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Search for New Superconductors in RE-Si and Al-B Systems: a High Pressure High Temperature Approach<sup>1</sup> MIGUEL ANGEL ALARIO-FRANCO, Universidad Complutense de Madrid, JOSE DE LA VENTA, ALI BASARAN, IVAN K. SCHULLER, University of California - San Diego, TED GRANT, ZACHARY FISK, University of California - Irvine — We have searched for the presence of superconductivity in the RE-Si and Al-B systems using HP-HT synthesis. The RE-Si system has some of the common features that are present in high TC superconducting materials. We have synthesized Ce, Pr, Nd and Gd silicides undoped and doped with C and B. On the other hand,  $AlB_2$  has some similarities with the superconducting MgB<sub>2</sub>. We have tried to synthesize AlB<sub>2</sub> way off stoichiometry using HP-HT and thin films Phase Spread Alloy. The  $Al_{0.67}$  B<sub>2</sub> would be the MgB<sub>2</sub> equivalent and good reason to expect superconductivity. We discuss the results for both systems after a careful analysis of several physical properties (SQUID, Modulated Microwave Absorption) and x-ray powder diffraction.

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