March 2, 2023

The Honorable Domenico J. Luccarelli  
Mayor of Holmdel Township  
4 Crawfords Corner Road  
Holmdel, NJ 07733

Dear Mayor Luccarelli:

I am writing you on behalf of the Board of Trustees of the American Astronomical Society (AAS) to express our concern about the future of the former Bell Telephone Laboratories horn antenna used by Doctors Arno A. Penzias and Robert W. Wilson. We understand that the Holmdel township planner is studying whether the surrounding site needs redevelopment. Your commitment to listening to your local community and designing a solution that best serves Holmdel is essential to good government. Throughout this process, we hope you will emphasize the importance of this National Historic Landmark to your township, your state, and our nation. We encourage you to develop a plan that preserves this instrument as a monument to its Nobel Prize-winning observations and as inspiration to future scientists and engineers.

The AAS is the major professional organization of astronomers in North America with 7,000 members from all over the world. Enhancing and sharing humanity’s scientific understanding of the Universe as a diverse and inclusive community is our mission. Doing this includes a respect for and appreciation of astronomical history. Nobel Laurate and Holmdel resident Robert Wilson is also a AAS member.

In 1959, Bell Laboratories constructed the horn antenna in Holmdel to support the National Aeronautics and Space Administration's (NASA’s) Project Echo. On August 12, 1960, the horn received a transmission from Jet Propulsion Laboratory (JPL) in California that had bounced off the Echo satellite. The message was a recorded statement by President Dwight D. Eisenhower, which invited other nations to use Echo for peaceful communication experiments. On August 13, the horn participated in a brief two-way telephone conversation between engineers in Holmdel and Goldstone, California. The horn was instrumental in the experiments that led to modern satellite communications.

While calibrating the horn antenna in 1964 at a wavelength of 7.35 centimeters, Doctors Penzias and Wilson found persistent excess noise of 3 degrees above absolute zero. In 1965, Princeton astrophysicists Doctors Robert H. Dicke, Jim Peebles, and David Wilkinson suggested that noise was the remanent of extremely hot radiation permeating the Universe during its early evolution. Now, known as the Cosmic Microwave Background (CMB) radiation, this noise provided crucial evidence in support of the Big Bang Theory for the origin of the Universe. In addition, the CMB and information encoded within it changed cosmology from a purely theoretical science into one grounded in observations.

Recognizing the transformative nature of this discovery, the Royal Swedish Academy of Sciences awarded Doctors Penzias and Wilson half of the 1978 Nobel Prize in Physics. Subsequently, in 1989, the US Secretary of the Interior designated the horn antenna a National Historic Landmark.

Without doubt, the horn antenna occupies a unique place in astronomical history. Your township should be proud of this monument. We hope the current planning study and future deliberations about the future of the surrounding site will take into consideration its historic value and international significance.

Sincerely,

Text

Description automatically generated

Dr. Kelsey Johnson, President

cc: The Honorable Rocco Impreveduto, Deputy Mayor  
 The Honorable Gregory Buontempo  
 The Honorable Brian Foster  
 The Honorable Kim LaMountain