

Opportunity Title: JWST Studies of High-Redshift Radio Galaxies

Opportunity Reference Code: 0233-NPP-NOV23-JPL-Astrophys

Organization National Aeronautics and Space Administration (NASA)

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

Description Actively accreting supermassive black holes (AGN) can have significant impact on the evolution of their host galaxies through feedback in the form of gas winds and radio jets which can be seen on kpc scale, encompassing the entire galaxy. This opportunity is for a postdoctoral fellow to play a leading role in analyzing and interpreting Cycle 1 JWST data for a sample of high-redshift radio galaxies (HzRGs), the only AGN population in which quasar mode feedback, radio mode feedback, and the host galaxies can be characterised simultaneously.

JWST NIRSpec integral field unit (IFU) spectroscopy will provide unprecedented detail into some of the most massive and active galaxies at the onset of the peak of star-formation and AGN activity, addressing long-standing questions on how AGN-driven outflows propagate into the host galaxy and how small-scale phenomena close to the central engine reflect on the large-scale jet and gas characteristics. The diffraction-limited resolution of JWST and two-dimensional coverage with the NIRSpec IFU will provide a 10-fold improvement in resolution over existing observations and will allow us to map the stellar, gas, and excitation components of distant HzRGs all at once for the first time. The postdoctoral fellow will also possibly have the opportunity to play a key role in a related JWST Cycle 1 program studying WISE J2246-0526, a mid-IR-selected, obscured AGN and the most luminous galaxy currently known.

Experience with integral field spectroscopy is highly desirable, and familiarity with AGN, stellar population synthesis, and/or dust modeling is also preferred. The successful candidate will also be encouraged to pursue their own independent research programs, and will have JPL institutional access to the Palomar 200-inch telescope.

Location:

Jet Propulsion Laboratory
Pasadena, California

Field of Science: Astrophysics

Advisors:

Daniel Stern
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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/oiiir/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.