

**Opportunity Title:** Astrophysics: Gravitational Radiation as a Window on the Universe

**Opportunity Reference Code:** 0031-NPP-NOV23-GSFC-Astrophys

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

**Reference Code** 0031-NPP-NOV23-GSFC-Astrophys

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

**Description** The gravitational wave astrophysics group at NASA/GSFC works in the emerging field of gravitational wave astronomy. Predicted by general relativity, gravitational waves are disturbances in spacetime produced by the motion of massive compact objects such as black holes, neutron stars, and white dwarfs. Observation of gravitational waves will provide a powerful new tool for understanding these objects, their environments, and the underlying physics of gravity itself.

Two major areas of research in the group are Numerical Relativity and development of the Laser Interferometer Space Antenna (LISA) mission. Numerical Relativity applies supercomputing technology to simulate the complex interactions of compact objects and predict the waveforms current and future instruments will detect. LISA is a space-based gravitational wave detector under development through a partnership of NASA and the European Space Agency that will study gravitational waves in the source-rich milliHertz frequency band. Expected LISA sources include the inspiral and merger of supermassive black hole binaries at high redshift, continuous GW emission from compact binaries in the Milky Way, and capture of compact objects by massive black holes.

Research opportunities in the gravitational wave astrophysics group include LISA mission design, LISA instrument technology, LISA data analysis development and estimation of LISA's measurement performance, prediction of source waveforms using both numerical relativity and analytic approximation methods, and astrophysics of gravitational wave systems. Interdisciplinary research projects are also encouraged.

**Location:**

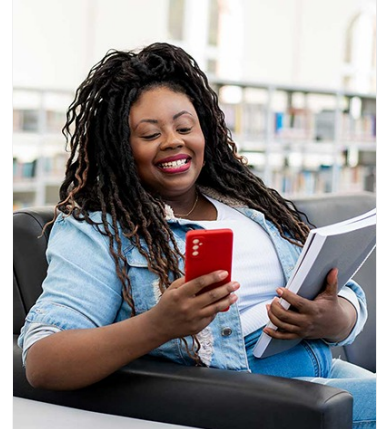
Goddard Space Flight Center  
Greenbelt, Maryland

**Field of Science:**Astrophysics

**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/oair/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.