

**The National Astronomical Observatory of Japan (NAOJ) invites  
applications for a Senior Specialist (Digital Electronics Engineer)  
at the ALMA Project**

ALMA is currently the most advanced on-ground radio telescope at millimeter and sub-millimeter wavelengths. It is located in Chile and operated by a global partnership of East Asia, North America and Europe, in cooperation with the Republic of Chile. ALMA uses interferometric techniques for astronomical observations using a large number of antennas and combining their received signals using “correlators”. Some of the antennas can also be used in single-dish mode to calculate the spectra of astronomical sources using a “spectrometer”. The “spectrometer” and “correlator” are real-time digital processors to calculate Fourier transforms and correlations of Gbps-speed digital data from antennas and one of the key instruments in ALMA.

The ALMA Compact Array (ACA) Correlator was developed based on FPGA technology by NAOJ, and it has been operated for scientific observations for about 10 years. EA-ALMA has recently developed a new Spectrometer based on GPU technology which will be installed at the ALMA site in the near future. ALMA is also starting to discuss the design of next generation correlator.

NAOJ seeks an engineer who works for the design, development, and maintenance of the current/future correlator and spectrometer in close technical collaboration with international partners.

**【Vacant post】**

One Senior Specialist (employee on annual salary system)

**【Division】**

ALMA Project

**【Duty Station】**

2-21-1 Osawa, Mitaka, Tokyo, Japan

**【Responsibilities】**

The successful candidate’s responsibilities will be:

- To perform necessary tasks for the maintenance of the ACA Correlator, based on FPGA technology. In particular, (1) diagnosis support of problems, (2) repairs and logistics of malfunctioning cards, and (3) technical support of workarounds for problems.
- To support the design and development of the ACA spectrometer, the ACA correlator upgrade or other instruments in line with the ALMA Development Program, working in close technical collaboration with international partners, and contribute to their maintenance.
- To provide operation support and maintenance of digital backend instruments (ACA correlator and future instruments) at the ALMA telescope in Chile, and to conduct on-site adjustment tests of newly developed instruments in Chile.

**【Term of Employment】**

- Employment will start from the date as soon as reasonably possible after the job offer has been accepted. The term is for 3 years(※1), including the probation period of 6 months.
  - ※1: In the final fiscal year of the employment, NAOJ will conduct a review on the amount of assigned work, the status of ongoing work, work skills, work performance, work attitudes, and the financial situation of the National Institutes of Natural Sciences (NINS) at the expiration of the term of employment. Based on the review results, the term of employment may be extended. (※2)
  - ※2: Note that the total period of employment from April 1, 2013 shall be within 10 years, if the person has been employed by NINS after April 1, 2013.

**【Qualification Requirements】**

1. To be familiar with digital circuits and signal processing technology.
2. To be familiar with FPGA and related technologies.
3. To have problem-solving skills in a mathematical way.
4. To have ability to read and write technical documents in English and communicate in English.

**【Working Hours】**

- 5 days a week (Monday through Friday) with Saturday and Sunday off, national holidays, year-end and new year holidays (from December 29 through January 3 of the next year)
- From 8:30 am (start of working hours) to 17:15 (closing of working hours) including 60-min lunch break each day. The total working hours will be 38.75 hours a week.

#### 【Compensation】

- Salary will be paid based on annual salary system, equivalent to an assistant professor at national universities or equivalent to an engineer at NAOJ in job classification.
  - One-twelfth of the annual salary will be paid every month. The amount of annual salary is determined according to responsibilities of work, actual performance, and experience etc.
  - Salary will be reviewed every fiscal year according to the results of performance reviews.
- Commuting allowance (up to 55,000 yen / month)  
\*: Allowances are provided pursuant to the NINS internal rules and regulations.
- Health insurance, pension insurance, unemployment insurance, and industrial accident insurance provided.
- Paid days off (annual leave, summer holidays, and bereavement leave, etc.)
- Day-care center for children (from 57 days after birth). \*Availability depends on the situation.

#### 【Selection】

A candidate will be selected through screening of application documents and interview.

#### 【Application documents】

- (1) A curriculum vitae with a face photograph
- (2) A summary of past work experiences
- (3) A personal statement describing intentions for the applied position including related experience and achievements (in two pages of A4 sized paper)
- (4) Your e-mail address and phone number for prompt contact

#### 【Application deadline】

May 29th, 2020, 12:00 (JST)

#### 【Submission】

Applicants are required to apply via the NAOJ job 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.

Please use the browser like Chrome, Firefox, Edge or safari when you upload them because this application system might not work well with other browsers.

The application documents should be converted to PDF.

(max 50MB each, 100MB in total, at most 10 files)

#### 【Contact】

(Inquiry about application)

NAOJ Personnel Unit, General Affairs Group, Administration Department

TEL : 0422-34-3658

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

Subject of e-mail: “Question on Senior Specialist at ALMA Project”

(Inquiry about job details)

NAOJ ALMA Project, Kenichi Kikuchi

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

Subject of e-mail: “Question on Senior Specialist at ALMA Project”

#### 【Others】

- Applicants are responsible for their own costs required for this selection (e.g. travel expenses for interviews).
- This position is not applicable to the debt-forgiveness program of the Japan Scholarship Foundation.
- Abiding by the Equal Employment Opportunity Act for Men and Women, NAOJ is committed to the realization of a society with gender equality. If candidates are deemed equal in their performance evaluation, NAOJ will take positive action to employ women. For details, see <http://open->

[info.nao.ac.jp/danjokyodo/](http://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, for those submitted by the successful candidate.