

## 航空機地球物理観測から推定される東南極リュツォ・ホルム湾周辺の Gondwana 形成過程

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### Tectonic evolution of Gondwana around Lutzow-Holm Bay, East Antarctica, inferred from airborne geophysical survey

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The area around Syowa Station in Lutzow-Holm Bay, East Antarctica, is considered as a junction of the continents of Africa, India, Madagascar, and Antarctica, according to a reconstruction model of Gondwana. This area is key for investigating the formation of Gondwana. To reveal the tectonic evolution that contributed to Gondwana's formation in this area, joint Japanese-German airborne geophysical surveys were conducted around Syowa Station in January 2006 during the JARE47, from 67S to 73S latitude and from 35E to 45E longitude. Ice radar, magnetic, and gravity data were obtained from onshore areas. Several characteristic features that are possibly related to the tectonic evolution of Gondwana were inferred, primarily from magnetic anomalies, as well as from gravity anomalies and bedrock topography. The boundaries of the Lutzow-Holm Complex, the Yamato-Belgica Complex, and the Western Rayner Complex are defined. The main geological structural trends of the Lutzow-Holm Complex derived from magnetic anomalies are NW-SE and are concordant with the geological results in the coastal region. However, nearly NE-SW-trending magnetic anomalies cut across the NW-SW magnetic anomaly trends, and NE-SW right lateral strike-slip faults were deduced from the magnetic and the gravity anomaly data of the Lutzow-Holm Complex. The Lutzow-Holm Complex was sub-divided into four blocks based on the estimated strike-slip faults. These strike-slip faults may have been generated during a younger stage of Pan-African orogeny, after the formation of NW-SE-striking geological structures. These results provide new constraints on the tectonic evolution of Gondwana during the Pan-African orogeny.