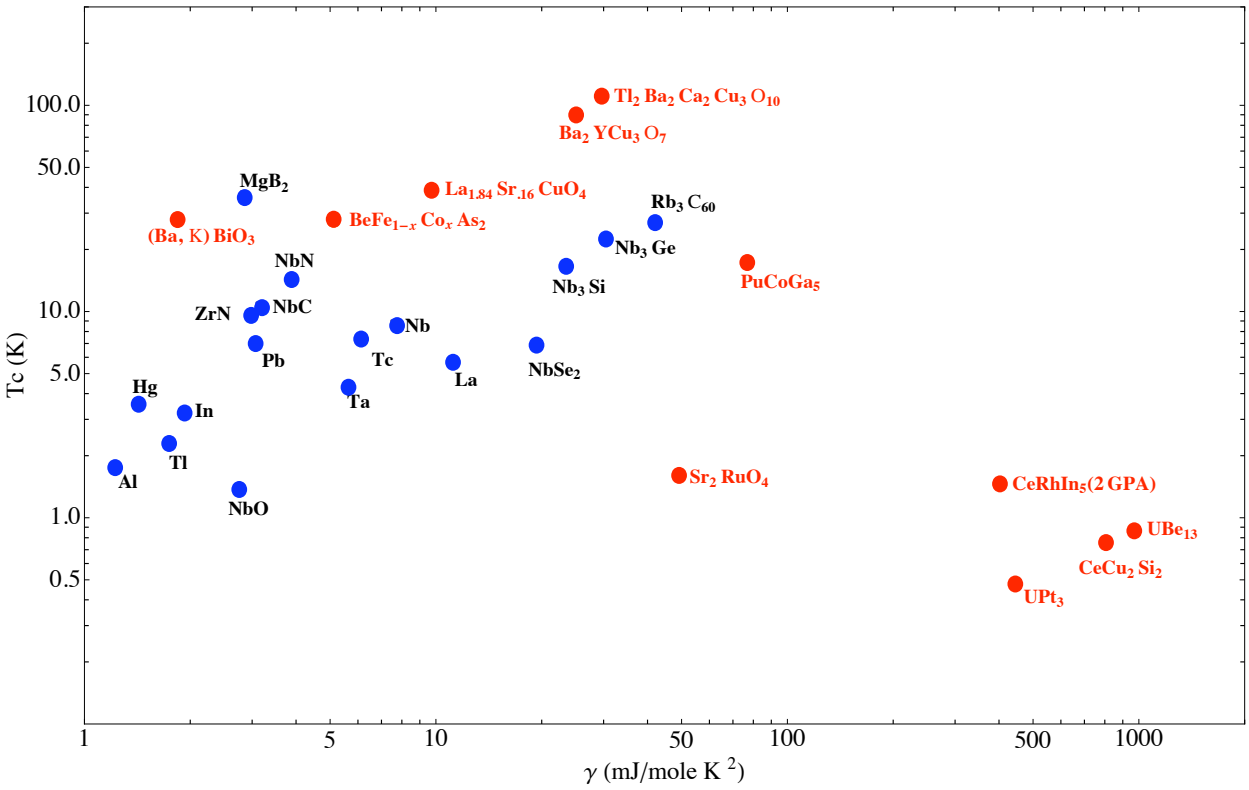


FIG. 1: Plot of Tc and specific heat coefficient for several classes of superconductors of interest. Black points denote those where the superconductivity is known to be promoted by electron-phonon interactions, red points denote those where it is likely that it is promoted by electron-electron interactions without the intermediary of phonons.

this plot will reveal. In reading this figure, it should also be borne in mind that a prejudice has been made to include in the figure either those which the highest $T_c$ in their material class or those which will aid in the discussions in this paper. Included here are different classes of metals and metallic compounds including the historically first superconductor (Hg) and the old champion, the A15 compound ($Nb_3Sn, Ge$) and the new champions, ($Rb_3C_{60}$ and $MgB_2$) among those for which superconductivity is understood to be due to e-ph interactions. Among those shown in red include some cuprate superconductors, some heavy fermion superconductors, an Fe-pnictide as also the interesting case of doped $BaBiO_3$. The crystal with the highest known $T_c \approx 164$ kelvin, $HgBa_2Ca_{m-1}Cu_mO_{2m+2+?}$ (Hg 1:2:m-1:m) with m=1, 2, and 3, under pressure of about 50 GPa [7], is not in the plot; its specfic heat at such pressures appears not to have been measured. Superfluid liquid $He^3$, not in the plot