

RECORDATION REQUESTED BY:

AFTER RECORDATION, RETURN TO:

When completed: Mail ()
Pick up () Phone:

SUBLEASE AGREEMENT

THIS SUBLEASE is made this 10th day of March, 1977, by and between the University of Hawaii, hereinafter called "SUBLESSOR," and the Science and Engineering Research Council, Polaris House, North Star Avenue, Swindon, SN2 1ET, Wiltshire, England, hereinafter called "SUBLESSEE" which shall include the Science and Engineering Research Council's successors. This Sublease is approved pursuant to General Lease S-4191, dated June 21, 1968, between Sublessor and the State of Hawaii, Board of Land and Natural Resources, hereinafter called "LESSOR." A copy of General Lease S-4191 is attached hereto as Exhibit A and incorporated herein by reference.

W I T N E S S E T H A T:

Sublessor, in consideration of the rent hereinafter reserved and upon the conditions, covenants and agreements hereinafter expressed, does hereby demise and let to Sublessee the parcels of land described in Exhibit B, attached hereto and incorporated herein by reference, and Sublessee does hereby sublease from Sublessor said parcels for the purposes of erecting a telescope facility to be constructed and operated by and at the expense of the Sublessee through a contractual arrangement set forth in a separate Operating and Site Development Agreement.

The facility shall include a parabolic reflecting telescope having an approximate diameter of 15 meters and its operating enclosure, data communication terminals, and associated equipment required to support the operations of the telescope, hereinafter referred to as "the Telescope."

I. GENERAL

A. Location/Area

The location/area comprises a portion of that certain land area, described in General Lease S-4191 and more specifically identified in Exhibit B, together with the right reserved to Sublessor

to establish an access road, and power and communication lines to the above portion of land, and the right reserved to Sublessee of access to said premises over and across the common entrances and rights of way, together with others entitled thereto under such rules and regulations as may be established by and amended from time to time by Sublessor, and the right reserved to Sublessee to establish communications and data lines between the above portion of land and that portion of land described in the UKIRT Sublease dated 21 September 1978. The site designated in Exhibit B is subject to survey by the Sublessee within THREE (3) months from the date of this Sublease, and the exact area covered by this Sublease and the easement thereof for the access road, and power, communication and data lines reserved to Sublessor and Sublessee shall be more specifically described by Sublessor and described by metes and bounds by Sublessee and approved by the County of Hawaii; such description shall be binding upon Sublessor and Sublessee.

B. Term of Sublease

To have and to hold the demised premises unto Sublessee in strict compliance with the terms, conditions, and restraints contained in General Lease S-4191, until the 31st day of December 2033 or such earlier date as provided for in Article IV. F.

C. Rental Charge

Sublessee hereby covenants and agrees to pay rental for the demised premises at ONE DOLLAR (\$1.00) per year in legal tender of the United States of America for the duration of the Sublease. The said fee shall be paid to the Business Office, Bachman Hall, University of Hawaii, 2444 Dole Street, Honolulu, Hawaii 96822.

D. Fire or Destruction of Facilities

If all three of the following events occur; (1) the facilities are destroyed by fire or other causes rendering the same unsuitable for purposes of millimeter- and submillimeter-wave astronomy, (2) Sublessee elects not to restore the facilities, and (3) this Sublease is terminated as provided for in Article IV.F.5., Sublessee shall have such unsuitable damaged property or debris removed within ONE (1) year, after written notice to remove, and shall restore the land to its original condition. In the event Sublessee shall fail to remove such damaged property or debris and restore the land within the time specified above, such property may be removed and the land restored to its original condition by Sublessor at the expense of Sublessee.

If the facilities or a portion thereof are restored and there is a material change in the plans and specifications of the facilities, then such restoration shall be subject to approval by Sublessor, and in keeping with Article III.I below.

E. Controlling Lease

In the event that any term or condition contained herein is inconsistent with or contrary to General Lease S-4191, the General Lease shall be controlling.

F. Operation of the Facilities

Neither Sublessee nor its successor or assigns shall operate or permit to be operated the aforementioned Telescope for purposes of research without a signed Operating and Site Development Agreement between Sublessor and Sublessee or its successor or assigns. The Telescope may be operated in the absence of an Operating and Site Development Agreement by Sublessee only when necessary to ensure the safety of personnel or of the facilities.

G. Indemnity

Sublessee will indemnify, defend and hold harmless Lessor and Sublessor, their officers, agents, employees or any person acting on their behalf from and against any claim or demand for loss, liability or damages including, but not limited to, claims for property damage, personal injury or death, by whomsoever brought, based upon any accident, fire, or other incident on the demised premises and roadways adjacent thereto, arising from any act or omission of Sublessee, its officers, agents, employees or invitees, or occasioned by any failure on the part of Sublessee to maintain the premises in a safe condition or to observe or perform any of the terms and conditions herein or any regulations, ordinances and laws of the Federal, State, Municipal or County governments.

Sublessor shall, as soon as possible, notify Sublessee of any claim or demand made against Sublessor and/or Lessor of any action brought thereon within a reasonable time for any act or omission of Sublessee and shall not compound, settle, or admit the same without the consent of Sublessee which will, at its own expense defend, dispute, or settle the same in the name and on behalf of Sublessor and/or Lessor. Sublessor shall give to Sublessee (but at Sublessee's expense) all reasonable assistance that Sublessee may require for such purposes. Sublessee shall not be required to indemnify Lessor and/or Sublessor for any damages or loss arising hereunder for which Lessor and/or Sublessor recovers insurance monies in accordance with the terms of any insurance policy effected from time to time. In the event of such recovery, Sublessee shall indemnify Lessor and/or Sublessor for any damages or loss exceeding the amount covered by said insurance policy or policies; provided that where Lessor and/or Sublessor has assumed the duty in writing to Sublessee to carry or maintain insurance coverage and fails to do so Sublessee will indemnify Lessor and/or Sublessor only for the amount of damages or loss exceeding the agreed upon policy limits.

Additionally, Sublessee shall, during the period of this Sublease, at its own cost and expense, purchase liability insurance through Mauna Kea Support Services or by other means for property damage, personal injury or death in the minimum amounts of \$300,000 per person, \$1,000,000 per occurrence, and \$50,000 property damage. Sublessor may increase or decrease these minimum amounts every FIVE (5) years. Said policies shall name Lessor and Sublessor as additional insureds and a copy shall be deposited with the Director of Procurement and Property Management.

II. THE SUBLESSOR HEREBY COVENANTS WITH THE SUBLESSEE AS FOLLOWS:

A. Peaceful Enjoyment

Upon provision by Sublessee of the use rights in lieu of rent described in the aforesaid Operating and Site Development Agreement and upon observance and performance of all the terms, covenants and conditions herein contained and on the part of Sublessee to be observed and performed, Sublessee shall peaceably hold and enjoy the demised premises during the term hereof without hindrance or interruption.

B. Renewal

At least SIX (6) months prior to the expiration of General Lease S-4191 on the 31st day of December 2033, Sublessor may seek to negotiate a renewal of the General Lease with the Board of Land and Natural Resources or its successor and, in the event of renewal, Sublessor shall negotiate in good faith an extension of the term of this Sublease with Sublessee, if so desired by Sublessee and under such terms and conditions as may then be mutually acceptable.

III. THE SUBLESSEE HEREBY COVENANTS WITH THE SUBLESSOR AS FOLLOWS:

A. Right of Entry

Sublessee will allow Sublessor or its agent(s) known to Sublessee or carrying suitable identification, free access at all reasonable times to the demised premises for the purpose of examining the same and determining whether the covenants herein are being fully observed and performed.

B. Janitorial and Other Services

Sublessee shall provide janitorial, custodial, and security services to the demised premises, including sewerage and sanitation facilities and services.

C. Repairs and Maintenance

At all times during the term of this Sublease, Sublessee shall, at Sublessee's own cost and expense, keep and maintain the demised premises and the buildings and improvements erected upon the demised premises, in good order and repair and in a clean condition. This obligation shall include, but not be limited to, the obligation of painting the improvements and any part, modification, or alteration thereof, when necessary.

D. Utilities and Other Charges

Sublessee shall pay for or cause to be paid when due all charges associated with the Telescope and all charges, duties and rates of every description, including electricity, water, communications, sewer, gas, refuse collection or any other charges, to which said demised premises, or any part thereof, or any improvements thereon, or which Sublessor or Sublessee in respect thereof, may during said term become liable, whether assessed to or payable by Sublessor or Sublessee.

E. Taxes and Assessments

Sublessee shall pay or cause to be paid when due, the amount of all taxes, rates, assessments, and other outgoings of every description as to which said demised premises or any part thereof, or any improvements thereon, or Sublessor or Sublessee in respect thereof, are now or may be assessed or become liable for by authority of law during the term of this Sublease.

F. Assignment and Subleasing

Neither Sublessee nor its successor or assigns shall, without the prior written consent of Sublessor, assign or mortgage this Sublease or any interest therein, or sublet the premises hereby demised, in whole or in part; provided, however, that such consent shall not be arbitrarily or capriciously withheld or delayed and that this provision shall not operate to prevent Sublessee from making the demised premises available to invitees for the purposes permitted hereunder. Furthermore, Sublessor hereby recognizes that Sublessee has entered into an agreement with the Nederlandse Organisatie voor Zuiver-Wetenschappelijk Onderzoek (ZWO) for collaboration in astronomical research which research shall include use of the telescope by ZWO.

G. Use of Demise

Sublessee shall use the demised premises exclusively for astronomical facilities to be constructed and managed by and at the expense of Sublessee in cooperation with Sublessor through separate agreements. Sublessee shall not permit or make any

waste or strip, or make any unlawful, improper or abusive use of the demised premises or any part thereof, and Sublessee shall be liable to Sublessor for all damages beyond reasonable wear and tear. As used in this Sublease, the term "reasonable wear and tear" shall include without limitation such grading, excavation and filling of the land demised as may be reasonably required for the construction of the improvements contemplated by this Sublease, and such grading, excavation and filling shall not be deemed to constitute strip or waste. Sublessee shall make every reasonable effort to minimize grading, excavation and filling.

H. Liability

All goods, wares, merchandise, equipment or other property of Sublessee shall be kept on the demised premises at the sole risk of Sublessee.

I. Improvements and Alterations

Prior to the commencement of any construction, alteration, or repair of any building or other improvement on the demised premises which expands or changes the external structure or appearance of the building or improvements, located on or to be located on the demised premises, the final location map, plans, and specifications shall be submitted to Sublessor and to the Chairman, Department of Land and Natural Resources, or to their authorized representatives, for approval, which approval shall not be arbitrarily or capriciously withheld or delayed. Sublessor and Lessor shall process any application for such alterations and additions as expeditiously as possible and subject to regulations of the Department of Land and Natural Resources. If any necessary approvals for the initial construction of the telescope shall be withheld then, without prejudice to any other remedy of Sublessee, Sublessee shall have the right to terminate this Sublease and be relieved of all further obligations hereunder.

All construction shall be in full compliance with all laws, rules, regulations of the Federal, State and County Governments applicable thereto, and also in accordance with plans and specifications submitted by Sublessee to and approved by Sublessor prior to commencement of construction.

IV. AND THE PARTIES MUTUALLY COVENANT AS FOLLOWS:

A. Disputes

Any controversy, claim or dispute which is not disposed by agreement within THIRTY (30) days may be referred to and decided by a board of arbitration, which shall act by majority, consisting of three persons who shall reduce their decision to writing and furnish a copy to each party. One arbitrator shall

be selected by Sublessor and one shall be selected by SERC; the arbitrators so selected shall jointly select the third neutral arbitrator. In the event that (1) either party fails to name its arbitrator, or (2) the first two arbitrators are unable to agree on a third arbitrator, then, in the first case, the party which has named its arbitrator and, in the second case, either party may apply to any judge of the Circuit Court for First Judicial Circuit to appoint such arbitrator and the decision of such judge shall be final and binding. The parties shall be entitled to be heard in any such proceeding. The arbitration shall proceed in accordance with the rules of the American Arbitration Association. The decision of the arbitrators shall be final and conclusive, subject to the provisions of Chapter 658, Hawaii Revised Statutes, as amended, provided that any arbitration award which requires the payment or expenditure of any funds by Sublessor shall not be binding upon Sublessor absent a legislative appropriation, which Sublessor shall use its best endeavors to obtain.

B. Expenses on Disputes

All parties shall pay their own expenses of arbitration including without limitation the fee of their arbitrator; the fee of the neutral arbitrator shall be divided equally; provided, however, that the arbitrators as part of their decision may provide for a different allocation of expenses. All parties may apply to the court for costs and reasonable attorney's fees incurred for judicial review of the decision of the arbitrators to be awarded.

C. Service of Process

Sublessee shall designate a representative within the State of Hawaii duly authorized to accept service of process on its behalf. In the event that Sublessee fails to so designate such a representative or such designated representative is unavailable, Sublessee consents that service of any notice or process issued against it may be served upon it by filing the same with the Director of Commerce and Consumer Affairs, State of Hawaii, or in his absence with the Deputy Director. Sublessor shall forward by certified mail to Sublessee a copy of any such notice or process served on the Director of Commerce and Consumer Affairs.

D. Governing Law; Severability

The validity, construction and performance of this Sublease, and the legal relations among the parties to this Sublease shall be governed by and construed in accordance with the laws of the State of Hawaii, excluding that body of law applicable to choice of law. In the event any provision of this Sublease shall be held by a court of competent jurisdiction to be contrary to law, the remaining provisions of this Sublease shall remain in full force and effect.

E. Binding on Successors

This Sublease shall be binding on and inure to the benefit of the successors of the parties hereto.

F. Termination

This Sublease may be terminated by the Sublessor upon the occurrence of any of the following events:

1. Absence of completion by Sublessee of a substantial part of the planned construction as described in Exhibit C attached hereto and incorporated herein by reference, by the 31st day of December 1985, unless an extension of this date is agreed to in writing between Sublessor and Sublessee.
2. Termination of the "Operating and Site Development Agreement Between Science and Engineering Research Council and the University of Hawaii Concerning the Design, Construction and Operation of the 15-m Millimeter-Wave Telescope of the Science and Engineering Research Council on Mauna Kea, Hawaii," unless said Agreement is renewed, extended, or renegotiated.
3. The expiration of General Lease No. S-4191 on December 31, 2033. If said General Lease is renewed or extended this Sublease may be renegotiated at that time.
4. If Sublessee fails to observe or comply with any of the terms and conditions herein within THIRTY (30) days after being notified in writing by Sublessor of such failure. In the event that more than THIRTY (30) days are reasonably required to observe or perform, Sublessee shall in good faith within said THIRTY (30) days, initiate action and provide a plan for observance or performance, and shall diligently prosecute the same to completion.
5. Destruction of the improvements by fire or other causes rendering the same unsuitable for purposes of millimeter- or submillimeter-wave astronomy, unless Sublessee notifies Sublessor within SIX (6) months of the date of casualty of its intention to restore the improvements to their prior condition within a reasonable length of time.
6. Mutual agreement of Sublessor and Sublessee.

G. Title to Facilities, Additions, Improvements, Alterations and Equipment, and Disposition in Event of Termination

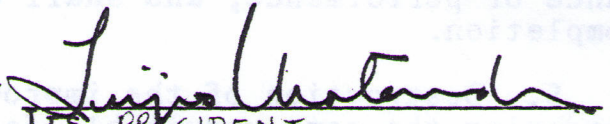
Title to all buildings, facilities, additions, improvements, alterations and equipment (collectively referred to herein as "property") on, affixed or installed in, or placed on the demised

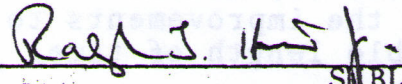
premises by Sublessee shall, at all times, remain in the name of Sublessee. However, upon termination or expiration of this Sublease (Article IV.F), Sublessee may exercise any one of the following options: (i) Negotiate with Sublessor for sale of the property to Sublessor. (ii) With the approval of Sublessor, peaceably surrender the demised premises and all or part of the property in place in good repair, order, and clean condition, reasonable wear and tear excepted. In the event that part of the property is removed, Sublessee shall restore the demised premises, or any portion affected thereby, to even grade to the extent that improvements are removed, and shall repair any damage done to the improvements in the event that equipment is removed. (iii) Sell the property to a third party acceptable to Sublessor, which acceptance shall not be arbitrarily or capriciously withheld. Such sale shall be contingent upon the execution of a new Sublease and Operating and Site Development Agreement with the third party and Sublessor.

In the event that none of these alternatives is agreed upon within SIX (6) months from the termination or expiration of this Sublease, all property shall be razed and removed at the sole expense of Sublessee. Such action shall be completed within ONE (1) year after termination or expiration of this Sublease, unless otherwise agreed in writing by Sublessor. In the event of such removal, Sublessee shall restore the demised premises, or any portion affected thereby, to even grade. In the event Sublessee shall fail to remove such property or debris and restore the demised premises within the time specified above, such property may be removed, the land restored to even grade by Sublessor at the expense of Sublessee.

IN WITNESS WHEREOF, the parties hereto have executed these presents the day and year first above written.

UNIVERSITY OF HAWAII

By 
Its PRESIDENT

By 
Its SUBLESSOR

SCIENCE AND ENGINEERING RESEARCH
COUNCIL

By

R. W. Newcomb
PROJECT MANAGER, MT

By

SUBLESSEE

APPROVED:

BOARD OF LAND AND NATURAL
RESOURCES, STATE OF HAWAII

APPROVED BY THE BOARD OF
LAND AND NATURAL RESOURCES
AT ITS MEETING HELD ON

April 22, 1983

By

S. Ono
Chairman and Member
Board of Land and Natural
Resources

By

R. Higashi
Member
Board of Land and Natural
Resources

APPROVED AS TO FORM:

By

Edmund G. ...
Deputy Attorney General
State of Hawaii

APPROVED AS TO FORM:

By

Phelim Huang
Deputy Attorney General
State of Hawaii

STATE OF HAWAII

CITY AND COUNTY OF HONOLULU

) ss.
)

On this 10th day of February, 1984, before me
appeared Fugio Matsuda and
Ralph Itoi, to me personally known, who,
being by me duly sworn, did say that they are President
and Director of Finance
respectively, of the University of Hawaii, a Hawaii corporation;
that the seal affixed to the foregoing instrument is the corporate
seal of said corporation; that said instrument was signed and sealed
in behalf of said corporation by the authority of its Board of
Regents; and said Fugio Matsuda
and Ralph Itoi
acknowledged the instrument to be the free act and deed of said
corporation.

Ruth M. Chang
Notary Public, First Circuit
State of Hawaii

My commission expires: 9/30/86

STATE OF HAWAII

CITY AND COUNTY OF HONOLULU

)
) ss.
)

On this 10th day of February, 1984, before me appeared Donald William Neupert, to me personally known, who, being by me duly sworn, did say that he is the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed and further declare that he is the Propt Manager, LK/NL Telecom of the SCIENCE AND ENGINEERING RESEARCH COUNCIL, and that the foregoing instrument was signed in behalf of said Council.

Paul M. Cheng
Notary Public, First Circuit
State of Hawaii

My commission expires: 9/30/86

The Common Seal of the SCIENCE AND ENGINEERING RESEARCH COUNCIL hereunto affixed is authenticated by:

Authorized Member of Council

Authorized Officer

RECORDATION REQUESTED BY:

AFTER RECORDATION, RETURN TO:

When completed: Mail ()
Pick up () Phone:

ATTACHMENT A

SUBLEASE AGREEMENT BETWEEN THE

SCIENCE AND ENGINEERING RESEARCH COUNCIL

AND THE

UNIVERSITY OF HAWAII

WITNESSETH THAT

Sublessee, in consideration of the rent hereinafter reserved and upon the conditions, covenants and agreements hereinafter expressed, does hereby demise and let to Sublessee the parcel of land described in Exhibit A, attached hereto and incorporated herein by reference, and Sublessee does hereby sublease from Sublessee said parcel for the purpose of erecting a telescope facility to be constructed and operated by and at the expense of the Sublessee through a contractual arrangement set forth in a separate Operating and Site Development Agreement.

The facility shall include a parabolic reflecting telescope having an approximate diameter of 12 meters and its operating structure, data communication terminals, and associated equipment required to support the operations of the telescope, hereinafter referred to as "the Telescope."

I. GENERAL

A. Location/Area

The location area comprises a portion of that certain land area described in General Lease S-4181 and more specifically identified in Exhibit B, together with the right reserved to Sublessee

CONTENTS

OPERATING AND SITE DEVELOPMENT AGREEMENT

BETWEEN THE

SCIENCE AND ENGINEERING RESEARCH COUNCIL

AND THE

UNIVERSITY OF HAWAII

CONCERNING THE

DESIGN, CONSTRUCTION, AND OPERATION

OF THE

15-m MILLIMETER-WAVE TELESCOPE

OF THE

SCIENCE AND ENGINEERING RESEARCH COUNCIL

ON

MAUNA KEA, HAWAII

IV. OTHER UTILITIES AND SERVICES

THIS AGREEMENT, made this 10th day of February 1984, by and between the Science and Engineering Research Council, hereinafter SERC, and the University of Hawaii, hereinafter UH;

W I T N E S S E T H :

WHEREAS, the millimeter and submillimeter wavelength regions of the electromagnetic spectrum have shown great scientific potential for contributing to our understanding of the astronomical universe; and

WHEREAS, the summit area of Mauna Kea is exceptionally well-endowed as a site for observations in these wavelengths; and

WHEREAS, SERC has correspondingly initiated a program to construct a 15-meter-aperture telescope dedicated to observations at these wavelengths and is desirous of locating the telescope on Mauna Kea; and

WHEREAS, SERC and UH have entered into a Memorandum of Understanding to proceed with the arrangements necessary for SERC to construct and operate the telescope on land leased by UH on Mauna Kea; and

WHEREAS, SERC also wishes to have access to Base Support Facilities in Hilo, Hawaii, to facilitate its use of the Telescope on Mauna Kea; and

WHEREAS, the construction and operation of the SERC Telescope on Mauna Kea will greatly benefit the academic and research programs at the UH-Manoa and UH-Hilo; and

WHEREAS, SERC and UH have a common interest in ensuring that the development of the Mauna Kea site and the Hilo Base Support Facilities will enhance the effective operation of the Telescope; and

RECOGNISING that SERC and the Nederlandse Organisatie voor Zuiver-Wetenschappelijk Onderzoek (ZWO) have signed a Protocol on Collaboration in astronomical research dated 18 June 1981 and as amended 13 June 1983, which protocol provides for ZWO to use the Telescope:

NOW, THEREFORE, in consideration of the mutual accommodations and agreements herein contained, the parties hereto agree as follows:

I. DEFINITIONS

"Telescope" includes a parabolic reflecting telescope approximately 15 meters in diameter and its operating enclosure. Its principal use will be at submillimeter and millimeter wavelengths.

"Facilities" include, but are not limited to, the Telescope, Instruments, Support Areas, and Associated Installations for the Telescope.

"Instruments" include, but are not limited to, receivers, detectors, computers, test equipment, and tools required to equip the telescope.

"Support Areas" refer to the space necessary within the subleased property to support scientific observers and technical personnel on site.

"Associated Installations" include all other facilities associated with the Telescope, such as electrical conductors, cableways and tunnels, driveways, parking lots, and access roads within the border of the subleased property.

"Mauna Kea Science Reserve" (hereinafter Science Reserve) is that area on the summit of Mauna Kea consisting generally of the area higher than 12,000 feet above sea level and specifically of that area leased by UH from the State of Hawaii, Board of Land and Natural Resources (hereinafter BLNR) under General Lease S-4191.

"Base Support Facilities" is the Operations Centre in Hawaii for the Telescope and the UK Infrared Telescope Facility already constructed on Mauna Kea. The proposed Base Support Facilities include, but are not limited to, the SERC offices, library, computer centre, and common areas to be located on UH land, commonly known as the "Komohana Street property" in Hilo.

"Mid-Level Facilities" includes, but is not limited to, the bedrooms, laboratory, and office facilities situated at Hale Pohaku.

II. LOCATION

A. The Telescope shall be constructed in the Science Reserve on that site more specifically described in Sublease No. H09175 between UH and SERC dated February 2, 1977, a copy of said Sublease No. H09175 being attached hereto as Attachment A and being specifically incorporated herein by reference.

B. Future plans may call for the addition of a micro-wave transmitter to relay data from the Telescope to a remote location. The placement of such a transmitter shall be determined by UH on a site acceptable to SERC; the site shall allow line-of-sight transmission to Hilo.

C. Future plans may call for construction of Base Support Facilities in which case a sublease on UH land in Hilo covering these Base Support Facilities will be concluded between UH and SERC. In general, the conditions of this sublease will be similar to Sublease No. H09175 between the parties for the land in the Science Reserve (Attachment A). It is recognized that any such sublease for the land in Hilo will be subject to BLNR approval.

III. RESPONSIBILITIES OF THE PARTIES

A. SCIENCE AND ENGINEERING RESEARCH COUNCIL

1. Design and Construction of the Facilities

SERC shall be solely responsible for the design, fabrication, and installation of the Facilities on Mauna Kea. SERC shall use its best endeavours to make available such funds for design and construction and associated work connected with the Facilities as shall be needed. SERC shall conform to the terms and conditions of the Sublease referenced in Article II above, as well as to applicable regulations and laws established for the preservation of the environmental quality and the scientific integrity of the summit area.

2. Installation of Individually Metered Electrical Service Connection

SERC will be responsible for the installation of its individually metered electrical service connection from a terminal (see Article III.B.7.b) to the Facilities.

3. Operation and Maintenance of the Facilities

a. Funds for operating and maintaining the Facilities shall be provided by SERC.

b. SERC shall be responsible for operation and maintenance costs of the permanent power line from the terminal described in this Agreement to the Telescope.

4. Permanent Mid-Level Facilities

If SERC elects to participate in the permanent Mid-Level Facilities at Hale Pohaku with respect to this Telescope to a greater extent than already provided for under

the existing Agreement for the UK Infrared Telescope, that participation shall be governed by the terms of a separate agreement to be negotiated between SERC and UH.

5. Base Support Facilities

If SERC elects to participate in the Base Support Facilities at Hilo with respect to this Telescope, that participation shall be governed by the terms of a separate Agreement to be negotiated between SERC and UH.

6. Research Environment and Management of the Science Reserve

Recognizing that SERC is part of a community of research organizations using the Science Reserve, SERC shall ensure that its activities in the Science Reserve are compatible with those of other telescope facilities located there, and with General Lease S-4191. SERC shall participate with other users of the Science Reserve in a forum established by UH to discuss the management of the Science Reserve.

B. UNIVERSITY OF HAWAII

1. Sublease

Subject to the approval of the BLNR, UH shall negotiate and execute a sublease with SERC to cover the land on which the Telescope will be located and for the necessary easements for the construction and operation of the Facilities.

2. Access to Facilities and Provision of Utilities

a. UH shall ensure right-of-access to SERC to the subleased property so that the property will not be landlocked and shall submit on behalf of SERC such applications as are required and have been prepared by SERC or its agent for permits required for construction and operation of the Facilities and Base Support Facilities. UH shall grant to or use its best efforts to obtain for SERC such other rights-of-access as may be necessary for utilities and cableways. All costs, fees, and other charges associated with such permits, rights of access, etc., shall be borne by SERC.

b. UH shall provide at no cost to SERC an access road to a boundary of the subleased property.

c. Pending installation of a permanent power line and during the construction and commissioning of the Telescope, UH shall, at SERC's request, provide SERC with access to a source of electrical power of 90 kW at a terminal

which is at or near the site of the 850-kW generator currently located on Mauna Kea and used by the existing telescopes there, conditional upon payment to UH of the sum of \$29,861.00, this being the share of the capital cost of the generator. The costs of connection from the Telescope to the terminal, and of electric power, are to be paid by SERC.

d. UH shall make available to SERC, at no cost to UH, one line at the Hawaiian Telephone Company's Central Terminal in the UH 88-inch telescope building.

3. Mauna Kea Support Services

a. UH shall provide support services on a basis of no profit, no loss to all astronomical facilities in the Science Reserve through the Mauna Kea Support Services (MKSS), which is operated by UH through its Institute for Astronomy (IFA). Such services shall include, but not be limited to, food and lodging as available by previous agreement, utilities, transportation services, road maintenance, auxiliary services, snow removal, and general administration.

b. The cost of all MKSS services shall be shared among the facilities operating or under construction at the time the costs are incurred; SERC shall have the right with respect to this Telescope to use these services at an annually negotiated rate.

c. SERC shall with respect to this Telescope be represented on the MKSS Oversight Committee which reviews existing activities and recommends changes to the activities of the MKSS.

4. Permanent Mid-Level Facilities

The space available to SERC in the Permanent Mid-Level Facilities under the existing Agreement for the UK Infrared Telescope may be used in respect of this Telescope. It is recognized that this space may be insufficient to accommodate the additional needs of this Telescope and, if this proves to be the case, then UH will negotiate with SERC conditions under which this situation can be corrected. In the event, however, that agreement cannot be reached, UH shall be under no obligation to provide space to SERC in the Permanent Mid-Level Facilities beyond the 14 bedrooms, laboratory, office, and common space already allotted to SERC under the existing agreement for the UK Infrared Telescope.

5. Base Support Facilities

If SERC elects to participate in the Base Support Facility with respect to this Telescope, UH shall endeavour to negotiate a separate Agreement with SERC detailing the conditions of this participation.

6. Research Environment and Management of Science Reserve

a. UH shall provide and maintain a forum to allow SERC in respect of this Telescope and other users of the Science Reserve to discuss, on an equal footing, the management of the Science Reserve and to advise UH accordingly. However, since UH is the primary lessee with the State of Hawaii, it is recognised that the final responsibility for management of the Science Reserve Area resides with UH.

b. Recognising that SERC is part of a community of research organisations using the Science Reserve, UH will ensure that activities in the Science Reserve are compatible with and do not interfere with the research or potential research related to the Telescope, or with any activities concerning the Facilities generally. UH shall determine in its reasonable discretion and in consultation with all astronomy-related organizations using the Science Reserve which activities are incompatible with or interfere with such research.

7. Infrastructure Improvements: Provision of Electric Power and Road Paving

a. In an effort to provide a more reliable, economical and environmentally acceptable source of power at Hale Pohaku and to the telescopes in the Science Reserve, UH shall construct a power line for the benefit of existing and future users and shall undertake to improve and to pave the road in whole or in part, including the spur road from the Telescope to the main access road. Both of these improvements (hereinafter Infrastructure Improvements) are subject to appropriate State and County permits and approvals, and to appropriate amendment of the 1977 BLNR Mauna Kea Plan, and to the UH's obtaining the agreement of the existing users of the Science Reserve to paying a negotiated share of the costs.

b. This power line shall provide SERC with 250 kW of electrical power for the Telescope at a terminal which is at or near the site of the 850-kW generator currently on Mauna Kea in the area of the Science Reserve.

C. RESPONSIBILITIES SHARED BY SERC AND UH

1. Infrastructure Improvements:

a. In recognition of the benefits to the operation of the Telescope accruing from the Infrastructure Improvements referenced in Article III.B.7, SERC agrees to reimburse UH the principal sum of SIX HUNDRED AND FORTY THREE THOUSAND DOLLARS (\$643,000.00) or such lesser sum as may result from the conditions set out in Article III.C.1.c. SERC assumes no obligation under this Agreement to reimburse such costs, exclusive of maintenance, in excess of this amount.

b. This Agreement is based on the intention of UH to spend a total of SEVEN MILLION DOLLARS (\$7,000,000.00) on Infrastructure Improvements, and the SERC contribution is accepted as its pro-rata share of this total expenditure. Approximately FIVE MILLION DOLLARS (\$5,000,000.00) will be set aside for the power line, and the funds remaining will be given to improving the safety features of the road and to paving, beginning at the boundary of the subleased properties of all facilities existing, under construction, or which are the subject of a completed Operating and Site Development Agreement SIX (6) months before the contracts for road improvement and paving are let.

c. UH believes that the sum of SEVEN MILLION DOLLARS (\$7,000,000.00) is adequate to complete the Infrastructure Improvements acceptable to all institutions sponsoring telescopes on Mauna Kea. However, should this prove not to be the case, UH shall endeavour to secure the agreement of all groups to an expenditure of such greater or lesser sum as may be necessary for satisfactory Infrastructure Improvements. In that case, the contribution to be sought from SERC for this Telescope shall be revised in the same proportion to the revised cost above SEVEN MILLION DOLLARS (\$7,000,000.00). If the total cost is less than SEVEN MILLION DOLLARS (\$7,000,000.00) SERC will be reimbursed its proportionate share of the difference.

d. Payments to UH by SERC in relation to SERC's share of the Infrastructure costs shall become due and payable at the time UH incurs expenditure on the Infrastructure Improvements. SERC's liability under this Agreement shall be limited to its pro-rata share of the costs incurred by UH or SIX HUNDRED AND FORTY-THREE THOUSAND DOLLARS (\$643,000.00), whichever is the lesser. To assist SERC with its financial planning, UH shall inform SERC of the financial commitments regarding the Infrastructure Improvements as they are made.

e. If, for any reason, this Agreement is terminated (see Article XII below), SERC shall remain obligated to reimburse to UH the full outstanding balance, if any, of SERC's share of the costs of the Infrastructure Improvements for which commitments have already been entered into by UH.

2. Operating and Maintenance Costs:

a. SERC shall be responsible for an annually negotiated share of common costs for services furnished by MKSS as prescribed in Article III.B.3. above.

b. During the construction phase, SERC shall be responsible for a separately negotiated share of such costs (including road maintenance and snow removal).

IV. OTHER UTILITIES AND SERVICES

If SERC and UH mutually agree that UH should construct other improvements necessary or desirable for the operation of the Facilities in the Science Reserve, the parties shall negotiate in good faith to determine SERC's fair share of the cost of such improvements subject to availability of funds.

V. SCIENTIFIC COLLABORATION:

In recognition of the potential for scientific interaction between SERC and UH which the Telescope offers, and of the contribution of UH in making the site available to SERC, SERC and UH agree on the following matters with regard to the operation of the Telescope.

A. UH Use of the Telescope:

1. Observing Time:

Observing time on the Telescope shall be allocated by SERC to proposals sponsored by UH so as to ensure, as far as possible:

a. Observing time shall be allocated on the basis of scientific merit and technical feasibility in competition with all other applications.

b. The proportion of available time on the Telescope allocated to UH shall not exceed 10% as averaged over any consecutive 12-month period, and shall be equitably distributed over the seasons of the year. UH would have the expectation that this percentage of observing time would normally be granted to its programs.

c. UH shall not carry forward more than a 6 months' entitlement to its 10% of the time, nor shall UH be entitled to anticipate more than 6 months' entitlement to its 10% of the time in any consecutive 12-month period.

2. Observing Proposals:

Only proposals forwarded by the Director, Institute for Astronomy, UH Manoa shall be considered in awarding UH time.

3. Detailed Telescope Scheduling:

UH-sponsored personnel shall be subject to the authority of a designated SERC officer, normally the astronomer-in-charge or his deputy, when using the Facilities. SERC shall be responsible for the detailed scheduling of all time on the Telescope.

B. Participation in SERC Committees

In order to encourage productive interaction between SERC and UH, UH shall have the right to nominate one member of the SERC's Millimetre Telescope Users' Committee (MTUC) (or its equivalent) and one member of the appropriate Telescope Time Allocation Panel (TTAP) (or its equivalent). Membership of TTAP shall apply only to matters relating to this Telescope. The Director, Institute for Astronomy, UH Manoa may at his/her discretion designate alternates to the MTUC and TTAP above in the event that the UH's nominated member is unable to attend. Representation on the MTUC may start immediately after signature of this agreement in order to facilitate interaction between UH and SERC during the design and construction phases at both the engineering and scientific levels. Costs of travel and subsistence for UH's nominees to attend such meetings shall be met by SERC up to a maximum of three person-trips in any one year. SERC's normal conditions of travel and subsistence shall apply.

C. Interaction with the UH-Manoa Academic Program

It is the expressed policy of UH, and consistent with past practice, that new astronomical facilities in the Science Reserve should provide some specific benefit to the academic program of UH. UH wishes to implement this policy in such a manner as will reflect the multi-institutional nature of the Mauna Kea Observatory, and will bring a parallel benefit to the sponsoring institutions. To this end, UH is seeking specific interaction with SERC staff, both at its UH Manoa headquarters and at its Hilo campus. Details of this interaction are set out below.

1. Research Posts and Studentships Resident at UH

a. SERC-Appointed Research Fellow

(i) The SERC shall appoint one Research Fellow at any one time who will participate in the Institute for Astronomy research program of millimetre-wave astronomy associated with the Telescope and, with the agreement of the Director, Institute for Astronomy, will be resident at the Institute for Astronomy, UH, Manoa. The SERC shall determine the conditions of appointment and will be responsible for payment of the appointee's salary, travel to and from Hawaii at the beginning and end of the appointment, and any other cost-of-living allowances as may from time to time be agreed between SERC and the appointee.

(ii) The UH shall at its own expense provide the appointee with office accommodation and research facilities at Manoa and with observing time on telescopes in the Science Reserve on the same basis as UH staff and including telescopes to which UH has access through this and other agreements.

(iii) For the purposes of allocating time on the Telescope under this Agreement, the appointee would compete for the UH's time as described in Article V.A. above;

(iv) The UH shall make available to the appointee funds to cover travel and accommodation for research purposes associated with the Research Fellow's observations at Mauna Kea.

(v) It is anticipated that such appointments would normally be of one or two years duration.

b. Additional Research Fellows

With the approval of the Director, Institute for Astronomy, the SERC may appoint additional Research Fellow(s) to be resident at the Institute for Astronomy, UH-Manoa. The conditions pertaining to such appointment(s) would be subject to negotiation for each individual case between UH and SERC.

c. SERC Research Students

The SERC shall assign up to two research students to be resident at any one time at UH. SERC shall be responsible for payment of their studentships and any associated living costs. The students would normally be expected to work under the supervision of the SERC-appointed Research Fellow. UH shall at its own expense afford them office

accommodation and research facilities at Manoa on the same basis as its own students, except that no additional allocation of telescope time would be granted other than that to the SERC-appointed Research Fellow. SERC shall meet the cost of transportation and accommodation associated with the students' observations at Mauna Kea.

d. Joint Appointment

In order further to extend the cooperation between the two scientific programs in this area, UH and SERC will use their best endeavours to establish a senior appointment to be funded jointly by UH and SERC. The incumbent would be selected jointly by UH and SERC.

D. Interaction with UH-Hilo

UH-Hilo plans to build a program which will concentrate on the technical areas associated with the operation and maintenance of astronomical telescopes and instrumentation. UH and SERC believe it is to their mutual advantage that such a training program be stimulated. To this end, UH-Hilo will offer affiliate faculty status to appropriately qualified employees of SERC who are associated with this Telescope and the UK Infrared Telescope, to enable them to participate in the teaching and training programs at UH-Hilo. Such participation is explicitly envisaged if the SERC Base Support Facility is constructed on land provided by UH and its extent will be determined on an annual basis in negotiation between SERC's resident Telescope Director and the Chancellor of UH-Hilo, or their designated representatives and will be formalized in an exchange of letters between them. Students and faculty from UH-Hilo may, with the approval of the Resident Director, participate in the maintenance, development, and other work associated with the telescope for training purposes.

In the same spirit of cooperation, and in accordance with Section 304-4, Hawaii Revised Statutes, all SERC staff and immediate family wishing to enroll in courses at UH-Hilo will not be charged the non-resident tuition differential.

VI. INDEMNITY

SERC will indemnify, defend and hold harmless UH and the State of Hawaii Board of Land and Natural Resources, their officers, agents, employees or any person acting on its behalf from and against any claim or demand for loss, liability or damages, including, but not limited to, claims for property damage, personal injury or death, by whomsoever brought, based upon any accident, fire, or other incident arising in connec-

tion with the operation of the Facilities and caused by any act or omission of SERC, its officers, agents, employees or invitees, or occasioned by any failure on the part of SERC to observe or perform any of the terms and conditions herein or any regulations, ordinances and laws of the federal, state, municipal or county governments.

UH shall, as soon as possible notify SERC of any claim or demand made against UH or any action brought thereon for any act or omission and shall not compound, settle, or admit the same without the consent of SERC which will, at its own expense defend, dispute, or settle the same in the name and on behalf of UH. UH shall give to SERC (but at SERC's expense) all reasonable assistance that SERC may require for such purposes. SERC shall not be required to indemnify UH for any damages or loss arising hereunder for which UH recovers insurance monies in accordance with the terms of any insurance policy effected from time to time. In the event of such recovery, SERC shall indemnify UH for any damages or loss exceeding the amount covered by said insurance policy or policies; provided that, where UH has assumed the duty in writing to SERC to carry or maintain insurance coverage and fails to do so, SERC will indemnify UH only for the amount of damages or loss exceeding the agreed upon policy limits.

Additionally, SERC shall require its contractors working on the premises described by Sublease No. H09175 to obtain a policy or policies of comprehensive general liability insurance with minimum limits of \$300,000 per person, \$1,000,000 for personal injury or death for any one occurrence, and \$50,000 against claims for property damage for any one occurrence. UH and the State of Hawaii shall be named as additional insureds on all such policies, and copies of such policies shall be deposited prior to commencement of any work by such contractors, with the Director of Procurement and Property Management, UH.

VII. DISPUTES

A. Any controversy, claim or dispute which is not disposed by agreement within THIRTY (30) days may be referred to and decided by a board of arbitration, which shall act by majority, consisting of three persons who shall reduce their decision to writing and furnish a copy to each party. One arbitrator shall be selected by UH and one shall be selected by SERC; the arbitrators so selected shall jointly select the third neutral arbitrator. In the event that (1) either party fails to name its arbitrator, or (2) the first two arbitrators are unable to agree on a third arbitrator, then, in the first case, the party which has named its arbitrator and, in the second case, either party may apply to any judge of the Circuit Court for First Judicial Circuit to appoint such

arbitrator and the decision of such judge shall be final and binding. The parties shall be entitled to be heard in any such proceeding. The arbitration shall proceed in accordance with the rules of the American Arbitration Association. The decision of the arbitrators shall be final and conclusive, subject to the provisions of Chapter 658, Hawaii Revised Statutes, as amended, provided that any arbitration award which requires the payment or expenditure of any funds by UH shall not be binding upon UH absent a legislative appropriation, which UH shall use its best endeavors to obtain.

B. Each party shall pay its own expenses of arbitration including without limitation the fee of its arbitrator and the fee of the neutral arbitrator shall be divided equally; provided, however, that the arbitrators as part of their decision may provide for a different allocation of expenses. It is agreed that either party may apply to the court for costs and reasonable attorney's fees incurred for judicial review of the decision of the arbitrators to be awarded.

VIII. SERVICE OF PROCESS

SERC shall designate a representative within the State of Hawaii duly authorized to accept service of process on its behalf. In the event that SERC fails to so designate such a representative or such designated representative is unavailable, SERC consents that service of any notice or process issued against it may be served upon it by filing the same with the Director of Commerce and Consumer Affairs, State of Hawaii, or in his absence with the Deputy Director. UH shall forward by certified mail to SERC a copy of any such notice or process served on the Director of Commerce and Consumer Affairs.

IX. GOVERNING LAW: SEVERABILITY

The validity, construction and performance of this Agreement and the legal relations among the parties to this Agreement shall be governed by and construed in accordance with the laws of the State of Hawaii, excluding that body of law applicable to choice of law. In the event any provision of this Agreement shall be held by a court of competent jurisdiction to be contrary to law, the remaining provision of this Agreement shall remain in full force and effect.

X. AMENDMENTS TO THIS AGREEMENT

This agreement may be amended at any time by mutual agreement of the parties in writing.

XI. TERM OF AGREEMENT

This Agreement will be in force on the last date of signing and execution by all parties of this document or Sublease No. H09175, whichever is later.

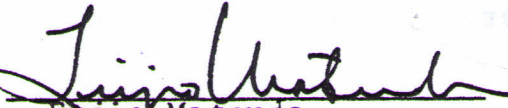
XII. TERMINATION

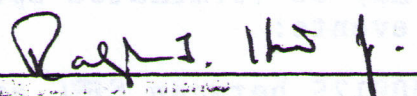
Except for the SERC financial obligation as defined in Article III.C.1.f to reimburse UH for its share of the Infrastructure Improvements, this Agreement may be terminated upon the occurrence of any of the following events:

1. Termination of Sublease No. H09175 between SERC and UH. One or both of the parties may wish to extend, renew, or renegotiate the Sublease prior to termination and, if so, the parties will give simultaneous consideration to a renewal or renegotiation of this Agreement.
2. The expiration of General Lease No. S-4191 on December 31, 2033, unless said General Lease is renewed or extended.
3. If SERC fails to observe or comply with any of the terms and conditions herein within THIRTY (30) days after being notified in writing by UH of such failure. In the event that more than THIRTY (30) days are reasonably required to observe or perform, SERC shall in good faith within said THIRTY (30) days, initiate action and provide a plan for observance or performance, and shall diligently prosecute the same to completion.
4. Mutual agreement in writing of UH and SERC.

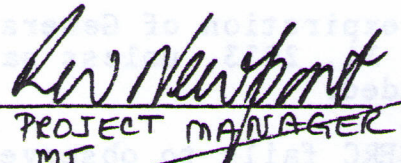
IN WITNESS WHEREOF, the parties hereto have executed these presents on the day and year first above written.

FOR THE UNIVERSITY OF HAWAII:

By  2-10-84
Fujio Matsuda
President Date

By  2-8-84
Date

FOR THE SCIENCE AND ENGINEERING
RESEARCH COUNCIL:

By  2-10-84
Its PROJECT MANAGER, Date
MT

By _____
Its _____ Date _____

APPROVED AS TO FORM:

Its _____ Date _____

CONTENTS

I.	DEFINITIONS	
II.	LOCATION	
III.	RESPONSIBILITIES OF THE PARTIES	
A.	Science and Engineering Research Council	
1.	Design and Construction of the Facilities	3
2.	Installation of Individually Metered Electrical Service Connection	3
3.	Operation and Maintenance of the Facilities	3
4.	Permanent Mid-Level Facilities	3
5.	Base Support Facilities	4
6.	Research Environment and Management of Science Reserve	4
B.	University of Hawaii	4
1.	Sublease	4
2.	Access to Facilities and Provision of Utilities	4
3.	Mauna Kea Support Service	5
4.	Permanent Mid-Level Facilities	5
5.	Base Support Facilities	6
6.	Research Environment and Management of Science Reserve	6
7.	Infrastructure Improvements: Provision of Electric Power and Road Paving	6
C.	Responsibilities Shared by SERC and UH	7
1.	Infrastructure Improvements	7
2.	Operating and Maintenance Costs	8
IV.	OTHER UTILITIES AND SERVICES	8

V. SCIENTIFIC COLLABORATION	8
A. UH Use of the Telescope	8
B. Participation in SERC Committees	9
C. Interaction with the UH-Manoa Academic Programs	9
D. Interaction with UH-Hilo	11
VI. INDEMNITY	11
VII. DISPUTES	12
VIII. SERVICE OF PROCESS	13
IX. GOVERNING LAW: SEVERABILITY	13
X. AMENDMENTS TO THIS AGREEMENT	13
XI. TERM OF THIS AGREEMENT	14
XII. TERMINATION	14