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Atomic Resolution Transmission Electron Microscopy of Defects in Hexagonal Boron Nitride and Graphene ASHLEY GIBB, UC Berkeley, NASIM ALEM, The Pennsylvania State University, CHENGYU SONG, JIM CISTON, National Center for Electron Microscopy, Lawrence Berkeley National Lab, ALEX ZETTL, UC Berkeley, Lawrence Berkeley National Lab — Monolayer sheets of sp2-bonded materials such as graphene and hexagonal boron nitride (h-BN) have been studied extensively due to their properties including high mechanical strength, thermal conductivity, stability, interesting electronic properties, and potential for integration into novel devices. Understanding the atomic scale structure of defects in these materials is important because defects can significantly affect the physical properties in these materials. In particular, understanding the dynamics of these defects explains much about the material's stability. We have synthesized h-BN and graphene using low pressure chemical vapor deposition and imaged defects using atomic resolution aberration corrected transmission electron microscopy.

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