

Opportunity Title: Algorithm Development for Deriving Stratospheric Aerosol Properties from Satellite Limb Sensors

Opportunity Reference Code: 0340-NPP-NOV26-GSFC-EarthSci

Organization National Aeronautics and Space Administration (NASA)

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

Please visit the NASA Postdoctoral Program website for application instructions and requirements: [How to Apply | NASA Postdoctoral Program \(orau.org\)](#).

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

Application Deadline 11/1/2026 6:00:59 PM Eastern Time Zone

Description About the [NASA Postdoctoral Program](#)

The [NASA Postdoctoral Program \(NPP\)](#) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

Description:

Satellite limb and occultation observations provide a unique opportunity to derive critical information about the vertical distribution of aerosols and trace gases with high vertical resolution. NASA's Ozone Mapping and Profiler Suite (OMPS) Limb Profiler on board the Suomi NPP and NOAA-21 satellites acquire solar light scattered from the atmospheric limb across a wide range of UV, VIS, and NIR wavelengths to retrieve aerosols and ozone. With the upcoming JPSS-3 and JPSS-4 missions also hosting the Limb Profiler, these continuous observations will extend through the mid-century. This demonstrates NASA's ongoing commitment to supporting aerosol measurements using the limb scattering technique. Furthermore, NASA recently selected the Stratosphere Troposphere Response using Infrared Vertically resolved light Explorer (STRIVE) mission (launching in ~2030), which will utilize VIS, NIR, and IR limb emissions to measure aerosols and trace gases.

The Science Challenge

The past decade has been marked by an increased frequency of pyroCb events that inject massive amounts of aerosols directly into the stratosphere—a trend expected to grow in the coming decades. Concurrently, there is an emerging threat to the stratosphere from the rapid



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expansion of space activity and an exponential increase in satellite launches. These factors introduce a critical scientific question: how will increasing stratospheric aerosol loads from pyroCb events and space activity affect stratospheric composition (including ozone chemistry) and dynamics?

The Opportunity

We are seeking a highly motivated postdoctoral candidate interested in addressing this question by developing advanced algorithms to derive aerosol properties from satellite limb sensors operating in the UV, VIS, and NIR ranges. This work will also involve analyzing aerosol observations by integrating information from multiple sources. While the primary advantage of the limb scattering technique is that it provides stratospheric aerosol observations globally, it relies on external information regarding the microphysical characteristics of the aerosols being measured. The selected candidate will explore methods to incorporate this external data, improving OMPS LP retrievals across various conditions. Through this research, the candidate will have the opportunity to work directly with data from the OMPS instrument suite and help pave the way for future missions like STRIVE.

Field of Science: Earth Science

Advisors:

Natalya Kramarova
natalya.a.kramarova@nasa.gov
(301) 614-5115

Nickolay Krotkov
Nickolay.A.Krotkov@nasa.gov
(301) 614-5553

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>.

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

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Questions about this opportunity? Please email npp@orau.org

Qualifications -A Ph.D. or equivalent degree in a relevant STEM field, including Meteorology, Physics, Mathematics, or Computer Science.

-Advanced programming skills with experience handling and analyzing big data (e.g., Python).

-Previous experience working with satellite measurements is highly desirable

Point of Contact [Mikeala](#)

Eligibility Requirements • **Degree:** Doctoral Degree.