

Supplementary Information for “Quenchable amorphous glass-like material from VF₃”

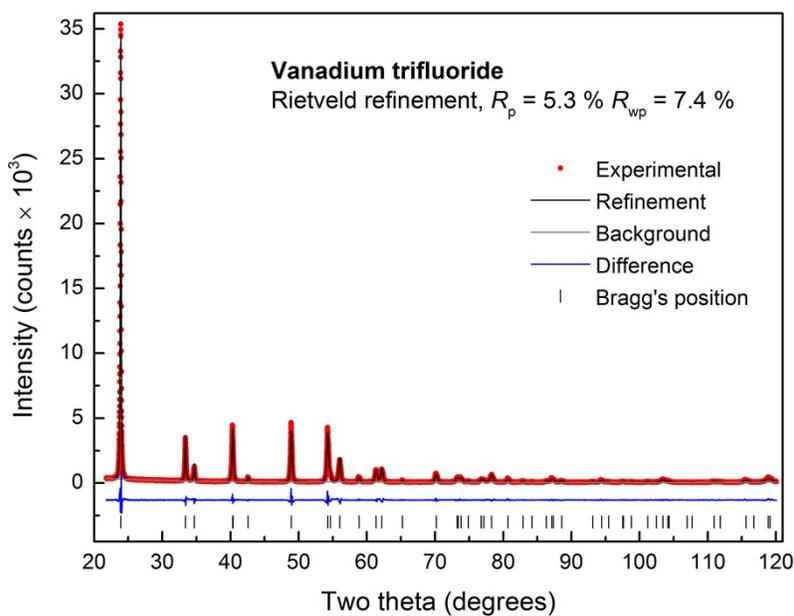


Figure S1. Laboratory X-ray diffraction profile for VF₃ powders fitted using Rietveld method.

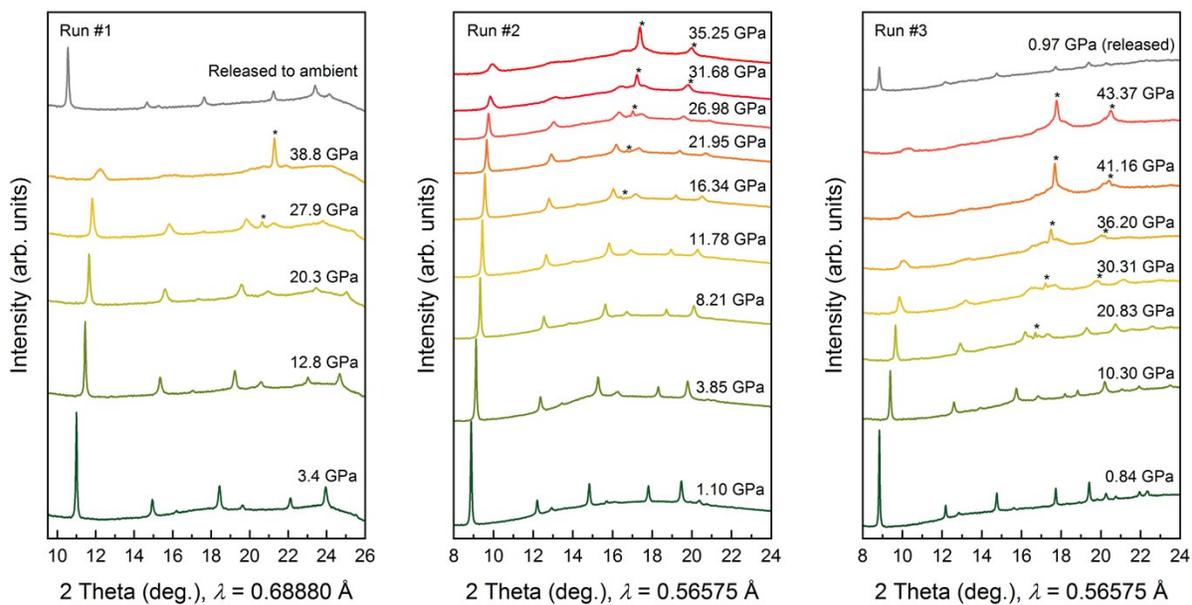


Figure S2. Synchrotron X-ray diffraction profiles representing a reversible transition in VF₃ powders under high-pressure. Black asterisks mark diffraction peaks from the neon gas.

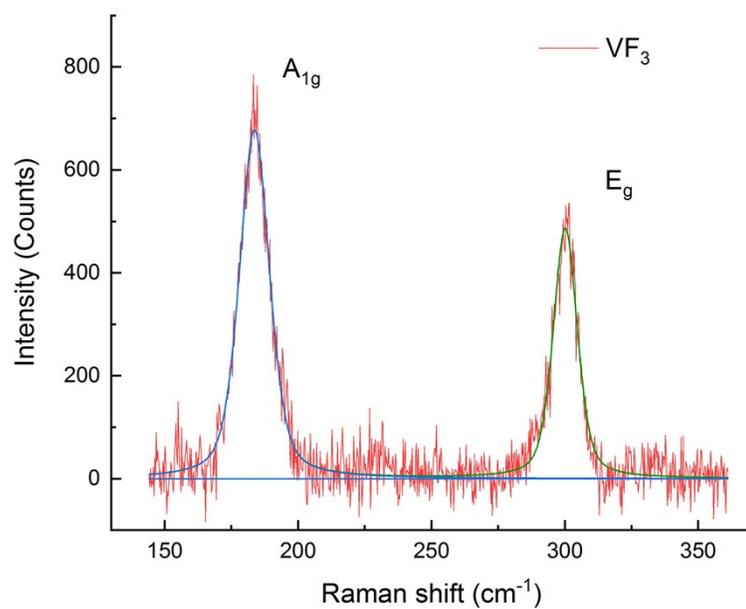


Figure S3. Raman spectrum at ambient conditions. Note background subtracted.

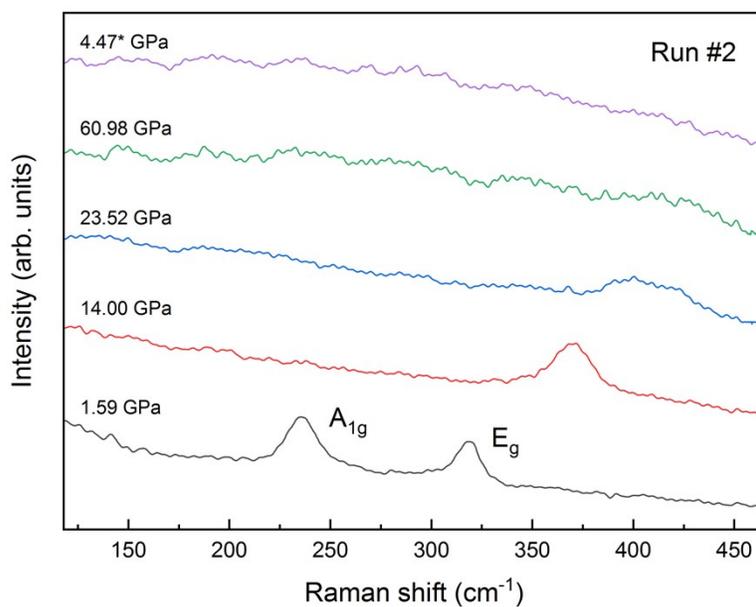


Figure S4. Raman measurements under high-pressure. The compression was performed to a pressure of 60.98 GPa, then released to 4.47 GPa (marked with an asterisk) followed by full decompression to an ambient pressure (image given in the main part of the article). Note, the spectra is well smoothed.

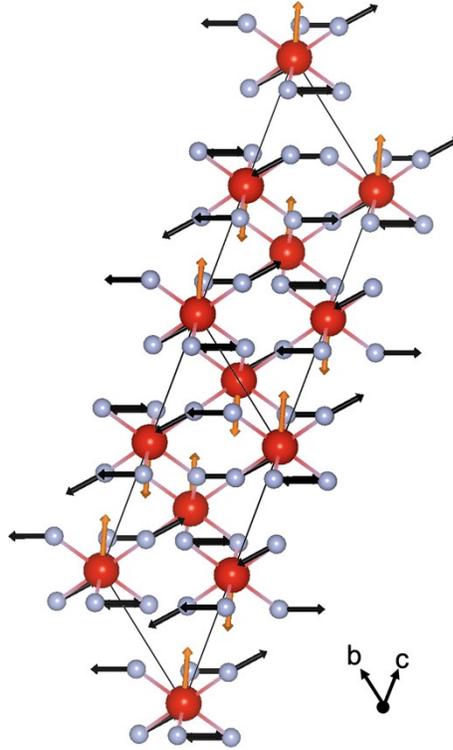


Figure S5. Lattice displacements by the phonon soft mode at $q = F$ at 55 GPa. Red and gray balls indicate V and F atoms, respectively. The black and orange arrows represent the displacement of each atom by the phonon mode.

Table 1: The lattice parameters and atomic positions of VF_3 at room temperature.

Atom	Space group $R\bar{3}c$				
	$a = 5.168 \text{ \AA}, b = 5.168 \text{ \AA}, c = 13.438 \text{ \AA}, \alpha = \beta = 90^\circ, \gamma = 120^\circ, V = 310.821 \text{ \AA}^3$				
	Wyckoff positions	x	y	z	Occ.
V	6b	0.00000	0.00000	0.00000	1.0
F	18e	0.40010	0.00000	0.25000	1.0