

INDEX, VOLUME 71, 1986

- Åberg, G., see Ericsson, T., 136
Abrecht, J., see Hewitt, D.A., 1126
Aines, R.D., G.R. Rossman: Relationships between radiation damage and trace water in zircon, quartz, and topaz, 1186
Aines, R.D., see Rossman, G.R., 779
Akizuki, M.: Al-Si ordering and twinning in edingtonite, 1510
Aldridge, L.P., E. Bill, R. Bläs, S. Lauer, V.R. Marathe, A. Sawaryn, A.X. Trautwein, H. Winkler: Electronic structure of Fe in some minerals, derived from iterative extended Hückel theory (IEHT), multiple scattering X_α (MS- X_α) calculations, and Mössbauer measurements, 1015
Alexander, V.D., D.T. Griffen, T.J. Martin: Crystal chemistry of some Fe- and Ti-poor dumortierites, 786
Amthauer, G., see Joswig, W., 1194
Angel, R.J.: Transformation mechanisms between single-chain silicates, 1441
Angel, R.J., C.T. Prewitt: Crystal structure of mullite: A re-examination of the average structure, 1476
Armbruster, T.: Role of Na in the structure of low cordierite: A single-crystal X-ray study, 746
Arth, J.G., see Barker, F., 632
Artioli, G., see Smith, J.V., 727
Ashworth, J.R.: Myrmekite replacing albite in prograde metamorphism, 895
Au, A.Y., see Hazen, R.M., 977
Barbosa, C.P., see Foord, E.E., 603
Barker, F., J.G. Arth, T.W. Stern: Evolution of the Coast batholith along the Skagway Traverse, Alaska and British Columbia, 632
Barnes, H.L., see Murowchick, J.B., 1243
Barton, M.D.: Phase equilibria and thermodynamic properties of minerals in the BeO-Al₂O₃-SiO₂-H₂O (BASH) system, with petrologic applications, 277
Barton, M.D., see Hemingway, B.S., 557
Batiza, R.: Review of Petrology, Mineralogy and Evolution of the Jan Mayen Magma System by Pall Imsland, 848
Beard, J.S., H.W. Day: Origin of gabbro pegmatite in the Smartville intrusive complex, northern Sierra Nevada, California, 1085
Bernstein, L.R.: Renierite, Cu₁₀ZnGe₂Fe₄S₁₆-Cu₁₁GeAsFe₄S₁₆: A coupled solid solution series, 210
Bill, E., see Aldridge, L.P., 1015
Bird, D.K., see Stern, L.A., 406
Bläs, R., see Aldridge, L.P., 1015
Bloss, F.D., see Su, S.-C., 1285, 1384, 1393
Boettcher, A.L., see Luth, R.W., 264
Borthwick, J., see Holdaway, M.J., 1135
Bringhurst, K.N., D.T. Griffen: Staurolite-lusakite series. II. Crystal structure and optical properties of a cobaltoan staurolite, 1466
Brisbin, W.C.: Mechanics of pegmatite intrusion, 644
Brown, G.E., Jr., B.A. Mills: High-temperature structure and crystal chemistry of hydrous alkali-rich beryl from the Harding pegmatite, Taos County, New Mexico, 547
Brown, G.E., Jr., R.C. Ewing: Introduction to the Jahns Memorial Issue, 233. Memorial of Richard Henry Jahns, 652
Brown, G.E., Jr., see Shigley, J.E., 356
Brown, G.E., Jr., see Stern, L.A., 406
Brown, W.E., see Takagi, S., 1229
Budahn, J.R.: Evidence for equilibrium conditions during the partitioning of nickel between olivine and komatiite liquids, 1337
Burnham, C. Wayne, H. Nekvasil: Equilibrium properties of granite pegmatite magmas, 239
Burnham, Charles W., see Post, J.E., 142, 1178
Burnham, C.W., see Skinner, H.C.W., 860
Burns, R.G., see Dyar, M.D., 955
Buseck, P.R., see Rask, J.H., 805
Carlson, W.D., M.K. Nelis: An occurrence of staurolite in the Llano uplift, central Texas, 682
Carmichael, I.S.E., see Lange, R.A., 937
Černý, P., B.E. Goad, F.C. Hawthorne, R. Chapman: Fractionation trends of the Nb- and Ta-bearing oxide minerals in the Greer Lake pegmatitic granite and its pegmatite aureole, southeastern Manitoba, 501
Chakoumakos, B.C., see Lumpkin, G.R., 569
Chandrasekhar, B.K., see White, W.B., 1415
Chang, C.D., see Posey-Dowty, J., 85
Chapman, R., see Černý, P., 501
Chernosky, J.V., Jr., see Jenkins, D.M., 924
Cho, M., J.J. Fawcett: A kinetic study of clinochlore and its high temperature equivalent forsterite-cordierite-spinel at 2 kbar water pressure, 68. Morphologies and growth mechanisms of synthetic Mg-chlorite and cordierite, 78
Clark, A.H., T.H. Pearce, P.L. Roeder, I. Wolfson: Oscillatory zoning and other microstructures in magmatic olivine and augite: Nomarski interference contrast observations on etched polished surfaces, 734
Clemens, J.D., J.R. Holloway, A.J.R. White: Origin of A-type granite: Experimental constraints, 317
Cohen, A.J., see Partlow, D.P., 589
Cölln, G. von, see Kroll, H., 1
Couty, R., B. Velde: Pressure-induced band splitting in infrared spectra of sanidine and albite, 99
Crerar, D., see Posey-Dowty, J., 85
Crock, J.G., see Foord, E.E., 603
Cronin, D.J., see Scarfe, C.M., 767
Cygani, R.T., A.C. Lasaga: Dielectric and polarization behavior of forsterite at elevated temperatures, 758
Czel, L.J.: Memorial of Robert Mann Grogan, 841

- Day, H.W., see Beard, J.S., 1085
 Desautels, P.E.: Memorial of Paul Seel, 1275
 Dollase, W.A., R.J. Reeder: Crystal structure refinement of huntite, $\text{CaMg}_3(\text{CO}_3)_4$, with X-ray powder data, 163
 Domine, F., B. Piriou: Raman spectroscopic study of the $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-K}_2\text{O}$ vitreous system: Distribution of silicon second neighbors, 38
 Duesler, E.N., E.E. Foord: Crystal structure of hashemite, BaCrO_4 , a barite structure type, 1217
 Dunn, P.J., C.A. Francis: Davidsonite and lehite discredited, 1515
 Dunn, P.J., D.R. Peacor, R.C. Erd, R.A. Ramik: Franciscanite and Ærebroite, two new minerals from California and Sweden, related to redefined welinitite, 1522
 Dunn, P.J., D.R. Peacor, B.D. Sturman, F.J. Wicks: Rouseite, a new lead manganese arsenite from Långban, Sweden, 1034
 Dunn, P.J., see Peacor, D.R., 1517
 Dunn, P.J., see Rouse, R.C., 1240
 Dutrow, B.L., see Holdaway, M.J., 1135, 1142
 Dwornik, E.J., see Evans, H.T., Jr., 1045
 Dyar, M.D.: Practical application of Mössbauer goodness-of-fit parameters for evaluation of real experimental results: A reply, 1266
 Dyar, M.D., R.G. Burns: Mössbauer spectral study ferruginous one-layer trioctahedral micas, 955
 Effenberger, H., F. Pertlik, J. Zemann: Refinement of the crystal structure of krausite: A mineral with an interpolyhedral oxygen-oxygen contact shorter than the hydrogen bond, 202
 Eggleton, R.A., see Sinclair, W., 815
 Ekambaram, V., see Rosenberg, P.E., 971
 Epstein, S., see Newman, S., 1527
 Erd, R.C., see Dunn, P.J., 1522
 Erickson, G.E., M.E. Mrose, J.W. Marinenko, J.J. McGee: Mineralogical studies of the nitrate deposits of Chile. V. Iquiqueite, $\text{Na}_4\text{K}_3\text{Mg}(\text{CrO}_4)\text{B}_2\text{O}_3\text{OH}\cdot 12\text{H}_2\text{O}$, a new saline mineral, 830
 Ericsson, T., A. Filippidis: Cation ordering in the limited solid solution $\text{Fe}_2\text{SiO}_4\text{-Zn}_2\text{SiO}_4$, 1502
 Ericsson, T., A.G. Nord, G. Åberg: Cation partitioning in hydrothermally prepared olivine-related (Fe,Mn)-sarcopsides, 136
 Eugster, H.P.: Minerals in hot water, 655
 Evans, B.W.: Reactions among sodic, calcic, and ferromagnesian amphiboles, sodic pyroxene, and deerite in high-pressure metamorphosed ironstone, Siphnos, Greece, 1118
 Evans, H.T., Jr., E.J. Dwornik, C. Milton: Kassite from the Diamond Jo quarry, Magnet Cove, Hot Spring County, Arkansas: The problem of cafetite and kassite, 1045
 Ewing, R.C., see Brown, G.E., Jr., 233, 652
 Ewing, R.C., see Lumpkin, G.R., 569
 Fawcett, J.J., see Cho, M., 68, 78
 Fenn, P.M.: On the origin of graphic granite, 325
 Fenn, P.M., see Swanson, S.E., 331
 Ferry, J.M.: Acceptance of the Mineralogical Society of America Award for 1985, 853
 Ferry, J.M., see Grove, T.L., 1049
 Filippidis, A., see Ericsson, T., 1502
 Finger, L.W., see Hazen, R.M., 977
 Fitz Gerald, J.D., J.B. Parise, I.D.R. Mackinnon: Average structure of an An_{48} plagioclase from the Hogarth Ranges, 1399
 Fitzgerald, S., A.L. Rheingold, P.B. Leavens: Crystal structure of a Cu-bearing vesuvianite, 1011. Crystal structure of a non-P₄/nnc vesuvianite from Asbestos, Quebec, 1483
 Fitzpatrick, J., A. Pabst: Thalenite from Arizona, 188
 Fleischer, M.: Memorial of George T. Faust, 843
 Foit, F.F., Jr., see Rosenberg, P.E., 971
 Foord, E.E., R.V. Gaines, J.G. Crock, W.B., Simmons, Jr., C.P. Barbosa: Minasgeraisite, a new member of the gadolinite group from Minas Gerais, Brazil, 603
 Foord, E.E., H.C. Starkey, J.E. Taggart, Jr.: Mineralogy and paragenesis of "pocket" clays and associated minerals in complex granitic pegmatites, San Diego County, California, 428
 Foord, E.E., see Duesler, E.N., 1217
 Foord, E.E., see Stern, L.A., 406
 Francis, C.A., see Dunn, P.J., 1515
 Franks, P.C., see Smith, M.P., 60
 Frost, M.T., I.E. Grey, I.R. Harrowfield, C. Li: Alteration profiles and impurity element distributions in magnetic fractions of weathered ilmenite, 167
 Fujino, K., H. Momoi, H. Sawamoto, M. Kumazawa: Crystal structure and chemistry of MnSiO_3 tetragonal garnet, 781
 Furukawa, T., see White, W.B., 1415
 Gaffey, S.J.: Spectral reflectance of carbonate minerals in the visible and near infrared (0.35–2.55 microns): Calcite, aragonite, and dolomite, 151
 Gaines, R.V., see Foord, E.E., 603
 Gasparik, T.: Experimental study of subsolidus phase relations and mixing properties of clinopyroxene in the silica-saturated system $\text{CaO-MgO-Al}_2\text{O}_3-\text{SiO}_2$, 686
 Goad, B.E., see Cerny, P., 501
 Goldsmith, J.R., see Su, S.-C., 1384
 Grant, J.A.: Quartz-philogopite-liquid equilibria and origins of charnockites, 1071
 Grave, E.D., see Vochten, R., 1037
 Green, N.L., S.I. Urdansky: Toward a practical plagioclase-muscovite thermometer, 1109. Ternary-feldspar mixing relations and thermobarometry, 1100
 Grew, E.S., J.R. Hinckley, N. Marquez: Li, Be, B, and Sr in margarite and paragonite from Antarctica, 1129
 Grey, I.E., see Frost, M.T., 167
 Griffen, D.T., see Alexander, V.D., 786
 Griffen, D.T., see Bringhurst, K.N., 1466
 Griffen, D.T., see Phillips, L.V., 1461
 Griffin, W.L., see Mottana, A., 1426
 Groat, L.A., F.C. Hawthorne: Structure of ungemachite, $\text{K}_3\text{Na}_2\text{Fe}^{3+}(\text{SO}_4)_6(\text{NO}_3)_2\cdot 6\text{H}_2\text{O}$, a mixed sulfate-nitrate mineral, 826
 Grove, T.L., J.M. Ferry, F.S. Spear: Phase transitions in calcic plagioclase: A correction and further discussion, 1049

- Gutmann, J.T.: Origin of four- and five-phase ultramafic xenoliths from Sonora, Mexico, 1076
- Hafner, S.S., see Stenek, J., 127
- Hammarstrom, J.M., E. Zen: Aluminum in hornblende: An empirical igneous geobarometer, 1297
- Hanson, G.N., see Walker, R.J., 440
- Harmon, R.S., see Holdaway, M.J., 1135
- Harneit, O., see Viswanathan, K., 1489
- Harris, D.W., see Hochella, M.F., Jr., 1247
- Harrowfield, I.R., see Frost, M.T., 167
- Harte, B.: Genesis of diamond: A mantle saga-- Distorted in the telling, 1258
- Haselton, H.T., Jr., see Hemingway, B.S., 557
- Hawthorne, F.C.: Lammertite, $\text{Cu}_3(\text{AsO}_4)_2$, a modulated close-packed structure, 206
- Hawthorne, F.C., see Černý, P., 501
- Hawthorne, F.C., see Groat, L.A., 826
- Hayes, J.F., see Skinner, H.C.W., 860
- Haymon, R.M., M. Kastner: Caminite: A new magnesium-hydroxide-sulfate-hydrate mineral found in a submarine hydrothermal deposit, East Pacific Rise, 21°N , 819
- Hazen, R.M., A.Y. Au, L.W. Finger: High-pressure crystal chemistry of beryl ($\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$) and euclase (BeAlSi_4OH), 977
- Hellmann, R., see Posey-Dowty, J., 85
- Hemingway, B.S., M.D. Barton, R.A. Robie, H.T. Haselton, Jr.: Heat capacities and thermodynamic functions for beryl, $\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$, phenakite, $\text{Be}_2\text{Si}_4\text{O}_7$, euclase, BeAlSi_4OH , bertrandite, $\text{Be}_4\text{Si}_2\text{O}_7(\text{OH})_2$, and chrysoberyl, BeAl_2O_4 , 557
- Henderson, D.M., see Yang, W., 712
- Henry, Darrell: Review of The Tourmaline Group by R.V. Dietrich, 1549
- Hewitt, D.A., J. Abrecht: Limitations on the interpretation of biotite substitutions from chemical analyses of natural samples, 1126
- Hinthon, J.R., see Grew, E.S., 1129
- Hinton, R.W., see Holdaway, M.J., 1135
- Hirai, H., H. Nakazawa: Grandite garnet from Nevada: Confirmation of origin of iridescence by electron microscopy and interpretation of a moiré-like texture, 123. Visualizing low symmetry of a grandite garnet on precession photographs, 1210
- Hochella, M.F., Jr., D.W. Harris, A.M. Turner: Scanning Auger microscopy as a high-resolution microprobe for geologic materials, 1247
- Hofmeister, A.M., G.R. Rossman: A spectroscopic study of blue radiation coloring in plagioclase, 95
- Hokanson, S.A., R.A. Yund: Comparison of alkali interdiffusion rates for cryptoperthites, 1409
- Holdaway, M.J.: Report of the Editor, 862
- Holdaway, M.J., B.L. Dutrow, J. Borthwick, P. Shore, R.S. Harmon, R.W. Hinton: H content of staurolite as determined by H extraction line and ion microprobe, 1135
- Holdaway, M.J., B.L. Dutrow, P. Shore: A model for the crystal chemistry of staurolite, 1142
- Hollister, L.S.: Review of A Practical Guide to Fluid Inclusion Studies by T. Shepard, A.H. Rankin, and P.H.M. Alderton, 1284
- Holloway, J.R., see Clemens, J.D., 317
- Hori, H., K. Nagashima, M. Yamada, R. Miyawaki, T. Marubashi: Ammonioleucite, a new mineral from Tatarazawa, Fujioka, Japan, 1022
- Hovis, G.L.: Behavior of alkali feldspars: Crystallographic properties and characterization of composition and Al-Si distribution, 869
- Huang, W., P.J. Wyllie: Phase relationships of gabbro-tonalite-granite-water at 15 kbar with applications to differentiation and anatexis, 301
- Hudleston, P.J.: Memorial of Strathmore R. B. Cooke, 1542
- Huebner, J.S.: Nature of phases synthesized along the join $(\text{Mg},\text{Mn})_2\text{Si}_2\text{O}_6$, 111
- Huebner, M., T.K. Kyser, E.G. Nisbet: Stable-isotope geochemistry of high-grade metapelites from the Central zone of the Limpopo belt, 1343
- Iwano, S., see Nagashima, K., 1028
- Iyer, G.V.A., see Subbanna, G.N., 1198
- Jahns, R.H., see Stern, L.A., 406
- Jenkins, D.M., J.V. Chernosky, Jr.: Phase equilibria and crystallochemical properties of Mg-chlorite, 924
- Jolliff, B.L., J.J. Papike, C.K. Shearer: Tourmaline as a recorder of pegmatite evolution: Bob Ingersoll pegmatite, Black Hills, South Dakota, 472
- Joswig, W., G. Amthauer, Y. Takéuchi: Neutron-diffraction and Mössbauer spectroscopic study of clintonite (xanthophyllite), 1194
- Kane, R.E., see Shigley, J.E., 1214
- Kastner, M., see Haymon, R.M., 819
- Kato, A., see Nagashima, K., 1028
- Kechid, S., see Smith, D.C., 1372
- Keller, W.D.: Compositions of condensates from heated clay minerals and shales, 1420
- Kirkpatrick, R.J., R. Oestrike, C.A. Weiss, Jr., K.A. Smith, E. Oldfield: High-resolution ^{27}Al and ^{29}Si NMR spectroscopy of glasses and crystals along the join $\text{CaMgSi}_2\text{O}_6$ - $\text{CaAl}_2\text{Si}_2\text{O}_6$, 705
- Kirkpatrick, R.J., see Wood, B.J., 999
- Kirkpatrick, R.J., see Yang, W., 712
- Kitamura, M., see Shen, B., 1455
- Koyama, E., see Nakai, I., 1234
- Kroll, H., I. Schmiemann, G. von Cölln: Feldspar solid solutions, 1
- Kumazawa, M., see Fujino, K., 781
- Kutty, T.R.N., see Subbanna, G.N., 1198
- Kvick, A., see Smith, J.V., 727
- Kyser, T.K., see Huebner, M., 1343
- Lange, R.A., I.S.E. Carmichael, J.F. Stebbins: Phase transitions in leucite (KAlSi_2O_6), orthorhombic $\text{KA}_1\text{Si}_2\text{O}_6$, and their iron analogues (KFeSi_2O_6 , KFeSi_4O_8), 937
- Lasaga, A.C., see Cygan, R.T., 758
- Lauer, S., see Aldridge, L.P., 1015
- Laul, J.C., see Shearer, C.K., 518
- Laul, J.C., see Walker, R.J., 440
- Leavens, P.B., see Fitzgerald, S., 1011, 1483

- Leavens, P.B., see White, J.S., Jr., 1221
 Leavens, P.B., see Zanazzi, P.F., 1224
 Leonard, B.F.: Memorial of A. F. Buddington, 1268
 Li, C., see Frost, M.T., 167
 Linnehan, D.G., see White, W.B., 1415
 Lofgren, G.E., see Petersen, J.S., 343
 London, D.: Magmatic-hydrothermal transition in the Tanco rare-element pegmatite: Evidence from fluid inclusions and phase-equilibrium experiments, 376. Formation of tourmaline-rich gem pockets in miarolitic pegmatites, 396
 Long, P.E., W.C. Luth: Origin of K-feldspar megacrysts in granitic rocks: Implications of a partitioning model for barium, 367
 Lumpkin, G.R., B.C. Chakoumakos, R.C. Ewing: Mineralogy and radiation effects of microlite from the Harding pegmatite, Taos County, New Mexico, 569
 Luth, R.W., A.L. Boettcher: Hydrogen and the melting of silicates, 264
 Luth, W.C., see Long, P.E., 367
 Mackinnon, I.D.R., see Fitz Gerald, J.D., 1399
 Mackinnon, I.D.R., see Zolensky, M.E., 1201
 Manson, D.V., see Shigley, J.E., 1214
 Marathe, V.R., see Aldridge, L.P., 1015
 Marinenco, J.W., see Erickson, G.E., 830
 Markgraf, S.A., see Reeder, R.J., 795
 Marquez, N., see Grew, E.S., 1129
 Martin, T.J., see Alexander, V.D., 786
 Marubashi, T., see Hori, H., 1022
 Mascarenhas, Y.P., see Vencato, I., 222
 Mason, D.R.: Magmatic ferromagnesian inclusions in granitoid plagioclase cores, Barrington Tops Granodiorite, New South Wales, Australia, 1314
 Masutomi, K., see Nakai, I., 1234
 Mathew, M., see Takagi, S., 1229
 Matson, D.W., S.K. Sharma, J.A. Philpotts: Raman spectra of some tectosilicates and of glasses along the orthoclase-anorthite and nepheline-anorthite joins, 694
 Matsubara, S., see Nagashima, K., 1028
 Matsumura, M., see White, W.B., 1415
 Mattievich, E., see Vencato, I., 222
 Mattson, S.M., see Rossman, G.R., 599
 McCormick, T.C.: Crystal-chemical aspects of nonstoichiometric pyroxenes, 1434
 McGee, E.S.: Garnet megacrysts of the Williams diatremes, north-central Montana, 674
 McGee, J.J., see Erickson, G.E., 830
 McLaughlin, G.M., see Sinclair, W., 815
 McMillan, K.: Spatially varied miaroles in the albite porphyry of Cuchillo Mountain, southwestern New Mexico, 625
 McMillan, P.F., R.R. Remmelle, Jr.: Hydroxyl sites in SiO_2 glass: A note on infrared and Raman spectra, 772
 McMullan, R.K., see Peterson, R.C., 742
 Mellini, M., S. Merlino, M. Pasero: X-ray and HRTEM structure analysis of orientite, 176
 Merlino, S., see Mellini, M., 176
 Meyer, H.O.A.: Genesis of diamond: A mantle saga--A reply, 1259. Proceedings of the Sixty-sixth Annual Meeting of the Mineralogical Society of America in Orlando, Florida, 855. Report of the Secretary for 1985, 856
 Mills, B.A., see Brown, G.E., Jr., 547
 Milton, C., see Evans, H.T., Jr., 1045
 Milton, D.J.: Chloritoid-sillimanite assemblage from North Carolina, 891
 Miyawaki, R., see Hori, H., 1022
 Miyawaki, R., see Nagashima, K., 1028
 Momoi, H., see Fujino, K., 781
 Montez, B., see Wood, B.J., 999
 Moore, P.B.: Quartz: Variations on a theme, 540
 Morimoto, N., see Shen, B., 1455
 Mottana, A., W.L. Griffin: Crystal chemistry of two coexisting K-richterites from St. Marcel (Val d'Aosta, Italy), 1426
 Mrose, M.E., see Erickson, G.E., 830
 Muir, I.D.: Memorial of Peter Gay, 1055
 Murowchick, J.B., H.L. Barnes: Formation of cubic FeS , 1243
 Murray, H.H.: Memorial of Richards A. Rowland, 1053
 Nabelek, P.I.: Trace-element modeling of the petrogenesis of granophyres and aplites in the Notch Peak granitic stock, Utah, 460
 Nagashima, K., R. Miyawaki, J. Takase, I. Nakai, K. Sakurai, S. Matsubara, A. Kato, S. Iwano: Kimuraite, $\text{CaY}_2(\text{CO}_3)_4 \cdot 6\text{H}_2\text{O}$, a new mineral from fissures in an alkali olivine basalt from Saga Prefecture, Japan, and new data on lokkaite, 1028
 Nagashima, K., see Hori, H., 1022
 Nagashima, K., see Nakai, I., 1234
 Nakai, I., H. Okada, K. Masutomi, E. Koyama, K. Nagashima: Henmilite, $\text{Ca}_2\text{Cu}(\text{OH})_4[\text{B}(\text{OH})_4]_2$, a new mineral from Fuka, Okayama Prefecture, Japan, 1234
 Nakai, I., see Nagashima, K., 1028
 Nakazawa, H., see Hirai, H., 123, 1210
 Naney, M.T., F.H. Ward: Sample manipulator and quenching apparatus for high-temperature 1-atm experiments, 837
 Navrotsky, A.: Cation-distribution energetics and heats of mixing in $\text{MgFe}_2\text{O}_4-\text{MgAl}_2\text{O}_4$, $\text{ZnFe}_2\text{O}_4-\text{ZnAl}_2\text{O}_4$, and $\text{NiAl}_2\text{O}_4-\text{ZnAl}_2\text{O}_4$ spinels: Study by high-temperature calorimetry, 1160
 Nekvasil, H., see Burnham, C. Wayne, 239
 Nelis, M.K., see Carlson, W.D., 682
 Nelson, S.A., Review of Igneous Petrology by Alexander R. McBirney, 1283
 Newbury, D., see Rouse, R.C., 1240
 Newman, S., E.M. Stolper, S. Epstein: Measurement of water in rhyolitic glasses: Calibration of an infrared spectroscopic technique, 1527
 Newnham, R.E.: Memorial of George W. Brindley, 1058
 Nicholls, I.A., see Oba, T., 1354
 Nisbet, E.G., see Huebner, M., 1343
 Nord, A.G., see Ericsson, T., 136
 Nord, G.L., Jr.: Report of the Treasurer for 1985, 857
 Nord, G.L., Jr., see Skinner, H.C.W., 860
 O'Brient, J.D.: Preservation of primary magmatic features in subvolcanic pegmatites, aplites, and granite from Rabb Park, New Mexico, 608
 O'Neill, H.S.C.: Mo-Mo₂ (MOM) oxygen buffer and the free energy of formation of MoO₂, 1007

- O'Neill, J.R., see Walker, R.J., 440
 Oba, T., I.A. Nicholls: Experimental study of cummingtonite and Ca-Na amphibole relations in the system Cum-Act-Pl-Qz-H₂O, 1354
 Oberti, R., see Rossi, G., 1378
 Oestrike, R., see Kirkpatrick, R.J., 705
 Okada, H., see Nakai, I., 1234
 Oldfield, E., see Kirkpatrick, R.J., 705
- Pabst, A., see Fitzpatrick, J., 188
 Papike, J.J., see Jolliff, B.L., 472
 Papike, J.J., see Shearer, C.K., 518
 Papike, J.J., see Walker, R.J., 440
 Parise, J.B., see Fitz Gerald, J.D., 1399
 Partlow, D.P., A.J. Cohen: Optical studies of biaxial Al-related color centers in smoky quartz, 589
 Pasero, M., see Mellini, M., 176
 Peacor, D.R., P.J. Dunn, W.B. Simmons, F.J. Wicks: Arsenites related to layer silicates: Manganarsite, the arsenite analogue of manganyrosomalite, and unnamed analogues of friedelite and schallerite from Långban, Sweden, 1517
 Peacor, D.R., see Dunn, P.J., 1034, 1522
 Peacor, D.R., see Rouse, R.C., 1240, 1494
 Peacor, D.R., see Yau, Y., 985
 Pearce, T.H., see Clark, A.H., 734
 Pelsmaekers, J., see Vochten, R., 1037
 Pertlik, F., see Effenberger, H., 202
 Petersen, J.S., G.E. Lofgren: Lamellar and patchy intergrowths in feldspars: Experimental crystallization of eutectic silicates, 343
 Peterson, R.C., R.K. McMullan: Neutron diffraction studies of sillimanite, 742
 Pfaffl, F.A.: Memorial of Heinz Meixner, 1051
 Phillips, L.V., D.T. Griffen: Staurolite-lusakite series. I. Synthetic Fe-Co staurolites, 1461
 Philpotts, J.A., see Matson, D.W., 694
 Piriou, B., see Domine, F., 38
 Posey-Dowty, J., D. Crerar, R. Hellmann, C.D. Chang: Kinetics of mineral-water reactions: Theory, design and applications of circulating hydrothermal equipment, 85
 Post, J.E., Charles W. Burnham: Ionic modeling of mineral structures and energies in the electron gas approximation: TiO₂ polymorphs, quartz, forsterite, diopside, 142. Modeling tunnel-cation displacements in hollandites using structure-energy calculations, 1178
 Powell, R., see Sandiford, M., 946
 Presnall, D.C.: An algebraic method for determining equilibrium crystallization and fusion paths in multicomponent systems, 1061
 Prewitt, C.T., see Angel, R.J., 1476
- Rager, H., H. Schneider: EPR study of Fe³⁺ centers in cristobalite and tridymite, 105
 Ramik, R.A., see Dunn, P.J., 1522
 Ranson, W.A.: Complex exsolution in inverted pigeonite: Exsolution mechanisms and temperatures of crystallization and exsolution, 1322
 Rask, J.H., P.R. Buseck: Topotactic relations among pyrolusite, manganite, and Mn₅O₈: A high-resolution transmission electron microscopy investigation, 805
- Reader, J.M., see Shelton, K.L., 916
 Reeder, R.J., S.A. Markgraf: High-temperature crystal chemistry of dolomite, 795
 Reeder, R.J., see Dollase, W.A., 163
 Reenen, D.D. von: Hydration of cordierite and hypersthene and a description of the retrograde orthoamphibole isograd in the Limpopo belt, South Africa, 900
 Remmele, R.R., Jr., see McMillan, P.F., 772
 Rheingold, A.L., see Fitzgerald, S., 1011, 1483
 Ribbe, P.H., see Su, S.-C., 1285, 1384, 1393
 Robie, R.A., see Hemingway, B.S., 557
 Roeder, P.L., see Clark, A.H., 734
 Rosenberg, P.E., F.F. Foit, Jr., V. Ekambaram: Synthesis and characterization of tourmaline in the system Na₂O-Al₂O₃-SiO₂-B₂O₃-H₂O, 971
 Ross, L.M., see Shelton, K.L., 916
 Rossi, G., R. Oberti, D.C. Smith: Crystal structure of lisetite, CaNa₂Al₄Si₄O₁₆, 1378
 Rossi, G., see Smith, D.C., 1372
 Rossman, G.R., R.D. Aines: Spectroscopy of a birefringent grossular from Asbestos, Ontario, Canada, 779
 Rossman, G.R., S.M. Mattson: Yellow, Mn-rich elbaite with Mn-Ti intervalence charge transfer, 599
 Rossman, G.R., see Aines, R.D., 1186
 Rossman, G.R., see Hofmister, A.M., 95
 Rouse, R.C., D.R. Peacor: Crystal structure of the zeolite mineral goosecreekite, CaAl₂Si₆O₁₆·5H₂O, 1494
 Rouse, R.C., D.R. Peacor, P.J. Dunn, W.B. Simmons, D. Newbury: Wheatleyite, Na₂Cu(C₂O₄)₂·2H₂O, a natural sodium copper salt of oxalic acid, 1240
 Rumble, D., III: Presentation of the Mineralogical Society of America Award for 1985 to John M. Ferry, 852
- Sakurai, K., see Nagashima, K., 1028
 Salje, E.: Heat capacities and entropies of andalusite and sillimanite: The influence of fibrolitization on the phase diagram of the Al₂SiO₅ polymorphs, 1366
 Sandiford, M., R. Powell: Pyroxene exsolution in granulites from Fyfe Hills, Enderby Land, Antarctica: Evidence for 1000°C metamorphic temperatures in Archean continental crust, 946
 Sawamoto, H., see Fujino, K., 781
 Sawaryn, A., see Aldridge, L.P., 1015
 Sawicki, J.A., see Stenek, J., 127
 Scarfe, C.M., D.J. Cronin: Viscosity-temperature relationships of melts at 1 atm in the system diopside-albite, 767
 Schmiemann, I., see Kroll, H., 1
 Schneider, H., see Rager, H., 105
 Schreyer, W.: Memorial of Paul Ramdohr, 839
 Seidemann, D.E., see Shelton, K.L., 916
 Sharma, S.K., see Matson, D.W., 694
 Shearer, C.K., J.J. Papike, S.B. Simon, J.C. Laul: Pegmatite-wallrock interactions, Black Hills, South Dakota: Interaction between pegmatite-derived fluids and quartz-mica schist wallrock, 518
 Shearer, C.K., see Jolliff, B.L., 472
 Shelton, K.L., J.M. Reader, L.M. Ross, G.W. Viele, D.E. Seidemann: Ba-rich adularia from

- the Ouachita Mountains, Arkansas: Implications for a postcollisional hydrothermal system, 916
- Shen, B., O. Tamada, M. Kitamura, N. Morimoto: Superstructure of laihunite-3M $\square_{0.40}Fe^{2+}_{0.80}Fe^{3+}_{0.80}SiO_4$, 1455
- Shigley, J.E., G.E. Brown, Jr.: Lithiophilite formation in granitic pegmatites: A reconnaissance experimental study of phosphate crystallization from hydrous aluminosilicate melts, 356
- Shigley, J.E., R.E. Kane, D.V. Manson: A notable Mn-rich gem elbaite tourmaline and its relationship to "tsilaisite," 1214
- Shigley, J.E., see Stern, L.A., 406
- Shore, P., see Holdaway, M.J., 1135, 1142
- Simmons, W.B., Jr., see Foord, E.E., 603
- Simmons, W.B., see Peacor, D.R., 1517
- Simmons, W.B., see Rouse, R.C., 1240
- Simon, S.B., see Shearer, C.K., 518
- Sinclair, W., R.A. Eggleton, G.M. McLaughlin: Structure refinement of calzirtite from Jacupiranga, Brazil, 815
- Skinner, H.C.W., K.M. Towe, J.F. Hayes, G.L. Nord, Jr., C.W. Burnham: Report of the Financial Advisory Committee for 1985, 860
- Smith, B.K.: Variations in the framework structure of the zeolite ferrierite, 989
- Smith, D.C., S. Kechid, G. Rossi: Occurrence and properties of lisetite, $CaNa_2Al_4Si_4O_16$, a new tectosilicate in the system Ca-Na-Al-Si-O, 1372
- Smith, D.C., see Rossi, G., 1378
- Smith, J.V., G. Artioli, A. Kvick: Low albite, $NaAlSi_3O_8$: Neutron diffraction study of crystal structure at 13 K, 727
- Smith, K.A., see Kirkpatrick, R.J., 705
- Smith, M.P., P.C. Franks: Mg-rich hollow sanidine in partially melted granite xenoliths in a mica peridotite at Rose dome, Woodson County, Kansas, 60
- Smith, P.P.K.: Direct imaging of tunnel cations in zinkenite by high-resolution electron microscopy, 194
- Spaulding, L.B., Jr., see Stern, L.A., 406
- Spear, F.S., see Grove, T.L., 1049
- Starkey, H.C., see Foord, E.E., 428
- Stebbins, J.F., see Lange, R.A., 937
- Steele, I.M.: Cathodoluminescence and minor elements in forsterites from extraterrestrial samples, 966
- Stenek, J., S.S. Hafner, J.A. Sawicki: Local states of Fe^{2+} and Mg^{2+} in magnesium-rich olivines, 127
- Stern, L.A., G.E. Brown, Jr., D.K. Bird, R.H. Jahns, E.E. Foord, J.E. Shigley, L.B. Spaulding, Jr.: Mineralogy and geochemical evolution of the Little Three pegmatite-aplite layered intrusive, Ramona, California, 406
- Stern, T.W., see Barker, F., 632
- Stolper, E.M., see Newman, S., 1527
- Sturman, B.D., see Dunn, P.J., 1034
- Su, S.-C.: Review of Optical Mineralogy by D. Shelley, 1060
- Su, S.-C., P.H. Ribbe, F.D. Bloss: Alkali feldspars: Structural state determined from composition and optic axial angle $2V$, 1285
- Su, S.-C., P.H. Ribbe, F.D. Bloss, J.R. Goldsmith: Optical properties of single crystals in the order-disorder series low albite-high albite, 1384
- Su, S.-C., P.H. Ribbe, F.D. Bloss, J.K. Warner: Optical properties of a high albite (anabite) - high sanidine solid-solution series, 1393
- Subbanna, G.N., T.R.N. Kutty, G.V.A. Iyer: Structural intergrowth of brucite in anthophyllite, 1198
- Swanson, S.E., P.M. Fenn: Quartz crystallization in igneous rocks, 331
- Taggart, J.E., Jr., see Foord, E.E., 428
- Takagi, S., M. Mathew, W.E. Brown: Crystal structures of bobierrite and synthetic $Mg_3(PO_4)_2 \cdot 8H_2O$, 1229
- Takase, J., see Nagashima, K., 1028
- Takéuchi, Y., see Joswig, W., 1194
- Tamada, O., see Shen, B., 1455
- Tossell, J.A.: Studies of unoccupied molecular orbitals of the B-O bond by molecular orbital calculations, X-ray absorption near edge, electron transmission, and NMR spectroscopy, 1170
- Towe, K.M., see Skinner, H.C.W., 860
- Trautwein, A.X., see Aldridge, L.P., 1015
- Turner, A.M., see Hochella, M.F., Jr., 1247
- Usdansky, S.I., see Green, N.L., 1100, 1109
- Vanko, D.A.: High-chlorine amphiboles from oceanic rocks: Product of highly-saline hydrothermal fluids?, 51
- Velde, B., see Couty, R., 99
- Velde, D., see Wagner, C., 17, 1473
- Vencato, I., Y.P. Mascarenhas, E. Mattievich: The crystal structure of $Fe^{2+}Fe^{3+}(PO_3OH)_4(H_2O)_4$: A new synthetic compound of mineralogic interest, 222
- Viele, G.W., see Shelton, K.L., 916
- Viswanathan, K., O. Harneit: Refined crystal structure of beta-uranophane, $Ca(UO_2)_2(SiO_3OH)_2 \cdot 5H_2O$, 1489
- Vochten, R., E.D. Grave, J. Pelsmaekers: Synthesis, crystallographic and spectroscopic data, solubility, and electrokinetic properties of metakahlerite and its Mn analogue, 1037
- Wagner, C., D. Velde: The mineralogy of K-richterite-bearing lamproites, 17. Davanite, $K_2TiSi_6O_15$, in the Smoky Butte (Montana) lamproites, 1473
- Walker, R.J., G.N. Hanson, J.J. Papike, J.R. O'Neill, J.C. Laul: Internal evolution of the Tin Mountain pegmatite, Black Hills, South Dakota, 440
- Ward, F.H., see Naney, M.T., 837
- Warner, J.K., see Su, S.-C., 1393
- Waychunas, G.A.: Performance and use of Mössbauer goodness-of-fit parameters: Response to spectra of varying signal/noise ratio and possible misinterpretations, 1261
- Weiss, C.A., Jr., see Kirkpatrick, R.J., 705
- Wenk, H.-R.: Presentation of the Roebling Medal of the Mineralogical Society of America for 1985 to Francis John Turner, 849

White, A.J.R., see Clemens, J.D., 317
 White, J.S., Jr., P.B. Leavens, P.F. Zanazzi:
 Switzerite redefined as $Mn_3(PO_4)_2 \cdot 7H_2O$, and
 metaswitzerite, $Mn_3(PO_4)_2 \cdot 4H_2O$, 1221
 White, J.S., Jr., see Zanazzi, P.F., 1224
 White, W.B., M. Matsumura, D.G. Linnehan, T.
 Furukawa, B.K. Chandrasekhar: Absorption and
 luminescence of Fe^{3+} in single-crystal or-
 thoclase, 1415
 Wicks, F.J., see Dunn, P.J., 1034
 Wicks, F.J., see Peacor, D.R., 1517
 Winchell, H.: Memorial of Clifton Sherwin Cor-
 bett, 1274
 Winkler, H., see Aldridge, L.P., 1015
 Wolfson, I., see Clark, A.H., 734
 Wood, B.J., R.J. Kirkpatrick, B. Montez: Order-
 disorder phenomena in $MgAl_2O_4$ spinel, 999
 Wyllie, P.J., see Huang, W., 301
 Yamada, M., see Hori, H., 1022

Yang, W., R.J. Kirkpatrick, D.M. Henderson:
 High-resolution ^{29}Si , ^{27}Al , and ^{23}Na NMR
 spectroscopic study of Al-Si disordering in
 annealed albite and oligoclase, 712
 Yau, Y., D.R. Peacor: Jerrygibbsite-
 leucophoenicite mixed layering and general
 relations between the humite and
 leucophoenicite families, 985
 Yund, R.A., see Hokanson, S.A., 1409
 Zanazzi, P.F., P.B. Leavens, J.S. White, Jr.:
 Crystal structure of switzerite,
 $Mn_3(PO_4)_2 \cdot 7H_2O$, and its relationship to
 metaswitzerite, $Mn_3(PO_4)_2 \cdot 4H_2O$, 1224
 Zanazzi, P.F., see White, J.S., Jr., 1221
 Zemann, J., see Effenberger, H., 202
 Zen, E., see Hammarstrom, J.M., 1297
 Zolensky, M.E., I.D.R. Mackinnon: Microstruc-
 tures of cylindrical tochilinites, 1201

$(Ag,Cu)_4TeS$, 1281
 $AgInS_2$, 846
 Al in orthopyroxene, 1076
 Al_2SiO_5 polymorphs, 1366
 An-Or Margules parameters, 1100
 actinolite, 51, 1118, 1314,
 1354
 adularia, 916
 aegirine-augite, 1118
 Afghanistan
 beryl, 396
 pegmatite, 396
 spodumene, 396
 tourmaline, 396
 Alaska
 germanite, 210
 hornblende, 1297
 orthogneiss, 632
 renierite, 210
 tonalite, 632
 albite, 99, 264, 406, 440, 712,
 895, 1384
 high, 1393
 low, 727
 See also alkali feldspar
 albite porphyry, 625
 alkali feldspar, 1, 608, 869,
 1100, 1285, 1393
 B-bearing K-feldspar, 428
 almandine, 1118
 alpha quartz, natural and
 synthetic, 589
 amblygonite, 440
 ammonian arcanite, 1282
 ammonioleucite, 1022
 amphiboles, 301, 1085, 1297
 Ca-Na, 1354
 Cr and V in, 1314
 Cl and F in, 51
 coexisting, 1118
 solvus, 900
 amphibole asbestos, 1198
 analcime, 1022

Analyses (chemical), minerals
 actinolite, 51, 1118, 1314,
 1354
 adularia, 916
 aegirine-augite, 1118
 albite, 406, 440, 1384
 alkali feldspar, 1, 869,
 1285, 1393
 almandine, 1118
 alpha quartz, natural and
 synthetic, 589
 amblygonite, 440
 ammonioleucite, 1022
 amphibole, 1085, 1297, 1354
 andalusite, 1366
 anthophyllite, 900, 1198
 apatite, 440
 augite, 734, 1076, 1085,
 1118, 1314
 beidellite, 428
 beryl, 277, 440, 547
 biotite, 518, 608, 900, 1126,
 1129
 calcite, 85
 calzirtite, 815
 caminite, 819
 Ca-Na amphibole, 1354
 cassiterite, 501
 chloritoid, 891
 chromite, 17
 Cl-hastingsite, 51
 clinopyroxene, 946
 clintonite, 1194
 columbite, 501
 cordierite, 746, 900
 cristobalite, 105
 crossite, 1118
 cummingtonite, 1118, 1314,
 1354
 davanite, 1473
 deerite, 1118
 diaspore, 1420, 1527
 dickite, 1420

diopside, 1076
 dolomite, 151
 dumortierite, 786
 elbaite, 406, 599, 1214
 enstatite, 1076
 fayalite-willemit, 1502
 feldspar, 608
 $Fe^{2+}Fe^{3+}(PO_3OH)_4(H_2O)_4$, 222
 (Fe,Mn)-sarcopsides, 136
 fluid inclusions, 376
 fluorite, 85
 forsterite, 966
 franciscanite, 1522
 garnet, 123, 674, 779, 781,
 900, 1210
 gedrite, 900
 gibbsite, 1420
 grandite garnet, 123, 1210
 grossular, 779
 halloysite, 1420
 hashemite, 1217
 hastingsite, Cl-, 51
 henmilite, 1234
 hornblende, 51, 608, 1314
 hypersthene, 900, 1314
 illite, 1420
 ilmenite, 17, 167, 1314
 iquiqueite, 830
 ixiolite, 501
 K-feldspar, 367, 406, 440
 K-richterite, 17, 1426
 $KAlSiO_4$, 937
 kaolinite, 1420
 $KFeSiO_4$, 937
 $KFeSi_2O_6$, 937
 kimuraite, 1028
 lanthanite, 1028
 lawsonite, 1527
 lepidolite, 406, 440
 leucite, 937
 Li-tosudite, 428
 lisetite, 1372
 lithiophilite, 356

Analyses (chemical), minerals
--continued
lokkaite, 1028
magnetite, 1314
manganarsite, 1517
margarite, 1129
metaswitzerite, 1221
microlite, 501, 569
minasgeraisite, 603
 $MnSiO_3$ garnet, 781
montmorillonite, 428
muscovite, 406, 440, 518
Na-Al tourmaline, 971
niobian rutile, 501
olivine, 734, 1076, 1085
omphacite, 1434
örebroite, 1522
orthopyroxene, 946, 1085
palygorskite, 428
paragonite, 1129
phlogopite, 17
plagioclase, 95, 343, 1049, 1076, 1085, 1399
priderite, 17
pseudobrookite, 17
pyrophyllite, 1527
pyroxene, 946, 1085, 1322
quartz, alpha, 589
renierite, 210
richterite, 17, 1426
riebeckite, 1118
rouseite, 1034
rutile (niobian-tantalian), 501
sanidine, 343, 1393
sarcopsides, (Fe,Mn)-, 136
sillimanite, 742, 1366
smectite, 1420
spinel, 1076
spodumene, 440, 1129
staurolite, 682, 1135, 1142, 1466
switzerite, 1221
tantalian rutile, 501
tantalite, 501
ternary feldspar, 1
thalenite, 188
tochilinite, 1201
topaz, 406
tosudite, Li-, 428
tourmaline, 472, 518, 971, 1214
tridymite, 105
vesuvianite, 1011, 1483
welinitite, 1522
wheatleyite, 1240
willemite-fayalite, 1502
winchite, 1118
wodginite, 501
zeolite, 608
zinkenite, 194
Analyses (chemical), rocks
aplite, 460, 608
bauxite, 1420
bentonite, 1420
china clay, 1420
granite, 460, 608
granophyre, 460

granulites, 946
kaolin, 1420
lamproites, 17
Mg-rich metapelite, 900
obsidian, 1527
orthogneiss, 632
pegmatite, 239, 440, 608
pyroxene-bearing granulites, 946
rhyolite, 608, 1354, 1527
schist, 518
shale, 1420
tonalite, 632
anatexis of lower crust, 301
andalusite, 277, 1366
anhydrous melts, 239
annite, 955
anorthite, 694
Antarctica
margarite, 1129
paragonite, 1129
pyroxene, 946
anthophyllite, 900, 1198
apatite, 440
aplite, 428, 460, 608
apophyllite, 1247
aragonite, 151
Archean, 946
Arizona
augite, 734
olivine, 734
thalenite, 188
Arkansas
adularia, 916
kassite, 1045
shale, 916
arsenites, 1517
arsenogoyazite, 845
A-type granite, 317
Auger microscopy, 1247
augite, 734, 1076, 1085, 1314
Australia
A-type granite, 317
amphibole, 1314
bobierrite, 1229
dacite, 1314
Fe-Ti oxides, 1314
ferriannite, 955
granodiorite, 1314
ilmenite (altered), 167
plagioclase, 1399
pyroxene, 1314
autoradiograph, thalenite, 188
a-X relations in plagioclase-muscovite assemblages, 1109
Ba zoning, 367
B-bearing K-feldspar, 428
 $BeO-Al_2O_3-SiO_2-H_2O$, 277
 $BeO-SiO_2-H_2O$, 277
Bi-Cu-Pb-Se-Te sulfides, 847
bastnaesite, 1277
bayankhanite, 1543
bauxite, 1420
bavenite, 428
behoite, 277
beidellite, 428
bentonite, 1420

bertrandite, 277, 557
beryl, 277, 396, 440, 547, 557, 977
beta-uranophane, 1489
biotite, 518, 608, 955, 1126, 1129
biotite-garnet, 682, 900
black smoker chimneys, 819
bobierrite, 1229
Book reviews
Batiza, R.: Petrology, Mineralogy and Evolution of the Jan Mayen Magma System by Pall Imsland, 848
Henry, Darrell: The Tourmaline Group by R.V. Dietrich, 1549
Hollister, L.S.: A Practical Guide to Fluid Inclusion Studies by T. Shepard, A.H. Rankin, and P.H.M. Alderton, 1284
Nelson, S.A., Igneous Petrology by Alexander R. McBirney, 1283
Su, S.-C.: Review of Optical Mineralogy by D. Shelley, 1060
borate, 231, 1170
braunite II, 1543
Brazil
andalusite, 1366
euclase, 557
minasgeraisite, 603
phenakite, 557
quartz, 589
synthetic alpha quartz, 589
tochilinite, 1201
brewsterite, 1494
bustamite, 1441
CaAl₂Si₂O₈-NaAlSi₃O₈-KAlSi₃O₈, 343
CaMgSi₂O₆-H₂O-H₂, 264
CaMg₃(CO₃)₄, 163
Ca-Na amphibole, 1354
CaO-Al₂O₃-SiO₂, 694
CaO-MgO-Al₂O₃-SiO₂, 686
Cl-hastingsite, 51
Cl in amphiboles, 51
Cu(Ir,Pt)₂S₄, 231
California
albite, 1
alkali feldspars, 406
amphibole, 1085
aplite, 428
beidellite, 428
beryl, 396
biotite, 955
calcite, 428
cleavelandite (blue), 95
clinopyroxene, 1085
columbite, 406
cookeite, 428
elbaite, 406, 599
ferrierite, 989
franciscanite, 1522

California--continued
 gabbro pegmatite, 1085
 laumontite, 428
 lepidolite, 406
 lithiophilite, 356
 montmorillonite, 428
 muscovite, 406
 olivine, 1085
 orthopyroxene, 1085
 palygorskite, 428
 pegmatite, 396, 428
 plagioclase, 1085
 pocket Li-tosudite, 428
 quartz, 406
 schorl, 406
 spodumene, 396
 stibio-bismuth-columbite-tantalite, 406
 stilbite, 428
 topaz, 406
 tourmaline, 396
 calcite, 85, 151, 428, 625
 calcite dissolution, 85
 calzirtite, 815
 caminite, 819
 canaphite, 1543
 Canada
 anorthosite, 1322
 columbite, 501
 edingtonite, 1510
 grossular, 779
 hornblende, 1297
 ixiolite, 501
 microlite, 501
 pegmatite, 376
 plagioclase feldspar (oligoclase), 712
 pyroxene, 1322
 tantalite, 501
 vesuvianite, 1483
 wodginite, 501
 caratiite, 227
 carnegieite, 694
 cassiterite, 501
 cathodoluminescence, 966
 cation and anion geothermometry, 1343
 cerite, 540
 charnockite, 1071
 chemical crystallography, 540
 cherepanovite, 1544
 Chile, iquiqueite, 830
 china clay, 1420
 China (PRC), laihunite-3M, 1455
 chlorite, 68, 78, 924
 chloritoid, 891
 chromite, 17
 chrysoberyl, 277, 557
 clairite, 229
 clinochlore, 68, 924
 clinopyroxene, 301, 674
 and orthopyroxene, 946, 1076, 1085
 clintonite, 1194
 color
 K-richterite, 1426
 plagioclase, 95
 tourmaline, 599

Colorado
 annite, 955
 dendritic quartz, 331
 germanite (?), 210
 renierite, 210
 columbite, 406, 501
 comparison of cation and anion, 1343
 Compressibility measurements
 beryl, 977
 euclase, 977
 cookeite, 428
 cordierite, 78, 746, 900, 924
 Cpx + An + Qtz, 686
 cristobalite, 105
 crossite, 1118
 cryptomelane, 1178
 Crystal growth, 331, 343
 cubic FeS, 1243
 diamond, 1258
 edingtonite, 1510
 mackinawite, 1243
 tochilinite, 1201
 troilite, 1243
 crystallization paths in multi-component systems, 1061
 Crystal structure
 albite, 727
 beryl, 547, 977
 beta-uranophane, 1489
 bobicrite, 1229
 calzirtite, 815
 CaMg₃(CO₃)₄, 163
 caminite, 819
 cerite, 540
 clintonite, 1194
 cordierite, 746
 diopside, 142
 dolomite, 795
 dumortierite, 786
 edingtonite, 1510
 euclase, 977
 (Fe,Mn)-sarcopsides, 136
 ferrierite, 989
 forsterite, 142
 garnet, 781, 1210
 goosecreekite, 1494
 grandite garnet, 1210
 hashemite, 1217
 hemmilite, 1234
 humite, 985
 huntite, 163
 K-richterite, 1426
 krausite, 202
 laihunite-3M, 1455
 lammerite, 206
 leucophoenicite, 985
 lisetite, 1378
 low albite, 727
 microlite, 569
 minasgeraisite, 603
 MnSiO₃ garnet, 781
 modeling, 142
 mullite, 1476
 orientite, 176
 plagioclase, 1399
 prehnite, 540
 quartz, 142, 540
 renierite, 210
 rhabdophane, 540
 richterite, K-, 1426
 sarcopsides, (Fe,Mn)-, 136
 sillimanite, 742
 staurolite (cobaltoan), 1466
 staurolite, 1142
 steenstrupine, 540
 switzerite, 1224
 TiO₂ polymorphs, 142
 ungemachite, 826
 uranophane, beta-, 1489
 vesuvianite, 1483
 vesuvianite, Cu-bearing, 1011
 wheatleyite, 1240
 Crystal synthesis
 clinochlore, 924
 cubic FeS, 1243
 fayalite-willemitite, 1502
 mackinawite, 1243
 metakahlerite, 1037
 Na-Al tourmaline, 971
 omphacite, 1434
 staurolite (Co and Fe), 1461
 tourmaline, Na-Al, 971
 troilite, 1243
 willemit-fayalite, 1502
 Cuba, orientite, 176
 cubic FeS, 1243
 cummingtonite, 1118, 1314, 1354
 cupnlite, 1278
 cuproiridsite, 1277
 cuprorhdsite, 1277
 Di-Ab melts, viscosity, 767
 Di-CaTs pyroxene solution, 686
 Di-CaTs system, 705
 Di-CaTs-CaEs pyroxene solutions, 686
 dacite, 1314
 davanite, 1473
 davisonite, discredited, 1515
 deerite, 1118
 dehydroxylation, 1420
 determinants in phase equilibria, 1061
 diamond, 1258, 1259
 diaspore, 1420, 1527
 dielectric constant, forsterite, 758
 dickite, 1420
 differential scanning calorimetry, 937
 Differential thermal analysis, thermogravimetric analysis
 ammonoleucite, 1022
 beta-uranophane, 1489
 heat capacities and entropies, 1366
 iquiqueite, 830
 kimuraite, 1028
 metakahlerite, 1037
 rouseite, 1034
 uranophane, beta-, 1489
 welinitite, 1522
 diopside, 142, 264, 1076
 discredited minerals 1282, 1515
 dissolution, 85

- dolomite, 151, 795
donpeacorite, 111
doyleite, 845
dumortierite, 786
- East Pacific Ocean
metaplutonic rocks, 51
caminite, 819
eclogite, 1372, 1434
edingtonite, 1510
ehrleite, 1544
elbaite, 406, 599
Mn-rich, 1214
Electrical properties
forsterite, 758
metakahlerite, 1037
Electron diffraction
bustamite, 1441
ferrierite, 989
jerrygibbsite, 985
johannsenite, 1441
leucophoenicite, 985
plagioclase, 1399
pyroxmangite, 1441
rhodonite, 1441
wollastonite, 1441
- Electron microscopy
adularia, 916
amphibole, 301, 1085
annite, 955
anthophyllite, 1198
apophyllite, 1247
augite, 1085
biotite, 955
bustamite, 1441
calcite, 625
caminite, 819
chlorite, Mg-, 78
clinopyroxene, 301
cordierite, 78
epidote, 625
ferrierite, 989
ferriphlogopite, 955
fluid inclusions, 396
garnet, 123, 301
ilmenite, 167
iquiqueite, 830
jerrygibbsite, 985
johannsenite, 1441
leucophoenicite, 985
lithiophilite, 356
manganite, 805
Mg-chlorite, 78
mica, 301
microlite, 569
minasgeraisite, 603
Mn₅O₈, 805
Na-Al tourmaline, 971
olivine, 734, 1085
orientite, 176
orthopyroxene, 1085
phlogopite, 955
plagioclase, 301, 895, 1049, 1085
pyrite, 1247
pyrolusite, 805
pyroxene, 301, 1085
pyroxmangite, 1441
- quartz, 895
renierite, 210
rhodonite, 1441
tochilinite, 1201
tourmaline, Na-Al, 971
wollastonite, 1441
zinkenite, 194
Electron paramagnetic resonance
spectroscopy
cristobalite, 105
iquiqueite, 830
plagioclase (sodic), 95
tridymite, 105
enstatite, 1076
epidote, 625
ertixiite, 1544
euclase, 277, 557, 977
Expansivity measurements
beryl, 547
Experimental petrology
actinolite, 1354
albite, 264
amphibole, 1354
A-type granite, 317
bertrandite, 277
beryl, 277
Ca-Na amphibole, 1354
chlorite, 68, 78, 924
chrysoberyl, 277
cordierite, 78, 924
cummingtonite, 1354
Di-Ab system, 767
Di-CaTs-CaEs pyroxene solutions, 686
diopside, 264
euclase, 277
feldspar, 325
gabbro, 301
granite, 301, 317
granite pegmatite, 608
LiAlSiO₄-NaAlSi₃O₈-SiO₂-Li₂B₄O₇-H₂O, 376
lithiophilite, 356
Mg-chlorite, 68, 78
(Mg,Mn)-pyroxenes, 111
(Mg,Mn)-pyroxenoids, 111
Ne-An joins, 694
Or-An joins, 694
pegmatite, 239, 325
phenakite, 277
pyroxenes, 111, 686
pyroxenoids, 111
quartz, 264, 325
quartz crystallization, 331
quartz-phlogopite-liquid, 1071
rhyolite, 1354
rhyolite porphyry, 608
spinel, 999
ternary feldspar, 343
tonalite, 301
exsolution
plagioclase, 1049
pyroxene, 946, 1322
Fe²⁺Fe³⁺(PO₃OH)₄(H₂O)₄, 222
Fe³⁺ spectra, 1415
(Fe,Mn)-sarcopsides, K_D, 136
- Fe-rich micas, 955
Fe titanate, 846
Fe-Ti oxides, 1314
fayalite-willemite, 1502
feldspar, 239, 325, 440, 608
See also individual feldspars
feldspar intergrowths, 343
ferriannite, 955
ferridiopside, 1544
ferrierite, 989
ferriphlogopite, 955
Finland, sillimanite, 1366
fluid inclusions, 376, 396
fluorannite, 955
fluorite, 85
fluorite dissolution, 85
forsterite, 142, 758, 966
France, lamproite, 17
franciscanite, 1522
fredrikssonite, 227
- gabbro, 301
gabbro pegmatite, oxygen in, 1085
gadolinite group, 603
garnet, 301, 674, 900, 1015
grandite, 123, 1210
grossular, 779
MnSiO₃, 781
garnet-biotite, 682, 900
gedrite, 900
georgechaite, 227
Geothermometry-geobarometry
adularia, 916
Al in orthopyroxene, 1076
alkali feldspar, 1100
amphibole solvus, 900
andalusite-sillimanite equilibrium, 1366
biotite-garnet, 682, 900
Cpx + An + Qtz, 686
calcite, 428
clinopyroxene, 301, 674
clinopyroxene-orthopyroxene, 946, 1076, 1085
comparison of cation and anion, 1343
dacite, 1314
eclogite, 1372
feldspar, 440, 608
fluid inclusions, 376
garnet, 301
garnet-biotite, 682, 900
granodiorite, 1314
hornblende, 1297
ironstone, 1118
lisetite, 1372
lithium aluminosilicate systems, 396
muscovite-plagioclase, 1109
orthoamphibole solvus, 900
orthopyroxene-clinopyroxene, 946, 1076, 1085
pelite, 895
plagioclase, 1100
plagioclase-muscovite, 1109
pyroxene, 1076, 1314, 1322
quartz, 440, 916

- Geothermometry-geobarometry--
continued
sillimanite-andalusite equilibrium, 1366
ternary feldspar, 1100
gerdtremmelite, 845
germanite, 210
Germany, sillimanite, 1366
gibbsite, 1420
gillespite, 1015
goldfieldite-like mineral, 847
goosecreekite, 1494
grandite garnet, 123, 1210
granite, 301, 317, 460, 608
See also Jahns Memorial Issue, 233-654
granitic pegmatite, 603, 608
See also Jahns Memorial Issue, 233-654
granitic melts, 239
granodiorite, 1314
granophyre, 460
granulites, 946
graphic granite, 325
grischunite, 227
Greece
co-existing amphiboles, 1118
ironstone, 1118
grossular, 779
gupeiite, 228
- H_2-H_2O , 264
 Hg_2I_2 mineral, 1548
halloysite, 1420
hashemite, 1217
hasteningite, Cl^- , 51
Hawaii
augite, 734
olivine, 734
heat capacities and entropies of Al_2SiO_5 polymorphs, 1366
hemimelite, 1234
high-grade metapelite, 1343
high-pressure equations of state, 977
hollandite, 1178
hornblende, 51, 608, 1297, 1314
humite, 985
hunsite, 163
hydrogen
in staurolite, 1135
in zircon and quartz, 1186
hydrotalcite-manasseite group members, 1548
hydrothermal systems, 51
hydrinous glasses, 772
hydrinous melts, 239
hypersthene, 900, 1314
- Iceland, olivine, 734
Idaho, hornblende, 1297
illite, 1420
ilmenite, 17, 1314
altered, 167
imitérite, 1277
inaglyite, 228
India
anthophyllite, 1198
- quartz (amethyst), 1186
Infrared spectroscopy
albite, 99
amethyst, 1186
ammonioleucite, 1022
analcime, 1022
aragonite, 151
calcite, 151
citrine, 1186
dolomite, 151
grossular, 779
hemimelite, 1234
iquiqueite, 830
K-richterite, 1426
kimuraite, 1028
leucite, 1022
lokkaita, 1028
metakahlerite, 1037
obsidian, 1527
plagioclase, 95
quartz, 1186
rhyolite, 1527
richterite, 1426
sanidine, 99
 SiO_2-H_2O glass, 772
topaz, 1186
zircon, 1186
intrusion mechanics, 644
ion microprobe, 1129
iquiqueite, 830
iridescence, 123
ironstone, 1118
irtyshite, 1545
Italy
clintonite, 1194
K-richterite, 1426
leucite, 937
ixiolite, 501
- Jahns Memorial Issue, 233-654
Japan
ammonioleucite, 1022
hemimelite, 1234
kimuraite, 1028
lokkaita, 1028
jerrygibbsite, 985
johannsenite, 1441
Jordan, hashemite, 1217
- $K_2O-Al_2O_3-SiO_2$, 694
 $KAISiO_4$, 937
 $KFeSiO_4$, 937
 $KFeSi_2O_6$, 937
K-feldspar, 367, 406, 440, 501
B-bearing, 428
K-richterite, 17, 1426
Kagomé net, 540
kanoite (synthetic), 111
kaolin, 1420
kaolinite, 1420
kassite, 1045
Kenya, albite (blue), 95
khatyrkite, 1278
kimberlite, 1258, 1259
kimuraite, 1028
Kinetics
albite, 895
calcite dissolution, 85
- cation and anion geothermometry, 1343
clinochlore, 68
cubic FeS, 1243
dissolution, 85
edingtonite, 1510
fluorite dissolution, 85
mackinawite, 1243
mineral-water reactions, 85
plagioclase exsolution, 1049
quartz crystallization, 331
troilite, 1243
kipushite, 228
kirkite, 1278
kolarite, 1545
komatiite, 1337
konderite, 229
krausite, 202
kyanite, 900
- Li-tosudite, 428
 $LiAlSiO_4-NaAlSi_3O_8-SiO_2-Li_2B_4O_7-H_2O$, 376
Li pegmatite, 239
laihunite- $3M$, 1455
lamellar intergrowth, 343
lammerite, 206, 847
lamproite, 17, 1473
lanthanite, 1028
laumontite, 428
lawsonite, 1527
leihite, discredited, 1515
lepidolite, 406, 440
lherzolite, 1076
leucite, 694, 937, 1022
leucophoenicite, 985
lisetite, 1372, 1378
lithiophilite, 356
lithium aluminosilicate systems, 396
lithium-hydrorhodonite, 1282
lokkaita, 1028
loncreekite, 229
luminescence, 1415
- (Mg,Mn)-pyroxenes, 111
(Mg,Mn)-pyroxenoids, 111
Mg-chlorite, 68, 78
Mg-rich metapelite, 900
 $MgO-Al_2O_3-SiO_2-H_2O$, 68
 $MgO-MnO-SiO_2$, 111
 Mn_5O_8 , 805
Mo-MoO₂ oxygen buffer, 1007
mackinawite, 1243
Madagascar, orthoclase, 1415
magma differentiation, 301
magmatic fluids, 460
magmatic vapor phase, 625
magnetite, 1314
Maine, bertrandite, 557
mammothite, 229, 1548
manganarsite, 1517
manganese arsenites, 1517
manganite, 805
mannardite, 230, 1178
margarite, 1129
Margules parameters, An-Or, 1100

Massachusetts, annite, 955
 melt-fluid partitioning, 460
 Melt structure
 albite, 264
 aplite, 460
 Di-Ab system, 767
 Di-CaTs system, 705
 diopside, 264
 (Fe,Mn)-sarcopsides, 136
 granite, 239, 460
 Ne-An, 694
 Or-An, 694
 phosphate-silicate, 356
 quartz, 264
 $\text{SiO}_2\text{-H}_2\text{O}$ glass, 772
 $\text{SiO}_2\text{-K}_2\text{O-Al}_2\text{O}_3$ system, 38
 silicate-phosphate, 356
 sarcopsides, 136
 Memorials
 A. F. Buddington, 1268
 Clifton Sherwin Corbett, 1274
 George T. Faust, 843
 George W. Brindley, 1058
 Heinz Meixner, 1051
 Paul Ramdohr, 839
 Paul Seel, 1275
 Peter Gay, 1055
 Richards A. Rowland, 1053
 Robert Mann Grogan, 841
 Strathmore R. B. Cooke, 1542
 metakahlerite, 1037
 metal complexing, 655
 metamict, 569
 metamorphism, 895, 1118, 1372
 metapelite, 900, 1343
 metaswitzerite, 1221
 methodology, ion microprobe, 1129
 Mexico
 iherzolite, 1076
 websterite, 1076
 wehrlite, 1076
 miaroles, 396, 608, 625
 mica, 239, 301
 See also individual micas
 Michigan, orientite, 176
 microcline, 1
 maximum, 406
 See also alkali feldspar
 microlite, 501, 569
 mid-ocean ridge, 51
 milarite, 603
 minasgeraisite, 603
 mineral-fluid partitioning, 460
 mineral-water reactions, 85
 Mineralogical Society of America Award, 1985, 852
 mixed volatiles ($\text{H}_2 + \text{H}_2\text{O}$), 264
 modeling, 142
 mongolite, 1279
 Montana
 lamproite, 17
 annite, 955
 davanite, 1473
 garnet megacryst, 674
 lamproite, 1473
 montmorillonite, 428

Mössbauer spectroscopy
 annite, 955
 biotite, 955
 clintonite, 1194
 fayalite-willemite, 1502
 ferriannite, 955
 ferriphlogopite, 955
 $\text{Fe}^{2+}\text{Fe}^{3+}_2(\text{PO}_3\text{OH})_4(\text{H}_2\text{O})_4$, 222
 fluorannite, 955
 garnet, 1015
 gillespite, 1015
 goodness-of-fit, 1266
 metakahlerite, 1037
 olivine, 127, 1015
 phlogopite, 955
 renierite, 210
 simulated spectra, 1261
 statistics, 1266
 staurolite, 1461
 willemite-fayalite, 1502
 Mozambique, albite (blue), 95
 mullite, 1476
 muscovite, 406, 440, 518
 and plagioclase, 1109
 myrmekite, 895
 Na-Al tourmaline, 971
 $\text{NaAlSi}_3\text{O}_8\text{-H}_2\text{O-H}_2$, 264
 $\text{NaAlSi}_3\text{O}_8\text{-KAlSi}_3\text{O}_8\text{-CaAl}_2\text{Si}_2\text{O}_8$, 1
 $\text{Na}_2\text{O-Al}_2\text{O}_3\text{-SiO}_2$, 694
 $\text{Na}_2\text{O-K}_2\text{O-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 406
 $\text{Na}_2\text{O-K}_2\text{O-CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 239
 Nb-Ta fractionation, 501
 Ne-An, 694
 Nepal, elbaite, 599
 nepheline, 694
 Neutron diffraction
 clintonite, 1194
 low albite, 727
 plagioclase, 1399
 sillimanite, 742
 Nevada
 ferrierite, 989
 grandite garnet, 123
 tonalite, 301
 New Hampshire, biotite, 955
 New Jersey
 humite, 985
 vesuvianite, 1011
 New Mexico
 albite porphyry, 625
 beryl, 547
 epidote, 625
 feldspar, 325
 K-feldspar, 367
 microlite, 569
 pegmatite, 239, 325, 569, 608
 quartz, 325
 rhyolite porphyry, 608
 sanidine aplite, 608
 sanidine granite, 608
 New minerals
 ammonioleucite, 1022
 arsenogoyazite, abs., 845
 bastnaesite, abs., 1277
 bayankhanite, abs., 1543
 braunite II, abs., 1543
 caminite, 819
 canaphite, abs., 1543
 caratiite, abs., 227
 cherepanovite, abs., 1544
 claireite, abs., 229
 cupalite, abs., 1278
 cuproiridsite, abs., 1277
 cuprorhodsite, abs., 1277
 doyleite, abs., 845
 ehrleite, abs., 1544
 ertixiite, abs., 1544
 ferridiopside, abs., 1544
 franciscanite, 1522
 fredrikssonite, abs., 227
 georgechaoite, abs., 227
 gerdtremmelite, abs., 845
 grischnunte, abs., 227
 gupeiite, abs., 228
 hemimelite, 1234
 imiterite, abs., 1277
 inaglyite, abs., 228
 iquiqueite, 830
 irtyshite, abs., 1545
 khaturkite, abs., 1278
 kimuraite, 1028
 kipushite, abs., 228
 kirkiite, abs., 1278
 kolarite, abs., 1545
 konderite, abs., 229
 lisetite, 1372
 lonecreekite, abs., 229
 mammothite, abs., 229
 manganarsite, 1517
 mannardite, abs., 230
 metaswitzerite, 1221
 minasgeraisite, 603
 mongolite, abs., 1279
 nickel-boussingaultite, abs., 1545
 örebroite, 1522
 oyelite, abs., 230
 philipsburgite, abs., 1279
 phyllotungstite, abs., 846
 radhakrishnaite, abs., 1545
 rouseite, 1034
 sabieite, abs., 229
 shigaite, abs., 1546
 sidwillite, abs., 1546
 sodium-pharmacosiderite, abs., 230
 srebrodolskite, abs., 1279
 switzerite, 1221
 tiptopite, abs., 230
 turneaureite, abs., 1280
 ungursaite, abs., 1546
 uranotungstite, abs., 1547
 usonite, abs., 1280
 villyaellenite, abs., 1547
 vinciennite, abs., 1280
 wheatleyite, 1240
 xifengite, abs., 228
 yecoraite, abs., 1547
 yuskporite, abs., 1547
 yushkinite, abs., 846
 nickel-boussingaultite, 1545
 niobian rutile, 501
 nitrate deposits, 830

- nomenclature, 955
 North Carolina
 chloritoid, 891
 dendritic quartz, 331
 feldspar, 325
 metaswitzerite, 1221
 pegmatite, 239, 325
 quartz, 325
 switzerite, 1221, 1224
 Norway
 lisetite, 1372, 1378
 thalenite, 188
 Nuclear magnetic resonance
 spectroscopy
 albite, 712
 borate, 1170
 Di-CaTs system, 705
 plagioclase feldspar, 712
 spinel, 999
 Or-An liquids, 694
 obsidian, 1527
 olivine, 127, 734, 1015, 1076, 1085
 olivine tholeiitic basalt, 301
 omphacite, 1434
 Optical properties
 adularia, 916
 albite, 1384, 1393
 albite porphyry, 625
 alkali feldspar, 1285, 1393
 ammonioleucite, 1022
 augite, 734
 caminitite, 819
 cubic FeS, 1243
 dumortierite, 786
 edingtonite, 1510
 elbaite, 1214
 franciscanite, 1522
 grandite garnet, 123, 1210
 grossular, 779
 hemimelite, 1234
 iquiqueite, 830
 K-richterite, 1426
 kimuraite, 1028
 lisetite, 1372
 manganarsite, 1517
 minasgeraisite, 603
 olivine, 734
 örebroite, 1522
 plagioclase, 343, 895, 1399
 pyroxene, 1322
 quartz, 589, 895
 renierite, 210
 richterite, 1426
 rouseite, 1034
 sanidine, 343, 1393
 smoky quartz, 589
 staurolite, 1466
 switzerite, 1221
 thalenite, 188
 tourmaline, 971
 Optical spectroscopy
 amethyst, 1186
 aragonite, 151
 calcite, 151
 citrine, 1186
 dolomite, 151
 elbaite, 599, 1214
 grossular, 779
 orthoclase, 1415
 plagioclase, sodic, 95
 quartz, 589, 1186
 renierite, 210
 smoky quartz, 589
 topaz, 1186
 order-disorder
 Al-Si, 999, 1494, 1510
 albite, 1384
 alkali feldspar, 869, 999, 1285, 1393
 columbite-tantalite, 501
 edingtonite, 1510
 feldspar, 1393
 goosecreekite, 1494
 hollandite minerals, 1178
 Mg-Al, 999
 spinels, 1160
 zeolite, 1494
 örebroite, 1522
 orientite, 176
 orthoamphibole solvus, 900
 orthoclase, 406, 1415
 orthogneiss, 632
 orthopyroxene
 Al in, 1076
 and clinopyroxene, 946, 1076, 1085
 osumilite group member, 846
 oxides, Cr and V in, 1314
 See also individual oxides
 oxygen buffer, Mo-MoO₂, 1007
 oxygen in gabbro pegmatite, 1085
 oyelite, 230
 Pb-Sb chlorosulfosalt, 1281
 Pb-Sb-Te sulfosalt, 1281
 palygorskite, 428
 paragonite, 1129
 patchy zoning, 343
 pegmatite, 239, 325, 376, 396, 440, 472, 569, 608
 gabbro, 1085
 See Jahns Memorial Issue, 233-654
 pelite, 895
 Pennsylvania
 tochilinite, 1201
 wheatleyite, 1240
 phase equilibria
 determinants in, 1061
 plagioclase, 1049
 sillimanite-andalusite, 1366
 phenakite, 277, 557
 philipsburgite, 1279
 phlogopite, 17
 phosphate-silicate, 356
 phyllotungstate, 846
 plagioclase, 301, 343, 712, 895, 1076, 1085, 1100, 1399
 exsolution, 1049
 sodic, color, 95
 See also individual
 plagioclases
 plagioclase-muscovite, 1109
 polarizability of forsterite, 758
 prehnite, 540
 priderite, 17, 1178
 Proceedings for 1985, 855
 pseudobrookite, 17
 pyrite, 1247
 pyrolusite, 805
 pyrophyllite, 1527
 pyroxene, 946, 1314, 1322
 CaTs and CaEs solutions, 686
 (Mg,Mn)-, 111
 pyroxenoids, (Mg,Mn)-, 111
 pyroxmangite, 1441
 Quantum mechanical calculations
 borate, 1170
 cryptomelane, 1178
 garnet, 1015
 gillespite, 1015
 hollandite, 1178
 mannardite, 1178
 olivine, 1015
 priderite, 1178
 quartz, 142, 239, 264, 325, 440, 540, 895, 916
 H in amethyst and citrine, 1186
 natural and synthetic, 589
 smoky, 589
 quartz crystallization, 331
 quartz monzonite, 460
 quartz-phlogopite-liquid, 1071
 quenching apparatus, 837
 Rb/Sr data, 632
 radhakrishnaite, 1545
 radiation effects, 569, 1186
 radiometric K-Ar dating, adularia, 916
 Raman spectroscopy
 anorthite, 694
 carnegieite, 694
 leucite, 694
 Ne-An liquids, 694
 nepheline, 694
 Or-An liquids, 694
 sanidine, 694
 SiO₂-H₂O glass, 772
 SiO₂-K₂O-Al₂O₃ glass, 38
 Rare-earth elements
 albite, 440
 amblygonite, 440
 apatite, 440
 aplite, 460
 beryl, 440
 granite, 460
 granophyre, 460
 K-feldspar, 440
 kimuraite, 1028
 lanthanite, 1028
 lepidolite, 440
 lokkaite, 1028
 microlite, 569
 minasgeraisite, 603
 muscovite, 440
 orthogneiss, 632
 pegmatite, 376, 396, 440

Rare-earth elements--continued
 schist, 518
 spodumene, 440
 thalenite, 188
 tonalite, 632
 renierite, 210
 Report of the Editor for 1985, 862
 Report of the Financial Advisory Committee for 1985, 860, 1549
 Report of the Secretary for 1985, 856
 Report of the Treasurer for 1985, 857
 Reviews. See Book reviews
 rhabdophane, 540
 rhodonite, 1441
 rhyolite, 608, 1354, 1527
 rhyolite porphyry, 608
 richterite, 17, 1426
 riebeckite, 1118
 Roebling Medal, 1985, 849
 "roedderite"-like phase, 17
 roubaultite, 1282
 rouseite, 1034
 rutile (niobian-tantalian), 501
 ryneronite, 428
 $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-K}_2\text{O}$, 38
 $\text{SiO}_2\text{-H}_2\text{O}$, 772
 $\text{SiO}_2\text{-H}_2\text{O}$ glass, 772
 $\text{SiO}_2\text{-H}_2\text{O-H}_2$, 264
 $\text{SiO}_2\text{-K}_2\text{O-Al}_2\text{O}_3$ glass, 38
 $\text{SiO}_2\text{-K}_2\text{O-Al}_2\text{O}_3$ system, 38
 sabieite, 229
 sabinaite, 231
 sahlinite, 231
 sample manipulator, 837
 sanidine, 99, 343, 694, 1393
 sarcopsides, (Fe,Mn), 136
 scanning Auger microscopy, 1247
 schist, 518
 schorl, 406
 Scotland, olivine tholeiitic basalt, 301
 shale, 1420
 shigaite, 1546
 sidwillite, 1546
 silicate inclusions in diamond, 1258
 silicate-phosphate, 356
 sillimanite, 742, 1366
 simulated spectra, 1261
 skarn, 1210
 smectite, 1420
 smoky quartz, 589
 sodium-pharmacosiderite, 230
 South Africa
 anthophyllite, 900
 cordierite, 900
 eclogite, 1434
 gedrite, 900
 hypersthene, 900
 kyanite, 900
 omphacite, 1434
 South Carolina, oligoclase (blue), 95

South Dakota
 granite, 301
 pegmatite, 440, 472, 518
 schist, 518
 tourmaline, 472
 South Korea
 grandite garnet, 1210
 skarn, 1210
 South-West Africa, beta-uranophane, 1489
 Spain
 lamproite, 17
 sillimanite, 1366
 spinels, 999, 1076, 1160
 spodumene, 396, 440, 1129
 srebrodolskite, 1279
 Sri Lanka, zircon, 1186
 Stable isotopes
 albite, 440
 amblygonite, 440
 apatite, 440
 beryl, 440
 gabbro pegmatite, 1085
 K-feldspar, 440
 lepidolite, 440
 metapelite, high-grade, 1343
 muscovite, 440
 obsidian, 1527
 oxygen in gabbro pegmatite, 1085
 pegmatite, 440
 quartz, 440
 rhyolite, 1527
 spodumene, 440
 statistics, 1266
 staurolite, 682
 Co and Fe, synthetic, 1461
 crystal chemistry, 1142
 cobaltoan, 1466
 H content of, 1135
 steenstrupine, 540
 stibio-bismuth-columbite-tantalite, 406
 stilbite, 428
 stringhamite, 231
 structural anisotropies, 644
 structure-energy calculations, 142, 1178
 submarine hydrothermal deposits, 819
 sulfosalt, 231
 supercritical fluids, 655
 Sweden
 manganarsite, 1517
 örebroite, 1522
 rouseite, 1034
 thalenite, 188
 trigonite, 1034
 welinitite, 1522
 switzerite, 1221, 1224
 Systems
 $\text{BeO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 277
 $\text{BeO-SiO}_2\text{-H}_2\text{O}$, 277
 $\text{CaAl}_2\text{Si}_2\text{O}_8\text{-NaAlSi}_3\text{O}_8$ -
 KAlSi_3O_8 , 343
 $\text{CaMgSi}_2\text{O}_6\text{-H}_2\text{O-H}_2$, 264
 $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2$, 694
 $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$, 686
 Di-Ab, 767
 Di-CaTs, 705
 $\text{K}_2\text{O-Al}_2\text{O}_3\text{-SiO}_2$, 694
 $\text{LiAlSi}_3\text{O}_8\text{-NaAlSi}_3\text{O}_8\text{-SiO}_2$ -
 $\text{Li}_2\text{B}_4\text{O}_7\text{-H}_2\text{O}$, 376
 $\text{MgO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 68
 MgO-MnO-SiO_2 , 111
 $\text{NaAlSi}_3\text{O}_8\text{-H}_2\text{O-H}_2$, 264
 $\text{NaAlSi}_3\text{O}_8\text{-KAlSi}_3\text{O}_8$ -
 $\text{CaAl}_2\text{Si}_2\text{O}_8$, 1
 $\text{Na}_2\text{O-Al}_2\text{O}_3\text{-SiO}_2$, 694
 $\text{Na}_2\text{O-K}_2\text{O-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 406
 $\text{Na}_2\text{O-K}_2\text{O-CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 239
 $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-K}_2\text{O}$, 38
 $\text{SiO}_2\text{-H}_2\text{O}$, 772
 $\text{SiO}_2\text{-H}_2\text{O-H}_2$, 264
 TiO_2 polymorphs, 142
 tantalian rutile, 501
 tantalite, 406, 501
 taylorite, discredited, 1282
 ternary feldspar, 1, 343, 1100
 ternary-feldspar An-Or Margules parameters, 1100
 Texas, staurolite, 682
 thalenite, 188
 thermal expansion, dolomite, 795
 Thermodynamic data
 Al_2SiO_5 polymorphs, 1366
 $\underline{\text{a-X}}$ relations in plagioclase-muscovite assemblages, 1109
 alkali feldspar, 1
 anhydrous melts, 239
 behoite, 277
 bertrandite, 277, 557
 beryl, 277, 557
 chlorite, Mg, 68
 chrysoberyl, 277, 557
 clinochlore, 924
 Di-CaTs-CaEs pyroxene solutions, 686
 differential scanning calorimetry, 937
 entropies of Al_2SiO_5 polymorphs, 1366
 euclase, 277, 557
 fayalite-willemite, 1502
 feldspar, 239
 $(\text{Fe,Mn})\text{-sarcopsides}$, K_D , 136
 heat capacities of Al_2SiO_5 polymorphs, 1366
 hydrous melts, 239
 KAlSi_3O_8 , 937
 KFeSi_3O_4 , 937
 KFeSi_2O_6 , 937
 leucite, 937
 MnSiO_3 garnet, 781
 MoO_2 , 1007
 Margules parameters, 1100
 muscovite-plagioclase, 1109
 phenakite, 277, 557
 plagioclase-muscovite, 1109
 pyroxene, Di-CaTs-CaEs solutions, 686
 quartz, 239

Thermodynamic data--continued
 sarcopsides, K_D , 136
 spinels, 999, 1160
 supercritical fluids, 655
 ternary-feldspar An-Or Mar-gules parameters, 1100
 willemite-fayalite, 1502
 tiptopite, 230
 tochilinite, 1201
 todorokite, 428
 tonalite, 301, 632
 topaz, 406, 1186
 tourmaline, 396, 472, 518
 Mn-rich, 1214
 Na-Al, 971
 See also individual tour-malines
 Trace elements
 amphibole, 51, 1314
 aplite, 460
 bavenite, 428
 beidellite, 428
 biotite, 518
 calcite, 428
 caminite, 819
 forsterite, 966
 granite, 460
 granophyre, 460
 hydrogen in zircon and quartz, 1186
 K-feldspar, 367, 428, 428, 501
 laumontite, 428
 microlite, 569
 minasgeraisite, 603
 montmorillonite, 428
 muscovite, 518
 orthogneiss, 632
 oxides, 1314
 palygorskite, 428
 pyroxene, 1314
 quartz, 589, 1186
 rynersonite, 428
 schist, 518
 smoky quartz, 589
 stilbite, 428
 thalenite, 188
 todorokite, 428
 tonalite, 632
 tourmaline, 472
 zircon, 1186
 transformation mechanisms, 1441
 tridymite, 105
 trigonite, 1034
 troilite, 1243
 Turkey
 myrmekite, 895
 pelite, 895
 turneaureite, 1280
 U silicate, 1281
 U-Ti silicate, 1281
 uklonskovite, 1282
 ultramafic xenoliths, 1076
 Ultraviolet spectroscopy
 elbaite, 599
 smoky quartz, 589
 ungemachite, 826

ungursaite, 1546
 Unit-cell data
 albite, 406, 727, 1384
 alkali feldspar, 1, 608, 869, 1285
 ammonioleucite, 1022
 andalusite, 277
 bertrandite, 277, 557
 beryl, 277, 547, 557
 beta-uranophane, 1489
 $\text{CaMg}_3(\text{CO}_3)_4$, 163
 caminite, 819
 cassiterite, 501
 chlorite, 924
 chrysoberyl, 277, 557
 clintonite, 1194
 columbite, 501
 cordierite, 746
 Di-CaTs pyroxene solution, 686
 davyanite, 1473
 dolomite, 795
 dumortierite, 786
 elbaite, 406, 1214
 euclase, 277, 557
 $\text{Fe}^{2+}\text{Fe}^{3+}_7(\text{PO}_3\text{OH})_4(\text{H}_2\text{O})_4$, 222
 (Fe,Mn)-sarcopsides, 136
 fayalite-willemite, 1502
 ferrierite, 989
 franciscanite, 1522
 garnet, 781
 goosecreekite, 1494
 grandite garnet, 123, 1210
 hashemite, 1217
 hemimelite, 1234
 huntite, 163
 iquiqueite, 830
 ixiolite, 501
 K-richterite, 1426
 kassite, 1045
 kimuraite, 1028
 laihunite-3M, 1455
 lammerite, 206
 lisetite, 1372, 1378
 lokkaite, 1028
 low albite, 727
 manganarsite, 1517
 maximum microcline, 406
 metakahlerite, 1037
 (Mg,Mn)-pyroxenes, 111
 (Mg,Mn)-pyroxenoids, 111
 microlite, 501, 569
 minasgeraisite, 603
 MnSiO_3 garnet, 781
 Na-Al tourmaline, 971
 niobian rutile, 501
 omphacite, 1434
 örebroite, 1522
 orthoclase, 406
 phenakite, 277, 557
 plagioclase, 1399
 pyroxenes, 111, 686
 pyroxenoids, 111
 renierite, 210
 richterite, K-, 1426
 rouseite, 1034
 rutile (niobian-tantalian), 501
 sanidine (high), 1393
 sarcopsides, 136
 schorl, 406
 sillimanite, 742
 spinel, 999
 staurolite, 1142, 1461, 1466
 switzerite, 1221, 1224
 tantalian rutile, 501
 tantalite, 501
 ternary feldspar, 1
 thalenite, 188
 topaz, 406
 tourmaline, 971
 ungemachite, 826
 uranophane, 1489
 vesuvianite, 1011, 1483
 wheatleyite, 1240
 willemite-fayalite, 1502
 wodginite, 501
 zinkenite, 194
 Unnamed minerals
 $(\text{Ag},\text{Cu})_4\text{TeS}$, 1281
 AgInS_2 , 846
 Bi-Cu-Pb-Se-Te sulfides, 847
 borate, 231
 $\text{Cu}(\text{Ir},\text{Pt})_2\text{S}_4$, 231
 Fe titanate, 846
 goldfieldite-like mineral, 847
 Hg_2I_2 mineral, 1548
 hydrotalcite-manasseite group members, 1548
 KFeSi_2O_6 , 937
 manganese arsenites, 1517
 osumilite group member, 846
 Pb-Sb chlorosulfosalt, 1281
 Pb-Sb-Te sulfosalt, 1281
 "roedderite"-like mineral, 17
 sulfosalt, 231
 U silicate, 1281
 U-Ti silicate, 1281
 ZnAl_2 , 1278
 Zn_2Al , 1278
 $(\text{Zn},\text{Fe})_2\text{Cu}_3\text{In}_3\text{S}_8$, 846
 uranophane, beta-, 1489
 uranotungstite, 1547
 usonite, 1280
 Utah
 lamproite, 17
 aplite, 460
 davisonite, 1515
 granite, 460
 granophyre, 460
 krausite, 202
 lehiite, 1515
 quartz monzonite, 460
 topaz, 1186
 vesuvianite, 1011, 1483
 Cu-bearing, 1011
 villyaelenite, 1547
 vinciennite, 1280
 Virginia
 albite, 712
 goosecreekite, 1494
 low albite, 727
 viscosity, Di-Ab melts, 767

- Washington, ferrierite, 989
 websterite, 1076
 wehrlite, 1076
 welinitite, 1522
 wheatleyite, 1240
 willemite-fayalite, 1502
 winchite, 1118, 1548
 wodginite, 501
 wollastonite, 1441
 Wyoming, leucite, 937
- X-ray diffraction data
 adularia, 916
 albite, 406
 alkali feldspar, 1, 869
 ammonioleucite, 1022
 $\text{CaMg}_3(\text{CO}_3)_4$, 163
 caminite, 819
 chlorite, 924
 dolomite, 795
 donpeacorite, 111
 elbaite, 406, 1214
 $\text{Fe}^{2+}\text{Fe}^{3+}_2(\text{PO}_3\text{OH})_4(\text{H}_2\text{O})_4$, 222
 (Fe-Mn)-sarcopsides, 136
 franciscanite, 1522
 hemimelite, 1234
 huntite, 163
 ilmenite (altered), 167
- iquiqueite, 830
 K-feldspar, 406
 K-richterite, 1426
 kassite, 1045
 kimuraite, 1028
 lepidolite, 406
 lisetite, 1372, 1378
 lokkaite, 1028
 manganarsite, 1517
 manganese arsenites, 1517
 microlite, 569
 minasgeraisite, 603
 Na-Al tourmaline, 971
 örebroite, 1522
 renierite, 210
 richterite, 1426
 rouseite, 1034
 sarcopsides, 136
 schorl, 406
 switzerite, 1221
 ternary feldspar, 1
 topaz, 406
 tourmaline, 971
 wheatleyite, 1240
- X-ray fluorescence data
 borate, 1170
 KAlSiO_4 , 937
 KFeSiO_4 , 937
- K FeSi_2O_6 , 937
 leucite, 937
 xifengite, 228
- yecoraite, 1547
 yttrialite,
 Yugoslavia, microcline, 1
 yusksporite, 1547
 yushkinite, 846
- Zn_2Al , 1278
 ZnAl_2 , 1278
 $(\text{Zn}, \text{Fe})_2\text{Cu}_3\text{In}_3\text{S}_8$, 846
 zaherite, 231
 Zambia
 elbaite, 599, 1214
 staurolite (cobaltoan), 1466
 zeolite, 608, 989, 1494
 zinkenite, 194
 Zimbabwe
 anthophyllite, 900
 cordierite, 900
 gedrite, 900
 high-grade metapelites, 1343
 hypersthene, 900
 kyanite, 900
 zircon, H in, 1186
 zoning in pegmatite, 440