Lick Observatory: **A New Opportunity for a University/Private Partnership**

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The University of California (UC) owns and operates Lick Observatory (on Mount Hamilton, 14 miles east of San Jose, CA) for the benefit of the entire UC system of faculty, research staff, postdoctoral scholars, graduate and undergraduate students, and the general public. The world's remote mountaintop observatory, it was founded in 1888 thanks to a bequest from James Lick (worth about $1.2 billion in terms of the 2008 GDP). Today, Lick remains a vital, unique, and productive facility for research, university education, and public outreach.

(1) Outstanding research has been done at Lick Observatory for more than a century since its inception, and Lick continues to astound. For example, most of the first 100 planets orbiting other stars were discovered at Lick using a forefront instrument that was the best of its kind at the time. Lick observations helped reveal the presence of giant black holes in the centers of galaxies. Large numbers of nearby exploding stars were found or studied at Lick, culminating with the discovery and verification of the accelerating expansion of the Universe; this was recognized with the 2011 Nobel Prize in Physics to two teams' leaders.

(2) The cutting-edge research now conducted at Lick cannot be done elsewhere at UC. In particular, the 0.76-meter KAIT, 1-m Nickel, 3-m Shane, and the new 2.4-m Automated Planet Finder telescopes are being used for major projects that require huge numbers of nights each year, and the necessary blocks of time are not available at other observatories.

(3) Lick is used for instrument development, and also as a test-bed for new instruments. For example, laser-guide-star adaptive optics (AO) was largely developed (and is still being improved) at the Shane 3-m telescope, and this became the basis for the Keck Observatory AO system. Even junior researchers have designed and tested innovative new instruments at Lick.

(4) Lick provides direct, hands-on access to telescopes for undergraduate and graduate students, so they can best learn observational and technical skills. This paves the way for careers in science, technology, and engineering that many of these students later pursue, thereby benefiting California. Students are the very people UC was designed to serve.

(5) Graduate students and postdoctoral scholars can be Principal Investigators of Lick proposals. They conceive, propose for, execute, and complete their own projects, thereby adding immensely to their development as strong, skilled, independent research scientists.

(6) Lick Observatory is a unique Bay Area treasure, with great historical significance both as a California landmark and as an educational institution with a lasting scientific legacy. Lick functions as the primary base for UC astronomy education and outreach efforts. About 35,000 visitors come to Lick each year to learn about the cosmos. Amateur astronomers volunteer for our public summer visitors program, providing extra telescopes and expertise.

However, given the overall financial pressures on UC, and other existing UC obligations to astronomy, Lick must transition to a new funding model. Lick costs $1.5M/year to operate, and up to an additional $1M/year to expand and improve. UC provides partial support, and Google Inc. has donated $1M. We seek private and corporate **matching** donations to cover costs and build an endowment. All gifts are welcome; see http://give.berkeley.edu/fund/?f=FN7185000 (or, for securities and stock, contact Mary Ann De Pianto, madepianto@berkeley.edu). There are several naming possibilities (buildings, domes, etc.), including the overall facility (e.g., the "XYZ Institute for Astrophysics"; Lick would be part of it), for sufficiently large donations.