

FIGURE OM1. The relationship between $\delta v_i/\delta P$ and pressure range of fit for siderite (a) and rhodochrosite (b) if assuming a linear relationship between the peak position and pressure.

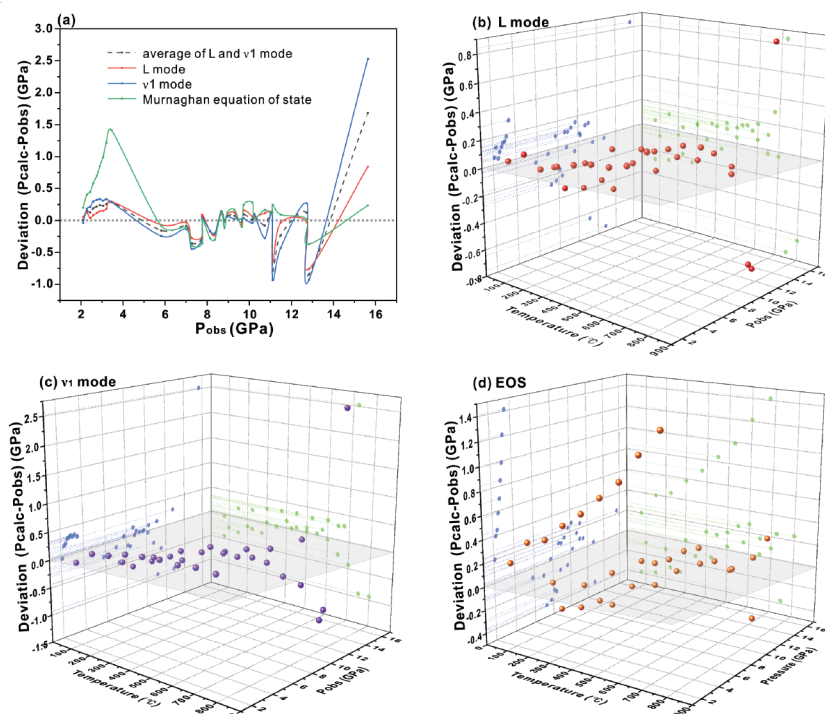


FIGURE OM2. Difference between the measured pressure and calculated pressure using Eq. 14 for different modes or Eq. 22 for siderite. (a) shows the relationship between deviation and pressure. (b–d) shows the deviation 865 calculated by Eq. 14 of L (b) and v₁ (c) mode or Eq. 22 of v₁ mode (d) in the P - T space.

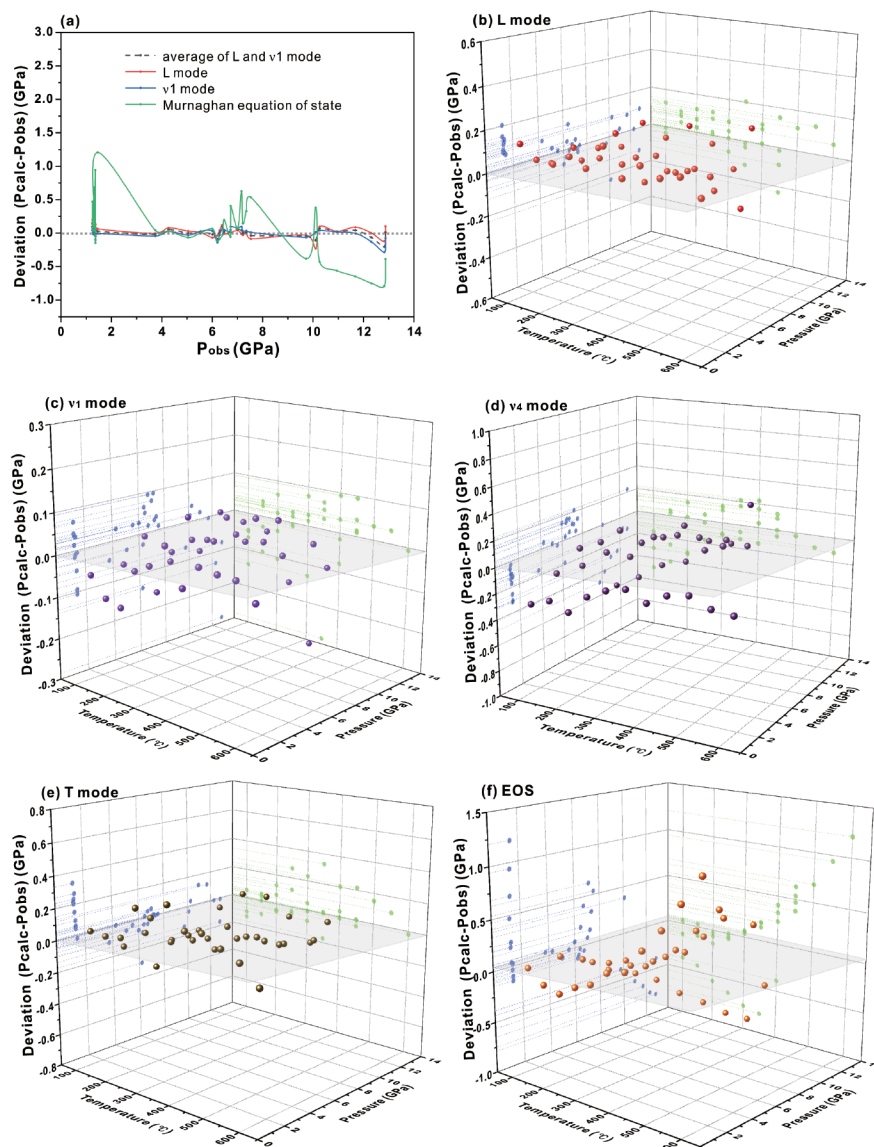


FIGURE OM3. Difference between the measured pressure and calculated pressure using Eq. 14 for different modes or Eq. 22 for rhodochrosite. (a) shows the relationship between deviation and pressure. (b-f) shows the deviation calculated by Eq. 14 of L (b), v₁ (c), v₄ (d), and T (e) mode or Eq. 22 of v₁ mode (f) in the *P-T* space.

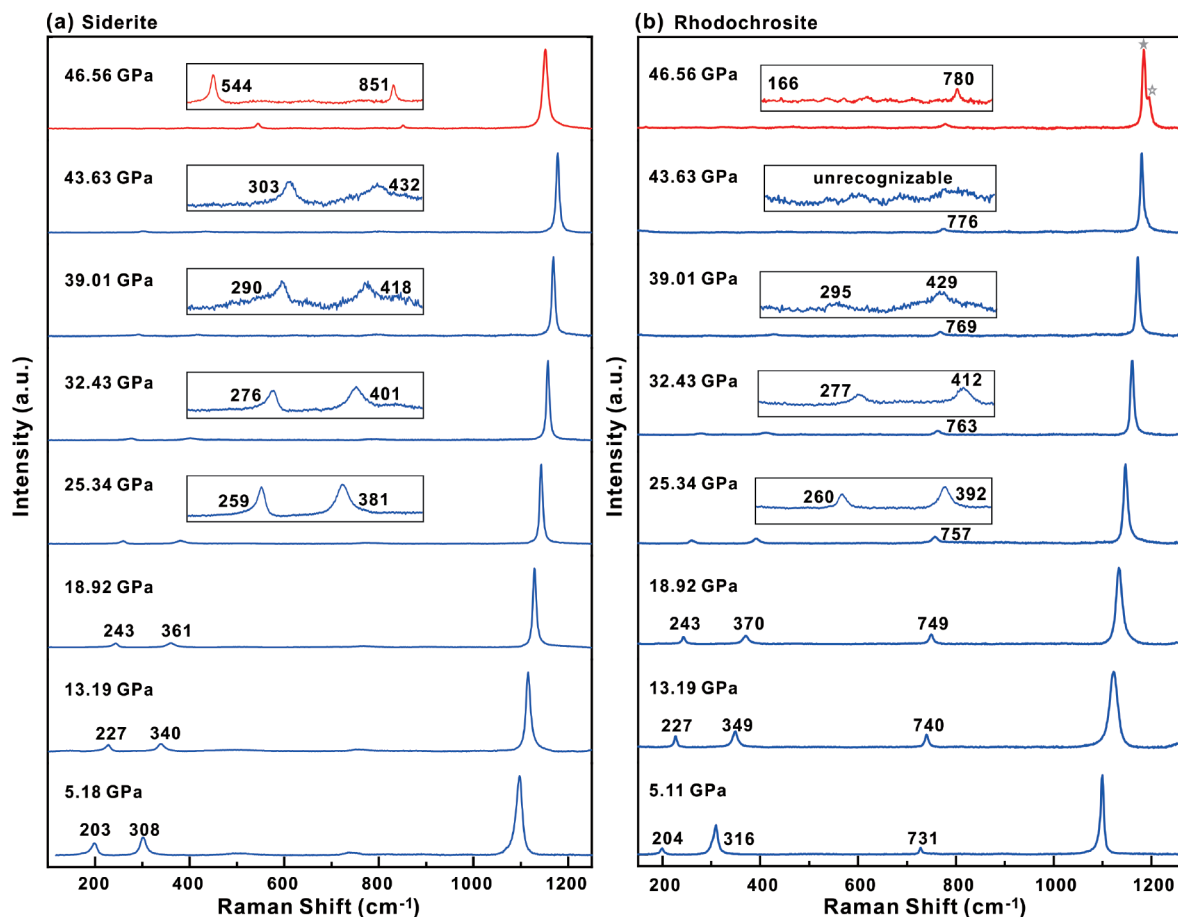


FIGURE OM4. Raman spectra of siderite **(a)** and rhodochrosite **(b)** up to 47 GPa. Blue spectra show HS siderite or $\text{MnCO}_3\text{-I}$, and red spectra show LS siderite or $\text{MnCO}_3\text{-II}$. At 46.6 GPa, the empty triangle in **(b)** marks the occurrence of a small shoulder, which belongs to the first occurring $\text{MnCO}_3\text{-II}$ and the black triangle marks the last remaining $\text{MnCO}_3\text{-I}$.