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Disappearing Broad lines in Active Galaxies? BRYAN SCOTT, VARDHA BENNERT, California Polytechnic State University, San Luis Obispo, TOMMASO TREU, University of California, Santa Barbara, MATTHEW AUGER, Institute of Astronomy, University of Cambridge, UK, STEFANIE KOMOSSA, Max-Planck Institute for Radio Astronomy, Bonn, Germany — Active galactic nuclei (AGN) are among the most luminous objects in the universe, and consequently can be studied at large distances. It is therefore of importance to understand both the mechanism and potential time variation of the behavior of these objects. Broad emission lines in spectra from these objects can be used to measure the mass of the supermassive black hole believed to lie at the heart of these galaxies. A sample of approximately 100 AGN in the local universe were observed using the Keck I telescope in order to estimate black hole masses and to measure stellar velocity dispersions. Of these objects in the survey, all of which had previously been classified according to the characteristic presence of broad emission lines as type I AGN from Sloan Digital Sky Survey spectra, six surprisingly seem to lack broad emission lines in the Keck spectra taken a few years later. We present analysis of the Keck and SDSS spectra and discuss possible implications for our understanding how AGN spectra vary with time, and consequently, the mechanism underlying AGN emission.

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