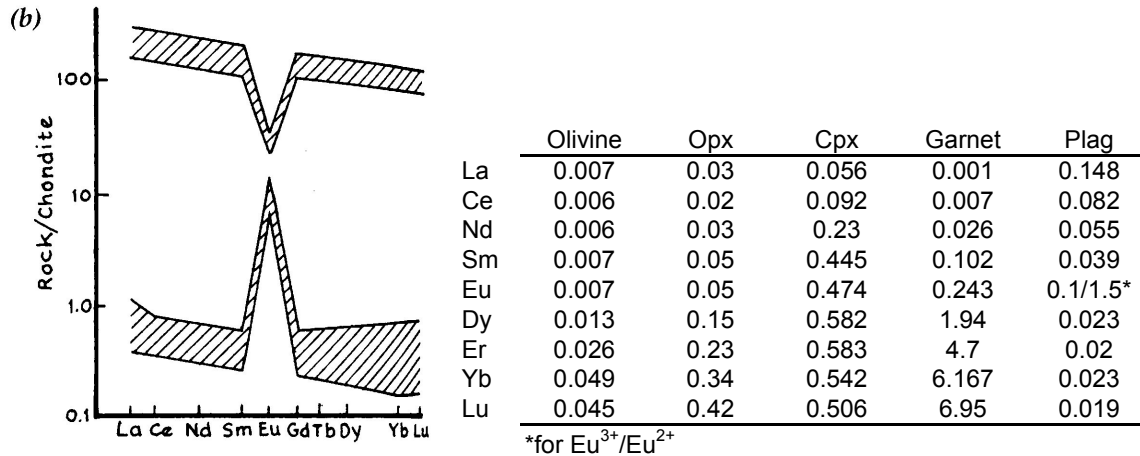


Lunar Rocks: Which came first, the basalt or the anorthosite?



The rare-earth element (REE) concentrations of igneous rocks from the Moon are shown in the figure above. The **top trend** represents the REE abundances for **an average lunar mare basalt**, and the **lower trend** represents the REE abundances of **an average lunar anorthosite**.

1. Which rock type has REE concentrations that are most similar to “bulk” lunar values?
2. Which element shows behavior that is different from what is expected from simple ionic radius and charge considerations? Why?
3. Using the partition coefficient data in the table above, describe a model for formation of the lunar basalt and anorthosite: