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Streaked optical pyrometry of ion heated compound targets in the study of plasma mix at high density interfaces[1] GILLISS DYER, REBECCA ROYCROFT, CRAIG WAGNER, AARON BERNSTEIN, TODD DITMIRE, B. MANUEL HEGELICH, University of Texas, Austin, BRIAN ALBRIGHT, JUAN FERNÁNDEZ, WOOSUK BANG, PAUL BRADLEY, D. CORT GAUTIER, CHRISTOPHER HAMILTON, SASI PALANIYAPPAN, MIGUEL SANTIAGO CORDOBA, ERIK VOLD, YIN LIN, Los Alamos National Laboratory — The interaction and mixing of different species of plasma at high energy density is of fundamental interest for HED physics and relevant to inertial confinement fusion. An ongoing campaign is underway at the Trident laser facility to study the dynamics at the interface of high and low atomic number materials under warm dense matter conditions. The experiments utilize laser-accelerated ions, such as aluminum, to flash heat solid targets to temperatures >1 eV. We report on streaked pyrometry measurements made in a recent experimental run, which shed light on the dynamics of heating induced in various target materials by these ion sources. Timescale as well as spatial extent of the heating can vary greatly depending on the dominant ion species and spectra.

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