

**Statement on H.R. 4952, To provide for the conveyance of the Mount Wilson Observatory in the Angeles National Forest, California, to the nonprofit organization currently operating the observatory under long-term lease.**

**For the Subcommittee on Forests and Forests Health, June 20, 2002**

**Chairman Scott McInnis.**

**From Sallie Baliunas, Ph.D., Deputy Director and Director of Science Programs at Mount Wilson Institute**

Chairman McInnis and distinguished Members of the Subcommittee:

I am grateful for the opportunity to provide information on H.R. 4952. I have been conducting astronomical research at Mount Wilson Observatory since 1976. Since 1989 I have been Deputy Director of Mount Wilson Institute, the non-profit organization authorized to operate the Observatory into the 22nd century. My research there has been part of my official duties as scientist at the Harvard-Smithsonian Center for Astrophysics for 22 years.

As Mr. Peterson noted, Harvard College Observatory first installed a telescope on Mount Wilson in 1889, on then-private land. By 1904, George Ellery Hale had begun planning to place there the next two largest telescopes in the world. With some of the world's greatest scientists using the most magnificent telescopes at the site with extraordinarily calm air, the Observatory became the origin of profound leaps of knowledge about humankind's place in the Cosmos.

**21st century on Mount Wilson** -- Today top scientists from Berkeley, Georgia State University, Penn State Univ., Univ. Illinois, Harvard-Smithsonian Center for Astrophysics, UCLA, USC, JPL, Cal Tech, Univ. Hawaii, Univ. Chicago and National Optical Astronomy Observatories (NOAO) conduct cutting-edge research with new-technology telescopes and instruments set in the priceless calm skies above Los Angeles. As a result of this precious calm air, Mount Wilson Institute in the last ten years has overseen the approximately \$62 million invested from public and private sources in new assets, plus improvements in and maintenance of existing assets that support astronomy and education. (A letter from the Director of the CHARA, Prof. Hal McAlister, the most powerful optical interferometer in the world, is attached as Appendix A).

**Public land and assets** - In 1976 an 1100-acre parcel of land containing the Observatory's 40 or so acres left private ownership and came to the USFS. The donated parcel also holds approximately 60 acres with visitor facilities built and donated to the public by the former private owner. This area forms the gateway to the Observatory, and includes roads, two large parking lots, restrooms, drinking fountains, stairs, picnic facilities, retaining walls, fences, and several buildings that have been abandoned for several years.

Through my 26 years of research at the Observatory the public facilities have deteriorated. In the last ten years, Mount Wilson Institute has been requesting that the Forest Service meet its obligations both on the public "gateway parcel" and on the Observatory grounds. There are two main concerns about USFS fulfillment of its obligations. First is for managing forest and public risk; and second is for the public benefit. A list of concerns that have been given to the USFS in ongoing communications is attached (Appendix B). I wish to discuss one important example in detail.

**Immediate hazards: Fire risk** - This year may be the worst for fire risk in the 112-year history of the mountaintop observatory. On the Observatory parcel the 1905 Lease requires that Mount Wilson Institute and USFS share the burden of reducing fire hazards. This includes removing trees and shrubs too close to buildings. My current and a prior site supervisor report that USFS has rarely met its share of fire risk abatement. The Institute has borne essentially all the cost in order to protect not only its employees, their families, visitors and the public but also the forest and facility.

As for trees, the Institute has for several years been requesting permission to remove trees that are fire and falling hazards, or interfere with the operation of the telescopes. (The 1905 Lease allows the Institute to remove trees that unduly affect telescope viewing). Only recently have inspection and permission been granted; the backlog of serious tree problems is so great that approximately 100 trees need to be removed as quickly as possible.

On the USFS parcel that is the gateway to the Observatory, we have urged for some time that fire hazards be addressed. A related issue is the nearly-empty USFS 300,000-gallon cistern that is the only fire-fighting water for one-half mile. The pump for the tank had broken and remained so for nearly a year, and now the tank cannot be filled from the nearby wells in time for fire fighting preparedness.

**Lost public benefits** - Per the 1905 Lease, the Observatory must be open free to the public. Moreover, the Institute believes that public access to the Observatory is an important mandate. Because USFS controls the access parcel, its dilapidated condition has decreased visitorship by more than a factor of ten in the last ten years. There are unsafe staircases, failed retaining walls, dead trees, broken fences, and attractive nuisances. The public restrooms have been closed for broken fixtures and a failed septic system. The Institute now pays over \$10,000 per year for portable facilities on USFS land.

Mount Wilson Institute has paid about \$250,000 just in the last six years (the period for which I summed the costs) to meet USFS obligations. The costs have been borne by donors, plus scientific grants from Federal and state agencies. Mount Wilson's Board of Trustees and the scientists who work to preserve and enhance this irreplaceable site unanimously support the proposed land transfer in order to ensure that the unique capabilities of the Observatory are developed and used for the best and highest scientific and educational purposes, for the intellectual and practical benefit of humankind.

Thank you for your time and attention.

## **Appendix A: Statement from Prof. Hal McAlister, Director of CHARA (Center for High Angular Resolution Astronomy) on Mount Wilson**

**From:** Harold A. McAlister

**Sent:** Tuesday, June 18, 2002 1:38 PM

**Subject:** Re: Mt. Wilson Institute Agreement

Dear Cong. Peterson:

I am pleased to comment on aspects of CHARA's presence on Mt. Wilson in connection with the proposed transfer of the land occupied by observatory facilities from the USFS to MWI. The CHARA Array consists

of six telescopes, distributed over the observatory grounds, whose beams of light are relayed to a central beam combination laboratory and are combined interferometrically to synthesize a single telescope some 350 meters in diameter. The scientific mission for the Array is the study of details on the surfaces of other stars and the determination of basic physical parameters for stars (such as their mass, distance, temperature, diameter and luminosity).

Our facility, which consists of 17 separate structures, was constructed between 1996 and 2001 at a capital cost of approximately \$14M with approximately 45% of these funds provided by a grant from the National Science Foundation. My University provides an annual operating budget of approximately \$350K for our activities on Mt. Wilson. Our access to this wonderful site was formalized on 30 Oct 1995 when our President signed a Memorandum of Understanding with the Mount Wilson Institute. This agreement provides us access to the site and speaks to mutual obligations regarding infrastructure availability and upkeep. Our relationships with MWI have consistently been positive at all levels, and our staff has worked well with MWI mountain staff on numerous occasions to mutual benefit.

I strongly support this land transfer for several reasons. First, it recognizes that MWI has been acting de facto as the entity with sole responsibility and liability (although with no privileges or authority) for maintaining grounds and facilities (including public facilities) at the Observatory. Second, MWI is now embarking on an ambitious program to enhance its viability through the introduction of new scientific opportunities and programs of public outreach, and land ownership will be a critical enhancement of the Institute's prospects towards achieving these goals through private fundraising efforts. Finally, I know that USFS resources are thinly stretched, and it simply makes good sense to turn over this limited and highly specialized site to the management of a group whose sole purpose is the preservation and furtherance of the Mount Wilson Observatory.

In response to your question of the accuracy of stating that CIW "owns" the Observatory, which I view as being defined by the land reservation set aside for astronomical research and all the buildings and facilities therein, it is clear that CIW does not own the land nor does it own the modern generation of facilities and buildings constructed there by Georgia State, UC Berkeley, the Naval Research Laboratory and others. CIW does indeed own the structures and telescopes it constructed prior to its closing those facilities in the late 1980's.

Sincerely,

Harold A. McAlister  
Regents' Professor of Physics and Astronomy  
Director, Center for High Angular Resolution Astronomy  
Georgia State University  
Atlanta, GA 30303

CHARA Website:<http://www.chara.gsu.edu/CHARA/index.html>

## **Appendix B: List of immediate concerns and risks transmitted to USFS**

USFS must provide opening and closing of USFS electric access gate to public areas. This activity includes

a security sweep of the public area at gate-closing, and search for and attention to unattended or inadequately-doused cooking fires.

The USFS 300,000 gallon reservoir has only 7 feet of water (the maximum depth is 30 feet). Water should be added to ensure adequate reserve for fire fighting capability.

Two long-dead tall dead ponderosa pines on the public roads are falling hazards.

Dead tree limbs on the public buildings are fire hazards.

Brush clearance is inadequate near public buildings.

The abandoned A-frame building is so dilapidated that it must be removed. (On June 9, 2002, USFS kindly boarded the building from accidental access.)

USFS bathrooms remain closed and unrepaired. If USFS opts to keep them closed in order to conserve water this year, the USFS should install portables nearby along with a hand-washing station. (Mount Wilson currently pays for portables on USFS site.)

USFS needs to commit to plow snow from its portion of the access road.

USFS needs to remove some trees to close to the roadways to ensure plowing safety.

USFS needs to widen its electric Front Gate for passage by emergency vehicles.

USFS needs to repair potholes on its access road.

USFS needs to repair its asphalt at the Front Gate entrance.

USFS safety fences need repair.

USFS retaining walls need repair.

Some public stairs and walkways are unsafe.

USFS needs to designate an area of the lower parking lot for emergency/rescue helicopter landing (LA County is re-issuing its long-standing request).

USFS needs to commit to its partial responsibility for fire prevention (brush and tree clearance) on the Observatory parcel.

USFS needs to inventory and keep repaired its water facilities.

USFS needs to ensure that public trash is consistently removed and kept from bears.

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