

# IUCrJ

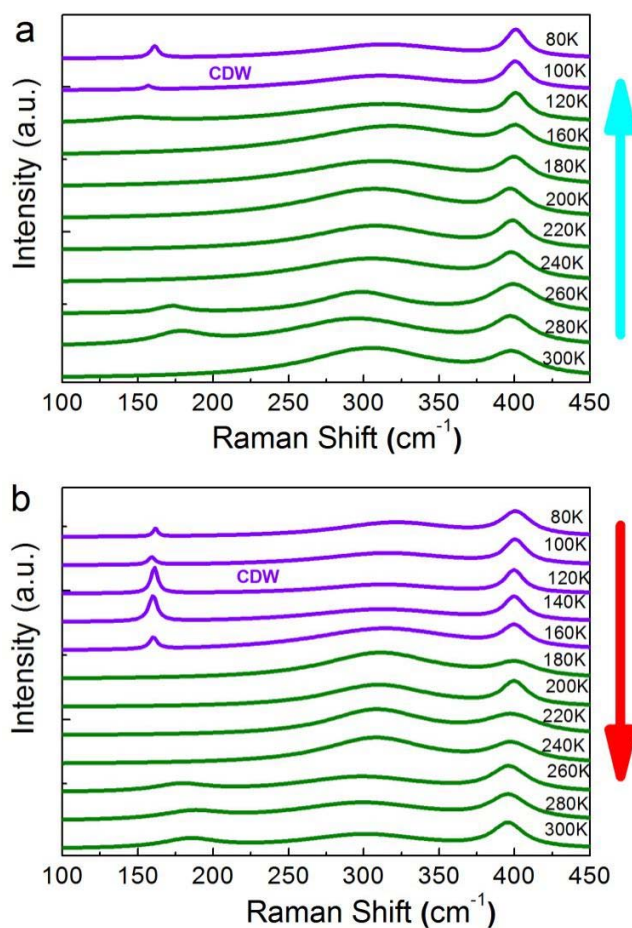
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**Supporting information for article:**

**Charge density waves and degenerate modes in exfoliated monolayer 2H-TaS<sub>2</sub>**

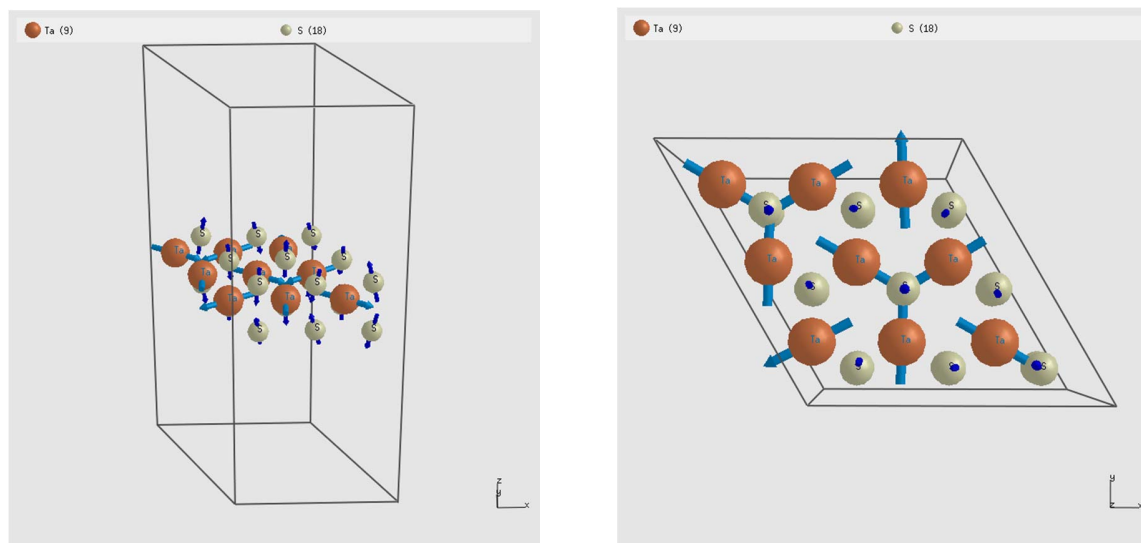
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## S1. Supplementary Figures

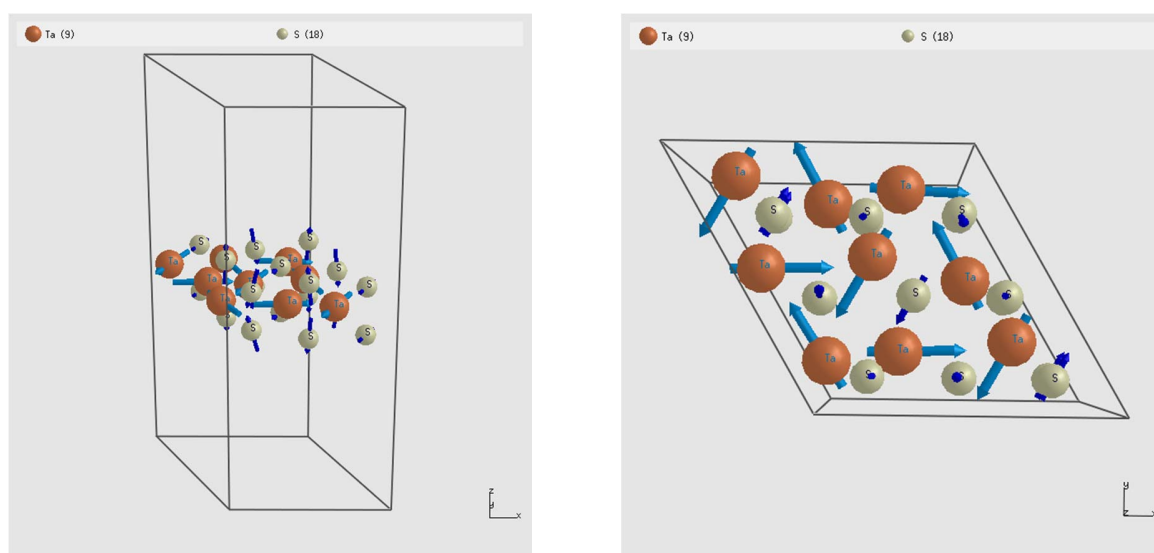


**Figure S1** Probing CDW in 10 nm thick TaS<sub>2</sub>. Raman spectra for 10 nm thick TaS<sub>2</sub> acquired during (a) cooling and (b) warming cycles.

By employing the *Phonopy* package, we can spatially visualize the atomic vibrations at a particular *k* point with a specific phonon band. Therefore, the figures for two degenerate CDW modes in 3×3×1 unit cell structure of monolayer 2H-TaS<sub>2</sub> are displayed. The corresponding animations are available as separate files.



**Figure S2** The degenerate breathing motion (Breathing mode) of CDW mode with frequency  $\tilde{\nu}=155.6691 \text{ cm}^{-1}$ . The right figure shows the top view of the breathing mode.



**Figure S3** The degenerate wiggling motion (Wiggle mode) of CDW mode with frequency  $\tilde{\nu}=155.6718 \text{ cm}^{-1}$ . The right figure shows the top view of the Wiggle mode.