

Abstract Submitted  
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**Preliminary Results for Coded Aperture Plasma Diagnostic<sup>1</sup>**

MAGNUS HAW, Caltech, PAKORN WONGWAITAYAKORNKUL, Rice University, PAUL BELLAN, Caltech — A 1D coded aperture camera has been developed as a prototype for a high speed, wavelength-independent, lenseless, plasma imaging diagnostic. Images are obtained via a coded or masked aperture that projects an invertible transform of the object onto a detector. The mask was made by printing the 1D code pattern on transparency sheets. The detector is a 48-element photodiode array sensitive to visible light. The system has a 38x2cm field of view, a vertical spatial resolution of 8mm, and a temporal resolution of 10ns. Visible light images of the Caltech MHD-driven jet experiment agree with simultaneous 2D images obtained with a conventional camera. Further work will involve increasing resolution and acquiring X-ray and EUV scintillators for imaging in those wavelengths.

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