

This data is from the paper titled "A Possible Complication of Using the 4.14 μm band to Assess D/H Ratios on Icy Bodies" published in The Astrophysical Journal Letters

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The data files are for:

Figure 1. Infrared spectra of the HDO and H₂O absorption bands in a crystalline H₂O sample during irradiation with 10 keV electrons at 50 K

Figure 1 - Full spectrum.txt - the first column is wavenumber (cm^{-1}), the second through tenth columns are spectra after fluences (10^{14} electrons cm^{-2}) of 0, 0.95, 2.61, 6.95, 28.0, 101, 341, 510, 1590, and the eleventh column is an amorphous reference spectrum taken at 50 K.

Figure 1 - HDO region.txt - the first column is wavenumber (cm^{-1}), the second through tenth columns are spectra after fluences (10^{14} electrons cm^{-2}) of 0, 0.95, 2.61, 6.95, 28.0, 101, 341, 510, 1590, and the eleventh column is an amorphous reference spectrum taken at 50 K.

Figure 1 - Near-IR region.txt - the first column is wavenumber (cm^{-1}), the second through tenth columns are spectra after fluences (10^{14} electrons cm^{-2}) of 0, 0.95, 2.61, 6.95, 28.0, 101, 341, 510, 1590, and the eleventh column is an amorphous reference spectrum taken at 50 K.

Figure 2. Band depth vs. dose during irradiation with 10 keV electrons at 50 K

Figure 2 - Band Depth vs. Dose.txt - the first column is the dose ($\text{eV H}_2\text{O}^{-1}$), the second column is the band depth of the 4.14 micron band, and the third column is the band depth of the 2 micron band.

Figure 3. Amorphous fraction of H₂O vs. absorbed dose during irradiation with 10 keV electrons at 50 K

Figure 3 - thin sample.txt - the first column is absorbed dose ($\text{eV H}_2\text{O}^{-1}$), the second column is the amorphous fraction calculated from the 4.14 micron band, and the third column is the amorphous fraction calculated from the 1.65 micron band.

Figure 3 - thick sample.txt - the first column is absorbed dose ($\text{eV H}_2\text{O}^{-1}$) and the second column is the amorphous fraction calculated from the 3 micron band.

Figure 3 - inset.txt - the first column is wavenumber (cm^{-1}), the second through tenth columns are derivative spectra after doses ($\text{eV H}_2\text{O}^{-1}$) of 0, 0.08, 0.22, 0.58, 2.35, 8.46, 28.6, 42.8, 133.4, and eleventh column is the

derivative of an amorphous reference spectrum taken at 50 K.

Figure 4. Band depth correction factor vs. fraction amorphized during irradiation of crystalline H₂O with 10 keV electrons

Figure 4 - 10 K.txt - the first column is amorphous fraction and the second column is the normalized band depth at 10 K.

Figure 4 - 30 K.txt - the first column is amorphous fraction and the second column is the normalized band depth at 30 K.

Figure 4 - 50 K.txt - the first column is amorphous fraction and the second column is the normalized band depth at 50 K.

Figure 5. Infrared spectra of HDO and H₂O absorption bands of crystalline H₂O sample before irradiation, after irradiation, and after irradiation and subsequent heating and cooling

Figure 5 - HDO.txt - the first column is wavenumber (cm⁻¹), the second column (a) is spectrum before irradiation, the third column (b) is spectrum after irradiating with 10 keV electrons to a fluence of 1×10^{17} electrons cm⁻² at 30 K, and the fourth column (c) is spectrum after heating the irradiated sample to 160 K and recooling it to 30 K.

Figure 5 - Near-IR.txt - the first column is wavenumber (cm⁻¹), the second column (a) is spectrum before irradiation, the third column (b) is spectrum after irradiating with 10 keV electrons to a fluence of 1×10^{17} electrons cm⁻² at 30 K, and the fourth column (c) is spectrum after heating the irradiated sample to 160 K and recooling it to 30 K.

Columns are tab delimited, with a single row descriptive header. Files are best read by importing into Excel, Origin Pro, or similar software.