Contribution ID: **18** Type: **Talk**

Stratosphere Troposphere Response using Infrared Vertically-resolved light Explorer (STRIVE) Mission Concept

The Stratosphere Troposphere Response using Infrared Vertically-resolved light Explorer (STRIVE) is a new satellite mission concept selected for a competitive Phase A Concept Study within NASA's 2023 Earth Systems Explorer Program. STRIVE includes the Advanced Limb Infrared Chemistry Experiment (ALICE), a limb-scanning infrared imaging spectrometer along with the Aerosol Radiometer for Global Observations of the Stratosphere (ARGOS), a limb-viewing dual wavelength multi-aperture near-infrared radiometer. Together they provide high vertical resolution (~1 km) measurements of temperature, ozone and other important trace gases, aerosol extinction and properties with significant daily global coverage to better understand atmospheric response.

STRIVE has the novel ability to resolve small-scale vertical structures of atmospheric composition and temperature, enabling new insights into the processes of troposphere-stratosphere interactions. In particular, the upper troposphere and lower stratosphere (UTLS) includes strong vertical gradients in many trace gas constituents along with fine scale vertical features that are more challenging to observe from space yet critical in process understanding as we move toward higher spatial (horizontal and vertical) resolution models. We will show how STRIVE will provide this higher fidelity 3D view, with a comprehensive suite of constituent and temperature measurements, in an atmosphere that is rapidly responding to changing conditions.

Topic

Upcoming Earth observation limb and occultation instruments

Author: OMAN, Luke (NASA/GSFC)

Co-authors: Prof. JAEGLE, Lyatt (University of Washington); Prof. WANG, Jun (University of Iowa); Dr HANISCO, Thomas (NASA/GSFC); Mr DELAND, Matthew (Science Systems & Applications Inc.)

Presenter: OMAN, Luke (NASA/GSFC)