***G&G* Data Depository:** Additional figures to accompany S. Karampelas et al., "Infrared spectroscopy of natural vs. synthetic amethyst: An update," *Gems & Gemology*, Vol. 47, No. 3, pp. 196-203.

Figure DD-1. This NH_4F-grown synthetic amethyst crystal weighs more than 600 g. These crystals are grown using basal seed plates, and show excellent coloration. Such NH_4F-grown synthetic amethysts are rare. Photo by Alain Cossard.

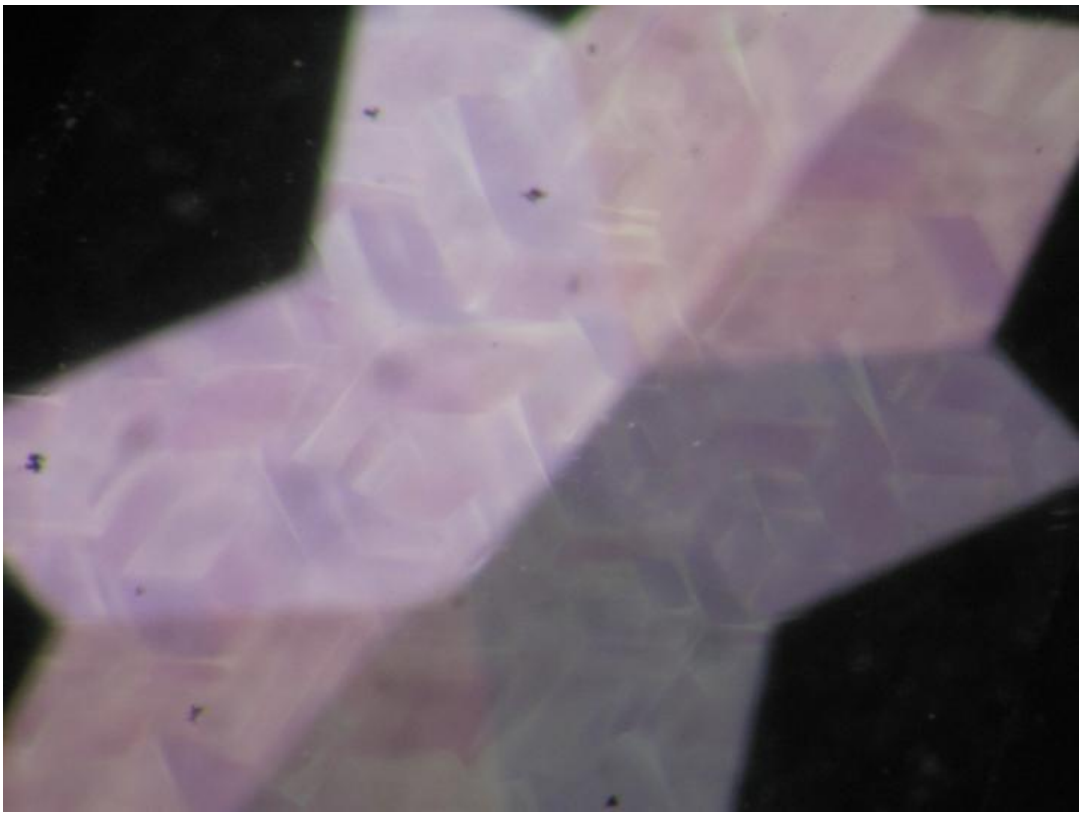

Figure DD-2. Color zoning, a characteristic of NH_4F-grown synthetic amethyst, is not seen in natural amethyst. Photomicrograph by E. Fritsch; image width 1 mm.

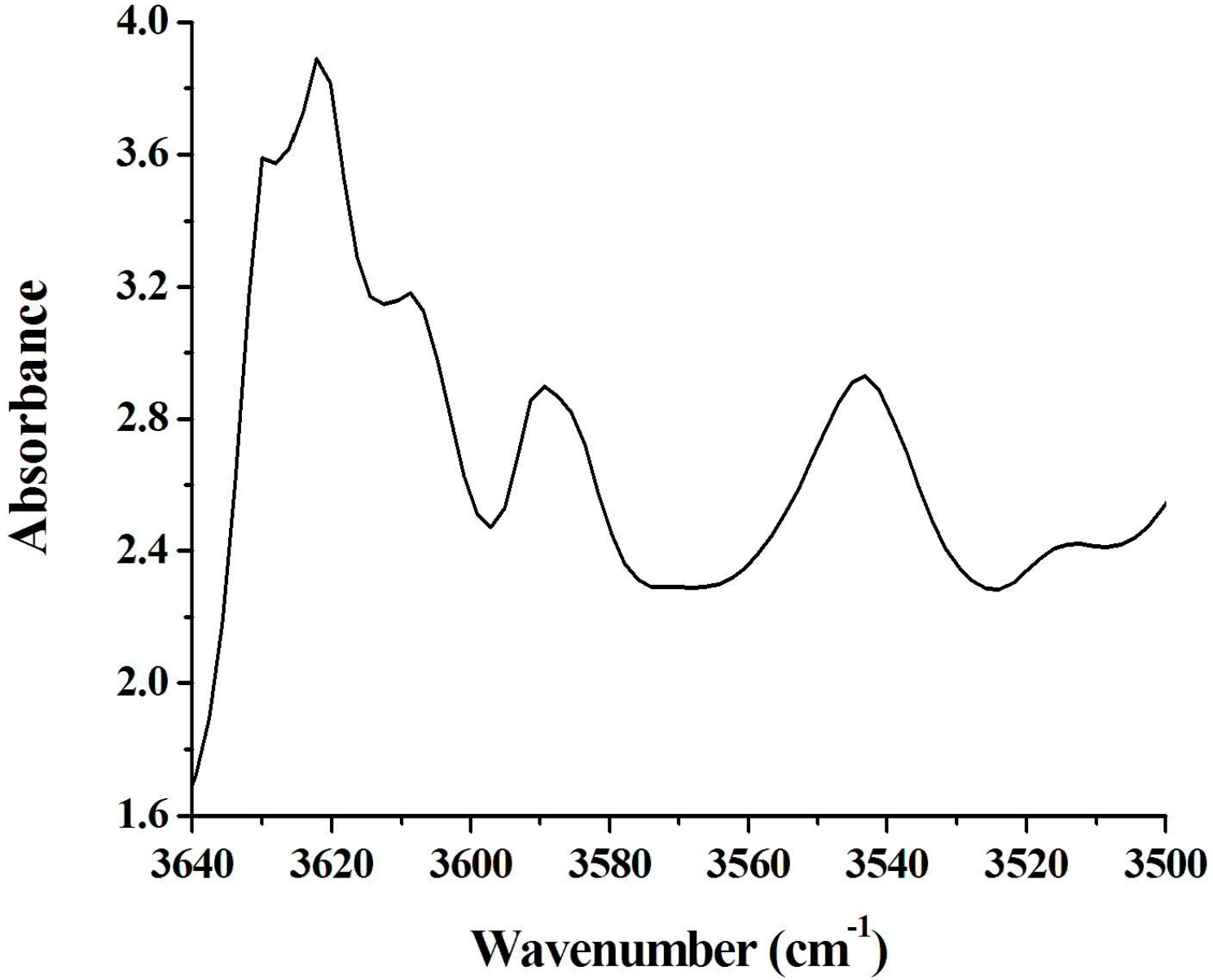

Figure DD-3. The FTIR spectrum of a 3 ct faceted NH_4F-grown synthetic amethyst is shown at 4 cm^{-1} resolution. The absorption pattern is characteristic of this type of synthetic amethyst.

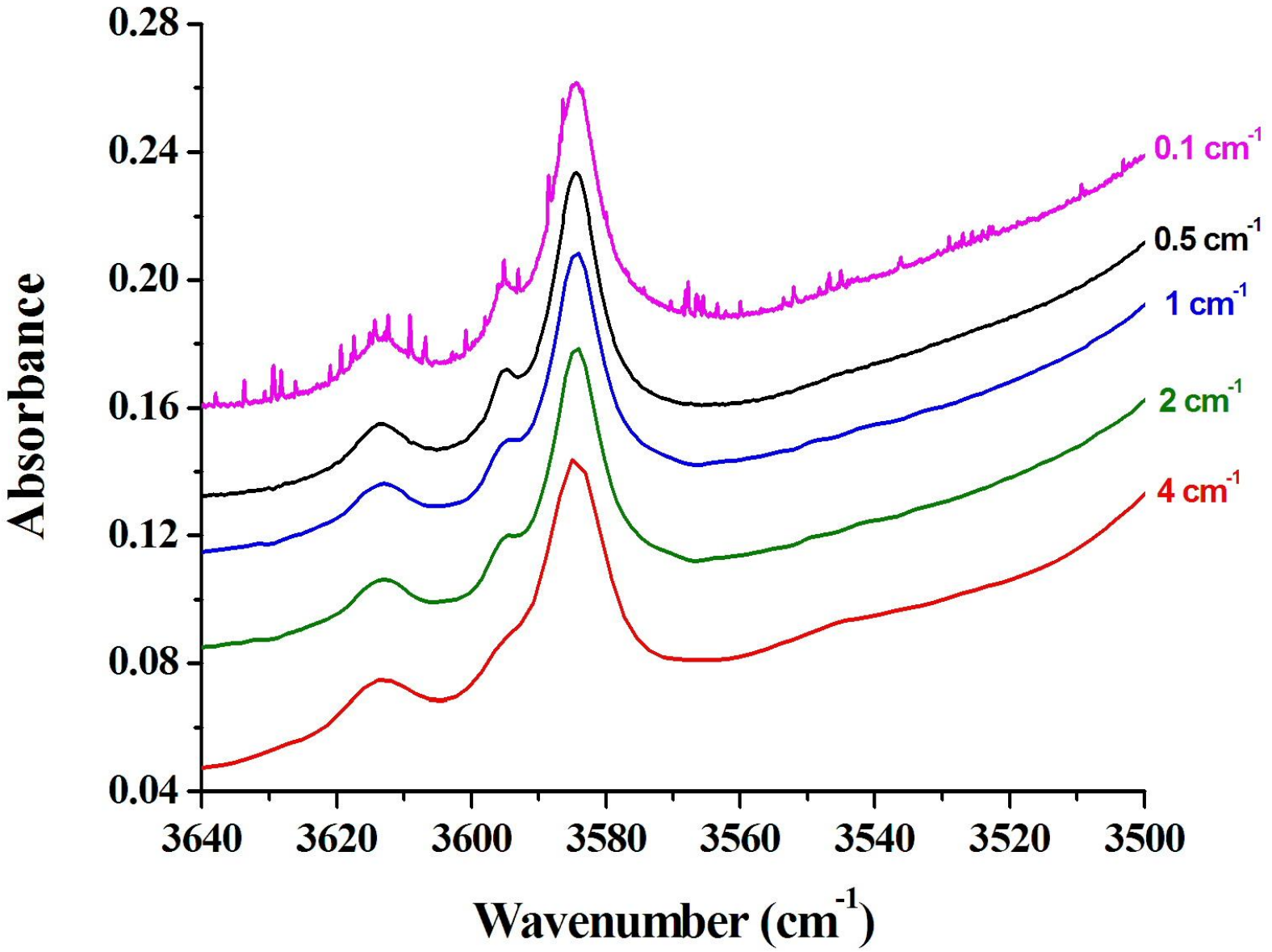

Figure DD-4. These IR spectra were obtained on the same area of a natural amethyst at resolutions of 4, 2, 1, 0.5, and 0.1 cm^{-1}. The 3595 cm^{-1} band assumes its true shape (i.e., it does not narrow any further when the resolution is increased) at 0.5 cm^{-1}. The 3614 cm^{-1} band reaches its true shape at 2 cm^{-1}, while the 3585 and 3543 cm^{-1} bands (not shown) assume theirs at 4 cm^{-1}.

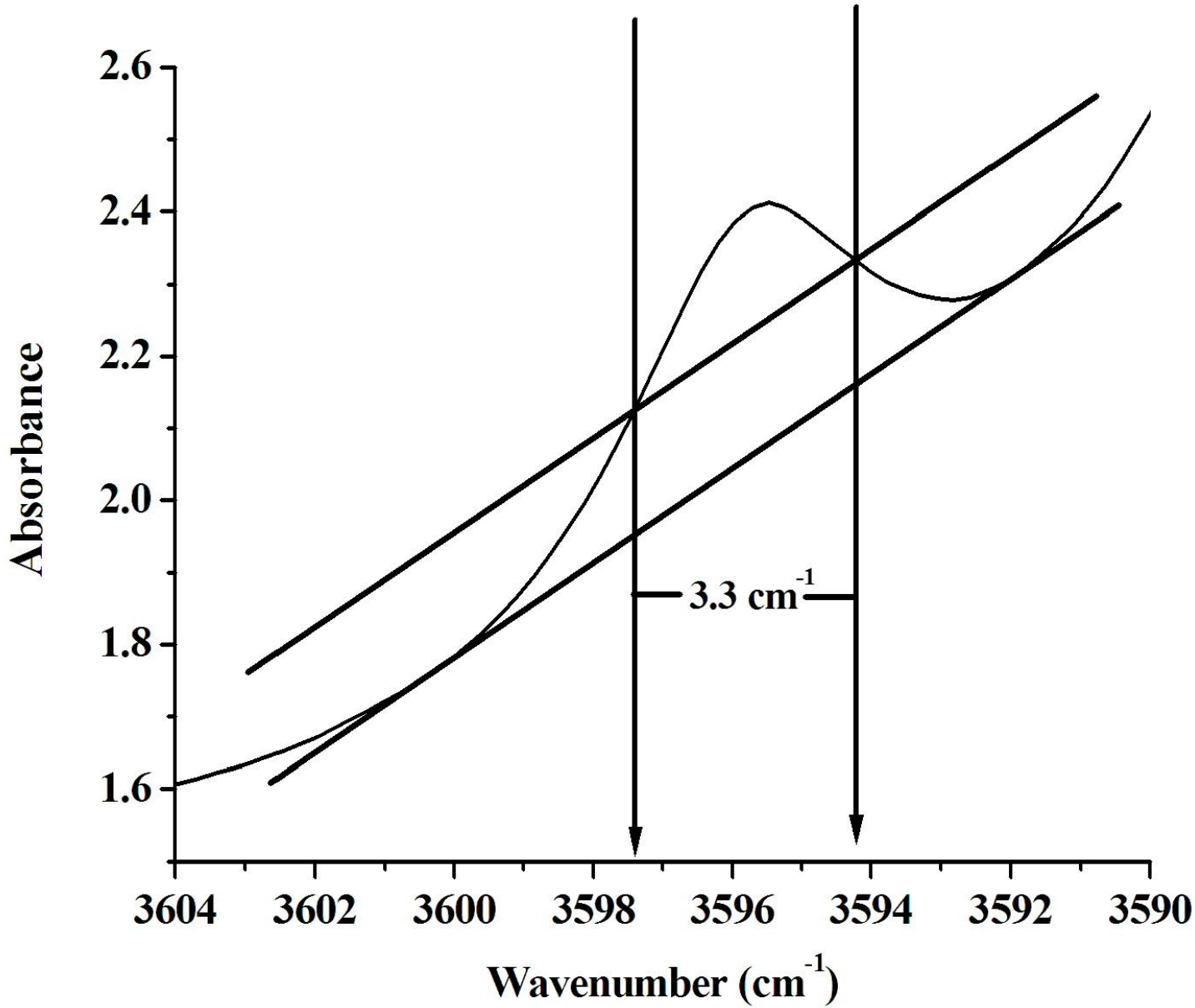

Figure DD-5. The 3595 cm^{-1} band of a faceted 3 ct amethyst from Mexico (Am060) is shown at 0.5 cm^{-1} resolution. To measure the full width at half maximum (FWHM), a linear background passing through both ends of the band is subtracted, the half-height is determined relative to this background, and the half-width is measured parallel to it. The FWHM of this band is 3.3 cm^{-1}.

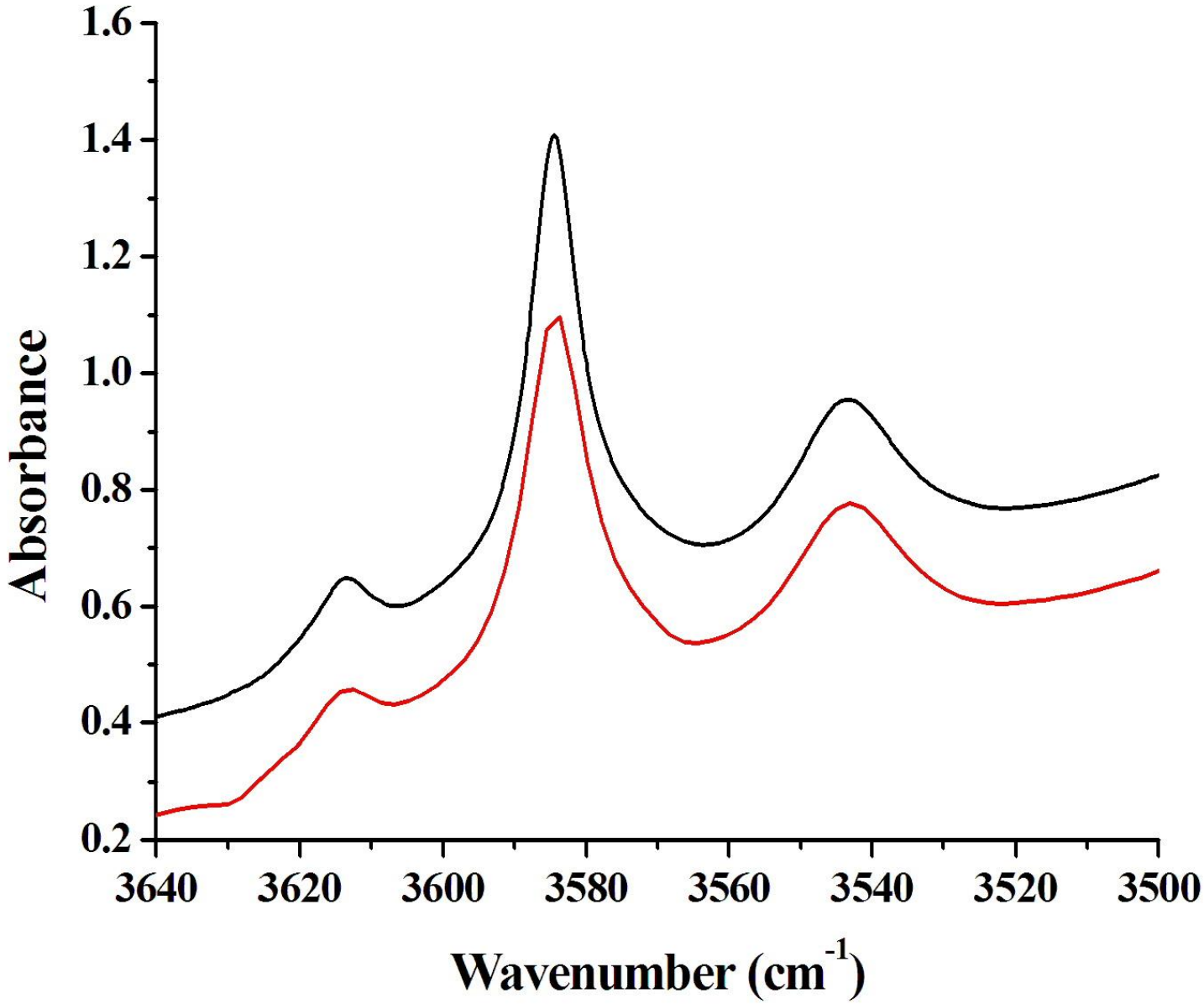

Figure DD-6. Infrared absorption spectra of a faceted 3.1 ct synthetic amethyst from Japan grown in K_2CO_3 solution (sample Q198) are shown at resolutions of 4 cm^{-1} (red) and 0.5 cm^{-1} (black). While the 3595 cm^{-1} band is not observed, the one at 3543 cm^{-1} is well developed.

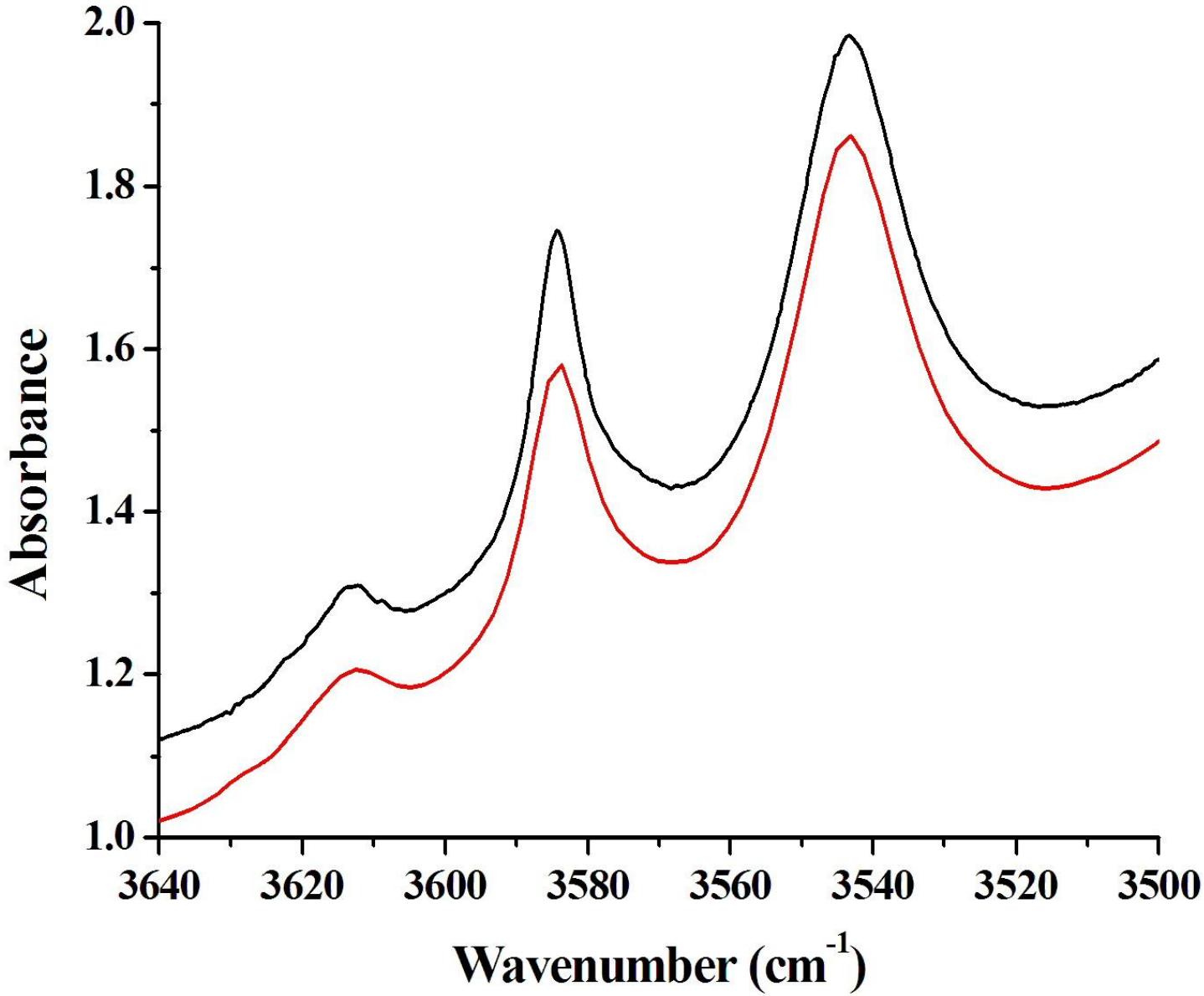

Figure DD-7. Infrared absorption spectra of a rough 8060.0 ct synthetic amethyst from Russia (sample Am1612) grown in K_2CO_3 solution are shown at resolutions of 4 cm^{-1} (red) and 0.5 cm^{-1} (black). The 3595 cm^{-1} band is not observed, while the one at 3543 cm^{-1} is very well developed.

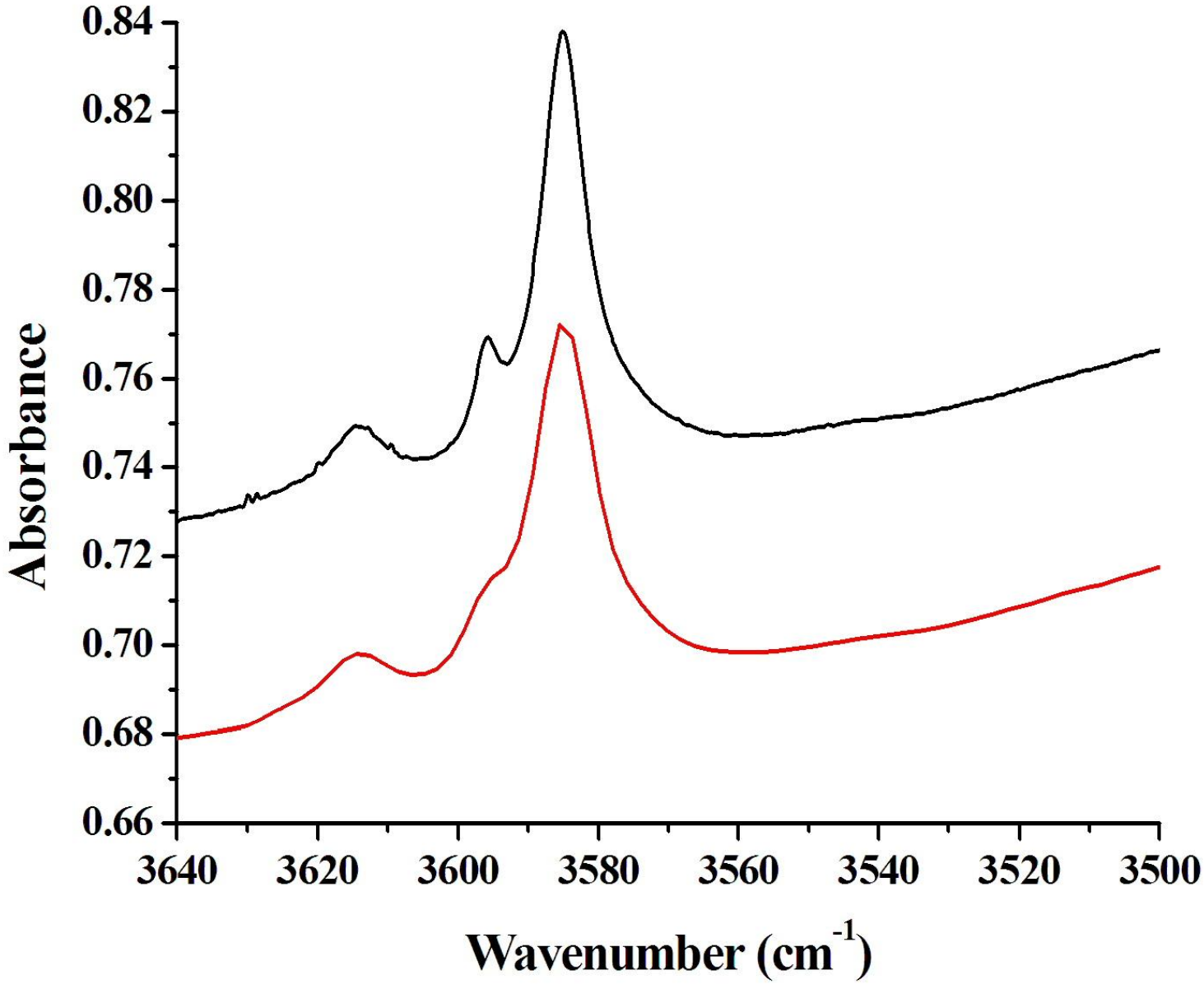

Figure DD-8. Infrared absorption spectra of a 1.0 ct rough amethyst from France (sample Am448) are shown resolutions of 4 cm^{-1} (red) and 0.5 cm^{-1} (black). The 3595 cm^{-1} band is observed at 4 cm^{-1} but very well resolved at 0.5 cm^{-1} (FWHM of 3 cm^{-1}).

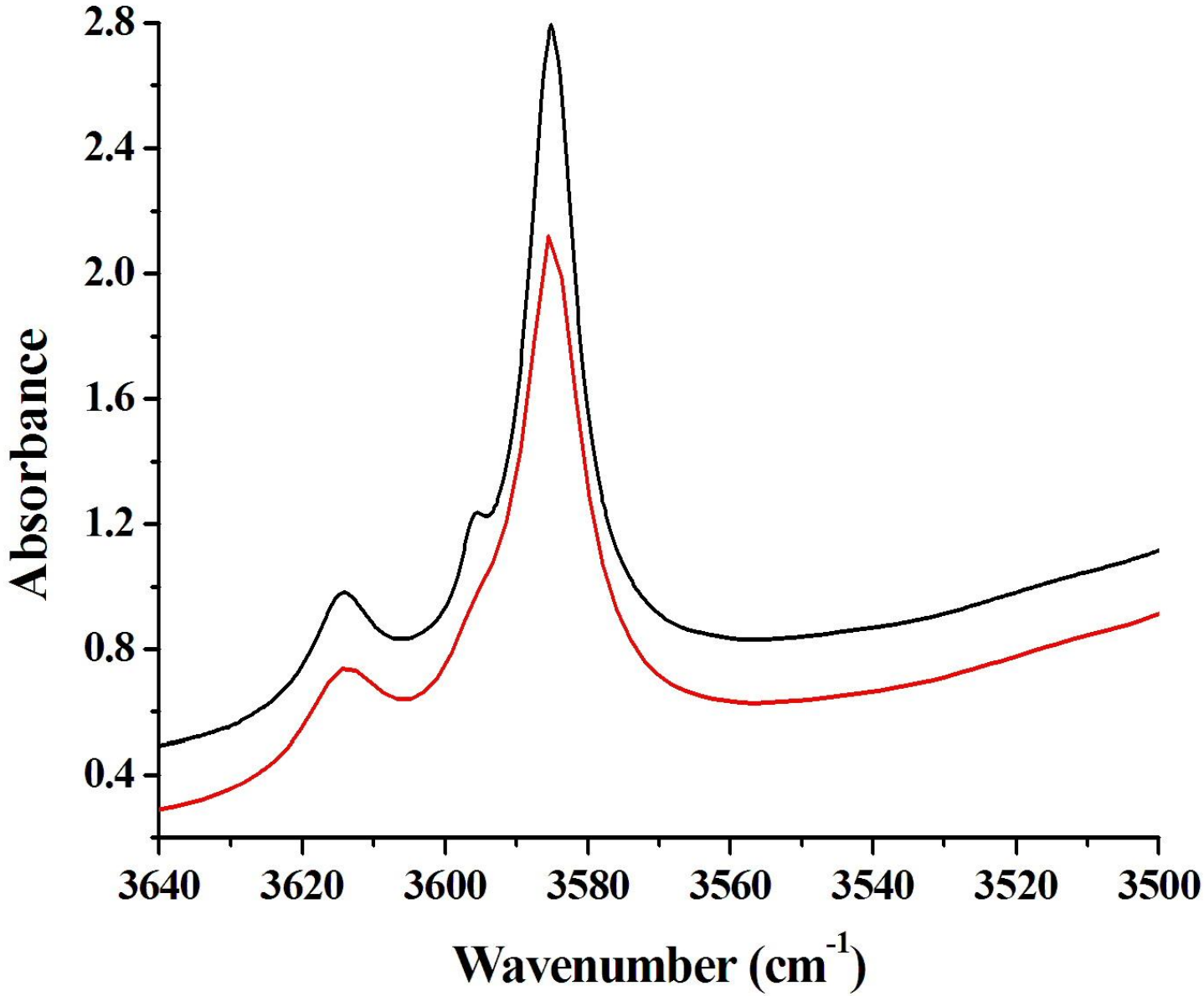

Figure DD-9. The infrared absorption spectra of a 5.3 ct rough amethyst from Brazil (sample Am106) are shown at resolutions of 4 cm^{-1} (red) and 0.5 cm^{-1} (black). While the 3595 cm^{-1} band could be overlooked at 4 cm^{-1} resolution, it is clearly observed at 0.5 cm^{-1} (FWHM of 3.3 cm^{-1}).

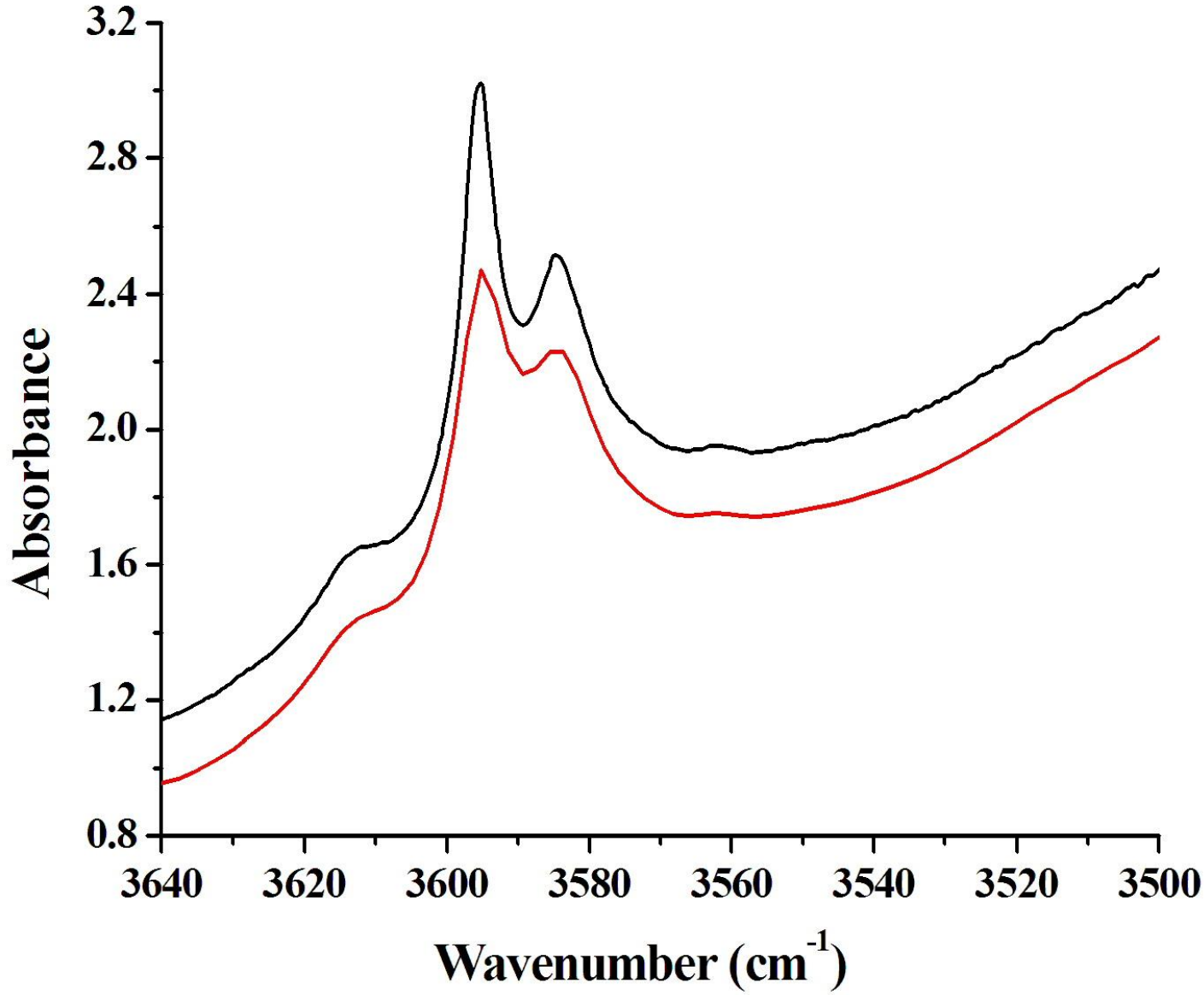

Figure DD-10. Infrared absorption spectra of a rough 1.2 ct amethyst of unknown origin with natural inclusions (sample Am023) are shown at resolutions of 4 cm^{-1} (red) and 0.5 cm^{-1} (black). The 3595 cm^{-1} band is more intense than the one at 3585 cm^{-1} in both spectra, with an FWHM of 5 cm^{-1} at 0.5 cm^{-1} resolution. A shoulder at about 3562 cm^{-1} is observed at both resolutions.