Table 7.15. Chemical compositions (wt.%) of average soils at lunar landing sites and in selected regions at the Apollo 15, Apollo 16, Apollo 17, Luna 16, Luna 20, and Luna 24 sites.

	11	12	14	15a	15b	15c	15	16a	16b	16c	16	17a	17b	17c	17d	17	L16	L20	L24
SiO_2	42.2	46.3	48.1	46.7	46.6	47.1	46.8	45.0	44.9	45.1	45.0	40.6	45.1	43.5	43.7	43.2	41.7	45.1	43.9
TiO_2	7.8	3.0	1.7	1.7	1.4	1.0	1.4	0.56	0.47	0.60	0.54	8.4	1.7	3.4	3.5	4.2	3.4	0.55	1.3
Al_2O_3	13.6	12.9	17.4	13.2	17.1	13.4	14.6	27.1	28.0	26.8	27.3	12.0	20.7	18.0	17.4	17.1	15.3	22.3	12.5
Cr_2O_3	0.30	0.34	0.23	0.44	0.27	0.37	0.36	0.34	0.54	0.11	0.33	0.45	0.25	0.28	0.32	0.33	0.28		0.32
FeO	15.3	15.1	10.4	16.3	11.7	14.9	14.3	5.2	4.7	5.4	5.1	16.7	8.8	10.9	12.2	12.2	16.7	7.0	19.8
MnO	0.20	0.22	0.14	0.21	0.16	0.19	0.19	0.41	0.27	0.22	0.30	0.23	0.12	0.16	0.16	0.17	0.23	0.13	0.25
MgO	7.8	9.3	9.4	10.9	10.5	13.0	11.5	5.8	5.6	5.7	5.7	9.9	9.8	10.7	11.1	10.4	8.8	9.8	9.4
CaO	11.9	10.7	10.7	10.4	11.6	10.3	10.8	15.8	15.7	15.6	15.7	10.9	12.8	12.12	11.3	11.8	12.5	15.1	12.3
Na_2O	47	0.54	0.70	0.38	0.45	0.33	0.39	0.46	0.50	0.43	0.46	0.35	0.42	0.42	0.42	0.40	0.34	0.50	0.31
K_2O	0.16	0.31	0.55	0.23	0.20	0.19	0.21	0.13	0.23	0.14	0.17	0.16	0.16	0.12	0.09	0.13	0.10	0.10	0.04
P_2O_3	0.05	0.4	0.51	0.16	0.19	0.19	0.18	0.13	0.10	0.10	0.11	0.14	0.15	0.09	0.08	0.12	0.12	0.16	0.11
S	0.12			0.07	0.08	0.04	0.06	0.07	0.05	0.09	0.07	0.12	0.09	0.07	0.09	0.09	0.21	0.08	0.14
Total	99.9	99.6	99.8	100.6	100.2	100.9	100.8	100.9	100.9	100.4	100.8	100.1	100.0	99.8	99.9	100.5	99.7	100.8	100.4
ppm																			
Sc	60	38	23	30	22	24	25.3	9.0	8.0	9.0	8.7	63	17	31	37	37	37	16	34
U	0.5	1.7	1.5	1.3		0.9	0.73	0.53	0.45	0.61	0.53	0.29	0.90	0.44		0.41	0.25	0.29	0.26
Th	1.9	6.4	6.7	3.8		3.0	2.3	1.9	1.4	2.8	2.0	0.53	2.7	2.7	1.5	1.9	0.8	0.85	1.1
La	16	39	70	23	32	24	26.3	11	8	13	10.7	8	15	11		8.5	13	5	5

11 Composition of soil 10002 from Apoll 11 site.
12 Average composition of selected soils (12001, 12023, 12030, 12032, 12033, 12037, 12041, 12042, 12044, 12070) from the Apollo 12 site.
14 Average composition of selected soils (14003, 14148, 14149, 14156) from the Apollo 14 site.
15a Average composition of selected mare soils (15012, 15013, 15020, 15030, 15040, 15070, 15080, 15470, 15500, 15530, 15600) from the Apollo 15 site.
15b Average composition of selected Apennine Front soils (15009, 15100, 15210, 15221, 15230, 15250, 15270, 15290) from the Apollo 15 site.
15c Average composition of selected green-glass-rich soils (15300, 15400, 15410, 15403) from the Apollo 15 site.
15 Average composition of Apollo 15 soils.
16a Average composition of Cayley Plain soil (60050, 60500, 61140, 61161, 61180, 61220, 61240, 61500, 62240, 62280) from the Apollo 16 site.
16b Average composition of selected North Ray soils (63320, 63340, 63500, 67460, 67480, 67600, 67700, 67710, 68500, 68820, 69920, 69940) from the Apollo 16 site.
16c Average composition of selected Stone Mountain and South Ray soils (64420, 64500, 64800, 65500, 65700, 66040, 66080) from the Apollo 16 site.
16 Average composition of Apollo 16 soils.
17a Average composition of selected mare soils (70011, 70160, 70180, 71040, 71060, 71500, 72160, 75060, 75080, 79220, 79240) from the Apollo 17 site.
17b Average composition of selected South Massif and light mantle soils (72320, 72440, 72460, 72500, 73120, 73140, 73220, 73280, 74120) from the Apollo 17 site.
17c Average composition of selected North Massif soils (76246, 76260, 76280, 76320, 76500, 77530) from the Apollo 17 site.
17d Average composition of selected Sculptured Hill soils (78220, 78420, 78440, 78460, 78480) from the Apollo 17 site.
17 Average composition of Apollo 17 soils.
L16 Average composition of Luna 16 soils (Russian data).
L20 Average composition of Luna 20 soils (Russian data; Sc from *Laul and Papike*, 1980).
L24 Average composition of Luna 24 soils (Russian data).

Data Source: *Baedecker et al.*(1974); *Bansal et al.*(1972); *Boynton et al.*(1975, 1976a); *Brunfelt et al.*(1972a,b; 1973a,b); *Carron et al.*(1972); *Christian et al.*(1976); *Compston et al.*(1973); *Cuttitta et al.*(1971); *Duncan et al.*(1973, 1975); *Finkelman et al.*(1975); *Frondel et al.*(1971); *Fruchter et al.*(1974a,b); *Goles et al.*(1971); *Haskin et al.*(1971, 1973); *Korotev*(1976, 1981, 1982); *Kräthenbühl et al.*(1973); *Laul and Papike*(1980); *Laul and Schmitt*(1973b); *Laul et al.*(1972, 1974); *Lindstrom et al.*(1972); *LSPET*(1972, 1973a,b); *Mason et al.*(1973); *Masuda et al.*(1972); *Miller et al.*(1974); *Morgan et al.*(1972); *Philpotts et al.*(1972, 1974); *Rhodes et al.*(1974); *Rose et al.*(1972, 1973, 1974, 1975); *Schnetzler and Philpotts*(1971); *Simkin et al.*(1973);

Tarasov et al.(1977); *Taylor et al.*(1973); *Vinogradov et al.*(1973); *Wakita et al.*(1971); *Wänke et al.*(1973, 1974, 1975); *Warren et al.*(1978); *Willis et al.*(1972); *Woodcock and Pillinger* (1978).