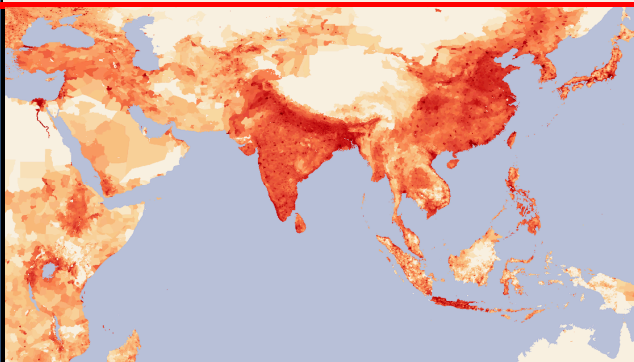
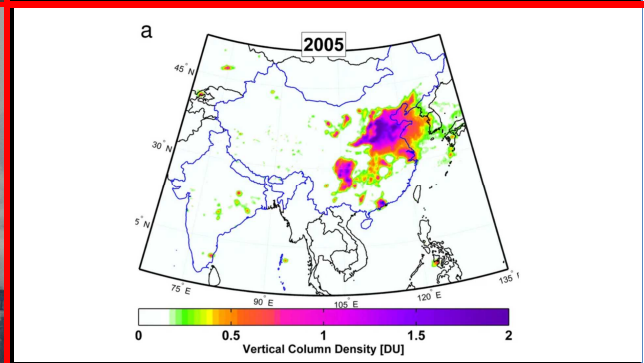
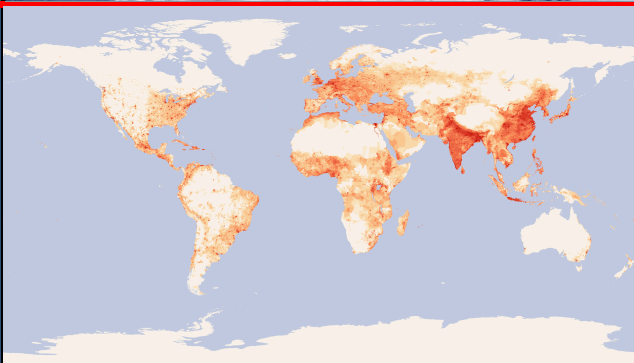
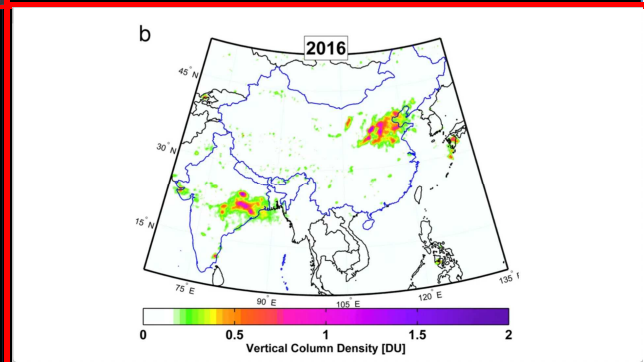
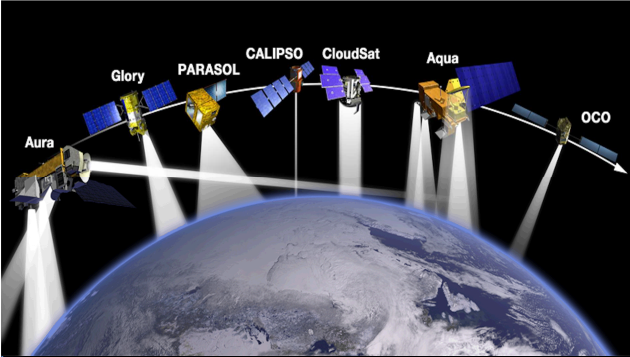


Tracking Pollution in the Stratosphere with Satellites and Balloons

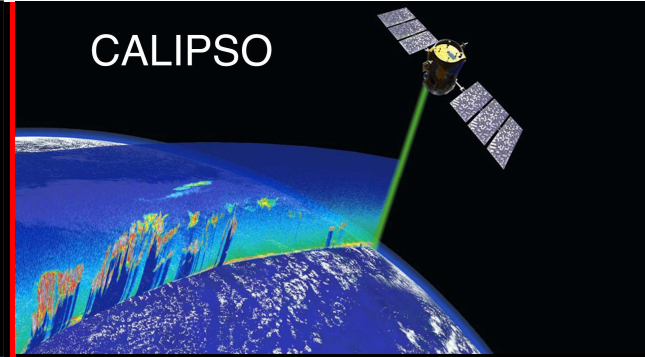


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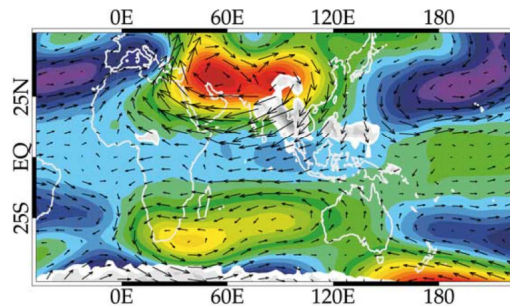




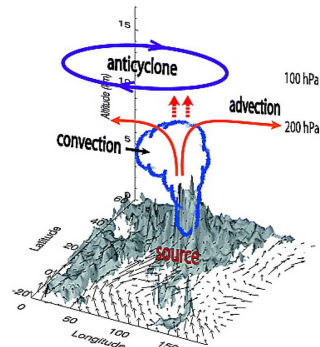
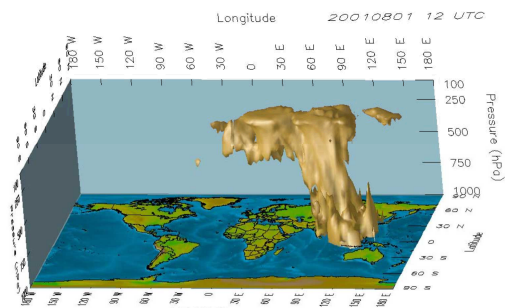
Stratospheric Pollution Plume Observed By Satellites



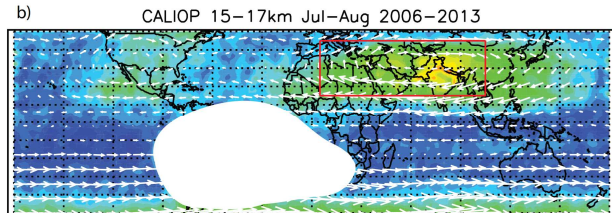
MLS/CO July-Aug 05 100hPa



Simulated Asian CO plume August 2001



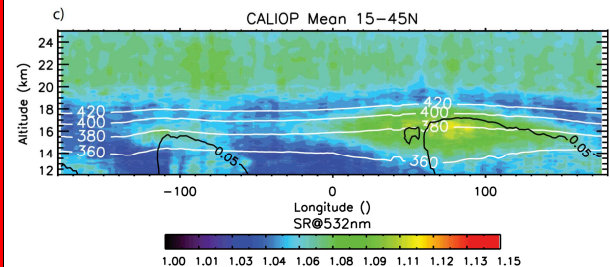
The Asian Tropopause Aerosol Layer



Lawrence, M. G. and Lelieveld, J.: Atmospheric pollutant outflow from southern Asia: a review, *Atmos. Chem. Phys.*, 10, 11017–11096, <https://doi.org/10.5194/acp-10-11017-2010>, 2010

Park, M., W. J. Randel, A. Gettelman, S. T. Massie, and J. H. Jiang (2007), Transport above the Asian summer monsoon anticyclone inferred from Aura Microwave Limb Sounder tracers, *J. Geophys. Res.*, **112**, D16309, doi:[10.1029/2006JD008294](https://doi.org/10.1029/2006JD008294)

Vernier, J.-P., L. W. Thomason, and J. Kar (2011), CALIPSO detection of an Asian tropopause aerosol layer, *Geophys. Res. Lett.*, **38**, L07804, doi:[10.1029/2010GL046614](https://doi.org/10.1029/2010GL046614)

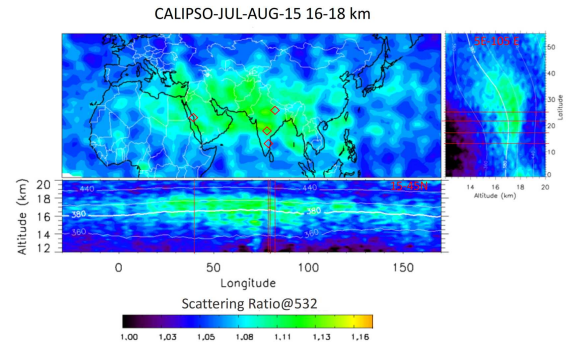
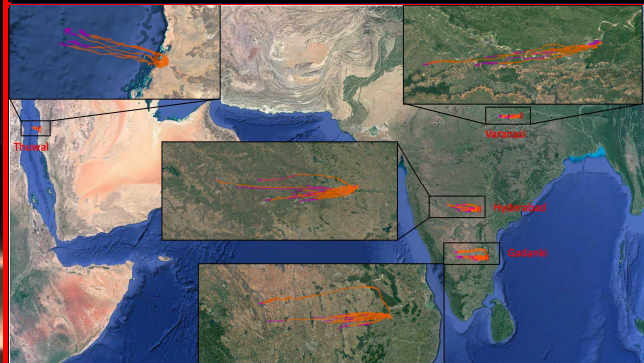




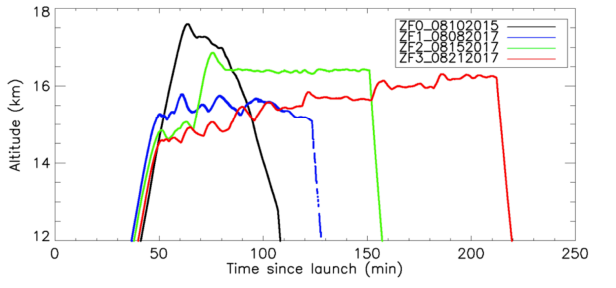
BATAL

Balloon measurement campaigns of the Asian Tropopause Aerosol Layer

Vernier, J., T.D. Fairlie, T. Deshler, M. Venkat Ratnam, H. Gadhavi, B.S. Kumar, M. Natarajan, A.K. Pandit, S.T. Akhil Raj, A. Hemanth Kumar, A. Jayaraman, 2018: BATAL: The Balloon Measurement Campaigns of the Asian Tropopause Aerosol Layer. *Bull. Amer. Meteor. Soc.*, 99, 955–973, <https://doi.org/10.1175/BAMS-D-17-0014.1>



Float at the edge of the Stratosphere



OPC Hyderabad

