



**Fig. 7** Elemental maps (ca.  $25 \times 23 \text{ cm}^2$ ) of Ca, Fe, Hg and Pb. Pb was not excited by means of the NSLS scanner. The images were recorded at different lateral resolutions from 0.25 mm per pixel (NSLS) over 0.5 mm per pixel (DESY) to 1.0 mm per pixel (mobile scanner).

surface structure of the ground layer, which itself follows the slight undulations of the wood grain. Because the face of the underlying portrait was painted using the strongly X-ray absorbing pigment lead white, the Pb distribution maps provide information most directly comparable to that of the

X-ray radiographs (Fig. 1b and h). Again the Pb-map obtained with the DESY scanner features a better contrast than that obtained by the X-ray tube based scanner.

The Hg-L maps obtained by both synchrotron-based scanners are of comparable quality, with quite a few details of the