

+

#0072

+

Temperature- and fO_2 -Dependence of the Re-Condensation Behaviour of Volatile Elements: Recent Results

Ertel-Ingrisch⁽¹⁾, Werner and Dingwell⁽¹⁾, Donald B.

⁽¹⁾Department of Earth and Environmental Sciences, Ludwig Maximilian University Munich;
ertel-ingrisch@lmu.de.

Volatility and re-condensation of elements was the governing process prior to the accretion of planetary bodies in the solar system and continues to play a major role to the present day, e.g. during volcanic eruptions. Yet relatively little is known about the parameters controlling volatility and re-condensation - with temperature (**t**) and oxygen fugacity (**fO_2**) assumed to be most important. In order to investigate this dependence, a systematic experimental study in respect to **fO_2** and **t** was initiated applying a modified MAE technique of [1] using a eutectic Anorthite-Diopside starting composition doped with up to 5000 ppm of 18 volatile elements. 2 experiments were performed at 1300°C at two different **fO_2** conditions ($\log fO_2 = -11.3$ (~ IW -0.5) and -0.7 (air)) to investigate the **fO_2** dependence while a 3rd run was performed at 1500°C in air to investigate the **t** dependence (1300 versus 1500°C).

Here we present results of the re-condensation behaviour of the volatile elements determined by LA-

+ ICPMS measurements of the 2 condensation traps +

Cite abstract as:

Ertel-Ingrisch, W, Dingwell, DB (2013) Temperature- and fO_2 -Dependence of the Re-Condensation Behaviour of Volatile Elements: Recent Results. Paneth Kolloquium, Nördlingen (Germany), abstract URL: <http://www.paneth.eu/PanethKolloquium/2013/0072.pdf> (abstract #0072).