

REVISION 1

Supplemental Material



Figure S1. Blue halite (Sample # N00341_AJM4313) from Stassfurt, Germany (Mineral Collection, Sorbonne Université, Paris).



Figure S2. Red villiaumite (Sample # N13100_AJM5773) from the Los Islands Archipelago, Guinea (Mineral Collection, Sorbonne Université, Paris).



Figure S3. Cleavage section of euhedral crystals of villiaumite from the Los Islands Archipelago, Guinea.

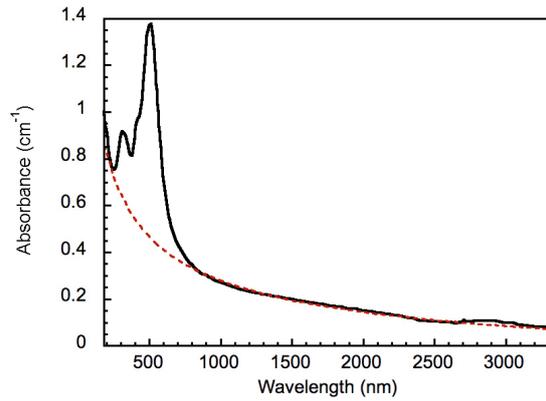


Figure S4. Room temperature optical absorption spectrum of villiaumite. The dotted red line corresponds to the background absorption due to a scattering of the incident light by optical heterogeneities (inclusions and fractures)

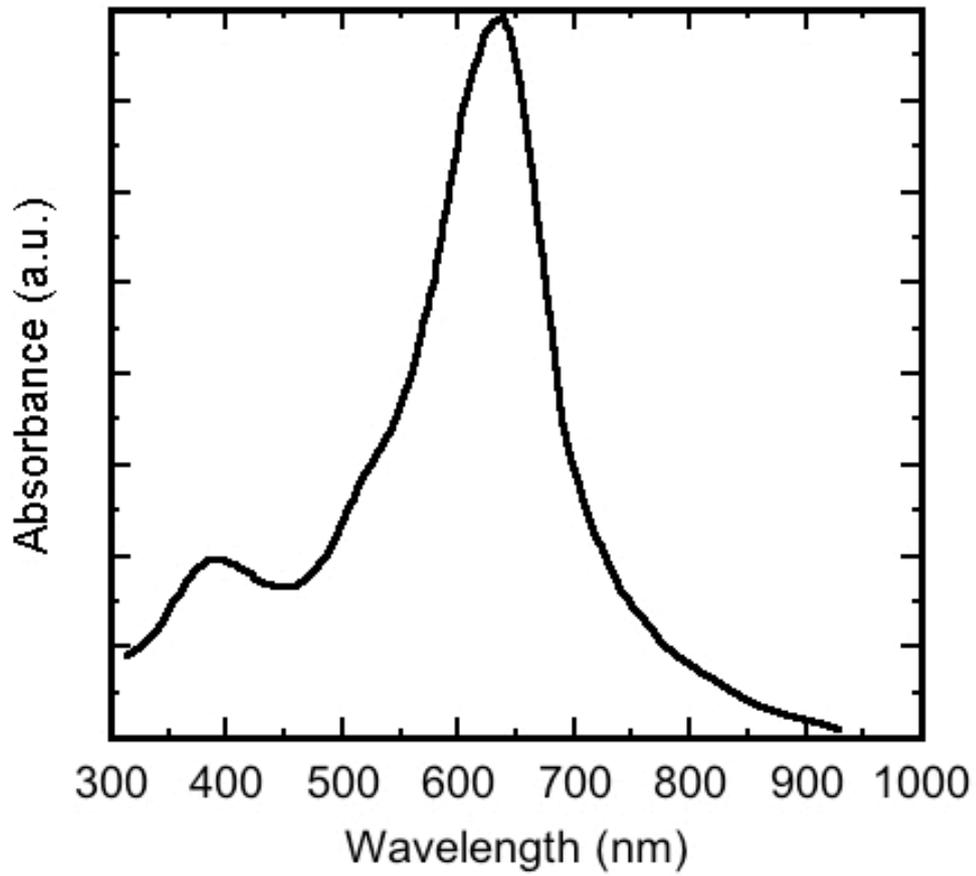


Figure S5. Scan of the historical absorption spectrum of the natural blue Stassfurt halite published by Doyle in 1960. The main absorption band peaks at 640 nm, a value consistent with that reported in this study.

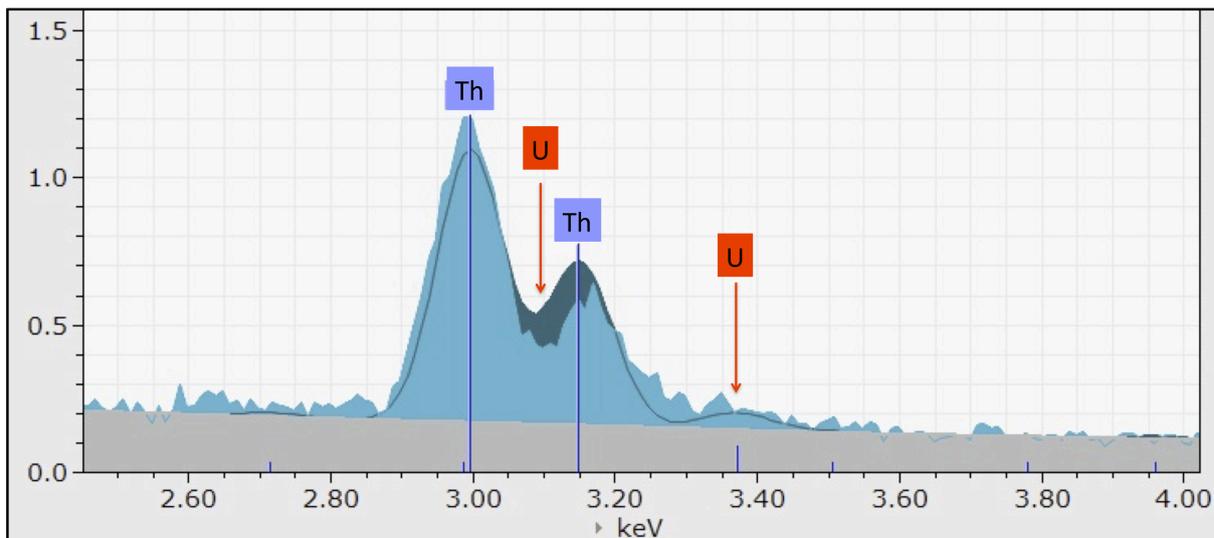


Figure S6. SEM/energy-dispersive X-ray spectroscopy of the nanoinclusions, about 500 nm large, encountered in the villiaumite from the Los Archipelago and depicted in Figure 2. The Th concentration has been calculated using the fit of the Th-M α_1 and Th-M β_1 signals, at 2.996 and 3.149 keV, respectively. The weak contribution at 3.35-3.40 keV may arise from the U-M β_1 signal, expected at 3.336 (the signal expected for U-M α_1 at 3.171 keV is hidden by the more intense Th-M β_1 emission).