My name is Klaus Hodapp, I am an astronomer with the University of Hawaii, Institute for Astronomy and work in Hilo.

I respectfully submit the following testimony with regards to the management of Maunakea in general, and specifically to the Thirty Meter Telescope (TMT) project:

The development of Maunakea as the world's premier site for astronomical observations began in the mid 1960s with an initiative by the Hawaii Island Chamber of Commerce, looking for a way to diversify the local economy on Hawaii Island. The initial site testing was done by Gerard Kuiper and his assistant Alika Herring, who is Hawaiian, from the University of Arizona. They were the first to recognize the superb characteristics of Maunakea for astronomical observations.

Much to the surprise of the competing groups from the University of Arizona and Harvard University, it was the newly founded Institute for Astronomy (IfA) of the University of Hawaii that won the NASA contract to build the 88" telescope on Maunakea in support of the planetary exploration program, and that successfully completed this project. This was a major success for our young UH astronomy program.

This first major telescope soon established convincing proof of the unique qualities of Maunakea as an astronomical site and allowed the IfA to enter into collaborative agreements with additional telescopes from national and international partners. As part of these agreements, UH astronomers got a share of the observing time at each of these partner telescopes and we used this access to build our academic programs, the IfA research program, the astronomy graduate program, the UH Hilo undergraduate astronomy program, and most recently the Manoa astrophysics undergraduate program into internationally well respected and competitive programs. We at UH have the youngest such programs in the nation, and have built them despite the initial skepticism from the established traditional centers of astronomical research and teaching. This is a major achievement for Hawaii as a relatively small state without a strong industrial base, and for UH as a young state university without the endowments or rich alumni base that some of our more established competitors enjoy. The one advantage that UH had in leveling the playing field and making this success possible was the access to the Maunakea telescopes that our partnership agreements provided.

Over the past 50 years of this development, we astronomers, collectively, have learned a lot from the Hawaiian community about the sacredness and cultural significance of Maunakea. While the actual summit of Maunakea (Pu'u Wekiu) was never considered as a site for a telescope, initial site testing had been done at Pu'u Poli'ahu, but all equipment has now been removed from that sacred Pu'u, the access road is now closed to vehicle traffic, and restauration, using TMT funds, is pending.
The management of Maunakea has continually been improved and refined, most recently with the establishment of OMKM. The Thirty Meter Telescope, specifically, was carefully planned, has gone through all the approval processes, and was judicially reviewed several times. Of all the telescopes in the Maunakea Astronomy Precinct, TMT is most removed from the summit and from Pu'u Poli'ahu; it is outside of the area of the summit cinder cones collectively known as Kuhahau'ula. As is documented in its environmental assessment, its site was chosen to minimize visual impact and to minimize impact on known cultural sites. The particular site choice represents some sacrifice in the astronomical characteristics, most notably exposure to wake turbulence from the summit ridge.

Statements have been made that the TMT might never be useful or competitive because the European Southern Observatories are already building an even larger telescope (the E-ELT) on Cerro Armazones in Chile. I have been on that mountain in Chile, I have observed there, and I know that it is not as good as Maunakea, a fact also extensively documented by the site testing done by TMT.

One of the earliest experiences on Maunakea, starting over 40 years ago, was that a telescope on Maunakea can outperform much larger instruments on lesser mountains. The observing time that UH will get on TMT will therefore allow the University of Hawaii to maintain our leading role in astronomical research and further enhance the quality and reputation of our teaching programs.