



***E ala ē me ke aloha a me ka ‘oia‘i‘o.
Awaken with aloha and truth.***

June 24, 2024

TO: Board of Land and Natural Resources (BLNR)

FR: E. Kalani Flores, representing the Flores-Case ‘Ohana

RE: Testimony for BLNR Agenda Item K-1 (June 28, 2024)

University of Hawai‘i at Hilo - Center for Maunakea Stewardship, Maunakea
Comprehensive Management Plan, 2023 Annual Progress Report

SUMMARY OF COMMENTS

It’s contended that the 2023 Annual Progress Report for the Maunakea Comprehensive Management Plan (CMP) prepared for the BLNR by the University of Hawai‘i at Hilo (UH Hilo) - Center for Maunakea Stewardship (CMS) is deficient, inadequate, and inaccurate.

BLNR/DLNR, representing the State as the Lessor, has the sole legal obligation, duty, and responsibility to appropriately manage and protect the conservation and public lands of Mauna Kea and to ensure that the Lessee, University of Hawai‘i (UH), and Sublessees are in compliance with all conditions of BLNR-approved management plans, conservation district use permits (CDUPs) and leases. The failure of BLNR/DLNR to assume their appropriate role as Lessor has resulted in substantial, adverse, and significant impacts to the natural, cultural, and historic resources on Mauna Kea. This matter has been previously brought to the attention of the BLNR/DLNR for several decades as noted below in the Hawaii State Auditor’s Report No. 05-13 (p. 30):

The lack of oversight by the department allows the university and its sublessees unchecked discretion on the use of Mauna Kea and leaves cultural and natural resources at risk for further damage.

We call upon BLNR/DLNR to reject the acceptance of the 2023 Annual Progress Report and to have UH Hilo - CMS make necessary revisions to ensure this report is accurate, complete, and in an acceptable state. In addition, we call upon BLNR/DLNR to enforce the non-compliance with the management plans, CDUPs, and leases for Mauna Kea.

SPECIFIC COMMENTS

I. TMT narratives are inaccurate

The following statement is inaccurate as presented in this progress report (p. 13):

Pursuant to TIO's sublease, annual lease rent starts at \$300,000. The lease rent schedule is phased, with increases based on construction activity. Full annual lease rent payments of \$1,080,000 a year will be paid when TMT is operational. To date, \$3,435,258 has been paid.

Based upon the BLNR-approved sublease between TMT International Observatory LLC (TIO) and the University of Hawai'i (UH), effective date of July 28, 2014, **TIO is in breach of this sublease and UH has not enforced compliance with all its terms** as noted below:

7. Rent. In consideration for the use of the Subleased Premises, Sublessee shall pay to Sublessor annual rents based on calendar years during the term of this Sublease as set forth below. The annual rent during the construction period is based on the incremental value of the major milestones achieved during the construction of the TMT Facilities. The milestones are set forth below and generally span approximately two (2) year periods. **The annual rents shall be paid based upon the specified calendar years below regardless of whether the respective milestone is achieved.** [*emphasis in bold*]

<u>Year</u>	<u>Annual Rent</u>	<u>Milestone</u>
1-3	\$300,000	Civil construction
4-5	\$400,000	Enclosure
6-7	\$600,000	Telescope Structure
8-9	\$700,000	Instruments and Mirrors
10	\$900,000	Commissioning
11 and later	\$1,080,000	Operations

Rent shall be paid in advance, in equal semi-annual installments, on or before January 13 and July 31, of each calendar year during the term of this Sublease. The first installment of rent for the initial, partial year (which will be prorated) shall be due within 30 days of the date of execution of this Sublease. Beginning in January of 2015, and in January of each year thereafter, the annual rental amount for the year shall be based on the initial annual rental amount adjusted for the annual rate of inflation recorded for subsequent years in accordance with the Consumer Price Index for all Urban Consumers, U.S. City Average (not seasonally adjusted) (base year 1982-1984 - 100) ("CPI"), published by the United States Department of Labor, Bureau of Labor Statistics. The calculation shall be made by comparing the CPI last published for the date nearest to the Effective Date (the "Base Index") with the CPI last published for the date nearest to the current anniversary date (the "Current Index"). If the Current Index has increased or decreased over the Base Index, then the amount subject to adjustment shall be set for the ensuing year by multiplying the initial annual rental amount by a fraction, the numerator of which is the Current Index and the denominator of which is the Base Index. If the base of the CPI changes from the 1982-84 base (100), the CPI shall, thereafter, be adjusted to the 1982-84 base (100) before the computation indicated above is made. If the CPI Index is at any time no longer published, a comparable index generally accepted and employed by the real estate profession shall be used.

Sublessor shall receive, deposit, and apply the rents received hereunder in accordance with the laws of the State of Hawaii, including, without limitation, Section 304A-2170 of the Hawaii Revised Statutes, as amended from time to time. Such deposit shall be net of the funds required by law to be transferred or paid to the Office of Hawaiian Affairs. Sublessor shall be responsible for paying over to the Office of Hawaiian Affairs its ratable share of the rents received in accordance with the laws of the State of Hawaii. [See attached TMT Sublease]

As stipulated in the sublease, the total amount that TIO should have paid to date is over **\$7 million** as “[t]he annual rents **shall be paid based upon the specified calendar years below regardless of whether the respective milestone is achieved.**” In addition, the full annual lease rent payment of \$1,080,000, plus the adjustment for the annual rate of inflation, should have started in this calendar year of 2024. **It’s contended that UH can not change such terms of this sublease without BLNR approval.**

Also, the following statement is inaccurate as presented in this progress report (p. 13):

In addition, as part of the lease negotiations TIO committed \$1 million per year in donations to community benefits, primarily by advancing STEM education on Hawai‘i

Island, and a similar amount to a workforce pipeline initiative as operations become imminent to maximize employment opportunities for residents. TIO has paused these payments while they await National Science Foundation (NSF) funding.

Firstly, **the required yearly payment by TIO for a \$1 million Community Benefits Package was stipulated as Special Condition No. 12 of the BLNR-approved CDUP HA-3568**, not as part of the lease negotiations, as noted below:

12. Providing \$1 million annually, adjusted for inflation, for "Community Benefits Package" which will commence with construction and continue through the term of the sublease. The package will be administered via The Hawai'i Island New Knowledge (THINK) Fund Board of Advisors. In addition to the types of programs described in the "Community Benefits Package" in the Findings of Fact, at least \$5,000 annually of the \$1 million shall support a program or programs to assist at risk youth, specifically focusing on the children of incarcerated parents; [*See attached CDUP HA-3568 Decision and Order*]

Secondly, UH or TIO can't arbitrarily make a decision to not make payments for the Community Benefits Package as this was one of the conditions of the CDUP. **This is another example of UH Hilo and TIO not being in compliance with this CDUP.** If UH Hilo/TIO assert that the TMT project "started construction," then this condition required that \$1 million annually, adjusted for inflation, be paid for the Community Benefits Package "**through the term of the sublease.**" Furthermore, TIO's commitment towards the annual payment for the Community Benefits Package is not subject to the determination of NSF funding. **It's contended that UH Hilo can not change conditions of the CDUP without BLNR approval. It's also contended that UH Hilo/TIO have not been in compliance with other conditions of this CDUP.**

II. CMP Management Actions status updates are incomplete

UH failed to implement and complete several significant management actions that required immediate implementation as identified in the CMP in order to protect the natural and cultural resources on Mauna Kea.

However, the progress report failed to include an update status of CMP management actions that are incomplete or not implemented. Likewise, this report only referenced a very limited and select CMP management actions.

RECOMMENDATIONS

BLNR/DLRN as part of its legal obligation, duty, and responsibility to properly manage and protect the conservation and public lands of Mauna Kea should require UH Hilo to resubmit a corrected and adequate progress report to address the following:

1. Fiscal report of all payments made by TIO as stipulated by the sublease and a narrative explaining the schedule and authorization for the suspension of payments.
2. Fiscal report of all payments made by TIO towards the Community Benefits Package as stipulated by Special Condition No. 12 of CDUP HA-3568 and a narrative explaining the authorization for the suspension of payments.
3. An accounting that demonstrates the Community Benefits Package was properly administered via The Hawai'i Island New Knowledge (THINK) Fund Board of Advisors in alignment with the types of programs described in the "Community Benefits Package" in the Findings of Fact as stipulated by Special Condition No. 12.
4. An accounting that demonstrates at least \$5,000 annually of the \$1 million was used to support a program or programs to assist at-risk youth, specifically focusing on the children of incarcerated parents as stipulated by Special Condition No. 12.
5. An accounting of the status of all General and Special Conditions of CDUP HA-3568.
6. Due to the improper management of the TMT sublease, an annual fiscal reporting of all observatory subleases and agreements should be included in the progress report to ensure proper fiscal accountability. This accounting should also report the amount of any UH-viewing time allocated with each observatory in lieu of rent and the actual usage of this viewing time.
7. In addition, an accounting of the status of all conditions, including insurance coverage, of all existing CDUPs to ensure compliance.
8. An accounting of the status of all cesspools, including those of observatories and non-UH facilities.
9. The identification of CMP Management Actions that have not yet been implemented/ completed.

BLNR should issue a notice of breach regarding the TMT sublease in accordance with HRS §171-20. Upon failure to cure this breach, this sublease should be terminated for violation of conditions and terms in accordance with HRS §171-39.

CC: Office of Hawaiian Affairs Board of Trustees & CEO

Attachments: 1) TMT Sublease, 2) CDUP HA-3568 Decision and Order

**SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT
BETWEEN
TMT INTERNATIONAL OBSERVATORY LLC
AND
THE UNIVERSITY OF HAWAII**

THIS SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT (this "**Sublease**") is made and entered into on this 28 day of July, 2014, effective as of July 28, 2014 (the "**Effective Date**"), by and between TMT International Observatory LLC, a Delaware limited liability company ("**Sublessee**"), and the University of Hawaii, a public body corporate and the public university of the State of Hawaii ("**Sublessor**").

RECITALS

This Sublease is entered into with reference to the following:

A. Sublessor leases certain lands located on and around the summit of Mauna Kea, Island of Hawaii from the State of Hawaii, Board of Land and Natural Resources ("**Lessor**") pursuant to General Lease No. S-4191, dated June 21, 1968 (the "**Master Lease**"), a copy of which is attached hereto as **Exhibit A** and incorporated herein by reference.

B. Sublessee desires to sublease a portion of said lands, as more fully described below, for the purpose of constructing and operating an optical/infrared telescope facility known as the Thirty Meter Telescope ("**TMT**") in the manner described in, and accordance with, this Sublease and that certain Scientific Cooperation Agreement Between Sublessee and Sublessor Concerning the Design, Construction and Operation of the Thirty Meter Telescope on Mauna Kea, Hawaii (the "**Scientific Cooperation Agreement**") executed simultaneously herewith and to be effective on the same Effective Date indicated above. The TMT facilities will include, but are not limited to, the TMT telescope and enclosure; the support building (the space necessary to support scientific observers and technical personnel while at the summit); together with instruments, electrical conductors, cableways and tunnels; driveways and parking lots; power, telephone and communications conduits and lines; and access roads within the border of the Subleased Premises (as defined in Section 1 below) ("**TMT Facilities**"). "TMT Facilities" does not include any facilities outside the Subleased Premises.

C. The Master Lease provides that Sublessor may not enter into a sublease without the prior written consent of the Lessor. Prior written consent to this Sublease has been obtained pursuant to that certain Consent to Sublease Under General Lease No. S-4191 dated _____, 2014, a copy of which is attached hereto as **Exhibit B** and incorporated herein by reference.

D. In 2000, Sublessor adopted the Mauna Kea Science Reserve Master Plan, which establishes the management structures for Sublessor's stewardship of the areas it

manages on Mauna Kea. In 2009 and 2010, Sublessor adopted, and Lessor approved, the Mauna Kea Comprehensive Management Plan (“CMP”) and its subplans: the Cultural Resources Plan, Natural Resources Management Plan, Public Access Plan, and Decommissioning Plan. These plans commit Sublessor to exercise responsible stewardship of Mauna Kea and to ensure that astronomical activities are conducted in a manner that respects the cultural significance of Mauna Kea, protects the environment, and is responsive to the needs and concerns of Native Hawaiians and the public.

E. In May 2010, Sublessor completed an Environmental Impact Statement for the TMT. In September 2010, Sublessor filed an Application for a Conservation District Use Permit to construct the TMT. The permit was approved in April 2013. Sublessee is now seeking a long term sublease to build and operate the TMT.

F. Sublessor has submitted a request to the Lessor for the mutual cancellation of the current Master Lease and issuance of a new master lease for a term of sixty-five (65) years from issuance. Sublessee desires to continue operation of the TMT Facilities beyond 2033. It is desirable for management and planning purposes, including appropriate stewardship of Mauna Kea, to address the potential continued operation of the TMT Facilities beyond 2033 in this Sublease.

AGREEMENT

Now, therefore, in consideration of the foregoing and of the mutual promises and agreements set forth herein, Sublessor and Sublessee agree as follows:

1. Subleased Premises. Sublessor does hereby sublease to Sublessee, and Sublessee does hereby sublease from Sublessor, the parcel of land shown and described in Exhibits C-1 and C-2 attached hereto and incorporated herein by reference (the “Subleased Premises”), constituting a portion of the land leased by Sublessor under the Master Lease.

2. Non-Exclusive Easements. Sublessee shall have the right of access to and egress from the Subleased Premises over and across the Mauna Kea Science Reserve, utilizing 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. Sublessee shall also have the rights to (i) utilize and construct in, grade, fill, and perform work approved by Lessor and Sublessor in the easement area shown and described in Exhibits C-1 and C-3 attached hereto and incorporated herein by reference (the “Easement Area”), (ii) utilize and construct in and perform work approved by Lessor and Sublessor and consistent with the TMT Access Way Agreement dated September 13, 2012, by and among Sublessor, the Smithsonian Institution Astrophysical Observatory, and the TMT Observatory Corporation, in the spur road from the Mauna Kea Observatory Access Road to the Subleased Premises, (iii) install and utilize power and communications conduits and lines from a central handhole or handholes in the Mauna Kea summit area to the Subleased Premises, and (iv) utilize and access the Batch Plant staging area as authorized by the TMT CDUP (as defined in Section 4 below).

3. Survey/Site Specific Description. The site shown in Exhibit C-1 hereto has been surveyed. The area covered by the Subleased Premises is specifically described in the metes and bounds description in Exhibit C-2 hereto. The area covered by the Easement Area is specifically described in the metes and bounds description in Exhibit C-3 hereto.

4. Use of Subleased Premises. Sublessee shall use the Subleased Premises solely to construct and operate the TMT Facilities in accordance with this Sublease and the Scientific Cooperation Agreement. The construction and operation of the Subleased Premises shall be conducted in strict compliance with the terms and conditions of Conservation District Use Permit HA-3568 approved by the Lessor on April 12, 2013 (the "TMT CDUP"), including performance of all mitigation conditions set forth therein, and any amended or subsequent Conservation District Use Permit. Sublessee shall not at any time during the term of this Sublease construct, place, maintain, or install on the Subleased Premises any other building, structure, or improvement without the prior written approval of Sublessor and Lessor and upon such conditions as Sublessor or Lessor may impose. For purposes of the foregoing sentence, any other "improvement" means improvements that are not specified in or contemplated by the TMT CDUP and not contained within the building envelop of TMT observatory plans approved in accordance with Section 37 below. For the avoidance of doubt, the addition of any instruments, equipment or any other additions that are fully contained within the observatory structure or buildings shall not require the prior written approval of Sublessor or Lessor, provided that such additions are otherwise in compliance with the terms of this Sublease and the Master Lease.

5. Management and Stewardship Obligations. This Sublease shall be subject to the following:

a. The Subleased Premises are within the State Land Use Conservation District and all uses shall comply with the applicable rules and regulations of the State Conservation District, including but not limited to Hawaii Revised Statutes ("HRS") Chapter 183C and Hawaii Administrative Rules ("HAR") Chapter 13-5.

b. Sublessee shall comply with applicable State rules and regulations related to historic preservation including but not limited to HRS Chapter 6E, and HAR Chapters 13-197, 13-198, 13-275 through 13-284 and 13-300, and any applicable amendments of or supplements to such historic preservation regulations.

c. Sublessor shall exercise management jurisdiction over the Subleased Premises pursuant to management plans approved by the Lessor, including the CMP and its subplans, the Natural Resources Management Plan, Cultural Resources Management Plan, Decommissioning Plan, and Public Access Plan, the TMT Management Plan, and any amendments of or supplements to management plans approved by the Lessor for lands that include the Subleased Premises. Sublessee acknowledges that it has reviewed and is familiar with the CMP and subplans. Sublessor shall keep Sublessee informed regarding any future amendments or supplements thereto, and shall promptly provide copies of such documents to Sublessee.

d. All public and commercial activities in the areas of Mauna Kea managed by Sublessor, including recreational activities, shall be governed by administrative rules promulgated pursuant to the authority granted Sublessor by Act 132 (SLH 2009), following consultation with DLNR, the Office of Hawaiian Affairs, and the public in accordance therewith.

e. The Constitution of the State of Hawaii mandates the protection of recognized customary and traditional native Hawaiian rights subject to State regulation. This Sublease shall be subject to the right of Native Hawaiians to exercise protected traditional and customary practices as provided in the CMP and consistent with the laws of the State of Hawaii.

f. Sublessor has established a management structure to manage the lands of which the Subleased Premises are a part, which structure includes the Office of Mauna Kea Management at the University of Hawaii at Hilo, the volunteer community-based Mauna Kea Management Board and the Kahu Kū Mauna advisory council on Hawaiian cultural matters.

6. Operation of the TMT Facilities. Neither Sublessee nor any successor or assign shall operate the TMT Facilities for purposes of research without a valid and effective Scientific Cooperation Agreement with Sublessor. The TMT Facilities may be operated in the absence of a valid and effective Scientific Cooperation Agreement only when necessary to ensure the safety of personnel or of the TMT Facilities.

7. Rent. In consideration for the use of the Subleased Premises, Sublessee shall pay to Sublessor annual rents based on calendar years during the term of this Sublease as set forth below. The annual rent during the construction period is based on the incremental value of the major milestones achieved during the construction of the TMT Facilities. The milestones are set forth below and generally span approximately two (2) year periods. The annual rents shall be paid based upon the specified calendar years below regardless of whether the respective milestone is achieved.

<u>Year</u>	<u>Annual Rent</u>	<u>Milestone</u>
1-3	\$300,000	Civil construction
4-5	\$400,000	Enclosure
6-7	\$600,000	Telescope Structure
8-9	\$700,000	Instruments and Mirrors
10	\$900,000	Commissioning
11 and later	\$1,080,000	Operations

Rent shall be paid in advance, in equal semi-annual installments, on or before January 31 and July 31, of each calendar year during the term of this Sublease. The first installment of rent for the initial, partial year (which will be prorated) shall be due within 30 days of the date of execution of this Sublease. Beginning in January of 2015, and in January of each year thereafter, the annual rental amount for the year shall be based on the initial annual rental amount adjusted for the annual rate of inflation recorded for subsequent years in

accordance with the Consumer Price Index for all Urban Consumers, U.S. City Average (not seasonally adjusted) (base year 1982-1984 - 100) ("CPI"), published by the United States Department of Labor, Bureau of Labor Statistics. The calculation shall be made by comparing the CPI last published for the date nearest to the Effective Date (the "**Base Index**") with the CPI last published for the date nearest to the current anniversary date (the "**Current Index**"). If the Current Index has increased or decreased over the Base Index, then the amount subject to adjustment shall be set for the ensuing year by multiplying the initial annual rental amount by a fraction, the numerator of which is the Current Index and the denominator of which is the Base Index. If the base of the CPI changes from the 1982-84 base (100), the CPI shall, thereafter, be adjusted to the 1982-84 base (100) before the computation indicated above is made. If the CPI Index is at any time no longer published, a comparable index generally accepted and employed by the real estate profession shall be used.

Sublessor shall receive, deposit, and apply the rents received hereunder in accordance with the laws of the State of Hawaii, including, without limitation, Section 304A-2170 of the Hawaii Revised Statutes, as amended from time to time. Such deposit shall be net of the funds required by law to be transferred or paid to the Office of Hawaiian Affairs. Sublessor shall be responsible for paying over to the Office of Hawaiian Affairs its ratable share of the rents received in accordance with the laws of the State of Hawaii.

8. Master Lease: Order of Precedence. The rights granted to Sublessee pursuant to this Sublease are subject to the terms and conditions of the Master Lease, as the same may be amended. In the event of any conflict between the terms of this Sublease and the Master Lease, the Master Lease shall be controlling. In the event of any conflict between the terms of this Sublease and the Scientific Cooperation Agreement, this Sublease shall be controlling. Sublessee shall comply with the terms and conditions of the Master Lease at all times. If Sublessee causes a breach or default of any term, covenant, restriction, or condition of the Master Lease, and this breach or default shall continue for a period of more than forty-five (45) days after delivery by the Sublessor of a written notice of breach or default and demand for cure (plus any additional period as the Lessor may allow for good cause), then Sublessor may, subject to the provisions of Section 171-21 of the Hawaii Revised Statutes, at once re-enter the Subleased Premises, or any part, and upon or without the entry, at its option, terminate this Sublease without prejudice to any other remedy or right of action for arrears of rent or for any preceding or other breach of contract; and in the event of termination, at the option of the Sublessor, all buildings and improvements shall remain and become the property of the Sublessor or shall be removed by Sublessee in accordance with the Site Decommissioning Plan at Sublessee's sole cost and expense; furthermore, Sublessor shall retain all rent paid in advance to be applied to any damages.

9. Term and Termination. The term of this Sublease shall begin on the Effective Date and shall expire on December 31, 2033, unless extended or sooner terminated as provided herein.

a. Mutual Cancellation of Master Lease and Concurrent Issuance of New Master Lease.

(1) Sublessor shall use its best efforts to continue to and shall diligently pursue and take all actions necessary or advisable to complete the process currently underway with Lessor to obtain mutual cancellation of the current Master Lease subject to and concurrent with issuance of a new master lease (the "**New Master Lease**"), for a term of sixty-five (65) years and on terms and conditions materially consistent with the form of lease document submitted to the Lessor for consideration at its meeting of November 8, 2013. In the foregoing sentence, such "actions" shall include, without limitation, continuing to prepare and process an Environmental Impact Statement for the New Master Lease and such "terms and conditions" shall include, without limitation, that the New Master Lease shall include the provisions stating that "The lease shall be subject to all existing subleases entered into by the Lessee and approved by the Lessor pursuant to General Lease No. S-4191 dated June 21, 1968", and "Should this lease be rendered or declared invalid, illegal, or unenforceable by a court of competent jurisdiction, such invalidation shall cause, without further action, General Lease No. S-4191 dated June 21, 1968 to be revived in its entirety for the duration of the term therein, unless and until the parties subsequently agree otherwise".

(2) If the New Master Lease is approved and duly executed by Lessor and Sublessor, Sublessor shall promptly provide a copy of the New Master Lease to Sublessee. Effective as of the effective date of the New Master Lease, the following shall apply:

i) The provisions of this Sublease shall continue, whether by extension, issuance of a new sublease, or otherwise, provided that any continuance shall be in accordance with the terms herein as a sublease under the New Master Lease (including, without limitation, the rents set forth herein);

ii) The New Master Lease shall become the Master Lease for all purposes of this Sublease or any new sublease, and all references to the Master Lease in this Sublease or any new sublease shall thereafter refer to the New Master Lease; and

iii) The term of this Sublease shall automatically be extended, and shall thereafter expire sixty-five (65) years after the Effective Date, or upon expiration or termination of the New Master Lease, whichever shall first occur.

(3) If the New Master Lease is approved, but the term is not for sixty-five (65) years or the terms and conditions thereof are not materially consistent with the form of lease document submitted to the Lessor for consideration at its meeting of November 8, 2013, Sections 9.a.(2)i, ii), and iii) above shall apply unless Sublessee, at its sole option, provides a notice of termination to Sublessor in accordance with Section 9.d. below within one hundred twenty (120) days after Sublessee's receipt of the New Master Lease from Sublessor. Sublessor further agrees to diligently negotiate in good faith with Sublessee regarding mutually acceptable amendments to this Sublease during such one hundred twenty (120) day period and to promptly and diligently pursue approval by the Lessor of such amendments.

(4) If the New Master Lease is approved on terms and conditions materially consistent with the form of lease document submitted to the Lessor for consideration at its meeting of November 8, 2013 or is otherwise acceptable to Sublessee in Sublessee's sole judgment, Sublessor agrees to execute an amendment to this Sublease to reflect compliance with Sections 9.a.(2)i, ii, and iii) above or a new sublease on the same material terms and conditions as set forth in this Sublease (including, without limitation, the rents set forth herein) and reflecting compliance with Sections 9.a.(2)i, ii, and iii) above.

(5) Sublessee acknowledges that the Lessor has sole authority to determine whether to approve and enter into the New Master Lease, pursuant to and in accordance with Hawaii law, that no such approval has been granted as of the date of this Sublease, and that no prior commitment to issue such approval has been or can be made.

b. Failure to Obtain New Master Lease. If the New Master Lease is not approved by Lessor or if Sublessor otherwise fails to obtain a New Master Lease that automatically extends the term of this Sublease in accordance with of Sections 9.a.(3) or 9.a.(4) above, Sublessor agrees to use its best efforts to and will immediately and diligently pursue another means of acquiring sufficient rights to continue to lease the Subleased Premises to Sublessee on substantially the same terms and conditions herein, but for an additional term extending to, on or about March 31, 2079. If a subsequent master lease is approved and duly executed by Lessor and Sublessor, Sublessor shall promptly provide a copy of such subsequent master lease to Sublessee and, at Sublessee's sole option: (I) the provisions of Sections 9.a.(2)i, ii, and iii) above shall apply as if the subsequent master lease is the "New Master Lease" referred to in Section 9.a. above and Sublessor shall execute an amendment to this Sublease to reflect compliance with Sections 9.a.(2)i, ii, and iii) above or a new sublease on the same material terms and conditions as set forth in this Sublease (including, without limitation, the rents set forth herein) and reflecting compliance with Sections 9.a.(2)i, ii, and iii) above, or (II) Sublessor shall diligently negotiate in good faith a new sublease with Sublessee, if so desired by Sublessee, on the same material terms and conditions as set forth in this Sublease (including, without limitation, the rents set forth herein and compliance with the Master Lease then in effect) or on such other terms and conditions as may be mutually agreeable to Sublessor and Sublessee, with a term ending on or after March 31, 2079.

c. Option to Extend Term. Notwithstanding the foregoing in Sections 9.a. and 9.b. above, Sublessee shall have an option to extend the term of this Sublease beyond December 31, 2033 if Sublessor acquires rights to sublease the Subleased Premises to Sublessee, whether under the New Master Lease or other master lease, and such extension shall be coterminous with such New Master Lease or other master lease, but in no event shall the term of this Sublease extend beyond March 31, 2079. Such option shall expire on December 31, 2033 and Sublessee shall have sole discretion regarding whether or not to exercise such option.

d. Termination Without Cause. Sublessee shall have the right to terminate this Sublease at any time upon six (6) months prior written notice to Sublessor.

e. Termination for Breach. This Sublease may be terminated for breach as provided in, and in accordance with, Sections 8 above or 25 below.

f. Non-use and Abandonment. If the Sublessee shall, at any time for a continuous period of eleven (11) months, fail or cease to use, or abandon the Subleased Premises, this Sublease shall cease and terminate. Sublessor shall provide written notice to Sublessee within thirty (30) days after the sixth (6th) month of such eleven (11) month period and shall allow Sublessee three (3) months to cure any such purported abandonment.

10. Effect of Termination or Expiration: Decommissioning. Upon termination or expiration of this Sublease, Sublessee shall, at Sublessor's sole option and at Sublessee's sole cost and expense either (a) surrender the Subleased Premises with all improvements existing or constructed thereon, or (b) decommission and remove the TMT Facilities and restore the land in accordance with the CMP and the Decommissioning Plan for Mauna Kea Observatories, A Sub-Plan of the Mauna Kea Comprehensive Management Plan (dated January, 2010 and approved by Lessor in March, 2010) ("**Decommissioning Plan**"), and any amended, supplemental, or successor plans adopted by Sublessor with the approval of the Lessor.

a. Decommissioning Funding Plan. Sublessee shall develop and periodically update a Decommissioning Funding Plan as described in, and in accordance with, the Decommissioning Plan, to provide assurance to Sublessor that sufficient funds will be available to carry out deconstruction and site restoration activities upon termination or expiration of this Sublease. The Decommissioning Funding Plan shall include one or more financial assurance mechanisms as described in the Decommissioning Plan. Sublessee shall provide the initial Decommissioning Funding Plan on or before the execution date of this Sublease as set forth above. Sublessee shall submit an updated Decommissioning Funding Plan to Sublessor for Sublessor's review and approval as provided in the CMP, and shall provide such information and documents as Sublessor may reasonably request from time to time to verify the availability and adequacy of funding to meet Sublessee's decommissioning and restoration obligations. If, at any time during the term of this Sublease, Sublessor reasonably determines that the Decommissioning Funding Plan is insufficient, Sublessee shall consult with Sublessor and shall negotiate in good faith to determine the amount of such additional funding and provide such additional funding assurance mechanisms.

b. Site Decommissioning Plan. Upon expiration or termination of this Sublease or any extended sublease, decommissioning, including site restoration, shall be carried out in strict compliance with a Site Decommissioning Plan developed and approved in accordance with the Decommissioning Plan ("**Decommissioning Obligations**").

c. Delivery of Possession. Except as otherwise provided herein, upon expiration or termination of this Sublease or any extended sublease and completion of Sublessee's Decommissioning Obligations, Sublessee shall peaceably deliver to Sublessor possession of the Subleased Premises in a clean and orderly condition.

d. Payment of Decommissioning Costs of Sublessor or Lessor. Sublessee shall promptly pay on demand any reasonable and necessary costs incurred by Sublessor or Lessor to remedy any failure on the part of Sublessee to fully and timely perform its Decommissioning Obligations.

e. Survival. The obligations of Sublessee under this Section 10, the rights and obligations of Sublessor and Sublessee under Sections 9.a., 9.b., and 9.c. above, and the obligations of Sublessee under Section 11 below shall survive expiration or termination of this Sublease.

f. Termination Without Decommissioning; Assumption of Decommissioning Obligations by Sublessor. If this Sublease expires or is terminated prior to the expiration of the Master Lease and at a time when the TMT Facilities have remaining useful life, at Sublessor's sole option Sublessee shall be relieved of its Decommissioning Obligations and permitted to surrender its subleasehold interest in the Subleased Premises without removal of the TMT Facilities on such terms as may be mutually agreed in writing by Sublessor and Sublessee, which may include payment to Sublessor of an amount to be held in reserve for future decommissioning in exchange for Sublessor's assumption of the Decommissioning Obligations.

11. Indemnity. Sublessee shall indemnify, defend, and hold harmless Lessor, Sublessor, and their officers, agents, employees, and other persons acting on their behalf, from and against any claim or demand for loss, liability, or damages (including, but not limited to, reasonable attorneys' fees and claims for property damage, personal injury, or death, based upon any accident, fire, or other incident on or about the Subleased Premises) to the extent arising or resulting from: (1) any act or omission on the part of Sublessee relating to Sublessee's use, occupancy, maintenance, or enjoyment of the Subleased Premises; (2) any failure on the part of Sublessee to properly maintain the Subleased Premises, and areas adjacent thereto in Sublessee's use and control, including any accident, fire, or nuisance, arising from or caused by any failure on the part of Sublessee to maintain the Subleased Premises in a safe condition; or (3) Sublessee's non-observance or non-performance of any of the terms, covenants, and conditions of this Sublease or the Master Lease or the rules, regulations, ordinances and laws of the Federal, State, or County governments. Sublessee further agrees to indemnify, defend, and hold harmless Lessor and Sublessor from any damages or claims arising from the release of "hazardous material" (as defined in Section 31 below) on the Subleased Premises occurring while Sublessee is in possession, or elsewhere if caused by Sublessee or any person acting under Sublessee.

12. Insurance. Sublessee shall, at its own cost and expense, maintain the following insurance. Such insurance shall be subject to the reasonable approval of Sublessor and Lessor and, except as to any property insurance, shall name Sublessor and Lessor as additional insureds. Sublessee shall deliver executed certificates thereof to Sublessor on or before the Effective Date of this Sublease and thereafter within a reasonable time prior to the expiration of the term of each such policy. As often as any such policy shall expire or terminate, renewal or additional policies shall be procured and maintained by Sublessee in like manner to like extent. If Sublessee has only provided

Sublessor with certificates evidencing the policies required to be carried by Sublessee under this Sublease, Sublessee agrees to deliver executed copies of all such required policies to Sublessor within ten (10) days of Sublessor's written request for the same.

a. Property Insurance. Sublessee shall at its own expense and at all times during the term of this Sublease keep Sublessee's property, including but not limited to the TMT Facilities, insured against (i) all of the risks covered by a standard ISO Commercial Property Special Causes of Loss Form (or equivalent) which shall be in an amount equal to the full replacement cost of such property and shall not have a deductible in excess of Two Hundred and Fifty Thousand Dollars (\$250,000), and (ii) such other hazards or risks which a reasonably prudent telescope operator on Mauna Kea would insure against. Sublessee hereby waives any and all rights of subrogation which it may have against Lessor and/or Sublessor, except to the extent of available insurance. In case the property required to be insured above or any part thereof shall be destroyed or damaged by fire or such other casualty required to be insured against, then and as often as the same shall happen, the proceeds of such insurance shall be paid to Sublessee to be used by Sublessee to promptly repair and restore any damage to such property.

b. Liability Insurance. Sublessee shall procure at Sublessee's expense and keep in force during the term of this Sublease and any extension thereof, the following insurance:

i) General Liability Insurance. Commercial general liability insurance (including coverage for liability caused by the fault of Sublessee, products-completed operations liability, personal and advertising injuries and coverage for contractual liability to the extent provided by ISO Form CGL #00-01-04-13 (or equivalent) covering Sublessee and naming as additional insureds: (i) Sublessor, (ii) Lessor, (iii) Sublessor's and Lessor's managers, officers, agents and employees, and (iv) such other parties as Sublessor may specify, insuring against liability arising out of the use, occupancy or maintenance of the Subleased Premises and areas appurtenant thereto by Sublessee with limits of not be less than One Million Dollars (\$1,000,000) for property damage, and Five Million Dollars (\$5,000,000) for injuries and deaths in any one occurrence or a combined single limit of Five Million Dollars (\$5,000,000) per occurrence and deductibles of no more than Two Hundred and Fifty Thousand Dollars (\$250,000). Such insurance shall be primary and shall not limit the liability of the Sublessee under Section 11 above.

ii) Auto Liability Insurance. Auto liability insurance covering all automobiles used by Sublessee in connection with its operations in the Subleased Premises with limits of not less than Five Hundred Thousand Dollars (\$500,000) for property damage, and Five Million Dollars (\$5,000,000) for injuries or deaths in any one occurrence or a combined single limit of Five Million Dollars (\$5,000,000) per occurrence, with deductibles of no more than Five Thousand Dollars (\$5,000) per occurrence and naming Sublessor and Lessor as additional insureds.

iii) Pollution Liability Insurance. Pollution liability insurance in the amount of not less than Five Million Dollars (\$5,000,000) and with deductibles of no

more than Two Hundred and Fifty Thousand Dollars (\$250,000) per occurrence and naming Sublessor and Lessor as additional insureds. Such insurance shall cover bodily injury, property damage, and environmental damage, including clean up and defense and remediation costs, for occurrences that arise from the occupancy or use of the Subleased Premises during the term of this Sublease by Sublessee.

c. General Insurance Requirements.

i) Sublessee shall use its best efforts to obtain the following terms in each policy of commercial property insurance and general liability insurance required in Sections 12.a. and 12.b. above to the extent that such terms are reasonably available in the commercial marketplace:

a) a provision that the liability of the insurer thereunder shall not be affected by, and that the insurer shall not claim, any right of set-off, counterclaim, apportionment, proration, or contribution by reason of, any other insurance obtained by or for Sublessor, Lessor, Sublessee, or any person claiming by, through, or under any of them; and

b) no provision relieving the insurer from liability for loss occurring while the hazard to buildings and personal property is increased, whether or not within the knowledge or control of, or because of any breach of warranty or condition or any other act or neglect by Sublessor, Lessor, Sublessee, or any person claiming by, through, or under any of them.

ii) Each policy of commercial property insurance and general liability insurance required in Sections 12.a. and 12.b. above shall:

a) be written by an insurance company rated A- or better, Class size VIII or better, by the Best's Key Rating Guide, based upon the rating system in effect on the date this Sublease is signed. In the event that Best's changes its rating system or ceases to provide ratings at some later date, then such insurance company shall have a rating from Best (or some other comparable rating service if Best's ceases to provide ratings) comparable to the "A- or better, Class VIII or better" requirement of the immediately preceding sentence; and

b) be specifically endorsed to provide that they are primary policies, not contributing with and not in excess of any coverage that Sublessor and/or Lessor may carry, notwithstanding anything to the contrary contained in any policies obtained by Sublessor and/or Lessor.

In addition, Sublessor shall request that each such policy be specifically endorsed to provide that such policy may not be cancelled except upon the insurer giving at least thirty (30) days' prior written notice thereof (ten (10) days in the case of nonpayment of premium) to Sublessor, Lessor, Sublessee, and other person having an interest in the property who has requested such notice of the insurer.

13. Taxes, Assessments, etc. Sublessee shall pay or cause to be paid, when due, the amount of all taxes, rates, and assessments of every description as to which the Subleased Premises or any part, or any improvements, or the Lessor, Sublessor, or Sublessee, are now or may be assessed or become liable by authority of law during the term of this Sublease; provided, however, that with respect to any assessment made under any betterment or improvement law which may be payable in installments, Sublessee shall be required to pay only those installments, together with interest, which becomes due and payable during the term of this Sublease.

14. Utility Services. Sublessee shall be responsible for obtaining any utility services and shall pay when due all charges, duties and rates of every description, including water, sewer, gas, refuse collection or any other charges, as to which the Subleased Premises or any part, or any improvements, or the Lessor, Sublessor, or Sublessee may become liable for during the term, whether assessed to or payable by the Lessor, Sublessor, or Sublessee.

15. Covenant against discrimination. The use and enjoyment of the Subleased Premises shall not be in support of any policy which discriminates against anyone based upon race, creed, sex, color, national origin, religion, marital status, familial status, ancestry, physical handicap, disability, age or HIV (human immunodeficiency virus) infection.

16. Sanitation. Sublessee shall keep the Subleased Premises and improvements in a strictly clean, sanitary and orderly condition.

17. Waste and Unlawful, Improper or Offensive Use of Subleased Premises. Sublessee shall not commit, suffer or permit to be committed any waste, nuisance, strip or unlawful, improper or offensive use of the Subleased Premises or any part, nor, without the prior written consent of the Lessor and Sublessor, cut down, remove or destroy, or suffer to be cut down, removed or destroyed, any trees now growing on the premises.

18. Compliance with Laws. Sublessee shall comply with all applicable requirements of all municipal, state, and federal authorities and observe all municipal, state and federal laws applicable to the Subleased Premises, now in force or which may be in force.

19. Inspection of Subleased Premises. Upon reasonable notice by Sublessor to Sublessee, Sublessee shall permit the Lessor, Sublessor, and their respective agents, at all reasonable times during the Sublease term, to enter the Subleased Premises and examine the state of its repair and condition.

20. Improvements. Sublessee shall not at any time during the term of this Sublease construct, place, maintain and install on the premises any building, structure or improvement of any kind and description except with the prior written approval of the Lessor and the Sublessor and upon those conditions as the Lessor or Sublessor may impose, unless otherwise provided in this Sublease. Construction of the TMT Facilities in accordance with Section 4 above is authorized. Except as otherwise provided in this

Sublease, Sublessee shall own all improvements constructed by and installed by Sublessee on the Subleased Premises.

21. Repairs to Improvements. Sublessee shall, at its own expense, keep, repair, and maintain all buildings and improvements now existing or hereafter constructed or installed on the Subleased Premises in good order, condition and repair, reasonable wear and tear excepted.

22. Liens. Sublessee shall not commit or suffer any act or neglect which results in the Subleased Premises, any improvement, the leasehold estate of the Sublessor, or the subleasehold estate of the Sublessee becoming subject to any attachment, lien, charge, or encumbrance, except as provided in this Sublease, and shall indemnify, defend, and hold the Lessor and Sublessor harmless from and against all attachments, liens, charges, and encumbrances and all resulting expenses.

23. Assignments, etc. Sublessee shall not sublease, subrent, transfer, assign, or permit any other person to exclusively occupy the Subleased Premises or any portion or transfer or assign this Sublease or any interest therein, either voluntarily or by operation of law, without the prior written approval of the Lessor and the Sublessor.

24. Costs of Litigation. Sublessee shall pay all costs, including reasonable attorney's fees, and expenses incurred by or paid by the Lessor or Sublessor (i) in enforcing the covenants and agreements of the Master Lease or this Sublease with respect to Sublessee, (ii) in recovering possession of the Subleased Premises, or (iii) in the collection of delinquent rental, taxes, and any and all other charges.

25. Breach. Time is of the essence in this Sublease and if the Sublessee shall become bankrupt, or if this Sublease and Subleased Premises shall be attached or taken by operation of law, or if Sublessee shall fail to observe and perform any of the material covenants, terms, and conditions contained in this Sublease and on its part to be observed and performed (other than a failure that causes a breach of the Master Lease, in which case Sublessor and Sublessee hereby agree that Section 8 above applies), and this failure shall continue for a period of more than sixty (60) days after delivery by the Sublessor of a written notice of breach or default and demand for cure, by personal service, registered mail or certified mail to the Sublessee at its last known address and to each holder of record having a security interest in the premises, then Sublessor may, subject to the provisions of Section 171-21 of the Hawaii Revised Statutes, at once re-enter the premises, or any part, and upon or without the entry, at its option, terminate this Sublease without prejudice to any other remedy or right of action for arrears of rent or for any preceding or other breach of contract; and in the event of termination, at the option of Sublessor, all buildings and improvements shall remain and become the property of the Sublessor or shall be removed by Sublessee in accordance with Section 10 above; furthermore, Sublessor shall retain all rent paid in advance to be applied to any damages.

26. Condemnation. If at any time, during the term of this Sublease, any portion of the Subleased Premises should be condemned, or required for public purposes by any

government authority, the rental shall be reduced in proportion to the value of the portion of the Subleased Premises condemned. Sublessee shall be entitled to receive from the condemning authority the proportionate value of the Sublessee's permanent improvements so taken in the proportion that it bears to the unexpired term of the Sublease; provided, that the Sublessee may, in the alternative, remove and relocate its improvements to the remainder of the lands occupied by Sublessee. Sublessee shall not by reason of the condemnation be entitled to any claim against the Lessor or Sublessor for condemnation or indemnity for leasehold interest and all compensation payable or to be paid for or on account of the leasehold interest by reason of the condemnation shall be payable to and be the sole property of the Lessor or Sublessor. The foregoing rights of the Sublessee shall not be exclusive of any other to which Sublessee may be entitled by law. Where the portion taken renders the remainder unsuitable for the use or uses for which the Subleased Premises were leased, Sublessee shall have the option to surrender this lease and be discharged and relieved from any further liability; provided, that Sublessee shall remove the permanent improvements constructed, erected and placed by it within any reasonable period allowed by the Lessor and Sublessor, in accordance with Section 10 above.

27. Right to Enter. The Lessor, Sublessor, or the County of Hawaii and their agents or representatives shall have the right to enter and cross any portion of the Subleased Premises for the purpose of performing any public or official duties; provided, however, in the exercise of these rights, the Lessor, Sublessor, or the County of Hawaii shall not interfere unreasonably with the Sublessee or Sublessee's use and enjoyment of the Subleased Premises.

28. Extension of Time. Notwithstanding any provision contained in this Sublease, when applicable, Sublessor may for good cause shown, allow additional time beyond the time or times specified in this Sublease for the Sublessee to comply, observe, and perform any of the Sublease terms, conditions, and covenants.

29. Quiet Enjoyment. Sublessor covenants and agrees with Sublessee that upon payment of the rent at the times and in the manner provided and the observance and performance of these covenants, terms, and conditions on the part of the Sublessee to be observed and performed, the Sublessee shall and may have, hold, possess, and enjoy the premises for the term of this Sublease, without hindrance or interruption by the Lessor, Sublessor or any other person or persons lawfully claiming by, through, or under the Lessor or Sublessor.

30. Non-warranty. Neither the Lessor nor Sublessor warrants the conditions of the Subleased Premises, as the same are being subleased as is.

31. Hazardous Materials. Sublessee shall not cause or permit the escape, disposal or release of any hazardous materials except as permitted by law. Sublessee shall not allow the storage or use of such materials in any manner not sanctioned by law or by the highest standards prevailing in the industry for the storage and use of such materials, nor allow to be brought onto the premises any such materials except to use in the ordinary

course of Sublessee's business where the Sublessee has provided Sublessor with a list that contains the identity of such materials used or stored by Sublessee in the ordinary course of its business and in compliance with all applicable federal and state regulations; provided, that if Sublessor disapproves in writing any such materials, the disapproved materials shall not be brought onto the Subleased Premises. If any lender or governmental agency shall ever require testing to ascertain whether or not there has been any release of hazardous materials by Sublessee, then the Sublessee shall be responsible for the reasonable costs thereof. In addition, Sublessee shall execute affidavits, representations and the like from time to time at Lessor's or Sublessor's request concerning Sublessee's best knowledge and belief regarding the presence of hazardous materials on the Subleased Premises placed or released by Sublessee.

For the purpose of this Sublease, "hazardous material" shall mean any pollutant, toxic substance, hazardous waste, hazardous material, hazardous substance, or oil as defined in or pursuant to the Resource Conservation and Recovery Act, as amended, the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, the Federal Clean Water Act, or any other federal, state, or local environmental law, regulation, ordinance, rule, or by-law, whether existing as of the date hereof, previously enforced, or subsequently enacted.

32. Hawaii Law. This Sublease shall be construed, interpreted, and governed by the laws of the State of Hawaii.

33. Exhibits - Incorporation in Sublease. All exhibits referred to herein are attached to this Sublease and hereby are deemed incorporated by reference.

34. Headings. The section headings herein are inserted only for convenience and reference and shall in no way define, describe or limit the scope or intent of any provision of this Sublease.

35. Partial Invalidity. If any term, provision, covenant or condition of this Sublease should be held to be invalid, void or unenforceable, the remainder of this Sublease shall continue in full force and effect and shall in no way be affected, impaired or invalidated thereby.

36. Withdrawal. If and to the extent that Lessor exercises its power of withdrawal under the Master Lease to withdraw any portion of the Subleased Premises for public uses or purposes upon giving reasonable notice and without compensation except as otherwise provided in the Master Lease, HRS Chapter 171, the New Master Lease, or other master lease between Sublessor and Lessor that includes the Subleased Premises, then Sublessor shall have the right to withdraw these same portions of the Subleased Premises during the term of this Sublease upon giving reasonable notice to Sublessee and subject to the Sublessee's claim for any compensation provided under the Master Lease, HRS Chapter 171, the New Master Lease, or other master lease between Sublessor and Lessor that includes the Subleased Premises for any permanent improvement constructed upon the Subleased Premises that is destroyed or made unusable in the process of the withdrawal or

taking. Upon such withdrawal, or upon the taking which causes any portion of the Subleased Premises to become unusable for the specific use or uses for which it was subleased, the rent shall be reduced in proportion to the value of the land withdrawn or made unusable, and to the extent permitted in the Master Lease, HRS Chapter 171, the New Master Lease, or other master lease between Sublessor and Lessor that includes the Subleased Premises, if any permanent improvement constructed upon the land by Sublessee is destroyed or made unusable in the process of the withdrawal or taking, the proportionate value shall be paid based upon the unexpired term of the lease (which value shall also include the cost of decommissioning such improvements including site restoration as required in the Decommissioning Plan).

37. **Building Construction.** All building construction shall be in full compliance with all applicable laws, rules and regulations of the federal, state, and county governments and in accordance with plans and specifications submitted to and approved by the Sublessor and the Chairman of the Board of Land and Natural Resources prior to commencement of construction.

38. **Clearances.** Sublessee shall be responsible for obtaining all necessary federal, state or county clearances.

39. **Time of Essence.** Time is of the essence in all provisions of this Sublease.

40. **Written Notice.** All notices shall be in writing and shall be deemed to have been delivered on the date sent if sent by certified mail (return receipt requested) or recognized courier (with delivery confirmation) or transmitted by facsimile (with written confirmation of transmission) and in each case with a copy sent by email on the same date as follows:

Sublessor:

Chancellor
University of Hawaii at Hilo
200 West Kawili Street
Hilo, Hawaii 96720-4091
Telephone: (808) 932-7348
Facsimile: (808) 932-7338
Email: dstraney@hawaii.edu

Sublessee:

Project Manager (during construction) or Observatory Director (after first light; contact information for Observatory Director to be delivered to Sublessor by written notice following construction)
TMT International Observatory LLC
1111 South Arroyo Parkway, Suite 200
Pasadena, CA 91105

Telephone: (626) 395-2997
Facsimile: (626) 296-1887
Email: sanders@tmt.org

With a copy to:

Ann Martin
General Counsel
TMT Observatory Corporation
Telephone: (626) 395-1646
Facsimile: (626) 395-6841
Email: ann.martin@caltech.edu

41. Dispute Resolution. Any dispute relating to or arising as a result of or in connection with this Sublease, if not resolved by negotiation, shall be submitted first to non-binding mediation with Dispute Prevention & Resolution, Inc. and if such mediation is not concluded within six (6) months after submission, then shall be decided in legal or equitable proceedings in accordance with Hawaii law in any court having jurisdiction in the State of Hawaii. Such mediation shall take place in the County of Honolulu, State of Hawaii. Each party shall bear its own costs and fees for such mediation and the fees and expenses of the mediator shall be borne by the parties equally.

42. Historic preservation. In the event any historic properties or burial sites, as defined in Section 6E-2 of the Hawaii Revised Statutes, are found on the Subleased Premises, Sublessee and Sublessee's agents, employees and representatives shall immediately stop all land utilization and/or work and contact the Historic Preservation Office in compliance with Hawaii Revised Statutes Chapter 6E.

43. Removal of Trash. Sublessee shall be responsible for the removal of all illegally dumped trash upon the premises within ninety (90) days from the date of execution of this Sublease and shall so notify the Sublessor in writing at the end of ninety (90) days.

44. Phase I Environmental Site Assessment. Prior to termination or revocation of this Sublease, Sublessee shall conduct a Phase I environmental site assessment of the Subleased Premises and conduct a complete abatement and disposal of any such sites, if necessary, satisfactory to the standards required by the Federal Environmental Protection Agency, the Department of Health, and the Department of Land and Natural Resources. Failure to comply with the provisions of this Section 44 shall not extend the term of this Sublease or automatically prevent termination or revocation of the lease. Sublessor, at its sole option, may refuse to approve termination, unless this evaluation and abatement provision has been performed. In addition or in the alternative, Sublessor may, at its sole option if Sublessee does not do so, arrange for performance of the provisions of this Section 44, all costs and expenses of such performance to be charged to and paid by Sublessee.

45. Counterparts. This Sublease may be executed in counterparts, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original (including counterparts delivered by facsimile or email), and said counterparts together shall constitute one and the same agreement binding all of the parties hereto.

[Remainder of page intentionally left blank; signature page follows.]

IN WITNESS WHEREOF, Sublessor and Sublessee have executed this Sublease as of the date first written above.

SUBLESSOR:

SUBLESSEE:

FOR THE UNIVERSITY OF HAWAII:

FOR TMT INTERNATIONAL
OBSERVATORY LLC:

By David Lassner

Name: David Lassner

Title: President

Date: 7/28/14

By EC Stone

Name: Edward C. Stone

Title: Executive Director

Date: 7/23/14

By Howard Todo

Name: Howard Todo

Title: Vice-President for Budget and
Finance

Date: 7/28/14

By Donald D. Straney

Name: Donald Straney

Title: Chancellor, University
of Hawai'i at Hilo

Date: 28 July 14

Approved as to form:

By Lawrence S. Okinaga

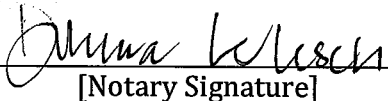
Name: Lawrence S. Okinaga, Carlsmith Ball LLP

Title: Special General Counsel

Date: 07/28/2014

STATE OF HAWAII)
) ss.
CITY AND COUNTY OF HONOLULU)

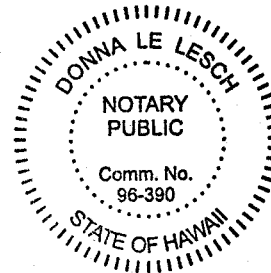
The attached document: **SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT BETWEEN TMT INTERNATIONAL OBSERVATORY LLC AND THE UNIVERSITY OF HAWAII**, dated July 28, 2014 which consists of 48 pages (including this page), was executed by **DAVID LASSNER** and **HOWARD TODO** and on this 28 day of July, 2014 in the First Judicial Circuit of the State of Hawaii, personally known/proved to me on the basis of satisfactory evidence to be the persons, who personally appeared before me and being by me duly sworn or affirmed, did say that they are the **PRESIDENT** and **VICE-PRESIDENT FOR BUDGET AND FINANCE**, respectively, of the **UNIVERSITY OF HAWAII**, and that such persons executed the foregoing instrument as the free act and deed of such persons, and if applicable in the capacities shown, having been duly authorized to execute such instrument in such capacities.


[Notary Signature]

(notary stamp or seal)

Printed Name: Notary Name

My commission expires: DONNA LE LESCH
Commission No. 96-390
Notary Public, State of Hawaii
My commission expires July 18 2016



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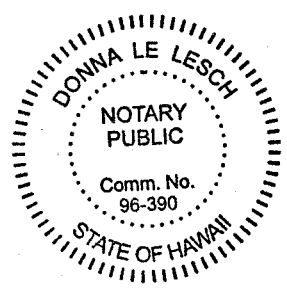
STATE OF HAWAII)
) ss.
COUNTY OF HAWAII)

The attached document: **SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT BETWEEN TMT INTERNATIONAL OBSERVATORY LLC AND THE UNIVERSITY OF HAWAII**, dated July 28, 2014 which consists of 48 pages (including this page), was executed by **DONALD STRANEY** on this 28 day of July, 2014 in the ~~Third~~ ^{5th} Judicial Circuit of the State of Hawaii, personally known/proved to me on the basis of satisfactory evidence to be the person, who personally appeared before me and being by me duly sworn or affirmed, did say that he is the **CHANCELLOR of UNIVERSITY OF HAWAI'I AT HILO**, and that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.

Donna Le Lesch
[Notary Signature]

(notary stamp or seal)

Printed Name: Notary Name
DONNA LE LESCH
Commission No. 96-390
Notary Public, State of Hawaii
My commission expires July 18 2016



STATE OF CALIFORNIA)
)
COUNTY OF Los Angeles) ss.

The attached document: **SUBLEASE AND NON-EXCLUSIVE EASEMENT AGREEMENT BETWEEN TMT INTERNATIONAL OBSERVATORY LLC AND THE UNIVERSITY OF HAWAII**, dated July 23, 2014 which consists of 22 pages (including this page), was executed by **EDWARD C. STONE** on this 23rd day of JULY, 2014, personally known/proved to me on the basis of satisfactory evidence to be the person, who personally appeared before me and being by me duly sworn or affirmed, did say that he is the **EXECUTIVE DIRECTOR** of **TMT INTERNATIONAL OBSERVATORY LLC** and that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.

C.M. Aguilar

[Notary Signature]

(notary stamp or seal)

Printed Name: Notary Name C.M. Aguilar

My commission expires: Jan. 16, 2017

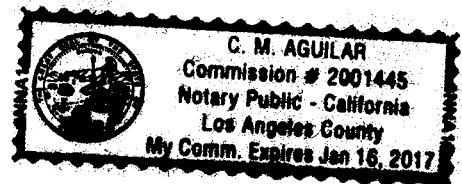


Exhibit A to Sublease

Master Lease (General Lease No. S-4191)

GENERAL LEASE NO. S-4191

THIS INDENTURE OF LEASE, made this 21st day of June, 1968, 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 demise and lease unto the said Lessee and the said Lessee does hereby rent and lease from the Lessor, all of that certain parcel of land situate at Kaohe, Hamakua, 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, herein mentioned and described, unto the said Lessee, for and during the term of sixty-five (65) years, to commence from the 1st day of January, 1968, and to terminate on the 31st day of December, 2033.

DEPARTMENT OF LAND AND NATURAL RESOURCES
HONOLULU, HAWAII

EXHIBIT A

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.

4. Right to use Demised Lands. The right for itself, and its successors, lessees, grantees and permittees, 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 and privileges 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 LESSEE, IN CONSIDERATION OF THE PREMISES, COVENANTS WITH THE LESSOR 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, any waste, strip, spoil, nuisance or unlawful, improper or offensive use of the demised premises.

4. Specified Use. 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 inimical to said scientific complex.

Activities inimical to said scientific complex shall include light and dust interference to observatory operation.

Rev'd
~~During hours of business~~ 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 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

policy which discriminates against anyone based upon race, creed, color or national origin.

10. General Liability. The Lessee shall at all times, with respect to the demised premises, use due care for safety, and the Lessee 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 Lessee on or in connection with the demised premises, subject to the laws of the State of Hawaii governing such liability.

11. Laws, Rules and Regulations, etc. The Lessee shall observe and comply with Regulation 4 of the Department of Land and Natural Resources and with all other laws, ordinances, rules and regulations of the federal, state, municipal or county governments affecting the demised lands or improvements.

12. Objects of Antiquity. The Lessee shall not appropriate, damage, remove, excavate, disfigure, deface or destroy any object of antiquity, prehistoric ruin or monument of historical value.

13. Undesirable Plants. In order to prevent the introduction of undesirable plant species in the area, the Lessee shall not plant any trees, shrubs, flowers or other plants in the leased area except those approved for such planting by the Chairman.

IN WITNESS WHEREOF, the STATE OF HAWAII, by its Board of Land and Natural Resources, has caused the seal of the Department of Land and Natural Resources to be hereunto affixed and these presents to be duly executed this 21:6

day of June, 1968, and the UNIVERSITY OF HAWAII, 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 HAWAII

By: *James F. [Signature]*
Acting Chairman and Member
Board of Land and
Natural Resources

And By: *Almon [Signature]*
Member
Board of Land and
Natural Resources

UNIVERSITY OF HAWAII

By: *Robert W. [Signature]*
Its Acting President

And By: *[Signature]*
Its

APPROVED AS TO FORM: *[Signature]*

Deputy Attorney General
Dated:

Proofed by:

EXHIBIT "A"

MAUNA KEA SCIENCE RESERVE

Kahe, Hamakua, Island of Hawaii, Hawaii

Being a portion of the Government Land of Kahe

Beginning at a point on the south boundary of this parcel of land, the coordinates of said point of beginning referred to Government Survey Triangulation Station "SUMMIT 1955" being 12,325.95 feet South and 471.84 feet West, as shown on Government Survey Registered Map 2789, thence running by azimuths measured clockwise from True South:-

1. 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: 135° 00' 18,667.62 feet;
2. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, still on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 225° 00' 18,667.62 feet;
3. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, still on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 281° 18' 04.6" 5173.56 feet;
4. 207° 49' 06.5" 841.83 feet along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909;
5. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, on a curve to the right with a radius of 1200.00 feet, the chord azimuth and distance being: 297° 49' 06.5" 2400.00 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" 701.87 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;

16. Thence along Mauna Kea Forest Reserve, Governor's Proclamation dated June 5, 1909, still on a curve to the right with a radius of 13,200.00 feet, the chord azimuth and distance being: 45° 00' 18.667.62 feet to the point of beginning and containing an AREA OF 13,321.054 ACRES.

EXCEPTING and RESERVING to the State of Hawaii and to all others entitled thereto, the Mauna Kea-Humuula and Mauna Kea-Uaikoia 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 and assigns, the waters and all riparian and other rights in and to all the streams within the above-described parcel of land.

Exhibit B to Sublease

Consent to Sublease Under General Lease No. S-4191

(attached)

CONSENT TO SUBLEASE OF GENERAL LEASE NO. S-4191

CONSENT is hereby given by the STATE OF HAWAII, by its Board of Land and Natural Resources, Lessor under unrecorded General Lease No. S-4191 dated June 21, 1968, leased to the University of Hawaii, a public body corporate, as Lessee, to the attached Sublease and Non-Exclusive Easement Agreement ("Sublease") dated _____, 2014, from the UNIVERSITY OF HAWAII, a public body corporate, as "Sublessor," to TMT INTERNATIONAL OBSERVATORY LLC, a Delaware limited liability company, as "Sublessee"; SUBJECT, HOWEVER, to the provisions of Section 171-21, Hawaii Revised Statutes, as amended, relating to the rights of holder of security interests, PROVIDED, FURTHER, that nothing contained herein shall change, modify, waive or amend the provisions, terms, conditions and covenants or the duties and obligations of the Lessee or Sublessee under General Lease 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.

IT IS FURTHER UNDERSTOOD AND AGREED by the STATE OF HAWAII, by its Board of Land and National Resources, that in the event said General Lease No. S-4191 is surrendered or defaulted upon by Lessee, UNIVERSITY OF HAWAII, prior to the expiration of the term thereof, the Sublease shall remain in full force and effect for the remainder of the term thereof, and Sublessee, TMT INTERNATIONAL OBSERVATORY LLC, shall be allowed its continued right to quiet enjoyment of the demised premises, upon and subject to the terms, conditions and covenants of General Lease No. S-4191. For the avoidance of doubt, for purposes of the immediately preceding sentence, a "surrender" by Lessee, UNIVERSITY OF HAWAII, does not include a mutual cancellation of said General Lease No. S-4191 and concurrent issuance of a New Master Lease (as defined in Section 9.a. of the Sublease) on terms that are acceptable to Sublessee or other master lease on terms that are acceptable to Sublessee, TMT INTERNATIONAL OBSERVATORY LLC, as contemplated by Section 9 of the Sublease.

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 consent.

DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P. O. Box 621
Honolulu, Hawaii 96809

IN WITNESS WHEREOF, the STATE OF HAWAII, by its Board and Land and Natural Resources, has caused the seal of the Department of Land and Natural Resources to be hereunto affixed and these presents to be fully executed on this ____ day of _____, 2014.

STATE OF HAWAII

Approved by the Board
of Land and Natural
Resources at its
meeting held on
_____, 2014

By _____
Chairperson and Member
Board of Land and
Natural Resources

LESSOR

UNIVERSITY OF HAWAII, a public body
corporate

By _____
DAVID LASSNER
Its President

By _____
HOWARD TODO
Its Vice-President for Budget and Finance

By _____
DONALD STRANEY
Chancellor, University of Hawai'i at Hilo

LESSEE

APPROVED AS TO FORM:

Deputy Attorney General
Dated: _____

DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P. O. Box 621
Honolulu, Hawaii 96809

STATE OF HAWAII)
) ss.
CITY AND COUNTY OF HONOLULU)

On this ____ day of _____, 2014, before me personally appeared **DAVID LASSNER, HOWARD TODO** and **DONALD STRANEY** personally known, who, being by me duly sworn or affirmed, did say that they are the President of the University of Hawai'i, the Vice-President for Budget and Finance of the University of Hawai'i, and the Chancellor of the University of Hawai'i at Hilo, respectively, and that the foregoing instrument was signed in the capacity shown, having been duly authorized to execute such instrument on behalf of the University of Hawai'i, a public body corporate, by authority of its Board of Regents, and that said **DAVID LASSNER, HOWARD TODO** and **DONALD STRANEY** acknowledged the foregoing instrument as the free act and deed of said University.

Name: _____

Notary Public, State of Hawaii

My commission expires: _____

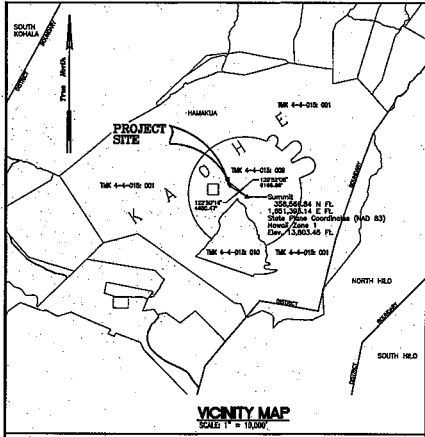
(Notary Stamp or Seal)

<u>NOTARY CERTIFICATION STATEMENT</u>	
Document Identification or Description: <u>CONSENT TO SUBLEASE OF GENERAL LEASE NO. S-4191</u>	
Document Date: _____	
No. of Pages: _____	
Jurisdiction (in which notarial act is performed): <u>Third Judicial Circuit of the State of Hawaii</u>	
Signature of Notary	Date of Notarization and Certification Statement
(Notary Stamp or Seal)	
Printed Name of Notary _____	

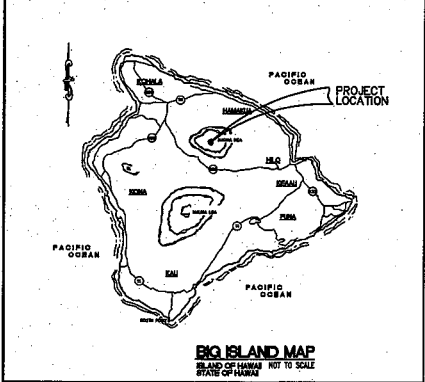
Exhibit C-1 to Sublease

Subleased Premises and Easement Area

(attached)

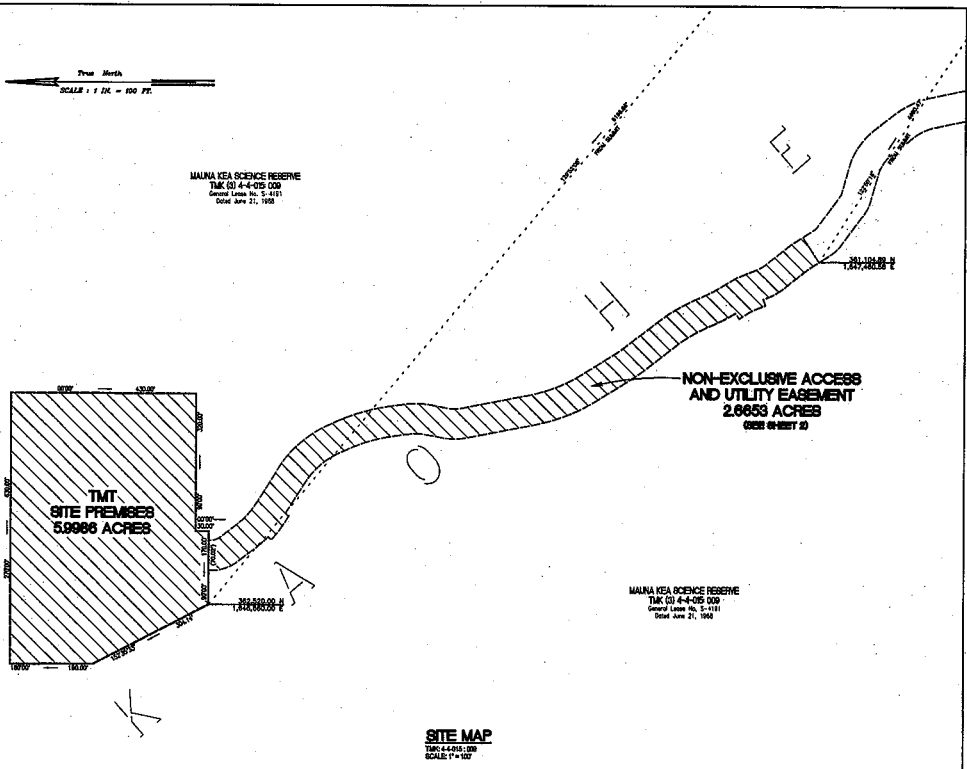


VICINITY MAP
SCALE: 1" = 10,000'



BIG ISLAND MAP
ISLAND OF HAWAII NOT TO SCALE
STATE OF HAWAII

- Notes:**
1. Coordinates are referred to State Plane Coordinates, Hawaii Zone 1 (NAD 83) - SLMART
SPC 18 1' 308,566.86 N, 1,051,203.14 E (Feet)
LAT 19 49' 14.4272" LONG 155 28' 05.0145" W
 2. All measurements measured clockwise from True South
- Map is compiled from records found at the State Survey Office, County of Hawaii Planning Department, State of Hawaii Bureau of Conveyances.



MAP SHOWING
TMT (30 METER TELESCOPE) SITE PREMISES
AND NON-EXCLUSIVE ACCESS AND UTILITY EASEMENT,
MAUNA KEA SCIENCE RESERVE,
GENERAL LEASE NO. S-4191,
DATED JUNE 12, 1968,
KAHOE, HAMAKUA, ISLAND OF HAWAII, HAWAII
TMK (3) 4-4-010-000
SCALE: 1" = 100'

SITE MAP
TMK (3) 4-4-010-000
SCALE: 1" = 100'

Engineering Partners, Inc.
P.O. Box 4159
Hale, Hawaii 96720
Tel: (808) 833-7900
Fax: (808) 833-3533
www.ephawaii.com ephawaii@hawaii.com

DATE: MARCH 6, 2014

JOB NO: 14043-14-01

THIS EASEMENT SURVEY MAP WAS PREPARED BY
ENGINEERING PARTNERS, INC. FOR
TMT OBSERVATORY CORPORATION
2832 E. WASHINGTON BLVD.
PASADENA, CA 91107

Professional Engineer License No. 10001
Expire April 21, 2014

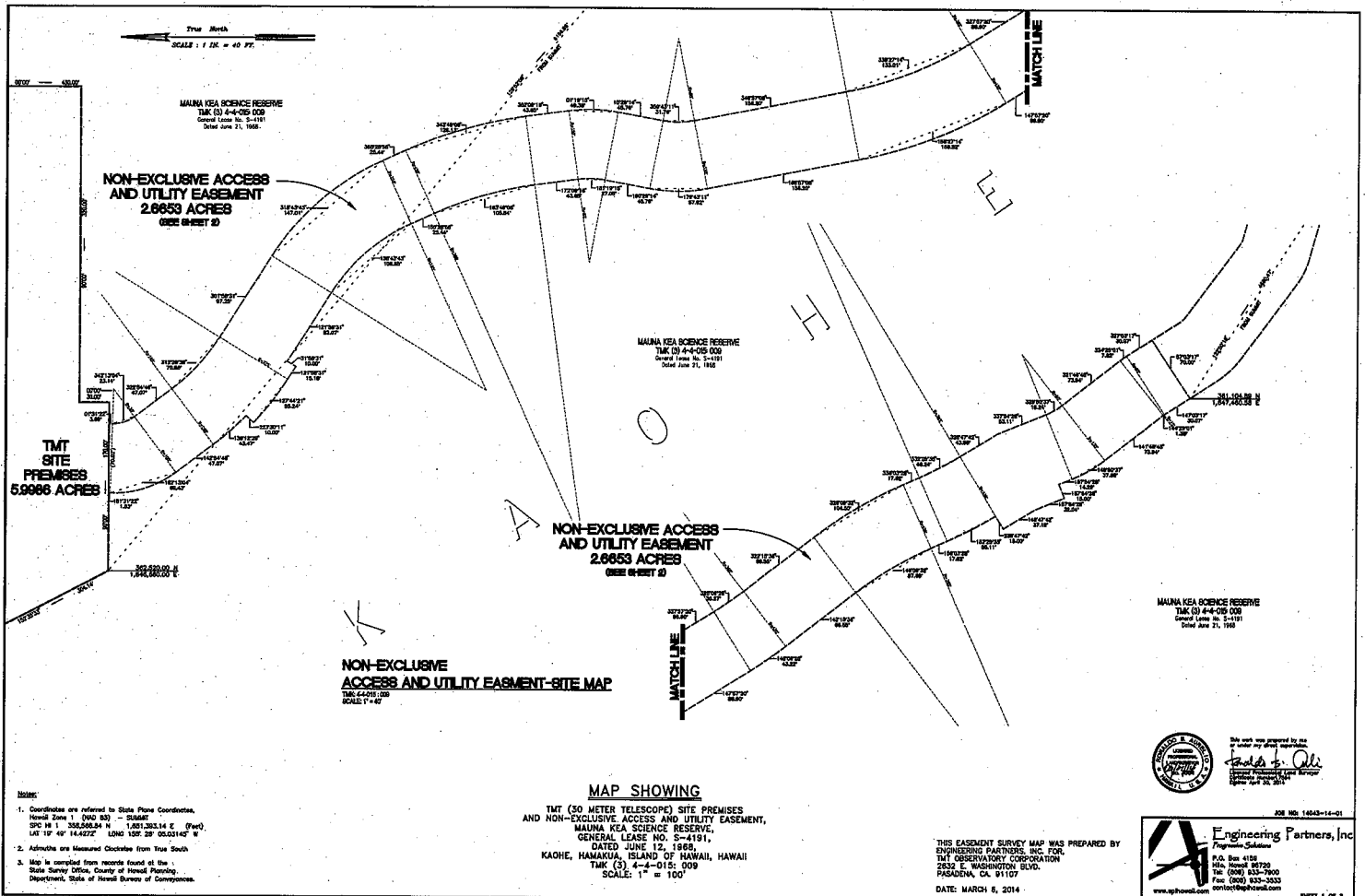


Exhibit C-2 to Sublease

Legal Description of Subleased Premises

(attached)

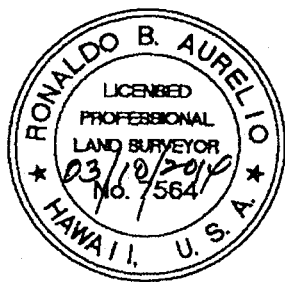
DESCRIPTION

TMT SITE PREMISES

All of that certain parcel of land being a portion of the Government Land of Kaohe, being also a portion of Mauna Kea Science Reserve covered by General Lease S-4191 to the University of Hawaii Situate at Kaohe, Hamakua, Island of Hawaii, Hawaii

Beginning at the southwest corner of this parcel of land referred to the Hawaii State Plane Coordinate System, Zone 1 (NAD83) 362,519.00 feet North and 1,646,660.00 feet East and the direct azimuth and distance from the Government Survey Triangulation Station "SUMMIT 1955" being 129° 52' 08"; 6,166.86 feet and running by azimuths measured clockwise from True South:

1. 152° 35' 33" 304.14 feet along the remainder of the Government Land of Kaohe and the remainder of Mauna Kea Science Reserved covered by General Lease S-4191 to the University of Hawaii;
2. 180° 00' 00" 190.00 feet same;
3. 270° 00' 00" 630.00 feet along same;
4. 0° 00' 00" 430.00 feet along same;
5. 90° 00' 00" 320.00 feet along same;
6. 0° 00' 00" 30.00 feet along same;
7. 90° 00' 00" 170.00 feet along the same to the point of beginning and containing an area of 5.9986 acres, more or less.



Description Prepared By:
Engineering Partners Inc.

Ronaldo B. Aurelio
RONALDO B. AURELIO
Licensed Professional Land Surveyor
Certificate Number 7564
Expires April 30, 2014

Hilo, Hawaii, March 10, 2014

Exhibit C-3 to Sublease

Legal Description of Easement Area

(attached)

DESCRIPTION

NON-EXCLUSIVE ACCESS AND UTILITY EASEMENT

All of that certain parcel of land being a portion of the Government land of Kaohe, being also a portion of Mauna Kea Science Reserve covered by General Lease S-4191 to the University of Hawaii
Situat at Kaohe, Hamakua, Island of Hawaii, Hawaii

Beginning at the southwest corner of this parcel of land referred to the Hawaii State Plane Coordinate System, Zone 1 (NAD83) 361,104.89 feet North and 1,647,460.58 feet East and the direct azimuth and distance from the Government Survey Triangulation Station "SUMMIT 1955" being 122° 50' 16"; 4,680.47 feet and running by azimuths measured clockwise from True South:

1. 147° 03' 17" 30.07 feet along the remainder of the Government Land of Kaohe and the remainder of Mauna Kea Science Reserved covered by General Lease S-4191 to the University of Hawaii;

Thence along the same on a curve to the left with a radius of 15.00 feet, the chord azimuth and distance being;

2. 144° 25' 01" 1.38 feet;
3. 141° 46' 45" 73.94 feet along same;

Thence along the same on a curve to the right with a radius of 135.00 feet, the chord azimuth and distance being;

4. 149° 50' 37" 37.88 feet;
5. 157° 54' 28" 14.29 feet along same;
6. 67° 54' 28" 15.00 feet along same;
7. 157° 54' 28" 32.04 feet along same;
8. 148° 47' 42" 37.18 feet along same;
9. 238° 47' 42" 15.00 feet along same;

Thence along the same on a curve to the right with a radius of 435.00 feet, the chord azimuth and distance being;

- 10. 152° 25' 35" 55.11 feet;
- 11. 156° 03' 28" 17.62 feet along same;

Thence along the same on a curve to the left with a radius of 365.00 feet, the chord azimuth and distance being;

- 12. 149° 09' 32" 87.69 feet;
- 13. 142° 15' 36" 89.55 feet along same;

Thence along the same on a curve to the right with a radius of 435.00 feet, the chord azimuth and distance being;

- 14. 145° 06' 28" 43.22 feet;
- 15. 147° 57' 20" 86.90 feet along same;

Thence along the same on a curve to the right with a radius of 435.00 feet, the chord azimuth and distance being;

- 16. 158° 27' 14" 158.52 feet;
- 17. 168° 57' 08" 156.20 feet along same;

Thence along the same on a curve to the right with a radius of 155.00 feet, the chord azimuth and distance being;

- 18. 179° 43' 11" 57.92 feet;
- 19. 190° 29' 14" 45.76 feet along same;

Thence along the same on a curve to the left with a radius of 85.00 feet, the chord azimuth and distance being;

- 20. 181° 19' 15" 22.08 feet;

21. 172° 09' 16" 43.65 feet along same;
 Thence along the same on a curve to the left with a radius of 365.00 feet, the chord azimuth and distance being;
22. 163° 49' 06" 105.84 feet;
23. 155° 28' 55" 25.44 feet along same;
 Thence along the same on a curve to the left with a radius of 185.00 feet, the chord azimuth and distance being;
24. 138° 43' 43" 106.65 feet;
25. 121° 58' 31" 82.07 feet along same;
26. 31° 58' 31" 10.00 feet along same;
27. 121° 58' 31" 15.18 feet along same;
 Thence along the same on a curve to the right with a radius of 275.00 feet, the chord azimuth and distance being;
28. 127° 44' 21" 55.24 feet;
29. 223° 30' 11" 10.00 feet along same;
 Thence along the same on a curve to the right with a radius of 265.00 feet, the chord azimuth and distance being;
30. 138° 12' 29" 43.47 feet;
31. 142° 54' 46" 47.07 feet along same;
 Thence along the same on a curve to the right with a radius of 105.00 feet, the chord azimuth and distance being;
32. 162° 13' 04" 69.43 feet;
33. 181° 31' 22" 1.83 feet along same;
34. 270° 00' 00" 70.02 feet along the TMT Building Site Easement:

35. 1° 31' 22" 3.69 feet along the remainder of the Government Land of Kaohe and the remainder of Mauna Kea Science Reserved covered by General Lease S-4191 to the University of Hawaii;
- Thence along the same on a curve to the left with a radius of 35.00 feet, the chord azimuth and distance being;
36. 342° 13' 04" 23.14 feet;
37. 322° 54' 46" 47.07 feet along same;
- Thence along the same on a curve to the left with a radius of 195.00 feet, the chord azimuth and distance being;
38. 312° 26' 39" 70.86 feet;
39. 301° 58' 31" 97.25 feet along same;
- Thence along the same on a curve to the right with a radius of 255.00 feet, the chord azimuth and distance being;
40. 318° 43' 43" 147.01 feet;
41. 335° 28' 55" 25.44 feet along same;
- Thence along the same on a curve to the right with a radius of 435.00 feet, the chord azimuth and distance being;
42. 343° 49' 06" 123.13 feet;
43. 352° 09' 16" 43.65 feet along same;
- Thence along the same on a curve to the right with a radius of 155.00 feet, the chord azimuth and distance being;
44. 1° 19' 15" 49.38 feet;
45. 10° 29' 14" 45.76 feet along same;

Thence along the same on a curve to the left with a radius of 85.00 feet, the chord azimuth and distance being;

- 46. 359° 43' 11" 31.76 feet;
- 47. 348° 57' 08" 156.20 feet along same;

Thence along the same on a curve to the left with a radius of 365.00 feet, the chord azimuth and distance being;

- 48. 338° 27' 14" 133.01 feet;
- 49. 327° 57' 20" 86.90 feet along same;

Thence along the same on a curve to the left with a radius of 365.00 feet, the chord azimuth and distance being;

- 50. 325° 06' 28" 36.27 feet;
- 51. 322° 15' 36" 89.55 feet along same;

Thence along the same on a curve to the right with a radius of 435.00 feet, the chord azimuth and distance being;

- 52. 329° 09' 32" 104.50 feet;
- 53. 336° 03' 28" 17.62 feet along same;

Thence along the same on a curve to the left with a radius of 365.00 feet, the chord azimuth and distance being;

- 54. 332° 25' 35" 46.24 feet;
- 55. 328° 47' 42" 43.96 feet along same;
- 56. 337° 54' 28" 53.11 feet along same;

Thence along the same on a curve to the left with a radius of 65.00 feet, the chord azimuth and distance being;

- 57. 329° 50' 37" 18.24 feet;

58. 321° 46' 45" 73.94 feet along same;

Thence along the same on a curve to the right with a radius of 85.00 feet, the chord azimuth and distance being:

59. 324° 25' 01" 7.82 feet;

60. 327° 03' 17" 30.07 feet along same;

61. 57° 03' 17" 70.00 feet along same to the point of beginning and containing an area of 2.6653 acres, more or less.



Description Prepared By:
Engineering Partners Inc.

A handwritten signature in black ink that reads "Ronaldo B. Aurelio".

RONALDO B. AURELIO
Licensed Professional Land Surveyor
Certificate Number 7564
Expires April 30, 2014

Hilo, Hawaii, March 10, 2014

standard conditions set forth in HAR § 13-5-42, as modified below, are imposed:

- The proposed land use will be consistent with the purpose of the Conservation District;
 - The proposed land use will be consistent with the objectives of the Resource subzone;
 - The proposed land use will comply with provisions and guidelines contained in Chapter 205A, where applicable;
 - The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community, or region;
 - The proposed land use, including buildings, structures, and facilities, will be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels;
 - The existing physical and environmental aspects of the land will be reasonably preserved or improved upon, whichever is applicable;
 - Subdivision of land will not be utilized to increase the intensity of land uses in the conservation district; and
 - The proposed land use will not be materially detrimental to the public health, safety, and welfare.
510. The proposed land use meets the criteria for issuance of a Conservation District Use Permit. The proposed land use also reasonably protects identified native Hawaiian rights.
511. Any proposed conclusion of law that is not specifically included above is hereby rejected.
512. If any of the above conclusions of law shall be determined to be findings of fact, it is intended that every such conclusion of law shall be construed as a finding of fact. Conversely, if any of the above findings of fact shall be determined to be conclusions of law, it is intended that every such finding of fact shall be construed as a conclusion of law.

DECISION AND ORDER

Based on the foregoing findings of fact and conclusions of law, the CDUA and the TMT Management Plan are approved. A CDUP shall be issued, subject to the following conditions:

General Conditions:

1. UH Hilo shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State, and County governments, and applicable parts of the HAR § 13-5 et seq.;
2. UH Hilo shall obtain appropriate authorization from the Department for the occupancy of state lands, if applicable;
3. UH Hilo shall comply with all applicable Department of Health administrative rules;
4. Any work done or construction to be done on the land shall be initiated within two (2) years of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within twelve (12) years of the approval. The UH Hilo shall notify the Department in writing when construction activity is initiated and when it is completed;
5. Before proceeding with any work authorized by the Board, UH Hilo shall submit four copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to UH Hilo. Plan approval by the Chairperson does not constitute approval required from other agencies;
6. All representations relative to mitigation set forth in the Environmental Impact Statement and Conservation District Use Application are incorporated and adopted as conditions of the permit;
7. All mitigation measures and management actions contained in the Historic Preservation Mitigation Plan, Construction Plan, Historical & Archaeological Site Plan, Maintenance Plan, and Arthropod Monitoring Plan, are incorporated as conditions of this permit;
8. The TMT Project will comply with any terms and conditions outlined in the Comprehensive Management Plan and associated sub-plans; and
9. The TMT Management Plan is approved, including all specific management actions articulated in the TMT Management Plan including, Cultural Resources Management, Natural Resources Management, Education & Outreach, Astronomical Resources, Permitting and Enforcement, Infrastructure and Maintenance, Construction Guidelines, Site Recycling, Decommissioning, Demolition & Restoration, Future Land Uses, and Monitoring, Evaluation & Updates. These management actions and their associated mitigation measures are incorporated as conditions of this permit.

The following special conditions shall be implemented by UHH, OMKM and TIO, as applicable:

1. Ensuring that employees attend mandatory cultural and natural resources training with a minimum of one days' training;
2. Working with the 'Imiloa Astronomy Center, OMKM, and Kahu Kū Mauna to develop informational exhibits for visitors regarding the natural, cultural and archaeological resources of Mauna Kea that could be used at the Mauna Kea VIS, 'Imiloa, TMT facilities, and other appropriate locations;
3. Funding the re-naturalization of the closed access road on Pu'u Poli'ahu, partial re-naturalization of the batch plant staging area after construction has been completed, and camouflaging of the utility pull boxes in certain locations to reduce the visual impact from the summit area;
4. Implementing an invasive species control program;
5. Working with OMKM to develop and implement a wēkiu bug habitat restoration study;
6. Implementing the "Zero Waste Management" policy;
7. Filling employment opportunities locally to the greatest extent possible;
8. Mandating that employees traveling beyond Hale Pōhaku take part in a ride-sharing program using project vehicles;
9. Using energy savings devices such as solar hot water systems, photovoltaic power systems, energy efficient light fixtures, and Energy Star rated appliances;
10. The University will decommission three telescopes permanently, as soon as reasonably possible, and no new observatories will be constructed on those sites. This commitment will be legally binding on the University and shall be included in any lease renewal or extension proposed by the University for Mauna Kea;
11. Notwithstanding any lease renewal or extension, consistent with the Decommissioning Plan, at least two additional facilities will be permanently decommissioned by December 31, 2033, including the Very Long Baseline Array antenna and at least one additional observatory.
12. Providing \$1 million annually, adjusted for inflation, for "Community Benefits Package" which will commence with construction and continue through the term of the sublease. The package will be administered via The Hawai'i Island New Knowledge (THINK) Fund Board of Advisors. In addition to the types of programs described in the "Community Benefits Package" in the Findings of Fact, at least \$5,000 annually of the \$1 million shall support a program or programs to assist at risk youth, specifically focusing on the children of incarcerated parents;
13. The Board of advisors shall ensure that a reasonable amount of funding is directed at programs for the most vulnerable and underserved members of Hawai'i Island

communities so that they can participate in our technological future.

14. The funding shall be distributed with reasonable promptness and not be used to build a permanent endowment;
15. Partnering with other institutions to implement a Workforce Pipeline Program, headed by at least one full-time position through the Community Outreach office, to prepare local residents for jobs in science, engineering, and technical fields;
16. UHH will ensure that the survey of the power line corridor easement complies with DLNR standards and is in accordance with the conditions contained in the grant of easement (including the Mauna Kea Ice Age Natural Area Reserve) that was approved by the BLNR in August 1985. The University will provide copies of the survey to DOFAW;
17. OMKM will consult with the U.S. Fish and Wildlife Service and experts who are advising OMKM, including representatives from the DLNR regarding surveys of the wēkiu bug and invertebrates along the utility corridor, including Pu‘u Hau Kea and the pu‘u west of the Parking Area 1;
18. The construction contractor will be required to minimize the visual changes to land within the utility line right-of-way during utility upgrades. Any disturbance outside of the easement area of the construction corridor will be restored to the extent possible;
19. UH Hilo will present a plan for handling recreational parking during construction to the OCCL for review and approval, at least one month prior to beginning construction;
20. Following construction, TMT shall keep their area clean and free of trash or unattended tools and equipment, unless authorized in writing by OMKM and OCCL;
21. The Archaeological Monitoring Plan will be submitted to the State Historic Preservation Division for review and approval prior to the onset of construction;
22. Sublease rent will be deposited into the Manna Kea Lands Management Special Fund, and only used for management of Mauna Kea and related purposes as provided by law;
23. UH Hilo/OMKM will notify OCCL of the date of the twice-annual inspections of the project site and allow Department staff to attend if available;
24. UH Hilo/OMKM will provide OCCL and BLNR a copy of TIO's annual report to OMKM, as required by Section 5.3 of the TMT Management Plan;
25. UH Hilo will allow BLNR to name a DLNR representative to participate in the CMP five-year management review process;

26. When provided or required, potable water supply and sanitation facilities shall have the approval of the Department of Health and the county Board of Water Supply;
27. UH Hilo understands and agrees that this permit does not convey any vested rights or exclusive privilege;
28. In issuing this permit, the Department and Board have relied on the information and data that UH Hilo has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
29. Where any interference, nuisance, or harm may be caused, or hazard established by the use, UH Hilo shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;
30. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary; the Applicant will also notify the Office of Hawaiian Affairs at the same time;
31. During construction, appropriate mitigation measures shall be implemented to minimize impacts to off-site roadways, utilities, and public facilities;
32. No construction work shall be initiated until the Applicant demonstrates compliance with all preconstruction conditions and mitigation measures specifically required in this decision. Once this condition has been satisfied, the Department will issue notice to proceed with construction;
33. TIO shall set aside funds annually in a sufficient amount to allow for site observatory and access way site restoration;
34. Daytime activities at TMT will be minimized on up to four days per year, as identified by Kahu Kū Mauna;
35. UHH shall consult with the Kahu Kū Mauna Council and cultural practitioners to the extent feasible to plan for, and establish, an appropriate area on Mauna Kea, within the MKSR, to be used by native Hawaiians for religious and cultural purposes; provided that this condition shall not affect the timing of TMT construction or operation;
36. UHH shall allow reasonable access to the area established under Condition 35 for the exercise of any native Hawaiian traditional and customary practices to the

extent feasible, reasonable, and safe. The allocation of this area shall be in addition to all other cultural and access rights of native Hawaiians to other areas of Mauna Kea as provided by law or by other conditions set forth herein;

37. In order to enhance the Hawaiian cultural presence on Mauna Kea, UHH shall include products and handicrafts with a native Hawaiian cultural theme among those sold at the Mauna Kea VIS, and explore whether an expanded area for specifically native Hawaiian crafts can be accommodated at or near the VIS;
38. UHH shall implement a cooperative internship and mentorship program between personnel working at the astronomy facilities on Mauna Kea and Hawaiian communities;
39. UHH and TIO shall develop a plan to implement and extend early entry programs for at-risk children of Hawaiian ancestry and other at-risk youth in the community of UH Hilo. The early entry program shall provide educational opportunities in STEM-related and other curriculum such as the following:
 - (a) Astronomy, math, science, engineering, environmental science and technical support careers at astronomy facilities;
 - (b) Hawaiian language and culture;
 - (c) Navigation;
 - (d) Geology;
 - (e) Biology and agriculture;
 - (f) Law Enforcement/criminal justice;
 - (g) New disciplines of learning dependent on career fields needed; and
 - (h) On-the-job training as necessary.

UHH/TIO shall report to BLNR on the progress of this condition prior to the completion of TMT construction; provided that progress on this condition or lack thereof shall not affect the construction or operation of the TMT Project and provided further that it requires no commitment for funding other than staff time for plan development;

40. UHH shall make reasonable accommodations for the use of facilities at Hale Pōhaku for the Hawaiian Language and Hawaiian Studies programs at UHH and HCC, along with their continued use by others;
41. Kahu Kū Mauna shall review policies concerning the construction and retention of personal or group shrines such as ‘ahu, and recommend policies to OMKM and/or BLNR as appropriate, within 18 months;

42. UHH and OMKM are allowed to take reasonable measures consistent with law, including limitations on the use of the TMT Access Way, if necessary for the security of the TMT Observatory; and
43. Other terms and conditions as may be prescribed by the Chairperson.

The conditions above shall be deemed severable, so that if any are deemed invalid, that shall not affect the part which remains or the validity of the permit.

In case of noncompliance with these conditions, the chairperson shall first attempt to secure compliance from the responsible party, and if unsuccessful, shall bring the matter to the board, with notice to the permittee, to request an order revoking the permit.

DATED: Honolulu, Hawai'i, September 27, 2017.

Suzanne D. Case

SUZANNE D. CASE, Chairperson
Board of Land and Natural Resources
and Presiding Officer

STANLEY H. ROEHRIG, Member

KEITH "KEONE" DOWNING, Member

JAMES A. GOMES, Member

Thomas H OI

THOMAS OI, Member

Samuel GON III

SAMUEL "OHU" GON III, Member

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SUZANNE D. CASE, Chairperson
Board of Land and Natural Resources
and Presiding Officer

I do not concur

STANLEY H. ROEHRIG, Member

KEITH "KEONE" DOWNING, Member

JAMES A. GOMES, Member

THOMAS OI, Member

SAMUEL "OHU" GON III, Member

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Board of Land and Natural Resources
and Presiding Officer

STANLEY H. ROEHRIG, Member

*I DO NOT CONCUR
Keith Keone Downing 9-27-17*

KEITH "KEONE" DOWNING, Member 9:49 AM

JAMES A. GOMES, Member

THOMAS OI, Member

SAMUEL "OHU" GON III, Member

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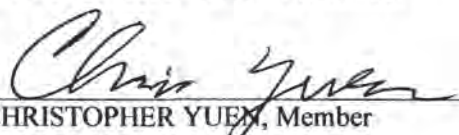
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