

## AUTHOR INDEX, VOLUME 75, 1990

- Ahn, J.H., Buseck, P.R.: Layer-stacking sequences and structural disorder in mixed-layer illite/smectite: Image simulations and HRTEM imaging, 267
- Aja, S.U., *see* Rosenberg, P.E., 1182
- Akimoto, S., *see* Hofmeister, A.M., 951
- Albright, L.F., Gartenhaus, S., Lipschutz, M.E.: Memorial of Gunnar Kullerud, 1451
- Altaner, S.P., *see* Daniels, E.J., 825
- Altaner, S.P., *see* Weiss, C.A., Jr., 970
- Amouric, M., *see* Le Gleuher, M., 813
- Anderson, A.T., Jr., *see* Skirius, C.M., 1381
- Anderson, O.L., *see* Cynn, H., 439
- Angel, R.J., Carpenter, M.A., Finger, L.W.: Structural variation associated with compositional variation and order-disorder behavior in anorthite-rich feldspars, 150
- Angel, R.J., Cressey, G., Criddle, A.: Edgarbaileyite,  $\text{Hg}_6\text{Si}_2\text{O}_7$ : The crystal structure of the first mercury silicate, 1192
- Anovitz, L.M., *see* Hemingway, B.S., 1370
- Armbruster, T., *see* Kunz, M., 141
- Armbruster, T., Bürgi, H.B., Kunz, M., Gnos, E., Brönnimann, S., Lienert, C.: Variation of displacement parameters in structure refinements of low albite, 135
- Armbruster, T., Röthlisberger, F.: Crystal growth and structures of mixed-anion silicates-germanates:  $\text{Ca}_5[(\text{Ge},\text{Si})_2\text{O}_7][(\text{Ge},\text{Si})\text{O}_4]$  and  $\text{Na}_2\text{Ca}_6[\text{Si}_2\text{O}_7][\text{SiO}_4]_2$ , 963
- Armbruster, T., Röthlisberger, F., Seifert, F.: Layer topology, stacking variation, and site distortion in melilite-related compounds in the system  $\text{CaO-ZnO-GeO}_2-\text{SiO}_2$ , 847
- Babkine, J., *see* Perez, J.-B., 909
- Bailey, S.W., *see* Guggenheim, S., 705
- Beckett, M.F., *see* Gittins, J., 1106
- Bell, D.R., *see* Skogby, H., 764
- Berman, R.G.: Mixing properties of Ca-Mg-Fe-Mn garnets, 328, 1375 [erratum]
- Birch, W.D., *see* Pring, A., 915, 1421
- Bird, D.K., *see* Manning, C.E., 859
- Bish, D.L., *see* Smyth, J.R., 522
- Bish, D.L., *see* Vaniman, D.T., 676
- Boatner, L.A., *see* Chakoumakos, B.C., 1447
- Bohlen, S.R., *see* Czamanske, G.K., 37
- Boisen, M.B., Jr., *see* Downs, R.T., 1253
- Boisen, M.B., Jr., Gibbs, G.V., Downs, R.T., D'Arco, P.: The dependence of the  $\text{SiO}$  bond length on structural parameters in coesite, the silica polymorphs, and the clathrasils, 748
- Boudreau, A.E., McCallum, I.S.: Low temperature alteration of REE-rich chlorapatite from the Stillwater Complex, Montana, 687
- Bowers, T.S., Burns, R.G.: Activity diagrams for clinoptilolite: Susceptibility of this zeolite to further diagenetic reactions, 601
- Braithwaite, R.S.W., *see* Dunn, P.J., 702
- Bramwell, S.T., *see* Buckley, A.M., 1140
- Brigatti, M.F., Davoli, P.: Crystal-structure refinements of *1M* plutonic biotites, 305
- Brönnimann, S., *see* Armbruster, T., 135
- Brothers, R.N., Yokoyama, K.: Fe-rich pyroxenes from a microdiorite dike, Whangarei, New Zealand, 620
- Brown, P.E., *see* Vry, J.K., 71
- Buckley, A.M., Bramwell, S.T., Day, P.: Intercalation reactions of kroautite,  $\text{HMnAsO}_4 \cdot \text{H}_2\text{O}$ , 1140
- Bukowski, M.S.T., *see* Stixrude, L., 1159
- Bürgi, H.B., *see* Armbruster, T., 135
- Burke, E.A.J., *see* Jambor, J.L., 1431
- Burnham, C.W.: The ionic model: Perceptions and realities in mineralogy, 443
- Burns, R.G., *see* Bowers, T.S., 601
- Buseck, P.R., *see* Ahn, J.H., 267
- Buseck, P.R., *see* Manceau, A., 490
- Buseck, P.R., *see* Sharp, T.G., 1438
- Cameron, M.: Report of the Secretary for 1989, 1217
- Cameron, M., *see* Hughes, J.M., 295, 1216 [erratum]
- Campbell, J.M., *see* Hofmeister, A.M., 1238
- Carlson, W.D.: Mechanisms and kinetics of apatite fission-track annealing, 1120
- Carpenter, M.A.: Acceptance of the Mineralogical Society of America Award for 1989, 719
- Carpenter, M.A., *see* Angel, R.J., 150
- Carpenter, M.A., *see* Walker, D., 1020

- Carroll, G.W., *see* Rock, N.M.S., 424  
 Carroll, G.W., *see* Williams, K.L., 1428  
 Carroll, M.R., Wyllie, P.J.: The system tonalite-H<sub>2</sub>O at 15 kbar and the genesis of calc-alkaline magmas, 345  
 Catlow, C., *see* Purton, J., 1268  
 Cebriá Gómez, J.M.: PX: A program for pyroxene classification and calculation of end-members, 1426  
 Chakoumakos, B.C., Sales, B.C., Boatner, L.A.: Alpha-decay-induced condensation of phosphate anions in a mineral, 1447  
 Charnock, J., Garner, C.D., Patrick, R., Vaughan, D.J.: An EXAFS study of thiospinel minerals, 247  
 Chermak, J.A., Rimstidt, J.D.: Estimating the free energy of formation of silicate minerals at high temperatures from the sum of polyhedral contributions, 1376  
 Chi, P.H., *see* Dunn, P.J., 405, 1216 [erratum]  
 Chi, P.H., *see* Peacor, D.R., 409  
 Chou, I., *see* Cygan, G.L., 1399  
 Chou, I., *see* Moecher, D.P., 1327  
 Clare, A.K., *see* Jenkins, D.M., 358  
 Clarke, D.B., *see* Richard, L.R., 421  
 Cohen, R.E., *see* Cynn, H., 439  
 Conradie, J.A., *see* Schoch, A.E., 27  
 Cressey, G., *see* Angel, R.J., 1192  
 Criddle, A., *see* Angel, R.J., 1192  
 Criddle, A., *see* Pring, A., 915  
 Crowley, K.D., *see* Hughes, J.M., 295, 1216 [erratum]  
 Cygan, G.L., *see* Stoffregen, R.E., 209  
 Cygan, G.L., Chou, I.-M.: The assemblage WO<sub>2</sub> + H<sub>2</sub>O as a steady-state hydrogen source in moderately reduced hydrothermal experiments, 1399  
 Cynn, H., Isaak, D.G., Cohen, R.E., Nicol, M.F., Anderson, O.L.: A high-pressure phase transition of corundum predicted by the potential induced breathing model, 439  
 Czamanske, G.K., Bohlen, S.R.: The Stillwater Complex and its anorthosites: An accident of magmatic underplating?, 37  
 D'Arco, P., *see* Boisen, M.B., Jr., 748  
 Daniels, E.J., Altaner, S.P.: Clay mineral authigenesis in coal and shale from the Anthracite region, Pennsylvania, 825  
 Davis, B.L., Shearer, C.K., Jr., Simon, S.B., Spilde, M.N., Papike, J.J., Laul, J.C.: X-ray reference-intensity and X-ray fluorescence analyses of Salton Sea core, 230  
 Davoli, P., *see* Brigatti, M.F., 305  
 Day, H.W., *see* Giaramita, M.J., 170  
 Day, P., *see* Buckley, A.M., 1140  
 Denison, J.R., *see* Nabelek, P.I., 874  
 Díaz, J.M., Farach, H.A., Poole, C.P., Jr.: Electron-spin-resonance study of Mn<sup>2+</sup> in natural wollastonite, 262  
 Dingwell, D.B.: Shear viscosities of galliosilicate liquids, 1231  
 Donahoe, R.J., Hemingway, B.S., Liou, J.G.: Thermochemical data for merlinoite: 1. Low-temperature heat capacities, entropies, and enthalpies of formation at 298.15 K of six synthetic samples having various Si/Al and Na/(Na + K) ratios, 188  
 Donahoe, R.J., Liou, J.G., Hemingway, B.S.: Thermochemical data for merlinoite: 2. Free energies of formation at 298.15 K of six synthetic samples having various Si/Al and Na/(Na + K) ratios and application to saline, alkaline lakes, 201  
 Dorais, M.J.: Compositional variations in pyroxenes and amphiboles of the Belknap Mountain complex, New Hampshire: Evidence for the origin of silica-saturated alkaline rocks, 1092  
 Doukhan, J.C., *see* Doukhan, N., 840  
 Doukhan, N., Ingrin, J., Doukhan, J.C., Latrous, K.: Coprecipitation of magnetite and amphibole in black star diopside: A TEM study, 840  
 Downs, R.T., *see* Boisen, M.B., Jr., 748  
 Downs, R.T., Gibbs, G.V., Boisen, M.B., Jr.: A study of the mean-square displacement amplitudes of Si, Al, and O atoms in framework structures: Evidence for rigid bonds, order, twinning, and stacking faults, 1253  
 du Bray, E.A., *see* Duffield, W.A., 1059  
 Duffield, W.A., du Bray, E.A.: Temperature, size, and depth of the magma reservoir for the Taylor Creek Rhyolite, New Mexico, 1059  
 Duggan, M.B.: Wilkinsonite, Na<sub>2</sub><sup>2+</sup>Fe<sub>4</sub><sup>3+</sup>Fe<sub>2</sub><sup>2+</sup>Si<sub>6</sub>O<sub>20</sub>, a new member of the aenigmatite group from the Warrumbungle Volcano, New South Wales, Australia, 694  
 Dunn, P.J.: Andrewsite and laubmannite formally discredited, 1197  
 Dunn, P.J.: The discreditation of mineral species, 928  
 Dunn, P.J., *see* Grice, J.D., 401  
 Dunn, P.J., *see* Peacor, D.R., 409, 923  
 Dunn, P.J., *see* Rouse, R.C., 1415

- Dunn, P.J., Braithwaite, R.S.W., Roberts, A.C., Ramik, R.A.: Kegelite from Tsumeb, Namibia: A redefinition, 702
- Dunn, P.J., Peacor, D.R., Grice, J.D., Wicks, F.J., Chi, P.H.: Wawayandaite, a new calcium manganese beryllium boron silicate from Franklin, New Jersey, 405, 1216 [erratum]
- Dunn, T.: An automated oxygen-fugacity control system for 0.1-MPa high-temperature furnaces, 398
- Durocher, J.J.G., *see* Halden, N.M., 956
- Dusausoy, Y., *see* Perez, J.-B., 909
- Dyar, M.D.: Mössbauer spectra of biotite from metapelites, 656
- Eckert, J.O., Jr., *see* Mohr, D.W., 1406
- Edenharter, A., *see* Pring, A., 915
- Eggleston, C.M., *see* Hochella, M.F., Jr., 723
- Elings, V.B., *see* Hochella, M.F., Jr., 723
- Elkins, L.T., Grove, T.L.: Ternary feldspar experiments and thermodynamic models, 544
- Enami, M., Zang, Q.: Quartz pseudomorphs after coesite in eclogites from Shandong province, east China, 381
- Ercit, T.S., *see* Groat, L.A., 992
- Essene, E.J.: Review of *Encyclopedia of Minerals*, second edition, by W.L. Roberts, T.J. Campbell, and G.R. Rapp, Jr., 938
- Evans, H.T., Jr., Hughes, J.M.: Crystal chemistry of the natural vanadium bronzes, 508, 1216 [erratum]
- Farach, H.A., *see* Díaz, J.M., 262
- Finger, L.W., *see* Angel, R.J., 150
- Fitz Gerald, J.D., *see* Lonker, S.W., 1282
- Fleet, M.E., *see* Stone, W.E., 881
- Fogel, R.A., Rutherford, M.J.: The solubility of carbon dioxide in rhyolitic melts: A quantitative FTIR study, 1311
- Fritz, S.J., *see* Mohr, D.W., 1406
- Frost, C.D., *see* Geist, D.J., 13
- Frost, C.D., Meier, M., Oberli, F.: Single-crystal U-Pb zircon age determination of the Red Mountain pluton, Laramie Anorthosite Complex, Wyoming, 21
- Gallop, D.M., *see* Halden, N.M., 956
- Garner, C.D., *see* Charnock, J., 247
- Gartenhaus, S., *see* Albright, L.F., 1451
- Gasparik, T.: A thermodynamic model for the enstatite-diopside join, 1080
- Gasparik, T., *see* Ross, N.L., 739
- Gatehouse, B.M., *see* Pring, A., 1421
- Geist, D.J., Frost, C.D., Kolker, A.: Sr and Nd isotopic constraints on the origin of the Laramie Anorthosite Complex, Wyoming, 13
- Ghiorso, M.S.: Application of the Darken equation to mineral solid solutions with variable degrees of order-disorder, 539
- Ghose, S., Hexiong, Y., Weidner, J.R.: Crystal growth and structure of  $K_2Al_2Si_3O_{10}\cdot KCl$ : A new anhydrous zeolite-type phase with the edingtonite framework, 947
- Giaramita, M.J., Day, H.W.: Error propagation in calculations of structural formulas, 170
- Gibbs, G.V., *see* Boisen, M.B., Jr., 748
- Gibbs, G.V., *see* Downs, R.T., 1253
- Gittins, J., Beckett, M.F., Jago, B.C.: Composition of the fluid phase accompanying carbonatite magma: A critical examination, 1106
- Glascock, M.D., *see* Nabelek, P.I., 874
- Gnos, E., *see* Armbruster, T., 135
- Goldsmith, J.R., Peterson, J.W.: Hydrothermal melting behavior of  $KAlSi_3O_8$  as microcline and sanidine, 1362
- Goodge, J.W., *see* Holdaway, M.J., 1043
- Goto, A., Tatsumi, Y.: Stability of chlorite in the upper mantle, 105
- Graeser, S., *see* Pring, A., 915
- Graetsch, H., *see* Rager, H., 392
- Grambling, J.A., *see* Williams, M.L., 886
- Grew, E.S., *see* Jambor, J.L., 240, 931
- Grew, E.S., Hiroi, Y., Shiraishi, K.: Högbomite from the Prince Olav Coast, East Antarctica: An example of oxidation-exsolution of a complex magnetite solid solution?, 589
- Grice, J.D., *see* Dunn, P.J., 405, 1216 [erratum]
- Grice, J.D., *see* Peacor, D.R., 409
- Grice, J.D., *see* Rouse, R.C., 1415
- Grice, J.D., Dunn, P.J., Ramik, R.A.: Jahnsite-(CaMnMn), a new member of the whiteite group from Mangualde, Beira, Portugal, 401
- Groat, L.A., Hawthorne, F.C.: The crystal structure of nissonite, 1170
- Groat, L.A., Raudsepp, M., Hawthorne, F.C., Ercit, T.S., Sherriff, B.L., Hartman, J.S.: The amblygonite-montebrasite series: Characterization by single-crystal structure refinement, infrared spectroscopy, and multinuclear MAS-NMR spectroscopy, 992
- Grove, T.L., *see* Elkins, L.T., 544
- Guggenheim, S., Bailey, S.W.: Baumite discredited, 705

- Guthrie, G.D., Jr., Veblen, D.R.: Interpreting one-dimensional high-resolution transmission electron micrographs of sheet silicates by computer simulation, 276
- Hacker, B.R.: Amphibolite-facies-to-granulite-facies reactions in experimentally deformed, unpowdered amphibolite, 1349
- Halden, N.M., Hawthorne, F.C., Durocher, J.J.G., Smith, G.S., Gallop, D.M., McKee, J.S.C.: High-energy K-line PIXE spectra of Au-bearing minerals, 956
- Hanson, G.N., *see* Kolker, A., 572
- Harrell, J.A., *see* Popp, R.K., 163
- Harris, C.: Oxygen-isotope zonation of agates from Karoo volcanics of the Skeleton Coast, Namibia: Reply, 1207
- Hartman, J.S., *see* Groat, L.A., 992
- Hawthorne, F.C., *see* Groat, L.A., 992, 1170
- Hawthorne, F.C., *see* Halden, N.M., 956
- Hawthorne, F.C., *see* Raudsepp, M., 1274
- Hazen, R.M., *see* Ross, N.L., 739
- Heaney, P.J., Veblen, D.R.: A high-temperature study of the low-high leucite phase transition using the transmission electron microscope, 464
- Hemingway, B.S.: Thermodynamic properties for bunsenite, NiO, magnetite, Fe<sub>3</sub>O<sub>4</sub>, and hematite, Fe<sub>2</sub>O<sub>3</sub>, with comments on selected oxygen buffer reactions, 781
- Hemingway, B.S., *see* Donahoe, R.J., 188, 201
- Hemingway, B.S., Anovitz, L.M., Robie, R.A., McGee, J.J.: The thermodynamic properties of dumortierite Si<sub>3</sub>B[Al<sub>6.75</sub>□<sub>0.25</sub>O<sub>17.25</sub>](OH)<sub>0.75</sub>], 1370
- Hemingway, B.S., Hewitt, D.A., Nord, G.L., Jr., Stout, J.H., Whitney, J.A.: Report of the Financial Advisory Committee for 1989, 1219
- Hemingway, B.S., Robie, R.A.: Heat capacities and thermodynamic properties of annite (aluminous iron biotite), 183
- Hesse, R., *see* Vali, H., 1443
- Hewitt, D.A., *see* Hemingway, B.S., 1219
- Hexiong, Y., *see* Ghose, S., 947
- Higgins, J.B., *see* Rouse, R.C., 1415
- Hiroi, Y., *see* Grew, E.S., 589
- Hitch, C.M., *see* Walker, D., 1020
- Hochella, M.F., Jr., Eggleston, C.M., Elings, V.B., Thompson, M.S.: Atomic structure and morphology of the albite {010} surface: An atomic-force microscope and electron diffraction study, 723
- Hofmeister, A.M., Horgan, J., Campbell, J.M.: Infrared spectra of GeO<sub>2</sub> with the rutile structure and prediction of inactive modes for isostructural compounds, 1238
- Hofmeister, A.M., Xu, J., Akimoto, S.: Infrared spectroscopy of synthetic and natural stishovite, 951
- Holdaway, M.J., Goodge, J.W.: Rock pressure vs. fluid pressure as a controlling influence on mineral stability: An example from New Mexico, 1043
- Holland, T., *see* Powell, R., 367
- Hollister, L.S., *see* Sisson, V.B., 59
- Holloway, J.R.: Review of *Origins of Igneous Rocks*, by Paul C. Hess, 721
- Horgan, J., *see* Hofmeister, A.M., 1238
- Howard, D.G., Tscherlich, R.W., Smith, J.V., Klein, G.L.: Boggsite, a new high-silica zeolite from Goble, Columbia County, Oregon, 1200
- Hughes, J.M., *see* Evans, H.T., Jr., 508, 1216 [erratum]
- Hughes, J.M., Cameron, M., Crowley, K.D.: Crystal structures of natural ternary apatites: Solid solution in the Ca<sub>5</sub>(PO<sub>4</sub>)<sub>3</sub>X (X = F, OH, Cl) system, 295, 1216 [erratum]
- Ingrin, J., *see* Doukhan, N., 840
- Isaak, D.G., *see* Cynn, H., 439
- Jackson, I., *see* Webb, S.L., 731
- Jago, B.C., *see* Gittins, J., 1106
- Jambor, J.L., Burke, E.A.J.: New mineral names, 1431
- Jambor, J.L., Grew, E.S.: New mineral names, 240, 931
- Jambor, J.L., Puziewicz, J.: New mineral names, 431, 1209
- Jambor, J.L., Vanko, D.A.: New mineral names, 706
- Jaques, A.L., *see* Taylor, W.R., 1290
- Jenkins, D.M., Clare, A.K.: Comparison of the high-temperature and high-pressure stability limits of synthetic and natural tremolite, 358
- Keppler, H.: Ion exchange reactions between dehydroxylated micas and salt melts and the crystal chemistry of the interlayer cation in micas, 529
- Kirkpatrick, R.J., *see* Weiss, C.A., Jr., 970
- Kirkpatrick, R.J., *see* Yang, W.-H.A., 1009
- Kittrick, J.A., *see* Rosenberg, P.E., 1182
- Klein, G.L., *see* Howard, D.G., 1200

- Kohn, M.J., Spear, F.S.: Two new geobarometers for garnet amphibolites, with applications to southeastern Vermont, 89
- Kolker, A., *see* Geist, D.J., 13
- Kolker, A., Lindsley, D.H., Hanson, G.N.: Geochemical evolution of the Maloin Ranch pluton, Laramie Anorthosite Complex, Wyoming: Trace elements and petrogenetic models, 572
- Koster van Groos, A.F.: High-pressure DTA study of the upper three-phase region in the system  $\text{Na}_2\text{CO}_3\text{-H}_2\text{O}$ , 667
- Koziol, A.M.: Activity-composition relationships of binary Ca-Fe and Ca-Mn garnets determined by reversed, displaced equilibrium experiments, 319
- Kruse, O.: Mössbauer and X-ray study of the effects of vacancy concentration in synthetic hexagonal pyrrhotites, 755
- Kunz, M., *see* Armbruster, T., 135
- Kunz, M., Armbruster, T.: Difference displacement parameters in alkali feldspars: Effects of (Si,Al) order-disorder, 141
- Labotka, T.C., *see* Novick, J.S., 387
- Lam, P.K., Yu, R., Lee, M.W., Sharma, S.K.: Structural distortions and vibrational modes in  $\text{Mg}_2\text{SiO}_4$ , 109
- Latrous, K., *see* Doukhan, N., 840
- Laul, J.C., *see* Davis, B.L., 230
- Lee, M.W., *see* Lam, P.K., 109
- Le Gleuher, M., Livi, K.J.T., Veblen, D.R., Noack, Y., Amouric, M.: Serpentinization of enstatite from Pernes, France: Reaction microstructures and the role of system openness, 813
- Leung, I.S.: Silicon carbide cluster entrapped in a diamond from Fuxian, China, 1110
- Lienert, C., *see* Armbruster, T., 135
- Lindsley, D.H., *see* Kolker, A., 572
- Lindsley, D.H., *see* Nekvasil, H., 1071
- Lindsley, D.H., Simmons, E.C.: Anorthosites and associated rocks [introduction], i
- Liou, J.G., *see* Donahoe, R.J., 188, 201
- Lipschutz, M.E., *see* Albright, L.F., 1451
- Liu, L.-G., Mernagh, T.P.: Phase transitions and Raman spectra of calcite at high pressures and room temperature, 801
- Livi, K.J.T., *see* Le Gleuher, M., 813
- Lonker, S.W., Fitz Gerald, J.D.: Formation of coexisting 1M and 2M polytypes in illite from an active hydrothermal system, 1282
- Madel, R.E., *see* Smyth, J.R., 314
- Manceau, A., Buseck, P.R., Miser, D., Rask, J., Nahon, D.: Characterization of Cu in lithiophorite from a banded Mn ore, 490
- Manning, C.E., Bird, D.K.: Fluorian garnets from the host rocks of the Skaergaard intrusion: Implications for metamorphic fluid composition, 859
- McCallum, I.S., *see* Boudreau, A.E., 687
- McCormick, T.C., *see* Smyth, J.R., 314
- McGee, J.J., *see* Hemingway, B.S., 1370
- McKee, J.S.C., *see* Halden, N.M., 956
- McKie, D.: Subsolidus phase relations in the system  $\text{K}_2\text{Ca}(\text{CO}_3)_2\text{-Na}_2\text{Mg}(\text{CO}_3)_2$  at 1 kbar: The fairchildite<sub>ss</sub>-buetschliite-eitelite eutectoid, 1147
- Megaw, H.D.: Acceptance of the Roebling Medal of the Mineralogical Society of America for 1989, 715
- Meier, M., *see* Frost, C.D., 21
- Merlino, S.: Memorial of Glauco Gottardi, 940
- Mernagh, T.P., *see* Liu, L.-G., 801
- Miser, D., *see* Manceau, A., 490
- Moecher, D.P., Chou, I.-M.: Experimental investigation of andradite and hedenbergite equilibria employing the hydrogen sensor technique, with revised estimates of  $\Delta G_m^0$ , 298 for andradite and hedenbergite, 1327
- Mohr, D.W., Fritz, S.J., Eckert, J.O., Jr.: Estimation of elemental microvariation within minerals analyzed by the microprobe: Use of model population estimates, 1406
- Moore, J.M., Waters, D.J., Niven, M.L.: Werdingite, a new borosilicate mineral from the granulite facies of the western Namaqualand metamorphic complex, South Africa, 415
- Mullis, J., *see* Ramseyer, K., 791
- Munoz, J.L.: Report of the Editor for 1989, 1221
- Munoz, J.L., *see* Smyth, J.R., 314
- Murray, H.H.: Memorial of Ralph Early Grim, 1229
- Mysen, B.O.: Role of Al in depolymerized, peralkaline aluminosilicate melts in the systems  $\text{Li}_2\text{O}\text{-Al}_2\text{O}_3\text{-SiO}_2$ ,  $\text{Na}_2\text{O}\text{-Al}_2\text{O}_3\text{-SiO}_2$ , and  $\text{K}_2\text{O}\text{-Al}_2\text{O}_3\text{-SiO}_2$ , 120
- Nabelek, P.I., Denison, J.R., Glascock, M.D.: Behavior of boron during contact metamorphism of calc-silicate rocks at Notch Peak, Utah, 874
- Nahon, D., *see* Manceau, A., 490

- Navrotsky, A.: Presentation of the Mineralogical Society of America Award for 1989 to Michael A. Carpenter, 718
- Nekvasil, H.: Reaction relations in the granite system: Implications for trachytic and syenitic magmas, 560
- Nekvasil, H., Lindsley, D.H.: Termination of the 2 feldspar + liquid curve in the system Ab-Or-An-H<sub>2</sub>O at low H<sub>2</sub>O contents, 1071
- Nelen, J.A., *see* Peacor, D.R., 923
- Newnham, R.E.: Presentation of the Roebling Medal of the Mineralogical Society of America for 1989 to Helen D. Megaw, 714
- Newton, R.C., *see* Peterson, J.W., 1029
- Nicol, M.F., *see* Cynn, H., 439
- Niven, M.L., *see* Moore, J.M., 415
- Noack, Y., *see* Le Gleuher, M., 813
- Nord, G.L., Jr., *see* Hemingway, B.S., 1219
- Norton, J.J., Redden, J.A.: Relations of zoned pegmatites to other pegmatites, granite, and metamorphic rocks in the southern Black Hills, South Dakota, 631
- Novick, J.S., Labotka, T.C.: Metamorphic fluids in the Notch Peak contact-metamorphic aureole: Evidence from fluid inclusions, 387
- Oberli, F., *see* Frost, C.D., 21
- Pagel, M., *see* Perez, J.-B., 909
- Papike, J.J., *see* Davis, B.L., 230
- Paquette, J., Reeder, R.J.: Single-crystal X-ray structure refinements of two biogenic magnesian calcite crystals, 1151
- Paris, E., *see* Ross, C.R., II, 1249
- Patrick, R., *see* Charnock, J., 247
- Peacor, D.R., *see* Dunn, P.J., 405, 1216 [erratum]
- Peacor, D.R., Dunn, P.J., Nelen, J.A.: Orlymanite, Ca<sub>4</sub>Mn<sub>3</sub>Si<sub>8</sub>O<sub>20</sub>(OH)<sub>6</sub>·2H<sub>2</sub>O, a new mineral from South Africa: A link between gyrolite-family and conventional phyllosilicate minerals?, 923
- Peacor, D.R., Dunn, P.J., White, J.S., Jr., Grice, J.D., Chi, P.: Lithiomarsturite, a new member of the pyroxenoid group, from North Carolina, 409
- Perez, J.-B., Dusausoy, Y., Babkine, J., Pagel, M.: Mn zonation and fluid inclusions in genthelvite from the Taghouaji complex (Air Mountains, Niger), 909
- Peterson, J.W., *see* Goldsmith, J.R., 1362
- Peterson, J.W., *see* Skirius, C.M., 1381
- Peterson, J.W., Newton, R.C.: Experimental biotite-quartz melting in the KMASH-CO<sub>2</sub> system and the role of CO<sub>2</sub> in the petrogenesis of granites and related rocks, 1029
- Petrov, I.: Role of natural radiation in tourmaline coloration: Discussion, 237
- Phillips, M.W., *see* Popp, R.K., 163
- Pironon, J.: Synthesis of hydrocarbon fluid inclusions at low temperature, 226
- Pluth, J.J., *see* Steele, I.M., 1186
- Pluth, J.J., Smith, J.V.: Crystal structure of boggsite, a new high-silica zeolite with the first three-dimensional channel system bounded by both 12- and 10-rings, 501
- Poole, C.P., Jr., *see* Diaz, J.M., 262
- Popp, R.K., Phillips, M.W., Harrell, J.A.: Accommodation of Fe<sup>3+</sup> in natural, Fe<sup>3+</sup>-rich, calcic and subcalcic amphiboles: Evidence from published chemical analyses, 163
- Post, J.E., Veblen, D.R.: Crystal-structure determinations of synthetic sodium, magnesium, and potassium birnessite using TEM and the Rietveld method, 477
- Powell, R., Holland, T.: Calculated mineral equilibria in the pelite system, KFMASH (K<sub>2</sub>O-FeO-MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O), 367
- Pring, A.: Disordered intergrowths in lead arsenic sulfide minerals and the paragenesis of the sartorite-group minerals, 289
- Pring, A., Birch, W.D., Sewell, D., Graeser, S., Edenthaler, A., Cridle, A.: Baumhauerite-2a: A silver-bearing mineral with a baumhauerite-like supercell from Lengenbach, Switzerland, 915
- Pring, A., Gatehouse, B.M., Birch, W.D.: Francisite, Cu<sub>3</sub>Bi(SeO<sub>3</sub>)<sub>2</sub>O<sub>2</sub>Cl, a new mineral from Iron Monarch, South Australia: Description and crystal structure, 1421
- Purton, J., Catlow, C.R.A.: Computer simulation of feldspar structures, 1268
- Puziewicz, J., *see* Jambor, J.L., 431, 1209
- Rager, H., Schneider, H., Graetsch, H.: Chromium incorporation in mullite, 392
- Ramik, R.A., *see* Dunn, P.J., 702
- Ramik, R.A., *see* Grice, J.D., 401
- Ramseyer, K., Mullis, J.: Factors influencing short-lived blue cathodoluminescence of  $\alpha$ -quartz, 791
- Rask, J., *see* Manceau, A., 490
- Raudsepp, M., *see* Groat, L.A., 992

- Raudsepp, M., Hawthorne, F.C., Turnock, A.C.: Crystal chemistry of synthetic pyroxenes on the join CaNiSi<sub>2</sub>O<sub>6</sub>-CaMgSi<sub>2</sub>O<sub>6</sub> (diopside): A Rietveld structure refinement study, 1274
- Redden, J.A., *see* Norton, J.J., 631
- Reeder, R.J., *see* Paquette, J., 1151
- Reksten, K.: Modulated microstructures in calcian ankerite, 495
- Reksten, K.: Superstructures in calcite, 807
- Richard, L.R., Clarke, D.B.: AMPHIBOL: A program for calculating structural formulae and for classifying and plotting chemical analyses of amphiboles, 421
- Ridd, M., *see* Taylor, W.R., 1290
- Rimstidt, J.D., *see* Chermak, J.A., 1376
- Roberts, A.C., *see* Dunn, P.J., 702
- Robie, R.A., *see* Hemingway, B.S., 183, 1370
- Rock, N.M.S., *see* Williams, K.L., 1428
- Rock, N.M.S., Carroll, G.W.: MINTAB: A general-purpose mineral recalculation and tabulation program for Macintosh microcomputers, 424
- Rosenberg, P.E., Kittrick, J.A., Aja, S.U.: Mixed-layer illite/smectite: A multiphase model, 1182
- Ross, C.R., II, Rubie, D.C., Paris, E.: Rietveld refinement of the high-pressure polymorph of Mn<sub>3</sub>O<sub>4</sub>, 1249
- Ross, M.: Review of *Classical Marble: Geochemistry, Technology, Trade*, edited by Norman Herz and Marc Waelkens, 721
- Ross, N.L., Shu, J.-F., Hazen, R.M., Gasparik, T.: High-pressure crystal chemistry of stishovite, 739
- Rossmann, G.R., *see* Skogby, H., 764
- Rossmann, G.R., *see* Smyth, J.R., 314
- Rossmann, G.R., Smyth, J.R.: Hydroxyl contents of accessory minerals in mantle eclogites and related rocks, 775
- Röthlisberger, F., *see* Armbruster, T., 847, 963
- Rouse, R.C., Dunn, P.J., Grice, J.D., Schlenker, J.L., Higgins, J.B.: Montesommaite, (K,Na)<sub>9</sub>Al<sub>9</sub>Si<sub>23</sub>O<sub>64</sub>·10H<sub>2</sub>O, a new zeolite related to merlinoite and the gismondine group, 1415
- Rubie, D.C., *see* Ross, C.R., II, 1249
- Rutherford, M.J., *see* Fogel, R.A., 1311
- Sales, B.C., *see* Chakoumakos, B.C., 1447
- Saunders, J.A.: Oxygen-isotope zonation of agates from Karoo volcanics of the Skeleton Coast, Namibia: Discussion, 1205
- Schlenker, J.L., *see* Rouse, R.C., 1415
- Schneider, H., *see* Rager, H., 392
- Schoch, A.E., Conradie, J.A.: Petrochemical and mineralogical relationships in the Koperberg Suite, Namaqualand, South Africa, 27
- Schroeder, P.A.: Far infrared, X-ray powder diffraction, and chemical investigation of potassium micas, 983
- Schulze, D.J.: Silicate-bearing rutile-dominated nodules from South African kimberlites: Metasomatized cumulates, 97
- Scott, K.M.: Origin of alunite- and jarosite-group minerals in the Mt. Leyshon epithermal gold deposit, northeast Queensland, Australia, 1176
- Seifert, F., *see* Armbruster, T., 847
- Sewell, D., *see* Pring, A., 915
- Sharma, S.K., *see* Lam, P.K., 109
- Sharp, T.G., Zheng, N.J., Tsong, I.S.T., Buseck, P.R.: Scanning tunneling microscopy of defects in Ag- and Sb-bearing galena, 1438
- Shearer, C.K., Jr., *see* Davis, B.L., 230
- Sherman, D.M.: Molecular orbital (SCF-Xα-SW) theory of Fe<sup>2+</sup>-Mn<sup>3+</sup>, Fe<sup>3+</sup>-Mn<sup>2+</sup>, and Fe<sup>3+</sup>-Mn<sup>3+</sup> charge transfer and magnetic exchange in oxides and silicates, 256
- Sherriff, B.L., *see* Groat, L.A., 992
- Shiraishi, K., *see* Grew, E.S., 589
- Shu, J.-F., *see* Ross, N.L., 739
- Simmons, E.C., *see* Lindsley, D.H., i [introduction]
- Simon, S.B., *see* Davis, B.L., 230
- Sisson, V.B., Hollister, L.S.: A fluid-inclusion study of metamorphosed pelitic and carbonate rocks, south-central Maine, 59
- Skirius, C.M., Peterson, J.W., Anderson, A.T., Jr.: Homogenizing rhyolitic glass inclusions from the Bishop Tuff, 1381
- Skogby, H., Bell, D.R., Rossmann, G.R.: Hydroxide in pyroxene: Variations in the natural environment, 764
- Smith, G.S., *see* Halden, N.M., 956
- Smith, J.V., *see* Howard, D.G., 1200
- Smith, J.V., *see* Pluth, J.J., 501
- Smyth, J.R., *see* Rossmann, G.R., 775
- Smyth, J.R., Madel, R.E., McCormick, T.C., Munoz, J.L., Rossmann, G.R.: Crystal-structure refinement of a F-bearing spessartine garnet, 314
- Smyth, J.R., Spaid, A.T., Bish, D.L.: Crystal structures of a natural and a Cs-exchanged clinoptilolite, 522
- Spaid, A.T., *see* Smyth, J.R., 522
- Spear, F.S., *see* Kohn, M.J., 89

- Spilde, M.N., *see* Davis, B.L., 230
- Stebbins, J.F., Sykes, D.: The structure of NaAlSi<sub>3</sub>O<sub>8</sub> liquid at high pressure: New constraints from NMR spectroscopy, 943
- Stebbins, J.F.: Review of *Fundamentals of Optical, Spectroscopic, and X-Ray Mineralogy*, by S. Mitra, 938
- Steele, I.M., Pluth, J.J.: Crystal structure of synthetic yoshiokaite, a stuffed derivative of the tridymite structure, 1186
- Stixrude, L., Bukowinski, M.S.T.: Rings, topology, and the density of tectosilicates, 1159
- Stoffregen, R.E., Cygan, G.L.: An experimental study of Na-K exchange between alunite and aqueous sulfate solutions, 209
- Stone, W.E., Fleet, M.E.: Platinum-iron alloy (Pt<sub>3</sub>Fe) in kimberlite from Fayette County, Pennsylvania, 881
- Stout, J.H., *see* Hemingway, B.S., 1219
- Sykes, D., *see* Stebbins, J., 943
- Tatsumi, Y., *see* Goto, A., 105
- Taylor, W.R., Jaques, A.L., Ridd, M.: Nitrogen defect aggregation characteristics of some Australasian diamonds: Time-temperature constraints on the source regions of pipe and alluvial diamonds, 1290
- Thompson, M.S., *see* Hochella, M.F., Jr., 723
- Tschernich, R.W., *see* Howard, D.G., 1200
- Tsong, I.S.T., *see* Sharp, T.G., 1438
- Turnock, A.C., *see* Raudsepp, M., 1274
- Vali, H., Hesse, R.: Alkylammonium ion treatment of clay minerals in ultrathin section: A new method for HRTEM examination of expandable layers, 1443
- Valley, J.W., *see* Vry, J.K., 71
- Vaniman, D.T., Bish, D.L.: Yoshiokaite, a new Ca,Al-silicate mineral from the Moon, 676
- Vanko, D.A., *see* Jambor, J.L., 706
- Vaughan, D.J., *see* Charnock, J., 247
- Veblen, D.R., *see* Guthrie, G.D., Jr., 276
- Veblen, D.R., *see* Heaney, P.J., 464
- Veblen, D.R., *see* Le Gleuher, M., 813
- Veblen, D.R., *see* Post, J.E., 477
- Vochten, R.: Transformation of chernikovite and sodium autunite into lehnerite, 221
- Vry, J.K., Brown, P.E., Valley, J.W.: Cordierite volatile content and the role of CO<sub>2</sub> in high-grade metamorphism, 71
- Walker, D., Carpenter, M.A., Hitch, C.M.: Some simplifications to multianvil devices for high pressure experiments, 1020
- Warren, P.H.: Lunar anorthosites and the magma-ocean plagioclase-flotation hypothesis: Importance of FeO enrichment in the parent magma, 46
- Waters, D.J., *see* Moore, J.M., 415
- Webb, S.L., Jackson, I.: Polyhedral rationalization of variation among the single-crystal elastic moduli for the upper-mantle silicates garnet, olivine, and orthopyroxene, 731
- Weidner, J.R., *see* Ghose, S., 947
- Weiss, C.A., Jr., Kirkpatrick, R.J., Altaner, S.P.: Variations in interlayer cation sites of clay minerals as studied by <sup>133</sup>Cs MAS nuclear magnetic resonance spectroscopy, 970
- White, J.S., Jr., *see* Peacor, D.R., 409
- Whitney, J.A.: Report of the Treasurer for 1989, 1218
- Whitney, J.A., *see* Hemingway, B.S., 1219
- Wicks, F.J., *see* Dunn, P.J., 405, 1216 [erratum]
- Wiebe, R.A.: Evidence for unusually feldspathic liquids in the Nain complex, Labrador, 1
- Williams, K.L., Rock, N.M.S., Carroll, G.W.: SPINEL and SPINELTAB: Macintosh programs to plot spinel analyses in the three-dimensional oxidized (magnetite) and reduced (ulvöspinel) prisms, 1428
- Williams, M.L., Grambling, J.A.: Manganese, ferric iron, and the equilibrium between garnet and biotite, 886
- Wood, B.J., *see* Woodland, A.B., 1342
- Woodland, A.B., Wood, B.J.: The breakdown of hercynite at low f<sub>O<sub>2</sub></sub>, 1342
- Wyllie, P.J., *see* Carroll, M.R., 345
- Xu, J., *see* Hofmeister, A.M., 951
- Yang, W.-H.A., Kirkpatrick, R.J.: Hydrothermal reaction of a rhyolitic-composition glass: A solid-state NMR study, 1009
- Yokoyama, K., *see* Brothers, R.N., 620
- Yu, R., *see* Lam, P.K., 109
- Zang, Q., *see* Enami, M., 381
- Zheng, N.J., *see* Sharp, T.G., 1438