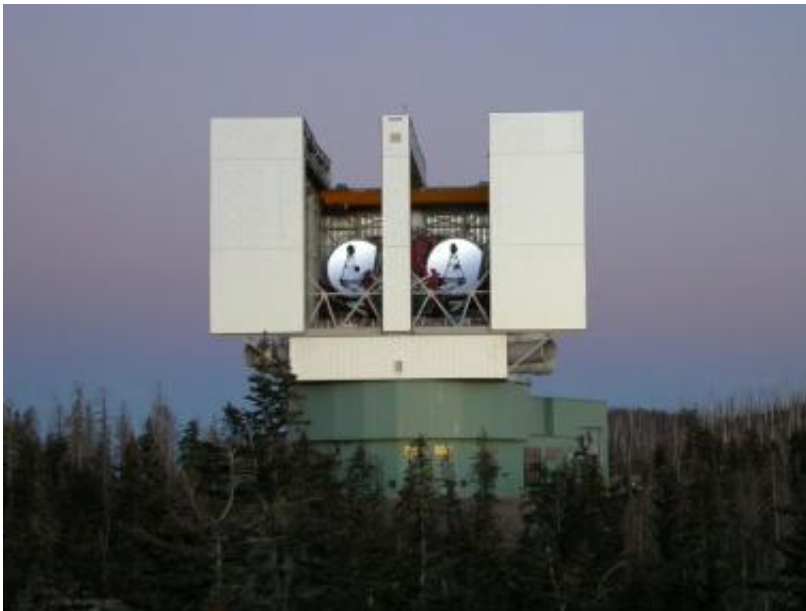


Double vision: New instrument casts its eyes to the sky

December 7 2010, By Whitney Clavin



The Large Binocular Telescope at Mt. Graham, Arizona. Image credit: Large Binocular Telescope Observatory

The Large Binocular Telescope Interferometer has taken its first images of the star Beta Peg in the constellation Pictor -- an encouraging start for an instrument designed to probe the cosmic neighborhoods where Earth-like planets could exist.

Eight years in development, the NASA-funded instrument combines beams of light from twin 8.4-meter (28-foot) mirrors mounted atop the

Large Binocular [Telescope](#) on Mount Graham, Ariz. "By combining the light of the telescopes, we're able to realize its full potential," said Project Manager Tom McMahon of the University of Arizona, Tucson. "Together, the two mirrors form the largest single-mount telescope in the world."

"The quality of the first-light images is wonderful," said the principal investigator for the project, Phil Hinz of the University of Arizona. "The telescope was stable and the instrument was working properly."

With this high-resolution imaging capability, astronomers hope to probe nearby solar systems -- specifically, the areas in these systems where Earth-like [planets](#) with [liquid water](#) could exist. Though the Large Binocular Telescope [Interferometer](#) won't be able to detect Earth-size planets, it will be able to see dust disks that are indicative of [planet formation](#), in addition to detecting large, Jupiter-size planets farther out from the star. These findings will help future, space-based exoplanet missions know where to search for Earth-like planets in our own galactic neighborhood.

With its ability to probe this "[habitable zone](#)" of other solar systems, the Large Binocular Telescope Interferometer will also complement the capabilities of other NASA missions -- the Keck Interferometer, which can find dust very close to stars; and the [Spitzer Space Telescope](#), which is adept at observing planet-forming dust that is much more distant.

"This instrument will help complete our picture of what planetary systems look like and be a pathfinder for finding Earth-like planets that are close by," Hinz said.

With a major upgrade of the Large Binocular Telescope's adaptive optics system scheduled for next year, the interferometer will undergo testing and commissioning for the majority of 2011, and during that

time, scientific observations will begin.

"This is the highest-resolution instrument of its kind in the world," McMahon said. "We won't just be able to image exoplanets, but extragalactic objects, nebulae and galaxies. It's taken time to make sure it works as envisioned, but now it's time to do science."

Provided by JPL/NASA

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