

Opportunity Title: Laser Interferometer for Gravity Wave Detection in Space

Opportunity Reference Code: 0007-NPP-NOV23-JPL-TechDev

Organization National Aeronautics and Space Administration (NASA)

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

Description My primary research interest is in experimental studies related both to classical and relativistic gravity, currently focused primarily on the Laser Interferometer Space Antenna (LISA) mission. LISA is an observatory for gravitational waves funded under NASA's Beyond Einstein Program. We have an experimental program to demonstrate interferometric performance in support of LISA, which is comprised of a 3-arm interferometer with an arm length of 5 million kilometers. We will demonstrate measurement system performance at the 20 picometer level over thousands of seconds to support LISA's astrophysical studies of black hole dynamics. Intersatellite interferometry also promises improved performance over what is possible with radiometric sensing of changes in the mass distribution of the Earth (and other heavenly bodies). We are involved in research to support technology development for an optical follow-on to the GRACE mission, which is currently measuring changes in the polar ice caps, for example. We are pursuing opportunities for radiometric sensors to enable gravity mapping of the Moon, Mars, Mercury, and moons of Saturn and Jupiter.

Location:

Jet Propulsion Laboratory
Pasadena, California

Field of Science: Technology Development

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



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