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Progress Towards a Quantum Gas Microscope JONATHON GILLEN, WASEEM BAKR, AMY PENG, SIMON FOELLING, MARKUS GREINER, Harvard University — We will present the latest progress towards a quantum gas microscope to experimentally realize and study complex many-body systems realized with a BEC of rubidium in an optical lattice. The experiment should allow us to achieve sub-micron optical resolution. Such imaging enables single atom sensitivity and optical resolutions on the order of the lattice spacing. The high resolution optics also enables flexible preparation of quantum states as well as the generation of arbitrarily shaped potentials.

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