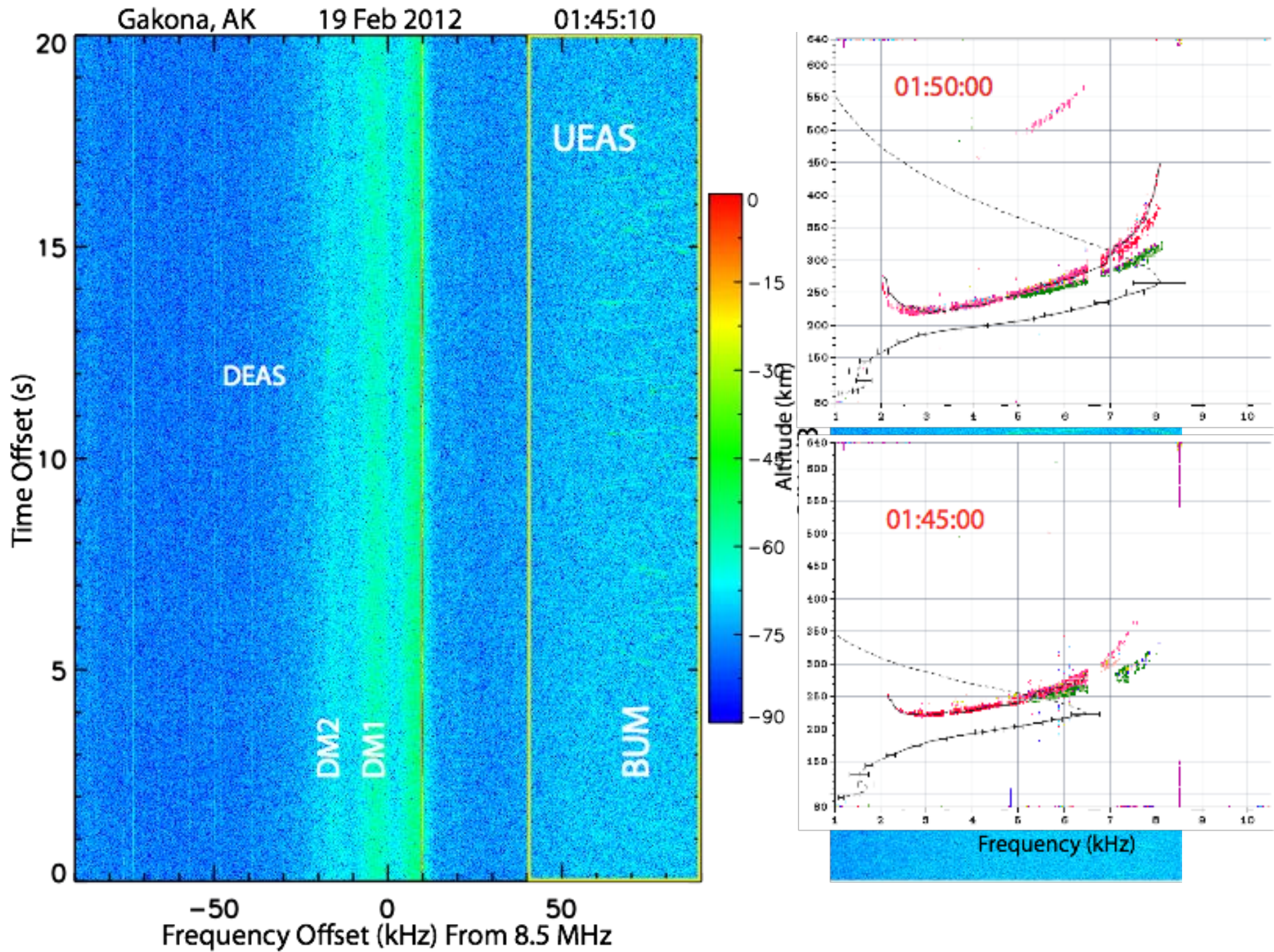
RiverviewX0 14 Mar 2013 01:59:31



RiverviewX0 18 Apr 2014 04:34:34



“Etch A Sketch” SEE Near 6th f_{ce}



Conclusions

- Recent studies have produced numerous previously uncharacterized SEE
- Optical “pancakes” have previously not been seen
- Twisted beam experiments produce long-lived layers