Re-examination of metamorphic and geochronologic events in Rayner Complex and Western Rayner Complex in Antarctica

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Enderby Land in Antarctica comprises of Neoproterozoic-Cambrian (c.650-500 Ma) high-grade metamorphic terranes that constituting Gondwana supercontinent (e.g., Shiraishi et al., 2008). Easternmost part is “Western Rayner Complex” of which granulite-facies and partly UHT metamorphism (Motoyoshi et al., 1994, 1995) and 2400-1000 Ma protolith and 540-520 Ma metamorphic ages were reported (Shiraishi et al., 1997). Neighboring “Rayner Complex” is characterized by >2500-1000 Ma protolith and 980-910 Ma granulite-facies metamorphic ages. Boundary between the Rayner and the Western Rayner Complex has been not clearly defined until when Horie et al. (2016) obtained 934-894 Ma SHIRMP zircon U-Pb ages from Mt. Lira, Condon Hills and Mt. Yuzhnaya regions with minor 590-570 Ma zircons from Mt. Yuzhnaya. Hiroi (unpublished data) also demonstrated contrasting metamorphic P-T evolution among the Mt. Lira, Condon Hills and Mt. Yuzhnaya regions.

JARE-58 (2016-2017) geology team made a short visit and sampling at a small nunatak of west of Mt. Yuzhnaya, a small nunatak of east of Forefinger Point, and Point Widdows in order to assess the relationship between the Rayner and the Western Rayner Complexes. We will report and discuss the update of the characteristic features of the Rayner and the Western Rayner Complexes.

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