

Reading assignments Stan Hart (03/03/1998)

**The following papers will be discussed on Tuesday,
March 17**

1. Hoffman, A., *Mantle geochemistry: the message from oceanic volcanism*, Nature, **385**, p. 219-229, 1997.
2. Carlson, R.W. *Mechanisms of Earth differentiation: consequences for the chemical structure of the mantle*, Reviews of Geophysics, **32**, p. 337-362, 1994. (Concentrate on the first section of the paper, pp338-345, titled "Differentiation accompanying planet formation", with the main questions to be asked being *Are the upper and lower mantles the same chemical composition or not?* and *Why is this issue important for the discussion of the scale of mantle convection?.*)
3. Javoy, M., *The integral enstatite chondrite model of the Earth* Geophys. Res. Lett., **22**, 2219-2222, 1995.

N.B. There is no class on Tuesday March 10th: instead of class, study carefully the Davies & Richards '92 (see last week's assignment) and the Carlson '94 and Hoffman '97 (see below) papers. These are good overviews and we'll come back to them several times during this course.

Other useful review articles that I can recommend are:

- Silver, Carlson, and Olson, *Deep slabs, geochemical heterogeneity, and the large scale structure of mantle convection: investigation of an enduring paradox*, Rev. Earth Planet. Sci. **16**, 477-541, 1988.
- Montagner *Can tomography tell us anything about convection in the mantle?* Rev. Geophys., **32**, 115-138, 1994.