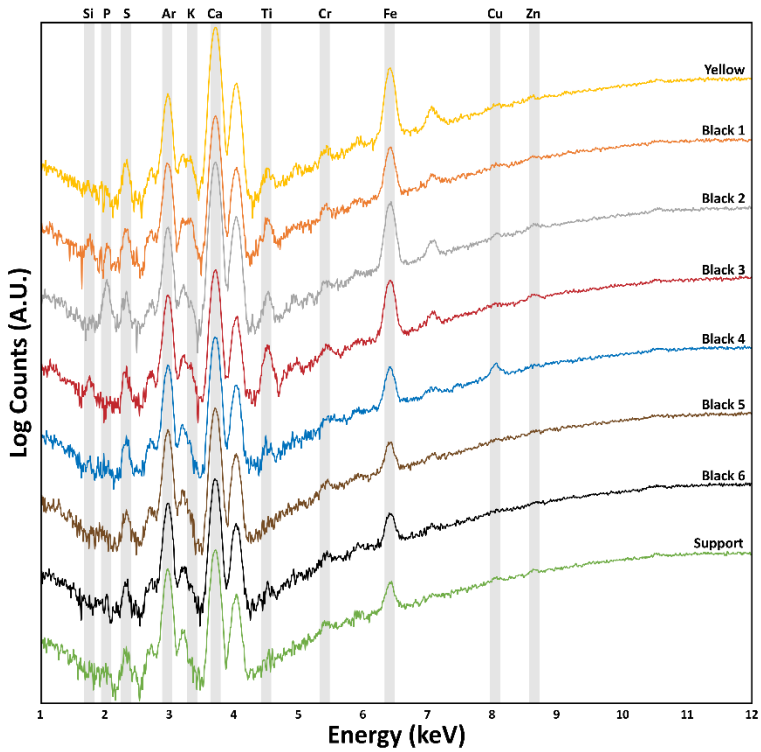

Figure S1. Representative spectra for the paper support and each drawing material identified in *Apparition* created by summing about 2000 pixels from the whole-object MA-XRF scan. The major K-line or L-line is labelled for relevant elements.

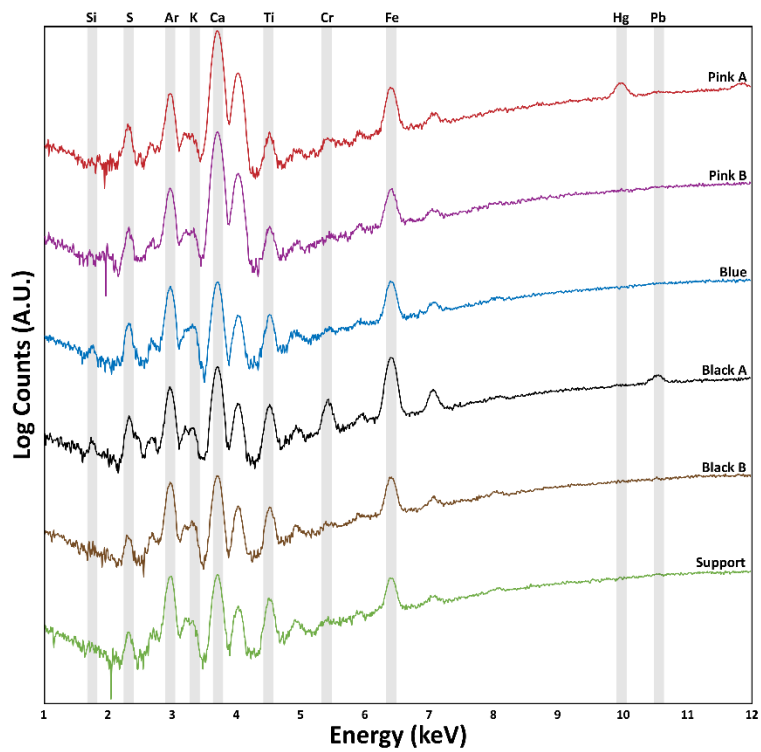

Figure S2. Representative spectra for the paper support and each drawing material identified in *Head within an Aureole* created by summing about 2000 pixels from the whole-object MA-XRF scan. The major K-line or L-line is labelled for relevant elements.

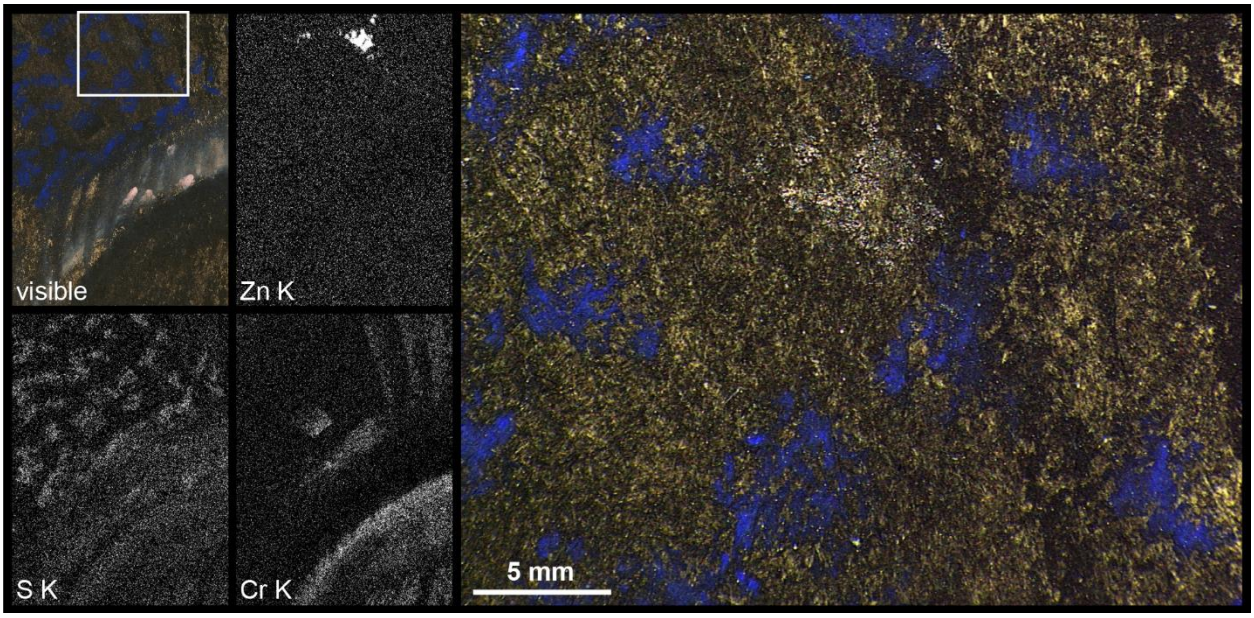

Figure S3. Detail of zinc-containing area in *Head within an Aureole* (left). This spot is not coincident with sulfur or chromium (characteristic of blue and black media, respectively), but rather follows a reflective droplet seen in the magnified image (right).

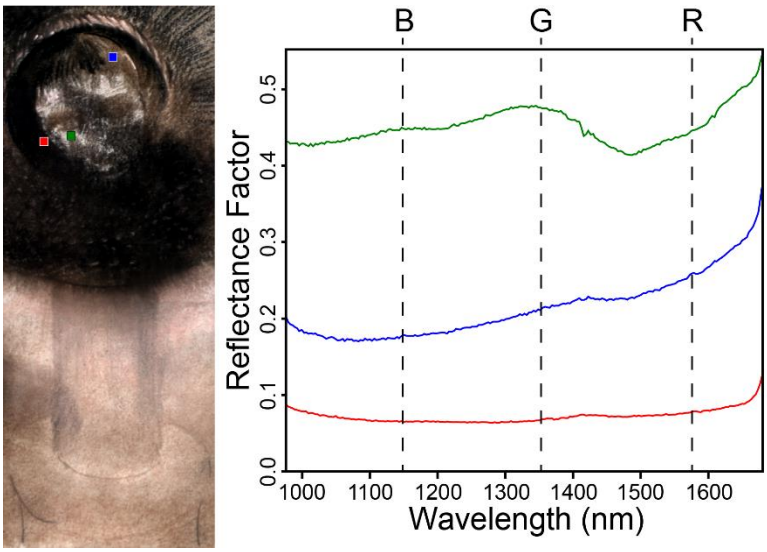

Figure S4. False-color infrared reflectogram created using 1575, 1352, and 1150 nm bands as RGB channels, respectively (left). Plot of diffuse reflectance spectra from the paper (green), black pastel (red) and brown charcoal (blue) explain the color differences observed in the false-color image (right).

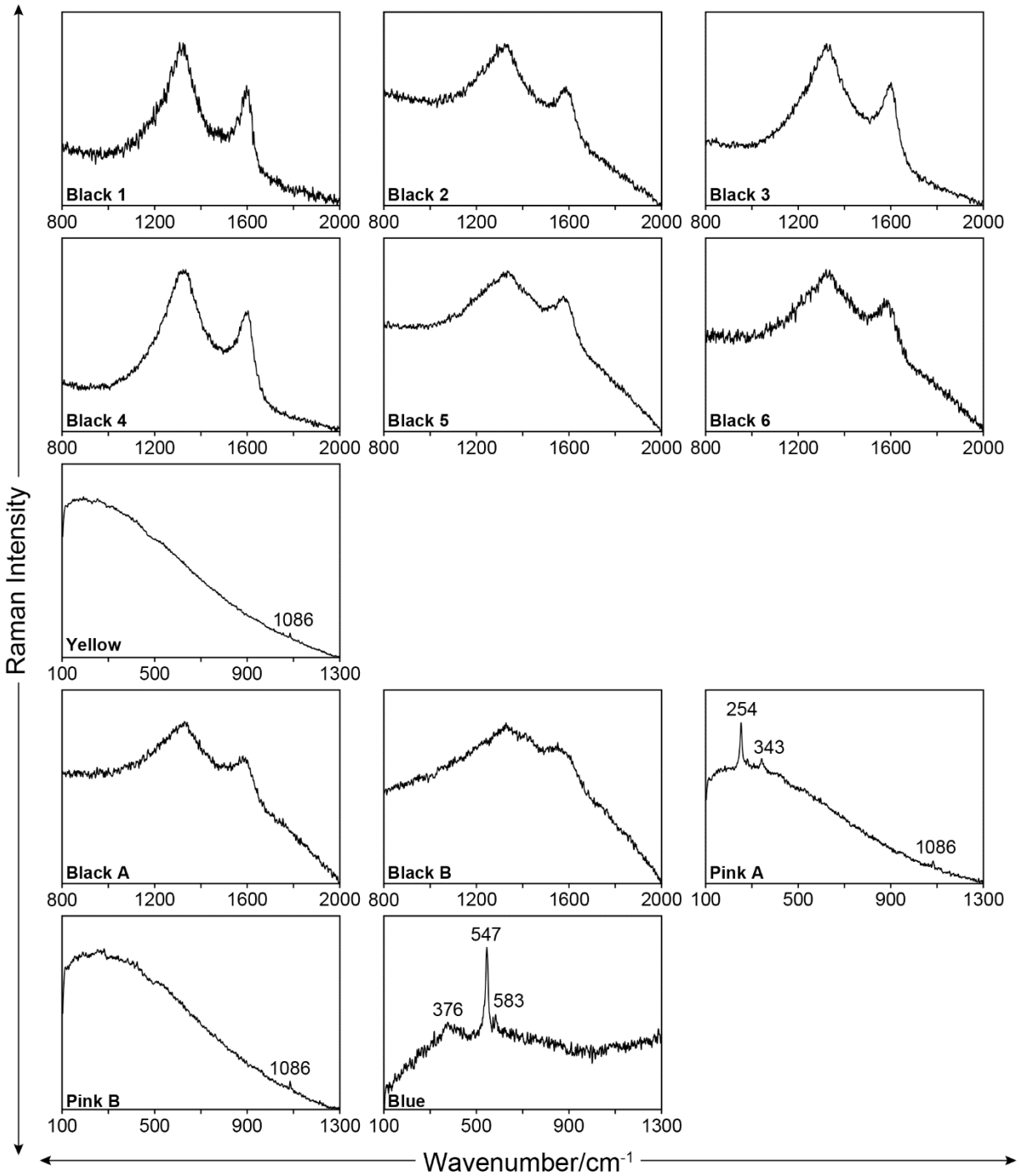

Figure S5. Representative Raman spectra for each material identified in *Apparition* and *Head within an Aureole* as described in Table 1. For colored drawing media, characteristic Raman bands of identified materials are given.

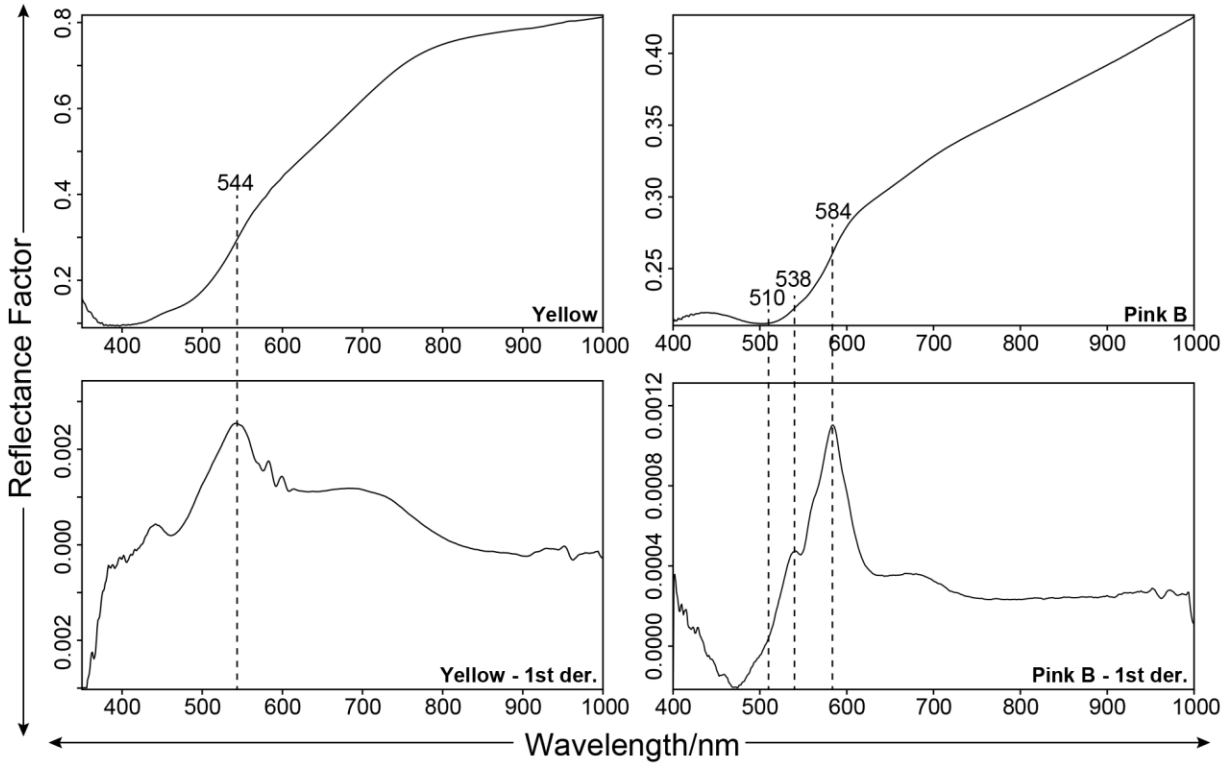

Figure S6. FORS diffuse reflectance spectra for the two materials in *Apparition* and *Head within an Aureole* that were not identified with Raman microspectroscopy (refer to Table 1). The first derivative of each spectrum is shown in the second row.