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**Fast Imaging of Runaway Electron Beams in DIII-D**[1] J.H. YU, A.N. JAMES, E.M. HOLLMANN, J.A. BOEDO, UCSD, N. COMMAUX, T.C. JERNIGAN, ORNL, T.E. EVANS, D.A. HUMPHREYS, E.J. STRAIT, M.A. VAN ZEELAND, J.C. WESLEY, GA — We present fast visible images of runaway electron (RE) beam formation and evolution following plasma shutdown induced by Ar pellet injection. The RE beam forms when a sufficiently strong toroidal electric field is generated in the cold plasma after the thermal collapse, and visible RE emission is first detected 3 to 10 ms after the pellet injection. The RE beam persists for up to 50 ms and moves upwards toward the top of the vessel with drift velocities ranging from <5 to 120 m/s. When fast electrons make contact with the vessel, gammas produce scintillations in BGO crystal detectors located around the machine and on the fast camera CMOS chip. The emission from well-developed RE beams is localized to the region of tangency between the camera line of sight and flux surfaces, indicating forward-beamed emission from either bremsstrahlung or synchrotron radiation. The beam location and spatial profile of emission is in good agreement with equilibrium reconstruction of flux surfaces.

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