



**Mary W. Jackson NASA Headquarters**  
Washington, DC 20546-0001

March 7, 2024

Reply to Attn of: SMD Astrophysics Division

Ref: Dear Colleague Letter to seek Nominations for participation in the LISA Science Team (LST) for the Laser Interferometer Space Antenna (LISA) ESA-led mission.<sup>1)</sup>

Dear Colleague,

NASA's Astrophysics Division at NASA Headquarters (HQ) in Washington, DC seeks self-nominations from interested individuals to participate as members of the Laser Interferometer Space Antenna (LISA) Science Team (LST).

LISA is a European Space Agency (ESA)-led mission with NASA as a partner. NASA is contributing flight-hardware systems, a science ground segment to produce scientific data products and facilitate scientific interpretation, and systems engineering and science support. LISA was adopted by ESA's Science Programme Committee on 25 January 2024, beginning the start of the implementation phase of the mission.

The role of the LISA Science Team is to provide scientific stewardship during the development and operations of the LISA mission.

### **Science Background:**

LISA will be the first space-based observatory of gravitational waves and the first instrument sensitive to gravitational waves in the millihertz band. The universe hosts a rich and diverse population of sources in this band, including compact binary stars in our Milky Way, capture of stellar remnant black holes in nuclear clusters, and mergers of massive black holes at high redshifts. As a first-of-its-kind mission, LISA also holds great promise for making new discoveries in astrophysics, fundamental physics, and cosmology.

### **Purpose of the Call:**

This Dear Colleague Letter (DCL) invites self-nominations for the membership to the LISA Science Team (LST) from individuals based in the United States (U.S.). The call complements a similar call by ESA for scientists based in ESA Member States. The LST will support the ESA Project and Operations teams on all aspects related to the science return of the mission.

<sup>1)</sup> URL: [https://pcos.gsfc.nasa.gov/news/2024/Call\\_for\\_US\\_Scientist\\_for\\_LISA\\_Science\\_Team.php](https://pcos.gsfc.nasa.gov/news/2024/Call_for_US_Scientist_for_LISA_Science_Team.php)

The LST will be comprised of up to twenty members from European Member States and international partners, including one representative nominated by the LISA Consortium, and up to two complementary scientists, with scientific expertise which broadens the science case of the nominal LISA mission. Of the remaining seventeen members, six members are appointed through this DCL and eleven will be appointed through an ESA call. The LST will be co-chaired by the ESA and NASA Project Scientists bringing the total LST membership to twenty-two.

The U.S.-based LST members selected through this call will be appointed by the NASA Astrophysics Division Director for a term of three years, renewable, with the “Roles and Responsibilities” spelled out below. The appointment is ad personam, i.e., made to an individual and not to an institution. Membership is open to experts in all relevant disciplines of the LISA mission (e.g. instrumentation, data processing, astrophysics) – the composition and expertise of the LST will reflect the needs of the mission throughout its lifecycle. NASA recognizes the scale of LISA as a multi-generational mission and encourages all career stages to apply, including early career.

### **Role and Responsibilities:**

The members of LST aid the Project Scientists in supporting the LISA mission through its mission lifecycle. The LST tasks are to monitor the correct implementation of the scientific objectives of the mission and maximize LISA’s scientific yield. The LST acts as a focus for the interest of the scientific community in LISA. Its recommendations are geared toward:

- maximizing the scientific return of LISA within programmatic constraints, while ensuring that the development and operations of the mission remain compatible with its main scientific objectives;
- optimizing the scientific performance of the instrument and spacecraft;
- formulating, optimizing, and maintaining the gravitational wave calibration strategy;
- optimizing access to the data via the mission archive(s);
- optimizing the analysis and utilization of LISA data;
- overseeing the generation of the Level-3 source catalogue from Level-2 data products;
- authorizing the release of scientific data products to the community;
- establishing, when necessary, Working Groups to provide expertise to support the LISA Science Team in providing scientific advice to the Project and Mission Managers;
- establishing and managing the Science Topical Panels (STPs) of the Early Release Science Time
- promoting public awareness and appreciation of the LISA mission, and supporting ESA and its partners in their outreach efforts.

In general, members of the LST are expected to monitor the development and operations of the mission and give advice on all aspects that affect its scientific

performance. They perform specific scientific tasks as required to discharge their responsibilities during development and operation. The U.S.-based members shall provide NASA HQ and the project quarterly reports including summary and issues.

### **Self-Nomination Process, Expectations, and Support:**

Self-nominations to be considered for participation as a member of the LST are due to NASA no later than April 16, 2024, 11:59PM (EST). Self-nominations should be submitted via email to Eric P. Smith ([Eric.P.Smith@nasa.gov](mailto:Eric.P.Smith@nasa.gov)) with "LST Self-Nomination" as the email subject line.

Self-nominations by U.S.-based individuals shall consist of a cover letter, a resume, and an up-to-date Current and Pending Support declaration.

The resume shall be a maximum of two pages, including relevant activities and publications. The cover letter (maximum two pages) should include:

1. Interest in being a member;
2. Expertise, capabilities, and experience that the submitter would bring to the LST;
3. Intended contributions and available level of effort to LST activities. At a minimum, LST members are expected to attend/participate in hybrid meetings (preferably in-person), more frequent remote meetings on a TBD cadence.
4. Commitment to incorporating NASA's core values of IDEA as a member.
5. Commitment to act in a manner consistent with the NASA Astrophysics Division's Statement of Principles.
6. Interest, ability, availability, and experience to mentor early career individuals and/or how the participation in the LST could provide growth and advancement in one's own career or that of one's early-career peers.
7. Plan for broadening the scientific impact of LISA by connecting to the broader Astrophysics community in both the scope of potential LISA science and activities within the science community.

The cover letter and resume shall comply with formatting guidelines in Section IV(b)ii of [the ROSES-2024 Summary of Solicitation](#).

LST members will have their travel expenses to meetings covered, and will be recognized, when eligible, with honoraria for their participation in meetings.

Self-nominating does not commit the submitter to serve on the LST and does not prevent the submitter from submitting responses to any NASA solicitations.

Self-nominations are solicited from "U.S. persons" defined as U.S. citizens or U.S. legal permanent resident individuals at U.S.-based research and academic institutions, NASA centers, science centers, government laboratories, industry, FFRDCs, and from unaffiliated private individuals residing in the U.S.

**Selection Process and Timeline:**

Selections of the six U.S.-based researchers will be based on the relevance of the expertise of individual candidates to LST activities, and the diversity of backgrounds and expertise across the team needed for successful LST.

LST activities is expected to begin in Spring 2024. LST members will report to the LST Co-Chairs.

Questions may be addressed to Eric P. Smith ([Eric.P.Smith@nasa.gov](mailto:Eric.P.Smith@nasa.gov))

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