

OLIVINE

V30-RD7-P1

V30-RD7-P6

NO	V30-RD7-P1			V30-RD7-P6			
	MP	MP	MP	G	G	P	MP
SI02	37.60	39.22	38.74	36.93	38.70	39.23	38.39
TI02	.05	.02	.08	.05	.07	.00	.04
AL203	.00	.00	.00	.00	.00	.00	.00
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	17.38	17.85	17.15	17.76	18.29	13.51	13.20
MNO	.27	.30	.26	.30	.29	.17	.19
MGO	44.28	44.32	43.76	42.91	44.16	47.60	47.40
CA0	.33	.32	.36	.35	.32	.30	.31
NA20	.00	.00	.00	.00	.00	.00	.00
K20	.02	.01	.02	.02	.02	.00	.00
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.07	.02	.08	.06	.03	.06	.08
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	99.98	102.05	100.44	98.37	101.88	100.87	99.61

NOS. OF IONS/4 OXYGENS

SI	.961	.980	.981	.963	.972	.973	.965
AL	.000	.000	.000	.000	.000	.000	.000
TI	.001	.000	.001	.001	.001	.000	.001
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.001	.000	.002	.001	.001	.001	.002
MG	1.687	1.651	1.653	1.667	1.653	1.760	1.776
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.372	.373	.364	.387	.384	.280	.277
MN	.006	.006	.006	.007	.006	.004	.004
CA	.009	.009	.010	.010	.009	.008	.008
NA	.000	.000	.000	.000	.000	.000	.000
K	.001	.000	.001	.001	.000	.000	.000
SUM	3.037	3.020	3.017	3.036	3.027	3.026	3.033
FE	18.0	18.4	18.0	18.8	18.9	13.7	13.5
MG	82.0	81.6	82.0	81.2	81.1	86.3	86.5

OLIVINE

NO			V30-RD7-P11			V30-RD7-P16	
	MP	G	P	MP	MP	P	P
SI02	36.73	39.51	37.96	37.88	38.90	36.01	38.28
TI02	.03	.00	.04	.03	.03	.09	.08
AL203	.01	.00	.00	.00	.00	.01	.00
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	13.06	13.57	17.28	18.28	19.08	26.92	21.67
MNO	.15	.19	.30	.35	.29	.44	.32
MGO	47.95	47.66	44.31	43.93	44.49	36.39	41.29
CA0	.36	.28	.32	.34	.35	.31	.30
NA20	.00	.00	.00	.00	.00	.00	.00
K20	.00	.00	.01	.00	.00	.01	.01
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.13	.11	.00	.06	.00	.05	.07
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.42	101.32	100.20	100.87	103.13	100.24	102.01

NOS. OF IONS/4 OXYGENS

SI	.938	.976	.967	.963	.968	.962	.975
AL	.000	.000	.000	.000	.000	.000	.000
TI	.001	.000	.001	.001	.001	.002	.002
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.003	.002	.000	.001	.000	.001	.001
MG	1.826	1.754	1.682	1.665	1.650	1.449	1.568
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.279	.280	.368	.389	.397	.601	.462
MN	.003	.004	.006	.008	.006	.010	.007
CA	.010	.007	.009	.009	.009	.009	.008
NA	.000	.000	.000	.000	.000	.000	.000
K	.000	.000	.000	.000	.000	.000	.000
SUM	3.060	3.023	3.033	3.036	3.031	3.036	3.023
FE	13.3	13.8	18.0	18.9	19.4	29.3	22.7
MG	86.7	86.2	82.0	81.1	80.6	70.7	77.3

## OLIVINE

NO			V30-RD8-PI				V30-RD8-PS	
	P	MP	P	P	MP	G	MP	
SI02	37.61	37.55	40.37	38.96	38.41	38.17	36.88	
TI02	.05	.10	.17	.16	.21	.18	.02	
AL2O3	.00	.00	.20	.14	.11	.10	.00	
FE2O3	.00	.00	.00	.00	.00	.00	.00	
FE0	19.33	20.83	11.32	13.54	14.60	12.71	21.14	
MNO	.33	.31	.20	.33	.31	.34	.29	
MGO	42.84	39.04	48.73	46.33	43.72	46.04	40.14	
CA0	.30	.28	.34	.34	.35	.41	.32	
NA2O	.00	.00	.09	.08	.07	.09	.00	
K2O	.03	.01	.05	.05	.05	.04	.00	
H2O-	.00	.00	.00	.00	.00	.00	.00	
H2O+	.00	.00	.00	.00	.00	.00	.00	
P2O5	.00	.00	.00	.00	.00	.00	.00	
CR2O3	.05	.00	.18	.15	.16	.20	.00	
NIO	.00	.00	.00	.00	.00	.00	.00	
CO2	.00	.00	.00	.00	.00	.00	.00	
TOTAL	100.53	98.12	101.64	100.08	97.99	98.28	98.79	

## NOS. OF IONS/4 OXYGENS

SI	.964	.992	.983	.976	.987	.972	.971
AL	.000	.000	.006	.004	.003	.003	.000
TI	.001	.002	.003	.003	.004	.003	.000
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.001	.000	.003	.003	.003	.004	.000
MG	1.638	1.537	1.768	1.729	1.675	1.747	1.576
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.414	.460	.230	.284	.314	.271	.466
MN	.007	.007	.004	.007	.007	.007	.007
CA	.008	.008	.009	.009	.010	.011	.009
NA	.000	.000	.004	.004	.004	.004	.000
K	.001	.000	.002	.002	.002	.001	.000
SUM	3.034	3.006	3.012	3.020	3.008	3.024	3.028
FE	20.2	23.0	11.5	14.1	15.8	13.4	22.8
MG	79.8	77.0	88.5	85.9	84.2	86.6	77.2

OLIVINE

NO	V30-RD8-P12			V30-RD10-P2			
	MP	P	MP	MP	MP	P	P
SI02	36.67	39.76	39.10	39.70	39.98	37.80	38.23
TI02	.06	.06	.05	.03	.05	.06	.00
AL203	.00	.00	.00	.06	.00	.00	.00
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	22.48	13.88	12.41	12.75	13.06	16.64	15.95
MNO	.34	.25	.17	.21	.16	.23	.29
MGO	38.73	44.37	45.81	48.51	47.57	44.40	44.71
CA0	.32	.26	.29	.26	.27	.28	.33
NA20	.00	.01	.02	.09	.01	.00	.00
K20	.03	.00	.01	.00	.01	.02	.01
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.02	.09	.09	.08	.09	.00	.05
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.66	98.68	97.93	101.70	101.20	99.43	99.58

NOS. OF IONS/4 OXYGENS

SI	.974	1.007	.993	.973	.985	.967	.973
AL	.000	.000	.000	.002	.000	.000	.000
TI	.001	.001	.001	.000	.001	.001	.000
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.000	.002	.002	.002	.002	.000	.001
MG	1.533	1.675	1.734	1.773	1.746	1.694	1.697
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.499	.294	.264	.261	.269	.356	.340
MN	.008	.005	.004	.004	.003	.005	.006
CA	.009	.007	.008	.007	.007	.008	.009
NA	.000	.001	.001	.004	.000	.000	.000
K	.001	.000	.000	.000	.000	.001	.000
SUM	3.025	2.992	3.006	3.027	3.014	3.032	3.026
FE	24.6	14.9	13.2	12.9	13.4	17.4	16.7
MG	75.4	85.1	86.8	87.1	86.6	82.6	83.3

OLIVINE

NO			V30-RD10-P4			V30-RD10-P7	
	P	MP	MP	MP	MP	P	P
SI02	38.32	39.90	37.81	39.91	39.14	40.02	39.39
TI02	.01	.04	.01	.05	.06	.00	.00
AL203	.00	.00	.00	.00	.00	.02	.03
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	15.17	17.02	16.16	15.22	17.61	13.30	14.59
MNO	.17	.20	.31	.27	.30	.25	.18
MGO	45.48	45.47	44.34	46.50	44.27	45.70	45.26
CA0	.32	.34	.34	.34	.36	.26	.25
NA20	.00	.00	.00	.00	.00	.04	.02
K20	.02	.01	.02	.02	.03	.00	.00
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.05	.00	.00	.06	.01	.09	.09
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	99.54	102.99	99.00	102.36	101.79	99.69	99.81

NOS. OF IONS/4 OXYGENS

SI	.972	.983	.970	.982	.980	1.001	.991
AL	.000	.000	.000	.000	.000	.001	.001
TI	.000	.001	.000	.001	.001	.000	.000
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.001	.000	.000	.001	.000	.002	.002
MG	1.720	1.669	1.696	1.705	1.652	1.703	1.697
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.322	.351	.347	.313	.369	.278	.307
MN	.004	.004	.007	.006	.006	.005	.004
CA	.009	.009	.009	.009	.010	.007	.007
NA	.000	.000	.000	.000	.000	.002	.001
K	.001	.000	.001	.001	.001	.000	.000
SUM	3.028	3.017	3.030	3.017	3.019	2.999	3.008
FE	15.8	17.4	17.0	15.5	18.2	14.0	15.3
MG	84.2	82.6	83.0	84.5	81.8	86.0	84.7

OLIVINE

NO	P	MP
SI02	38.84	38.57
TI02	.04	.05
AL203	.01	.00
FE203	.00	.00
FE0	15.32	15.67
MNO	.26	.29
MGO	44.81	43.35
CA0	.29	.26
NA20	.03	.03
K20	.00	.00
H20-	.00	.00
H20+	.00	.00
P205	.00	.00
CR203	.04	.06
NIO	.00	.00
CO2	.00	.00
TOTAL	99.63	98.28

NOS. OF IONS/4 OXYGENS

SI	.983	.992
AL	.000	.000
TI	.001	.001
FE3+	.000	.000
CR	.001	.001
MG	1.691	1.661
NI	.000	.000
FE2+	.325	.337
MN	.006	.006
CA	.008	.007
NA	.001	.001
K	.000	.000
SUM	3.016	3.007
FE	16.1	16.9
MG	83.9	83.1

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PLAGIOCLASE

NO	V30-RD7-P6				V30-RD7-P11		
	P	MP	MP	G	P	P	P
SI02	47.16	48.88	52.53	48.74	52.67	51.02	51.76
TI02	.01	.04	.02	.02	.09	.07	.01
AL203	31.66	37.82	29.38	31.29	28.97	29.79	29.82
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	.31	.47	.77	.39	.43	.44	.49
MNO	.00	.00	.06	.01	.07	.09	.02
MGO	.24	.25	.39	.29	.20	.21	.19
CA0	16.67	15.90	14.06	15.53	13.93	14.24	13.86
NA20	2.24	2.77	3.79	2.81	3.78	3.49	3.53
K20	.05	.07	.05	.05	.08	.07	.06
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.00	.00	.01	.00	.00	.00	.04
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.34	99.19	101.06	99.14	100.20	99.41	99.77

NOS. OF IONS/8 OXYGENS

SI	2.207	2.263	2.373	2.254	2.394	2.343	2.362
AL	1.746	1.681	1.564	1.705	1.552	1.612	1.604
TI	.000	.001	.001	.001	.003	.002	.000
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.000	.000	.000	.000	.000	.000	.002
MG	.017	.017	.026	.020	.013	.014	.013
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.012	.018	.029	.015	.016	.017	.019
MN	.000	.000	.002	.000	.003	.003	.001
CA	.836	.789	.681	.769	.678	.700	.677
NA	.203	.249	.332	.252	.333	.311	.312
K	.003	.004	.003	.003	.005	.004	.003
SUM	5.023	5.022	5.012	5.020	4.996	5.007	4.993
CA	80.2	75.7	67.0	75.1	66.8	69.0	68.2
NA	19.5	23.9	32.7	24.6	32.8	30.6	31.4
K	.3	.4	.3	.3	.4	.4	.3

PLAGIOCLASE

NO

V30-RD7-PI6

	G	G	P	P	MP	MP	MP
SI02	52.88	53.82	52.02	53.89	54.39	52.32	52.62
TI02	.11	.17	.05	.08	.07	.03	.09
AL203	29.21	28.30	29.30	28.03	28.38	28.68	28.57
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	.63	1.30	.48	.55	.58	.53	.72
MNO	.01	.01	.00	.00	.00	.04	.00
MGO	.19	.51	.18	.12	.13	.21	.19
CA0	13.37	12.99	13.75	12.31	12.81	13.24	12.72
NA20	3.93	3.95	3.82	4.56	4.51	4.16	4.23
K20	.08	.10	.06	.11	.07	.13	.14
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.01	.00	.04	.00	.00	.01	.00
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.41	101.15	99.69	99.65	100.93	99.35	99.28

NOS. OF IONS/8 OXYGENS

SI	2.396	2.424	2.377	2.453	2.446	2.399	2.411
AL	1.560	1.502	1.578	1.504	1.505	1.550	1.543
TI	.004	.006	.002	.003	.002	.001	.003
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.000	.000	.001	.000	.000	.000	.000
MG	.013	.034	.012	.008	.009	.014	.013
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.024	.049	.018	.021	.022	.020	.028
MN	.000	.000	.000	.000	.000	.001	.000
CA	.649	.627	.673	.690	.617	.650	.625
NA	.345	.345	.338	.402	.393	.370	.375
K	.005	.006	.003	.007	.004	.008	.008
SUM	4.996	4.994	5.003	4.997	4.998	5.014	5.006
CA	64.9	64.1	66.3	59.5	60.8	63.3	61.9
NA	34.6	35.3	33.4	39.9	38.8	36.0	37.2
K	.5	.6	.3	.6	.4	.8	.8



PLAGIOCLASE

V80-RD8-PI

NO	G	P	P	P	MP	MP	MP
SI02	55.05	47.43	49.79	49.48	50.61	49.43	50.70
TI02	.16	.19	.20	.20	.21	.19	.20
AL203	25.52	31.97	30.02	28.66	30.03	29.75	29.36
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	1.04	.55	.57	.56	.54	.58	.71
MNO	.04	.13	.07	.08	.09	.09	.12
MGO	.09	.24	.29	.31	.36	.33	.35
CA0	9.60	17.08	15.19	14.97	14.87	14.96	14.55
NA20	5.67	1.81	3.21	3.16	3.23	3.10	3.48
K20	.21	.07	.08	.11	.11	.09	.09
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.00	.14	.04	.07	.10	.10	.10
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	97.38	99.60	99.47	97.59	100.14	98.61	99.66

NOS. OF IONS/8 OXYGENS

SI	2.554	2.195	2.297	2.326	2.315	2.299	2.332
AL	1.396	1.744	1.632	1.588	1.618	1.631	1.591
TI	.006	.007	.007	.007	.007	.007	.007
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.000	.005	.001	.003	.004	.004	.004
MG	.006	.016	.020	.022	.025	.023	.024
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.040	.021	.022	.022	.021	.023	.027
MN	.002	.005	.003	.003	.004	.003	.005
CA	.477	.847	.751	.754	.728	.745	.717
NA	.510	.162	.287	.288	.286	.280	.310
K	.012	.004	.005	.006	.006	.005	.006
SUM	5.003	5.007	5.025	5.019	5.013	5.020	5.022

CA	47.7	83.6	72.0	71.9	71.3	72.3	69.4
NA	51.0	16.0	27.6	27.5	28.1	27.2	30.0
K	1.2	.4	.5	.6	.6	.5	.5

PLAGIOCLASE

NO

V30-RD8-PS  
P P

	G	G	G	P	P	MP	MP
SI02	50.77	50.33	49.42	52.45	51.95	53.66	53.08
TI02	.21	.19	.17	.05	.06	.10	.07
AL203	29.80	29.22	29.47	29.35	29.35	28.59	27.40
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	.86	.67	.63	.64	.62	.62	.61
MNO	.14	.08	.05	.00	.00	.00	.00
MGO	.46	.33	.31	.22	.15	.23	.18
CA0	14.57	14.76	14.54	13.39	13.82	12.91	12.95
NA20	3.56	3.22	3.25	3.90	3.83	4.39	4.12
K20	.13	.10	.10	.07	.05	.07	.08
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.08	.10	.09	.03	.00	.03	.00
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.58	99.00	98.03	100.10	99.83	100.60	98.51

NOS. OF IONS/8 OXYGENS

SI	2.317	2.329	2.310	2.385	2.373	2.425	2.449
AL	1.603	1.594	1.624	1.573	1.580	1.522	1.490
TI	.007	.007	.006	.002	.002	.003	.003
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.003	.004	.003	.001	.000	.001	.000
MG	.031	.023	.021	.015	.010	.016	.013
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.033	.026	.025	.024	.024	.024	.024
MN	.005	.003	.002	.000	.000	.000	.000
CA	.712	.732	.728	.653	.676	.625	.640
NA	.315	.289	.295	.344	.339	.385	.369
K	.008	.006	.006	.004	.003	.004	.005
SUM	5.034	5.013	5.021	5.000	5.007	5.004	4.991
CA	68.8	71.3	70.8	65.2	66.4	61.7	63.1
NA	30.4	28.1	28.7	34.4	33.3	37.9	36.4
K	.8	.6	.6	.4	.3	.4	.5

PLAGIOCLASE

NO	V30-RD8-P12							
	MP	G	G	P	P	P	P	P
SI02	56.58	53.59	53.60	50.76	49.57	48.15	49.90	
TI02	.12	.09	.10	.06	.04	.04	.04	
AL203	25.75	27.84	26.36	30.42	30.90	31.64	29.69	
FE203	.00	.00	.00	.00	.00	.00	.00	
FE0	.72	.78	.81	.43	.48	.43	.37	
MNO	.01	.04	.00	.00	.02	.00	.00	
MGO	.08	.14	.20	.24	.21	.14	.26	
CA0	9.39	12.52	12.16	14.45	14.84	15.83	14.47	
NA20	6.31	4.46	4.38	3.02	2.76	2.06	2.84	
K20	.14	.07	.09	.05	.06	.02	.06	
H20-	.00	.00	.00	.00	.00	.00	.00	
H20+	.00	.00	.00	.00	.00	.00	.00	
P205	.00	.00	.00	.00	.00	.00	.00	
CR203	.00	.00	.00	.03	.00	.00	.00	
NIO	.00	.00	.00	.00	.00	.00	.00	
CO2	.00	.00	.00	.00	.00	.00	.00	
TOTAL	99.09	99.53	97.71	99.46	98.88	98.31	97.64	

NOS. OF IONS/8 OXYGENS

SI	2.574	2.447	2.489	2.326	2.290	2.242	2.330
AL	1.381	1.498	1.443	1.643	1.682	1.736	1.634
TI	.004	.003	.003	.002	.002	.001	.001
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.000	.000	.000	.001	.000	.000	.000
MG	.005	.010	.014	.016	.015	.010	.018
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.028	.030	.032	.017	.019	.017	.015
MN	.000	.002	.000	.000	.001	.000	.000
CA	.458	.613	.605	.709	.734	.790	.724
NA	.557	.395	.395	.269	.247	.186	.257
K	.008	.004	.005	.003	.003	.001	.003
SUM	5.014	5.000	4.986	4.986	4.992	4.983	4.982
CA	44.8	60.6	60.2	72.3	74.6	80.8	73.5
NA	54.4	39.0	39.3	27.4	25.1	19.0	26.1
K	.8	.4	.5	.3	.3	.1	.4

PLAGIOCLASE

NO	MP		G		P		
	MP	MP	G	G	P	P	P
SI02	50.49	50.25	54.25	51.25	46.25	53.27	48.11
TI02	.04	.05	.07	.10	.04	.07	.15
AL203	29.33	30.37	26.16	27.80	32.37	27.38	31.58
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	.41	.43	.79	.88	.32	.84	.53
MNO	.00	.00	.02	.00	.01	.03	.09
MGO	.19	.26	.38	.44	.03	.11	.30
CA0	14.52	14.07	11.88	13.49	17.62	11.72	16.42
NA20	2.95	3.04	4.20	3.57	1.53	4.97	2.31
K20	.05	.06	.12	.07	.00	.01	.07
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.07	.00	.00	.00	.01	.04	.15
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.05	98.53	97.87	97.60	98.18	98.43	99.72

NOS. OF IONS/B OXYGENS

SI	2.348	2.323	2.509	2.396	2.170	2.458	2.221
AL	1.607	1.655	1.426	1.531	1.790	1.489	1.718
TI	.002	.002	.002	.004	.001	.002	.005
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.003	.000	.000	.000	.000	.002	.005
MG	.013	.018	.026	.031	.002	.008	.021
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.016	.017	.031	.034	.012	.032	.021
MN	.000	.000	.001	.000	.000	.001	.004
CA	.723	.697	.589	.676	.886	.579	.812
NA	.266	.272	.377	.323	.139	.445	.206
K	.003	.003	.007	.004	.000	.000	.004
SUM	4.980	4.986	4.967	4.999	5.002	5.017	5.017
CA	72.9	71.7	60.5	67.4	86.4	56.6	79.4
NA	26.8	28.0	38.7	32.2	13.6	43.4	20.2
K	.3	.3	.7	.4	.0	.0	.4

PLAGIOCLASE

NO	P	P	MP	MP	MP	G	G
SI02	52.18	53.86	53.26	53.47	52.74	53.55	55.11
TI02	.24	.23	.20	.24	.22	.21	.28
AL2O3	27.71	27.76	28.87	27.86	27.17	24.49	25.68
FE2O3	.00	.00	.00	.00	.00	.00	.00
FE0	.79	.88	.70	.74	.89	1.90	.94
MNO	.11	.10	.11	.06	.06	.05	.09
MGO	.20	.27	.26	.20	.26	1.47	.12
CA0	12.12	12.05	12.89	12.40	12.12	12.41	9.74
NA2O	4.64	4.94	4.57	4.96	4.84	5.14	6.42
K2O	.11	.15	.12	.12	.10	.00	.17
H2O-	.00	.00	.00	.00	.00	.00	.00
H2O+	.00	.00	.00	.00	.00	.00	.00
P2O5	.00	.00	.00	.00	.00	.00	.00
CR2O3	.08	.08	.04	.11	.05	.09	.10
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.19	100.33	100.96	100.16	98.45	99.32	98.64

NOS. OF IONS/8 OXYGENS

SI	2.421	2.444	2.405	2.433	2.441	2.477	2.534
AL	1.515	1.485	1.533	1.494	1.482	1.335	1.392
TI	.008	.008	.007	.008	.008	.007	.010
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.003	.003	.002	.004	.002	.003	.004
MG	.014	.019	.017	.014	.018	.011	.008
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.031	.034	.027	.028	.034	.074	.036
MN	.004	.004	.004	.002	.002	.002	.004
CA	.603	.586	.623	.604	.601	.615	.480
NA	.418	.435	.400	.438	.434	.461	.572
K	.006	.009	.007	.007	.006	.000	.010
SUM	5.024	5.025	5.024	5.032	5.029	5.077	5.050
CA	58.7	56.9	60.5	57.6	57.7	57.2	45.2
NA	40.7	42.2	38.8	41.7	41.7	42.8	53.9
K	.6	.8	.7	.7	.6	.0	.9

## PLAGIOCLASE

NO	G			V30-RD10-P2		MP	
	G	G	G	P	P	MP	MP
SI02	54.68	52.51	54.94	45.18	47.01	50.94	47.62
TI02	.26	.26	.23	.03	.00	.07	.05
AL203	25.47	27.01	27.24	32.95	32.95	29.15	32.38
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	1.06	.81	.94	.30	.30	.53	.48
MNO	.08	.12	.09	.00	.01	.00	.01
MGO	.20	.31	.21	.17	.17	.19	.19
CA0	10.18	11.96	11.17	18.03	17.68	13.65	17.13
NA20	6.12	4.64	5.69	1.51	1.51	3.31	1.74
K20	.14	.08	.15	.05	.05	.17	.05
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.13	.12	.08	.00	.00	.00	.04
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.33	97.82	100.75	98.17	99.67	98.00	99.72

## NOS. OF IONS/8 OXYGENS

SI	2.527	2.444	2.480	2.128	2.171	2.367	2.197
AL	1.387	1.481	1.449	1.826	1.793	1.597	1.761
TI	.009	.009	.008	.001	.000	.002	.002
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.005	.004	.003	.000	.000	.000	.002
MG	.014	.022	.014	.012	.012	.013	.013
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.041	.031	.036	.012	.012	.021	.019
MN	.003	.005	.004	.000	.000	.000	.000
CA	.504	.596	.540	.910	.875	.680	.847
NA	.549	.419	.498	.138	.135	.298	.156
K	.008	.005	.009	.003	.003	.010	.003
SUM	5.046	5.016	5.039	5.029	5.001	4.987	4.999
CA	47.5	58.5	51.6	86.6	86.4	68.8	84.2
NA	51.7	41.0	47.5	13.1	13.3	30.2	15.5
K	.8	.5	.8	.3	.3	1.0	.3

PLAGIOCLASE

NO	V30-RD10-P4			V30-RD10-P7			
	P	P	MP	MP	MP	P	P
SI02	49.92	48.05	51.15	49.90	51.27	51.03	50.74
TI02	.07	.06	.04	.06	.07	.06	.07
AL203	30.50	32.89	29.76	30.52	30.08	29.81	29.74
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	.44	.31	.57	.60	.58	.60	.52
MNO	.00	.00	.00	.05	.00	.00	.03
MGO	.32	.19	.26	.25	.26	.20	.22
CA0	15.28	17.60	14.60	15.07	15.16	14.07	14.95
NA20	2.76	1.83	3.17	2.93	2.95	3.47	3.00
K20	.13	.08	.12	.11	.11	.10	.06
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.01	.02	.04	.00	.00	.05	.02
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	99.43	101.03	99.71	99.49	100.48	99.39	99.35

NOS. OF IONS/8 OXYGENS

SI	2.297	2.189	2.343	2.296	2.332	2.343	2.334
AL	1.654	1.766	1.606	1.656	1.613	1.613	1.612
TI	.002	.002	.001	.002	.002	.002	.002
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.000	.001	.001	.000	.000	.002	.001
MG	.022	.013	.018	.017	.018	.014	.015
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.017	.012	.022	.023	.022	.023	.020
MN	.000	.000	.000	.002	.000	.000	.001
CA	.753	.859	.716	.743	.739	.692	.736
NA	.246	.162	.282	.262	.261	.309	.268
K	.007	.005	.007	.007	.006	.006	.004
SUM	5.000	5.009	4.996	5.008	4.993	5.004	4.993
CA	74.8	83.8	71.3	73.5	73.5	68.7	73.1
NA	24.5	15.8	28.0	25.9	25.9	30.7	26.6
K	.7	.4	.7	.7	.6	.6	.3

## PLAGIOCLASE

NO	P	MP	MP	MP	MP	MP
SI02	47.85	49.61	50.33	50.16	50.77	50.50
TI02	.02	.05	.05	.06	.08	.08
AL203	31.06	29.88	30.54	28.93	29.56	29.43
FE203	.00	.00	.00	.00	.00	.00
FE0	.42	.57	.50	.54	.62	.64
MNO	.05	.03	.04	.06	.01	.04
MGO	.14	.19	.20	.22	.24	.22
CA0	15.85	14.83	14.92	14.24	14.14	14.13
NA20	2.26	3.26	2.98	3.57	3.64	3.60
K20	.07	.08	.04	.04	.07	.07
H20-	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00
CR203	.05	.00	.02	.05	.02	.03
NI0	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00
TOTAL	97.77	98.49	99.62	97.80	99.15	98.75

## NOS. OF IONS/8 OXYGENS

SI	2.245	2.307	2.309	2.345	2.340	2.338
AL	1.717	1.638	1.651	1.594	1.606	1.606
TI	.001	.002	.002	.002	.003	.003
FE3+	.000	.000	.000	.000	.000	.000
CR	.002	.000	.001	.002	.001	.001
MG	.010	.013	.013	.015	.017	.015
NI	.000	.000	.000	.000	.000	.000
FE2+	.017	.022	.019	.021	.024	.025
MN	.002	.001	.002	.000	.000	.002
CA	.797	.739	.733	.713	.698	.701
NA	.205	.294	.265	.323	.325	.323
K	.004	.005	.002	.003	.004	.004
SUM	4.999	5.021	4.997	5.018	5.018	5.019
CA	79.2	71.2	73.3	68.6	68.0	68.2
NA	20.4	28.3	26.5	31.1	31.6	31.4
K	.4	.4	.2	.2	.4	.4



## APPENDIX II

11

## PLAGIOCLASE

NO	V30-RD7-PI							
	P	P	MP	MP	MP	G	G	
SI02	47.20	47.22	51.49	51.23	50.70	52.31	52.10	
TIO2	.02	.02	.09	.09	.08	.06	.07	
AL2O3	32.69	32.01	29.27	29.03	29.49	29.76	28.77	
FE2O3	.00	.00	.00	.00	.00	.00	.00	
FeO	.26	.37	.62	.43	.55	.79	.90	
MNO	.02	.30	.00	.00	.00	.03	.03	
MGO	.22	.21	.23	.27	.24	.23	.29	
CAO	17.56	17.58	14.23	13.73	14.51	14.40	13.28	
NA2O	1.54	1.72	3.45	3.71	3.44	3.66	3.78	
K2O	.02	.02	.06	.07	.06	.07	.13	
H2O-	.00	.00	.00	.00	.00	.00	.00	
H2O+	.00	.00	.00	.00	.00	.00	.00	
P2O5	.00	.00	.00	.00	.00	.00	.00	
CR2O3	.04	.01	.02	.03	.00	.06	.00	
NIO	.30	.00	.00	.00	.00	.00	.00	
CO2	.00	.00	.00	.00	.00	.00	.00	
TOTAL	99.58	99.09	99.47	98.58	99.07	101.38	99.34	

## NOS. OF IONS/8 OXYGENS

SI	2.181	2.194	2.362	2.368	2.339	2.358	2.391
AL	1.780	1.753	1.582	1.581	1.604	1.581	1.556
TI	.001	.001	.003	.003	.003	.002	.002
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.001	.000	.001	.001	.000	.002	.000
MG	.015	.014	.016	.019	.017	.016	.020
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.010	.012	.024	.017	.021	.030	.035
MN	.001	.000	.000	.000	.000	.001	.001
CA	.869	.875	.700	.680	.717	.696	.653
NA	.138	.155	.307	.333	.307	.320	.336
K	.001	.001	.004	.004	.003	.004	.008
SUM	4.997	5.006	4.998	5.006	5.012	5.010	5.001
CA	86.2	84.8	69.3	66.9	69.8	68.2	65.5
NA	13.7	15.0	30.4	32.7	29.9	31.4	33.7
K	.1	.1	.4	.4	.3	.4	.8

PYROXENE

V30-RD7-P1

V30-RD7-P6

NO.	MP	G	G	G	G	G	G	G
SI02	50.79	47.43	52.47	48.66	49.78	47.03	47.16	
TI02	.93	1.62	.55	1.33	1.75	1.62	1.72	
AL203	4.24	5.90	1.89	5.13	5.75	6.60	5.89	
FE203	.00	.30	.00	.00	.00	.00	.00	
FE0	6.62	9.55	7.89	7.09	9.22	8.79	7.62	
MNO	.16	.24	.25	.20	.21	.16	.23	
MGO	16.69	15.12	20.32	16.46	15.80	14.45	14.00	
CAO	20.64	19.06	16.33	19.77	19.00	20.41	21.81	
NA2O	.19	.24	.08	.22	.29	.52	.27	
K2O	.03	.03	.02	.04	.00	.00	.05	
H2O-	.00	.00	.00	.00	.00	.00	.00	
H2O+	.00	.00	.00	.00	.00	.00	.00	
P2O5	.00	.00	.00	.00	.00	.00	.00	
CR203	.96	.30	.44	.65	.15	.26	.51	
NI0	.00	.00	.00	.00	.00	.00	.00	
CO2	.00	.00	.00	.00	.00	.00	.00	
TOTAL	101.25	99.50	100.24	99.54	101.96	99.85	99.25	

NOS. OF IONS/6 OXYGENS

SI	1.853	1.784	1.916	1.811	1.814	1.765	1.780
AL	.182	.262	.081	.225	.247	.292	.262
TI	.025	.046	.015	.037	.048	.046	.049
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.028	.009	.013	.019	.004	.008	.015
MG	.907	.848	1.106	.913	.858	.808	.787
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.202	.301	.241	.221	.281	.276	.240
MN	.005	.008	.008	.006	.006	.005	.007
CA	.807	.768	.639	.788	.742	.821	.882
NA	.013	.017	.005	.016	.020	.038	.020
K	.002	.001	.001	.002	.000	.000	.002
SUM	4.024	4.044	4.025	4.039	4.022	4.058	4.044

CA	42.1	40.1	32.2	41.0	39.4	43.1	46.2
MG	47.4	44.2	55.7	47.5	45.6	42.4	41.2
FE	10.5	15.7	12.1	11.5	14.9	14.5	12.6

PYROXENE

V30-RD7-P11

NO	G	G	P	P	P	MP	MP
SI02	48.64	49.29	50.06	48.61	51.50	50.00	50.08
TI02	1.35	1.46	.90	.82	.91	1.13	1.06
AL203	5.44	4.94	3.90	3.36	3.65	4.08	4.15
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	8.12	8.34	7.41	6.94	7.94	7.49	7.37
MNO	.25	.20	.23	.13	.26	.21	.14
MGO	13.84	14.18	17.05	16.26	16.62	16.16	16.90
CA0	20.83	20.52	19.29	20.54	19.62	20.55	20.08
NA20	.33	.30	.26	.26	.20	.26	.21
K20	.05	.02	.01	.03	.01	.03	.02
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.49	.25	.52	.63	.36	.34	.80
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	99.34	99.49	99.62	97.59	101.06	100.24	100.82

NOS. OF IONS/6 OXYGENS

SI	1.826	1.844	1.857	1.851	1.883	1.850	1.841
AL	.241	.218	.171	.151	.157	.178	.180
TI	.038	.041	.025	.023	.025	.031	.029
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.015	.007	.015	.019	.010	.010	.023
MG	.775	.791	.943	.923	.906	.891	.926
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.255	.261	.230	.221	.243	.232	.227
MN	.008	.006	.007	.004	.008	.006	.004
CA	.838	.823	.767	.838	.769	.815	.791
NA	.024	.022	.019	.019	.014	.019	.015
K	.002	.001	.000	.001	.000	.001	.001
SUM	4.021	4.014	4.034	4.051	4.015	4.034	4.036
CA	44.9	43.9	39.5	42.3	40.1	42.0	40.7
MG	41.5	42.2	48.6	46.6	47.2	46.0	47.6
FE	13.6	13.9	11.8	11.2	12.7	12.0	11.7

PYROXENE

V30-RD7-P16

NO	P	P	P	P	MP	MP	MP
SI02	54.03	50.42	49.51	50.26	50.18	50.52	52.68
TI02	.43	.75	1.14	1.01	1.20	.88	.78
AL203	1.37	2.83	4.35	3.45	3.59	3.48	2.95
FE203	.50	.00	.50	.00	.00	.00	.00
FEO	8.93	7.96	8.13	8.86	10.27	8.29	7.94
MNO	.30	.27	.18	.21	.28	.25	.26
MGO	20.52	17.58	15.95	17.24	15.68	16.86	17.04
CAO	15.08	19.39	19.91	18.24	19.09	19.15	20.37
NA2O	.11	.20	.24	.20	.30	.25	.28
K2O	.02	.03	.02	.03	.02	.03	.03
H2O-	.00	.00	.00	.00	.00	.00	.00
H2O+	.00	.00	.00	.00	.00	.00	.00
P2O5	.00	.00	.00	.00	.00	.00	.00
CR2O3	.20	.24	.26	.20	.13	.29	.37
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.99	99.67	99.70	99.72	100.74	100.00	102.71

NOS. OF IONS/6 OXYGENS

SI	1.954	1.875	1.844	1.868	1.863	1.872	1.898
AL	.058	.124	.191	.151	.157	.152	.125
TI	.012	.021	.032	.028	.033	.025	.021
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.006	.007	.008	.006	.004	.008	.010
MG	1.106	.974	.886	.955	.867	.931	.915
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.270	.248	.253	.275	.319	.257	.239
MN	.009	.009	.006	.007	.009	.008	.008
CA	.584	.773	.795	.726	.759	.760	.786
NA	.008	.015	.017	.014	.021	.018	.020
K	.001	.001	.001	.001	.001	.002	.001
SUM	4.007	4.047	4.033	4.033	4.034	4.033	4.024
CA	29.8	38.7	41.1	37.1	39.0	39.0	40.5
MG	56.4	48.9	45.8	48.8	44.6	47.8	47.2
FE	13.8	12.4	13.1	14.1	16.4	13.2	12.3

PYROXENE

V30-RDB-P1

V30-RDB-PS

NO	G	G	G	G	G	G	G	P
SI02	52.05	49.36	49.63	50.72	49.56	50.77	50.12	
TI02	1.01	1.31	1.14	.93	1.37	.95	1.15	
AL203	4.40	4.79	4.90	5.01	3.67	2.15	3.45	
FE203	.00	.00	.00	.00	.00	.00	.00	
FE0	9.58	7.81	6.65	5.76	11.02	17.72	10.06	
MNO	.31	.35	.28	.23	.35	.64	.24	
MGO	15.60	15.71	15.37	17.62	15.29	16.58	15.90	
CA0	17.59	18.46	19.61	18.85	17.75	12.44	18.65	
NA20	.48	.42	.35	.40	.39	.43	.26	
K20	.09	.07	.06	.05	.05	.05	.03	
H20-	.00	.00	.00	.00	.00	.00	.00	
H20+	.00	.00	.00	.00	.00	.00	.00	
P205	.00	.00	.00	.00	.00	.00	.00	
CR203	.19	.29	.41	1.10	.13	.11	.17	
NIO	.00	.00	.00	.00	.00	.00	.00	
CO2	.00	.00	.00	.00	.00	.00	.00	
TOTAL	101.29	98.55	98.60	100.67	99.58	101.84	100.02	

NCS. OF IONS/6 OXYGENS

SI	1.898	1.851	1.856	1.846	1.864	1.895	1.870
AL	.189	.212	.216	.215	.163	.095	.152
TI	.028	.037	.032	.025	.039	.027	.032
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.006	.009	.012	.032	.004	.003	.005
MG	.848	.878	.857	.956	.857	.922	.884
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.292	.245	.208	.175	.347	.553	.314
MN	.309	.011	.009	.007	.011	.020	.008
CA	.687	.742	.794	.735	.715	.497	.746
NA	.034	.030	.025	.028	.029	.031	.019
K	.004	.003	.003	.002	.003	.002	.001
SUM	3.996	4.018	4.012	4.021	4.030	4.046	4.030
CA	37.6	39.8	42.7	39.4	37.3	25.2	38.4
MG	46.4	47.1	46.1	51.2	44.7	46.7	45.5
FE	16.0	13.1	11.2	9.4	18.1	28.0	16.1

PYROXENE

NO	MP				G		P
	MP	MP	MP	MP	G	G	
SI02	48.88	49.51	51.05	49.76	49.21	49.97	48.95
TI02	1.43	1.47	.97	1.53	1.44	1.55	1.48
AL203	3.96	4.44	3.68	4.53	5.19	4.93	4.39
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	10.69	9.56	9.52	9.66	10.26	10.09	8.60
MNO	.36	.26	.32	.22	.26	.25	.27
MGO	16.15	15.32	17.32	15.68	16.14	15.53	14.76
CA0	18.21	18.56	17.68	19.23	18.16	18.75	19.38
NA20	.26	.29	.19	.29	.25	.26	.45
K20	.01	.01	.02	.03	.03	.02	.00
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.19	.16	.25	.35	.22	.12	.26
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.14	99.58	100.99	101.28	101.14	101.46	98.55

V30-RD8-P2

NOS. OF IONS/6 OXYGENS

SI	1.830	1.851	1.873	1.834	1.816	1.836	1.849
AL	.175	.196	.159	.197	.226	.214	.196
TI	.040	.041	.027	.042	.040	.043	.042
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.006	.005	.007	.010	.007	.003	.008
MG	.901	.853	.947	.861	.888	.851	.831
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.335	.299	.292	.298	.317	.310	.272
MN	.011	.008	.010	.007	.008	.008	.009
CA	.731	.743	.695	.760	.718	.738	.784
NA	.019	.021	.013	.021	.018	.018	.033
K	.000	.000	.001	.002	.001	.001	.000
SUM	4.049	4.018	4.024	4.031	4.037	4.022	4.024
CA	37.1	39.2	35.9	39.6	37.4	38.9	41.6
MG	45.8	45.0	49.0	44.9	46.2	44.8	44.0
FE	17.0	15.8	15.1	15.5	16.5	16.3	14.4

## PYROXENE

NO	P	P	P	MP	MP	MP	MP
SI02	50.42	51.44	52.80	52.74	48.77	49.08	50.73
TI02	1.32	.95	.32	.91	1.66	1.32	.97
AL203	3.88	3.79	2.65	3.13	4.79	3.93	3.46
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	8.22	8.03	5.02	8.94	10.03	8.99	9.51
MNO	.16	.20	.17	.20	.23	.20	.21
MGO	15.09	15.39	17.96	16.09	13.93	15.17	15.38
CA0	20.38	19.88	19.99	18.36	18.18	18.48	18.48
NA20	.38	.40	.25	.40	.38	.34	.34
K20	.00	.00	.00	.00	.00	.00	.00
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.47	.38	.40	.18	.07	.27	.22
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.32	100.47	99.57	100.95	98.02	97.77	99.30

## NOS. OF IONS/6 OXYGENS

SI	1.868	1.894	1.931	1.926	1.855	1.866	1.897
AL	.170	.165	.114	.135	.215	.176	.152
TI	.037	.026	.009	.025	.047	.038	.027
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.014	.011	.012	.005	.002	.008	.007
MG	.833	.845	.979	.876	.789	.860	.857
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.255	.247	.154	.273	.319	.286	.297
MN	.005	.006	.005	.006	.007	.006	.007
CA	.809	.784	.784	.718	.741	.753	.740
NA	.027	.029	.018	.028	.028	.025	.025
K	.000	.000	.000	.000	.000	.000	.000
SUM	4.017	4.007	4.006	3.993	4.003	4.017	4.009
CA	42.6	41.8	40.9	38.5	40.1	39.7	39.1
MG	43.9	45.0	51.1	46.9	42.7	45.3	45.2
FE	13.4	13.2	8.0	14.6	17.2	15.1	15.7

PYROXENE

NO	MP	<del>MG</del>	G	G	G	G	G
SI02	51.50	52.95	49.31	48.83	52.43	49.49	49.11
TI02	.80	.42	1.42	1.83	.54	1.32	1.54
AL203	3.36	1.67	4.45	3.17	1.60	3.94	4.14
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	8.25	10.90	9.51	13.30	10.37	10.85	11.47
MNO	.24	.33	.21	.29	.31	.25	.33
MGO	16.14	18.97	14.70	12.56	19.12	14.56	15.64
CA0	19.16	14.11	18.02	18.08	14.27	18.75	16.45
NA20	.39	.24	.35	.46	.18	.39	.39
K20	.00	.00	.00	.00	.00	.00	.00
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.39	.17	.18	.06	.20	.10	.04
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.24	99.77	98.15	98.57	99.02	99.65	99.10

NOS. OF IONS/6 OXYGENS

SI	1.899	1.953	1.866	1.878	1.946	1.862	1.852
AL	.146	.072	.199	.144	.070	.175	.184
TI	.022	.012	.040	.053	.015	.037	.044
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.011	.005	.005	.002	.006	.003	.001
MG	.887	1.043	.829	.720	1.058	.816	.879
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.254	.336	.301	.428	.322	.341	.362
MN	.008	.010	.007	.009	.010	.008	.011
CA	.757	.558	.731	.745	.568	.756	.665
NA	.028	.017	.026	.034	.013	.029	.028
K	.000	.000	.000	.000	.000	.000	.000
SUM	4.013	4.006	4.004	4.013	4.007	4.026	4.026

CA	39.9	28.8	39.3	39.4	29.1	39.5	34.9
MG	46.7	53.8	44.6	38.0	54.3	42.7	46.1
FE	13.4	17.4	16.2	22.6	16.5	17.8	19.0



## PYROXENE

NO	V30-RD10-P2						
	G	P	P	MP	MP	MP	MP
SI02	50.39	50.21	50.98	51.03	53.95	49.56	52.12
TI02	1.08	.40	.52	.73	.40	.67	.33
AL203	3.89	2.97	3.45	3.74	1.64	3.84	1.47
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	8.87	4.35	5.15	6.47	6.65	5.89	7.11
MNO	.25	.15	.12	.19	.20	.08	.23
MGO	16.15	17.66	17.63	17.80	19.78	17.60	20.44
CA0	17.18	21.77	21.22	19.44	18.65	20.42	17.44
NA20	.33	.16	.14	.13	.08	.15	.07
K20	.00	.04	.02	.03	.01	.03	.02
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.47	.45	.40	.34	.21	.29	.07
NI0	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	98.60	98.15	99.64	99.91	101.58	98.53	99.30

## NOS. OF IONS/6 OXYGENS

SI	1.887	1.878	1.878	1.875	1.939	1.852	1.921
AL	.172	.131	.150	.162	.070	.169	.064
TI	.030	.011	.014	.020	.011	.019	.009
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.014	.013	.012	.010	.006	.009	.002
MG	.901	.985	.968	.975	1.060	.980	1.123
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.278	.136	.159	.199	.290	.184	.219
MN	.008	.005	.004	.006	.006	.002	.007
CA	.689	.873	.837	.765	.718	.818	.689
NA	.024	.012	.010	.009	.006	.011	.005
K	.000	.002	.001	.001	.001	.001	.001
SUM	4.002	4.045	4.033	4.024	4.015	4.046	4.040
CA	36.9	43.8	42.6	39.5	36.3	41.3	33.9
MG	48.3	49.4	49.3	50.3	53.6	49.5	55.3
FE	14.9	6.8	8.1	10.3	10.1	9.3	10.8

PYROXENE

V30-RD10-P4

NO	MP	MP	MP	MP	MP	MP	G
SI02	53.85	52.82	50.94	51.64	52.13	53.24	53.85
TI02	.36	.36	.78	.62	.37	.40	.42
AL203	1.77	1.65	4.81	3.10	1.66	1.72	1.81
FE203	.00	.00	.00	.00	.00	.00	.00
FE0	6.68	5.95	5.46	5.51	6.69	5.55	6.60
MNO	.19	.24	.12	.24	.22	.18	.17
MGO	19.96	19.69	17.49	17.28	20.68	19.50	19.48
CA0	17.86	18.70	20.96	20.63	17.02	20.13	19.31
NA20	.06	.09	.20	.13	.08	.16	.09
K20	.01	.01	.04	.04	.03	.03	.03
H20-	.00	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00	.00
CR203	.18	.24	.20	.51	.30	.19	.19
NIO	.00	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00	.00
TOTAL	100.12	99.74	101.01	99.71	99.18	101.09	101.96

NOS. OF IONS/6 OXYGENS

SI	1.933	1.932	1.850	1.899	1.918	1.925	1.932
AL	.076	.071	.206	.134	.072	.073	.076
TI	.010	.010	.021	.017	.010	.011	.011
FE3+	.000	.000	.000	.000	.000	.000	.000
CR	.005	.007	.006	.015	.009	.006	.005
MG	1.084	1.073	.947	.947	1.134	1.051	1.042
NI	.000	.000	.000	.000	.000	.000	.000
FE2+	.204	.182	.166	.170	.206	.168	.198
MN	.006	.008	.004	.008	.007	.005	.005
CA	.697	.733	.815	.813	.671	.780	.742
NA	.004	.006	.014	.010	.006	.011	.006
K	.000	.000	.002	.002	.001	.001	.001
SUM	4.019	4.023	4.031	4.014	4.035	4.031	4.020
CA	35.1	36.9	42.3	42.1	33.4	39.0	37.5
MG	54.6	54.0	49.1	49.1	56.4	52.6	52.6
FE	10.3	9.2	8.6	8.8	10.2	8.4	10.0

PYROXENE

V80-RD7-P7

NO	P	P	G	G	G	G
SI02	52.38	50.86	51.31	50.87	51.45	50.97
TI02	.46	.88	.74	.62	.71	.72
AL203	3.56	4.11	3.34	3.42	3.88	3.69
FE203	.00	.00	.00	.00	.00	.00
FE0	5.35	6.46	6.43	5.68	6.24	6.10
MNO	.12	.19	.18	.16	.16	.22
MGO	18.12	16.51	16.92	17.65	17.94	17.36
CA0	19.30	18.89	19.62	19.05	18.30	18.07
NA20	.23	.25	.28	.36	.22	.25
K20	.00	.00	.00	.00	.00	.00
H20-	.00	.00	.00	.00	.00	.00
H20+	.00	.00	.00	.00	.00	.00
P205	.00	.00	.00	.00	.00	.00
CR203	.41	.34	.34	.88	.22	.54
NI0	.00	.00	.00	.00	.00	.00
CO2	.00	.00	.00	.00	.00	.00
TOTAL	99.93	98.49	99.15	98.69	99.12	97.92

NOS. OF IONS/6 OXYGENS

SI	1.908	1.891	1.899	1.887	1.894	1.900
AL	.153	.180	.146	.149	.168	.162
TI	.013	.025	.021	.017	.020	.020
FE3+	.000	.000	.000	.000	.000	.000
CR	.012	.010	.010	.026	.006	.016
MG	.984	.915	.934	.976	.984	.964
NI	.000	.000	.000	.000	.000	.000
FE2+	.163	.201	.199	.176	.192	.190
MN	.004	.006	.006	.005	.005	.007
CA	.753	.752	.778	.757	.722	.722
NA	.016	.018	.020	.026	.016	.018
K	.000	.000	.000	.000	.000	.000
SUM	4.005	3.998	4.012	4.021	4.007	4.000

CA	39.6	40.3	47.7	39.7	38.0	38.5
MG	51.8	49.0	48.9	51.1	51.9	51.4
FE	8.6	10.8	10.4	9.2	10.1	10.1