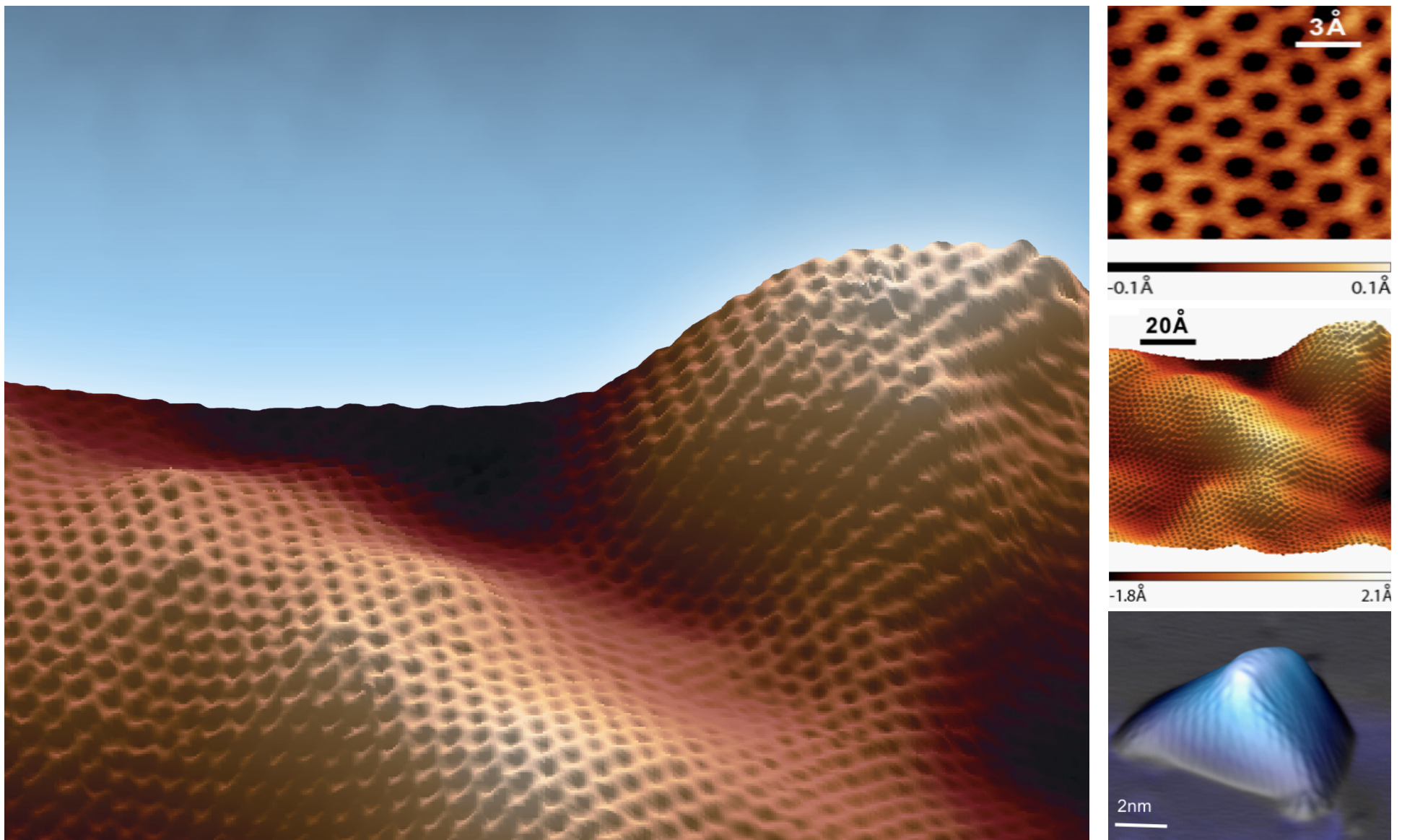


Boston University Physics Colloquium

The Benson T. Chertok Lecture



The Electrons in Your Pencil: Observations of a Carbon Flatland

Carbon is unique among elements due to the wide variety of structures that it can support. This property has long provided a playground for chemists and biologists, but it is only relatively recently that physicists have discovered what a flexible material carbon is for creating nanostructures with quantum mechanical behavior unlike any other substance. It is ironic that the most recent big breakthrough in the study of carbon-based materials has come from isolating the particulate matter of pencil scratchings, now called graphene. The irony is that from such mundane origins comes such a surprisingly interesting material. In this talk I will provide a termite's view of graphene, and describe some of the phenomena that you would see if you could shrink yourself down to the size of an atom and jump into a graphene flatland. The tool that gives us this view is the scanning tunneling microscope (STM). I will describe how the STM gives us new insight into the unusual ways that electrons move in pieces of graphene that have been structured at the nanometer scale.

Michael Crommie

University of California at Berkeley

December 7, 2010 (Tuesday) at 3:30pm (Refreshments at 3:15pm)

SCI 107, Metcalf Science Center, Boston University

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