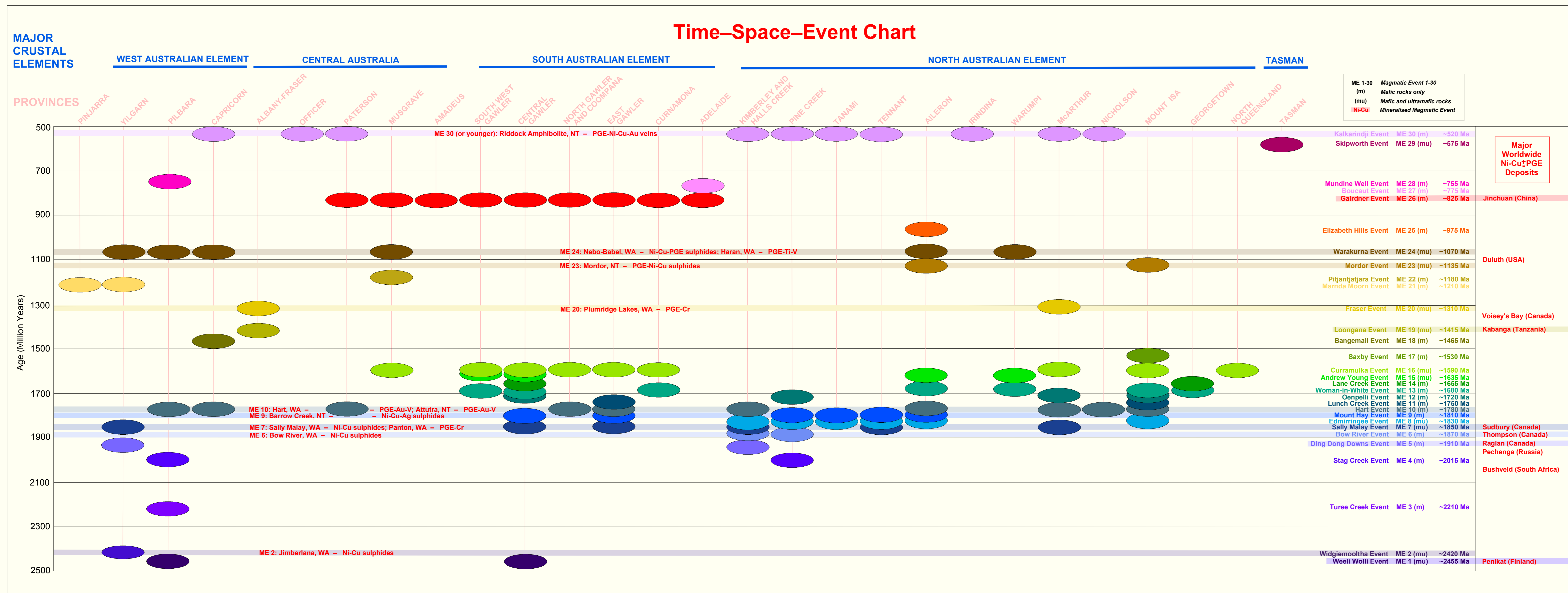


AUSTRALIAN PROTEROZOIC MAFIC-ULTRAMAFIC MAGMATIC EVENTS (Sheet 2 of 2)



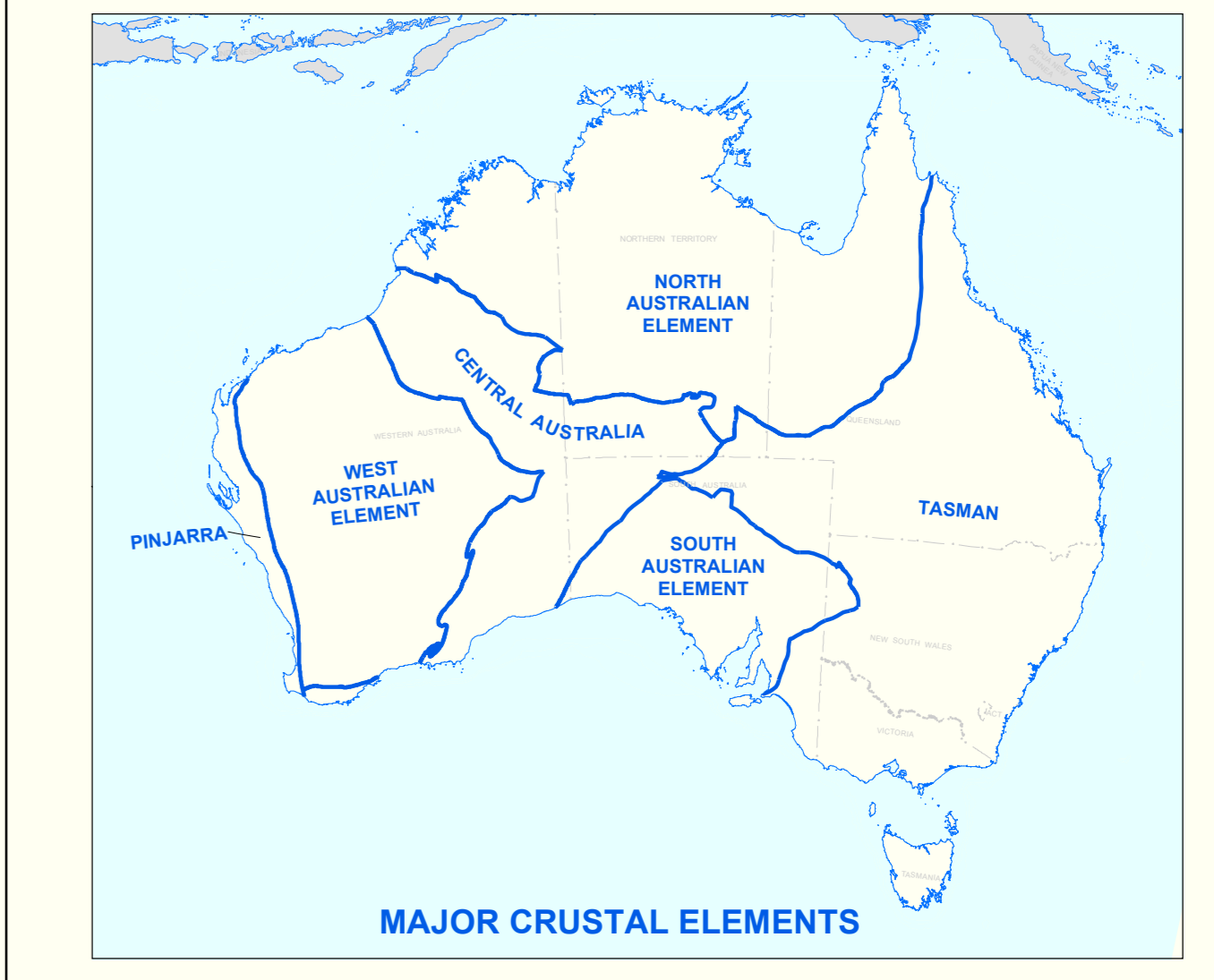
Sheet 1: 1:5 000 000 Map of Proterozoic Magmatic Events
 Sheet 2: Time-Space-Event Chart
 1:10 000 000 Map of Mineral Deposits & Occurrences
 1:10 000 000 Map of Proterozoic Large Igneous Provinces



Time-Space-Event Chart
 The presence and correlation of the 30 identified Proterozoic mafic-ultramafic Magmatic Events are represented across 28 provinces. Event names and ages, symbol colours, and provinces (with informal names) are those of the 1:5 000 000 Map on Sheet 1. Horizontal coloured bands indicate the presence of known Ni-PGE-Cr-V-Ti-(La)-Cu-Ag mineralisation within certain Magmatic Events, either in Australia or overseas.

Time-equivalent magmatism in different provinces does not necessarily imply co-genetic magmatism.

Provinces are grouped as Major Crustal Elements according to the inset map below, adapted from Shaw et al. (1995) Australian Crustal Elements 1:5 000 000 map.



Distribution of Mineral Deposits and Occurrences
 Deposits and occurrences of Ni-Cu-PGE-Ti mineralisation are overlain on a composite map of Precambrian mafic-ultramafic magmatic rock units, major and minor. Both sulphide and laterite nickel deposits are shown. Data are from Geoscience Australia's OZMIN and MINLOC resource databases.

Proterozoic Large Igneous Provinces (LIPs)
 Dashed lines indicate the geographic extent of five Magmatic Events distinguished as exceptionally large emplacements of dominantly mafic magmas. Those shown on this map are expressed only by time-equivalence of intrusion and extrusion; co-genetic magmatism across crustal provinces is not necessarily implied. Colours and unit polygons are linked to the 1:5 000 000 Map on Sheet 1, and to the Time-Space-Event Chart. The approximate eastern limit of Precambrian crustal elements is shown as the Tasman Line.

Kalkarindji LIP: ME 30 ~530 Ma. Extensive preservation of basaltic lavas across the North Australian Craton and central Australia; intrusions in the Kimberley and Irindina provinces. Modified after Glass & Phillips (2006). Geology 34, 461-464.

Gairdner LIP: ME 26 ~825 Ma. Gairdner Dyke Swarm of the South Australian Craton and the Musgrave province, lavas in the basal stratigraphy of the Adelaide and Anandus provinces, possible comagmatic in the Paterson province. Modified after Zhao et al. (1994). Earth and Planetary Science Letters 121, 349-367.

Warakurna LIP: ME 24 ~1070 Ma. Time-equivalent magmatism in a belt that includes the Musgrave province and crosses the West Australian Craton, dolerite dykes in the southern margin of the North Australian Craton. Modified after Wingate et al. (2004). Geology 32, 105-108.

Marda Moorn LIP: ME 21 ~1210 Ma. Extensive coeval dolerite dyke swarms, with variable geometries of emplacement, intruding the Yilgarn and Pilbarra provinces. Modified after Wingate & Pidgeon (2005). <http://www.largeigneousprovinces.org/05July.html>

Hart LIP: ME 10 ~1780 Ma. Dolerites and basalts within the Kimberley province modified after Tyler et al. (2006). <http://www.largeigneousprovinces.org/09Aug.html>; possible extent encompasses time-equivalent magmatism in eight other provinces across the West, North, and South Australian Cratons, and in central Australia.

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 Cartography by G.A. Young, V. Cooper, G. Tobin, S. Mezzomo

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Other maps in this series:
 This map is the third and final part of a Geoscience Australia series showing the geographic extent and time-space relationships of Proterozoic mafic-ultramafic magmatism and associated mineral deposits across the Australian continent.

Part 1: Western Australia was published in October 2006 and documents 15 Proterozoic mafic-ultramafic magmatic events. Copies of the Part 1 map are available free online at: http://www.ga.gov.au/image_cache/GA8757.pdf in pdf format http://www.ga.gov.au/image_cache/GA8757.jpg in jpg format

Part 2: Northern Territory-South Australia was published in July 2007 and documents 19 Proterozoic mafic-ultramafic magmatic events. Copies of the Part 2 map are available free online at: http://www.ga.gov.au/image_cache/GA8800.pdf in pdf format http://www.ga.gov.au/image_cache/GA8799.jpg in jpg format

The geological and geochronological information underpinning this map series is summarised in Geoscience Australia Record 2008/15 (Geocat Number: 66624). Guide to using the 1:5 000 000 map of Australian Proterozoic mafic-ultramafic magmatic events by Hoatson, Clauub-Long, and Jareth

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It is recommended that this map be referred to as:
 Hoatson, D.M., Clauub-Long, J.C., Jareth, S., 2008. Australian Proterozoic Mafic-Ultramafic Magmatic Events: Sheets 1 and 2 (1:5 000 000 and 1:10 000 000 scale maps), Geoscience Australia, Canberra

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