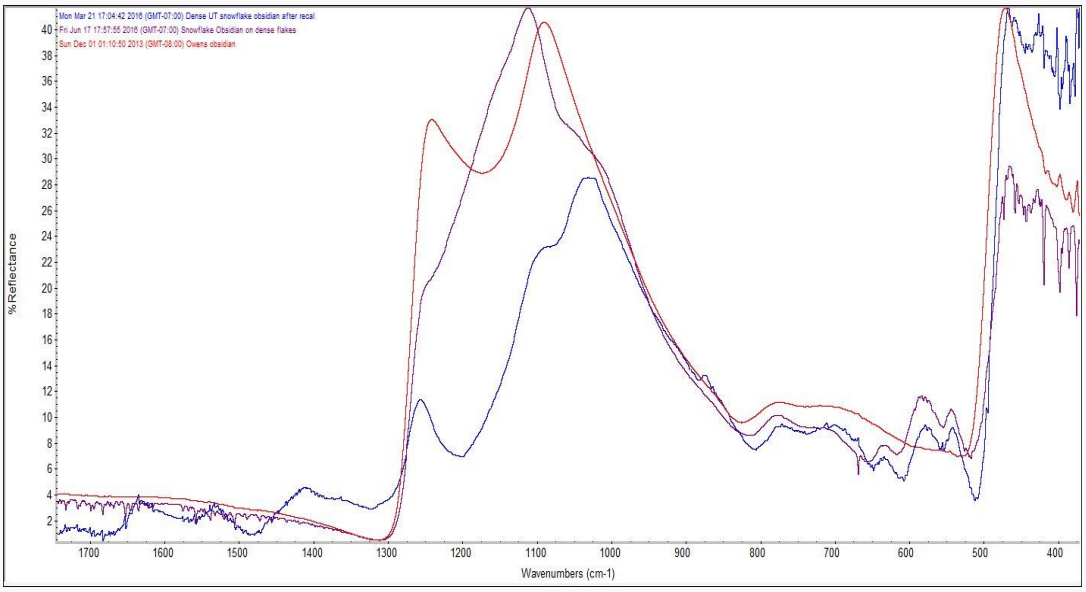
What are the obsidian types made of and did GeologyHub get it right?

Donald Kasper 11-23-2021, 2 pgs.

Jan 4, 2021 https://www.youtube.com/watch?v=kfgybq_2CHc, What are the Varieties of Obsidian?
Let us take a look at the GeologyHub statements:

1. Statement: Peanut obsidian is oligoclase in perlite. Analysis: It is some type of feldspar in perlite but the glass matrix makes it quite impossible to identify distinctly, yet the author's marker bands for oligoclase are not found in the orbs.
2. Statement: Starburst jasper is feldspar in obsidian. Analysis: There are many starburst structures in many volcanic rocks, but generally the symplectite structures called colloquially starbursts, are feldspar. Starburst jaspers are rhyolite to dacite with symplectites of feldspar, probably sanidine.
3. Statement: Snowflake obsidian is cristobalite in black obsidian matrix. Analysis: The presenter makes a common and quite widespread mistake of confusing symplectite structures called starburst or snowflake which are K-feldspar, likely sanidine and some calcite, contrasted with orbs in Coso volcanic field obsidian, which are the type locality for cristobalite. Why symplectites are confused with orbs confuses the author to this day, but seems to be caused by fast and shallow study. Remember: morphology matters. Specific structures are caused by specific minerals, not any minerals.
4. Statement: Sheen and rainbow obsidians are caused by magnetite diffracting light. Analysis: In all that glass matrix, infrared spectroscopy so far cannot determine what the mineralization is, while published microprobe study by Caltech shows magnetite. In the meantime, kaolinite exposed to 1200 C lava will decompose into mullite, an aluminum and silica oxide, which is very likely the most common colorant for mahogany and some sheen obsidians. That is, because magnetite is found in obsidian does not prove it is the colorant. Its presence may account for the black color of obsidian.
5. Statement: Apache tears are in matrix and rounded by stream weathering. Analysis: The matrix is perlite and the orb tears are the unhydrated, remnant obsidian not altered to perlite. None of it is stream worn. It comes right out of the perlite that way. Apache tears are only formed in perlite.
6. Statement: Mahogany obsidian is colored reddish from iron. Analysis: This is a presumption promoted as a fact. The author has no paper on hand that proved this and is likely kaolinite capture and alteration to mullite when the flow scoured the ground as it moved out from its vent source.

Here is the comparison of a snowflake obsidian and an obsidian matrix showing the snowflakes are feldspar. An obsidian is a silica and feldspar glasses mix, but everything below 800 cm-1 infrared is only identified as feldspar in dense snowflake accumulations to reduce the background glass interference. The glass obscures what feldspar it is. No cristobalite marker bands for the snowflakes occurs in these spectra, such as a classical 621 cm-1 peak.



Mexican peanut obsidian with two orb scans showing feldspar, probably sanidine, compared to a glass matrix.