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**Towards a quantum gas microscope for molecules** SARAH BROMLEY, ANDREW INNES, JONAS MATTHIES, LEWIS MCARD, JONATHAN MORTLOCK, APICHAYAPORN RATKATA, SIMON CORNISH, Durham University — We report progress towards the building of a quantum gas microscope for molecules that has the flexibility to produce RbCs or KCs diatomic molecules. A quantum gas microscope for molecules combines the state-of-the-art imaging and addressing techniques currently employed in atomic quantum gas microscopes and applies them to molecule experiments. The long-range dipole-dipole interactions between heteronuclear polar molecules will allow for studies, all with single lattice-site resolution, of extended Hubbard models, which are expected to exhibit much richer many-body physics, including novel checkerboard, star, and stripe phases.

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