PHYSICS AND ASTRONOMY COLLOQUIUM

MEASURING WAVES OF GRAVITY FROM ACROSS THE UNIVERSE WITH LIGO AND COSMIC EXPLORER

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Albert Einstein predicted gravitational waves in 1916, as a consequence of his general relativity theory. A century later, gravitational-wave observations of black hole and neutron star mergers by the Laser Interferometer Gravitational-Wave Observatory (LIGO) and its European partner Virgo have opened a new window on the universe. These observatories achieve their extreme sensitivity through cutting-edge physics and engineering including high laser power, pristine optical coatings and squeezed light. But today's observatories are only just sensitive enough to see the loudest gravitational-wave signals. Cosmic Explorer (CE) is a next-generation ground-based gravitational-wave observatory envisioned to begin operations in the 2030s. CE has entered its design and site identification and evaluation stage. With its spectacular sensitivity, CE will peer deeply into the universe's dark side—observing gravitational waves from remnants of the first stars—and open a wide discovery aperture to the novel and unknown.

COFFEE: 3:10 PM
BARKAS LOUNGE
(3049 PHYSICS)

COLLOQUIUM: 3:40 PM
WINSTON CHUNG HALL
(ROOM 138)

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