

## **NSTX Weekly Report (Aug. 25, 2006)**

**FY 2006 NSTX plasma operations completed on June 23, 2006.**

**Joule Milestone: 11 weeks**

**Achieved: 12.66 weeks**

R. Maingi (ORNL) concluded a 4 week visit to DIII-D, to continue analysis of the DIII-D/MAST/NSTX pedestal aspect ratio scaling experiment with Tom Osborne (GA) and Phil Snyder (GA). Edge stability analysis was completed for six DIII-D discharges, for comparison with NSTX and MAST.

### **Engineering Operations (A. von Halle, C. Neumeier)**

The NSTX outage continued this past week with the on-going in-vessel machining to provide the apertures required for the new Poloidal CHERS diagnostic. Work also continued on the neutral beam calorimeter to remove a damaged bushing and to re-align the guide rails. Removals of the de-commissioned PHA diagnostic system is in progress, as well as maintenance of diagnostic vacuum pumps. In-vessel Mirnov coils are being modified for improved frequency response, and design options for a new multi-barrel lithium evaporator system are being investigated. A detailed evaluation of the diagnostic grounding system to reduce electrical noise continues.

The test cell will remain in free (card reader) access through the coming week, with the exception of a brief period early Tuesday morning (before 8:00AM) for electrical insulation testing.

### **Research Operations (M. Bell)**

#### **Diagnostic Operations (R. Kaita)**

- Mirnov coils for the high frequency array were removed for modification to determine if gain and frequency response can be improved. During a bench test, higher signal levels were obtained when the stainless steel windings on one of the coils was replaced with heavier gauge copper. The remaining coils will be similarly rewound, and then remounted inside the NSTX vacuum vessel.
- Requests for quotations were issued for the piezoelectric drive mechanism required for remote control of the launching mirror for the high-k scattering microwave fluctuation diagnostic. A single response was obtained for a suitable unit. Outstanding questions concerning its compatibility with NSTX bakeout temperatures, however, need to be resolved before the order could be placed. Given the delivery schedule for the component, it was decided to defer this upgrade to the high-k system until the FY07 outage.