

## SOKENDAI Internship 2023 specific themes

Supervisor's name	Field	Exercise theme	Supplemental information
Issei Yamamura	Astrophysics	This study is aiming to classify the infrared sources in the AKARI catalogues by cross-matching with other astronomical catalogues and taking colours and spectral energy distribution (SED). An extra goal is to find peculiar objects.	
Hideo Matsuhara	Astrophysics	Investigation of dust obscured galaxies at distant universe: With observational studies using space infrared telescopes, and/or through development studies of future instrumentation.	
Tadayasu Dotani Takayuki Tamura	Astrophysics	Experience data analysis from the X-ray Astronomy satellite, such as Suzaku, and learn how the physical parameters in the X-ray emission region are extracted from the observational data.	Basic knowledge on data reduction and error analysis is preferable. Recommended text book is "Data Reduction and error Analysis for the Physical Sciences" by P. R. Bevington & D. K. Robinson (McGraw-Hill)
Taro Sakao	Solar Physics	Investigation of high energy plasma phenomena in the X-ray corona of the Sun: With observational studies using spacecraft data, and/or through development studies of future instrumentation.	Successful applicants can be engaged in data analysis with, e.g., hard and soft X-ray telescopes (HXT and SXT) data from Yohkoh satellite as well as data from soft X-ray telescope (XRT) aboard Hinode. It is also possible to participate in development studies of precision X-ray Wolter mirrors and/or high-speed X-ray CMOS sensors for future photon-counting soft X-ray telescope to help revealing mechanism(s) of particle acceleration in the solar corona.
Takehiko Satoh	Planetary Science	Space probes play key roles to advance our knowledge about the earth's neighbors. Opportunities to experience analyses of data from Akatsuki (on-going Venus mission) for enthusiastic interns, to open the door to planetary sciences, are available.	
Takahiro Iwata	Planetary Science	Research on geology, geophysics, and geochemics of the moon and asteroids, based on planetary explorations such as SELENE and Hayabusa2 mission.	
Takeshi Takashima, Kazushi Asamura	Space Plasma Physics	An internship student will analyze the data from "ARASE" (ERG) surveying the geospace including the Van Allen belt, area around the earth filled by relativistic electrons, and experience the data analysis to understand the geospace.	Listed supervisors are the managers and instrument PIs of ARASE project. Please refer to the following special volume of papers about ARASE project <a href="https://www.springeropen.com/collections/erg">https://www.springeropen.com/collections/erg</a>

Takumi Abe	Upper Atmospheric Physics	A study of ionospheric or thermospheric physics is possible in this internship program. Data obtained by sounding rocket may be used for understanding interesting phenomena occurring in these regions.	
Ikko Funaki	Space Engineering	Spacecraft Propulsion Research: Ion engine, Hall thruster, and other advanced spacecraft propulsion concepts are dealt in the internship period. Depending on the season an intern selects, several experimental campaign, system or theoretical analyses will be on going, and the intern will join one of the activities.	
Koji Tanaka	Space Engineering	Experience on wireless power transmission technologies for the future energy system in the space environment.	