Addendum

to « K-Mesons in Emulsions Exposed to a 6.2 GeV Proton Beam » ⁽¹⁾.J. CRUSSARD, V. FOUCHÉ, J. HENNESSY, G. KAYAS, L. LEPRINCE-RINGUET,
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Since January 1956, other flat secondaries of K⁺-mesons have been measured and identified in the stack exposed to the 6.2 GeV proton beam of the Ber-

keley Bevatron.

The results of these measurements are quoted below: they should be added to those of Table II (p. 736-7-8 of ⁽¹⁾).

TABLE II-A.

No.	Type	Observed length	Scattering measurement		Grain counts		Total range mm	Remarks
			$p\beta c$ MeV	at (*) mm	g/g_{pr}	at (*) mm		
K ₅₁₃	K _μ	163	180 ± 19	43	1.14 ± 0.04	40	212 ± 11	—
			—	—	1.39 ± 0.06	162	—	—
K ₄₀₃	K _μ	158	—	—	1.13 ± 0.03	76	—	—
			98 ± 15	155	1.46 ± 0.05	155	210 ± 15	—
K ₃₅₂	K _μ	113	156 ± 14	38	1.08 ± 0.03	38	186 ± 14	—
			145 ± 16	103	—	—	—	—
K ₄₉₆	K _μ	128	—	—	1.08 ± 0.04	65	198 ± 16	—
			116 ± 15	124	1.29 ± 0.06	126	—	—
K ₃₁₀	K _μ	108	126 ± 14	106	1.12 ± 0.05	106	191 ± 14	—
			195 ± 23	6	1.00 ± 0.05	6	—	—
K ₂₉₉	K _μ	80	—	—	1.05 ± 0.05	51	189 ± 15	—
			154 ± 12	64	1.08 ± .070	61	—	—

(*) This is the distance from the decay point of the K to the middle point of the measurement interval.

⁽¹⁾ *Nuovo Cimento*, **3**, 731 (1956).

TABLE II (*Continued*).

No.	Type	Observed length	Scattering measurement		Grain counts		Total range mm	Remarks
			$p\beta c$ MeV	at (*) mm	g/g_{pr}	at (*) mm		
K ₆₄₃	K _{μ}	75.5	158 ± 24	71	1.09 ± 0.06	72	197 ± 33	—
K ₄₄₀	K _{μ}	73	149 ± 25	69	1.12 ± 0.05	69	186 ± 26	—
K ₄₅₂	K _{μ}	59	203 ± 14	5	1.04 ± 0.08	5	194 ± 15	—
K ₃₂₈	K _{μ}	57	174 ± 30	55	1.00 ± 0.05	5	205 ± 32	—
K ₃₈₂	K _{μ}	55	167 ± 14	47	1.07 ± 0.05	45	185 ± 20	—
K ₇₁₇	K _{μ}	52	163 ± 19	49	1.06 ± 0.045	49	186 ± 26	—
K ₆₁₂	K _{μ}	40	235 ± 25	29	1.08 ± 0.04	31	265 ± 40	—
K ₄₅₃	K _{μ}	20	202 ± 23	6.5	1.06 ± 0.03	6.5	197 ± 25	—
K ₆₁₄	K _{μ}	20	197 ± 18	9	—	—	192 ± 23	—
K ₃₇₃	χ	114.8	—	—	—	—	114.8	$\pi\mu e$
K ₄₆₈	χ	32.2	—	—	—	—	—	4 + 0 π
K ₁₁₇	χ	7.9	—	—	—	—	—	3 + 0 π
K ₃₇₃	χ	6.6	—	—	—	—	—	4 + 0 π
K ₃₈₃	χ	6.7	104 ± 10	66	1.44 ± 0.06	66	115 ± 7	—
K ₄₃₆	χ	6	155 ± 15	3	1.15 ± 0.05	6	103 ± 20	—
K ₄₃₁	K _{β}	{ 18.4	117 ± 15	2.2	—	—	—	Becomes impossible to follow after 18.4 mm
			60 ± 7	7.3	1.10 ± 0.03	8.9	—	
K ₂₂₉	K _{β}	2.0	96 ± 16	1.0	1.11 ± 0.06	2.0	—	» » 2.0 mm
K ₆₁₈	π	68.7	111	—	—	—	68.7	μ
K ₃₇₀	π	17	106 ± 30	2	1.33 ± 0.05	2	—	out of stack

(*) This is the distance from the decay point of the K to the middle point of the measured interval.

Table III (p. 740 of ⁽¹⁾) compares the proportions of the various types of K-mesons found in different experiments. The results given for the G-stack were based on Table II (p. 1070) of the G-stack report ⁽²⁾. However, we learn that these results cannot be used in this connection,

as some of the geometrical standards used by the various contributing laboratories were not identical. For comparison purposes, only Table IV of the G-stack report (p. 1095) should be used. Furthermore, our Table III should be amended to take into account the new results enumerated above. With these two corrections, Table III now reads:

⁽²⁾ G-STACK COLLABORATION: *Nuovo Cimento*, **2**, 1063 (1955).

TABLE III.

Type of K_L	Present experiment		G-stack		RITSON <i>et al.</i>	
	Number	%	Number	%	Number	%
K_μ	49	60	27	52	13	60
χ	22	27	17	33	7	32
K_β	7	9	5	10	1	5
α with fast μ	3	4	2-4	5	—	3 (*)
Total	81		51-53		21	

(*) Two out of 60 K_L 's have been identified by grain count.

It will be noticed that the new percentages of the various types of K-mesons identified in the present experiment

are practically identical with those given in (1) although the statistics are increased by nearly 50 %.

Fig. 1. - A microphotograph of the disruption of a Carbon nucleus into three α -particles (tracks 2, 3 and 4) by a positive heavy meson.