

Monthly Ozone Residual Comparisons Between OMPS-LP and MLS

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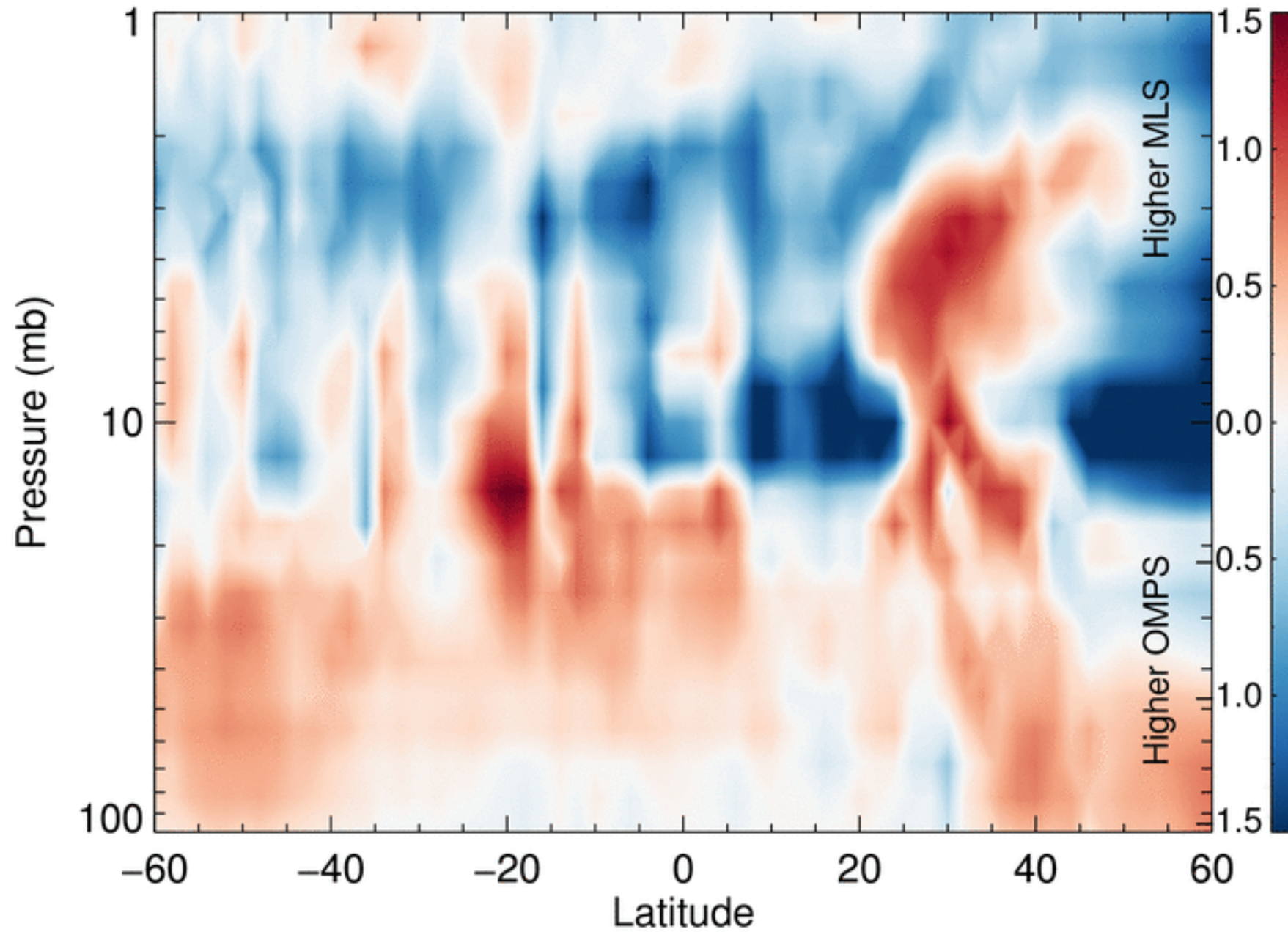
Background

- Performed using daily OMPS-LP and MLS data files
 - Comparisons done for the entire length of the OMPS-LP data record, ranging from January 2012 through June 2017
- Daily zonal means were created for each day and averaged together across an entire month
 - Zonal means were done with a 2-degree latitude bin from 60 South to 60 North
 - A spline was used to bring the OMPS vertical (pressure) resolution down to that of MLS so 1-to-1 comparisons could be made
 - Study focused mainly on stratosphere, from 100mb to 1mb

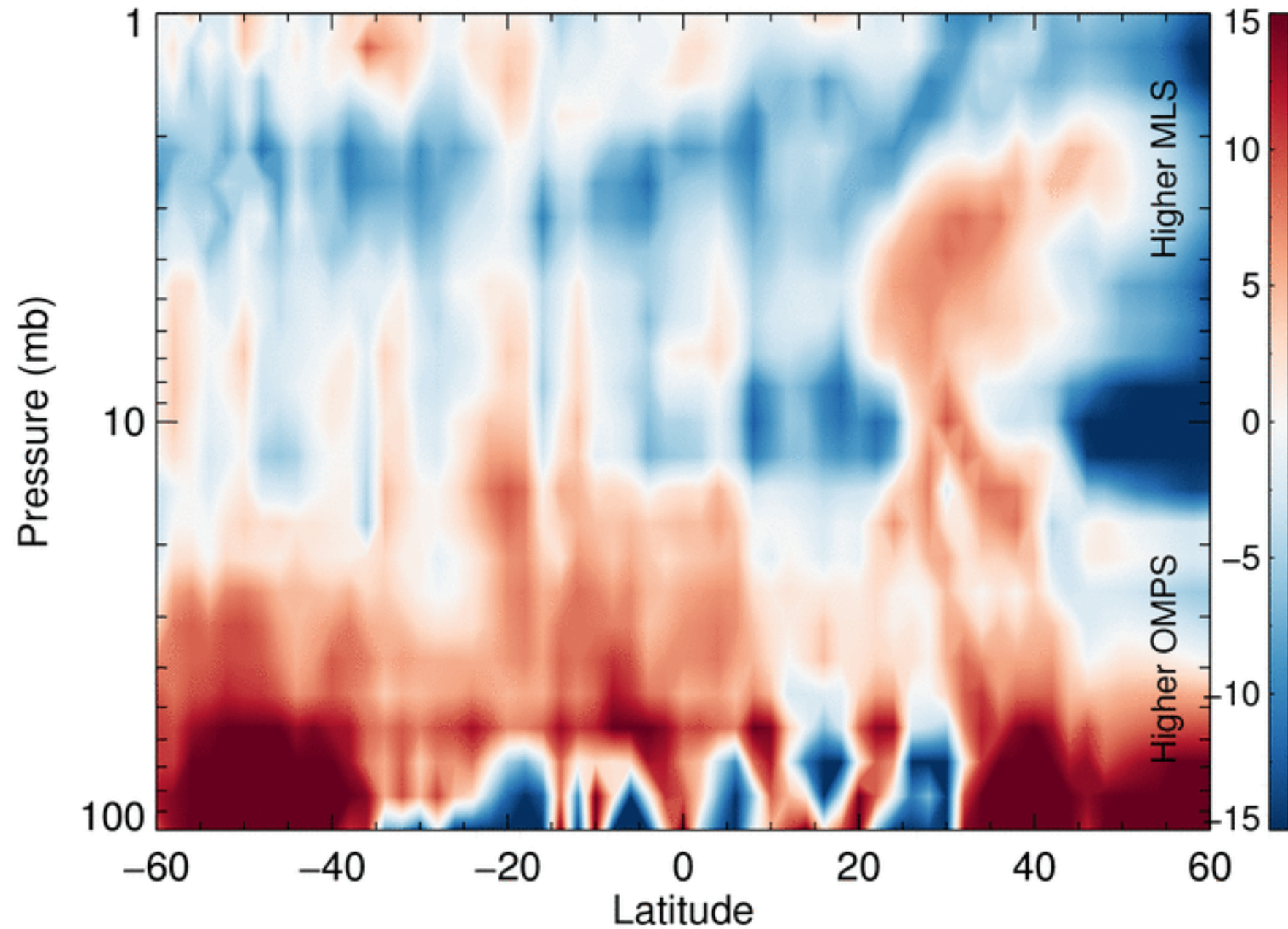
Background (cont.)

- Differences between the MLS and OMPS monthly zonal means were calculated for each month
- Correlation calculations were done for each month
- Percent Bias plots were also calculated for each month

Residuals for 2012 01



Percent Bias for 2012 01



Notes About the Plots

- The loss in coverage poleward of 50 degrees during June July and August of each year seems to come from the OMPS data, potentially due to either polar night or solar zenith angle.
 - Impacts both hemispheres due to a potential wrap-around effect during the spline process
- Vertical striations in the OMPS data present starting in April of 2017 and continuing through the summer

Correlation Statistics

- Average Correlation: 97.8582%
- Maximum Correlation: 99.5729%
- Minimum Correlation: 92.9895%
- Standard Deviation: 2.1935%

Thank You