

Abstract Submitted  
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**Multiband** **superconductivity**  
**and penetration depth in PrOs<sub>4</sub>Sb<sub>12</sub>**<sup>1</sup> D.E. MACLAUGHLIN, LEI SHU, U.  
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W.M. YUHASZ, N.A. FREDERICK, M.B. MAPLE, U. Calif., San Diego — The  
penetration depth  $\lambda$  in the filled-skutterudite heavy-fermion superconductor  
PrOs<sub>4</sub>Sb<sub>12</sub> has been measured using transverse-field muon spin rotation. It is found  
to be temperature-independent at low temperatures, consistent with a nonzero gap  
for quasiparticle excitations. In contrast, zero-field radiofrequency inductive mea-  
surements yield a stronger temperature dependence of  $\lambda$ , indicative of point  
nodes in the gap. A  $\sim 10\%$  discrepancy is found at intermediate temperatures. This  
seems likely to be due to multiband superconductivity in this compound, recently  
found from thermal conductivity measurements. A sufficiently large difference be-  
tween gaps would render the field distribution in the vortex controlled exclusively  
by the larger gap band, whereas all bands would participate in zero field.

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