

## Subject index

- accretion  
 Earth 19, 24, 26  
 terrane 309, 620, 626–628, 643
- activation  
 energy 51, 308, 433–438, 453, 481, 514–518, 530, 586  
 enthalpy 432, 434, 508, 532, 535, 658  
 volume 525, 527–531, 540
- adiabat, mantle 6, 12, 96, 298, 314, 332, 338, 343, 377, 455
- admittance 561–563, 568–569, 573, 576–579, 592–594
- advection 221, 311, 332, 626, 628
- age  
 age-dependence 53, 95, 162, 167–169, 178, 201, 205, 215, 217, 237, 248, 252–255, 271–272, 283, 299, 320, 385, 418, 458, 460, 496, 503, 546, 574, 584–585, 600  
 and isochron 20, 27  
 depletion age 36, 46  
 model age 35  
 global distribution 38, 608, 655–656  
 geological 38, 40, 306  
 of ocean floor 42, 200, 252, 644  
 of continental crust 38, 91, 423, 612  
 of lithospheric mantle 40, 46, 166, 274, 619–620  
 tectono-thermal 38, 40, 208
- anelasticity 48, 53, 74, 176, 207, 358
- anisotropy,  
 electrical, 10, 426, 434, 462, 464, 477–480, 488, 494–495  
 mechanical (flexural) 594, 599, 606  
 thermal 229  
 seismic, 9  
 azimuthal 58–60, 187, 495, 596, 674  
 frozen-in 62, 97, 189, 193, 201  
 LPO 58, 61–62, 495, 518, 523, 539, 551, 592  
 olivine 62, 116, 137, 176, 502  
 orthopyroxene 62, 64  
 polarization 188–189, 195–200  
 structural 58
- anharmonicity 53, 358
- anorthosite 547, 638–640
- Archean (see also cratons)  
 mantle temperature 289, 614  
 paradox 287–289
- Arrhenius law 50, 210, 352, 432, 508, 516, 529
- asthenosphere, 2–3, 9, 12, 66, 96, 190, 199, 202, 266, 298, 348, 387, 394, 404, 448–450, 479, 486, 495, 514, 537, 588  
 see also lithosphere-asthenosphere boundary, LVZ
- attenuation,  
 seismic-wave 9, 48, 66, 207, 360, 464  
 effect of grain size 53  
 effect of temperature 50, 210, 351–352  
 frequency dependence 51–53
- avalanche, mantle 628, 633, 656
- basal drag 11, 664–667
- basalt  
 flood basalt, see also Geographical Index 13, 394, 636–637  
 mid-ocean ridge basalt (MORB) 13, 19, 24, 28, 43, 64, 332, 376–378, 401, 448, 623, 626  
 ocean island basalt (OIB) 13, 17, 35, 64, 626, 636  
 ocean plateau basalt 637, 643
- basin  
 back-arc 149, 268, 351  
 ocean 199, 259, 457, 476, 587  
 sedimentary 93, 128, 144, 154, 159, 221, 487, 594, 600
- body-waves 74, 134, 156, 188
- boundary layer  
 thermal (TBL) 12, 13, 42, 96, 166, 222, 256, 259, 288, 297–298, 323, 372, 376, 402, 551, 633, 654, 660  
 chemical (CBL) 12, 13, 99, 213, 259, 298, 325, 372, 376, 393, 398, 402, 654  
 mechanical (MBL) 11, 376, 549, 552, 597–598, 606  
 rheological (RBL) 9, 10, 11, 327, 334, 372, 552  
 see also lithosphere
- brittle–ductile transition 295, 509, 512, 542–543, 550, 586, 605–606
- Bulk Earth (BE) 17
- Bulk Silicate Earth (BSE) 18–19, 24, 26, 624
- buoyancy 110, 173, 187, 222, 292, 402, 406, 552, 642
- Burgers vector 61, 64, 520
- Byerlee's friction law 510–512, 605
- chondrites 17–19, 24, 26–32, 36  
 CHUR 17, 18, 28

- Clapeyron slope 99, 632  
 classification  
   geochemical 15  
   cosmochemical 17  
   Goldschmidt rule 381  
 clinopyroxene 225, 377, 403, 433, 456, 534  
 coherence 555, 561, 563–565, 568, 570, 576–579, 592, 601  
 composition,  
   *see also* heterogeneity, mantle compositional;  
   crust, *see* continental crust; oceanic crust  
   modal 380, 386, 390, 534  
   normative 382, 400–401, 409  
   upper mantle (*see also* BSE; heterogeneity, mantle  
   compositional; PUM, pyrolite mantle)  
   continental trend 71, 181, 383–384, 624  
   depleted 10, 17, 28, 31, 32, 36, 46, 67, 298,  
   354, 378–380, 385, 394, 396, 405, 420,  
   535, 601  
   enriched 12–13, 17, 19, 454  
   fertile 17, 176, 321, 334, 346, 380  
   layering 365, 386, 390, 394, 396, 402, 405,  
   421, 481  
   melt-metasomatism 69, 111, 240, 343, 394–395,  
   402, 405, 415, 416, 419, 421, 440, 480–482,  
   619, 658, 659  
   oceanic trend 67, 383, 384  
   primitive 17  
 concordia 25  
 Conrad discontinuity, *see* seismic discontinuity  
 constitutive equations 523, 527, 528  
 continental crust, *see also see* seismic discontinuity,  
   Moho  
   complementarity to depleted mantle 30, 623–624,  
   626, 627  
   composition 16, 84, 237, 601, 608, 615, 623,  
   627, 643  
   growth 35, 38, 623, 626, 645, 646–649  
   recycling 648–651, 656, 668  
 convection, mantle  
   edge-driven 636, 638, 640  
   global pattern 12, 172, 178, 221, 283, 289, 308, 335,  
   413, 450, 495, 628, 633–634, 658, 664  
   layered 287, 387, 396, 632, 656  
   small-scale, secondary 201, 255, 259, 264,  
   308, 398  
   whole-mantle 287, 289, 387, 632, 645  
 core 16, 18, 26, 135, 190, 220, 236, 365, 381, 624  
 core-mantle boundary 17, 136, 187, 633, 635, 645  
 cratons (*see also* Geographical Index)  
   Archean, two groups 307, 308, 315, 345, 415, 423,  
   659–660  
   general features 93, 111, 170, 208, 217, 238, 247,  
   271, 301, 309, 320, 339, 393, 477, 612,  
   620, 636  
 creep, *see* deformation mechanisms  
 crust, *see* continental crust, oceanic crust  
 crustal correction,  
   in seismic tomography, 143–145, 208  
   in flexural modeling 571–574  
 decay (radioactive) 8, 19–20, 230, 313  
   decay constant 20  
 decoupling, mechanical 11, 61–63, 176, 199, 492, 508,  
   513–514, 535, 543, 548–551, 556–557,  
   571–572, 586, 591–592, 598–599  
 deformation, *see also* deformation mechanisms  
   brittle (elastic), 506, 542, 549, 559, 603, 605  
   Coulomb 511  
   ductile (viscous), 506, 507, 509, 542, 543  
   plastic, 506, 507  
   visco-elastic 11, 199, 492, 513–514, 586  
   Brace-Goetze strength profiles, *see also* YSE  
   541–543  
   stress envelopes 543–545  
 deformation, olivine, 61–63, 176, 199, 413, 508, 518,  
   535, 548–551, 552, 556–557, 571–572,  
   591–592, 598–599  
 deformation mechanisms 524  
   diffusion creep, 61, 199, 515–517, 520, 523,  
   528, 538  
   grain-boundary diffusion (Coble creep) 517  
   grain boundary sliding 61, 517, 521  
   matrix diffusion (Nabarro-Herring creep) 517, 532  
   dislocation (power-law) creep, 60, 63, 197, 199, 514,  
   517–518, 520, 523, 528, 533  
   Harper-Dorn creep, 518  
   Peierls plasticity 519, 524–525  
   transition between diffusion and dislocation creep 9,  
   99, 534  
 delamination 42, 94, 162, 615, 626, 661–662  
 depleted mantle, *see* composition, mantle; basalt,  
   mid-ocean-ridge  
 differentiation, mantle 4, 17, 29, 34, 36, 38, 67, 309,  
   383, 619, 624–625, 627–628, 646  
 dihedral angle 65, 444  
 dispersion, seismic-wave, 49, 77, 139, 195 *see also*  
   attenuation, seismic-wave  
 dome-and-keel tectonics 615–618  
 Dorn's law 508  
 dunite 51, 382, 385, 409, 540, 637  
  
 $\epsilon_{HF}$  33, 34  
 $\epsilon_{Nd}$  28, 34  
 earthquake 11, 59, 83, 469, 543, 603–605  
 eclogite, *see also* magmatism, intraplate 310, 320, 448,  
   626, 637, 644, 661  
 effective elastic thickness, *see* lithosphere thickness  
 elastic core 544, 558, 605  
 elasticity, *see also* deformation 543  
 elements  
   chalcophile 16  
   compatible minor/trace elements 16  
   incompatible 16

- LILE 16  
 lithophile 15  
 rare Earth elements (REEs), 16  
 refractory 17  
 siderophile 15  
 enriched mantle, see composition, upper mantle, fertile;  
   basalts, OIB  
 exchange reactions 328, 331  
 extension,  
   lithospheric 118, 188, 268, 292–293, 343, 486–489,  
     506, 542, 595, 605, 635, 661  
   extension factor 118, 292  
 fault 109, 194, 245, 271, 471, 483, 489–491, 492,  
   510–511, 565  
 fertile mantle, see composition, upper mantle  
 flexural rigidity, 5–6, 555, 556–557, 558–559, 561, 564  
   anisotropic 570  
   thin-plate approximation 559–560  
 flood basalt, see magmatism, LIPs  
 fluids, see water in the mantle  
 forsterite content, see also Mg-number 380  
 Fresnel zone 76, 116, 215  
 fugacity 425, 436–438  
 garnet 29, 64, 183, 363, 385, 393, 448, 534  
   garnet stability field 69, 72, 181  
   effect on density and seismic velocity 387, 403, 405  
   see also spinel stability field; phase transition  
 geoid 68, 181, 221, 264, 363, 406  
 geotherm, 8, 543  
   active continents  
     collisional orogens 290  
     extensional regions 292  
   oceanic,  
     cooling half-space model 257–258  
     plate model 259, 261–263  
   reference, 277, 282  
   stable continental, 13, 238, 243, 274–280, 360,  
     362–363, 365  
     uncertainty 276, 280–282  
   xenolith, see also temperature 240, 323–324, 332,  
     340, 342–346  
     garnet geotherm, 336–338, 372, 393  
     kink 324, 333–336, 372  
     uncertainty, *see also* geothermobarometers 239,  
       332–333, 371  
 geothermobarometers 328–332  
 Goetze's criterion 508, 513  
 Goldschmidt's mineralogical phase rule, see  
   classification  
 GPS 588, 590, 599  
 grain size,  
   influence on rheology 60, 516, 517, 518, 523–525,  
     528, 532–533  
   influence on seismic parameters 53–57  
   variations with depth 53–56, 99, 110, 176, 325, 328  
 granulite 232, 234, 408, 644  
 gravity anomalies, see also isostasy 11, 74, 181, 554  
   compositional variations 415–416  
   wavelength 423, 562, 565  
 growth rate, crustal, see continental crust  
 harzburgite 67, 267, 385, 394, 396, 402, 481, 627  
   low-Ca 385  
 HCL (high conductivity layer), see asthenosphere  
 heat conduction, 222, 256, 275, 289  
 heat flux 221, 250–251, 271, 274  
   from mantle 282–287  
   global loss 220, 310–313  
   heat flow province 241  
   paleocorrections 223–224  
   reduced 241, 247–248  
   wavelength 238, 242  
 heterogeneity, mantle compositional  
   as reflected in density 13, 376, 391, 403, 406,  
     415, 423  
   as reflected in electrical data 431, 439, 454, 502  
   as reflected in seismic data 70, 72, 110, 111, 157,  
     177–181, 349, 358, 363–364, 390–391, 419  
   density-velocity scaling factor 72, 74, 183, 349,  
     363, 402  
   isotopic 28  
   lateral 370, 395  
   secular trends 13, 34, 178, 320, 385–387, 421  
   suboceanic 268, 401, 458, 462, 546, 586  
   subcontinental 17, 69, 315, 363–365, 392, 421, 601,  
     606, 627, 643, 658  
   vertical 110, 176, 178, 216, 324, 392  
 hotspot, see also Geographical Index 17, 172, 641  
   electrical conductivity 466–468, 496  
   heat flux 270, 274, 313  
   seismic structure 174, 211  
   *see also* plume, mantle; basalt, ocean islands  
 hydrogen diffusion, 446, 463, 481, 536  
 isentropic, see *adiabat, mantle*  
 isochron equation 20  
 isopycnic hypothesis 180, 376, 406–410  
 isostasy 552, 561  
   classical models 552–554, 555, 587  
     Airy-type 552, 562  
     Pratt-type 552, 562  
     general type 553–554  
   flexural 554–555, 558, 575, 603  
   regional 555, 558  
 isostatic response function 562  
 isotope 19  
 isotope ratios 18, 20  
 juvenile crust, see continental crust, growth  
 kimberlite 147, 323, 336, 338, 343, 346, 386, 394–398,  
   411, 412, 416, 419, 450, 655

- Kola Superdeep Borehole 244–247  
 komatiite 289, 384, 462, 624, 641
- LAB (lithosphere–asthenosphere boundary) 4, 205, 328, 495, 496  
*see also* lithosphere thickness  
 lherzolite 67, 385, 396, 540  
 LIPs (large igneous provinces), *see* basalts and Geographical Index  
 lithospheric mantle 1, 420  
*see also see* composition, upper mantle; pyrolite  
 lithosphere, *see also* boundary layer, perisphere, tectosphere  
 basic definitions 1, 2, 3–5, 14  
 elastic 5–6, 556  
 electrical 10, 503  
 mechanical 7, 12  
 petrologic 5, 12, 394  
 seismic 8, 201  
 thermal 7, 297  
 lithosphere recycling  
*see* basal drag; continental crust, recycling; Rayleigh–Taylor instability; subduction  
 lithosphere thickness, *see also* boundary layer LAB  
 elastic, 5, 6, 556, 586, 593–594, 595–599, 601–602  
 effective elastic 557, 560  
 variations with age 584–585, 586, 599–601  
 electrical 10, 479, 481, 488, 496–501, 503  
 mechanical 557  
 petrologic, 10–11, 325, 337  
 rheological 551–552  
 seismic, *see also* LVZ 9, 12–13, 96, 109, 202–206, 216–217  
 thermal 7–8, 13, 257, 259, 260, 298, 345–346  
 variations with age 257, 265–266, 300–306  
 load,  
 external (topographic or surface) 556  
 internal (subsurface), 556, 563  
 loading ratio 563  
 Love waves, *see* surface waves  
 LPO (lattice preferred orientation), *see* anisotropy, seismic  
 LVZ (low-velocity zone), 3, 9, 57, 65, 77–78, 79, 96–98, 128–130, 166, 168, 202, 499  
*see also* asthenosphere; lithosphere thickness, seismic  
 magmatism, *see* basalt  
 Maxwell time 514, 543  
 melt  
 amount of,  
 in upper mantle 66, 97, 98, 359, 362, 401, 442, 445, 447, 458, 462, 464, 465, 469, 471, 488, 492, 495, 496, 539–540  
 degree of melting 447  
 melt fraction 447  
 geometry of inclusions 64–66, 442–445  
 melting  
 batch, 447  
 decompressional 376  
 fractional, 447  
 influence of fluids, 64  
 melt extraction, 67, 377, 378, 380, 387, 421, 449, 467, 540  
 Mg-number (Mg#), 67–72, 380, 393–394, 403, 407  
 metasomatism, *see* composition, mantle  
 mid-ocean ridge, 42, 95, 149, 167, 190, 201, 212, 251, 255, 259, 378, 445, 447, 449, 463, 465, 496, 537, 546, 667  
*see also* basalts; spreading rate; Geographical Index  
 moduli, elastic 47–48, 506–507  
 Mohr–Coulomb failure 509–510  
 Moho, *see* seismic discontinuity  
 models, global  
 crustal CRUST5.1 and CRUST2.0 88–91  
 thermal TC1 307  
 Nusselt number 222  
 Occam inversion 429  
 oceanic crust 42, 95–96, 258, 263, 282, 376, 608, 623  
 oceanic trend, *see* composition, upper mantle  
 ocean  
 anomalous 95, 270  
 normal 166  
 oceanic plateau, *see* Geographical Index  
 olivine, anisotropy, seismic 67  
 orthopyroxene, *see also* anisotropy, seismic 69, 72, 181, 380, 382, 384, 385, 387, 411, 421, 448, 534  
 Opx# 71, 181  
 overturns, mantle, 633, 645, 656  
 oxidation state (mantle), *see* redox reactions  
 partition coefficient 16  
 Péclet number 221  
 peridotite (mantle), *see also* composition 320, 381  
 abyssal 380  
 garnet 240, 330, 364, 386, 395, 446  
 high-temperature 325, 334, 336, 346, 383  
 low-temperature 324, 383  
 massif (orogenic) 239, 412  
 coarse 325  
 sheared 327  
 perisphere, 12–13, 96  
 phase transition  
 gabbro/basalt-eclogite 87, 490  
 graphite-diamond 330  
 olivine-spinel, 440  
 spinel-garnet 131, 330, 393  
*see also* transition zone (mantle); seismic discontinuity, 410-km, 660-km  
 plate motion, direction 189–190, 194, 195, 200, 494, 634

- plate tectonics, 4, 11, 148, 374, 554  
 driving forces, 630, 667  
 start of 123, 289, 309, 615, 643–644
- platform, see also Geographical Index 93
- plume, mantle (see also hotspot; Geographical Index)  
 172–174, 275, 312, 630, 634, 636, 640
- PNE seismic profiles 127–131
- Poisson's ratio 48, 85, 507
- postglacial rebound 560, 588, 606  
 Fennoscandian, 588–590  
 North American 590, 595
- Prandtl number 222
- PUM (primitive upper mantle) 31, 36
- pyrolyte, 381
- Q (seismic quality factor) see attenuation, seismic
- Rayleigh number 222
- Rayleigh–Taylor instability 661
- Rayleigh waves, see surface waves
- redox reactions, 437 see also fugacity  
 redox buffer 437
- reference models, seismic  
 ak135, iaspei (or iasp91) 79, 195, 202  
 oceanic, 174  
 PREM, 79, 145–147, 195, 354
- rheological models,  
 “jelly-sandwich” 548, 605  
 “crème brûlée” 549, 615  
 “banana split” 549
- rift, continental, see also Geographical Index 86, 171, 635
- seismic event relocation 83
- seismic velocity, see also reference models, seismic  
 absolute 148, 171, 202, 488  
 relative 9, 81, 147–148, 202
- seismic discontinuity,  
 Conrad discontinuity 85, 94  
 G (Gutenberg)-discontinuity 96, 402  
 L (Lehmann)-discontinuity 2, 98–99, 199, 480  
 Moho 77, 86–93, 94, 105, 107, 116–117, 130–131, 295  
 410 km, 7, 49, 98, 106, 111–112, 130, 174, 299, 440,  
 631–632, 661  
 520 km, 130, 453  
 660 km, 111–112, 172, 631–633, 645
- shear heating 255, 266, 271, 327
- shear-wave splitting, see anisotropy, seismic
- shield, see craton
- solidus, see temperature
- spinel stability field, see also garnet stability field; phase  
 transition 67
- spreading rate 96, 201, 252, 463
- strain rate, geological 61, 508
- stretching factor, see extension
- stress  
 bending 544, 559, 560, 582  
 yield 507
- subduction, 86, 135, 190, 212, 290, 448, 459,  
 469–470, 557  
 anisotropy, seismic 194  
 Archean, seismic evidence (see also plate tectonics)  
 626–627, 644  
 electrical structure 470–472, 474, 482, 485, 490  
 thermal structure 266–268, 290
- supercontinents 634–635
- surface waves, see also tomography  
 fundamental mode, 138, 139, 143  
 Love waves 74, 138, 145, 188, 195  
 Rayleigh waves 74, 138, 143–144, 188, 195
- T<sub>e</sub>*, see lithosphere thickness, elastic
- tectosphere 13
- temperature, see also geotherm; Archean  
 Curie 365, 367  
 gradient, adiabatic 258, 298, 455  
 homologous 50  
 melting,  
 liquidus 367  
 solidus 5, 6, 64  
 potential see also adiabat, mantle, 7, 12
- thermal diffusion 230
- thermobarometry, see geotherm, xenolith
- tomography (seismic), see also body waves; surface  
 waves; dispersion  
 regularization method 78, 81  
 resolution  
 checkerboard test 82–83  
 smearing test 82  
 sensitivity kernel 139
- transfer function, see admittance
- transition, continent-ocean 145, 162, 215, 366
- transition zone (mantle) 111–114, 174, 175, 440
- traps, see basalt, flood-basalts
- TTG (tonalite-trondheimitic-granodiorite) 614
- Urey ratio 275, 289
- viscosity, see also deformation mechanisms 513, 514,  
 518, 519, 523, 530, 539  
 typical ranges:  
 asthenosphere 298, 552, 588  
 lithosphere 298, 552  
 lower mantle 590  
 uncertainty 525, 528, 531, 532, 540, 588  
 upper mantle 532, 537, 589
- water in the mantle 413–414, 446, 448, 450, 455, 520, 536
- wetting angle, see dihedral angle
- yield strength 544
- yield strength envelopes (YSE) 541, 557–558
- yield stress, see stress
- zircon 26, 32

## Geographical index

- Abitibi Province 123, 274, 480, 594, 620  
 Alps 38, 87, 94, 120–121, 157, 290, 489, 559, 572, 591–592  
 Amazonian craton, *see* South American craton  
 Anabar shield, *see* Siberian craton  
 Andes 94, 120, 137, 154, 268, 307, 471, 559, 591, 662  
 Antarctica 38, 145, 166, 309, 370  
 Appalachians 94, 473, 487, 490, 591, 593, 594  
 Atlantic ocean 43–46, 167, 257, 637  
 Azores 44, 174
- Baikal rift zone 40, 94, 159, 171, 194, 475, 489  
 Baltic Shield, *see* East European craton  
 Basin and Range Province 31, 94, 118, 292, 293, 473, 487, 594, 615
- Caledonides 121, 395, 590, 597  
 Canadian Shield 122, 132, 151, 200, 205, 236, 241, 248, 274, 283, 371, 442, 479, 563, 571, 579, 592, 595  
 Carpathians 157, 490  
 Cascadia subduction zone 152, 471  
 Caucasus 558, 573, 574  
 Central Asia 109, 558, 574, 605  
 Central Australian Mobile Belt 94, 162, 187  
 Colorado Plateau 40, 410, 661  
 Congo craton 40, 163, 169, 306, 423
- Dnieper-Donets rift 95, 110
- East African rift 94, 163, 171, 194, 489, 571, 659  
 East European craton 93, 110, 128, 156, 176, 205, 236, 273, 310, 348, 396, 415, 419, 498–499, 597, 640  
 East Pacific Rise 169, 189, 194, 201, 208, 252, 257, 378, 463  
 Eastern Australia 40, 99, 162, 320
- Greenland 27, 29, 31, 34, 37, 38, 107, 145, 154, 309, 390, 395, 396, 420, 593  
 Grenville Province 123, 274, 595  
 Guayana Shield, *see* South American craton
- Hawaii 174, 201, 374, 468, 581–582, 588
- Iceland 43, 96, 105, 174, 194, 401, 642  
 Indian craton 94, 160, 639
- Japan arc 95, 194, 268, 352
- Kaapvaal, *see* South African craton  
 Kalahari, *see* South African craton  
 Karoo traps 110, 394, 395, 421
- Mariana trench 468  
 Mediterranean Sea 157, 268, 476, 662  
 Mid-Continent rift 171, 593
- Namibian flood basalts 637  
 North Australian craton 163, 596  
 North China craton 40, 169, 205, 295, 300, 343, 620
- Ontong-Java Plateau 95, 321, 637
- Pacific ocean 98, 114, 167, 169, 189, 194, 201, 216, 257, 266, 270, 362, 460–464  
 Pannonian Basin 156, 320, 476, 488, 496  
 Parana basin 154, 637, 641  
 Pilbara, *see* Western Australian craton
- Rhine Graben 171, 488, 495  
 Rio Grande Rift 40, 171, 194, 489
- San Andreas fault 194, 271  
 São Francisco craton 343  
 Siberian craton 159, 199, 205, 236, 309, 327, 330, 338, 353, 362, 372, 384, 396, 415, 475, 636, 644, 660  
 Siberian traps 394, 395, 636  
 Sierra Nevada 492, 626, 662  
 Sino-Korean, *see* North China craton  
 Slave craton 37, 69, 123, 152, 325, 390, 396, 420, 442, 481–482, 594, 600  
 South African craton 93, 165–166, 176, 216, 240, 248, 323, 327, 328, 384, 394, 408, 414, 421  
 South American craton 99, 154, 169, 415  
 Superior Province, *see* Canadian Shield
- Tanzanian craton 40, 163, 343, 408, 409, 414, 620  
 TESZ 156, 371, 485  
 Tibet 94, 109, 162, 194, 492–494, 669  
 Tien Shan, *see* Central Asia  
 Tonga trench 582  
 Trans-Hudson orogen 241, 442, 483, 594

Ukrainian Shield, *see* East European craton  
Urals 94, 122, 271, 419, 486, 574  
Variscides 94, 118, 661  
West African craton 163, 202, 236, 323, 479  
West Siberian Basin 127–129, 159

Western Australian craton 37, 94, 99, 141, 162, 232,  
363, 386, 415, 596, 608, 615–618  
Western Norway, *see* Caledonides  
Wyoming craton 40, 42, 300, 306, 343, 620  
Yilgarn, *see* Western Australian craton  
Zimbabwe, *see* South African craton