

JOB VACANCY ANNOUNCEMENT

- Associate Professor, National Astronomical Observatory of Japan (NAOJ) -

NAOJ invites applications for an associate professor position as follows:

1. Job Title: Associate Professor, one position
2. Division and Location: JASMINE Project, Mitaka, Tokyo
3. Area of Expertise: Astronomy, and/or related fields
4. Job Description:

The National Astronomical Observatory of Japan (NAOJ) has the JASMINE Project aiming to develop the science payload and the mission operation system of the JAXA (Japan Aerospace Exploration Agency)'s infrared space astrometry mission, JASMINE¹. The JASMINE is planned to have the ability to image the stellar kinematics in the central region of the Milky Way Galaxy at a distance of 8 kpc by the infrared astrometric observations, enabling one to study the formations of its bulge, bar, disk and central black hole and to identify the region of the birth and the trajectory of the solar system through the performance of Galactic Center Archeology and Galactoseismology. Also, JASMINE will carry out the exploration of the potentially habitable exoplanets by the time-domain astronomical observations. The target launch date is 2028, and the mission is in the final stage of the concept study phase at JAXA. JASMINE will create and publish a catalog including astrometric parameters such as annual parallaxes of about 100,000 stars through observing the stars hundreds of thousands of times over a three-year period. JASMINE's data processing achieves high precisions of astrometric measurements through self-calibrations using the relative positional relationship of observed stars to model and remove various systematic errors. The science payload of the mission consists of the infrared telescope subsystem and the infrared detector subsystem.

We invite applications for an associate professor position at the JASMINE project of NAOJ. A successful candidate for this position is expected to lead the development of the science payload, initially as the Science Payload Deputy Lead assisting the Science Payload Lead, then within a few years as the Science Payload Lead.

The Science Payload Deputy Lead is required to understand the flow down of the requirements from the scientific objectives to astrometric accuracy, and the rationale of requirement allocations between the spacecraft system and the ground data-processing system. With those background the successful candidate is expected to assist the Science Payload Lead in fulfilling the following responsibilities, then later is expected to fulfill as the Science Payload Lead:

- (i) to lead establishing the functional/performance requirements of the science payload;
- (ii) to play key roles in establishing the requirement allocations from the JASMINE integrated system² to individual four systems, and then from the spacecraft system to subsystems of science payload;
- (iii) to define the interface specifications, the verification and validation strategies, reliability design policy, and technical development plans of the science payload; and
- (iv) to confirm the consistency of the requirements allocations and interface specifications among the subsystems comprising the Science Payload.

The Science Payload Lead is also expected to support the Principal Scientist who is responsible for the JASMINE integrated system.

¹ The mission name is currently being changed from Small-JASMINE to JASMINE.

² The JASMINE integrated system consists of four systems: the spacecraft system, the launch system, the spacecraft operation system, and the science operation system. The spacecraft system consists of subsystems for the science payload (the telescope subsystem and the detector subsystem) and for the spacecraft bus (the satellite structure subsystem, the satellite thermal subsystem, data handling etc.).

The successful candidate is also expected to contribute actively in the development of the detector subsystem as a key member, and to take major responsibilities in technical development of one of the three components: the infrared sensors, the on-board signal-processing electronics, and the infrared camera. He or she is also expected to manage the development of the entire detector subsystem, namely to lead establishing the requirement definition and verification/validation schemes, and to identify and manage progress of technical development items.

Finally fostering young scientists, engineer in NAOJ and graduate students collaborating with them is also responsibility of the successful candidate, taking advantage of the activities for the JASMINE mission.

5. Terms of Appointment:

The successful candidate should be able to start as soon as reasonably possible after the job offer has been accepted. The term of contract is up to the end of the Japanese academic year in which the faculty reaches NAOJ's mandatory retirement age of 65. The probation period of six months is included.

6. Minimum Educational Requirement and qualifications:

Ph.D. or equivalent in astronomy or related fields

To carry out the responsibilities described in section 4, a candidate is required to have the following abilities and experience.

- (a) Basic knowledge of astronomy to understand the rationale for the astrometric requirements of JASMINE from its scientific objectives.
- (b) Experience in the development of either ground-based or spaceborne astronomical instrumentals as a system.
- (c) In the above development, experience in contributing as the main person in charge of thermal, mechanical, optical, or electronics design and development. Experience in the development and characterization of detector system is highly recognized.
- (d) Strong interest in and willingness to understand the entire development of the telescope subsystem from function requirements to design, verification and validations.
- (e) Strong interest in and willingness to understand the post data processing, which is essential to achieve the astrometric accuracy required for the JASMINE mission.
- (f) Communication skills necessary to work as a team.
- (g) Experience in fostering or supporting to foster students or young researchers/engineers, regardless of the field.

The responsibilities of this position also require continuously demonstrating leadership and outstanding performance in research activities.

7. Required Application Materials: (*To be prepared in English. Any other language will not be accepted.)

- (1) A cover letter,
- (2) A curriculum vitae,
- (3) A list of referred papers and a list of patents (if any). SPIE and COSPAR proceedings can be included in refereed papers.
- (4) A summary of your past research activities including international collaborations,
- (5) Your commitment and plan to fulfill the duties,
- (6) Your address (e-mail and phone) for prompt contact and the email address of your current supervisor or line manager,

(7) Three or more reference letters. Reference letters should be written by faculty/staff with tenured positions. Reference letters from multiple countries are preferred. Please ask your references to upload the letters directly to an NAOJ's application system shown in 9 before the deadline. Applicants are responsible for ensuring that the letters are submitted before the application deadline.

8. Application Deadline: 2022-06-22, 12:00 (noon) (Japan Standard Time)

9. Submission:

Applicants are required to apply via the NAOJ Nextcloud on the web. Please access the application form at the following URL:

<https://forms.office.com/r/NzYRLXgBEJ>

After you submit the initial form, you will receive an email showing the URLs for (a) uploading your application documents, and (b) for your reference letters.

Once you get the URL(a) for your application documents, please upload the files corresponding to the documents (1) through (6) stated in 7. These files must be in PDF format (max 50MB each, 100MB in total, at most 10 files).

Please ask your references to upload their letters via the URL(b) you receive for this purpose.

For inquiries, please contact with a subject; "Question on Associate Professor of JASMINE"

E-mail: naoteru.gouda_AT_ao.ac.jp (replace _AT_ with @)

Professor Gouda, Naoteru, *Director of JASMINE Project, NAOJ*

If you have any question related to submissions or other items,

please contact with a subject; "Question on Associate Professor of JASMINE"

E-mail: apply-JASMINE-assocprof20220622_AT_ao.ac.jp (replace _AT_ with @)

10. Labor Conditions:

(1) Work Type and Work Hours:

The Discretionary Labor System for Professional Work shall be applied.

(Standard work hours: 38.75 hrs/week, from 8:30 to 17:15 with an hour intermission)

(2) Holidays:

Saturdays and Sundays, National Holidays, New Year holidays (December 29th - January 3rd),

Annual paid leave (20days: to be prorated for the first year), Summer holidays (3 days)

(3) Social Insurances:

MEXT Mutual Aid Association (health insurance), Employees' Pension Insurance,

Employment Insurance, Industrial Accident Compensation Insurance

(4) Remuneration:

Salary: The amount of an annual salary shall be determined based on the school career and job experiences in accordance with the NINS regulations (NINS, or the National Institutes of Natural Sciences, is an executive institute that manages NAOJ). The payment will be made monthly in 12 equivalents.

Allowances: Dependent allowance, residential allowance, commutation allowance, and the other allowances will be paid when the requirements based on the NINS regulations are all filled.

The equivalent of the term-end allowance and the diligence allowance shall be included in the annual salary.

Salary Increase: Once a year in accordance with the performance evaluation

Retirement Allowance: Shall be paid

11. Remarks:

- Candidates selected in the final short list may be interviewed by the selection committee either via the internet or face-to-face. The expense for the interview will not be covered by NAOJ.
- If the selection committee deems that there is no qualified candidate for this position, it is possible no one will be selected.
- NINS Employee Regulations shall be applied to this position.
- Smoking is prohibited on the premises excluding designated outdoor smoking areas.
- Policy for Equal Employment Opportunity: Abiding by the Equal Employment Opportunity Act for Men and Women, NAOJ is committed to the realization of a society with gender equality.
 - If two candidates are deemed equal in their performance evaluation, NAOJ will take positive action to employ women.
 - If you have taken a leave(s) such as for maternity, child care, and/or family care, please indicate it in your curriculum vitae. We will consider it when assessing your performance.

For further information about NAOJ's efforts to achieve gender equal society, see

<https://www2.nao.ac.jp/~open-info/gender-equality/en/>

- Information submitted in your application documents will not be used for any purpose other than the selection process and for contacting you with necessary notices in connection with the selection. Once the selection process is complete, we will securely dispose of all application documents and personal information, except for those submitted by the successful candidate.

12. Name of recruiter

Inter-University Research Institute Corporation, National Institutes of Natural Sciences (NINS),
National Astronomical Observatory of Japan (NAOJ)