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Scanning Tunneling Microscopy Atomic Resolution of Uranium Compound MARILYN HAWLEY, SHAO-PING CHEN, Los Alamos National Laboratory, PHILLIP VAN STOCKUM, Stanford University — Room temperature ultra-high vacuum scanning tunneling microscopy (STM) atomic resolution imaging has been achieved for the first time on a layered uranium compound, uranium antimony two. High quality single crystals were cleaved in situ then imaged by STM using PtIr tips. Atomic resolution images revealed an in-plane square lattice with an uranium-uranium interatomic spacing consistent with theoretical predictions for the lowest energy cleavage plane. The STM images revealed a number of, as yet, unexplained features suggestive of missing atoms and single atom wide rows of atoms aligned along the two a-lattice parameter directions, which will be discussed in this talk.

Marilyn Hawley
Los Alamos National Laboratory

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