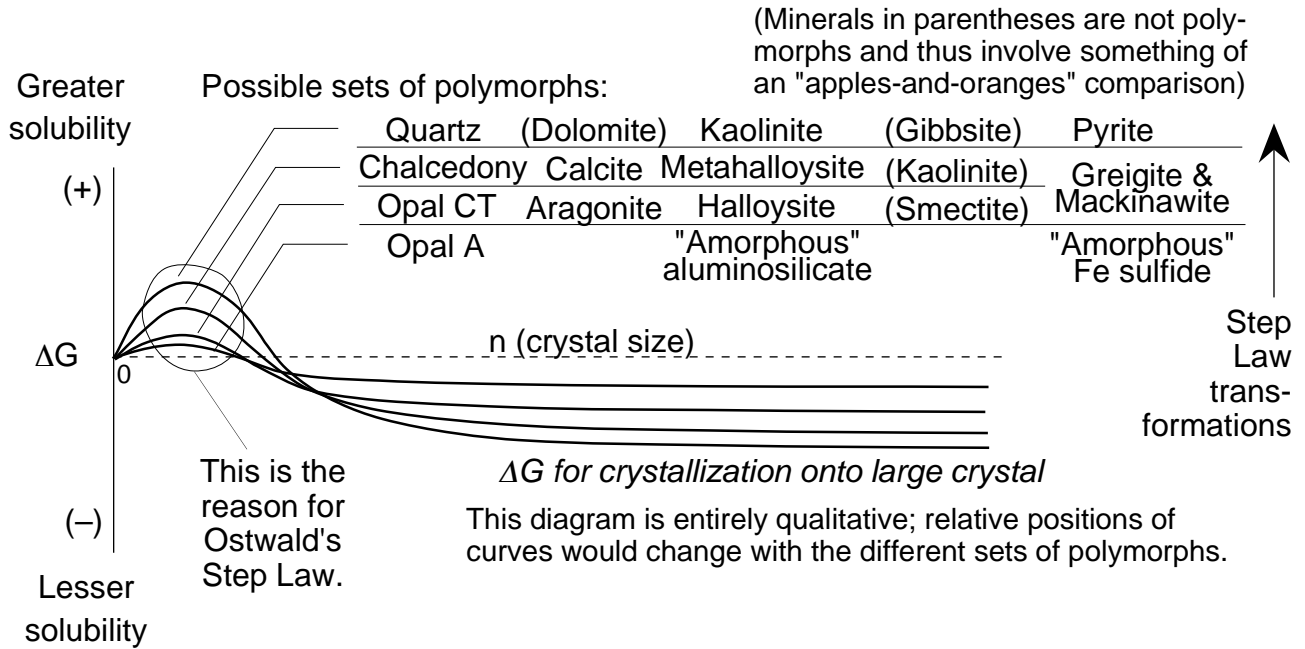


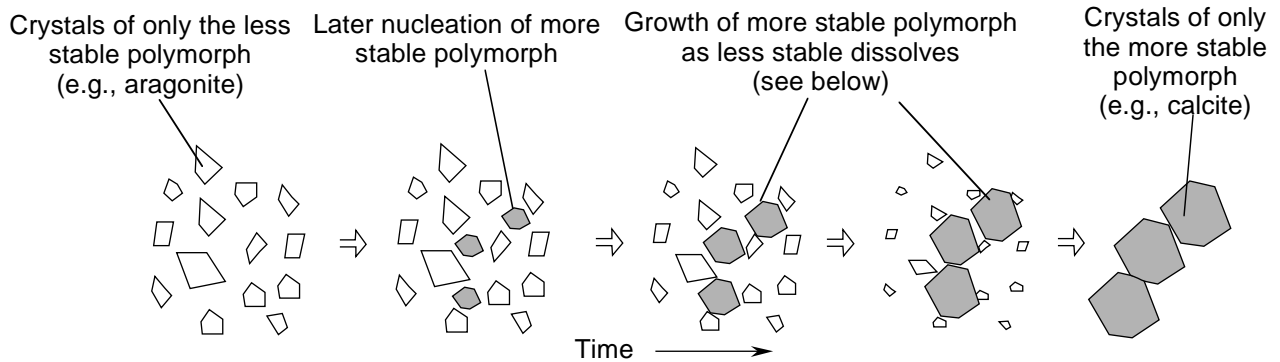
A thermodynamic perspective on Ostwald's Law

This document attempts to explain Ostwald's Step Law, the observation that a solution supersaturated with respect to more than one polymorph of a chemical substance will precipitate a more soluble polymorph, which later converts to less soluble polymorph(s).

This is a diagram for multiple polymorphs in one solution (one saturation state):



Precipitation of a more soluble (less stable) polymorph from the solution establishes a metastable solid that with time recrystallizes to a more stable polymorph:



In detail: the difference in equilibrium concentration around the two polymorphs establishes a concentration gradient, so that dissolved solid is transferred from the more soluble polymorph to the less soluble one, shrinking the former and growing the latter.

