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Pressure-temperature magnetic phase diagram of Au_4V investigated by electrical resistivity using Designer Diamond Anvils[1] DAMON JACKSON, CHANTEL ARACNE, SAM WEIR, Lawrence Livermore National Laboratory, JASON JEFFRIES, BRIAN MAPLE, University of California, San Diego, YOGESH VOHRA, University of Alabama, Birmingham — The electrical resistivity of Au_4V has been measured up to a pressure of 20 GPa between room temperature and 15 K. These measurements were performed using designer diamonds, which consist of lithographically deposited tungsten micro-leads embedded within a single crystal of diamond. The electrical resistivity of Au_4V has a kink in its slope at 45 K under ambient pressure, which is associated with a ferromagnetic transition. Designer diamonds can be used with a diamond anvil cell to track the pressure dependence of this ferromagnetic transition, which is found to increase under the application of pressure.

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