

# INDEX, VOLUME 66, 1981\*

<i>Ab initio</i> MO calculations	819,1237	Analyses, cont.	
Achondrite, oriented olivine	1233	eclogite	459
ACKERMANN, DIETRICH see		epidote, Cr	974
FRANZ, GERHARD	872	eugsterite	635
Acrofanite, new mineral (abstr)	1100	fayalite	95
Adularia, analyses	484	Fe dolomite	512
Aegirine, analyses	485	forsterite	498
Afghanite, structure	777	friedelite	1061
Ajoite, new data	201	garnet	463,711,743,1027
AKIZUKI, MIZUHIKO: Investigation		glasses, Na	547
of phase transition of natural		graphitic sulfidic schists	916
ZnS minerals by high resolution		greenalite	523
electron microscopy	1006	halloysite	1004
: Origin of optical		heulandite	480
variation in analcime	403	hypersthene	75,337
Albite		ilmenite	95,728,978
analyses	484	iron formation	89,511
heat capacity	1202	jonsomervilleite	834
Aldermanite, new mineral (abstr)	1099	kanoite	128
Alforsite, new mineral	1050	kaolinite rock	1004
Alkali diffusion, EPMA	547	karlite	875
Alkali feldspars, thermodynamic		kornerrupine	743
functions	1202	kutnahorite	280
Atkremite, Utah	741	kyanite	706
ALLARD, L.F. see GORDON, W.A.	127	lepidolite	1224
Almandine, analyses	57	leucite	669
Almosbite, new mineral (abstr)	878	lherzolite	448
Alpine peridotite, Alps	443	Ludwigite	875
Alumopharmacosiderite, new		magnetite	95,337,729
mineral (abstr)	1099	margarite	215
Amesite-2H <sub>2</sub> , structure and		meta-autunite	1070
ordering	185	metakaolin nodule	1004
AMOURIC, MARC see MELLINI,		microcline	75
MARCELLO	1073	minnesotaite	517
Amphibole, analyses	94	muscovite	55,75,215,710,913
Amphiboles, India	625	Na amphibole	464
Analbite, heat capacity	1202	natroapophyllite	414
Analcime, optical variation	403	olivine	337,526,665,450,978
Andalusite, analyses	706	orthopyroxene	75,337,451,526
Analyses, chemical			729,967
adularia	484	parascholzite	848
aegirine	485	perovskite	670
ajosite	203	phlogopite	347,668,1158
albite	484	plagioclase	75
alforsite	1052	pleonaste	337
almandine	57,96	potassic lavas	671
amesite-2H <sub>2</sub>	186	prehnite	913
amphibole	94,627	pyrophyllite-1 <sub>2c</sub>	351
andalusite	706	pyroxenes	31,92
antigorite	802	pyroxmangite	281
apatite	347,670	riebeckite	517
axinite	429	rhodonite	281
bannisterite	1065	sapphirine, Be	1029
bartonite	371	schallerite	1056
bayldonite	149	serpentine	347
biotite	56,75,96,359,710,913	siderite	515
biotite, Si-rich	587	sillimanite	706
brucite	802	spinel	670,729,743
Ca amphibole	465	staurolite	59,712
calcite	504,512	sterlinghillite	183
caryophilite	1060	stilpnomelane	516
chlorite	60,75,711,913	surinamite	1026
chloritoid	711	taaffeite	1029
chromite, Mn	1015	talc	498,501,802
clinopyroxene	128,337,452,666,728	theophrastite	1021
cordierite	60,75,711,1030	titanomagnetite	754
corundum	743	tivanite	867
Cr diopside	347	tremolite	498,501
Cr spinel	347	wairakite	481
dachiardite	481	winchite	627
diopside	498	wonesite	102
dolomite	347	yugawaralite	481
		Analyses, cont.	
		zoisite, Cr	974
		ANDERSON, C.S. and S.W. BAILEY:	
		A new cation ordering pattern	
		in amesite-2H <sub>2</sub>	185
		ANDERSON, J.B. see SHOEMAKER,	
		G.L.	169
		Andesite, experimental genesis	938
		Anilite, Cu-S bond	813
		Anorthite, phase equilibria	1183
		Antarctica	
		meteoritic olivine	1233
		surinamite, etc.	1022
		Antigorite, dissolution	801
		Apatite	
		analyses	670
		inclusion in Cr diopside	347
		Apuanite, microstructure	1073
		Aragonite, oolite	789
		ARAKI, TAKAHARU and P.B. MOORE:	
		Dixenite, Cu <sup>1+</sup> Mn <sup>2+</sup> Fe <sup>3+</sup> (OH) <sub>6</sub> <sup>-</sup>	
		(As <sup>3+</sup> O <sub>3</sub> ) <sub>5</sub> (Si <sup>4+</sup> O <sub>4</sub> ) <sub>2</sub> (As <sup>5+</sup> O <sub>4</sub> ):	
		metallic (As <sup>3+</sup> Cu <sup>1+</sup> ) clusters	
		in an oxide matrix	1263
		and _____; Fillowite,	
		Na <sub>2</sub> Ca(Mn,Fe) <sub>2</sub> <sup>+</sup> (PO <sub>4</sub> ) <sub>6</sub> : its	
		crystal structure	827
		, see MOORE, P.B.	1034
		ARIMA, M. see KUEHNER, S.M.	663
		Arizona, ajoite	201
		Arrojadite, structure	1034
		Arsenoauchecornite, new	
		mineral (abstr)	436
		Asbecasite, bond angle	819
		Ashanite, new mineral (abstr)	217
		Augite, dispersion	987
		Australia	
		bannisterite	1063
		halloysite from kaolinite	997
		iron formation	87,507
		meta-autunite	1068
		pyrrhotite	1254
		tivanite	866
		Austria, karlite	872
		Axinite, structure	428
		β-Mg <sub>2</sub> SiO <sub>4</sub> , structure	568
		Back-scattered electron	
		detector	362
		BAILEY, S.W. see ANDERSON, C.S.	185
		see WEISS, ZDENEK	561
		BAKER, D.R. see SEKINE,	
		TOSHIMORI	938
		BALTATZIS, EMM. and C. KATAGAS:	
		Margarite pseudomorphs	
		after kyanite in Glen Esk,	
		Scotland	213
		Balyakinite, new mineral	
		(abstr)	436
		BAMBAUER, H. -U. see KROLL,	
		HERBERT	763
		Bannisterite, empirical	
		formulae	1063
		BARGAR, K.E. and M.H. BEESON:	
		Hydrothermal alteration in	
		research drill hole Y-2, Low-	
		er Geyser Basin, Yellowstone	
		National Park, Wyoming	473
		BARRONNET, ALAIN see MELLINI,	
		MARCELLO	1068

- Bartonite  
 new mineral 369  
 structure 376
- Basalt, olivine in vugs 980
- BAUER, J.F. and SCLAR, C.B.:  
 The "10A phase" in the  
 system MgO-SiO<sub>2</sub>-H<sub>2</sub>O 576
- Bayldonite, formula and structure 148
- BEESON, M.H. see BARGAR, K.E. 473
- BENEKE, KLAUS and GERHARD LAGALY:  
 Krautite, MnHAsO<sub>4</sub>·H<sub>2</sub>O - an  
 intracrystalline reactive  
 mineral 432
- BENNETT, C.E.G. and J. GRAHAM:  
 New observations on natural  
 pyrrhotites: magnetic transi-  
 tion in hexagonal pyrrhotite 1254
- BENNETT, J.M. see SMITH, J.V. 777
- Bentorite, new mineral (abstr) 637
- BERG, J.H. and S.A. MORSE:  
 Dispersion method for olivine,  
 orthopyroxene and augite 985
- Bergenite, new data (abstr) 1102
- BERKLEY, J.L. AND KEIL, KLAUS:  
 Olivine orientation in the  
 ALHA77005 achondrite 1233
- Beryl, Malagasy 885
- Beryllium silicates, MO  
 calculations 819
- BESANCON, J.R.: Rate of cation  
 disordering in ortho-  
 pyroxenes 965
- Bessmertnovite, new mineral  
 (abstr) 878
- Biotite  
 analyses 56,75,710,913  
 radiohaloes 358  
 Si-rich, structure 586
- BISH, D.L.: Cation ordering in  
 synthetic and natural Ni-  
 Mg olivine 770
- \_\_\_\_\_ and R.F. GIESE, JR.:  
 Interlayer bonding of Iib  
 chlorite 1216
- Bismutohauchecornite, new  
 mineral (abstr) 436
- Blueschist, Alps 443
- BOETTCHER, A.L. see BOHLEN,  
 S.R. 951  
 \_\_\_\_\_ see FARMER, G.L. 1154
- BOHLEN, S.R. and A.L. BOETTCHER:  
 Experimental investigations  
 and geological applications  
 of orthopyroxene geo-  
 barometry 951
- Boltwoodite, structure 612
- Book reviews 221,440,880,1104
- Bond calculations 819,1237
- Bond distances, oxyanions of  
 Be, B, C, N 601
- Bornite, Cu-S bond 813
- Brabantite, new mineral (abstr) 878
- Brazil, pyrophyllite - 1zc 350
- BROWN, P.E. see GORDON, W.A. 127
- Brucite, dissolution 801
- BRUSECK, P.R. see VEHLIN, D.R. 1107
- Buserite, intercalation by  
 dodecylammonium chloride,  
 synthesis 424
- BUTT, C.R.M. and J. GRAHAM:  
 Sodian potassian hydroxian  
 meta-autunite: first  
 natural occurrence of an  
 intermediate member of a  
 predicted solid solution  
 series 1068
- Ca amphibole, analyses 465
- Ca oxalate trihydrate 859
- CABRI, L.J.: New mineral names  
 637,1099,1274
- Calcarious metamorphics,  
 Scotland 491
- Calcite  
 analyses 504,512  
 decarbonation equilibria 1135  
 oolite 789
- California  
 alforsite 1050  
 bartonite 369  
 deposits on olivine  
 santaclarite 154
- Calderite, new data (abstr) 1290
- CAMERON, MARYELLEN and J.J.  
 PAPIKE: Structural and  
 chemical variations in  
 pyroxenes 1
- Cancrinite, structure 777
- Carbonates, North Carolina 278
- CARPENTER, M.A.: A "conditional  
 spinodal" within the peris-  
 terite miscibility gap of  
 plagioclase feldspars 553
- Carpholite, Mg, structure 1080
- Carrollite, MO calculations 1250
- Caryopilite, crystal chemistry 1054
- Cathophorite, new mineral  
 (abstr) 878
- Cation ordering, plagioclase 553
- CATTI, MICHELE, GIOVANNI FERRARIS  
 and GABRIELLA IVALDI: The  
 crystal structure of picro-  
 pharmacolite, Ca<sub>2</sub>Mg(HAsO<sub>4</sub>)<sub>2</sub>  
 (AsO<sub>4</sub>)<sub>2</sub>·11H<sub>2</sub>O 385
- Chabazite, structure 777
- CHAKOUMAKOS, B.C., R.J. HILL and  
 G.V. GIBBS: A molecular  
 orbital study of rings in  
 silicates and siloxanes 1237
- Chalococite, low, structure 808
- Chalcopyrite, Cu-S bond 813
- CHAO, G.Y.: Ajoite, new data 201
- \_\_\_\_\_: New mineral names 217,878
- Charnockite, origin 1164
- Chert nodules, metamorphic in  
 dolostone 491
- Chlorite  
 analyses 60,75,913  
 Iib, interlayer bonding 1216
- Chloritoid, analyses 711
- Choloalite, new mineral (abstr) 1099
- CHRIST, C.L., memorial of 649
- Chromian diopside, kimberlite 347
- Chromian spinel, inclusion in  
 Cr diopside 347
- Chromite, zoned Mn-rich 1013
- Chukhrovite-(Ce), new data  
 (abstr) 879
- Chukhrovite, structure,  
 synthesis 392
- CLARK, J.R. see CZAMANSKE, G.K. 369
- \_\_\_\_\_ see GARRELS, R.M. 649
- CLARK, R.S., JR., review of *The  
 Sciences of Minerals in the  
 Age of Jefferson* (Greene  
 and Burke) 441
- Classification, of pyroxenes 2,40
- CLEMENCY, C.V. see LIN, F.C. 801
- Clinochalcomenite, new  
 mineral (abstr) 217
- Clinopyroxene  
 analyses 452,666,728
- Clinopyroxene, cont.  
 analyses, synthetic 227  
 exsolution 127  
 magma genesis 938  
 REE partitioning 242
- Coesite, high-pressure  
 structure 324
- Colorado, peridotite nodule 334
- Colquiriite, new mineral  
 (abstr) 879,1099
- Combustion metamorphism 997
- Connecticut  
 dickinsonite 1034  
 fillowite 827
- Copper phosphate hydrate  
 structure 169  
 polymorphism 176
- Copper-sulfur bond lengths 807
- Cordierite, analyses 60,75,711,1030
- Corundum, analyses 743
- Covellite, Cu-S bond 813
- Crete, Mg carpholite 1080
- Cristobalite, from combustion 997
- Crystal growth, diopside 223
- Crystal structure  
 amesite-2H<sub>2</sub> 185  
 arrojadite 1034  
 axinite 428  
 β-Mg<sub>2</sub>SiO<sub>4</sub> 561  
 baronite 376  
 biotite, Si-rich 586  
 boltwoodite 612  
 Ca oxalate trihydrate 859  
 carpholite 1080  
 chalcocite, low 808  
 chukhrovite, synthetic 392  
 clinopyroxene 128  
 coesite, high pressure 324  
 copper phosphate hydrate,  
 QPM 169  
 dickinsonite 1034  
 diopside, high pressure 315  
 dixenite 1263  
 djurleite 808  
 fillowite 827  
 jagoite 852  
 kanoite 128  
 heulandite-Ca/NH<sub>4</sub> 309  
 kanonaite 561  
 lepidolite 1221  
 liebenbergite (Ni-Mg  
 olivine) 770  
 natroapophyllite 416  
 nukundamite, synthetic 398  
 picropharmacolite 385  
 pseudomalachite polymorphs 176  
 pyrophyllite-1zc 350  
 pyroxenes 1  
 santaclarite 154  
 soddyite 621  
 tivanite 868  
 uranophane 612  
 weeksite 620  
 Crystals, largest 885
- Cyanophyllite, new mineral  
 (abstr) 1274
- CZAMANSKE, G.K., R.C. ERD, B.F.  
 LEONARD and J.L. CLARK:  
 Bartonite, a new potassium  
 iron sulfide mineral 369
- Czechoslovakia  
 lepidolite 1221  
 sphalerite 1006

- Decarbonation equilibria 1135  
 DEGANELLO, SERGIO, A.R. KAMPF, and P.B. MOORE: The crystal structure of calcium oxalate trihydrate:  $\text{Ca}(\text{H}_2\text{O})_3(\text{C}_2\text{O}_4)$  859  
 DE LA VEGA, S.E. see SWINNEA, J.S. 428  
 DEMAYO, B. see SEAL, M. 358  
 DE PORTILLA, V.S., M.P. QUEVEDO and V.I. STEPANOV: The structure of bayldonite: chemical analysis differential thermal analysis, and IR spectroscopy 148  
 Desulfidation 908  
 DEVERY, D.M. and A.J. EHLMANN: Morphological changes in a series of synthetic Mg-calcites 592  
 Devolatilization equilibria 1135  
 Diamond, fluid inclusions 746  
 Dickinsonite, structure 1034  
 Differential thermal analysis, thermogravimetric analysis  
 ajoite 203  
 bayldonite 149  
 eugsterite 635  
 halloysite 1002  
 kaolinite rock 1002  
 karlite 867  
 metakaolin nodule 1002  
 natroapophyllite 421  
 phyllosilicate, 10Å 578  
 santaclarite 164  
 Diffusive transformation 763  
 Diopside  
 analyses 498  
 composition melts 223  
 high pressure structure 315  
 Disorder rate, orthopyroxene 965  
 Dispersion method 985  
 Displacive transformation 763  
 Dissolution, kinetics 801  
 Dixenite, crystal structure 1263  
 Djurleite, structure 808  
 Dolomite  
 decarbonation equilibria 1135  
 inclusion in Cr diopside 347  
 oolite 789  
 Dorfmanite, new mineral (abstr) 217  
 DOWNS, J.W. and G.V. GIBBS: The role of the  $\text{BeOSi}$  bond in the structures of beryllosilicate minerals 819  
 DUNN, P.J., review of *A Manual of New Mineral Names, 1892-1978* (Embrey and Fuller) 440  
 : Sterlinghillite, a new hydrated manganese arsenate mineral from Ogensburg, New Jersey 182  
 , P.B. LEAVENS, J.A. NORBERG and R.A. RAMIK: Bannisterite: new chemical data and empirical formulae 1963  
 , D.R. PEACOR, J.A. NELEN and J.A. NORBERG: Crystal-chemical data for schallerite, caryopilite and friedelite from Franklin and Sterling Hill, New Jersey 1054  
 see STURMAN, B.D. 843  
 Eclogite, quartz 938  
 ECONOMOY, MARIA see MARCOPOULOS, THEODOR 1020  
 see PARASKEVOPOULOS, G.M. 1013  
 EDGAR, A.D. see KUEHNER, S.M. 663  
 EHLMANN, A.J. see DEVERY, D.M. 592  
 Eifelite, new mineral (abstr) 218  
 EITEL, W.H., memorial of 647  
 Ekaterinite, new mineral (abstr) 437  
 Electron densities, oxyanions of Be, B, C, N 601  
 Electron microprobe, Na in glasses 547  
 Electron microscopy  
 altered glass 479  
 amphibole 1107  
 apuanite 1073  
 augite 1107  
 chlorite 1107  
 clinojimthompsonite 1107  
 clinopyroxene 132,1107  
 eugsterite 634  
 halloysite 1003  
 ilmenite in olivine 976  
 kanoite 132  
 Mg calcite 592  
 meta-autunite 1069  
 metakaolin 1003  
 montmorillonite 479  
 mullite 142  
 obsidian 478  
 olivine, deposits on oolite 789  
 orthopyroxene 1107  
 pyribole 1107  
 pyroxenes 32  
 schafarzikite 1073  
 sphalerite 1006  
 spodumene 1107  
 stirlinghillite 183  
 talc 1107  
 tremolite 1107  
 uralite 1107  
 versiliaite 1073  
 wurtzite 1006  
 zeolites 479  
 Zn staurolite 933  
 Enstatite, melting equilibria 1164  
 Enumeration, of zeoliths 777  
 Epidote, Cr in amphibolite 974  
 ERD, R.C. see CZAMANSKE, G.K. 369  
 Erionite, structure 777  
 ERNST, W.G.: Petrogenesis of eclogites and peridotites from the Western and Ligurian Alps 443  
 : Presentation of the Mineralogical Society of America Award for 1980 to Susan Werner Kieffer 643  
 ESSENE, E.J., review of *Optical Mineralogy: The Nonopaque Minerals* (Phillips and Griffen) 880  
 see GORDON, W.A. 127  
 see NEWBERRY, N.G. 1050  
 see WINTER, G.A. 278  
 Eugsterite, new mineral 632  
 EVANS, H.T.: Cooper coordination in low chalcocite and djurleite and other copper-rich sulfides 807  
 and J.R. CLARK: The crystal structure of bartonite, a potassium iron sulfide, and its relationship to pentlandite and djerfisherite 376  
 Exsolution, plagioclase 553  
 FARMER, G.L. and A.L. BOETTCHER: Petrologic and crystal-chemical significance of some deep-seated phlogopites 1154  
 FARROW, C.M. see LEAKE, B.E. 625  
 Faujasite 777  
 Fayalite  
 analyses 95  
 geobarometry 951  
 Fe dolomite, analyses 512  
 FERRARIS, GIOVANNI see CATTI, MICHELE 385  
 Ferrarisite, new mineral (abstr) 637  
 Ferrosilite  
 geobarometry 951  
 phase equilibria 1175  
 thermodynamic data 951  
 FERRY, J.M.: Petrology of graphitic sulfide-rich schists from south-central Maine: an example of desulfidation during prograde regional metamorphism 908  
 Fillowite, structure 827  
 FINGER, L.W. see HAZEN, R.M. 586  
 see OHASHI, YOSHIKAZU 154  
 FLEISCHER, MICHAEL: New mineral names 214,436,637,878,1099,1274  
 FLÖRKE, O.W., H.G. MIELKE, JURGEN WICHERT and HOLGER KULKE: Quartz with rhombohedral cleavage from Madagascar 596  
 Fluid-rock ratios 908  
 FOLAND, K.A. and M.E. WAGNER: A simple method of preparing glasses from rock powders 1086  
 Forsterite  
 analyses 498  
 analyses, synthetic 227  
 FOSTER, C.T., JR.: A thermodynamic model of mineral segregations in the lower sillimanite zone near Rangeley, Maine 260  
 Framework silicates, classification 777  
 France, micropharmacolite 385  
 Francis, C.A.: New mineral names 217,878  
 FRANZ, GERHARD, DIETRICH ACKERMAN and EDDIE KOCH: Karlite,  $\text{Mg}_7(\text{BO}_3)_3(\text{OH},\text{Cl})_5$ , a new borate mineral and associated ludwigite from the Eastern Alps 872  
 FRAZIER, A.W. see MATHEW, M. 392  
 FREER, ROBERT: Memorial of Roger G.J. Strens 1095  
 FRENCH, B.M., review of *Planetary Geology* (Guest, Butterworth, Murray and O'Donnell) 440  
 Friedelite, crystal chemistry 1054

- Gabbro, pyroxene-oxide intergrowths 723  
 Gaitite, new mineral (abstr) 1274  
 Garnet analyses 463,711,743,1027  
   magma genesis 938  
   REE partitioning 242  
 GARRELS, R.M. and J.R. CLARK: Memorial of Charles L. Christ 1916-1980 649  
 GARRISON, J.R., JR. and L.A. TAYLOR: Petrogenesis of pyroxene-oxide intergrowths from kimberlite and cumulate rocks: co-precipitation or exsolution? 723  
 Geerite, new mineral (abstr) 1274  
 Georgia, quartz cell dimensions 204  
 Geothermometry, geobarometry calc-silicate rock 491  
   eclogites 443  
   fayalite 951  
   ferrosilite 951  
   gabbro 723  
   kimberlites 723  
   magnetite-ilmenite 1189  
   Mn deposit 279,281  
   pelitic schists 62,79,82,702  
   peridotite nodule 334  
   peridotites 443,723  
 GIARDINI, A.A. see MELTON, C.E. 746  
 GIBBS, G.V. see DOWNS, J.W. 819  
   see CHAKOUMAKOS, B.C. 1237  
   see GUPTA, ABHA 601  
 GIESE, R.F., JR. see BISH, D.L. 1216  
 GILBERT, M.C., Secretary: Proceedings of the Sixty-first Annual Meeting of the Mineralogical Society of America in Atlanta, Georgia 652  
 Gittinsite, new mineral (abstr) 1274  
 Glass, rock EPMA 1086  
 Glasses, analyses of Na 547  
 Glushinskite, new data (abstr) 439  
 Gmelinite, structure 777  
 GOLDSMITH, J.R.: The join  $\text{CaAl}_2\text{Si}_2\text{O}_8\text{-H}_2\text{O}$  (anorthite-water) at elevated pressures and temperatures 1183  
 GOLE, M.J. and CORNELIS KLEIN: High-grade metamorphic Archean banded iron-formations, Western Australia: assemblages with coexisting pyroxenes  $\pm$  fayalite 87  
   see KLEIN, CORNELIS 507  
 Goosecreekite, new mineral (abstr) 1275  
 GORDON, W.A., D.R. PEACOR, P.E. BROWN, E.J. ESSENE and L.F. ALLARD: Exsolution relationships in a clinopyroxene of average composition  $\text{Ca}_0.43\text{Mn}_0.69\text{Mg}_0.82\text{Si}_2\text{O}_6$  127  
 GRAHAM, J. see BENNETT, C.E.G. 1254  
   see BUTT, C.R.M. 1068  
 GRAMBLING, J.A.: Kyanite, andalusite, sillimanite, and related mineral assemblages in the Truchas Peaks region, New Mexico 702  
 Granulite facies geobarometry 951  
   melting 1164  
 Greece Mn chromite 1013  
 Greece, cont. theophrastite 1020  
 Greenalite, analyses 523  
 Greenland, ilmenite in olivines 976  
 Greenschist, Alps 443  
 GRAPES, R.H.: Chromian epidote and zoisite in kyanite amphibolite, Southern Alps, New Zealand 974  
 Gregoryite, new mineral (abstr) 879  
 Greigite, MO calculations 1250  
 GREW, E.S.: Surinamite, taaffeite, and beryllian sapphirine from pegmatites in granulite-facies rocks of Casey Bay, Enderby Land, Antarctica 1022  
 GREY, I.E. and E.H. NICKEL: Titanite, a new oxyhydroxide mineral from Western Australia, and its structural relationship to rutile and diasporite 866  
 GRIFFEN, D.T.: Synthetic Fe/Zn staurolites and the ionic radius of  $\text{IVZn}^{2+}$  932  
 GUGGENHEIM, STEPHEN: Cation ordering in lepidolite 1221  
   see JUNG, H.L. 350  
 GUNDERSON, S.H. and H.-R. WENK: Heterogeneous microstructures in oolitic carbonates 789  
 GUPTA, ABHA, D.K. SWANSON, J.A. TOSSELL and G.V. GIBBS: Calculation of bond distances, one-electron energies and electron density distributions in first-row tetrahedral hydroxy and oxyanions 601  
 HALL, M.G. and G.E. LLOYD: The SEM examination of geological samples with a semiconductor back-scattered electron detector 362  
 Halloysite, from kaolinite 997  
 HARRISON, W.J.: Partitioning of REE between minerals and coexisting melts during partial melting of a garnet lherzolite 242  
 Hauecorinite redefined, new mineral (abstr) 436  
 HAZEN, R.M., L.W. FINGER, and D. VELDE: Crystal structure of a silica- and alkali-rich trioctahedral mica 586  
   see SPEAR, F.S. 100  
 Heat capacity albite, analbite 1202  
   microcline, high sanidine 1202  
 Hedenbergite, phase equilibria 1175  
 Hematite, on olivine 980  
 Hematolite, compared with dixenite 1263  
 HEMINGWAY, B.S., K.M. KRUPKA and R.A. ROBIE: Heat capacities of the alkali feldspars between 350 and 1000 K from differential scanning calorimetry, the thermodynamic functions of the alkali feldspars from 298.15 to 1400 K, and the reaction quartz + jadeite = analbite 1202  
 HERVIG, R.L. and J.V. SMITH: Dolomite-apatite inclusion in chrome-diopside crystal, Bellsbank Kimberlite, South Africa 346  
   see STEELE, I.M. 526  
 Heulandite analyses 480  
   Ca/NH<sub>4</sub>, thermal stability 309  
 High sanidine, heat capacity 1202  
 HILL, R.J.: Mineralogical Society of America Kraus-Glass Crystallographic Research Award for 1980 646  
   see CHAKOUMAKOS, B.C. 1237  
 HOERSCH, A.L.: Progressive metamorphism of the chert-bearing Durness limestone in the Beinn an Dubhaich aureole, Isle of Skye, Scotland: A reexamination 491  
 HOLDAWAY, M.J. see NOVAK, J.M. 51  
 HORIUCHI, HIROYUKI and HIROSHI SAWAMOTO:  $\beta\text{-Mg}_2\text{SiO}_4$ : Single-crystal X-ray diffraction study 568  
 HSU, L.C.: Phase relations of some tungstate minerals under hydrothermal conditions 298  
 HURST, V.J. and S.P. STORCH: Regional variation in the cell dimensions of metamorphic quartz 204  
 HUTCHEON, I.D. see STEELE, I.M. 526  
 Hydration reactions, serpentinization 290  
 Hydrogen bonding, chlorite 1216  
 Hydrothermal alteration, Yellowstone 473  
 Hypersthene analyses 75,337  
   synthetic disordering 965  
 Ilmenite analyses 95,728  
   exsolution in olivine 976  
 Ilmenite-hematite, phase relations 1189  
 India diamond inclusions 746  
   winchite 625  
 Infrared spectra bayldonite 149  
   halloysite 1002  
   kaolinite 197  
   kaolinite rock 1002  
   karlite 876  
   ludwigite 876  
   metakaolin nodule 1002  
   natroapophyllite 421  
   phyllosilicate, 10 Å 582  
   serpentine, Al 197  
 Intergrowths, pyroxene-oxide 723  
 Interlayer bonding, OH vs F 1216  
 Ion microprobe, olivine, orthopyroxene 526  
 Iron formation, Australia 87,507  
 Iron-titanium oxides, phase relations 1189  
 Italy, biotite, Si-rich 586  
 IVALDI, GABRIELLA see CATTI, MICHELE 385

- JACOBS, G.K. and D.M. KERRICK: Devolatilization equilibria in H<sub>2</sub>O-CO<sub>2</sub> and H<sub>2</sub>O-CO<sub>2</sub>-NaCl fluids: an experimental and thermodynamic evaluation at elevated pressures and temperatures 1135
- Jadeite, phase relations 1202
- Jagoite, structure 852
- Jamesite, new mineral (abstr) 1275
- Japan  
 analcime 403  
 lepidolite 1221  
 natroapophyllite 410,416
- Johnsomervilleite, new mineral (abstr) 437
- Jungite (correction), new data (abstr) 1280
- Kalborsite, new mineral (abstr) 879
- KAMPF, A.R. see DEGANELLO, SERGIO 859
- Kanoite, exsolution 127
- Kanonaite, structure 561
- Kaolinite  
 infrared spectra 196  
 clayrock 997
- Karlite, new mineral 872
- KATAGAS, C. see BALTATZIS, EMM. 213
- KATO, TOSHIO see MIURA, YASUNORI 416
- KEIL, KLAUS see BERKLEY, J.L. 1233
- Keithconnite, new mineral (abstr) 1275
- Kentucky, kimberlite, peridotite 723
- Kenya, eugsterite 632
- KERRICK, D.M. see JACOBS, G.K. 1135
- Khademite, new data (abstr) 1102
- KIEFFER, S.W.: Acceptance of the Mineralogical Society of America Award for 1980 644
- Kimberlite  
 phlogopite 1154  
 pyroxene-oxide intergrowths 723
- Kinetics, dissolution 801
- Kingsmountite, new mineral (abstr) 1275
- KIRKPATRICK, R.J., L.-C. KUO and JOHN MELCHIOR: Crystal growth in incongruently-melting compositions: programmed cooling experiments with diopside 223
- KITAKAZE, ARASHI see SUGAKI, ASAHIKO 398
- KLEIN, CORNELIS and M.J. GOLE: Mineralogy and petrology of parts of the Marra Mamba Iron Formation, Hamersley Basin, Western Australia see GOLE, M.J. 507
- KNELLER, W.A.: Memorial of Wilhelm Hermann Julius Eitel 647
- KOCH, EDDIE see GRANZ, GERHARD 872
- Kolymite, new mineral (abstr) 218
- Kornerupine, analyses 743
- KORZHINSKII, D.S.: Acceptance of the Roebing Medal of the Mineralogical Society of America for 1980 642
- KOSTINER, EDWARD see SHOEMAKER, G.L. 169,176
- Kovdorskite, new mineral (abstr) 437
- Krautite, alkylamine intercalation, synthesis 432
- KROLL, HERBERT and H.-U. BAMBauer: Diffusive and displacive transformation in plagioclase and ternary feldspar series 763
- KRUPTA, K.M. see HEMINGWAY, B.S. 1202
- KUEHNER, S.M., A.D. EDGAR and M. ARIMA: Petrogenesis of the ultrapotassic rocks from the Leucite Hills, Wyoming 663
- KULKE, HOLGER see FLÖRKE, O.W. 596
- Kulkeite, new mineral (abstr) 218
- KULLERUD, G., review of *Geochemistry of Hydrothermal Ore Deposits, Second Edition* (Barnes, Ed.) 1104
- KUO, L.-C. see KIRKPATRICK, R.J. 223
- KUSHIRO, IKUO see MYSEN, B.O. 678
- KUTINA, JAN: review of *Resources Minerales. Mineral Resources* (Guillemin and Lagny, Eds.) 1104
- Kutnahorite, analyses 280
- Kuznetsovite, new mineral (abstr) 1100
- Kyanite  
 amphibolite 974  
 analyses 706  
 phase equilibria 1186
- LABOTKA, T.C., J.J. PAPIKE, D.T. VANIMAN and G.B. MOREY: Petrology of contact metamorphosed argillite from the Rove Formation, Gunflint Trail, Minnesota 70
- LAGALY, GERHARD see BENEKE, KLAUS 432
- Lanthanite-(Nd), new mineral (abstr) 637
- Largest crystals 885
- LEAKE, B.E., C.M. FARROW and V.K. NAYAK: Further studies on winchite from the type locality 625
- LEAVENS, P.B. see DUNN, P.J. 1063
- LEE, J.H. and STEPHEN GUGGENHEIM: Single crystal X-ray refinement of pyrophyllite-1Tc 350
- LEONARD, B.F. see CZAMANSKE, G.K. 369
- Lepidolite, structure, ordering 1221
- Leucite, analyses 669
- LEVIEN, LOUISE and C.T. PREWITT: High-pressure crystal structure and compressibility of coesite 324
- \_\_\_\_\_ and \_\_\_\_\_: High pressure structural study of diopside 315
- Levyne, structure 777
- Lherzolite, Alps 443
- Liebenbergite, cation ordering 770
- Liguria, eclogites, peridotites 443
- Limestone, oolite 789
- LIN, F.-C. and C.V. CLEMENCY: The dissolution kinetics of brucite, antigorite, talc, and phlogopite at room temperature and pressure 801
- LINDSLEY, D.H.: Some experiments pertaining to the magnetite-ulvospinel miscibility gap 759
- \_\_\_\_\_ : The formation of pigeonite on the join hedenbergite-ferrosilite at 11.5 and 15 kbar: experiments and a solution model 1175
- \_\_\_\_\_ see SPENCER, K.J. 1189
- Lingaitukuang, new mineral (abstr) 878
- Linnaeite, MO calculations 1250
- Liottite, structure 777
- Liquifaction residue, pyrrhotite 1258
- Lloyd, G.E. see HALL, M.G. 362
- Lloyd, J.M.: Vapor deposits on olivine in vugs in a basalt: an SEM application 980
- LOUGHNAN, F.C. and F.I. ROBERTS: The natural conversion of ordered kaolinite to halloysite (10A) at Burning Mountain near Wingen, New South Wales 997
- Ludwigite, Austria 872
- Macquartite, new mineral (abstr) 638
- Madagascar  
 biotite radiohaloes 358  
 quartz 596
- Magnetic transition, pyrrhotite 1254
- Magnetite, analyses 95,337,729
- Magnetite-ulvospinel, miscibility gap 751,759
- Maine  
 pelitic schists 51,260  
 sulfidic schists 908
- Malagasy, beryl 885
- Manganese deposit, metamorphosed 278
- Manganese hydrous oxide 424
- Mantle xenoliths, phlogopite 1154
- MARCOPOULOS, THEODOR and MARIA ECONOMOU: Theophrastite, Ni(OH)<sub>2</sub>, a new mineral from northern Greece 1020
- Margarite, pseudomorphs 213
- MARTINEZ, G. see VELDE, B. 196
- MASON, BRIAN, review of *Atlas of Rock-Forming Minerals in Thin Section* (Mackenzie and Guilford) 221
- \_\_\_\_\_, review of *Global Tectonics and Metallogeny, Volume 1, Nos. 1 & 2* (Kutina, Ed.) 221
- \_\_\_\_\_, review of *Glossary of Mineral Species* (Fleischer) 221
- \_\_\_\_\_, review of *Klockmanns Lehrbuch der Mineralogie* (Ramdohr and Strunz) 881
- Mass spectrometry, diamond inclusions 746
- MATHEW, M., S. TAKAGI, K.R. WAERSTAD and A.W. FRAZIER: The crystal structure of synthetic chukhrovite, Ca<sub>4</sub>AlSi(SO<sub>4</sub>)F<sub>13</sub>·12H<sub>2</sub>O 392
- MATSUEDA, HIRAHARU, YASUNORI MIURA and JOHN RUCKLIDGE: Natroapophyllite, a new orthorhombic sodium analog of apophyllite I. Descrip-

- tion, occurrence and nomenclature 410  
 see MIURA, YASUNORI 416  
 McCONNELL, J.D.C.: Time-temperature study of the intensity of satellite reflections in nepheline 990  
 McGillite  
 new mineral (abstr) 1276  
 relation to friedelite 1061  
 Mcguinnessite, new mineral (abstr) 1276  
 MELCHIOR, JOHN see KIRKPATRICK, R.J. 223  
 MELLINI, MARCELLO and STEFANO MERLINO: The crystal structure of jagoite 852  
 , MARC AMOURIC, ALAIN BARONNETT and GENEVIEVE MERCURIOT: Microstructures and nonstoichiometry in schafarzikite-like minerals 1073  
 see MOORE, P.B. 1034  
 Melting experiments, CO<sub>2</sub> 1164  
 MELTON, C.E. and A.A. GIARDINI: The nature and significance of occluded fluids in three Indian diamonds 746  
 Memorials  
 Charles L. Christ 649  
 Wilhelm Hermann Julius Eitel 647  
 Philip Moore Orville 1092  
 Roger G.J. Strens 1095  
 Fredrik William Houlder Zachariassen 1097  
 MERCURIOT, GENEVIEVE see MELLINI, MARCELLO 1073  
 MERLINO, STEFANO see MELLINI, MARCELLO 852  
 see MOORE, PAUL B. 1034  
 Meta-autunite, Na, K, OH 1068  
 Metakaolin, from kaolinite 997  
 Metavivianite, new data (abstr) 1103  
 Meteorite, Antarctica 1233  
 Mexico, axinite 428  
 Mg calcite, synthetic morphology 592  
 Mica, triclinic structure 586  
 Microcline  
 analyses 75  
 heat capacity 1202  
 Microscope technique, for RI 1089  
 MIELKE, H.G. see FLÖRKE, O.W. 596  
 Mineral segregations, pelitic 260  
 Minnesota, pelitic schists 70  
 Minnesota, analyses 517  
 MIURA, YASUNORI, TOSHIO KATO, JOHN RUCKLIDGE and HIROHARU MATSUEDA: Natroapophyllite, a new orthorhombic sodium analog of apophyllite 416  
 II. Crystal structure 410  
 see MATSUEDA, HIROHARU 1135  
 Mixed-volatile equilibria 1135  
 MIZOTA, TADATO see SUGAKI, ASAHIKO 398  
 Mn carbonate, analyses 280  
 Modified spinel,  $\beta$ -Mg<sub>2</sub>SiO<sub>4</sub> 568  
 Molecular orbital calculations 819,1237,1250  
 MOORE, P.B.: Memorial of Fredrik William Houlder Zachariassen 1097  
 , TAKAHARU ARAKI, STEFANO MERLINO, MARCELLO MELLINI and P.F. ZANAZZI: The arrojadite-dickinsonite series, KNa<sub>4</sub>Ca(Fe,Mn)<sub>4</sub>Al(OH)<sub>2</sub>(PO<sub>4</sub>)<sub>12</sub>: crystal structure and crystal chemistry 1034  
 see ARAKI, TAKAHARU 827,1263  
 see DEGANELLO, SERGIO 859  
 MOREY, G.B. see LABOTKA, T.C. 70  
 Morozeviczite, new mineral (abstr) 437  
 MORSE, S.A. see BERG, J.H. 985  
 MORTIER, W.J. and J. R. PEARCE: Thermal stability of the heulandite-type framework: crystal structure of the calcium/ammonium form dehydrated at 483 K 309  
 MOSELEY, DAVID: Ilmenite exsolution in olivine 976  
 Mossbauer spectroscopy, biotite 359  
 Mullite  
 from kaolinite 997  
 twinning and superstructure 142  
 Muscovite analyses 55,75,710,913  
 MYSEN, B.O., F.J. RYERSON and DAVID VIRGO: The structural role of phosphorus in silicate melts 106  
 , DAVID VIRGO and IKUO KUSHIRO: The structural role of aluminum in silicate melts--a Raman spectroscopic study at 1-atmosphere 678  
 Na amphibole, analyses 464  
 Nacaphite, new mineral (abstr) 218  
 Nagashimalite, new mineral (abstr) 638  
 NAKAJIMA, YOSHIHARU and P.H. RIBBE: Twinning and superstructure of Al-rich mullite 142  
 Natrophosphate, new data (abstr) 879  
 Natroapophyllite  
 new mineral 410  
 structure 416  
 NAYAK, V.K. see LEAKE, B.E. 625  
 NELEN, J.A. see DUNN, P.J. 1054  
 Nepheline  
 order-disorder 990  
 satellite reflections 990  
 NEWBERRY, N.G., E.J. ESSENE and D.R. PEACOR: Alforsite, a new member of the apatite group: the barium analogue of chlorapatite 1050  
 New mineral names 217,436,637,878,1099,1274  
 New minerals  
 acrofanite (abstr) 1100  
 aldermanite (abstr) 1099  
 alforsite 1050  
 almbosite (abstr) 878  
 alumopharmacosiderite (abstr) 1099  
 arsenohauchecornite (abstr) 436  
 ashanite (abstr) 217  
 balyakinite (abstr) 436  
 bartonite 369  
 bentonite (abstr) 637  
 bessmertnovite (abstr) 878  
 bismutohauchecornite (abstr) 436  
 brabanite (abstr) 878  
 cathophorite (abstr) 878  
 choloalite (abstr) 1099  
 clinochalcocomenite (abstr) 217  
 New minerals, cont.  
 colquiriite (abstr) 879,1099  
 cyanophyllite (abstr) 1274  
 dorfmanite (abstr) 217  
 eifelite (abstr) 218  
 ekaterinite (abstr) 437  
 eugsterite 632  
 ferrarisite (abstr) 637  
 gaitite (abstr) 1274  
 geerite (abstr) 1274  
 gittinsite (abstr) 1274  
 goosecreekite (abstr) 1275  
 gregoryite (abstr) 879  
 hauchecornite (abstr) 436  
 jamesite (abstr) 1275  
 johnsomervilleite (abstr) 437  
 kalborsite (abstr) 879  
 karlite 872  
 keithconite (abstr) 1275  
 kingsmountite (abstr) 1275  
 kolymite (abstr) 218  
 kovdorskite (abstr) 437  
 kulkeite (abstr) 218  
 kuznetsovite (abstr) 1100  
 lanthanite-(Nd) (abstr) 637  
 lingaitukuang (abstr) 878  
 macquartite (abstr) 638  
 mcgillite (abstr) 1276  
 mcguinnessite (abstr) 1276  
 morozeviczite (abstr) 437  
 nacaphite (abstr) 218  
 nagashimalite (abstr) 638  
 natroapophyllite 410  
 o'danielite (abstr) 218,1276  
 oligite (abstr) 438  
 olympite (abstr) 438  
 paralstonite (abstr) 219  
 paranatrolite (abstr) 1276  
 pararealgar (abstr) 1277  
 parascholzite 843  
 petarasite (abstr) 1277  
 polkovicite (abstr) 437  
 putoranite (abstr) 638  
 roaldite (abstr) 1100  
 rokuhnite (abstr) 219  
 sabinaitite (abstr) 1277  
 sacrofanite (abstr) 1100  
 saneroite (abstr) 1277  
 santalarite 154  
 schieffelinite (abstr) 219  
 sergeevite (abstr) 1100  
 shabynite (abstr) 1101  
 shahovite (abstr) 1101  
 sodium phlogopite (abstr) 219,639  
 spionkopite (abstr) 1279  
 sterlinghillite 182  
 stibiobetafite (abstr) 1278  
 stibivanite (abstr) 1278  
 suessite (abstr) 1101  
 tancoite (abstr) 1278  
 taneyamalite (abstr) 1101  
 telluropalladinite (abstr) 1275  
 tellurohauchecornite (abstr) 436  
 thalferisite (abstr) 219  
 theophrastite 1020  
 tisinaitite (abstr) 219  
 tivanite 866  
 tugarinovite (abstr) 438  
 viitaniemiite (abstr) 1102  
 wonesite 100  
 yarrowite (abstr) 1279  
 Hampshire, arrojadite 1034  
 New Jersey  
 bannisterite 1063

- New Jersey, cont.  
 schallerite, etc. 1054  
 sterlinghillite 182  
 New Mexico, pelitic schists 702  
 New York  
 clinopyroxene exsolution 127  
 ferrosilite 951  
 New Zealand, Cr epidote 974  
 NICKEL, E.H. see GREY, I.E.  
 NIELSEN, C.H. and HARALDUR  
 SIGURDSSON: Quantitative  
 methods for electron micro-  
 probe analysis of sodium  
 in natural and synthetic  
 glasses 547  
 NORBERG, J.A. see DUNN, P.J.  
 1054,1063  
 North Carolina, Mn deposit 278  
 NOVAK, J.M. and M.J. HOLDAWAY:  
 Metamorphic petrology,  
 mineral equilibria, and  
 polymetamorphism in the  
 Augusta quadrangle, south-  
 central Maine 51  
 Nukundamite, structure, synthesis 398  
 Oblique observation, for RI 1089  
 Oboyerite, new data (abstr) 220  
 O'Danielite, new mineral (abstr)  
 218,1276  
 Offretite, structure 777  
 OHASHI, YOSHIKAZU and L.W.  
 FINGER: The crystal struc-  
 ture of santalacraite, CaMn<sub>4</sub>-  
 [Si<sub>5</sub>O<sub>14</sub>(OH)](OH)·H<sub>2</sub>O: the  
 role of hydrogen atoms in the  
 pyroxenoid structure 154  
 Olgite, new mineral (abstr) 438  
 Olivine  
 analyses 337,450,665  
 dispersion 986  
 hematite deposits 980  
 ilmenite exsolution 976  
 ion microprobe analyses 526  
 Ni-Mg ordering 770  
 oriented in achondrite 1233  
 REE partitioning 242  
 Olympite, new mineral (abstr) 438  
 Oolite, microstructure 789  
 Optical properties  
 ajoite 202  
 alforsite 1052  
 augite 987  
 bartonite 374  
 eugsterite 635  
 karlite 847  
 meta-autunite 1069  
 natroapophyllite 412  
 nukundamite, synthetic 400  
 olivine 986  
 orthopyroxene 986  
 parascholzite 847  
 phlogopite 1159  
 pyroxmangite 282  
 rhodonite 282  
 scholzite 847  
 sterlinghillite 184  
 theophrastite 1021  
 tivanite 867  
 wonesite 100  
 Optical spectra  
 biotite 358  
 phlogopite 1160  
 Orthopyroxene  
 analyses 337,451,729  
 Orthopyroxene, cont.  
 dispersion 986  
 ion microprobe analyses 526  
 REE partitioning 242  
 synthetic disordering 965  
 ORVILLE, P.M. memorial of 1092  
 Oxyanions of Be, B, C, N, bond  
 distances 601  
 PABST, ADOLF: New mineral names  
 217,436,1099  
 PADOVANI, E.R. and R.J. TRACY:  
 A pyrope-spinel (alkremite)  
 xenolith from Moses Rock  
 Dike: first known North  
 American occurrence 741  
 PAPIKE, J.J. see CAMERON,  
 MARYELLEN 1  
 see LABOTKA, T.C. 70  
 Paralstonite, new mineral  
 (abstr) 219  
 Paranatrolite, new mineral  
 (abstr) 1276  
 Pararealgar, new mineral  
 (abstr) 1277  
 Parascholzite, new mineral  
 (abstr) 843  
 PARASKEVOPOULOS, G.M. and  
 MARIA ECONOMOU: Zoned Mn-  
 rich chromite from podiform  
 type chromite ore in serpen-  
 tinites of northern Greece 1013  
 PATERSON, E.: Intercalation of  
 synthetic buserite by  
 dodecylammonium chloride 424  
 PEACOR, D.R. see DUNN, P.J.  
 1954  
 see GORDON, W.A. 127  
 see NEWBERRY, N.G. 1050  
 see WINTER, G.A. 278  
 PEARCE, J.R. see MORTIER, W.J.  
 309  
 Pegmatite  
 arrojadite 1034  
 fillowite 827  
 surinamite, etc. 1022  
 Pelitic schists  
 Maine 51,260  
 Minnesota 70  
 New Mexico 702  
 Peridotite  
 Colorado 334  
 pyroxene-oxide intergrowths 723  
 Peristerite, conditional  
 spinodal 553  
 Perovskite, analyses 670  
 Petarasite, new mineral (abstr) 1277  
 Petrofabric analysis, olivine 1233  
 Pharaohnite, discredited  
 mineral (abstr) 220  
 Phlogopite  
 analyses 668  
 dissolution 801  
 inclusion in Cr diopside 347  
 melting equilibria 1164  
 reverse pleochroism 1154  
 Phyllosilicate, 10 Å, synthesis 576  
 Picropharmacolite, structure 385  
 Pigeonite, phase equilibria 1175  
 Plagioclase  
 analyses 75  
 conditional spinodal 553  
 transformations 763  
 Plate tectonics, Alps 443  
 Pleonaste, analyses 337  
 Polkovicite, new mineral (abstr) 437  
 POLLACK, S.S. and C.A. SPITLER:  
 Iron content of pyrrhotites  
 produced in continuous  
 liquefaction units 1258  
 Potassic volcanics, Wyoming 663  
 Prehnite, analyses 913  
 PREWITT, C.T. see LEVIEN,  
 LOUISE 315,324  
 PRICE, G.D.: Subsolidus phase  
 relations in the titan-  
 magnetite solid solution  
 series 751  
 Pseudomalachite, third  
 polymorph 169  
 Putoranite, new mineral (abstr) 638  
 Pyriboles, in pyroxene 1107  
 Pyrite, graphitic schists 908  
 Pyrophyllite-17c, structure 350  
 Pyroxenes  
 analyses 92  
 cation ordering 25  
 microstructures 1107  
 structure and chemistry 1  
 Pyroxenoids, North Carolina 278  
 Pyroxmangite, analyses 281  
 Pyrrhotite  
 graphitic schists 908  
 magnetic transition 1254  
 X-ray data 1258  
 Quartz  
 regional variation in cell  
 dimensions 204  
 rhombohedral cleavage 596  
 QUEVEDO, M.P. see DE PORTILLA,  
 V.S. 148  
 Radiohaloes, biotite 358  
 Raman spectroscopy  
 Al in silicate melts 678  
 P-bearing melts 106  
 spodumene and melts 118  
 RAMIK, R.A. see DUNN, P.J.  
 1063  
 Rare earth elements  
 eclogite 460  
 therzolite 449  
 melt and therzolite 242  
 Refractive indices, measure-  
 ment 1089  
 RENDON-DIAZMIRON, L.E. see  
 SWINNEA, J.S. 428  
 221,440,880,1104  
 Reviews  
 Barnes, H.L. (Ed.): *Geochem-  
 istry of Hydrothermal Ore  
 Deposits, Second Edition*  
 (Kullerud) 1104  
 Brindley, G.W. and G. Brown:  
*Crystal Structures of Clay  
 Minerals and their X-ray  
 Identification*  
 (Tettenhorst) 881  
 Embry, P.J. and J.P. Fuller:  
*A Manual of New Mineral  
 Names* (Dunn) 440  
 Fleischer, Michael: *Glossary  
 of Mineral Species*  
 (Mason) 221  
 Greene, J.C. and J.G. Burke:  
*The Sciences of Minerals  
 in the Age of Jefferson*  
 (Clarke) 441  
 Guest, John with Paul  
 Butterworth, John Murray  
 and William O'Donnell:

- Reviews, cont.
- Guest et al., cont.:  
*Planetary Geology* (French) 770  
 Guillemain, Cl. and Ph. Lagny (Eds.): *Resources Minerales. Mineral Resources* (Kutina) 1104  
 Kutina, Jan (Ed.): *Global Tectonics and Metallogeny* (Mason) 221  
 MacKenzie, W.S. and C. Guilford: *Atlas of Rock-Forming Minerals in Thin Section* (Mason) 221  
 Nassau, Kurt: *Gems Made by Man* (Sinkankas) 880  
 Phillips, W.R. and D.T. Griffen: *Optical Mineralogy: The Nonopaque Minerals* (Essene) 881  
 Ramdohr, Paul and Hugo Strunz: *Klockmanns Lehrbuch der Mineralogie* (Mason) 881  
 Rhodonite, analyses 281  
 RIBBE, P.H. see NAKAJIMA, YOSHIHARU 142  
 RICKWOOD, P.C.: The largest crystals 885  
 Riebekite, analyses 517  
 RIEDER, MILAN see WEISS, ZDENEK 561  
 Roaldite, new mineral (abstr) 1100  
 ROBERTS, F.I. see LOUGHNAN, F.C. 997  
 ROBIE, R.A. see HEMINGWAY, B.S. 1202  
 Rock EPMA, using glass 1086  
 RODEN, M.F. see SMITH, DOUGLAS 334  
 Rokuhnite, new mineral (abstr) 219  
 ROUSE, R.C. see STURMAN, B.D. 843  
 RUCKLIDGE, JOHN see MIURA, YASUNORI 416  
 see MATSUEDA, HIROHARU 410  
 RUMBLE, DOUGLAS III see SPEAR, F.S. 100  
 RYERSON, F.J. see MYSEN, B.O. 106  
 Ryolite, hydrothermal alteration 473
- Sabinaitite, new mineral (abstr) 1277  
 Sacrofanite, new mineral (abstr) 1100  
 Sanerofite, new mineral (abstr) 1277  
 SANFORD, R.F.: Mineralogical and chemical effects of hydration reactions and applications to serpentinization 290  
 Santaclarite, new mineral 154  
 Sapphirine, Be, analyses 1027  
 Sateillite reflections, nepheline 990  
 SAWAMOTO, HIROSHI see HORIUUCHI, HIROYUKI 568  
 Scanning electron microscope, BSE 362  
 Schafarzikite, microstructure 1073  
 Schallerite, crystal chemistry 1054  
 Schieffelinite, new mineral (abstr) 219  
 Schneiderite=Schmiederite, new data (abstr) 220  
 Scholzite, new data 847  
 SCHLAR, C.B. see BAUER, J.F. 576  
 Scotland  
 calcareous metamorphics 491  
 margarite pseudomorphs 213
- SEAL, M., E.R. VANCE, and B. DEMAYO: Optical spectra of giant radiohaloes in Madagascar biotite 358  
 Secondary ion analyses 526  
 SEKINE, TOSHIMORI, P.J. WYLLIE and D.R. BAKER: Phase relationships at 30 kbar for quartz eclogite composition in CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O with implications for subduction zone magmas 938  
 Sengierite, new data (abstr) 220  
 Sergeevite, new mineral (abstr) 1100  
 Serpentine, AI, infrared spectra 196  
 Serpentinization, hydration reactions 290  
 Shabynite, new mineral (abstr) 1101  
 Shahovite, new mineral (abstr) 1101  
 SHARMA, S.K. and BRUNO SIMONS: Raman study of crystalline polymorphs and glasses of spodumene composition quenched from various pressures 118  
 Sheet silicates, in pyroxenes 1107  
 SHIMA, HIROMI see SUGAKA, ASAHIKO 398  
 SHOEMAKER, G.L., J.B. ANDERSON and EDWARD KOSTINER: The crystal structure of a third polymorph of Cu<sub>5</sub>(PO<sub>4</sub>)<sub>2</sub>(OH)<sub>4</sub> and EDWARD KOSTINER: Polymorphism in Cu<sub>5</sub>(PO<sub>4</sub>)<sub>2</sub>(OH)<sub>4</sub> 176  
 Siderite, analyses 515  
 SIGURDSSON, HARALDUR see NIELSEN, C.H. 547  
 Silica minerals, hydrothermal alteration 473  
 Silicate melts  
 Al-bearing, Raman spectra 678  
 diopside crystallization 223  
 P in 106  
 REE partitioning 242  
 spodumene composition 118  
 Silicate rings, MO calculations 1237  
 Sillimanite, analyses 706  
 Siloxane rings, MO calculations 1237  
 SIMONS, BRUNO see SHARMA, S.K. 118  
 SINKANKAS, JOHN, review of *Gems made by Man* (Nassau) 880  
 SKINNER, B.J.: Memorial of Philip Moore Orville 1092  
 SMITH, D.K. see STOHL, F.V. 610  
 SMITH, DOUGLAS and M.F. RODEN: Geothermometry and kinetics in a two-spinel peridotite nodule, Colorado Plateau 334  
 SMITH, J.V. see HERVIG, R.L. 346  
 see STEELE, I.M. 526  
 and J. MICHAEL BENNETT: Enumeration of 4-connected 3-dimensional nets and classification of framework silicates: the infinite set of ABC-6 nets; the Archimedean and  $\sigma$ -related nets 777  
 Sodalite, structure 777  
 Soddyite, structure 621  
 Sodium-phlogopite, new mineral (abstr) 219,639  
 Solid solution model, Fe-Ti oxides 1189  
 South Africa  
 inclusions in Cr diopside 346
- South Africa, cont.  
 liebenbergite 770  
 phlogopite 1154  
 South Dakota, arrojadite 1034  
 SPEAR, F.S., R.M. HAZEN and DOUGLAS RUMBLE III: Wonesite: a new rock-forming silicate from the Post Pond, Vermont 100  
 SPENCER, K.J. and D.H. LINDSLEY: A solution model for coexisting iron-titanium oxides 1189  
 Sphalerite, phase transition 1006  
 Spinel, analyses 670,729,743  
 Spionkopite, new mineral (abstr) 1279  
 SPITTLER, C.A. see POLLACK, S.S. 1258  
 Spodumene, Raman spectra 118
- Staurolite  
 analyses 59,712  
 Zn, synthetic 932  
 STEELE, I.M., R.L. HERVIG, I.D. HUTCHEON and J.V. SMITH: Ion microprobe technique and analyses of olivine and low-Ca pyroxene 526  
 STEINFINK, HUGO see SWINNEA, J.S. 428  
 STEPANOV, V.I. see DE PORTILLA, V.S. 148  
 Sterlinghillite, new mineral 182  
 Stibiobetafite, new mineral (abstr) 1278  
 Stibivanite, new mineral (abstr) 1278  
 Stilpnomelane, analyses 516  
 STOHL, F.V. and D.K. SMITH: The crystal chemistry of the uranyl silicate minerals 610  
 STORCH, S.P. see HURST, VERNON 204  
 STRENS, R.G.J., memorial of 1095  
 Stromeyerite, Cu-S bond 813  
 STURMAN, B.D., R.C. ROUSE and P.J. DUNN: Parascholzite, a new mineral from Hagendorf, Bavaria, and its relationship to scholzite 843  
 Subduction magma 938  
 Suessite, new mineral (abstr) 1101  
 SUGAKI, ASAHIKO, HIROMI SHIMA, ARASHI KITAKAZE and TADATO MIZOTA: Hydrothermal synthesis of nukundamite and its crystal structure 398  
 Sulfidic schists, Maine 908  
 Surinamite, analyses, X-ray data 1026  
 SWANSON, D.K. see GUPTA, ABHA 601  
 Sweden  
 dixenite 1263  
 jagoite 852  
 SWINNEA, J.S., HUGO STEINFINK, L.E. RENDON-DIAZMIRON and S.E. DE LA VEGA: The crystal structure of a Mexican axinite 428
- Systems  
 CaAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>-H<sub>2</sub>O 1183  
 CaCO<sub>3</sub>-MgCO<sub>3</sub>-MnCO<sub>3</sub> 280  
 CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O 938  
 CaO-SiO<sub>2</sub>-MgO-Al<sub>2</sub>O<sub>3</sub>-CO<sub>2</sub>-H<sub>2</sub>O-NaCl 1107  
 CaWO<sub>4</sub>-PbWO<sub>4</sub> 299  
 Fe<sub>3</sub>O<sub>4</sub>-Fe<sub>2</sub>TiO<sub>4</sub> 751  
 FeO-CaO-SiO<sub>2</sub> 1175



- Systems, cont.
- FeO-MgO-SiO<sub>2</sub> 951  
 FeWO<sub>4</sub>-ZnWO<sub>4</sub> 301  
 MgO-SiO<sub>2</sub>-H<sub>2</sub>O 576  
 MnWO<sub>4</sub>-ZnWO<sub>4</sub> 301  
 SiO<sub>2</sub>-CaO-Na<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub> 678  
 SiO<sub>2</sub>-CaSiO<sub>3</sub>-Mg<sub>2</sub>SiO<sub>4</sub> 223
- Taaffeite, analyses, X-ray data 1028  
 TAKAGI, S. see MATHEW, M. 392  
 Talc  
 analyses 498,501  
 dissolution 801  
 hydrous 576  
 Tancoite, new mineral (abstr) 1278  
 Taneyamalite, new mineral (abstr) 1101  
 TAYLOR, L.A. see GARRISON, J.R., JR. 723  
 Tellargpalite, new data (abstr) 1103  
 Tellurohauchecornite, new mineral (abstr) 436  
 Telluropalladinite, new mineral (abstr) 1275  
 Ternary feldspar, transformations 763  
 Tetrahedrite, Cu-S bond 813  
 TETTENHORST, RODNEY, review of *Crystal Structures of Clay Minerals and their X-ray Identification* (Brindley and Brown, Eds.) 881  
 Textures, igneous experimental 223  
 Thalfeisite, new mineral (abstr) 219  
 Theophrastite, new mineral 1020  
 Thiospinel, MO calculations 1250  
 Tholeiite, oceanic genesis 938  
 THOMPSON, J.B., JR.: Presentation of the Roebling Medal of the Mineralogical Society of America for 1980 to Dmitrii Sergeevich Korzhinskii 640  
 Tisinalite, new mineral (abstr) 219  
 Titanomagnetite  
 phase relations 1189  
 subsolidus relations 651,759  
 Tivanite, new mineral 866  
 TOSSELL, J.A. see GUPTA, ABHA 601  
 see VAUGHAN, D.J. 1250
- Trace elements  
 olivine, orthopyroxene 526  
 potassic rocks 672  
 TRACY, R.J. see PADOVANI, E.R. 741  
 Tremolite, analyses 498,501  
 Tridymite, from combustion 997  
 Tugarinovite, new mineral (abstr) 438  
 Tungstate minerals, phase relations 298  
 Turkey, eugsterite 632
- Unit-cell data  
 ajoite 186  
 alforsite 1051  
 amesite-2H<sub>2</sub> 186  
 arrojadite 1036  
 axinite 428  
 β-Mg<sub>2</sub>SiO<sub>4</sub> 568  
 bartonite 373  
 biotite, Si-rich 587  
 boltwoodite 613  
 Ca oxalate trihydrate 860
- Unit-cell data, cont.  
 carpholite 1081  
 chukrovite, synthetic 393  
 clinopyroxene 128  
 coesite, high pressure 330  
 copper phosphate hydrate QPM 170  
 dickinsonite 1036  
 diopside, high-pressure 318  
 dixenite 1263  
 fillowite 828  
 heulandite-Ca/NH<sub>4</sub> 310  
 jagoite 852  
 kanoite 128  
 kanonaitite 561  
 karlite 874  
 lepidolite 1224  
 liebenbergite (Ni-Mg olivine) 770  
 meta-autunite 1070  
 mullite, Al synthetic 143  
 natroapophyllite 414  
 nukundamite, synthetic 393  
 parascholzite 847  
 phyllosilicate, 10 Å 579  
 picroparmaccolite 386  
 plagioclase 764  
 pseudomalachite polymorphs 176  
 pyrophyllite-1zc 351  
 quartz 204  
 santaclaraitite 155  
 scholzite 847  
 taaffeite 1028  
 ternary feldspar 764  
 theophrastite 1021  
 tivanite 867  
 uranophane 613  
 wonesite 102  
 Zn staurolite 934
- Unnamed minerals  
 α-MnSiO<sub>3</sub> (abstr) 220  
 alloys (abstr) 639  
 arsenate 218  
 As<sub>2</sub>Se<sub>3</sub> (abstr) 1279  
 Bi<sub>2</sub>Te (abstr) 438  
 Cu mineral (abstr) 439  
 GeS<sub>2</sub> (abstr) 1279  
 HgI<sub>2</sub> (abstr) 1102  
 iridium sulfides (abstr) 1289  
 K analogue of macdonaldite (abstr) 220  
 KAlF<sub>4</sub> (abstr) 1279  
 KAl(SO<sub>4</sub>)<sub>2</sub> (abstr) 1279  
 lead minerals (abstr) 220  
 (Mn,Ca)<sub>6</sub>(V,As)Si<sub>5</sub>O<sub>18</sub>(OH) (abstr) 1279  
 (NH<sub>4</sub>)Al(SO<sub>4</sub>)<sub>2</sub> (abstr) 1279  
 palladium bismuth chloride (abstr) 1279  
 palladium copper sulfotelluride (abstr) 1102  
 Sn-Cu-Pb mineral (abstr) 439  
 sulfides and sulfosalts (abstr) 1280  
 sulfate of Cu and Mn (abstr) 1280  
 telurites 436  
 uranyl silicate 622  
 Uralites, microstructures 1107  
 Uranophane, structure 612  
 Uranyl silicates, crystal structure 610  
 U.S.S.R.  
 amesite-2H<sub>2</sub> 185  
 bayldonite 148  
 Utah, pyrope-spinel xenolith 741
- VANCE, E.R. see SEAL, M. 358  
 VAN HILTEN, DICK: Refractive indices of minerals through the microscope: a simpler method of oblique observation 1089  
 VANIMAN, D.T. see LABOTKA, T.C. 70  
 VAUGHAN, D.J. and J.A. TOSSELL: Electronic structure of thiospinel minerals: results from MO calculations 1250  
 VELEN, D.R. and P.R. BUSECK: Hydrous pyriboles and sheet silicates in pyroxenes and urallites: intergrowth microstructures and reaction mechanisms 1107  
 VELDE, B. and G. MARTINEZ: Effect of pressure on OH-stretching frequencies in kaolinite and ordered aluminous serpentine 196  
 VELDE, D. see HAZEN, R.M. 586  
 VERGOUWEN, LIDEKE: Eugsterite, a new salt mineral 632  
 Vermont, wonesite 100  
 Versiliaite, microstructure 1073  
 Viitaniemiite, new mineral (abstr) 1102  
 VIRGO, DAVID see MYSEN, B.O. 106,678  
 VISWANATHAN, KRISHNAMOORTHY: The crystal structure of a Mg-rich carpholite 1080
- WAERSTAD, K.R. see MATHEW, M. 392  
 WAGNER, MARY EMMA see FOLAND, K.A. 1086  
 Wairakite, analyses 481  
 Weddellite, unit cell data 862  
 Weeksite, structure 620  
 WEICHERT, JURGEN see FLÖRKE, O.W. 596  
 WENDLANDT, R.F.: Influence of CO<sub>2</sub> on melting of model granulite facies assemblages: a model for the genesis of charnockites 1164  
 WENK, H.-R. see GUNDERSON, S.H. 789  
 WEISS, ZDENEK, S.W. BAILEY and MILAN RIEDER: Refinement of the crystal structure of kanonaitite, (Mn<sup>3+</sup>,Al)<sup>[6]</sup>(Al,Mn<sup>3+</sup>)<sup>[5]</sup>O[SiO<sub>4</sub>] 561  
 West Germany, parascholzite 843  
 Western Alps, eclogites, peridotites 443  
 Whewellite, unit cell data 862  
 Winchite, India 625  
 WINTER, G.A., E.J. ESSENE and D.R. PEACOR: Carbonates and pyroxenoids from the manganese deposit near Bald Knob, North Carolina 278  
 Wisconsin, oolite 789  
 Wonesite, new mineral 100  
 Wurtzite, phase transition 1006  
 WYLLIE, P.J. see SEKINE, TOSHIMORI 938  
 Wyoming, ultrapotassic volcanics 663

Xenolith, pyrope-spinel	741
X-ray diffraction data	
ajoite	202
alforsite	1051
arrojadite	1048
bartonite	373
boltwoodite	615
clay minerals	483
chukhrovite, synthetic	393
dickinsonite	1048
dixenite	1272
eugsterite	635
fillowite	841
kanonaite	561
meta-autunite	1071
natroapophyllite	415
new uranyl silicate	623
parascholzite	846
phyllosilicate, 10 Å	579
pyrrhotite, synthetic	1258
scholzite	846
soddyite	621
stirlinghillite	184
surinamite	1026
taaffeite	1028
theophrastite	1021
tivanite	867
Yarrowite, new mineral (abstr)	1279
Yellowstone, hydrothermal	
alteration	473
Yugawaralite, analysis	481
ZACHARIASEN, F.W.H., memorial of	1097
ZANAZZI, P.F. see MOORE, P.B.	1034
Zeolite	
A, structure	777
losod, structure	777
rho, structure	777
TMA-E(AB), structure	777
ZK5	777
Zeolite facies, iron formation	507
Zeolites, alteration of	
rhyolite	473
Zn radius in staurolite	935
Zoisite	
Cr in amphibolite	974
magma genesis	938
phase equilibria	1183