

# KAVLI INSTITUTE FOR THEORETICAL PHYSICS

*Presents*

## *The Forty-Fourth KITP Public Lecture*

Sponsored by Friends of KITP

### William Phillips

## Time, Einstein and the Coolest Stuff in the Universe

At the beginning of the 20th century Einstein changed the way we think about Time. Now in the 21st century Einstein's thinking is shaping one of the key scientific and technological wonders of contemporary life: atomic clocks, the best timekeepers ever made. Such super-accurate clocks are essential to industry, commerce and science; they are the heart of the Global Positioning System (GPS), which guides cars, airplanes and hikers to their destinations. Today, atomic clocks are still being improved, using atoms cooled to incredibly low temperatures. Atomic gases reach temperatures less than a billionth of a degree above Absolute Zero. Super-cold atoms are at the heart of Primary Clocks accurate to better than a second in 100 million years. Such atoms also use, and allow tests of, some of Einstein's strangest predictions. This lively, multimedia presentation, will include experimental demonstrations and down-to-earth explanations of some of today's most exciting science.

### About the Speaker

WILLIAM D. PHILLIPS is a Fellow of the Joint Quantum Institute, a cooperative research organization of the National Institute of Standards and Technology and the University of Maryland, which is devoted to the study of quantum coherent phenomena. At NIST he leads the Laser Cooling and Trapping Group, and at JQI he is the co-director of an NSF-funded Physics Frontier Center studying quantum phenomena across the subfields of physics. In 1997, Dr. Phillips shared the Nobel Prize in Physics "for development of methods to cool and trap atoms with laser light."

**Wednesday, October 13, 2010**

**8:00 PM (Reserved seats held until 7:50 PM)**

*Kavli Institute for Theoretical Physics, Main Seminar Room*



©Robert Rathe

**Admission is Free**  
**Seating is by RSVP only**  
**at:**

**<http://www.kitp.ucsb.edu/public-lecture-rsvp>**

**or call**

**(805) 893-6349**

**by Oct. 8, 2010**

**Reserved seats are held  
until 7:50 PM**

*To make special arrangements to  
accommodate a disability, call the  
KITP at the number above.*

### LOT 10 PARKING

From the roundabout at Hwy 217, turn right onto Mesa Rd, merge into left lane, turn left at the first light into Lot 10 parking structure. **PARK, BUY a \$3 permit** from the dispenser (near the elevator and stairs), **DISPLAY PERMIT** on dashboard. The KITP is right next door.

*The KITP gratefully acknowledges  
its many friends in the community.*

K I T P  
P u b l i c  
L e c t u r e  
S e r i e s

