

**Opportunity Title:** Observations and analysis of trace gases in the troposphere and lower stratosphere

**Opportunity Reference Code:** 0160-NPP-NOV23-GSFC-EarthSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0160-NPP-NOV23-GSFC-EarthSci

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

**Description** NASA's Atmospheric Composition focus area studies the variations in and processes that affect aerosols, clouds, and trace gases, which influence climate, weather, and air quality. A combination of airborne observations, satellite information, and numerical modeling is required to understand how atmospheric composition is changing, why it is changing, and the consequences of such changes for air quality and climate. This research project focuses on airborne in situ measurements of trace gases, such as formaldehyde (HCHO), nitrogen dioxide (NO<sub>2</sub>), and ozone (O<sub>3</sub>), from a variety of NASA aircraft (WB-57, ER-2, DC-8, etc.). Such observations complement the capability of satellite missions, such as AURA and TEMPO, by

1. validating satellite retrievals with traceable laboratory calibrations, and
2. providing chemical insight into the drivers of variability in trace gases throughout the troposphere and lower stratosphere.

Potential research foci include:

- Convective transport and impacts on atmospheric composition or cirrus formation
- Emission and chemical evolution of biomass burning plumes
- Surface-atmosphere exchange of hydrocarbons, ozone, and NO<sub>2</sub>
- Global atmospheric oxidizing capacity
- Synergy between airborne and satellite observations

**Location:**

Goddard Space Flight Center  
Greenbelt, Maryland

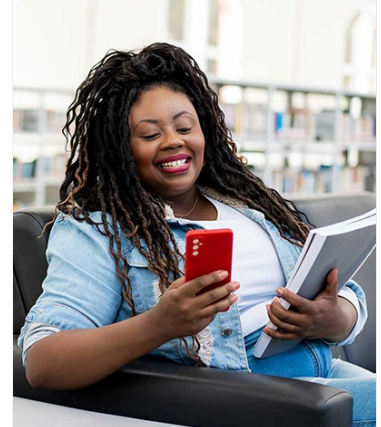
**Field of Science:**Earth Science

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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/oiir/export-control>.



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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  
Requirements**

- **Degree:** Doctoral Degree.