

## **JOB VACANCY ANNOUNCEMENT**

### **- Project Professor for Microwave Photonics, National Astronomical Observatory of Japan (NAOJ) -**

NAOJ invites applications for a Project Professor position as follows:

1. Job Title: Project Professor, one position
2. Division and Location: The Advanced Technology Center (ATC), NAOJ, Mitaka, Tokyo 181-8588, Japan
3. Area of Expertise: Applied Physics, Electrical/Electronic Engineering, and/or Radio Astronomy
4. Job Description:

The ALMA telescope is currently the most powerful mm/sub-mm wave astronomical facility on ground. However, it will need to be progressively upgraded to continue in this position towards the 2020s and beyond. The upgrade will happen in parallel to stable operations in the second phase of the project called ALMA2. The priorities for development have been outlined in the recently published ALMA Development Roadmap. The top priority is the increase of the instantaneous bandwidth, to more than twice the currently available, which will require research not only on receivers, but also on high-speed digitizers, backend and data transmission systems. Another of the most important upgrade priorities is the improvement of the angular resolution. For that, ALMA will have to increase its longer baselines (currently ~16 km) to at least 25-30 km. The increase of the distance between the furthest antennas will pose challenges in the distribution of the photonic local oscillator (LO) to the receivers in the different antennas, which is a key to the success of interferometric observations.

We invite applications for a Project Professor position for ALMA at the Advanced Technology Center (ATC) of NAOJ. The successful candidate for this position is expected to lead research and development efforts towards high-stability photonic LO systems with frequency switching capabilities to realize long-baseline high-frequency observations, and the high-speed digitizers, backend and data transmission systems necessary for ALMA2, among others.

The successful candidate will be a key figure in the ALMA Project Development team, and a major player in international collaborations fostered by the ALMA Project and/or NAOJ.

The responsibilities of this position require a continuous demonstration of leadership and outstanding performance in research activities, and also to foster collaborations among NAOJ scientists and engineers to stimulate productivity of science and development by making the best use of the strengths of NAOJ. Fostering of young scientists, engineers and technicians including PhD's students is also required as part of the job responsibility.

As required qualifications for this position, applicants are expected to have a wide range of experience and skills in the field of radio astronomical instrumentation, in particular in photonic and digital technologies, and have good system engineering ability to strongly promote astronomical research and development keeping up with the demands of the times. Apart from highly technical and scientific knowledge, the successful candidate must have good communication and negotiation skills, and be able to work in large international teams in English. It is envisioned that the successful candidate will raise the state of NAOJ presence in the world, as an overall outcome of the above activities.

#### 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 for five (5) years or up to the end of the Japanese academic year in which the faculty reaches NAOJ's mandatory retirement age of 65, whichever is shorter. The term includes the probation period of six (6) months. If the results of annual performance reviews remain positive for five consecutive years, the contract may be extended for up to additional five (5) years within the prescribed age limit for retirement. If the successful candidate has been employed by NINS after 2013 April 1, the term may be set so that the total accumulated terms of the employment does not exceed ten (10) years.

#### 6. Minimum Educational Requirement: Ph.D. or equivalent

#### 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) Publications list (Separate refereed and non-refereed papers. SPIE 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. Note that your current supervisor or line manager cannot be your reference. 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 (Reference letters should be written by faculty/staff with tenured positions, and no more than two reference letters will be accepted from each country).

8. Application Period: from 2019-11-20, 15:00 to 2020-02-14, 17:00 (Japan Standard Time)

9. Submission:

Applicants are required to apply via the NAOJ's application system on the web:

<https://jobregister.nao.ac.jp/>

Please fill out the form on the web and upload the documents specified on the application form. If it takes time to prepare the documents, applicants should be issued applicant ID and reference IDs in advance. Reference letters should be uploaded by persons who have written the letter for you directly, following the instruction shown on the application form. Reference IDs and passwords are required to upload reference letters, so please inform references of the issued reference IDs and passwords.

The application documents should be converted to PDF (max 50MB each, 100MB in total, at most 10 files).

If you have any question related to the job description, contact;

E-mail: y.uzawa\_AT\_nao.ac.jp (replace \_AT\_ with @)

Professor Uzawa, Yoshinori,

*Director of Advanced Technology Center, NAOJ,*

Subject of e-mail: "Question on JD of Project Professor in Photonics at the NAOJ ATC"

If you have any question related to the application system or other items, contact;

E-mail: JobRegister-contact-10\_AT\_nao.ac.jp (replace \_AT\_ with @)

Subject of e-mail: "Question on Project Professor in Photonics at the NAOJ ATC"

10. Notes for application:

- Candidates selected in the final short list may be interviewed by the selection committee either via internet or face-to-face. The expense for the interview will not be covered by NAOJ.

11. Remarks:

- The NAOJ Advisory Committee for Research and Management will make the final decision for the appointment.
- 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. For details, see <https://open-info.nao.ac.jp/danjokyodo/>
- 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.