

DEPARTMENT OF STATE

WASHINGTON

July 12, 2002

Excellency:

I have the honor to refer to the recent discussions between representatives of the Government of the United States of America and of the Government of Japan concerning the terms and conditions whereby cooperation on the Second Balloon-Borne Superconducting Magnet Spectrometer Program (hereinafter referred to as "the Program") will be undertaken between the two Governments.

In consideration of the continuing mutually beneficial relationship between the two Governments in the field of peaceful exploration and use of outer space; taking into account the Agreement between the Government of the United States of America and the Government of Japan on Cooperation in Research and Development in Science and Technology, signed at Toronto, on June 20, 1988, as extended and amended; and reaffirming that the provisions of the Agreement between the Government of the United States of America and the Government of Japan Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, signed at Washington, on April 24, 1995, and the Exchange

of Notes of the same date between the two Governments concerning subrogated claims shall apply to the Program, I have the further honor to propose on behalf of the Government of the United States of America the following arrangements:

1. Cooperation on the Program will be executed for the Government of the United States of America by the National Aeronautics and Space Administration (hereinafter referred to as "NASA") and for the Government of Japan by the Institute of Space and Astronautical Science (hereinafter referred to as "ISAS").

2. With a view to setting forth detailed terms and conditions for cooperation on the Program, NASA and ISAS will conclude implementing arrangements (Memorandum of Understanding, hereinafter referred to as "the MOU"), providing, inter alia, that NASA and ISAS will jointly undertake a scientific investigation of cosmic rays by NASA's launch by balloon of a superconducting magnet spectrometer to be provided by ISAS.

3. The provisions of the present arrangements and the MOU shall be implemented in accordance with the laws and regulations in force in each country. Activities under the present arrangements and the MOU shall be subject to the availability of appropriated funds.

4. NASA and ISAS shall consult with each other regarding any matter that may arise from or in connection with the cooperation on the Program. If the matter cannot be resolved through such consultations, consultations between the Government of the United States of America

and the Government of Japan shall be held through diplomatic channels with a view to finding a mutually acceptable solution.

5. The present arrangements shall remain in force for a period of ten years, unless terminated by either Government upon six months' written notice of its intention to terminate them through diplomatic channels. The present arrangements may be extended or amended by mutual written agreement of the two Governments.

I have the further honor to propose that, if the foregoing arrangements are acceptable to the Government of Japan, this Note and Your Excellency's Note in reply shall constitute an agreement between the two Governments, which will enter into force on the date of Your Excellency's reply.

Accept, Excellency, the renewed assurances of my highest consideration.

For the Secretary of State:

A handwritten signature in cursive script, reading "John F. Sumner". The signature is written in dark ink and is positioned below the typed name "John F. Sumner".



EMBASSY OF JAPAN
WASHINGTON, D. C.

July 12, 2002

Excellency:

I have the honor to acknowledge the receipt of Your Excellency's Note of today's date, which reads as follows:

"I have the honor to refer to the recent discussions between representatives of the Government of the United States of America and of the Government of Japan concerning the terms and conditions whereby cooperation on the Second Balloon-Borne Superconducting Magnet Spectrometer Program (hereinafter referred to as "the Program") will be undertaken between the two Governments.

In consideration of the continuing mutually beneficial relationship between the two Governments in the field of peaceful exploration and use of outer space; taking into account the Agreement between the Government of the United States of America and the Government of Japan on Cooperation in Research and Development in Science and Technology, signed at Toronto, on June 20, 1988, as extended and amended; and reaffirming that the provisions of the Agreement between the Government of the United States of America and the Government of Japan Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, signed at Washington, on April 24,

1995, and the Exchange of Notes of the same date between the two Governments concerning subrogated claims shall apply to the Program, I have the further honor to propose on behalf of the Government of the United States of America the following arrangements:

1. Cooperation on the Program will be executed for the Government of the United States of America by the National Aeronautics and Space Administration (hereinafter referred to as "NASA") and for the Government of Japan by the Institute of Space and Astronautical Science (hereinafter referred to as "ISAS").
2. With a view to setting forth detailed terms and conditions for cooperation on the Program, NASA and ISAS will conclude implementing arrangements (Memorandum of Understanding, hereinafter referred to as "the MOU"), providing, inter alia, that NASA and ISAS will jointly undertake a scientific investigation of cosmic rays by NASA's launch by balloon of a superconducting magnet spectrometer to be provided by ISAS.
3. The provisions of the present arrangements and the MOU shall be implemented in accordance with the laws and regulations in force in each country. Activities under the present arrangements and the MOU shall be subject to the availability of appropriated funds.

4. NASA and ISAS shall consult with each other regarding any matter that may arise from or in connection with the cooperation on the Program. If the matter cannot be resolved through such consultations, consultations between the Government of the United States of America and the Government of Japan shall be held through diplomatic channels with a view to finding a mutually acceptable solution.

5. The present arrangements shall remain in force for a period of ten years, unless terminated by either Government upon six months' written notice of its intention to terminate them through diplomatic channels. The present arrangements may be extended or amended by mutual written agreement of the two Governments.

I have the further honor to propose that, if the foregoing arrangements are acceptable to the Government of Japan, this Note and Your Excellency's Note in reply shall constitute an agreement between the two Governments, which will enter into force on the date of Your Excellency's reply."

I have the further honor to confirm on behalf of the Government of Japan that the foregoing arrangements are acceptable to the Government of Japan and to agree that Your Excellency's Note and this Note in reply shall constitute an agreement between the two Governments, which will enter into force on the date of this reply.

Accept, Excellency, the renewed assurances of my highest
consideration.

For the Ambassador Extraordinary
and Plenipotentiary of Japan

A handwritten signature in black ink, appearing to read "J. Tomoda", with a long horizontal flourish extending to the right.

His Excellency
Colin L. Powell
The Secretary of State

**IMPLEMENTING ARRANGEMENT
(MEMORANDUM OF UNDERSTANDING)
BETWEEN THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
OF THE UNITED STATES OF AMERICA
AND THE
INSTITUTE OF SPACE AND ASTRONAUTICAL SCIENCE
OF THE MINISTRY OF EDUCATION,
CULTURE, SPORTS, SCIENCE AND TECHNOLOGY OF JAPAN
FOR COOPERATION FOR A SECOND
BALLOON-BORNE SUPERCONDUCTING MAGNET SPECTROMETER**

Table of Contents

	Preamble	3-4
Article 1	Scope of Activities	4-5
Article 2	Responsibilities of NASA	5
Article 3	Responsibilities of ISAS	5
Article 4	Program Coordination	5
Article 5	Exchange of Technical Data and Goods	5 - 6
Article 6	Intellectual Property Rights	6
Article 7	Rights and Distribution of Experiment Derived Data	7
Article 8	Financial Arrangements	7
Article 9	Customs, Entry and Temporary Residence, and Overflight	7-8
Article 10	Public Information	8
Article 11	Allocation of Risks	8 - 11
Article 12	Mishap Investigations	11
Article 13	Ownership of Equipment	11
Article 14	Effect on Other Arrangements	11
Article 15	Amendments	12
Article 16	Entry into Force and Duration	12
Article 17	Termination	12

PREAMBLE

The National Aeronautics and Space Administration (NASA) of the United States of America and the Institute of Space and Astronautical Science (ISAS) of the Ministry of Education, Culture, Sports, Science and Technology of Japan (hereinafter referred to as "the Parties"), pursuant to paragraph 2 of the Exchange of Notes between the Government of the United States of America and the Government of Japan of July 12, 2002, concerning cooperation on a *Second Balloon-borne Superconducting Magnet Spectrometer* (hereinafter referred to as the "Exchange of Notes");

With a view to setting forth detailed terms and conditions for cooperation on a Second Balloon-borne Superconducting Magnet Spectrometer Program;

Recognizing the desire to extend mutually beneficial cooperation established in previous joint space research projects;

Affirming their mutual interest in cooperative scientific investigation of cosmic rays using a balloon-borne superconducting magnet spectrometer;

Recognizing the previous cooperation of both Parties in the area of cooperative scientific research requiring NASA balloon launches and associated activities;

Recognizing the success of their cooperation under the Implementing Arrangement (Memorandum of Understanding) for Cooperation for a Balloon-Borne Superconducting Magnet Spectrometer of August 1, 1996;

Recognizing the mutual benefit to be derived from working together for the peaceful use of space for the welfare of all humankind;

Considering the respective interests of the Parties in the potential for commercial applications of space technologies for the benefit of the peoples of both countries;

Recognizing the value to international political harmony of combining efforts for the efficient exploration of outer space;

Recognizing their efforts as members of the Missile Technology Control Regime (MTCR);

Recognizing that for the purposes of this cooperative effort, the Goddard Space Flight Center and the University of Maryland are related entities of NASA;

Recognizing for the purposes of this cooperative effort, the University of Tokyo, High Energy Accelerator Research Organization (KEK), and Kobe University are related entities of ISAS;

Recognizing for the purposes of this cooperative effort, the Agreement between the Government of the United States of America and the Government of Japan Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, done at Washington on April 24, 1995, and the Exchange of Notes of the same date between the Government of the United States of America and the Government of Japan concerning subrogated claims;

Recognizing for the purposes of this cooperative effort, the Agreed Minutes Concerning the Agreement between the Government of the United States of America and the Government of Japan Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, done at Washington on December 8, 2000;

Have agreed as follows:

ARTICLE 1

SCOPE OF ACTIVITIES

The highest priority science investigations for the high-energy cosmic ray physics and astrophysics discipline include investigations that require the exposure of magnet spectrometers to the space environment. In order to meet this priority, a thin solenoid magnet and a real-time particle detector system for Balloon-Borne Experiments with a Superconducting Magnet Spectrometer (hereinafter referred to as "BESS") has been developed by U.S. and Japanese scientists. During the U.S.-Japan BESS collaboration from 1993 to 2001, seven flights were successfully conducted, yielding significant scientific results such as the first definitive detection of mass-resolved cosmic antiprotons and the first measurement of the antiproton flux at low energies.

The primary purpose of this Implementing Arrangement (Memorandum of Understanding) is to provide continued support for the cooperative U.S.-Japan program to fly BESS experiments using NASA's stratospheric research balloon launch, tracking, and recovery capability. It is envisioned that this cooperative program will continue to produce significant scientific results that will complement the exposure of magnet spectrometers in space. The primary scientific objectives of this cooperative program are to search for anti-nuclei and make precise measurements of antiprotons and other components of cosmic rays in an energy range not accessible in the International Space Station orbit. The search for antimatter should shed light on the matter/antimatter asymmetry of the universe, and it might provide insight into the nature of dark matter. A second major scientific objective of the BESS program is to measure the spectra of protons and helium and their isotopes over a large fraction of the solar cycle, at least several years prior to and several years following the solar magnetic field reversal. The relative flux of particles of different charge signs before and after the solar magnetic field reversal constrains models of solar modulation and propagation of charged particles in the heliosphere. Comparison of BESS data with measurements by the Voyager

spacecraft in the outer heliosphere will help determine the local interstellar cosmic-ray spectra outside the solar system.

ARTICLE 2

RESPONSIBILITIES OF NASA

To carry out this program, NASA will:

Provide directly or through its related entities support for hardware upgrades to the BESS scientific instrument and subsequent data analysis. NASA will also continue to provide support for balloons, balloon launch, operations, ground support, and payload recovery accompanied with balloon campaigns for approximately one flight opportunity per 1 - 2 years for conventional flights or one flight opportunity per 2 - 3 years for long-duration flights.

ARTICLE 3

RESPONSIBILITIES OF ISAS

To carry out this program, ISAS will:

Provide through its related entities, which will include the University of Tokyo, High Energy Accelerator Research Organization (KEK), and Kobe University, the BESS core scientific instrument, and hardware upgrades of the instrument and subsequent data analysis. ISAS will also provide support for consumables required to carry out balloon exposures of the upgraded instrument.

ARTICLE 4

PROGRAM COORDINATION

The U.S. and Japanese science teams will work together to determine the specific science objectives for each flight. The science teams will also work together to determine the preferred locations for balloon staging and launches.

ARTICLE 5

EXCHANGE OF TECHNICAL DATA AND GOODS

Under this Implementing Arrangement (Memorandum of Understanding), the Parties shall be obligated to transfer only those technical data (including software) and goods necessary to fulfill their respective responsibilities under this Implementing Arrangement (Memorandum of Understanding), in accordance with the following provisions:

- a) The transfer of technical data for discharging the Parties' responsibilities with regard to interface, integration, and safety shall normally be made without restriction, except as required by national laws and regulations relating to export control or the control of classified data. If design, manufacturing, and processing data and associated software, which are proprietary but not export controlled, are necessary for interface, integration, or safety purposes, the transfer shall be made and the data and associated software shall be appropriately marked. Nothing in this Article requires the Parties or their related entities to transfer goods or technical data contrary to national laws and regulations relating to export control or control of classified data.
- b) All transfers of proprietary technical data and export-controlled goods and technical data are subject to the following provisions. In the event that a Party finds it necessary to transfer goods, which are subject to export control or technical data, which is proprietary or subject to export controls, and for which protection is to be maintained, such goods shall be specifically identified as such. For the purposes of fulfilling the receiving Party's program responsibilities under this Implementing Arrangement (Memorandum of Understanding), all technical data shall be marked with a notice to indicate its use, and be disclosed by the receiving Party and its related entities (e.g., contractors and subcontractors). The identified goods and marked technical data shall not be disclosed or re-transferred to any other entity without the prior written permission of the furnishing Party. The receiving Party shall abide by the terms of the notice, and protect any such identified goods and marked technical data from unauthorized use and disclosure. The receiving Party also agrees to obtain these same obligations from its related entities prior to the transfer. Nothing in this Article requires the Parties to transfer goods or technical data contrary to national laws and regulations relating to export control or control of classified data.
- c) All goods, marked proprietary data, and marked or unmarked technical data subject to export control, which are transferred under the programs implemented by this Implementing Arrangement (Memorandum of Understanding), shall be used by the receiving Party exclusively for the purposes of the programs implemented by this Implementing Arrangement (Memorandum of Understanding).

ARTICLE 6

INTELLECTUAL PROPERTY RIGHTS

Nothing in this Implementing Arrangement (Memorandum of Understanding) shall be construed as granting or implying any rights to, or interest in, patents or inventions of the Parties, institutions acting on their behalf, or their contractors or subcontractors for activities conducted under this Implementing Arrangement (Memorandum of Understanding).

ARTICLE 7

RIGHTS AND DISTRIBUTION OF EXPERIMENT DERIVED DATA

Data from all flights will be transferred to the ISAS and NASA data centers as designated in the project implementation plans. These implementation plans will determine access to the data prior to its being made available for distribution to the wider scientific community. Data from all flights will be made available to the scientific community for investigations within approximately 1-year after the flight of the scientific balloons.

Results of the experiments will be made available through publication in the appropriate journals or other established channels as soon as practical and consistent with good scientific practice. In the event such reports or publications are copyrighted, ISAS and NASA shall have a royalty-free right under the copyright to reproduce, distribute, and use such copyrighted work for their own purposes.

ARTICLE 8

FINANCIAL ARRANGEMENTS

1. The Parties shall be responsible for funding their respective activities, under this Implementing Arrangement (Memorandum of Understanding). Obligations under this Implementing Arrangement (Memorandum of Understanding) shall be subject to the availability of appropriated funds.

2. All activities under this Implementing Arrangement (Memorandum of Understanding) shall be conducted in a manner consistent with the respective national laws and regulations of each country.

ARTICLE 9

CUSTOMS, ENTRY AND TEMPORARY RESIDENCE, AND OVERFLIGHT

1. In accordance with the laws and regulations of each country, each Party shall arrange free customs clearance and waiver of all applicable duties and taxes for equipment and related goods necessary for the implementation of this Implementing Arrangement (Memorandum of Understanding). In the event that any customs fees or taxes of any kind are nonetheless levied on such equipment and related goods, such customs fees or taxes shall be borne by the Party levying such fees or taxes. The Parties' obligation to ensure duty-free entry is reciprocal.

2. In accordance with the laws and regulations of each country, each Party shall facilitate the provision of the appropriate entry and residence documentation for the other Party's nationals who enter, exit and reside within its territory in order to carry out activities under this Implementing Arrangement (Memorandum of Understanding).

3. In accordance with the laws and regulations of each country, each Party shall facilitate the provision of aircraft over-flight clearances as necessary in order to carry out activities under this Implementing Arrangement (Memorandum of Understanding).

These arrangements shall be implemented on a reciprocal basis.

ARTICLE 10

PUBLIC INFORMATION

The Parties may release public information regarding their respective efforts in connection with this project. However, ISAS and NASA each agree to coordinate in advance, any public information or activities, which relate to the other Party's responsibilities or performance. Information that has been cleared previously, and has not changed in content, will not require re-coordination.

ARTICLE 11

ALLOCATION OF RISKS

1. It is confirmed that the Agreement between the Government of Japan and the Government of the United States of America Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes of April 24, 1995, the Exchange of Notes of the same date between the Government of Japan and the Government of the United States of America concerning subrogated claims, and the Agreed Minutes Concerning the Agreement between the Government of the United States of America and the Government of Japan Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, will apply to activities under this Implementing Arrangement (Memorandum of Understanding).

2. The relevant text of Article 3 of the Cross-Waiver Agreement as applied to the Parties of this Implementing Arrangement (Memorandum of Understanding) provides as follows:

1. For the purposes of this Article:

(a) A "Party" includes the Government of the United States of America, the Government of Japan, and their agencies. It also includes those institutions established under the laws and regulations of the United States of America or of Japan for the implementation of the space development programs of the respective countries and other entities, which may be designated in the Annex, with respect to each specific joint activity for which they are designated.

(b) The term "related entity" means:

(1) a contractor or subcontractor of a Party at any tier;

- (2) a user or customer of a Party at any tier; or
- (3) a contractor or subcontractor of a user or customer of a Party at any tier.

The term "related entity" may also include another State or an agency or institution of another State, where such State, agency or institution is an entity as described in (1) through (3) above or is otherwise involved in a joint activity listed in the Annex.

The terms "contractors" and "subcontractors" include suppliers of any kind.

(c) The term "damage" means:

- (1) bodily injury to, or other impairment of health of, or death of, any person;
- (2) damage to, loss of, or loss of use of any property;
- (3) loss of revenue or profits; or
- (4) other direct, indirect, or consequential damage.

(d) The term "launch vehicles" means an object or any part thereof intended for launch, launched from Earth, or returning to Earth which carries payloads or persons, or both.

(e) The term "payload" means all property to be flown or used on or in a launch vehicle.

(f) The term "Protected Space Operations" means all activities pursuant to the joint activities listed in the Annex, including launch vehicle activities and payload activities on Earth, in outer space, or in transit between Earth and outer space. It includes, but is not limited to:

- (1) research, design, development, test, manufacture, assembly, integration, operation, or use of launch or transfer vehicles, payloads, or instruments, as well as related support equipment and facilities and services;
- (2) all activities related to ground support, test, training, simulation, or guidance and control equipment and related facilities or services.

The term "Protected Space Operations" excludes activities on Earth which are conducted on return from space to develop further a payload's product, or process for use other than for the joint activity in question.

- 2. (a) Each Party agrees to a cross-waiver of liability pursuant to which each Party waives all claims against any of the entities or persons listed in sub-paragraphs (1) through (3) below 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, including but not limited to delict and tort (including negligence of every degree and kind) and contract, against:

- (1) the other Party;
- (2) a related entity of the other Party;
- (3) the employees of any of the entities identified in sub-paragraphs (1) and (2) above.

(b) In addition, each Party shall extend the cross-waiver of liability as set forth in sub-paragraph 2(a) above to its own related entities by requiring them, by contract or otherwise, to agree to waive all claims against the entities or persons identified in sub-paragraphs (2)(a)(1) through (2)(a)(3) above.

(c) This cross-waiver of liability shall be applicable to liability arising from the Convention on International Liability for Damage Caused by Space Objects, done at the cities of Washington, London and Moscow, on March 29, 1972, where 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.

(d) Notwithstanding the other provisions of this Article, this cross-waiver of liability shall not be applicable to:

- (1) claims between a Party and its own related entity or between its own related entities;
- (2) claims made by a natural person, his/her estate, survivors, or subrogees for bodily injury, other impairment of health or death of such natural person;
- (3) claims for damage caused by willful misconduct;
- (4) intellectual property claims;
- (5) claims for damage resulting from a failure of the Parties to extend the cross-waiver of liability as set forth in sub-paragraph 2(b) or from a failure of the Parties to ensure that their related entities extend the cross-waiver of liability as set forth in sub-paragraph 2(b); or
- (6) contract claims between the Parties based on the express contractual provisions.

(e) Nothing in this Article shall be construed to create the basis for a claim or suit where none would otherwise exist.

3. ISAS confirms that the Japan-based Society for Promotion of Space Science will buy insurance coverage to hold harmless NASA and its related entities against liability arising

from subrogated claims against such entities made by the Government of Japan, as a subrogee based on damage arising out of Protected Space Operations.

4. NASA waives all claims of the Government of the United States of America, including subrogated claims, against the Government of Japan, ISAS, and ISAS's related entities based on damage arising out of Protected Space Operations.

ARTICLE 12

MISHAP INVESTIGATIONS

In the case of a mishap or mission failure, the Parties agree to provide assistance to each other in the conduct of any investigation. In the case of activities, which may 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 Implementing Arrangement (Memorandum of Understanding), the Parties agree to establish a process for investigating each such mishap as part of their program/project implementation.

ARTICLE 13

OWNERSHIP OF EQUIPMENT

Equipment provided by NASA pursuant to this Implementing Arrangement (Memorandum of Understanding) shall remain the property of the Government of the United States. Equipment provided by ISAS pursuant to this Implementing Arrangement (Memorandum of Understanding) shall remain the property of the Government of Japan.

ARTICLE 14

EFFECT ON OTHER ARRANGEMENTS

This Implementing Arrangement (Memorandum of Understanding) shall not prejudice other arrangements regarding matters outside or within the scope of this Implementing Arrangement (Memorandum of Understanding) which the Parties concluded or may conclude as mutually agreed. This Implementing Arrangement (Memorandum of Understanding) shall furthermore not prejudice the cooperation of either Party with other States and international organizations.

ARTICLE 15

AMENDMENTS

This Implementing Arrangement (Memorandum of Understanding) may be amended by mutual written agreement of the Parties.

ARTICLE 16

ENTRY INTO FORCE AND DURATION

This Implementing Arrangement (Memorandum of Understanding) shall enter into force upon the date of signature by the Parties and shall remain in force for ten (10) years, and may be extended by mutual written agreement of the Parties, provided that the Exchange of Notes remains in force.

ARTICLE 17

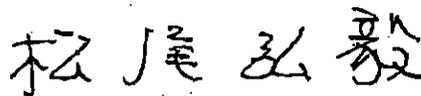
TERMINATION

Either Party may terminate this Implementing Arrangement (Memorandum of Understanding) at any time after providing the other Party with 6 months' advance written notice of its intent. The obligations of the Parties set forth in the provisions in Article 5 - Exchange of Technical Data and Goods; Article 6 - Intellectual Property Rights; Article 9 - Customs, Entry and Temporary Residence, and Overflight; and Article 11 - Allocation of Risks shall continue to apply after the expiration or termination of this Implementing Arrangement (Memorandum of Understanding).

Upon entry into force, the Implementing Arrangement (Memorandum of Understanding) for Cooperation for a Balloon-Borne Superconducting Magnet Spectrometer of August 1, 1996, shall terminate.



FOR THE NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION OF
THE UNITED STATES OF AMERICA:



FOR THE INSTITUTE OF SPACE AND
ASTRONAUTICAL SCIENCE OF
THE MINISTRY OF EDUCATION,
CULTURE, SPORTS, SCIENCE AND
TECHNOLOGY OF JAPAN:

July 12, 2002
Date

July 15, 2002
Date