



Karl F. Herzfeld, 1892-1978

Department of Physics
The Catholic University of America



presents the 26th

Karl Herzfeld Memorial Lecture

Almost Absolute Zero: The Story of Laser Cooling and Trapping

William D. Phillips

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Laser Trapping and Cooling Group
Atomic Physics Division

National Institute of Standards and Technology
Gaithersburg, MD

1997 Nobel Laureate

Contrary to intuition, we can cool a gas by shining a laser on it. This lecture will describe how laser cooling works, and how this process has allowed us to reach temperatures less than a microdegree above absolute zero – millions of times colder than the darkest regions of outer space. Atomic clocks using these ultra-cold atoms now have an accuracy better than one second in 60 million years, and new states of matter arising from sub-microdegree gases are opening avenues of research undreamed of in the 20th century.

The lecture is an updated version of the Nobel Lecture given in Stockholm on 8 December 1997. It is aimed at a general audience of non-scientists, but discusses some of the newest and most exciting developments in physics.

Friday, April 13, 2007 at 4:00 PM

in the Karl Herzfeld Auditorium of Hannan Hall - Room 108

Reception immediately following lecture

Parking and other information: (202) 319-5315 or <http://physics.cua.edu>