

Basement geological research of East Antarctica

Tomokazu Hokada^{1,2}, Kenji Horie^{1,2}, Yoichi Motoyoshi^{1,2}, Yoshifumi Nogi^{1,2} and Antarctic Geology Research Group

¹*National Institute of Polar Research*

²*The Graduate University for Advanced Studies, SOKENDAI*

Geology program of the Japanese Antarctic Research Expedition (JARE) started in 1957 when the JARE's first expedition landed at Soya Coast in Dronning Maud Land, East Antarctica. Since then, the JARE's geology programs have covered the area of longitude between 10°E and 55°E of the Antarctic continent, and published total 39 sheets of geological map series. Dynamics of continental formation, evolution and fragmentation is one of fundamental questions in Earth science. The Antarctic Continent is comprised of a substratum that formed over a period of 4 billion years, and traces of the Gondwana supercontinent fragmentation can be found on the seafloor of the Antarctic Ocean that surround the Antarctic continent. Therefore, the Antarctic region is ideal field for studying continental evolution since Archaean and fragmentation process as well as seafloor spreading evolution during the initial breakup of supercontinent.

We propose research plan combined with geological and geophysical method for elucidating continental evolution and fragmentation process. For the next stage of the JARE scientific program, we propose research plan on the three areas - such as (1) Syowa Station area, (2) Sør Rondane Mountains, and (3) Enderby Land. Enderby Land. In addition to the basement geological research, geophysical studies by using aircraft and research vessel are also important as estimating the inland and seaward extension of geological structures and tectonic provinces. Our research project will elucidate tectonic history and evolution and fragmentation of the continent since Archaean to Phanerozoic from integrated studies with geology and geophysics, and provide new constrains on global dynamics.