JAXA Aerospace Project Research Associate recruitment 2012

No.	Research fields	Details of topics	Qualification	Academic research environment	Research: Project contribution
1	Research on aerodynamic drag reduction for environmetally viable aviation	Towards realization of sustainable society, global environmental issues such as global warming are being discussed from various aspects. For aviation as one of global transportation systems, needs to reduce CO2 emission are getting stronger, where aerodynamic drag reduction and improvement of engine efficiency are two major issues. In this research, the airframe drag reduction techniques are focused. In this research, various drag reduction techniques which are newly proposed or were proposed formerly are re-examined with the state-of-the art technologies, then some promising techniques are extracted or newly found, followed by their demonstration of effectiveness in a practical condition. Both skin friction and pressure drag could be dealt with while various strategies such as active/passive flow control and optimization of aerodynamic configuration can be considered. To accomplish the goal mentioned above, both wind tunnel tests and CFD calculations should be used collaboratively.	Advanced knowledge on aerodynamics and experiences of wind tunnel test and/or CFD are required to conduct the present research. It is desirable to have some knowledge and experience in flow control. Also, knowledge on material and surface treatment could be useful. Since the drag reduction is a significantly tough problem which was tried for a long period by many researchers, the applicant should have a strong spirit of challenge to attack the target using various innovative strategies continuously. Ability in communication with colleague researchers is also important.	Research is supported and advised by the director of Fluid Dynamics Group and related researchers with long experiences on wind tunnel test and CFD. Outside the group, discussions and collaborations with aerodynamic researchers in JAXA are also possible. Large-scale wind tunnels and super computer called JSS are available to conduct the research with some restrictions on availability.	6 : 4
2	Development study of advanced composite material for rockets and spacecrafts	In department of space structure and material, many research activities on structures and mechanics and materials have been actively done, (1) structures of spacecrafts (satellites, space explore, large space structures, etc.) and rockets and their subsystem components, (2) space mechanics involving deployable structures, (3) advanced materials for such structures and subsystem components like engines. To improve performance of rockets and spacecrafts for the future space explore missions, innovations on light weighted structures by use of advanced composite materials those does have new functions are truly required. Research group now focused on the new composite materials as light weight sandwich panel can be operative up to 300 ° C, or nano-technology based super light composite materials, and a candidate is expected to conduct new composite material research based on her/his own new ideas.	A candidate is expected to have common knowledge of composites and plastics, and special knowledge on structure, strength, and fracture of a fiber-reinforced composite. Especially a candidate expected to have research experience and techniques about mechanical behavior and performance of carbon nano-tubes and its composite. To overcome many technology issues, ability to find subject and solve problems for herself/himself.	Organization: Research activities will be supervised by all the faculty members of the department of space structure and materials. Facilities: Many mechanical and thermal analyzers. Process equipments, a draft chamber, a cure oven, a hot press. Computers for simulation. Large experimental equipments in Sagamihara Campus and also other JAXA's facilities.	7 : 3
3	Development of the X-ray Satellite, ASTRO-H	ASTRO-H mission is the next major X-ray mission in Japan. ASTRO-H will carry two Hard X-ray Telescopes for the Hard X-ray Imager, and two Soft X-ray Telescopes, one with a micro-calorimeter spectrometer array with excellent energy resolution of <7 eV, and the other with a large area CCD in their respective focal planes. In order to extend the energy coverage to the soft gamma-ray region up to 600 keV, the Soft Gamma-ray Detector, which is based on the cocept of Si/CdTe Compton Gamma Camera, will be implemented as a non-focusing detector. Applicants are expected to participate in the project to develop these instruments and also to work on science achieved by the mission. Contribution to the mission-wide technologies such as data acquisition, data processing and satellite bus system is also the area of research. (For further information on the project, please visit http://astro-h.isas.jaxa.jp).	Background of physics or astrophysics, It would be desireable if applicants have some experiences on design and actual development of radiation detectors for X-rays and gamma-rays.	Reseach will be performed under supervision by professors in the department of high energy astrophysics and related departments. In addition to perform research in the field of high energy astrophysics, applicants can access cutting edge technologies implemented in the instruments to be onboard the ASTRO-H satellite. These technologies include highly advanced X-ray and gamma-ray detectors, Space Wire network, and analog VLSI.	3 : 7
4	Research of Infrared Astronomy with AKARI (ASTRO-F) and other facilities	Our main project is AKARI (ASTRO-F), which has carried out an All-Sky Survey and thousands of pointed observations in the past years. AKARI All-Sky catalogues has been in public in March 2010, and efforts to improving the data are continued. Researches based on the AKARI data are extensively carried out. Observations with sounding rocket and balloons are also ongoing. The successful candidates are expected to participate in these projects, by sharing the responsibilities of data reduction and archiving. It is strongly encouraged to carry out astronomical researches based on the data, in various topics such as formation of galaxies, stars, and planets, and interstellar media.	The person is expected to extend one's own astronomical researches using the data of AKARI or other projects of the department, in cooperation with JAXA staffs. Skill and experience of software development for astronomical data analysis are requested.	As of July 2011 our group consists with three Professors, four Associate Professors, and three Assistant professors. Facilities such as computers are provided.	7 : 3
5	Reserch work in the astronomical instrumnentation for SPICA and future space infrared missions	Our group is promoting the next-generation infrared astronomical satellite, SPICA, to the key issues in modern astronomy, e.g., birth and evolution of galaxies and planetary systems. SPICA is a 3.2m, cold telescope which has outstanding sensitivity and angular resolution. SPICA is proposed to be launched in FY2018 under extensive international collaboration. Moreover, we supplement such a large mission with sub-orbital small missions using sounding rockets and balloons. We have opportunities for postdoctral researchers, who will work in basic research and development including highly-sensitive infrared detectors, focal plane instruments, coronagraph system, light-weight telescope, and cryogenics, and/or system design of the instrumentation for above missions.	An experience in the satellite instrument, astronomical instrumentation for the ground-based telescope, or experimental physics related to this research area is expected.	Succesful applicants will be involved in the international research group that drives the SPICA project under the supervision of faculty of Department of Infrared Astrophysics. With three professors, four associate professors, and three assistant professors, our department is one of the largest research group in infrared astronomy in Japan. Our department has fabrication equipments and test facilities for the experimental research.	4 : 6

JAXA Aerospace Project Research Associate recruitment 2012

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6	Deep Space Mission Desgin	Unlike earth-orbiting satellites, deep space explorers must reach their target objects by themselves.Trajectory desgin is the first step of deep space mission planning, which strongly constrains schedule and scale of the mission and provides critical conditions for the spacecraft design. Accordingly, trajectory design of deep space mission is not a simple energy optimization process, but a high level synthesis process of spacecraft design, operation plan, and program management. For this reason, it is also frequently called "mission design."Therefore, a researcher is expected to join the study team on future deep space missions and to cope with the problems on mission analysis and spacecraft design. The researcher is also expected to study on the design process specific to deep space missions.	What is required to perform this research is a wide range of knowledge and capability in space technology. In particular, to have research experience in the field of astrodynamics (mainly of trajectory design), or research/development experience of spacecraft system is preferable.	The research is done under the lead of research staffs in ISAS Department of Space Systems and Astronautics, as well as the colaboration with other research staffs in JAXA (ISAS, JSPEC, etc.). A PC for design and analysis use will be provided to the researcher, and the JAXA super computer is also available on research necessity.	5 : 5
7	Scientific studies using Venus orbiter Akatsuki	Akatsuki (Venus Climate Orbiter) was launched in 2010 and is now orbiting the sun after the failure of the Venus orbit insertion. JAXA is examining the possibility of retry of orbit insertion in 2015. The present study intends to study the Venus atmosphere and other topics in the solar system using Akatsuki's onboard instruments during the extended cruise phase. Collaborative studies with foreign Venus missions are also welcome.	The researchers are expected to have experiences in processing the earth's or planetary data and well understand the basics of remote sensing.	Project members in JAXA and universities will collaborate with the researcher. Seminars on atmospheric physics and planetary sciences are held every week, and the researchers can join these. Computers for developing data processing tools will be provided. Super-computers of JAXA are also available.	5 : 5
8	Study on the upper atmospheric physics with the sounding rocket	In-situ observation of the lower ionosphere and thermosphere at altitude of 80-200 km can be made by the sounding rocket only, and therefore the limited data are available. However, it is becoming possible to approach various unresolved problems from new viewpoint due to recent advance on measurement technology By using the sounding rocket, the Institute of Space and Astronautical Science (ISAS) is trying to elucidate various phenomena occurring in the upper atmosphere where the neutral and charged particles coexist. The following subjects are expected in this study: 1) Development of a new instrument for the sounding rocket experiment. 2) Proposal and performance of a new sounding rocket experiment on the upper atmospheric physics 3) Study on the upper atmospheric physics with currently available data sets.	Professional knowledge on the thermosphere and ionosphere is required. It is desirable for a candidate to conduct the sounding rocket experiment by communicating cooperatively with staffs not only inside ISAS but outside JAXA. Also, we expect that a candidate aggressively approaches a development of the new instrument with his/her own idea and make a proposal of new experiment.	The sounding rocket project is being operated and conducted by research staff of science and engineering and technical staff. According to the research subject proposed by the candidate, appropriate staff will assist the work. It is possible to use facilities at ISAS by making arrangement with the related officials..	5 : 5
9	Solar physics researches based on Hinode observations	ISAS/JAXA is leading solar physics researches with the Hinode satellite. Hinode was developed and launched on September 2006 by ISAS, with NAOJ as domestic partner and with international partners. Applicants are expected to make major contributions to Hinode's scientific opeations and to perform data analysis for leading researches on solar physics and its related field. Hinode has three advanced telescopes, providing high spatial resolution data of magnetic and velocity field at the photosphere and diagnostics of the hot plasma in the corona. Depending on the applicants' interests, the research topics can be selected from various kinds of topics, including the heating of the corona and chromosphere, cornal dynamics, solar flares, genration, development, and dissipation of solar magnetic fields, Sun-heliosphere connection, and Sun-laboratory plasma comparisons. In addition to science researches with Hinode, applicants are encouraged to participate in conceptual studies and research developments for the future solar physics missions, such as Solar-C.	Research experiences on solar physics or its relevant research field are required for applicants. Applicants are expected to promote his/her researches (either observationally or theoritically) based on observations including Hinode. Researches should make contributions to further improvements on our knowledge on the Sun.	Reseaches can be promoted in deep collaboration with researchers in ISAS and NAOJ. Also, applicants can promote resarch works with foreign residents at ISAS. The computers at ISAS allow researchers to access all the Hinode data on line. Applicants are highly encouraged to participant in scientific operations of Hinode. With such opportunities, he/she can realise new observations with Hinode.	5 : 5
10	Research in astronomy and astrophysics with the Suzaku observatory, operation and instrument calibrations	The Suzaku observatory which was put into the orbit in July 2005. There are many research themes utilizing the six years of observations. The researchers are also expected to contribute in improving calibrations of the instruments and/or analysis software, and operations of the spacecraft.	Research experience in physics and astrophysics, data analysis in using UNIX computers.	The Suzaku project will provide all necessary data-analysis environment. We can support researches of various different fields in high-energy astrophysics, since there are six supervisors with different research interests.	7 : 3

JAXA Aerospace Project Research Associate recruitment 2012

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11	Research of new instrumentations for next-generation X-ray and gamma-ray observations	Research of new instrumentations for next-generation X-ray and gamma-ray observations and their related technologies. In our division, inovative new technologies for X-ray/gamma-ray observations for the next international observatories and small satellites are being studied; X-ray focusing mirror systems, high-resolution X-ray spectrometers, X-ray pixel detectors, Compton hard X-ray detectors, and related technologies such as space cryogenics and digital data processing. Other researche themes based on applicant's own new ideas are also welcome.	Research experience in physics and astrophysics, in particular, in experimental physics and/or any instrumentations in astronomy and astrophysics.	Applicant can select various research themes in high-energy astrophysics instrumentations, since there are six supervisors with different research interests. Researchers can use various equipments of our group, e.g. X-ray beam facility, X-ray generators, cryogenic refrigerators, X-ray mirror replication facility, photo-lithography and micro-machining facilities.	5 : 5
12	Development study of the extreme ultraviolet spectrum telescope on the first small scientific satellite for planet observations	The small scientific satellite project team develops the extreme ultraviolet (EUV) spectrum telescope on the first satellite to observe the tempral and spacial variations of the tenuos plasma or atmosphere distribution in the planetary ionospheres and exosphers and in the atmospheric escape region in response to the solar activity and the solar wind condition. The scope of this theme is the design, fabrication and examination of the EUV telescope equipment and drawing up a plan of the observation and the operation. Furthermore, the scope includes the development and the establishment of the data analytical technique of the associated reserch fields such as planet atmosphere evolution and/or plasma transportation process, and it is expected to apply the technique to the EUV spectrum data analysis.	The one that has the earth and planetary scientific grouding and understand scientific purposes and observations requests about the extreme ultraviolet spectrum observation. It is preferable to have the experience of developing an instrument on a satellite or an optical observation equipment on the ground, and is more desirable to wear the experiment skill that is necessary for this development study. In addition, it is hoped to study thema on planetary tenuos ionospheres and/or exospheres and plasma environment.	The scientific and engineering researchers of the small scientific satellite project team deals with instruction. This development study is accomplished using the facilities such as a extreme ultraviolet analyzer and a vacuum chamber of the Institute of Space and Astronautical Science, but the other facilities can be used to perform the experiences as necessary.	6 : 4
13	Transmission of information or energy in space using radio waves or laser	Four kinds of research subject are considered; (1)Deep space communication network Advanced ommunication systems and associated onboard/ground equipments for very long distance communication. (2)Optical transmission Elements and laser for advanced optical transmission (3)Data transmission techniques for space communication High speed and high reliability data transmission (4)Microwava power transmission High efficiency microwave power generation and beam direction control	Past experiences in the above research fields are not necessarily requested, but basic knowledge of electronics engineering or communication engineering is required. Highly motivated indivisuals for the pioneering research are welcome.	Profs.Saito, Yamamoto, Yamada, and Kawasaki, and Associate Profs.Tanaka and Toda are to lead research depending on the research subject. Anechoic chambers, electromagnetic field analyzers, and optical communication analyzers are available for professional research. Test facilities in JAXA or in other universities may be used as necessary.	3 : 7
14	Aerodynamic research related tospace transportation system for challenging space exploration programs	Aerodynamics related to space transportation systems. It is advised for the applicants to select several topics from the following research topics: 1) Aerodynamics and aero-thermodynamics related to reusable space transportation systems 2) Aero-thermodynamics for planetary exploration entry probes 3) Aerial vehicles for planetary exploration 4) Spacecraft with magneto plasma sail utilizing the interaction between the magnetic field and solar wind 5) Aerodynamics related to space transportation system 6) Design for space transportation system	The applicants must have sufficient knowledge and experience for the aerodynamics. It is also desirable that the applicants have sufficient knowledge for space transportation systems.	Profs. Abe, Fujii, Oyama and Funaki are available for the research adviser. For the research, many research facilities including a super-computing facility, a wind tunnel complex are available for the research.	5 : 5
15	Research of wireless sensor network systems for a frequently reusable spacecraft	This study is the advanced study of wireless sensor systems for health monitoring in a frequently reuseable spacecraft developed with the wireless technology in the reusable observation rocket. The special feature of this study is use of the wireless power transmission technology in the wireless sensor network system. This study is expected to produce good natures in wireless communication power transmission and wireless sensing energy transfer. We focus on technology development of no wireharness in the fly-by-wireless spacecraft, increase of safety, easy maintenance, reduction of payload problem and potentially low cost. The energy harvesting technology will be covered in this study with vibration and pressure. We study and develop the design and the fabrication of a MMIC/MIMIC , a compact APAA, a HPA by the GaN, and a rectenna, a SoC and a small sensor node.	The semiconductor device and microwave and millimeter-wave technologies are requested in this study as foundations. More detailed of the study are the design of Si/compound semiconductor device and circuit, the test fabrication of an active integrated antenna and a phased array antenna, the measurement of characteristics of the circuits and modules. In addition, you can study an advanced RF-ID tag, MIMO and modulation/demodulation analysis in terms of the system. Applicants are expected in the experience of use of the CADs and the microwave measurement equipment.	You can join Kawasaki research group and the DE communication and data transmission group. Equipments and CADs such as microwave circuit and EM simulators, measurement equipments, bonders, EB, and a clean room are available. You can use these tools under our regulations.	3 : 7

JAXA Aerospace Project Research Associate recruitment 2012

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16	Experimental study on space plasma and hypervelocity impact	It is possible to study on space plasma and hyper velocity impact based on facilities at ISAS. Possible subjects for the studies are the following, and we welcome exploratory research also. (1) Plasma environment around space platform (2) Instrument development for observation in space (3) Wave phenomena in space plasma (4) Plasma heating phenomena due to nonlinear wave-particle interaction (5) Chemistry in the terrestrial and planetary upper atmosphere (6) Hypervelcoty Impact destruction (7) Elementary process of hypervelocity impact (8) Development of new instrument for advanced impact experiment (9) Development of impact spacecraft to the planetary surface	We expect a candidate who has experience on working experimental research related to the above or related subjects.. In particular, a candidate who enthusiastically promotes research by developing a new subject is very welcome. It is desirable to have experimental techniques such as building of measurement systems, making of electronic circuits, and working of test equipment tools,. Also, we encourage research in relation to data obtained by satellite or sounding rocket observations. It is also desirable for a candidate to be able to give good advice and insight for the researchers who come to our institute for the collaborational study.	The staffs of the Committee for Space Plasma Science provide a guidance. We have two main facilities; 1) Space plasma science chamber (2m diameter, 4m length), 2) hypervelocity impact accelerator (possible to launch the projectile with a veocity of 7km/s several times a day). It is possible to conduct very unique and large-scale experiment with these facilities.	5 : 5
17	Magnetospheric studies via Plasma Universe perspective	The near-earth space of the magnestopehre is a precious field where detailed in-situ observations of the plasma dynamics can be obtained. There indeed are fundamental issues in space plasma physics that can be solved only when we have detailed enough knowledge of the issues. In addition to deepening the magnetospheric physics itself, this fact assigns us with a new duty of expanding our horizon of space plasma physics research with the cosmic perspective, or the Plasma Universe perspective, in mind. The succsessful candidate is expected to perform data analysis and/or numerical simulation stuides of magnetospheric processes that have wide implications in the general space plasma context and to contribute in "exporting" our knwoledge to other branches of astro-plasma physics research.	Experience in data analysis and/or numerical simulation studies is necessary. It is desirable that the research outputs are useful for the future mission planning activities of ISAS.	Members of the ISAS space plasma mission teams such as Akebono and Geotail will be available as research partners to the successful candiate. The successful candiate will also have very good access to the large scale computational facility of JAXA.	7 : 3
18	AKEBONO and GEOTAIL Data Analysis Studies in International Multi-Point Observations	Nowadays, there are a lots of magnetospheric observatories in the Earth's magnetosphere, such as NASA THEMIS, ESA Cluster-II as well as JAXA's AKEBONO and GEOTAIL satellites. Making well-organized multi-point simultaneous high-quality observation datasets provide a big jump for understanding the Earth's magnetosphere. Project researchers of this application are expected to contribute to international joint research of the magnetospheric multi-point measurement studies by maximizing AKEBONO and GEOTAIL results.	Project researchers are expected to promote data analysis studies using AKEBONO and GEOTAIL data in the international multi-point observations, under the condition where the latest datasets of a number of magnetosheric observatories, such as AKEBONO, GEOTAIL, Cluster-II, and THEMIS can be easily used. It is desirable to have English ability required for the above-mentioned international research promotion.	The staff scientists of AKEBONO and GEOTAIL projects will collaborate with project researchers. The project researchers can use scientific datasets of AKEBONO and GEOTAIL as well as the data analysis computer fascility.	7 : 3
19	Planetary magnetosphere studies supporting future mission planning activities	Studies, especially comparative studies of the near-planet space of magnestophere is a route for our fundamental understanding of generalized space plasma physics. In addition to this plasma-astrophysics flavor, more of planetary science oriented achievements from the studies would be to open ours eyes to the fact that planets and satellites are embedded in space filled with the plasmas and their environments are under the influence of the activities in the plasma space that surrounds them. The succsessful candidate is expected to perform data analysis and/or numerical simulation stuides of planetary magnetospheric/exospheric processes with the broad implications in mind. It is desirable that the research outputs are useful for the future planetary mission planning activities of ISAS.	Experience in data analysis and/or numerical simulation studies is necessary. Examples of the reserch themes are: Kaguya data analysis to explore the lunar plasma environment, data analysis of MEX plasma data, GLL and Cassini data analysis to expore the magnetospheres of the outer planets, aurora studies using HST data. Support to more than one of the activities listed below is expected: Future missions of EXCEED (L2013) and BepiColombo MMO (L2014), the planning of missions to Mars and Jupiter.	Members of the ISAS mission teams such as Kaguya, EXCEED and BepiColombo MMO, and also the members of the future mission WG (MELOS and EJSM-JMO) will be available as research partners to the successful candiate. The successful candiate will also have very good access to the large scale computational facility of JAXA.	7 : 3
20	Research on high temperature melts and matastable phases using electrostatic levitation furnaces	In order to boost the experimental results with the electrostatic levitation furnace (ELF), which will be onboard the ISS around 2015, this project conducts ground based reseraches. It includes thermophysical property measurements of highly refractory materials / structural analysis of high temperature melts / metastable phase formation from deeply undercooled melts, etc. The results of these research will be used for the experiments in the ISS as well as technical developments of the ELF.	Fundamental knowledge of vacuum systems and optical system are required. One of the following background is preferred; 1) Computer aided control system, 2) fundamental physics (condensed matter), 3) instruments fro thermophysical property measurements of liquid metal.	The laboratory is located in Tsukuba Space Center. The staff includes a professor, an assistant professor, researchers, and students. The laboratory is so well equipped that almost all research activities can be conducted within The Laboratory. Experiments using SPring-8 (high energy light source) for structural analysis have been conducted annually.	7 : 3

JAXA Aerospace Project Research Associate recruitment 2012

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21	Multidisciplinary space science research and development of science satellite data archives	In the department of space information analysis, we are developing the space science data archive DARTS (http://darts.isas.jaxa.jp), in collaboration with Center for Science-satellite Operation and Data Archive (C-SODA). The cancidate will carry out his/her own research using archival data on DARTS, and also participae in the development of JAXA's satellite data archives.	Experience of space science research using satellite data. Also, the candidate should be able to define requirements for the space science data archives to promote researches using archival data. Expereince of development of software, database or web-system is desirable.	The candidate will have an office at ISAS, and work with staff of the Department of Science Information Analysis and C-SODA. In our department, there are experts in various fields of space science, such as high energy astrophysics, solar-terrestrial physics, solar physics, lunar and planetary science, numerical simulation, etc.	7 : 3
22	Development of MAXI data archive	MAXI is theX-ray all sky monitor equipped on the exposed part of the Jpaanese experimental modeul "KIBO" on the Inernational Space Station. The candidate will carry out (1) astrophysics research using MAXI data, and (2) development of the long-term data archive of MAXI.	Experience of the high energy astrophysics research using satellite data, as well as experience of developing software system for satellite data acquisition, analysis and archive.	The candidate will have an office at ISAS, and work with DARTS (ISAS's space data archive) team members. Also, he/she will work with MAXI team members at RIKEN, MAXI team in Tsukuba, and other Japanese universities.	5 : 5
23	Development of new methods for science data analysys/instrument design with high-performance computing technology	Numerical simulations can virtually reproduce the space environment that is quite diffucult to simulation in ground experiments, so that, they are expected to contribute design process of spacecraft system. Mission data obtained from the advanced science spacecrafts become huge volume, and complicated data process is required. Moreover, modern space science research styles require not only complex data analysis itself, but also cooperation with numerical modelings. Now that, high performance computing technology should be applied to wider situations of space science missions, not only to theoretical numerical simulations. In this sense, we will develop the applied technique of numerical simulations to science data analysis or spacecraft subsystem design.	The project researchers of this application is expected to propose new ideas for science data analysis technique or onboard subsystem design utilizing high-performance computing technology.	The project researchers will do their research topics under the collaboration with JAXA staffs related to their thema. The JAXA supercomputer system can be utilized for this research application.	7 : 3
24	Animal physiochemical research on biological effects of space environments	Biological effects of space environment on living organisms shall be investigated with physiochemical metods. Higher animals, especially rodents, will be used as biological samples. Analyses of the samples from space experiments, which will be obtained by biospecimen sharing project with foreign space agencies like NASA, will be conducted. And ground-based basic researches shall be carried out to propose a newly conducted space experiment.	It is necessary to have experience of higher animal research with physiochemical and/or peripheral methods. It's better to have a background of a rodent research. It's also desirable to have a daily conversation skill in English.	The laboratory is located in Tsukuba Space Center, and is so well equipped with various devices for nucleic acid or protein analyses. The staff includes five investigators. It is necessory to participate JAXA life science projects in cooperation with them, and to conduct your own research activities.	7 : 3
25	Study of the plasma wave-particle interaction using the Akebono satellite data	Since the Akebono satellite was launched in 1989, it has measured the plasma particles, magnetic fields, electric fields and plasma waves in the earth magnetosphere. Many findings about the auroral phenomena, plasmasphere and radiation belt have been produced from the huge amount of data accumulated by the long-term observation. One of the current targets of the Akebono project is the interpretation of the interaction between the plasma wave and particle in the inner magnetosphere. The wave-particle interaction process, which causes particle acceleration, and its relation with the phenomena in the magnetosphere (e.g. radiation belt activity) should be investigated by the comparison between the measurement data and simulation/numerical modeling results. Now projects to measure the inner magnetosphere/radiation belt directly are prepared in some organizations in the world. The results from Akebono should be utilized to make good plan in these future projects.	The applicants are expected to have the experience and skill of the study as well as the good knowledge about the plasma wave-particle interaction or related theme. Ability of the up-to-date numerical simulation and/or modeling of the space plasma is desirable.	Good environment to study the data from the Akebono satellite and, at the same time, the numerical simulation/modeling is available for the employed scientist in ISAS. In the Akebono project, there are members majoring the numerical simulation/modeling in ISAS and other institutes and universities. The collaborative studies with them will drive the study of the employed scientist.	7 : 3

JAXA Aerospace Project Research Associate recruitment 2012

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26	Research and Development on Scientific Payloads towards Future Solar Missions	Applicants for this position shall participate in future Japanese space solar programs such as SOLAR-C and contribute to the relevant program through R&D studies of on-board scientific instrument(s). Towards SOLAR-C, ISAS solar physics group are now engaged in studying photon-counting soft X-ray telescope and its focal-plane detector, and are also developing high-reliability mechanisms allowing >10 million movements in space which are indispensable for observing continuously magnetic activities in the solar atmosphere. Applicants are requested to be engaged in either such R&D studies on scientific instruments that can bring break-through in future space solar physics, or in the development of on-board acquisition/processing systems for science data, performance evaluation on scientific instruments followed by detailed assessment on their science performance, or in the study on engineering aspects of the spacecraft system.	Applicants are requested to have good knowledge of physics or astrophysics. For applicants who aim to carry out engineering study, basic knowledge and research capability for the relevant area are required. It is desired that the applicants have experience in hardware R&D studies on physics and/or astrophysics. It is requested that the applicants can promote collaborative research activities with other groups inside or outside JAXA whenever needed. Those who have strong will to develop next generation space solar physics through hardware development are highly welcomed.	ISAS solar physics group (SOLAR-B project) will supervise the research and it is possible to use various test facilities in ISAS. Meanwhile, collaborative research activities with solar physics group at NAOJ (with which ISAS solar group have years-long working relationship) as well as use of test facilities at NAOJ are also available and encouraged.	3 : 7