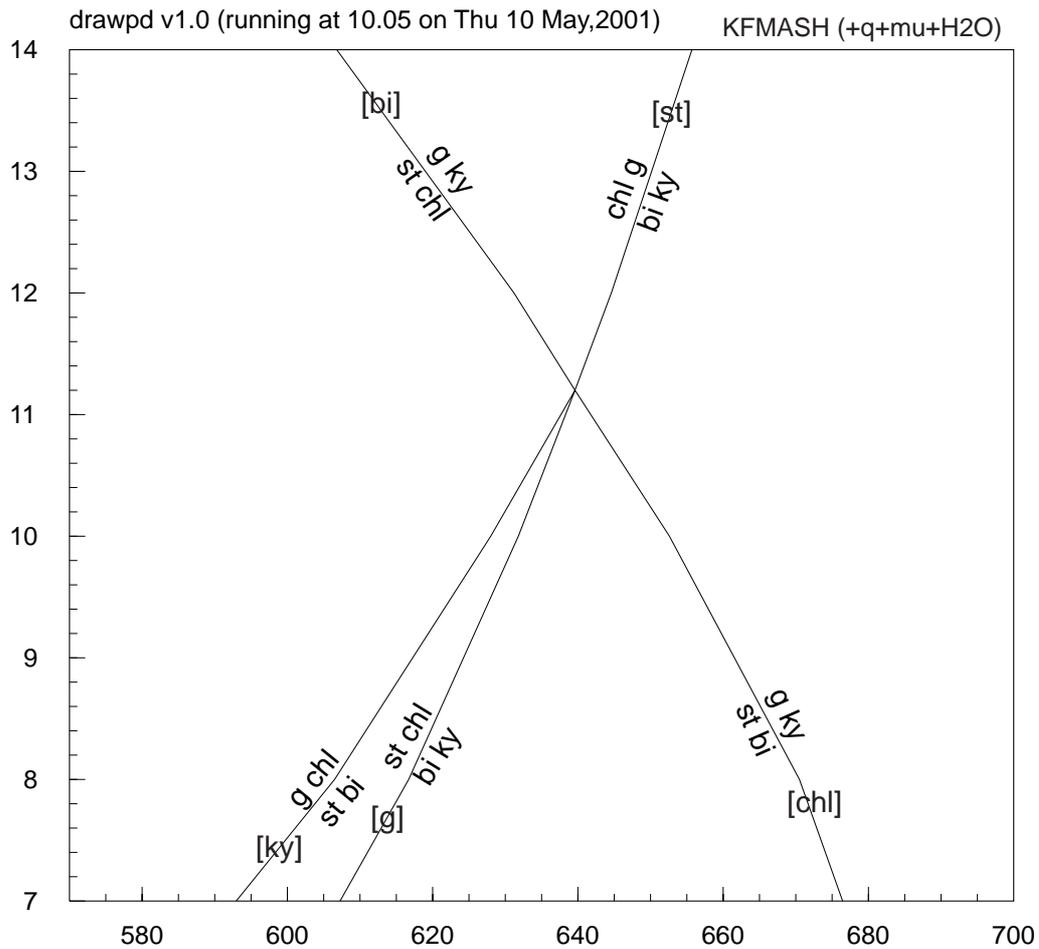


THERMOCALC Workshop 2001: Calculating Metamorphic Phase Equilibria

Answers for Practical 1

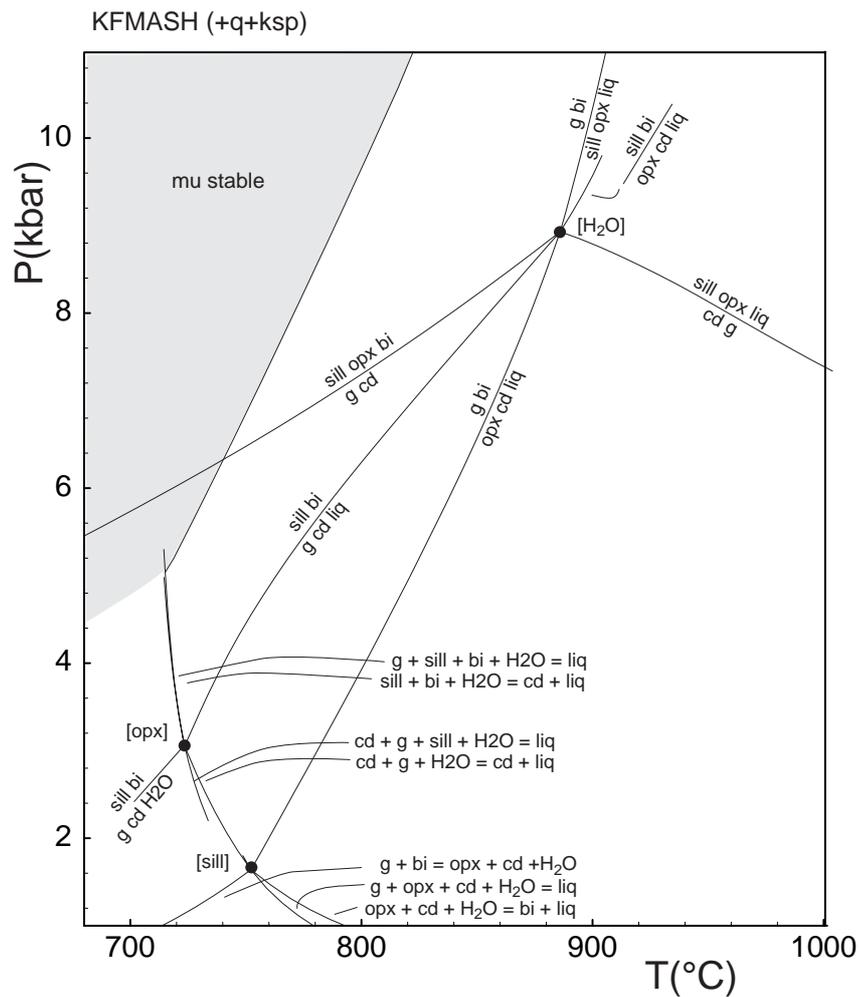
1. The resulting phase diagram is shown below. (Nothing awkward here, hopefully, if you mastered DRAWPD)



- Starting with $bi + sill = g + cd + liq$, and knowing that an extra phase (to $bi, sill, g, cd, liq$) is involved at an invariant, it is a matter of adding, in turn liq and opx to this assemblage, and calculating the invariants ($[opx]$ and $[H_2O]$).

Schreinemakers on those invariants make “sense”, with $[opx]$ stable at the solidus, and $[H_2O]$ stable at higher P , and $bi + sill = g + cd + liq$ stable between them. Looking to see if any of the univariants from these two invariants cross (and so therefore generating new invariants, if they share sufficient phases), we discover that $[sill]$ is a stable invariant.

The final Figure is shown below.



3. Having been systematic (and careful), we get

