

Abstract Submitted
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NSTX high-speed color camera as a low-resolution survey spectrometer¹ A.L. ROQUEMORE, R.E. BELL, R. KAITA, D. MUELLER, W. DAVIS, PPPL, R.J. MAQUEDA, Nova Photonics, C. BUSH, ORNL — NSTX has recently installed a high-speed 10-bit color camera having a wide-angle global view of the plasma. The camera is typically operated from 1.5 - 5 kHz depending on the desired spatial resolution. The high-speed aspect of the camera yields information on the overall plasma behavior, while the colors gives an indication of the dominant elements involved. For instance, neutral deuterium and helium are readily identified as a red and yellow glow respectively, and especially during the plasma fueling, their spectra can be easily discerned. With the introduction of lithium into NSTX, the camera readily reveals the orange glow from Li I and the bright green associated with the Li II state, depending on the local temperature. Narrow green filaments are often observed to spiral around the center stack or propagating along the last closed flux surface. Bright flares of Li are observed when the plasma interacts with material surfaces or even dust particles. Several methods of displaying the 10-bit color can be used to emphasize details of the discharges. Many example movies will be available to demonstrate the camera's capabilities.

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