

Balloon Instrumentation Engineer (7119U), Space
Sciences Laboratory - 63989
University of California, Berkeley

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| Job Title | Balloon Instrumentation Engineer (7119U), Space Sciences Laboratory - 63989 |
| Department | Space Sciences Laboratory |
| Institution | University of California, Berkeley Berkeley, California |
| Date Posted | Feb. 1, 2024 |
| Application Deadline | Open until filled |
| Position Start Date | Available immediately |
| Job Categories | Professional Staff |
| Academic Field(s) | Electrical and/or Electronics |
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Job Description

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Balloon Instrumentation Engineer (7119U), Space Sciences Laboratory - 63989

About Berkeley

At the University of California, Berkeley, we are committed to creating a community that fosters equity of experience and opportunity, and ensures that students, faculty, and staff of all backgrounds feel safe, welcome and included. Our culture of openness, freedom and belonging make it a special place for students, faculty and staff.

The University of California, Berkeley, is one of the world's leading institutions of higher education, distinguished by its combination of internationally recognized academic and research excellence; the

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transformative opportunity it provides to a large and diverse student body; its public mission and commitment to equity and social justice; and its roots in the California experience, animated by such values as innovation, questioning the status quo, and respect for the environment and nature. Since its founding in 1868, Berkeley has fueled a perpetual renaissance, generating unparalleled intellectual, economic and social value in California, the United States and the world.

We are looking for equity-minded applicants who represent the full diversity of California and who demonstrate a sensitivity to and understanding of the diverse academic, socioeconomic, cultural, disability, gender identity, sexual orientation, and ethnic backgrounds present in our community. When you join the team at Berkeley, you can expect to be part of an inclusive, innovative and equity-focused community that approaches higher education as a matter of social justice that requires broad collaboration among faculty, staff, students and community partners. In deciding whether to apply for a position at Berkeley, you are strongly encouraged to consider whether your values align with our [Guiding Values and Principles](#), our [Principles of Community](#), and our [Strategic Plan](#).

At UC Berkeley, we believe that learning is a fundamental part of working, and our goal is for everyone on the Berkeley campus to feel supported and equipped to realize their full potential. We actively support this by providing all of our staff employees with at least 80 hours (10 days) of paid time per year to engage in professional development activities. To find out more about how you can grow your career at UC Berkeley, visit grow.berkeley.edu.

Departmental Overview

The Space Sciences Laboratory (SSL) is an Organized Research Unit (ORU) of the Berkeley campus reporting to the Vice Chancellor for Research. SSL's primary goal is to foster research in space-related sciences and to provide education for the next generation of space scientists. Research at SSL, led by Berkeley faculty and SSL Senior Fellows, focuses on experiments and observations carried out in space as well as theoretical and basic research.

SSL is seeking a highly motivated electrical engineer to work on NASA-funded high-altitude balloon programs. The balloon programs are fast-paced environments, requiring creative problem solving while working in interdisciplinary teams sending cutting-edge scientific instruments into a near-space environment. Engineers are involved in the full design cycle: specification, design, build, test, calibration, integration with other systems, and operation in the full instrument and flight.

Two current programs preparing for balloon flights in the next few years are the General Antiparticle Spectrometer (GAPS) and the Gamma-Ray Imager/Polarimeter for Solar Flares (GRIPS).

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GAPS is designed to detect antinuclei (antiprotons, antideuteron, and antihelium) in cosmic rays with high sensitivity, as messengers of dark matter processes in the galaxy. The instrument includes several technologies such as silicon radiation detectors, custom electronics, thermal systems, monitoring sensors and computers. The GAPS payload is scheduled to launch from McMurdo Station, Antarctica in December 2024. More information about the GAPS payload and detection principle can be found here: <https://gaps1.astro.ucla.edu/gaps/>

GRIPS will provide a combination of high-resolution imaging, spectroscopy, and polarimetry of solar-flare gamma-ray emission to understand the processes behind the impulsive release of stored magnetic energy in the Sun. GRIPS uses advanced germanium detectors and low-noise readout electronics. The GRIPS payload is scheduled to launch its second flight from McMurdo Station, Antarctica in December 2025. For more information, see <https://grips.ssl.berkeley.edu/>

Application Review Date

The First Review Date for this job is: February 13, 2024

Responsibilities

- Under general supervision, designs and prepares electrical systems of moderate complexity for novel laboratory equipment and instruments aboard near-space research balloons. Such designs consist of a variety of commercial off-the-shelf parts, legacy electronics and new, custom-designed electronics.
- Using engineering principles and standards, designs, tests, and troubleshoots circuit boards and cables, both independently and with the subsystems with which they interface.
- Oversees production of electronics including PCB fabrication, board assembly, mechanical close-out and cable assembly. Works collaboratively with other disciplines to integrate electronics across systems or mechanically with the rest of the payload.
- Attend integration, test and launch campaigns (Texas July 2025, Antarctica October 2025-January 2026).
- Participate in pre-flight monitoring and flight operations of the payload.

Required Qualifications

- Basic working knowledge of instrumentation electrical engineering principles and methods in order to independently perform professional design work of limited scope and complexity.
- Organizational abilities and decision-making to prioritize work assignments.

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- Ability to work in a small team and independently learn new material as needed.
- Electrical schematic experience, PCB layout experience or experience guiding a layout designer.
- Circuit Prototyping experience.

Preferred Qualifications

- Experience in an experimental setting
- Software experience (C++, Python)
- GUI programming experience
- FPGA Design experience
- Basic mechanical CAD experience
- Control systems, PID tuning experience

Education / Training Requirements

- Bachelors degree in electrical or electronic engineering or physics with work experience ideally involving analog or digital, FPGA or power supply engineering

Salary & Benefits

For information on the comprehensive benefits package offered by the University, please visit the University of California's [Compensation & Benefits](#) website.

Under California law, the University of California, Berkeley is required to provide a reasonable estimate of the compensation range for this role and should not offer a salary outside of the range posted in this job announcement. This range takes into account the wide range of factors that are considered in making compensation decisions including but not limited to experience, skills, knowledge, abilities, education, licensure and certifications, analysis of internal equity, and other business and organizational needs. It is not typical for an individual to be offered a salary at or near the top of the range for a position. Salary offers are determined based on final candidate qualifications and experience.

The budgeted salary or hourly range that the University reasonably expects to pay for this position is \$77,600.00-\$140,400.00.

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How to Apply

To apply, please submit your resume and cover letter.

Other Information

Travel to the Antarctic is anticipated from November 2025 to January 2026. Travel to the Antarctic requires the passage of a physical and dental exam as specified by the United States Antarctic Program. <https://www.nsf.gov/geo/opp/soh/>

Travel to Texas is anticipated for June of 2025. The duration of this trip is 3-6 weeks.

Dates for the above mentioned trips are subject to change due to the fact that delays are fairly common for balloon programs.

Conviction History Background

This is a designated position requiring fingerprinting and a background check due to the nature of the job responsibilities. Berkeley does hire people with conviction histories and reviews information received in the context of the job responsibilities. The University reserves the right to make employment contingent upon successful completion of the background check.

Equal Employment Opportunity

The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status. For more information about your rights as an applicant, please see [the U.S. Equal Employment Opportunity Commission](#) poster.

For the complete University of California nondiscrimination and affirmative action policy, please see the University of California [Discrimination, Harassment, and Affirmative Action in the Workplace](#) policy.

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To apply, visit

https://careerspub.universityofcalifornia.edu/psp/ucb/EMPLOYEE/HRMS/c/HRS_HRAM.HRS_APP_SCH

Contact Information

Please reference Academickeys in your cover letter when
applying for or inquiring about this job announcement.

Contact

N/A

University of California, Berkeley

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