Title
POSSIBLE OBSERVATION OF THE COEXISTENCE OF SUPERCONDUCTIVITY AND LONG-RANGE MAGNETIC ORDER IN NDRH6B6, SMRH4B4 AND TMRH4B4

Journal
BULLETIN OF THE AMERICAN PHYSICAL SOCIETY, 24(3)

ISSN
0003-0503

Authors
HAMAKER, HC
MACKAY, HB
WOOLF, LD
et al.

Publication Date
1979

HF 13 Possible Observation of the Coexistence of Superconductivity and Long-Range Magnetic Order in $NdRh_6B_6$, $SmRh_4B_4$ and $TmRh_4B_4$.* † H. C. HAMAKER, H. B. MacKAY, L. D. WOOLF, Z. FISK and M. B. MAPLE, U. of Calif., San Diego— The ternary rare earth compounds $NdRh_6B_6$, $SmRh_4B_4$ and $TmRh_4B_4$ have been studied by means of critical field, low temperature heat capacity and static magnetic susceptibility measurements. Features in the upper critical field and heat capacity data suggest the occurrence of long range magnetic order in the superconducting state. The temperature dependence of the static magnetic susceptibility of $NdRh_6B_6$ follows a Curie-Weiss law with an effective moment $\mu_{eff} = 3.6\,\mu_B$ and a Curie-Weiss temperature $\theta_p = -6.2$ K between 20 K and room temperature. However, magnetization vs. applied field isotherms show a greater tendency towards saturation than would be expected for an antiferromagnet.

*Supported by US DOE/Ey-76-S-03-0034-PA227-3 (HCH, HBM, LDW, MBM).
†Supported by NSF/DMR77-08469 (ZF).