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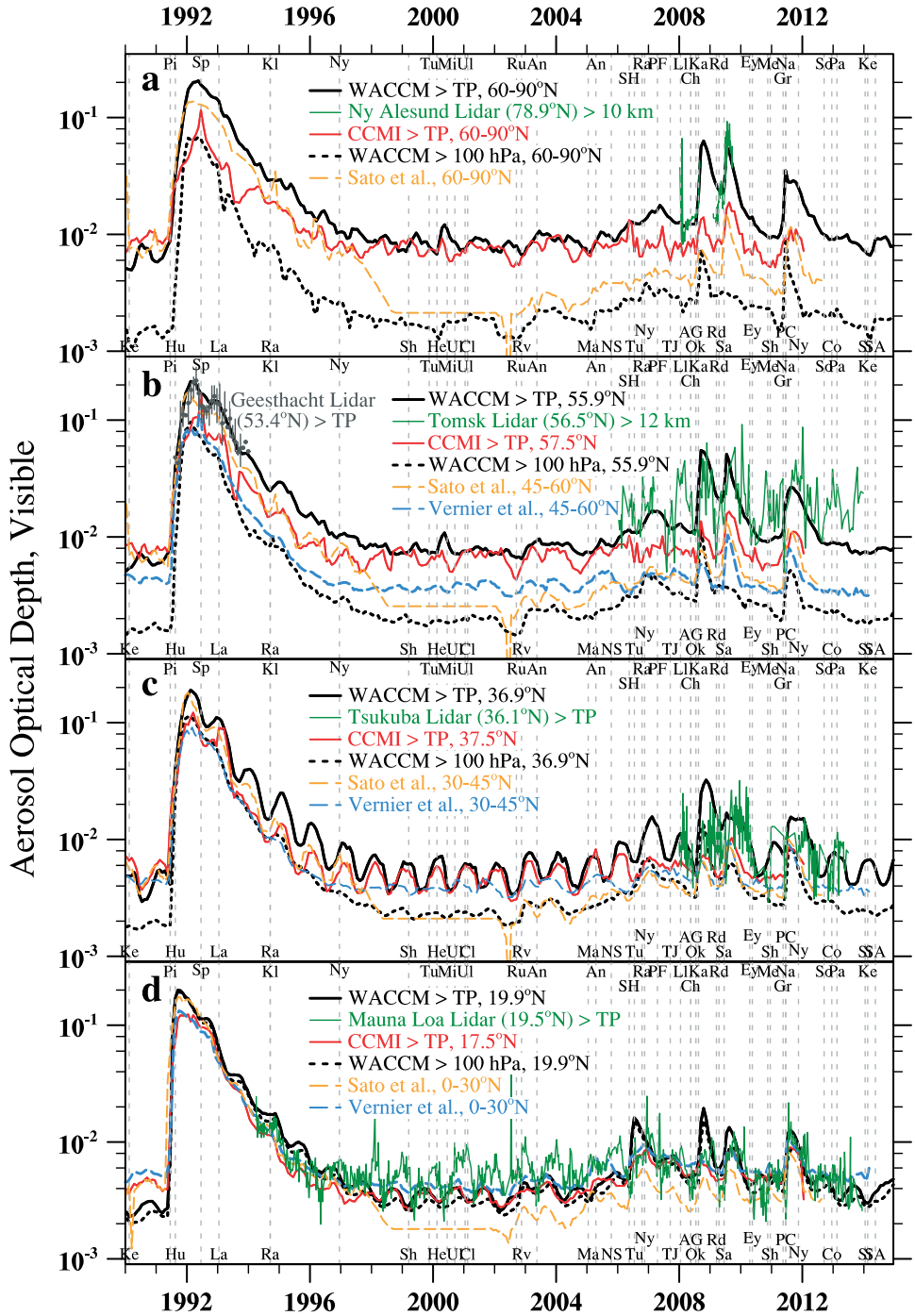

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Cover: *Mills et al.* [DOI: 10.1002/2015JD024290] calculated the impact of volcanic eruptions on aerosol optical depth, a measure of how effectively atmospheric particles cool the planet, from 1990 to 2014. The calculations use a new database of over 170 eruptions with a new prognostic stratospheric aerosol capability in the Whole Atmosphere Community Climate Model (WACCM, solid black) to show increased volcanic impacts in the period 2005–2014 compared to the previous decade. WACCM calculations show good agreement with ground-based lidar observations (green and grey) at 5 sites in the Northern Hemisphere. In contrast, aerosol analyses derived from satellite observations (orange, blue, and red) have trouble accounting for aerosol in the lowermost stratosphere outside of the tropics due to interference from clouds. Hence satellites generally miss 50–90% of aerosol optical depth at middle and high latitudes. In light of these findings, the impacts of volcanoes on the post-2000 reduction in the rate of increase of global average temperature should be re-examined. See pp. 2332-2348.

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Climate and Dynamics

Aerosol and Clouds

Composition and Chemistry

*This article is part of a Special Section—East Asian Study of Tropospheric Aerosols and Impact on Cloud and Precipitation