Appendix 2. Electron Microprobe Analyses of Phenocrysts from the Blanco Trough Glasses.

A2.1. Introduction.

This appendix contains electron microprobe analyses of phenocrysts found in the Blanco Trough glasses. All analyses were performed on doubly-polished thin sections using the the JOEL 733 Superprobe at Rensselaer Polytechnic Institute. Spinels were recalculated assuming perfect stoichiometry using the scheme of Carmichael (1967) to determine Fe_2O_3 abundance. Run conditions and other information concerning the analytical procedures can be found in Section 4.2.

Samples numbers first list the phase, second the sample number of the glass in which it was found and third the number of the analysis for that glass sample, e.g.:

Ol-348.7

would be an olivine phenocryst from VG-348, and was the seventh analysis performed on a phenocryst in sample VG-348. The following abbreviations are used:

Ol:	olivine
Sp:	chromian spinel
Pl:	plagioclase
Fo:	Mg / (Mg + Fe) x 100
Cr#:	Cr / (Cr + Al)
Mg#:	Mg / (Mg + Fe^{2+})
Fe^{3+}#:	Fe^{3+} / (Fe^{3+} + Cr + Al)
An:	Ca / (Ca + Na + K) x 100
U:	unzoned
C:	core
R:	rim

Table XVIII

Electron microprobe analyses of olivine phenocrysts from VG-169.

Sample	*Ol-169.5*	*Ol-169.7*	*Ol-169.10*	*Ol-169.12*	*Ol-169.13*	*Ol-169.19*
SiO_2	39.53	39.88	39.67	40.05	40.18	39.86
Al_2O_3	0.05	0.04	0.03	0.06	0.05	0.03
TiO_2	0.00	0.00	0.00	0.00	0.01	0.02
FeO	16.52	16.48	16.29	14.82	14.57	16.51
MnO	0.26	0.31	0.26	0.20	0.18	0.30
MgO	43.33	43.51	43.46	44.45	44.77	42.69
CaO	0.32	0.33	0.30	0.27	0.29	0.30
Cr_2O_3	0.03	0.06	0.03	0.04	0.02	0.04
NiO	0.18	0.19	0.18	0.23	0.25	0.17
Total	100.22	100.80	100.23	100.12	100.30	99.91
Cations based on four oxygens:						
Si	0.9988	1.0013	1.0009	1.0041	1.0041	1.0090
Al	0.0013	0.0012	0.0009	0.0017	0.0014	0.0009
Ti	0.0000	0.0000	0.0000	0.0000	0.0001	0.0003
Fe	0.3491	0.3460	0.3437	0.3106	0.3044	0.3495
Mn	0.0056	0.0066	0.0056	0.0043	0.0037	0.0064
Mg	1.6324	1.6285	1.6347	1.6613	1.6678	1.6112
Ca	0.0086	0.0088	0.0080	0.0073	0.0077	0.0080
Cr	0.0006	0.0012	0.0006	0.0008	0.0004	0.0007
Ni	0.0037	0.0037	0.0037	0.0046	0.0051	0.0035
Total	3.0001	2.9973	2.9981	2.9945	2.9947	2.9896
Fo	82.4	82.5	82.6	84.2	84.6	82.2
Notes						

Table XVIII
(Continued)

Sample	*Ol-169.22*	*Ol-169.25*
SiO_2	39.38	39.83
Al_2O_3	0.04	0.04
TiO_2	0.00	0.03
FeO	16.58	15.63
MnO	0.25	0.28
MgO	43.12	43.90
CaO	0.37	0.28
Cr_2O_3	0.04	0.04
NiO	0.16	0.22
Total	99.93	100.26
Cations based on four oxygens:		
Si	0.9985	1.0017
Al	0.0012	0.0012
Ti	0.0000	0.0005
Fe	0.3516	0.3287
Mn	0.0053	0.0061
Mg	1.6298	1.6458
Ca	0.0099	0.0074
Cr	0.0009	0.0008
Ni	0.0032	0.0045
Total	3.0003	2.9966
Fo	82.3	83.4
Notes	C	

Table XIX

Electron microprobe analyses of chromian spinel phenocrysts from VG-169.

Sample	*Sp-169.3*	*Sp-169.4*	*Sp-169.8*	*Sp-169.9*	*Sp-169.14*	*Sp-169.20*
FeO	26.66	26.28	29.39	28.68	29.29	29.46
TiO_2	1.60	1.61	2.17	2.01	2.11	2.25
MnO	0.31	0.24	0.26	0.25	0.25	0.25
MgO	12.18	12.05	11.40	11.67	11.72	11.53
Al_2O_3	23.04	22.67	19.15	21.41	20.46	18.73
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	35.13	35.09	35.90	34.85	34.27	35.40
NiO	0.14	0.14	0.13	0.11	0.12	0.12
Total	99.07	98.09	98.42	98.98	98.22	97.74
Fe_2O_3	9.69	9.38	11.64	10.85	11.94	12.13
FeO	17.93	17.83	18.91	18.91	18.54	18.53
Total	100.02	99.01	99.55	100.05	99.40	98.94
Cations based on four oxygens:						
Fe	0.7099	0.7068	0.8084	0.7745	0.8012	0.8171
Ti	0.0383	0.0389	0.0538	0.0487	0.0520	0.0561
Mn	0.0083	0.0066	0.0073	0.0067	0.0070	0.0071
Mg	0.5780	0.5778	0.5591	0.5620	0.5716	0.5701
Al	0.8647	0.8594	0.7424	0.8147	0.7890	0.7321
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8842	0.8921	0.9336	0.8895	0.8864	0.9281
Ni	0.0037	0.0036	0.0035	0.0030	0.0031	0.0031
Total	3.0871	3.0851	3.1080	3.0990	3.1101	3.1136
Cr#	0.5055	0.5093	0.5570	0.5219	0.5290	0.5590
Mg#	0.5476	0.5463	0.5180	0.5238	0.5298	0.5258
Fe3+#	0.1173	0.1148	0.1468	0.1341	0.1494	0.1544
Notes						

Table XIX

(Continued)

Sample	*Sp-169.21*
FeO	29.59
TiO_2	2.27
MnO	0.26
MgO	11.42
Al_2O_3	18.92
SiO_2	0.00
Cr_2O_3	35.43
NiO	0.10
Total	97.98
Fe_2O_3	11.94
FeO	18.83
Total	99.17
Cations based on four oxygens:	
Fe	0.8183
Ti	0.0564
Mn	0.0073
Mg	0.5633
Al	0.7374
Si	0.0000
Cr	0.9263
Ni	0.0025
Total	3.1115
Cr#	0.5567
Mg#	0.5194
Fe^{3+}#	0.1517
Notes	

Table XX

Electron microprobe analyses of plagioclase phenocrysts from VG-169.

Sample	*Pl-169.1*	*Pl-169.2*	*Pl-169.6*	*Pl-169.11*	*Pl-169.15*	*Pl-169.16*
SiO_2	51.37	50.37	51.01	50.63	52.18	50.69
Al_2O_3	30.00	30.27	30.03	29.82	28.12	30.14
FeO	0.49	0.44	0.52	0.50	0.79	0.48
CaO	14.67	15.17	14.39	15.02	13.51	14.85
K_2O	0.07	0.06	0.05	0.05	0.08	0.05
Na_2O	3.41	3.04	3.41	3.24	3.92	3.21
Total	100.00	99.34	99.41	99.26	98.59	99.43
Cations based on eight oxygens:						
Si	2.3452	2.3177	2.3413	2.3323	2.4123	2.3289
Al	1.6138	1.6415	1.6241	1.6190	1.5318	1.6319
Fe	0.0186	0.0169	0.0199	0.0194	0.0304	0.0186
Ca	0.7172	0.7479	0.7078	0.7412	0.6689	0.7311
K	0.0042	0.0035	0.0031	0.0030	0.0046	0.0031
Na	0.3015	0.2708	0.3033	0.2890	0.3513	0.2857
Total	5.0004	4.9983	4.9995	5.0039	4.9994	4.9992
An	70.1	73.2	69.8	71.7	65.3	71.7
Notes						

Table XX

(Continued)

Sample	*Pl-169.17*	*Pl-169.18*	*Pl-169.23*	*Pl-169.24*
SiO_2	50.82	50.96	50.18	50.60
Al_2O_3	29.90	28.88	29.72	29.58
FeO	0.51	0.50	0.47	0.46
CaO	15.08	14.54	15.30	14.79
K_2O	0.07	0.05	0.06	0.05
Na_2O	3.12	3.32	3.05	3.27
Total	99.50	98.25	98.79	98.76
Cations based on eight oxygens:				
Si	2.3344	2.3673	2.3247	2.3407
Al	1.6186	1.5810	1.6225	1.6128
Fe	0.0197	0.0194	0.0183	0.0179
Ca	0.7422	0.7233	0.7592	0.7331
K	0.0040	0.0029	0.0038	0.0030
Na	0.2782	0.2988	0.2743	0.2931
Total	4.9971	4.9927	5.0028	5.0006
An	72.5	70.6	73.2	71.2
Notes				

Table XXI

Electron microprobe analyses of olivine phenocrysts from VG-172.

Sample	*Ol-172.1*	*Ol-172.2*	*Ol-172.3*	*Ol-172.4*	*Ol-172.5*	*Ol-172.6*
SiO_2	39.36	39.24	39.26	39.46	39.70	39.61
Al_2O_3	0.05	0.06	0.04	0.04	0.03	0.05
TiO_2	0.01	0.02	0.04	0.03	0.05	0.04
FeO	15.82	15.36	15.99	15.83	15.70	15.79
MnO	0.26	0.26	0.24	0.24	0.26	0.26
MgO	44.26	44.22	43.33	43.74	43.57	43.57
CaO	0.29	0.28	0.31	0.31	0.32	0.31
Cr_2O_3	0.07	0.05	0.06	0.05	0.06	0.07
NiO	0.25	0.25	0.26	0.21	0.24	0.24
Total	100.37	99.74	99.53	99.91	99.93	99.94
Cations based on four oxygens:						
Si	0.9912	0.9925	0.9976	0.9976	1.0024	1.0007
Al	0.0015	0.0018	0.0012	0.0012	0.0009	0.0015
Ti	0.0002	0.0004	0.0008	0.0006	0.0009	0.0008
Fe	0.3332	0.3249	0.3398	0.3347	0.3315	0.3336
Mn	0.0055	0.0056	0.0052	0.0051	0.0056	0.0056
Mg	1.6612	1.6669	1.6409	1.6480	1.6395	1.6404
Ca	0.0078	0.0076	0.0084	0.0084	0.0087	0.0084
Cr	0.0014	0.0010	0.0012	0.0010	0.0012	0.0014
Ni	0.0051	0.0051	0.0053	0.0043	0.0049	0.0049
Total	3.0071	3.0057	3.0004	3.0008	2.9956	2.9971
Fo	83.3	83.7	82.8	83.1	83.2	83.1
Notes						

Table XXII

Electron microprobe analyses of chromian spinel phenocrysts from VG-172.

Sample	*Sp-172.7*	*Sp-172.8*	*Sp-172.9*
FeO	27.70	27.42	28.70
TiO_2	2.15	2.30	2.62
MnO	0.24	0.32	0.30
MgO	13.20	13.22	13.27
Al_2O_3	21.70	21.69	19.54
SiO_2	0.00	0.00	0.00
Cr_2O_3	34.45	34.52	35.70
NiO	0.15	0.16	0.14
Total	99.58	99.62	100.26
Fe_2O_3	11.96	11.63	12.90
FeO	16.92	16.94	17.08
Total	100.78	100.78	101.55
Cations based on four oxygens:			
Fe	0.7376	0.7279	0.7682
Ti	0.0515	0.0550	0.0631
Mn	0.0065	0.0086	0.0081
Mg	0.6264	0.6265	0.6330
Al	0.8146	0.8132	0.7373
Si	0.0000	0.0000	0.0000
Cr	0.8672	0.8678	0.9033
Ni	0.0038	0.0041	0.0036
Total	3.1076	3.1045	3.1166
Cr#	0.5156	0.5163	0.5506
Mg#	0.5816	0.5817	0.5806
Fe^{3+}#	0.1458	0.1422	0.1594
Notes			

Table XXIII

Electron microprobe analyses of olivine phenocrysts from VG-342.

Sample	*Ol-342.1*	*Ol-342.2*	*Ol-342.6*
SiO_2	40.35	40.11	40.29
Al_2O_3	0.06	0.06	0.05
TiO_2	0.02	0.02	0.00
FeO	12.96	13.11	13.09
MnO	0.22	0.21	0.27
MgO	46.39	46.16	45.63
CaO	0.32	0.30	0.33
Cr_2O_3	0.04	0.04	0.06
NiO	0.28	0.26	0.27
Total	100.63	100.27	99.99
Cations based on four oxygens:			
Si	0.9986	0.9973	1.0040
Al	0.0017	0.0018	0.0016
Ti	0.0003	0.0003	0.0000
Fe	0.2683	0.2726	0.2728
Mn	0.0046	0.0044	0.0056
Mg	1.7116	1.7109	1.6952
Ca	0.0085	0.0080	0.0087
Cr	0.0007	0.0007	0.0011
Ni	0.0056	0.0052	0.0054
Total	2.9997	3.0010	2.9944
Fo	86.5	86.3	86.1
Notes			

Table XXIV

Electron microprobe analyses of chromian spinel phenocrysts from VG-342.

Sample	*Sp-342.3*	*Sp-342.4*	*Sp-342.7*
FeO	23.52	19.06	20.07
TiO_2	1.72	0.64	0.75
MnO	0.22	0.13	0.18
MgO	14.08	15.52	15.26
Al_2O_3	25.23	32.98	30.81
SiO_2	0.00	0.00	0.00
Cr_2O_3	34.13	30.50	32.19
NiO	0.14	0.17	0.18
Total	99.05	99.00	99.43
Fe_2O_3	8.85	6.07	6.91
FeO	15.55	13.59	13.84
Total	99.92	99.60	100.12
Cations based on four oxygens:			
Fe	0.6116	0.4730	0.5024
Ti	0.0402	0.0143	0.0168
Mn	0.0059	0.0033	0.0046
Mg	0.6527	0.6866	0.6810
Al	0.9246	1.1538	1.0873
Si	0.0000	0.0000	0.0000
Cr	0.8391	0.7157	0.7619
Ni	0.0036	0.0039	0.0043
Total	3.0777	3.0507	3.0583
Cr#	0.4756	0.3828	0.4120
Mg#	0.6174	0.6705	0.6627
Fe^{3+}#	0.1052	0.0677	0.0777
Notes			

Table XXV

Electron microprobe analyses of plagioclase phenocrysts from VG-342.

Sample	*Pl-342.5*	*Pl-342.8*
SiO_2	50.55	49.58
Al_2O_3	30.30	30.56
FeO	0.50	0.44
CaO	14.54	14.80
K_2O	0.05	0.03
Na_2O	3.29	3.11
Total	99.23	98.52
Cations based on eight oxygens:		
Si	2.3258	2.3001
Al	1.6427	1.6707
Fe	0.0192	0.0172
Ca	0.7166	0.7355
K	0.0032	0.0018
Na	0.2931	0.2800
Total	5.0007	5.0051
An	70.7	72.3
Notes	C →	R

Table XXVI

Electron microprobe analyses of olivine phenocrysts from VG-345.

Sample	*Ol-345.1*	*Ol-345.2*	*Ol-345.3*	*Ol-345.6*	*Ol-345.7*	*Ol-345.10*
SiO_2	39.35	39.24	39.56	39.65	39.76	39.82
Al_2O_3	0.03	0.05	0.02	0.07	0.04	0.04
TiO_2	0.00	0.01	0.00	0.00	0.00	0.00
FeO	12.89	13.91	13.32	12.87	13.18	13.00
MnO	0.20	0.23	0.20	0.20	0.28	0.20
MgO	46.63	46.16	46.52	46.93	46.47	46.44
CaO	0.29	0.27	0.31	0.28	0.29	0.26
Cr_2O_3	0.02	0.04	0.00	0.12	0.04	0.08
NiO	0.27	0.24	0.24	0.24	0.21	0.26
Total	99.69	100.13	100.18	100.35	100.28	100.09
Cations based on four oxygens:						
Si	0.9851	0.9825	0.9868	0.9854	0.9898	0.9919
Al	0.0009	0.0013	0.0006	0.0019	0.0013	0.0012
Ti	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000
Fe	0.2697	0.2912	0.2779	0.2674	0.2743	0.2708
Mn	0.0043	0.0048	0.0043	0.0042	0.0059	0.0042
Mg	1.7403	1.7234	1.7299	1.7389	1.7248	1.7247
Ca	0.0079	0.0071	0.0084	0.0074	0.0079	0.0069
Cr	0.0004	0.0008	0.0000	0.0024	0.0007	0.0015
Ni	0.0054	0.0048	0.0047	0.0048	0.0042	0.0051
Total	3.0140	3.0160	3.0126	3.0123	3.0089	3.0065
Fo	86.6	85.5	86.2	86.7	86.3	86.4
Notes						

Table XXVII

Electron microprobe analyses of chromian spinel phenocrysts from VG-345.

Sample	*Sp-345.4*	*Sp-345.5*	*Sp-345.8*	*Sp-345.9*
FeO	19.83	19.46	20.07	19.81
TiO_2	1.10	0.69	0.73	0.77
MnO	0.17	0.19	0.19	0.22
MgO	16.09	15.61	15.28	15.39
Al_2O_3	33.11	32.16	28.68	29.76
SiO_2	0.00	0.00	0.00	0.00
Cr_2O_3	29.87	31.94	35.44	34.54
NiO	0.18	0.17	0.16	0.19
Total	100.34	100.23	100.55	100.69
Fe_2O_3	6.97	6.39	6.93	6.63
FeO	13.55	13.71	13.82	13.84
Total	101.04	100.85	101.24	101.34
Cations based on four oxygens:				
Fe	0.4860	0.4800	0.5021	0.4924
Ti	0.2043	0.0154	0.0165	0.0173
Mn	0.0041	0.0047	0.0049	0.0055
Mg	0.7031	0.6864	0.6817	0.6820
Al	1.1437	1.1177	1.0114	1.0423
Si	0.0000	0.0000	0.0000	0.0000
Cr	0.6922	0.7447	0.8382	0.8116
Ni	0.0042	0.0041	0.0040	0.0045
Total	3.0575	3.0531	3.0585	3.0556
Cr#	0.3769	0.3998	0.4531	0.4377
Mg#	0.6790	0.6699	0.6632	0.6646
Fe^{3+}#	0.0773	0.0708	0.0779	0.0741
Notes				

Table XXVIII

Electron microprobe analyses of olivine phenocrysts from VG-347.

Sample	*Ol-347.1*	*Ol-347.2*	*Ol-347.9*	*Ol-347.10*	*Ol-347.16*	*Ol-347.25*
SiO_2	39.72	39.96	39.10	39.58	39.04	39.40
Al_2O_3	0.08	0.06	0.07	0.06	0.06	0.04
TiO_2	0.00	0.01	0.02	0.02	0.01	0.02
FeO	14.78	14.89	15.17	14.24	14.72	14.76
MnO	0.25	0.25	0.24	0.28	0.22	0.23
MgO	44.86	45.14	44.21	44.87	45.03	44.48
CaO	0.30	0.26	0.29	0.24	0.25	0.29
Cr_2O_3	0.06	0.02	0.09	0.07	0.07	0.03
NiO	0.30	0.29	0.27	0.27	0.29	0.27
Total	100.34	100.88	99.47	99.63	99.70	99.54
Cations based on four oxygens:						
Si	0.9952	0.9957	0.9911	0.9963	0.9856	0.9954
Al	0.0023	0.0017	0.0021	0.0017	0.0018	0.0012
Ti	0.0000	0.0002	0.0005	0.0004	0.0002	0.0005
Fe	0.3097	0.3102	0.3216	0.2997	0.3109	0.3118
Mn	0.0052	0.0052	0.0052	0.0059	0.0047	0.0049
Mg	1.6755	1.6768	1.6707	1.6841	1.6949	1.6753
Ca	0.0080	0.0071	0.0079	0.0066	0.0069	0.0079
Cr	0.0012	0.0003	0.0018	0.0014	0.0015	0.0007
Ni	0.0060	0.0058	0.0055	0.0054	0.0059	0.0055
Total	3.0029	3.0029	3.0063	3.0015	3.0123	3.0031
Fo	84.4	84.4	83.9	84.9	84.5	84.3
Notes						

Table XXVIII
(Continued)

Sample	*Ol-347.26*	*Ol-347.27*	*Ol-347.28*	*Ol-347.29*	*Ol-347.32*	*Ol-347.34*
SiO_2	39.06	39.28	39.15	39.57	39.71	39.21
Al_2O_3	0.09	0.06	0.12	0.04	0.05	0.06
TiO_2	0.05	0.05	0.04	0.03	0.00	0.01
FeO	15.22	15.78	15.92	14.41	15.08	14.76
MnO	0.23	0.25	0.21	0.24	0.24	0.26
MgO	43.64	44.04	43.46	44.71	44.68	44.92
CaO	0.32	0.31	0.39	0.33	0.26	0.29
Cr_2O_3	0.07	0.08	0.09	0.05	0.04	0.08
NiO	0.17	0.19	0.20	0.26	0.27	0.32
Total	98.85	100.03	99.58	99.65	100.34	99.90
Cations based on four oxygens:						
Si	0.9957	0.9921	0.9940	0.9968	0.9960	0.9881
Al	0.0027	0.0017	0.0036	0.0012	0.0015	0.0016
Ti	0.0009	0.0009	0.0008	0.0006	0.0000	0.0001
Fe	0.3244	0.3333	0.3380	0.3035	0.3162	0.3111
Mn	0.0050	0.0053	0.0045	0.0051	0.0052	0.0055
Mg	1.6588	1.6583	1.6449	1.6791	1.6705	1.6875
Ca	0.0088	0.0083	0.0106	0.0089	0.0071	0.0078
Cr	0.0013	0.0015	0.0017	0.0010	0.0007	0.0017
Ni	0.0036	0.0039	0.0042	0.0053	0.0055	0.0065
Total	3.0012	3.0052	3.0023	3.0013	3.0026	3.0099
Fo	83.6	83.3	83.0	84.7	84.1	84.4
Notes				C		

Table XXVIII

(Continued)

Sample	*Ol-347.38*	*Ol-347.39*	*Ol-347.46*
SiO_2	39.83	40.08	39.57
Al_2O_3	0.06	0.06	0.06
TiO_2	0.01	0.00	0.02
FeO	14.21	14.19	14.26
MnO	0.24	0.21	0.24
MgO	44.88	44.76	44.54
CaO	0.28	0.30	0.31
Cr_2O_3	0.07	0.05	0.04
NiO	0.27	0.24	0.22
Total	99.85	99.89	99.27
Cations based on four oxygens:			
Si	0.9996	1.0045	0.9995
Al	0.0018	0.0018	0.0019
Ti	0.0002	0.0000	0.0004
Fe	0.2983	0.2973	0.3011
Mn	0.0052	0.0044	0.0052
Mg	1.6792	1.6721	1.6768
Ca	0.0075	0.0081	0.0084
Cr	0.0014	0.0009	0.0008
Ni	0.0054	0.0048	0.0045
Total	2.9985	2.9939	2.9985
Fo	84.9	84.9	84.8
Notes			

Table XXIX

Electron microprobe analyses of chromian spinel phenocrysts from VG-347.

Sample	*Sp-347.3*	*Sp-347.4*	*Sp-347.5*	*Sp-347.8*	*Sp-347.11*	*Sp-347.12*
FeO	21.69	22.19	22.16	22.24	21.85	21.60
TiO_2	0.77	0.94	0.80	0.96	0.74	0.65
MnO	0.19	0.22	0.21	0.20	0.22	0.22
MgO	15.26	14.74	14.91	14.78	15.13	15.22
Al_2O_3	33.69	31.99	31.70	32.04	33.36	33.83
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	28.77	29.45	30.29	29.45	28.31	27.97
NiO	0.20	0.23	0.21	0.23	0.24	0.17
Total	100.57	99.76	100.28	99.90	99.84	99.66
Fe_2O_3	7.80	7.95	8.17	7.97	8.17	8.05
FeO	14.66	15.03	14.80	15.06	14.49	14.35
Total	101.34	100.55	101.09	100.69	100.66	100.46
Cations based on four oxygens:						
Fe	0.5334	0.5548	0.5519	0.5551	0.5420	0.5350
Ti	0.0170	0.0212	0.0180	0.0216	0.0165	0.0144
Mn	0.0048	0.0055	0.0052	0.0050	0.0055	0.0056
Mg	0.6689	0.6571	0.6622	0.6576	0.6690	0.6721
Al	1.1673	1.1272	1.1128	1.1273	1.1661	1.1811
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.6687	0.6959	0.7135	0.6950	0.6637	0.6550
Ni	0.0047	0.0054	0.0050	0.0055	0.0056	0.0040
Total	3.0647	3.0670	3.0686	3.0670	3.0684	3.0673
Cr#	0.3641	0.3817	0.3905	0.3813	0.3627	0.3567
Mg#	0.6497	0.6361	0.6423	0.6362	0.6504	0.6540
Fe^{3+}#	0.0860	0.0894	0.0913	0.0896	0.0907	0.0891
Notes						

Table XXIX

(Continued)

Sample	*Sp-347.13*	*Sp-347.14*	*Sp-347.15*	*Sp-347.20*	*Sp-347.21*	*Sp-347.22*
FeO	21.77	22.47	21.68	22.40	22.47	22.52
TiO_2	0.73	0.89	0.77	0.88	0.88	0.91
MnO	0.21	0.22	0.23	0.24	0.23	0.22
MgO	15.29	14.78	15.01	14.76	14.70	14.63
Al_2O_3	33.56	32.01	33.03	31.93	32.17	31.72
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	28.74	28.50	28.80	29.68	29.81	29.88
NiO	0.20	0.22	0.21	0.18	0.16	0.17
Total	100.50	99.09	99.73	100.08	100.41	100.05
Fe_2O_3	8.04	8.59	7.83	8.14	7.92	8.04
FeO	14.52	14.73	14.62	15.06	15.33	15.28
Total	101.30	99.94	100.51	100.88	101.21	100.85
Cations based on four oxygens:						
Fe	0.5361	0.5654	0.5389	0.5589	0.5585	0.5628
Ti	0.0161	0.0201	0.0173	0.0198	0.0197	0.0205
Mn	0.0052	0.0057	0.0059	0.0061	0.0057	0.0055
Mg	0.6710	0.6631	0.6650	0.6566	0.6514	0.6519
Al	1.1648	1.1354	1.1569	1.1229	1.1269	1.1171
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.6689	0.6780	0.6768	0.7000	0.7004	0.7058
Ni	0.0049	0.0054	0.0050	0.0044	0.0038	0.0041
Total	3.0669	3.0730	3.0656	3.0686	3.0664	3.0677
Cr#	0.3648	0.3738	0.3690	0.3840	0.3832	0.3871
Mg#	0.6523	0.6413	0.6465	0.6358	0.6308	0.6305
Fe^{3+}#	0.0887	0.0970	0.0873	0.0912	0.0885	0.0903
Notes						

Table XXIX

(Continued)

Sample	*Sp-347.23*	*Sp-347.24*	*Sp-347.33*	*Sp-347.35*	*Sp-347.36*	*Sp-347.37*
FeO	22.42	22.16	22.30	22.01	22.25	22.75
TiO_2	0.92	0.93	0.80	0.89	0.89	0.86
MnO	0.26	0.21	0.19	0.25	0.23	0.17
MgO	14.82	14.64	14.84	14.83	14.91	14.56
Al_2O_3	32.53	31.90	31.19	32.08	32.51	31.70
SiO_2	0.00	0.28	0.00	0.00	0.00	0.00
Cr_2O_3	28.92	28.85	30.56	29.43	28.93	29.70
NiO	0.20	0.17	0.20	0.21	0.20	0.23
Total	100.07	99.14	100.08	99.68	99.91	99.96
Fe_2O_3	8.16	7.52	8.33	7.97	8.18	8.26
FeO	15.06	15.38	14.79	14.83	14.88	15.31
Total	100.88	99.89	100.91	100.49	100.73	100.79
Cations based on four oxygens:						
Fe	0.5579	0.5564	0.5580	0.5500	0.5541	0.5695
Ti	0.0207	0.0209	0.0181	0.0200	0.0199	0.0194
Mn	0.0066	0.0052	0.0049	0.0063	0.0058	0.0044
Mg	0.6576	0.6552	0.6618	0.6608	0.6619	0.6497
Al	1.1408	1.1287	1.1000	1.1298	1.1411	1.1185
Si	0.0000	0.0084	0.0000	0.0000	0.0001	0.0000
Cr	0.6803	0.6848	0.7229	0.6953	0.6811	0.7029
Ni	0.0048	0.0041	0.0047	0.0050	0.0047	0.0055
Total	3.0685	3.0637	3.0703	3.0672	3.0687	3.0697
Cr#	0.3735	0.3775	0.3965	0.3809	0.3737	0.3858
Mg#	0.6368	0.6290	0.6413	0.6406	0.6410	0.6289
Fe^{3+}#	0.0913	0.0857	0.0934	0.0895	0.0915	0.0928
Notes						

Table XXIX
(Continued)

Sample	*Sp-347.40*	*Sp-347.45*
FeO	21.42	22.28
TiO_2	0.83	1.00
MnO	0.20	0.23
MgO	15.27	14.78
Al_2O_3	33.97	31.63
SiO_2	0.03	0.00
Cr_2O_3	29.05	29.79
NiO	0.25	0.21
Total	101.01	99.92
Fe_2O_3	7.28	8.05
FeO	14.86	15.03
Total	101.74	100.72
Cations based on four oxygens:		
Fe	0.5236	0.5570
Ti	0.0182	0.0225
Mn	0.0050	0.0059
Mg	0.6653	0.6587
Al	1.1701	1.1146
Si	0.0008	0.0000
Cr	0.6713	0.7042
Ni	0.0058	0.0050
Total	3.0601	3.0679
Cr#	0.3645	0.3871
Mg#	0.6468	0.6367
Fe^{3+}#	0.0801	0.0907
Notes		

Table XXX

Electron microprobe analyses of plagioclase phenocrysts from VG-347.

Sample	*Pl-347.17*	*Pl-347.18*	*Pl-347.19*	*Pl-347.41*	*Pl-347.42*	*Pl-347.43*
SiO_2	49.93	50.01	49.14	51.29	49.96	50.53
Al_2O_3	30.90	30.60	31.16	29.89	30.92	30.62
FeO	0.53	0.73	0.65	0.95	0.53	0.64
CaO	14.38	14.29	14.65	14.22	14.46	14.72
K_2O	0.04	0.04	0.04	0.05	0.05	0.04
Na_2O	3.05	3.20	3.04	3.32	3.18	3.32
Total	98.83	98.86	98.69	99.72	99.10	99.88
Cations based on eight oxygens:						
Si	2.3047	2.3105	2.2777	2.3485	2.3018	2.3133
Al	1.6807	1.6660	1.7024	1.6131	1.6790	1.6521
Fe	0.0205	0.0280	0.0254	0.0365	0.0205	0.0244
Ca	0.7113	0.7073	0.7275	0.6975	0.7136	0.7219
K	0.0024	0.0026	0.0026	0.0031	0.0027	0.0026
Na	0.2728	0.2862	0.2731	0.2949	0.2843	0.2947
Total	4.9923	5.0005	5.0086	4.9936	5.0019	5.0090
An	72.1	71.0	72.5	70.1	71.3	70.8
Notes						

Table XXX

(Continued)

Sample	*Pl-347.44*
SiO_2	50.34
Al_2O_3	31.27
FeO	0.59
CaO	14.66
K_2O	0.03
Na_2O	3.11
Total	99.99
Cations based on eight oxygens:	
Si	2.2986
Al	1.6828
Fe	0.0224
Ca	0.7171
K	0.0019
Na	0.2755
Total	4.9984
An	72.1
Notes	

Table XXXI

Electron microprobe analyses of olivine phenocrysts from VG-348.

Sample	*Ol-348.1*	*Ol-348.2*	*Ol-348.4*	*Ol-348.6*	*Ol-348.7*	*Ol-348.8*
SiO_2	40.75	40.31	41.06	39.81	39.55	40.20
Al_2O_3	0.07	0.07	0.09	0.08	0.05	0.07
TiO_2	0.03	0.01	0.03	0.01	0.00	0.00
FeO	11.94	12.63	12.45	12.38	12.62	13.13
MnO	0.22	0.17	0.20	0.19	0.20	0.19
MgO	45.57	45.92	46.13	45.72	46.35	46.09
CaO	0.30	0.27	0.26	0.28	0.28	0.30
Cr_2O_3	0.07	0.05	0.04	0.04	0.00	0.01
NiO	0.30	0.34	0.29	0.26	0.27	0.27
Total	99.25	100.77	100.54	98.78	99.32	100.27
Cations based on four oxygens:						
Si	1.0160	1.0166	1.0123	1.0014	0.9916	0.9991
Al	0.0020	0.0020	0.0025	0.0023	0.0015	0.0021
Ti	0.0005	0.0002	0.0006	0.0002	0.0000	0.0000
Fe	0.2489	0.2599	0.2566	0.2604	0.2647	0.2730
Mn	0.0047	0.0036	0.0042	0.0042	0.0042	0.0039
Mg	1.6941	1.6845	1.6957	1.7146	1.7325	1.7076
Ca	0.0080	0.0072	0.0067	0.0075	0.0074	0.0081
Cr	0.0014	0.0011	0.0007	0.0008	0.0000	0.0002
Ni	0.0060	0.0067	0.0058	0.0053	0.0055	0.0054
Total	2.9816	2.9816	2.9853	2.9967	3.0074	2.9995
Fo	87.2	86.6	86.9	86.8	86.7	86.2
Notes					C → R	

Table XXXI

(Continued)

Sample	*Ol-348.9*	*Ol-348.10*	*Ol-348.12*	*Ol-348.13*	*Ol-348.14*	*Ol-348.19*
SiO_2	39.57	39.69	39.94	39.93	39.88	39.96
Al_2O_3	0.07	0.07	0.07	0.03	0.09	0.09
TiO_2	0.01	0.00	0.01	0.00	0.01	0.00
FeO	13.34	13.28	12.74	13.47	13.04	12.80
MnO	0.21	0.24	0.17	0.22	0.18	0.19
MgO	46.06	45.91	46.09	45.94	45.98	46.26
CaO	0.28	0.27	0.28	0.31	0.28	0.28
Cr_2O_3	0.05	0.03	0.04	0.04	0.05	0.03
NiO	0.32	0.29	0.30	0.27	0.30	0.33
Total	99.90	99.77	99.63	100.21	99.80	99.95
Cations based on four oxygens:						
Si	0.9899	0.9934	0.9978	0.9954	0.9963	0.9958
Al	0.0021	0.0020	0.0022	0.0010	0.0026	0.0026
Ti	0.0003	0.0000	0.0001	0.0000	0.0002	0.0000
Fe	0.2790	0.2779	0.2661	0.2808	0.2724	0.2667
Mn	0.0045	0.0051	0.0036	0.0046	0.0037	0.0040
Mg	1.7177	1.7131	1.7168	1.7074	1.7122	1.7186
Ca	0.0074	0.0072	0.0074	0.0083	0.0074	0.0075
Cr	0.0010	0.0006	0.0008	0.0008	0.0009	0.0006
Ni	0.0064	0.0058	0.0060	0.0053	0.0060	0.0066
Total	3.0081	3.0051	3.0005	3.0035	3.0016	3.0024
Fo	86.0	86.0	86.6	85.9	86.3	86.6
Notes						

C →

Table XXXI
(Continued)

Sample	*Ol-348.20*	*Ol-348.21*	*Ol-348.22*	*Ol-348.24*	*Ol-348.26*	*Ol-348.27*
SiO_2	39.81	39.62	40.01	39.55	39.47	39.66
Al_2O_3	0.07	0.05	0.09	0.08	0.07	0.07
TiO_2	0.00	0.00	0.01	0.02	0.01	0.01
FeO	13.72	13.53	13.05	13.53	12.80	13.24
MnO	0.23	0.22	0.20	0.19	0.20	0.19
MgO	46.06	45.74	45.93	45.98	45.75	45.72
CaO	0.29	0.24	0.32	0.29	0.30	0.29
Cr_2O_3	0.03	0.01	0.09	0.09	0.06	0.06
NiO	0.28	0.25	0.28	0.26	0.25	0.28
Total	100.50	99.66	99.97	99.99	98.87	99.52
Cations based on four oxygens:						
Si	0.9912	0.9936	0.9977	0.9892	0.9948	0.9949
Al	0.0021	0.0014	0.0025	0.0022	0.0014	0.0020
Ti	0.0000	0.0000	0.0001	0.0004	0.0002	0.0001
Fe	0.2855	0.2837	0.2721	0.2830	0.2697	0.2776
Mn	0.0049	0.0048	0.0042	0.0041	0.0042	0.0040
Mg	1.7096	1.7102	1.7075	1.7144	1.7191	1.7099
Ca	0.0077	0.0065	0.0085	0.0079	0.0081	0.0078
Cr	0.0006	0.0002	0.0017	0.0018	0.0013	0.0012
Ni	0.0056	0.0051	0.0056	0.0052	0.0050	0.0056
Total	3.0073	3.0054	2.9999	3.0082	3.0036	3.0032
Fo	85.7	85.8	86.3	85.8	86.4	86.0
Notes	R					

Table XXXI

(Continued)

Sample	*Ol-348.28*	*Ol-348.29*	*Ol-348.31*	*Ol-348.34*	*Ol-348.36*	*Ol-348.41*
SiO_2	39.88	39.61	40.21	39.85	39.81	39.36
Al_2O_3	0.08	0.07	0.08	0.07	0.07	0.09
TiO_2	0.01	0.01	0.00	0.01	0.01	0.01
FeO	13.33	13.13	12.90	12.96	13.24	13.29
MnO	0.15	0.19	0.20	0.22	0.25	0.20
MgO	45.92	45.51	46.03	45.72	46.01	46.24
CaO	0.29	0.30	0.30	0.27	0.27	0.33
Cr_2O_3	0.06	0.06	0.05	0.02	0.02	0.03
NiO	0.26	0.24	0.28	0.29	0.29	0.25
Total	99.98	99.13	100.04	99.40	99.97	99.81
Cations based on four oxygens:						
Si	0.9955	0.9969	1.0006	0.9989	0.9941	0.9857
Al	0.0023	0.0022	0.0024	0.0020	0.0020	0.0028
Ti	0.0001	0.0002	0.0000	0.0002	0.0001	0.0003
Fe	0.2783	0.2763	0.2683	0.2716	0.2765	0.2782
Mn	0.0032	0.0041	0.0043	0.0047	0.0053	0.0041
Mg	1.7088	1.7074	1.7076	1.7086	1.7129	1.7264
Ca	0.0078	0.0080	0.0079	0.0073	0.0072	0.0090
Cr	0.0012	0.0012	0.0009	0.0005	0.0005	0.0006
Ni	0.0051	0.0049	0.0056	0.0058	0.0057	0.0051
Total	3.0024	3.0010	2.9975	2.9995	3.0044	3.0121
Fo	86.0	86.1	86.5	86.3	86.1	86.1
Notes						

Table XXXI

(Continued)

Sample	*Ol-348.47*	*Ol-348.50*	*Ol-348.54*	*Ol-348.55*
SiO_2	39.42	39.80	39.62	39.50
Al_2O_3	0.07	0.08	0.07	0.02
TiO_2	0.00	0.00	0.00	0.00
FeO	13.21	13.04	12.78	13.19
MnO	0.21	0.18	0.21	0.21
MgO	46.44	46.15	46.20	46.04
CaO	0.31	0.28	0.28	0.25
Cr_2O_3	0.02	0.03	0.06	0.04
NiO	0.27	0.28	0.28	0.24
Total	99.95	99.84	99.50	99.48
Cations based on four oxygens:				
Si	0.9856	0.9940	0.9924	0.9912
Al	0.0021	0.0023	0.0019	0.0006
Ti	0.0000	0.0000	0.0000	0.0000
Fe	0.2761	0.2722	0.2677	0.2769
Mn	0.0044	0.0038	0.0045	0.0044
Mg	1.7309	1.7182	1.7252	1.7225
Ca	0.0082	0.0076	0.0075	0.0067
Cr	0.0004	0.0006	0.0012	0.0008
Ni	0.0054	0.0057	0.0057	0.0049
Total	3.0130	3.0043	3.0059	3.0079
Fo	86.2	86.3	86.6	86.2
Notes				

Table XXXII

Electron microprobe analyses of chromian spinel phenocrysts from VG-348.

Sample	*Sp-348.3*	*Sp-348.5*	*Sp-348.11*	*Sp-348.15*	*Sp-348.16*	*Sp-348.17*
FeO	16.15	16.25	15.91	15.94	15.79	15.92
TiO_2	0.24	0.27	0.25	0.24	0.22	0.25
MnO	0.19	0.15	0.16	0.15	0.14	0.12
MgO	17.65	17.84	17.94	18.06	17.79	17.67
Al_2O_3	45.20	45.48	46.03	46.23	45.88	45.70
SiO_2	0.02	0.01	0.00	0.00	0.00	0.00
Cr_2O_3	20.38	20.74	20.41	19.93	20.52	19.39
NiO	0.24	0.24	0.23	0.28	0.28	0.25
Total	100.06	100.99	100.94	100.83	100.63	99.32
Fe_2O_3	4.48	4.48	4.23	4.52	4.05	4.40
FeO	12.11	12.21	12.09	11.87	12.14	11.96
Total	100.51	101.42	101.35	101.28	101.02	99.74
Cations based on four oxygens:						
Fe	0.3734	0.3725	0.3637	0.3643	0.3622	0.3695
Ti	0.0051	0.0056	0.0051	0.0049	0.0046	0.0052
Mn	0.0043	0.0035	0.0037	0.0036	0.0033	0.0029
Mg	0.7277	0.7291	0.7311	0.7360	0.7273	0.7311
Al	1.4732	1.4692	1.4828	1.4894	1.4829	1.4946
Si	0.0004	0.0002	0.0000	0.0000	0.0000	0.0001
Cr	0.4455	0.4493	0.4411	0.4307	0.4450	0.4255
Ni	0.0052	0.0053	0.0051	0.0062	0.0061	0.0056
Total	3.0349	3.0347	3.0327	3.0349	3.0313	3.0344
Cr#	0.2322	0.2342	0.2292	0.2243	0.2307	0.2215
Mg#	0.7220	0.7225	0.7255	0.7306	0.7231	0.7248
Fe^{3+}#	0.0464	0.0460	0.4034	0.0462	0.0416	0.0457
Notes						

Table XXXII
(Continued)

Sample	*Sp-348.18*	*Sp-348.23*	*Sp-348.25*	*Sp-348.30*	*Sp-348.32*	*Sp-348.33*
FeO	15.31	16.12	16.06	15.90	15.81	15.99
TiO_2	0.20	0.26	0.28	0.27	0.25	0.28
MnO	0.18	0.18	0.17	0.14	0.08	0.10
MgO	17.94	17.72	17.66	17.50	18.19	17.81
Al_2O_3	46.08	45.17	45.14	45.39	47.20	45.35
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	20.76	20.73	20.69	20.60	18.77	20.74
NiO	0.27	0.24	0.22	0.25	0.25	0.21
Total	100.74	100.43	100.23	100.05	100.56	100.48
Fe_2O_3	3.75	4.45	4.30	3.89	4.41	4.26
FeO	11.93	12.11	12.18	12.40	11.84	12.15
Total	101.11	100.86	100.65	100.44	100.99	100.90
Cations based on four oxygens:						
Fe	0.3501	0.3717	0.3709	0.3674	0.3605	0.3678
Ti	0.0040	0.0055	0.0059	0.0056	0.0052	0.0058
Mn	0.0042	0.0043	0.0040	0.0032	0.0020	0.0022
Mg	0.7312	0.7285	0.7272	0.7209	0.7394	0.7306
Al	1.4848	1.4676	1.4690	1.4778	1.5168	1.4708
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.4488	0.4518	0.4518	0.4500	0.4047	0.4512
Ni	0.0058	0.0052	0.0050	0.0055	0.0055	0.0046
Total	3.0290	3.0346	3.0335	3.0303	3.0339	3.0330
Cr#	0.2320	0.2353	0.2351	0.2333	0.2105	0.2347
Mg#	0.7283	0.7227	0.7209	0.7155	0.7325	0.7232
Fe^{3+}#	0.3084	0.0459	0.0445	0.0403	0.0450	0.0440
Notes						

Table XXXII

(Continued)

Sample	*Sp-348.37*	*Sp-348.38*	*Sp-348.39*	*Sp-348.42*	*Sp-348.43*	*Sp-348.44*
FeO	16.10	15.93	15.80	16.12	16.93	17.46
TiO_2	0.26	0.21	0.32	0.28	0.30	0.27
MnO	0.16	0.14	0.14	0.09	0.18	0.21
MgO	18.02	17.77	17.37	17.88	16.70	15.86
Al_2O_3	46.54	46.74	42.92	45.99	38.63	34.75
SiO_2	0.00	0.01	0.00	0.00	0.00	0.00
Cr_2O_3	19.13	19.61	23.32	20.17	27.63	31.48
NiO	0.25	0.28	0.24	0.26	0.17	0.22
Total	100.46	100.68	100.10	100.78	100.53	100.25
Fe_2O_3	4.66	3.99	3.91	4.35	4.59	4.65
FeO	11.90	12.33	12.28	12.21	12.79	13.27
Total	100.92	101.09	100.50	101.22	101.00	100.71
Cations based on four oxygens:						
Fe	0.3689	0.3639	0.3684	0.3691	0.4020	0.4240
Ti	0.0053	0.0043	0.0066	0.0058	0.0064	0.0060
Mn	0.0037	0.0033	0.0033	0.0021	0.0043	0.0052
Mg	0.7361	0.7242	0.7223	0.7299	0.7069	0.6864
Al	1.5025	1.5054	1.4107	1.4843	1.2930	1.1889
Si	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
Cr	0.4142	0.4236	0.5142	0.4367	0.6204	0.7225
Ni	0.0054	0.0062	0.0054	0.0057	0.0038	0.0052
Total	3.0361	3.0309	3.0307	3.0335	3.0367	3.0381
Cr#	0.2161	0.2196	0.2670	0.2273	0.3242	0.3779
Mg#	0.7296	0.7197	0.7159	0.7230	0.6994	0.6805
Fe^{3+}#	0.0478	0.0409	0.0409	0.0446	0.0489	0.0506
Notes						

Table XXXII

(Continued)

Sample	*Sp-348.45*	*Sp-348.46*	*Sp-348.48*	*Sp-348.49*	*Sp-348.51*	*Sp-348.52*
FeO	17.05	16.81	15.69	15.82	16.30	15.86
TiO_2	0.25	0.35	0.24	0.26	0.25	0.20
MnO	0.20	0.21	0.15	0.13	0.17	0.16
MgO	16.92	16.93	18.30	18.16	17.25	17.83
Al_2O_3	40.12	39.10	47.23	46.82	41.63	45.96
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	26.82	27.37	19.09	19.49	24.72	20.81
NiO	0.20	0.19	0.28	0.30	0.20	0.23
Total	101.57	100.96	100.98	100.96	100.53	101.05
Fe_2O_3	4.58	4.63	4.42	4.38	4.39	4.02
FeO	12.92	12.64	11.70	11.87	12.35	12.24
Total	102.01	101.42	101.42	101.41	100.95	101.45
Cations based on four oxygens:						
Fe	0.3991	0.3966	0.3563	0.3601	0.3815	0.3624
Ti	0.0053	0.0075	0.0048	0.0052	0.0052	0.0042
Mn	0.0048	0.0049	0.0035	0.0029	0.0041	0.0037
Mg	0.7058	0.7124	0.7413	0.7370	0.7196	0.7262
Al	1.3233	1.3004	1.5120	1.5023	1.3730	1.4800
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.5934	0.6107	0.4100	0.4196	0.5469	0.4494
Ni	0.0045	0.0042	0.0062	0.0065	0.0044	0.0051
Total	3.0361	3.0367	3.0340	3.0336	3.0347	3.0309
Cr#	0.3095	0.3194	0.2132	0.2182	0.2848	0.2329
Mg#	0.7000	0.7047	0.7359	0.7316	0.7134	0.7219
Fe^{3+}#	0.0480	0.0489	0.0450	0.0447	0.0460	0.0411
Notes						

Table XXXII
(Continued)

Sample	*Sp-348.53*
FeO	16.05
TiO_2	0.36
MnO	0.16
MgO	17.19
Al_2O_3	41.50
SiO_2	0.00
Cr_2O_3	23.88
NiO	0.27
Total	99.41
Fe_2O_3	4.38
FeO	12.10
Total	99.84
Cations based on four oxygens:	
Fe	0.3791
Ti	0.0076
Mn	0.0039
Mg	0.7239
Al	1.3813
Si	0.0000
Cr	0.5332
Ni	0.0061
Total	3.0349
Cr#	0.2784
Mg#	0.7168
Fe^{3+}#	0.0464
Notes	

Table XXXIII

Electron microprobe analyses of olivine phenocrysts from VG-356.

Sample	*Ol-356.2*	*Ol-356.3*	*Ol-356.5*	*Ol-356.7*	*Ol-356.8*	*Ol-356.9*
SiO_2	39.13	39.45	39.43	39.63	39.61	39.73
Al_2O_3	0.05	0.05	0.04	0.05	0.04	0.42
TiO_2	0.03	0.01	0.01	0.02	0.02	0.10
FeO	15.55	15.74	14.85	14.50	14.82	16.27
MnO	0.28	0.27	0.26	0.22	0.22	0.23
MgO	43.88	43.50	44.18	43.98	45.07	43.17
CaO	0.30	0.30	0.30	0.28	0.31	0.59
Cr_2O_3	0.01	0.03	0.04	0.08	0.06	0.08
NiO	0.22	0.22	0.24	0.21	0.24	0.21
Total	99.46	99.57	99.35	98.98	100.38	100.81
Cations based on four oxygens:						
Si	0.9933	1.0001	0.9981	1.0043	0.9922	0.9968
Al	0.0015	0.0015	0.0012	0.0016	0.0011	0.0125
Ti	0.0005	0.0002	0.0002	0.0005	0.0005	0.0018
Fe	0.3302	0.3337	0.3143	0.3072	0.3105	0.3414
Mn	0.0061	0.0057	0.0056	0.0048	0.0046	0.0050
Mg	1.6608	1.6441	1.6672	1.6616	1.6830	1.6148
Ca	0.0082	0.0082	0.0083	0.0077	0.0083	0.0159
Cr	0.0001	0.0006	0.0008	0.0015	0.0011	0.0016
Ni	0.0045	0.0045	0.0049	0.0042	0.0048	0.0042
Total	3.0051	2.9985	3.0005	2.9934	3.0060	2.9941
Fo	83.4	83.1	84.1	84.4	84.4	82.5
Notes						

Table XXXIII

(Continued)

Sample	*Ol-356.14*	*Ol-356.15*	*Ol-356.18*	*Ol-356.19*	*Ol-356.20*	*Ol-356.22*
SiO_2	39.72	39.63	39.60	39.51	39.81	39.58
Al_2O_3	0.05	0.06	0.06	0.06	0.06	0.04
TiO_2	0.01	0.01	0.03	0.04	0.04	0.00
FeO	15.23	15.34	15.05	14.85	14.92	14.99
MnO	0.25	0.29	0.21	0.23	0.23	0.25
MgO	45.02	44.32	44.65	45.31	45.25	44.36
CaO	0.33	0.36	0.30	0.26	0.29	0.29
Cr_2O_3	0.07	0.07	0.07	0.03	0.04	0.07
NiO	0.27	0.23	0.22	0.25	0.22	0.22
Total	100.96	100.31	100.20	100.54	100.85	99.82
Cations based on four oxygens:						
Si	0.9914	0.9958	0.9945	0.9886	0.9924	0.9976
Al	0.0014	0.0018	0.0017	0.0016	0.0017	0.0013
Ti	0.0002	0.0002	0.0006	0.0007	0.0007	0.0000
Fe	0.3178	0.3223	0.3161	0.3107	0.3111	0.3160
Mn	0.0053	0.0061	0.0046	0.0049	0.0048	0.0053
Mg	1.6750	1.6603	1.6718	1.6902	1.6818	1.6669
Ca	0.0089	0.0097	0.0080	0.0068	0.0077	0.0079
Cr	0.0015	0.0014	0.0014	0.0007	0.0008	0.0014
Ni	0.0053	0.0046	0.0045	0.0051	0.0045	0.0045
Total	3.0068	3.0022	3.0031	3.0094	3.0055	3.0008
Fo	84.1	83.7	84.1	84.5	84.4	84.1
Notes						

Table XXXIII

(Continued)

Sample	*Ol-356.26*	*Ol-356.28*	*Ol-356.31*	*Ol-356.34*
SiO_2	39.59	39.78	39.29	39.85
Al_2O_3	0.05	0.06	0.05	0.06
TiO_2	0.01	0.03	0.02	0.03
FeO	15.44	14.93	15.63	14.78
MnO	0.26	0.24	0.26	0.21
MgO	44.64	44.95	44.88	45.03
CaO	0.33	0.25	0.27	0.28
Cr_2O_3	0.02	0.04	0.05	0.10
NiO	0.22	0.29	0.25	0.24
Total	100.57	100.57	100.71	100.56
Cations based on four oxygens:				
Si	0.9926	0.9947	0.9855	0.9955
Al	0.0016	0.0017	0.0015	0.0016
Ti	0.0001	0.0005	0.0005	0.0005
Fe	0.3237	0.3123	0.3279	0.3087
Mn	0.0055	0.0052	0.0056	0.0044
Mg	1.6688	1.6759	1.6783	1.6773
Ca	0.0089	0.0067	0.0074	0.0074
Cr	0.0004	0.0008	0.0010	0.0019
Ni	0.0045	0.0057	0.0050	0.0048
Total	3.0061	3.0034	3.0126	3.0021
Fo	83.8	84.3	83.7	84.5
Notes				

Table XXXIV

Electron microprobe analyses of chromian spinel phenocrysts from VG-356.

Sample	*Sp-356.1*	*Sp-356.4*	*Sp-356.6*	*Sp-356.13*	*Sp-356.16*	*Sp-356.21*
FeO	26.10	25.59	25.57	25.61	24.93	25.64
TiO_2	1.57	1.64	1.64	1.63	1.57	1.60
MnO	0.28	0.24	0.24	0.28	0.24	0.28
MgO	12.66	12.78	12.88	13.05	12.92	12.81
Al_2O_3	22.71	22.38	22.52	23.49	22.67	22.27
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	35.89	36.51	35.85	34.68	36.09	36.25
NiO	0.14	0.10	0.16	0.15	0.10	0.17
Total	99.35	99.24	98.87	98.88	98.52	99.03
Fe_2O_3	9.83	9.42	9.73	9.93	9.20	9.77
FeO	17.24	17.11	16.80	16.67	16.64	16.84
Total	100.32	100.17	99.82	99.87	99.43	99.99
Cations based on four oxygens:						
Fe	0.6920	0.6790	0.6803	0.6781	0.6636	0.6824
Ti	0.0375	0.0392	0.0392	0.0387	0.0376	0.0383
Mn	0.0075	0.0064	0.0064	0.0075	0.0065	0.0074
Mg	0.5987	0.6046	0.6110	0.6163	0.6131	0.6080
Al	0.8489	0.8368	0.8446	0.8764	0.8500	0.8354
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8998	0.9159	0.9017	0.8681	0.9084	0.9119
Ni	0.0035	0.0026	0.0042	0.0038	0.0025	0.0045
Total	3.0879	3.0843	3.0874	3.0888	3.0825	3.0878
Cr#	0.5145	0.5224	0.5163	0.4975	0.5163	0.5219
Mg#	0.5668	0.5710	0.5774	0.5825	0.5805	0.5755
Fe^{3+}#	0.1184	0.1138	0.1179	0.1195	0.1115	0.1182
Notes						

Table XXXIV
(Continued)

Sample	*Sp-356.21*	*Sp-356.23*	*Sp-356.24*	*Sp-356.25*	*Sp-356.29*	*Sp-356.30*
FeO	25.68	25.50	25.82	25.61	25.06	26.00
TiO_2	1.54	1.60	1.68	1.54	1.65	1.74
MnO	0.27	0.23	0.28	0.26	0.25	0.27
MgO	12.81	12.77	12.87	13.14	12.98	12.75
Al_2O_3	22.55	22.23	22.36	23.29	23.03	22.48
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	35.82	36.38	35.26	35.66	35.48	35.26
NiO	0.17	0.18	0.18	0.17	0.11	0.14
Total	98.85	98.89	98.45	99.68	98.56	98.64
Fe_2O_3	9.88	9.56	10.19	9.93	9.31	9.98
FeO	16.78	16.89	16.64	16.67	16.67	17.01
Total	99.82	99.84	99.46	100.65	99.48	99.63
Cations based on four oxygens:						
Fe	0.6840	0.6794	0.6907	0.6737	0.6660	0.6941
Ti	0.0368	0.0383	0.0405	0.0365	0.0393	0.0417
Mn	0.0072	0.0062	0.0076	0.0070	0.0068	0.0073
Mg	0.6083	0.6066	0.6137	0.6164	0.6149	0.6072
Al	0.8464	0.8347	0.8431	0.8635	0.8625	0.8460
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.9017	0.9162	0.8917	0.8868	0.8913	0.8900
Ni	0.0045	0.0047	0.0047	0.0043	0.0028	0.0037
Total	3.0889	3.0861	3.0919	3.0881	3.0836	3.0900
Cr#	0.5158	0.5232	0.5140	0.5066	0.5081	0.5126
Mg#	0.5764	0.5740	0.5795	0.5842	0.5811	0.5719
Fe^{3+}#	0.1194	0.1159	0.1240	0.1185	0.1127	0.1215
Notes						

Table XXXIV
(Continued)

Sample	*Sp-356.32*	*Sp-356.33*
FeO	25.29	25.53
TiO_2	1.65	1.60
MnO	0.26	0.27
MgO	13.03	12.85
Al_2O_3	22.99	22.76
SiO_2	0.00	0.00
Cr_2O_3	35.83	35.84
NiO	0.22	0.21
Total	99.26	99.06
Fe_2O_3	9.53	9.65
FeO	16.70	16.83
Total	100.21	100.02
Cations based on four oxygens:		
Fe	0.6684	0.6775
Ti	0.0392	0.0381
Mn	0.0068	0.0074
Mg	0.6137	0.6078
Al	0.8561	0.8513
Si	0.0000	0.0000
Cr	0.8951	0.8990
Ni	0.0057	0.0054
Total	3.0850	3.0865
Cr#	0.5110	0.5136
Mg#	0.5816	0.5763
Fe^{3+}#	0.1147	0.1165
Notes		

Table XXXV

Electron microprobe analyses of plagioclase phenocrysts from VG-356.

Sample	*Pl-356.10*	*Pl-356.11*	*Pl-356.12*	*Pl-356.27*	*Pl-356.35*	*Pl-356.36*
SiO_2	51.20	51.23	51.89	51.81	51.60	51.49
Al_2O_3	29.69	29.78	29.51	29.16	29.24	29.56
FeO	0.85	0.82	0.86	0.98	0.96	0.84
CaO	13.55	14.03	13.62	13.60	13.45	13.86
K_2O	0.07	0.06	0.05	0.07	0.09	0.07
Na_2O	3.69	3.62	3.79	3.86	3.78	3.63
Total	99.05	99.54	99.73	99.48	99.13	99.45
Cations based on eight oxygens:						
Si	2.3574	2.3505	2.3724	2.3774	2.3748	2.3626
Al	1.6114	1.6101	1.5901	1.5768	1.5857	1.5984
Fe	0.0327	0.0314	0.0330	0.0376	0.0370	0.0322
Ca	0.6683	0.6894	0.6672	0.6685	0.6633	0.6811
K	0.0040	0.0034	0.0029	0.0038	0.0052	0.0042
Na	0.3296	0.3221	0.3360	0.3437	0.3374	0.3230
Total	5.0034	5.0068	5.0016	5.0076	5.0033	5.0014
An	66.7	67.9	66.3	65.8	65.9	67.5
Notes						

Table XXXVI

Electron microprobe analyses of olivine phenocrysts from VG-357.

Sample	*Ol-357.1*	*Ol-357.3*	*Ol-357.5*	*Ol-357.6*	*Ol-357.7*	*Ol-357.10*
SiO_2	40.00	39.80	39.69	39.59	39.61	39.30
Al_2O_3	0.05	0.04	0.05	0.06	0.05	0.05
TiO_2	0.05	0.03	0.03	0.05	0.06	0.04
FeO	16.53	16.33	16.25	16.34	16.08	17.23
MnO	0.22	0.36	0.19	0.21	0.32	0.25
MgO	43.21	43.54	43.47	43.51	43.26	42.89
CaO	0.29	0.30	0.30	0.28	0.32	0.32
Cr_2O_3	0.04	0.07	0.07	0.06	0.06	0.05
NiO	0.17	0.22	0.23	0.18	0.18	0.22
Total	100.56	100.69	100.25	100.28	99.94	100.35
Cations based on four oxygens:						
Si	1.0059	1.0003	1.0008	0.9987	1.0018	0.9958
Al	0.0015	0.0012	0.0015	0.0018	0.0015	0.0015
Ti	0.0009	0.0006	0.0006	0.0009	0.0011	0.0008
Fe	0.3476	0.3433	0.3427	0.3447	0.3401	0.3651
Mn	0.0047	0.0077	0.0041	0.0045	0.0069	0.0054
Mg	1.6194	1.6309	1.6335	1.6358	1.6307	1.6196
Ca	0.0078	0.0081	0.0081	0.0076	0.0087	0.0087
Cr	0.0008	0.0014	0.0014	0.0012	0.0012	0.0010
Ni	0.0034	0.0044	0.0047	0.0037	0.0037	0.0045
Total	2.9920	2.9978	2.9972	2.9989	2.9957	3.0022
Fo	82.3	82.6	82.7	82.6	82.7	81.6
Notes						

Table XXXVI
(Continued)

Sample	*Ol-357.11*	*Ol-357.13*	*Ol-357.14*	*Ol-357.16*	*Ol-357.19*	*Ol-357.20*
SiO_2	39.18	38.87	39.44	38.47	39.30	39.29
Al_2O_3	0.05	0.04	0.05	0.06	0.06	0.04
TiO_2	0.03	0.04	0.04	0.04	0.02	0.02
FeO	16.71	16.39	16.35	16.26	16.31	16.15
MnO	0.25	0.22	0.38	0.39	0.45	0.42
MgO	43.09	43.83	43.76	43.68	43.70	43.48
CaO	0.32	0.30	0.30	0.32	0.30	0.29
Cr_2O_3	0.04	0.02	0.03	0.08	0.06	0.06
NiO	0.23	0.21	0.25	0.23	0.23	0.21
Total	99.90	99.92	100.60	99.53	100.43	99.95
Cations based on four oxygens:						
Si	0.9952	0.9865	0.9935	0.9817	0.9920	0.9952
Al	0.0015	0.0012	0.0015	0.0018	0.0018	0.0011
Ti	0.0006	0.0008	0.0008	0.0008	0.0004	0.0003
Fe	0.3550	0.3479	0.3444	0.3470	0.3443	0.3420
Mn	0.0054	0.0047	0.0081	0.0084	0.0096	0.0090
Mg	1.6312	1.6579	1.6427	1.6611	1.6440	1.6421
Ca	0.0087	0.0082	0.0081	0.0087	0.0081	0.0079
Cr	0.0008	0.0004	0.0006	0.0016	0.0012	0.0011
Ni	0.0047	0.0043	0.0051	0.0047	0.0047	0.0043
Total	3.0031	3.0119	3.0047	3.0159	3.0061	3.0031
Fo	82.1	82.7	82.7	82.7	82.7	82.8
Notes						

Table XXXVI
(Continued)

Sample	*Ol-357.21*
SiO_2	39.53
Al_2O	0.04
TiO_2	0.03
FeO	16.45
MnO	0.26
MgO	43.50
CaO	0.30
Cr_2O_3	0.05
NiO	0.24
Total	100.40
Cations based on four oxygens:	
Si	0.9972
Al	0.0012
Ti	0.0006
Fe	0.3471
Mn	0.0056
Mg	1.6355
Ca	0.0081
Cr	0.0010
Ni	0.0049
Total	3.0011
Fo	82.5
Notes	

Table XXXVII

Electron microprobe analyses of chromian spinel phenocrysts from VG-357.

Sample	*Sp-357.2*	*Sp-357.4*	*Sp-357.8*	*Sp-357.9*	*Sp-357.12*	*Sp-357.15*
FeO	29.80	29.70	29.85	30.10	32.03	29.88
TiO_2	2.26	2.17	2.34	2.32	2.98	2.25
MnO	0.32	0.14	0.24	0.08	0.23	0.27
MgO	12.04	12.05	12.12	12.03	11.82	12.13
Al_2O_3	20.69	21.10	20.68	20.71	19.15	20.78
SiO_2	0.00	0.00	0.29	0.00	0.00	0.00
Cr_2O_3	33.37	33.52	33.02	33.94	33.21	34.24
NiO	0.15	0.20	0.19	0.16	0.17	0.22
Total	98.63	98.88	98.73	99.34	99.59	99.76
Fe_2O_3	12.81	12.50	12.42	12.55	14.01	12.66
FeO	18.26	18.44	18.66	18.79	19.41	18.48
Total	99.90	100.12	99.96	100.58	100.98	101.02
Cations based on four oxygens:						
Fe	0.8117	0.8051	0.8105	0.8143	0.8750	0.8048
Ti	0.0554	0.0529	0.0571	0.0564	0.0732	0.0545
Mn	0.0088	0.0038	0.0066	0.0022	0.0064	0.0074
Mg	0.5844	0.5821	0.5864	0.5799	0.5754	0.5822
Al	0.7944	0.8063	0.7915	0.7898	0.7374	0.7889
Si	0.0000	0.0000	0.0094	0.0000	0.0000	0.0000
Cr	0.8592	0.8590	0.8475	0.8679	0.8575	0.8717
Ni	0.0039	0.0052	0.0050	0.0042	0.0045	0.0057
Total	3.1178	3.1145	3.1140	3.1147	3.1293	3.1152
Cr#	0.5196	0.5158	0.5171	0.5236	0.5377	0.5249
Mg#	0.5402	0.5380	0.5365	0.5329	0.5205	0.5391
Fe^{3+}#	0.1597	0.1549	0.1564	0.1558	0.1778	0.1561
Notes						

Table XXXVII

(Continued)

Sample	*Sp-357.17*	*Sp-357.18*
FeO	30.01	29.82
TiO_2	2.32	2.25
MnO	0.36	0.18
MgO	12.10	12.09
Al_2O_3	20.73	20.59
SiO_2	0.00	0.00
Cr_2O_3	34.13	33.85
NiO	0.14	0.15
Total	99.79	98.93
Fe_2O_3	12.70	12.68
FeO	18.57	18.40
Total	101.05	100.19
Cations based on four oxygens:		
Fe	0.8085	0.8099
Ti	0.0562	0.0550
Mn	0.0098	0.0050
Mg	0.5809	0.5852
Al	0.7873	0.7883
Si	0.0000	0.0000
Cr	0.8692	0.8691
Ni	0.0036	0.0039
Total	3.1156	3.1163
Cr#	0.5247	0.5244
Mg#	0.5372	0.5394
Fe^{3+}#	0.1569	0.1577
Notes		

Table XXXVIII

Electron microprobe analyses of olivine phenocrysts from VG-360.

Sample	*Ol-360.3*	*Ol-360.4*	*Ol-360.8*	*Ol-360.9*	*Ol-360.12*	*Ol-360.14*
SiO_2	38.88	39.23	38.95	39.08	39.21	38.98
Al_2O_3	0.04	0.04	0.06	0.05	0.04	0.04
TiO_2	0.06	0.00	0.00	0.00	0.03	0.00
FeO	17.23	17.22	17.58	17.52	17.16	17.39
MnO	0.31	0.25	0.26	0.28	0.31	0.28
MgO	42.43	42.83	42.58	42.62	43.11	42.75
CaO	0.37	0.24	0.33	0.29	0.26	0.30
Cr_2O_3	0.09	0.06	0.05	0.09	0.04	0.04
NiO	0.18	0.22	0.25	0.21	0.27	0.25
Total	99.59	100.10	100.06	100.15	100.43	100.02
Cations based on four oxygens:						
Si	0.9938	0.9963	0.9923	0.9940	0.9930	0.9925
Al	0.0013	0.0011	0.0017	0.0015	0.0012	0.0012
Ti	0.0012	0.0000	0.0001	0.0001	0.0005	0.0000
Fe	0.3683	0.3657	0.3744	0.3726	0.3634	0.3702
Mn	0.0067	0.0054	0.0056	0.0061	0.0066	0.0061
Mg	1.6168	1.6215	1.6171	1.6157	1.6273	1.6224
Ca	0.0100	0.0067	0.0089	0.0079	0.0071	0.0081
Cr	0.0017	0.0012	0.0011	0.0019	0.0007	0.0007
Ni	0.0036	0.0046	0.0051	0.0043	0.0055	0.0052
Total	3.0033	3.0024	3.0061	3.0041	3.0053	3.0063
Fo	81.4	81.6	81.2	81.3	81.7	81.4
Notes						

Table XXXVIII

(Continued)

Sample	*Ol-360.16*	*Ol-360.17*	*Ol-360.20*	*Ol-360.21*	*Ol-360.25*
SiO_2	38.95	38.77	38.80	38.81	38.97
Al_2O_3	0.04	0.03	0.04	0.04	0.04
TiO_2	0.02	0.04	0.04	0.02	0.01
FeO	17.66	17.33	17.27	17.42	17.31
MnO	0.29	0.29	0.29	0.28	0.27
MgO	42.50	42.69	42.87	42.65	42.90
CaO	0.28	0.26	0.26	0.27	0.25
Cr_2O_3	0.04	0.05	0.08	0.03	0.00
NiO	0.22	0.21	0.24	0.26	0.21
Total	100.01	99.67	99.88	99.78	99.96
Cations based on four oxygens:					
Si	0.9929	0.9929	0.9892	0.9911	0.9921
Al	0.0012	0.0012	0.0011	0.0011	0.0013
Ti	0.0005	0.0005	0.0008	0.0004	0.0002
Fe	0.3765	0.3765	0.3681	0.3719	0.3684
Mn	0.0062	0.0062	0.0062	0.0061	0.0057
Mg	1.6152	1.6152	1.6295	1.6237	1.6280
Ca	0.0077	0.0077	0.0071	0.0073	0.0069
Cr	0.0008	0.0008	0.0016	0.0006	0.0000
Ni	0.0044	0.0044	0.0049	0.0053	0.0043
Total	3.0054	3.0054	3.0085	3.0074	3.0069
Fo	81.1	81.5	81.6	81.4	81.5
Notes					

Table XXXIX

Electron microprobe analyses of chromian spinel phenocrysts from VG-360.

Sample	*Sp-360.1*	*Sp-360.2*	*Sp-360.5*	*Sp-360.6*	*Sp-360.7*	*Sp-360.10*
FeO	31.80	32.01	33.23	32.59	32.89	32.48
TiO_2	3.09	3.15	3.57	3.42	3.43	3.25
MnO	0.32	0.32	0.26	0.31	0.25	0.33
MgO	10.89	10.78	10.97	10.69	10.76	10.88
Al_2O_3	18.41	18.01	17.48	17.43	17.53	18.32
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	33.86	34.01	33.50	33.09	33.84	33.35
NiO	0.16	0.19	0.14	0.18	0.15	0.18
Total	98.52	98.46	99.15	97.71	98.86	98.79
Fe_2O_3	12.69	12.80	13.77	13.36	13.28	13.21
FeO	20.37	20.48	20.83	20.56	20.93	20.58
Total	99.79	99.74	100.51	99.03	100.17	100.10
Cations based on four oxygens:						
Fe	0.8822	0.8910	0.9226	0.9176	0.9154	0.9005
Ti	0.0771	0.0789	0.0890	0.0865	0.0859	0.0811
Mn	0.0090	0.0090	0.0073	0.0089	0.0071	0.0094
Mg	0.5386	0.5351	0.5429	0.5366	0.5339	0.5377
Al	0.7197	0.7063	0.6841	0.6918	0.6878	0.7160
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8880	0.8949	0.8793	0.8807	0.8905	0.8741
Ni	0.0042	0.0050	0.0037	0.0048	0.0041	0.0048
Total	3.1188	3.1202	3.1290	3.1270	3.1247	3.1236
Cr#	0.5522	0.5588	0.5624	0.5601	0.5642	0.5497
Mg#	0.4879	0.4840	0.4841	0.4810	0.4781	0.4851
Fe^{3+}#	0.1647	0.1669	0.1805	0.1773	0.1742	0.1719
Notes						

Table XXXIX
(Continued)

Sample	*Sp-360.11*	*Sp-360.13*	*Sp-360.15*	*Sp-360.18*	*Sp-360.19*	*Sp-360.22*
FeO	31.14	32.40	32.20	31.71	31.76	32.62
TiO_2	2.82	3.13	2.90	3.00	3.11	3.21
MnO	0.31	0.30	0.30	0.24	0.30	0.30
MgO	11.17	10.83	10.74	10.70	10.73	10.65
Al_2O_3	19.28	17.99	18.37	18.19	17.94	17.58
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	32.88	33.28	33.85	34.41	33.67	33.09
NiO	0.23	0.20	0.14	0.20	0.16	0.16
Total	97.83	98.12	98.49	98.46	97.67	97.61
Fe_2O_3	12.86	13.44	13.04	12.38	12.72	13.51
FeO	19.55	20.30	20.46	20.55	20.30	20.45
Total	99.10	99.46	99.79	99.68	98.93	98.95
Cations based on four oxygens:						
Fe	0.8646	0.9059	0.8953	0.8815	0.8908	0.9191
Ti	0.0705	0.0787	0.0725	0.0750	0.0784	0.0814
Mn	0.0087	0.0084	0.0083	0.0069	0.0086	0.0087
Mg	0.5531	0.5398	0.5326	0.5303	0.5365	0.5352
Al	0.7544	0.7088	0.7199	0.7128	0.7090	0.6982
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8632	0.8798	0.8900	0.9043	0.8928	0.8817
Ni	0.0061	0.0054	0.0038	0.0053	0.0044	0.0042
Total	3.1205	3.1267	3.1223	3.1162	3.1205	3.1285
Cr#	0.5335	0.5537	0.5527	0.5592	0.5572	0.5579
Mg#	0.5044	0.4874	0.4834	0.4812	0.4850	0.4813
Fe^{3+}#	0.1659	0.1756	0.1686	0.1609	0.1671	0.1783
Notes						

Table XXXIX

(Continued)

Sample	*Sp-360.23*	*Sp-360.24*	*Sp-360.26*	*Sp-360.27*
FeO	32.09	32.71	33.47	31.30
TiO_2	3.23	3.22	3.73	2.90
MnO	0.28	0.26	0.34	0.25
MgO	10.76	10.63	10.64	10.84
Al_2O_3	17.96	17.95	17.69	17.88
SiO_2	0.00	0.00	0.00	0.00
Cr_2O_3	33.27	33.60	32.00	33.83
NiO	0.13	0.19	0.20	0.17
Total	97.72	98.55	98.07	97.16
Fe_2O_3	12.94	13.15	13.81	12.75
FeO	20.44	20.86	21.03	19.82
Total	99.00	99.86	99.44	98.43
Cations based on four oxygens:				
Fe	0.8999	0.9119	0.9396	0.8814
Ti	0.0814	0.0807	0.0942	0.0734
Mn	0.0081	0.0072	0.0096	0.0071
Mg	0.5377	0.5282	0.5325	0.5444
Al	0.7097	0.7051	0.7000	0.7097
Si	0.0000	0.0000	0.0000	0.0000
Cr	0.8821	0.8855	0.8494	0.9007
Ni	0.0036	0.0052	0.0055	0.0045
Total	3.1224	3.1238	3.1308	3.1212
Cr#	0.5540	0.5566	0.5481	0.5592
Mg#	0.4841	0.4759	0.4742	0.4936
Fe^{3+}#	0.1703	0.1720	0.1840	0.1672
Notes				

Table XL

Electron microprobe analyses of olivine phenocrysts from VG-368.

Sample	*Ol-368.1*	*Ol-368.2*	*Ol-368.3*	*Ol-368.4*	*Ol-368.5*	*Ol-368.6*
SiO_2	40.18	39.75	39.74	39.87	39.93	39.68
Al_2O_3	0.05	0.05	0.07	0.05	0.05	0.04
TiO_2	0.02	0.02	0.02	0.03	0.00	0.00
FeO	14.73	15.48	15.52	15.52	15.60	15.31
MnO	0.22	0.23	0.28	0.18	0.22	0.24
MgO	44.57	43.79	44.46	43.97	44.31	43.26
CaO	0.30	0.27	0.28	0.28	0.28	0.30
Cr_2O_3	0.04	0.04	0.06	0.05	0.02	0.04
NiO	0.26	0.22	0.25	0.25	0.28	0.27
Total	100.38	99.85	100.68	100.20	100.68	99.15
Cations based on four oxygens:						
Si	1.0044	1.0028	0.9954	1.0022	0.9996	1.0076
Al	0.0016	0.0015	0.0019	0.0015	0.0014	0.0013
Ti	0.0004	0.0003	0.0003	0.0005	0.0000	0.0000
Fe	0.3078	0.3265	0.3251	0.3263	0.3265	0.3251
Mn	0.0046	0.0049	0.0059	0.0039	0.0046	0.0052
Mg	1.6609	1.6470	1.6602	1.6477	1.6538	1.6376
Ca	0.0080	0.0073	0.0075	0.0077	0.0075	0.0082
Cr	0.0008	0.0008	0.0011	0.0010	0.0004	0.0008
Ni	0.0053	0.0045	0.0051	0.0050	0.0056	0.0054
Total	2.9938	2.9955	3.0025	2.9958	2.9993	2.9912
Fo	84.4	83.5	83.6	83.5	83.5	83.4
Notes						

Table XLI

Electron microprobe analyses of olivine phenocrysts from VG-370

Sample	*Ol-370.1*	*Ol-370.2*	*Ol-370.4*	*Ol-370.5*	*Ol-370.6*	*Ol-370.8*
SiO_2	39.08	39.08	39.01	38.71	38.80	39.09
Al_2O_3	0.04	0.04	0.05	0.04	0.05	0.05
TiO_2	0.00	0.00	0.01	0.01	0.02	0.00
FeO	16.00	15.84	16.74	16.07	16.13	15.35
MnO	0.29	0.27	0.30	0.32	0.32	0.25
MgO	43.82	43.93	43.32	43.33	43.10	43.80
CaO	0.27	0.29	0.30	0.28	0.30	0.29
Cr_2O_3	0.04	0.03	0.05	0.05	0.12	0.07
NiO	0.21	0.25	0.19	0.22	0.25	0.26
Total	99.75	99.74	99.97	99.03	99.08	99.17
Cations based on four oxygens:						
Si	0.9912	0.9909	0.9907	0.9903	0.9925	0.9945
Al	0.0012	0.0011	0.0014	0.0012	0.0014	0.0015
Ti	0.0000	0.0000	0.0003	0.0002	0.0004	0.0000
Fe	0.3394	0.3359	0.3555	0.3438	0.3449	0.3266
Mn	0.0061	0.0059	0.0065	0.0069	0.0068	0.0054
Mg	1.6572	1.6606	1.6402	1.6525	1.6433	1.6613
Ca	0.0074	0.0079	0.0082	0.0078	0.0081	0.0079
Cr	0.0008	0.0007	0.0011	0.0010	0.0025	0.0013
Ni	0.0042	0.0051	0.0038	0.0046	0.0051	0.0054
Total	3.0076	3.0080	3.0076	3.0082	3.0050	3.0039
Fo	83.0	83.2	82.2	82.8	82.7	83.6
Notes						

Table XLI

(Continued)

Sample	*Ol-370.9*	*Ol-370.10*	*Ol-370.11*	*Ol-370.12*	*Ol-370.13*	*Ol-370.18*
SiO_2	39.20	38.84	39.52	40.03	39.52	39.59
Al_2O_3	0.04	0.03	0.04	0.10	0.04	0.04
TiO_2	0.02	0.03	0.00	0.02	0.04	0.03
FeO	15.91	15.55	15.78	15.91	16.08	16.14
MnO	0.23	0.26	0.25	0.22	0.23	0.27
MgO	43.67	43.81	43.51	42.64	43.59	43.33
CaO	0.27	0.25	0.26	0.63	0.26	0.28
Cr_2O_3	0.05	0.05	0.04	0.05	0.06	0.05
NiO	0.27	0.28	0.29	0.27	0.21	0.24
Total	99.64	99.11	99.69	99.87	100.02	99.98
Cations based on four oxygens:						
Si	0.9946	0.9903	1.0009	1.0117	0.9986	1.0011
Al	0.0011	0.0010	0.0013	0.0029	0.0012	0.0012
Ti	0.0003	0.0005	0.0000	0.0003	0.0007	0.0007
Fe	0.3375	0.3316	0.3342	0.3362	0.3397	0.3414
Mn	0.0049	0.0057	0.0054	0.0048	0.0050	0.0057
Mg	1.6517	1.6653	1.6426	1.6066	1.6420	1.6334
Ca	0.0072	0.0067	0.0069	0.0170	0.0069	0.0076
Cr	0.0011	0.0011	0.0007	0.0010	0.0011	0.0011
Ni	0.0055	0.0057	0.0059	0.0055	0.0043	0.0048
Total	3.0038	3.0079	2.9979	2.9859	2.9994	2.9969
Fo	83.0	83.4	83.1	82.7	82.9	82.7
Notes						

Table XLII

Electron microprobe analyses of chromian spinel phenocrysts from VG-370.

Sample	*Sp-370.3*	*Sp-370.7*	*Sp-370.14*	*Sp-370.15*	*Sp-370.16*	*Sp-370.17*
FeO	29.18	28.90	29.22	29.84	28.96	29.84
TiO_2	2.35	2.25	2.23	2.67	2.19	2.33
MnO	0.27	0.26	0.32	0.24	0.28	0.26
MgO	11.92	12.15	11.96	11.93	11.99	11.80
Al_2O_3	20.95	21.25	20.91	21.26	21.37	20.86
SiO_2	0.00	0.20	0.00	0.00	0.00	0.00
Cr_2O_3	33.72	33.27	34.17	31.84	33.12	32.87
NiO	0.16	0.21	0.19	0.17	0.21	0.16
Total	98.53	98.50	99.00	97.94	98.12	98.12
Fe_2O_3	11.78	11.68	11.94	12.34	11.96	12.47
FeO	18.57	18.37	18.46	18.73	18.19	18.60
Total	99.72	99.65	100.18	99.17	99.30	99.36
Cations based on four oxygens:						
Fe	0.7930	0.7828	0.7912	0.8153	0.7885	0.8164
Ti	0.0574	0.0549	0.0544	0.0655	0.0535	0.0574
Mn	0.0074	0.0071	0.0087	0.0065	0.0077	0.0073
Mg	0.5774	0.5869	0.5775	0.5810	0.5822	0.5755
Al	0.8023	0.8113	0.7978	0.8184	0.8200	0.8042
Si	0.0000	0.0064	0.0000	0.0000	0.0000	0.0000
Cr	0.8664	0.8519	0.8747	0.8225	0.8526	0.8503
Ni	0.0042	0.0055	0.0049	0.0045	0.0056	0.0041
Total	3.1080	3.1068	3.1091	3.1138	3.1100	3.1151
Cr#	0.5191	0.5122	0.5229	0.5011	0.5096	0.5138
Mg#	0.5336	0.5409	0.5359	0.5317	0.5402	0.5306
Fe^{3+}#	0.1474	0.1463	0.1483	0.1561	0.1492	0.1567
Notes						

Table XLIII

Electron microprobe analyses of olivine phenocrysts from VG-373.

Sample	*Ol-373.6*	*Ol-373.7*	*Ol-373.8*	*Ol-373.9*	*Ol-373.19*	*Ol-373.20*
SiO_2	39.94	39.98	39.53	39.47	40.01	39.63
Al_2O_3	0.08	0.08	0.08	0.08	0.07	0.07
TiO_2	0.00	0.01	0.03	0.02	0.02	0.00
FeO	13.03	12.99	12.90	13.19	12.77	12.90
MnO	0.19	0.23	0.15	0.20	0.21	0.23
MgO	46.12	46.09	45.62	46.13	46.10	45.79
CaO	0.30	0.26	0.28	0.28	0.25	0.31
Cr_2O_3	0.06	0.08	0.08	0.06	0.05	0.04
NiO	0.31	0.30	0.21	0.24	0.33	0.30
Total	100.03	100.02	98.88	99.67	99.81	99.26
Cations based on four oxygens:						
Si	0.9955	0.9964	0.9961	0.9889	0.9980	0.9954
Al	0.0022	0.0023	0.0022	0.0023	0.0021	0.0020
Ti	0.0001	0.0002	0.0005	0.0005	0.0003	0.0000
Fe	0.2715	0.2706	0.2718	0.2763	0.2663	0.2709
Mn	0.0041	0.0048	0.0033	0.0043	0.0044	0.0049
Mg	1.7138	1.7125	1.7139	1.7231	1.7145	1.7148
Ca	0.0079	0.0069	0.0076	0.0074	0.0067	0.0083
Cr	0.0012	0.0016	0.0016	0.0011	0.0010	0.0008
Ni	0.0062	0.0059	0.0042	0.0049	0.0066	0.0060
Total	3.0025	3.0013	3.0012	3.0087	2.9999	3.0030
Fo	86.3	86.4	86.3	86.2	86.6	86.4
Notes						

Table XLIII

(Continued)

Sample	*Ol-373.26*	*Ol-373.31*	*Ol-373.32*	*Ol-373.33*	*Ol-373.37*	*Ol-373.38*
SiO_2	39.54	39.89	39.73	39.79	39.57	39.78
Al_2O_3	0.07	0.08	0.05	0.06	0.04	0.06
TiO_2	0.00	0.00	0.00	0.02	0.03	0.01
FeO	12.88	13.21	13.10	13.09	12.46	12.91
MnO	0.23	0.20	0.24	0.21	0.18	0.17
MgO	45.71	45.92	46.10	45.87	46.37	45.92
CaO	0.28	0.30	0.29	0.30	0.28	0.28
Cr_2O_3	0.04	0.07	0.04	0.08	0.02	0.06
NiO	0.30	0.32	0.31	0.32	0.33	0.26
Total	99.05	100.00	99.87	99.74	99.28	99.44
Cations based on four oxygens:						
Si	0.9953	0.9955	0.9929	0.9954	0.9920	0.9966
Al	0.0020	0.0023	0.0016	0.0017	0.0011	0.0017
Ti	0.0000	0.0000	0.0000	0.0003	0.0005	0.0002
Fe	0.2710	0.2757	0.2737	0.2739	0.2613	0.2705
Mn	0.0049	0.0042	0.0050	0.0045	0.0039	0.0037
Mg	1.7153	1.7087	1.7176	1.7108	1.7333	1.7151
Ca	0.0077	0.0080	0.0078	0.0080	0.0075	0.0075
Cr	0.0008	0.0015	0.0008	0.0015	0.0005	0.0011
Ni	0.0062	0.0065	0.0063	0.0064	0.0067	0.0052
Total	3.0031	3.0024	3.0057	3.0025	3.0065	3.0015
Fo	86.4	86.1	86.3	86.2	86.9	86.4
Notes		C	→	R		

Table XLIII
(Continued)

Sample	*Ol-373.47*
SiO_2	39.37
Al_2O_3	0.12
TiO_2	0.03
FeO	13.99
MnO	0.22
MgO	44.52
CaO	0.35
Cr_2O_3	0.12
NiO	0.25
Total	98.97
Cations based on four oxygens:	
Si	0.9967
Al	0.0037
Ti	0.0006
Fe	0.2962
Mn	0.0048
Mg	1.6806
Ca	0.0094
Cr	0.0024
Ni	0.0051
Total	2.9994
Fo	85.0
Notes	

Table XLIV

Electron microprobe analyses of chromian spinel phenocrysts from VG-373.

Sample	*Sp-373.1*	*Sp-373.2*	*Sp-373.3*	*Sp-373.4*	*Sp-373.5*	*Sp-373.10*
FeO	17.23	15.68	15.52	16.21	15.86	16.25
TiO_2	0.32	0.25	0.24	0.28	0.25	0.33
MnO	0.15	0.11	0.08	0.11	0.10	0.16
MgO	15.45	17.33	17.43	17.17	17.28	17.42
Al_2O_3	31.99	44.96	46.54	44.35	45.65	44.22
SiO_2	0.00	0.00	0.00	0.00	0.03	0.04
Cr_2O_3	33.56	20.24	19.37	21.07	19.28	20.34
NiO	0.18	0.20	0.21	0.21	0.25	0.27
Total	98.89	98.78	99.40	99.39	98.70	99.03
Fe_2O_3	4.52	3.82	3.31	4.00	3.84	5.06
FeO	13.16	12.24	12.54	12.61	12.40	11.85
Total	99.33	99.15	99.72	99.80	99.08	99.67
Cations based on four oxygens:						
Fe	0.4284	0.3667	0.3584	0.3786	0.3700	0.3807
Ti	0.0071	0.0052	0.0049	0.0059	0.0053	0.0069
Mn	0.0038	0.0027	0.0020	0.0025	0.0023	0.0038
Mg	0.6849	0.7224	0.7178	0.7149	0.7191	0.7277
Al	1.1208	1.4813	1.5151	1.4598	1.5016	1.4600
Si	0.0000	0.0000	0.0000	0.0000	0.0009	0.0010
Cr	0.7886	0.4473	0.4231	0.4651	0.4253	0.4505
Ni	0.0043	0.0046	0.0046	0.0047	0.0056	0.0060
Total	3.0379	3.0302	3.0258	3.0314	3.0301	3.0366
Cr#	0.4130	0.2319	0.2182	0.2416	0.2207	0.2310
Mg#	0.6766	0.7162	0.7124	0.7081	0.7129	0.7258
Fe^{3+}#	0.0503	0.0400	0.0343	0.0418	0.0402	0.0530
Notes	C → R		U	U	U	U

Table XLIV
(Continued)

Sample	*Sp-373.11*	*Sp-373.12*	*Sp-373.13*	Sp-373.14	*Sp-373.15*	*Sp-373.16*
FeO	16.41	16.18	16.65	15.68	17.66	16.10
TiO_2	0.28	0.23	0.31	0.23	0.33	0.29
MnO	0.15	0.16	0.16	0.18	0.21	0.16
MgO	17.60	17.65	17.47	17.89	15.64	17.64
Al_2O_3	44.52	45.19	43.83	45.71	33.79	44.26
SiO_2	0.01	0.03	0.01	0.00	0.01	0.01
Cr_2O_3	19.94	19.90	21.06	20.11	31.78	20.35
NiO	0.26	0.29	0.29	0.29	0.28	0.29
Total	99.18	99.64	99.78	100.10	99.71	99.12
Fe_2O_3	5.06	4.69	5.03	4.35	4.85	4.90
FeO	11.85	11.96	12.12	11.76	13.29	11.69
Total	99.67	100.09	100.28	100.52	100.18	99.59
Cations based on four oxygens:						
Fe	0.3835	0.3756	0.3888	0.3612	0.4330	0.3767
Ti	0.0058	0.0048	0.0065	0.0048	0.0073	0.0061
Mn	0.0035	0.0039	0.0039	0.0041	0.0053	0.0038
Mg	0.7336	0.7304	0.7270	0.7349	0.6837	0.7358
Al	1.4667	1.4782	1.4419	1.4843	1.1674	1.4593
Si	0.0004	0.0008	0.0004	0.0000	0.0003	0.0003
Cr	0.4406	0.4366	0.4648	0.4381	0.7366	0.4502
Ni	0.0059	0.0065	0.0065	0.0065	0.0067	0.0066
Total	3.0400	3.0368	3.0396	3.0338	3.0402	3.0387
Cr#	0.2310	0.2280	0.2437	0.2278	0.3868	0.2357
Mg#	0.7258	0.7245	0.7198	0.7306	0.6772	0.7289
Fe^{3+}#	0.0530	0.0487	0.0525	0.0449	0.0533	0.0513
Notes	U	U	U	U	C →	R

Table XLIV

(Continued)

Sample	*Sp-373.17*	*Sp-373.18*	*Sp-373.21*	*Sp-373.22*	*Sp-373.23*	*Sp-373.24*
FeO	15.94	15.71	17.31	16.33	16.16	18.61
TiO_2	0.27	0.25	0.36	0.30	0.28	0.32
MnO	0.15	0.18	0.17	0.15	0.17	0.16
MgO	17.56	17.87	15.93	17.11	17.13	14.17
Al_2O_3	44.45	45.86	35.50	42.41	41.19	26.65
SiO_2	0.02	0.00	0.02	0.00	0.00	0.00
Cr_2O_3	20.19	20.16	28.44	20.93	23.78	38.77
NiO	0.27	0.28	0.21	0.25	0.24	0.15
Total	98.85	100.30	97.95	97.47	98.94	98.84
Fe_2O_3	4.62	4.22	5.12	5.10	4.67	
4.80						
FeO	11.78	11.91	12.70	11.74	11.95	14.29
Total	99.31	100.73	98.45	97.99	99.41	99.31
Cations based on four oxygens:						
Fe	0.3733	0.3611	0.4269	0.3908	0.3838	0.4769
Ti	0.0056	0.0051	0.0080	0.0064	0.0060	0.0074
Mn	0.0037	0.0042	0.0043	0.0036	0.0040	0.0043
Mg	0.7333	0.7324	0.7004	0.7301	0.7253	0.6474
Al	1.4671	1.4858	1.2341	1.4308	1.3790	0.9625
Si	0.0005	0.0000	0.0006	0.0000	0.0000	0.0000
Cr	0.4469	0.4381	0.6631	0.4737	0.5339	0.9394
Ni	0.0062	0.0061	0.0050	0.0057	0.0054	0.0036
Total	3.0366	3.0327	3.0425	3.0411	3.0373	3.0414
Cr#	0.2335	0.2277	0.3495	0.2486	0.2791	0.4938
Mg#	0.7265	0.7278	0.6909	0.7220	0.7186	0.6386
Fe^{3+}#	0.0484	0.0435	0.0565	0.0546	0.0497	0.0550
Notes	U	U	C →	R	U	C →

Table XLIV
(Continued)

Sample	*Sp-373.25*	Sp-373.27	*Sp-373.28*	*Sp-373.29*	*Sp-373.30*	*Sp-373.34*
FeO	16.34	17.83	15.95	17.13	15.77	16.02
TiO_2	0.21	0.39	0.26	0.31	0.26	0.25
MnO	0.08	0.20	0.11	0.20	0.13	0.19
MgO	17.38	15.12	17.34	15.85	17.64	17.88
Al_2O_3	45.17	31.28	45.49	35.11	45.78	45.50
SiO_2	0.00	0.00	0.00	0.00	0.07	0.02
Cr_2O_3	19.65	34.05	19.33	28.94	18.70	18.98
NiO	0.19	0.18	0.20	0.20	0.18	0.25
Total	99.02	99.04	98.69	97.75	98.44	99.07
Fe_2O_3	4.49	4.67	4.06	5.02	4.31	5.02
FeO	12.29	13.62	12.29	12.61	11.89	11.50
Total	99.47	99.51	99.08	98.24	98.88	99.59
Cations based on four oxygens:						
Fe	0.3816	0.4451	0.3727	0.4239	0.3682	0.3728
Ti	0.0045	0.0087	0.0055	0.0070	0.0055	0.0051
Mn	0.0019	0.0050	0.0027	0.0050	0.0031	0.0044
Mg	0.7233	0.6728	0.7220	0.6993	0.7343	0.7417
Al	1.4862	1.1001	1.4978	1.2247	1.5041	1.4920
Si	0.0000	0.0000	0.0000	0.0000	0.0019	0.0005
Cr	0.4337	0.8033	0.4269	0.6771	0.4128	0.4174
Ni	0.0043	0.0043	0.0045	0.0048	0.0041	0.0055
Total	3.0353	3.0393	3.0320	3.0419	3.0340	3.0394
Cr#	0.2258	0.4219	0.2218	0.3560	0.2153	0.2186
Mg#	0.7159	0.6642	0.7154	0.6914	0.7256	0.7348
Fe^{3+}#	0.0469	0.0522	0.0425	0.0556	0.0452	0.0522
Notes	R	C → R		C → R		U

Table XLIV

(Continued)

Sample	*Sp-373.35*	*Sp-373.36*	*Sp-373.39*	*Sp-373.40*	*Sp-373.41*	*Sp-373.42*
FeO	16.12	16.20	18.37	18.09	17.39	16.47
TiO_2	0.25	0.27	0.45	0.36	0.30	0.26
MnO	0.21	0.16	0.19	0.18	0.19	0.21
MgO	17.96	17.84	15.07	15.68	15.95	17.66
Al_2O_3	45.76	44.10	29.16	33.28	35.45	43.91
SiO_2	0.01	0.03	0.00	0.00	0.17	0.00
Cr_2O_3	19.57	21.37	34.99	30.80	29.04	21.05
NiO	0.22	0.21	0.15	0.21	0.15	0.20
Total	100.09	100.17	98.38	98.61	98.64	99.77
Fe_2O_3	4.86	4.89	5.67	5.74	4.80	5.16
FeO	11.74	11.79	13.26	12.92	13.06	11.82
Total	100.58	100.67	98.94	99.17	99.12	100.27
Cations based on four oxygens:						
Fe	0.3716	0.3757	0.4661	0.4491	0.4262	0.3842
Ti	0.0052	0.0056	0.0103	0.0081	0.0067	0.0055
Mn	0.0049	0.0037	0.0048	0.0046	0.0047	0.0049
Mg	0.7380	0.7378	0.6818	0.6941	0.6969	0.7342
Al	1.4866	1.4416	1.0428	1.1645	1.2241	1.4433
Si	0.0002	0.0007	0.0000	0.0000	0.0050	0.0000
Cr	0.4265	0.4686	0.8391	0.7228	0.6727	0.4641
Ni	0.0050	0.0047	0.0037	0.0050	0.0036	0.0044
Total	3.0379	3.0383	3.0485	3.0481	3.0398	3.0406
Cr#	0.2229	0.2453	0.4459	0.3829	0.3546	0.2433
Mg#	0.7317	0.7295	0.6694	0.6838	0.6851	0.7270
Fe^{3+}#	0.0501	0.0508	0.0644	0.0637	0.0529	0.0538
Notes	U	U	C → R		C → R	

Table XLV

Electron microprobe analyses of plagioclase phenocrysts from VG-373.

Sample	*Pl-373.43*	*Pl-373.44*	*Pl-373.45*	*Pl-373.46*	*Pl-373.48*	*Pl-373.49*
SiO_2	49.59	48.41	48.66	49.26	48.91	48.60
Al_2O_3	30.82	30.71	30.08	30.49	31.03	30.50
FeO	0.68	0.66	0.61	0.67	0.65	0.58
CaO	15.45	16.19	15.85	15.73	15.92	16.04
K_2O	0.01	0.02	0.02	0.02	0.03	0.02
Na_2O	3.06	2.52	2.72	2.78	2.68	2.64
Total	99.63	98.51	97.94	98.95	99.22	98.38
Cations based on eight oxygens:						
Si	2.2830	2.2584	2.2815	2.2838	2.2632	2.2689
Al	1.6722	1.6888	1.6617	1.6662	1.6920	1.6781
Fe	0.0262	0.0259	0.0239	0.0261	0.0252	0.0227
Ca	0.7622	0.8091	0.7961	0.7811	0.7892	0.8022
K	0.0007	0.0010	0.0013	0.0011	0.0017	0.0012
Na	0.2735	0.2283	0.2471	0.2501	0.2401	0.2387
Total	5.0177	5.0115	5.0116	5.0083	5.0113	5.0117
An	73.5	77.9	76.2	75.7	76.5	77.0
Notes						

Table XLVI

Electron microprobe analyses of olivine phenocrysts from VG-376.

Sample	*Ol-376.3*	*Ol-376.4*	*Ol-376.5*	*Ol-376.6*	*Ol-376.8*	*Ol-376.9*
SiO_2	39.01	39.23	39.39	39.30	39.51	39.51
Al_2O_3	0.05	0.05	0.04	0.06	0.05	0.06
TiO_2	0.04	0.03	0.04	0.04	0.02	0.02
FeO	14.31	14.56	14.60	15.14	15.34	14.96
MnO	0.20	0.27	0.23	0.30	0.26	0.26
MgO	44.13	44.38	44.47	43.58	43.63	43.93
CaO	0.30	0.31	0.33	0.37	0.34	0.28
Cr_2O_3	0.12	0.05	0.06	0.12	0.04	0.05
NiO	0.19	0.20	0.23	0.25	0.19	0.16
Total	98.34	99.08	99.38	99.16	99.38	99.23
Cations based on four oxygens:						
Si	0.9957	0.9949	0.9959	0.9987	1.0017	1.0012
Al	0.0015	0.0016	0.0012	0.0018	0.0015	0.0018
Ti	0.0007	0.0005	0.0008	0.0008	0.0004	0.0004
Fe	0.3053	0.3088	0.3086	0.3217	0.3253	0.3171
Mn	0.0042	0.0058	0.0048	0.0065	0.0056	0.0056
Mg	1.6793	1.6779	1.6759	1.6512	1.6485	1.6591
Ca	0.0082	0.0085	0.0088	0.0101	0.0092	0.0076
Cr	0.0024	0.0010	0.0013	0.0023	0.0008	0.0010
Ni	0.0040	0.0041	0.0047	0.0051	0.0039	0.0033
Total	3.0014	3.0031	3.0019	2.9982	2.9968	2.9970
Fo	84.6	84.5	84.4	83.7	83.5	84.0
Notes						

Table XLVI
(Continued)

Sample	*Ol-376.14*	*Ol-376.15*	*Ol-376.16*	*Ol-376.17*	*Ol-376.18*	*Ol-376.19*
SiO_2	39.32	39.01	39.42	39.32	39.18	39.36
Al_2O_3	0.03	0.13	0.05	0.04	0.04	0.07
TiO_2	0.02	0.08	0.03	0.02	0.02	0.01
FeO	14.33	15.04	14.38	14.28	14.21	14.24
MnO	0.28	0.27	0.23	0.24	0.26	0.25
MgO	45.18	43.29	44.46	44.39	44.23	44.27
CaO	0.33	0.40	0.31	0.31	0.31	0.28
Cr_2O_3	0.07	0.07	0.08	0.06	0.07	0.05
NiO	0.23	0.17	0.18	0.18	0.25	0.20
Total	99.79	98.46	99.14	98.85	98.58	98.72
Cations based on four oxygens:						
Si	0.9897	0.9979	0.9976	0.9977	0.9974	0.9996
Al	0.0009	0.0040	0.0014	0.0012	0.0013	0.0019
Ti	0.0004	0.0015	0.0006	0.0004	0.0005	0.0003
Fe	0.3016	0.3218	0.3043	0.3031	0.3025	0.3024
Mn	0.0061	0.0058	0.0050	0.0051	0.0057	0.0053
Mg	1.6952	1.6508	1.6775	1.6795	1.6784	1.6763
Ca	0.0089	0.0110	0.0084	0.0085	0.0085	0.0076
Cr	0.0013	0.0014	0.0016	0.0012	0.0013	0.0009
Ni	0.0046	0.0035	0.0037	0.0037	0.0051	0.0041
Total	3.0086	2.9977	3.0000	3.0004	3.0006	2.9985
Fo	84.9	83.7	84.6	84.7	84.7	84.7
Notes			R	←	C	→

Table XLVI
(Continued)

Sample	*Ol-376.20*	*Ol-376.29*	*Ol-376.30*
SiO_2	39.52	39.33	39.68
Al_2O_3	0.04	0.61	0.04
TiO_2	0.02	0.02	0.01
FeO	14.38	14.17	14.14
MnO	0.28	0.27	0.22
MgO	44.25	43.99	44.59
CaO	0.31	0.56	0.27
Cr_2O_3	0.05	0.20	0.06
NiO	0.23	0.24	0.24
Total	99.09	99.38	99.26
Cations based on four oxygens:			
Si	1.0007	0.9928	1.0013
Al	0.0013	0.0181	0.0013
Ti	0.0003	0.0005	0.0002
Fe	0.3045	0.2991	0.2984
Mn	0.0060	0.0057	0.0046
Mg	1.6707	1.6555	1.6778
Ca	0.0085	0.0151	0.0073
Cr	0.0011	0.0040	0.0012
Ni	0.0047	0.0049	0.0049
Total	2.9977	2.9955	2.9970
Fo	84.6	84.7	84.9
Notes	R		

Table XLVII

Electron microprobe analyses of chromian spinel phenocrysts from VG-376.

Sample	*Sp-376.2*	*Sp-376.10*	*Sp-376.11*	*Sp-376.12*	*Sp-376.13*	*Sp-376.21*
FeO	24.63	29.39	24.50	24.54	24.79	25.08
TiO_2	1.43	2.92	1.51	1.52	1.53	1.50
MnO	0.21	0.24	0.25	0.26	0.21	0.23
MgO	13.06	12.52	12.64	12.89	12.97	12.94
Al_2O_3	24.01	20.01	24.17	24.38	24.24	24.26
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	34.85	32.83	33.76	33.14	33.71	33.75
NiO	0.16	0.18	0.14	0.18	0.19	0.15
Total	98.34	98.09	96.97	96.90	97.64	97.91
Fe_2O_3	9.10	12.76	8.66	9.15	9.27	9.45
FeO	16.43	17.89	16.70	16.30	16.44	16.57
Total	99.25	99.35	97.83	97.82	98.56	98.85
Cations based on four oxygens:						
Fe	0.6524	0.8039	0.6571	0.6578	0.6605	0.6670
Ti	0.0339	0.0718	0.0364	0.0366	0.0366	0.0358
Mn	0.0055	0.0066	0.0069	0.0071	0.0056	0.0062
Mg	0.6169	0.6103	0.6046	0.6159	0.6161	0.6138
Al	0.8961	0.7716	0.9137	0.9210	0.9103	0.9095
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8726	0.8489	0.8562	0.8398	0.8493	0.8488
Ni	0.0041	0.0047	0.0035	0.0047	0.0049	0.0038
Total	3.0815	3.1179	3.0784	3.0828	3.0833	3.0848
Cr#	0.4932	0.5239	0.4836	0.4769	0.4825	0.4826
Mg#	0.5862	0.5549	0.5743	0.5850	0.5844	0.5819
Fe^{3+}#	0.1094	0.1625	0.1058	0.1115	0.1123	0.1141
Notes						

Table XLVII

(Continued)

Sample	*Sp-376.22*	*Sp-376.23*	*Sp-376.24*	*Sp-376.25*	*Sp-376.26*	*Sp-376.27*
FeO	24.18	24.51	25.21	25.19	24.56	24.71
TiO_2	1.51	1.51	1.71	1.62	1.61	1.62
MnO	0.21	0.22	0.23	0.23	0.23	0.19
MgO	13.07	13.14	12.95	12.80	12.99	12.84
Al_2O_3	24.32	24.47	23.33	23.69	24.26	23.58
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	34.32	34.00	33.71	33.87	34.56	34.91
NiO	0.18	0.16	0.23	0.15	0.18	0.18
Total	97.79	98.01	97.37	97.54	98.39	98.04
Fe_2O_3	8.72	9.08	9.83	9.44	8.72	8.82
FeO	16.33	16.33	16.35	16.68	16.70	16.76
Total	98.65	98.91	98.34	98.49	99.25	98.90
Cations based on four oxygens:						
Fe	0.6420	0.6493	0.6771	0.6743	0.6493	0.6577
Ti	0.0360	0.0360	0.0414	0.0390	0.0382	0.0388
Mn	0.0057	0.0058	0.0064	0.0063	0.0063	0.0052
Mg	0.6187	0.6209	0.6199	0.6111	0.6123	0.6096
Al	0.9100	0.9135	0.8829	0.8937	0.9036	0.8847
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8614	0.8516	0.8557	0.8571	0.8637	0.8786
Ni	0.0045	0.0041	0.0058	0.0038	0.0045	0.0047
Total	3.0781	3.0812	3.0891	3.0853	3.0779	3.0793
Cr#	0.4862	0.4823	0.4921	0.4895	0.4886	0.4982
Mg#	0.5879	0.5891	0.5853	0.5775	0.5809	0.5772
Fe^{3+}#	0.1053	0.1093	0.1204	0.1151	0.1051	0.1071
Notes						

Table XLVII
(Continued)

Sample	*Sp-376.28*	*Sp-376.31*	*Sp-376.35*
FeO	24.59	24.48	28.52
TiO_2	1.59	1.43	2.75
MnO	0.22	0.24	0.14
MgO	13.02	13.04	13.16
Al_2O_3	24.07	24.20	21.32
SiO_2	0.00	0.00	0.21
Cr_2O_3	34.16	34.57	32.45
NiO	0.18	0.16	0.12
Total	97.82	98.12	98.67
Fe_2O_3	9.04	8.99	12.15
FeO	16.45	16.38	17.58
Total	98.73	99.01	99.87
Cations based on four oxygens:			
Fe	0.6540	0.6490	0.7668
Ti	0.0380	0.0341	0.0665
Mn	0.0060	0.0065	0.0038
Mg	0.6172	0.6165	0.6305
Al	0.9023	0.9040	0.8081
Si	0.0000	0.0000	0.0068
Cr	0.8591	0.8664	0.8247
Ni	0.0047	0.0040	0.0031
Total	3.0811	3.0805	3.1103
Cr#	0.4876	0.4893	0.5051
Mg#	0.5852	0.5865	0.5716
Fe^{3+}#	0.1095	0.1081	0.1527
Notes			

Table XLVIII

Electron microprobe analyses of plagioclase phenocrysts from VG-376.

Sample	*Pl-376.1*	*Pl-376.7*	*Pl-376.32*	*Pl-376.33*
SiO_2	50.86	50.58	51.10	50.94
Al_2O_3	29.53	29.44	29.18	29.98
FeO	0.70	0.58	0.73	0.87
CaO	14.12	14.19	13.75	13.95
K_2O	0.08	0.07	0.09	0.07
Na_2O	3.50	3.65	3.62	3.57
Total	98.80	98.51	98.46	99.38
Cations based on eight oxygens:				
Si	2.3506	2.3460	2.3673	2.3413
Al	1.6086	1.6094	1.5930	1.6237
Fe	0.0272	0.0223	0.0281	0.0333
Ca	0.6991	0.7050	0.6823	0.6871
K	0.0045	0.0044	0.0053	0.0040
Na	0.3141	0.3282	0.3252	0.3185
Total	5.0041	5.0153	5.0011	5.0077
An	68.7	68.0	67.4	68.1
Notes				

Table XLIX

Electron microprobe analyses of olivine phenocrysts from VG-378.

Sample	*Ol-378.1*	*Ol-378.2*	*Ol-378.4*	*Ol-378.6*	*Ol-378.9*	*Ol-378.10*
SiO_2	38.76	39.25	38.88	39.19	39.71	39.41
Al_2O_3	0.04	0.05	0.05	0.04	0.05	0.05
TiO_2	0.02	0.02	0.01	0.04	0.02	0.05
FeO	17.27	16.98	17.22	17.12	17.16	17.14
MnO	0.25	0.18	0.26	0.17	0.46	0.41
MgO	42.40	42.33	42.34	42.54	42.43	42.35
CaO	0.28	0.29	0.31	0.26	0.28	0.30
Cr_2O_3	0.03	0.01	0.05	0.06	0.02	0.04
NiO	0.21	0.19	0.28	0.19	0.20	0.21
Total	99.26	99.30	99.40	99.61	100.33	99.96
Cations based on four oxygens:						
Si	0.9940	1.0030	0.9956	0.9993	1.0053	1.0020
Al	0.0012	0.0015	0.0015	0.0012	0.0015	0.0015
Ti	0.0004	0.0004	0.0002	0.0008	0.0004	0.0010
Fe	0.3704	0.3629	0.3688	0.3651	0.3633	0.3645
Mn	0.0054	0.0039	0.0056	0.0037	0.0099	0.0088
Mg	1.6206	1.6121	1.6159	1.6165	1.6009	1.6048
Ca	0.0077	0.0079	0.0085	0.0071	0.0076	0.0082
Cr	0.0006	0.0002	0.0010	0.0012	0.0004	0.0008
Ni	0.0043	0.0039	0.0058	0.0039	0.0041	0.0043
Total	3.0047	2.9958	3.0029	2.9988	2.9933	2.9959
Fo	81.4	81.6	81.4	81.6	81.5	81.5
Notes						

Table XLIX
(Continued)

Sample	*Ol-378.11*	*Ol-378.14*	*Ol-378.15*	*Ol-378.16*
SiO_2	39.05	39.24	38.57	38.96
Al_2O_3	0.05	0.04	0.04	0.04
TiO_2	0.04	0.03	0.04	0.02
FeO	17.28	17.11	17.21	17.08
MnO	0.29	0.30	0.33	0.49
MgO	42.25	42.46	42.61	42.23
CaO	0.27	0.27	0.28	0.29
Cr_2O_3	0.03	0.06	0.05	0.06
NiO	0.21	0.22	0.20	0.23
Total	99.47	99.72	99.33	99.40
Cations based on four oxygens:				
Si	0.9987	0.9999	0.9892	0.9975
Al	0.0015	0.0012	0.0012	0.0012
Ti	0.0008	0.0006	0.0008	0.0004
Fe	0.3696	0.3646	0.3691	0.3657
Mn	0.0063	0.0065	0.0072	0.0106
Mg	1.6103	1.6125	1.6286	1.6114
Ca	0.0074	0.0074	0.0077	0.0080
Cr	0.0006	0.0012	0.0010	0.0012
Ni	0.0043	0.0045	0.0041	0.0047
Total	2.9995	2.9983	3.0089	3.0009
Fo	81.3	81.6	81.5	81.5
Notes				

Table L

Electron microprobe analyses of chromian spinel phenocrysts from VG-378.

Sample	*Sp-378.3*	*Sp-378.5*	*Sp-378.7*	*Sp-378.8*	*Sp-378.12*	*Sp-378.13*
FeO	32.20	32.20	32.21	32.56	32.46	31.86
TiO_2	3.03	2.91	2.94	3.01	3.09	3.00
MnO	0.29	0.23	0.34	0.33	0.25	0.28
MgO	11.12	11.09	11.21	11.18	11.24	11.04
Al_2O_3	17.73	17.82	18.25	18.45	18.61	17.96
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	33.12	33.39	33.92	32.20	32.52	32.95
NiO	0.19	0.18	0.19	0.19	0.15	0.14
Total	97.68	97.82	99.06	97.92	98.33	97.23
Fe_2O_3	13.98	13.91	13.71	14.33	13.94	13.56
FeO	19.60	19.67	19.86	19.65	19.90	19.64
Total	99.07	99.20	100.42	99.34	99.70	98.57
Cations based on four oxygens:						
Fe	0.9045	0.9031	0.8905	0.9102	0.9023	0.8972
Ti	0.0765	0.0734	0.0731	0.0757	0.0772	0.0760
Mn	0.0083	0.0065	0.0095	0.0093	0.0070	0.0080
Mg	0.5567	0.5542	0.5523	0.5570	0.5567	0.5540
Al	0.7021	0.7045	0.7112	0.7271	0.7292	
0.7129						
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8795	0.8852	0.8864	0.8509	0.8545	0.8771
Ni	0.0051	0.0049	0.0051	0.0051	0.0040	0.0038
Total	3.1327	3.1318	3.1281	3.1353	3.1309	3.1290
Cr#	0.5561	0.5568	0.5548	0.5392	0.5395	0.5516
Mg#	0.5027	0.5012	0.5015	0.5034	0.5016	0.5004
Fe^{3+}#	0.1828	0.1810	0.1761	0.1861	0.1807	0.1779
Notes						

Table LI

Electron microprobe analyses of olivine phenocrysts from VG-380.

Sample	*Ol-380.1*	*Ol-380.2*	*Ol-380.3*	*Ol-380.4*	*Ol-380.5*	*Ol-380.6*
SiO_2	39.35	39.53	39.28	39.49	39.73	40.08
Al_2O_3	0.04	0.04	0.04	0.04	0.05	0.05
TiO_2	0.00	0.00	0.01	0.00	0.02	0.02
FeO	16.23	16.57	16.24	16.15	16.57	16.19
MnO	0.18	0.22	0.20	0.13	0.20	0.27
MgO	43.06	42.81	42.96	43.22	42.94	43.15
CaO	0.31	0.30	0.28	0.30	0.28	0.30
Cr_2O_3	0.04	0.06	0.04	0.06	0.06	0.06
NiO	0.24	0.20	0.20	0.18	0.20	0.24
Total	99.46	99.73	99.26	99.56	100.01	100.35
Cations based on four oxygens:						
Si	1.0008	1.0037	1.0010	1.0020	1.0050	1.0085
Al	0.0012	0.0011	0.0012	0.0011	0.0014	0.0015
Ti	0.0000	0.0001	0.0002	0.0000	0.0004	0.0003
Fe	0.3453	0.3517	0.3461	0.3427	0.3504	0.3406
Mn	0.0039	0.0047	0.0043	0.0027	0.0043	0.0057
Mg	1.6327	1.6202	1.6322	1.6350	1.6191	1.6189
Ca	0.0086	0.0081	0.0078	0.0081	0.0075	0.0080
Cr	0.0009	0.0012	0.0009	0.0013	0.0012	0.0012
Ni	0.0049	0.0041	0.0040	0.0037	0.0040	0.0048
Total	2.9980	2.9949	2.9976	2.9966	2.9931	2.9896
Fo	82.5	82.2	82.5	82.7	82.2	82.6
Notes						

Table LI

(Continued)

Sample	*Ol-380.7*	*Ol-380.8*
SiO_2	39.22	39.67
Al_2O_3	0.04	0.04
TiO_2	0.00	0.03
FeO	16.12	16.05
MnO	0.29	0.27
MgO	43.35	43.38
CaO	0.28	0.29
Cr_2O_3	0.04	0.05
NiO	0.27	0.22
Total	99.62	100.00
Cations based on four oxygens:		
Si	0.9965	1.0022
Al	0.0012	0.0012
Ti	0.0001	0.0005
Fe	0.3425	0.3390
Mn	0.0063	0.0058
Mg	1.6417	1.6340
Ca	0.0077	0.0080
Cr	0.0008	0.0010
Ni	0.0055	0.0044
Total	3.0022	2.9960
Fo	82.7	82.8
Notes		

Table LII

Electron microprobe analyses of olivine phenocrysts from VG-383.

Sample	*Ol-383.1*	*Ol-383.2*	*Ol-383.3*	*Ol-383.4*	*Ol-383.5*	*Ol-383.6*
SiO_2	38.91	38.77	38.64	38.69	39.18	39.20
Al_2O_3	0.03	0.02	0.03	0.03	0.03	0.04
TiO_2	0.00	0.01	0.02	0.01	0.02	0.01
FeO	17.27	17.22	16.09	17.20	16.01	16.27
MnO	0.18	0.21	0.10	0.28	0.22	0.23
MgO	43.42	43.13	44.12	43.17	44.19	43.77
CaO	0.30	0.26	0.32	0.26	0.33	0.30
Cr_2O_3	0.04	0.03	0.05	0.04	0.05	0.05
NiO	0.18	0.20	0.25	0.20	0.23	0.19
Total	100.35	99.86	99.63	99.87	100.26	100.05
Cations based on four oxygens:						
Si	0.9867	0.9881	0.9826	0.9863	0.9887	0.9920
Al	0.0009	0.0007	0.0010	0.0008	0.0010	0.0011
Ti	0.0000	0.0001	0.0004	0.0002	0.0004	0.0002
Fe	0.3662	0.3670	0.3421	0.3667	0.3378	0.3442
Mn	0.0039	0.0045	0.0022	0.0060	0.0047	0.0050
Mg	1.6416	1.6387	1.6726	1.6407	1.6625	1.6511
Ca	0.0083	0.0072	0.0088	0.0072	0.0088	0.0081
Cr	0.0008	0.0006	0.0010	0.0007	0.0009	0.0009
Ni	0.0037	0.0040	0.0052	0.0040	0.0048	0.0038
Total	3.0122	3.0109	3.0158	3.0126	3.0097	3.0065
Fo	81.8	81.7	83.0	81.7	83.1	82.7
Notes	C	C →	R	C →	R	R ←

Table LII

(Continued)

Sample	*Ol-383.7*	*Ol-383.8*	*Ol-383.9*	*Ol-383.10*	*Ol-383.11*
SiO_2	39.29	38.92	38.64	39.20	39.04
Al_2O_3	0.03	0.05	0.06	0.06	0.05
TiO_2	0.00	0.01	0.02	0.03	0.03
FeO	17.36	16.68	17.29	15.87	17.40
MnO	0.27	0.28	0.17	0.08	0.23
MgO	43.36	43.87	43.32	44.02	43.18
CaO	0.25	0.29	0.29	0.33	0.32
Cr_2O_3	0.03	0.04	0.02	0.02	0.02
NiO	0.19	0.21	0.15	0.21	0.17
Total	100.79	100.35	99.96	99.82	100.44
Cations based on four oxygens:					
Si	0.9916	0.9850	0.9841	0.9920	0.9892
Al	0.0009	0.0015	0.0018	0.0018	0.0016
Ti	0.0001	0.0001	0.0003	0.0005	0.0006
Fe	0.3664	0.3530	0.3682	0.3359	0.3686
Mn	0.0057	0.0059	0.0037	0.0017	0.0049
Mg	1.6315	1.6550	1.6446	1.6607	1.6314
Ca	0.0068	0.0078	0.0080	0.0089	0.0087
Cr	0.0006	0.0008	0.0004	0.0005	0.0005
Ni	0.0039	0.0043	0.0031	0.0042	0.0034
Total	3.0074	3.0135	3.0143	3.0061	3.0089
Fo	81.7	82.4	81.7	83.2	81.6
Notes	← C → R		C	→ R	C

Table LIII

Electron microprobe analyses of olivine phenocrysts from VG-384.

Sample	*Ol-384.1*	*Ol-384.2*	*Ol-384.3*	*Ol-384.4*	*Ol-384.5*	*Ol-384.7*
SiO_2	39.86	39.58	39.36	39.40	39.40	39.31
Al_2O_3	0.03	0.03	0.04	0.04	0.04	0.05
TiO_2	0.01	0.00	0.03	0.03	0.02	0.02
FeO	16.15	15.98	16.04	16.37	16.29	16.28
MnO	0.37	0.43	0.69	0.24	0.30	0.28
MgO	43.52	43.38	43.78	43.72	43.31	43.55
CaO	0.30	0.30	0.31	0.30	0.31	0.29
Cr_2O_3	0.08	0.06	0.05	0.04	0.07	0.05
NiO	0.20	0.24	0.25	0.21	0.22	0.20
Total	100.52	100.00	100.55	100.35	99.96	100.03
Cations based on four oxygens:						
Si	1.0025	1.0009	0.9922	0.9943	0.9980	0.9950
Al	0.0009	0.0009	0.0012	0.0012	0.0012	0.0015
Ti	0.0002	0.0000	0.0006	0.0006	0.0004	0.0004
Fe	0.3397	0.3380	0.3382	0.3455	0.3451	0.3446
Mn	0.0079	0.0092	0.0147	0.0051	0.0064	0.0060
Mg	1.6312	1.6349	1.6448	1.6443	1.6349	1.6429
Ca	0.0081	0.0081	0.0084	0.0081	0.0084	0.0079
Cr	0.0016	0.0012	0.0010	0.0008	0.0014	0.0010
Ni	0.0040	0.0049	0.0051	0.0043	0.0045	0.0041
Total	2.9961	2.9981	3.0061	3.0041	3.0003	3.0033
Fo	82.8	82.9	83.0	82.6	82.6	82.7
Notes						

Table LIII

(Continued)

Sample	*Ol-384.9*	*Ol-384.10*	*Ol-384.12*	*Ol-384.13*	*Ol-384.16*	*Ol-384.17*
SiO_2	39.55	39.67	39.56	39.68	39.80	39.75
Al_2O_3	0.05	0.05	0.04	0.06	0.04	0.04
TiO_2	0.02	0.01	0.01	0.01	0.04	0.02
FeO	16.17	16.28	16.15	16.17	16.10	16.22
MnO	0.28	0.25	0.17	0.13	0.31	0.17
MgO	43.60	43.15	43.57	43.30	43.43	43.07
CaO	0.32	0.30	0.29	0.30	0.29	0.26
Cr_2O_3	0.07	0.07	0.03	0.03	0.05	0.06
NiO	0.22	0.20	0.25	0.22	0.18	0.20
Total	100.28	99.98	100.07	99.90	100.24	99.79
Cations based on four oxygens:						
Si	0.9977	1.0034	0.9994	1.0034	1.0032	1.0063
Al	0.0015	0.0015	0.0012	0.0018	0.0012	0.0012
Ti	0.0004	0.0002	0.0002	0.0002	0.0008	0.0004
Fe	0.3412	0.3444	0.3412	0.3420	0.3394	0.3434
Mn	0.0060	0.0054	0.0036	0.0028	0.0066	0.0036
Mg	1.6392	1.6266	1.6404	1.6318	1.6314	1.6249
Ca	0.0086	0.0081	0.0078	0.0081	0.0078	0.0071
Cr	0.0014	0.0014	0.0006	0.0006	0.0010	0.0012
Ni	0.0045	0.0041	0.0051	0.0045	0.0036	0.0041
Total	3.0005	2.9950	2.9995	2.9952	2.9950	2.9922
Fo	82.8	82.5	82.8	82.7	82.8	82.6
Notes						

Table LIV

Electron microprobe analyses of chromian spinel phenocrysts from VG-384.

Sample	*Sp-384.6*	*Sp-384.8*	*Sp-384.11*	*Sp-384.14*	*Sp-384.15*
FeO	30.10	29.82	29.93	30.15	29.43
TiO_2	2.31	2.29	2.27	2.31	2.12
MnO	0.26	0.29	0.18	0.35	0.40
MgO	12.10	12.15	12.13	11.99	12.11
Al_2O_3	20.73	21.01	20.67	20.47	21.17
SiO_2	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	34.16	33.46	33.66	33.93	33.86
NiO	0.13	0.19	0.16	0.13	0.15
Total	99.79	99.22	99.00	99.33	99.23
Fe_2O_3	12.68	12.73	12.82	12.86	12.45
FeO	18.67	18.35	18.38	18.57	18.22
Total	101.05	100.47	100.27	100.60	100.47
Cations based on four oxygens:					
Fe	0.8109	0.8063	0.8122	0.8174	0.7946
Ti	0.0560	0.0557	0.0554	0.0563	0.0515
Mn	0.0071	0.0079	0.0049	0.0096	0.0109
Mg	0.5809	0.5854	0.5866	0.5793	0.5827
Al	0.7873	0.8008	0.7907	0.7823	0.8058
Si	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.8699	0.8552	0.8635	0.8695	0.8642
Ni	0.0034	0.0049	0.0042	0.0034	0.0039
Total	3.1154	3.1163	3.1175	3.1178	3.1135
Cr#	0.5249	0.5164	0.5220	0.5264	0.5175
Mg#	0.5359	0.5413	0.5404	0.5351	0.5423
Fe^{3+}#	0.1567	0.1577	0.1593	0.1598	0.1535
Notes					

Table LV

Electron microprobe analyses of olivine phenocrysts from VG-385.

Sample	*Ol-385.2*	*Ol-385.3*	*Ol-385.6*	*Ol-385.7*	*Ol-385.8*	*Ol-385.9*
SiO_2	39.45	39.33	39.92	39.89	39.53	39.10
Al_2O_3	0.06	0.08	0.05	0.42	0.06	0.08
TiO_2	0.00	0.02	0.03	0.06	0.03	0.04
FeO	14.54	14.11	13.62	14.24	14.30	14.01
MnO	0.22	0.19	0.20	0.20	0.26	0.20
MgO	45.35	44.98	44.93	44.55	44.92	45.28
CaO	0.30	0.27	0.30	0.54	0.28	0.29
Cr_2O_3	0.06	0.05	0.02	0.08	0.07	0.06
NiO	0.26	0.29	0.29	0.25	0.25	0.29
Total	100.24	99.33	99.36	100.24	99.71	99.35
Cations based on four oxygens:						
Si	0.9890	0.9928	1.0036	0.9974	0.9947	0.9873
Al	0.0019	0.0025	0.0015	0.0124	0.0017	0.0024
Ti	0.0000	0.0003	0.0005	0.0011	0.0006	0.0007
Fe	0.3048	0.2978	0.2864	0.2976	0.3010	0.2958
Mn	0.0046	0.0040	0.0043	0.0043	0.0055	0.0043
Mg	1.6947	1.6929	1.6843	1.6605	1.6853	1.7044
Ca	0.0080	0.0074	0.0081	0.0144	0.0075	0.0079
Cr	0.0011	0.0011	0.0003	0.0016	0.0014	0.0013
Ni	0.0053	0.0060	0.0058	0.0051	0.0051	0.0059
Total	3.0093	3.0048	2.9948	2.9943	3.0029	3.0099
Fo	84.8	85.0	85.5	84.8	84.8	85.2
Notes			C → R			

Table LV

(Continued)

Sample	*Ol-385.10*	*Ol-385.11*	*Ol-385.14*	*Ol-385.17*	*Ol-385.20*	*Ol-385.21*
SiO_2	39.06	39.04	38.98	39.06	39.87	39.18
Al_2O_3	0.07	0.07	0.07	0.10	0.07	0.05
TiO_2	0.02	0.03	0.00	0.01	0.02	0.00
FeO	14.09	14.33	13.98	14.75	13.49	13.31
MnO	0.23	0.23	0.21	0.25	0.22	0.21
MgO	45.21	45.21	45.81	45.03	46.32	46.30
CaO	0.35	0.26	0.29	0.37	0.27	0.27
Cr_2O_3	0.04	0.06	0.04	0.05	0.05	0.06
NiO	0.30	0.26	0.33	0.25	0.30	0.34
Total	99.37	99.47	99.70	99.87	100.62	99.73
Cations based on four oxygens:						
Si	0.9869	0.9860	0.9815	0.9848	0.9904	0.9829
Al	0.0020	0.0021	0.0021	0.0030	0.0020	0.0014
Ti	0.0004	0.0005	0.0000	0.0001	0.0003	0.0000
Fe	0.2977	0.3026	0.2943	0.3109	0.2803	0.2793
Mn	0.0048	0.0050	0.0046	0.0054	0.0047	0.0045
Mg	1.7030	1.7023	1.7194	1.6927	1.7155	1.7319
Ca	0.0094	0.0069	0.0077	0.0101	0.0072	0.0073
Cr	0.0009	0.0012	0.0008	0.0009	0.0011	0.0013
Ni	0.0060	0.0052	0.0066	0.0050	0.0060	0.0069
Total	3.0110	3.0117	3.0169	3.0129	3.0075	3.0155
Fo	85.1	84.9	85.4	84.5	86.0	86.1
Notes						

Table LV

(Continued)

Sample	*Ol-385.24*	*Ol-385.25*	*Ol-385.26*
SiO_2	39.56	39.17	39.34
Al_2O_3	0.03	0.08	0.07
TiO_2	0.00	0.00	0.00
FeO	13.75	14.23	14.01
MnO	0.24	0.24	0.21
MgO	46.52	45.74	46.18
CaO	0.16	0.31	0.28
Cr_2O_3	0.00	0.04	0.04
NiO	0.26	0.25	0.28
Total	100.52	100.05	100.40
Cations based on four oxygens:			
Si	0.9851	0.9833	0.9828
Al	0.0010	0.0024	0.0022
Ti	0.0000	0.0000	0.0000
Fe	0.2863	0.2987	0.2926
Mn	0.0052	0.0050	0.0044
Mg	1.7272	1.7116	1.7197
Ca	0.0043	0.0083	0.0076
Cr	0.0000	0.0007	0.0008
Ni	0.0051	0.0051	0.0056
Total	3.0142	3.0150	3.0155
Fo	85.8	85.1	85.5
Notes			

Table LVI

Electron microprobe analyses of chromian spinel phenocrysts from VG-385.

Sample	*Sp-385.5*	*Sp-385.12*	*Sp-385.13*	*Sp-385.15*	*Sp-385.18*	*Sp-385.19*
FeO	20.56	19.19	19.70	20.38	19.75	19.58
TiO_2	0.74	0.65	0.61	0.59	0.58	0.59
MnO	0.18	0.16	0.15	0.19	0.17	0.16
MgO	15.27	15.32	15.64	15.56	15.99	15.80
Al_2O_3	33.18	34.32	35.30	34.61	34.93	35.23
SiO_2	0.00	0.00	0.00	0.00	0.00	0.00
Cr_2O_3	30.26	29.62	28.98	29.17	28.80	28.92
NiO	0.18	0.21	0.21	0.22	0.19	0.21
Total	100.38	100.19	100.59	100.72	100.40	100.49
Fe_2O_3	6.74	6.08	6.10	6.86	6.90	6.32
FeO	14.49	14.43	14.20	14.20	13.53	13.89
Total	101.04	100.79	101.19	101.40	101.09	101.12
Cations based on four oxygens:						
Fe	0.5058	0.4876	0.4782	0.4968	0.4807	0.4756
Ti	0.0165	0.0142	0.0133	0.0129	0.0126	0.0129
Mn	0.0045	0.0041	0.0037	0.0046	0.0043	0.0040
Mg	0.6699	0.6691	0.6769	0.6760	0.6940	0.6842
Al	1.1508	1.1845	1.2079	1.1889	1.1981	1.2061
Si	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cr	0.7040	0.6859	0.6651	0.6721	0.6627	0.6642
Ni	0.0043	0.0050	0.0048	0.0052	0.0043	0.0049
Total	3.0559	3.0504	3.0500	3.0564	3.0567	3.0518
Cr#	0.3795	0.3666	0.3551	0.3611	0.3560	0.3550
Mg#	0.6526	0.6542	0.6625	0.6613	0.6780	0.6697
Fe^{3+}#	0.0745	0.0669	0.0665	0.0749	0.0752	0.0688
Notes						

Table LVI

(Continued)

Sample	*Sp-385.22*	*Sp-385.23*	*Sp-385.27*
FeO	19.16	19.44	19.33
TiO_2	0.55	0.60	0.66
MnO	0.15	0.17	0.18
MgO	15.84	15.42	15.75
Al_2O_3	35.23	34.70	34.39
SiO_2	0.00	0.07	0.00
Cr_2O_3	29.10	28.87	29.98
NiO	0.26	0.20	0.15
Total	100.29	99.47	100.44
Fe_2O_3	6.08	5.87	6.01
FeO	13.68	14.15	13.91
Total	100.89	100.05	101.04
Cations based on four oxygens:			
Fe	0.4658	0.4776	0.4710
Ti	0.0121	0.0132	0.0145
Mn	0.0038	0.0042	0.0044
Mg	0.6866	0.6752	0.6844
Al	1.2069	1.2012	1.1810
Si	0.0000	0.0019	0.0000
Cr	0.6688	0.6705	0.6907
Ni	0.0060	0.0048	0.0035
Total	3.0499	3.0487	3.0494
Cr#	0.3565	0.3581	0.3689
Mg#	0.6735	0.6601	0.6686
Fe^{3+}#	0.0663	0.0649	0.0659
Notes			

Table LVII

Electron microprobe analyses of plagioclase phenocrysts from VG-385.

Sample	*Pl-385.1*	*Pl-385.4*	*Pl-385.16*
SiO_2	49.55	49.89	49.74
Al_2O_3	31.20	31.23	30.95
FeO	0.46	0.55	0.71
CaO	14.77	14.81	14.63
K_2O	0.03	0.03	0.02
Na_2O	3.15	3.18	3.26
Total	99.15	99.69	99.30
Cations based on eight oxygens:			
Si	2.2842	2.2881	2.2918
Al	1.6951	1.6881	1.6803
Fe	0.0177	0.0211	0.0273
Ca	0.7294	0.7276	0.7220
K	0.0017	0.0020	0.0011
Na	0.2815	0.2831	0.2914
Total	5.0095	5.0100	5.0139
An	72.0	71.9	71.2
Notes			