

## High pressure neutron diffraction of anhydrous and hydrous albite glasses and preliminary neutron imaging in PLANET

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We, magma group, have conducted neutron diffraction experiment under high pressure first time on February 15-21, 2012. Samples were anhydrous and deuterated-hydrous albite glasses. We used semi-sintered ZrO<sub>2</sub> with a dimension of 17 mm cubic as pressure medium, and enclosed the samples which diameter were 4.6 mm in the center of the cell. The anvil truncation was 10 mm. We used Ni-doped WC anvil, and adopted 6-6 type compression system. The diffraction data were collected at 2.3 and 5.5 GPa in both anhydrous and deuterated-hydrous albite glasses, respectively. The measurement times at 2.3 and 5.5 GPa were 14 and 22 hours at the live times, respectively. In this experimental period, the beam intensity was about 290 kW; this intensity was about 1/3 of the expected intensity in J-PARC in the future. Moreover, the empty and the vanadium cells under each condition were also measured, and the sample diffraction pattern were corrected by those data. Details of the results will be presented.

Moreover, the exploratory experiment of neutron imaging was also conducted. Details of the results will be also presented.

Keywords: J-PARC, PLANET, neutron diffraction, amorphous material, neutron imaging, high pressure