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Microcrystal Small Molecule X-ray Crystallography at the Advanced Light Source. Allen G. Oliver¹, Simon Clark², Sirine Fakra², Frederick J. Hollander¹, Howard A. Padmore², Al C. Thompson², ¹College of Chemistry, Univ. of California, Berkeley, Berkeley, CA 94720, ²Advanced Light Source, 1 Cyclotron Rd., Lawrence Berkeley National Laboratory, Berkeley, CA 94720.

Beamline 11.3.1 at the Advanced Light Source (ALS) provides facilities for small molecule X-ray crystallographic analysis for crystals that are considered too small for conventional laboratory sources. A bright 3rd generation synchrotron X-ray source combined with a novel high performance and simple beamline used together with a SMART 6000 detector allow for rapid data collection with high data redundancy and completeness to high resolution (a typical dataset has 100% coverage at 0.8 Å resolution and an overall resolution of 0.75 Å). Structural analyses have been routinely performed on samples as small as 20 x 20 x 20 microns. Stable instrumental characteristics and standard operating procedures similar to those of laboratory instruments allow for visitor data collection with minimal training.