

An Estimate of the Chemical Impact of the Cerro Hudson Eruption

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The Cerro Hudson volcano [49.5S, 73.0W] erupted explosively on the 12th of August 1991, ejecting approximately 1.5Mt of SO₂ into the lower stratosphere. After the oxidation of SO₂ into H₂SO₄ and subsequent formation of aerosols, enhanced depletion of O₃ occurred in the winter following. The eruption cloud was observed by LIDAR as it passed over Melbourne, Australia. The results show that material from the Hudson eruption is decoupled from that from Pinatubo at the same latitude by their distinct altitudes. This study provides an estimate of the how the concentrations of O₃, HCl, SO₂, H₂S and HBr were affected by the Hudson eruption.