



Il Presidente

PROT CE-PT208-135

Rome, 21ST MARCH, 2008

Mr. Michael O'Brien
Assistant Administrator
For External Relations

NASA HQs
Washington

Dear Mr. O'Brien:

Thank you for your letter dated March 4, 2008, in which you propose the terms and conditions under which NASA and ASI will co-operate within the NASA Juno mission.

We are aware of the fact that the Juno mission will further our understanding of planetary and Solar System formation by studying the origin and evolution of Jupiter.

I would like to confirm that ASI agrees on the terms and conditions proposed in the Interim Letter of Agreement, along with the understanding explained in the accompanying side letter.

Therefore, your letter of March 4, 2008, together with the accompanying letter of the same date, and the present affirmative reply document our joint understanding as to the implementation of this cooperative effort.

Sincerely yours,

Giovanni Fabrizio Bignami



National Aeronautics and Space Administration

Headquarters

Washington, DC 20546-0001



March 4, 2008

Reply to Attn of:

Office of External Relations

Prof. Giovanni Bignami
President
Italian Space Agency (ASI)
Viale di Villa Grazioli, 23
00198 Rome
Italy

Dear Prof. Bignami:

The National Aeronautics and Space Administration (NASA) and the Italian Space Agency (ASI) have expressed a mutual interest in collaborating on NASA's Juno mission. NASA and ASI have a long history of successful cooperation in planetary missions, above all the Cassini mission to Saturn. NASA selected the Juno mission in May 2005 under a New Frontiers Program Announcement of Opportunity (AO-03-OSS-03). The Juno mission will be launched in August 2011 and, after arriving at Jupiter in October 2016, will orbit Jupiter's poles while taking a multitude of measurements.

The Juno mission will further our understanding of planetary and solar system formation by studying the origin and evolution of Jupiter. Juno will probe Jupiter's interior structure, atmospheric composition and dynamics, and polar magnetosphere. Using a spinning, solar-powered spacecraft, Juno will make global maps of the gravity, magnetic fields, and atmospheric composition of Jupiter from a unique polar orbit with a close perijove. Juno will carry precise, high-sensitivity radiometers, magnetometers, and gravity science systems and its 30 science orbits will extensively sample Jupiter's full range of latitudes and longitudes. From its polar perspective, Juno will also combine in situ and remote sensing observations to explore the polar magnetosphere and determine what drives Jupiter's remarkable auroras.

Dr. Scott Bolton of the Southwest Research Institute in San Antonio, Texas, is the Juno Principal Investigator (PI). Dr. Bolton has assembled an international team of experts to develop the Juno instruments and to carry out the scientific investigations. The international Juno team includes participants from the United States, Italy, France, Belgium and Denmark. This Agreement will cover the Italian contributions to the Juno mission by ASI. These contributions involve the development of an infrared instrument, development of a Ka-band transponder for gravity science use, and participation in the Juno science investigations.

Giving consideration to an accompanying side letter of this same date, the purpose of this letter is to establish an Interim Letter of Agreement (LOA), hereinafter referred to as “the Agreement,” which will allow NASA and ASI, hereinafter referred to as “the Parties,” and their respective Related Entities to collaborate on the Juno project. In this framework NASA and ASI will also explore the possible areas for increasing the present level of collaboration for the Juno project. The Agreement defines the Parties’ responsibilities and the terms and conditions for the collaboration. The Parties’ planned cooperation will be further defined in a NASA/ASI Memorandum of Understanding (MOU) that will supersede this Interim Agreement, and will cover all the mission phases, including data analysis and scientific publications.

RESPONSIBILITIES – KA-BAND TRANSPONDER (KaT)

To implement this collaboration, NASA will use reasonable efforts to:

1. manage and conduct the Juno project throughout the life of the mission, including development, integration, test and launch of the Juno spacecraft;
2. provide overall program management for the Telecom Subsystem (including the KaT);
3. establish and maintain the mission design for the gravity science investigation, including requirements definition, development of the KaT specification, subsystem level verification plans, and overall mission requirements;
4. support the development of the ASI-provided KaT as outlined in Juno Document “D-37646, Roles and Responsibilities – Jovian Infrared Auroral Mapper and Ka-Band Translator Development”; and,
5. provide an opportunity for Italian participation in the Juno interior science working group (part of the Juno science team).

To implement this collaboration, ASI will use reasonable efforts to:

1. develop, test, calibrate, and deliver, in conjunction with its Related Entities, the KaT to NASA for integration into the Juno mission;
2. complete specific detailed duties and tasks as outlined in Juno Document “D-37646, Roles and Responsibilities – Jovian Infrared Auroral Mapper and Ka-Band Translator Development”;
3. provide suggestions to NASA and the Juno PI on a candidate name of an Italian scientist to participate in the Juno interior science working group; and,
4. provide high- and low-level data products consistent with the Juno science team data analysis and archiving plan through the ASI Science Data Center.

RESPONSIBILITIES – JOVIAN INFRARED AURORAL MAPPER (JIRAM)

To implement this collaboration, NASA will use reasonable efforts to:

1. manage and conduct the Juno project throughout the life of the mission, including development, integration, test, and launch of the Juno spacecraft;
2. support the development of the JIRAM instrument as outlined in Juno Document “D-37646, Roles and Responsibilities – Jovian Infrared Auroral Mapper and Ka-Band Translator Development”; and,
3. provide opportunities for participation in the Juno Atmosphere and Magnetosphere science working group(s) (part of the Juno science team).

To implement this collaboration, ASI will use reasonable efforts to:

1. develop, test, calibrate, and deliver, in conjunction with its Related Entities, the JIRAM instrument and support its operations throughout the life of the mission;
2. complete specific detailed duties and tasks as outlined in Juno Document “D-37646, Roles and Responsibilities – Jovian Infrared Auroral Mapper and Ka-Band Translator Development”;
3. provide suggestions to NASA and the Juno PI on a candidate name of an Italian scientist to participate in the Juno Atmosphere and Magnetosphere science working group(s); and,
4. provide high- and low-level data products consistent with the Juno science team data analysis and archiving plan through the ASI Science Data Center.

POINTS OF CONTACT

The NASA point-of-contact is:

Ms. Adriana Ocampo
 Science Mission Directorate
 NASA Headquarters
 Washington, DC 20546
 Telephone: 202-358-2152
 Facsimile: 202-358-3987
 E-Mail: adriana.c.ocampo@nasa.gov

The ASI point-of-contact is:

Dr. Enrico Flamini
Observation of the Universe
Italian Space Agency
Viale Liegi, 26
00198 Rome, Italy
Telephone: 39-06-8567-298
Facsimile: 39-06-8543-871
E-mail: enrico.flamini@asi.it

SHARING AND DISTRIBUTION OF SCIENTIFIC DATA

1. All release of Juno data by the Juno investigation teams, including the JIRAM and KaT science teams, shall comply with the policies for release of data and public information as stated in the NASA New Frontiers Program Data Management Plan and in the Juno Project Data Management Plan (PDMP), which will be approved by NASA. All scientific and ancillary Juno data records, including JIRAM and KaT data, shall be submitted to NASA's Planetary Data System (PDS) in accordance with PDS standards and policies on suitable data levels on the schedule in the Juno PDMP, but not to exceed the six-month period defined in paragraph 6.2 below.
2. Science data obtained by the JIRAM and KaT co-investigators shall be delivered to the Juno Science Operations Center (JSOC) as they are created for use by the Juno Science Team. Release of Juno science and ancillary data to the scientific community is accomplished when the products are delivered to the PDS. The archiving schedule in the PDMP shall not exceed six months for the Juno Science Investigation Teams to process, calibrate, and validate the data prior to delivery to the PDS. This validation period begins with the receipt by the JIRAM and KaT investigators of usable science data, ground-based and flight calibration data, and any associated Juno data in a form suitable for analysis.
3. Data to be submitted to the JSOC and, eventually, archived with the PDS include edited telemetry data (Committee on Data Management and Archive (CODMAC) Level 2 data), full resolution calibrated data (CODMAC Level 3), calibration documentation, and higher level products such as maps.
4. The Parties shall have the right to use the data (processed and unprocessed) at any time for support of their respective responsibilities to the mission.
5. The Parties and their investigators at any level, including co-investigators, collaborators, and other associated scientists, shall have full and immediate access to scientific data obtained by the Juno Project. The Parties shall work to ensure that all investigators have access to other telemetered science and engineering data relevant to the calibration/validation of the respective investigations.

6. Copies of all publications and reports detailing the scientific results of the Juno mission investigations shall be provided to the PDS, as well as the data modules on which they are based. The PDS shall, in turn, submit these publications and reports to NASA's National Space Science Data Center (NSSDC), where appropriate. Such publications and reports shall include a suitable acknowledgement of the services afforded by the contributions or the cooperation of each Party.

FINANCIAL ARRANGEMENTS

Each Party will bear the costs of discharging its respective responsibilities, including travel and subsistence of personnel and transportation of all equipment and other items for which it is responsible. Further, it is understood that the ability of the Parties to carry out their obligations is subject to the availability of appropriated funds. Should either Party encounter budgetary problems that may affect the activities to be carried out under this Agreement, the Party encountering the problems will notify and consult with the other Party as soon as possible.

TRANSFER OF GOODS AND TECHNICAL DATA

The Parties are obligated to transfer only those technical data (including software) and goods necessary to fulfill their respective responsibilities under this Agreement, in accordance with the following provisions, notwithstanding any other provision of this Agreement:

1. All activities of the Parties will be carried out in accordance with their national laws and regulations, including those relating to export control and the control of classified information.
2. The transfer of technical data for the purpose of discharging the Parties' responsibilities with regard to interface, integration, and safety shall normally be made without restriction, except as provided in paragraph 1 above.
3. All transfers of goods and proprietary or export-controlled technical data are subject to the following provisions. In the event a Party or its Related Entity (defined for the purpose of this clause as contractors, subcontractors, grantees, cooperating entities, or any lower tier contractor, subcontractor, grantee, or cooperating entities of a Party) finds it necessary to transfer goods or to transfer proprietary or export-controlled technical data, for which protection is to be maintained, such goods shall be specifically identified and such proprietary or export-controlled technical data shall be marked. The identification for goods and the marking on proprietary or export-controlled technical data will indicate that the goods and proprietary or export-controlled technical data shall be used by the receiving Party or Related Entities only for the purposes of fulfilling the receiving Party's or Related Entity's responsibilities under this Agreement, and that the identified goods and marked proprietary technical data or marked export-controlled technical data shall not be disclosed or retransferred to any other entity without the prior written permission of the furnishing Party or its Related Entity. The receiving Party or Related Entity shall abide by the terms of the notice and protect any such identified

goods and marked proprietary technical data or marked export-controlled technical data from unauthorized use and disclosure. The Parties to this Agreement will cause their Related Entities to be bound by the provisions of this clause related to use, disclosure, and retransfer of goods and marked technical data through contractual mechanisms or equivalent measures

4. All goods exchanged in the performance of this Agreement shall be used by the receiving Party or Related Entity exclusively for the purposes of the Agreement. Upon completion of the activities under the Agreement, the receiving Party or Related Entity shall return or, at the request of the furnishing Party or its Related Entity, otherwise dispose of all goods and marked proprietary technical data or marked export-controlled technical data provided under this Agreement, as directed by the furnishing Party or Related Entity.

INTELLECTUAL PROPERTY

1. For the purposes of this clause, "Related Entity" includes but is not limited to contractors, subcontractors, grantees, or cooperating entities (or any lower tier contractor, subcontractor, grantee, or cooperating entities) of a Party.
2.
 - a. Nothing in this Agreement shall be construed as granting, either expressly or by implication, to the other Party any rights to, or interest in, any inventions or works of a Party or its Related Entities made prior to the entry into force of, or outside the scope of, this Agreement, including any patents (or similar forms of protection in any country) corresponding to such inventions or any copyrights corresponding to such works.
 - b. Any rights to, or interest in, any invention or work made in the performance of this Agreement solely by one Party or any of its Related Entities, including any patents (or similar forms of protection in any country) corresponding to such invention or any copyright corresponding to such work, shall be owned by such Party or Related Entity. Allocation of rights to, or interest in, such invention or work between such Party and its Related Entities shall be determined by applicable laws, rules, regulations, and contractual obligations.
 - c. It is not anticipated that there will be any joint inventions made in the performance of this Agreement. Nevertheless, in the event that an invention is jointly made by the Parties in the performance of this Agreement, the Parties shall, in good faith, consult and agree within 30 calendar days as to: i) the allocation of rights to, or interest in, such joint invention, including any patents (or similar forms of protection in any country) corresponding to such joint invention; ii) the responsibilities, costs, and actions to be taken to establish and maintain patents (or similar forms of protection in any country) for each such joint invention; and iii) the terms and conditions of any license or other rights to be exchanged between the Parties or granted by one Party to the other Party.

- d. For any work jointly authored by the Parties, should the Parties decide to register the copyright in such work, they shall in good faith consult and agree as to the responsibilities, costs, and actions to be taken to register copyrights and maintain copyright protection (in any country).
- e. Subject to the provisions of Transfer of Goods and Technical Data and Release of Results and Public Information clauses of this Agreement, each Party shall have an irrevocable royalty-free right to reproduce, prepare derivative works, distribute, and present publicly, and authorize others to do so on its behalf, any copyrighted work resulting from activities undertaken in the performance of this Agreement for its own purposes, regardless of whether the work was created solely by, or on behalf of, the other Party or jointly with the other Party.

LIABILITY AND RISK OF LOSS

The Parties agree that a comprehensive cross-waiver of liability between the Parties and their Related Entities will further the objectives of the Juno mission. The cross-waiver of liability will be broadly construed to achieve this objective. The terms of the waiver are set out below.

1. Each Party agrees to a cross-waiver of liability pursuant to which each Party waives all claims against the other Party, the other Party's Related Entities, employees of the other Party, or employees of the other Party's Related Entities, based on damage arising out of Protected Space Operations. This cross-waiver shall apply only if the person, entity, or property causing the damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations. The cross waiver shall apply to any claims for damage, whatever the legal basis for such claims, except for claims for damage caused by willful misconduct.
2. Each Party shall extend the cross-waiver of liability to its own Related Entities by requiring them, by contract or otherwise, to agree to waive all claims, and require that their Related Entities waive all claims, against the other Party, the other Party's Related Entities, and employees of the other Party or its Related Entities, based on damage arising out of Protected Space Operations.
3. Notwithstanding the other provisions of this Article, this cross-waiver of liability will not be applicable to:
 - a. claims between a Party and its own Related Entity or among its own Related Entities;
 - b. claims made by a natural person, his/her estate, survivors or subrogees (except when a subrogee is a Party to this Agreement or is otherwise bound by the terms of this cross-waiver) for bodily injury, other impairment of health, or death of such natural person; or
 - c. intellectual property claims.

4. This cross-waiver of liability shall not apply to the performance of the Parties' obligations under this Agreement.
5. Nothing in this clause will be construed to create the basis for a claim or suit where none would otherwise exist.
6. In the event of third-party claims which may arise out of, inter alia, the Liability Convention, the Parties shall consult promptly on any potential liability, on any apportionment of such liability, and on the defense of such claim.

CUSTOMS, TAXES, AND IMMIGRATION

In accordance with its laws and regulations, each Party shall facilitate free customs clearance and waiver of all applicable customs duties and taxes for equipment and related goods necessary for the implementation of this Agreement. In the event that any customs duties or taxes of any kind are nonetheless levied on such equipment and related goods, such customs duties or taxes shall be borne by the Party of the country levying such customs duties or taxes. The Parties' obligation to facilitate duty-free entry and exit of equipment and related goods is fully reciprocal. Each of the Parties shall facilitate the movement of persons and goods necessary to comply with this agreement into and out of its territory, subject to its laws and regulations.

OWNERSHIP OF EQUIPMENT

Should any equipment be provided by ASI pursuant to this Agreement, it will remain the property of ASI. Should any equipment be provided by NASA pursuant to this Agreement, it will remain the property of NASA. Each Party agrees to return any of the other Party's equipment in its possession to the other Party at the conclusion of the project.

RELEASE OF RESULTS AND PUBLIC INFORMATION

1. The Parties retain the right to release public information regarding their own activities under this Agreement. The Parties shall coordinate with each other in advance concerning releasing to the public information that relates to the other Party's responsibilities or performance under this Agreement. As appropriate, full acknowledgement will be made by both Parties of the role of the other Party in the Juno mission.
2. The Parties shall make the final results obtained from the Juno mission available to the general scientific community through publication in appropriate journals or by presentations at scientific conferences as soon as possible and in a manner consistent with good scientific practices.
3. The Parties acknowledge that the following data or information does not constitute public information and that such data or information shall not be included in any

publication or presentation by a Party under this clause without the other Party's prior written permission:

- a. data furnished by the other Party in accordance with the Transfer of Goods and Technical Data clause of this Agreement which is export-controlled, classified or proprietary; or
- b. information about an invention of the other Party before an application for a patent (or similar form of protection in any country) corresponding to such invention has been filed covering the same, or a decision not to file has been made.

CONSULTATIONS/SETTLEMENT OF DISPUTES

The Parties agree to consult promptly on any matter arising out of this Agreement. Any issue concerning the interpretation or implementation of the terms of this Agreement will first be referred to the points of contact named above for the Parties. If they are unable to come to agreement on any issue, then the dispute will be referred to the NASA Associate Administrator for Science Mission Directorate and the ASI Director of the Observation of the Universe, or their designees; and if unresolved at this level, to the NASA Administrator and ASI President, or their designated representatives, for joint resolution.

MISHAP INVESTIGATION

In the case of a mishap or mission failure, the Parties agree to provide assistance to each other in the conduct of any investigation, bearing in mind, in particular, the provisions of the Transfer of Goods and Technical Data clause. In the case of activities which might result in the death of or serious injury to persons, or substantial loss of or damage to property as a result of activities under this Agreement, the Parties agree to establish a process for investigating each such mishap as part of their program/project implementation agreements.

REGISTRATION OF SPACE OBJECTS

NASA shall request that the Government of the United States register the Juno spacecraft as a space object in accordance with the 1975 Convention on the Registration of Objects Launched into Outer Space (the Registration Convention). Exercise of jurisdiction and control over the spacecraft shall be subject to the relevant provisions of this Agreement. Registration pursuant to this paragraph shall not affect the rights or obligations of either Party or its Government under the Liability Convention.

CHOICE OF LAW

The Parties hereby designate the U.S. Federal law to govern this Agreement for all purposes.

ENTRY INTO FORCE AND TERMINATION

This Agreement will enter into force upon the date of ASI's affirmative reply and will remain in force for a period of four years. The Agreement may be amended or extended at any time by mutual written agreement of the Parties and may be terminated by either Party after at least three months advance written notification of intent to terminate. The obligations of the Parties set forth in this Agreement concerning Liability and Risk of Loss; Intellectual Property; Transfer of Goods and Technical Data; and Customs, Taxes and Immigration, shall continue to apply after the expiration or termination of this Agreement. In the event of termination, the Parties shall endeavor to minimize the negative impacts of any such termination on the other Party.

With consideration to the accompanying side letter of the same date, if the above terms and conditions are acceptable to ASI, I propose that this letter, together with your affirmative reply, document our agreement as to the implementation of this cooperative effort.

Sincerely,



Michael F. O'Brien
Assistant Administrator
for External Relations