Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Neutron scattering, magnetic, and transport properties of non-centrosymmetric $UIrSi_3$. SHANTA SAHA, I-LIN LIU, Center for Nano Physics and Advanced Materials, Department of Physics, University of Maryland, College Park, MD 20742, CRAIG BROWN, NICHOLAS BUTCH, NIST Center for Neutron Research, Gaithersburg, MD 20899, JOHNPIERRE PAGLIONE, Center for Nano Physics and Advanced Materials, Department of Physics, University of Maryland, College Park, MD 20742 — Heavy-fermion superconductivity in the non-centrosymmetric crystal structure has drawn much attention [1]. It is argued that the order parameter contains not only a spin-singlet part, but also an admixture of a spin-triplet state. The compound $UIrSi_3$ crystallizes in the non-centrosymmetric $BaNiSn_3$ structure which is closely related to the well-known $ThCr_2Si_2$-type [2]. Preliminary study on polycrystalline $UIrSi_3$ shows antiferromagnetic order below Neel temperature T_N =42 K [2]. Its lanthanide analog $CeIrSi_3$ shows heavy-fermion superconductivity under pressure [1]. Therefore, further investigation on $UIrSi_3$ would be meaningful. We would like to present the results of our investigation on $UIrSi_3$ by neutron scattering, magnetic, and transport measurement on poly and single crystals grown by Czochralski method in a tetra-arc-furnace. [1] Onuki *et al.*, J. Phys. Soc. Jpn. **77**, suppl. A 37 (2008). [2] Buffat *et al.*, J. Mag. Mag. Mat. 62, 53 (1986).

Center for Nano Physics and Advanced Materials, Department of Physics, University of Maryland, College Par

Date submitted: 23 Nov 2015 Electronic form version 1.4