

AGREEMENT CONCERNING ENTRUSTMENT OF RESEARCH

Universidad de Chile, Observatorio Cerro Calan having its principal office at Camino del Observatorio 1515 Las Condes, Santiago, CHILE (hereinafter referred to as "UNIVERSITY") and **Japan Science and Technology Agency**, 4-1-8, Honcho Kawaguchi-shi, Saitama 332-0012, Japan (hereinafter referred to as "JST") hereby enter into this Agreement (hereinafter referred to as the "Agreement") on the date of May 9, 2005 with respect to the entrustment to UNIVERSITY of part of the research concerning the "Development of a portable superconductive radiometer for remote sensing observations of atmospheric minor constituents" ,which is the theme of the research of JST's SORST Research Project, and the acceptance of such entrustment by UNIVERSITY as follows:

Article 1. (Entrustment of Research)

1. JST agrees to entrust the research shown in Exhibit 1 (hereinafter referred to as the "Research") to UNIVERSITY, and UNIVERSITY agrees to accept such entrustment and conduct the Research.
2. UNIVERSITY shall conduct the Research under the supervision of the research director designated by JST and shall provide buildings, facilities and equipment for the Research. The research director shall be Dr. Yasuo Fukui, who is Professor of Nagoya UNIVERSITY, or any other person designated by JST.

Article 2. (Term)

The term shall be from May 9, 2005 until March 31, 2006, and may be extended thereafter until the limit of September 30, 2007 at the option of JST.

Article 3. (Implementation of Research)

1. Researchers who will participate in the Research by the instruction of UNIVERSITY shall be listed in Exhibit 2. When deemed necessary for the performance of the Research in the judgement of the research director, UNIVERSITY may cause researchers other than the researchers listed in Exhibit 2 to participate in the Research at the request of the research director.

2. In the event that UNIVERSITY intends to add or change the researchers pursuant to the preceding paragraph, UNIVERSITY shall notify JST to that effect.

3. In the event that it becomes necessary for the performance of the Research in the judgement of the research director, JST may dispatch JST's researchers to UNIVERSITY's place of implementation of the Research and cause them to participate in the Research at the request of the research director. The expenses incidental to such researchers' business trip to Chile shall be borne by JST.

4. In the event that it becomes necessary for the performance of the Research in the judgement of the research director, UNIVERSITY's researchers may make a business trip to Japan at the request of the research director. The expenses incidental to such researchers' business trip to Japan shall be borne by JST in accordance with the traveling expense rules for JST employees, and the clerical procedures shall be determined upon consultation between JST and UNIVERSITY.

Article 4. (Entrusted Research Expenses)

1. The total amount of the entrusted research expenses to be paid to UNIVERSITY under this Agreement shall be limited to Japanese yen 4.5 Million (¥4,500,000.-) in the fiscal year 2005 ending 31 March 2006.

2. The entrusted research expenses shall be paid within thirty (30) days from the acceptance of the invoice, by transfer to the bank account held by UNIVERSITY under the account name of Universidad de Chile at Bank of Chile, Santiago, Chile with the account number of 5000-77486-08. The following detailed information should be used for the bank transfer:



Bank: Banco de Chile

Address: Ahumada No 251 – Santiago de Chile

Swift: BCHICLRM

ABA : 26005652

Beneficiary : Universidad de Chile

Account number : 5000-77486-08

Reference : Rolando Nuñez, Tesorero. Facultad de Ciencias Físicas y Matemáticas.

3. The payments shall be made in Japanese yen.

Article 5. (Disbursements)

1. The entrusted research expenses shall be the personnel expenses of UNIVERSITY 's researchers, research equipment, research materials, expenses for consumables, traveling expenses, communication expenses and general administrative expenses whose specifications shall be indicated in Exhibit 3.

2. When UNIVERSITY intend to make payment for items other than those set forth in the preceding paragraph, UNIVERSITY shall obtain the prior approval of JST or the research director.

Article 6. (Accounting Report and Settlement of Accounts)

1. UNIVERSITY shall keep records of the amount, payment date, payee and contents of disbursement of all the expenses in order to clarify the accounting of this Agreement.

2. JST may inspect such records for the purpose of confirmation, and UNIVERSITY shall make such records available for JST's inspection within a

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reasonable scope at the request of JST. The expenses necessary for the inspection shall be borne by JST.

3. UNIVERSITY shall submit the accounting reports of 2005 fiscal year (from the day of the commencement of this Agreement until March 31, 2006) in the form prescribed in Exhibit 4 by April 30, 2006 pursuant to Exhibit 4.

4. In the event that the entrusted research expenses paid by JST under Article 4 hereof exceed the amount actually paid for the Research as shown in the account report under Article 6.3, UNIVERSITY shall promptly return the remaining amount, if any, to JST. The payment to JST under this paragraph shall be made in Japanese yen by telegraphic transfer to the bank account designated by JST within thirty (30) days from the submission of the accounting reports. The provisions of this paragraph shall survive the termination or cancellation of this Agreement.

Article 7. (Equipment)

1. JST may procure the equipment and materials, which become newly necessary for the performance of the Research and which JST deems necessary, at the request of the research director and bring them into the place of implementation of the Research in Chile, or may request UNIVERSITY to procure them. JST may request UNIVERSITY to maintain and administer them.

2. The ownership of the equipment and materials which were brought in or procured by JST under the preceding paragraph shall belong to JST. JST may take such equipment, etc. back to Japan, if JST so desires, at JST's expense.

3. JST may cause JST's employees or the person designated by JST to enter UNIVERSITY's facilities and to inspect the equipment, etc. which was brought in or procured by JST under paragraph 1 of this Article at JST's expense after obtaining UNIVERSITY's prior consent.

Article 8. (Indemnification)

1. JST and UNIVERSITY shall indemnify each other for any and all losses, claims or expenses arising from the performance of this Agreement. This

indemnification shall be made only in the case where such losses, claims or expenses arose as a result of the gross negligence or willful act of the indemnifying party.

2. Indemnification for the injury, sickness, accident, damage or death of the researchers, etc. participating in the "Research" shall be made by the organization to which such researchers, etc. belong.

Article 9. (Use of Data and Information)

JST and UNIVERSITY confirm and agree that each party shall have the right to use the data and information obtained from the implementation of the Research.

Article 10. (Completion Report of Entrusted Research)

UNIVERSITY shall prepare the research completion report with respect to the Research and submit the same to JST within ninety (90) days from the completion of the Research.

Article 11. (Publication of Research Results)

1. Unless otherwise agreed, JST and UNIVERSITY may release the research results obtained from the Research (hereinafter referred to as the "Research Results") to the public after giving prior notice to other party.

2. Unless otherwise agreed, a researcher may release the Research Results to the public after obtaining the research director's consent. Furthermore, in the event that a researcher intends to release the Research Results to the public during the term of the implementation of the Research, JST and UNIVERSITY shall give proper support to such researcher.

Article 12. (Intellectual Property Rights)

1. In the event that the researchers, etc. make inventions in the course, or as a result, of the Research, the patent rights related to the inventions shall belong to JST. JST and UNIVERSITY shall make measures necessary for the attribution of the patent rights to JST with respect to researchers, etc.



belonging to each of themselves.

2. In the event that JST receives any royalty or other revenue (hereinafter referred as "Revenue") from granting the license of the patent held by JST under the preceding paragraph of Article 12.1., JST shall pay 1/4 of the total amount of the Revenue received to the researchers who made such invention.

Article 13. (Confidentiality)

JST and UNIVERSITY shall maintain the secrecy of the confidential information which had been disclosed by the other party, and neither party shall disclose such information to any third party. These provisions concerning confidentiality shall survive the termination or cancellation of this Agreement.

Article 14. (Arbitration)

Any dispute, controversy or claim arising from or in connection with this Agreement which cannot be settled shall be submitted, under the rules of arbitration of the International Chamber of Commerce, to the arbitration consisting of three (3) or more arbitrators appointed in Tokyo pursuant to such rules. The languages to be used in the arbitration procedures shall be English.

Article 15. (Governing Law)

This Agreement shall be governed by, and construed in accordance with the laws of Japan.

Article 16. (Independent Contractor)

None of the provisions of this Agreement may be construed to bring about an employment relationship between JST and UNIVERSITY.

Article 17. (Assignment)

Neither JST nor UNIVERSITY may assign or transfer this Agreement, in all or in part, to any third party without obtaining the prior consent of the other party.



Article 18. (Termination of Agreement)

In the event that UNIVERSITY materially breach any of the provisions of this Agreement, JST may give notice demanding the remedy of such breach to UNIVERSITY. In the event that UNIVERSITY fail to remedy such breach within thirty (30) days from the date of such notice, JST may terminate this Agreement, and in the event that JST sustains any damages due to such termination of this Agreement, UNIVERSITY shall immediately compensate JST for such damages at the request of JST.

Article 19. (Notice)

Any notice required or permitted to be given under this Agreement shall be made in writing and shall be (a) delivered by hand, (b) sent by prepaid registered mail or home delivery service or (c) sent by facsimile (which shall be confirmed by prepaid registered mail) to the addresses of each party first above written in this Agreement. All notices shall become effective upon receipt thereof. Any change in the address of each party for the purpose of this Agreement shall be made in the form of a notice to the other party in the manner set forth above.

Article 20. (Communication Between Parties)

1. All communication with respect to the research or this Agreement, except for that set forth in the following Paragraph 2 of this Article, shall be conducted between Dr. Leonardo Bronfman, Professor of UNIVERSITY of Chile, who represents UNIVERSITY for these effects, and the research director Dr. Yasuo Fukui, Professor of Nagoya UNIVERSITY designated by JST .
2. Communication concerning the accounting or managerial aspects of this Agreement shall be made in English between the persons in charge described below:

UNIVERSITY: Leonardo Bronfman, Professo, Universidad de Chile

JST: Toru Souma, Manager, 3rd Research Promotion Division, Department of Research Promotion JST.



Article 21. (Consultation)

In the event that any doubt arises concerning any matter not prescribed in this Agreement or the interpretation or implementation of any of the provisions of this Agreement, JST and UNIVERSITY shall consult each other in good faith.

IN WITNESS WHEREOF, the parties hereto have prepared this Agreement in duplicate and have affixed their signatures hereon, each party retaining one (1) original copy hereof.



Koichi Kitawaza

Executive Director

JAPAN SCIENCE AND TECHNOLOGY AGENCY

Prof. Francisco Brieva

Decano (S) Facultad de Ciencias

Físicas y Matemáticas

UNIVERSIDAD DE CHILE

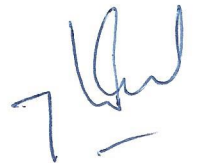


Exhibit 1: Contents of Entrusted Research

Exhibit 2: List of Research Participants

Exhibit 3: Specifications of Entrusted Research Expenses

Exhibit 4: Form of Accounting Report

Exhibit 1 [Research Program]

This research project are aimed at developing a movable and low-power consumptive millimeter-wave radiometer and observing temporal variations of stratospheric and mesospheric minor constituents such as ozone, chlorine-monoxide, water vapor isotopomers , etc., in the subtropic region of southern hemisphere, Atacama highland, Chile. The altitude of the Atacama highland is 4,800m, and the highland is one of the best observational sites for millimeter and sub-millimeter wavelengths because of its very low atmospheric (tropospheric) attenuation. Experiments and evaluation of the radiometer in such an ideal site is very essential to bring out the best performance of the radiometer system as much as possible.

The radio astronomy group of Universidad de Chile will provide laboratory space in U. Chile in Santiago and will support the hardware development and the observation in Atacama. For the millimeter radiometer development, a well-equipped clean laboratory is necessary to fabricate a superconductive receiver, but we have only temporal work space at the Atacama site. Back-up support in the laboratory in U. Chile is quite helpful to assemble the receiver system and to repair damaged instruments.

Profs. Bronfman and May had operated 1.2-m millimeter-wave telescope in Cerro Tololo Inter-American Observatory in Chile for several years, and they have excellent expertise in the millimeter-wave technique. In addition, a young engineer, R. Salazar who had studied millimeter and sub-millimeter technique in the UNIVERSITY of Cologne in Germany will help us in the Atacama site as well as in the laboratory. The radio astronomy group is the only collaborative partner who has ability enough to assemble and develop the millimeter-wave receiver in Chile.

In this project, the Chilean group will contribute to the following items in collaboration with the Japanese group:

i) At the observational site in Atacama,

- Test observation and evaluation of the system performance
- Data analysis and data archiving to the backup media
- Maintenance of the radiometer system and check the working status of instruments, such as superconductive receiver, spectrometer, 4K-refrigerator, etc.

ii) In the laboratory in U. Chile,

- Mounting a SIS-junction to the mixer block
- Experiments for the higher frequency (sub-millimeter) receiver system
- Repair and re-assemble damaged electrical and/or cryogenic instruments

Exhibit 2

[List of Names of the Participating Researchers]

1. Researchers of UNIVERSITY

Leonardo Bronfman,	Professor	Universidad de Chile
Jorge May	Professor	Universidad de Chile
Roberto Salazar	Researcher	Universidad de Chile

2. Researchers of JST

Yasuo Fukui	Professor	Nagoya UNIVERSITY
Akira Mizuno	Professor	Nagoya UNIVERSITY
Toshikazu Onishi	Associate Professor	Nagoya UNIVERSITY
Norikazu Mizuno	Assistant Professor	Nagoya UNIVERSITY



Exhibit 3

[Breakdown of Expenditures]

Personnel Fee

JPYen 4,500,000

Total:

JPYen 4,500,000



Exhibit 4 [Form of Account Report]

Japan Science and Technology Agency (JST)

4-1-8 Honcho Kawaguchi-shi, Saitama 332-0012

[name]

[title]

[date]

Dear Sirs

We, pursuant to Article 5 of the Joint Research Agreement between UNIVERSITY and JST dated May 9, 2005, attach a copy of an account book for the period from the day of the commencement of this Agreement until March 31, 2006. We summarize the accounts as follows:

BANK ACCOUNT (J¥)	Deposit	Withdrawal	Balance
Research fee			
INCOME AND EXPENDITURE (J¥)	Income	Expenditure	Balance
Equipment			
Supplies			
Personnel			
Travelling			
Light, Electricity,			
Other expenses			
Total			

Yours faithfully

By: _____

[name] [title]

