Tracing Argoland in Eastern Tethys

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The NW Australia-derived Argoland continental block has played a pivotal role in the breakup of northern East Gondwana and initial opening of the Indian Ocean. However, its present identity remains enigmatic. Combining our new detrital zircon dating results from Sulawesi and published data from relevant regions in eastern Tethys (n >14,000 in total), we find that West and Central Sulawesi and SE Borneo show age profiles almost indistinguishable from that of Bird's Head, characterized by a diagnostic age population of 1450-1350 Ma. In addition, the most prevailing age populations (ca. 1300-500 Ma) in NW Australia are sparse to rare in Sulawesi and Borneo. By contrast, West Burma and East and West Java exhibit age patterns similar to that of NW Australia. These observations lead us to suggest that West Sulawesi and East Java most probably originated from Bird's Head and NW Australia, respectively; current models regarding them as a single block as Argoland need amendments. In the perspectives of size and age profile, West Burma occurs as the best candidate for Argoland that rift from NW Australia in the Late Jurassic. The continental fragments beneath East and West Java might be slivers of Argoland. These shed new light on the paleogeographic reconstruction and breakup of East Gondwana, as well as the progressive growth of SE Asia.