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Nearly two solar cycles of ACE-FTS temperatures in the stratosphere to lower thermosphere

In August of this year, the ACE-FTS (Atmospheric Chemistry Experiment –Fourier Transform Spectrometer) instrument will celebrate its 2^{nd} "helioversary" of being in orbit. With routine measurements of temperature profiles within 15-125 km, spanning from February 2004 to today, ACE-FTS data is well-suited to measure atmospheric cooling trends and temperature responses to solar input. This study will compare ACE-FTS temperatures to correlative data from four other atmospheric limb sounders—MLS on Aura, OSIRIS and SMR on Odin, and SABER on TIMED. The comparison results will be used to assess global, regional, and seasonal biases and drifts. These data will also be used to derive temperature trends throughout the stratosphere to lower thermosphere over the past two decades, as well as the atmospheric temperature response to the 11-year solar cycle.

Topic

Current and past limb and occultation instruments: algorithms, products, validation

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