

**Solar Cycle Dependence of Odd-Oxygen, Odd-Hydrogen, and Ozone in the Mesopause Region Observed by SABER**

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A consistent set of measurements of oxygen, hydrogen and ozone and related parameters derived from the Sounding of the Atmosphere using Broadband Emission Radiometry (SABER) instrument on the NASA TIMED satellite will be presented. These data clearly indicate the influence of solar variability on the atmosphere structure and composition. In general, the values of most parameters decrease with decreasing solar activity. However, odd-hydrogen is observed to increase with decreasing solar activity. While the data indicate a direct relation between solar activity and atmospheric response, the role of dynamical variability in modulating the direct solar response has not yet been investigated, particularly on regional scales (e.g., tropical, mid-latitude, or polar). We describe the SABER observations in detail and discuss how they can be used with general circulation models to assess the coupled role of dynamics and solar variability in determining the overall atmospheric response.