

## SUBJECT INDEX

### A

- ab initio calculations
  - density functional theory 66(24): 4223
  - aquo 66(24): 4223
  - hexaquo 66(24): 4223
  - electron transfer 66(24): 4223
  - kinetics 66(24): 4223
  - oxygenation 66(24): 4223
  - hydrolysis 66(24): 4223
- aluminosilicate melts
  - activation energy 66(1): 109
  - tracer diffusion 66(1): 109
  - silica 66(1): 109
  - albite 66(1): 109
  - jadeite 66(1): 109
  - glass 66(2): 291
  - hydrous melts 66(2): 291
  - oxygen sites 66(2): 291
  - nuclear magnetic resonance 66(2): 291
- aqueous geochemistry
  - estuaries 66(3): 403
  - humics 66(3): 403
  - metals 66(3): 403
  - copper 66(3): 403
  - cobalt 66(3): 403
  - complexation 66(3): 403
  - binding 66(3): 403
  - modeling 66(3): 403
  - goethite 66(3): 431
  - dissolution 66(3): 431
  - siderophores 66(3): 431
  - temperature 66(3): 431
  - trihydroxamate 66(3): 431
  - desferrioxamine 66(3): 431
  - biogenic silica 66(3): 439
  - opal 66(3): 439
  - Si cycle 66(3): 439
  - dissolution 66(3): 439
  - kinetics 66(3): 439
  - flow-through experiment 66(3): 439
  - phytoplankton 66(3): 439
  - oxygen exchange 66(4): 577
  - kinetics 66(4): 577
  - 17O-NMR 66(4): 577
  - aluminum 66(4): 577
  - oil field brines 66(4): 615
  - Li isotopes 66(4): 615
  - seawater 66(4): 615
  - evaporation 66(4): 615
  - Messinian 66(4): 615
  - Fe(III) oxyhydroxides 66(5): 745
  - colloids 66(5): 745
  - Ca adsorption 66(5): 745
  - phosphate adsorption 66(5): 745
  - salinity gradient 66(5): 745
  - chromate 66(5): 783
  - barite 66(5): 783
  - hydrogel 66(5): 783
  - diffusion 66(5): 783
  - Zn 66(7): 1119
  - ferrihydrate 66(7): 1119
  - sorption 66(7): 1119
  - EXAFS 66(7): 1119
  - goethite 66(8): 1305
  - surface 66(8): 1305
  - sorption 66(8): 1305
  - uranyl 66(8): 1305
  - molecular mechanics 66(8): 1305
  - solute transport 66(8): 1311
  - low permeability 66(8): 1311
  - diffusion 66(8): 1311
  - clay mineralogy 66(8): 1311
  - noble gases 66(8): 1311
  - <sup>4</sup>He 66(8): 1311
  - rare earth elements 66(8): 1323
  - McMurdo Dry Valleys 66(8): 1323
  - Antarctica 66(8): 1323
  - iron 66(8): 1323
  - manganese 66(8): 1323
  - redox cycling 66(8): 1323
  - water column 66(8): 1323
  - microbial reduction 66(8): 1323
  - bromine 66(8): 1387
  - partition coefficient 66(8): 1387
  - evaporites 66(8): 1387
  - halite 66(8): 1387
  - kainite 66(8): 1387
  - sylvite 66(8): 1387
  - carnallite 66(8): 1387
  - bischofite 66(8): 1387
  - Henry's law 66(8): 1387
  - copper isotopes 66(9): 1499
  - zinc isotopes 66(9): 1499
  - anion exchange 66(9): 1499
  - chromatography 66(9): 1499
  - equilibrium fractionation 66(9): 1499
  - acid mine drainage 66(9): 1511
  - weathering 66(9): 1511
  - sulfide minerals 66(9): 1511
  - column experiment 66(9): 1511
  - metal attenuation 66(9): 1511
  - acid neutralization 66(9): 1511
  - Kidd Creek 66(9): 1511
  - corundum 66(9): 1621
  - solubility 66(9): 1621
  - aluminum aqueous complexes 66(9): 1621
  - corundum in CaCl<sub>2</sub> 66(9): 1621
  - thermodynamics 66(9): 1621
  - hydrogen sulfide 66(10): 1713
  - dissociation constants 66(10): 1713
  - sulfur 66(10): 1713
  - surface complexation 66(10): 1713
  - polysulfanes 66(10): 1713
  - lava-seawater interactions 66(11): 1925
  - hydrothermal fluids 66(11): 1925
  - magmatic volatiles 66(11): 1925
  - subaqueous volcanism 66(11): 1925
  - Co 66(11): 1943
  - Atlantic Ocean 66(11): 1943
  - trace elements 66(11): 1943
  - biogeochemistry 66(11): 1943
  - BATS 66(11): 1943
  - residence time 66(11): 1943
  - Al 66(11): 2013
  - fluoride complexes 66(11): 2013
  - supercritical fluids 66(11): 2013
  - thermodynamic properties 66(11): 2013
  - acid chemistry 66(14): 2499
  - subzero temperatures 66(14): 2499
  - geochemical model 66(14): 2499
  - Europa 66(14): 2499
  - carbonic acid 66(14): 2529
  - dissociation constants 66(14): 2529
  - seawater 66(14): 2529
  - pK1 66(14): 2529
  - pK2 66(14): 2529
  - birnessite 66(15): 2639
  - heavy metal 66(15): 2639
  - Zn 66(15): 2639
  - Pb 66(15): 2639
  - Cu 66(15): 2639
  - adsorption 66(15): 2639
  - fluid inclusions 66(15): 2683
  - halite 66(15): 2683
  - Silurian seawater 66(15): 2683
  - evaporite deposits 66(15): 2683
  - Michigan Basin 66(15): 2683
  - affect on seawater composition 66(15): 2683
  - organic acids 66(15): 2755
  - C isotopes 66(15): 2755
  - organic acids 66(15): 2755
  - hydrous pyrolysis 66(15): 2755
  - carbonate minerals 66(16): 2823
  - Fe(III) oxide reduction 66(16): 2823
  - ankerite 66(16): 2823
  - Sr incorporation 66(16): 2823
  - biomineralization 66(16): 2823
  - Fe isotopes 66(17): 2995
  - isotope fractionation 66(17): 2995
  - hematite 66(17): 2995
  - aqueous Fe(III) 66(17): 2995
  - experimental 66(17): 2995
  - adsorption 66(17): 3017
  - complexation 66(17): 3017
  - EDTA 66(17): 3017
  - ion exchange 66(17): 3017
  - Zn 66(17): 3017
  - Ni 66(17): 3017
  - metal partitioning 66(17): 3063
  - sorption kinetics 66(17): 3063
  - Ni isotopes 66(17): 3063
  - Cu isotopes 66(17): 3063
  - Zn isotopes 66(17): 3063
  - carbonate minerals 66(18): 3201
  - magnesite 66(18): 3201
  - dissolution 66(18): 3201
  - AFM 66(18): 3201
  - scanning probe microscopy 66(18): 3201
  - kinetics 66(18): 3201
  - Al 66(18): 3211
  - Fe(III) oxide reduction 66(18): 3211
  - humic materials 66(18): 3211
  - binding 66(18): 3211
  - trace metals 66(18): 3211
  - dissolution 66(18): 3235
  - U ore 66(18): 3235
  - weathering 66(18): 3235
  - soddyite 66(18): 3235
  - precipitation 66(18): 3235
  - REE 66(19): 3339
  - rainwater 66(19): 3339
  - snow 66(19): 3339
  - surface water 66(19): 3339
  - atmospheric deposition 66(19): 3339
  - Sr isotopes 66(19): 3339
  - Nd isotopes 66(19): 3339
  - hydrothermal fluids 66(19): 3453
  - As(III) 66(19): 3453
  - vapor-liquid fractionation 66(19): 3453
  - transport 66(19): 3453
  - XAFS spectroscopy 66(19): 3453
  - volcanic gases 66(19): 3453
  - Cd 66(20): 3549
  - deposition 66(20): 3549
  - mobility 66(20): 3549
  - lake sediments 66(20): 3549
  - diagenesis 66(20): 3549
  - Eu 66(20): 3599
  - complexation 66(20): 3599
  - acetate 66(20): 3599
  - potentiometric method 66(20): 3599

elevated temperatures 66(20): 3599  
Cu 66(20): 3615  
chloride 66(20): 3615  
hydrothermal fluids 66(20): 3615  
complexation 66(20): 3615  
porphyry copper deposits 66(20): 3615  
Mo 66(21): 3679  
kaolinite 66(21): 3679  
catalysis 66(21): 3679  
clay minerals 66(21): 3679  
speciation 66(21): 3679  
kinetics 66(21): 3679  
hydrothermal fluids 66(21): 3693  
oceanic crust 66(21): 3693  
seafloor hydrothermal systems 66(21):  
3693  
REE 66(21): 3693  
trace elements 66(21): 3693  
low temperature 66(21): 3693  
Au 66(21): 3719  
speciation 66(21): 3719  
solubility 66(21): 3719  
silicate melts 66(21): 3719  
brine 66(21): 3719  
seawater evolution 66(21): 3733  
evaporite 66(21): 3733  
halite 66(21): 3733  
fluid inclusions 66(21): 3733  
Danube 66(21): 3839  
river water 66(21): 3839  
major elements 66(21): 3839  
C isotopes 66(21): 3839  
O isotopes 66(21): 3839  
S isotopes 66(21): 3839  
H isotopes 66(21): 3839  
Sr isotopes 66(21): 3839  
biogeochemistry 66(22): 3855  
U 66(22): 3855  
bacteria 66(22): 3855  
transport 66(22): 3855  
metals 66(22): 3855  
XAFS 66(22): 3855  
EXAFS 66(22): 3873  
XANES 66(22): 3873  
ligand exchange 66(22): 3873  
metal-organic complexes 66(22): 3873  
surface chemistry 66(22): 3873  
adsorption 66(22): 3873  
methyl mercury 66(22): 3873  
soil organic matter 66(22): 3873  
Cr 66(22): 3927  
leaching 66(22): 3927  
dissolution kinetics 66(22): 3927  
cement phases 66(22): 3927  
ore processing 66(22): 3927  
hydrocalumite 66(22): 3927  
hydrogarnet 66(22): 3927  
methane 66(22): 3971  
brine 66(22): 3971  
phase relations 66(22): 3971  
thermodynamic properties 66(22): 3971  
basalt 66(23): 4015  
surface water 66(23): 4015  
groundwater 66(23): 4015  
Iceland 66(23): 4015  
solubility 66(23): 4015  
mineral composition 66(23): 4015  
thermodynamic properties 66(23): 4015  
Mn 66(23): 4047  
oxidation 66(23): 4047  
photo-oxidation 66(23): 4047  
superoxide 66(23): 4047  
singlet oxygen 66(23): 4047  
humics 66(23): 4047

microorganisms 66(23): 4047  
photochemistry 66(23): 4047  
noble gases 66(23): 4103  
groundwater 66(23): 4103  
fractionation 66(23): 4103  
supersaturation 66(23): 4103  
quasi-saturation 66(23): 4103  
entrapped air 66(23): 4103  
soil 66(23): 4103  
manganese 66(23): 4119  
chromium 66(23): 4119  
oxidation 66(23): 4119  
sorption 66(23): 4119  
dissolution 66(23): 4119  
XPS 66(23): 4119  
AFM 66(23): 4119  
SEM 66(23): 4119  
ICP 66(23): 4119  
forsterite 66(23): 4165  
enstatite 66(23): 4165  
aqueous silica 66(23): 4165  
mantle fluids 66(23): 4165  
metamorphic fluids 66(23): 4165  
experimental petrology 66(23): 4165  
solubility in water 66(23): 4165  
Ga-Si complexes 66(24): 4203  
Al-Si complexes 66(24): 4203  
metal coordination 66(24): 4203  
71 Ga NMR 66(24): 4203  
Ga K-edge XAFS 66(24): 4203  
hydrolysis 66(24): 4203  
polymerization 66(24): 4203  
Marcus theory 66(24): 4223  
limnology 66(24): 4235  
saline lakes 66(24): 4235  
salinity 66(24): 4235  
equation of state 66(24): 4235  
major ions 66(24): 4235  
CTD 66(24): 4235  
Nd speciation 66(24): 4311  
chloride complexes 66(24): 4311  
formation constants 66(24): 4311  
spectroscopy 66(24): 4311  
aqueous solutions 66(24): 4311  
hydrothermal systems 66(24): 4311  
arc magmatism  
Indonesia 66(15): 2771  
arc-continent collision 66(15): 2771  
radiogenic isotopes 66(15): 2771  
trace elements 66(15): 2771  
continental subduction 66(15): 2771

## B

barium  
zoning 66(9): 1641  
diffusion 66(9): 1641  
feldspar 66(9): 1641  
Rutherford backscattering 66(9): 1641  
basalts  
Mars 66(11): 2025  
meteorites 66(11): 2025  
crust 66(11): 2025  
mantle oxidation state 66(11): 2025  
oxygen fugacity 66(11): 2025  
mantle 66(11): 2025  
Rb-Sr 66(11): 2025  
Sm-Nd 66(11): 2025  
Mars 66(11): 2037  
Iherzolithic shergottites 66(11): 2037  
ages 66(11): 2037  
Rb-Sr isotopes 66(11): 2037  
Sm-Nd isotopes 66(11): 2037  
field relations 66(12): 2167

petrogenesis 66(12): 2167  
magma chamber 66(12): 2167  
crystallization 66(12): 2167  
phase equilibria 66(12): 2167  
moon 66(14): 2631  
earth 66(14): 2631  
eucrites 66(14): 2631  
impacts 66(14): 2631  
chromium 66(14): 2631  
origin 66(14): 2633  
giant impact hypothesis 66(14): 2633  
bulk composition 66(14): 2633  
moon 66(14): 2633  
EXAFS spectroscopy 66(15): 2639  
biogeochemistry  
marine sediments 66(7): 1171  
sapropels 66(7): 1171  
phosphate cycling 66(7): 1171  
organic matter 66(7): 1171  
Fe oxides 66(7): 1171  
anoxia 66(7): 1171

## C

carbonate minerals  
Upper Ordovician 66(2): 241  
epeiric sea 66(2): 241  
paleoceanography 66(2): 241  
Nd isotopes 66(2): 241  
Sm/Nd ratios 66(2): 241  
sea level 66(2): 241  
Sr isotopes 66(4): 595  
glacial meltwaters 66(4): 595  
Canadian Rockies 66(4): 595  
carbonate weathering 66(4): 595  
coccoliths 66(6): 927  
Emiliana huxleyi 66(6): 927  
paleoclimate 66(6): 927  
paleotemperature proxies 66(6): 927  
Sr/Ca ratio 66(6): 927  
calcite precipitation 66(7): 1159  
Mg<sup>2+</sup> removal 66(7): 1159  
H<sup>+</sup> removal 66(7): 1159  
biogeochemistry 66(7): 1159  
foraminifera 66(7): 1159  
ALH84001 66(7): 1285  
SNC meteorites 66(7): 1285  
Mars 66(7): 1285  
aqueous alteration 66(7): 1285  
ostracods 66(10): 1701  
C isotopes 66(10): 1701  
O isotopes 66(10): 1701  
isotope fractionation 66(10): 1701  
calcite 66(10): 1701  
scallop 66(10): 1727  
shell 66(10): 1727  
isotopes 66(10): 1727  
growth rate 66(10): 1727  
coral 66(11): 1955  
C isotopes 66(11): 1955  
O isotopes 66(11): 1955  
light 66(11): 1955  
feeding 66(11): 1955  
Porites compressa 66(11): 1955  
land snails 66(11): 1987  
C isotopes 66(11): 1987  
O isotopes 66(11): 1987  
isotopic composition 66(11): 1987  
vegetation 66(11): 1987  
rainfall 66(11): 1987  
dolomite 66(14): 2541  
computer simulation 66(14): 2541  
impurities 66(14): 2541  
bulk 66(14): 2541

surface 66(14): 2541  
 calcite 66(16): 2875  
 REE 66(16): 2875  
 EXAFS 66(16): 2875  
 coordination 66(16): 2875  
 crystal growth 66(18): 3177  
 coprecipitation 66(18): 3177  
 thermodynamics 66(18): 3177  
 kinetics 66(18): 3177  
 Mn 66(18): 3177  
 Sr/Ca 66(18): 3263  
 corals 66(18): 3263  
 sea surface temperature 66(18): 3263  
 proxy records 66(18): 3263  
 benthic foraminifera 66(19): 3375  
 temperature calibration 66(19): 3375  
 core tops 66(19): 3375  
 Little Bahama Banks 66(19): 3375  
 Mg/Ca 66(19): 3375  
 Cu(II) 66(22): 3943  
 Zn(II) 66(22): 3943  
 calcite 66(22): 3943  
 adsorption 66(22): 3943  
 differential incorporation 66(22): 3943  
 EXAFS 66(22): 3943  
 calcite 66(24): 4247  
 dissolution kinetics 66(24): 4247  
 early diagenesis 66(24): 4247  
 transport and reaction 66(24): 4247  
 thermodynamic equilibrium 66(24): 4247  
 marine geochemistry 66(24): 4247  
 numerical model 66(24): 4247  
 trace elements 66(24): 4261  
 uranium isotopes 66(24): 4261  
 calcite 66(24): 4261  
 uranium series dating 66(24): 4261  
 cathodoluminescence 66(24): 4261  
 mass spectrometry 66(24): 4261  
 continental climate 66(24): 4261  
 weathering 66(24): 4261  
 carbonatites  
 Kola Peninsula 66(5): 881  
 noble gases 66(5): 881  
 trace elements 66(5): 881  
 mantle plumes 66(5): 881  
 chondrites  
 refractory inclusions 66(8): 1459  
 Efremovka 66(8): 1459  
 ultrarefractory trace element pattern 66(8): 1459  
 fassaite 66(8): 1459  
 perovskite 66(8): 1459  
 condensation 66(8): 1459  
 olivines 66(9): 1663  
 Renazzo 66(9): 1663  
 Acfer 182 66(9): 1663  
 El Djouf 001 66(9): 1663  
 carbonaceous chondrites 66(9): 1663  
 glass inclusions 66(9): 1663  
 condensation 66(9): 1663  
 evaporation 66(1): 145  
 refractory inclusions 66(1): 145  
 major elements 66(1): 145  
 stable isotope compositions 66(1): 145  
 fractional crystallization 66(1): 145  
 melilite zoning 66(1): 145  
 cooling rates 66(1): 145  
 thermal metamorphism 66(1): 163  
 carbonaceous chondrites 66(1): 163  
 graphitization 66(1): 163  
 naphthalene 66(1): 163  
 pyrolysis-GC 66(1): 163  
 osmium isotopes 66(2): 329  
 upper mantle 66(2): 329  
 isotopic evolution 66(2): 329  
 ophiolite 66(2): 329  
 chromite 66(2): 329  
 chronometry 66(2): 347  
 enstatite 66(2): 347  
 I-Xe ages 66(2): 347  
 chondrules 66(2): 347  
 refractory inclusions 66(3): 521  
 CAI 66(3): 521  
 Mg isotopes 66(3): 521  
 evaporation 66(3): 521  
 thermal evolution 66(3): 521  
 metal rich chondrites 66(4): 647  
 Weatherford, metal 66(4): 647  
 Gujba, metal 66(4): 647  
 Bencubbin 66(4): 647  
 siderophile elements 66(4): 647  
 condensation model 66(4): 647  
 magnesium isotopes 66(4): 683  
 oxygen isotopes 66(4): 683  
 Allende meteorite 66(4): 683  
 chondrules 66(4): 683  
 CAI 66(4): 683  
 laser ablation 66(4): 683  
 sulfur 66(4): 699  
 troilite 66(4): 699  
 impact melting 66(4): 699  
 vaporization 66(4): 699  
 breccia 66(4): 699  
 evaporation 66(4): 713  
 enstatite 66(4): 713  
 kinetics 66(4): 713  
 elemental fractionation 66(4): 713  
 solar nebula 66(4): 713  
 inclusions 66(16): 2959  
 plagioclase 66(16): 2959  
 olivine 66(16): 2959  
 spinel 66(16): 2959  
 magnetite 66(16): 2959  
 Maralinga 66(16): 2959  
 sequential condensation 66(16): 2959  
 gas-solid exchange 66(16): 2959  
 CAI 66(16): 2959  
 metal-troilite-magnetite 66(17): 3143  
 Fe-Ni-S-O 66(17): 3143  
 eutectic 66(17): 3143  
 shock vein 66(17): 3143  
 high-pressure 66(17): 3143  
 chromite 66(17): 3143  
 Sixiangkou 66(17): 3143  
 carbonaceous chondrites 66(17): 3161  
 meteorites 66(17): 3161  
 martian meteorites 66(17): 3161  
 solubility 66(17): 3161  
 phosphate 66(17): 3161  
 plant nutrients 66(17): 3161  
 thermal metamorphism 66(18): 3327  
 shock metamorphism 66(18): 3327  
 impacts 66(18): 3327  
 MIL99301 66(18): 3327  
 ordinary chondrites 66(18): 3327  
 annealing 66(18): 3327  
 Orgueil 66(23): 4177  
 Murchison 66(23): 4177  
 carbonaceous chondrites 66(23): 4177  
 insoluble organic matter 66(23): 4177  
 organic radicals 66(23): 4177  
 EPR 66(23): 4177  
 ENDOR 66(23): 4177  
 rhenium 66(23): 4187  
 osmium isotopes 66(23): 4187  
 carbonaceous 66(23): 4187  
 enstatite 66(23): 4187  
 ordinary 66(23): 4187  
 lodranites 66(23): 4187  
 Allende 66(23): 4187  
 CM chondrites 66(24): 4355  
 Cold Bokkeveld 66(24): 4355  
 fine-grained rims 66(24): 4355  
 aqueous alteration 66(24): 4355  
 parent body 66(24): 4355  
 transmission electron microscopy 66(24): 4355  
 cronstedtite 66(24): 4355  
 polygonal serpentine 66(24): 4355  
 chrysotile 66(24): 4355  
 clay geochemistry  
 XANES 66(8): 1349  
 SXRF 66(8): 1349  
 Ce 66(8): 1349  
 Mn oxides 66(8): 1349  
 fracture transport 66(8): 1349  
 Bandalier Tuff 66(8): 1349  
 coastal sediments  
 salt marsh 66(6): 1011  
 Pb-210 dating 66(6): 1011  
 Cs-137 dating 66(6): 1011  
 Am-241 66(6): 1011  
 redox 66(6): 1011  
 coral  
 metals 66(1): 45  
 Porites 66(1): 45  
 rare earth elements 66(1): 45  
 zinc 66(1): 45  
 lead 66(1): 45  
 mining 66(1): 45  
 core  
 compositional convection 66(12): 2155  
 adcumulus growth 66(12): 2155  
 solidification 66(12): 2155  
 inner core boundary 66(12): 2155  
 core-mantle boundary 66(12): 2155  
 mushy zones 66(12): 2155  
 phase diagram 66(12): 2155  
 crystal growth  
 fluorite 66(6): 997  
 hydrothermal deposits 66(6): 997  
 REE 66(6): 997  
 sectoral zoning 66(6): 997  
 trace elements 66(6): 997  
 spinel 66(12): 2123  
 spinel growth 66(12): 2123  
 diffusion in spinel 66(12): 2123  
 reaction kinetics 66(12): 2123  
 periclase 66(12): 2123  
 corundum 66(12): 2123  
 diagenesis 66(22): 3901  
 needles 66(22): 3901  
 grain pitting 66(22): 3901  
 solid inclusions 66(22): 3901  
 fluid inclusions 66(22): 3901  
 clay coatings 66(22): 3901  
 crystallization  
 aqueous solution 66(2): 185  
 solid solution 66(2): 185  
 supersaturation 66(2): 185  
 distribution coefficients 66(2): 185  
 nucleation 66(2): 185  
 kinetics 66(2): 185  
 Cs geochemistry  
 Hanford site 66(2): 193  
 sorption 66(2): 193  
 sediments 66(2): 193  
 migration 66(2): 193

## E

### eclogite

metamorphism 66(4): 625  
isotope equilibrium 66(4): 625  
O isotopes 66(4): 625  
Nd isotope 66(4): 625  
Sm-Nd 66(4): 625  
metamorphism 66(7): 1221  
isotopic dating 66(7): 1221  
Maksyutov Complex, Russia 66(7): 1221  
role of fluids 66(7): 1221  
Rb/Sr dating 66(7): 1221  
eclogitization 66(7): 1221

## F

### ferromanganese crusts

geochronology 66(1): 73  
sea-level evolution 66(1): 73  
Baltic Sea 66(1): 73  
<sup>226</sup>Raex/Ba excess 66(1): 73  
barium 66(1): 73  
radium 66(1): 73  
growth rates 66(1): 73

### flood basalts

Ethiopia 66(8): 1429  
fractional crystallization 66(8): 1429  
ignimbrite 66(8): 1429  
rhyolite 66(8): 1429  
mantle plume 66(8): 1429  
Oligocene 66(8): 1429

### fluid inclusion

synchrotron X-ray fluorescence 66(4): 561  
nuclear microprobe 66(4): 561  
SXRF 66(4): 561  
PIXE 66(4): 561  
quantitative analysis 66(4): 561  
calibration procedures 66(4): 561

## G

### geochemical cycles

atmospheric O<sub>2</sub> 66(3): 361  
dynamics 66(3): 361  
models 66(3): 361  
stability 66(3): 361  
carbon cycle 66(3): 361  
mercury 66(7): 1105  
global-scale biogeochemistry 66(7): 1105  
air-sea exchange 66(7): 1105  
<sup>210</sup>Pb 66(7): 1105  
anthropogenic emissions of Hg 66(7): 1105  
natural emissions of Hg 66(7): 1105  
atmospheric chemistry 66(7): 1105  
trace metals 66(7): 1139  
redox 66(7): 1139  
oxygen minimum zone 66(7): 1139  
eastern tropical north Pacific 66(7): 1139  
atmospheric oxygen 66(21): 3707  
Late Archean 66(21): 3707  
paleosol 66(21): 3707  
Mount Roe 66(21): 3707  
major elements 66(21): 3707  
trace elements 66(21): 3707  
rare earth elements 66(21): 3707

### geochronology

silicate minerals 66(3): 487  
carbonate minerals 66(3): 487  
uranium isotopes 66(3): 487  
thorium isotopes 66(3): 487  
soils 66(3): 487  
paleosols 66(3): 487

Nevada 66(3): 487  
Yucca Mountains 66(3): 487  
Crater Flat 66(3): 487  
in situ Pb-Pb dating 66(6): 1051  
multiple collector ICP-MS 66(6): 1051  
apatite 66(6): 1051  
sphene 66(6): 1051  
monazite 66(6): 1051  
excess Ar 66(6): 1067  
bulk diffusivity 66(6): 1067  
numerical modeling 66(6): 1067  
biotite 66(6): 1067  
biotite 66(6): 1067  
Simplon Pass, Switzerland 66(6): 1067  
<sup>40</sup>Ar/<sup>39</sup>Ar 66(7): 1237  
thermochronometry 66(7): 1237  
diffusion 66(7): 1237  
step heating 66(7): 1237  
K feldspar 66(7): 1237  
Ar-Ar dating 66(10): 1793  
granites 66(10): 1793  
muscovite recrystallization 66(10): 1793  
step heating 66(10): 1793

### geomicrobiology

fayalite 66(2): 213  
olivine 66(2): 213  
surface morphology 66(2): 213  
Acidithiobacillus ferrooxidans 66(2): 213  
chemical weathering 66(2): 213  
iron oxidation 66(2): 213  
microorganisms 66(2): 213  
Mn(II) oxidation 66(5): 773  
Leptothrix discophora 66(5): 773  
kinetics 66(5): 773  
microorganisms 66(5): 773  
Mn cycling 66(5): 773  
carbon isotope fractionation 66(6): 983  
methanogenesis 66(6): 983  
DNA analysis 66(6): 983  
hydrogen isotope exchange 66(6): 983  
hydrogen isotope fractionation 66(6): 983  
rice paddy soil 66(6): 983  
methanogenesis 66(10): 1681  
formation waters 66(10): 1681  
glaciation 66(10): 1681  
basinal brines 66(10): 1681  
methane 66(10): 1681  
hydrogeochemistry 66(10): 1681  
fluid migration 66(10): 1681  
salinity 66(10): 1681  
fossil bacteria 66(10): 1773  
ToF-SIMS 66(10): 1773  
bacterial biofilms 66(10): 1773  
Enspel 66(10): 1773  
Oligocene 66(10): 1773  
Germany 66(10): 1773  
Mn reduction 66(18): 3247  
U reduction 66(18): 3247  
Shewanella putrefaciens 66(18): 3247  
Mn oxides 66(18): 3247  
uranium(VI) 66(18): 3247  
uraninite 66(18): 3247

### gold

adsorption 66(3): 383  
pyrite 66(3): 383  
pyrrhotite 66(3): 383  
mackinawite 66(3): 383  
XPS 66(3): 383  
zero point of charge 66(3): 383  
hydrosulfide gold(I) complexes 66(3): 383

### groundwater

noble gases 66(5): 797  
paleotemperature 66(5): 797  
paleoclimate 66(5): 797

Aquia aquifer 66(5): 797  
He isotopes 66(5): 797  
Mt. Vesuvius 66(6): 963  
C isotopes 66(6): 963  
water-rock interaction 66(6): 963  
magma gases 66(6): 963  
He isotopes 66(6): 963  
arsenic 66(17): 2981  
solubility 66(17): 2981  
speciation 66(17): 2981  
redox chemistry 66(17): 2981  
salinity 66(17): 2981  
isotopes 66(17): 2981  
Owens Lake 66(17): 2981

## H

### hydrothermal fluids

CO<sub>2</sub> 66(5): 759  
meteoric water 66(5): 759  
gas-water-rock interactions 66(5): 759  
H isotopes 66(5): 759  
O isotopes 66(5): 759  
C isotopes 66(5): 759  
Vulcano Island 66(5): 759  
gases 66(8): 1409  
trace metals 66(8): 1409  
diffuse low-temperature fluids 66(8): 1409  
subsurface boiling 66(8): 1409  
phase separation 66(8): 1409  
vapor phase discharge 66(8): 1409  
North Fiji basin 66(8): 1409  
copper 66(9): 1611  
solubility 66(9): 1611  
speciation 66(9): 1611  
vapor transport 66(9): 1611  
ore deposits 66(9): 1611  
hydrothermal circulation 66(10): 1739  
midocean ridge flank 66(10): 1739  
geochemical flux 66(10): 1739  
sediment diagenesis 66(10): 1739  
reactive transport model 66(10): 1739  
Juan de Fuca ridge flank 66(10): 1739  
methane 66(20): 3563  
C isotopes 66(20): 3563  
hydrothermal plumes 66(20): 3563  
microbial oxidation 66(20): 3563

### hydrothermal vents

fluxes 66(11): 1905  
plume 66(11): 1905  
Mid-Atlantic Ridge 66(11): 1905  
sedimentation 66(11): 1905  
trace elements 66(11): 1905

## I

### iodine-129

volcanism 66(21): 3827  
subduction recycling 66(21): 3827  
bromine 66(21): 3827  
geothermal fields 66(21): 3827  
Central America 66(21): 3827

### iron geochemistry

maghemite 66(15): 2801  
hematite 66(15): 2801  
ferrihydrite 66(15): 2801  
crystallization 66(15): 2801  
soil 66(15): 2801  
Mars 66(15): 2801

### iron meteorites

IAB complex 66(13): 2445  
IICD irons 66(13): 2445  
reclassification 66(13): 2445  
silicate inclusions 66(13): 2445

impact heating 66(13): 2445  
 impact melting 66(20): 3657  
 clinopyroxene 66(20): 3657  
 lodranites 66(20): 3657  
 NWA 468 66(20): 3657  
 MAC 88177 66(20): 3657  
 silicate inclusions 66(20): 3657  
 iron sulfides  
 mackinawite 66(5): 829  
 Fe(II)/Fe(III) 66(5): 829  
 surface chemistry 66(5): 829  
 structural properites 66(5): 829  
 TEM 66(5): 829  
 XRD 66(5): 829  
 TMS 66(5): 829  
 XPS 66(5): 829  
 isotope geochemistry  
 isotope fractionation 66(6): 1095  
 Mg isotopes 66(6): 1095  
 O isotopes 66(6): 1095  
 troposphere 66(6): 1095  
 Mars 66(6): 1095  
 lead isotopes 66(8): 1375  
 aerosols 66(8): 1375  
 TIMS 66(8): 1375  
 temporal variation 66(8): 1375  
 source signatures 66(8): 1375  
 O isotopes 66(11): 1881  
 three-isotope plot 66(11): 1881  
 mass-independent fractionation 66(11):  
 1881  
 oxygen-17 anomalies 66(11): 1881  
 paleoclimate 66(11): 1891  
 phytoliths 66(11): 1891  
 oxygen isotopes 66(11): 1891  
 prairies 66(11): 1891  
 atmospheric H<sub>2</sub> 66(14): 2475  
 D/H ratios 66(14): 2475  
 air pollution 66(14): 2475  
 analytical methods 66(14): 2475  
 noble gases 66(14): 2483  
 nitrogen 66(14): 2483  
 helium 66(14): 2483  
 groundwater 66(14): 2483  
 hydrocarbons 66(14): 2483  
 groundwater 66(14): 2483  
 continental crust 66(14): 2483  
 mantle degassing 66(14): 2483  
 Os isotopes 66(14): 2615  
 Greenland 66(14): 2615  
 Archean 66(14): 2615  
 early Earth 66(14): 2615  
 mantle evolution 66(14): 2615  
 spinel peridotites 66(14): 2615  
 komatiites 66(14): 2615  
 late veneer 66(14): 2615  
 noble gases 66(16): 2807  
 hydrocarbons 66(16): 2807  
 migration 66(16): 2807  
 basin fluids 66(16): 2807  
 Delaware Basin 66(16): 2807  
 laser microprobe 66(16): 2855  
 sulfosalts 66(16): 2855  
 fractionation factor 66(16): 2855  
 S isotopes 66(16): 2855  
 H isotopes 66(16): 2865  
 O isotopes 66(16): 2865  
 chert nodules 66(16): 2865  
 periodicity 66(16): 2865  
 sedimentary basins 66(16): 2865  
 Poland 66(16): 2865  
 Jurassic 66(16): 2865  
 lunar regolith grains 66(16): 2929  
 Kapoeta meteorite 66(16): 2929  
 noble gases 66(16): 2929  
 solar wind 66(16): 2929  
 accretion time 66(17): 3151  
 Hf-W isotopes 66(17): 3151  
 Allende carbonaceous chondrite 66(17):  
 3151  
 core formation 66(17): 3151  
 extinct radionuclides 66(17): 3151  
 Se isotopes 66(18): 3191  
 meteorites 66(18): 3191  
 hydrothermal vents 66(18): 3191  
 igneous rocks 66(18): 3191  
 hydride generation 66(18): 3191  
 MC-ICP-MS 66(18): 3191  
 tooth enamel 66(18): 3225  
 mammals 66(18): 3225  
 C isotopes 66(18): 3225  
 O isotopes 66(18): 3225  
 apatite 66(18): 3225  
 hydroxyapatite 66(18): 3225  
 bioapatite 66(18): 3225  
 isotope profiles 66(18): 3225  
 isotopic time-series 66(18): 3225  
 hippopotamus 66(18): 3225  
 anhydrite 66(18): 3303  
 sulfides 66(18): 3303  
 ion microprobe 66(18): 3303  
 arc magmatism 66(18): 3303  
 andesite melt 66(18): 3303  
 sulfur cycles 66(18): 3303  
 Os isotopes 66(18): 3317  
 komatiites 66(18): 3317  
 mantle evolution 66(18): 3317  
 rhenium 66(18): 3317  
 core-mantle interaction 66(18): 3317  
 crustal recycling 66(18): 3317  
 O isotopes 66(19): 3351  
 ion microprobe 66(19): 3351  
 dust 66(19): 3351  
 quartz 66(19): 3351  
 source 66(19): 3351  
 O isotopes 66(19): 3367  
 unsaturated soil 66(19): 3367  
 gas 66(19): 3367  
 microbial respiration 66(19): 3367  
 diffusion 66(19): 3367  
 modeling 66(19): 3367  
 isotope fractionation 66(19): 3367  
 Re-Os isotopes 66(19): 3441  
 geochronology 66(19): 3441  
 Exshaw Formation 66(19): 3441  
 western Canada sedimentary basin 66(19):  
 3441  
 organic matter 66(19): 3441  
 hydrocarbon maturation 66(19): 3441  
 Arctic 66(20): 3521  
 lake sediments 66(20): 3521  
 Pb isotopes 66(20): 3521  
 atmospheric deposition 66(20): 3521  
 atmospheric O<sub>2</sub> 66(21): 3757  
 C isotopes 66(21): 3757  
 mass balance 66(21): 3757  
 fossil plants 66(21): 3757  
 isotope fractionation 66(21): 3769  
 pressure effect 66(21): 3769  
 brucite 66(21): 3769  
 water 66(21): 3769  
 experiment 66(21): 3769  
 D/H isotopes 66(21): 3769  
 IIIAB iron meteorites 66(21): 3793  
 pallasites 66(21): 3793  
 Re-Os isotopes 66(21): 3793  
 Pd-Ag isotopes 66(21): 3793  
 chronology 66(21): 3793  
 liquid-solid metal fractionation 66(21):  
 3793  
 siderophile element fractionation 66(21):  
 3793  
<sup>129</sup>I 66(21): 3827  
 H isotopes 66(22): 3887  
 O isotopes 66(22): 3887  
 cellulose 66(22): 3887  
 climate 66(22): 3887  
 rodent middens 66(22): 3887  
 Apollo samples 66(22): 4007  
<sup>138</sup>Ce-<sup>143</sup>Nd isotope systematics 66(22):  
 4007  
 isotopes 66(22): 4007  
 REE 66(22): 4007  
 lunar crust 66(22): 4007  
 TIMS 66(22): 4007  
 uranium series dating 66(24): 4273  
<sup>230</sup>Th/U dating 66(24): 4273  
 bone 66(24): 4273  
 hydroxyapatite 66(24): 4273  
 uranium diffusion 66(24): 4273  
 uranium adsorption 66(24): 4273  
 diffusion-adsorption model 66(24): 4273  
 oxygen isotopes 66(24): 4325  
 eclogite 66(24): 4325  
 mantle xenoliths 66(24): 4325  
 lithospheric mantle 66(24): 4325  
 mantle metasomatism 66(24): 4325  
 trace element partitioning 66(24): 4325  
 West African craton 66(24): 4325  
 Isua supracrustal belt  
 Pb isotopes 66(3): 467  
 Nd isotopes 66(3): 467  
 Sr isotopes 66(3): 467  
 West Greenland 66(3): 467  
 metasomatism 66(3): 467  
 oceanic crust 66(3): 467  
 metamorphism 66(3): 467  
 allanite 66(3): 467  

**L**

 lithium  
 trace elements 66(8): 1401  
 LIBS 66(8): 1401  
 quartz 66(8): 1401  
 cathodoluminescence 66(8): 1401  
 trace element 66(8): 1401  
 fluid 66(8): 1401  

**M**

 mantle  
 spinel-garnet transition 66(12): 2109  
 phase equilibria 66(12): 2109  
 experimental 66(12): 2109  
 upper mantle 66(12): 2109  
 stirring tracers 66(17): 3125  
 convection 66(17): 3125  
 apparent ages 66(17): 3125  
 degassing 66(17): 3125  
 MORB 66(17): 3125  
 OIB 66(17): 3125  
 mantle geochemistry  
 Nb 66(9): 1651  
 U 66(9): 1651  
 Th 66(9): 1651  
 Sm 66(9): 1651  
 Nd 66(9): 1651  
 komatiites 66(9): 1651  
 basaltic crust 66(9): 1651  
 continental crust 66(9): 1651  
 depleted mantle 66(9): 1651

- mantle plumes 66(9): 1651  
marine sediments  
  biogeochemistry 66(1): 85  
  pyrite oxidation 66(1): 85  
  iron sulfide oxidation 66(1): 85  
  Mn(IV) reduction 66(1): 85  
  Fe(III) reduction 66(1): 85  
  nitrate reduction 66(1): 85  
  authigenic metals 66(5): 849  
  alkenones 66(5): 849  
  Indian Ocean 66(5): 849  
  precession cycles 66(5): 849  
  manganese carbonate formation 66(5): 867  
  MnO<sub>2</sub> reduction 66(5): 867  
  oxygen isotopes 66(5): 867  
  carbon isotopes 66(5): 867  
  Baltic Sea 66(5): 867  
  Mn carbonate 66(9): 1589  
  laminated sediments 66(9): 1589  
  Baltic Sea 66(9): 1589  
  saline inflow 66(9): 1589  
  Mn sulfide 66(9): 1589  
  foraminifera 66(9): 1589  
  bioturbation 66(10): 1759  
  authigenic 66(10): 1759  
  uranium 66(10): 1759  
  mobilization 66(10): 1759  
  non-steady state diagenesis 66(14): 2547  
  Saguenary Fjord 66(14): 2547  
  flood event 66(14): 2547  
  porewater salinity 66(14): 2547  
  diagenesis 66(14): 2547  
  anaerobic nitrate production 66(14): 2547  
  Fe 66(14): 2547  
  Mn 66(14): 2547  
  isotopes 66(14): 2569  
  sediment 66(14): 2569  
  Labrador Sea 66(14): 2569  
  Nd isotopes 66(14): 2569  
  Pb isotopes 66(14): 2569  
  clay-size fraction 66(14): 2569  
  Quaternary 66(14): 2569  
  authigenic uranium 66(17): 3085  
  marine particles 66(17): 3085  
  sediment traps 66(17): 3085  
  redox chemistry 66(17): 3085  
  Sr isotopes 66(20): 3585  
  Nd isotopes 66(20): 3585  
  detrital flux 66(20): 3585  
  terrigenous sediments 66(20): 3585  
  sapropels 66(20): 3585  
  phosphorus geochemistry 66(23): 4069  
  Heinrich events 66(23): 4069  
  Fe oxides 66(23): 4069  
  dysaerobic conditions 66(23): 4069  
  bottom water 66(23): 4069  
  glacial conditions 66(23): 4069  
  phosphorus regeneration 66(23): 4069  
  Chesapeake Bay 66(24): 4367  
  Mo 66(24): 4367  
  redox 66(24): 4367  
martian meteorites  
  shergottite 66(19): 3505  
  petrology 66(19): 3505  
  major and trace elements 66(19): 3505  
micrometeorites  
  stony cosmic spherules 66(1): 173  
  Fe isotopes 66(1): 173  
  Mg isotopes 66(1): 173  
  Si isotopes 66(1): 173  
  Antarctica 66(1): 173  
  mass-dependent fractionation 66(1): 173  
mineral dissolution  
  B.E.T. surface 66(17): 3055  
  geometric surface 66(17): 3055  
  fractals 66(17): 3055  
  surface morphology 66(17): 3055  
N  
nanoscience  
  nanogeochemistry 66(5): 735  
  critical zone 66(5): 735  
  mineral-bacteria interactions 66(5): 735  
  mineral-water interactions 66(5): 735  
  metal transport 66(5): 735  
O  
organic matter  
  marine sediments 66(2): 223  
  Heinrich Events 66(2): 223  
  carbon isotopes 66(2): 223  
  nitrogen isotopes 66(2): 223  
  paleoclimate 66(2): 223  
  North Atlantic 66(2): 223  
  Late Quaternary 66(2): 223  
  eastern tropical North Pacific 66(3): 457  
  degradation 66(3): 457  
  denitrification 66(3): 457  
  oxygen-deficient zone 66(3): 457  
  amino acids 66(3): 457  
  POC flux 66(3): 457  
  organic sulfur 66(6): 937  
  Holocene 66(6): 937  
  methylthioethers 66(6): 937  
  pyrite 66(6): 937  
  polysulfides 66(6): 937  
  thiolanes 66(6): 937  
  lakes 66(6): 937  
  dissolved organic carbon 66(6): 955  
  marine organic chemistry 66(6): 955  
  humic substances 66(6): 955  
  carbohydrates 66(6): 955  
  black carbon 66(6): 1025  
  extraction 66(6): 1025  
  <sup>14</sup>C measurements 66(6): 1025  
  soot 66(6): 1025  
  charcoal 66(6): 1025  
  C isotopes 66(7): 1211  
  chemical processing 66(7): 1211  
  plant tissue 66(7): 1211  
  cellulose 66(7): 1211  
  C3 66(7): 1211  
  C4 CAM 66(7): 1211  
  Isua supracrustal belt 66(7): 1257  
  carbon isotope 66(7): 1257  
  metamorphism 66(7): 1257  
  ion microprobe 66(7): 1257  
  graphite 66(7): 1257  
  origin of life 66(7): 1257  
  Murchison 66(10): 1851  
  meteorite 66(10): 1851  
  NMR 66(10): 1851  
  macromolecule 66(10): 1851  
  <sup>13</sup>C 66(10): 1851  
  IH 66(10): 1851  
  trace metals 66(11): 1969  
  lipid biomarkers 66(11): 1969  
  sapropel 66(11): 1969  
  Mediterranean Sea 66(11): 1969  
  ODP Site 969 66(11): 1969  
  paleoclimate 66(11): 1969  
  redox oscillation 66(11): 2003  
  marine sediments 66(11): 2003  
  cell-associated lipids 66(11): 2003  
microbial products 66(11): 2003  
degradation rate and pathway 66(11): 2003  
biomarkers 66(15): 2719  
turbidites 66(15): 2719  
Madeira abyssal plain 66(15): 2719  
sediments 66(15): 2719  
oxidation 66(15): 2719  
biomarkers 66(15): 2737  
Arabian Sea 66(15): 2737  
Indian Ocean 66(15): 2737  
sediments 66(15): 2737  
oxidation 66(15): 2737  
preservation 66(20): 3573  
alteration 66(20): 3573  
sedimentary diagenesis 66(20): 3573  
C isotopes 66(20): 3573  
N isotopes 66(20): 3573  
bacterial degradation 66(20): 3573  
Lake Lugano 66(20): 3573  
hydrogen isotopes 66(22): 3955  
methane oxidation 66(22): 3955  
bacteria 66(22): 3955  
fatty acids 66(22): 3955  
sterols 66(22): 3955  
hopanols 66(22): 3955  
isotope fractionation 66(22): 3955  
lipid biosynthesis 66(22): 3955  
Bacteria 66(23): 4085  
methane 66(23): 4085  
Be'eri 66(23): 4085  
seeps 66(23): 4085  
preservation 66(23): 4085  
Archaea 66(23): 4085  
methanotrophs 66(23): 4085  
hopanoid triterpenoids 66(23): 4085  
extreme environments 66(23): 4085  
organo-sulfur compounds 66(23): 4085  
Os geochemistry  
  Os isotopes 66(21): 3789  
  seawater 66(21): 3789  
  atmospheric deposition 66(21): 3789  
  <sup>210</sup>Pb 66(21): 3789  
oxygen isotopes  
  witherite 66(1): 63  
  aragonite 66(1): 63  
  carbonate minerals 66(1): 63  
  isotope equilibrium 66(1): 63  
  chemical synthesis 66(1): 63  
  fractionation factor 66(1): 63  
  fractionation factor 66(4): 589  
  phosphoric acid 66(4): 589  
  carbon dioxide 66(4): 589  
  magnesite 66(4): 589  
P  
paleosols  
  clay mineralogy 66(17): 3093  
  oxygen isotopes 66(17): 3093  
  paleoclimate 66(17): 3093  
  Permian-Pennsylvanian 66(17): 3093  
Pb geochemistry  
  concentration 66(14): 2517  
  soil 66(14): 2517  
  partitioning 66(14): 2517  
  isotopes 66(14): 2517  
  sequential extraction 66(14): 2517  
Pb isotopes  
  ocean circulation 66(2): 257  
  general circulation model 66(2): 257  
  paleoceanography 66(2): 257  
  transport and removal of Pb 66(2): 257

phosphate minerals  
high-pressure polymorph 66(13): 2439  
merrillite 66(13): 2439  
[f113]ä/f113]Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> 66(13): 2439  
shock veins 66(13): 2439  
Suizhou meteorite 66(13): 2439

## R

rare earth elements  
curium 66(1): 1  
humic substances 66(1): 1  
montmorillonite 66(1): 1  
laser-induced fluorescence spectroscopy  
66(1): 1  
sorption 66(1): 1  
tetrad effect 66(7): 1185  
fluorite 66(7): 1185  
granites 66(7): 1185  
fluid evolution 66(7): 1185  
pigeonite 66(7): 1269  
lunar ferroan anorthosite 66(7): 1269  
partitioning 66(7): 1269  
subsolvus reequilibration 66(7): 1269  
pyroxenes 66(7): 1269  
analytical methods 66(20): 3635  
isotope dilution analysis 66(20): 3635  
Mc-ICPMS 66(20): 3635  
Ce anomaly 66(20): 3635  
rhyolites  
U-Th disequilibrium 66(10): 1821  
residence times 66(10): 1821  
accessory phases 66(10): 1821  
mineral crystallization 66(10): 1821  
fractionation rates 66(10): 1821

## S

silica  
biogenic silica 66(9): 1601  
aluminum 66(9): 1601  
crystal chemistry 66(9): 1601  
XANES/EXAFS 66(9): 1601  
biogenic silica 66(14): 2559  
reactivity 66(14): 2559  
aging 66(14): 2559  
diagenesis 66(14): 2559  
adsorption 66(14): 2559  
surface chemistry 66(14): 2559  
surface complexation 66(14): 2559  
biogenic silica 66(15): 2701  
apparent solubility 66(15): 2701  
dissolution 66(15): 2701  
North Atlantic 66(15): 2701  
silicate melts  
thermodynamic modeling 66(1): 93  
activities 66(1): 93  
optical basicity 66(1): 93  
sulfide capacity 66(1): 93  
activity coefficient 66(1): 93  
viscosity 66(1): 125  
tracer diffusion 66(1): 125  
models 66(1): 125  
cations 66(1): 125  
framework 66(2): 303  
nuclear magnetic resonance 66(2): 303  
17O NMR 66(2): 303  
11B NMR spectroscopy 66(2): 303  
disorder 66(2): 303  
aluminosilicates 66(2): 303  
borosilicates 66(2): 303  
Ar 66(3): 507  
K 66(3): 507  
Rb 66(3): 507

partitioning 66(3): 507  
mantle degassing 66(3): 507  
clinopyroxene 66(3): 507  
diffusion 66(4): 635  
multicomponent diffusion 66(4): 635  
CaO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> 66(4): 635  
diffusion matrix 66(4): 635  
Libyan Desert glass 66(5): 903  
silicate immiscibility 66(5): 903  
graphite ribbons 66(5): 903  
dark streaks 66(5): 903  
Tyndall effect 66(5): 903  
impact glass 66(5): 903  
vesicles 66(8): 1449  
helium diffusion 66(8): 1449  
noble gases 66(8): 1449  
mid-ocean ridge 66(8): 1449  
basalt 66(8): 1449  
carbon dioxide 66(9): 1627  
water 66(9): 1627  
andesites 66(9): 1627  
FTIR 66(9): 1627  
SIMS analyses 66(9): 1627  
melt polymerization 66(9): 1627  
solubility mechanisms 66(9): 1627  
melt species 66(9): 1627  
CO<sub>2</sub> solubility 66(10): 1809  
CO<sub>2</sub> speciation 66(10): 1809  
phonolite 66(10): 1809  
infrared 66(10): 1809  
NMR 66(10): 1809  
mid-ocean ridge basalts 66(12): 2073  
low-velocity zone 66(12): 2073  
mantle heterogeneity 66(12): 2073  
potential temperature 66(12): 2073  
plagioclase-spinel 66(12): 2073  
lherzolite 66(12): 2073  
basalt generation 66(12): 2073  
garnet peridotite 66(12): 2091  
modal mineralogy 66(12): 2091  
melting 66(12): 2091  
mantle 66(12): 2091  
mineralogical effects 66(12): 2091  
basalt 66(12): 2099  
lower mantle 66(12): 2099  
perovskite 66(12): 2099  
phase relation 66(12): 2099  
chemical composition 66(12): 2099  
high-pressure 66(12): 2099  
carbonatite 66(12): 2139  
experiments 66(12): 2139  
high-pressure 66(12): 2139  
kimberlite 66(12): 2139  
orangeite 66(12): 2139  
high-pressure 66(12): 2193  
experiments 66(12): 2193  
source 66(12): 2193  
water content 66(12): 2193  
primitive basalt 66(12): 2193  
St. Vincent 66(12): 2193  
island arc 66(12): 2193  
bimodal differentiation 66(12): 2211  
solidification fronts 66(12): 2211  
basaltic sills 66(12): 2211  
silicic segregations 66(12): 2211  
thermal expansivity 66(12): 2231  
volume-temperature relationship 66(12):  
2231  
supercooled liquid 66(12): 2231  
haplobasalts 66(12): 2231  
anorthite 66(12): 2231  
diopside 66(12): 2231  
dilatometry 66(12): 2231  
equations of state 66(12): 2231

beryllium 66(12): 2239  
mineral/melt partitioning 66(12): 2239  
cordierite 66(12): 2239  
feldspar 66(12): 2239  
mica 66(12): 2239  
crustal cycle of beryllium 66(12): 2239  
granites 66(12): 2239  
partition coefficient 66(12): 2267  
Mg-Fe partitioning 66(12): 2267  
olivine melt 66(12): 2267  
melt structure 66(12): 2267  
depolymerization of melt 66(12): 2267  
solubility experiments 66(12): 2273  
Mg/Si ratio 66(12): 2273  
mantle 66(12): 2273  
differentiation 66(12): 2273  
continental crust 66(12): 2273  
aqueous fluid 66(12): 2287  
solubility experiments 66(12): 2287  
alkali 66(12): 2287  
alumina 66(12): 2287  
element partitioning 66(12): 2287  
pressure 66(12): 2287  
temperature 66(12): 2287  
O isotopes 66(12): 2299  
U isotopes 66(12): 2299  
Pb isotopes 66(12): 2299  
zircon 66(12): 2299  
China 66(12): 2299  
Neoproterozoic 66(12): 2299  
ultrahigh-pressure metamorphism 66(12):  
2299  
snowball Earth 66(12): 2299  
peat bogs 66(13): 2307  
atmospheric deposition 66(13): 2307  
SE Asia 66(13): 2307  
Holocene 66(13): 2307  
younger Dryas 66(13): 2307  
dust 66(13): 2307  
sources 66(13): 2307  
aerosols 66(13): 2307  
Eu 66(13): 2325  
montmorillonite 66(13): 2325  
sorption 66(13): 2325  
cation exchange 66(13): 2325  
surface complexation 66(13): 2325  
montmorillonite 66(13): 2335  
Ni uptake 66(13): 2335  
EXAFS 66(13): 2335  
P-EXAFS 66(13): 2335  
neof ormation 66(13): 2335  
phyllosilicate 66(13): 2335  
oxygen solubility 66(13): 2349  
electrolyte solutions 66(13): 2349  
Pitzer equations 66(13): 2349  
arsenopyrite 66(13): 2361  
As(III) speciation 66(13): 2361  
Fe(II) speciation 66(13): 2361  
solubility experiments 66(13): 2361  
thermodynamic properties 66(13): 2361  
hydrothermal fluids 66(13): 2361  
zircon 66(13): 2379  
U-Pb geochronology 66(13): 2379  
bias 66(13): 2379  
magnetic susceptibility 66(13): 2379  
paramagnetic 66(13): 2379  
provenance 66(13): 2379  
Frantz magnetic 66(13): 2379  
barrier separator 66(13): 2379  
sample preparation 66(13): 2379  
U-Pb 66(13): 2399  
Th-Pb 66(13): 2399  
Rb-Sr 66(13): 2399  
uranium disequilibrium 66(13): 2399

baddeleyite 66(13): 2399  
 zircon 66(13): 2399  
 apatite 66(13): 2399  
 phlogopite 66(13): 2399  
 carbonatite 66(13): 2399  
 phoscorite 66(13): 2399  
 Kovdor massif 66(13): 2399  
 aqueous fluid 66(13): 2421  
 solubility experiments 66(13): 2421  
 alkaline earth 66(13): 2421  
 molar volume 66(13): 2421  
 isochore 66(13): 2421  
 pressure 66(13): 2421  
 temperature 66(13): 2421  
 liquid immiscibility 66(14): 2603  
 borosilicates 66(14): 2603  
 element partitioning 66(14): 2603  
 speciation in melts 66(14): 2603  
 centrifuge separation 66(14): 2603  
 copper solubility 66(15): 2791  
 basaltic magmas 66(15): 2791  
 Cu-Fe sulfide liquid 66(15): 2791  
 silicate liquid partition coefficients 66(15): 2791  
 Cu-rich ores 66(15): 2791  
 solubility 66(16): 2915  
 water 66(16): 2915  
 shallow magma chambers 66(16): 2915  
 pressure 66(16): 2915  
 density 66(16): 2915  
 trace element partitioning 66(17): 3109  
 partition coefficient 66(17): 3109  
 garnet 66(17): 3109  
 clinopyroxene 66(17): 3109  
 subduction 66(17): 3109  
 MORB 66(17): 3109  
 Zr-Hf 66(17): 3109  
 Nb-Ta 66(17): 3109  
 ion-probe 66(17): 3109  
 experimental petrology 66(17): 3109  
 adakites 66(17): 3109  
 pyroxenites 66(17): 3109  
 partial melting 66(17): 3109  
 Zr 66(18): 3293  
 Hf 66(18): 3293  
 zircon 66(18): 3293  
 hafnon 66(18): 3293  
 solubility 66(18): 3293  
 fractionation 66(18): 3293  
 granite 66(18): 3293  
 U series disequilibria 66(19): 3481  
 MORB 66(19): 3481  
 basalt petrogenesis 66(19): 3481  
 melt generation 66(19): 3481  
 melt transport 66(19): 3481  
 East Pacific Rise 66(19): 3481  
 Nd 66(19): 3481  
 Sr 66(19): 3481  
 Hf 66(19): 3481  
 Pb isotopes 66(19): 3481  
 magma chambers 66(19): 3481  
 trace elements 66(20): 3647  
 partitioning 66(20): 3647  
 hydrous melts 66(20): 3647  
 REE 66(20): 3647  
 clinopyroxene 66(20): 3647  
 garnet 66(20): 3647  
 melt generation 66(23): 4133  
 melt transport 66(23): 4133  
 spreading ridges 66(23): 4133  
 geochemistry 66(23): 4133  
 U-series disequilibria 66(23): 4133  
 porous flow 66(23): 4133  
 trace elements 66(23): 4133  
 abyssal peridotite 66(23): 4133  
 aluminosilicate melts (glasses) 66(23): 4149  
 melt structure 66(23): 4149  
 glass structure 66(23): 4149  
 water speciation 66(23): 4149  
 ab initio calculations 66(23): 4149  
 NMR calculations 66(23): 4149  
 protonation model 66(23): 4149  
 depolymerization model 66(23): 4149  
 arc magmatism 66(24): 4287  
 basalt 66(24): 4287  
 Central America 66(24): 4287  
 flux-melting 66(24): 4287  
 uranium series disequilibrium 66(24): 4287  
 thorium 66(24): 4287  
 protactinium 66(24): 4287  
 tektites 66(24): 4347  
 impact glasses 66(24): 4347  
 Fe local structure 66(24): 4347  
 XANES 66(24): 4347  
 EXAFS 66(24): 4347  
 silicate minerals  
   weathering 66(5): 837  
   granitoid 66(5): 837  
   Pb isotopes 66(5): 837  
   REE 66(5): 837  
   sphene 66(5): 837  
   apatite 66(5): 837  
   allanite 66(5): 837  
   dissolution 66(5): 837  
   surface chemistry 66(6): 913  
   amorphous silica 66(6): 913  
   glass 66(6): 913  
   dissolution kinetics 66(6): 913  
   NMR spectroscopy 66(6): 913  
   alkali sorption 66(6): 913  
   surface polymerization 66(6): 913  
   surface complexation 66(6): 913  
   aluminous spinel 66(16): 2903  
   diffusion coefficients 66(16): 2903  
   Fe(II) 66(16): 2903  
   Mg 66(16): 2903  
   quartz 66(17): 3037  
   crystal growth 66(17): 3037  
   X-ray reflectivity 66(17): 3037  
   atomic force microscopy 66(17): 3037  
   quartz 66(17): 3037  
   clay 66(22): 3913  
   kaolinite 66(22): 3913  
   dissolution 66(22): 3913  
   kinetics 66(22): 3913  
   activation energy 66(22): 3913  
   pH 66(22): 3913  
 silicate rocks  
   Fe(II)/Fe(III) 66(6): 1085  
   Fe(II) 66(6): 1085  
   Wilson's method 66(6): 1085  
   GSJ standards 66(6): 1085  
 SNC meteorites  
   basalts 66(10): 1867  
   crystallization 66(10): 1867  
   modeling 66(10): 1867  
   redox processes 66(10): 1867  
   phase equilibria 66(10): 1867  
   oxides 66(10): 1867  
   silicates 66(10): 1867  
   mineral analyses 66(10): 1867  
 solar nebula  
   silicon carbide 66(4): 661  
   silica 66(4): 661  
   volatilization 66(4): 661  
   kinetics 66(4): 661  
   presolar grains 66(4): 661  
 Sudbury Igneous Complex  
   Pt-Os isotopes 66(2): 273  
   Re-Os isotopes 66(2): 273  
   chondritic values 66(2): 273  
   meteorite impact 66(2): 273  
 sulfate minerals  
   enthalpy of formation 66(10): 1839  
   heat capacity 66(10): 1839  
   high-temperature calorimetry 66(10): 1839  
   jarosite 66(16): 2841  
   chromate minerals 66(16): 2841  
   solid solution 66(16): 2841  
   stoichiometric saturation 66(16): 2841  
   Lippmann diagram 66(16): 2841  
   Re-Os isotopes 66(6): 1037  
   mantle sulfides 66(6): 1037  
   laser ablation microprobe 66(6): 1037  
   multicollector ICPMS 66(6): 1037  
   As(III) 66(18): 3281  
   orpiment 66(18): 3281  
   oxidation 66(18): 3281  
   reaction kinetics 66(18): 3281  
   chemical weathering 66(23): 4057  
   pyrrhotite 66(23): 4057  
   acid leaching 66(23): 4057  
   metal-depleted surface layer 66(23): 4057  
   air oxidation 66(23): 4057  
   IR spectroscopy 66(23): 4057  
   XPS 66(23): 4057  
   X-ray emission spectroscopy 66(23): 4057  
   Mossbauer spectroscopy 66(23): 4057  
 surface chemistry  
   surface complexation 66(19): 3389  
   goethite 66(19): 3389  
   proton uptake 66(19): 3389  
   potentiometric titrations 66(19): 3389  
   surface charge density 66(19): 3389

## T

thermodynamics  
   phase equilibrium 66(19): 3431  
   Gibbs Ensemble Monte Carlo 66(19): 3431  
   CH<sub>4</sub> 66(19): 3431  
   C<sub>2</sub>H<sub>6</sub> 66(19): 3431  
   computer simulation 66(19): 3431  
 trace element geochemistry  
   dust 66(9): 1569  
   dust source 66(9): 1569  
   aerosols 66(9): 1569  
   Owens Lake 66(9): 1569  
   playa 66(9): 1569  
   southwest USA 66(9): 1569  
 trace elements  
   platinum 66(22): 3987  
   osmium 66(22): 3987  
   Sierra 66(22): 3987  
   xenolith 66(22): 3987  
   sulfide 66(22): 3987  
   palladium 66(22): 3987  
   iridium 66(22): 3987

## U

U geochemistry  
   sorption 66(20): 3533  
   precipitation 66(20): 3533  
   iron oxides 66(20): 3533  
   XANES 66(20): 3533  
   EXAFS 66(20): 3533  
   FT-IR 66(20): 3533  
   luminescence 66(20): 3533  
   uranate 66(20): 3533

**V**

## volatiles

volcanic gases 66(21): 3811  
 black smokers 66(21): 3811  
 atmospheric oxygen 66(21): 3811  
 great oxidation event 66(21): 3811  
 mantle oxidation stage 66(21): 3811  
 C isotopes 66(21): 3811  
 S isotopes 66(21): 3811  
 N isotopes 66(21): 3811

**W**

## weathering

dissolution rates 66(15): 2665  
 experimental 66(15): 2665  
 rhyolite 66(15): 2665  
 glass 66(15): 2665  
 clay-size fraction 66(15): 2665  
 hydration 66(15): 2665  
 chemical affinity 66(15): 2665  
 flushing 66(15): 2665  
 Himalaya Mountains 66(1): 13  
 silicate minerals 66(1): 13  
 carbonate minerals 66(1): 13  
 soil chronosequence 66(1): 13  
 Ca/Sr 66(1): 13  
 Sr isotopes 66(1): 13  
 U 66(1): 29  
 black shale 66(1): 29  
 Himalaya 66(1): 29  
 Re 66(1): 29  
 Os 66(1): 29  
 Yamuna River 66(1): 29  
 Zr 66(5): 819  
 mobility 66(5): 819

depletion 66(5): 819  
 REE 66(5): 819  
 dissolution 66(5): 819  
 laterites 66(7): 1197  
 chemical redistribution 66(7): 1197  
 trace elements 66(7): 1197  
 U-Th disequilibria 66(7): 1197  
 modeling 66(7): 1197  
 silicate minerals 66(8): 1335  
 Antarctica 66(8): 1335  
 McMurdo Dry Valleys 66(8): 1335  
 biofilms 66(8): 1335  
 silicon 66(9): 1525  
 germanium 66(9): 1525  
 Hawaii 66(9): 1525  
 chronosequence 66(9): 1525  
 sequential extraction 66(9): 1525  
<sup>187</sup>Os/<sup>188</sup>Os 66(9): 1539  
 black shales 66(9): 1539  
 isotope geochemistry 66(9): 1539  
 Lesser Himalaya 66(9): 1539  
 global budget 66(9): 1539  
 Re 66(9): 1539  
 Os 66(9): 1539  
 granite 66(14): 2583  
 oxidation 66(14): 2583  
 redox 66(14): 2583  
 Fe-reducing bacteria 66(14): 2583  
 simulation 66(14): 2583  
 Monod kinetics 66(14): 2583  
 chemical weathering 66(19): 3397  
 Yamuna basin 66(19): 3397  
 Himalaya 66(19): 3397  
 CO<sub>2</sub> drawdown 66(19): 3397  
 activation energy 66(19): 3397  
 chemical weathering 66(19): 3417  
 Sr isotopes 66(19): 3417

carbonate minerals 66(19): 3417  
 silicate minerals 66(19): 3417  
 Himalaya 66(19): 3417

**Z**

## zinc geochemistry

sediments 66(9): 1549  
 speciation 66(9): 1549  
 micro-PIXE 66(9): 1549  
 SXRF 66(9): 1549  
 EXAFS 66(9): 1549  
 P-EXAFS 66(9): 1549  
 principal component analysis 66(9): 1549

## zircon

oscillatory zoning 66(2): 311  
 SHRIMP 66(2): 311  
 REE 66(2): 311  
 pattern formation 66(2): 311  
 self-organization 66(2): 311  
 partition coefficient 66(16): 2887  
 melt inclusion 66(16): 2887  
 accessory minerals 66(16): 2887  
 trace elements 66(16): 2887  
 rare earth elements 66(16): 2887  
 petrogenesis 66(16): 2887  
 fractional crystallization 66(16): 2887  
 partial melting 66(16): 2887  
 differentiation 66(16): 2887

## zoning

oscillatory zoning 66(3): 403  
 barite 66(3): 403  
 celestite 66(3): 403  
 crystal growth 66(3): 403  
 nonlinear dynamics 66(3): 403