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A 3d View of Spherical Crystals and Grain Boundary Scars MARK BOWICK, Syracuse University, THOMAS EINERT, PETER LIPOWSKY, JORG SCHILLING, ANDREAS BAUSCH, Technical University of Munich — We present an experimental system suitable for producing spherical crystals and for observing the distribution of lattice defects (disclinations and dislocations) on a significant fraction (50%) of the sphere. The introduction of fluorescently labeled particles enables us to determine the location and orientation of grain boundary scars. We find that the total number of scars and the number of excess dislocations per scar agree with theoretical predictions and that the geometrical centers of the scars are roughly positioned at the vertices of an icosahedron.

Mark Bowick
Syracuse University

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