

Opportunity Title: NASA Goddard Space Flight Center Cold Atom Interferometry and Optical Clocks4/14

Opportunity Reference Code: 0272-NPP-JUL23-GSFC-TechDev

Organization National Aeronautics and Space Administration (NASA)

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

Application Deadline 7/1/2023 6:00:00 PM Eastern Time Zone

Description Description:

The Quantum Engineering and Sensor Technology (QuEST) Laboratory at NASA Goddard Space Flight Center in Greenbelt, MD is calling all "Quantum Engineers" looking to advance the technology of quantum sensing for Earth science and space applications!

Cold-atom interferometry

This is an opportunity to help build NASA Goddard's first cold atom interferometry laboratory to provide a test bed for advanced laser cooling of Cs and Rb. Cold atom-based gravimeters and gravity gradiometers will enable the next generation of Earth science, Planetary science and Astrophysics precision gravity measurements. Opportunities include designing and building a 3D magneto-optical trap (MOT) and light pulse interferometer at the Goddard campus in Greenbelt, MD as well as opportunities to work with academic and industrial partners to build and test one of the world's largest and most sensitive cold atom gravity gradiometers. Looking for applicants with experience in laser trapping and cooling of neutral atoms or ions, Atomic Molecular and Optical (AMO) physics theory and experiment or quantum information sciences.

Optical atomic clocks

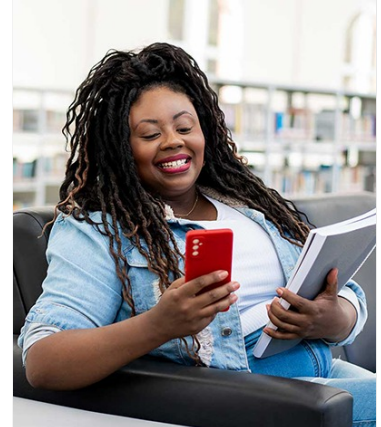
This is an opportunity to help build an ultra-precise Sr⁺ optical atomic clock at NASA Goddard Space Flight Center in Greenbelt, MD. Optical atomic clocks with stability better than 10⁻¹⁶ will enable navigation in deep space and in Earth orbit in GPS denied environments and could enable fundamental physics experiments in space such as gravitational wave detection and dark energy and dark matter searches. Opportunities to partner with academic and government research laboratories as well as industrial partners may also be available. Looking for applicants with experience in one or more of the following areas: AMO Physics, generation and characterization of laser frequency combs, optical external reference cavities, radio frequency and optical metrology, and trapped ions.

Field of Science: Technology Development

Advisors:

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Holly Leopardi



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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>.

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.