Plate 13. (a) The tidal stress-field produced by 1° of nonsynchronous rotation (Greenberg et al., 1998) shows a good fit to the locations and orientations of several lineaments. The lineaments are numbered (1) Astypalaea, (2) Thynia, (3) Libya, (4) Agenor, (5) Udaeus, and (6) Minos Lineae. A better fit is produced if fractures are back-rotated westward in longitude relative to the stress field [by an amount given by their color coding, as defined in (b)] such that their orientations are perpendicular to the direction of maximum tension, providing a possible original longitude for the creation of the crack. (b) The global pattern of lineaments based on Galileo observations illustrates a range of orientations that cannot all be fitted to the same stress template, such as that shown in (a), because they formed at different times. The lineaments are color coded to indicate how far westward they must be back-rotated in order to form perpendicular to the maximum tension produced by the stress of nonsynchronous rotation [map courtesy of Z. Selvans (Selvans et al., in preparation)]. Some of the numbered lineae in (a) are numbered accordingly in (b).

Accompanies chapter by Kattenhorn and Hurford (pp. 199–236).