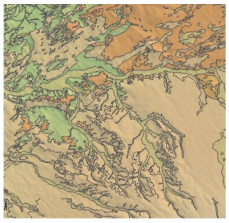

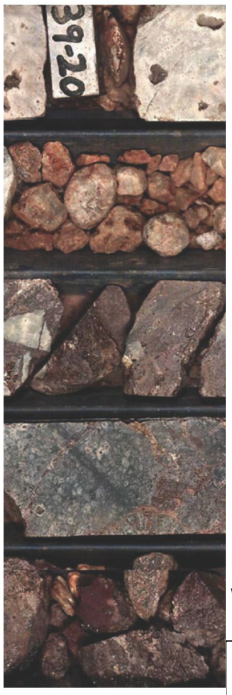

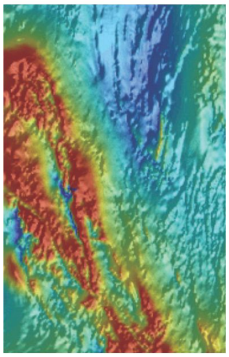

Department of State Development

Metadata: 3D Architecture model of the western Gawler Craton

Important Information: Contact Position: Tom Wise (GSSA), Ruth Murdie (GSWA)

Date Printed: 10/04/2017

Government of South Australia

Department of State Development

Dataset

Title: 3D Architecture model of the western Gawler Craton

Custodian: Geological Survey of South Australia, Geological Survey of Western Australia

Jurisdiction: South Australia

Description

Abstract:
Geoscience Australia in collaboration with the Geological Survey of South Australia (PACE Frontiers), the Geological Survey of Western Australia (Royalties for Regions Exploration Incentive Scheme), and AuScope funded the Eucla-Gawler 2D deep seismic survey 13GA-EG1. This model interpolates between this seismic line and another shot in 2008, the 08GA-OM1 seismic line. It images the western Gawler Craton from where it abuts the central Gawler Craton in the east to where the Coompana Province covers the lower Gawler crust in the west. The foundations of the model are faults derived from seismic and magnetic interpretations. Gravity and magnetic inversions investigate the relationship between the different fault-bounded blocks.

ANZLIC Search Terms:
GEOSCIENCES Geophysics, GEOSCIENCES Geology

Geographic Extent Polygon: 95,000 mE, 6,515,000 mN; 458,000 mE, 6,515,000 mN; 458,000 mE, 6,515,000 mN; 458,000 mE, 6,749,000 mN

North bounding latitude: 6,749,000 mN

South bounding latitude: 6,515,000 mN

East bounding longitude: 95,000 mE

West bounding longitude: 458,000 mE

Data Currency

Beginning Date: 2016-06-30

End Date: 2017-03-31

Dataset Status

Progress: Complete

Maintenance: As required

Version Number: 1

Access

Stored format: DIGITAL SKUA-GOCAD data

Available format(s): DIGITAL SKUA-GOCAD project and object files (.gprj, .vo, .ts, .pl, .gp, .grs, .vs)

Access constraint(s): Data is not to be redistributed without approval from Authorisation Officer.

Data Quality

Lineage: Source data and linage is summarised in table below.

Positional accuracy: Horizontal accuracy of formation boundaries is variable (interpreted); vertical accuracy of the interpolated formation surfaces, topographic and basement surfaces are variable due to resampling (topographic surface), interpretation (formation boundaries) and interpolation.

Attribute accuracy: Geological attributes are based on interpretation of features in the subsurface which are not directly observable; thus they are subject to alternative interpretations.

Contact Information

Contact organisation: Department of the Premier and Cabinet, South Australia

Contact position: Customer Service Centre

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Metadata Dates

Add date: 2017-03-30

Change date: 2017-04-10

Responsible Party

Responsible party: Program Leader, Geoscientific Information Management

Responsible party function: Custodian/Steward

Description

Dataset classification: Principal version

Spatial representation type: Matrix

Dimension: x,y,h

Sample Graphic(s)

File Name	Size	Type	Comments and data sources
08GA_OM1_CDP.vs	302 kb	Curve	Common depth point locations of the seismic line 08GA-OM1
08GA_OM1_Line.pl	5 kb	Curve	Trace of the seismic line 08GA-OM1
13GA_EG1_CDP.vs	828 kb	Points	Common depth point locations of the seismic line 13GA-EG1
13GA_EG1_Line.pl	6 kb	Curve	Trace of the seismic line 13GA-EG1
13GA_EG1_interpretation_located.ts	46 kb	Surface	Surface for the interpretation image of seismic line 13GA-EG1
13GA_EG1_interp.vo	2 kb	Voxet	Flat image of the interpretation of seismic line 13GA-EG1. Original image from Dutch et al, 2015.
B1_Eucla_Basin.ts	583 kb	Surface	Basal surface of the Eucla Basin
B2_Bight_Basin.ts	39 kb	Surface	Basal surface of the Bight Basin
B3_Arckaringa_Basin.ts	66 kb	Surface	Basal surface of the Arckaringa Basin
B4_Officer_Basin.ts	81 kb	Surface	Basal surface of the Officer Basin
Basin_ouline_Arckaringa.pl	11 kb	Curve	Outline of the Arckaringa Basin. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
Basin_ouline_Bight.pl	5 kb	Curve	Outline of the Bight Basin. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
Basin_ouline_Eucla.pl	112 kb	Curve	Outline of the Eucla Basin. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
Basin_ouline_Officer.pl	13 kb	Curve	Outline of the Officer Basin. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
D01_Basins.ts	144 kb	Surface	Basal surface of the all the basin units except the Eucla Basin
D02_Nawa_Metasediment.ts	354 kb	Surface	Basal surface of the Nawa metasediments
D03_Upper_Crust.ts	617 kb	Surface	Basal surface of the upper crust
D04_Middle_Crust.ts	317 kb	Surface	Basal surface of the non-reflective crust
D05_Moho.ts	12 kb	Surface	The Moho
F01_Jindarnga.ts	39 kb	Surface	Surface of Jindarnga Shear Zone
F02_Yarle.ts	74 kb	Surface	Surface of Yarle Shear Zone
F03_Wirratinna.ts	100 kb	Surface	Surface of Wirratinna Shear Zone
F04_Wirinjinna.ts	160 kb	Surface	Surface of Wirinjinna Shear Zone
F05_Karari_1.ts F06_Karari_2.ts F07_Karari_3.ts F08_Karari_4.ts	158 kb 33 kb 13 kb 117 kb	Surface Surface Surface Surface	Surfaces of Karari Shear Zone
F09_HorseCamp.ts	6 kb	Surface	Surface of Horse Camp Shear Zone
F10_Ifould.ts	44 kb	Surface	Surface of Ifould Shear Zone
F11_Tallacootra_1.ts F12_Tallacootra_2.ts	70 kb 90 kb	Surface Surface	Surfaces of Tallacootra Shear Zone
F13_Beella.ts	65 kb	Surface	Surface of Beella Shear Zone
F14_Domain_boundary_ChristieFowler.ts	28 kb	Surface	Domain boundary between the Christie and Fowler Domains
F15_Chimpering_1.ts F16_Chimpering_2.ts	45 kb 97 kb	Surface Surface	Surfaces of Chimpering Shear Zone

File Name	Size	Type	Comments and data sources
F17_Colona_1.ts F18_Colona_2.ts	387 kb 41 kb	Surface Surface	Surfaces of Colona Shear Zone
F19_Coorabie_1.ts F20_Coorabie_2.ts F21_Coorabie_3.ts F22_Coorabie_4.ts F23_Coorabie_5.ts	45 kb 75 kb 65 kb 22 kb 113 kb	Surface Surface Surface Surface Surface	Surfaces of CoorabieShear Zone
F24_MiddleCrust.ts	102 kb	Surface	Surface of the ramp in the Middle Crust
F25_Muckanippie.ts	41 kb	Surface	Surface of Muchanippie Shear Zone
F26_Bulgunnia.ts	271 kb	Surface	Surface of Bulgunnia Shear Zone
F27_Yerda.ts	459 kb	Surface	Surface of Yerda Shear Zone
F28_Oolabina.ts	117 kb	Surface	Surface of Oolabina Shear Zone
F29_Koonibba.ts	24 kb	Surface	Surface of Koonibba Shear Zone
F30_Bulga.ts	50 kb	Surface	Surface of Bulga Shear Zone
Gravity_inversion.vs	1042 kb	points	Observed, calculated and residual magnetic data from the final density inversion.
Grav_3km_points.vs	701 kb	points	Bouguer anomaly data gridded at 3 km Original data downloaded from http://www.geoscience.gov.au
Grav_up20_points.vs	563 kb	points	Bouguer Anomaly data gridded at 3 km and upward continued to 20 km. Original data downloaded from http://www.geoscience.gov.au
H01_Cenozoic.pl	15 kb	Curve	Base of the Cenozoic taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H02_Mesozoic.pl	19 kb	Curve	Base of the Mesozoic taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H03_Upper_Mt_Toondina_Formation.pl	5 kb	Curve	Base of the Upper Mount Toondina Foramtion taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H04_Lower_Mt_Toondina_Formation.pl	11 kb	Curve	Base of the Lower Mount Toondina Foramtion taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H05_Stuart_Range_Formation.pl	16 kb	Curve	Base of the Stuart Range Formation taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H06_Boorthanna_Formation.pl	21 kb	Curve	Base of the Boorthanna Formation taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H07_Gawler_Range_Volcanics.pl	6 kb	Curve	Base of the Gawler Range Volcanics taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H08_Tarcoola_Formation.pl	6 kb	Curve	Base of the Tarcoola taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H09_Granite.pl	26 kb	Curve	Outline of granitic intrusions taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
H10_Moho.pl	13 kb	Curve	The Moho taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.

File Name	Size	Type	Comments and data sources
Hx_08GA_OM1_Form_Line.pl	143 kb	Curve	Form lines taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
Hy_08GA_OM1_Fault.pl	70 kb	Curve	Fault traces taken from the interpretation of 08GA-OM1 seismic line. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
Magnetic_inversion.vs	811 kb	points	Observed, calculated and residual magnetic data from the final magnetic inversion.
Model_susceptibility.vo Model_susceptibility_Magnetic_susceptibility @@ Model_susceptibility_Rock_unit@@ Model_susceptibility__flags@@	7 kb 9,526 kb 4,763 kb 11,907 kb	Voxet	Block model with cell properties of rock unit and magnetic susceptibility
Model_susceptibility.vo Model_susceptibility_Density@@ Model_susceptibility_Rock_unit@@ Model_susceptibility__flags@@	7 kb 9,526 kb 4,763 kb 14,288 kb	Voxet	Block model with cell properties of rock unit and density
Rock_Unit_Colours	18 kb	html	Colour classification for block model regions
SZ01_Jindarnga.pl	5 kb	Curve	Surface trace of the Jindarnga Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ02_Yarle.pl	4 kb	Curve	Surface trace of the Yarle Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ03_Wirratinna.pl	6 kb	Curve	Surface trace of the Wirratinna Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ04_Wirinjinna.pl	6 kb	Curve	Surface trace of the Wirinjinna Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ05_Karari_1.pl SZ06_Karari_2.pl SZ08_Karari_4.pl	6 kb 5 kb 10 kb	Curve Curve Curve	Surface traces of the Karari Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ09_HorseCamp.pl	2 kb	Curve	Surface trace of the Horse Camp Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ10_Ifould.pl	4 kb	Curve	Surface trace of the Ifould Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ11_Tallacootra_1.pl SZ12_Tallacootra_2.pl	9 kb 9 kb	Curve Curve	Surface traces of the Tallacootra Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ13_Beela.pl	7bkb	Curve	Surface trace of the Beella Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ15_Chimpering_1.pl SZ16_Chimpering_2.pl	6 kb 10 kb	Curve Curve	Surface traces of the Chimpering Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ17_Colona_1.pl SZ18_Colona_2.pl	9 kb 5 kb	Curve Curve	Surface traces of the Colona Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.

File Name	Size	Type	Comments and data sources
SZ19_Coorabie_1.pl SZ20_Coorabie_2.pl SZ21_Coorabie_3.pl SZ22_Coorabie_4.pl SZ23_Coorabie_5.pl	5 kb 6 kb 6 kb 2 kb 13 kb	Curve Curve Curve Curve Curve	Surface traces of the Coorabie Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ25_Muckanippie.pl	5 kb	Curve	Surface trace of the Muchanippie Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ26_Bulgunnia.pl	6 kb	Curve	Surface trace of the Bulgunnia Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ27_Yerda.pl	6 kb	Curve	Surface trace of the Yerda Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ28_Oolabinna.pl	10 kb	Curve	Surface trace of the Oolabinna Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
SZ29_Koonibba.pl	3 kb	Curve	Surface trace of the Koonibba Shear Zone. Original file downloaded from https://sarig.pir.sa.gov.au/Map.
TMI_3k_points.vs	657 kb	points	Total magnetic intensity data gridded at 3 km Original data downloaded from http://www.geoscience.gov.au
TMI_3k_up5_points.vs	513 kb	points	Total magnetic intensity data gridded at 3 km and upward continued to 5 km. Original data downloaded from http://www.geoscience.gov.au
Topo_2k_surface.ts	4884 kb	Surface	Shuttle Radar Topography Mission (SRTM) topography regridded at 2 km. Original data downloaded from http://srtm.csi.cgiar.org
Topo_surface.ts	9336 kb	Surface	Shuttle Radar Topography Mission (SRTM) topography gridded at 90m. Original data downloaded from http://srtm.csi.cgiar.org

Usage

Purpose: 3D geophysical data compilation of public domain data

Use: Geophysical research and lithospheric studies and mineral exploration.

Usage limitations: As most of the features portrayed are not directly observable, the dataset is interpretive. It also incorporates other interpretations which have not been independently verified.

Dataset Associations

Dependant datasets: Dutch, R.A., Pawley, M.J., and Wise, T.W. (compilers) 2015. What lies beneath the western Gawler Craton? Eucla-Gawler Seismic Survey line 13GA-EG1E, Seismic and Magnetotelluric Workshop 2015. Extended abstracts of technical presentations. Government of South Australia. Department of State Development. Report Book, 2015/00029

GADDS Geophysical Archive Data Delivery System www.geoscience.gov.au

Jarvis, A, Reuter, HI, Nelson, A and Guevara, E 2008, Hole-filled SRTM for the globe, Version 4, available from the CGIAR-CSI SRTM 90m Database: CGIAG Consortium for Spatial information, http://srtm.csi.cgiar.org

Kennett, BLN and Salmon, M 2012, AuSREM: Australian seismological reference model: Australian Journal of Earth

Sciences, v. 59, p. 1091–1103.

Korsch, R.J., and Kositcin, N. (editors), 2010. GOMA (Gawler Craton-Officer Basin-Musgrave Province-Amadeus Basin) Seismic and MT Workshop 2010. Geoscience Australia, Record, 2010/39, 162 pp.

SARIG South Australian Resources Information Gateway; https://map.sarig.sa.gov.au/

van der Wielen, S.E, Goodwin, J., Nicoll, M. and Keeping, T. 2015 Potential-field investigation of the seismic reflection line 13Ga-EG1E, in: Dutch, R. A., Pawley, M. J., and Wise, T. W., eds., What lies beneath the western Gawler Craton? 13GA-EG1E Seismic and Magnetotelluric Workshop 2015, Report Book 2015/00029. Department of State Development, South Australia, Adelaide.

Origin

Dataset size: 31 MB

Projection: UTM Zone 53

Datum: GDA94

Dataset Management

Attributes