

Plate 1. Stereoscopic image (400 \times 400 $\mu m)$ of clinoptilite crystals (view with red/green spectacles).



(a)



(b)

Plate 2. BSE images of igneous rock: (a) original monochrome image; (b) same image with grey scale converted to 'thermal' colours. (See Section 4.7.2.)





Plate 3. Orientation map of calcite grains in marble derived from EBSD patterns; misorientations across boundaries coloured according to scale shown (0–90°). (See Section 4.8.3.) (By courtesy of G. Lloyd.)



(a)



(b)

Plate 4. 'Real' colour SEM cathodoluminescence images obtained by combining images recorded with red, green and blue filters (See Section 4.8.4.): (a) quartz-cemented sandstone $(700 \times 500 \,\mu\text{m})$ with two episodes of fracturing revealed by dark blue and red luminescent quartz infilling (Markowitz and Milliken, 2003); (b) haloes in quartz ($550 \times 350 \,\mu\text{m}$) revealing radiation damage caused by radioactive elements in small inclusions (Oliveira *et al.*, 2003).





(b)

Plate 5. Monazite grain: (a) X-rays maps for Th, U and Pb; (b) map showing colour-coded age (Ma) derived from concentrations of the same elements (scale bar = $20 \,\mu$ m). (See Section 6.5.) (Goncalves, Williams and Jercinovic, 2005.)



Plate 6. X-ray map of Ca in granulite, using 'thermal' colour scale, showing sillimanite (dark), zoned plagioclase, and symplectites $(1 \times 1 \text{ mm})$. (See Section 6.7.) (By courtesy of M. Jercinovic and M. Williams.)



Plate 7. Composite X-ray map $(16 \times 25 \text{ mm})$ of lunar meteorite consisting of regolith breccia matrix (bottom) and olivine-gabbro fragment (top); colours determined by amounts of Mg (red), Fe (green), and Ca (blue); principal phases: olivine – yellow, pigeonite – orange, augite – purple, feldspar – blue, various Fe-rich phases – green (Fagan *et al.*, 2003). (See Section 6.7.) (By courtesy of M. Killgore and T. Fagan.)



Plate 8. X-ray maps of garnet $(450 \times 450 \,\mu\text{m})$ showing Mn distributions in serial sections (~40 μm slices); colour scale: blue-green-yellow-orange-red (Spear & Daniel, 1998). (See Section 6.10.) (By courtesy of F. S. Spear.)