

Reading assignment Louise Kellogg and Stein Jacobsen (07/04/1998)

Following are the papers that will be discussed on Tuesday April 14th.

For general reading:

Harper and Jacobsen, Noble gases and earth's accretion, *Science*, 273, 1814-1818, 1996.

If you want some supplementary reading containing more complex models of degassing than are contained in the assigned papers:

- Kellogg and Wasserburg, The role of plumes in mantle helium fluxes, *Earth Planet. Sci. Lett.*, 99, 276-289, 1990.
- Porcelli and Wasserburg, Mass transfer of xenon through a steady-state upper mantle, *Geochim. Cosmochim. Acta*, 59, 1991-2007, 1995 (which takes the same approach using Xenon).

Papers to be discussed:

As a pair:

- Allegre, Hofmann, and O'Nions, The argon constraints on mantle structure *Geophys. Res. Lett.*, 23, 3555-3557, 1996.
- Turcotte and Schubert, Tectonic implications of radiogenic noble gases in planetary atmospheres, *Icarus*, 74, 36-46, 1988.

and

- Farley, Natland, and Craig, Binary mixing of enriched and undegassed (primitive?) mantle components (He, Sr, Nd, Pb) in Samoan lavas, *Earth Planet. Sci. Lett.*, 111, 183-199, 1992.