

JOB OPENING: Postdoctoral Research Scientist in Experimental Plasma Physics

The Space Science Institute (SSI) invites applications for a Postdoctoral Research Scientist to be based in Princeton, NJ. The selected candidate will take a leading role in experiments aimed at understanding the 3-D nature of collisionless flux ropes during magnetic reconnection.

The project aims to elucidate how the three-dimensional structure of the reconnection layer is affected by the surrounding larger-scale system, how flux ropes form and evolve in space, and how their movement influences the overall rate of the reconnection process. The postdoctoral scientist will be responsible for planning and conducting experiments on the newly commissioned Facility for Laboratory Reconnection Experiment (FLARE) at the Princeton Plasma Physics Laboratory (PPL), analyzing experimental results and comparing to theoretical predictions, and preparing results for publication. The selected candidate will work with SSI Research Scientist Dr. Seth Dorfman, who will be responsible for overseeing the project. The postdoctoral scientist will be assisted at the facility by FLARE staff member Dr. Peiyun Shi, who will also participate in project science meetings. The results of this research are expected to advance foundational knowledge of magnetic reconnection needed both to improve predictive models of space weather that can damage key satellites and power grid infrastructure and to develop clean, sustainable commercial fusion power.

For more information on 3-D reconnection in the Magnetic Reconnection Experiment (the predecessor device to FLARE), see this PoP paper: <http://dx.doi.org/10.1063/1.4862039>
For more information on the FLARE device, see this submitted overview paper: <https://arxiv.org/abs/2608.17332>

Knowledge/Education: A Ph.D. in plasma physics or related fields is required prior to the start date of the position. Applicants should demonstrate the potential to publish research results in peer-reviewed high-quality journals, good communication skills, and the ability to work independently. No prior experience with FLARE is expected, but applicants should demonstrate skills that show they will be able to learn the required experimental tools quickly. Experience with laboratory plasma experiments or space plasma physics is considered an advantage.

The position is expected to start in early 2027. As we are primarily interested in finding the right candidate for the position, the exact start date is flexible. The initial appointment will be for 1 year, renewable up to a total of 2 years contingent upon satisfactory performance and continued availability of funds. The position is open to applicants within the US and abroad and will be based at the Princeton Plasma Physics Laboratory where the FLARE device is located. Opportunities therefore exist to interact with the laboratory and space plasma physics both at PPPL (<https://www.pppl.gov/>) and in the Astrophysical Sciences Department (<https://web.astro.princeton.edu/>) on Princeton University campus, including group meetings and seminars. The project is supported by Department of Energy grant DE-SC0026674 awarded to SSI in 2026. This is a full-time position with benefits. Benefits include health, dental, vision, and (after 1 year of service) 403(b) retirement plan. Position, salary, benefits, and travel budget for conferences are dependent upon continued availability of grant funding.

To Apply:

Send application materials to ssihr@spacescience.org and cc sethd at spacescience dot org with “Attn: Dr. Seth Dorfman” in the subject line.

Please include a curriculum vitae, cover letter, statement of previous research experience (max 2 pages), and contact details for 3 references. Interviews will be conducted via Zoom. Please submit an application by November 11, 2026 to ensure full consideration.

Contact Dr. Seth Dorfman with questions or to submit your CV for a preliminary evaluation:
<https://www.spacescience.org/bio.php?emp=SDORFMAN>

Please note: The Space Science Institute is a non-profit, public benefits corporation and operates as an equal opportunity employer. This job description is general in nature and is not designed to contain or to be interpreted as a comprehensive inventory of all duties, responsibilities and qualifications of the position. More information about SSI can be found here:
<http://www.spacescience.org/>