GJ 3 Iridium-Thulium Eutectics, A Binary Magnetic Superconductor.* J. L. Smith, Z. Fisk,** J. A. O'Rourke, J. O. Willis, and B. T. Matthias,** † Los Alamos Scientific Laboratory.--Iridium-yttrium eutectics with a layered structure of Ir and YIr_2 show an extraordinary enhancement of the superconducting transition temperature over that of either phase.[1] In the similar Ir-Tm system, the $TmIr_2$ present in the layers orders magnetically at 0.96 K.[2] In samples of composition near $Ir_{.8}Tm_{.2}$, a superconducting transition is seen at 1.9 K by resistivity and ac susceptibility measurements.[3] While it remains difficult to identify the superconducting phase, it can only be due to some combination of Ir and Tm. This is a significant demonstration of the importance of eutectics because the superconductivity occurs in the presence of probable local moments.

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[1] B. T. Matthias *et al.*, Science 208, 401 (1980).

[2] J. L. Smith and B. T. Matthias, J. Mag. Mag. Materials 21, L203 (1980).