PHANEROZOIC

MESOZOIC

CRETACEOUS

Kpr-sf — **PARDA FORMATION:** mudstone; interbedded fine-grained sandstone

Kco-sp — **CALLAWA FORMATION:** very fine-grained to coarse-grained sandstone, and conglomerate

CARBONIFEROUS–PERMIAN

CPpa-sepg — **PATERSON FORMATION:** conglomerate (including diamictite), sandstone, and siltstone; largely glacigene

CAMBRIAN

c. 523 Ma[1]

Cdv-od — **DAVIS DOLERITE:** dolerite in sills and dykes; fine to medium grained

PALEOZOIC

PROTEROZOIC

NEOPROTEROZOIC

ERH-od — EMW-od

ERH-od **Round Hummock Dolerite Suite:** dolerite dyke, fine to medium grained (dashed where concealed)

EMW-od **Mundine Well Dolerite Suite:** dolerite dykes, sills, and small intrusions with locally abundant xenoliths and potassic alteration of wallrocks; includes minor quartz diorite, syenite, tonalite, and biotite monzogranite (dashed where concealed)

c. 755 Ma[2]

<911 Ma

EPH-xs-lx — **Throssell Range Group:** sandstone, shale, limestone, and dolomite

EPA-sk — **Tarcunyah Group:** sandstone, siltstone, mudstone, and stromatolitic and non-stromatolitic dolomite; minor conglomerate

Warakurna Supersuite

c. 1050 Ma

EWK-od — Dolerite sill or plug; fine- to medium-grained dolerite, and gabbro

MESOPROTEROZOIC

<1317 Ma[3]

EMN-s — **Manganese Group:** sandstone, siltstone, mudstone, conglomerate, chert, and dolostone

PALEOPROTEROZOIC

c. 1803 Ma

EBG-gmh — **Bridget Suite:** hornblende monzogranite and granodiorite

c. 1867 Ma[4]

E-p — Kimberlite dyke; includes the Brockman Creek Kimberlite; weakly metamorphosed

AEec-sf — **EEL CREEK FORMATION:** mudstone, shale, siltstone, and sandstone; locally intruded by dolerite sills and dykes

AEpj-ccx — **PINJIAN CHERT BRECCIA:** chert breccia and poorly bedded chert; overlies Carawine Dolomite

2629–2501 Ma[5,6]

AHAL-xkt-ci — **Lower Hamersley Group:** carbonate sedimentary rocks, shale, siltstone, chert, and banded iron-formation; metamorphosed

NEOARCHEAN

2775–2629 Ma[7,8]

AFO-xb-s — **Fortescue Group:** basalt, basaltic andesite, and felsic volcanic rocks with locally thick siliciclastic sedimentary rocks; local carbonate rocks, komatiitic basalt and dolerite sills

Fortescue Rifting Event (commencement, c. 2775 Ma)

ASR-g — ASRmo-gm, ASRco-gm, ASRbo-gm, ASRsh-gmp, ASRcg-gm, ASRgi-gmp, ASRkb-gme, ASRkd-gmv, ASRmi-gmp, ASRmn-gm, ASRmy-gmi, ASRmj-gmp, ASRpo-gmv, ASRto-gmd, ASRth-gmv, ASRtt-gme, ASR-gme

Split Rock Supersuite

2851–2831 Ma
c. 2831 Ma
c. 2837 Ma
c. 2838 Ma
c. 2851 Ma

ASR-g Undivided granitic rocks including monzogranite, syenogranite, and pegmatite
ASRmo-gm **MOOLYELLA MONZOGRANITE:** muscovite–biotite monzogranite; medium grained; massive to weakly foliated
ASRco-gm **COOKES CREEK MONZOGRANITE:** biotite monzogranite; seriate to feldspar porphyritic; fine to medium grained; weakly metamorphosed
ASRbo-gm **BONNEY DOWNS MONZOGRANITE:** monzogranite; medium grained; locally sparsely porphyritic; locally muscovite bearing
ASRsh-gmp **SPEAR HILL MONZOGRANITE:** coarse-grained to K-feldspar porphyritic biotite monzogranite
ASRcg-gm **COOGLEGONG MONZOGRANITE:** monzogranite, coarse grained and commonly porphyritic; locally fine grained or pegmatitic; local igneous layering; metamorphosed
ASRgi-gmp **GILLAM MONZOGRANITE:** weakly feldspar-porphyritic biotite(–muscovite) monzogranite; locally with magnetite phenocrysts; massive to weakly foliated; weakly metamorphosed
ASRkb-gme **KIMMYS BORE MONZOGRANITE:** biotite monzogranite; homogeneous, equigranular to seriate
ASRkd-gmv **KADGEWARRINA MONZOGRANITE:** muscovite–biotite(–garnet) monzogranite; equigranular to weakly porphyritic; massive to layered
ASRmi-gmp **MINNAMONICA MONZOGRANITE:** quartz and K-feldspar porphyritic muscovite(–biotite) monzogranite; fine to coarse grained; massive to weakly foliated
ASRmn-gm **MONDANA MONZOGRANITE:** massive leucocratic monzogranite; very fine to medium grained; quartz-rich, minor biotite, equigranular to sparsely feldspar-porphyritic; weakly metamorphosed
ASRmy-gmi **MYANNA LEUCOGRANITE:** biotite–muscovite monzogranite; locally with quartz and K-feldspar phenocrysts; massive to weakly foliated
ASRnu-gmp **NUMBANA MONZOGRANITE:** medium- to coarse-grained feldspar(–quartz) porphyritic monzogranite; massive to weakly foliated; local flow-aligned feldspar phenocrysts; local garnet-bearing pegmatite and granite dykes
ASRpo-gmv **POOCATCHE MONZOGRANITE:** muscovite–biotite monzogranite; seriate to porphyritic; massive to weakly foliated; locally abundant pegmatite
ASRto-gmd **TAMBOURAH MONZOGRANITE:** pegmatitic to coarse-grained granite, generally as irregular patches in foliated biotite granodiorite (?Kavir granodiorite)
ASRth-gmv **THELMAN MONZOGRANITE:** muscovite–biotite(–garnet) monzogranite; equigranular to weakly porphyritic; fine to medium grained; massive to weakly foliated; weakly metamorphosed
ASRtt-gme **TABBA TABBA LEUCOGRANITE:** biotite(–muscovite) granite; seriate to equigranular; fine to medium grained; massive to weakly foliated and metamorphosed
ASR-gme Biotite(–muscovite) monzogranite; equigranular to weakly K-feldspar porphyritic; locally highly leucocratic and ghost-banded; massive to weakly foliated

Mosquito Creek Orogeny (2905–2890 Ma)

Nullagine Group

ANUq-mh — **MOSQUITO CREEK FORMATION:** interlayered psammite and pelite; graded bedding and local cross-bedding preserved; includes metamorphosed turbidite deposits

ANUc-xmd-mw — **COONDAMAR FORMATION:** metamorphosed siliciclastic and mafic igneous rocks

North Pilbara Orogeny (2960–2920 Ma)

2948–2941 Ma

ACDk-frb — **KIALRAH RHYOLITE:** flow-banded porphyritic rhyolite and minor dacite; metamorphosed

ACDbl-xb-s — ACDbm-bb

BOOKINGARRA FORMATION
ACDbl-xb-s **Louden Volcanic Member:** basalt and komatiite, with locally thick siliciclastic sedimentary intercalations; metamorphosed
ACDbm-bb **South Mallina Basalt Member:** siliceous high-Mg basalt; typically variolitic, commonly with pyroxene spinifex textures, and pillowed

Du Grey Supergroup — Croydon Group

ACDm-s — ACDl-st — ACDls-b

ACDm-s **MALLINA FORMATION:** interbedded shale, siltstone, sandstone, and medium- to fine-grained wacke; metamorphosed
ACDl-st **LALLA ROOKH SANDSTONE:** sandstone with beds of conglomerate, and minor siltstone and shale; metamorphosed
ACDls-b **Salt Well Member:** mafic volcanic and intrusive rocks; includes debris-flow deposits; metamorphosed

ACDc-s — ACDo-s

c. 2988 Ma

ACDc-s **CONSTANTINE SANDSTONE:** sandstone and wacke, locally arkosic; local conglomerate; includes quartzite; metamorphosed
ACDo-s **CATTLE WELL FORMATION:** sandstone, siltstone, shale, and wacke; minor felsic volcaniclastic rocks; local chert replacing stromatolitic carbonate rocks; metamorphosed

ADGc-b — **COONIEENA BASALT:** massive and pillowed basalt and komatiitic basalt; local siliceified basaltic andesite and hyaloclastic breccia; metamorphosed

Gorge Creek Group

AGC-xci-s — Banded iron-formation and siliciclastic rocks

AGCu-s — **CUNDALINE FORMATION:** shale, siltstone, and wacke; local sandstone and conglomerate; metamorphosed

AGCle-cd — **CLEAVERVILLE FORMATION:** banded iron-formation, ferruginous chert, sandstone, siltstone and shale; minor grey-white chert and felsic volcaniclastic rock; metamorphosed

3022–3016 Ma

AGCf-stq — **FARREL QUARTZITE:** quartz sandstone and quartzite; locally fuchsitic; minor conglomerate and chert; metamorphosed

Prinsep Orogeny (3068–3066 Ma)

Elizabeth Hill Supersuite

ABH-g — ABHco-gti — ABH-xgnl-gp

ABH-g Tonalite to syenogranite; local greenstone xenoliths; metamorphosed, with minor orthogneiss
ABHco-gti **COCKERAGA LEUCOGRANITE:** leucocratic biotite(–hornblende) tonalite, granodiorite and subordinate monzogranite; local pegmatite, and greenstone and granitic gneiss xenoliths; weakly metamorphosed
ABH-xgnl-gp Leucogranite; medium to coarse grained; abundant pegmatite and local greenstone and granitic gneiss xenoliths

3068–3066 Ma

AmhsP — AmhscP — AmogP — AmtqP — AmtyP — Axmwo-gP — AmwaP — AxmwsmusP — AmogP — AmqtP — AmqptP — AmuP — AmusP — AoP — AodP — AuxP

AmhsP Semi-pelitic schist; local corundum-bearing pelitic schist
AmhscP Foliated interlayered psammite and pelite, typically chloritic; includes some chlorite–actinolite schist and phyllite
AmogP Medium- to coarse-grained metagabbro; foliated
AmtqP Quartzite, including metamorphosed quartz arenite
AmtyP Mylonitized metasandstone
Axmwo-gP Amphibolite with abundant granitic dykes and veins; local interleaved metamorphosed ultramafic rocks
AmwaP Amphibolite; fine- to medium-grained amphibole–plagioclase–quartz–sericite–epidote rock
AxmwsmusP Mafic and ultramafic schists
AmogP Medium- to coarse-grained metagabbro; foliated
AmqP Metamorphosed ultramafic intrusive rock
AmqpP Metaperidotite
AmqtpP Serpentinized peridotite and serpentine–chlorite schist
AmuP Metamorphosed ultramafic rocks
AmusP Tremolite–chlorite–talc schist
AoP Dolerite or gabbro; includes local ultramafic rock; metamorphosed
AodP Dolerite in dykes and sills; metamorphosed
AoP Ultramafic intrusive rocks; metamorphosed
AuxP Pyroxenite; metamorphosed

Soanesville Group

ASOy-cs — **PYRAMID HILL FORMATION:** banded iron-formation, chert, and shale; metamorphosed

ASOh-b — ASOb-mbo — ASOh-musr

ASOh-b **HONEYEATER BASALT:** massive and pillowed basalt and komatiitic basalt; locally vesicular; metamorphosed
ASOh-mbo Amphibolite derived from basaltic rocks
ASOh-musr Tremolite–chlorite–talc schist

ASOp-xco-f — **PADDY MARKET FORMATION:** banded iron-formation, chert, siliciclastic sedimentary rocks, and local felsic volcanic rocks; metamorphosed

c. 3190 Ma[11]

ASOc-s — **CORBOY FORMATION:** siliciclastic sedimentary rocks; metamorphosed

ASOc-sh — **CARDINAL FORMATION:** black shale with minor siltstone; local banded iron-formation, chert, sandstone, and conglomerate; metamorphosed

<3228 Ma

ASOb-xs-f — **BUDJAN CREEK FORMATION:** siliciclastic and felsic volcaniclastic rocks; local basalt; metamorphosed

East Pilbara Terrane Rifting Event (3220–3165 Ma)

Pilbara Supergroup — Sulphur Springs Group

API-xmwo-g — API-mwa — API-xmb-mu — API-ma — API-mu — API-xmus-g

API-xmwo-g Amphibolite intruded by granite veins (50%)
API-mwa Amphibolite; metamorphosed mafic volcanic and intrusive rocks; locally schistose
API-xmb-mu Metamorphosed mafic and ultramafic rocks; includes local schist
API-ma Metamorphosed ultramafic intrusive rock
API-mu Metamorphosed ultramafic rock
API-xmus-g Ultramafic and minor mafic schists intruded by granite veins

ASSqp-c — **Pincunah Banded-Iron Member:** banded iron-formation; jaspilitic; minor layered chert and shale; metamorphosed

3253–3235 Ma[12]

ASSc-xf-s — **KANGAROO CAVES FORMATION:** felsic and mafic volcanic rocks, and siliciclastic sedimentary rocks; metamorphosed

>3255 Ma[12]

ASSk-b — **KUNAGUNARRINA FORMATION:** basaltic rocks with komatiitic basalt; minor komatiite, siliciclastic rocks and chert; metamorphosed

ASSl-s — **LEILIRA FORMATION:** siliciclastic sedimentary rocks, minor felsic volcanic rocks, and chert; metamorphosed

Emu Pool Event (3300–3290 Ma)

Emu Pool Supersuite

AEM-g — AEMe-mgm, AEMzu-gg, AEMmt-gg, AEMno-gge, AEMjh-gm, AEMjo-gg, AEMjh-gg, AEMco-gg, AEMbo-gmop, AEMce-ggv, AEMcm-gg, AEMmu-gm, AEMco-gmo, AEMwi-gg, AEMke-gg, AEMgo-gg, AEMco-gp, AEMco-gnop, AEMce-mgg, AEMch-gt, AEMds-gr, AEMtr-ggp, AEMwo-gt

3324–3277 Ma
3292–3277 Ma
3299–3294 Ma
3308–3297 Ma
3313–3300 Ma
3313–3303 Ma
3321–3304 Ma[13]
3313–3307 Ma
3324–3307 Ma[14,15]
3318–3309 Ma[16]
c. 3310 Ma
c. 3310 Ma
3317–3310 Ma[17]
3324–3310 Ma[18]
3315–3312 Ma[16]
c. 3313 Ma
3317–3314 Ma[13]
c. 3317 Ma
3318–3314 Ma

AEM-g Monzogranite and granodiorite; minor trondhjemite; metamorphosed
AEMel-mgtn **ELSIE CREEK TONALITE:** metatonalite and metagranodiorite; local sills of monzogranite and orthogneiss xenoliths; strongly foliated to gneissic
AEMzu-gg **ZULU GRANODIORITE:** biotite granodiorite; local tonalite and monzogranite; medium to coarse grained, weakly foliated
AEMmt-gg **MULLUGUNYA GRANODIORITE:** biotite–hornblende granodiorite; medium grained, weakly foliated and metamorphosed
AEMno-gge **NANDINGARRA GRANODIORITE:** biotite–hornblende granodiorite to tonalite; equigranular; contains inclusions of Tambina Supersuite tonalite; metamorphosed
AEMjh-gm **JOHANSEN MONZOGRANITE:** biotite monzogranite; medium to coarse grained; locally foliated; metamorphosed
AEMjo-gg **JOORINA GRANODIORITE:** biotite granodiorite; local tonalite and monzogranite; locally porphyritic; variably foliated; metamorphosed
AEMjh-gg **JENKIN GRANODIORITE:** biotite granodiorite; medium to coarse grained; foliated; metamorphosed
AEMbo-gmop **BOOBINA PORPHYRY:** porphyritic fine-grained monzogranite; minor hornblende; weakly metamorphosed
AEMcw-ggv **COTTON WELL GRANODIORITE:** muscovite granodiorite; fine to medium grained; weakly foliated; metamorphosed
AEMcm-gg **CAMPBELL WELL GRANODIORITE:** biotite granodiorite; medium to coarse grained; foliated; weakly metamorphosed
AEMmu-gm **MUNGANBRINA MONZOGRANITE:** monzogranite; banded, medium to coarse grained; locally seriate to porphyritic; weakly foliated and metamorphosed
AEMco-gmp **CARBANA MONZOGRANITE:** biotite monzogranite; feldspar porphyritic; common mafic xenoliths; weakly metamorphosed
AEMwi-gg **WILINA GRANODIORITE:** quartz-rich biotite granodiorite and trondhjemite; medium grained; weakly metamorphosed
AEMke-gg **KENNELL GRANODIORITE:** biotite–hornblende granodiorite; local monzogranite and tonalite; foliated; local mafic xenoliths and schlieren; metamorphosed
AEMgo-gg **GOBBOS GRANODIORITE:** biotite granodiorite and monzogranite, with minor hornblende; medium grained, seriate to locally porphyritic; weakly metamorphosed
AEMco-gg **COPPIN GAP GRANODIORITE:** biotite granodiorite and tonalite; medium grained, massive to seriate, weakly foliated; local mafic xenoliths; weakly metamorphosed
AEMco-gnop Porphyritic microgranodiorite and micromonzogranite; metamorphosed
AEMce-mgg **CHESSMAN GRANODIORITE:** metamorphosed biotite granodiorite and metatonalite; medium to coarse grained; strongly foliated to gneissic
AEMch-gt **CHIMINGADGI TRONDHJEMITE:** biotite trondhjemite; medium grained, massive, seriate textured; weakly metamorphosed
AEMds-gr **DAVITT SYENOGRANITE:** muscovite–garnet syenogranite; medium grained, foliated; weakly metamorphosed
AEMtr-ggp **TRIBERTON GRANODIORITE:** biotite–hornblende granodiorite to tonalite; feldspar porphyritic; medium to coarse grained; common mafic xenoliths; weakly metamorphosed
AEMwo-gt **WALGUNYA TRONDHJEMITE:** quartz-rich biotite trondhjemite; medium to coarse grained; weakly metamorphosed

Kelly Group

AKEc-b — **CHARTERIS BASALT:** basalt and basaltic komatiite; minor dolerite sills, chert and felsic volcanic rocks; metamorphosed

3325–3315 Ma

AKEw-xf-s — **WYMAN FORMATION:** felsic volcanic and volcaniclastic rocks; local clastic sedimentary rocks, chert and basalt; metamorphosed

3350–3335 Ma

AKEe-b — AKEe-od

AKEe-b **EURO BASALT:** basalt, komatiitic basalt, serpentinized peridotite; local dolerite and gabbro sills; minor felsic volcaniclastic rocks and chert; metamorphosed
AKEe-od Dolerite; includes local gabbro; metamorphosed

<3426 Ma

APIs-xs-c — **STRELLEY POOL FORMATION:** silicified carbonate rocks, sandstone, conglomerate, chert, and dolomite; stromatolitic; metamorphosed

Warrawoona event (3430–3410 Ma)

AWA-mwo — AWA-mus — AWA-muts — AWA-xbb-bk — AWA-bb

AWA-mwo Amphibolite derived from mafic intrusive or extrusive rock
AWA-mus Ultramafic schist
AWA-muts Serpentized peridotite and komatiite; includes serpentinite and tremolite–chlorite–serpentine–carbonate schist
AWA-xbb-bk Basalt and komatiitic basalt; locally silicified or schistose; metamorphosed
AWA-bb Basalt; massive or pillowed, and locally variolitic; metamorphosed

Salgash Subgroup

AWAp-f — AWAp-frt

AWAp-f **PANORAMA FORMATION:** felsic volcanic rock; local sedimentary rock; metamorphosed
AWAp-frt Rhyolitic tuffaceous volcaniclastic sandstone, including ash beds; well bedded; metamorphosed

3448–3424 Ma

AWAno-xop-ox — AWAst-xo-a — AWAgo-mot — AWAgo-ox

AWAno-xop-ox **NOB WELL INTRUSION:** serpentinized peridotite and metapyroxenite
AWAst-xo-a **STRUTTON INTRUSION:** gabbro, pyroxenite, and peridotite; metamorphosed
GAP INTRUSION
AWAgo-mot Serpentinite; derived from peridotite
AWAgo-ox Pyroxenite; metamorphosed

AWAo-b — AWAo-od — AWAo-mutk

AWAo-b **APEX BASALT:** basalt, komatiitic basalt, serpentinized peridotite; local dolerite sills; minor felsic volcaniclastic rocks and chert; metamorphosed
AWAo-od Fine- to medium-grained dolerite; metamorphosed
AWAo-mutk Talc–carbonate rock derived from metaperidotite; includes volcanic protoliths

Warrawoona Group — Coongan Subgroup

AWAm-ccb — **Marble Bar Chert Member:** layered grey, red, and white chert; metamorphosed

3474–3459 Ma[19]

AWAd-f — **DUFFER FORMATION:** felsic volcanic rock; local basalt, chert, and felsic schist; metamorphosed

AWAd-fdp — Massive feldspar-porphyritic dacite and andesite; includes subvolcanic intrusive rock; metamorphosed

AWAm-b — AWAmo-soz — AWAm-xmbo-g

3470–3469 Ma
c. 3470 Ma[21]

AWAm-b **MOUNT ADA BASALT:** mafic volcanic rock; local ultramafic rock; metamorphosed
AWAmo-soz **Antarctic Creek Member:** arenite and layered black, grey, red and white chert; contains an impact-spherule bed; metamorphosed
AWAm-xmbo-g Interlayered amphibolite (derived from basalt) and granitic rocks; commonly schistose; includes granite and pegmatite veins (section only)

Talga Talga Subgroup

AWAh-xu-s — AWAr-xcc-b

c. 3477 Ma
c. 3481 Ma

AWAh-xu-s **McPHEE FORMATION:** ultramafic volcanic rock, siliciclastic sedimentary rock, basalt, and chert; local felsic volcanic rock; metamorphosed
AWAr-xcc-b **DRESSER FORMATION:** chert and mafic volcanic rock; metamorphosed

AWAn-b — AWAn-mc — AWAn-xmbo-g

>3490 Ma[22]

AWAn-b **NORTH STAR BASALT:** mafic volcanic rocks; minor ultramafic rocks and chert; metamorphosed
AWAn-mc White and grey laminated metachert; recrystallized
AWAn-xmbo-g Amphibolite, commonly schistose and derived from basalt; intruded by granitic rocks including pegmatite veins

Coonterunah Subgroup

AWAo-b — **DOUBLE BAR FORMATION:** basalt; massive or pillowed; locally schistose; metamorphosed

AWAc-f — **COUCAL FORMATION:** felsic volcanic rocks; local felsic volcanic breccia; metamorphosed

3515–3498 Ma[23]

AWAt-mwo — **TABLE TOP FORMATION:** amphibolite; metamorphosed mafic volcanic and intrusive rocks; locally schistose

ARCHEAN

PALEOARCHEAN

CANNING BASIN

OFFICER BASIN — TEN SECTION BASIN — CENTRALIAN SUPERBASIN

COLLIER BASIN — CAPRICORN OROGEN

HAMERSLEY BASIN

MOSQUITO CREEK BASIN

DE GREY SUPERBASIN — MALLINA BASIN — GORGE CREEK BASIN

SOANESVILLE BASIN

FORTESCUE BASIN

mlyrq — Mylonite, silicified

od — Dolerite dykes, sills, or plugs; fine- to medium-grained dolerite; age uncertain (dashed where concealed)

Fortescue Group

AFO-od — Dolerite dyke or sill

2766–2755 Ma

AFOhh-frp — **HARDEY FORMATION**
Bamboo Creek Member: porphyritic dacite, rhyodacite, and rhyolite; coarse- to fine-grained alkali feldspar and quartz phenocrysts; locally as dykes

c. 2772 Ma[9]

ABL-od — **Black Range Dolerite Suite:** dolerite dyke; local gabbro; weakly metamorphosed

Sisters Supersuite

AST-xg-o — ASTbs-gmp, ASTmg-gme, ASTwo-gm, ASTch-mgm, ASTki-gmp, ASTug-gmp, AST-gm, ASTpr-gmp, AST-gmp, ASTbe-gm, ASTab-mgm, ASTcn-gmm, ASTel-gmp, ASTpi-gmp, ASTP-g, ASTci-ggh, ASTmi-ggh, ASTwg-ggh, ASTmi-xo-a, ASTmi-ma, ASTsh-xo-a

2954–2919 Ma
c. 2927 Ma
2934–2919 Ma[10]
2933–2927 Ma

AST-xg-o Granitic and ultramafic to mafic intrusive rocks; metamorphosed
ASTbs-gmp **BAMBOO SPRINGS MONZOGRANITE:** biotite monzogranite; K-feldspar porphyritic; coarse grained; magmatic foliation
ASTmg-gme **MULGANDINNAH MONZOGRANITE:** magnetite-bearing biotite monzogranite, fine to medium grained; weakly foliated
ASTwo-gm **WOODSTOCK MONZOGRANITE:** biotite monzogranite; equigranular to feldspar porphyritic; weakly to moderately foliated; locally abundant pegmatite and granodiorite dykes; magnetite-bearing leucogranite pods

2937–2933 Ma

ASTch-mgm **CHEEARRA MONZOGRANITE:** metamonzogranite; weakly to strongly foliated; locally well-developed banding; includes pegmatite and granite dykes
ASTki-gmp **KEEP IT DARK MONZOGRANITE:** porphyritic monzogranite; locally equigranular; metamorphosed

c. 2938 Ma

ASTug-gmp **MUNGARINYA MONZOGRANITE:** feldspar(–quartz) porphyritic biotite monzogranite; massive to weakly foliated; locally well developed flow alignment of phenocrysts and schlieren; locally ghost banded; weakly metamorphosed

c. 2940 Ma
c. 2940 Ma
c. 2941 Ma
c. 2941 Ma

AST-gm Biotite monzogranite; seriate to K-feldspar porphyritic; fine to medium grained; massive to weakly foliated; local strong flow-alignment; weakly metamorphosed
ASTpr-gmp **PETERMARER MONZOGRANITE:** biotite monzogranite; seriate to strongly K-feldspar porphyritic; weakly metamorphosed
AST-gmp Biotite monzogranite with K-feldspar and local quartz phenocrysts; leucocratic; massive to weakly foliated; weakly metamorphosed
ASTbe-gm **BEABEA MONZOGRANITE:** biotite monzogranite; equigranular to feldspar porphyritic; weakly to moderately foliated
ASTab-mgm **ABYDOS MONZOGRANITE:** porphyritic biotite–titanite metamonzogranite; feldspar and quartz phenocrysts; moderate to strong foliation
ASTcn-gmm **COONDINA MONZOGRANITE:** biotite monzogranite; leucocratic; medium grained to weakly porphyritic
ASTel-gmp **ELEY MONZOGRANITE:** porphyritic biotite monzogranite; numerous K-feldspar phenocrysts; weakly foliated; metamorphosed
ASTpi-gmp **PINCUNAH MONZOGRANITE:** porphyritic biotite(–hornblende) monzogranite; feldspar and quartz phenocrysts, commonly aligned; metamorphosed

2946 Ma

ASTP-g **Portree Suite:** granitic rock; metamorphosed

Indee Suite

2946–2945 Ma
c. 2946 Ma
c. 2954 Ma

ASTci-ggh **CHILLERINA GRANODIORITE:** hornblende biotite granodiorite to K-feldspar porphyritic monzogranite; massive to moderately foliated; weakly metamorphosed
ASTmi-ggh **MALLINDRA WELL GRANODIORITE:** hornblende–biotite granodiorite and tonalite; massive to moderately foliated; locally inclusion-rich; weakly metamorphosed
ASTwo-ggh **WALLAREENYA GRANODIORITE:** hornblende–biotite granodiorite and tonalite; massive to moderately foliated; locally inclusion-rich; weakly metamorphosed

Langenbeck Suite

ASTmi-xo-a **MILLINDINNA INTRUSION:** gabbro, pyroxenite, and peridotite; metamorphosed
ASTmi-ma Metamorphosed ultramafic intrusive rock
ASTsh-xo-a **SHAY INTRUSION:** gabbro, norite, and pyroxenite; metamorphosed

Cleland Supersuite

ACE-g — ACEbi-grm, ACEst-grn, ACEst-rod, ACEko-mggb, ACEwo-grnp, ACEgc-mgrn, ACEsf-mgg, ACE-mgtn, ACEku-grn

3274–3223 Ma
3246–3223 Ma
3239–3238 Ma[12]
3252–3244 Ma

ACE-g Monzogranite, granodiorite, and tonalite; local gabbro and dolerite; variably metamorphosed
ACEbi-grn **BISHOP CREEK MONZOGRANITE:** biotite monzogranite to granodiorite and syenogranite; fine to coarse grained; locally seriate and porphyritic; rare pegmatite dykes; weakly metamorphosed
ACEst-grn **STRELLEY MONZOGRANITE:** hornblende–biotite monzogranite and granophyric monzogranite; local diorite, dolerite, and gabbro; metamorphosed
ACEst-od Dolerite and gabbro; metamorphosed
ACEko-mggb **KAVIR GRANODIORITE:** metamorphosed biotite granodiorite and minor pegmatitic granite; fine to medium grained; foliated
ACEwo-grnp **WOLLINE MONZOGRANITE:** monzogranite and syenogranite; porphyritic and seriate; metamorphosed
ACEgc-mgrn **GARDEN CREEK MONZOGRANITE:** metamorphosed biotite monzogranite; tectonically foliated; leucocratic; minor pegmatitic granitic sheets
ACEsf-mgg **SIFFLEETES GRANODIORITE:** metamorphosed biotite–hornblende granodiorite; locally common amphibolite and diorite xenoliths; moderately to strongly foliated
ACE-mgtn Tonalitic orthogneiss; locally includes veins of granitic pegmatite or greenstone xenoliths
ACEku-grn **BULLGARINA MONZOGRANITE:** biotite(–muscovite) monzogranite; medium to coarse grained; weakly metamorphosed

Dalton Suite

c. 3185 Ma

ADA-xo-a — ADA-ma

ADA-xo-a Mafic and ultramafic intrusive rocks; metamorphosed
ADA-ma Metamorphosed ultramafic intrusive rock

Mount Billroth Supersuite

3199-3178 Ma

AMBge-mgtn — **GOLDEN EAGLE ORTHOGNEISS:** layered orthogneiss derived from tonalite, granodiorite, monzogranite, and pegmatite; includes layers and lenses of amphibolite and ultramafic schist

Tambina Supersuite

3451-3416 Ma
3448-3416 Ma[13]
3428–3420 Ma
c. 3421 Ma
c. 3427 Ma
c. 3446

ATA-mg — ATAft-mgtn, ATAww-mgtn, ATApe-mgtn, ATAyo-mgtn, ATAbo-mgt, ATAno-gm, ATAlo-mggn, ATA-mgti, ATA-jmgg-mwa

ATA-mg Metatonalite and metagranodiorite; gneissic to massive; local leucocratic monzogranite
ATAft-mgtn **FIG TREE GNEISS:** banded metatonalite and metagranodiorite gneiss; local metatrondhjemite, metamonzogranite and metasyenogranite gneiss, and migmatite
ATAww-mgtn **WILSON WELL GNEISS:** heterogeneous tonalitic orthogneiss and schlieric hornblende granodiorite; migmatitic
ATApe-mgtn **PETROGLYPH GNEISS:** tonalitic orthogneiss with sheeted pegmatitic granitic veins and local white leucogranite
ATAyo-mgtn **YALLINGARRINTHA TONALITE:** metamorphosed biotite–hornblende tonalite and metagranodiorite; moderately to strongly foliated
ATAbo-mgt **BOOKARGEMOONA TONALITE:** metamorphosed biotite tonalite; foliated to gneissic; local xenoliths of amphibolite
ATAno-gm **NORTH POLE MONZOGRANITE:** biotite monzogranite; equigranular to weakly porphyritic
ATAlo-mggn **LADY ADELAIDE ORTHOGNEISS:** gneissose leucocratic metagranodiorite; homogeneous to schlieric-textured
ATA-mgti Metatonalite with abundant greenstone xenoliths; massive to strongly foliated
ATA-jmgg-mwa Metagranodiorite with amphibolite xenoliths along contacts of amphibolite rafts; equigranular, mesocratic to melanocratic

Callina Supersuite

3484–3462 Ma
3465–3462 Ma[16,20]
c. 3466 Ma
c. 3469 Ma
c. 3468 Ma[12]

ACL-mg — ACLow-mgi, ACLho-gf, ACLco-mgg, ACLns-mgtn, ACLun-mgtn, ACLmo-xmgm-mgg

ACL-mg Metadiorite to metasyenogranite; massive to gneissic
ACLow-mgi **OWENS GULLY DIORITE:** metamorphosed quartz diorite; foliated to gneissic
ACLho-gf **HOMEWARD BOUND GRANITE:** alkali-feldspar granite; medium to coarse grained; includes local diorite and granodiorite; massive to weakly foliated; weakly metamorphosed
ACLco-mgg **COOLYIA CREEK GRANODIORITE:** metagranodiorite to metatonalite; clotty hornblende texture; strongly foliated
ACLns-mgtn **NORTH SHAW TONALITE:** metamorphosed hornblende tonalite to diorite; equigranular, with local plagioclase phenocrysts
ACLun-mgtn **UNDERWOOD GNEISS:** granitic gneiss and migmatite; metatonalite, metagranodiorite, and metamonzogranite banding; strongly sheared
ACLmo-xmgm-mgg **MOTHERIN MONZOGRANITE:** interleaved metamonzogranite, metagranodiorite, gneiss, and pegmatite; moderately to strongly foliated; intruded by abundant sheets of massive to weakly foliated muscovite-bearing metamonzogranite and pegmatite

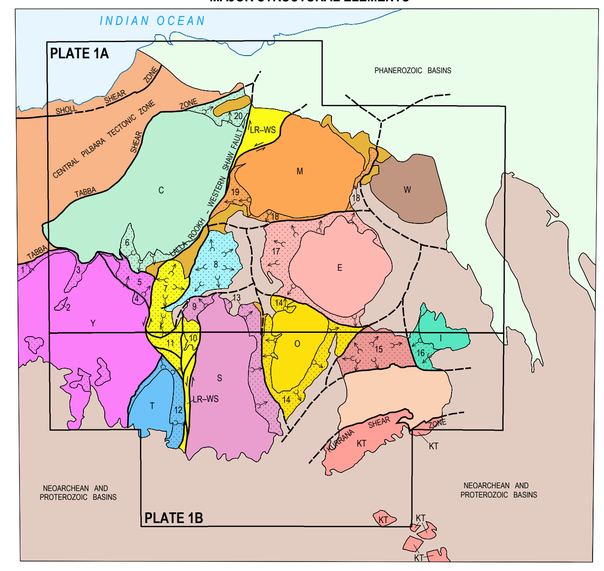
SOANESVILLE BASIN

KURRANA TERRANE

PILBARA CRATON

EAST PILBARA TERRANE

MAJOR STRUCTURAL ELEMENTS



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0 20 40 60 80 100

Kilometres

PILBARA CRATON

Lalla Rookh – Western Shaw Structural Corridor

LR–WS Granitic Rocks

Greenstone belts
7 Soanesville
10 Emerald Mine
11 Tambina

De Grey Superbasin

Mosquito Creek Basin

KT Kurrana Terrane

Dome name:	Granitic complex	Greenstone belt
Carlindi	C	6 20 — 6 East Strelley, 20 Goldsworthy
Corunna Downs	O	14 — Kelly
McPhee	not exposed	15 — McPhee
Mount Edgar	E	17 — Marble Bar
Muccan	M	18 19 — 18 Doolena Gap, 19 Warralong
North Pole	not exposed	8 — Panorama
Shaw	S	9 13 — 9 North Shaw, 13 Coongan
Tambourah	T	12 — Western Shaw
Warrawagine	W	not exposed
Yilgalong	I	16 — Mount Elsie
Yule	Y	1 2 3 4 5 Unnamed — 1 Pilbara Well, 2 Mount Francisco, 3 Wodgina, 4 Abydos, 5 Pincunah

Major fault or shear zone

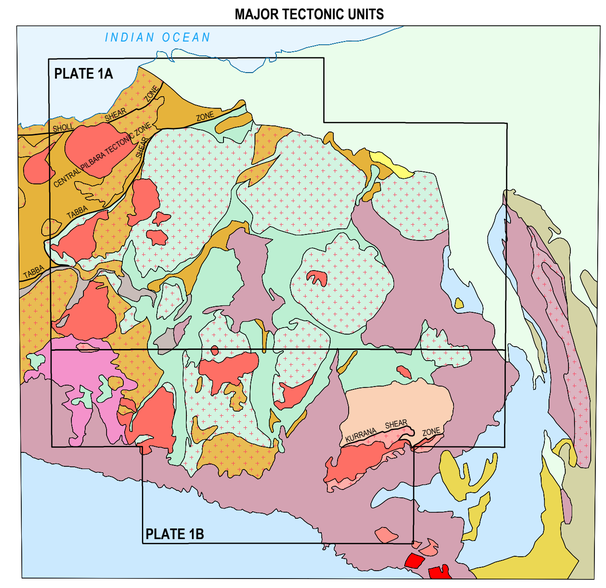
Major fault or shear zone; inferred, concealed

Major fault or shear zone; showing relative sinistral displacement

Way-up from pillow structures

*Note: numbers and unit order does not indicate stratigraphic age

MAJOR TECTONIC UNITS



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0 20 40 60 80 100

Kilometres

Phanerozoic basins

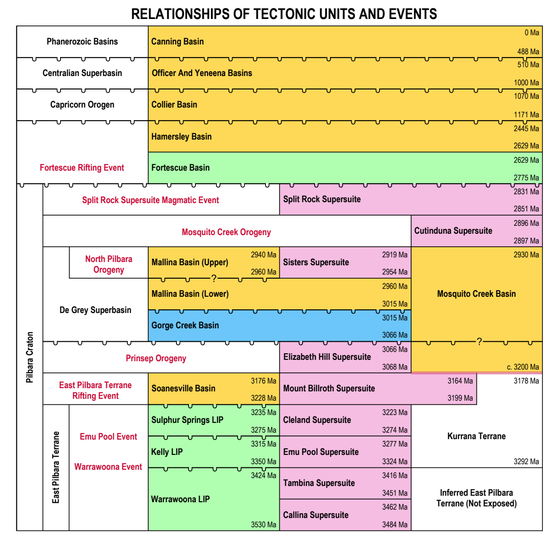
PROTEROZOIC: Centralian Superbasin; Collier Basin; Unnamed basin (Eel Creek Formation; age uncertain); Hamersley Basin; Fortescue Basin; Gregory Range Granitic Suite

ARCHEAN: Split Rock Supersuite; Cutinduna Supersuite; Mosquito Creek Basin; De Grey Superbasin; Sisters Supersuite; Elizabeth Hill Supersuite; Soanesville Basin; Kurrana Terrane; Mount Billroth Supersuite; East Pilbara Terrane; Paleoarchean granitic supersuites

PILBARA CRATON

Major shear zone

RELATIONSHIPS OF TECTONIC UNITS AND EVENTS


Phanerozoic Basins
Canning Basin 0 Ma 488 Ma 510 Ma
Centralian Superbasin
Officer And Yeneena Basins 1000 Ma 1070 Ma
Capricorn Orogen
Collier Basin 1171 Ma 2445 Ma
Hamersley Basin 2629 Ma
Fortescue Rifting Event
Fortescue Basin 2629 Ma 2775 Ma
Pilbara Craton
Split Rock Supersuite Magmatic Event
Split Rock Supersuite 2831 Ma 2851 Ma
Mosquito Creek Orogeny
Cutinduna Supersuite 2896 Ma 2897 Ma
North Pilbara Orogeny
Mallina Basin (Upper) 2940 Ma 2960 Ma
Sisters Supersuite 2919 Ma 2954 Ma
Mosquito Creek Basin 2930 Ma
De Grey Superbasin
Mallina Basin (Lower) 2960 Ma 3015 Ma
Gorge Creek Basin 3015 Ma 3066 Ma
Prinsep Orogeny
Elizabeth Hill Supersuite 3066 Ma 3068 Ma
c. 3200 Ma
East Pilbara Terrane Rifting Event
Soanesville Basin 3176 Ma 3228 Ma
Mount Billroth Supersuite 3164 Ma 3199 Ma
3178 Ma