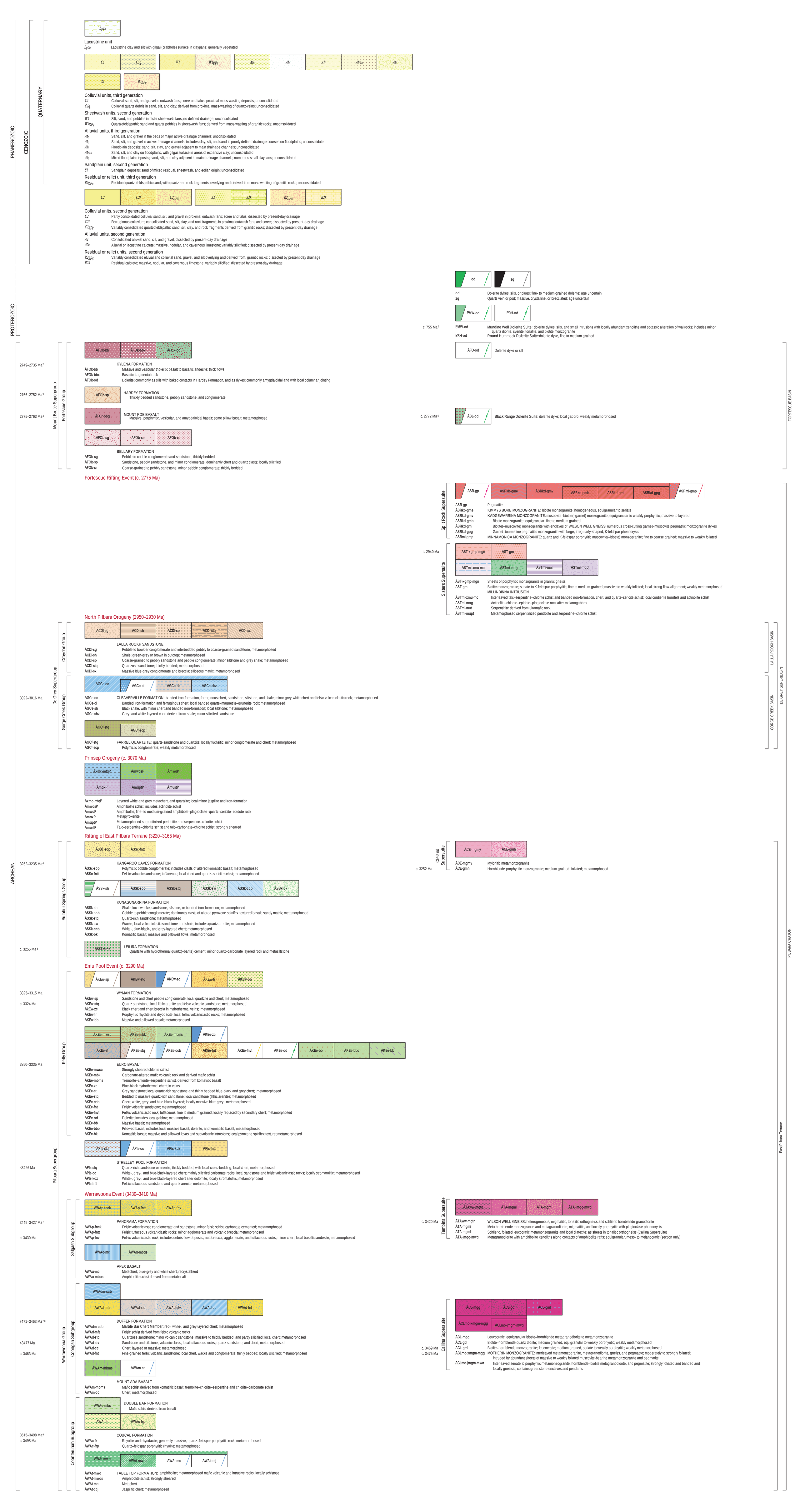
PHANEROZOIC
CENOZOIC
QUATERNARY
Lacustrine unit
Lp1b Lacustrine clay and silt with gilgai (crabhole) surface in claypans; generally vegetated
Colluvial units, third generation
C1 Colluvial sand, silt, and gravel in outwash fans; scree and talus; proximal mass-wasting deposits; unconsolidated
C1g Colluvial quartz debris in sand, silt, and clay; derived from proximal mass-wasting of quartz-veins; unconsolidated
Sheetwash units, second generation
W1 Silt, sand, and pebbles in distal sheetwash fans; no defined drainage; unconsolidated
W1gPz Quartzofeldspathic sand and quartz pebbles in sheetwash fans; derived from mass-wasting of granitic rocks; unconsolidated
Alluvial units, third generation
A1b Sand, silt, and gravel in the beds of major active drainage channels; unconsolidated
A1c Sand, silt, and gravel in active drainage channels; includes clay, silt, and sand in poorly defined drainage courses on floodplains; unconsolidated
A1f Floodplain deposits; sand, silt, clay, and gravel adjacent to main drainage channels; unconsolidated
A1ecs Sand, silt, and clay on floodplains, with gilgai surface in areas of expansive clay; unconsolidated
A1s Mixed floodplain deposits; sand, silt, and clay adjacent to main drainage channels; numerous small claypans; unconsolidated
Sandplain unit, second generation
S1 Sandplain deposits; sand of mixed residual, sheetwash, and eolian origin; unconsolidated
Residual or relict unit, third generation
R1gPz Residual quartzofeldspathic sand, with quartz and rock fragments; overlying and derived from mass-wasting of granitic rocks; unconsolidated
C2
C2f
C2gPz
A2
A2k
R2gPz
R2k
Colluvial units, second generation
C2 Partly consolidated colluvial sand, silt, and gravel in proximal outwash fans; scree and talus; dissected by present-day drainage
C2f Ferruginous colluvium; consolidated sand, silt, clay, and rock fragments in proximal outwash fans and scree; dissected by present-day drainage
C2gPz Variably consolidated quartzofeldspathic sand, silt, clay, and rock fragments derived from granitic rocks; dissected by present-day drainage
Alluvial units, second generation
A2 Consolidated alluvial sand, silt, and gravel; dissected by present-day drainage
A2k Alluvial or lacustrine calcrete; massive, nodular, and cavernous limestone; variably silicified; dissected by present-day drainage
Residual or relict units, second generation
R2gPz Variably consolidated eluvial and colluvial sand, gravel, and silt overlying and derived from, granitic rocks; dissected by present-day drainage
R2k Residual calcrete; massive, nodular, and cavernous limestone; variably silicified; dissected by present-day drainage
PROTEROZOIC
od Dolerite dykes, sills, or plugs; fine- to medium-grained dolerite; age uncertain
zq Quartz vein or pod; massive, crystalline, or brecciated; age uncertain
EMW-od
ERH-od
c. 755 Ma[1]
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
ERH-od Round Hummock Dolerite Suite: dolerite dyke, fine to medium grained
AFO-od Dolerite dyke or sill
FORTESCUE BASIN
APOk-bb
APOk-bbx
APOk-od
2749–2735 Ma[2]
KYLENA FORMATION
APOk-bb Massive and vesicular tholeiitic basalt to basaltic andesite; thick flows
APOk-bbx Basaltic fragmental rock
APOk-od Dolerite; commonly as sills with baked contacts in Hardey Formation, and as dykes; commonly amygdaloidal and with local columnar jointing
Mount Bruce Supergroup
Fortescue Group
APOh-sp
2766–2752 Ma[2]
HARDEY FORMATION
Thickly bedded sandstone, pebbly sandstone, and conglomerate
APOr-bbg
2775–2763 Ma[4]
MOUNT ROE BASALT
Massive, porphyritic, vesicular, and amygdaloidal basalt; some pillow basalt; metamorphosed
c. 2772 Ma[5]
ABL-od Black Range Dolerite Suite: dolerite dyke; local gabbro; weakly metamorphosed
APOb-sg
APOb-sp
APOb-sr
BELLARY FORMATION
APOb-sg Pebble to cobble conglomerate and sandstone; thickly bedded
APOb-sp Sandstone, pebbly sandstone, and minor conglomerate; dominantly chert and quartz clasts; locally silicified
APOb-sr Coarse-grained to pebbly sandstone; minor pebble conglomerate; thickly bedded
Fortescue Rifting Event (c. 2775 Ma)
Split Rock Supersuite
ASR-gp
ASRkb-gme
ASRkd-gmv
ASRkd-gmb
ASRkd-gmi
ASRkd-gpg
ASRmi-gmp
ASR-gp Pegmatite
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
ASRkd-gmb Biotite monzogranite; equigranular; fine to medium grained
ASRkd-gmi Biotite(–muscovite) monzogranite with enclaves of WILSON WELL GNEISS; numerous cross-cutting garnet–muscovite pegmatitic monzogranite dykes
ASRkd-gpg Garnet–tourmaline pegmatitic monzogranite with large, irregularly-shaped, K-feldspar phenocrysts
ASRmi-gmp MINNAMONICA MONZOGRANITE: quartz and K-feldspar porphyritic muscovite(–biotite) monzogranite; fine to coarse grained; massive to weakly foliated
c. 2940 Ma
Sisters Supersuite
AST-xgmp-mgn
AST-gm
ASTmi-xmu-mc
ASTmi-mog
ASTmi-mut
ASTmi-mopt
AST-xgmp-mgn Sheets of porphyritic monzogranite in granitic gneiss
AST-gm Biotite monzogranite; seriate to K-feldspar porphyritic; fine to medium grained; massive to weakly foliated; local strong flow-alignment; weakly metamorphosed
MILLINDINNA INTRUSION
ASTmi-xmu-mc Interlayered talc–serpentine–chlorite schist and banded iron-formation, chert, and quartz–sericite schist; local cordierite hornfels and actinolite schist
ASTmi-mog Actinolite–chlorite–epidote–plagioclase rock after melanogabbro
ASTmi-mut Serpentinite derived from ultramafic rock
ASTmi-mopt Metamorphosed serpentinized peridotite and serpentine–chlorite schist
North Pilbara Orogeny (2950–2930 Ma)
LALLA ROOKH BASIN
DE GREY SUPERBASIN
GORGE CREEK BASIN
ACDl-sg
ACDl-sh
ACDl-sp
ACDl-stq
ACDl-sx
Croydon Group
LALLA ROOKH SANDSTONE
ACDl-sg Pebble to boulder conglomerate and interbedded pebbly to coarse-grained sandstone; metamorphosed
ACDl-sh Shale; green-grey or brown in outcrop; metamorphosed
ACDl-sp Coarse-grained to pebbly sandstone and pebble conglomerate; minor siltstone and grey shale; metamorphosed
ACDl-stq Quartzose sandstone; thickly bedded; metamorphosed
ACDl-sx Massive blue-grey conglomerate and breccia; siliceous matrix; metamorphosed
AGCe-co
AGCe-ci
AGCe-sh
AGCe-shz
3022–3016 Ma
CLEAVERVILLE FORMATION: banded iron-formation, ferruginous chert, sandstone, siltstone, and shale; minor grey-white chert and felsic volcaniclastic rock; metamorphosed
AGCe-co Banded iron-formation and ferruginous chert; local banded quartz–magnetite–grunerite rock; metamorphosed
AGCe-ci Black shale, with minor chert and banded iron-formation; local siltstone; metamorphosed
AGCe-sh Grey- and white-layered chert derived from shale; minor silicified sandstone
AGCf-stq
AGCf-scp
AGCf-stq FARREL QUARTZITE: quartz-sandstone and quartzite; locally fuchsitic; minor conglomerate and chert; metamorphosed
AGCf-scp Polymictic conglomerate; weakly metamorphosed
De Grey Supergroup
Gorge Creek Group
Prinsep Orogeny (c. 3070 Ma)
Axmc-mtsP
AmwosP
AmwspP
AmoxP
AmopP
AmupP
Axmc-mtsP Layered white and grey metachert, and quartzite; local minor jaspilite and iron-formation
AmwosP Amphibolite schist; includes actinolite schist
AmwspP Amphibolite; fine- to medium-grained amphibole–plagioclase–quartz–sericite–epidote rock
AmoxP Metapyroxenite
AmopP Metamorphosed serpentinized peridotite and serpentine–chlorite schist
AmupP Talc–serpentine–chlorite schist and talc–carbonate–chlorite schist; strongly sheared
Rifting of East Pilbara Terrane (3220–3165 Ma)
PILBARA CRATON
East Pilbara Terrane
ASSc-sop
ASSc-frtt
3252–3235 Ma[6]
KANGAROO CAVES FORMATION
ASSc-sop Polymictic cobble conglomerate; includes clasts of altered komatiitic basalt; metamorphosed
ASSc-frtt Felsic volcanic sandstone; tuffaceous; local chert and quartz–sericite schist; metamorphosed
Cleland Supersuite
ACE-mgmy
ACE-gmh
c. 3252 Ma
ACE-mgmy Mylonitic metamonzogranite
ACE-gmh Hornblende-porphyritic monzogranite; medium grained; foliated; metamorphosed
ASSk-sh
ASSk-sob
ASSk-stq
ASSk-sw
ASSk-ccb
ASSk-bk
KUNAGUNARRINA FORMATION
ASSk-sh Shale; local wacke, sandstone, siltstone, or banded iron-formation; metamorphosed
ASSk-sob Cobble to pebble conglomerate; dominantly clasts of altered pyroxene spinifex-textured basalt; sandy matrix; metamorphosed
ASSk-stq Quartz-rich sandstone; metamorphosed
ASSk-sw Wacke; local volcaniclastic sandstone and shale; includes quartz arenite; metamorphosed
ASSk-ccb White-, blue-black-, and grey-layered chert; metamorphosed
ASSk-bk Komatiitic basalt; massive and pillowed flows; metamorphosed
ASSl-mbac
c. 3255 Ma[4]
LEILIRA FORMATION
Quartzite with hydrothermal quartz(–barite) cement; minor quartz–carbonate layered rock and metasiltstone
Sulphur Springs Group
Kelly Group
Emu Pool Event (c. 3290 Ma)
AKEw-sp
AKEw-stq
AKEw-zc
AKEw-fr
AKEw-bb
3325–3315 Ma
c. 3324 Ma
WYMAN FORMATION
AKEw-sp Sandstone and chert pebble conglomerate; local quartzite and chert; metamorphosed
AKEw-stq Quartz sandstone; local lithic arenite and felsic volcanic sandstone; metamorphosed
AKEw-zc Black chert and chert breccia in hydrothermal veins; metamorphosed
AKEw-fr Porphyritic rhyolite and rhyodacite; local felsic volcaniclastic rocks; metamorphosed
AKEw-bb Massive and pillowed basalt; metamorphosed
AKEe-mwsc
AKEe-mbk
AKEe-mbms
AKEe-zc
AKEe-st
AKEe-stq
AKEe-ccb
AKEe-fmt
AKEe-fmvt
AKEe-od
AKEe-bb
AKEe-bbo
AKEe-bk
3350–3335 Ma
EURO BASALT
AKEe-mwsc Strongly sheared chlorite schist
AKEe-mbk Carbonate-altered mafic volcanic rock and derived mafic schist
AKEe-mbms Tremolite–chlorite–serpentine schist, derived from komatiitic basalt
AKEe-zc Blue-black hydrothermal chert; in veins
AKEe-st Grey sandstone; local quartz-rich sandstone and thinly bedded blue-black and grey chert; metamorphosed
AKEe-stq Bedded to massive quartz-rich sandstone; local sandstone (lithic arenite); metamorphosed
AKEe-ccb Chert; white, grey, and blue-black layered; locally massive blue-grey; metamorphosed
AKEe-fmt Felsic volcanic sandstone; metamorphosed
AKEe-fmvt Felsic volcaniclastic rock; tuffaceous; fine to medium grained; locally replaced by secondary chert; metamorphosed
AKEe-od Dolerite; includes local gabbro; metamorphosed
AKEe-bb Massive basalt; metamorphosed
AKEe-bbo Pillowed basalt; includes local massive basalt, dolerite, and komatiitic basalt; metamorphosed
AKEe-bk Komatiitic basalt; massive and pillowed lavas and subvolcanic intrusions; local pyroxene spinifex texture; metamorphosed
APle-stq
APle-cc
APle-kdz
APle-fmtt
<3426 Ma
STRELLEY POOL FORMATION
APle-stq Quartz-rich sandstone or arenite; thickly bedded, with local cross-bedding; local chert; metamorphosed
APle-cc White-, grey-, and blue-black-layered chert; mainly silicified carbonate rocks; local sandstone and felsic volcaniclastic rocks; locally stromatolitic; metamorphosed
APle-kdz White-, grey-, and blue-black-layered chert after dolomite; locally stromatolitic; metamorphosed
APle-fmtt Felsic tuffaceous sandstone and quartz arenite; metamorphosed
Pilbara Supergroup
Warrawoona Event (3430–3410 Ma)
AWAp-fmck
AWAp-fmtt
AWAp-fmv
3449–3427 Ma[7]
c. 3430 Ma
PANORAMA FORMATION
AWAp-fmck Felsic volcaniclastic conglomerate and sandstone; minor felsic schist; carbonate cemented; metamorphosed
AWAp-fmtt Felsic tuffaceous volcaniclastic rocks; minor agglomerate and volcanic breccia; metamorphosed
AWAp-fmv Felsic volcaniclastic rock; includes debris-flow deposits, autobreccia, agglomerate, and tuffaceous rocks; minor chert; local basaltic andesite; metamorphosed
Tambina Supersuite
ATAww-mgtn
ATA-mgmi
ATA-mgmi
ATA-jmgg-mwo
c. 3420 Ma
ATAww-mgtn WILSON WELL GNEISS: heterogeneous, migmatitic, tonalitic orthogneiss and schlieric hornblende granodiorite
ATA-mgmi Meta hornblende monzogranite and metagranodiorite; migmatitic, and locally porphyritic with plagioclase phenocrysts
ATA-mgmi Schlieric, foliated leucocratic metamonzogranite and local dalradite; as sheets in tonalitic orthogneiss (Callina Supersuite)
ATA-jmgg-mwa Metagranodiorite with amphibolite xenoliths along contacts of amphibolite rafts; equigranular, meso- to melanocratic (section only)
AWAp-mc
AWAo-mbos
Salgash Subgroup
APEX BASALT
AWAo-mc Metachert; blue-grey and white chert; recrystallized
AWAo-mbos Amphibolite schist derived from metabasalt
AWAdm-ccb
AWAd-mfs
AWAd-stq
AWAd-stv
AWAd-cc
AWAd-fmt
3471–3463 Ma[7,8]
<3477 Ma
c. 3463 Ma
DUFFER FORMATION
AWAdm-ccb Marble Bar Chert Member: red-, white-, and grey-layered chert; metamorphosed
AWAd-mfs Felsic schist derived from felsic volcanic rocks
AWAd-stq Quartzose sandstone; minor volcanic sandstone; massive to thickly bedded, and partly silicified; local chert; metamorphosed
AWAd-stv Sandstone and siltstone; volcanic clasts; local tuffaceous rocks, quartz sandstone, and chert; metamorphosed
AWAd-cc Chert; layered or massive; metamorphosed
AWAd-fmt Fine-grained felsic volcanic sandstone; local chert, wacke and conglomerate; thinly bedded; locally silicified; metamorphosed
Callina Supersuite
ACL-mgg
ACL-gd
ACL-gmi
ACLmo-xmgm-mgg
ACLmo-jmgm-mwo
c. 3469 Ma
c. 3475 Ma
ACL-mgg Leucocratic, equigranular biotite–hornblende metagranodiorite to metamonzogranite
ACL-gd Biotite–hornblende quartz diorite; medium grained, equigranular to weakly porphyritic; weakly metamorphosed
ACL-gmi Biotite–hornblende monzogranite; leucocratic, medium grained, seriate to weakly porphyritic; weakly metamorphosed
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
ACLmo-jmgm-mwo Interleaved seriate to porphyritic metamonzogranite, hornblende–biotite metagranodiorite, and pegmatite; strongly foliated and banded and locally gneissic; contains greenstone enclaves and pendants
AWAm-mbms
AWAm-cc
MOUNT ADA BASALT
AWAm-mbms Mafic schist derived from komatiitic basalt; tremolite–chlorite–serpentine and chlorite–carbonate schist
AWAm-cc Chert; metamorphosed
Coonterunah Subgroup
Warrawoona Group
AWAo-mbs
AWAc-fr
AWAc-frp
3515–3498 Ma[9]
c. 3498 Ma
DOUBLE BAR FORMATION
Mafic schist derived from basalt
COUCAL FORMATION
AWAc-fr Rhyolite and rhyodacite; generally massive, quartz–feldspar porphyritic rock; metamorphosed
AWAc-frp Quartz–feldspar porphyritic rhyolite; metamorphosed
AWAt-mwa
AWAt-mwss
AWAt-mc
AWAt-ccj
AWAt-mwa TABLE TOP FORMATION: amphibolite; metamorphosed mafic volcanic and intrusive rocks; locally schistose
AWAt-mwss Amphibolite schist; strongly sheared
AWAt-mc Metachert
AWAt-ccj Jaspilitic chert; metamorphosed
ARCHEAN