# INDEX TO VOLUME 206

This index covers both the *Initial Reports* and *Scientific Results* portions of Volume 206 of the *Proceedings of the Ocean Drilling Program*. References to page numbers in the *Initial Reports* are preceded by "A" followed by the chapter number with a colon (A1:) and to those in the *Scientific Results* (this volume) by "B" followed by the chapter number with a colon (B1:).

The index was prepared by Earth Systems, under subcontract to the Ocean Drilling Program. The index contains two hierarchies of entries: (1) a main entry, defined as a keyword or concept followed by a reference to the page on which that word or concept appears, and (2) a subentry, defined as an elaboration on the main entry followed by a page reference.

The index covers volume text, figures, and tables but not core-description forms ("barrel sheets"), core photographs, smear slide data, or thin section descriptions. Also excluded from the index are bibliographic references, names of individuals, and routine front matter.

The Subject Index follows a standard format. Geographical, geologic, and other terms are referenced only if they are subjects of discussion. A site chapter in the *Initial Reports* is considered the principal reference for that site and is indicated on the first line of the site's listing in the index. Such a reference to Site 1256, for example, is given as "Site 1256, A3:1–396."

The Taxonomic Index is an index relating to significant findings and/or substantive discussions, not of species names *per se*. This index covers three varieties of information: (1) individual genera and species that have been erected or emended formally, (2) biostratigraphic zones, and (3) fossils depicted in illustrations. A taxonomic entry consisting of both genus and species is listed alphabetically by genus and also by species. Biostratigraphic zones are listed alphabetically by genus; zones with letter prefixes are listed under "zones."

### SUBJECT INDEX

# A

accretion, crust, A1:10-11 age vs. depth basement, A1:41; A3:103 Neogene nannofossil datums, A1:64; A3:129; B2:21 summary, A3:121–122 albite alteration, A3:66 basement secondary mineral geochemistry, B8:3 photograph, A3:208 photomicrograph, A3:209–211, 222 replacement, B7:3 veins, A1:32 alkalinity pore water, A3:38 vs. depth, A3:148 alteration basalts, A1:31-32; A3:65-73 basement, A3:65-73 geochemistry, A3:236; B8:1-16 photograph, A3:218–219, 282 photomicrograph, A3:205-216, 220-222, 225-228, 230, 234–235, 282 spectroscopy, B12:1–13 See also hydrothermal alteration alteration front, photomicrograph, A3:235

alteration halos composition, A3:66–73 lava, B1:7 photograph, A3:218, 224, 229, 231-232, 237 photomicrograph, A3:225-228, 230 See also oxidation halos alteration halos, black, composition, A3:68 alteration halos, brown, composition, A3:68-69 alteration halos, mixed, composition, A3:69 alteration types, vs. depth, A1:90; A3:223 alteration zones, vs. depth, A1:95; A3:256 aluminum hyaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 sediments, A3:42 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, B3:15 See also calcium/aluminum ratio; iron/aluminum ratio aluminum/titanium ratio, vs. depth, B3:16 aluminum oxide vs. depth, A1:81; A3:152, 194; B5:6 vs. magnesium number of clinopyroxene, B5:25 vs. magnesium oxide, A1:88; A3:199

#### **VOLUME 206 SUBJECT INDEX** ammonium • calcite

ammonium pore water, A3:38 vs. depth, A3:148 amphibole photograph, A3:238, 243 photomicrograph, A3:239-241 amygdules, photograph, A3:244, 269 anorthite, basement secondary mineral geochemistry, B8:3 apatite basement secondary mineral geochemistry, B8:3, 16 groundmass, A3:57-59 photomicrograph, A3:210 replacement, B7:3 aragonite photomicrograph, A3:205 veins, A3:72; B10:1-6 augite basalts, A1:29; A3:57; B5:6 grain size vs. depth, A3:61-63, 187; B5:9-10 groundmass, A3:57-59 photomicrograph, A3:220 augite, granular, photomicrograph, A3:183 augite microphenocrysts, photomicrograph, A1:80; A3:178 augite phenocrysts, photomicrograph, A3:179

#### B

barite, mass accumulation rates, A3:44 barium lava, B1:7 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12-13 vs. depth, A3:152; B3:15; B6:6 barium/lanthanum ratio basement, B6:3 vs. depth, B6:7 barium/titanium ratio mass accumulation rates, A3:45-46 sediments, A1:25; A3:154 vs. depth, A1:67; B3:16 basalts alteration, A1:31-32; A3:65-73 average grain size, A3:373-374 digital imaging, A3:90-93, 318-320 digital photomicrograph log, A3:372 geochemistry, A1:30-31; A3:64-65, 375-382; B1:5-9 lithologic units, A3:53-65 microbiology, A1:34-35 modal analysis data, A3:371 paleomagnetism, A1:33-34 petrography, A1:28-30; A3:55-64 photograph, A3:213, 224, 237-238, 244 photomicrograph, A3:177-186, 309 physical properties, A1:34 recrystallization, A3:59-64 scanning electron microscopy, B5:16, 18, 20 structure, A1:32-33 textures, B5:1-32

vs. depth, A1:71–72 basalts, normal mid-ocean-ridge, geochemistry, B6:1-10 basement age vs. depth, A1:41; A3:103 alteration, A1:32; A3:65-73 crust, A1:11 digital imaging, A3:90-93 downhole measurements, A3:93-97 igneous petrology and geochemistry, A3:52-65 in situ drilling, A1:3-6, 40, 103-104 microbiology, A3:85-87 paleomagnetism, A3:80-85 physical properties, A3:87-90 secondary mineral chemistry, B8:1-16 stratigraphy, A1:71; A3:162-163; B1:15 structural geology, A3:73-80 superfast spreading, A3:52-97 trace elements, B6:1-10 bathymetry Cocos plate, B11:8 profile maps, A4:11, 23, 35, 47 Site 1256, A1:49-52; A3:108 Site ALIJOS, A1:52 Site GUATB-01, A1:51 Site GUATB-02, A1:50; A3:111 Site GUATB-03, A1:49; A3:110 bathymetry, multibeam, contour map, A4:10, 34, 46 beidellite, basement secondary mineral geochemistry, B8:2-3 biostratigraphy sedimentary overburden, A3:26-29 summary, A1:23-24; B1:4 upper Cenozoic, B2:1–25 biotite, interstitial, photomicrograph, A3:207 bioturbation lithologic units, A1:23; A3:23-26 See also burrows boudins, photomicrograph, A3:266 breccia alteration, A3:69 basalts, A3:78-79 photograph, A3:234, 237-238, 282-284 photomicrograph, A3:282 vs. depth, A3:233, 255 breccia, hyaloclastite, basalts, A3:78-79 breccia, jigsaw puzzle, basalts, A3:79 breccia, polymictic, basalts, A3:78-79 breccia, sediment-infilling, basalts, A3:79 breccia, talus, photograph, A3:283 brecciation, incipient, photograph, A3:285-286 brecciation, photomicrograph, A3:239 Brunhes/Matuyama boundary, summary, A1:24 **Brunhes** Chron magnetostratigraphy, A3:35 summary, A1:24 burrows, photograph, A3:125

### C

calcite basement secondary mineral geochemistry, B8:3, 16

#### **VOLUME 206 SUBJECT INDEX** calcite (continued) • chromium

replacement, B7:3 veins, A3:72; B10:1-6 visible and near-infrared spectroscopy, A3:49 vs. depth, A3:158 See also calcium carbonate calcite, measured, vs. predicted calcite, A3:159 calcite, predicted vs. depth, A3:158 vs. measured calcite, A3:159 calcium pore water, A3:39-40 sediments, A3:42 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12-13 vs. depth, A3:149; B3:15 See also iron/calcium ratio; lithium/calcium ratio; magnesium/calcium ratio; manganese/calcium ratio; potassium/calcium ratio; strontium/calcium ratio calcium/aluminum ratio, vs. depth, A1:85; A3:198 calcium carbonate alteration, B1:8 mass accumulation rates, A3:43-44 photograph, A3:244 sediments, A3:41-42 calcium oxide titanium hydrogarnet, B9:2-6 vs. depth, A1:82; A3:152, 195 vs. magnesium oxide, A1:88; A3:199 caliper logs, vs. depth, A3:161, 322-330 carbon, dissolved organic pore water, A3:38 vs. depth, A3:148 carbon, organic sediments, A3:41-42 vs. depth, A1:66; A3:151 carbon, productivity proxies, B4:7-8 carbon isotopes carbonate crash, B4:5-6 vs. age, B4:21 vs. carbonate mass accumulation rates, B4:21 vs. oxygen isotopes, B4:21 carbonate compensation depth carbonate crash models, B4:12 mass accumulation rates, A3:44; B2:9-10 summary, A1:24-25; A3:29 carbonate content vs. age, B2:22 vs. depth, A1:56; A3:126, 151 carbonate crash biostratigraphy, B1:4; B2:10-11 mass accumulation rates, A3:45-46 middle-upper Miocene, B4:1-24 Miocene, A1:24 models, B4:8-10 proposed models, B4:10-12 timing, B4:8 carbonate fibers, stretched, photograph, A3:278 carbonates accumulation in open oceans, B4:8

diagenesis, B4:6-7 mass accumulation rates vs. age, A3:153 photomicrograph, A3:212, 279 productivity, B4:1-24 productivity proxies, B4:7-8 vs. age, B4:22-23 vs. depth, A3:255 carbonates, biogenic, geochemistry, B3:1-26 celadonite alteration, B1:8 basement secondary mineral geochemistry, B8:2-3, 5 - 10halos, A3:68-73 intensive low-temperature hydrothermal alteration, A3:71 lithologic units, A3:25 photograph, A3:232, 244 photomicrograph, A3:205-206, 225-226, 245-247, 279, 309; B9:4 replacement, B7:3 veins, A3:71-72 vs. depth, A3:255 Cenozoic, upper, nannofossil biostratigraphy, B2:1-25 cesium lava, B1:7 vs. depth, B6:6 chalcedony basement secondary mineral geochemistry, B8:3 photograph, A3:238 photomicrograph, A3:205, 253-254, 309 replacement, B7:3 chalcopyrite, photograph, A3:243 chemical analysis shipboard vs. shore-based digestion, B3:8, 26 shore-based flux vs. shore-based microwave acid digestion, B3:7-8, 19-25 chert, lithologic units, A1:23; A3:25-26 chilled margins folding, A3:75 photograph, A1:76; A3:164, 171 photomicrograph, A3:186 recrystallized basalts, A3:61 chloride pore water, A3:38 vs. depth, A3:147 See also sodium/chloride ratio chlorite alteration, A3:66 basement secondary mineral geochemistry, B8:3 photograph, A3:238 chlorite-smectite mixed-layer minerals, geochemistry, B7:2-3 Chondrites, lithologic units, A3:23-26 chromaticity lithologic units, A3:24-26 vs. depth, A3:126 chromium hyaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 lava, B1:6

#### **VOLUME 206 SUBJECT INDEX** chromium (continued) • diatomite, lithologic units

shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, A1:84; B3:15 vs. magnesium oxide, A1:89; A3:200 Chron C1n, magnetostratigraphy, A3:35 Chron C3An.1n, magnetostratigraphy, A3:35 Chron C3An.1r, magnetostratigraphy, A3:35 Chron C3r, magnetostratigraphy, A3:35 Chron C4n.1r, magnetostratigraphy, A3:35 Chron C5Br-C5Bn interval, basalts, A3:85 Chron C5n.2n, magnetostratigraphy, A3:35 clasts basalts, A3:78 lithologic units, A1:27-28 photograph, A3:234, 237, 284 clasts, angular, photograph, A1:76; A3:171, 173 clasts, pumice, lithologic units, A3:24–26 clav lithologic units, A3:23-26 photomicrograph, A3:205 visible and near-infrared spectroscopy, A3:49 vs. depth, A3:123 clay, nannofossil silt, lithologic units, A3:23 clay, sandy silty, lithologic units, A3:23-24 clay, terrigenous, geochemistry, B3:1-26 clay minerals, photomicrograph, A3:235 clinopyroxene basalts, A1:28-30 deformation, A3:73–74 grain size variations of groundmass crystals, B5:22-23 groundmass, A3:57-59 lava ponds, B5:2-3 magmatic veins, A3:63-64 photomicrograph, B5:17, 19, 21 recrystallized basalts, A3:60 clinopyroxene, equigranular, photomicrograph, A3:189 clinopyroxene, granular, photomicrograph, A3:186 clinopyroxene, plumose, photomicrograph, A3:180; B5:8 clinopyroxene groundmass, grain size vs. depth, A3:190 clinopyroxene phenocrysts, basalts, A1:79; A3:57 clinopyroxene replacement, photomicrograph, A3:212, 220 Clipperton Fracture Zone, seafloor spreading, A1:9–10 Cocos/Nazca/Pacific plate triple junction, seafloor spreading, A1:9–10 Cocos/Pacific plate boundary age map, A1:46; A3:105 seafloor spreading, A1:9-10 Cocos plate age map, B1:12 drilling summary, A1:1-117 geology, A1:10-11 Cocos Ridge crust, A1:10-11 See also Pacific-Cocos Ridge coercivity basalts, A3:84-85 demagnetization, A3:291-299

compressional wave velocity basalts, A3:88-89 sediments, A3:48 vs. depth, A1:69; A3:155 vs. porosity, A3:157 contamination, microbial activity, A3:86 core imaging interpretation, A3:92–93 processing, A3:91–92 coring, orientation, A3:354 Coriolis effect, carbonate crash, B4:3 correlation, magnetic susceptibility, A3:31-32 cracks, photograph, A3:173 Cruise EW9903, site survey results, A4:1-49 crust, oceanic formation at superfast spreading rate, A1:26-36, 44; A3:3-5; B1:1-15 in situ drilling, A1:3-6; B1:1-15 crust, upper oceanic hydration, B12:1-13 physical properties, B13:1-11 seafloor spreading, A1:9-10 crystal aggregates, lava ponds, B5:3 crystallites, groundmass, A3:58-59 crystals, acicular, lava ponds, B5:3

### D

Deep Sea Drilling Project, in situ basement drilling, A1:3-6 deep water, carbonate crash models, B4:8-10 deformation, intracrystalline, basalts, A3:73-74 deformation, photomicrograph, A3:193 deformation, shear, photomicrograph, A3:280 demagnetization, alternating-field principal component analysis, A3:134, 137-140 vector plots, A1:100; A3:133, 291-299, 304-305 demagnetization, split cores, A3:32-33 demagnetization, thermal, vector plots, A1:99; A3:300-301 density basalts, A3:87-88 sediments, A3:47 vs. depth, A1:69; A3:155, 310-311, 392-394; B13:8-10 density, bulk vs. porosity, A3:315; B13:7 vs. velocity, A3:314 density, gamma ray attenuation bulk, vs. depth, A3:121-122, 155 density, matrix, vs. porosity, B13:7 density, multisensor track and moisture and density, upper oceanic crust, B13:1-11 density logs, vs. depth, A3:322 devitrification, lava ponds, B5:2-3 diagenesis, carbonates, B4:6-7 diatom mats mass accumulation rates, B2:9-10 photograph, A3:127 diatom mats, laminated, geochemistry, B3:1-26 diatomite, lithologic units, A3:24-26

#### **VOLUME 206 SUBJECT INDEX** diatoms • hydration

diatoms lithologic units, A1:23; A3:23-24 vs. depth, A3:123 digital imaging basalts, A3:90-91; B11:11-26 basement, A3:90-93, 318-320, 395 dikes lithologic units, A3:55 photograph, A3:174 dip photograph, A3:273 primary magmatic layering, A3:261 structure reorientation, B11:1-26 structures, A3:80, 287, 289 dissolution carbonate compensation depth, B2:10-11 carbonate crash, B1:5; B4:1-24 downhole measurements basement, A3:93-97 sedimentary overburden, A3:49-52 drilling depth, A1:42-43; A3:104 operations, A3:112-113, 115, 117-118; B1:14

### E

East Antarctic Ice Sheet, carbonate crash models, B4:9 East Pacific Rise, drilling summary, A1:1–117 epoch boundaries, list, A3:341 Equatorial Undercurrent, carbonate crash, B4:3

### F

fabric, magmatic basalts, A3:73-74 veins, A1:32–33 faults, photograph, A3:128 feldspar basement secondary mineral geochemistry, B8:3, 12-15 photograph, A3:244 photomicrograph, A3:245 replacement, B7:12 fissures, extension, photomicrograph, A3:271 flow banding photograph, A3:263 photomicrograph, A3:264 flow structures, photomicrograph, A3:185 folding basalts, A3:74-75 photograph, A1:74; A3:165, 167, 263, 265 photomicrograph, A3:185, 262, 264 foraminifers carbonate crash models, B4:9 vs. depth, A3:123 formation capture cross section logs, vs. depth, A3:322 Formation MicroScanner imaging, vs. depth, B11:11-12 Formation MicroScanner imaging logs, vs. depth, A3:322, 325-330 fractures types and geometry, A3:76–78

veins, A3:75-76

#### G

gamma ray logs, vs. depth, A3:161, 322-323 gamma rays basalts, A3:89 sediments. A3:48 vs. depth, A3:156, 203, 312-313; B13:8-10 garnet. See also hydrogarnet; hydroschorlomite garnet, andraditic, with celadonite, B1:7 geochemistry sediments, B3:1-26 summary, A1:25-26 geochemistry, igneous, basement, A3:52-65 geochemistry, inorganic, sedimentary overburden, A3:36-41 geochemistry, sediment, sedimentary overburden, A3:41-46 geophysical anomalies, isochrons, A4:9 geothermal gradient, downhole measurements, A3:49-50 glass shards, photomicrograph, A3:235 glassy margins photograph, A1:75; A3:168-169 photomicrograph, A3:177 glauconite bands, photograph, A3:128 grain size average size, A3:373-374; B5:26-27 average size of recrystallized base, B5:28 Lowrie-Fuller tests, A3:141 variations of groundmass crystals, B5:22-23 vs. depth, A3:187-188, 190-191; B5:4-5 gravity surveys, profile maps, A4:13, 25, 37, 49 groundmass basalts, A3:57-59 grain size vs. depth, A1:71-72; A3:162-163, 190-191 lava ponds, B5:2-3 photomicrograph, B5:19-21 textures, A3:58-59 Guatemala Basin Cruise EW9903, A4:1-49 geology, A1:10-11

#### Н

hafnium, vs. depth, B6:6 heat flow downhole measurements, A3:49–50 summary, A1:26; A3:366 vs. depth, A1:70; A3:160 hematite, alteration, A3:66 hyaloclastite alteration, A3:70 lithologic units, A3:54–55 photograph, A1:76; A3:170–171, 234, 282 photomicrograph, A3:235, 282 hydration core spectroscopy, B12:11 upper oceanic crust, B12:1–13 vs. depth, B12:12–13

#### **VOLUME 206 SUBJECT INDEX** hydrogarnet, titanium • magnesium

hydrogarnet, titanium geochemistry, B9:1–6 photomicrograph, B9:4 hydroschorlomite, with celadonite, B1:7 hydrothermal alteration, low-temperature, basalts, A3:71; B1:7 hydrothermal alteration, photograph, A3:237, 244

igneous contacts, photograph, A3:174 igneous petrology, basement, A3:52-65 igneous rocks lithologic units, A1:26-28, 114-115; A3:367; B1:15 stratigraphy, A1:26-28; A3:162-163, 368 vs. depth, A1:71-72 Indonesian Seaway, carbonate crash models, B4:11 Indonesian Throughflow, carbonate crash models, B4:11 intergrowths, granophyric groundmass, A3:57-59 photograph, A3:208 photomicrograph, A3:182, 209-210, 222 intergrowths, photograph, A3:242 intermediate water, carbonate crash models, B4:10–12 Intertropical Convergence Zone, carbonate crash, B4:3 iron basement secondary mineral geochemistry, B8:3 hyaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 sediments, A3:42 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, B3:15 iron/aluminum ratio, sediments, A3:43 iron/calcium ratio veins, B10:3-6 vs. strontium/calcium ratio, B10:5 iron-titanium oxide, photomicrograph, B5:17, 19, 21 iron/titanium ratio, vs. depth, B3:16 iron oxide basement secondary mineral geochemistry, B8:2-3 lithologic units, A1:23 phyllosilicates, B7:2-3 titanium hydrogarnet, B9:2-6 vs. depth, A1:81; A3:152, 194, 255 vs. magnesium oxide, A1:88; A3:199 iron oxide veins, vs. depth, A3:248-249 iron oxyhydroxide alteration, A3:66 basement secondary mineral geochemistry, B8:3 intensive low-temperature hydrothermal alteration, A3:71 photograph, A3:224, 231-232, 237, 244 photomicrograph, A3:205, 218, 225-226, 230, 246-247, 280, 309 replacement, B7:3 veins, A3:72 isochrons, magnetic anomalies, A1:47; A3:109

J

joints basalts, A3:78 reorientation, B11:14-26

#### L

laminations. basalts. A3:74 lanthanum. See also barium/lanthanum ratio lanthanum/samarium ratio basement, B6:4 vs. depth, B6:7 lava flows, lithologic units, A1:26-28; A3:53-55; B1:5-9 lava flows, massive ponded, lithologic units, A1:27-28 lava flows, recrystallized aphanitic photograph, A3:184, 242 photomicrograph, A3:185 lava ponds alteration, A3:66-73; B1:6-7 grain size vs. depth, A3:61-63 photograph, A1:74; A3:165-167 photomicrograph, A3:189, 192–193 recrystallized basalts, A3:60–61 textures, A1:29-30; B5:1-32 lead lava, B1:7 vs. depth, B6:6 lightness. See chromaticity lithium pore water, A3:40 vs. depth, A3:149 lithium/calcium ratio pore water, A3:40 vs. depth, A1:68; A3:150 lithium/magnesium ratio pore water, A3:40 vs. depth, A1:68; A3:150 lithologic units igneous rocks, A1:26-28; A3:367; B1:15 sedimentary overburden, A3:22-26, 338 summary, A1:22-23, 111 Unit I, A3:22-24 Unit II, A3:24–26 lithology, prediction based on near-infrared spectroscopy, A3:365 lithostratigraphy sedimentary overburden, A3:22-26 summary, A1:22–23; A3:119–122 vs. depth, A1:58–59 loss on ignition lava, A3:65 vs. magnesium oxide, A1:89; A3:200

#### Μ

magnesium hyaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 pore water, A3:39–40 sediments, A3:42

#### **VOLUME 206 SUBJECT INDEX** magnesium (continued) • microlites

shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, A3:149; B3:15 See also lithium/magnesium ratio; potassium/magnesium ratio magnesium/calcium ratio pore water, A3:39 veins, B10:2-6 vs. depth, A1:68; A3:150 vs. strontium/calcium ratio, B10:5 magnesium number lava, A3:65; B1:6; B5:6 vs. depth, A1:85; A3:65, 198 magnesium number, clinopyroxene vs. aluminum oxide, B5:25 vs. titanium oxide, B5:25 magnesium oxide basement secondary mineral geochemistry, B8:2-3 phyllosilicates, B7:2-3 vs. depth, A1:82; A3:152, 195 vs. major oxides, A1:88; A3:199 vs. trace elements, A1:89; A3:200 magnetic anomalies isochrons, A1:47; A3:109; A4:8 profile maps, A4:12, 24, 36, 48 magnetic declination principal component analysis, A3:135 vs. depth, A1:60-63; A3:132, 142-145, 302-303 magnetic field logs magnetic field, A3:96-97 vs. depth, A3:324 magnetic inclination basalts, A1:34; A3:84-85 demagnetization, A3:291-299 magnetic subdivisions, A3:331 vs. depth, A3:132, 142, 302-303 magnetic intensity sediments, A3:30 split cores, A3:32-33 vs. depth, A3:126, 132, 142, 302-303 magnetic quality index, vs. depth, A3:307 magnetic subdivisions, magnetic inclination, A3:331 magnetic susceptibility basalts, A3:89 sediments, A3:30-32, 48-49 vs. depth, A3:121-122, 126, 130-131, 156, 302, 312-313; B13:8-10 magnetic susceptibility, loop, vs. depth, A3:130-131 magnetic susceptibility, point, vs. depth, A3:130-131 magnetite alteration, A3:66 basalts, A1:29 grain size variations of groundmass crystals, B5:22-23 groundmass, A3:57-59 lava ponds, B5:2-3 magmatic veins, A3:63-64 photograph, A3:243 recrystallized basalts, A3:60 rock magnetism, A3:33-34 magnetite, equigranular, photomicrograph, A3:189

magnetite groundmass, grain size vs. depth, A3:190 magnetostratigraphy datums, A3:35 summary, A1:24, 113; A3:355 vs. depth, A1:60-63; A3:142-145 major elements basement secondary mineral geochemistry, B8:5-16 sediments, A3:42-43 vs. depth, B3:15 major oxides basalts, A3:375–382 vs. magnesium oxide, A1:88 manganese basement secondary mineral geochemistry, B8:3 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, A1:81; A3:149, 194; B3:15 manganese/calcium ratio veins, B10:3-6 vs. strontium/calcium ratio, B10:5 manganese oxide vs. depth, A3:152 vs. magnesium oxide, A1:88; A3:199 marcasite, halos, A3:68 mass accumulation rates carbonate crash, B4:1-24 carbonates, B2:9-10 sediments, A3:43-46 vs. age, A3:153; B2:22; B4:21 See also sedimentation rates mass accumulation rates, bulk sediments, vs. age, B4:22 mass accumulation rates, carbonate vs. age, B4:22 vs. carbon isotopes, B4:21 mass accumulation rates, organic carbon, vs. age, B4:22 mass accumulation rates, terrigenous, vs. age, B4:22 mass accumulation rates, volcanic ash, vs. age, B4:23 Matuyama Chron. See Brunhes/Matuyama boundary mesostasis, groundmass, A3:58 metals mass accumulation rates, A3:45 mass accumulation rates vs. age, A3:153 mica, lithologic units, A3:25 microbial activity alteration textures, A3:86-87 basalts, A1:34-35; A3:308-309, 390-391 microbiology basalts, A1:34-35; A3:85-97 basement, A3:85-87 microcataclasite, basalts, A3:78 microcracks, photomicrograph, A3:260, 269 microcrystalline texture, photograph, A1:73; A3:164, 174 microfaults basalts, A3:78 photomicrograph, A3:281 reorientation, B11:14-26 microlites groundmass, A3:59 replacement, B7:3

#### **VOLUME 206 SUBJECT INDEX** microspheres, basalts • pH

microspheres, basalts, A3:391 microstructures, basalts, A3:73-74 mineral chemistry, lava ponds, B5:6 mineral composition, basalts, B5:24, 29-32 Miocene carbonate compensation depth, A1:24-25 carbonate crash, A1:24 nannofossil biostratigraphy, A3:27-29; B2:6-8 Miocene, middle, lithologic units, A3:24-26 Miocene, middle-upper, carbonate crash, B1:4-5; B4:1-24 Miocene, middle/upper boundary, nannofossil biostratigraphy, A3:28 Miocene, upper, lithologic units, A3:22-26 Miocene/Pliocene boundary, nannofossil biostratigraphy, B2:6 mixed-layer minerals basement secondary mineral geochemistry, B8:3 See also chlorite-smectite mixed-layer minerals

### Ν

nannofossil datums age and depth and zonation, B2:25 correlation with sedimentation, B2:23 nannofossils diagenesis, B4:6-7 vs. depth, A3:123 nannofossils, calcareous biostratigraphy, A1:23-24; A3:26-29 datums, A1:112; A3:340 distribution, A3:342-343; B2:24 Neogene datum age vs. depth, A1:64 upper Cenozoic biostratigraphy, B2:1-25 Nazca plate. See Cocos/Nazca/Pacific triple junction neodymium, lava, B1:7 Neogene, nannofossil datum age vs. depth, A1:64 nickel hyaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, A1:84; A3:197 vs. magnesium oxide, A1:89; A3:200 niobium vs. depth, A1:83; A3:196; B6:6 vs. magnesium oxide, A1:89; A3:200 vs. zirconium, A1:87; A3:202 niobium-zirconium-yttrium ternary diagram, basalts, A1:86: A3:201 nitrogen, alteration, B1:8 nitrogen isotopes, alteration, B1:8 nodules, chert, lithologic units, A3:25-26 nodules, lithologic units, A1:23 nontronite, halos, A3:68 North Atlantic Deep Water, carbonate compensation depth, B2:10

### 0

ocean currents, carbonate crash models, B4:10-12

Ocean Drilling Program, in situ basement drilling, A1:3-6 oligoclase, replacement, B7:3 olivine, basalts, A1:28-30; A3:56 olivine phenocrysts, basalts, A1:79; A3:56 olivine replacement, photomicrograph, A3:205-206, 214, 226 ooze, calcareous nannofossil, lithologic units, A3:24-26 ooze, clayey nannofossil, lithologic units, A3:23-24 ooze, sandy silty nannofossil, lithologic units, A3:23-24 opal photomicrograph, A3:253-254 visible and near-infrared spectroscopy, A3:49 opal, predicted, vs. depth, A3:158 organic matter, sediments, A1:25-26 oxidation halos, photograph, A3:251 oxygen isotopes carbonate crash, B4:5-6

### Р

vs. age, B4:21

vs. carbon isotopes, B4:21

Pacific-Cocos Ridge, seafloor spreading, A1:10 Pacific Ocean E equatorial biostratigraphy, B2:1-25 middle/late Miocene carbonate crash, B4:1-24 upper oceanic crust, B1:1-15 Pacific plate age map, B1:12 See also Cocos/Nazca/Pacific triple junction; Cocos/ Pacific plate boundary paleoceanography, carbonate crash, B4:1-24 paleoclimatology, carbonate crash, B4:1-24 paleomagnetism archive-half sections, A3:82-83, 344-348, 385-387 basalts, A1:33-34 basement, A3:80-85 discrete samples, A3:350-351, 384 drilling disturbed intervals, A3:344 igneous rocks, A3:385-387, 389 principal component analysis, A3:349 sedimentary overburden, A3:29-35 split cores, A3:32–33 summary, A1:24 whole-round experiment, A3:83-84 working-half measurements, A3:81-82 Panama Gateway carbonate compensation depth, B2:10 carbonate crash models, B4:8-10 particulate tracers, microbial activity, A3:86 perfluorocarbon tracers gas chromatograms, A3:308 microbial activity, A3:86 Peru-Chile Current, carbonate crash, B4:3 petrography basalts, A3:55-64 lithologic units, A1:28-30 pН pore water, A3:37-38 vs. depth, A3:147

#### **VOLUME 206 SUBJECT INDEX** phenocrysts • pyrite

phenocrysts basalts, A1:28-30; A3:55-56; B5:5-6 modal abundance, A1:78; A3:175-176 photomicrograph, A3:177-179 vs. depth, A1:71-72; A3:162-163 See also clinopyroxene phenocrysts; olivine phenocrysts; plagioclase phenocrysts phosphate, pore water, A3:38 phosphorus intensive low-temperature hydrothermal alteration, A3:71 shore-based flux vs. shore-based microwave acid digestion, B3:12-13 phosphorus oxide vs. depth, A1:82; A3:195 vs. magnesium oxide, A1:88; A3:199 photoelectric effect logs, vs. depth, A3:322 phyllosilicates basement secondary mineral geochemistry, B8:1-16 geochemistry. B7:2-3 photograph, A3:234 photomicrograph, A3:209, 221, 239-240, 246-247 phyllosilicates, celadonitic, geochemistry, B7:2–3, 5–11 phyllosilicates, saponitic, geochemistry, B7:2-3, 11 physical properties basalts, A1:34; A3:388 basement, A3:87-90 lava, B1:8-9 sedimentary overburden, A3:46-49 summary, A1:26 upper oceanic crust, B13:1-11 phytoplankton, carbonate crash models, B4:8-10 pigeonite groundmass, A3:57-59 photomicrograph, A3:182 pigeonite, prismatic, photomicrograph, A3:182 pillow basalts, photograph, A3:169 pillow lava, lithologic units, A3:54; B1:6-9 plagioclase basalts, A1:28-30 deformation, A3:73–74 grain size variations of groundmass crystals, B5:22-23 grain size vs. depth, A3:61-63, 187-188; B5:9-10 groundmass, A3:57-59 lava ponds, B5:3 magmatic veins, A3:63-64 photomicrograph, A3:281; B5:17 recrystallized basalts, A3:60; B5:8 See also albite; anorthite plagioclase, sodic, photomicrograph, A3:182 plagioclase crystals, photomicrograph, A3:260 plagioclase glomerocrysts, photomicrograph, A3:216 plagioclase groundmass, grain size vs. depth, A3:191 plagioclase laths, photomicrograph, A3:177-178, 180, 189, 259; B5:17, 19, 21 plagioclase phenocrysts basalts, A1:79; A3:56-57 photomicrograph, A1:80; A3:215 plagioclase phenocrysts, zoned, photomicrograph, A3:178

plagioclase replacement, photomicrograph, A3:211, 215-216, 245 Planolites, lithologic units, A3:23-26 plate tectonics, crust, A1:10-11 Pleistocene lithologic units, A3:22-24 See also Pliocene/Pleistocene boundary Pliocene lithologic units, A3:22-24 nannofossil biostratigraphy, A3:27-29; B2:5-6 See also Miocene/Pliocene boundary Pliocene/Pleistocene boundary lithologic units, A3:23 nannofossil biostratigraphy, B2:5 pore water, geochemistry, A3:36-41, 357-360 porosity basalts, A3:88 sediments, A3:47-48 vs. bulk density, A3:315; B13:7 vs. compressional wave velocity, A3:157 vs. depth, A1:69; A3:155, 310-311, 392-394 vs. velocity, A3:48, 316 well-logging, A3:52 porosity logs, vs. depth, A3:161, 322 potassium hvaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 pore water, A3:40 sediments, A3:42 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12-13 vs. depth, A3:149; B3:15 potassium/calcium ratio pore water, A3:40 vs. depth, A1:68; A3:150 potassium/magnesium ratio pore water, A3:40 vs. depth, A1:68; A3:150 potassium/titanium ratio, vs. depth, A1:85; A3:198 potassium logs, vs. depth, A3:161, 323 potassium oxide basement secondary mineral geochemistry, B8:2-3 lava, A3:65 phyllosilicates, B7:2-3 vs. depth, A1:82; A3:152, 195 vs. magnesium oxide, A1:88; A3:199 preferred orientation, photomicrograph, A3:259 productivity carbonate crash, B4:1-24 mass accumulation rates, B2:9-10 vs. depth, A1:67; A3:154 productivity proxies, carbonates, B4:7-8 pull-aparts, sigmoidal photograph, A3:268, 275 veins, A3:75-76 pyrite alteration, A3:66-73 photograph, A3:208, 232, 243 photomicrograph, A3:205, 222, 227-228

#### **VOLUME 206 SUBJECT INDEX** pyrite (continued) • sediments, bulk

veins, A3:71 pyrite fronts, halos, A3:69 pyroxene. *See* augite; clinopyroxene; pigeonite

## Q

quartz groundmass, A3:57–59 magmatic veins, A3:63–64 photograph, A3:208, 237 photomicrograph, A3:182, 209–210, 222, 239–240, 246–247 quartz, euhedral, photomicrograph, A3:209, 252 Quaternary, nannofossil biostratigraphy, A3:26–29; B2:4–5 quenched surfaces, lava ponds, B5:2–3

### R

radioactivity, well-logging, A3:52 radiolarians, vs. depth, A3:123 rare earths, basement, B1:7; B6:3-4, 8 recrystallization basalts, A3:59-64 core image. B5:11 folding, A3:75 lava ponds, B5:1-32 photograph, A1:74; A3:167, 242, 265 photomicrograph, A3:270; B5:12-15 textures, B5:12–15 reduction. See sulfate reduction reflectance lithologic units, A3:22–26 vs. depth, A3:121-122 vs. wavelength, B12:9 See also chromaticity remanent magnetization, anhysteretic discrete samples, A3:33, 352 Lowrie–Fuller tests, A3:141 remanent magnetization, characteristic basalts, A3:84-85 discrete samples, A3:33 remanent magnetization, isothermal discrete samples, A3:353 Lowrie-Fuller tests, A3:141 split cores, A3:32–33 remanent magnetization, natural basalts, A3:84-85 demagnetization, A3:29-30, 304-306 split cores, A3:32–33 resistivity logs, vs. depth, A3:161, 322 reworking, nannofossils, B2:11–12 rock magnetism, titanomagnetite, A3:33-34 rubidium lava. B1:7 vs. depth, B6:6

# S

salinity pore water, A3:37–38

vs. depth, A3:147 samarium. See lanthanum/samarium ratio sand lithologic units, A3:23-26 vs. depth, A3:123 saponite alteration, A3:66-73; B1:8; B7:1-16 basement secondary mineral geochemistry, B8:2-3, 11 photograph, A3:208, 213, 218-219, 224, 231-232, 237, 242, 284 photomicrograph, A3:205-206, 209, 212, 214-215, 222, 226, 239-240, 269, 279, 309 veinlets, A3:78–79 veins, A1:32; A3:71 saponite fibers, overlapping, photograph, A3:277 saponite fibers, shear, photomicrograph, A3:280-281 scandium shore-based flux vs. shore-based microwave acid digestion, B3:12-13 vs. depth, A1:84; A3:197; B6:6 vs. magnesium oxide, A1:89; A3:200 seafloor spreading Cocos/Pacific plate boundary, A1:9-10; B1:1-15 depth to velocity inversion vs. spreading rate, A3:106; B1:13 sea level changes, carbonate crash models, B4:12-13 secondary minerals alteration, A3:66-73 geochemistry, B7:1-16; B8:1-16 total volume in veins and breccia, A1:92 veins, A1:93 vs. depth, A1:91; A3:217, 248-249, 255 sedimentary overburden biostratigraphy, A3:26-29 downhole measurements, A3:49-52 inorganic geochemistry, A3:36-41 lithostratigraphy, A3:22-26; B1:4-5 paleomagnetism, A3:29-35 physical properties, A3:46-49 preliminary results, A3:1-3 sediment geochemistry, A3:41-46 sedimentation rates, A3:35–36 Site 1256. A3:22–52 sedimentation, upper Cenozoic, B2:1-25 sedimentation rates sedimentary overburden, A3:29, 35-36; B1:4-5 summary, A1:24-25; A3:146 vs. depth, A1:65; A3:146 See also mass accumulation rates sedimentation rates, linear biostratigraphy, B2:9–10 data, A3:356 sediments geochemistry, A3:41-46; B3:1-26 summary, A1:22-23 X-ray diffraction data, A3:339 sediments, bulk geochemistry, A3:361-364 vs. age, B4:22-23 Site 1256, B2:22

#### **VOLUME 206 SUBJECT INDEX** sediments, interflow • strontium/calcium ratio

sediments. interflow alteration, A3:69 photograph, A3:242–243 vs. depth, A3:204, 233, 255 seismic profiles, Site GUATB-03, A1:53-54 seismic sections, multichannel, vs. two-way travel time, A4:14-21, 26-33, 38-45 seismic surveys, Cruise EW9903, A4:1-49 seismic tracks, multichannel, maps, A4:10, 34, 46 shear bands, basalts, A3:76 shear structures, basalts, A3:74-75 sheet flows lithologic units, A1:27-28; A3:53 photograph, A1:73, 75; A3:164, 168 silica alteration. A3:66 hyaloclastite, A3:70 intensive low-temperature hydrothermal alteration, A3:71 photograph, A3:218, 232, 242, 244 photomicrograph, A3:279 pore water, A3:39 sediments, A3:42 titanium hydrogarnet, B9:2-6 vs. depth, A1:81; A3:148, 152, 194, 255 vs. magnesium oxide, A1:88; A3:199 silica, biogenic mass accumulation rates, A3:45 mass accumulation rates vs. age, A3:153 vs. age, B2:22 vs. depth, A1:66; A3:151 silicification, lithologic units, A1:23 silicon shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, B3:15 silt lithologic units, A3:23-26 vs. depth, A3:123 Site 998, carbonate and volcanic ash mass accumulation rates vs. age, B4:23 Site 999, carbonate and volcanic ash mass accumulation rates vs. age, B4:23 Site 1256, A3:1–396 background and objectives, A3:5-9 basement secondary mineral geochemistry, B8:1-16 basement trace elements, B6:1-10 bathymetry, A1:49-52 calcium carbonate veins, B10:1-6 coring summary, A1:108; A3:335 downhole measurements, A1:35 drilling summary, A1:1-117 geology, A1:10-11 lava pond textures, B5:1-32 lithostratigraphy vs. depth, A1:58-59 location, A1:56; A3:114 operations, A1:13-22, 105-107, 109-110; A3:9-21, 332-334, 336-337 physical properties of upper oceanic crust, B13:1-11 preliminary results, A3:1-5

principal results, A1:22-36 reconstruction of site, A1:48; A3:107 reentry cone, A1:57 secondary mineral chemistry, B7:1-16 sediment geochemistry, B3:1-26 sedimentary overburden, A3:22-52 site description, A3:1–396 structure reorientation, B11:1-26 titanium hydrogarnets, B9:1-6 upper Cenozoic nannofossil biostratigraphy, B2:1-25 upper oceanic crust hydration, B12:1–13 whole-core images, A1:35-36 Site ALIJOS, bathymetry, A1:52 Site GUATB-01, bathymetry, A1:51 Site GUATB-02, bathymetry, A1:50; A3:111 Site GUATB-03 bathymetry, A1:49; A3:110 seismic profiles, A1:53-54 site survey results, Guatemala Basin, A1:11-13 Skolithos, lithologic units, A3:23-26 smear slide data, vs. depth, A3:123 smectite basement secondary mineral geochemistry, B8:2-3 spectroscopy, B12:1–13 vs. depth, B12:12–13 See also chlorite-smectite mixed-layer minerals smectite, predicted, vs. depth, A3:158 sodium pore water, A3:37-38 sediments, A3:42 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12-13 vs. depth, A3:147; B3:15 sodium/chloride ratio, vs. depth, A3:147 sodium oxide vs. depth, A1:82; A3:152, 195 vs. magnesium oxide, A1:88; A3:199 South Equatorial Current, carbonate crash, B4:3 spectroscopy, visible and near-infrared basalts, A3:90 hydration indicator, B12:1-13 sediments, A3:49; B1:5 stable isotopes alteration, B1:8 carbonate crash, B4:5-6 stratigraphy, epoch boundaries, A3:341 strontium lava, A3:65; B1:7 pore water, A3:39–40 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12-13 vs. depth, A1:83; A3:149, 152, 196; B3:15; B6:6 vs. magnesium oxide, A1:89; A3:200 strontium/calcium ratio pore water, A3:40 sediments, A1:26; A3:150 veins, B10:2-6 vs. depth, A1:68 vs. iron/calcium ratio, B10:5

#### **VOLUME 206 SUBJECT INDEX** strontium/calcium ratio (continued) • veinlets

vs. magnesium/calcium ratio, B10:5 vs. manganese/calcium ratio, B10:5 strontium isotopes, veins, B10:3-6 structural geology, basement, A3:73-80 structures dip, A3:287, 289 orientation, A3:80 reorientation, B11:1-26 rose diagrams, A1:98; A3:288, 290 veins, A1:32-33 vs. depth, A1:96-97; A3:257-258 structures, brittle-ductile, photomicrograph, A3:264 structures, ductile, photomicrograph, A3:264 structures, wrinklelike, photograph, A3:272 sulfate pore water, A3:38 sediments, A1:25-26 vs. depth, A3:148 sulfate reduction, pore water, A3:38 sulfides, photomicrograph, A3:279

# Т

tantalum, vs. depth, B6:6 temperature downhole measurements, A3:49-50 vs. depth, A1:70; A3:160 tension gashes photograph, A3:267 photomicrograph, A3:280 veins, A3:75-76 terrigenous material mass accumulation rates, A3:44 mass accumulation rates vs. age, A3:153 vs. age, B2:22; B4:22-23 vs. depth, A1:66; A3:151 textures basalts, B5:1-32 groundmass, A3:58-59 recrystallization, B5:12-15 textures, cryptocrystalline photograph, A1:73, 77; A3:164, 174 photomicrograph, A3:259 recrystallized basalts, A3:60-61 textures, euhedral, basalts, A1:28-30 textures, fibrous, lava ponds, B5:3 textures, granophyric photograph, A3:208 photomicrograph, A3:182, 209-210, 222 textures, holohyaline, recrystallized basalts, A3:60-61 textures, ophitic, photomicrograph, A3:178 textures, plumose, groundmass, A3:58-59; B5:8 textures, poikilitic, photomicrograph, A3:183 textures, soggy phone book, photograph, A3:127 textures, variolitic groundmass, A3:58-59 lava ponds, B5:2-3 photomicrograph, A3:180-181; B5:8 thermal conductivity basalts, A3:89 sediments, A3:49

vs. depth, A1:70; A3:156, 160, 312-313 thorium, vs. depth, B6:6 thorium/uranium ratio basement, B6:3 vs. depth, B6:7 thorium logs, vs. depth, A3:161, 323 titanite alteration, B1:8 photomicrograph, A3:205 titanium intensive low-temperature hydrothermal alteration, A3:71; B1:7 sediments, A3:42 shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, B3:15 See also aluminum/titanium ratio; barium/titanium ratio; iron-titanium oxide; iron/titanium ratio; potassium/titanium ratio; zirconium/titanium ratio titanium oxide basalts, A1:30-31 titanium hydrogarnet, B9:2-6 vs. depth, A1:81; A3:64-65, 152, 194; B5:6 vs. magnesium number of clinopyroxene, B5:25 vs. magnesium oxide, A1:88; A3:199 vs. zirconium, A1:87; A3:65, 202 titanomagnetite, rock magnetism, A3:33-34 trace elements basalts, A1:30-31; A3:375-382 basement, B6:1-10 basement secondary mineral geochemistry, B8:5-16 sediments, A3:42-43 vs. depth, B3:15 vs. magnesium oxide, A1:89 trace fossils. lithologic units. A3:22-26 transport, downslope, sediments, B2:11-12

### U

ultrasonic borehole imaging logs, vs. depth, A3:322, 325–327, 330 underway geophysics, Cruise EW9903, A4:1–49 uplifts, carbonate crash models, B4:10–12 uranium vs. depth, B6:6 *See also* thorium/uranium ratio uranium logs, vs. depth, A3:161, 323

# V

vanadium shipboard vs. shore-based digestion, B3:14 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, A1:84; A3:197 vs. magnesium oxide, A1:89; A3:200 vein networks, photograph, A3:274 veinlets folding, A3:75

#### **VOLUME 206 SUBJECT INDEX** veinlets (continued) • zirconium

photograph, A3:272 photomicrograph, A3:266, 269 saponite, A3:78–79 veins alteration, A1:31-32; A3:66, 68, 71-72 alteration halos, A3:218 microbial alteration textures, A3:86-87 photograph, A3:213, 218-219, 224, 231-232, 269, 273-274 photomicrograph, A3:205-212, 225, 269-270, 309 reorientation, B11:14–26 secondary minerals, A1:93 structures, A1:32-33; A3:75-76 types and geometry, A3:76-78 vs. depth, A3:204, 248-249 veins, carbonate composition, A1:31-32; A3:72 geochemistry, B10:1-6 vs. depth, A3:248-249 veins, celadonite composition, A3:71–72 photograph, A3:251 vs. depth, A3:248-249 veins, composite, photomicrograph, A3:278-280 veins, conjugate set photograph, A3:276 types and geometry, A3:77 veins, fibrous, types and geometry, A3:77-78 veins, iron oxyhydroxide composition, A3:72 photograph, A3:251 veins, late magmatic basalts, A3:63-64; B5:5-6 photograph, A3:208 photomicrograph, A3:192-193, 222 veins, pyrite composition, A3:72 photomicrograph, A3:250 vs. depth, A3:248-249, 255 veins, saponite composition, A3:71 photograph, A3:252 photomicrograph, A3:253-254 vs. depth, A3:248-249, 255 veins, secondary minerals, vs. depth, A1:94 veins, shear photograph, A3:277 reorientation, B11:14-26 veins, silica composition, A3:72 photograph, A3:252 photomicrograph, A3:253-254 vs. depth, A3:248-249 veins, stepped, photograph, A3:275 velocity vs. bulk density, A3:314 vs. depth, A1:55; A3:310-311, 392-394 vs. porosity, A3:48, 316 See also compressional wave velocity velocity, horizontal, vs. vertical velocity, A3:317

velocity, one-dimensional model, inversion of refraction data, A1:55 velocity, vertical, vs. horizontal velocity, A3:317 vesicles photograph, A1:75; A3:168-169 photomicrograph, A3:206, 214, 226, 230, 262, 269 vesicles, flattened, basalts, A3:74 vesicles, pipe, photograph, A3:169 volcanic ash lithologic units, A3:23-26 vs. age, B4:23 volcanic ash layers, photograph, A3:124 volcanic glass alteration, A3:67 groundmass, A3:57-59 lithologic units, A1:27-28, 116-117; A3:54-55 microbial alteration textures, A3:86 photograph, A1:76; A3:170-171, 234-235 photomicrograph, A3:240 See also glass shards; glassy margins volcanic glass, altered, photograph, A1:77 volcaniclastics lithologic units, A3:54-55 photograph, A1:77; A3:172 volcanism, stratigraphy, B1:8-9 vugs photograph, A3:218, 252 photomicrograph, A3:246-247

#### W

water content sediments, A3:392–394 spectroscopy, B12:10 well-log Interval 1, basalts, A3:95 well-log Interval 2, basalts, A3:95–96 well-log Interval 3, basalts, A3:96 well-logging basalts, A3:93–97 operations, A3:321, 396 vs. depth, A1:101

# X

X-ray diffraction data, sediments, A3:339, 383

# Y

yttrium vs. depth, A1:83; A3:152, 196; B6:6 vs. magnesium oxide, A1:89; A3:200 *See also* niobium–zirconium–yttrium ternary diagram; zirconium/yttrium ratio

### Z

zirconium basalts, A1:30–31 lava, A3:65 shore-based flux vs. shore-based microwave acid digestion, B3:12–13 vs. depth, A1:83; A3:64–65, 196; B6:6

#### **VOLUME 206 TAXONOMIC INDEX** zirconium (continued) • *rotaria, Reticulofenestra,* Site 1256

vs. magnesium oxide, A1:89; A3:200 vs. niobium, A1:87; A3:202 vs. titanium oxide, A1:87; A3:65, 202 *See also* niobium–zirconium–yttrium ternary diagram zirconium/titanium ratio lava, A3:65 vs. depth, A1:85; A3:198

## A

abies/neoabies group, Sphenolithus, Site 1256, A3:28; B2:6 abisectus, Cyclicargolithus, Site 1256, B2:11 acutus, Ceratolithus, Site 1256, B2:6 Amaurolithus amplificus, Site 1256, A3:28; B2:6–7 Amaurolithus primus, Site 1256, A3:28; B2:6–7 Amaurolithus spp., Site 1256, A3:28 Amaurolithus tricorniculatus, Site 1256, B2:6 ampliaperta, Helicosphaera, Site 1256, A3:28; B2:8 amplificus, Amaurolithus, Site 1256, B2:7 asymmetricus, Discoaster, Site 1256, B2:6

### B

*berggrenii, Discoaster,* Site 1256, A3:28; B2:7, 11 *bollii, Discoaster,* Site 1256, B2:11 *brouweri, Discoaster,* Site 1256, A3:28; B2:4–5

# C

Calcidiscus macintyrei, Site 1256, B2:4 Calcidiscus spp., Site 1256, A3:27; B2:4–5 caribbeanica, Gephyrocapsa, Site 1256, B2:4 Catinaster coalitus, Site 1256, A3:28; B2:7–8 Ceratolithus acutus, Site 1256, B2:6 Ceratolithus rugosus, Site 1256, B2:5–6 coalitus, Catinaster, Site 1256, A3:28; B2:7–8 Coccolithus miopelagicus, Site 1256, B2:8 Coccolithus spp., Site 1256, A3:27 Cyclicargolithus abisectus, Site 1256, B2:11 Cyclicargolithus floridanus, Site 1256, A3:28; B2:8

### D

Discoaster asymmetricus, Site 1256, B2:6 Discoaster berggrenii, Site 1256, A3:28; B2:7, 11 Discoaster bollii, Site 1256, B2:11 Discoaster brouweri, Site 1256, A3:28; B2:4–5 Discoaster hamatus, Site 1256, A3:28; B2:7–8, 11 Discoaster kugleri, Site 1256, A3:28; B2:8 Discoaster neohamatus, Site 1256, B2:7 Discoaster neorectus, Site 1256, B2:7 Discoaster quinqueramus, Site 1256, A3:28; B2:5 Discoaster quinqueramus, Site 1256, A3:28; B2:6–7, 11 Discoaster sanmiguelensis, Site 1256, A3:28; B2:8 Discoaster spp., Site 1256, B1:4 Discoaster surculus, Site 1256, A3:28; B2:5

### E

Emiliania huxleyi, Site 1256, A3:26-27; B2:4

zirconium/yttrium ratio basement, B6:3 lava, A3:65 vs. depth, A1:85; A3:198; B6:7 Zoophycos lithologic units, A3:24–26 photograph, A3:125

# TAXONOMIC INDEX

floridanus, Cyclicargolithus, Site 1256, A3:28; B2:8

# G

*Gephyrocapsa caribbeanica,* Site 1256, B2:4 *Gephyrocapsa* spp., Site 1256, A3:26–27; B1:4; B2:4

#### Н

*hamatus, Discoaster,* Site 1256, A3:28; B2:7–8, 11 *Helicosphaera ampliaperta,* Site 1256, A3:28; B2:8 *Helicosphaera sellii,* Site 1256, B2:4 *heteromorphus, Sphenolithus,* Site 1256, A3:28; B2:8 *huxleyi, Emiliania,* Site 1256, A3:26–27; B2:4

### K

kugleri, Discoaster, Site 1256, A3:28; B2:8

#### 

lacunosa, Pseudoemiliania, Site 1256, A3:27; B2:4

### Μ

*macintyrei, Calcidiscus,* Site 1256, B2:4 *miopelagicus, Coccolithus,* Site 1256, B2:8 *moriformis, Sphenolithus,* Site 1256, B2:11

### Ν

*neohamatus, Discoaster,* Site 1256, B2:7 *neorectus, Discoaster,* Site 1256, B2:7

### Ρ

pentaradiatus, Discoaster, Site 1256, A3:28; B2:5 primus, Amaurolithus, Site 1256, A3:28; B2:6–7 Pseudoemiliania lacunosa, Site 1256, A3:27; B2:4 pseudoumbilica, Reticulofenestra, Site 1256, A3:28; B2:5, 8

# Q

quinqueramus, Discoaster, Site 1256, A3:28; B2:6-7, 11

### R

*Reticulofenestra pseudoumbilica,* Site 1256, A3:28; B2:5, 8 *Reticulofenestra rotaria,* Site 1256, B2:7, 12 *Reticulofenestra* spp., Site 1256, B2:4 *rotaria, Reticulofenestra,* Site 1256, B2:7, 12 rugosus, Ceratolithus, Site 1256, B2:5-6

### S

sanmiguelensis, Discoaster, Site 1256, A3:28; B2:8 sellii, Helicosphaera, Site 1256, B2:4 Sphenolithus abies/neoabies group, Site 1256, A3:28; B2:6 Sphenolithus heteromorphus, Site 1256, A3:28; B2:8 Sphenolithus moriformis, Site 1256, B2:11 Sphenolithus spp., Site 1256, A3:27; B1:4 surculus, Discoaster, Site 1256, A3:28; B2:5

# T

tricorniculatus, Amaurolithus, Site 1256, B2:6

# Z

zones (*with letter prefixes*) CN10a, Site 1256, B2:6 NN4, Site 1256, A3:28

NN5, Site 1256, A3:27–28; B2:8 NN6, Site 1256, A3:28; B2:8 NN7, Site 1256, A3:28; B2:8 NN8, Site 1256, A3:28; B2:8 NN9, Site 1256, A3:28; B2:7 NN10, Site 1256, A3:28; B2:7 NN11, Site 1256, A3:28; B2:7, 11 NN11a, Site 1256, A3:28 NN11b, Site 1256, A3:28 NN12, Site 1256, B2:6 NN14/NN13 boundary, Site 1256, A3:28; B2:6 NN15, Site 1256, B2:6 NN16, Site 1256, A3:28; B2:5-6 NN17, Site 1256, A3:28; B2:5 NN18, Site 1256, A3:28; B2:5 NN18–NN17 interval, Site 1256, B2:5 NN19, Site 1256, A3:27; B2:4 NN19-NN18 interval, Site 1256, B2:5 NN20, Site 1256, A3:27; B2:4 NN21, Site 1256, A3:26–27; B2:4