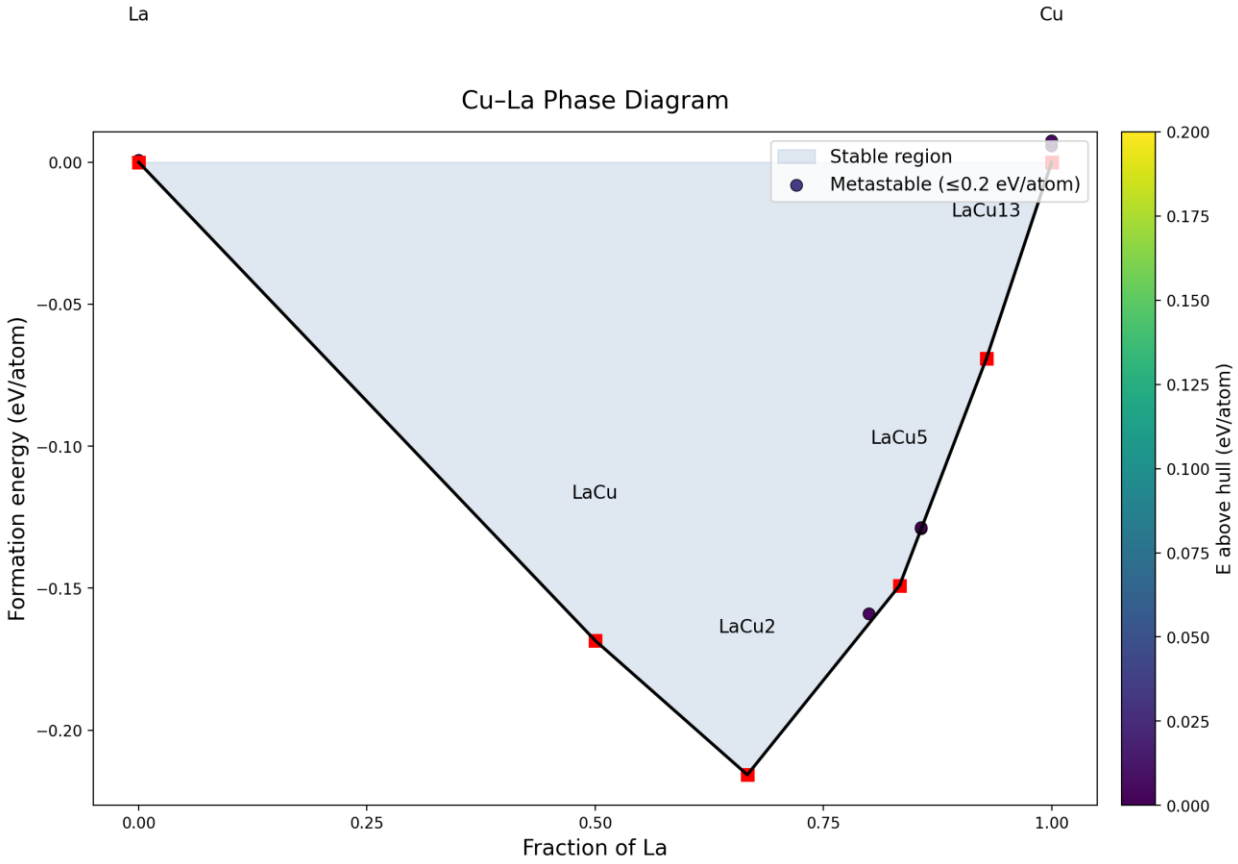
1.3 Binary Phase Diagram

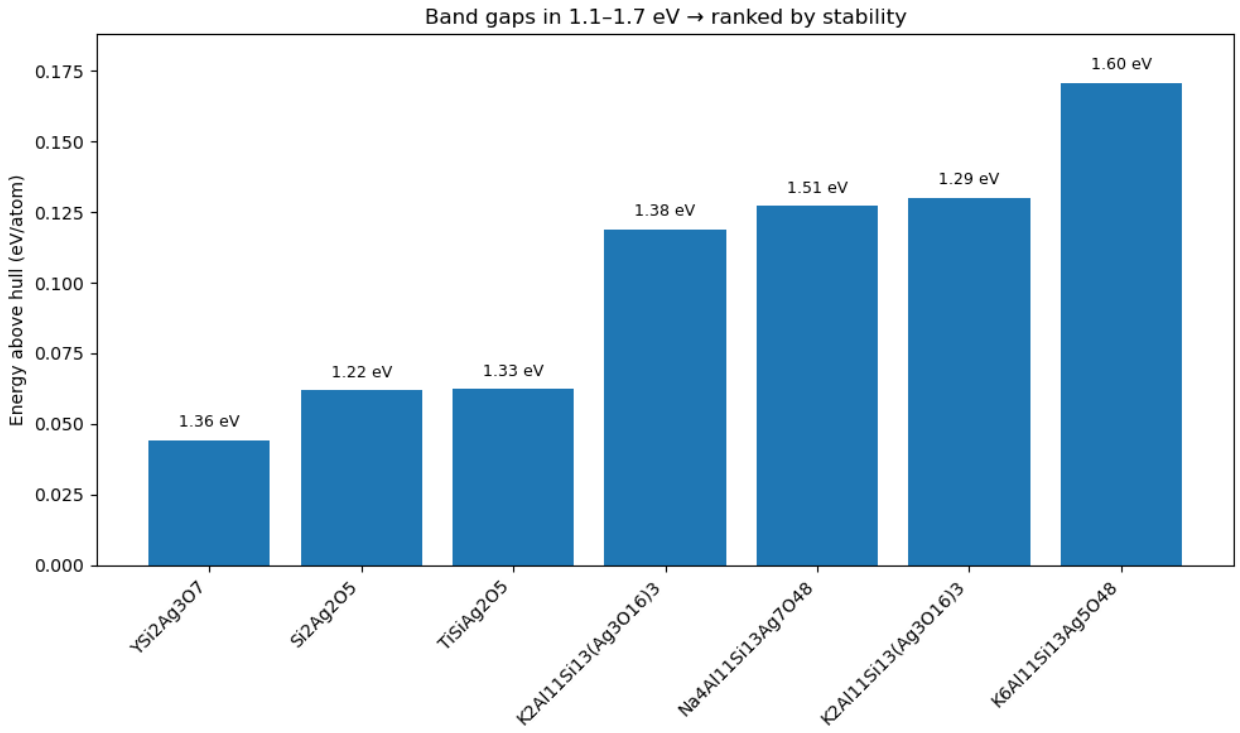
This interactive Python script prompts you for one or more element symbols and a desired band-gap range, then uses your Materials Project API key to query the database for compounds matching those criteria. It gathers each candidate's energy above the convex hull (a measure of thermodynamic stability), sorts the list to identify the most stable wide-band-gap materials, and finally presents the top N entries as a Matplotlib bar chart of their hull energies.



Cu-La Phase Diagram

5.1 Solar Cell Material Finder

This interactive Python script prompts you for optional element filters, uses your Materials Project API key to search for compounds with band gaps in the photovoltaic window (1.1–1.7 eV), ranks them by their energy above the convex hull (a measure of stability), and then displays the top N solar-cell candidate materials as a Matplotlib bar chart annotated with their band gaps.



Suitable Materials Containing Ag,Si,O