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**A Neutron Streak Camera Designed for ICF Fuel Ion Temperature** JIABIN CHEN, HUA LIAO, MING CHEN, National Key Laboratory of Laser Fusion, Research Center of Laser Fusion, China Academy of Engineering Physics — A neutron streak camera was designed for inertial confinement fusion (ICF) fuel ion temperature diagnostic. It is made of a 1 cm thick  $\times$ 8 cm diam piece of 3% benzophenone quenched plastic scintillator with about a 190 ps FWHM and a streak tube (55ps time resolution) with large-area photocathode ( $\phi$ 30 mm) showed no slit. The electron beam from the photocathode is focused into a little spot ( $\phi$ 1mm). Then the spot is scanned directly and multiplied by an internal microchannel plate. This greatly improves the sensitivity of the tube. The neutron streak camera combines the advantages of scintillation detector (with high neutron detection efficiency) and of streak camera (with fast time response). The whole detection system time resolution is 300ps and can record neutron time of flight signals from ICF implosion target with yields of  $10^7$  DT neutron per shot.

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