

Opportunity Title: Stratosphere-Troposphere Coupling and Impacts on Surface
Climate and Composition

Opportunity Reference Code: 0013-NPP-NOV23-GISS-EarthSci

Organization National Aeronautics and Space Administration (NASA)

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Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description Stratospheric variability impacts surface weather and climate on timescales ranging from days to decades. In addition, the stratosphere affects tropospheric composition not only through the stratosphere-to-troposphere transport of ozone but also indirectly by modulating tropospheric dynamics. This project is broadly oriented towards using the Goddard Institute for Space Studies (GISS) ModelE middle atmosphere climate model in concert with both NASA reanalyses and remote sensing (e.g., Aura, UARS) as well as ground-based observation networks (e.g., SHADOZ) to identify the mechanisms and timescales by which the stratosphere influences surface climate and composition. Sample topics include stratospheric modulation of Arctic sea ice loss and Northern Hemisphere midlatitude circulation extremes, stratospheric sudden warmings and their relationship with the El Nino-Southern Oscillation (ENSO), interactions between the Quasi-Biennial Oscillation (QBO) and tropical precipitation, etc. Research feeding back on model development (e.g., gravity-wave drag parameterizations) is strongly encouraged.

Location:

Goddard Institute for Space Studies
New York City, New York

Field of Science:Earth Science

Advisors:

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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: <https://www.nasa.gov/oiiir/export-control>.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Eligibility • **Degree:** Doctoral Degree.



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Requirements