

NATIONAL SCIENCE FOUNDATION
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OFFICE OF THE
GENERAL COUNSEL

24 August 2016

Dr. Jeffrey Pappas
Director and State Historic Preservation Officer
New Mexico Department of Cultural Affairs-
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

RE: Section 106 Consultation for the Proposed Changes to Sacramento Peak Observatory
Operations, Sunspot, New Mexico

Dear Dr. Pappas:

The National Science Foundation (NSF) Directorate for Mathematical and Physical Sciences (MPS), Division of Astronomical Sciences (AST) has identified the need to divest several facilities from its portfolio to retain the balance of capabilities needed to deliver the best performance on the key science of the present decade and beyond. Sacramento Peak Observatory in Sunspot, Otero County, New Mexico, is one of the facilities identified for divestment. The decision regarding the potential changes to Sacramento Peak Observatory operations is considered a federal undertaking. While engaging in Section 106 consultation under the National Historic Preservation Act (NHPA), NSF will be simultaneously conducting an Environmental Impact Statement (EIS) process under the National Environmental Policy Act (NEPA) to identify potential impacts associated with the proposed changes to operations.

NSF sent the New Mexico Department of Cultural Affairs (DCA) – Historic Preservation Division a NEPA scoping letter on July 7, 2016 that presented the proposed alternatives under consideration for inclusion in the EIS. NSF received a response letter from the DCA on July 11, 2016 (Log: 103900), noting that the changes in operations at the Sacramento Peak Observatory have the potential to adversely affect historic properties. By this letter, NSF is formally initiating Section 106 consultation under the NHPA and transmitting the *Cultural Resources Evaluation, National Solar Observatory (Sacramento Peak Observatory), Sunspot, New Mexico* (Enclosure 1) and the *Archaeological Survey of 36 HA for AURA Inc. at the National Solar Observatory, Sunspot, Otero County, New Mexico, January 1995* (Enclosure 2) for your review and comment.

Project Location and Background

The Sacramento Peak Observatory is located within the Lincoln National Forest in the Sacramento Mountains. Established by the United States Air Force via a Memorandum of Agreement with the United States Forest Service (USFS) in 1950, the facility was transferred to NSF in 1976. NSF and the USFS executed a land use agreement, signed in 1980, to formalize this transfer and the continued use of the land for the observatory. The flagship facility at the Sacramento Peak

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Observatory is the Richard B. Dunn Solar Telescope (Dunn Solar Telescope), which was completed in 1969 and is a high spatial resolution optical solar telescope, allowing solar astronomers worldwide to obtain information about the sun. In addition to the Dunn Solar Telescope, Sacramento Peak hosts the John W. Evans Solar Facility (1952), the Hilltop Dome (1963, currently decommissioned), the Grain Bin Dome (1950, currently abandoned), and the Patrol Dome, as well as various support structures.

Project Description

NSF's Division of Astronomical Sciences (AST) is the federal steward for ground-based astronomy in the United States, funding research with awards to individual investigators and small research groups, and via cooperative agreements for operation of large telescope facilities. These national and international telescope facilities provide world-leading, one-of-a-kind observational capabilities on a competitive basis to thousands of astronomers per year. These facilities also enable scientific advances by making archived data products available to researchers. Along with funding telescope facilities and research awards, AST supports the development of advanced technologies and instrumentation.

One area of research supported by AST is solar astronomy, which is primarily managed via the National Solar Observatory (NSO). NSO-managed facilities include the Sacramento Peak Observatory.

In 2015, CH2M conducted a Cultural Resources Evaluation for the architectural resources at the Sacramento Peak Observatory. The results of the survey are included below, under "Determinations of Eligibility." The associated technical report, entitled *Cultural Resources Evaluation, National Solar Observatory (Sacramento Peak Observatory), Sunspot, New Mexico*, is attached for reference (Enclosure 1).

A range of preliminary proposed alternatives is being considered for evaluation and include the following:

- **No Action Alternative - Continued NSF Investment for Science-focused Operations:** Under the No Action Alternative, NSF would not divest Sacramento Peak Observatory and NSF would continue funding to operate it based on available appropriations. Operations would be contingent on funding appropriations. None of the proposed alternatives would be implemented, including deconstruction or mothballing of facilities.
- **Alternative 1 - Transition to Full Operations with Interested Parties for Solar Astronomy Research:** Alternative 1 would include full scope of operations of the facility by interested parties for solar astronomy research. Most structures at the site would remain operational while allowing science goals to be pursued; unused structures would either be deconstructed or mothballed.
- **Alternative 2 - Transition to Partial Operations with Interested parties, and Deconstructing or Mothballing of Facilities not proposed to be used:** Alternative 2 would include partial scope of operations with interested parties to use the facilities for scientific purposes. This alternative would also include deconstructing or mothballing of any structures not being used.

- **Alternative 3 - Mothballing of Facilities Limited to Basic Maintenance:** Alternative 3 would involve preservation of essential structures, including buildings, telescopes, and other equipment with periodic basic maintenance. Structures that are not needed would be deconstructed.

- **Alternative 4 - Deconstruction and Site Restoration:** This alternative would include deconstruction of the above-grade structures at the facility.

NSF has determined that the Area of Potential Effects (APE) for the proposed action is defined as the area within the Sacramento Peak Observatory boundary plus two small noncontiguous areas southeast of the facility that include a sewage treatment plant and the water well system. Figure 2-1 included in Enclosure 1 shows the boundaries of the APE. NSF requests your concurrence with this determination.

Public Involvement

A Notice of Intent was published in the Federal Register on July 5, 2016 to initiate the public scoping process for the EIS. A Public Scoping Meeting was conducted on July 21, 2016, in Alamogordo, New Mexico, and the public comment period closed on August 5, 2016. NSF anticipates conducting an additional public meeting during the late fall of 2016, following the publication of the Draft EIS. Section 106 consultation needs will be addressed as part of the public meeting, or during separate consulting party meetings scheduled during the same time period. Follow-up discussions with consulting parties will occur as needed.

Previous Cultural Resources Studies

Previous environmental reviews and archaeological surveys have been conducted at the Sacramento Peak Observatory. During the 1990s, a series of surveys were conducted in preparation for the construction of the Sacramento Peak Observatory Visitor and Education Center (1992 to 1995) and before planned construction of roads and buildings at the Sacramento Peak Observatory (1994 to 1995). The instruments and buildings associated with the Sacramento Peak Observatory have not been previously evaluated for National Register of Historic Places (NRHP) eligibility.

An intensive archaeological survey was conducted at the Sacramento Peak in Observatory 1994. The associated report (dated 1995; provided as Enclosure 2) indicated that no prehistoric or historic sites were identified and that the Sacramento Peak Observatory was “a historically significant complex” (Shields, 1995). An Environmental Assessment conducted in 1995 noted that “the Sacramento Peak Solar Observatory is an historic scientific compound begun in 1947, however, the buildings have not been evaluated for historical significance” (Cartwright, 1995).

Determination of Eligibility

Background research indicated that there are no NRHP-listed structures within the APE. An architectural historian with CH2M conducted an intensive architectural survey at the Sacramento Peak Observatory from January 26 to 27, 2015, following Secretary of the Interior standards and guidelines. The site visit was also used to engage staff in informal interviews and to conduct archival research.

Historic built environment resources at the Sacramento Peak Observatory were evaluated for potential eligibility for listing in the NRHP, both individually and as a potential historic district.

The evaluation included all facilities that were more than 45 years old at the time of the survey. A total of 65 built environment resources that had been constructed in or before 1970 were identified as extant within the APE including 5 telescope structures, 35 residential buildings, 17 administrative buildings, and 8 buildings and structures associated with site infrastructure. Figure 5-1, included in Enclosure 1, shows the location of each evaluated built environment resource.

NSF has determined that there are two telescopes on the property that are individually eligible for listing in the NRHP: the John W. Evans Solar Facility and the Dunn Solar Telescope. Both are eligible under Criterion A for important associations with events that have made a significant contribution to the field of solar astronomy. The Dunn Solar Telescope is also eligible under Criterion C for design and engineering. Both telescopes have undergone minor additions and alterations. However, these changes have not diminished the overall integrity of the telescopes. Additionally, NSF has determined that the Sacramento Peak Observatory is eligible for listing in the NRHP as a historic district for representing an important time in science and military history and for its significant contribution to the advancement of solar astronomy (Criterion A). The Sacramento Peak Observatory is a collection of Cold War-era buildings and structures primarily constructed between 1950 and 1969 that reflects the early history of solar astronomy in the United States. The telescopes and associated facilities have influenced other, more modern solar telescopes and the observations have greatly expanded the understanding of the Sun. There are 63 built resources that are contributing resources to the Sacramento Peak Observatory historic district. Table 1 lists the properties at the Sacramento Peak Observatory that were identified as individually eligible for the NRHP. Attachment A, included in Enclosure 1, lists the buildings that contribute to the NRHP-eligible historic district.

TABLE 1. Individually NRHP-Eligible Built Environment Resources within the APE

| Resource Name | Year Constructed | Description/Significance | NRHP Eligibility Determination |
|--|-------------------------|--|---|
| Sacramento Peak Historic District | 1950-1969 | Collection of solar telescopes, residential buildings, administrative buildings, and site infrastructure facilities associated with NSO and Sacramento Peak. | Eligible (Historic District); 65 contributing resources (see Attachment A in Enclosure 1) |
| John W. Evans Solar Facility, Building 3000 (housed in the Big Dome) | 1952 | Dome contains two coronagraphs, the largest in the United States, and a coelostat. Consists of a 30-foot dome on concrete walls. | Individually eligible and contributing to Sacramento Peak Historic District |
| Richard B. Dunn Solar Telescope, Building 3042 (formerly Vacuum Tower Telescope) | 1969 | A solar telescope composed of a vacuum tube centered within a concrete tower that extends 136 feet above ground and 228 feet below ground. | Individually eligible and contributing to Sacramento Peak Historic District |

Request for Concurrence

As stated earlier, NSF requests your concurrence with NSF's determination of the APE. NSF also requests your concurrence with NSF's determination that there are two telescopes at the Sacramento Peak Observatory that are individually eligible for listing in the NRHP and that the Sacramento Peak Observatory is eligible for the NRHP as a historic district, containing 63 contributing resources. NSF is also requesting concurrence that there are no known archaeological sites on the Sacramento Peak Observatory property.

Initiation of Section 106 Consultation

The Sacramento Peak Observatory is a federally-owned property (the Forest Service owns the land and NSF owns the facilities) that contains potential historic properties. Therefore, the proposed action has the potential to affect historic properties. In compliance with 36 Code of Federal Regulations (CFR) 800.3(c), NSF is initiating consultation with the DCA on the proposed changes to Sacramento Peak Observatory operations. Please respond within 30 days from receipt of this letter to:

Ms. Elizabeth Pentecost
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NSF is also transmitting the two previous cultural resources reports discussed above: *Cultural Resources Evaluation, National Solar Observatory (Sacramento Peak Observatory), Sunspot, New Mexico* and the *Archaeological Survey of 36 HA for AURA Inc. at the National Solar Observatory, Sunspot, Otero County, New Mexico, January 1995* (attached as Enclosures 1 and 2). If you have any questions, please do not hesitate to contact me by phone at 703-292-4592 or by email at cblanco@nsf.gov. We look forward to further consultation on this proposed undertaking.

Sincerely,



EAP Caroline M. Blanco
Federal Preservation Officer
Assistant General Counsel
Office of the General Counsel

Cc: E. Pentecost
D. Bishop, CH2M

Enclosures:

1. Cultural Resources Evaluation, National Solar Observatory (Sacramento Peak Observatory), Sunspot, New Mexico
2. Archaeological Survey of 36 HA for AURA Inc. at the National Solar Observatory, Sunspot, Otero County, New Mexico, January 1995