

Supplementary Materials

Portrait of an Artist at Work: Exploring Max Ernst's Surrealist Techniques

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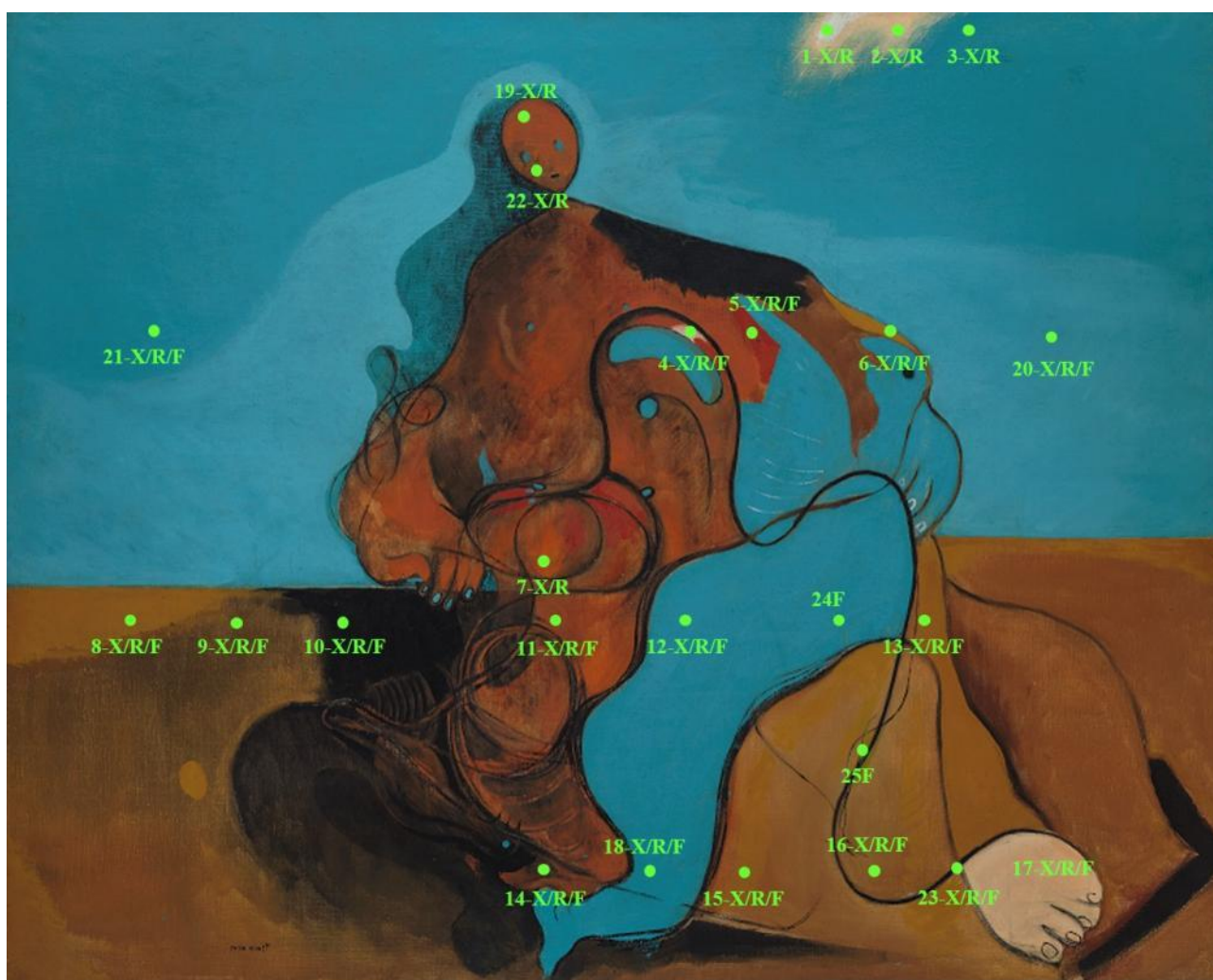


Figure S 1: Points analysed on the *Kiss* by the different techniques. X: XRF, R, Raman spectroscopy, F, ER-FTIR.



Figure S 2: Points analysed on the *Garden airplane trap* by the different techniques. X: XRF, R, Raman spectroscopy, F, ER-FTIR.

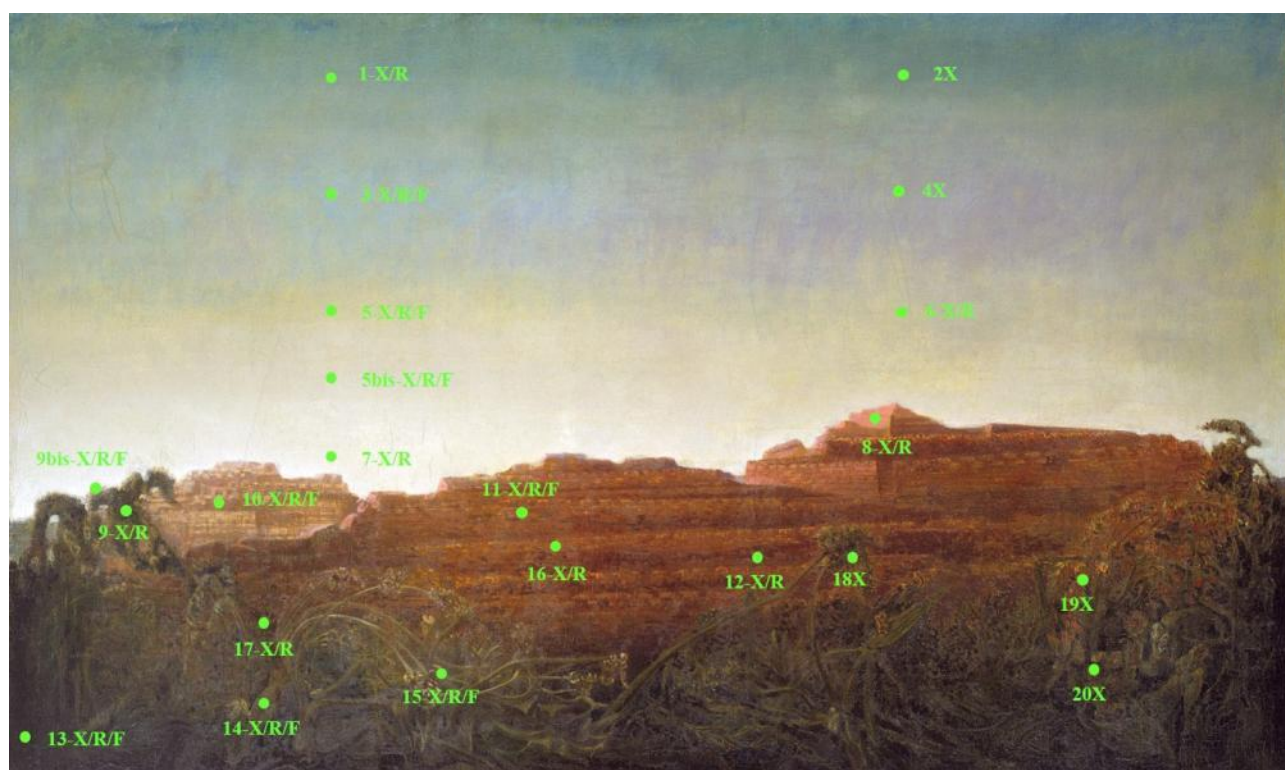


Figure S 3: Points analysed on the *Entire city* by the different techniques. X: XRF, R, Raman spectroscopy, F, ER-FTIR.

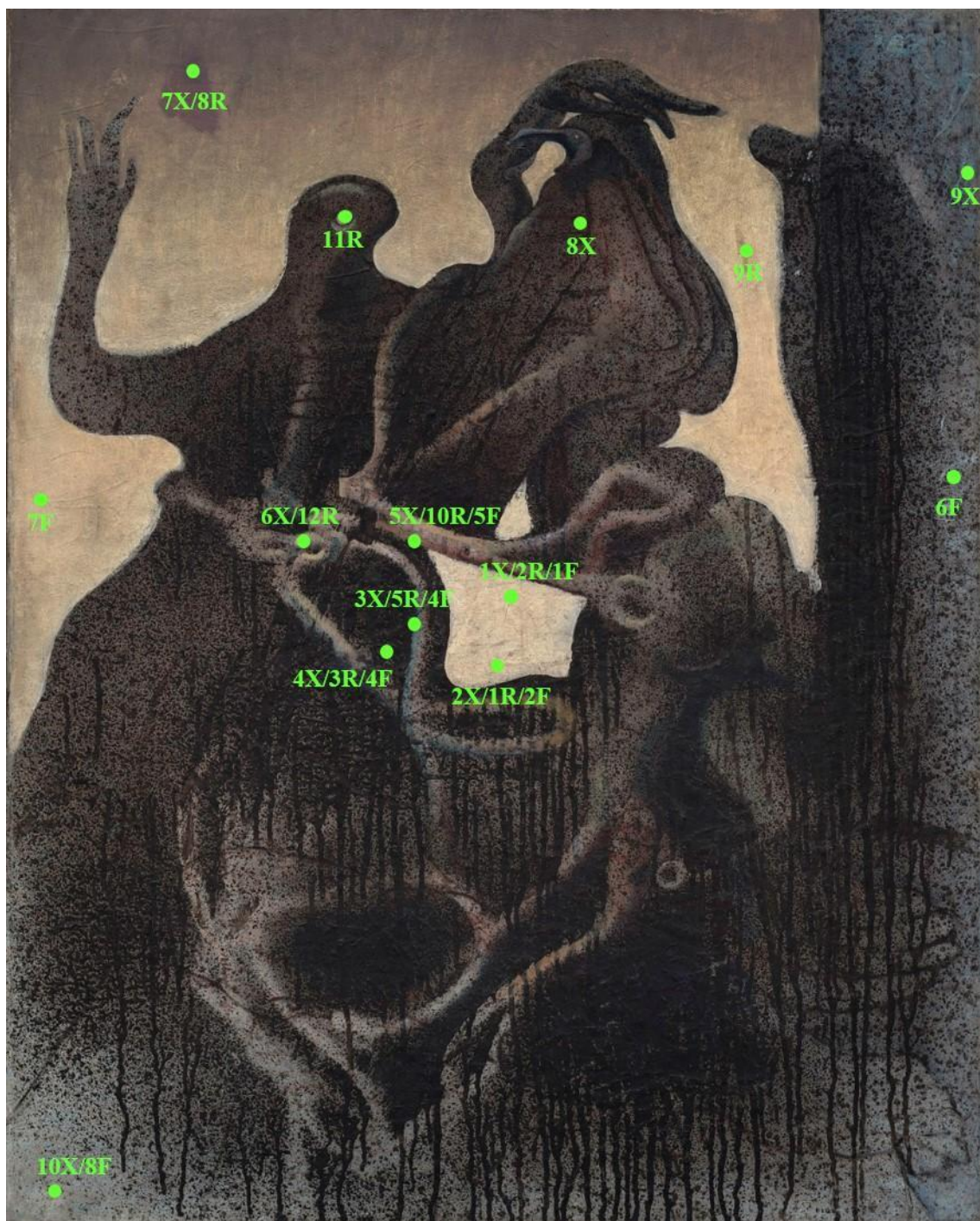


Figure S 4: Points analysed on the *Zoomorphic couple* by the different techniques. X: XRF, R, Raman spectroscopy, F, ER-FTIR.

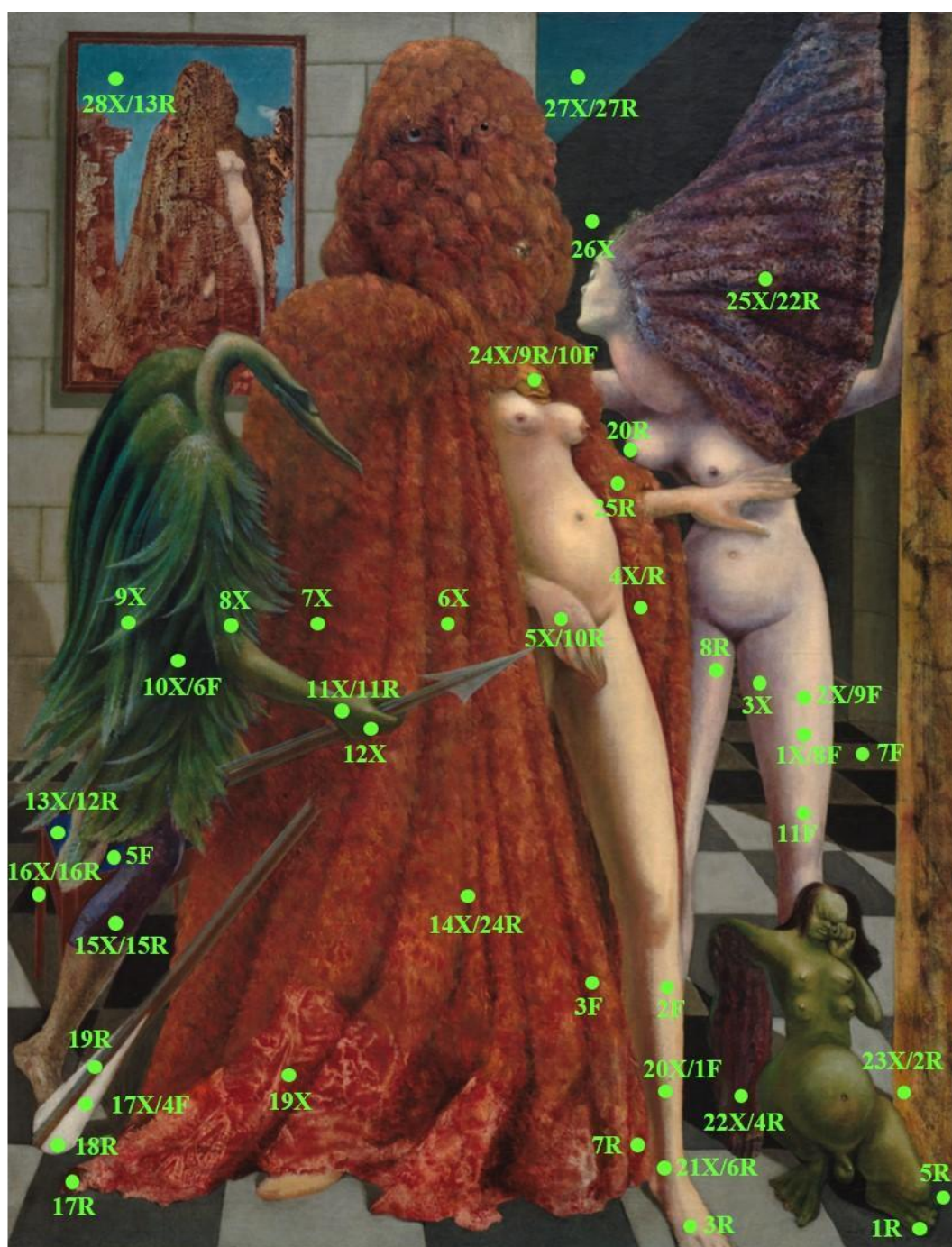


Figure S 5: Points analysed on the *Attirement of the bride* by the different techniques. X: XRF, R, Raman spectroscopy, F, ER-FTIR.

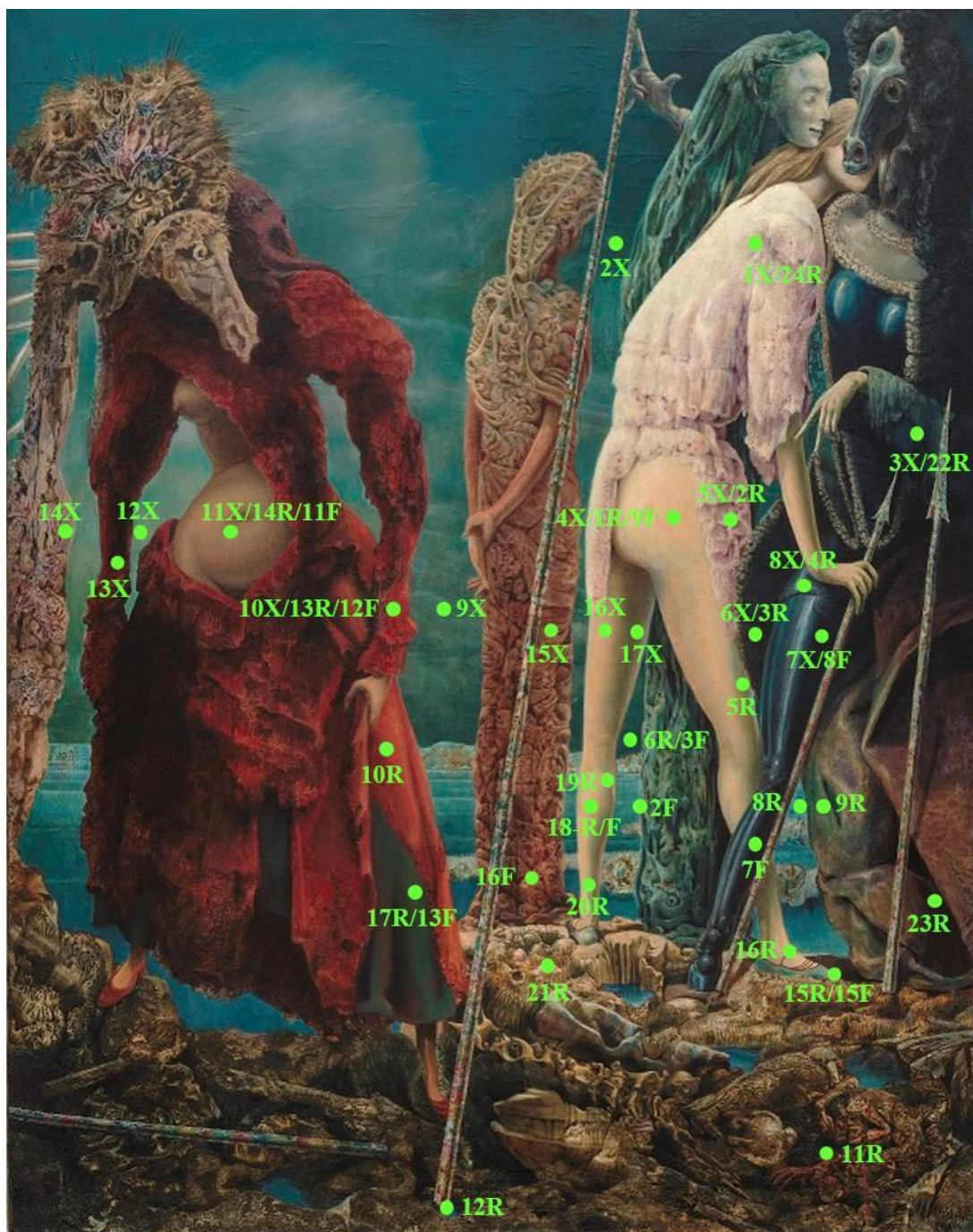


Figure S 6: Points analysed on the *Antipope* by the different techniques. X: XRF, R, Raman spectroscopy, F, ER-FTIR.

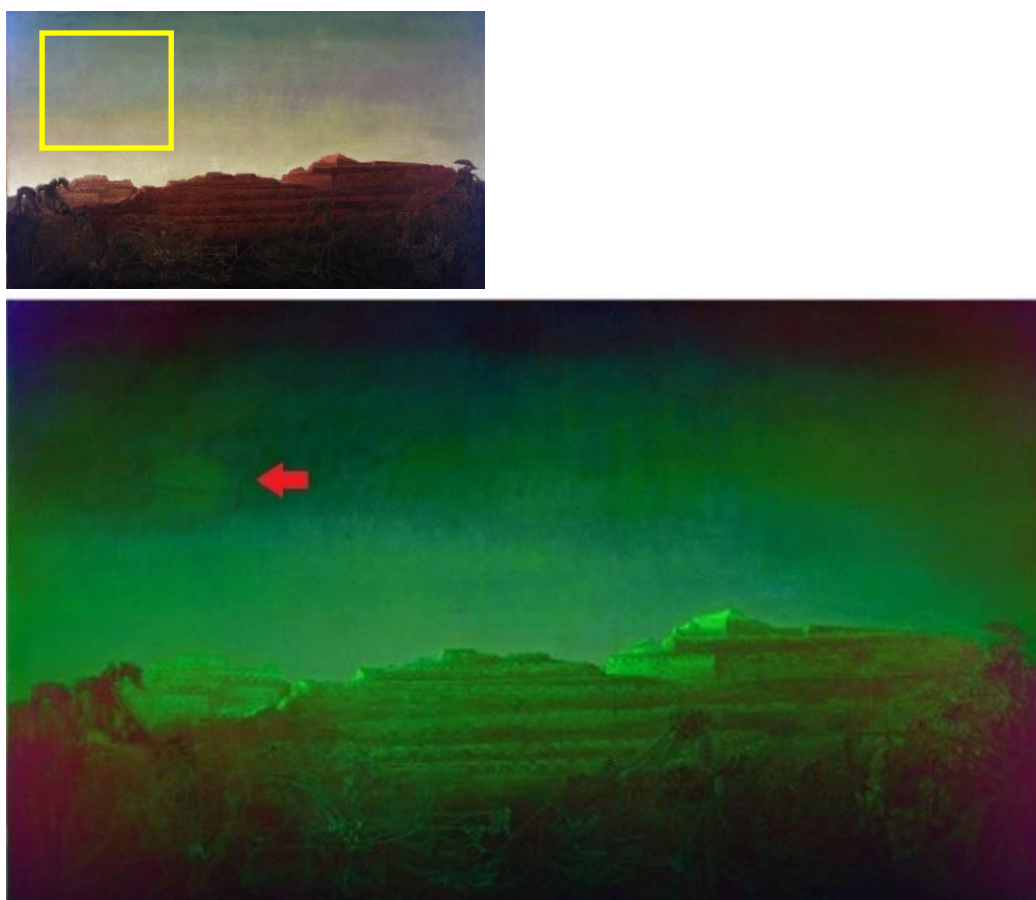


Figure S 7: Chroma DI (1050-650, 650-550, 550-450 nm) of *the Entire city*: the red arrow points at the moon circle, not visible in the RGB image (yellow square)

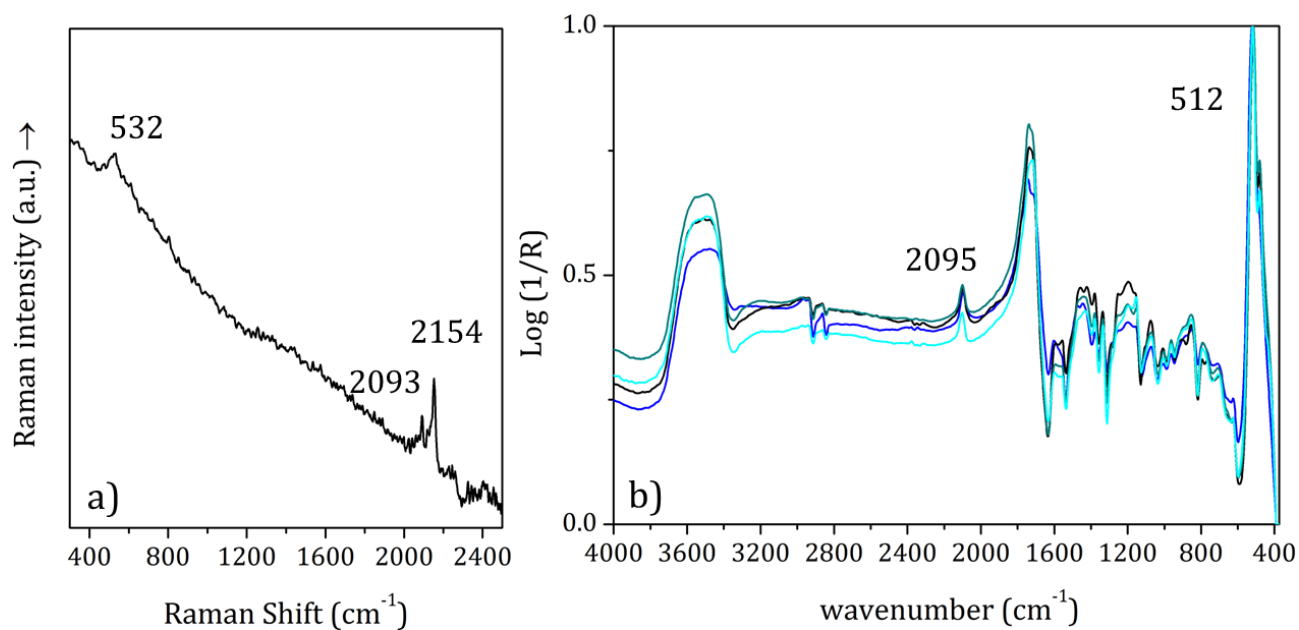


Figure S 8: Spectral features of Prussian blue recognized in *The Kiss*: (a) in-situ Raman spectrum and (b) ER-FTIR spectrum, the absorption at 512 cm⁻¹ is to refer to $\nu(\text{ZnO})$.

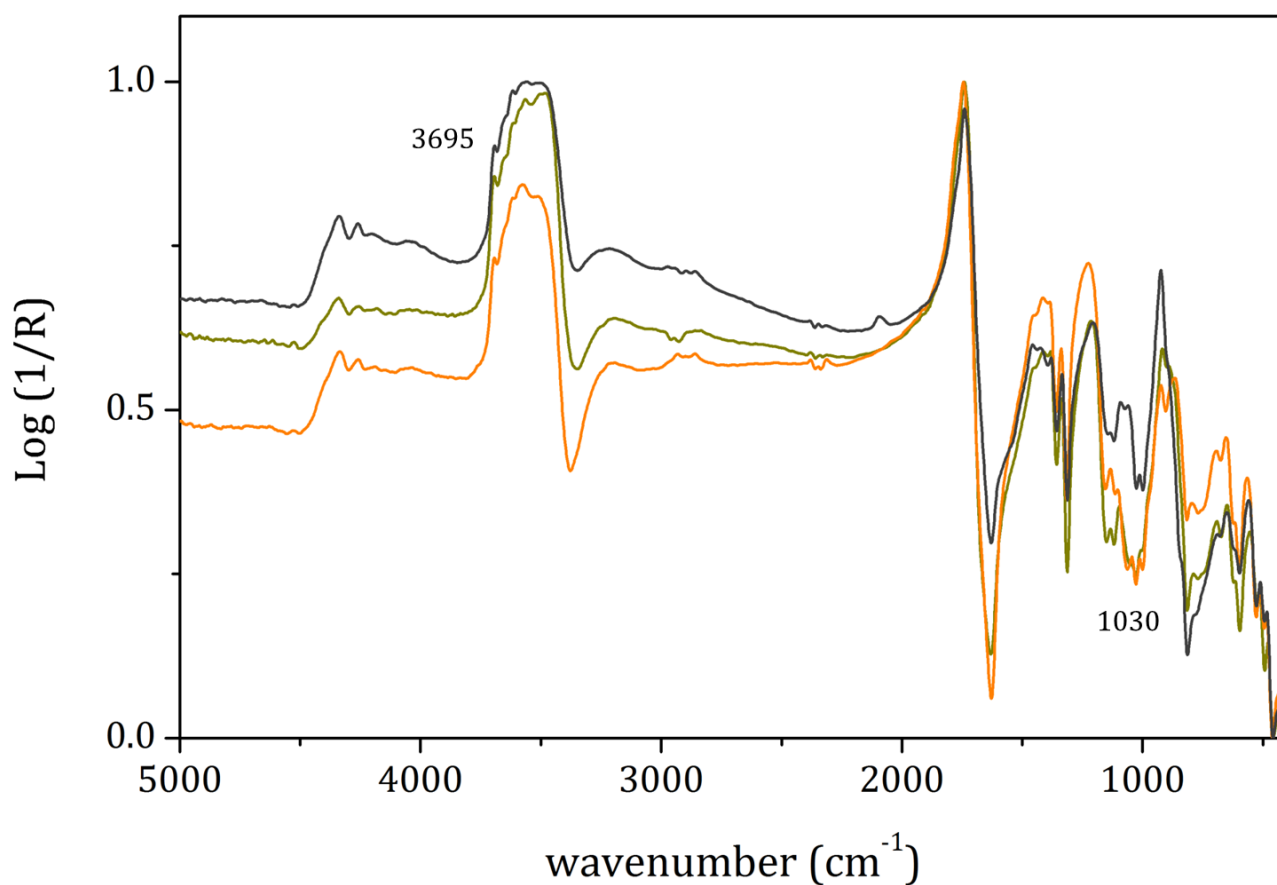


Figure S 9: ER-FTIR spectra of three yellow tones in *The Kiss* which show the presence of silicates

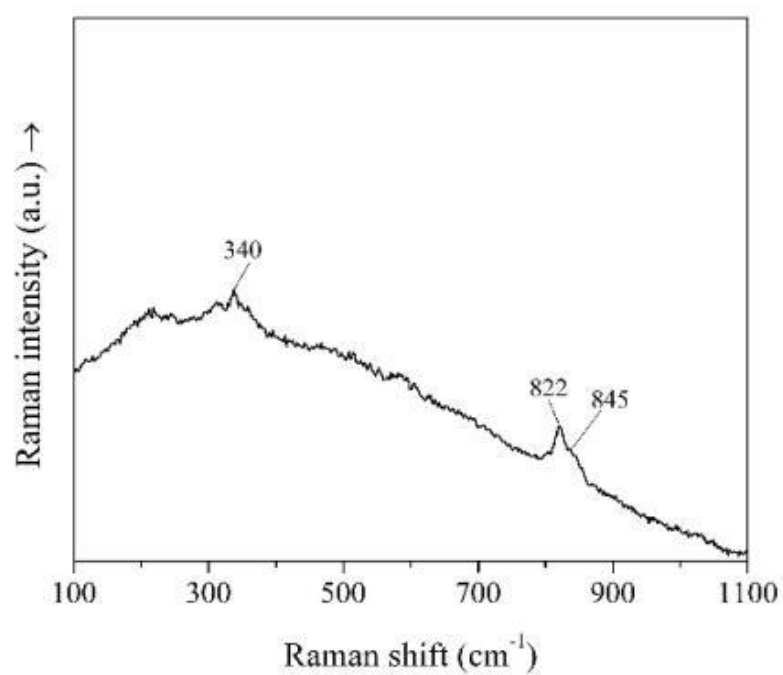


Figure S 10: In-situ Raman analysis of *the Kiss* identifying chrome yellow orange

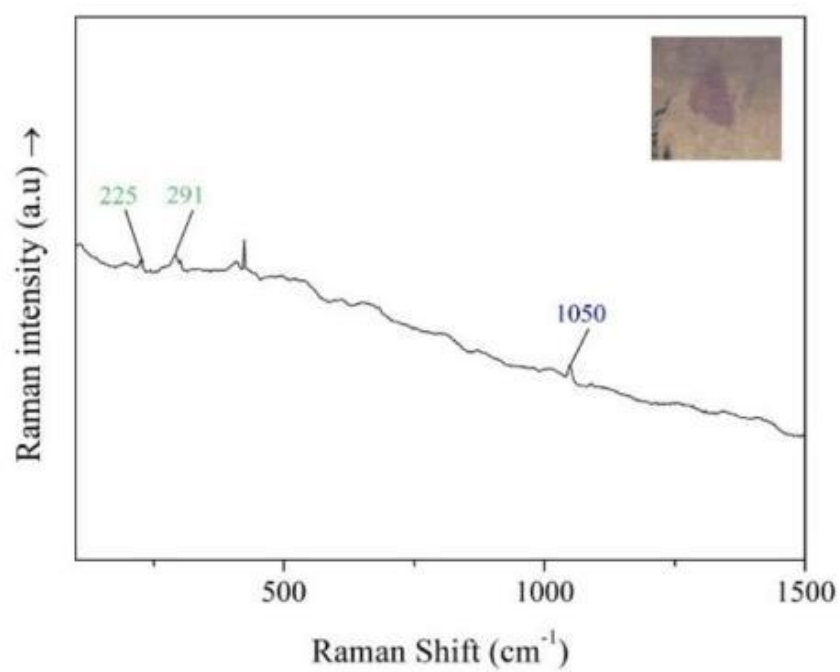


Figure S 11: In-situ Raman analysis of the *Zoomorphic couple* identifying iron oxide (green peaks) and lead white (blue peak)

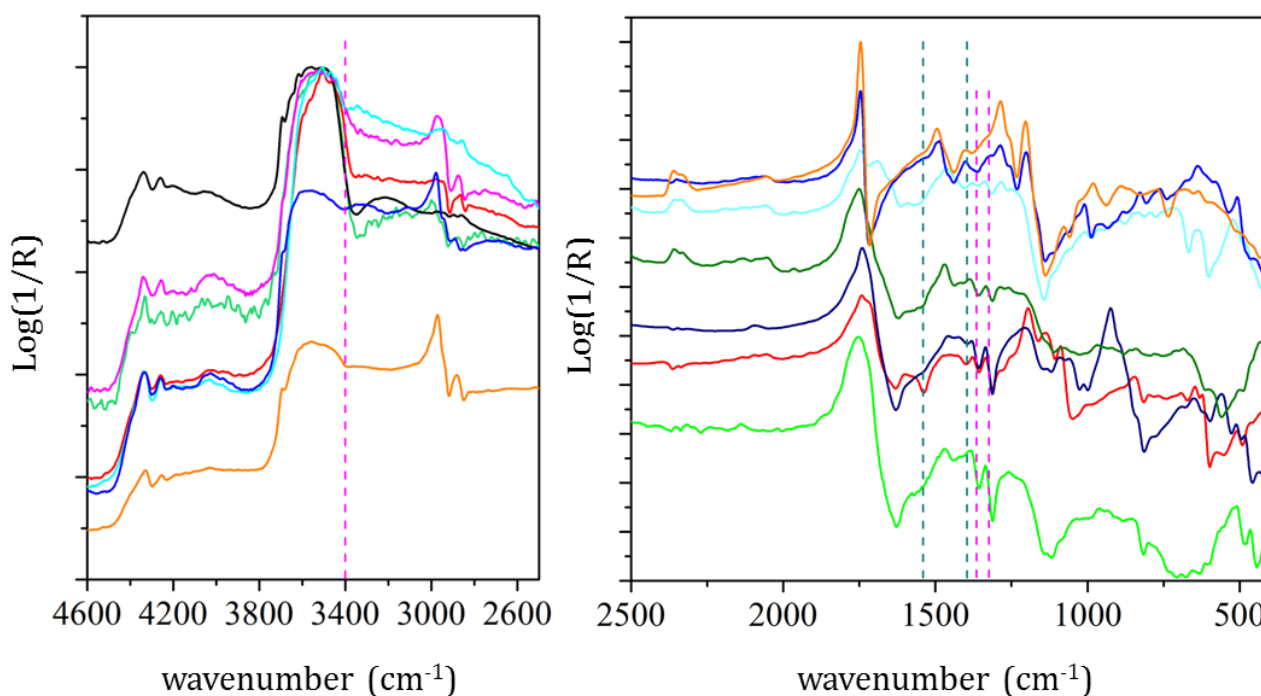


Figure S 12: ER-FTIR reflection spectra showing the presence of alteration products in AP (green lines), KI (black line) ZC (red for the spectrum collected in dark tones, cyan for the one collected on light tones), VS (magenta line), GA (blue line) and EC (orange line). Zinc oxalate (magenta dashed line) was identified by the typical inverted doublet at ≈ 1364 and ≈ 1320 cm^{-1} , attributable to the $\nu_s(\text{CO})$ and by the derivative $\nu(\text{OH})$ at ≈ 3400 cm^{-1} [1]. Instead, Zn metal soaps, probably zinc stearate (dark cyan dashed line), were recognized by the sharp inverted bands at ≈ 1540 and ≈ 1395 cm^{-1} which can be reasonably attributed to the asymmetric and symmetric stretching of the carboxylate group in zinc stearate [2, 3, 4, 5].

References:

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