



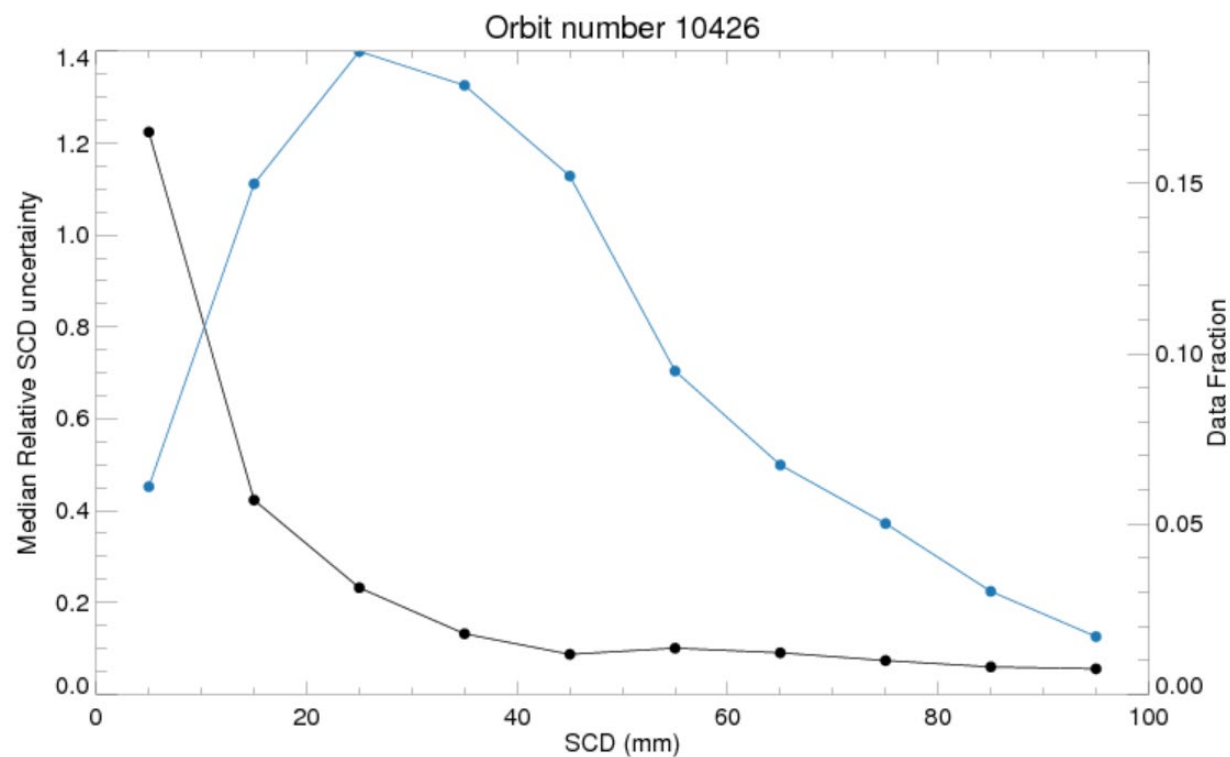
*Supplement of*

## **Ozone Monitoring Instrument (OMI) Total Column Water Vapor version 4 validation and applications**

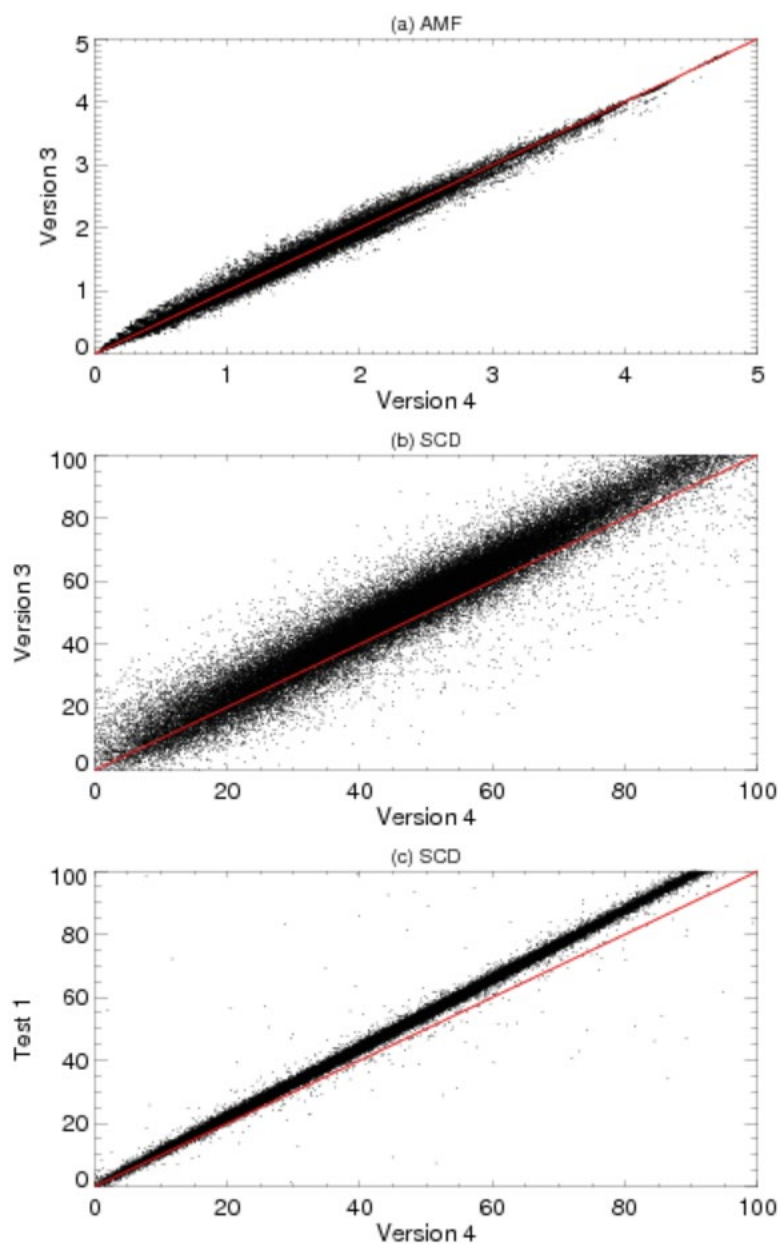
**Huiqun Wang et al.**

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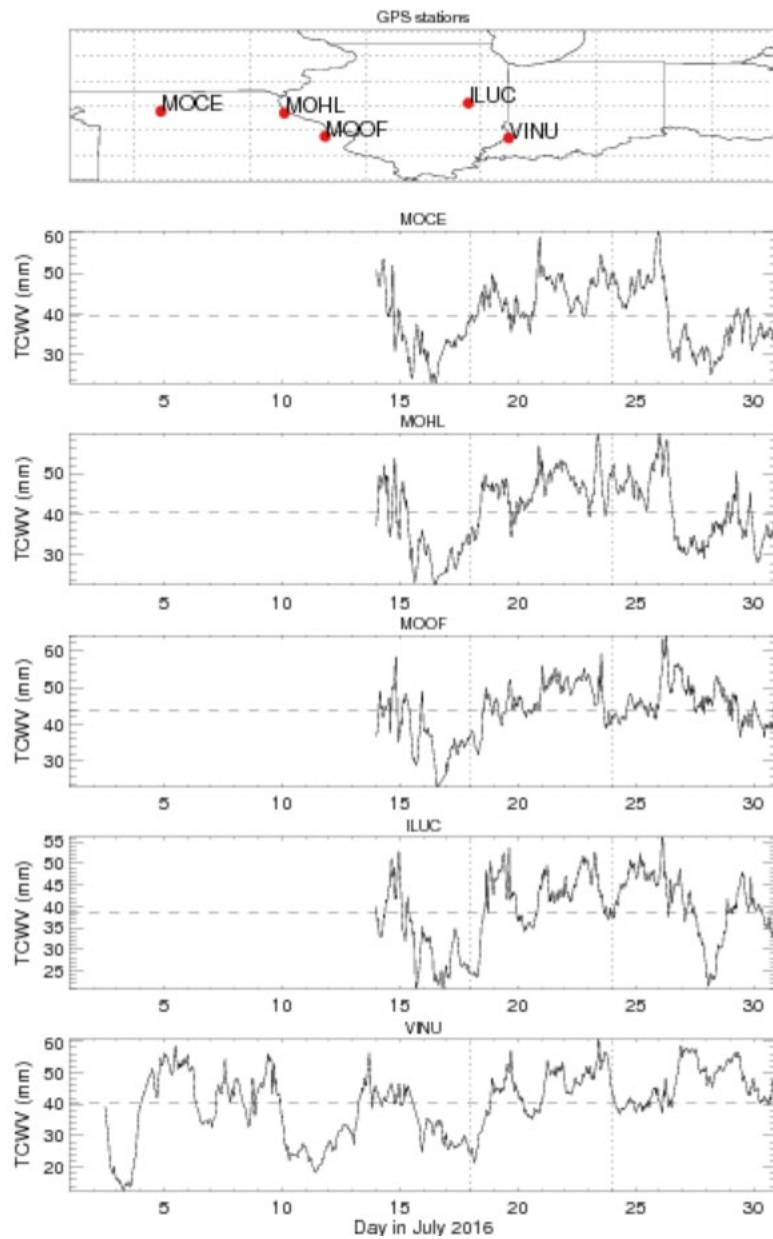
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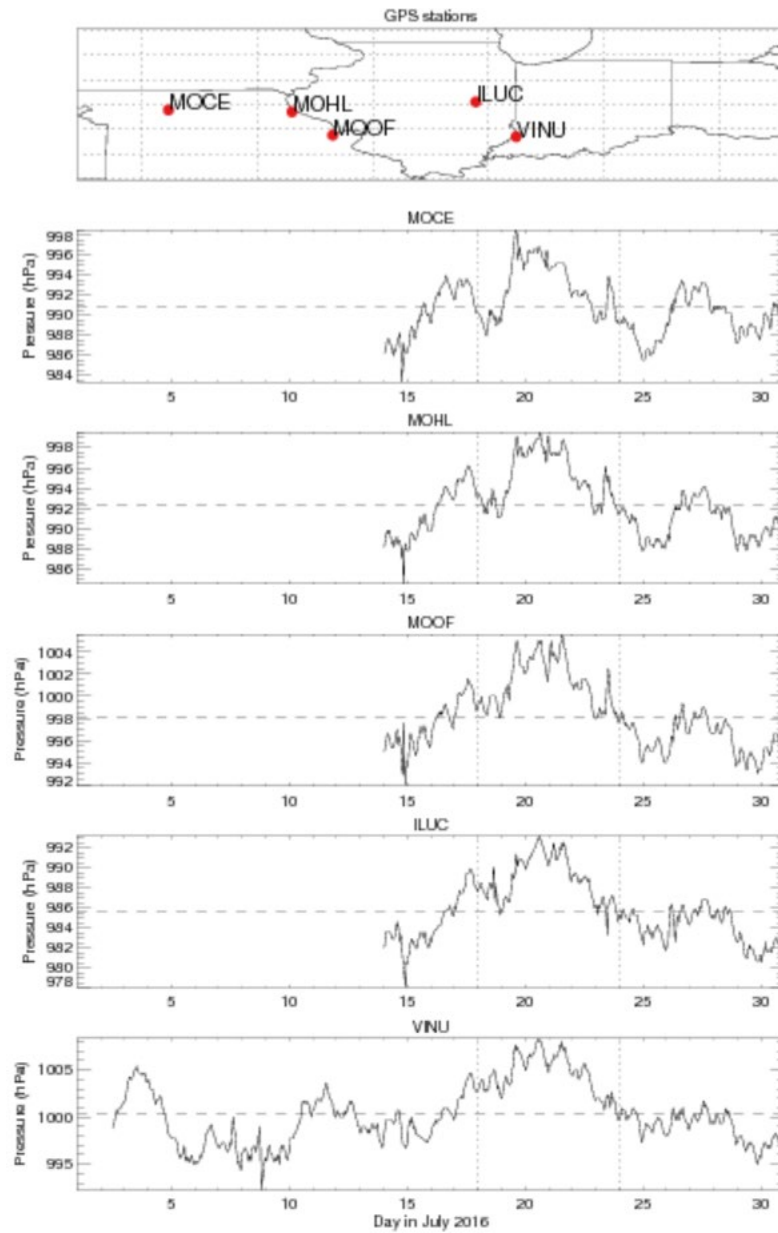
Supplementary Figure 1. Black curve shows the median relative SCD uncertainty for each 10 mm SCD bin (left axis). Blue curve shows the fraction of data points that fall within each 10 mm SCD bin (right axis). Results are derived from OMI orbit number 10426.



Supplementary Figure 2. (a) Version 4.0 versus Version 3.0 AMF comparison; (b) Version 4.0 versus Version 3.0 SCD comparison; (c) Version 4.0 versus Test 1 SCD comparison. Test 1 has the same setting as Version 4.0 except that water vapor reference spectrum is from HITRAN 2016. All results are for OMI orbit number 10423.



Supplementary Figure 3. Time series of TCWV (mm) observed by each GPS station indicated in the top panel for July 2016. The horizontal dashed lines indicate the mean TCWV for July. The two dotted vertical lines bracket the corn sweat time period discussed in the paper.



Supplementary Figure 4. Time series of surface pressure (hPa) observed by each GPS station indicated in the top panel for July 2016. The horizontal dashed lines indicate the mean surface pressure for July. The two dotted vertical lines bracket the corn sweat time period discussed in the paper.