MAUNA KEA SCIENCE RESERVE
Kaohe, Hamakua, Island of Hawaii, Hawaii
Scale: 1 inch = 4000 feet

MAUNA KEA

Kea Science Reserve
13,321.064

Governor's
Proclamation

Forest
RESERVE

1909

MAUNA KEA SCIENCE RESERVE

Kaohe, Hamakua, Island of Hawaii, Hawaii
Scale: 1 inch = 4000 feet
6. 27° 49' 06.5" 841.83 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

7. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 306° 59' 47.4" 1824.16 feet;

8. 227° 29' 00.9" 2805.06 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

9. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 1500.00 feet, the chord azimuth and distance being: 317° 29' 00.9" 3000.00 feet;

10. 47° 29' 00.9" 2805.06 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

11. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 13200.00 feet, the chord azimuth and distance being: 325° 31' 55.2" 701.07 feet;

12. 245° 46' 12.7" 2760.45 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

13. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 2000.00 feet, the chord azimuth and distance being: 335° 46' 12.7" 4000.00 feet;

14. 65° 46' 12.7" 2760.45 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

15. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 352° 14' 32.9" 3863.50 feet;
day of __________, 1968, and the UNIVERSITY OF
HAWAI'I, by its __________ and __________, has caused these presents to be duly executed this
day of __________, 1968, effective as of the day and
year first above written.

STATE OF HAWAI'I

By: 
Chairman and Member
Board of Land and
Natural Resources

And By: 
Member
Board of Land and
Natural Resources

UNIVERSITY OF HAWAI'I

By: 
Its Acting President

And By: 
Its

APPROVED AS TO FORM:

Deputy Attorney General
Dated: __________

Proofed by: __________
during hours of darkness and certain types of electric or
electronic installation on the demised lands, but shall not
necessarily be limited to the foregoing.

5. **Assignments.** The Lessee shall not sublease, sub-
rent, assign or transfer this lease or any rights thereunder
without the prior written approval of the Board of Land and
Natural Resources.

6. **Improvements.** The Lessee shall have the right
during the existence of this lease to construct and erect build-
ings, structures and other improvements upon the demised prem-
ises; provided, that plans for construction and plot plans of
improvements shall be submitted to the Chairman of the Board
of Land and Natural Resources for review and approval prior to
commencement of construction. The improvements shall be and
remain the property of the Lessee, and shall be removed or
disposed of by the Lessee at the expiration or sooner termina-
tion of this lease; provided, that with the approval of the
Chairman such improvements may be abandoned in place. The
Lessee shall, during the term of this lease, properly maintain,
repair and keep all improvements in good condition.

7. **Termination by the Lessee.** The Lessee may ter-
minate this lease at any time by giving thirty (30) days' notice
in writing to the Lessor.

8. **Termination by the Lessor.** In the event that (1)
the Lessee fails to comply with any of the terms and conditions
of this lease, or (2) the lessee abandons or fails to use the
demised lands for the use specified under paragraph 4 of these
covenants for a period of two years, the Lessor may terminate
this lease by giving six months' notice in writing to the Lessee.

9. **Non-Discrimination.** The Lessee covenants that the
use and enjoyment of the premises shall not be in support of any
RESERVING UNTO THE LESSOR THE FOLLOWING:

1. **Water Rights.** All surface and ground waters appurtenant to the demised premises, together with the right to enter and to capture, divert or impound water; provided, that the Lessor shall exercise such rights in such manner as not to interfere unreasonably with the Lessee's use of the demised premises; provided, further, that the Lessee shall have the right to use the waters of Lake Waiau for any purpose necessary or incidental to the use permitted by this lease on the following conditions:

   a. No drilling or disturbance of Lake Waiau's bottom, banks or areas adjacent thereto shall be permitted;

   b. No activity shall be permitted which will result in the pollution of the waters of Lake Waiau;

   c. Lessee shall not take or divert any of the waters arising from springs which furnish the water supply for Pohakuloa, and no alterations to said springs shall be made by Lessee.

2. **Access.** All rights to cross the demised premises for inspection or for any government purposes.

3. **Hunting and Recreation Rights.** All hunting and recreation rights on the demised lands, to be implemented pursuant to rules and regulations issued by said Board in discharging its fish and game or state parks responsibilities; provided, however, that such hunting and recreation activities shall be coordinated with the activities of the Lessee on the demised lands; and provided, further, that such hunting and recreation activities shall be limited to day-light hours only.
III. **Conflict.**

In the event any term or condition contained herein is inconsistent with or contrary to Exhibit B, the said Exhibit B shall be controlling.

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

UNIVERSITY OF HAWAII

By

[Signature]

By

[Signature]

Sublessor

SCIENCE RESEARCH COUNCIL

By

[Signature]

By

[Signature]

Sublessee

APPROVED:

STATE OF HAWAII

By

[Signature]

Chairman and Member
Board of Land and Natural Resources

By

[Signature]

Member
Board of Land and Natural Resources

APPROVED AS TO FORM:

By

[Signature]

Deputy Attorney General

-10-
or installed with the approval of Sublessor and at the expense of the Sublessee. In the event that the parties are unable to agree on such negotiated figure within thirty (30) days from the date of such notice, the dispute shall be submitted to arbitration as provided in paragraph I of MUTUAL COVENANTS below. If Sublessor does not exercise this option, Sublessee may sell the assets to a third party acceptable to the Sublessor, or Sublessee (1) may with the approval of the Chairman of the Board of Land and Natural Resources, which approval will not be unreasonably withheld, surrender the same in place, in whole or in part, without cost to the Sublessor or (2) otherwise the Sublessee shall remove the same, in whole or in part, at its expense within one (1) year after termination or expiration. In the event of removal, the Sublessee shall restore the property 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.

XIV. Default.

That the Sublessee shall peaceably surrender the demised premises to the Sublessor if Sublessee fails to observe or perform any condition or covenant herein provided within thirty (30) days after being notified by the Sublessor of such failure, or in the event that more than thirty (30) days are reasonably required, then Sublessee shall commence such observance or performance within said thirty (30) days and shall diligently prosecute the same to completion.

AND THE PARTIES MUTUALLY COVENANT AS FOLLOWS:

I. Disputes.

Any controversy, claim or dispute concerning a question
in whole or in part; provided, however, that such consent shall be not 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.

VIII. Surrender.

That on the expiration of the term or sooner determination thereof as in this Sublease provided, the Sublessee shall peaceably and quietly leave and surrender and deliver up to the Sublessor the demised premises in good repair, order, and clean condition, reasonable wear and tear excepted.

IX. Expenses on Default. (Intentionally omitted. See Mutual Covenants I and II).

X. Use of Demise.

That the Sublessee shall use the premises exclusively for astronomical facilities to be constructed and managed by and at the expense of Sublessee in cooperation with the University of Hawaii through a separate contractual arrangement, and Sublessee shall not permit or make any waste or strip, or 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 hereby as may be reasonably required for the construction of the improvements contemplated by this
Sublessee shall peaceably hold and enjoy the demised premises during the term hereof without hindrance or interruption.

THE SUBLESSEE HEREBY COVENANTS WITH THE SUBLESSOR AS FOLLOWS:

I. Janitorial and Other Services.

That the Sublessee shall provide janitorial, custodial and security services to the demised premises.

II. Repairs and Maintenance.

That the Sublessee shall be responsible for all repair and maintenance of the grounds and the buildings and improvements erected upon the premises, and any modification, improvement, or alteration approved by the Sublessor and made by the Sublessee.

III. General Liability.

That the Sublessee shall at all times with respect to the demised premises use due care for safety, and the Sublessee shall be liable for any loss, liability, claim or demand for property damage, personal injury or death arising out of any injury, death, or damage on the demised premises caused by or resulting from any negligent activities, operations or omissions of the Sublessee on or in connection with the demised premises, subject to the laws of the State of Hawaii governing such liability.

IV. Utilities and Other Charges.

That the Sublessee shall pay when due all charges,
I. **Location/Area.**

A portion of that certain land area described in General Lease S-4191 and more specifically identified in Exhibit A, hereto attached and by reference made a part hereof, together with the right reserved to Sublessor to establish a 20 foot wide easement to accommodate an access road, and power and telephone lines, 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 and amended from time to time by the Sublessor. The site designated in Exhibit A is subject to survey by the Sublessor within six (6) months from the date of this Sublease, and the exact area covered by this Sublease, and the easement thereon for the access road, and power and telephone lines reserved to Sublessor, shall be more specifically established by Sublessor and described by metes and bounds, and such description shall be binding upon the Sublessor and Sublessee.

II. **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, a copy of which is attached hereto as Exhibit B, and by this reference made a part hereof, for and during a principal term of not more than twenty-seven (27) years commencing on the 21st day of January, 1976, and thereafter subject to automatic extension without further notice or execution of further documents until the expiration of the General Lease on December 31, 2033. Either party may terminate this Sublease at the expiration of the principal term or after the principal term, upon
EXHIBIT D
to
OSDA Attachment A

DESCRIPTION OF CONSTRUCTION

The purpose of the Very Long Baseline Array (VLBA) is to provide high-quality radio images of remote astronomical objects at the highest angular resolution that can be achieved by a ground-based instrument. The site is located 12,200 feet above sea level. The fenced area around the site measures 150 feet by 250 feet. The control building has a floor area of 1400 square feet. The Very Long Baseline Array (VLBA) antenna is 25 meters in diameter, carried on a fully-steerable mounting which permits it to be pointed to any direction above the horizon. Construction of the Mauna Kea facility is scheduled to begin in the Spring of 1990, with full operation starting in 1992.

Site preparation, which includes grading, road building, installation of the buried power line, construction of the antenna foundation and control building, and fence erection, will be done by local contractors; specifically:

1. **Site Work**: Development of a 150 ft. x 250 ft. site including grading, fencing, placement of gravel cover; access road, water tank, cess pool, transformer pad, trench, backfill and conduit system for the primary electric service; and a conduit system for underground telephone service.

2. **Antenna Foundation**: Excavation, grading and backfill and construction of an approximately 350 cubic yard reinforced concrete antenna foundation including drainage system, electrical conduits to the building, and a grounding system and counterpoise around the foundation.

3. **Site Control Building**: Construction of an approximately 1400 square foot masonry block building including excavation, grading, backfill; water, electric, telephone, septic systems and sanitary connections; conduits, electrical connections to the antenna foundation and grounding system.

4. **Other**:
   a. **Scheduling of Construction Work**: All work, utility connections, etc., shall be planned and scheduled with the other installations and tenants within the Mauna Kea Science Reserve so as not to interfere with operations within the Science Reserve and other subcontractors who may be on the site including moving of heavy loads and other traffic up and down the mountain.
   b. **Disposal of Debris**: All debris and litter will be hauled away to an approved disposal site. The construction site will be kept free of litter at all times and litter will not be allowed on adjacent areas.
   c. **Excess Excavation**: Any excess excavation will be disposed of outside the fenced area or hauled away to an approved fill. It shall be spread uniformly, graded free of large rocks and left in a neat and clean manner.
STATE OF HAWAII  
CITY AND COUNTY OF HONOLULU  

On this 19th day of April, 1999, before me appeared KENNETH P. MORTIMER and EUGENE S. IMAI, to me personally known, who, being by me duly sworn, did say that they are the President, University of Hawai‘i and Chancellor, University of Hawai‘i at Mānoa, and Senior Vice President for Administration, respectively, of the UNIVERSITY OF HAWAI'I, a body corporate, and that seal affixed to the foregoing instrument is the corporate seal of said University and that the foregoing instrument was signed and sealed in behalf of said University by authority of its Board of Regents, and the said KENNETH P. MORTIMER and EUGENE S. IMAI acknowledged said instrument to be the free act and deed of said University.

Helen J. Nakamura  
Notary Public, State of Hawai‘i  
HELEN T. NAKAMURA  

My Commission expires: 3-27-2007
and covenants or the duties and obligations of the Lessee or Sublessee under General Lease No. S-4191.

IT IS UNDERSTOOD that except as provided herein, should there be any conflict between the terms of General Lease No. S-4191 and the terms of the Sublease, the former shall control; and that no further sublease or assignment of any interest of the premises or any portion thereof shall be made without the prior written consent of the Board of Land and Natural Resources.

FURTHERMORE, Lessee hereby acknowledges that the Lessor's consent to sublease under General Lease No. S-4191, does not release the Lessee of any and all responsibilities, obligations, liabilities, and claims respecting or arising under or out of said General Lease prior to the effective date of this sublease.
MAUNA KEA SCIENCE RESERVE
Kaohe, Hamakua, Island of Hawaii, Hawaii

Scale: 1 inch = 4000 feet

MAUNA KEA SCIENCE RESERVE
Governor's Proclamation
dated June 5, 1969
(CSP 5081)

MAUNA KEA SCIENCE RESERVE
SUMMIT 1955' A

12325.05 5
471.64W

MAUNA KEA SCIENCE RESERVE
SUMMIT 1955' A

12325.05 5
471.64W

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII
6. 27° 49' 06.5" 841.83 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

7. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 306° 59' 47.4" 1824.16 feet;

8. 227° 29' 00.9" 2805.06 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

9. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 1500.00 feet, the chord azimuth and distance being: 317° 29' 00.9" 3000.00 feet;

10. 47° 29' 00.9" 2805.06 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

11. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 13200.00 feet, the chord azimuth and distance being: 325° 31' 55.2" 701.87 feet;

12. 245° 46' 12.7" 2760.45 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

13. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 2000.00 feet, the chord azimuth and distance being: 335° 46' 12.7" 4000.00 feet;

14. 65° 46' 12.7" 2760.45 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;

15. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 352° 14' 32.9" 3563.50 feet;
day of June, 1968, and the UNIVERSITY OF HAWAII, by its Acting President and its Acting President, has caused these presents to be duly executed this day of , 1968, effective as of the day and year first above written.

STATE OF HAWAII

By: 

Acting Chairman and Member
Board of Land and Natural Resources

And By: 

Member
Board of Land and Natural Resources

UNIVERSITY OF HAWAII

By: 

Its Acting President

And By: 

Its

APPROVED AS TO FORM:

Deputy Attorney General
Dated: 

Proofed by:
during hours of darkness and certain types of electric or electronic installation on the demised lands, but shall not necessarily be limited to the foregoing.

5. **Assignments.** The Lessee shall not sublease, subrent, assign or transfer this lease or any rights thereunder without the prior written approval of the Board of Land and Natural Resources.

6. **Improvements.** The Lessee shall have the right during the existence of this lease to construct and erect buildings, structures and other improvements upon the demised premises; provided, that plans for construction and plot plans of improvements shall be submitted to the Chairman of the Board of Land and Natural Resources for review and approval prior to commencement of construction. The improvements shall be and remain the property of the Lessee, and shall be removed or disposed of by the Lessee at the expiration or sooner termination of this lease; provided, that with the approval of the Chairman such improvements may be abandoned in place. The Lessee shall, during the term of this lease, properly maintain, repair and keep all improvements in good condition.

7. **Termination by the Lessee.** The Lessee may terminate this lease at any time by giving thirty (30) days' notice in writing to the Lessor.

8. **Termination by the Lessor.** In the event that (1) the Lessee fails to comply with any of the terms and conditions of this lease, or (2) the Lessee abandons or fails to use the demised lands for the use specified under paragraph 4 of these covenants for a period of two years, the Lessor may terminate this lease by giving six months' notice in writing to the Lessee.

9. **Non-Discrimination.** The Lessee covenants that the use and enjoyment of the premises shall not be in support of any
1. Water Rights. All surface and ground waters appurtenant to the demised premises, together with the right to enter and to capture, divert or impound water; provided, that the Lessor shall exercise such rights in such manner as not to interfere unreasonably with the Lessee's use of the demised premises; provided, further, that the Lessee shall have the right to use the waters of Lake Waiau for any purpose necessary or incidental to the use permitted by this lease on the following conditions:

   a. No drilling or disturbance of Lake Waiau's bottom, banks or areas adjacent thereto shall be permitted;

   b. No activity shall be permitted which will result in the pollution of the waters of Lake Waiau;

   c. Lessee shall not take or divert any of the waters arising from springs which furnish the water supply for Pohakuloa, and no alterations to said springs shall be made by Lessee.

2. Access. All rights to cross the demised premises for inspection or for any government purposes.

3. Hunting and Recreation Rights. All hunting and recreation rights on the demised lands, to be implemented pursuant to rules and regulations issued by said Board in discharging its fish and game or state parks responsibilities; provided, however, that such hunting and recreation activities shall be coordinated with the activities of the Lessee on the demised lands; and provided, further, that such hunting and recreation activities shall be limited to day-light hours only.
STATE OF HAWAII
CITY AND COUNTY OF HONOLULU

On this 21st day of March 1991, before me appeared Donald N. B. Hall, personally known to me, who, being by me duly sworn, did say that he is the Director of the Institute for Astronomy, 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 on behalf of said corporation by the authority of its Board of Regents; and said Donald N. B. Hall acknowledged the instrument to be the free act and deed of said corporation.

Notary Public; First Circuit
State of Hawaii

My commission expires: 4/4/92

STATE OF HAWAII
CITY AND COUNTY OF HONOLULU

On this 21st day of March 1991, before me appeared Albert J. Simone and Ralph T. Horii, Jr., personally known to me, who, being by me duly sworn, did say that they are the President and Vice President for Finance and Operations, 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 on behalf of said corporation by the authority of its Board of Regents; and said Albert J. Simone and Ralph T. Horii, Jr. acknowledged the instrument to be the free act and deed of said corporation.

Notary Public, First Circuit
State of Hawaii

My commission expires: 3/27/91
STATE OF VIRGINIA  
COUNTY OF ALBEMARLE  

On this 21 day of September, 1990, before me appeared Paul A. Vanden Bout, personally known to me, who, being by me duly sworn, did say that he is Director of Associated Universities, Inc./National Radio Astronomy Observatory, a non-profit, public-benefit corporation; that the seal affixed to the foregoing instrument is the corporate seal of said corporation, that said instrument was signed and sealed on behalf of said corporation; and said Paul A. Vanden Bout acknowledged the instrument to be the free act and deed of said corporation.

[Signature]
Notary Public

My commission expires:
November 4, 1990
c. In the event that Sublessee fails to remove such Property or debris and restore the Demised Premises within TWELVE (12) months, such Property may be removed and the land restored as described above by Sublessor at the expense of Sublessee.

4. If this Sublease terminates or expires, and Sublessor has either voluntarily surrendered General Lease S-4191, or defaulted on either this Sublease or General Lease S-4191, and if Sublessee is allowed its continued right to quiet enjoyment of the Property and the Demised Premises under the terms of the Consent to Sublease as stated in Exhibit B, then Sublessee agrees to honor the terms of this Sublease.

If said surrender or default results in Sublessor’s rights of General Lease S-4191 being (a) returned to Lessor, then Sublessee agrees to negotiate in good faith a new Operating Agreement with Lessor on the terms and conditions of Sublessee’s continued use of the Demised Premises; or (b) transferred to an organization other than Sublessor, then Sublessee agrees to negotiate in good faith a new Operating Agreement with the new sublessor of the Demised Premises, and to honor the terms and conditions of said superseding Operating Agreement with said new sublessor. Continued right to quiet enjoyment of the Property and the Demised Premises is contingent upon satisfactory negotiation of an Operating Agreement with Lessor or said new sublessor.
D. **Final Agreement**

This Sublease constitutes the final agreement between Sublessor and Sublessee regarding the Sublease of the Demised Premises and the grant of Easement to Sublessee for purposes of Sublessee’s construction of the Facilities. All prior discussions and/or agreements among the parties concerning the subject matter addressed in this Sublease shall have no force and effect.

E. **Notices**

All notices required or permitted to be given hereunder by Sublessor to Sublessee, or Sublessee to Sublessor, shall be in writing and sent to the following address:

- **If to Sublessor:**
  - University of Hawaii
  - 2444 Dole Street
  - Honolulu, HI 96822
  - Attn: Vice President for Finance & Operations

- **If to Sublessee:**
  - National Radio Astronomy Observatory
  - 520 Edgemont Road
  - Charlottesville, VA 22903
  - Attn: J. L. Desmond

Sublessor and Sublessee may change the address of the recipient of notices by sending a written notice of each such change to the last designated address or the addressee.

F. **Termination**

This Sublease shall terminate upon the occurrence of any of the following events:

1. If the planned construction of the Facilities described in Exhibit D is not substantially completed by the 31st of December 1994, unless otherwise agreed to in writing between Sublessor and Sublessee.

2. Termination of the aforesaid OSDA unless a new OSDA between UH and another party or parties is executed and Lessor, Sublessor, and Sublessee agree to in writing to a continuation of this Sublease.

3. The expiration of General Lease No. S-4191 on December 31, 2033 without renewal, extension or renegotiation. If said General Lease is renewed, extended or renegotiated, then this Sublease shall be renewed, extended or renegotiated at that time in accordance with II.C.

4. If Sublessee fails to observe or comply with any of the terms or conditions herein within SIXTY (60) days after being notified in writing by Sublessor of such failure. In the event that more than SIXTY (60) days are reasonably required to observe or perform, Sublessee shall in good faith and within said SIXTY (60) days, initiate action and provide a plan for observance or performance, and shall diligently prosecute the same to completion.
but not be limited to, the obligation to paint the Facilities as appropriate and to make any modification or alteration thereof when necessary.

D. **Utilities and Other Charges**

Except as may be agreed in the aforesaid OSDA, Sublessee shall pay for or shall cause to be paid when due all charges associated with the Facilities and all charges, duties and rates of every description, including electricity, water, communications, sewer, gas, refuse collection or any other similar charges, as 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**

If, at any time in the future, government taxes or assessments are made, 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, of Sublessor or Sublessee in respect thereof, are now or may be assessed or become liable by authority of law during the term of this Sublease.

F. **Assignment and Subleasing**

Neither Sublessee nor its successors or assigns shall, without the prior written consent of Lessor and Sublessor, assign, sublease or mortgage this Sublease or any interest therein, or sublet the Demised Premises, 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.

G. **Use of Demised Premises**

1. Sublessee shall use the Demised Premises exclusively for the Facilities, which are to be constructed and operated by and at the expense of Sublessee or others working in cooperation with Sublessee through the aforesaid OSDA and through any other agreements which may be agreed to by Sublessor and Sublessee.

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

3. 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 the Sublease, the term "reasonable wear and tear" shall include without limitation such grading, excavation and filling of the demised premises as may be reasonably required for the construction of the improvements contemplated by this Sublease. Such grading, excavation and filling shall not be deemed to constitute strip or waste. Sublessee shall make reasonable effort to minimize grading, excavation and filling.
G. **Controlling Lease**

Sublessee shall observe and comply with all terms and conditions of General Lease S-4191.

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

H. **Operation of the Facilities**

Neither Sublessee nor its successor or assigns shall operate or permit to be operated the aforementioned Facilities for purposes of research without an effective OSDA. The Facilities may be operated by Sublessee in the absence of the aforesaid OSDA only when necessary to ensure the safety of personnel or of the Facilities.

I. **Indemnity/Insurance**

Sublessee shall 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, based upon any accident, fire, or other incident on the Demised Premises and roadways adjacent thereto which arises from any act or omission of Sublessee, its officers, agents, employees, or invitees, or occasioned by any failure on the part of the Sublessee to maintain the Demised 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.

Additionally, Sublessee shall, at its own cost and expense, maintain liability insurance for personal injury or death and property damage in the minimum amounts of ONE MILLION DOLLARS ($1,000,000.00) per person and FIVE MILLION DOLLARS ($5,000,000.00) per occurrence for personal injury or death, and FIVE HUNDRED THOUSAND DOLLARS ($500,000.00) against claims for property damage for any one occurrence, subject to revision every FIVE (5) years in writing. Said insurance is subject to the approval of Lessor and Sublessor and shall name Lessor and Sublessor as additional insureds. A certificate of insurance evidencing that said insurance is in full force and effect shall be deposited with the Director of Procurement and Property Management, 1400 Lower Campus Road, Room 15, Honolulu, Hawaii 96822, U.S.A.

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

A. **Peaceful Enjoyment**

Upon provision to Sublessor of the rights (in lieu of rent) provided in the aforesaid OSDA and upon observance and performance of all the terms, covenants and conditions contained herein, Sublessee shall peaceably hold and enjoy the Demised Premises during the term hereof without hindrance or interruption. Any proposed use of the Demised Premises by Sublessor or Lessor, their successors or assigns, as contemplated in, but not limited to, those paragraphs entitled "Hunting Recreation Rights" and "Right to Use Demised Land" as set forth in General Lease S-4191, shall be subject to coordination with Lessor, Sublessor and Sublessee; such proposed use shall not interfere unreasonably with Sublessee's use of the demised premises.
SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT

THIS Sublease and accompanying non-exclusive Easement is made this 28th day of September, 1996, by and between the UNIVERSITY OF HAWAII, hereinafter called "Sublessor," and the ASSOCIATED UNIVERSITIES, INC./NATIONAL RADIO ASTRONOMY OBSERVATORY, hereinafter called "Sublessee." This Sublease and Easement 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 said General Lease S-4191 and "Consent to Sublease of General Lease S-4191," are attached hereto as Exhibits A and B, respectively, and are incorporated herein by reference.

WITNESSETH THAT:

Sublessor, in consideration of the rent hereinafter reserved and upon the conditions, convenants and agreements hereinafter expressed, does hereby demise and let to Sublessee the parcel of land described in Exhibit C, attached hereto and incorporated herein by reference, and Sublessee does hereby sublease from Sublessor said parcel for the purpose of erecting an antenna facility to be constructed and operated by and at the expense of Sublessee through a contractual arrangement set forth in a separate "Operating and Site Development Agreement Between the Associated Universities, Inc./National Radio Astronomy Observatory and the University of Hawaii Concerning the Erection and Operation of a Very Long Baseline Array Antenna (hereinafter "VLBA") on Mauna Kea, Hawaii" (hereinafter "OSDA").

Construction will include the VLBA control buildings and antenna with related equipment and instrumentation and related support facilities and infrastructure improvements required on the demised premises to support the operations of the VLBA (collectively "Facilities").

I. GENERAL

A. Location/Area

The location/area comprises a portion of that certain land area, described in General Lease S-4191 and its Exhibit A, and more specifically identified in Exhibit C attached hereto.
IN WITNESS WHEREOF, the parties hereto have executed these presents on the
day and year first above written.

FOR THE UNIVERSITY OF HAWAII:

By

Donald N. B. Hall
Its Director, Institute
for Astronomy

Date

9/28/90

By

Ralph T. Hori, Jr.
Its Vice President
for Finance and Operations

Date

By

Albert J. Simone
Its President

Date

Approved as to form:

By

Harriet Y. Lewis
Its Deputy Attorney General

Date

9/17/90

FOR THE NATIONAL RADIO ASTRONOMY OBSERVATORY:

By

Paul Vanden Bout
Its Director

Date

9/21/90

FOR ASSOCIATED UNIVERSITIES, INC.:

By

Robert E. Hughes
Its President

Date

9/25/90
additional insureds. A Certificate of Insurance evidencing that said insurance is in full force and effect shall be deposited with the Director of Procurement and Property Management, University of Hawaii, 1400 Lower Campus Road, Room 15, Honolulu, Hawaii 96822, U.S.A.

XI. ATTORNEY’S FEES

AUI/NRAO and UH shall each pay their own attorney’s fees and any other legal expenses.

XII. SERVICE OF PROCESS

AUI/NRAO shall designate a representative within the State of Hawaii duly authorized to accept service of process on its behalf.

XIII. GOVERNING LAW: SEVERABILITY

The validity, construction and performance of this OSDA and the legal relations among the parties to this OSDA 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 OSDA shall be held by a court of competent jurisdiction to be contrary to law, the remaining provisions of this OSDA shall remain in full force and effect.

XIV. AMENDMENTS TO THIS OSDA

This OSDA may be amended in writing at any time by mutual agreement of AUI/NRAO and UH.

XV. TERM OF THIS OSDA

This OSDA shall become effective on the date first above written to execute this document or the effective date of the Sublease, whichever is later, and shall terminate as provided in XVII.

XVI. RENEGOTIATION OR EXTENSION OF THIS OSDA

If UH and the BLNR either renegotiate or extend General Lease S-4191 beyond December 31, 2033, or if UH obtains a lease providing the same general terms and conditions as General Lease S-4191 for a period beyond December 31, 2033, UH shall extend this OSDA accordingly, except that AUI/NRAO and UH agree to negotiate in good faith any revisions thereto proposed at the time by either AUI/NRAO or UH.

XVII. TERMINATION

This OSDA shall be terminated upon the first of any of the following events to occur:
c. Fund the cost of operating and maintaining the commercial power lines from the handhole described in V.I.D.1.a.(i) to the Facilities, and for telephone lines from Hale Pohaku to the Facilities. In addition, AUI/NRAO shall pay an annually negotiated share of any data communications service provided to the Facilities.

VII. DELEGATION OF RIGHTS AND ASSIGNMENT OF RESPONSIBILITIES BY AUI/NRAO

AUI/NRAO may delegate certain of its rights, and assign certain of its obligations and responsibilities hereunder to other agents. However, it is understood that AUI/NRAO shall be ultimately responsible to UH for the obligations and responsibilities undertaken by them in this OSDA.

VIII. ASSIGNMENT OF RIGHTS

Any assignment of rights to the facility shall be bound by paragraph III.F. of the sublease and non-exclusive easement agreement. AUI/NRAO undertakes that, if considering any such assignment of an interest in the facility or subleasing of the facility, it will so notify UH so as to provide adequate time for UH to review the proposed assignment of rights, secure a consent agreement from the new party or parties and to obtain the necessary prior written consent approval by the UH Board of Regents, the State of Hawaii Board of Land Natural Resources, and any other bodies whose consent is required under the terms of the lease, the sublease, or other agreements and documents.

IX. SCIENTIFIC COOPERATION

In recognition of the potential for scientific interaction between AUI/NRAO and UH which the Facilities offer, and of the contribution of UH in making the site available to AUI/NRAO, AUI/NRAO and UH agree on the following matters with regard to the operational phase of the Facilities.

A. UH Use of the Facilities

1. Observing time on the Facilities shall be allocated to proposals sponsored by UH under the following ground rules:

a. Observing time shall first be allocated to the NRAO Director for engineering purposes and for the scheduling of the Hawaii antenna as an element of the VLBA.

b. Of the remaining time scheduled for single dish observing, one-third of the time shall then be reserved for UH for observations with the Hawaii antenna, up to a maximum of 15% of the total time.

c. Only proposals having a UH staff member, student or bona fide visitor as principal investigator, and forwarded by the IfA Director shall be considered in scheduling UH single dish observing time.

d. Scheduling of observing time shall be performed by a single individual designated to perform this function for the Observatory.
CENTS ($627,707.00) (in December 31, 1989 dollars, with escalation following the most recently published State of Hawaii All Urban Consumers Price Index), toward:

(i) The provision of an underground power spur line (to the same HELCO approved standards as the main line to the summit and with parallel circuit capacity of no less than 2,000 kVA) together with communications conduits from an agreed handhole of the summit line to a handhole at or near the facility which allows for future extension of, or connection to, the spur line and communications conduits. This spur line and communications conduits will be part of the Mauna Kea infrastructure. Actual costs of the spur line, up to a maximum of half of the infrastructure contribution, will be credited against the VLBA infrastructure contribution.

(ii) The provision of repeater station infrastructure and equipment below Hale Pohaku.

This contribution shall be made within THIRTY (30) DAYS of the execution of this OSDA.

2. Information Station Expansion

a. UH:

UH anticipates that it may be in the best interests of the astronomical facilities forming a part of the Mauna Kea Observatories to expand the Information Station after three additional major astronomical facilities beyond the existing six major astronomical facilities join the Mauna Kea Observatories. UH shall consider this possibility and pursue it if this becomes appropriate.

b. AUI/NRAO:

Fund the design and installation of an information station display for the VLBA, up to a maximum of $5,000.00, which display must be accepted by UH.

3. Other Infrastructure Improvements to the Mauna Kea Observatories:

It may become necessary or desirable for the greater benefit of the astronomical facilities that form a part of the Mauna Kea Observatories to construct infrastructure improvements beyond those described in VLD.1. through VLD.2. If such infrastructure improvements are funded entirely by contributions from new funding sources (e.g., new astronomical facilities which join the Mauna Kea Observatories), and/or UH, then AUI/NRAO shall enjoy access to such improvements on an equal footing with the other astronomical facilities except where extension of such improvements to the NRAO site would involve additional costs or access to the mid-level facility. If such infrastructure improvements require contributions from some or all of the astronomical facilities for which there are signed operating and site development agreements with UH, then AUI/NRAO shall have access to such improvements, and AUI/NRAO shall be liable to contribute to the cost of such improvements, only if and to the extent that AUI/NRAO and UH have agreed in writing to such access and contributions. If AUI/NRAO elects to participate in any such improvements, AUI/NRAO and UH shall negotiate in good faith to determine the fair share of the cost of such improvements which AUI/NRAO shall contribute. The amount of this fair share shall be set forth in separate written agreements and normally shall be based on the
also to protect the site from interference that may emanate from within or from outside the Mauna Kea Science Reserve.

1. **UH:**
   a. UH shall continue to protect the interests of the astronomical facilities in the Mauna Kea Science Reserve from interference emanating from within the Mauna Kea Science Reserve which would affect the scientific integrity of the sites on which the astronomical facilities are located.
   
   b. UH shall continue to pursue actively the initiation, improvement of, existing local, county and state laws and ordinances, and/or enforcement, as are necessary to assure that the nighttime level and character of man-made light, or radio frequency emissions, emanating from other areas of the County of Hawaii does not increase significantly over time, so as to interfere with the effectiveness of optical, infrared or radio frequency observations.

2. **AUI/NRAO:**

   AUI/NRAO shall conduct its activities in the Mauna Kea Science Reserve in a manner compatible with and not inimical to the activities of other astronomical facilities located there, and shall conform to applicable regulations established by UH, by the State of Hawaii, and by the United States of America for the preservation of the environmental quality and the scientific integrity of the Mauna Kea Science Reserve.

B. **Permits:**

1. **UH:**

   UH shall submit to the appropriate local authorities, and on behalf of AUI/NRAO or its designee(s) such applications for permits connected with the Facilities as are required and have been prepared by AUI/NRAO for use of State of Hawaii land, including Mid-Level Facilities and Base Support Facilities.

2. **AUI/NRAO:**

   AUI/NRAO or its designee(s) shall prepare such applications for permits connected with the Facilities as are required for use of State of Hawaii land, including Mid-Level Facilities and Base Support Facilities.

C. **Rights of Access**

1. **UH:**

   UH shall ensure AUI/NRAO right-of-access to the Demised Premises, and shall ensure their right to have access to a handhole or handholes for the commercial power, telephone, and data communications described in V.I.D.1, under the conditions described therein. UH shall grant to or use its best efforts to obtain for AUI/NRAO such other rights-of-access as may be needed by AUI/NRAO for utilities and cableways.
Infrared Telescope, the James Clerk Maxwell Telescope, the Caltech Submillimeter Observatory, the W. M. Keck Observatory, and the VLBA antenna. Future telescope facilities forming a part of the Mauna Kea Observatories shall be considered Major Astronomical Facilities unless otherwise agreed in writing by UH.

"Mauna Kea Observatories" includes, but is not limited to, the Mauna Kea Science Reserve, the astronomical facilities and infrastructure improvements on Mauna Kea, and UH operations which support the astronomical facilities on Mauna Kea.

"Mauna Kea Science Reserve" is the land in the summit area of Mauna Kea consisting generally of that land above 12,000 feet altitude and specifically that which is leased by UH from the BLNR under General Lease S-4191.

"MKSS" stands for Mauna Kea Support Services which is operated by UH through the IfA, and is responsible for providing services to support the Mauna Kea Observatories.

"Mid-Level Facilities" include, but are not limited to, the bedrooms, laboratories, common areas, and offices at Hale Pohakau on Mauna Kea. Construction of the first phase of the Mid-Level Facilities was completed in 1983.

"UH-AUI/NRAO OSDA" stands for the "Operating and Site Development Agreement Between the Associated Universities, Inc./National Radio Astronomy Observatory and the University of Hawaii Concerning the Erection and Operation of a Very Long Baseline Array Antenna on Mauna Kea, Hawaii," and to which is attached the Sublease and Non-Exclusive Easement. The rights and responsibilities of this OSDA shall not concern any other astronomical facilities on Mauna Kea which may involve AUI/NRAO.

"Sublease and Non-Exclusive Easement" is that Agreement between AUI/NRAO and UH, and approved by BLNR, attached hereto as Attachment A, including the exhibits thereto.

"VLBA" stands for the Very Long Baseline Array and includes the Antenna and the entire operation in Hawaii to support the Antenna including the Facilities, the AUI/NRAO share of the Mid-Level Facilities, and any Base Support Facilities, or other facilities that may be built or operated in Hawaii on behalf of AUI/NRAO.

II. LOCATION OF THE FACILITIES

The Sublease (Attachment A) specifies the proposed location of the Facilities on Mauna Kea.

III. INTERACTION BETWEEN AUI/NRAO AND UH

While the principal parties to this OSDA are AUI/NRAO and UH, day-to-day interaction between them will usually be carried out by specified representatives of AUI/NRAO and UH. In the case of UH, this will normally be the Director of the IfA and, in the case of AUI/NRAO, this will normally be the Director of AUI/NRAO, during the erection and operation of the facility.
OPERATING AND SITE DEVELOPMENT AGREEMENT

THIS AGREEMENT is made this 28th day of September, 1990, by and between the ASSOCIATED UNIVERSITIES, INC./NATIONAL RADIO ASTRONOMY OBSERVATORY ("AUI/NRAO") and the UNIVERSITY OF HAWAII ("UH").

WITNESSETH:

WHEREAS, aperture-synthesis radio antennas for astronomical research have shown great scientific potential for contributing to our understanding of the astronomical universe;

WHEREAS, Mauna Kea, located on the Island of Hawaii, is the strategic location for the westernmost antenna of the array;

WHEREAS, AUI/NRAO has initiated a program to erect and operate an antenna of the Very Long Baseline Array (hereinafter "VLBA") below the summit area, between the 12,200- and 12,400-foot elevation of Mauna Kea approximately 2,600-feet northeast of the Mauna Kea Access Road, and is desirous of locating this antenna and related facilities on Mauna Kea;

WHEREAS, an area of approximately two acres has been delineated for AUI/NRAO use for the antenna and control buildings and to be located near the position 19°48'10"N, 155°27'25"W;

WHEREAS, AUI/NRAO and UH believe that the best interests of both parties are to be served through a program of close scientific cooperation centered around this antenna and related facilities;

WHEREAS, the operation of the VLBA antenna on Mauna Kea will greatly benefit the academic and research programs at UH;

WHEREAS, AUI/NRAO and UH have a common interest in insuring that the development of the Mauna Kea site will enhance the effective operation of this telescope;

WHEREAS, AUI/NRAO and UH executed a Memorandum of Understanding on January 9, 1989, which provides that once AUI/NRAO has identified funds for the construction and operation of astronomical facilities on Mauna Kea, and for a mutually agreed-upon share of (1) the common costs related to the operating antenna facilities on Mauna Kea, (2) costs associated with the infrastructure, and (3) other site improvements and common-purpose expenses and facilities, an Operating and Site Development Agreement shall be negotiated between AUI/NRAO and UH which shall set down the details of a program in which AUI/NRAO will provide technical advice to UH and will participate in the support of the Mauna Kea Public Visitor Center.

NOW, THEREFORE, in consideration of the mutual agreements herein contained, AUI/NRAO and UH agree as follows:
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MAUNA KEA, HAWAII
ON
VERY LONG BASELINE ARRAY ANTENNA
OF A
ERECTION AND OPERATION
CONCERNING THE
UNIVERSITY OF HAWAII
AND THE
NATIONAL RADIO ASTRONOMY OBSERVATORY
ASSOCIATED UNIVERSITIES, INC.

BETWEEN
OPERATING AND SITE DEVELOPMENT AGREEMENT
OSD Angle Measurement: VLA Site

OSD Angle Measurement B: VLA Site Road

Exhibit C to Attachment A - Description of Construction
Exhibit C to Attachment A - Defined Terms
Exhibit E to Attachment A - Concerns and Sublease
Exhibit F to Attachment A - General Terms S-4191

Observatories and the University of Hawaii
Between the Associated Universities, Inc. (The National Radio Astronomy
Observatory) and the University of Hawaii

OSD Agreement A: Sublease and Non-Exclusive Easement Agreement

12. Disposition of Facilities on Termination
11. Termination
11. Renegotiation or Extension of This OSDA
11. Term of This OSDA
11. Amendments to This OSDA
11. Service of Process
11. Attorneys Fees
10. Indemnification
10. Facsimile of the
9. Data Certification
9. Proposed Radiotelemetry
9. Proposed Astronomical Facilities
9. UHF Use of the Facilities
Support FACILITIES, or non-exclusive easements granted by UNR to AN/RAO under the "BLNR" (Board of Land and Natural Resources of the State of Hawaii) Support FACILITIES, refer to the headquarters for the AN/RAO WIBA (Washington Information Building). The "BLNR," which is a not-for-profit research and development organization located in "AN/RAO" stands for the "Associated Universities, Inc." National Radio Astronomy Organization, to be located on the Demised Premises (see Animation C), and used for astronomical observations. Development Agreement, the following definitions apply:

DEFINITIONS
VI. RESPONSIBILITIES SHARED JOINTLY BY ANU/NRAO AND UH

A. Responsibility, all of which shall be individually met.

- Facilities, all of which shall be individually met.

- Location, to the west of the Mauna Kea Access Road near the 12,000 foot elevation on the Science cooperation mentioned in IX.A. B and C. ANI/NRAO shall be solely responsible for funding the areas of:

  - Scientific cooperation

  - Erection and operation of the Facilities.

  - ANI/NRAO shall be solely responsible for securing the funding for the

    - Erection and operation of the Facilities.

    - ANI/NRAO shall be solely responsible for funding the

V. SOLE RESPONSIBILITIES OF ANI/NRAO

A. Management of the Mauna Kea Observatories

B. Access Road to the Facilities

VI. SOLE RESPONSIBILITIES OF UH

A. Access to the Facilities

B. Scientific cooperation

C. ANI/NRAO shall be solely responsible for:

- Scientific cooperation

- Erection and operation of the Facilities.

- ANI/NRAO shall be solely responsible for:

  - Erection and operation of the Facilities.

  - ANI/NRAO shall be solely responsible for:

    - Erection and operation of the Facilities.
TWENTY-SEVEN THOUSAND SEVEN HUNDRED SEVEN DOLLARS AND ZERO CENTS

p.

AU/IN/R/AO:

summit area

access road in whole or in part including safety devices, to make payable from the

(1) UH intends to continue to improve and pave the main

of the Mauna Kea access road.

access to the computer and minimally acceptable upon hand holde near the 12,200 foot elevation

Telecommunications Company using this facility to provide telephone service to the facility, with

communications cable between these two locations. UH will not digest to Hawaiian

access a conduit from the summit area to make available to Hawaiian Telephone

Hyper-optical cable data communications link

(2) UH is under no obligation to provide access to the

access road. The

line is a minimally acceptable upon hand holde near the 12,200 foot elevation of the Mauna Kea

connection for the facilities to the commercial power line. If the conduit is a part of the same and

connection to commercial power for the facilities to be capable of 225 KW. The

astronomical facilities in the Mauna Kea Science Reserve, and small grants to AU/IN/R/AO

(3) UH has arranged for the construction of a

has completed the installation of commercial power to Hale

and Road Improvements

Commercial Power Data Communications Conduits and Lines

Funding:

Improvements described in 1,2,3 are subject to State and County permits, approvals, and

associated with the height-of-access designated in VI.C.1.

AU/IN/R/AO shall pay all costs, fees and other charges

D. Infrastructure Improvements Shared in Conjunction with Other

AU/IN/R/AO

- 6 -
1. OPERATIONS AND MAINTENANCE

Cooperation with other Nuclear Power Projects located on the same premises.

If AN/URNAO is not owned by the State of Hawaii, it shall do so in a manner which ensures facilities on land owned by the State of Hawaii to be used by any AN/URNAO for which Base Support is desired by AN/URNAO and so coordinate the development of common Base Support of Hawaii; AN/URNAO shall make every effort to make State land available in a location of Hawaii land.

If AN/URNAO decides to construct Base Support Facilities on State

AN/URNAO will not have access to the Mid-Level Facility.

Access to the Mid-Level Facility

E. AN/URNAO will not have access to the Mid-Level Facility.

F. Base Support Facilities

Separate arrangements between UH and AN/URNAO

2. AN/URNAO

Separate Arrangements between UH and AN/URNAO

Separate arrangements between UH and AN/URNAO.

AN/URNAO participation on State land shall be governed by the terms of

F. Base Support Facilities

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Access to the Mid-Level Facility

E. AN/URNAO will not have access to the Mid-Level Facility.

AN/URNAO participation on State land shall be governed by the terms of

D. Operations and Maintenance

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If AN/URNAO is not owned by the State of Hawaii, it shall do so in a manner which ensures facilities on land owned by the State of Hawaii to be used by any AN/URNAO for which Base Support is desired by AN/URNAO and so coordinate the development of common Base Support of Hawaii; AN/URNAO shall make every effort to make State land available in a location of Hawaii land.

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3. AN/URNAO

Separate Arrangements between UH and AN/URNAO.

Separate arrangements between UH and AN/URNAO.

AN/URNAO participation on State land shall be governed by the terms of

F. Base Support Facilities

AN/URNAO will not have access to the Mid-Level Facility.

Access to the Mid-Level Facility

E. AN/URNAO will not have access to the Mid-Level Facility.
Additional: AN/NU/RAD shall be in our cost and expense, maintain...

INSURANCE/INDEMNIFICATION

X.

University of Hawaii, Institute for Astronomy, in any publications or news releases.

on its-developed instruments shall have credit for those results also given to the
with the National Science Foundation. Results obtained at the facilities by the faculty or
in/University of Hawaii, Astronomy Observatory, under the aegis of the Association of Universities,
be referred to as the Very Large Baseline Array. The University of Hawaii, AN/NU/RAA shall be given appropriate credit and shall
work performed at the facilities, AN/NU/RAD will be given appropriate credit and shall
In all publications and news releases referring results obtained from

E. Repeals Attributions

Unpublished within the Science Reserve on Manus Kea and Hakalau.

D. Site Characterization

The potential to affect astronomical research on Manus Kea and Hakalau.

C. Proposed Radio Transmitters

Potential and importance of any proposed radio astronomy facilities to be located in

B. Proposed Astronomy Facilities

VLBA on the same basis as other members of the U.S. astronomical community.

A. Proposed Astronomy Facility

2. Un-sponsored personnel and the instrumentation they bring to...
1. Mutual written agreement of AU/NRAO and UH.
2. Termination of the Sublease.
3. Termination of management or operation of the Facilities by AU/NRAO.
4. December 31, 2033, when General Lease No. S-4191 terminates, unless a suitable extension or new lease as allowed for in XVI has been negotiated.

**XVIII. DISPOSITION OF FACILITIES ON TERMINATION**

Disposition of the Facilities on termination shall be conducted pursuant to the provisions of the Sublease.
SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT

BETWEEN

THE ASSOCIATED UNIVERSITIES, INC. (NATIONAL RADIO ASTRONOMY OBSERVATORY)

AND

THE UNIVERSITY OF HAWAII

OSDA ATTACHMENT A

Sublease Exhibits:
A. General Lease
B. Consent to Sublease
C. Demised Premises
D. Planned Construction
the Sublessee will not be unreasonably withheld.

If the Facilities of a Portion thereto are restored, such restoration shall be
subject to approval by Sublessee and shall be in keeping with III. If such approval is
neglected, Sublessee at the expense of Sublessee:

Sublessee may be removed and the land affected thereby restored to even grade. By
removing such damaged property of Sublessee and restore same to Sublessee.

(1) Year, after written notice to remove, Sublessee shall remove the
property or portion affected thereby to even grade. In the event Sublessee fails to
remove the property or portion affected thereby to even grade, Sublessee shall then be
provided for in IV.F, G, Sublessee shall have such unsuitable damaged property or debris
removed within ONE (1) Year. After written notice to remove, and shall restore the
Sublessee's copy of this Sublease, and (3) this Sublease is terminated as
provided for in other causes rendering the same unsuitable for purposes of radio astronomy.

F. Fire or Destruction of the Facilities

96822, U.S.A.

Hawaii. VICE President for Finance & Operations, 2440 Due Street, Honolulu, Hawaii
Amendments for the duration of the Sublease. Such fees shall be paid to the University of
Premises at ONE DOLLAR ($1.00) per year in legal tender of the United States of
Sublessee hereby covenants and agrees to pay rent in legal tender for the Denised

E. Renewal Charge

provided for in IV.F, G, and I.C.

The term of this Sublease shall be from the date first above written and
shall expire on December 21, 2033, unless sooner terminated or extended, as
respectively

D. Term of Sublease

Sublessee, Sublessee and the State of Hawaii,

Subject to approval by the County of Hawaii; such description shall be binding upon
Sublessee and Sublessee after the Sublessee has been completed, and is
the non-exclusive easement for the sole road and power and communication
and the exclusive easement for the use road and power and communication
Six (6) months from the date of this Sublease, the exact area covered by this Sublease,

C. Survey/Specific Description

near the 12,000 foot elevation to the Facilities, all of which shall be individually measured.

Sublessee shall have the right of access to and across the Mountain Koa Science Reserve, utilizing the common
Premises, to and across the Mountain Koa Science Reserve, utilizing the common

B. Non-Exclusive Easement

C. Repairs and Maintenance

Premises, including sewerage and sanitation facilities and services. Sublessee shall provide, maintain and keep in good condition, Sublessee shall provide, maintain and keep in good condition, and the

B. Laboratory and Other Services

Herein are defined and performed and performed

A. Right of Entry

III. Sublessee Hereby Covenants with Sublessee as

so that neither of these agreements is terminable earlier than mutual agreement date.

D. Frustration Performance

or renunciation of said General Lease.

C. Renewal

Sublessee shall make every effort to contest renewal, extension

B. Covenant Against Contingent Fees

Sublessee waives any right to contest, whether in good faith or contest renewal, extension, renewal of any lease or renewal of this Sublease, Sublessee shall

Sublessee, in its discretion, to conclude from above the terms to which this Sublease is subject to the following: Sublessee shall

Prime of Securing Business, for the purpose of securing compliance of Sublessee with the provisions of this warranty, Sublessee shall

For the purpose of securing compliance of Sublessee with the provisions of this warranty, Sublessee shall

Sublessee waives any right to contest, whether in good faith or contest renewal, extension, and concludes from above the terms to which this Sublease is subject to the following: Sublessee shall

Sublessee waives any right to contest, whether in good faith or contest renewal, extension, and concludes from above the terms to which this Sublease is subject to the following: Sublessee shall
successors of the parties hereto.

This Sublease shall be binding on and inure to the benefit of the

C. Binding on Successors

Sublease shall remain in full force and effect.

Upon the happening of any such notice or process served on the Director of
Commerce and Consumer Affairs,

Sublessee shall immediately serve a copy of any such notice or process issued to
the Director of Commerce and Consumer Affairs.

So designated a representative of such designated representative is unauthorized to accept service of process on behalf of the

Sublessee shall designate a representative within the State of Hawaii for

B. Governing Law, Severability

A. Service of Process

I. LAWS, RULES AND REGULATIONS

J. Improvements and Alterations

K.
removed.

any damage done to the Property not removed in the event that equipment is repaired, the Sublessee shall restore the Demised Premises, or any portion thereof, to the exterior, and shall remove all or any part of the Property in any part thereof, unless otherwise agreed in writing by Sublessee, the following:

removal will be at the expense of Sublessee.

conditions shall apply if all or any part of the Property is removed under this Section 17.

a. Unless otherwise agreed in writing by Sublessee, the following:

b. Sublessee may peaceably surrender all or part of the Property in whole or in part.

c. Sublessee may peaceably surrender the Property.

The development agreement between the new party and Sublessee:

Sublessee shall be entitled to any expenses, unless otherwise agreed in writing by Sublessee.

Sublessee shall be entitled to the expenses of Sublessee, such as repairable in any part of the Property.

Sublessee may peaceably surrender the Property and Sublessee.

Sublessee may peaceably surrender the Property and Sublessee.

The following conditions shall apply:

When Sublessee is sold, abandoned, or surrendered, its surrender or abandonment shall not be treated or considered by Sublessee as an escrow for the payment of any expenses, unless otherwise agreed in writing by Sublessee.

The National Science Foundation (hereinafter referred to herein as “Property”) or the Property, if a party to Sublessee's contract, is responsible for removal of the Property.

1. The Party or Parties, Additional, Additions, and Improvements.

2. Disposition in Event of Termination of Expiration of Premises.

3. Title to the Premises.

4. Premises.

5. Deed of the Premises, Additional, Additions, and Improvements.

6. Premises.

7. Disposition in Event of Termination of Expiration of Premises.

8. By Sublessee.

9. Mutual agreement in writing between Sublessee and Sublessee.

10. By Sublessee.

11. Good faith judgment.

12. Sublessee is not required to proceed among the sources of funding which, in Sublessee's opinion, need be used to acquire or maintain the Property.

13. Sublessee's prior written notice of expiration in event of the event.

14. Sublessee's prior written notice of expiration in event of the event.

15. Sublessee's prior written notice of expiration in event of the event.
Approved as to Form:

Joseph E. Hughes, Date 9/28/90

By: Thomas Mathew, Date 9/28/90

Approved as to Form:

Alpert J. Simon, Date

By:

By: R.K. Heine, Date 9/1/84

I, President

Robert E. Hughes

I, President

Paul Vanden Bout, Date 9/27/90

By: Thomas Mathew

I, Director

Donald N. Hall, Date 9/28/90

By: Thomas Mathew

I, Director, Institute for Astronomy

Karen A. Pickering, Date 9/27/90

By: Thomas Mathew

I, Director, Astronomy Observatory

IN WITNESS WHEREOF, the parties hereto have executed these
My commission expires:

My Notary Public

[Signature]

On this 25th day of September, 1990, before me appeared Robert E. Hughes, personally known to me, who being by me duly sworn, did say that he is President of Associated Universities, Inc., a non-profit, public-benefit corporation, that said corporation; and said Robert E. Hughes acknowledged the instrument to be the free act and deed of said corporation. The seal affixed to the foregoing instrument is the corporate seal of said corporation; that said instrument was signed and sealed on behalf of said corporation; that the said instrument was acknowledged by the subscriber, Robert E. Hughes, personally, to the best of his knowledge and belief, to be true and correct.
31st day of December, 2033.

From the 1st day of January, 1968, and to terminate on the for and during the term of sixty-five (65) years, to commence lesse, hereinafter mentioned and described, unto the said lessee, to have and to hold, all and singular the said premises,

A. hereinafter attached and made a part hereof,

State of Hawa'i, and county of Honolulu, Haraheka, County and Island of Hawa'i, land situate at Ka'eohe, Hamakua, County and Island of Hawa'i, rent and lease from the lessor, all of that certain parcel of and lessee unto the said lessee and the said lessee does hereby and agreements contained herin, the lessor does hereby demense and in consideration of the mutual premises

WITNESS THEIR

referred to as the "LESSEE" city and county of Honolulu, State of Hawa'i, heretofore referred to the "LESSEE", and the UNIVERSITY OF HAWA'I, a body corporate, Hawa'i 1955, as amended, heretofore referred to as the 1968, by and between the State of this instrument of lease, made this DAY 2/1/91.

GENERAL LEASE NO. S-4191
Activity or activities integral to said scienntific complex shall
be considered integral to said scienntific complex.

Any more particular a buffer zone to prevent the intrusion
involving an observatory, any a scienntific reserve
used by the lessee as a scienntific complex, including without
limits

4. Specified Use. The land hereby leased shall be

offenselvuse of the demised premises.

For, any waste, spilt, spot, nuisance or unlaw\n
3. Waste. The lessee shall not make, perform or suf-

and orderly condition.

keep the demised premises and improvements in a clean, sanitary

2. Maintenance of the Premses. The lessee shall

excepted.

lesser, in good order and condition, reasonably wear and tear

render and deliver possession of the demised premises to the

or sooner termination of this lease, peaceably and quietly sur-

1. Surrender. The lessee shall, at the expiration

VANTS WITH THE LESSOR AS POLTONS:

THE LESSOR IN CONSIDERATION OF THE PREMISES, COVE

such agreement shall not be abstricted by or capteculated with-

that, except that, except that, except that, except

that, except that, except that, except that, except that, except that,

portions of the lands, except upon mutual determination by the parties barato

be perpetual or for a term or term, term, term, term, term, term, term.

however, thereby and prorogued reciprocal agreement said

that, except that, except that, except that, except that, except that,

portions of the lands demised and the right to grant to others

any and the successors, lessees, grantees and partmees, to use any

such use or grant with or unanimous interests with the

such use or grant with or unanimous interests with the
IN WITNESS WHEREOF, the State of Hawaii, by its

Planting by the Chairman.

plants in the leased area except those approved by such
lessee shall not plant any trees, shrubs, flowers or other
introduction of undesirable plant species in the area, the
undesirable plants. In order to prevent the

3. undesirable plants.

of historic, cultural, or scenic value or monument.

destroy or object of antiquity. The lessee shall not ap-

12. objects of antiquity. The lessee shall not ap-

ments.

or county governments affecting the demonstrated lands or improve-
nance, rules and regulations of the federal, state, municipal
ance, rules and regulations of the state, or
of land and natural resources and with all other laws, rules,
small observable and comply with regulation 4 of the Department
the lessee

such liability. The lessee shall not be liable for any loss, liability, claim
caused by or resulting from any negligent or negligent activity's occurrence
out of any injury, death or damage on the demonstrated premises
or demand for property damage, personal injury or death arising
and the lessee shall be liable for any loss, liability, claim
with respect to the demonstrated premises, use due care for safety,

10. General Liability. The lessee shall at all times,

created, color or national origin, and
discrimination against anyone based upon race,
6.5' 2,400.00 feet.

and distance bearing: 277° 49'.

1200.00 feet, the chord azimuth
to the rights with a radius of
dated June 5, 1909, on a curve
date on June 5, 1909.

Government, a proclamation dated
841.83 feet along Mauna Kea Forest Reserve.

4. 207° 49', 06.5'.

57.36 feet.

being: 281° 18'. 04.6'.

chord azimuth and distance
to the rights with a radius of 13,200.00 feet.

a curve to the rights with a
date on June 5, 1909.

Government, a proclamation
2. Thence along Mauna Kea Forest Reserve.

"Mauna Kea Forest Reserve, Governor, a proclamation
1. Along Mauna Kea Forest Reserve, Governor, a proclamation

By azimuths measured clockwise from true south:

shown on government survey registered map 7889, thence running

1,555' being 12.325.95 feet south and 471.84 feet west, as

referred to government survey triangulation station "Sunbit"

beginning at a point on the south boundary of this

beginning at a portion of the government land of Kahoe.

Kahoe, Remarks, plotsland of Hawaile, Hawaii

MAUNA KEA SCIENCE RESERVE

"EXHIBIT A"
and across said tracts and all other extractive tracts within the above-described parcel of land, together with rights of access over

excepting and reserving to the state of Hawaii
change, modify, waive or amend the provisions, terms, conditions, interests, provided, further, that nothing contained herein shall
amended, relating to the rights of holder of security
as amended, referring to the provisions of section 77-21, Hawaii Revised Statutes, however,

as "Sublease" sh" Sublet, however,

Bureau of Conveyances, State of Hawaii, as Document
Recorde in the
Bagaimnot Road, Charlotteville, Virginia 22903, recorded in the
non-profit, non-benefit corporation, whose address is 220
Univer"ity of Hawaii, a body corporate, as Sublessor, to the Associated
University of Hawaii, a body corporate as lessee, to the
General Lease No.

Lessee, under unrecorded
Board of Land and Natural Resources, Lessee, under unrecorded
Consent is hereby given by the State of Hawaii, by these

Consent to Sublease of General Lease No. S-4191

Tax Map Key No. (3) 4-3-15 09

Total Number of Pages: 

To: ( ) Return by Mail
( ) Pick up at: ( )

REGULAR SYSTEM

LAND COURT SYSTEM

SUBLEASE EXHIBIT B
LEASE

Leaseholder, University of Hawaii at
its president, University of Hawaii and
Kenneth P. Mortimer

By

LESSEE

By

ADMINISTRATION

Its Director: Vice President for
Business Affairs

By

CORPORATE

UNIVERSITY OF HAWAII, A BODY

LESSOR

Natl: Board of Land and Resources:
Charterperson and Member

By

STATE OF HAWAII

August 21, 1997.

meeting held on

Resourses at its

approved by the

and these present to be duly executed this
day of

IN WITNESS WHEREOF, the STATE OF HAWAII, by its Board

DEPARTMENT OF LAND AND NATURAL RESOURCES

attested for

By

DEPUTY ATTORNEY GENERAL

APPROVED AS TO FORM:

DATED:

JULY 1, 1999.
NR A0 Site-Demised Premises
Exhibit C to OSDA Attachment A
The estimated cost of this work is 1.3 million dollars.

The antenna will be controlled remotely from the NRAO Operations Center in Socorro, New Mexico. A staff of two to four technicians to perform maintenance and other NRAO (National Radio Astronomy Observatory) functions.

Radio Astronomy Observatories (RANO) techniques. The antenna position will be done by the same technician as the other antenna in the array. Installation of electronics and control systems will be performed by National Science Foundation personnel.

In our case and that of other NRAO antennas, rock is not a problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill.

1. Cut and Fill: It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill. It is the inherent size of the rock or cobble that limits the problem by making the rock and cobble and boulder usable as fill.

- Articulated Find: There are four archaeological sites in the vicinity of the construction site. The sites are well marked with visual barriers.
- Site or District: Only local landowners are notified of the proposed construction.
- Activity: Contained blasting for excavation and removal of boulders.
of Hawaii through a separate contractual arrangement. 

expense of the Sublessee in cooperation with the University scope facility to be constructed and managed by and at the the Sublessee for the purposes of erecting a 3.9 meter tele
the Sublessee, and the Sublessee does hereby sublease from mons heretofore expressed, does hereby demise and let to The Sublessee, in consideration of the rent here-

WITHIN ES F E 2 1 968,

and Natural Resources and the University of Hawaii dated June 1976, between the State of Hawaii by the Board of Land Resources pursuant to the requirements of Item 5 of General "Sublessee," and approved by the Board of Land and Natural Property House, P.O. Box 12, Sitton, 52217, England, heretofore called "Sublessee," and the SCIENCE RESEARCH COUNCIL, whose called "Sublessee," and between the UNIVERSITY OF HAWAII, heretofore 1976. This SUBLEASE, made this 1st day of September, 

SUBLEASE AGREEMENT

____________________________

Phone: ( )

When completed: 10/11/2000

AGREED TO

RECOGNITION REQUESTED BY:

____________________________

RECOGNITION REQUESTED BY:

____________________________

RETURN TO:
on the part of the Sublessee to be observed and performed, the
of all the terms, covenants and conditions hereinafter contained and
in lieu of rent as aforesaid and upon observance and performance
that upon proviso that by the Sublessee of the use rights

I. Personal Enormity.

AS FOLLOWS:

THE SUBLESSEE HEREBY COVENANTS WITH THE SUBLESSOR

Prior condition.

that the Sublessee to restore the improvements to the
Lessee of the Sublessee to restore the improvements to their
causality of the Sublessee within sixty (60) months of the date of
shall cause a restoration of the Sublessee, unless the Sublessee
causes a prevention of the use unsuitable for observation purposes

Destruction of the improvements by fire or other

II. Fire or Destruction of Premises.

Parties.

pattled to a separate agreement to be concluded between the
the Sublessee, tenants, employees, agents and invitees, the
Sublessee, its officers, employees, agents, and invitees, the
of paying rent for the demised premises to grantees to the
Sublessee hereby covenants and agrees that in lieu

III. Rental Charge.

In accordance with Paragraph X of hereof.

wants and equipment aforesaid or installed shall be determined

In such event, the title to alterations, additions, improvements
at least five (5) years, notice in writing to the other party.
or any interest therein or subject the premises hereby demised,
ten consent of the Sublessee, assignt of mortgagee this Sublease
shall not, without the Prior Writ-

VII. Assignment.

formed.

whether the covenants herein are being fully observed and per-

presents for the purpose of examining the same and determining
agent(s), at all reasonable times, free access to the demised

That the Sublessee will allow the Sublessee or the

VI. Right of Entry.

the term of this Sublease.

may be assessed or become liable by authority of law during
or the Sublessee or Sublessee in respect thereof, are now or

premises or any part thereof, or any improvements thereon
other outgoings or every description to which said demised
when due, the amount of all taxes, rates, assessments, and

That the Sublessee shall pay or cause to be paid,

V. Taxes and Assessments.

telephone(s) as may be required.

the Sublessee shall pay for installation and use of such

'Additionally, the Sublessee or Sublessee, to or payable by the Sublessee or Sublessee in respect of the Sublessee or Sublessee in respect of the Sublessee or Sublessee in respect of

Whenever may during said term become liable, whether assessed

improvements thereof of the Sublessee or Sublessee or any part thereof, or any
water, sewer, gas, refuse collection or any other charges, as
duties and rates of every description, including electricity.
alterations, additions, improvements, equipment attached to the Sublessee, to purchase at a negotiable figure all structural
within thirty (30) days thereafter, upon notice in writing
of the Sublessee for any cause shall have the first option
The Sublessee upon the termination or expiration

XII. Title to Alterations, Additions, Improvements and

obligations hereunder.
right to terminate this Sublease and be relieved of all further
or to any other remedy of Sublessee, Sublessee shall have the
be withheld or unreasonably delayed, then, without prejudice
this Sublease, or if the necessary governmental approval shall

XIII. Alteration.

that the Sublessee shall make no improvements, major

XIV. Alteration.

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

XV. Liability.

be deemed to constitute strip or waste.
Sublessee and such grading, excavation and fitting shall not
II. EXPENSES OF DISPUTES.

VI. (Adopted by Chapter 568, H.R. 5) as amended.

Arbitrators shall be named and constitute subject to the pro-
the American Arbitration Association. The decision of the
the arbitrator shall be in accordance with the rules of
the American Arbitration Association, and shall be
be final and binding. The court for the first judgment, without appoint such arbitrator
decision of such judge shall be final and binding, the
court for the first judgment, without appoint such arbitrator
second case either party may apply to any judge of the circuit
either party may apply to any judge of the circuit
first case the party which has named the arbitrator and in the
terms is unable to agree on a third arbitrator, then in the
party fails to name the arbitrator, or (ii) the first two arbit-
the third neutral arbitrator. In the event that (i) either
the subject, the arbitrators so selected shall jointly select
shall be selected by the arbitrators. One party, the
written and transmitted a copy of each party. One copy of
constitute of three persons who shall reduce their decision
death of a board of arbitration, which shall act by majority. By
agreement within thirty (30) days, shall be referred to and
of each arising under this Subpart, which is not disposed of
My commission expires at death

Notary Public.

In the name of the Research Council, in the name of the Science Research Council, and in the name of the Board of Regents, in behalf of the Corporation of Hawaii and the University of Hawaii, the Instrument is signed and sealed and that said Instrument was signed and sealed in behalf of said Council and that said Instrument was signed and sealed by authority of the Board of Regents, in behalf of said Council and that said Instrument was signed and sealed in behalf of said Council and that said Instrument was signed and sealed by authority of the Board of Regents.

My commission expires at death
of Honolulu, State of Hawaii.

Notary Public.

On this 10th day of January, 1976, before me

CITY AND COUNTY OF HONOLULU
STATE OF HAWAII

(}

SS:
(}

EXECUTION OF ENGLAND
KINGDOM
THIS INDENTURE OF LEASE, made this [day] of [month], 1969, by and between the STATE OF HAWAII, by its Board of Land and Natural Resources, pursuant to the provisions of Section 103A-90(b), Revised Laws of Hawaii 1955, as amended, hereinafter referred to as the "LESSOR", and the UNIVERSITY OF HAWAII, a body corporate, whose post office address is 2444 Dole Street, Honolulu, City and County of Honolulu, State of Hawaii, hereinafter referred to as the "LESSEE", WITNESSETH THAT:

For and in consideration of the mutual promises and agreements contained herein, the Lessor does hereby demesne and lease unto the said Lessee, all of that certain parcel of land situate at Ko'ola, Lanai, County and Island of Hawaii, State of Hawaii, and more particularly described in Exhibit "A", hereto attached and made a part hereof, TO HAVE AND TO HOLD, all and singular the said premises, for and during the term of sixty-five (65) years, to commence from the 1st day of January, 1960, and to terminate on the 30th day of December, 2022.
4. Right to use Demised Lands. The right for itself, and its successors, lessees, grantors and assignees, to use any portion of the lands demised and the right to grant to others rights and privileges affecting said land, provided, however, that, except as otherwise provided herein, no such use shall be permitted or rights granted affecting said lands, except upon mutual determination by the parties hereto that such use or grant will not unreasonably interfere with the lessee's use of the demised premises; provided, further, that such agreement shall not be arbitrarily or capriciously withheld.

THE LESSOR, IN CONSIDERATION OF THE PREMISES, COVENANTS WITH THE LESSEE AS FOLLOWS:

1. Surrender. The lessee shall, at the expiration or sooner termination of this lease, peaceably and quietly surrender and deliver possession of the demised premises to the lessor in good order and condition, reasonable wear and tear excepted.

2. Maintenance of the Premises. The lessee shall keep the demised premises and improvements in a clean, sanitary and orderly condition.

3. Waste. The lessee shall not make, permit or suffer for any waste, strip, spoil, nuisance or unlawful, improper or offensive use of the demised premises.

4. Specializing. The land hereby leased shall be used by the lessee as a scientific complex, including without limitation thereof an observatory, and as a scientific reserve being more specifically a buffer zone to prevent the intrusion of activities detrimental to said scientific complex.

Activities involving said scientific complex shall include light and dust interference to observatory operation.
The Department of Land and Natural Resources to be responsible for the management, conservation, and the use of land and natural resources. The Governor of the State of Hawaii, by the authority of the said Department of Land and Natural Resources, is hereby authorized to execute this

Panting by the Chairman

planted in the said area except those approved for such

hence such not planted any trees, shrubs, flowers, or other

introduction of unsuitable plants or trees in the area, the

1.2. Undermining of Plant. In order to prevent the

or other damage or property, damage, common, excessive, destructive of

the area, the

1.1. Objection of Authority. The reason shall not ap-

ment.

or County governments ascertaining the condemned land or improved

cause, notice and regulation of the condemned, where, and with other laws, or

of land and natural resources and with all other laws, or

shall observe and comply with regulation 4 of the Department

II. Laws, Rules and Regulations, etc., The Island

much judgment.

premises, subject to the same as the State of Hawaii government,

or construction of the property, or in consultation with the Department

can not be consulted by any of the following:

out of any injury, death or damage on the defendant's premises

or damage or property damage, personal injury or death or

and the owner shall be liable for any harm, liability, claim

with respect to the condemned premises, use the care for damage,

10. General Authority. The owner shall at all times, no

property which is not in or on the land upon the

purchaser, or any person, or any

or national or international

...
5. Theence showing Hanna Koa Forest Reserve, Governor's proclamation, acres.

6. 900, 90.5, 491.83 feet from Hanna Koa Forest Reserve, 8.77 acres.

8. 900, 90.5, 491.83 feet from Hanna Koa Forest Reserve, Governor's proclamation, acres. 3. Theence showing Hanna Koa Forest Reserve, Governor's proclamation, acres.

10. Hanna Koa Forest Reserve, Governor's proclamation.

By azimuth measured clockwise from true south:

1. Shown on government survey map, 270°, the center

2. 1955 to 1955.95 feet south and 197.95 feet west, as

3. Reported to government survey, proclamation, section

4. The center of the government survey of part point of beginning at a point in the south boundary of this

5. Being a part of the government land of Kona

MAUNA KEA SCIENCE RESERVE

EXHIBIT V
EXCEPTING and RESERVING to the State of Hawaii, all others entitled thereto, the Naupaka trails, and all other existing trails within the above-described parcel of land, together with rights of access over, and across said trails.

ALSO, EXCEPTING and RESERVING to the State of Hawaii, its successors, assigns, the waters, and all riparian and other rights in and to all the streams within the above-described parcel of land.