

Opportunity Title: Airborne Lidar Measurements of Atmospheric Trace Gases, Aerosols, and Clouds

Opportunity Reference Code: 0037-NPP-NOV23-LRC-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0037-NPP-NOV23-LRC-EarthSci

How to Apply All applications must be submitted in [Zintellect](#)

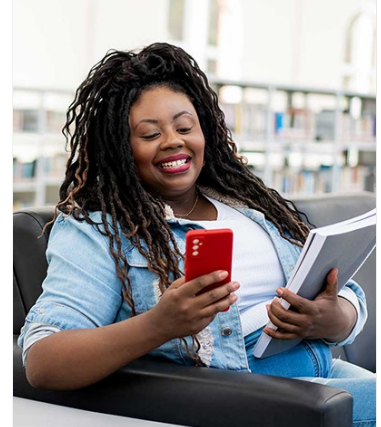
Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description Description:

NASA Langley Research Center has developed the facility class High Altitude Lidar Observatory (HALO), an advanced multi-function airborne lidar for profile measurements of water vapor, column and profile measurements of methane, and profile measurements of aerosol/cloud optical properties using the Differential Absorption Lidar (DIAL) and High Spectral Resolution Lidar (HSRL) techniques, respectively. HALO was developed to address the observational needs of the NASA Earth Science Division Weather and Atmospheric Dynamics, Carbon Cycle, Atmospheric Composition and Radiation Science focus areas. As such, HALO routinely deploys on different NASA aircraft in support of domestic and international field campaigns. Many of the campaigns are flown with other in situ and remote sensors including multi-frequency doppler radar, doppler lidar, microwave radiometers, dropsondes, and visible and near infrared spectrometers. The data sets acquired offer extensive and unique opportunities to study the influence of water vapor and aerosols on weather systems and the formation of clouds as well as for the study of the increasingly important role of biogenic and anthropogenic methane emissions in the carbon cycle. They also provide opportunities to investigate combined active-passive retrievals of water vapor and temperature profiles with airborne and space-based hyperspectral infrared sounders where airborne DIAL observations can be utilized to improve the accuracy and increase the vertical resolution of infrared sounders.

An opportunity exists for qualified candidates to participate in the airborne HALO activities that include evaluating instrument performance and data quality, developing new algorithms or approaches to derive new atmospheric data products (water vapor, methane, and or aerosol/cloud observations), and scientific analyses of data sets from the lidars alone or in conjunction with other field data or coincident satellite remote sensing data. Candidates may work with past data sets or deploy with the LaRC team on future field campaigns to participate in real-time data acquisition, post flight data analyses, and scientific studies with participating instrument and modeling teams. In addition, candidates may focus specifically on instrument development efforts in, e.g., lasers, detectors, and advanced instrumentation techniques. Candidates with prior experience in lidar data analysis and system design/operation are preferred. Candidates with interest in linking water vapor and or methane observations to modeling activities are also encouraged to apply.

Field of Science: Earth Science



Whether you are just starting your career or already at a senior level, ORAU offers internships, fellowships, research opportunities, and contract positions that can provide you with invaluable experience. Download the ORAU Pathfinder mobile app and find the right opportunity to propel you along your career path!

Visit ORAU Pathfinder [↗](#)



Opportunity Title: Airborne Lidar Measurements of Atmospheric Trace Gases, Aerosols, and Clouds

Opportunity Reference Code: 0037-NPP-NOV23-LRC-EarthSci

Advisors:

Amin Nehrir
amin.r.nehrir@nasa.gov
(757) 864-6107

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents;
- 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.