

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

National Environmental Policy Act; Outrigger Telescopes  
Project

AGENCY: National Aeronautics and Space Administration  
(NASA).

NOTICE (03-155)

ACTION: Notice of intent to prepare an environmental  
impact statement (EIS) and conduct scoping for the  
Outrigger Telescopes Project.

SUMMARY: Pursuant to the National Environmental Policy Act  
of 1969 (NEPA), as amended (42 U.S.C. 4231 et seq.), the  
Council on Environmental Quality Regulations for  
Implementing the Procedural Provisions of NEPA (40 CFR  
Parts 1500-1508), and NASA policy and procedures (14 CFR  
Part 1216 Subpart 1216.3), NASA intends to prepare an EIS  
for the proposed Outrigger Telescopes Project (OTP). The  
EIS will address environmental issues associated with the  
on-site construction, installation, and operation of four  
to six 1.8-meter (72-inch) Outrigger Telescopes. NASA  
proposes to fund the OTP at the W.M. Keck Observatory  
(WMKO) site within the Astronomy Precinct of the Mauna Kea  
Science Reserve on the Island of Hawai'i, State of Hawaii.

DATES: Interested parties are invited to submit comments on or before February 16, 2004, to assure full consideration during the scoping process.

ADDRESSES: Comments should be addressed to Dr. Carl B. Pilcher; Office of Space Science, Code SZ; NASA Headquarters; 300 E Street, SW; Washington, DC 20546-0001. In addition, electronic comments may be sent to Dr. Carl B. Pilcher at [otpeis@nasa.gov](mailto:otpeis@nasa.gov) or by hardcopy facsimile at 202-358-3096.

FOR FURTHER INFORMATION CONTACT: Dr. Carl B. Pilcher, at telephone 877-283-1977 (toll-free), electronically at [otpeis@nasa.gov](mailto:otpeis@nasa.gov), or by hardcopy facsimile at 202-358-3096.

SUPPLEMENTARY INFORMATION: The OTP is a key element in NASA's Origins Program. The Origins Program addresses two fundamental questions: (1) How do galaxies, stars, and planets form? (i.e., "Where do we come from?"); and (2) Are there planets, aside from ours, that have the conditions necessary to support life? (i.e., "Are we alone?"). The OTP has four scientific objectives that contribute to achieving the goals of the Origins Program:

- Detect the "wobble" of stars due to the gravity of unseen orbiting planetary companions as small as Uranus.

- Make images of disks of gas and dust surrounding young stars and stars that are still forming.
- Make high-resolution images of faint objects outside our galaxy.
- Make high-resolution images of objects within our solar system, including asteroids, comets, and outer planets.

The first of these four objectives can be accomplished with the Outrigger Telescopes alone linked together as an interferometer. (An interferometer combines the light from two or more separate telescopes so that they act like one big telescope.) The last three objectives require that the Outrigger Telescopes be linked as an interferometer to at least one 8-meter or larger telescope.

NASA proposes to fund the OTP at the W.M. Keck Observatory (WMKO) site located within the Astronomy Precinct of the Mauna Kea Science Reserve on the Island of Hawai`i. WMKO is the site of the two largest optical telescopes in the world - the twin 10-meter Keck I and Keck II. The OTP, if fully implemented as proposed, would consist of up to six 1.8-meter (72-inch) telescopes placed strategically around the two existing Keck Telescopes.

The California Association for Research in Astronomy (CARA), a non-profit corporation established by the

University of California and California Institute of Technology (Caltech), operates and maintains the WMKO. The approximately 2-hectare (5-acre) WMKO site is subleased to Caltech by the University of Hawaii (UH). The WMKO site is located within the Astronomy Precinct (approximately 212 hectares (525 acres)) of the Mauna Kea Science Reserve. The 4,500 hectare (11,000 acre) Science Reserve, is leased to UH by the State of Hawaii.

Because of present funding constraints, only four Outrigger Telescopes would initially be installed and operated, although the foundations for six would be constructed. It is anticipated that the on-site construction and installation of four of the six Outrigger Telescopes, along with on-site construction of the underground structures for Telescopes 5 and 6, would begin early in 2005, with initial operations anticipated in 2006. If funding were available, NASA would intend to complete the on-site construction, installation, and operation of Telescopes 5 and 6, with on-site construction and installation likely to begin no earlier than 2006.

In addition to the WMKO site, alternative sites with at least one existing 8-meter or larger telescope will be considered in the EIS. If NASA decides not to or cannot implement the OTP at the WMKO site or a reasonable

alternative site with an existing 8-meter or larger optical telescope, NASA would consider sites where at least the one objective that does not require such a large telescope (i.e., the survey of stars for "wobble" due to the gravity of unseen orbiting planetary companions as small as Uranus) can be achieved. Alternative sites to be considered in the EIS under such a materially reduced science OTP option will include, but not necessarily be limited to, the Mt. Wilson Observatory in Los Angeles County, California, and the Navy Prototype Optical Interferometer (NPOI) site near Flagstaff, Arizona. The No Action alternative will also be addressed.

The EIS will analyze the potential environmental impacts associated with the on-site construction, installation, and operation of the Outrigger Telescopes at the WMKO site and other reasonable alternative sites. The potential environmental impacts at alternative sites for the materially reduced science OTP option will also be evaluated. Environmental issues to be emphasized will include, but not necessarily be limited to, cultural resources, flora and fauna, sewage, and cumulative impacts.

Because it is evident that there is substantial environmental controversy and concern about locating the

Outrigger Telescopes on Mauna Kea, public scoping meetings will be held in the State of Hawaii on the following dates:

(a) January 5, 2004, King Kamehameha Beach Hotel; 75-5660 Palani Road, Kailua-Kona, Hawaii 96740 (paid parking at the hotel will be free for attendees);

(b) January 7, 2004, Hawaii Naniloa; 93 Banyan Drive, Hilo, Hawaii 96720 (parking is free);

(c) January 8, 2004, Waimea YMCA; 67-1435 Mamalahoa Hwy, Kamuela, Hawaii 96743 (parking is free);

(d) January 12, 2004, Japanese Cultural Center; 2554 South Beretania Street, Honolulu, Hawaii 96826 (paid parking at the Cultural Center will be free for attendees);

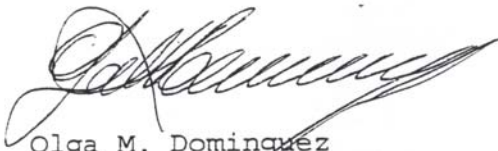
(e) January 13, 2004, Wai`anae District Park; 85-601 Farrington Highway, Wai`anae, Hawaii 96792 (parking is free).

All of the meetings will begin with an informal open house from 5:15 to 6:15 pm. The formal meetings to listen to public comments and concerns will begin at 6:30 pm. NASA is planning to have a Hawaiian language translator at all of the meetings.

NASA will also consider conducting public scoping meetings near reasonable alternative sites in the United States as they are identified, as well as near alternative sites for the materially reduced science OTP option including the Mt.

Wilson and NPOI sites, if there is sufficient public environmental interest and concern.

Written public input and comments on alternatives and environmental issues and concerns associated with the OTP are hereby requested.

A handwritten signature in black ink, appearing to read 'Olga M. Domínguez', written in a cursive style.

Olga M. Domínguez  
Deputy Assistant Administrator for  
Management Systems