

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NOTICE

National Environmental Policy Act; Finding of No Significant Impact; Temporary Optical Test Sites for the W. M. Keck Observatory Twin Keck Telescope Interferometer

AGENCY: National Aeronautics and Space Administration

ACTION: Finding of No Significant Impact

SUMMARY: Pursuant to the National Environmental Policy Act of 1969, as amended (NEPA) (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and NASA's Procedures for Implementing NEPA (14 CFR Subpart 1216.3), NASA has made a Finding of No Significant Impact (FONSI) with respect to installation of two temporary optical test sites at the W. M. Keck Observatory (WMKO), Mauna Kea, Hawaii. The proposed sites will be used during the testing phase of the Keck Interferometer Project. They will be used to collect the starlight needed to integrate and test the instrumentation that will combine the light from the Keck I and Keck II 10-meter telescopes. Use of the temporary sites will allow most of the test and development work to be done efficiently without disturbing the important on-going research activities on the Keck telescopes.

The draft Environmental Assessment, Temporary Optical Test Sites for the W. M. Keck Observatory Twin Keck Telescope Interferometer, was advertised in Hawaii papers, distributed to interested parties, and made available in libraries there. Thirty days were allowed for comments and the one comment received is now part of the final Environmental Assessment.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

NASA has independently reviewed the EA prepared for the Temporary Optical Test Sites for the W. M. Keck Observatory Twin Keck Telescope Interferometer and has determined that it represents an accurate and adequate analysis of the scope and level of associated environmental impacts. The EA is incorporated by reference in this FONSI.

The California Association for Research in Astronomy (CARA)--in association with the National Aeronautics and Space Administration (NASA)--proposes to install two temporary optical test sites at the W. M. Keck Observatory (WMKO), Mauna Kea, Hawaii. The proposed sites will be used during the testing phase of the Keck Interferometer Project. They will be used to collect the starlight needed to integrate and test the instrumentation that will combine the light from the Keck I and Keck II 10-meter telescopes. Use of the temporary sites will allow most of the test and development work to be done efficiently without disturbing the important on-going research activities on the Keck telescopes. When the instrumentation is fully operational, the optical beams from the Keck telescopes will be used to do the final testing.

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Each of the proposed sites will include a siderostat and an enclosure for weather protection--a shelter with a roll-off roof. Underground optical paths will connect the test sites to the instrumentation housed in the basement of the Keck II telescope building. All above-ground test facilities will be removed at the completion of the development testing--about three years and nine months after the start of site work--and the site will be restored to its original use as a parking area.

Alternatives considered in this environmental assessment (EA) were the proposed action, no action and using the two 10-meter Keck telescopes to align the interferometer optics. The no-action alternative would mean that the W. M. Keck Observatory would have no interferometer and that the scientific objectives would not be accomplished.

The option of using the Keck I and Keck II 10-meter telescopes--the world's largest--for aligning the optics is considered impractical because it would preclude astronomical observing for long periods of time. These telescopes are in high demand with astronomers from all over the world scheduled for months to years in advance to use them. This alternative would be too disruptive and too costly from a scientific point of view.

The environmental analysis indicates that the proposed action will have no adverse impacts on the physical and human environment of the area. No cultural remains were identified in the project area during a 1982 reconnaissance survey of the Mauna Kea Science Reserve or during the construction of the Keck I and Keck II telescopes. In addition, an ethnographic study of the summit area did not attribute any particular significance to the Observatory location. In this letter responding to a request for Historic Preservation Review (Chapter 8E, HRS and Section 106, National Historic Preservation Act), the State Historic Preservation Officer (SHPO) concurred that the proposed test sites will have "no effect" on significant historic sites.

On the basis of the EA developed for Temporary Optical Test Sites for the W. M. Keck Observatory Twin Keck Telescope Interferometer NASA has determined that the environmental impacts associated with this project will not individually or cumulatively have an adverse effect on the quality of the environment. Therefore, an environmental impact statement is not required and a Finding of No Significant Impact is hereby issued.



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**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
(NASA)**

FINAL ENVIRONMENTAL ASSESSMENT

TEMPORARY OPTICAL TEST SITES

for the

W. M. KECK OBSERVATORY

TWIN KECK TELESCOPE INTERFEROMETER

Mauna Kea, Hawaii

September 1998

NASA CONTRACT NO. NASA-1260

NASA TASK ORDER NO. RF-306