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FROM UNIT-CELL PARAMETERS TO Si/Al DISTRIBUTION IN K-FELDSPARS: CORRIGENDUM

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Some numerical results in the paper by Ferguson (1980) require changing as the result of corrections published by Dal Negro *et al.* (1980) of the interaxial angles α and γ for

TABLE 1 REVISED. UNIT CELL PARAMETERS (Å, °), $\overline{T_j\text{-}O}$ DISTANCES (Å) AND TETRAHEDRAL Al-CONTENTS t_j (–) OF STRUCTURALLY REFINED K FELDSPARS†

Sample#	a	b	c	Tr[110] Tr[1$\bar{1}$0]	α α*	β	c*/b* γ γ*	$\overline{T_j\text{-}O}$ distances: T_1 T_1O T_1m	$\overline{T_j\text{-}O}$ distances: T_2 T_2O T_2m	Al contents: t_1 t_1O t_1m	t_2 t_2O t_2m	Σ+	t_1 t_1O t_1m	t_2 t_2O t_2m	Σ++	Ref.##
							Monoclinic: space group C2/m									
(1)	8.546(5)	13.037(5)	7.178(5)	15.588(7)	-	115.97(5)	2.0202(4)	1.645(2)	1.641(2)	26	24	100	26	24	100	(1)
(2)	8.5642(2)	13.0300(4)	7.1749(2)	15.593(4)	-	115.994(5)	2.0204(3)	1.645[2]	1.640[2]	26	23	98	26	23	98	(2,3,4)
(3)	8.539(4)	13.015(5)	7.179(3)	15.566(6)	-	115.99(2)	2.0169(3)	1.650[1]	1.637[1]	30	21	102	30	21	102	(5)
(4)	8.552(6)	13.030(9)	7.179(6)	15.586(11)	-	115.91[5]	2.0178(6)	1.650(1)	1.635(1)	30	20	100	30	19	98	(6)
(5)	8.549(5)	13.028(5)	7.188(5)	15.582(7)	-	116.02(5)	2.0169(4)	1.653(2)	1.635(2)	32	20	104	32	19	102	(1)
(6)	8.575(2)	13.007(3)	7.191(2)	15.579(4)	-	115.977(20)	2.0121(2)	1.654[1]	1.634[1]	32	19	102	33	18	102	(7)
(7)	8.561(2)	12.996(4)	7.192(2)	15.562(4)	-	116.01(1)	2.0107(2)	1.656(3)	1.628(3)	34	15	98	35	14	98	(3,4,8)
(8)	8.554(2)	12.970(4)	7.207(2)	15.537(4)	-	116.007(10)	2.0024(2)	1.664(2)	1.622(2)	39	12	102	40	10	100	(4)
(9)	8.545(2)	12.967(5)	7.201(3)	15.529(5)	-	116.00(2)	2.0035(3)	1.665[1]	1.621[1]	39	11	100	41	9	100	(5)
(10)	8.5632(11)	12.963(14)	7.2099(11)	15.536(18)	-	116.073(9)	2.0016(4)	1.667(1)	1.616(1)	41	8	98	43	5	96	(9)
							++Metrically monoclinic, structurally triclinic: space group C$\bar{1}$									
(11)	8.589(2)	13.013(7)	7.197(2)	15.592(7)	-	116.02(3)	2.0121(12)	1.660[1] 1.657[1]	1.631[1] 1.630[1]	36 34	17 17	104	38 35	16 15	104	(10)
(12)	8.583(2)	12.988(7)	7.202(2)	15.568(7)	-	116.05(3)	2.0073(12)	1.665[1] 1.655[1]	1.626[1] 1.626[1]	39 33	14 14	100	41 34	13 13	101	(10)
(13)	8.563(2)	12.990(7)	7.210(2)	15.558(7)	-	115.93(3)	2.0033(12)	1.672[1] 1.659[1]	1.623[1] 1.623[1]	44 35	12 12	103	46 37	10 10	103	(10)
							Triclinic: space group C$\bar{1}$									
(14)	8.567(2)	12.980(7)	7.200(2)	15.583(7) 15.521(7)	90.07(3) 90.05(3)	116.03(3)	89.75(3) 90.25(3)	1.669[1] 1.654[1]	1.623[1] 1.622[1]	42 32	12 12	98	44 33	10 10	97	(10)
(15)	8.643(3)	12.929(4)	7.190(3)	15.602(5) 15.502(5)	90.13(3) 90.05[3]	116.24(3)	89.60(3) 90.38[3]	1.671(3) 1.651(3)	1.622(3) 1.627(3)	43 30	12 15	100	46 31	10 13	100	(11,12)
(16)	8.564(2)	12.984(7)	7.201(2)	15.613(7) 15.495(7)	90.13(3) 90.08(3)	116.02(3)	89.53(3) 90.45(3)	1.674[1] 1.651[1]	1.624[1] 1.621[1]	45 30	13 11	99	48 31	11 9	99	(10)
(17)	8.5784[14]	12.9600[10]	7.2112[12]	15.651[1] 15.432[1]	90.30[3] 90.10[3]	116.03[3]	89.12[3] 90.83[3]	1.694[3] 1.643[3]	1.619[3] 1.616[3]	58 25	10 8	101	63 25	7 5	100	(13,14)
(18)	8.560(2)	12.984(7)	7.209(2)	15.672(7) 15.430(7)	90.28(3) 90.15(3)	116.03(3)	89.03(3) 90.93(3)	1.694[1] 1.643[1]	1.620[1] 1.619[1]	58 25	10 10	103	63 25	8 7	103	(10)
(19)	8.574(2)	12.962(7)	7.210(2)	15.690(7) 15.391(7)	90.35(3) 90.20(3)	116.03(3)	88.80(3) 91.17(3)	1.701[2] 1.631[2]	1.620[2] 1.619[2]	63 17	10 10	100	68 16	8 7	99	(10)
(20)	8.567(2)	12.970(7)	7.221(2)	15.732(7) 15.353(7)	90.43(3) 90.25(3)	116.00(3)	88.48(3) 91.47(3)	1.717[1] 1.630[1]	1.615[1] 1.615[1]	73 17	7 7	104	79 15	4 4	102	(10)
(21)	8.561(2)	12.972(7)	7.223(2)	15.800(7) 15.281(7)	90.57(3) 90.38(3)	115.97(3)	87.92(3) 92.03(3)	1.731[1] 1.618[1]	1.616[1] 1.616[1]	82 9	8 8	107	90 7	5 5	107	(10)
(22)	8.5726[16]	12.9618[18]	7.2188[18]	15.818[2] 15.257[2]	90.57[3] 90.47[3]	115.92[3]	87.75[3] 92.22[3]	1.735(6) 1.613(6)	1.619(6) 1.609(6)	85 6	10 3	104	93 3	7 0	103	(15)
(23)	8.560(4)	12.964(7)	7.215(3)	15.819(8) 15.246(8)	90.65(8) 90.38(8)	115.83(8)	87.70(8) 92.23(8)	1.741(5) 1.614(5)	1.611(5) 1.612(5)	88 6	5 5	104	97 4	1 2	104	(16)

+ and ++ calculated from 'modified Jones-Ribbe-Gibbs' and 'modified Smith-Bailey' curves respectively. Σ = sum of tetrahedral populations.

\# (1) Heated sanidine (2) Heated Spencer C orthoclase (3) Low sanidine #7002 (4) Sanidine #7002 (5) Sanidine (6) Adularia, St.Gotthard #297 (7) Spencer C orthoclase (8) Spencer B adularia (9) Adularia #7007 (10) Ordered orthoclase (11) P2B (12) P2A (13) CA1A (14) P17C (15) K235 (16) A1D (17) Spencer U (18) CA1B (19) P1C (20) RC2OC (21) CA1E (22) Pontiskalk (23) Pellotsalo

\## (1) Weitz 1972 (2) Ribbe 1963 (3) Cole et al. 1949 (4) Colville & Ribbe 1968 (5) Phillips & Ribbe 1973 (6) Brown et al. 1974 (7) J.B. Jones, pers. comm. 1979 (8) Jones & Taylor 1961 (9) Prince et al. 1973 (10) Dal Negro et al. 1978 (11) Dal Negro et al. 1980 (12) Ribbe 1979 (13) Ribbe & Gibbs 1975 (14) Bailey 1969 (15) Bailey & Taylor 1955 (16) Finney & Bailey 1964 (17) Brown & Bailey 1964

† Standard deviations enclosed in [ ] were assigned in this study. †† For this group, γ = γ* = 90.00(3)° for all samples.

six of the nine microclines whose refined structures they described earlier (Dal Negro *et al.* 1978). The changes are incorporated into the accompanying Table 1 Revised, which also includes corrected values of *Tr*[110] and *Tr*[1$\bar{1}$0]. Although the corrected α and γ angles lead to changes of up to 0.008 Å in some *individual* distances T_j–O from those given in Table 3 in Dal Negro *et al.* (1978), all the *mean* distances $\overline{T_j\text{–O}}$ are unchanged except for $\overline{T_1\text{O–O}}$ of specimen CA1E, which changes by only 0.001 Å. Consequently, all the $\overline{T_j\text{–O}}$ values and the Al contents t_j derived assuming both the Jones–Ribbe–Gibbs and the Smith–Bailey t *versus* T–O relationships (t_j^J and t_j^S, respectively) in Table 1 Revised remain unchanged from the original Table 1.

Because the plot of *Tr*[110], *Tr*[1$\bar{1}$0] against the sums of certain Al contents, shown as Figure 3 in the original paper, was included for discussion rather than determinative purposes, the small changes in a number of the plotted points resulting from the revised α and γ angles of Dal Negro *et al.* (1980) have not been made in that figure. On the other hand, because the plot of mean $\overline{T\text{–O}}$ distances (and Al contents) against interaxial angle γ (and other parameters) shown as Figure 5 *is* intended for determinative purposes, the points have been replotted using the corrected γ values and the unchanged $\overline{T_j\text{–O}}$ distances shown in Table 1 Revised; new linear regression lines were calculated, leading to the accompanying Figure 5 Revised. The constants for the new linear-regression equations for these triclinic microclines are shown in Table 2 Revised, which also includes slight changes found necessary in the equations for the monoclinic specimens (unrelated to the changes in the triclinic specimens).

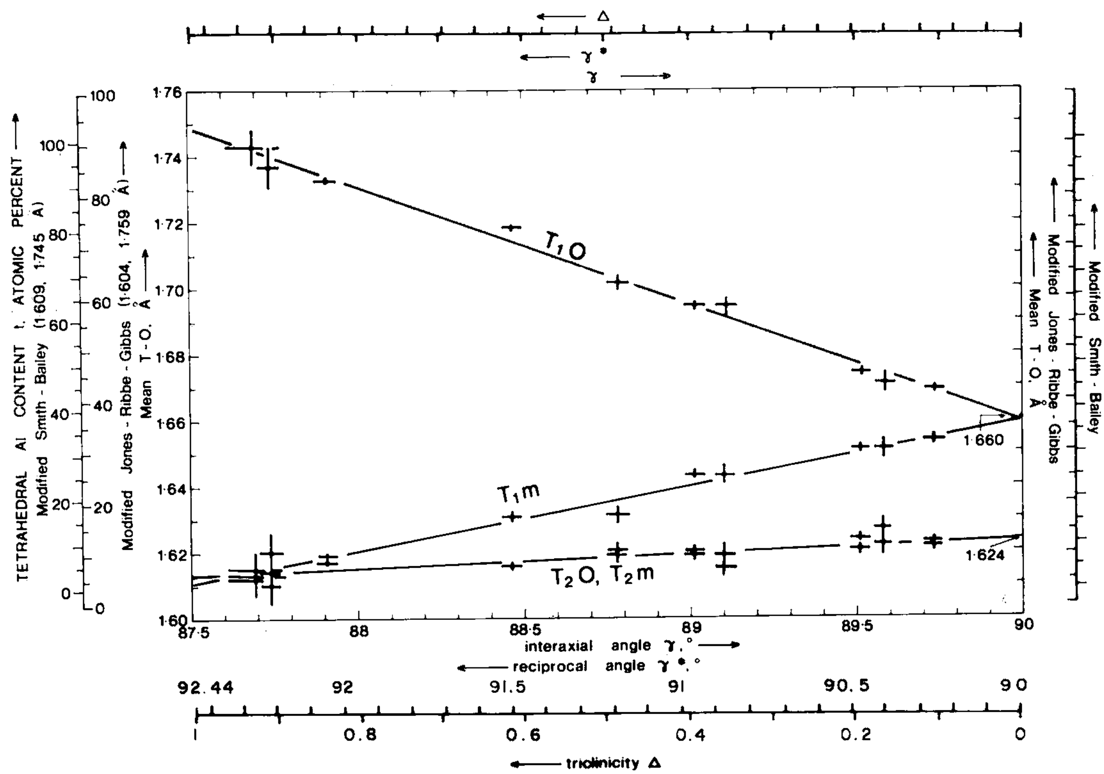

FIG. 5 REVISED. Changes in relation to Figure 5 in Ferguson (1980) involve a replotting of some of the points, consequent recalculation and redrawing of the linear regression lines, and a slight modification in the γ^* scale, all of which are explained in the accompanying text.

TABLE 2 REVISED. LINEAR REGRESSION EQUATIONS* FOR DETERMINATIVE CURVES

Monoclinic: Figure 4					Triclinic: Figure 5				
y**	x	m	c	R***	y	x	m	c	R
$\overline{T_1\text{-}O}$	b	-0.269913	5.16493	-0.964	$\overline{T_1O\text{-}O}$	γ	-0.034870	4.79800	-0.996
t_1^J		-174.193	2298.09	-	t_1O^J		-22.5036	2061.26	-
t_1^S		-198.654	2617.11	-	t_1O^S		-25.6484	2345.64	-
$\overline{T_2\text{-}O}$		0.290490	-2.14671	0.964	$\overline{T_1m\text{-}O}$		0.020264	-0.16404	0.992
t_2^J		187.420	-2419.91	-	t_1m^J		13.0839	-1141.55	-
t_2^S		213.602	-2761.65	-	t_1m^S		14.9118	-1304.71	-
$\overline{T_1\text{-}O}$	c	0.621253	-2.81189	0.974	$\overline{T_2'\text{-}O}$		0.005009	1.17365	0.834
t_1^J		400.805	-2848.94	-	$t_2'^J$		3.22568	-277.150	-
t_1^S		456.803	-3250.65	-	$t_2'^S$		3.67664	-319.574	-
$\overline{T_2\text{-}O}$		-0.656690	6.35249	-0.957	$\overline{T_1O\text{-}O}$	γ*	0.035725	-1.55555	-
t_2^J		-423.711	3063.83	-	t_1O^J		23.0570	-2039.19	-
t_2^S		-482.905	3488.18	-	t_1O^S		26.2791	-2327.84	-
$\overline{T_1\text{-}O}$	c*/b*	-1.06803	3.80404	-0.984	$\overline{T_1m\text{-}O}$		-0.020766	3.52875	-
t_1^J		-688.979	1419.24	-	t_1m^J		-13.4056	1242.51	-
t_1^S		-785.229	1613.83	-	t_1m^S		-15.2785	1412.42	-
$\overline{T_2\text{-}O}$		1.13901	-0.661067	0.975	$\overline{T_2'\text{-}O}$		-0.005131	2.08622	-
t_2^J		734.678	-1461.00	-	$t_2'^J$		-3.30500	310.611	-
t_2^S		837.317	-1668.79	-	$t_2'^S$		-3.76705	350.358	-
					$\overline{T_1O\text{-}O}$	Δ	0.087170	1.65974	-
					t_1O^J		56.2590	35.9350	-
					t_1O^S		64.1210	37.2790	-
					$\overline{T_1m\text{-}O}$		-0.050670	1.65977	-
					t_1m^J		-32.7097	36.0000	-
					t_1m^S		-37.2795	37.3530	-
					$\overline{T_2'\text{-}O}$		-0.012520	1.62442	-
					$t_2'^J$		-8.06420	13.1610	-
					$t_2'^S$		-9.19160	11.3240	-

*Equations are of the standard form $y=mx+c$.

**t_i^J and t_i^S are the Al-contents (wt.%) of site T_i forecast from the 'modified Jones-Ribbe-Gibbs' ($Al=645.16\ \overline{T\text{-}O} - 1034.84$) and 'modified Smith-Bailey' ($Al=735.29\ \overline{T\text{-}O} - 1183.09$) curves respectively.

***correlation coefficients are not given for $y=t_i$ and $x=\gamma^*$ and Δ because experimental standard deviations cannot be assigned to these parameters.

Besides the replotting of the points of Dal Negro *et al.*, one other minor change was found necessary in Figure 5 Revised: the curve correlating γ^* to γ changed such that the γ^* equivalent to the arbitrarily chosen γ of 87.5° for maximum microcline (as explained in the original paper) altered from 92.35° to 92.44°; the resulting slight change in scale is incorporated into Figure 5 Revised.

The changes necessitated by the revised data of Dal Negro *et al.* (1980) are such as to cause no changes in the numerical conclusions and the interpretations given in the author's paper.

REFERENCES

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