

The persistently variable "Background" stratospheric aerosol layer and global climate change

John Daniel[†]; Susan Solomon; Ryan Neely III; Jean-Paul Vernier; Ellsworth Dutton; Larry Thomason

[†] NOAA/ESRL Chemical Sciences Division, USA

Leading author: John.S.Daniel@noaa.gov

Measurements of stratospheric aerosol have demonstrated that it is difficult to define a meaningful "background" level. Observations suggest that aerosols are persistently variable even in the absence of eruptions on the scale of Pinatubo. Stratospheric aerosol observations made using several techniques are considered here and suggest a significant increasing trend since 2000. Such an increasing trend implies a negative radiative forcing that would offset some of the forcing from increasing greenhouse gases over this same time period. We will discuss some of the implications of this trend for modeling past and future climate change.