

## High pressure phase relationships of the Fe-Ni-C system and its implications to the lunar core structure

KISHIMOTO, Shumpachi<sup>1\*</sup> ; URAKAWA, Satoru<sup>1</sup>

<sup>1</sup>Graduate school of natural science and technology, Okayama University

We investigate the phase relationships of the Fe-Ni-C systems at 5 GPa equivalent to the lunar core condition using multi anvil high pressure apparatus. We determined the precise melting relationships of the Fe-Ni-C system at 5 GPa. We also elucidate the stability field of (Fe,Ni)<sub>3</sub>C and (Fe,Ni)<sub>7</sub>C<sub>3</sub> carbide phase. In the meeting we will discuss the composition and the structure of the lunar core using the present data based on the seismic model of Weber et al. (2011).

Keywords: high pressure, lunar core, Fe-Ni-C system, phase relationships