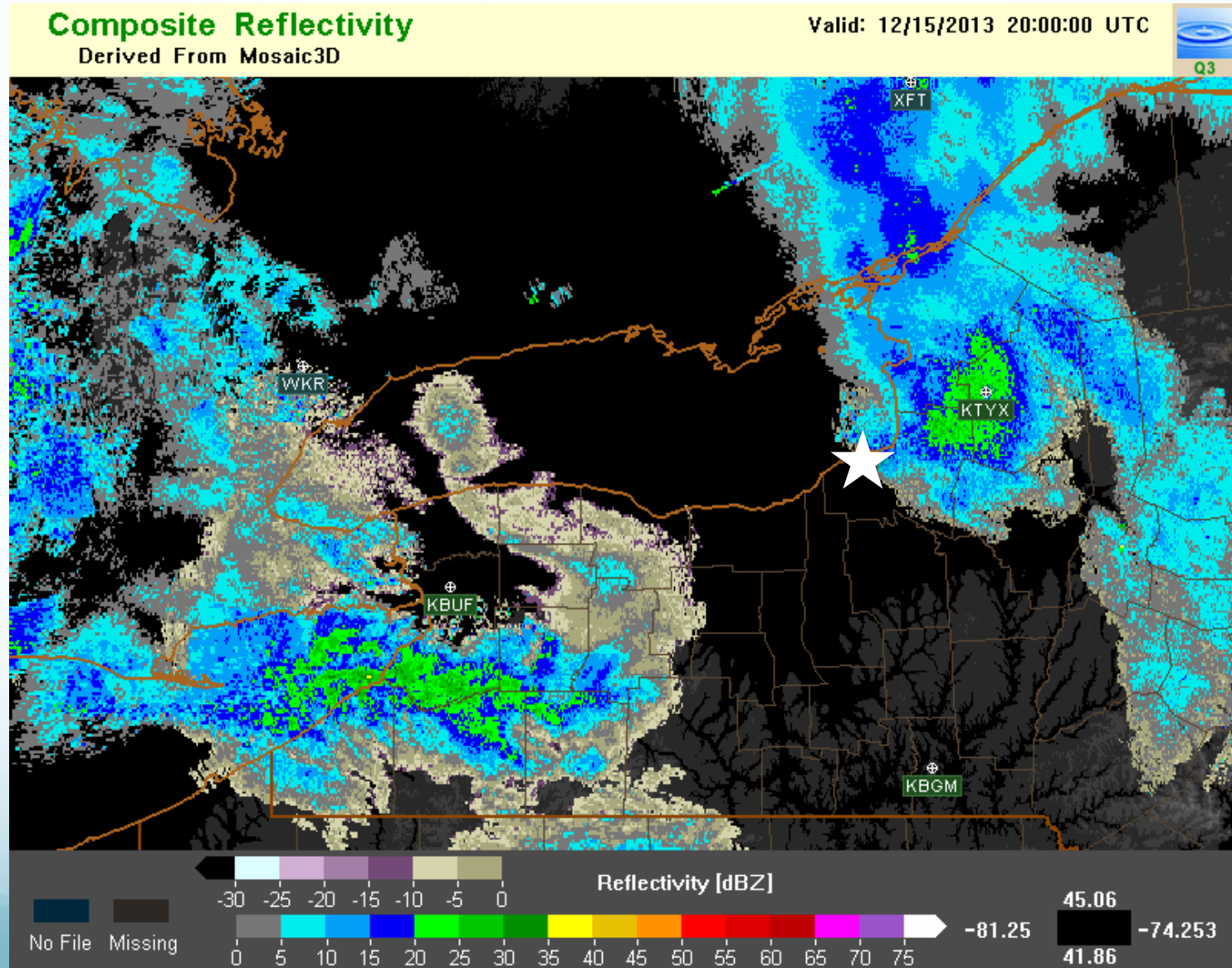


UAH OWLeS Project Science Focus

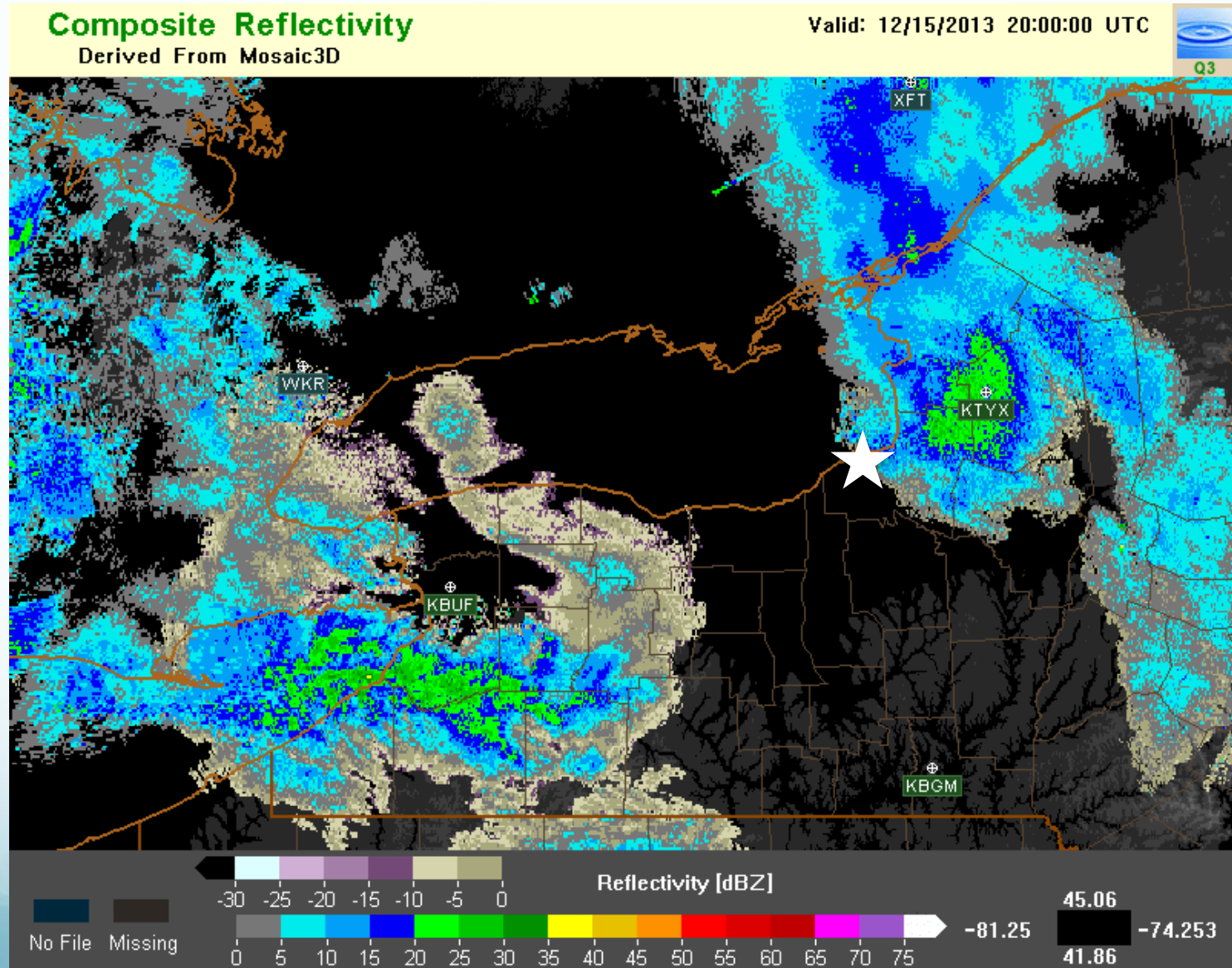
IOP-4

LLAP Band to Frontal? Band Transition

IOP 4 – LLAP Band takes on frontal band characteristics



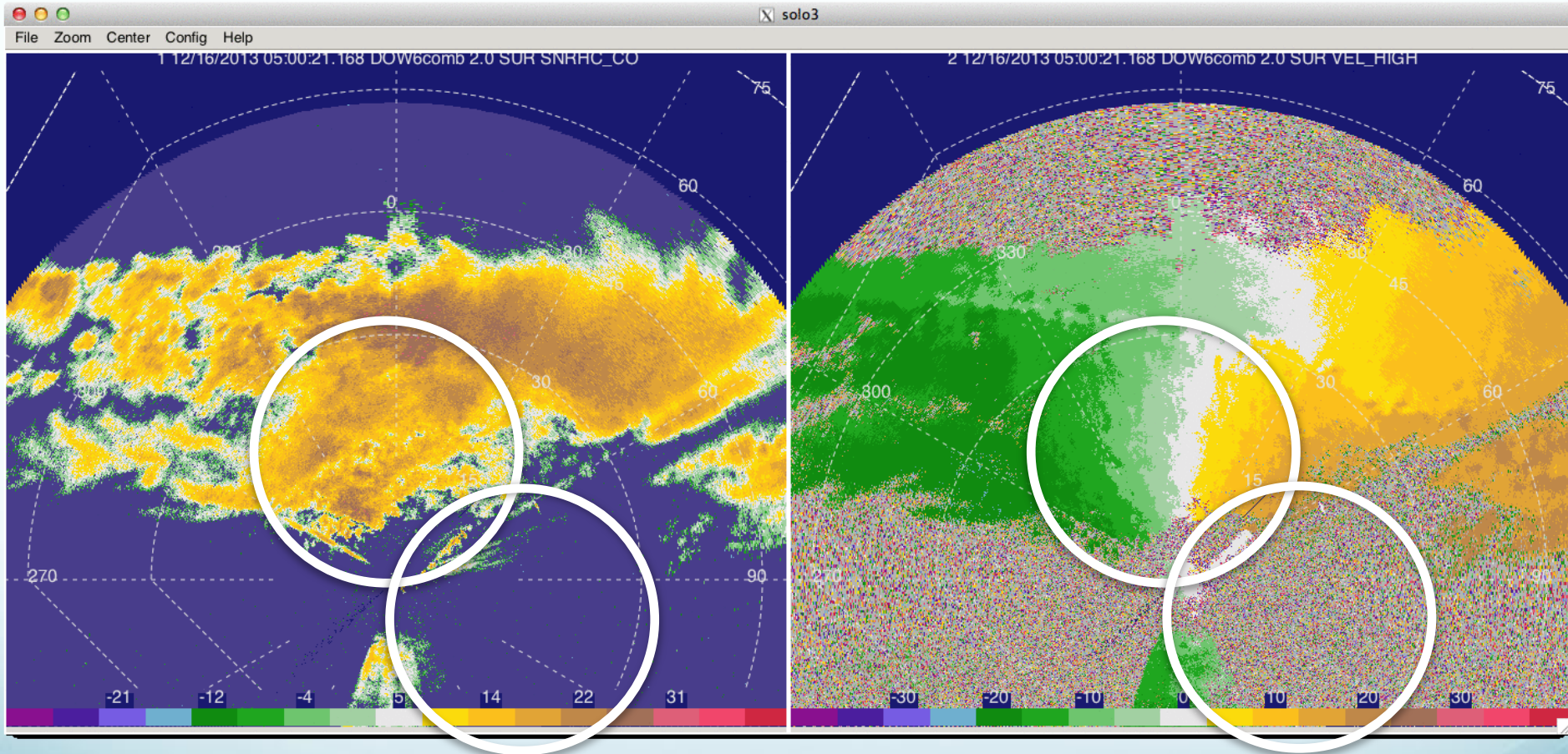
IOP 4 – LLAP Band takes on frontal band characteristics



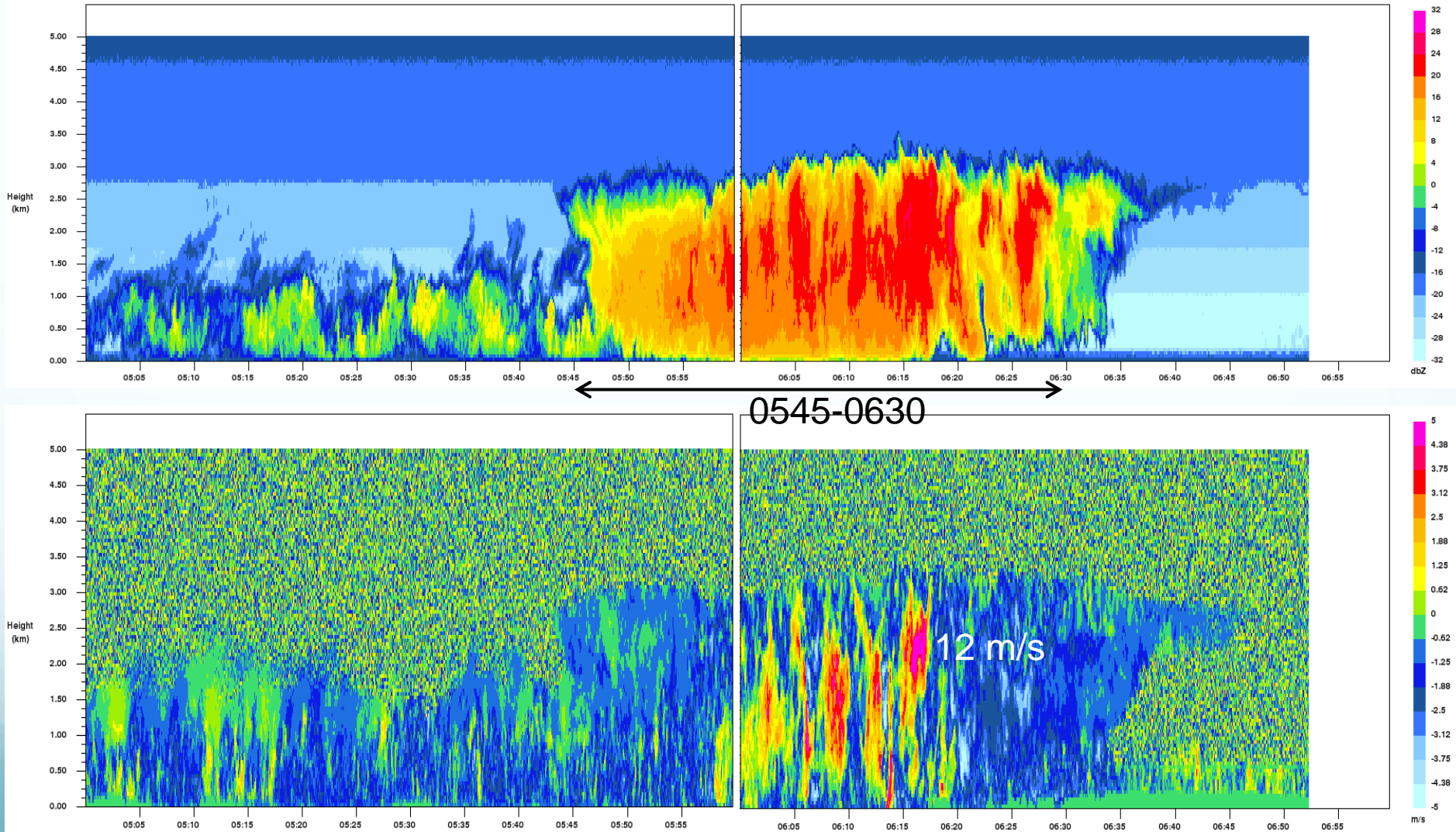
IOP-4: DOW 6 PPI

DOW6 - Z - Reflectivity

DOW6 - Vr - Radial Velocity

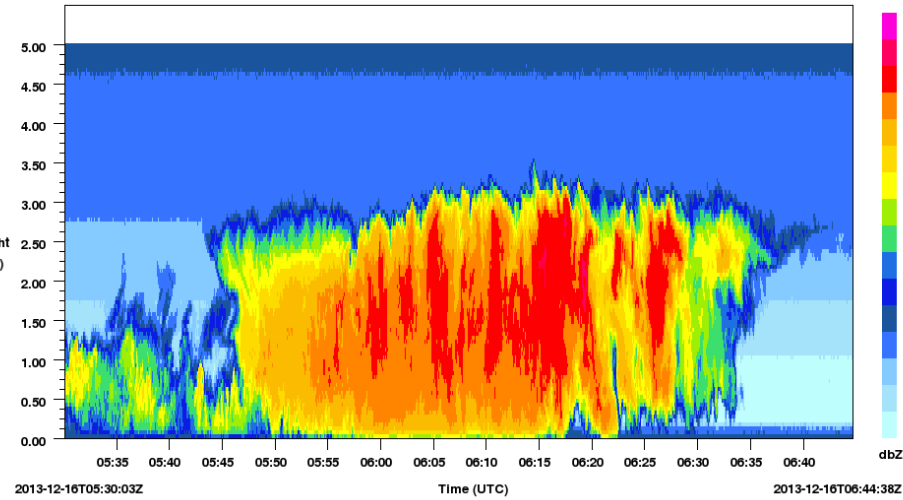


IOP-4 (16 Dec): Sampled the LLAP band as it surged southward over the MIPS. Largest updraft sampled: ~12 m/s

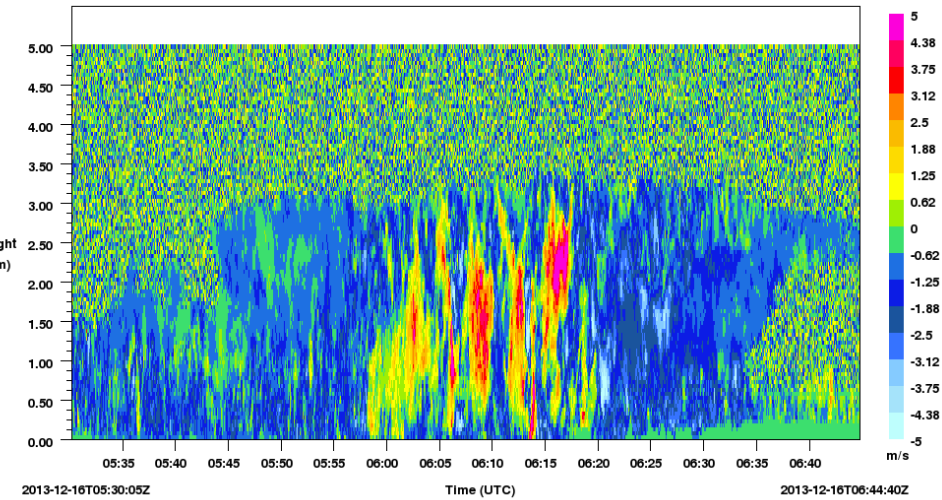


IOP-4: X-Band Profiling Radar & 915 MHz Profiler

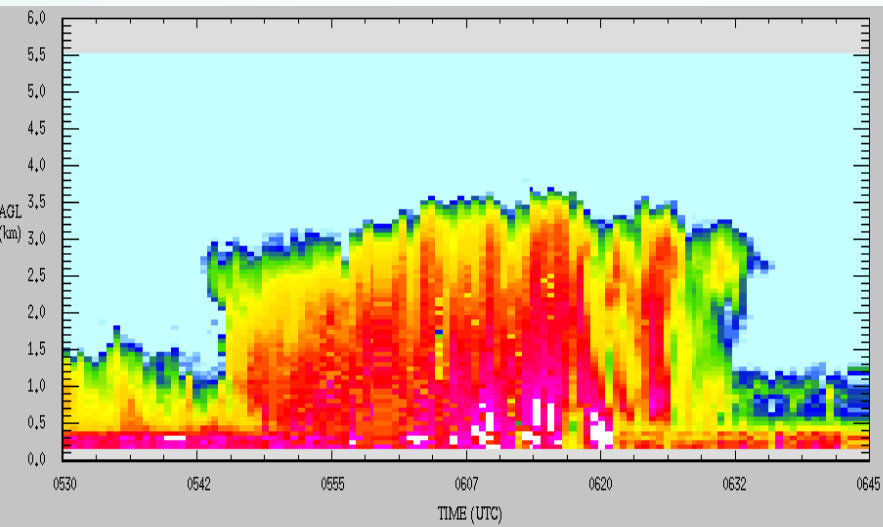
XPR - Z - Reflectivity



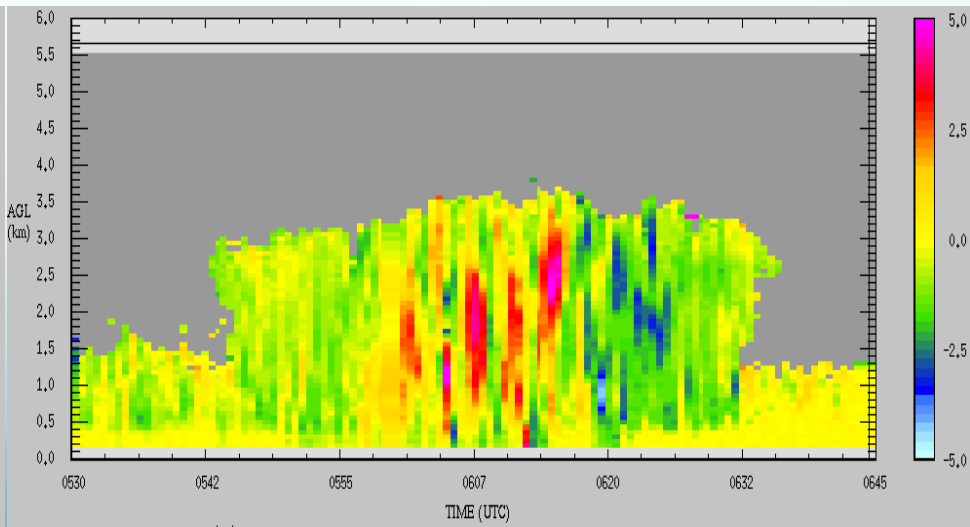
XPR - W - Radial Velocity



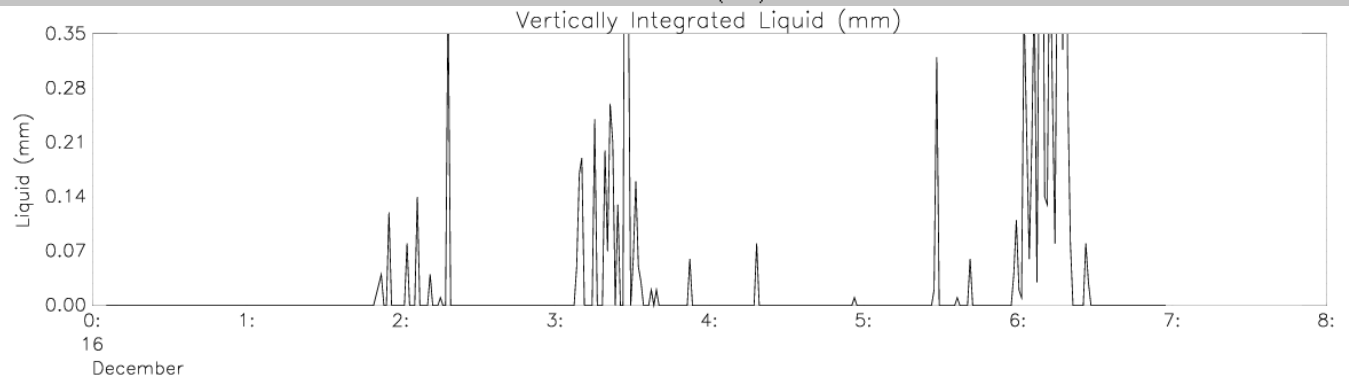
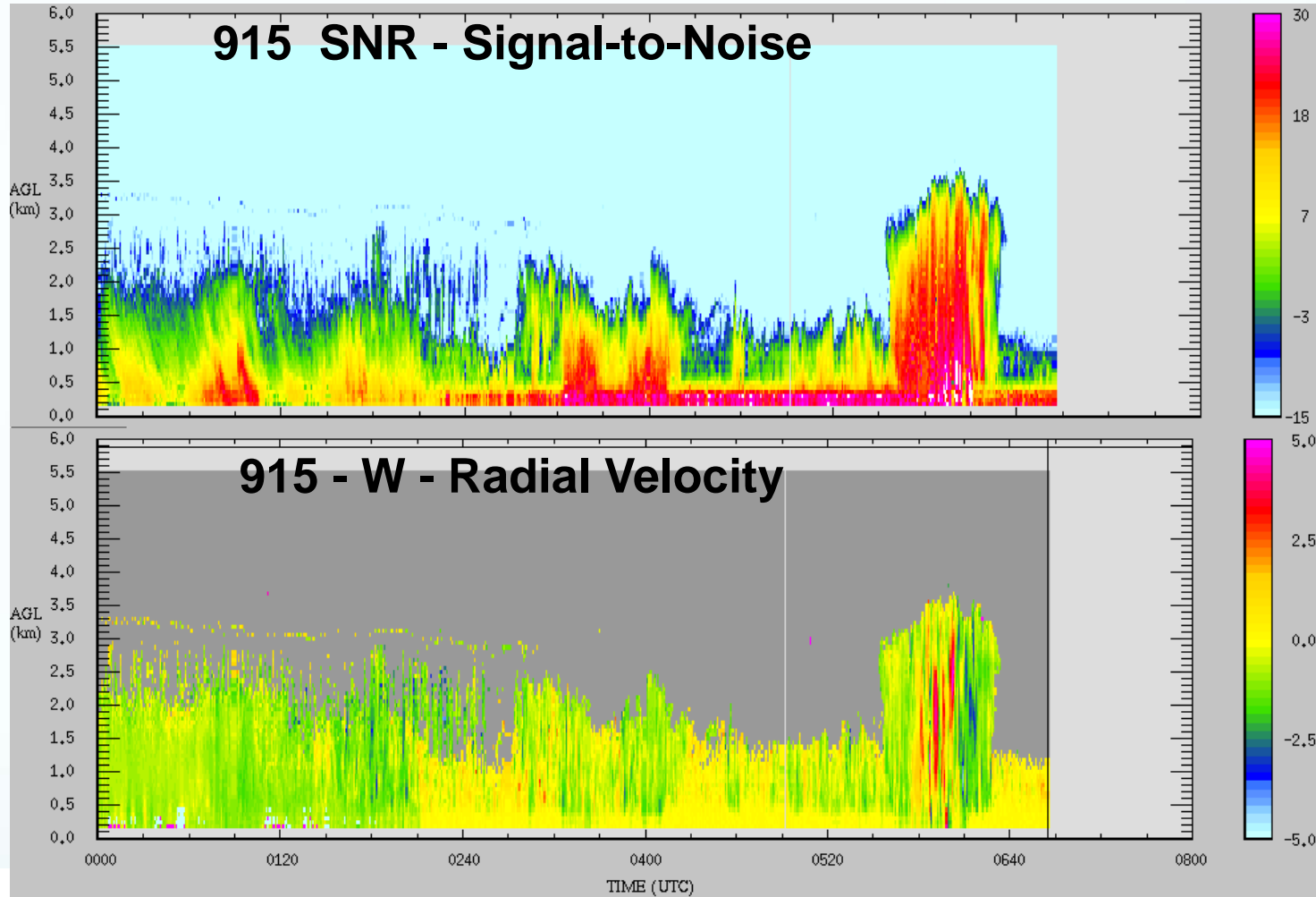
915 SNR - Signal-to-Noise



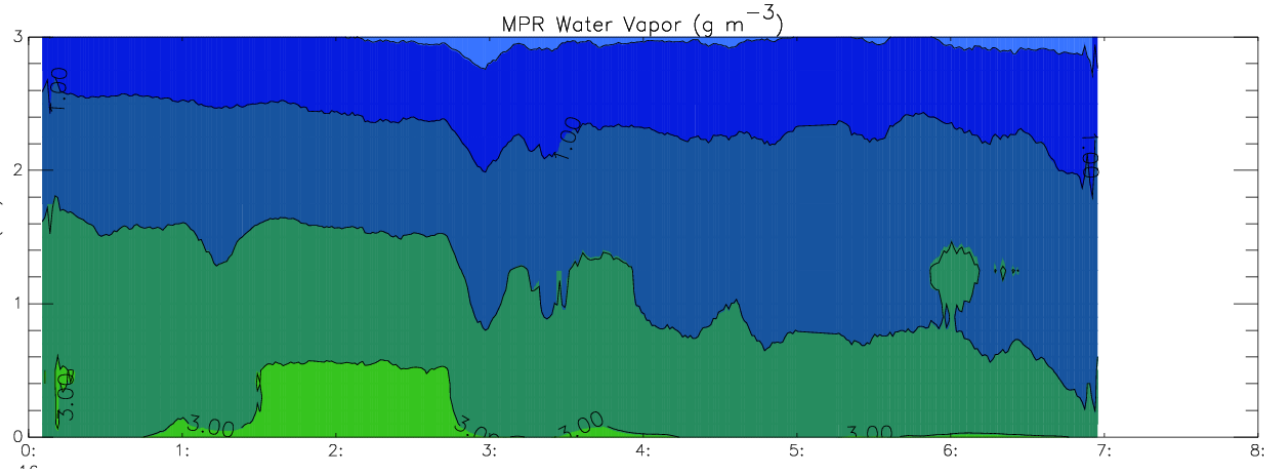
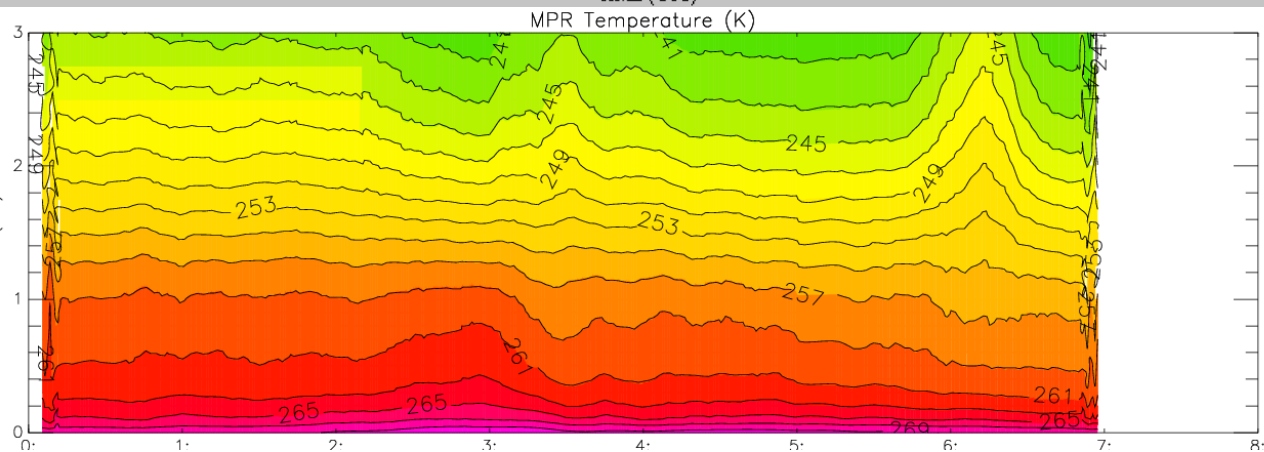
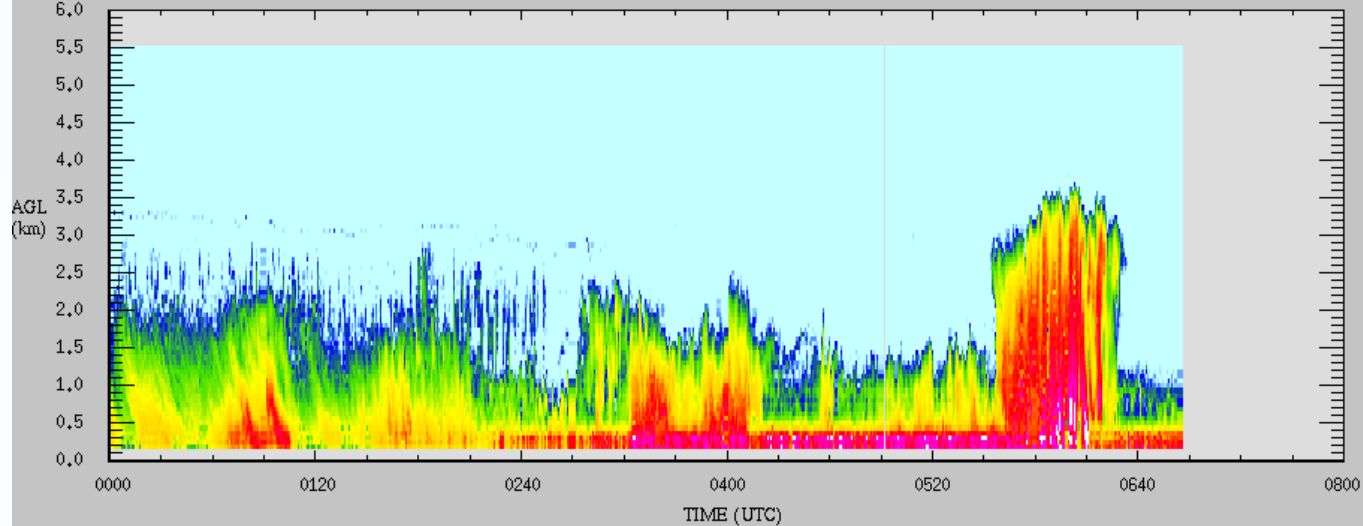
915 - W - Radial Velocity



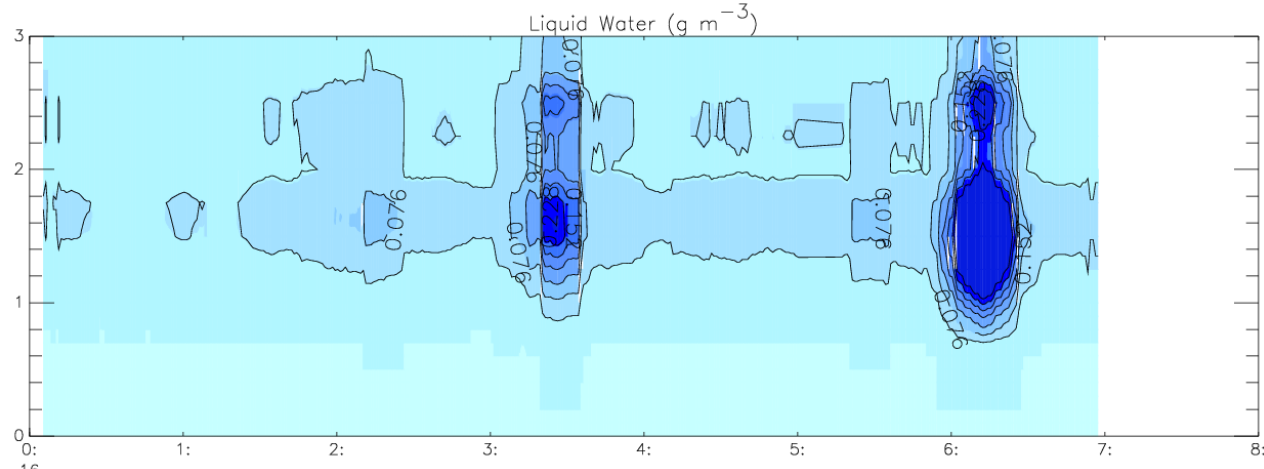
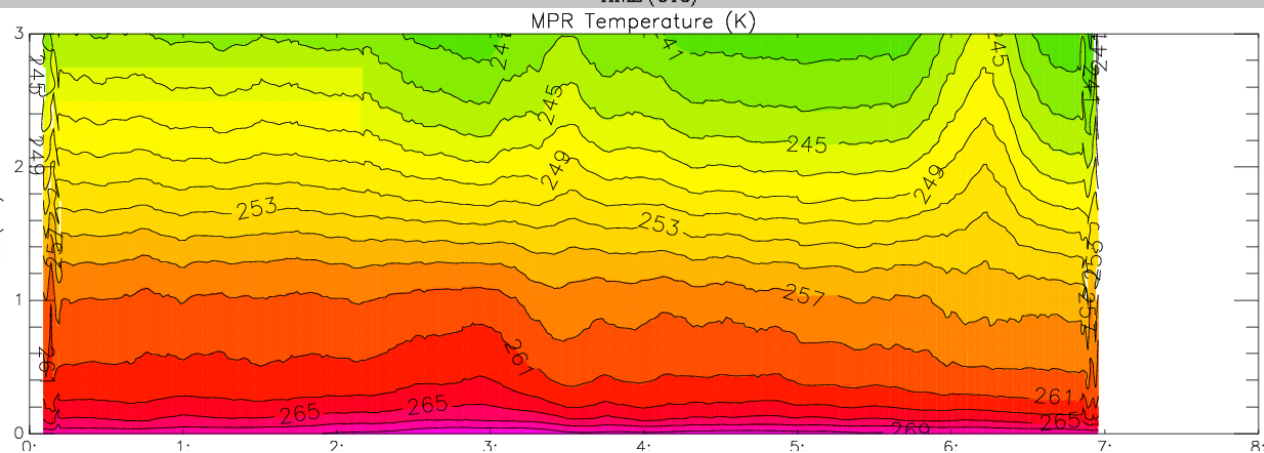
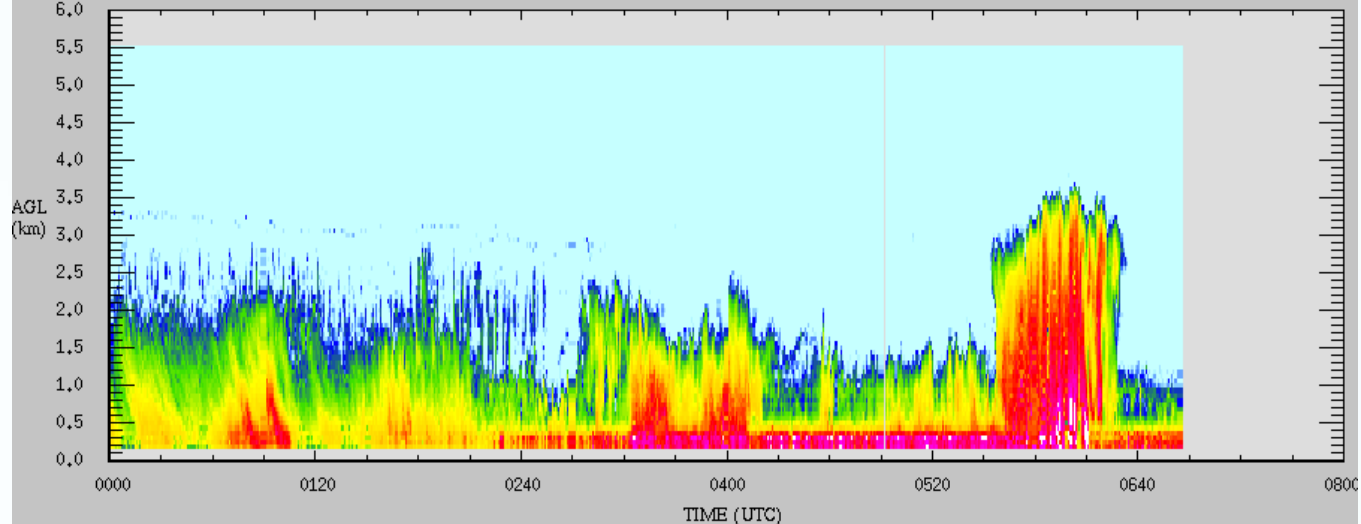
IOP-4: 915MHz Profiler and MPR VIL Comparison



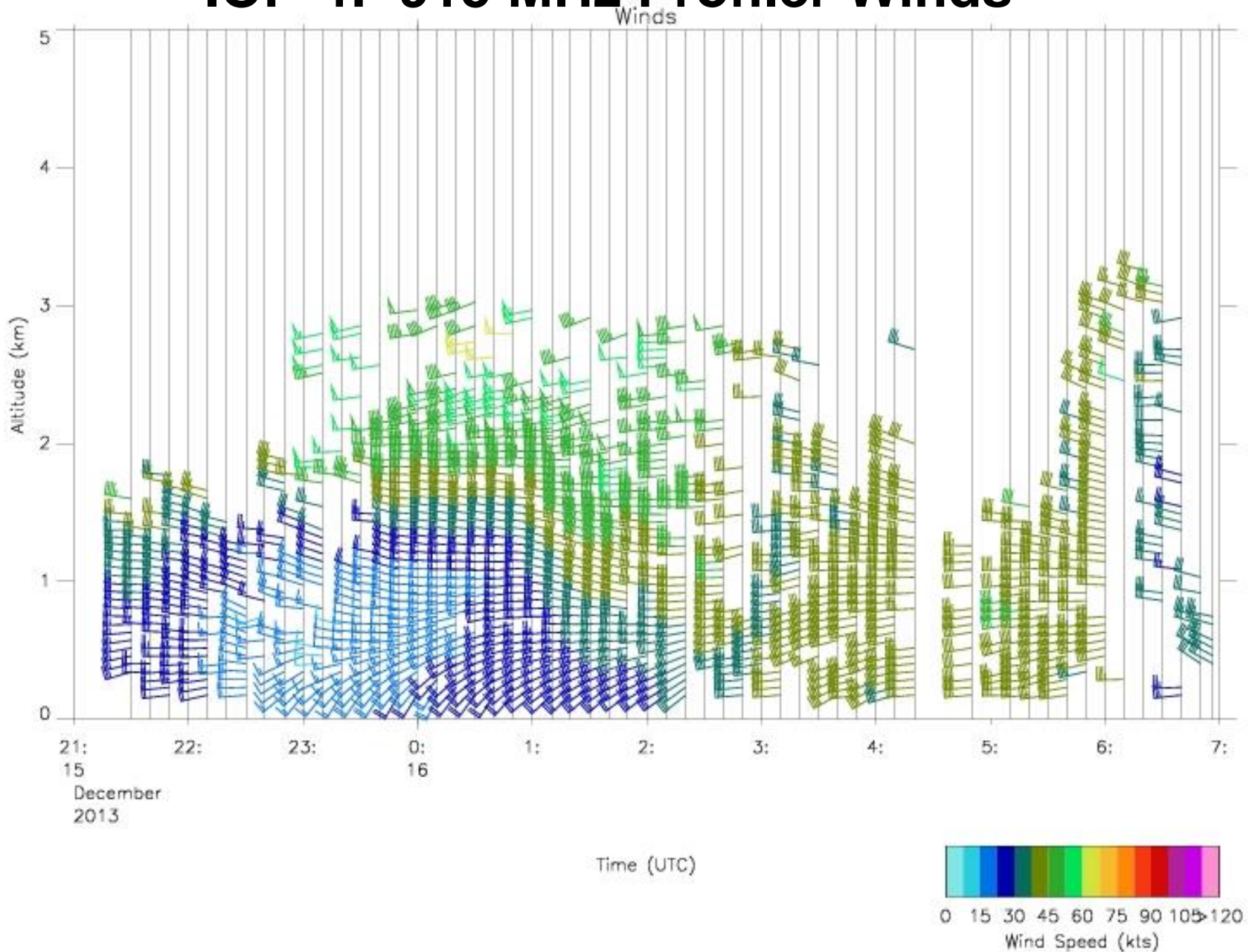
IOP-4: 915 MHz Profiler and Microwave Profiling Radiometer



IOP-4: 915 MHz Profiler and Microwave Profiling Radiometer



IOP-4: 915 MHz Profiler Winds



915 reprocessed winds, 12/16/13 (Prefrontal)

1387173013 Consensus @ Mon Dec 16 05:50:13 2013 UTC

1387172428 Data Start Time @ Mon Dec 16 05:40:28 2013 UTC

1387173013 Data End Time @ Mon Dec 16 05:50:13 2013 UTC

Ht (m)	U (m/s)	uconf	V (m/s)	vconf	W (m/s)	wconf
--------	---------	-------	---------	-------	---------	-------

175	16.35	0.11	1.44	0.81	0.05	1.00
232	16.49	0.10	2.34	0.79	-0.05	1.00
289	16.64	0.10	3.23	0.81	-0.14	1.00
346	16.78	0.57	3.87	0.80	-0.23	1.00
403	17.15	0.51	4.08	0.72	-0.36	1.00
460	17.68	0.47	4.18	0.16	-0.54	1.00
517	18.21	0.50	3.88	0.94	-0.70	1.00
574	18.73	0.55	3.17	0.86	-0.83	1.00
631	19.09	0.63	2.59	0.85	-0.89	1.00
688	19.10	0.46	2.19	0.81	-0.83	1.00
745	19.00	0.13	1.84	0.98	-0.75	1.00
802	19.11	0.61	1.20	0.98	-0.77	1.00
859	19.41	0.66	0.50	0.99	-0.78	1.00
916	19.68	0.92	-0.01	0.98	-0.76	1.00
973	19.73	0.31	-0.79	0.96	-0.77	1.00
1030	19.64	0.55	-1.55	0.97	-0.75	1.00
1087	18.91	0.76	-1.83	0.97	-0.48	1.00
1144	18.24	0.62	-2.46	0.94	-0.39	0.92
1201	17.72	0.58	-3.17	0.82	-0.39	0.91

915 reprocessed winds, 12/16/13 (Post-frontal)

1387176608 Consensus @ Mon Dec 16 06:50:08 2013 UTC

1387176021 Data Start Time @ Mon Dec 16 06:40:21 2013 UTC

1387176608 Data End Time @ Mon Dec 16 06:50:08 2013 UTC

Ht (m)	U (m/s)	uconf	V (m/s)	vconf	W (m/s)	wconf
--------	---------	-------	---------	-------	---------	-------

175	14.50	0.46	-9.93	0.29	-0.05	0.98
-----	-------	------	-------	------	-------	------

232	14.17	0.46	-9.93	0.30	0.00	0.99
-----	-------	------	-------	------	------	------

289	13.84	0.46	-9.93	0.33	0.05	0.86
-----	-------	------	-------	------	------	------

346	13.80	0.36	-9.72	0.41	0.07	0.85
-----	-------	------	-------	------	------	------

403	13.89	0.78	-9.28	0.61	0.12	0.82
-----	-------	------	-------	------	------	------

460	13.93	0.10	-8.43	0.72	0.19	0.80
-----	-------	------	-------	------	------	------

517	13.66	0.49	-7.27	0.81	0.27	0.78
-----	-------	------	-------	------	------	------

574	13.86	0.35	-6.25	0.40	0.22	0.82
-----	-------	------	-------	------	------	------

631	13.83	0.37	-5.36	0.19	0.18	0.83
-----	-------	------	-------	------	------	------

688	13.79	0.72	-4.24	0.65	0.18	0.82
-----	-------	------	-------	------	------	------

745	14.37	0.53	-3.80	0.46	0.12	0.84
-----	-------	------	-------	------	------	------

802	14.79	0.62	-3.68	0.00	0.09	0.88
-----	-------	------	-------	------	------	------

859	15.40	0.62	-3.45	0.00	0.08	0.80
-----	-------	------	-------	------	------	------

916	15.69	0.89	-2.82	0.76	0.17	0.73
-----	-------	------	-------	------	------	------

973	15.67	0.28	-3.29	0.76	0.28	0.65
-----	-------	------	-------	------	------	------

1030	15.53	0.43	-4.06	0.67	0.38	0.66
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1087	15.54	0.37	-4.59	0.42	0.43	0.73
------	-------	------	-------	------	------	------

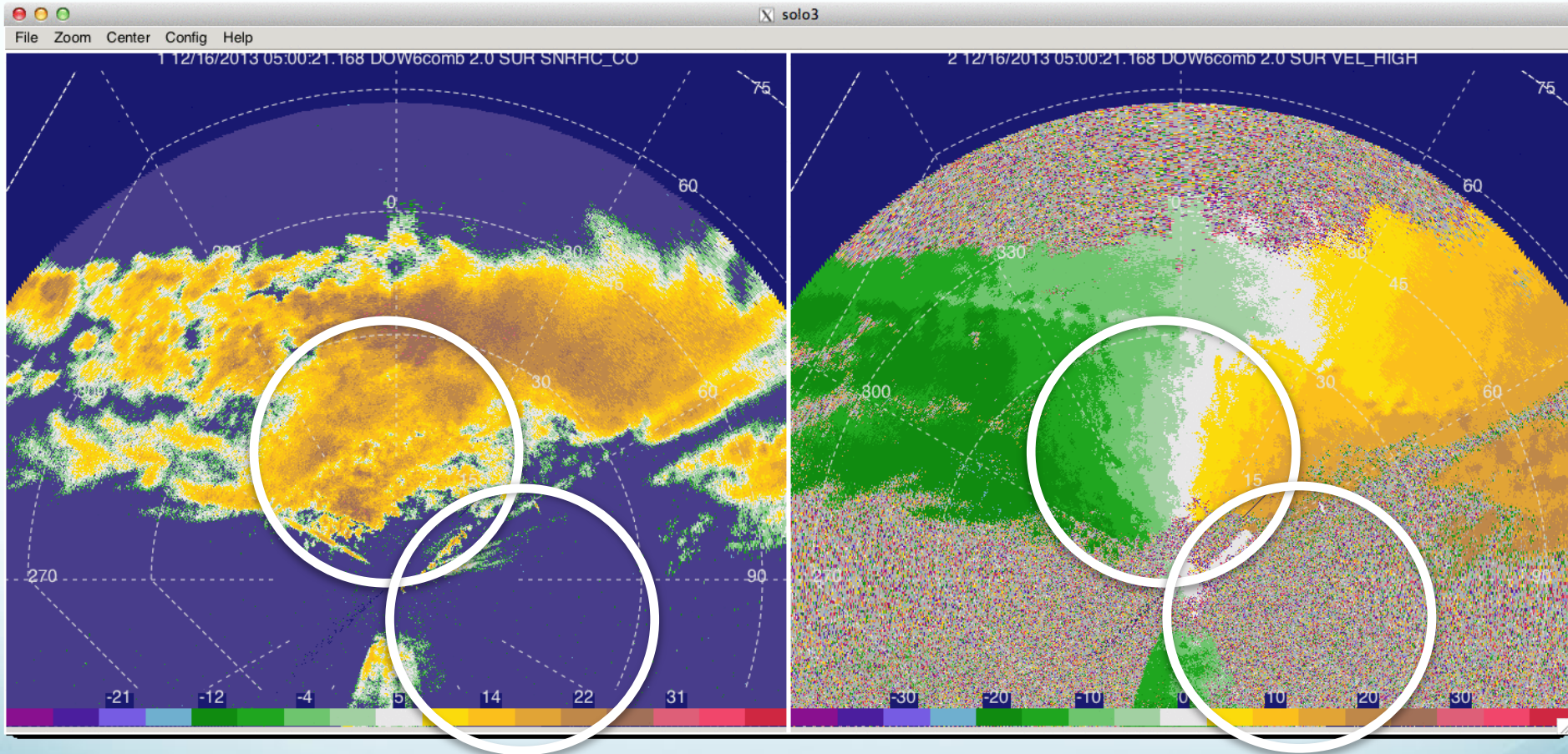
1144	15.33	0.47	-5.15	0.22	0.41	0.29
------	-------	------	-------	------	------	------

1201	15.45	0.29	-5.71	0.13	0.30	0.00
------	-------	------	-------	------	------	------

IOP-4: DOW 6 PPI

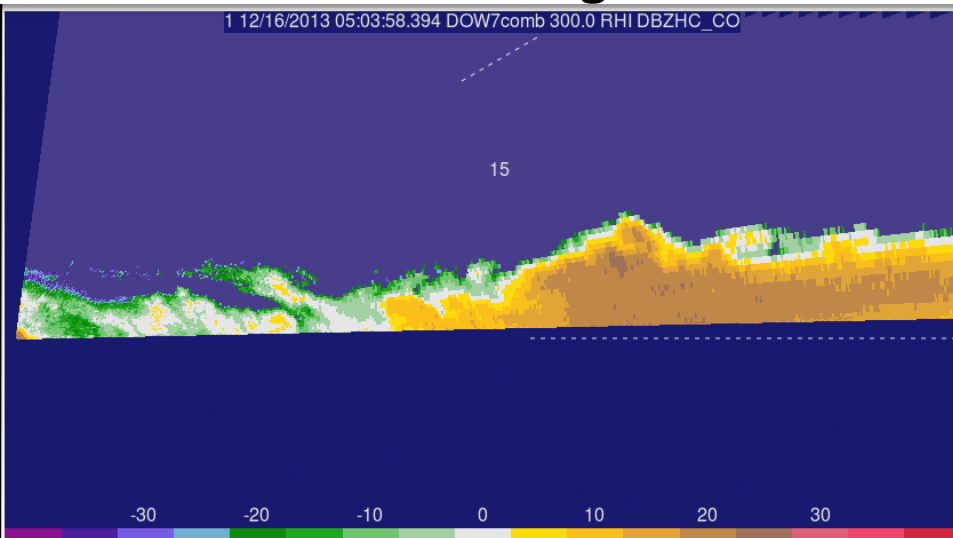
DOW6 - Z - Reflectivity

DOW6 - Vr - Radial Velocity

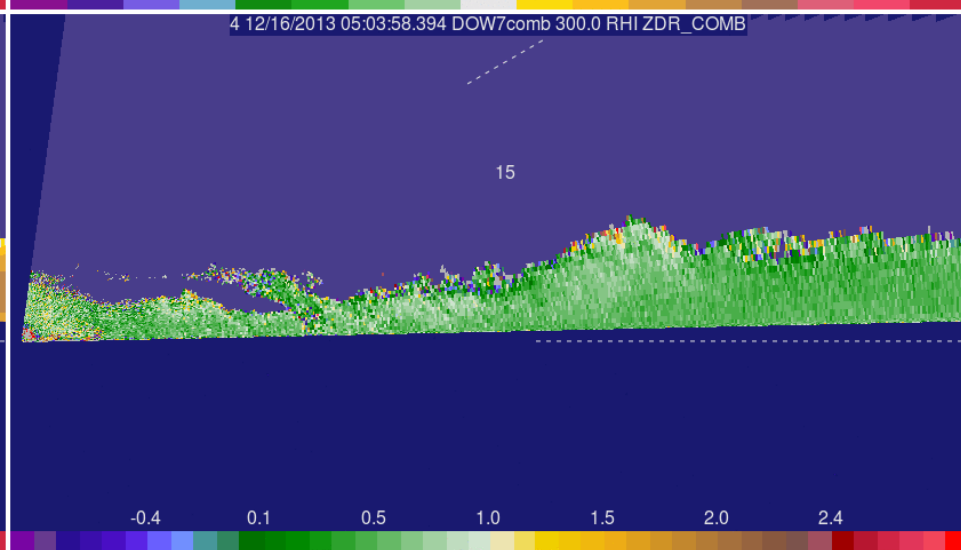
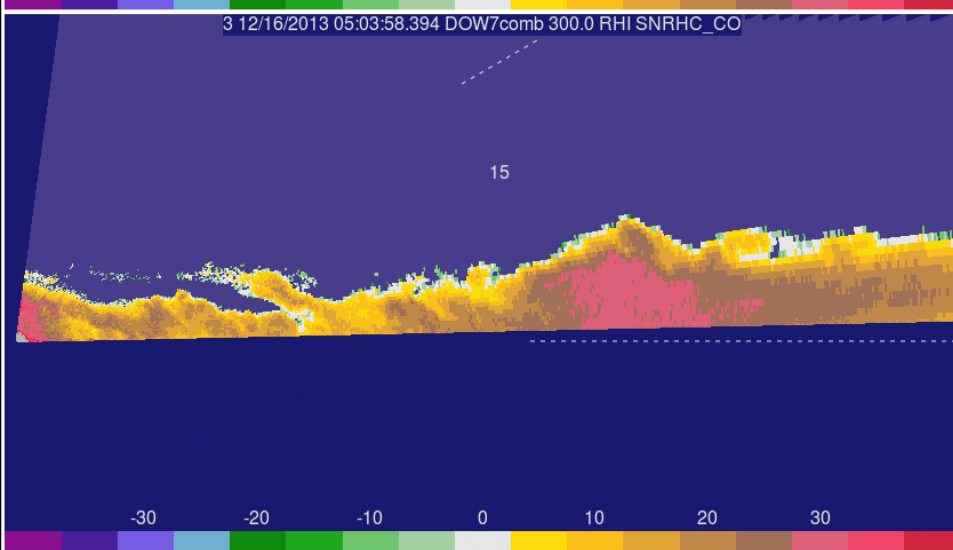
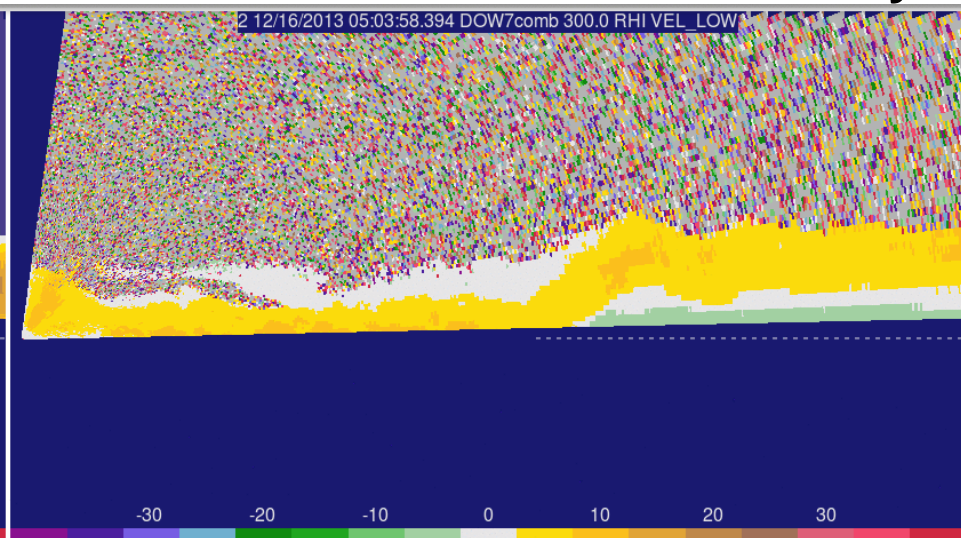


IOP-4: DOW 7 RHI

DOW7 RHI - Z - Reflectivity
DOW7 RHI - SNR - Signal-to-Noise

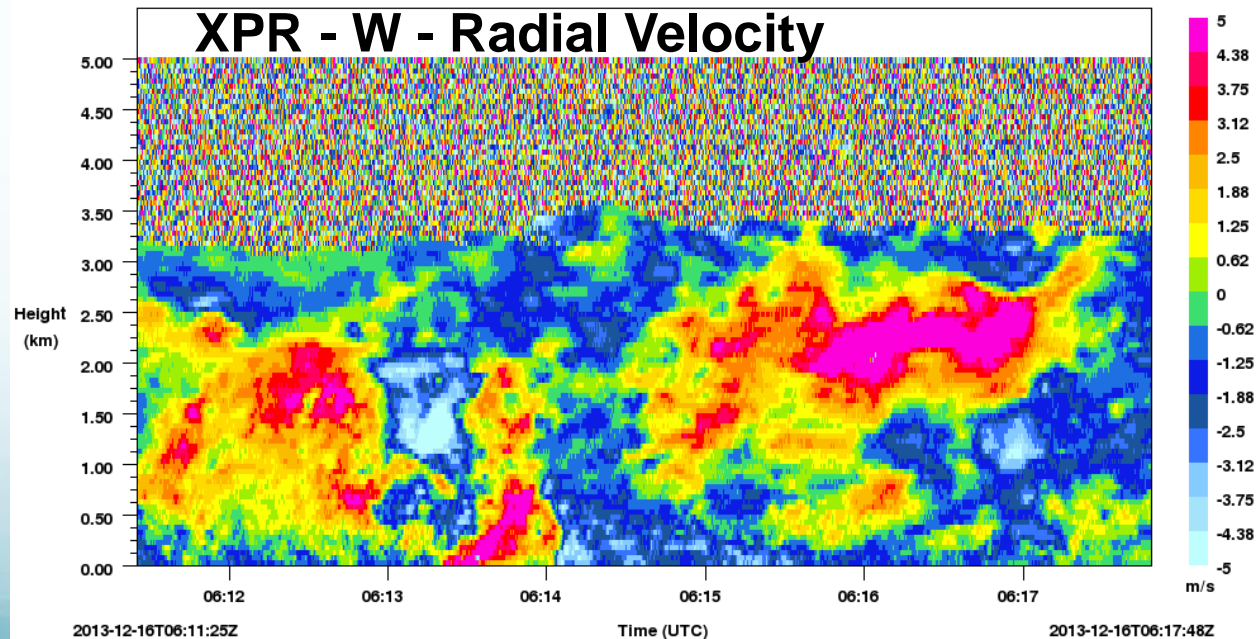
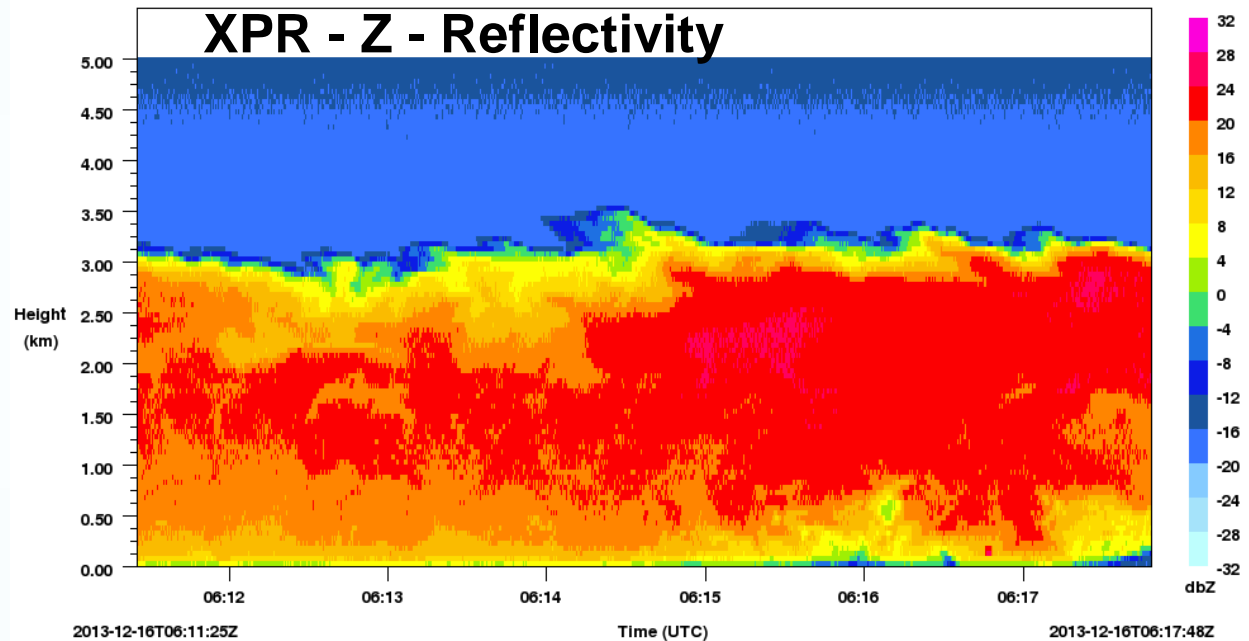


DOW7 RHI - Vr - Radial Velocity
DOW7 RHI - ZDR - Diff Reflectivity



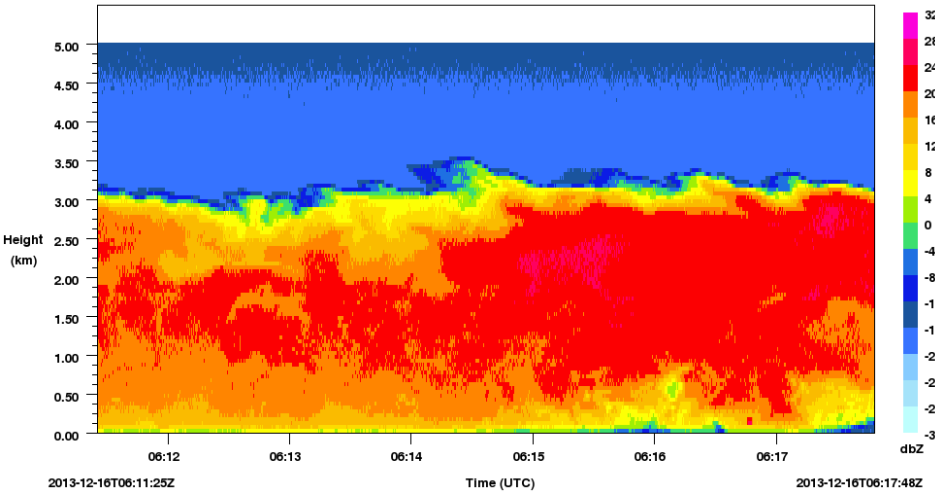
IOP-4: X-Band Profiling Radar & 915 MHz Profiler

- W depicting frontal surface with tilted upward vertical motion – more similar to density current / gust front.
- Maxima in W:
 - ~11m/s near frontal surface
 - ~12m/s centered near 2.5km AGL behind sfc front.

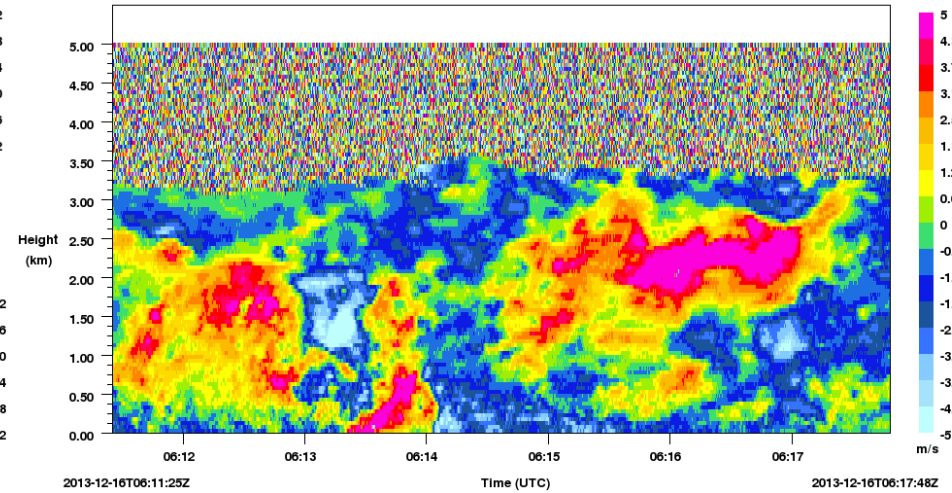


IOP-4: XPR and DOW7 RHI Frontal Comparison

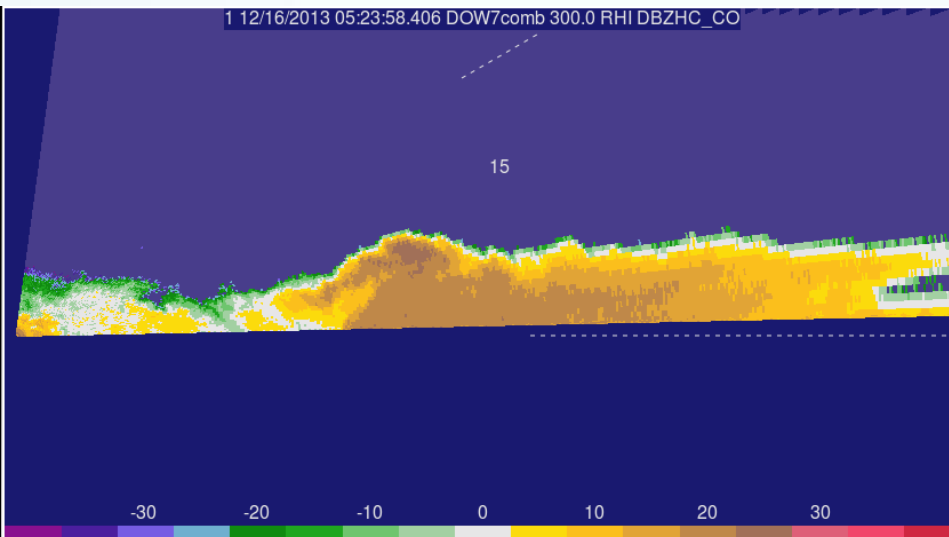
XPR - Z – 0611 – 0618 UTC



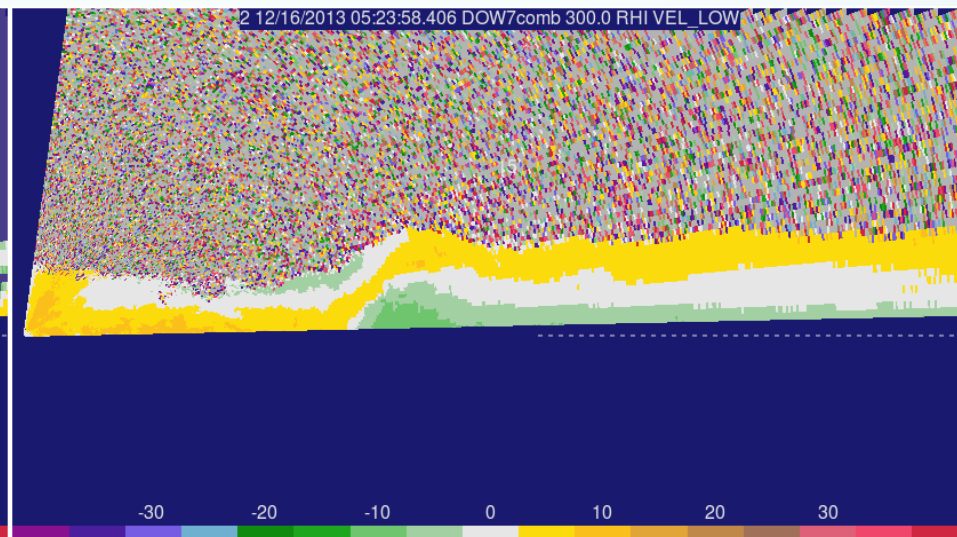
XPR - W - 0611 – 0618 UTC



DOW6 RHIs - Z – 0523 UTC



DOW6 RHIs - Vr – 0523 UTC

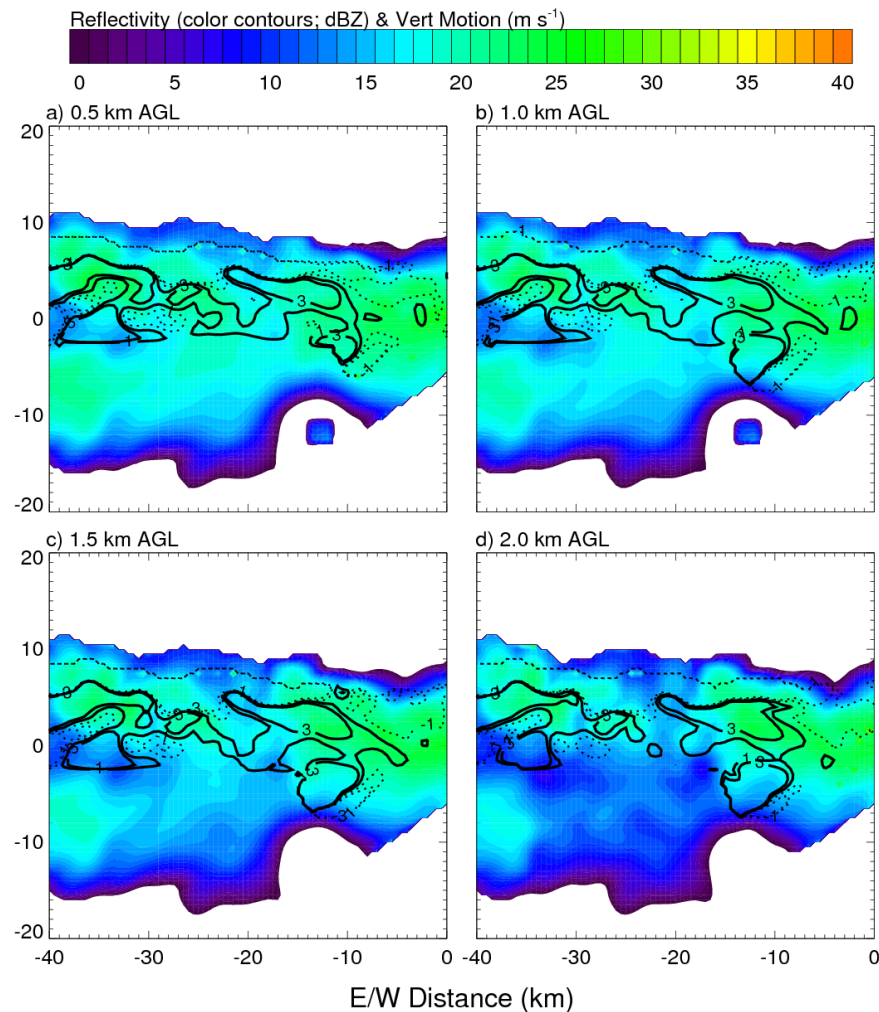
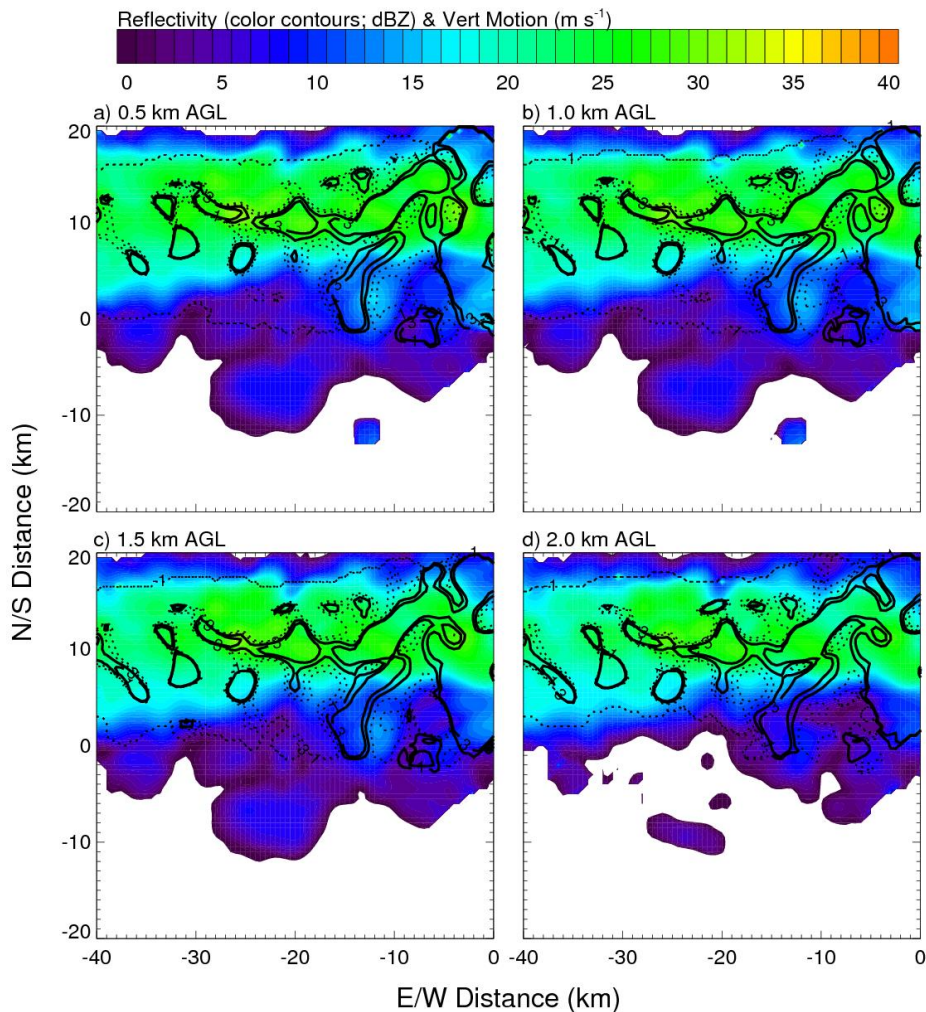


Very Prelim Dual-Doppler Syntheses for IOP-4

RadX → REORDER → CEDRIC

0530 UTC

0600 UTC



IOP-9 (Oswego) – Wall cloud-like feature associated with misovortex which persisted for 30+ minutes.



End of IOP-15 (21
Jan)
Arctic frontal passage
over Lake Ontario.



Low clouds/whirls are
a visual representation
of boundary layer heat
& moisture flux from
“warm” lake upward to
extremely cold air.





UAH OWLeS Camera at SUNY - Oswego Tuesday Jan 21, 2014 04:00:16 PM
Temp: 2.6°F, wind: NNE at 4 mph, Gust: 10