PHANEROZOIC

CENOZOIC

QUATERNARY

Alluvial units

Ac	Alluvial; incised stream channel
Apc	Claypan; locally with salt efflorescences
Au	Superficial channel

Colluvial units

Cf	Colluvium
Cfg	Colluvium; dominantly quartzofeldspathic materials
Cfl	Colluvium; heterogeneous
Cfm	Colluvium; dominantly ferromagnesian materials

Sheetwash units

Wf	Sheetwash fan; very gently inclined landform (<1° slope); extremely low relief
Wff	Sheetwash plain; tan soils with abundant, fine-grained, ferruginous pisoid gravel

Eolian units

Ee	Sand dune
Er	Eolian sandplain
Ef	Eolian veneer over alluvium and/or colluvium
Ew	Swale

Residual or relict units

Rf	Residual or relict ferruginous materials; ferruginous and ferruginized saprolite; ferruginous duricrust; also includes transported material; cemented or uncemented ferruginous gravel
Rizu	Residual siliceous caprock developed over ultramafic rock
Rrkg	Groundwater calcrete; locally forms low mounds; nodular to massive; commonly with alternating layers of carbonate and chalcedony
Rrkp	Pedogenic calcrete; nodular to massive
Rrz	Duricrust (residual or relict); silcrete

PROTEROZOIC

MESOPROTEROZOIC

NEOPROTEROZOIC

Petermann Orogeny (*c.* 570–530 Ma[1])

Ꝑod	Dolerite dyke, sill or plug; fine- to medium-grained dolerite and gabbro
Ꝑog	Gabbro and metagabbro of various ages; typically ophitic to subophitic textures or granoblastic where metamorphosed
Ꝑzq	Massive, coarse-grained vein quartz
Ꝑmod	Metadolerite and dolerite of various ages; typically ophitic to subophitic textured; locally with garnet coronas around pyroxene; interpreted from aeromagnetic data where dashed

MUSGRAVE PROVINCE

ꝐmyyMU	Mylonite and blastomylonite; unassigned; predominantly felsic and locally garnet-bearing

825 Ma

ꝐGD-od	**Gairdner Dyke Swarm:** medium-grained dolerite and metadolerite; typically intergranular to subophitic; polygonal granoblastic where metamorphosed

c. 1000 Ma

ꝐKL-od	**Kullal Dyke Suite:** fine-grained olivine–plagioclase dolerite and metadolerite; typically porphyritic; granoblastic where metamorphosed

Giles Event (*c.* 1082–1060 Ma[1 2 3])

1075–1060 Ma[3]

Warakurna Supersuite

ꝐWK-mgry	Mylonitic syenogranite; leucocratic but typically contains mafic xenoliths; locally abundant K-feldspar phenocrysts up to 1 cm
ꝐWK-grl	Fine- to medium-grained, porphyritic to seriate-textured syenogranite; leucocratic but typically contains mafic xenoliths; locally abundant K-feldspar phenocrysts up to 1 cm; rare rapakivi texture
ꝐWK-ggc	Medium-grained clinopyroxene-bearing granodiorite; massive to weakly foliated; locally abundant mafic clots
ꝐWK-gmhb	Medium- to coarse-grained hornblende–biotite monzogranite; massive

BENTLEY BASIN

Bentley Supergroup

Tollu Group

ꝐTLs-frp	**SMOKE HILL VOLCANICS** Porphyritic rhyolite and lesser dacite as lavas and subvolcanic sills and cryptodomes; includes up to 10% subhedral to euhedral microcline phenocrysts up to 6 mm; locally laminated, flow banded, amygdaloidal or spherulitic

c. 1075 Ma

Skirmish Hill volcanic association

ꝐBEk-fcp	Rhyodacite and dacite; plagioclase phenocrysts and glomerophenocrysts up to 8 mm; locally amygdaloidal; includes layers or sheets of medium-grained granophyre

c. 1075 Ma

Warakurna Supersuite

Giles Suite

ꝐWKg2-o	Mafic intrusive rock; massive or weakly layered; locally mingled with leucogranite; undivided
ꝐWKg2-ogb	Fine- to medium-grained biotite-bearing gabbro; locally interleaved with granite
ꝐWKg2-xog-g	Gabbro; ophitic to subophitic texture; variably mixed and mingled with leucogranite; locally foliated and mylonitic
ꝐWKg2-mog	Fine- to medium-grained metagabbro; granoblastic texture; locally foliated
ꝐWKg2-mogy	Mylonite derived from gabbro or from mixed and mingled gabbro and leucogranite

≥1078 Ma

ꝐWKg1-oa	Medium- to coarse-grained anorthosite; massive to foliated; locally with symplectic intergrowths of clinopyroxene and plagioclase
ꝐWKg1-otly	Coarse-grained leucotroctolite; layered; cumulate texture with glomeroporphyritic olivine commonly enclosed in orthopyroxene
ꝐWKg1-otn	Olivine-rich troctolite; olivine poikilitic to granoblastic texture; contains up to 70% olivine; locally foliated
ꝐWKg1-og	Medium-grained, even-textured gabbro; locally olivine porphyritic
ꝐWKg1-oge	Massive gabbro; even-grained; locally weakly metamorphosed
ꝐWKg1-ogj	Fine- to coarse-grained gabbro; interstitial magnetite typically penetrates mineral fractures
ꝐWKg1-ogl	Medium- to coarse-grained leucogabbro; poikilitic; locally weakly metamorphosed
ꝐWKg1-ogn	Medium-grained olivine-bearing gabbro
ꝐWKg1-ogp	Medium-grained porphyritic gabbro; phenocrysts of orthopyroxene up to 6 mm
ꝐWKg1-ogx	Medium-grained intergranular to subophitic melagabbro
ꝐWKg1-ogxn	Olivine-porphyritic melagabbro; weakly metamorphosed
ꝐWKg1-ogy	Gabbro; mm- and cm-scale layering of pyroxenite to anorthosite compositions; locally metamorphosed
ꝐWKg1-ogz	Massive weakly metamorphosed gabbro; well-developed ophitic to subophitic texture with oikocrysts up to 1 cm
ꝐWKg1-occ	Medium-grained clinopyroxene melagabbro; intergranular to adcumulate texture
ꝐWKg1-om	Medium- to coarse-grained gabbronorite; equigranular; massive to weakly layered; locally foliated
ꝐWKg1-oml	Medium-to coarse-grained leucogabbronorite; equigranular; massive to layered on cm-scale; locally weakly foliated
ꝐWKg1-omal	Fine-grained, even-textured leucogabbronorite; forms sills, dykes, and xenoliths
ꝐWKg1-omy	Fine-grained gabbronorite; weakly laminated; abundant magnetite oikocrysts up to 2 cm
ꝐWKg1-oo	Fine- to medium-grained olivine gabbro; massive to weakly foliated; locally shows cm-scale mineralogical banding
ꝐWKg1-ooj	Medium-grained olivine gabbro; magnetite aggregates up to 5 mm
ꝐWKg1-oojy	Olivine gabbro; magnetite-rich layers 1–2 m thick
ꝐWKg1-ow	Coarse-grained, massive to foliated norite
ꝐWKg1-moty	Mylonitic leucotroctolite; layered protolith
ꝐWKg1-mosy	Mylonite derived from mafic intrusive rock

ꝐWKg1-apz	Poikilitic peridotite; olivine orthocumulate with poikilitic clinopyroxene and interstitial plagioclase
ꝐWKg1-ax	Massive pyroxenite; locally weakly metamorphosed; adcumulate to poikilitic texture
ꝐWKg1-axc	Medium-grained clinopyroxenite; adcumulate texture

> 1078 Ma

Bentley Supergroup

Kunmarnara Group

ꝐKRm-bbg	**MUMMAWARRAWARRA BASALT:** vesicular and amygdaloidal basalt, basaltic andesite, and andesite; locally plagioclase porphyritic; epidotized
ꝐKRd-sg	**MACDOUGALL FORMATION:** quartz-pebble conglomerate and sandstone
ꝐKRd-mxsm	Strongly foliated quartz-pebble conglomerate, feldspathic sandstone, muscovite quartzite, and phyllite; metamorphosed; locally garnetiferous near mafic intrusions

BENTLEY BASIN

Musgravian Orogeny (*c.* 1219–1155 Ma[4])

Pitjantjatjara Supersuite

ꝐPJ-mg	**Pitjantjatjara Supersuite;** metagranite and gneiss
ꝐPJ-mgmu	Weakly to strongly foliated, porphyritic leucocratic metamonzogranite; contains clinopyroxene, orthopyroxene, and hornblende; K-feldspar phenocrysts up to 2 cm; locally mylonitic
ꝐPJ-mgrl	Moderately foliated, medium- to coarse-grained leucocratic syenogranite; irregular quartz blebs to 2 cm in a feldspathic groundmass
ꝐPJ-jmg-mh	Weakly to strongly foliated, medium- to coarse-grained, equigranular leucosyenogranite; locally contains rounded garnet up to 2 cm; rafts of metatexitic psammite and pelite

Late Pitjantjatjara Supersuite (*c.* 1190–1155 Ma)

ꝐPJ2-mge	Fine- to medium-grained, massive to weakly banded granofels and metamorphosed schlieric leucogranite; typically <5% mafic minerals; seriate to K-feldspar porphyritic
ꝐPJ2-mgsi	Fine- to medium-grained, schlieric, orthopyroxene(–hornblende)-bearing metaleucogranite; weakly to strongly foliated; locally abundant xenoliths and layers of metatexitic to diatexitic granite and gneiss

Early Pitjantjatjara Supersuite (*c.* 1219–1190 Ma)

ꝐPJ1-mgmn	Strongly foliated to gneissic, porphyritic leucogranite; locally migmatitic and intruded by schlieric leucogranite; K-feldspar phenocrysts to 2 cm; locally mylonitic
ꝐPJ1-mgmo	Charnockite; orthopyroxene–clinopyroxene(–hornblende) metamonzogranite; massive to weakly foliated; feldspar porphyritic
ꝐPJ1-mgmu	Weakly to strongly foliated, porphyritic, leucocratic, clinopyroxene–orthopyroxene–hornblende metamonzogranite; K-feldspar phenocrysts to 2 cm; locally mylonitic
ꝐPJ1-mgry	Mylonitic, medium- to coarse-grained, metamorphosed leucocratic syenogranite; quartz ribbons to 2 cm in a feldspathic groundmass
ꝐPJ1-jmg-md	Strongly foliated to gneissic, porphyritic monzogranite with schlieren, rafts, and screens of metasedimentary rock

ꝐmgelMU	Medium-grained metaleucogranite; even-textured to granoblastic; strongly foliated; locally silicified
ꝐmgmuMU	Coarse-grained porphyritic metamonzogranite; up to 10% rounded K-feldspar phenocrysts; locally foliated and weathered
ꝐmgmyMU	Coarse-grained porphyritic metamonzogranite; strongly foliated to mylonitic
ꝐmgnMU	Granitic gneiss
ꝐmgsyMU	Mylonite derived from granite; undivided

Mount West Orogeny (*c.* 1336–1293 Ma[5])

1336–1293 Ma

Wankanki Supersuite

ꝐWN-mgmu	Weakly to strongly foliated, porphyritic metamonzogranite; contains clinopyroxene, orthopyroxene, and hornblende; K-feldspar phenocrysts to 2 cm; locally mylonitic
ꝐWN-mgni	Migmatitic gneiss; metatexitic to diatexitic; locally stromatic; mainly derived from hypersthene–biotite granodiorite and monzogranite but includes metasedimentary and metavolcaniclastic protoliths
ꝐWN-mgno	Orthopyroxene–clinopyroxene–biotite gneissic granite; locally shows cm-scale gneissic banding; texturally and mineralogically gradational with weakly to strongly foliated porphyritic metamonzogranite; includes sheets of metatexite and schlieric leucogranite
ꝐWN-mgrb	Weakly to strongly foliated biotite metasyenogranite; <5% mafic minerals; typically with abundant microcline; locally gneissic and contains abundant veins and sheets of schlieric leucogranite
ꝐWN-mgsy	Mylonite derived from metamorphosed granite or gneiss
ꝐWN-xmfn-mh	Composite gneiss comprising felsic volcanic and volcaniclastic units interlayered on a cm- to m-scale with psammite, garnetiferous pelite, and rare calc-silicate rocks; typically metatexitic and cut by locally abundant, variably transposed leucogranite veins; locally epidotized along faults
ꝐWN-xmfn-mr	Composite gneiss comprising leucocratic felsic volcanic and volcaniclastic units interlayered on a cm- to m-scale with orthopyroxene–plagioclase(–quartz) acid to intermediate granulite; locally metatexitic and cut by variably transposed leucogranite veins
ꝐWN-xmgn-mg	Interleaved orthopyroxene–clinopyroxene–biotite gneissic granite and fine- to medium-grained schlieric orthopyroxene(–hornblende)-bearing leucogranite

MUSGRAVE PROVINCE

1360–1293 Ma

Wirku Metamorphics

ꝐWM-mhig	Metatexitic gneiss comprising cm- to m-thick layers of garnet–orthopyroxene–biotite(–cordierite–hercynite–hornblende) pelite and psammite with rare quartzite, feldspathic psammite, and calc-silicate layers; cut by locally abundant, variably transposed leucocratic veins
ꝐWM-mlig	Diatexitic, coarse-grained garnet–orthopyroxene–biotite(–cordierite) pelite; leucocratic; rounded garnet porphyroblasts up to 2 cm; migmatitic textures range from stromatic to nebulitic to raft migmatite
ꝐWM-mlil	Diatexitic, coarse-grained garnet–sillimanite–orthopyroxene–biotite(–cordierite) pelite; leucocratic; rounded garnet porphyroblasts to 2 cm; migmatitic textures range from stromatic to nebulitic to raft migmatite
ꝐWM-mtn	Fine- to medium-grained quartzofeldspathic gneiss; laminated to banded on a mm- to cm-scale and interlayered on a cm- to m-scale; locally with angular quartz grains up to 1 cm; typically metatexitic but locally diatexitic; locally intruded at various scales by several generations of granite
ꝐWM-mroo	Medium-grained orthopyroxene–plagioclase(–quartz) acid to intermediate granulite; locally garnetiferous; granoblastic texture; massive to moderately foliated
ꝐWM-mroi	Medium-grained orthopyroxene–plagioclase(–quartz) acid to intermediate granulite gneiss; laminated to banded on a mm- to cm-scale and interlayered with leucogranite veins on a cm- to m-scale; typically metatexitic and cut by locally abundant, variably transposed leucogranite veins
ꝐWM-xmhn-mf	Composite gneiss comprising garnet–orthopyroxene–biotite(–cordierite–hercynite–hornblende) pelite and psammite interlayered on a cm- to m-scale with lesser felsic volcanic and volcaniclastic units; typically metatexitic and cut by locally abundant, variably transposed leucogranite veins
ꝐWM-xmli-mr	Composite gneiss comprising diatexitic, coarse-grained garnet–orthopyroxene–biotite(–cordierite) pelite interlayered on a m-scale with lesser medium-grained orthopyroxene–plagioclase(–quartz) acid to intermediate granulite gneiss; cut by locally abundant, variably transposed leucogranite veins
ꝐWM-xmt-mh	Fine- to medium-grained, laminated feldspathic psammite interlayered with garnet–orthopyroxene–biotite(–cordierite–hercynite–hornblende) pelite and psammite; local orthopyroxene–plagioclase(–quartz) acid to intermediate granulite and calc-silicate interlayers; typically metatexitic

1360–1293 Ma

Piti Palya Metamorphics

ꝐPP-mh	**Piti Palya Metamorphics;** undivided weakly to strongly banded gneiss; typically quartzofeldspathic but includes amphibolitic rocks; mostly of sedimentary or volcanosedimentary protolith but possibly includes felsic to mafic intrusive protoliths
ꝐPP-mhni	Pelitic and psammitic gneiss; banded on a mm- to cm-scale and interlayered on a cm- to m-scale; includes garnet–sillimanite–cordierite–hercynite gneiss, quartz–feldspar–garnet–hypersthene gneiss, and quartz–plagioclase–hypersthene–biotite gneiss of clastic and volcaniclastic origin; migmatitic
ꝐPP-mhnl	Interleaved quartz–garnet–sillimanite–hercynite(–cordierite) pelitic gneiss, psammite, and thickly bedded quartzite; variably mylonitic
ꝐPP-mlni	Medium- to coarse-grained garnet–sillimanite pelitic gneiss; poorly to well banded; metatexitic to diatexitic; rounded garnet porphyroblasts up to 2 cm; locally interlayered with well-banded to laminated, medium-grained quartzofeldspathic paragneiss
ꝐPP-mnfo	Laminated to banded orthopyroxene-bearing quartzofeldspathic gneiss interleaved with pelitic gneiss
ꝐPP-xmh-mn	Interbedded garnet–sillimanite–hercynite(–cordierite) pelite and laminated to banded orthopyroxene-bearing quartzofeldspathic gneiss
ꝐPP-xmn-mh	Interbedded laminated to banded orthopyroxene-bearing quartzofeldspathic gneiss and garnet–sillimanite–hercynite(–cordierite) pelite

Ꝑxmna-mgMU	Amphibolitic gneiss interleaved with migmatitic granitic gneiss; locally mylonitic