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Observation of Cascade Implosions in Star-Like Wire-Array *Z*-Pinches on the Zebra Generator A. HABOUB, V.V. IVANOV, A.L. ASTANOVITSKIY, S.D. ALTEMARA, University of Nevada, Reno — The dynamics of implosions in Al and W star-like wire arrays were investigated in the 1-MA Zebra generator. The hydrodynamic mode of implosion was confirmed by several optical plasma diagnostics, including five-frame laser probing of z-pinch in three directions, an optical streak camera, and a time-gated (ICCD). In low wire-number star-like arrays the imploding plasma starts on the edge wires, cascades from wire to wire accelerating toward the center, and forms moving plasma columns with a smooth leading edge. The hydrodynamic regime of collision presumably mitigates the instabilities, improves the homogeneity of the imploding plasma, and increases the radiated power in the star-like wire array. Work was supported by the DOE/NNSA under UNR grant DE-FC52-06NA27616.

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