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Iridium-Thulium Eutectics, A Binary Magnetic
Superconductor.* J. L. Smith, Z. Fisk,** J. A. O'Rourke,
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Laboratory.—Iridium-yttrium eutectics with a
layered structure of Ir and YIr₂ show an extraordinary
enhancement of the superconducting transition tempera-
ture over that of either phase. In the similar Ir-Tm
system, the TmIr₂ present in the layers orders
magnetically at 0.96 K.² In samples of composition
near Ir₃₄ Tm₂₆, a superconducting transition is seen
at 1.9 K² by resistivity and ac susceptibility meas-
urements. While it remains difficult to identify the
superconducting phase, it can only be due to some com-
bination of Ir and Tm. This is a significant demonstra-
tion of the importance of eutectics because the super-
conductivity occurs in the presence of probable local
moments.

*Work performed under the auspices of the Department of
Energy
**Also at UCSD, La Jolla, CA where the research is spon-
sored by NSF OMR 77-08469.
¹Deceased, formerly also at Bell Laboratories.
21, L203 (1980).