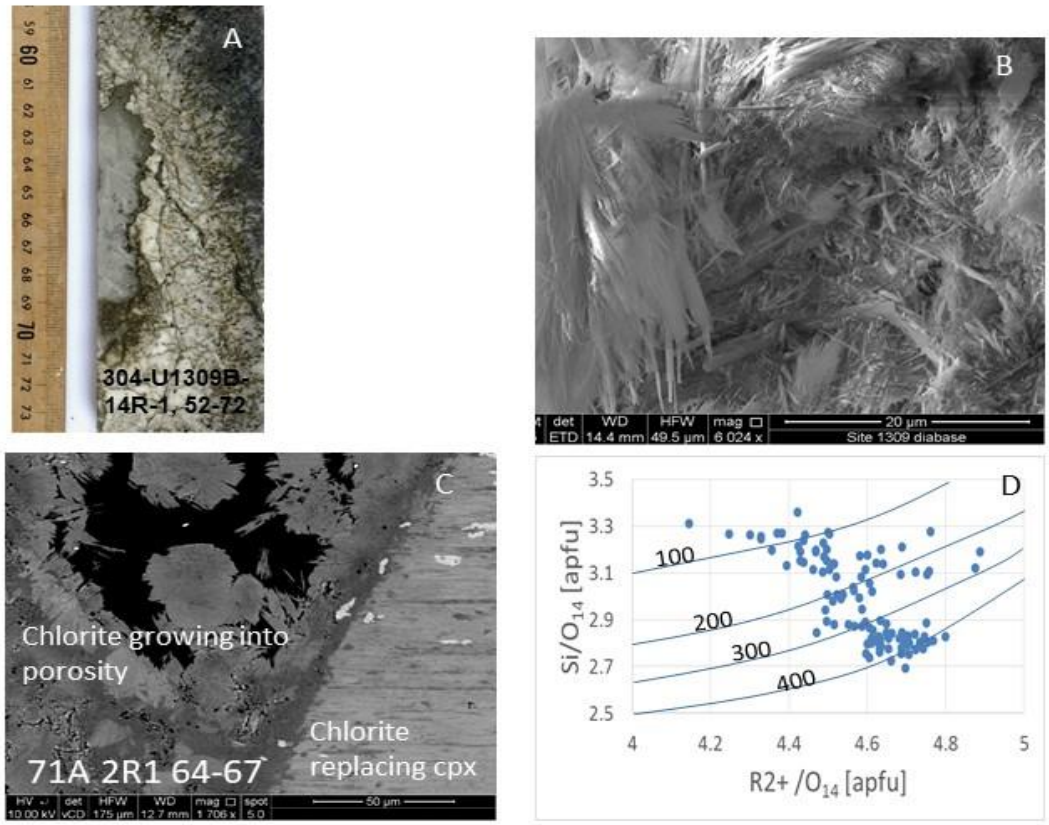

Fig. 1: Reaction porosity in the Atlantis Massif. A: amphibole filled vug in gabbro with bleached reaction rim of sodic feldspar and minor amphibole, 72mbsf in IODP Hole 1309B. Relict porosity is common both in the vug and the reaction rim. The vug is interpreted as a section through a stockwork pipe for black smoker fluid flowing up the detachment fault. B: Fibrous amphibole filling porosity formed by dissolution of clinopyroxene in diabase, IODP Hole 1309B. C: chloritized gabbro with plagioclase completely dissolved and the space filled by chlorite. D: chlorite geothermometry (Bourdelle and Cathelineau, 2015) showing that the vugs filled over a temperature range from 400 to <100 °C