

AGREEMENT AMONG:

THE NATIONAL SCIENCE FOUNDATION OF THE UNITED STATES OF AMERICA

**THE SCIENCE AND ENGINEERING RESEARCH COUNCIL OF THE UNITED
KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND**

THE NATIONAL RESEARCH COUNCIL OF CANADA

CONCERNING

**THE CONSTRUCTION AND OPERATION OF
AN 8 METER TELESCOPE ON MAUNA KEA, HAWAII AND
AN 8 METER TELESCOPE ON CERRO PACHON, CHILE
TO BE KNOWN AS THE GEMINI FACILITIES**

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AGREEMENT AMONG:

**THE NATIONAL SCIENCE FOUNDATION OF THE UNITED STATES OF AMERICA
(hereinafter referred to as “NSF”)**

**THE SCIENCE AND ENGINEERING RESEARCH COUNCIL OF THE UNITED
KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
(hereinafter referred to as “PPARC”) and**

**THE NATIONAL RESEARCH COUNCIL OF CANADA
(hereinafter referred to as ‘NRC’)**

CONCERNING

**THE CONSTRUCTION AND OPERATION OF AN 8 METRE TELESCOPE
ON MAUNA KEA, HAWAII AND AN 8 METRE TELESCOPE
ON CERRO PACHON, CHILE
TO BE KNOWN AS THE GEMINI FACILITIES.**

Desiring to encourage further scientific collaboration among the United States of America, the United Kingdom, and Canada,

Taking into account their common interest in supporting research in Astronomy,

Recognizing the scientific importance of access to both hemispheres with large telescopes,

Recognizing that PPARC and NRC support astronomical facilities on Mauna Kea, Hawaii,

Recognizing that NSF supports astronomical facilities on Cerro Tololo, Chile,

Desiring to achieve full intellectual and economic benefits to all Parties in the execution of Gemini with a fair and equitable division of responsibilities and benefits among the Parties, consistent with their contributions and the timely and cost effective execution of Gemini,

Recognizing that a Memorandum of Understanding dated 15 September 1992 among NSF, PPARC, and NRC has been executed prior to the signing of this Agreement,

NSF, PPARC and NRC, hereinafter referred to collectively as the “Partners”,

HAVE AGREED AS FOLLOWS:

1 DEFINITIONS

In this Agreement:

- 1.1 “**Assessment Point**” means the time at which the Parties to this Agreement must decide whether or not to continue their collaboration.
- 1.2 “**Award**” means the legal agreement between the Executive Agency and the relevant Managing Organization.
- 1.3 “**Budget**” means an estimate of income commitment and expenditure within a specified financial year.
- 1.4 “**Commissioning**” means the stage immediately following Construction in which the telescope and instrument systems are integrated and the telescopes are used with day-one instruments to characterize and de-bug the facility operations.
- 1.5 “**Commissioning Activities**” means the activities necessary for the Commissioning of the Gemini Facilities and the commissioning of any subsequent enhancements thereto.
- 1.6 “**Construction**” means the planning, design, construction, and installation of the Gemini Telescopes.
- 1.7 “**Designated Members**” means those members of the Gemini Board authorized to speak on behalf of the Parties on matters before the Gemini Board.
- 1.8 “**Executive Agency**” means the agency established under Article 9.12 empowered to act on behalf of the Parties to arrange for the carrying out of Gemini.
- 1.9 “**Engineering Activities**” means the activities necessary for maintenance and improvement of the Gemini Telescopes, their control systems and enclosures.
- 1.10 “**Gemini**” means the collaborative project involving the Construction, Commissioning, and Operation of the Gemini Facilities.
- 1.11 “**Gemini Board**” (hereinafter referred to as the Board) means the Board established by the Partners under Article 9.1 as the primary forum for interactions and decisions between the Parties.
- 1.12 “**Gemini Facilities**” means two facilities, one in the northern hemisphere and one in the southern hemisphere, each of which comprises a reflecting telescope with a main mirror diameter of approximately 8 metres, their enclosures, their instrumentation, and all other things associated with them.

- 1.13 “**Gemini North**” means that part of the Gemini Facilities to be constructed on Mauna Kea, Hawaii.
- 1.14 “**Gemini South**” means that part of the Gemini Facilities to be constructed on Cerro Pachon, Chile.
- 1.15 “**Gemini Telescopes**” means Gemini North and Gemini South.
- 1.16 “**Intellectual Property**” means intellectual and industrial property produced or generated during the performance of the Work which is capable of protection by patents, trademarks or copyright; and industrial design, technical information, inventions, prototypes and specifications produced or generated in the performance of the Work which are capable of being licensed.
- 1.17 “**Managing Organization**” means the organization referred to in Article 9.13 appointed by the Executive Agency to manage Gemini.
- 1.18 “**Non-Party**” means any individual or organization that is not a Party to this Agreement.
- 1.19 “**Observing Time**” means the time scheduled for observing, excluding the time required for Engineering and Commissioning Activities.
- 1.20 “**Operation**” means the stage after each of the Gemini Facilities have been fully commissioned. This represents steady-state operation and requires all major telescope and building functions to have been tested and accepted, a complement of scientific and technical staff able to support routine astronomical observations with the existing facilities to be in post, and the capability to commission new instruments and telescope enhancements with minimal disruption.
- 1.21 “**Parties**” means the parties to this Agreement and includes the Partners.
- 1.22 “**Partners**” means NSF, PPARC, and NRC.
- 1.23 “**Site**” means the place where each of the Gemini Facilities are to be constructed.
- 1.24 “**Work**” means any activity approved by the Gemini Board relating to Gemini according to the Project Description annexed to this Agreement as Annex “A”.
- 1.25 “**Work Package**” means a specific grouping of identified individual components of the Work.

2 SCOPE OF THE AGREEMENT

- 2.1 This Agreement covers Construction, Commissioning, and Operation of the Gemini Telescopes.

- 2.2 The Parties shall jointly execute Gemini in accordance with the Project Description, Scientific Requirements, and Project Time Schedule which are affixed to this Agreement as Annex “A”, “B”, and “C” respectively.
- 2.3 The Partners shall contribute to the execution of Gemini, in part through cash payments and in part through the execution of Work Packages which shall be accounted for as cash payments.
- 2.4 Any benefits to the University of Hawaii (hereinafter referred to as UH) arising from reference in this Agreement shall be subject to the signing of a Memorandum of Understanding, an Operation and Site Development Agreement (hereinafter referred to as the OSDA), and sublease between NSF and UH all of which will have been subject to the prior written agreement of the partners. Upon the signing of a Memorandum of Understanding, OSDA and sublease between NSF and UH, the *Parties* agree to abide by all terms and conditions contained in these agreements.
- 2.5 This Agreement is comprised of Articles and Annexes.
- 2.6 This Agreement is not intended to create obligations binding under International Law.

3 AMENDMENT

- 3.1 Except as provided in Article 3.2, no amendment of this Agreement is of effect unless it is in writing, dated and signed by all Parties, and specifically states the intention to amend this Agreement.
- 3.2 *When it deems necessary, the Gemini Board may modify any Annexes to this Agreement with the exception of Annex I, providing the modification does not significantly alter the intent of this Agreement. Any modification to the Annexes shall require the unanimous agreement, in writing, of the Designated Members of the Partners.*

4 TERM and TERMINATION

- 4.1 This Agreement shall become effective when signed by all the Partners and shall expire on 2012 December 31 unless extended in accordance with Article 4.2.
- 4.2 At points, to be known as Assessment Points, the Parties shall decide whether or not to close the Gemini Facilities, in whole or in part, and whether to:
 - a) extend this Agreement for a further period of at least three years;

or

- b) allow this Agreement to expire without renewal and dispose of the Gemini Facilities.
- 4.3 The first Assessment Point shall be within calendar year 2009. Subsequent Assessment Points shall be at 3-yearly intervals unless otherwise determined by unanimous agreement of the Board.
- 4.4 At any Assessment Point, any Party may elect not to continue its participation in Gemini beyond the current expiry date. Any Party electing not to continue shall not be subject to penalty. However, if in consequence of any Party electing not to continue, the remaining Parties are able to operate only part of the Gemini Facilities, the Party electing not to continue shall share any costs or benefits arising from the partial closure of the Gemini Facilities in proportion to its contribution to Gemini. The Party electing not to continue shall not be entitled to make any claim for compensation for prior contribution.
- 4.5 The remaining Parties shall take full responsibility for the assets and liabilities of Gemini, and must agree to the proportions in which those assets, and the costs of operating the Gemini Telescopes, shall henceforth be apportioned between them. In consequence, the remaining Parties shall either amend this Agreement or terminate this Agreement and replace it with a new agreement.
- 4.6 In the event that the Parties agree to terminate this Agreement during Construction and Commissioning, or to close the Gemini Facilities, in whole or in part, during Operation, the Parties will share any costs and/or benefits arising from such termination or closure in proportion to their contribution to Gemini.
- 4.7 On expiry of this Agreement, the Parties shall agree on the manner in which the assets shall be disposed of. The costs or benefits arising from that disposal, including the net proceeds that may arise from any sale of assets, shall be divided between the Parties in proportion to their contribution to Gemini.

5 WITHDRAWAL

- 5.1 A Party wishing to withdraw from this Agreement prior to 2012 December 31 and before Operation has begun may do so at any time by providing written notice of withdrawal to the other Parties to this Agreement. To enable the remaining Parties to continue with Gemini, the withdrawing Party shall pay either (1) 50% of its total scheduled Contribution not yet paid or (2) the total of its scheduled payments (as specified in Article 13.10 and Annex "F") for 5 years commencing with the date of the notice of withdrawal, whichever is the greater. Payments shall be made in the amounts and on dates to be

determined by the remaining Parties after consultation with the withdrawing Party.

- 5.2 A Party wishing to withdraw from this Agreement prior to 2012 December 31 but after Operation has begun may do so at any time by providing written notice of withdrawal to the other Parties to this Agreement. To enable the remaining Parties to continue Operation, the withdrawing Party shall pay the total of its scheduled payments for 2 years commencing with the date of the notice of withdrawal. The penalty will be paid in the amounts and on dates to be determined by the remaining Parties after consultation with the withdrawing Party.
- 5.3 The extent to which the sums already paid and, where relevant, Work Packages already completed and delivered, entitle a withdrawing Party to Observing time after withdrawal shall be determined by the remaining Parties.
- 5.4 A withdrawing Party's penalty may be reduced in whole or in part if the withdrawing Party is able to find a replacement acceptable to the remaining Parties. The extent of the reduction shall be determined by the remaining Parties in consultation with the withdrawing Party and, if appropriate, the replacement Party or Parties.
- 5.5 Except as provided in Article 5.3 and as otherwise agreed by the remaining Parties, all rights and benefits conferred on a Party under this Agreement shall be forfeited at the date of withdrawal.
- 5.6 Notwithstanding 5.5, a withdrawing Party shall retain any rights in Intellectual Property acquired as at the date that notice of withdrawal is given.
- 5.7 A withdrawing Party shall, at the request of the remaining Parties, transfer all its right, title, and interest in any property, contracts (to the extent allowed under those contracts) or work in progress funded out of money contributed to Gemini under this Agreement to such other persons or parties as the remaining Parties direct and shall otherwise cooperate in order to facilitate the continuation of Gemini by the remaining Parties.

6 PRECEDENCE/PRIMACY

- 6.1 This Agreement supersedes all prior communications, negotiations and agreements between the Parties concerning Gemini.
- 6.2 If the Annexes and the Articles of the main body of this Agreement are inconsistent, the Articles shall prevail. The headlines of Articles are not relevant to the interpretation of the Articles.

6.3 No Party shall enter into agreements concerning Gemini that conflict with the terms of this Agreement. Should conflict with another agreement arise, this Agreement shall prevail.

7 OWNERSHIP

7.1 All assets of Gemini shall be the property of the Executive Agency, or such other body as the Partners agree. However, the Executive Agency shall not dispose of assets, in whole or in part, during the period of this Agreement without the written consent of all the Parties.

7.2 The Managing Organization shall be granted delegated authority by the Executive Agency to dispose of assets the value of which does not exceed a limit set from time to time by the Board subject to the said assets being either surplus to the future requirements of Gemini or unserviceable and beyond economic repair. Initially, that limit shall be \$ 50 000 US dollars. Surplus assets shall be offered for sale to the Parties before being offered for sale to Non-Parties. All proceeds realized shall be reinvested in Gemini.

7.3 Where the value of an asset identified for disposal exceeds the limit referred to in Article 7.2 above, the Managing Organization shall seek the approval of the Board before disposing of that asset and shall seek instruction from the Board as to whether the proceeds realized are to be reinvested in Gemini or distributed between the Parties in proportion to their contributions to Gemini.

7.4 The Managing Organization shall present an annual itemized report to the Board on the disposal of assets.

8 NEW MEMBERSHIP

8.1 Any Non-Party shall be permitted to join Gemini subject to the unanimous agreement of the Partners who shall determine the terms under which the Non-Party shall be invited to join.

8.2 Where a Non-Party joins Gemini, this Agreement shall be amended such that the Non-Party becomes a Party to the Agreement and accepts and abides by the terms thereof.

9 MANAGEMENT

9.1 The Partners shall establish a supervisory and regulatory body to be known as the Gemini Board.

9.2 The Board shall be composed of:

4 members appointed by NSF

2 members appointed by PPARC

2 members appointed by NRC

1 member appointed by UH

1 member appointed by CONICYT

1 member appointed by ARC

1 member appointed, on an alternating basis, by SECYT-CONICET and MCT.

and such other members as the Partners shall determine in accordance with Article 8 (New Membership). *SECYT-CONICET and MCT shall determine a mutually acceptable order and procedure for the appointment of their Board member and for appointments to any committees or subcommittees established by the Board, but their alternative appointments to the Board shall be for at least a two year term. SECYT-CONICET and MCT may appoint an observer to the Board and to a committee or subcommittee of the Board when the member of the Board or the voting representative to a committee or subcommittee is from the other's country.*

- 9.3 Such other persons shall be invited to attend meetings of the Board as the Board may from time to time determine.
- 9.4 *The Board shall appoint a member from one of the Partners as Chair. The Chair for the Board shall rotate between the Partners every 2 years, with a member appointed by NSF serving as Chair in every second rotation beginning with NSF on 1992 January 01.*
- 9.5 There shall be a Secretary to the Board, who shall be responsible for the support of the Board including keeping records of the meetings and decisions of the Board.
- 9.6 Each Party having a member on the Board shall appoint a member as its "Designated Member" and that Designated Member shall have authority to speak for that Party on matters before the Board.
- 9.7 The Parties shall advise the Chair and Secretary, in writing, of the members they have appointed to the Board and the duration of the appointments.
- 9.8 A Party may change its appointed member(s) and/or its Designated Member by giving notice, in writing, to that effect to the Chair and Secretary of the Board, who shall be responsible for notifying the other Parties.
- 9.9 *The members appointed by CONICYT and UH shall only have voting rights on scientific matters appertaining to Gemini South in the case of CONICYT, and to Gemini North in the case of UH. The Chair is responsible for the interpretation and application of these restrictions in case of dispute.*

- 9.10 *A representative of CONICYT and of UH shall be entitled to attend all meetings of committees of the Board and all formal meetings concerning Gemini which involve all of the Parties.*
- 9.11 There shall be an Executive Agency empowered to act on behalf of the Parties to arrange for the carrying out of Gemini.
- 9.12 NSF shall be the Executive Agency. In the event that NSF is in default or withdraws, the remaining Partners shall choose an Executive Agency.
- 9.13 There shall be a Managing Organization appointed by the Executive Agency to manage Gemini. The appointment requires the unanimous agreement in writing of all the Partners. At intervals to be determined by the Board, and specifically before the start of Operations, the choice of Managing Organization shall be subject to review by the Executive Agency. The terms of reference (i.e. policies) for each review shall be agreed by the Partners. At each review, the Board shall either approve the choice of Managing Organization for a further defined period or shall indicate to the Executive Agency that an alternate Managing Organization be appointed.
- 9.14 Initially, the Managing Organization shall be the Association of Universities for Research in Astronomy, Inc. (“AURA”).

10 RESPONSIBILITIES OF THE GEMINI BOARD

- 10.1 The Board shall:
- (a) be the primary forum for interactions and decisions between the Parties;
 - (b) ensure that Gemini is carried out in accordance with the terms of this Agreement;
 - (c) be the body with overall budgetary and policy control over Gemini;
 - (d) meet at least twice per year;
 - (e) report at least once per year in writing to the Parties on the progress of Gemini including the financial situation, projected timescales and the estimated cost to completion;
 - (f) define, appoint, and review, as necessary, such committees as the Board deems necessary;
 - (g) determine the duration of Construction and Commissioning of the Gemini Facilities, and the apportionment of costs between Construction and Commissioning and Operation where these overlap;

- (h) provide guidance to the Managing Organization on the content of their management plans;
- (i) approve the job descriptions and appointments of the key Gemini staff for Construction and Commissioning as described in Annex “D”;
- (j) approve a management structure for Operation following proposals by the Managing Organization, and the job descriptions and appointments of the key Gemini staff required by the approved structure;
- (k) taking into account Article 19.1, determine the policy and procedures for the allocation of Observing Time which shall be based on peer review;
- (l) receive and comment on reports from the Partners on negotiations with Non-Parties wishing to join Gemini; and
- (m) *participate in, and advise on, the program established in Article 25, and remain informed of its progress.*

10.2 The Board shall be responsible for reviewing and approving:

- (a) annual and multi-year Gemini Budgets;
- (b) subawards to be made by the Managing Organization with a value exceeding \$1 million;
- (c) the Executive Agency’s selection of Managing Organization and any renewals or changes;
- (d) the terms of the Award between the Executive Agency and the Managing Organization supporting Gemini;
- (e) the annual accounts and auditors reports of the Managing Organization and Executive Agency;
- (f) the management plans as prepared by the Managing Organization;
- (g) the Science Requirements Document, contained in Annex “B”, and any subsequent agreed updates; and
- (h) plans for the use of Development Funds as described in more detail in Article 17.

10.3 The Board shall not employ staff.

10.4 The Board may, with the agreement of the Designated Members, adopt common oversight and management activities chargeable to Gemini, and may request the Executive Agency to arrange for the engagement of staff to assist in such tasks. Expenses related to such oversight functions as may be

required by individual Parties shall be the responsibility of the respective Party.

- 10.5 Rules of Procedure for the Board, which shall be subject to the unanimous agreement of the Designated Members of the Partners, must be established within 12 months of the signature of this Agreement. The Rules of Procedure shall include a list of contact persons for this Agreement and their addresses. These Rules shall form Annex “E”.

11 RESPONSIBILITIES OF THE EXECUTIVE AGENCY

11.1 The Executive Agency shall:

- (a) subject to Article 10.2, select the Managing Organization;
- (b) ensure that all agreements between the Managing Organization and subawardees do not conflict with this Agreement;
- (c) receive and maintain records of contributions from the Parties;
- (d) transfer contributions received to the Managing Organization;
- (e) ensure that the terms of its Award to the Managing Organization include sufficient audit provisions so that contributions provided for Gemini are properly accounted for annually;
- (f) inform the Managing Organization of the decisions of the Board;
- (g) complete arrangements necessary to secure the Site and open access to the Site for the Construction, Commissioning and Operation of the Gemini Telescopes;
- (h) ensure the Parties have access to the Work at the Project Office, Gemini North Site, and Gemini South Site at all reasonable times;
- (i) use its best efforts to facilitate the employment by or on behalf of the Managing Organization of non-US citizens and to use its best efforts to facilitate the admission into and exit from the United States and Chile of persons where this is in the interests of Gemini and the Parties;
- (j) use its best efforts to facilitate the free movement between the United States and Chile and the Partner countries of materials, equipment and other items necessary to the execution of Gemini;
- (k) provide, at the expense of the Executive Agency, a Secretary for the Board and associated administrative support; and
- (l) report regularly to the Board.

12 RESPONSIBILITIES OF THE MANAGING ORGANIZATION

12.1 The Managing Organization shall:

- (a) develop management plans;
- (b) be responsible for the overall management of Gemini in accordance with the management plans as approved by the Board;
- (c) employ key Gemini staff as described in Annex “D”;
- (d) carry out the decisions of the Board as transmitted by the Executive Agency;
- (e) keep proper records and accounts;
- (f) produce for the Board by October 31 of each year a Budget for the following year and during Construction and Commissioning, Budgets to completion of that phase and during Operation, Budgets for not less than three (3) further years;
- (g) facilitate access to the Work and Site;
- (h) establish safety rules;
- (i) report through the Executive Agency to the Board; and
- (j) *Facilitate the distribution of funds to CONICYT for the development of Chilean astronomy, as established in Article 25 , and assist in realizing the program if requested.*

13 FINANCIAL PROVISIONS - GENERAL

13.1 The provisions of this Article shall apply to Construction, Commissioning and Operation.

13.2 The approval of financial matters before the Board requires the unanimous agreement of the Designated Members of the Partners.

Accounting and Audits

13.3 The accounting unit shall be the US dollar.

13.4 The financial year of Gemini shall be the calendar year (January 1 December 31).

13.5 The audit year of the Managing Organization shall be its fiscal year.

- 13.6 The Executive Agency shall ensure that the Managing Organization presents to the Board by October 31 of each year Budgets as required by Article 12.1 (f).
- 13.7 On or before November 30, the Board must approve a Budget for the following year. Approval of the Budget requires the unanimous agreement of the Designated Members of the Partners.
- 13.8 The Executive Agency shall ensure that at the same meetings as those at which the Budget is presented by the relevant Managing Organization, the Managing Organization presents the Board with the preliminary financial reports and forecasts for the financial year about to end, so that the Board may consider these figures before approving the Budget for the following year.
- 13.9 Within three months of the end of each Gemini financial year, the Managing Organization shall provide the Board with financial reports for the money spent during that Gemini financial year.
- 13.10 For each budget year the amount and timing of that part of the contribution to Gemini due from each Party shall be agreed at the Board meeting that considers the Budget.
- 13.11 The contributions of the Parties shall be calculated in US dollars. Payments for Construction and Commissioning shall normally be remitted to the Executive Agency in accordance with the Payment Schedule attached to this Agreement as Annex "F". For Operation, a payment schedule will be approved annually by the Board. A Party may reschedule payments subject to the unanimous approval of the Designated Members of the Board.
- 13.12 In converting a payment into US Dollars the contributing Party shall use the rate of exchange quoted by the US Department of State as the rate effect on the date of payment. Notwithstanding the above, the Executive Agency and any Party may bring proposals to the Board for it: unanimous agreement for alternative methods of making contributions to Gemini.
- 13.13 For the purposes of accounting for Partners' contributions, the value attributed to any Work Package shall be its equivalent value in US dollars at the exchange rate as defined in 13-12 on the day when the Partner was authorized to proceed with the Work Package. Contributions in the form of Work Packages shall be deemed to have been made on the date that deliverables are accepted by the Managing Organization, unless some other schedule has been agreed in advance between the Managing Organization and the Partner.

- 13.14 Any Party may elect to make additional payments in a Gemini financial year in excess of those due. Any such payments shall be credited against contributions due in future fiscal years.
- 13.15 The Executive Agency shall provide the Board with an annual report of payments and accepted Work Packages credited to the Parties contributions”, sums transferred to the Managing Organization, and contributions received but not yet provided to the Managing Organization. Any Party may request through the Board that the Executive Agency have its Inspector General audit and certify the accuracy of the annual report.
- 13.16 Funds provided to the Managing Organization will be subject to an annual external audit, the results of which will be available to the Parties via the Board.

Gemini Board expenses

- 13.17 Parties hosting meetings of the Board shall be responsible for the local costs of the meetings. Each Party shall be responsible for the expenses of its members attending meetings, including travel and accommodation costs.
- 13.18 The full costs of employing staff, wherever they may be located, on Work shall be chargeable to Gemini subject to their use being authorized in advance by the Managing Organization.

Subawards

- 13.19 Subject to Article 18 (Work Packages), the Executive Agency shall ensure that the Managing Organization, to the maximum extent practicable, makes subawards on the basis of competitive tender.
- 13.20 The Executive Agency shall ensure that the Managing Organization adheres to the procedures for authorizing requisitions, commitment, obligation and expenditure of funds as set forth in its Award with the Executive Agency, as approved by the Board, and shall be responsible for ensuring that its Award with the Managing Organization fulfills the requirements of this Agreement between the Parties.
- 13.21 All subawards awarded by the Managing Organization between \$250 thousand US and \$1 million US, shall be reported to the Board. All subawards totaling in excess of \$1 million US shall be put to the Board for approval prior to being awarded.
- 13.22 Subaward approvals made by the Board shall require the unanimous agreement of the Designated Members of the Partners. In cases of urgency such agreement may be obtained in writing through the Designated Members, independent of a Board meeting, but such cases shall be reported to the next Board meeting.

14 FINANCIAL PROVISIONS - CONSTRUCTION & COMMISSIONING

14.1 *The Parties shall contribute, subject, as applicable, to Article 2.3, to the total cost of Construction and Commissioning up to a maximum of \$176 million US, plus \$8 million US for technical enhancements, plus \$9.2 million US as ARC s contribution to Construction and Commissioning, in the percentages of the total as follows:*

<i>NSF:</i>	<i>47.62%</i>
<i>PPARC:</i>	<i>23.81%</i>
<i>NRC:</i>	<i>14.29%</i>
<i>ARC:</i>	<i>4.76%</i>
<i>CONICYT:</i>	<i>4.76%</i>
<i>CONICET:</i>	<i>2.38%</i>
<i>MCT:</i>	<i>2.38%</i>

subject to the following over-riding national restrictions:

(a) NSF shall not be obligated to contribute more than 50/105 of the cost to a maximum of \$92,000,000 US;

(b) PPARC shall not be obligated to contribute more than \$46,000,000 US;

(c) NRC shall not be obligated to contribute more than \$36,000,000 CDN for construction plus \$1,200,000 US for technical enhancements;

(d) CONICYT shall not be obligated to contribute more than \$9,200,000 US;

(e) ARC shall not be obligated to contribute more than \$9,200,000 US;

(f) CONICET shall not be obligated to contribute more than \$4,600,000 US;

and

(g) MCT shall not be obligated to contribute more than \$4,600,000 US.

14.3 Amounts spent by NSF, PPARC and NRC prior to the effective date of this Agreement shall count towards the contributions made by the respective Partners. It is agreed that amounts which were spent prior to 1991 June 1 and which count towards the contribution of the Partners shall be limited to \$354,382 US in the case of NSF, \$658 US in the case of PPARC, with no contribution made prior to 1991 June 01 by NRC.

14.4 Amounts spent after 1991 June 01 shall only be counted towards contributions made by the Parties if they were authorized, in advance, by the Managing Organization.

Contributions by the Parties

- 14.5 Under the Award between the Executive Agency and the Managing Organization, the Executive Agency may authorize the Managing Organization, subject to any approvals required under this Agreement, to enter into long term subawards. If the Managing Organization believes that the Project will benefit financially from placing specific contracts which exceed annual commitment limits, it will discuss with the Partners through the Executive Agency the provision of additional financial cover. This process will normally take place during the Board approval of Budgets and will be confirmed by the Partners, in writing, to the Executive Agency. The Partners agree that if for any reason this Agreement is terminated during Construction and Commissioning, funds will be made available so that the Managing Organization can meet any unavoidable obligations under any subawards already made. The total sum payable by each Partner, including payments made in respect of any unavoidable obligations, shall not exceed its percentage share as specified in Article 14.1, of the costs incurred to termination.
- 14.6 NSF, NRC and PPARC fully expect that the funds that they will set aside and obligate from time-to-time to Gemini project will fully meet their obligations under this Agreement. However, pursuant to the restrictions contained in the national laws of the Partners, the ability of each Partner to obligate its full commitment, or its ability to satisfy any contingent liability that may arise under Article 5 (Withdrawal) or Article 16 (Default) of this Agreement must necessarily be subject to funds that are available from the appropriations which their respective governments have made for the Partners.
- 14.7 *CONICYT is exempted from all subsequent increases in the cost of Construction and Commissioning over and above its initial contribution of US\$9,200,000.*

15 FINANCIAL PROVISIONS - OPERATION

- 15.1 Funding of the travel costs of observers or others wishing to use the Gemini Facilities is outside the scope of this Agreement.
- 15.2 *“The contributions for operations of Gemini shall be shared among the Parties as follows:*

<i>NSF</i>	<i>50.119%</i>
<i>PPARC</i>	<i>23.81%</i>
<i>NRC</i>	<i>15.00%</i>
<i>ARC</i>	<i>6.19%</i>

<i>CONICYT</i>	<i>0.0%</i>
<i>CONICET</i>	<i>2.381%</i>
<i>MCT</i>	<i>2.5%</i>

15.3 Operation of Gemini shall be integrated to the maximum extent possible with the then current operations and staff of:

- (a) the PPARC Joint Astronomy Centre in Hilo (JACH), in Hawaii, and,
- (b) the Cerro Tololo Inter-American Observatory (CTIO), in Chile,

and shall make use of the resources of JACH and CTIO, to the extent that those facilities are available and meet the operational requirements of Gemini as agreed by the Board. It is recognized that NSF and PPARC derive certain benefits from expanding the use of JACH and CTIO in this way.

15.4 The costs of using the facilities and resources of JACH and CTIO shall be approved by the Board and shall be shared between the Parties in proportion to their contributions as determined under *Article 15.2*.

15.5 *CONICYT is liberated from all past, present and future contributions for Operating Costs and Development Funds, and from any other financial agreements such as may be entered into between the Partners. This will be reflected in all subsequent issues of the Administrative Guidelines.*

16 DEFAULT

16.1 If a Party is in arrears on any payment by more than 90 calendar days during Construction and Commissioning, the Executive Agency shall inform the Board. If no satisfactory explanation for the delay has been made and accepted by the Board, the Chair of the Board shall notify the defaulting Party, in writing, that the remaining Parties intend to consider that Party as having withdrawn from the Agreement and the relevant provisions of Article 5 shall apply.

16.2 If a Party is in arrears on any payment by more than 90 calendar days during Operation, the remaining Parties may suspend the observing privileges of that Party until the arrears are paid.

16.3 If a Party is in arrears for more than twelve months during Operation, the Executive Agency shall inform the Board. If no satisfactory explanation for the delay has been made and accepted by the Board, the Chair of the Board shall notify the defaulting Party, in writing, that the remaining Parties intend to consider that Party as having withdrawn from the Agreement. The defaulting Party will then have 90 days to pay the arrears. If it does not pay the arrears within the 90 days, the defaulting Party shall be treated as

having withdrawn from the Agreement and the relevant provisions of Article 5 shall apply.

- 16.4 Where a satisfactory explanation for any delay in payment has been made by the defaulting Party and accepted by the Board, such further period as the Board considers appropriate may be granted for the payment of arrears.
- 16.5 On expiry of such further period, in the event that the arrears remain unpaid, the Chair of the Board shall notify the defaulting Party, in writing, that the remaining Parties intend to consider that Party as having withdrawn from the Agreement and the relevant provisions of Article 5 shall apply.

17 DEVELOPMENT FUNDS

- 17.1 An Instrument Development Fund shall be established to provide for instruments and their supporting systems to augment, upgrade or replace those provided as part of Construction.
- 17.2 A Facilities Development Fund shall be established to provide an improvement program for the Gemini Telescopes and their support systems.
- 17.3 The total amount of each Development Fund and the required schedule of payments shall be determined by the Board and shall require the unanimous agreement of the Designated Members.
- 17.4 Each Party shall contribute on an annual basis to the Instrument Development Fund and to the Facilities Development Fund in the same share as its contribution to the Construction cost or such shares as the Board may determine.
- 17.5 The Managing Organization shall hold and manage the Development Funds.
- 17.6 The Managing Organization shall produce plans for the use of the Instrument Development Fund and the Facilities Development Fund. These plans shall be subject to approval by the Board.
- 17.7 Any Work arising out of expenditures from the Instrument and Facility Development Funds shall be subject to an equitable sharing of responsibilities and benefits between the Parties.
- 17.8 Upon termination of this Agreement, the Parties shall share any excess money contained in the Development Funds and shall share responsibility for any commitments outstanding at the time of termination in the same share as their contribution to the Development Funds.

18 WORK PACKAGES

- 18.1 The Managing Organization shall be responsible for the development of a hierarchical list of all Work to be done on the Project. Individual items shall be grouped together in Work Packages. Each Work Package shall have an estimated cost and timescale associated with it.
- 18.2 The list of Work Packages shall be presented by the Managing Organization to the Board for approval. The list presented should identify those Work Packages which will be offered to specific Partners and those Work Packages which will be offered for international tender.
- 18.3 Responsibility for the procurement and management of approved Work Packages shall be allocated by the Board to individual Partners in a manner consistent with their technical expertise and having regard to their contributions.
- 18.4 Work not allocated to specific Partners as Work Packages shall be offered for international tender by the Managing Organization in a manner which shall enable competitive bidding by companies of the United States, the United Kingdom, and Canada on terms that are not selectively to the disadvantage of the companies of any of those countries.
- 18.5 *The Managing Organization will, when undertaking work relating solely to Gemini South, encourage bids from Chilean organizations or from organizations of other Parties that make substantial use of Chilean resources, recognizing, however, that the decision of the Managing Organization must be consistent with the timely and cost effective execution of the work.*

19 OBSERVING TIME AND DATA RIGHTS

- 19.1 The allocation of Observing Time at the Gemini Telescopes shall recognize the University of Hawaii and Chilean Astronomy. Subject to the financial contributions being maintained as stated in Article 14.1, the Observing Time shall be divided between the Parties equitably according to the seasons of the year, and the sky illumination by Moon and Sun, as follows:

<i>a) Gemini North:</i>	<i>NSF including the University of Hawaii:</i>	<i>53.91%</i>
	<i>PPARC:</i>	<i>22.00%</i>
	<i>NRC:</i>	<i>13.86%</i>
	<i>ARC:</i>	<i>5.72%</i>
	<i>CONICYT:</i>	<i>0.00%</i>
	<i>CONICET:</i>	<i>2.20%</i>
	<i>MCT:</i>	<i>2.31%</i>
<i>b) Gemini South:</i>	<i>NSF including Chilean astronomy:</i>	<i>53.91%</i>

<i>PPARC:</i>	<i>22.00%</i>
<i>NRC:</i>	<i>13.68%</i>
<i>ARC:</i>	<i>5.72%</i>
<i>CONICYT*:</i>	<i>0.00%</i>
<i>CONICET:</i>	<i>2.20%</i>
<i>MCT:</i>	<i>2.31%</i>

** CONICYT has made available to the Gemini Parties the use of observing time in excess of Chilean needs consisting of 4.4% on Gemini North and 4.4% on Gemini South, for the duration of the present Agreement.*

- 19.2 Subject to Article 2.4, UH shall be guaranteed 10% of the Observing Time on Gemini North. Chile shall be guaranteed 10% of the Observing Time on Gemini South.
- 19.3 The Board shall determine the ownership rights of data, rules for access to the archival data and use of the data prior to the commencement of Operation of the Gemini Telescopes.
- 19.4 The Managing Organization shall arrange to keep and maintain a log and an archive copy of each observation and of the relevant calibration data in a form accessible by qualified researchers as approved by the Board.
- 19.5 Any observer who obtains data using either of the Gemini Telescopes shall have exclusive use of that data for the first eighteen (18) months after its collection. Thereafter, the data shall become available to any qualified researcher in accord with general principles approved by the Board.
- 19.6 The Managing Organization shall not make nor permit any other use of the data except in accordance with general principles approved by the Board.

20 ACCESS BY OTHERS

- 20.1 The Board shall determine the terms under which a Non-Party may access and use the Gemini Facilities.
- 20.2 By agreement between the Parties, any Party may assign its Observing Time, in whole or in part, to a Non-Party. The agreement of the Parties to such arrangements, which must be in accordance with this and any other agreements concerning Gemini, shall not be unreasonably withheld.

21 INTELLECTUAL PROPERTY

- 21.1 Except as provided in Articles 19.3 through 19.6 concerning data acquired at the Gemini Telescopes, the inventor or creator of Intellectual Property or his or her assignee or employer shall have ownership or the option to own all Intellectual Property arising out of the Work done pursuant to this Agreement.

- 21.2 Subject to Article 21.6, for all Intellectual Property created during Work under this Agreement other than inventions, the Managing Organization shall provide and obtain a non-exclusive, non-transferable, irrevocable, paid-up license (1) for use by the Managing Organization for Gemini and (2) for each of the Parties to use or have used on their behalf throughout the world for non-commercial research purposes any such Intellectual Property.
- 21.3 The provisions of the NSF Award to the Managing Organization will, if applicable, contain the patent right provisions required by Chapter 18 of Title 35, United States Code, including a requirement as authorized by 35 USC 202 (c) (4) that the Managing Organization provide or obtain, in addition to the license rights of the United States, a non-exclusive, nontransferable, irrevocable, paid-up license for each of the non-U. S. Parties to practice or have practiced on their behalf throughout the world for research purposes any subject inventions. The license rights which the Managing Organization will obtain for the United States under subawards or other arrangements with persons or organizations from countries of the non-U.S. Parties shall be limited to a non-exclusive, nontransferable, irrevocable, paid-up license for NSF to practice or have practiced on its behalf for research purposes any subject inventions created during Work under this Agreement.
- 21.4 It is recognized that some arrangements made by the Managing Organization for the undertaking of research or development work for Gemini may involve funding agreements that are not subject to Article 21-3. These might include, for example, the detailing of employees of the Parties to participate on the Project Team while retaining their status as employees of the Parties. The provisions of the NSF Award to the Managing Organization will contain terms and conditions designed to assure the identification and reporting of inventions on a basis comparable to that contemplated under Article 21.3 and the granting of licenses to all the Parties by the owner of the inventions that are substantially the same as those required for non-US Parties under Article 21.3. Each Party recognizes that when arrangements involving its employees are made that are subject to this Article, the Party will have to enter into appropriate arrangements with the Managing Organization to accomplish the intent of this Article.
- 21.5 In the case of scientific or technical papers, reports, books or the like (whether in print or electronic form) prepared by the Managing Organization or its subawardees which are provided to the Parties or the Board, each Party shall be free to translate, reproduce and publicly distribute them, subject to such restrictions, if any, as may be placed on the document pursuant to Article 21.6.
- 21.6 The Parties recognize that in some cases the Managing Organization or its subawardees may have to obtain goods or services from organizations that limit the uses made of certain technical data, software, know-how, or other

information provided to the Managing Organization or its subawardees because the organization providing the data, software, know-how or other information treats it as proprietary or trade secret and normally restricts its use. This is likely to be particularly true where pre-existing technical data or software is involved. In such cases, the Parties recognize that it may not be cost-effective or possible for the Managing Organization or its subawardees to obtain license rights for the Parties of the type normally contemplated by Articles 21.2 and 21.5 and do not expect the Managing Organization or its subawardees to obtain such rights in such cases; provided that, whatever license rights are obtained should be the same for all the Parties.

22 LIABILITY & INDEMNITY

22.1 The Executive Agency shall require the Managing Organization to procure and maintain for its own benefit, and the benefit of the Parties, comprehensive general liability insurance in such amounts as determined by the Board.

23 NOTICE

23.1 Any notice contemplated by this Agreement, unless a different address is subsequently notified by one Party to the others in writing, must be sent to the Parties at the addresses stated in Annex "H", and copied to the Secretary to the Board, by either

(a) certified mail, and then it is considered to have been received ten days after it is sent; or

(b) courier or facsimile, and then it is considered to have been received only when acknowledged by an official receipt or a return facsimile transmission.

24 DISPUTES

24.1 Any disagreements regarding the interpretation, implementation or application of this Agreement shall be resolved by consultation among the Partners. Disagreements shall not be referred to any national or international tribunal or third party for settlement.

25 COOPERATIVE PROGRAMS FOR THE DEVELOPMENT OF CHILEAN ASTRONOMY

25.1 CONICYT will establish a framework of a nationwide program for the development of Chilean astronomy, consistent with the objectives stipulated in the present agreement.

- 25.2 The Gemini Partnership will, in accordance with the terms of this agreement, transfer to CONICYT, through the Managing Organization, a sum of US\$9,366,824, payment of which should be completed by 30 November 2005.
- 25.3 The funds referred to in 25.2 are to be invested in a program established by CONICYT for the development of Chilean astronomy and closely related sciences. They are to be used wholly and exclusively for this purpose as described in the Cooperative Agreement signed by CONICYT and the parties to the Gemini Agreement which will become Annex I of that Agreement. For the parties contributing to the payments established in Annex I, the terms of Article 16 of the Gemini Agreement shall apply in the event of default or late payment.
- 25.4 Any arrangement between the Managing Organization and CONICYT for the transfer of the funds in 25.2 shall be approved by the Gemini Board.
- 25.5 The funds shall be administered by CONICYT in accordance with its legal faculties, the present agreement and any relevant laws and regulations.

26 ANNEXES

- 26.1 The following annexes are incorporated by reference and form part of this Agreement:
- (a) Annex "A" Project Description
 - (b) Annex "B" Scientific Requirements Document
 - (c) Annex "C" Project Time Schedule
 - (d) Annex "D" Guidelines for the Managing Organization
 - (e) Annex "E" Rules of Procedure for the Board
 - (f) Annex "F" Payment Schedule
 - (g) Annex "G" Principles (Governing Allocation of Work Packages)
 - (h) Annex "H" Addresses of Parties and Board
 - (i) Annex "T" Cooperative Agreement Between CONICYT and the Gemini Parties

The **National Research Council of Canada** executed this Agreement in triplicate at the City of Ottawa, in the province of Ontario this 28th day of October, 1993.

NATIONAL RESEARCH COUNCIL OF CANADA

per: _____

title: President

The **National Science Foundation of the United States of America** executed this Agreement in triplicate, at the City of Washington, District of Columbia, this 21st day of October, 1993.

NATIONAL SCIENCE FOUNDATION OF THE UNITED STATES OF AMERICA

per: _____

title: Director

The Particle Physics and Astronomy Research Council of the United Kingdom of Great Britain and Northern Ireland executed this Agreement in triplicate at the Town of Swindon, County of

Wiltshire, this 25th day of October, 1993.

Particle Physics and Astronomy Research Council of the United Kingdom of Great Britain and Northern Ireland

per: _____

title: Chairman

ANNEX A

PROJECT DESCRIPTION

The Gemini Project has as its goal the construction of two 8-m telescopes. The first will be located on Mauna Kea in Hawaii, and the second will be built on Cerro Pachon in Chile.

At the completion of construction, the Gemini project will supply the following on Mauna Kea:

- An elevation-over azimuth telescope with a monolithic primary mirror with an 8-m usable aperture
- An infrared secondary at f/l 6 with tip/tilt and chopping capability
- A low order adaptive optics system for use in the near infrared
- An imager for 1-5 microns
- A multi-aperture optical spectrograph
- An optical imager
- A cooled grating spectrometer for the wavelength range 1-5 microns
- A rotator and instrument mounting
- A telescope enclosure
- A thermal control system for the enclosure
- Primary mirror handling equipment
- A sputtering plant capable of coating the primary mirror
- An in-situ system for cleaning the primary mirror
- A program to develop the method for depositing a protected silver coating on the primary mirror
- A building to house the control room and other support facilities
- Dormitory facilities for observers at Hale Pohaku
- Capability for remote observing at sea level on Hawaii
- Computers and software for telescope control and data acquisition

Also included in the project budget are funds to realign the road and utilities to the CFHT and to move the UH 24-inch telescope. Excluded from the current project budget is the cost of a sea level headquarters in Hawaii.

In Chile, the project will provide:

- An elevation-over-azimuth telescope with a monolithic primary mirror with an 8-m usable aperture
- An aluminum-coated secondary at $f/1.6$ with tip/tilt and chopping capability
- An optical imager
- Guiding and wavefront sensor at the Cassegrain focus
- Rotator and instrument mounting at the Cassegrain focus
- A high resolution optical spectrograph
- A telescope enclosure
- A thermal control system for the enclosure
- Primary mirror handling equipment
- A sputtering plant capable of coating the primary mirror with Al
- An in-situ system for cleaning the primary mirror
- A building to house the control room and other support facilities
- Capability for remote observing at sea level in La Serena
- Computers and software for telescope control and data acquisition
- A road to Cerro Pachon
- Power and water lines to Cerro Pachon
- A construction camp, which can be converted to a small number of bedrooms for use by observers
- Construction of office space in La Serena

It is assumed that, while observers may choose to sleep on Cerro Pachon, primary meal service and additional sleeping quarters will be provided at CTIO, with staff and observers driving daily as needed.

The base budget includes funds to develop the processes required to deposit protected silver coatings on the primary mirror of the Mauna Kea telescope and to provide a coating chamber that can deposit an aluminum coating (base budget) and can be upgraded to provide the capability for protected silver coatings. The Gemini board has agreed to consider including the upgrade to the coating chamber in the Gemini budget after technical feasibility is established.

The total package outlined here can be completed within the budget ceiling of \$176. After the major contracts have been let, we may determine that some of the contingency is not required. If that proves to be the case, the following are additional capabilities that remain to be prioritized:

- Upgrade of Coating Chamber
- Nasmyth Secondary
- Tertiary
- Nasmyth Acquisition/Guiding
- Nasmyth Rotator
- f/6 Secondary
- Narrow Field Corrector
- Multi-Object Spectrograph

The Nasmyth secondary would be placed on the Cerro Pachon Telescope. The Gemini Science Committee has not agreed on the preferred location for the f/6 secondary.

ANNEX B
SCIENTIFIC REQUIREMENTS DOCUMENT

This Annex is composed of the GEMINI SCIENCE REQUIREMENTS, Version 1.2, dated April 1 993. This document comprises a title page, a one page Preface, a two page Table of Contents plus forty-three pages of Scientific Requirements.