

Evidence of lower atmospheric influences/coupling in midlatitude long-term mesopause-region temperatures

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An unique midlatitude nocturnal mesopause-region temperatures resulting from 25 years of Na lidar observations at Colorado State University and Utah State University reveals influences of tropospheric and/or stratospheric forcing. These includes signals of Mt. Pinatubo eruption and El Nino Southern Oscillation, as well as altitude-dependent (wave-like structures) responses to the 11-year and 27-day solar flux variability. Though the cause for these intriguing signals is not yet known, publications in 2015 by colleagues elsewhere have also shown similar effects in temperatures from satellite data.

Keywords: Mesopause temperatures, Lower atmospheric influences, 25 years Na lidar observation