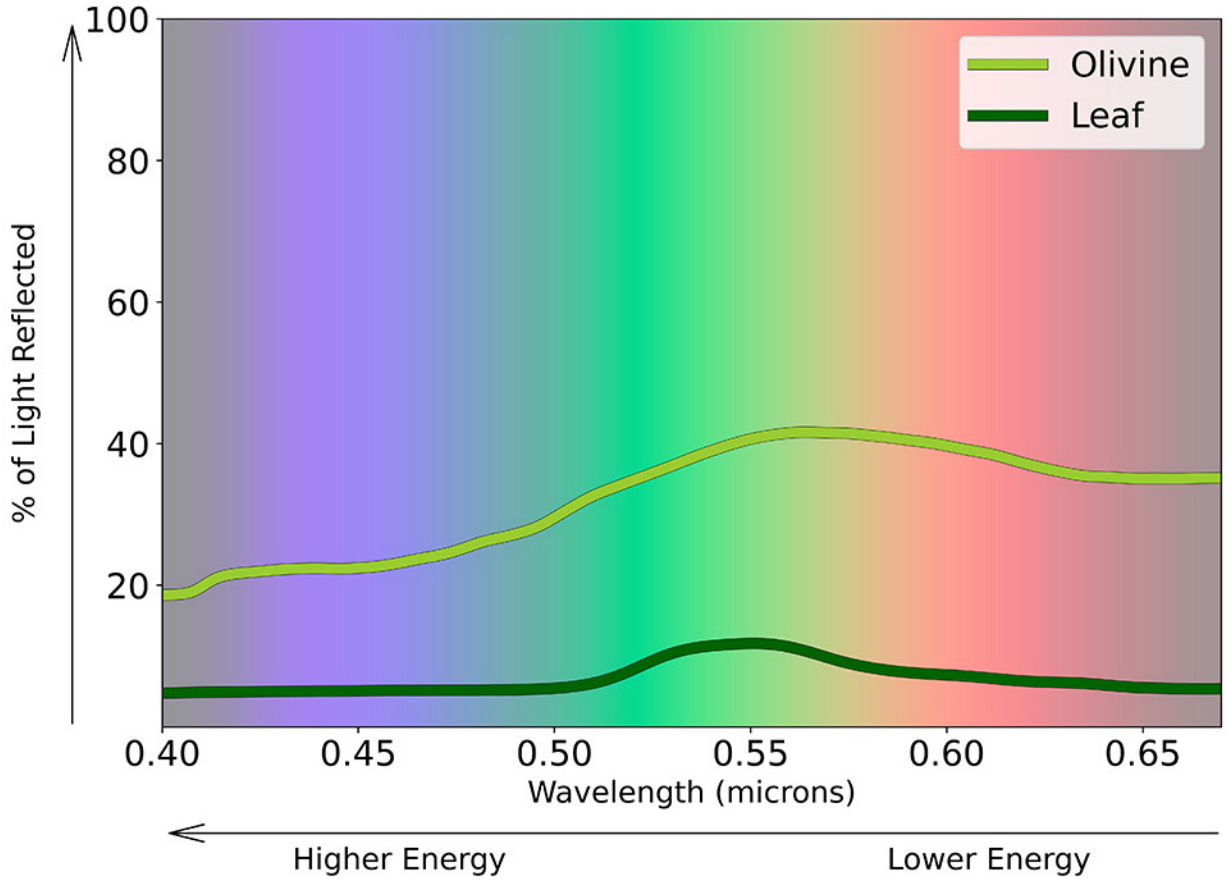
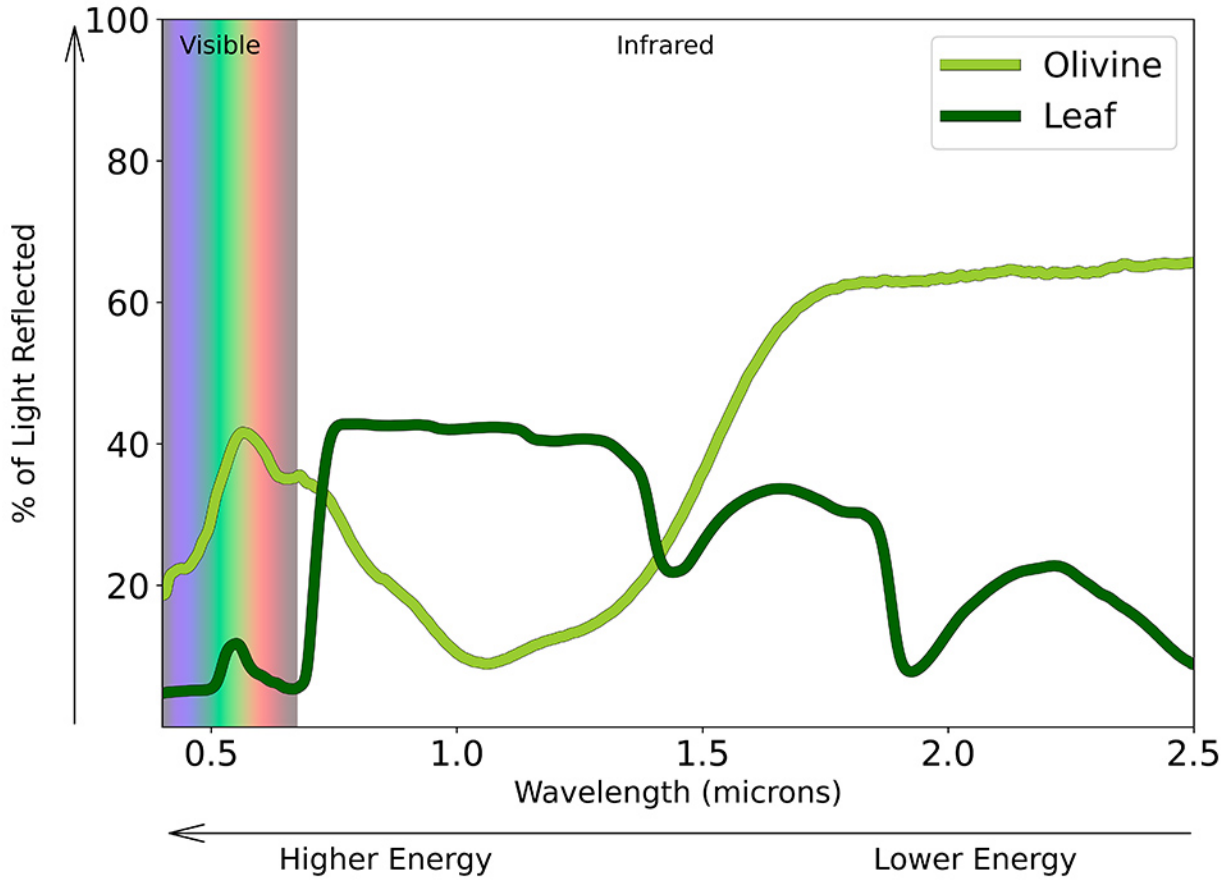
Science Activity 7: Hidden Minerals: Using Spectroscopy to Understand Mars

Comparing Green Things–Visible



A graph of the reflectance spectra of the volcanic mineral olivine and a green maple leaf. Both have similar spectra, with a peak of reflectance in the green part of the visible spectrum. If you just had spectra and no images or other information, they would be difficult to tell apart using just visible light!

Comparing Green Things–Visible and Infrared



A graph of the reflectance spectra of the volcanic mineral olivine and a green maple leaf, but now showing the amount of both visible light and invisible infrared light reflected. The spectra of olivine and a green maple leaf are very different in the infrared, even though they are similar in the visible range. Measuring the infrared light makes it easy to tell them apart!

Minerals We Notice

Review the spectra from the landing sites. Circle the minerals you find. If a mineral is evidence of water, circle the water droplet.

Gale Crater

Olivine 

Pyroxene 

Kaolinite 

Nontronite 

Kieserite 

Gypsum 

Jezero Crater

Olivine 

Pyroxene 

Kaolinite 

Nontronite 

Kieserite 

Gypsum