Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

**Upgrade Plans for the C-Mod FIR Polarimeter**[1] R. WATTERSON, MITemps, D. GARNIER, Columbia University, J. IRBY, MIT-PSFC, D.L. BROWER, UCLA, P. XU, Wells Fargo, W.F. BERGERSON, MIT-Lincoln Labs, W.X. DING, UCLA, W. GUTTENFELDER, PPPL, E.S. MARMAR, MIT-PSFC
— The 3-chord FIR polarimeter presently deployed on C-Mod is capable of responding to both fast changes in the plasma equilibrium and high frequency fluctuations. It operates under ITER-like plasma conditions and magnetic fields, and uses an optical layout similar to that proposed for ITER. The details of this system and some results from the C-Mod 2012 campaign will be presented, along with the design of the upgrade that is now being implemented. The new system will provide horizontal chords near the mid-plane and low loss etalon windows to improve both the signal level and our ability to study magnetic fluctuations. The laser table has been relocated from the C-Mod cell to a shielded and climate controlled location, and improvements have been made to its acoustic isolation. New collimation optics, and a beam-line needed to convey the FIR beams into the tokamak port have been designed. Improvements to the detector electronics will also be discussed, as will initial testing of the laser system and reference detectors during C-Mod operation.

[1]Supported by USDoE Award DE-FC02-99ER54512.

James Irby
MIT-PSFC

Date submitted: 11 Jul 2014 Electronic form version 1.4