

Canadian Embassy



Ambassade au Canada

Note No. 0213

Sir,

I have the honor to refer to recent discussions between representatives of the Government of Canada and the Government of the United States of America concerning the terms and conditions whereby the first Canadian Space Agency (CSA) SciSat-1 Atmospheric Chemistry Experiment (ACE) Mission to be launched by a single National Aeronautics and Space Administration (NASA)/United States-provided launch vehicle in 2003, shall be implemented by NASA, on behalf of the Government of the United States of America, and by the CSA, on behalf of the Government of Canada.

The Government of Canada proposes that cooperation between our two Governments on the ACE mission shall be in accordance with the terms and conditions set forth in the attached Memorandum of Understanding concluded between the CSA and NASA, with the exception of Articles 11, 12 and 13 of the Memorandum of Understanding.

.../2

If the foregoing proposal is acceptable to you, I have the honour to propose that this Note, as well as the attached Memorandum of Understanding, with the exception of its Articles 11, 12 and 13 which shall have no effect between the Parties, which are equally authentic in the English and French languages, and your Note in reply, shall constitute an Agreement between Canada and the United States of America. The Agreement shall enter into force on the date of your reply and shall remain in force for a period of seven years after the SciSat-1 satellite has been launched, unless terminated by either Party upon twelve-months written notice to the other Party. The Agreement may be amended upon written concurrence of the Parties, in accordance with each Party's internal legal procedures.

Please accept, Sir, the assurances of my highest consideration.

A handwritten signature in black ink, appearing to read "Bertin Côté". The signature is stylized with a large initial "B" and a distinct "Côté" ending.

Bertin Côté,
Minister and Deputy Head of Mission

Washington, July 18, 2003

Memorandum of Understanding
between the
National Aeronautics and Space Administration
of the United States of America
and the
Canadian Space Agency
Concerning the
SciSat-1 Atmospheric Chemistry Experiment (ACE) Mission

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Preamble

The National Aeronautics and Space Administration of the United States of America (hereinafter referred to as "NASA")

and

The Canadian Space Agency (hereinafter referred to as "CSA")

RECALLING the successful cooperation in the fields of space and Earth science;

DESIRING to extend the cooperation developed between NASA and CSA (hereinafter referred to as "the Parties"), and

CONSIDERING the Agreement for Enhanced Cooperation in Space between NASA and CSA of May 18, 1994 (hereinafter referred to as the "1994 Enhanced Cooperation Arrangement");

HAVE AGREED as follows:

Article 1 - Mission Description

Pursuant to the 1994 Enhanced Cooperation Arrangement, a joint study group has defined the science priorities and other details for specific cooperative projects of mutual interest involving NASA and the CSA science smallsat (SciSat) Program. This Memorandum of Understanding (MOU) addresses implementation of this first CSA SciSat-1 Atmospheric Chemistry Experiment (ACE) mission to be launched by a single NASA/U.S.-provided launch vehicle in 2002.

The objective of the ACE mission is to improve our understanding of the chemical processes involved in the depletion of the ozone layer, with particular emphasis on the processes occurring over Canada and the Arctic. This will be accomplished by analyzing and combining the measurements obtained from the space-borne ACE instrumentation with those obtained from ground-based, balloon-based and other space-based projects. In an effort to enhance ACE atmospheric chemistry research NASA will provide CSA with access to data from its Total Irradiance Mission (TIM). This TIM data will support atmospheric chemistry research by providing a better understanding of the Earth's radiation budget.

It is expected that this research will help determine future trends relating to the Earth's ozone layer, especially at high latitudes, and ascertain whether the springtime ozone depletion that is seen to some extent over the Arctic in late winter-early spring could reach the extent of that observed over Antarctica.

Article 2 - Responsibilities of NASA

NASA will use reasonable efforts to do the following:

1. Participate in the development of a Joint Mission Implementation Plan (JMIP), which addresses the equitable sharing of delivery capacity of the launch vehicle in mass, volume and orbit geometry, while ensuring the minimum science requirements of both Parties are met;
2. Procure and provide the equivalent of one-half of a Pegasus XL-class launch service provider and associated pre-launch engineering support as agreed to in the JMIP;
3. Provide data to CSA, from NASA's Total Irradiance Monitor (TIM) experiment currently scheduled for launch in mid-2002, as defined in the JMIP. This data, when available, will be provided to CSA for the duration of this MOU without restrictions and with a minimum of delay for release of calibrated data;
4. Provide, upon mutual agreement of both Parties, and on a reimbursable basis, NASA engineering support for the CSA spacecraft design and development;
5. Participate in CSA science mission reviews as agreed to in the JMIP;
6. Provide early orbit engineering support as agreed to in the JMIP; and
7. Provide the updates to the existing Stratospheric Aerosol and Gas Experiment (SAGE) and Atmospheric Trace Molecule Spectroscopy (ATMOS) algorithms and create a spectroscopic database for ACE.

Article 3 - Responsibilities of CSA

CSA will use reasonable efforts to do the following:

1. Participate in the development of a JMIP, which addresses the equitable sharing of delivery capacity of the launch vehicle in mass, volume and orbit geometry, while ensuring the minimum science requirements of both Parties are met;
2. Provide a Canadian satellite, conduct a scientific investigation, and arrange for scientific collaboration, as appropriate, for the mutual benefit of both Parties to this MOU;
3. Provide NASA with ACE science data freely and without restriction and with a minimum delay for release of calibrated data in accordance with Article 4 of this MOU;
4. Participate with NASA in the SciSat launch vehicle reviews as agreed to in the JMIP; and

5. Provide funding to NASA for costs of providing CSA-requested engineering support for the design and development of the CSA mission spacecraft.

Article 4 - Data Policy

The Parties will share science data without restriction and will specify in the JMIP the archiving and distribution policy for the data consistent with the policies of the Parties.

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

Article 5 - Exchange of Technical Data and Goods

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

1. The transfer of technical data for the purpose of discharging the Parties' responsibilities with regard to interface, integration, and safety will 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 is proprietary but not export controlled, is necessary for interface, integration, or safety purposes, the transfer will be made and the data and associated software will be appropriately marked. 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.
2. All transfers of proprietary technical data and export-controlled goods and technical data are subject to the following provisions. In the event 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 will be specifically identified and such technical data will be marked with a notice to indicate that they will be used and disclosed by the receiving Party and its related entities (e.g., contractors and subcontractors) only for the purposes of fulfilling the receiving Party's responsibilities under the programs implemented by this agreement, and that the identified goods and marked technical data will not be disclosed or

retransferred to any other entity without permission of the furnishing Party. The receiving Party agrees to abide by the terms of the notice, and to protect any such identified goods and marked technical data from unauthorized use and disclosure, and also agrees to obtain these same obligations from its related entities prior to the transfer.

3. All goods, marked proprietary data, and marked or unmarked technical data subject to export control, which are transferred under this MOU, will be used by the receiving Party exclusively for the purposes of the programs implemented by this MOU.

Article 6 - Invention and Patent Rights

Nothing in this MOU will be construed as granting or implying any rights to, or interest in, patents owned or inventions of the Parties or their contractors or subcontractors.

In the event that an invention is jointly made by employees of the Parties, their contractors or subcontractors, during the implementation of this MOU, the Parties will consult and agree as to the responsibilities and costs of actions to be taken to establish and maintain patent protection for such invention and on the terms and conditions of any license or other rights to be exchanged or granted by or between the Parties.

Article 7 - Funding

Except as otherwise provided in this MOU, each Party will bear the costs of discharging its respective responsibilities under this MOU, including travel and subsistence of each Party's personnel and transportation of its own equipment and associated documentation. It is understood that the ability of the Parties to carry out their respective responsibilities is subject to their respective funding procedures and the availability of appropriated funds.

Article 8 - Customs and Taxes

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

Article 9 - Publication of Public Information and Results

NASA and CSA may release public information regarding their respective efforts in connection with this MOU. However, NASA and CSA each agree to coordinate in advance with the other any public information activities which relate to the other's responsibilities or performance. Information which has been previously cleared and has not changed will not require recoordination.

Article 10 - Liability

1. The purpose of this Article is to establish a cross-waiver of liability between the Parties and the Parties' related entities in the interest of encouraging space exploration and investment. The cross-waiver of liability will be broadly construed to achieve this objective.

2. For the purposes of this Article:

(a) 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.

(b) 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.

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

- (d) The term "payload" means all property to be flown or used on or in a launch vehicle.
- (e) The term "Protected Space Operations" means all activities pursuant to this MOU, 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 activity in question.

- 3. (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 subparagraphs (1) through (3) below based on damage arising out of Protected Space Operations. This cross-waiver will 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 will apply to any claims for damage, whatever the legal basis for such claims, (including negligence of every degree and kind), against:
 - (1) the other Party;
 - (2) a related entity of the other Party; and
 - (3) the employees of any of the entities identified in subparagraphs (1) and (2) above.
- (b) In addition, each Party will extend the cross-waiver of liability as set forth in paragraph 3 (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 subparagraphs 3 (a) (1) through 3 (a) (3) above.
- (c) This cross-waiver of liability will be applicable to liability arising from the Convention on International Liability for Damage Caused by Space Objects, of 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 will 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, except where a subrogee is one of the Parties;
 - (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 paragraph 3 (b) or from a failure of the Parties to ensure that their related entities extend the cross-waiver of liability as set forth in paragraph 3 (b); or
 - (6) contract claims between the Parties based on the express contractual provisions.
- (e) Nothing in this Article will be construed to create the basis for a claim or suit where none would otherwise exist.

Article 11 - Entry Into Force and Duration

This MOU will become effective upon signature and pursuant to an Exchange of Diplomatic Notes. It will remain in effect for five years after the ACE satellite has been launched, provided the Exchange of Notes remains in force. This MOU may be extended for an additional period of time by written agreement of the Parties.

Article 12 - Amendment

This MOU may be amended upon written concurrence of the Parties.

Article 13 - Termination

Either Party may terminate this MOU at any time upon at least 12 months written notice of the intent to terminate. Termination by either Party will not affect that Party's continuing obligations under this MOU with regards to liability and protection of data and goods. This MOU will also cease to have effect upon termination of the Exchange of Notes between the Government of the United States of America and the Government of Canada on the SciSat-1 Program (or the ACE Mission).

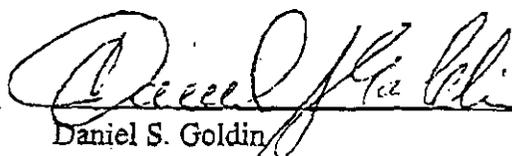
DONE in duplicate at Washington in the English and French languages, both texts being equally valid, this 24 day of October, 2000.

FOR THE CANADIAN SPACE AGENCY

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



W.M. (Mac) Evans
President



Daniel S. Goldin
Administrator

Excellency:

I have the honor to acknowledge receipt of Minister Côté's note Number 0213, dated July 18, 2003, proposing an agreement concerning cooperation on the first Canadian Space Agency SciSat-1 Atmospheric Chemistry Experiment mission to be launched by a single-launch vehicle provided by the National Aeronautics and Space Administration of the United States of America.

I have the further honor to inform you that the proposal outlined in Minister Côté's note is acceptable to the Government of the United States of America and further, to confirm that his note, with the enclosed Memorandum of Understanding, done in the English and French languages, each version being equally authentic, and this note in reply shall constitute an Agreement between our two Governments which shall enter into force on the date of this note.

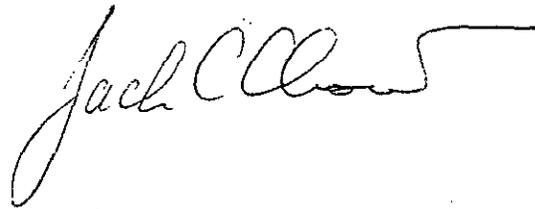
His Excellency
Michael Frederick Kergin,
Ambassador of Canada.

DIPLOMATIC NOTE

- 2 -

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

For the Secretary of State:

A handwritten signature in cursive script, appearing to read "Jack C. Stewart". The signature is written in dark ink and is positioned below the typed text "For the Secretary of State:". The signature is fluid and somewhat stylized, with a long horizontal stroke at the end.