

COSMIC Observations of the Stratospheric Sudden Warming of January 2009

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One of the largest Stratospheric Sudden Warmings (SSWs) on record occurred in the Arctic stratosphere during January 2009. Observed temperature increases at 30 km exceeded 40 K over just a few days. This warming was accompanied by stratospheric cooling over tropical latitudes, which is a well-known effect associated with changes in the global-scale Brewer-Dobson circulation. We use COSMIC observations to study the behavior of this warming event and, in particular, examine the detailed vertical structure of temperature changes at high latitudes and in the tropics. Our initial results show some unexpected behavior near the tropical tropopause.