

My Afghanistan pargasite is diopside, and the black in my zoisite is pargasite,
go figure

Donald Kasper 7-28-2017

If you go to the Mindat web site and look up pargasite, you will see a long series of specimens from Afghanistan with lime green crystals in calcite matrix. Seeing similar material sold out of Pakistan dealers, I purchased one to get an infrared graph on pargasite. I wanted some more data on inosilicates in infrared.

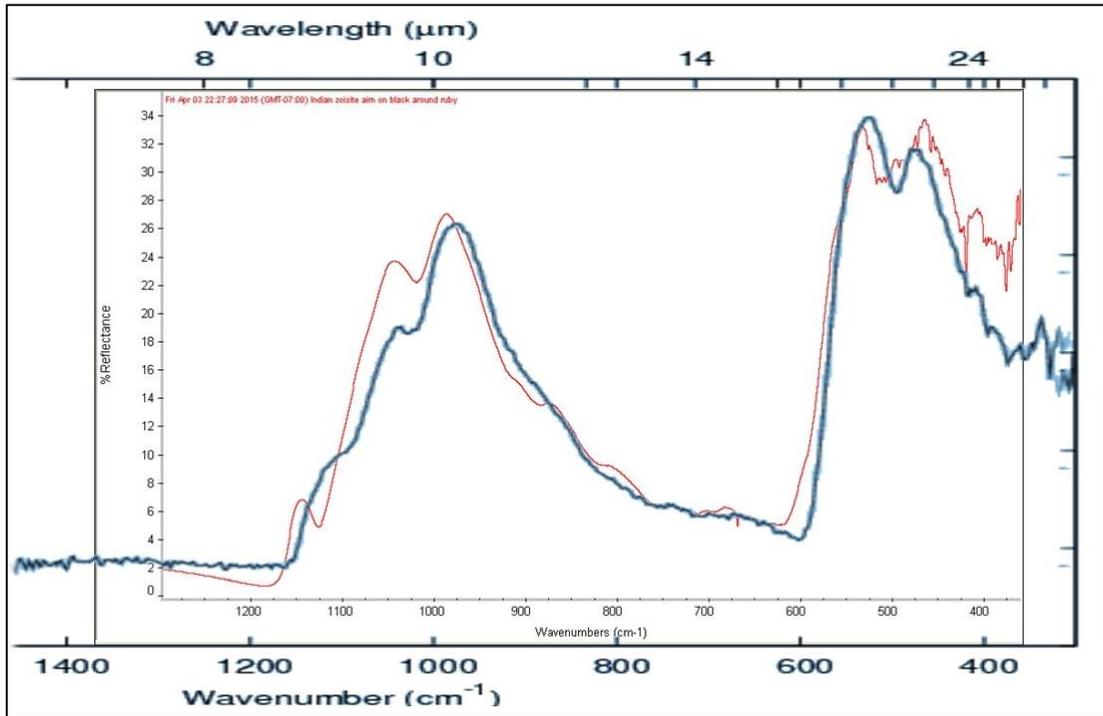
Infrared spectroscopy shows that my pargasite is a zoned crystal varying from augite to diopside. There is no pargasite, but the matrix is calcite. I see a Chinese dealer selling the same material claimed to be from Viet Nam, identified as diopside.

Then I saw the Mindat statement that zoisite out of Tanzania has pargasite, incorrectly identified in other sources as tschermakite. The latter claim comes from Wikipedia. It is interesting that the identical green, red corundum, and black material is stated to be from Tanzania on Mindat, while retailers at club shows sell it to me as originated from India. Unless there are two identical locales with the same triplet of mineralization, I would go with the Tanzania metamorphic zone where this and tanzanite would originate. Mindat quotes a research paper indicating a confirmation of pargasite for this material.

Armed with good reference graphs of pargasite out of the U. of Arizona and my slice of this triplet zoisite material, I had previously only been able to identify the black as an amphibole. Checking this material infrared graph to the reference is an exact match. The black in the Tanzania zoisite is indeed pargasite.

So my pargasite is diopside, and my tschermakite is pargasite. None of the yellow-green Afghan Mindat specimens I would consider pargasite. This is the typical state of mineral identification on web sites and from gem shows.

Arizona state pargasite in blue-gray, overlaid mixed zoisite black mineralization in red graph using infrared spectroscopy.



Russian chrome diopside (violet graph), 2 scans of crystal faces of Afghan crystal sold as pargasite (red and blue graph) using infrared spectroscopy. The only argument here is where the blue graph is closer to augite. The distinction between augite and diopside is an arbitrary compositional cutoff.

