

Ground layer	not examined	white (large proportions of lead white)	- calcium carbonate - only a few reddish grounds on early works contain red lead, lead white and calcium carbonate
<i>Imprimatura</i>	not examined	grey (lead white, calcite, carbon black of vegetable origin)	white and reddish (lead white, red lead)
Underdrawing	no underdrawing detectable (personal communication R. Kasl)	no underdrawing detectable	liquid and dry black media, 'red chalk'
Pigments	not examined	lead white, ochre, vermilion, red iron oxide, red lake pigment, azurite, ultramarine, indigo, copper green, carbon black of vegetable origin	lead white, lead-tin yellow, ochre, vermilion, red iron oxide, red lake pigment, azurite, ultramarine, copper green, carbon black of vegetable origin et al.

Results

- The Indianapolis painting was painted on beech wood with an earliest felling date of 1524. The support of the Vienna version is oak. Oak panels are exceptional in the oeuvre of Lucas Cranach the Elder.

- The lead white ground and the grey *imprimatura* of the Vienna painting have so far not been identified on any other painting by Lucas Cranach the Elder.

- While Cranach's large panels usually show some form of underdrawing no preliminary drawing can be detected on both versions.

- Although the pigments identified on the Vienna version represent Cranach's palette it is striking that azurite, ultramarine and indigo have been used simultaneously on this panel. According to present results of analysis Cranach's use of ultramarine was restricted to a short period after his visit to the Netherlands in 1508. Indigo is noted in Cranach's invoices but until now it has not been identified on any panel painting.

Although lead tin yellow is the predominant yellow pigment on Cranach's panel paintings only yellow ochre has been identified on the Vienna version.

Conclusion

The obvious differences between the *Crucifixion* sold in Vienna and Cranach's characteristic practices leave no doubt that this painting has not been produced in his workshop (cf. Heydenreich 2000, p. 35, 66, 125, 131). Since the Vienna version depicts the same subject matter and the coat of arms almost identical it can be concluded that it is a later copy of the Indianapolis painting.