Table 6: Representative microprobe analyses of olivine phenocrysts - core and rim

Sample	101		102		LV-167		169		142		109		259		260	
	basaltic ash		*base flow*		*middle flow*		*top flow*		*summit*		*Tio Cleto*		*El Vigia bomb*		*El Vigia*	
Oxide	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R
SiO_2	38.6	37.9	38.3	37.9	39.6	39.0	38.6	36.8	36.7	35.6	39.3	38.5	38.8	38.0	38.7	38.1
P_2O_5	0.05	0.12	0.04	0.01	0.17	0.01	0.03	0.09	0.03	0.06	0.00	0.07	0.07	0.01	-	-
Al_2O_3	0.00	0.02	0.02	0.01	0.04	0.04	0.02	0.04	0.00	0.03	0.03	0.03	0.01	0.03	0.05	0.04
FeO	19.48	22.64	21.42	27.05	20.89	28.47	21.26	29.59	32.54	35.77	17.99	22.77	17.76	21.81	20.46	23.89
MnO	0.35	0.35	0.31	0.46	0.31	0.41	0.31	0.46	0.60	0.70	0.21	0.37	0.30	0.33	0.22	0.35
MgO	40.7	37.9	39.4	34.2	38.9	32.3	40.1	32.7	30.6	27.9	42.4	38.8	43.1	38.7	39.7	36.7
CaO	0.12	0.18	0.14	0.21	0.35	0.09	0.15	0.34	0.21	0.27	0.16	0.19	0.11	0.19	0.05	0.09
NiO	-	-	0.19	0.09	0.17	0.06	0.24	0.09	0.02	0.01	0.27	0.15	-	-	0.23	0.13
Total	99.34	99.07	99.72	99.91	100.43	100.24	100.70	100.09	100.69	100.28	100.40	100.83	100.15	99.09	99.40	99.54
X_{Fo}	78	74	76	68	75	65	77	66	62	58	80	75	81	75	77	72
X_{Fa}	21	25	23	30	23	32	23	33	37	41	19	24	18	24	22	26

Table 7: Microprobe analyses of groundmass olivines - average of N grains

Sample	102	LV-167	169	151	142	109
	base flow	*middle flow*	*top flow*	*pillow*	*summit flow*	*Tio Cleto*
N	9	12	11	10	12	10
SiO_2	36.7	36.1	36.3	37.2	34.9	37.5
P_2O_5	0.13	0.10	0.15	0.18	0.19	0.04
Al_2O_3	0.04	0.04	0.04	0.07	0.03	0.06
FeO	30.13	34.87	33.62	29.16	40.25	28.65
MnO	0.50	0.61	0.57	0.48	0.78	0.58
MgO	32.1	28.6	29.5	32.8	23.4	32.8
CaO	0.30	0.28	0.34	0.31	0.34	0.30
NiO	0.06	-	0.04	0.09	0.02	0.06
Total	99.95	100.61	100.59	100.22	99.90	100.03
X_{Fo}	65	59	60	66	50	66
X_{Fa}	34	40	38	33	48	33
Range X_{Fo}	57 - 70	53 - 66	53 - 65	59 - 67	47 - 55	63 - 69

Table 8: Representative microprobe analyses of plagioclase feldspar

Sample	101		102		LV-167		169		142		142		109		259		260	
	basaltic ash		*base flow*		*middle flow*		*top flow*		*summit*		*summit*		*Tio Cleto*		*El Vigia bomb*		*El Vigia*	
Oxide	mpc	mpr	mpc	mpr	mpc	mpr	mpc	mpr	mpc	mpr	pc	pr	mpc	mpr	mpc	mpr	mpc	mpr
SiO_2	53.0	53.9	52.8	53.9	53.2	59.3	52.6	57.3	52.9	62.7	49.9	57.7	50.0	54.5	52.1	53.3	49.2	54.7
TiO_2	0.10	0.07	0.12	0.16	0.10	0.20	0.09	0.19	0.12	0.15	0.01	0.17	0.56	0.15	0.11	0.14	0.00	0.09
Al_2O_3	29.01	28.10	28.65	27.55	29.29	25.30	29.56	26.05	29.27	22.30	30.85	25.99	30.37	27.32	29.76	28.74	31.73	27.31
FeO	0.79	0.70	0.79	0.87	0.83	0.77	0.77	0.93	0.79	0.53	0.61	0.67	0.85	0.96	1.02	0.97	0.62	0.95
MgO	0.13	0.10	0.11	0.13	0.11	0.05	0.14	0.17	0.09	0.01	0.09	0.02	0.10	0.17	0.02	0.01	0.04	0.20
CaO	12.18	11.30	11.88	10.00	11.81	6.62	12.40	8.32	11.73	3.46	14.26	8.10	13.08	10.96	12.87	11.22	14.62	10.06
Na_2O	3.48	5.51	4.85	5.92	4.27	6.69	4.74	7.26	4.90	8.28	3.58	6.18	3.86	4.56	3.43	5.44	2.19	5.82
K_2O	0.17	0.26	0.26	0.45	0.28	0.97	0.26	0.72	0.34	2.05	0.13	1.19	0.54	0.36	0.25	0.27	0.15	0.37
SrO	0.47	0.36	0.33	0.27	0.35	0.32	0.24	0.12	0.23	0.23	0.35	0.20	0.30	0.20	0.32	0.22	0.40	0.33
BaO	0.03	0.06	0.00	0.02	0.07	0.19	0.09	0.07	0.02	0.23	0.04	0.03	0.03	0.03	0.01	0.02	0.00	0.04
Total	99.32	100.36	99.79	99.21	100.28	100.42	100.91	101.16	100.42	99.89	99.78	100.23	99.71	99.17	99.86	100.37	98.94	99.88
X_{An}	62.2	50.7	54.9	45.6	57.3	32.2	56.4	36.2	54.5	16.2	66.2	38.6	61.3	53.9	65.1	51.8	75.7	45.8
X_{Ab}	32.2	44.7	40.6	48.9	37.5	59.0	39.0	57.2	41.2	70.2	30.1	53.3	32.7	40.5	31.4	45.4	20.5	47.9
X_{Or}	1.0	1.4	1.4	2.4	1.6	5.6	1.4	3.7	1.9	11.4	0.7	6.7	3.0	2.1	1.5	1.5	0.9	2.0

mpc = microphenocryst core; mpr = microphenocryst rim; pc = phenocryst core; pr = phenocryst rim.

Table 9: Representative microprobe analyses of groundmass and phenocryst augite

Sample	161 *flow*	LV-167 *middle flow*	169 *top flow*	142 *summit*	142 pc	142 pr	109 *Tio Cleto*
SiO_2	49.4	50.6	47.2	50.7	50.6	49.5	51.1
TiO_2	2.15	1.54	2.62	1.34	1.14	1.56	1.15
Al_2O_3	2.86	2.29	3.78	2.22	3.45	4.77	2.71
FeO	11.45	11.71	12.13	12.25	8.25	8.25	8.12
MnO	0.30	0.37	0.27	0.36	0.16	0.16	0.20
MgO	11.8	14.8	12.1	14.4	14.9	14.2	14.6
CaO	20.83	17.77	20.54	17.78	21.08	21.38	21.51
Na_2O	0.45	0.40	0.55	0.38	0.39	0.43	0.39
K_2O	0.01	0.02	0.00	0.01	0.00	0.00	0.00
Total	99.27	99.43	99.25	99.40	99.97	100.25	99.76
X_{Wo}	0.78	0.67	0.75	0.68	0.76	0.75	0.86
X_{En}	0.71	0.82	0.68	0.80	0.82	0.78	0.81
X_{Fs}	0.36	0.37	0.38	0.38	0.25	0.25	0.25

Table 10: Microprobe analyses of Volcan La Laja groundmass glass - average of N points

Sample	102	153	169	151	101
	base flow	*middle flow*	*top flow*	*pillow*	*basaltic ash*
N	7	17	8	14	13
SiO_2	45.8	50.2	48.5	48.6	53.1
TiO_2	3.71	3.28	2.56	3.63	2.99
Al_2O_3	5.20	7.21	4.24	7.88	13.63
FeO	15.30	15.45	15.00	13.93	10.68
MgO	10.0	8.0	8.4	8.1	3.1
CaO	16.69	11.10	17.88	13.75	6.81
Na_2O	0.95	1.51	0.97	1.79	2.82
K_2O	0.39	1.72	0.78	1.08	2.23
P_2O_5	0.41	1.29	0.94	0.50	0.80
SrO	0.09	0.13	0.08	0.14	0.16
BaO	0.03	0.08	0.07	0.06	0.07
Total	98.54	99.91	99.37	99.45	96.54

Table 11: Representative microprobe analyses of spinel inclusions in olivine phenocrysts

Sample	101		102		LV-167		169		142		109		259		260	
	basaltic ash		*base flow*		*middle flow*		*top flow*		*summit*		*Tio Cleto*		*El Vigia bomb*		*El Vigia*	
Oxide	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H
SiO_2	0.07	0.02	0.09	0.08	0.10	0.04	0.08	0.06	0.09	0.04	0.09	0.01	0.00	0.05	0.03	0.02
TiO_2	8.38	8.71	15.44	8.35	16.80	10.91	16.59	8.47	20.43	19.27	2.91	1.72	3.35	3.04	5.22	3.12
Al_2O_3	8.00	9.42	3.50	11.13	4.47	8.33	3.51	9.06	3.00	3.05	14.81	25.62	18.96	19.85	9.29	18.58
Cr_2O_3	10.80	12.65	7.72	13.45	8.65	11.74	6.69	13.50	0.42	1.77	18.73	22.99	22.71	24.66	17.36	25.30
V_2O_3	0.39	0.49	0.70	0.40	0.70	0.43	0.92	0.43	0.69	0.66	0.24	0.15	0.36	0.29	0.37	0.24
FeO	59.44	56.95	64.73	54.65	63.00	59.63	64.80	58.15	67.70	67.92	50.94	35.42	45.66	41.92	58.99	43.72
MnO	0.41	0.39	0.46	0.29	0.58	0.46	0.39	0.28	0.38	0.39	0.22	0.20	0.53	0.37	0.46	0.46
MgO	7.5	8.0	4.7	7.9	3.2	6.4	3.8	6.7	4.3	3.5	7.7	11.7	6.1	8.8	4.2	7.0
CaO	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.03	0.02	0.00	0.06	0.06	0.01	0.04	0.02	0.00
NiO	0.28	0.17	0.05	0.17	0.05	0.25	0.06	0.10	0.00	0.01	0.15	0.25	0.14	0.24	0.10	0.25
ZnO	0.00	0.00			0.10	0.04	-	-	-	-	-	-	0.25	0.21	0.23	0.29
Total	95.29	96.77	97.40	96.49	97.62	98.17	96.79	96.78	97.02	96.63	95.80	98.13	98.10	99.43	96.27	98.96
FeO	27.85	28.18	38.59	28.17	42.10	32.73	40.91	30.05	43.59	43.55	24.16	18.95	27.54	23.89	30.40	27.44
Fe_2O_3	35.10	31.97	29.05	29.43	23.22	29.89	26.55	31.24	26.8	27.08	29.76	18.30	20.14	20.03	31.77	18.09
Recalc. Total	98.80	99.97	100.31	99.44	99.94	101.16	99.45	99.90	99.70	99.34	98.77	99.96	100.12	101.43	99.45	100.77
X_{ulv}	0.356	0.385	0.417	0.216	0.587	0.446	0.455	0.221	0.557	0.528	0.394	0.212	0.523	0.450	0.449	0.527
X_{mgt}	0.460	0.410	0.391	0.376	0.314	0.385	0.362	0.405	0.363	0.371	0.377	0.372	0.249	0.240	0.421	0.214

FeO and Fe_2O_3 calculated using method of Ghiorso and Carmichael (1981);
L and H refer to lowest and highest Cr_2O_3 spinels in each sample

Table 12: Microprobe analyses of groundmass oxides - average of N points

Sample	102	169	161	142	109	259		260	
	base flow	*top flow*	*middle flow*	*summit flow*	*Tio Cleto*	*El Vigia*		*El Vigia*	
N	14	14	19	21	17	2	2	11	2
SiO_2	0.2	0.4	0.2	0.3	0.1	0.2	0.1	0.1	0.1
TiO_2	17.65	19.17	21.76	21.22	21.20	8.39	50.59	7.22	44.48
Al_2O_3	3.23	1.91	1.32	1.96	1.11	2.42	0.08	1.92	0.10
Cr_2O_3	2.30	2.66	0.37	0.01	0.20	5.08	0.56	6.22	0.17
V_2O_3	0.76	0.86	0.74	0.74	0.49	1.06	0.12	0.39	0.32
FeO	69.10	68.14	69.40	72.09	70.52	74.92	42.84	76.81	50.81
MnO	0.39	0.51	0.50	0.43	0.53	0.33	0.41	0.32	0.39
MgO	3.5	1.9	2.2	2.0	2.7	2.1	5.0	1.9	1.2
CaO	0.10	0.08	0.09	0.04	0.10	0.15	0.11	0.10	0.19
NiO	0.02	0.01	0.02	0.01	0.03	0.01	0.02	0.02	0.03
Total									
FeO	42.35	45.57	47.49	48.30	46.17	43.72	7.60	46.73	15.10
Fe_2O_3	29.73	25.08	24.34	26.43	27.07	35.57	36.00	34.75	37.22
Recalc. Total	100.20	98.15	98.94	101.45	99.71	98.98	100.56	99.64	99.25
X_{ulv}	0.404	0.353	0.340	0.360	0.375	0.613		0.655	
X_{mgt}	0.509	0.586	0.596	0.583	0.551	0.339		0.303	
						T = 780 °C		T = 840 °C	
						log fO_2 = -14.3		log fO_2 = -13.1	

FeO, Fe_2O_3, T and fO_2 calculated utilizing Ghiorso and Carmichael (1981).