LP UV Ozone Retrieval Analysis with Revised Lower Altitude Limit

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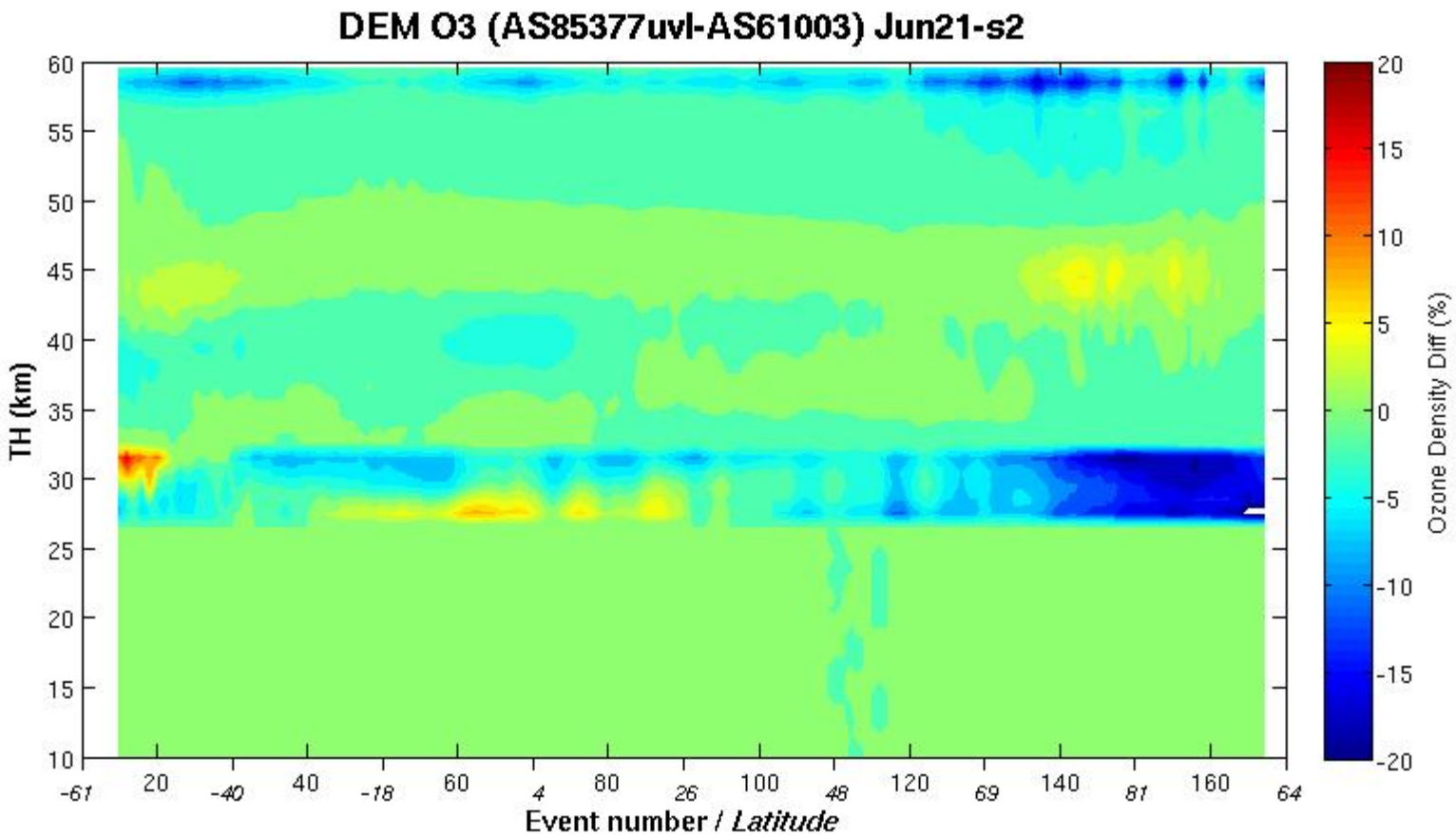
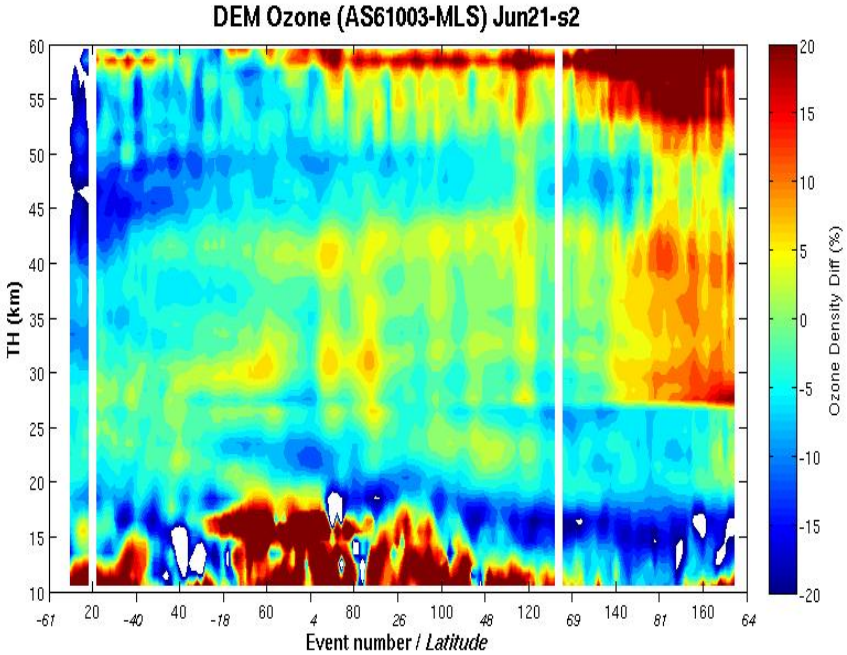
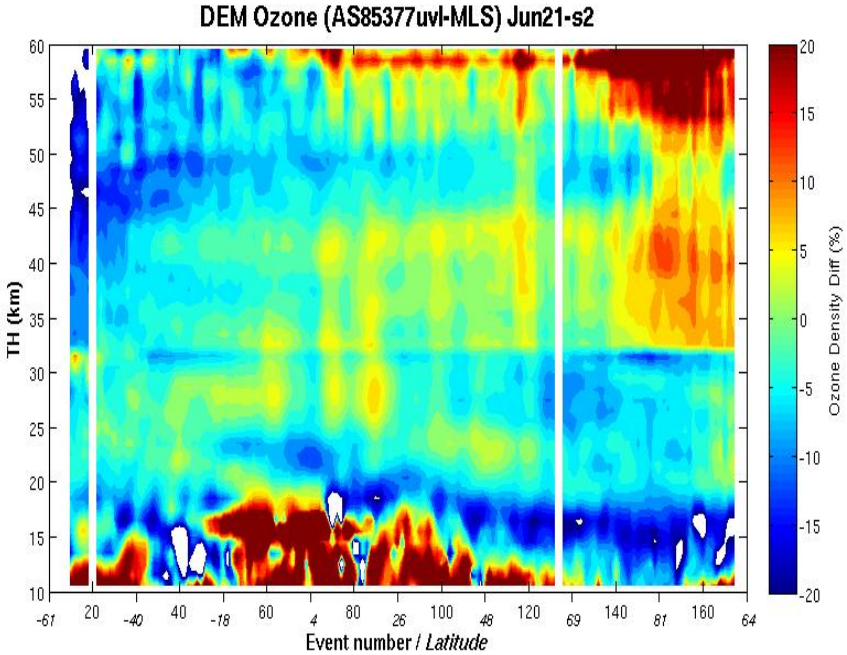
Summary

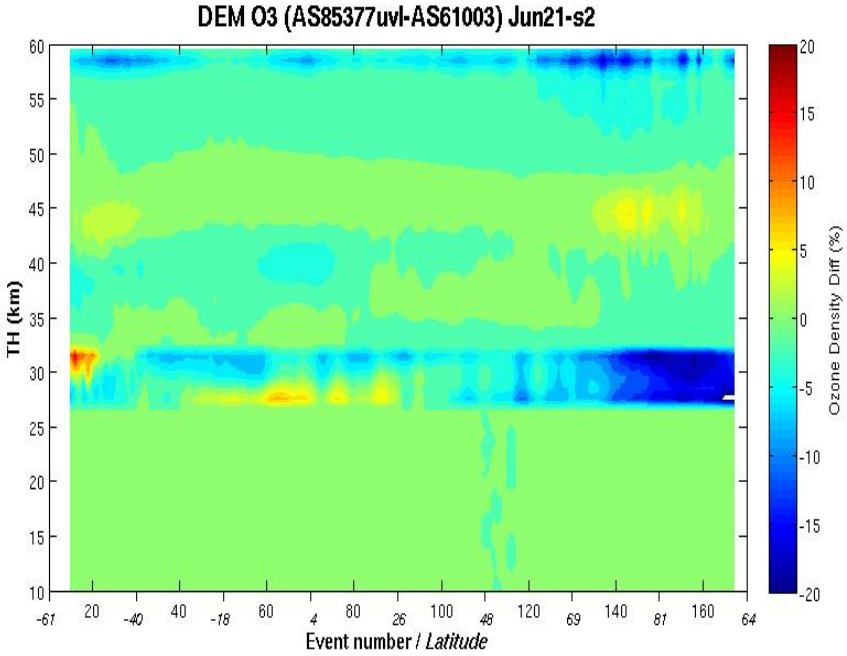
- The test case turns off the logical switch 'L_Lower_Hartley_Huggins', which forces the lower limit of the UV ozone retrieval to be pushed down by 5 km (→ 40 km at 290 nm, decreasing to 25 km at 325 nm). The test processing will use the wavelength-dependent UV lower limit directly from the ivv.in file.
- The combined ozone transition from the VIS ozone retrieval to the UV ozone retrieval is changed from 27.5 km to 32.5 km.
- 4 selected cardinal days were processed (6/21/2013, 9/22/2013, 12/22/2013, and 3/21/2014).
- Daily event mean combined ozone is compared to V2 data (AS61003) and to MLS daily event mean.
- Also look at use of revised lower limit.

Ozone Differences (Test Case - V2) for 6/21/2013







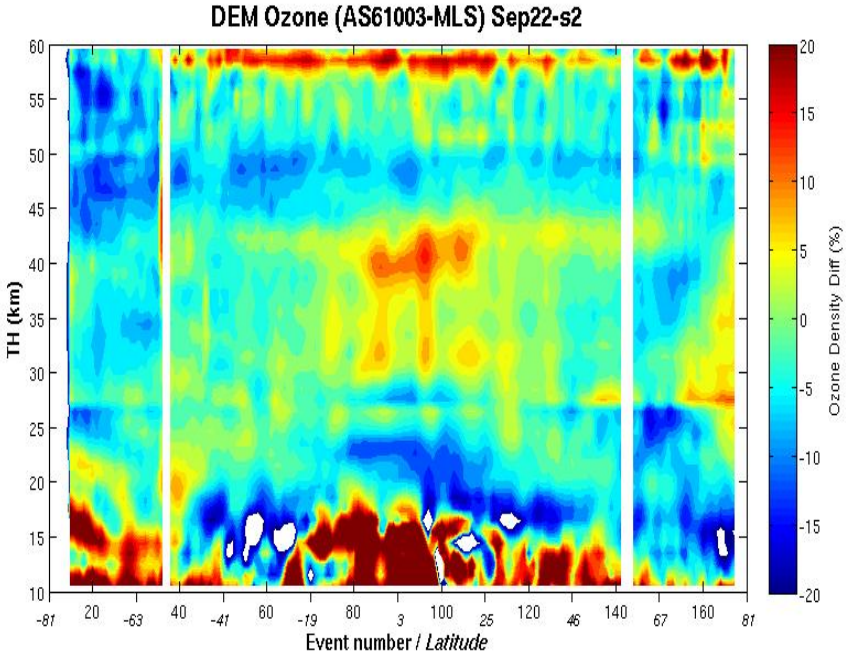


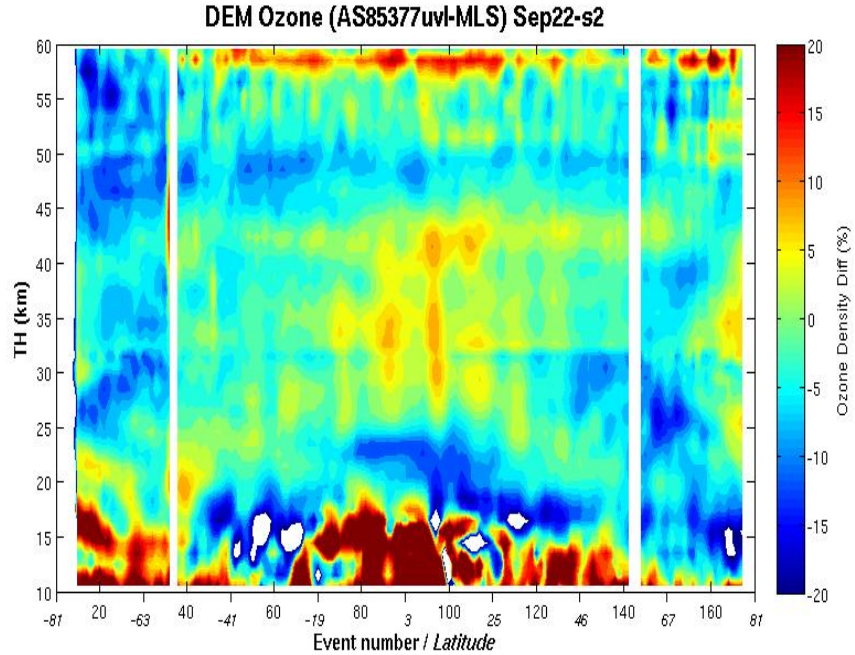
Ozone Difference for June 21

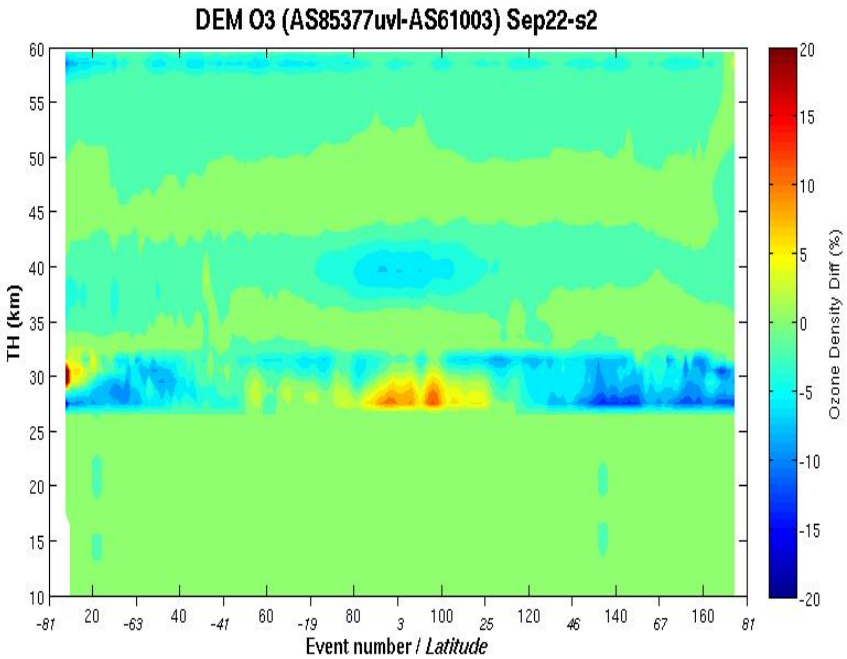
Top left: V2 – MLS

Top right: Test case - MLS

Bottom left: Test case - V2





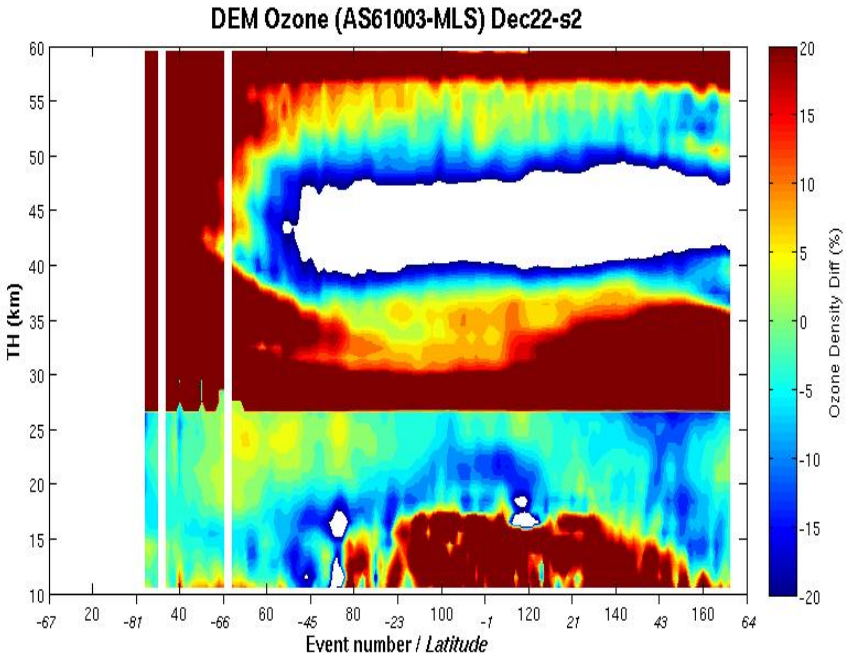


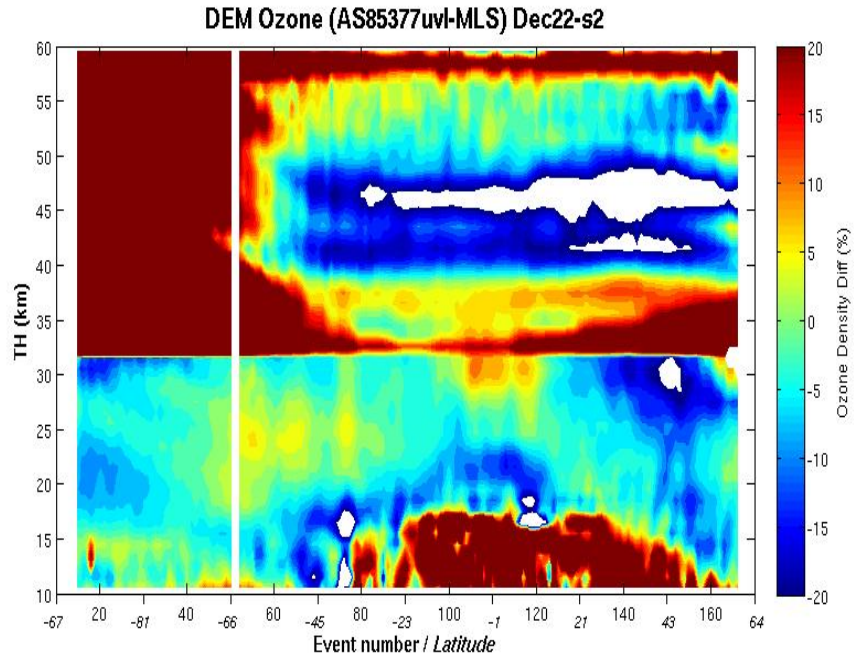
Ozone Difference for September 22

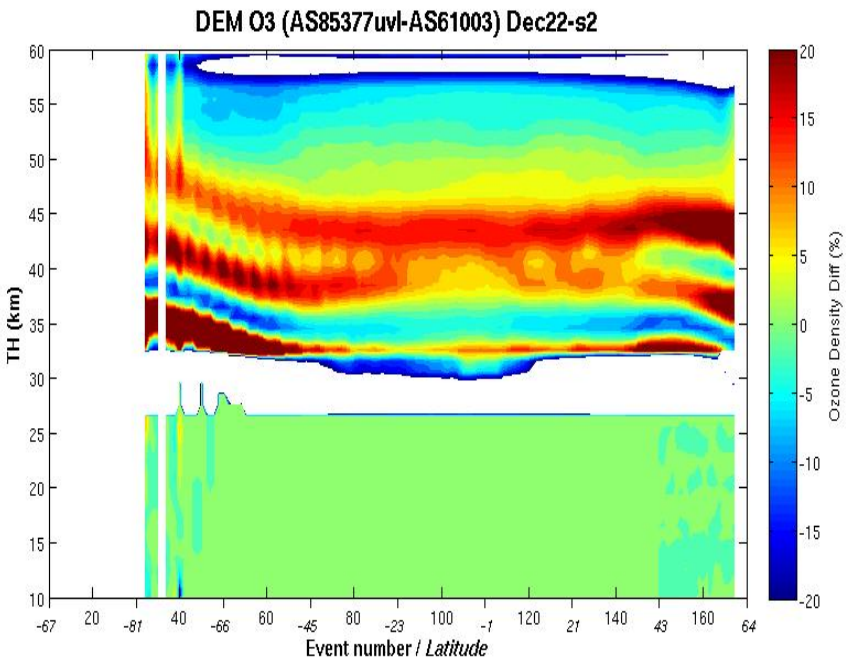
Top left: V2 – MLS

Top right: Test case - MLS

Bottom left: Test case - V2





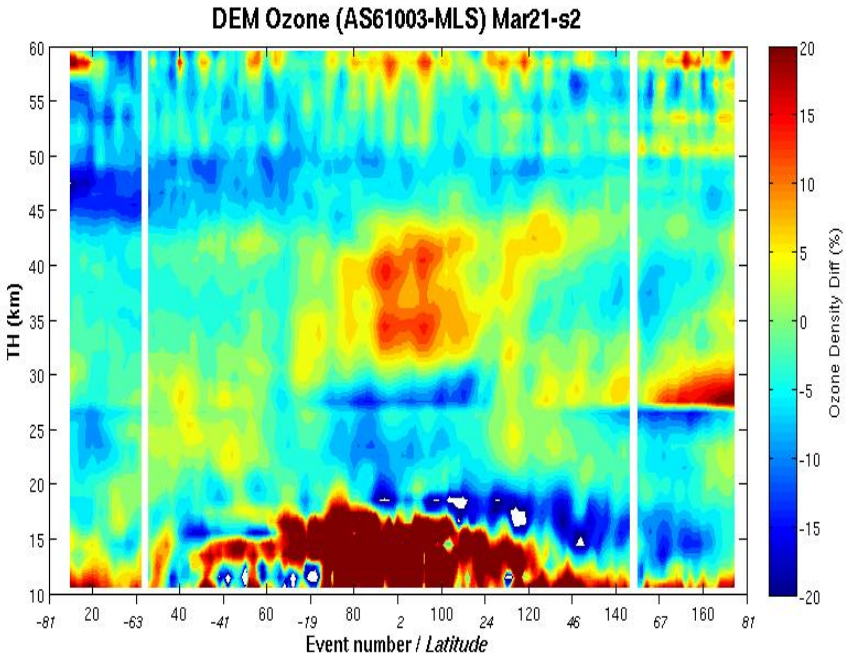


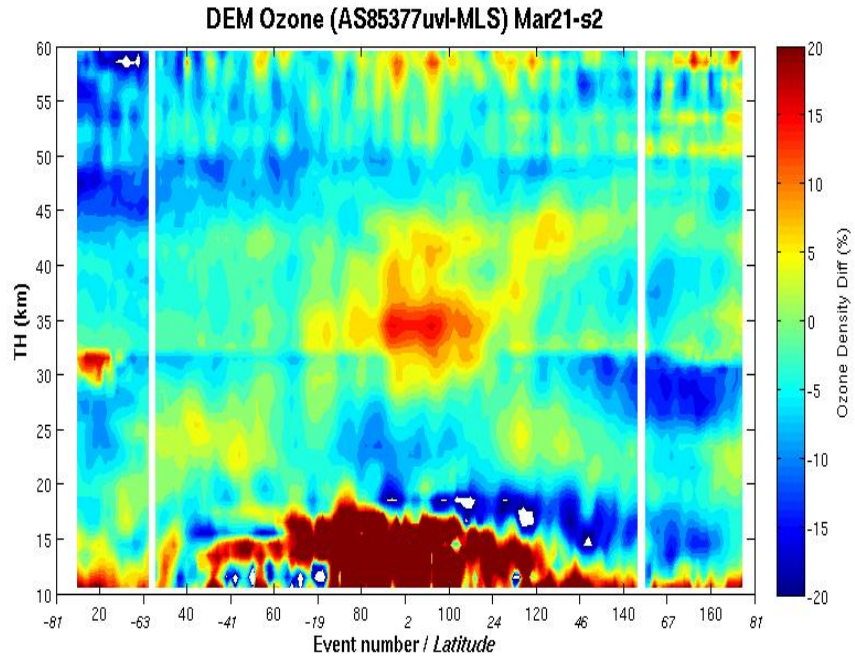
Ozone Difference for December 22
(sample table v0.5**)**

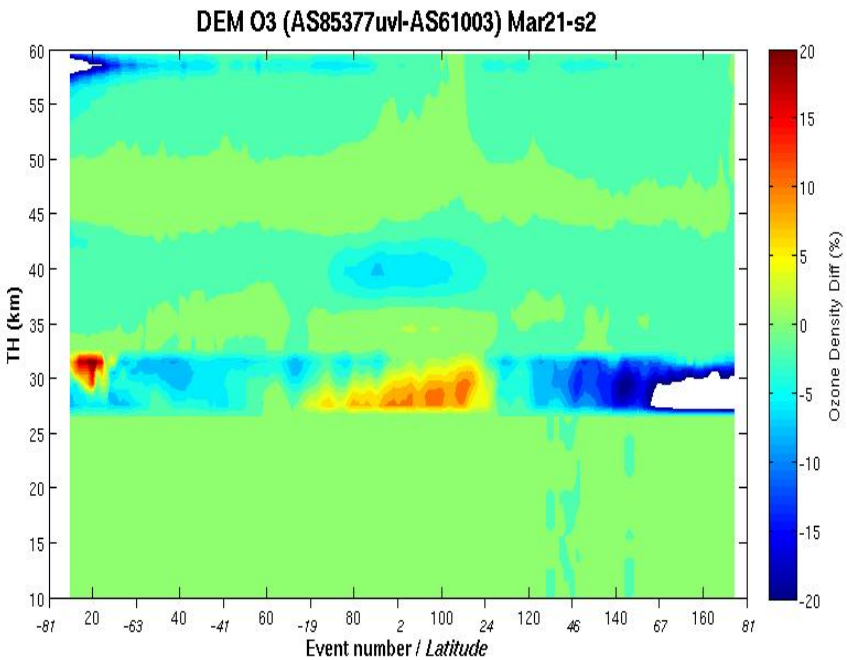
Top left: V2 – MLS

Top right: Test case - MLS

Bottom left: Test case - V2







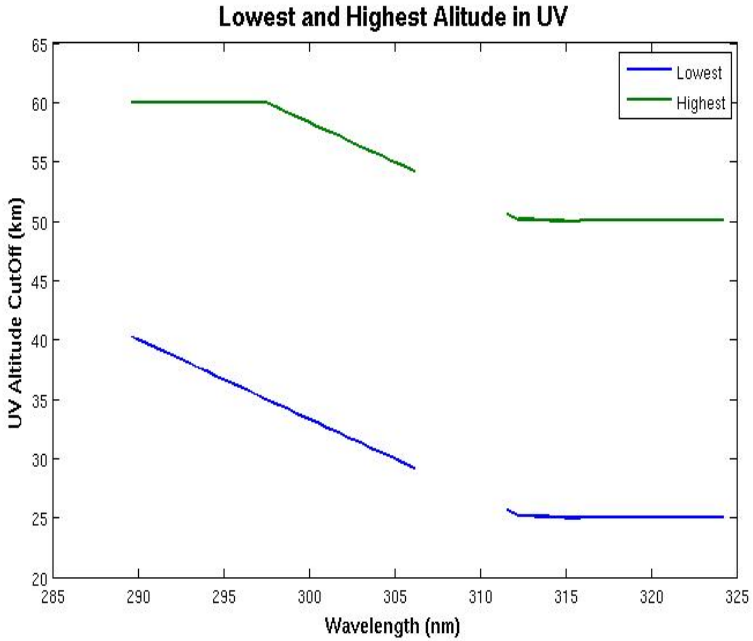
Ozone Difference for March 21
(sample table v0.7**)**

Top left: V2 – MLS

Top right: Test case - MLS

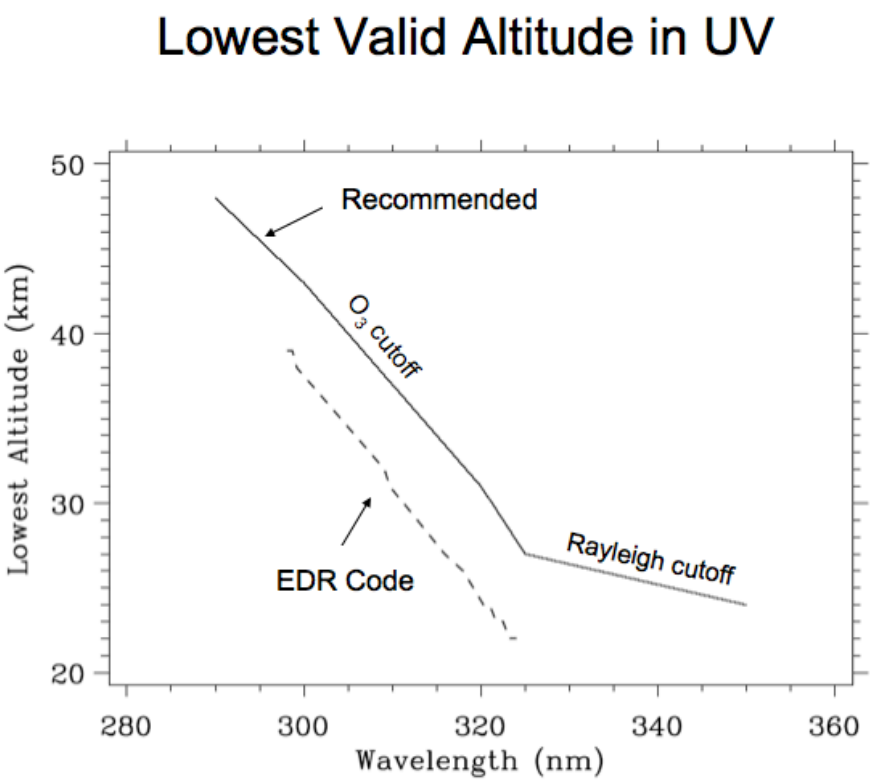
Bottom left: Test case - V2

Current and Proposed UV Lower Limit



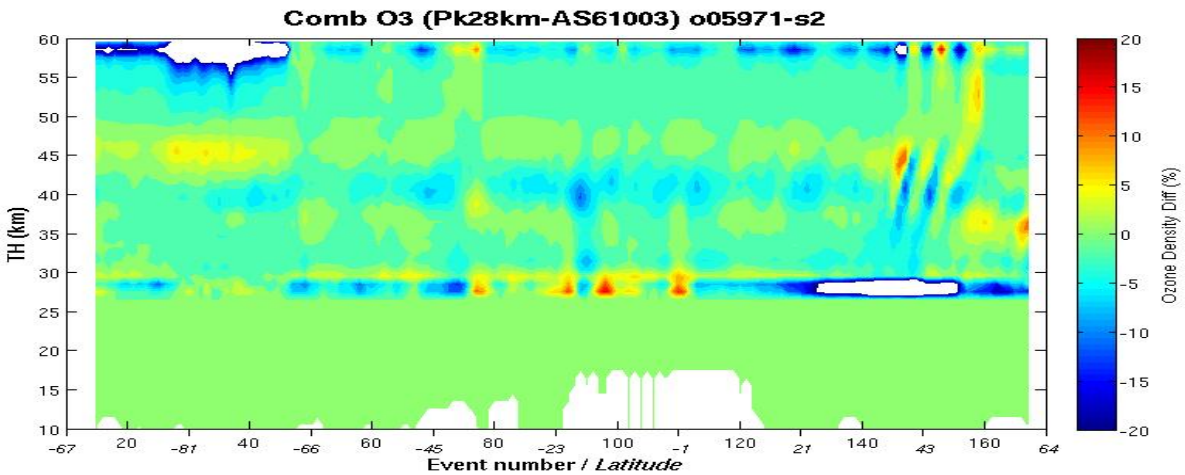
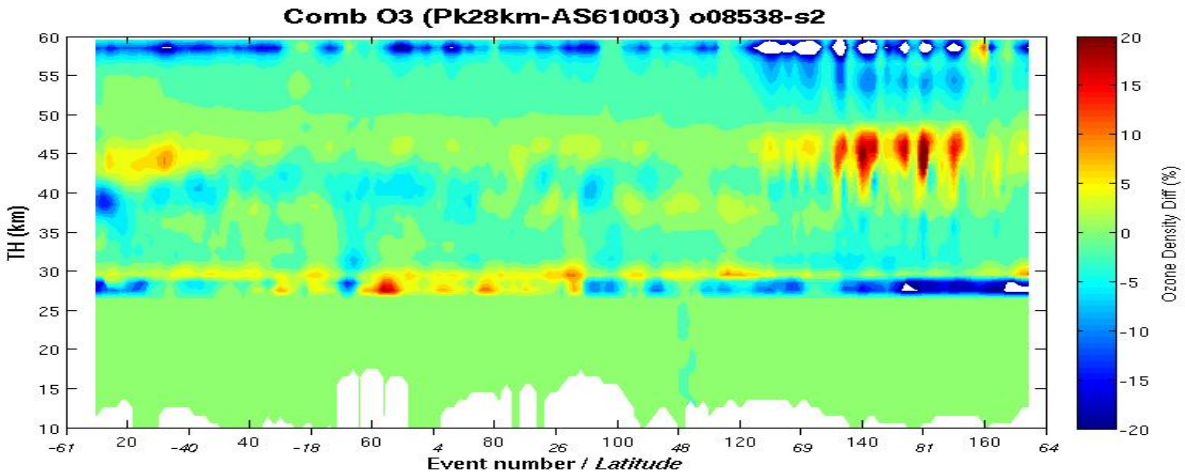
V2 processing lower limit = 40 km at 290 nm, decreasing to 25 km at 325 nm

Proposed threshold based on ozone absorption cutoff = 48 km at 290 nm, decreasing to 28 km at 325 nm



Ozone Changes (Suggested Limit – V2 Results)

Ozone change for orbit 5971 (December 22, 2012)



Ozone change for orbit 8538 (June 21, 2013)