Supporting information for:

Effect of iron and trivalent cations on OH-defects in olivine

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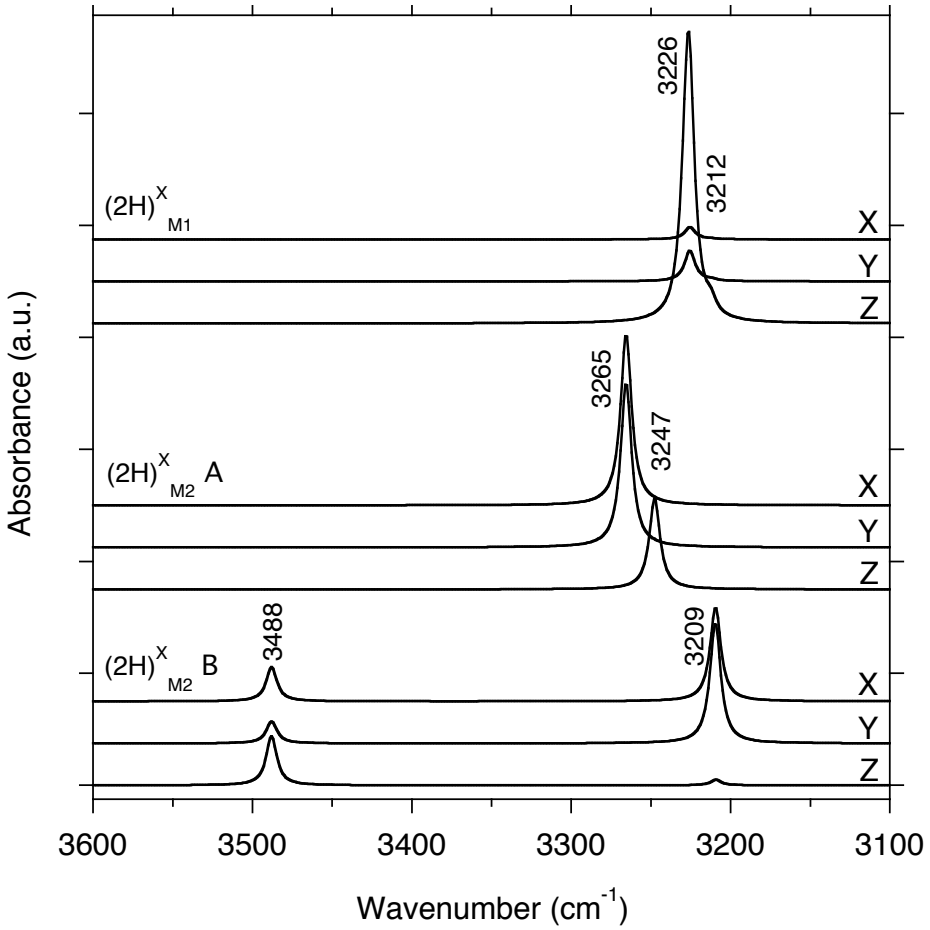

FIGURE S1. Theoretical polarized infrared spectra of $(2H)^{x}_{M}$ defects. $(2H)^{x}_{M1}$ corresponds to the M1 configuration in Balan et al. (2011).

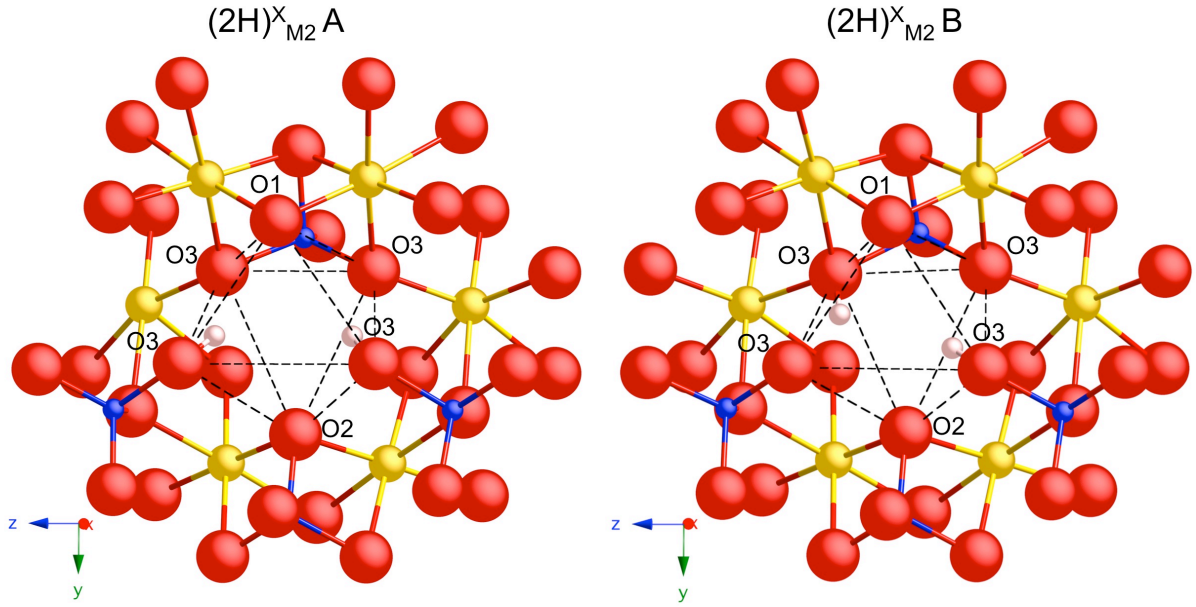

FIGURE S2. Structural models of $(2H)^{x}_{M2}$ defects, with Mg in yellow, Si in blue, O in red and H in white (color online).

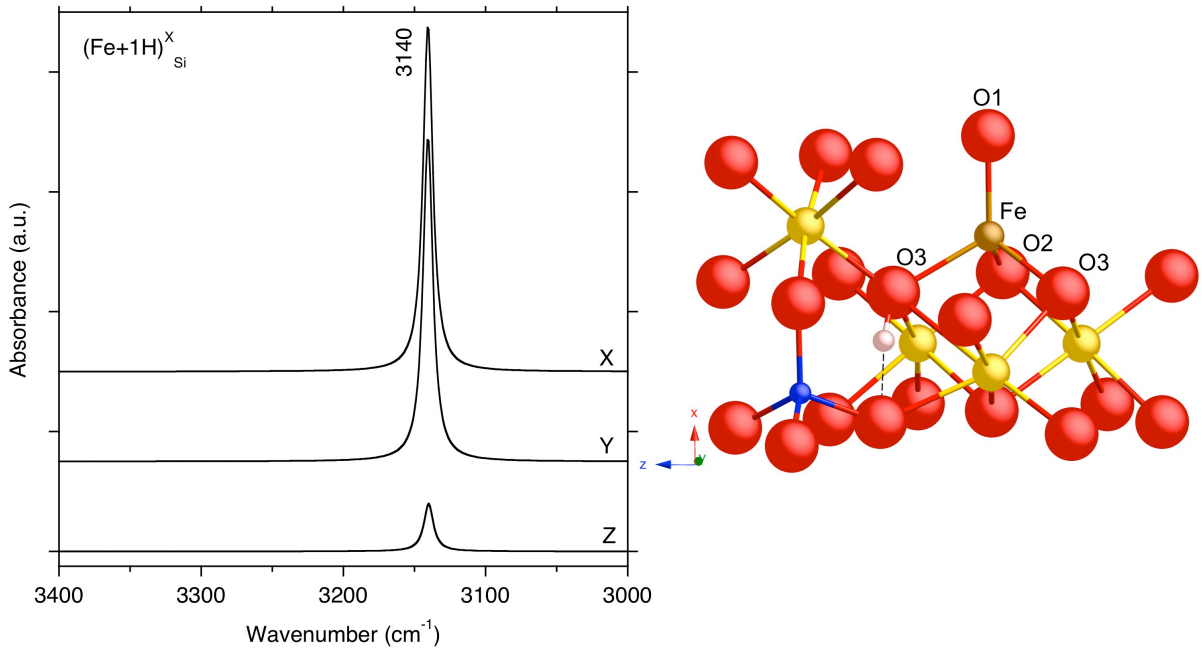

FIGURE S3. Theoretical polarized infrared spectra of $(Fe+1H)^{\times}_{Si}$ defect (left) and the corresponding structural model (right).

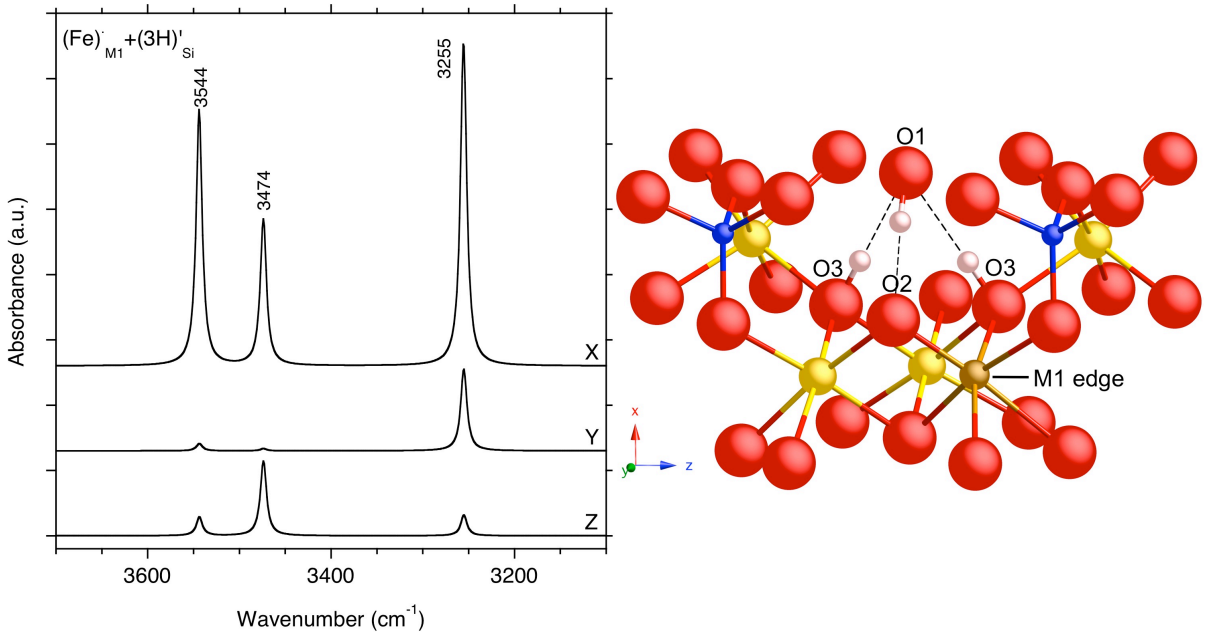

FIGURE S4. Theoretical polarized infrared spectra of $[(Fe)^{\bullet}_{M1}(3H)'_{Si}]^{\times}$ defect (left) and the corresponding structural model (right).