

Opportunity Title: Silicon Detector Characterization and Optimization for Space Imaging Systems

Opportunity Reference Code: 0352-NPP-NOV26-JPL-Engineering

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0352-NPP-NOV26-JPL-Engineering

How to Apply All applications must be submitted in [Zintellect](#)

Please visit the NASA Postdoctoral Program website for application instructions and requirements: [How to Apply | NASA Postdoctoral Program \(orau.org\)](#).

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

Application Deadline 11/1/2026 6:00:59 PM Eastern Time Zone

Description About the [NASA Postdoctoral Program](#)

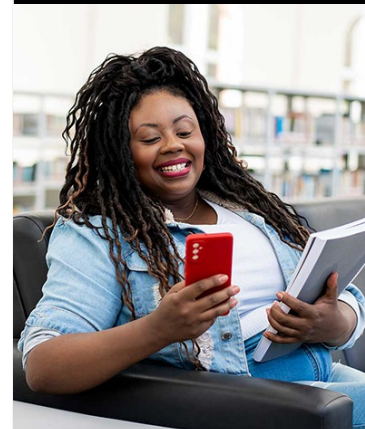
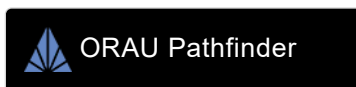
The [NASA Postdoctoral Program \(NPP\)](#) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

Description:

We are seeking a postdoctoral researcher specializing in **silicon detector characterization and optimization** for high-performance space imaging applications. The successful candidate will focus on understanding and improving the operational performance of advanced silicon imaging technologies—including EMCCDs, sCMOS detectors, and Skipper CCDs—with specific emphasis on **noise reduction, quantum-efficiency (QE) measurements, and camera system integration**.

The role centers on developing and implementing **state-of-the-art detector test methodologies** to extract key performance parameters such as read noise, dark current, charge transfer efficiency, gain stability, and single-photon sensitivity. The researcher will be responsible for designing optimized detector operating modes, refining clocking and bias conditions, and identifying pathways to achieve best-in-class low-noise performance across a range of silicon detector architectures.

A major component of this position involves conducting **precision QE measurements**, calibrations, and spectral response characterizations to support astrophysics applications where detector throughput, stability, and sensitivity are mission-critical. The candidate will also lead efforts in **camera system integration**, including working with custom electronics,



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low-noise readout chains, and environmental test configurations relevant to space imaging performance.

This position contributes directly to detector development efforts for astrophysics missions while supporting broader **next-generation space-camera technology** across multiple programs. The preferred candidate will bring strong expertise in semiconductor device physics, hands-on experience with advanced detector testbeds, and a demonstrated ability to interpret device behavior and translate insights into optimized detector operation.

Field of Science: Engineering

Advisors:

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Questions about this opportunity? Please email npp@orau.org

Point of Contact [Mikeala](#)

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