E787 Results

Mode	Result	Gain wrt prev. data	Comments
$K^+ \to \pi^+\nu\bar{\nu}$	$\left(4.2^{+9.7}_{-3.5}\right) \times 10^{-10}$	145	constrains new physics, $\lvert V_{td}\rvert$ **Discovery!**
$K^+ \to \pi^+\mu\mu$	$(5.0 \pm 1.0) \times 10^{-8}$	4500	χPT study future ρ determination ~ 200 events **Discovery!**
$K^+ \to \pi^+\gamma\gamma$	$(1.1 \pm 0.3) \times 10^{-6}$	100	Long distance effects search for light $X^0 \to \gamma\gamma$ ~ 30 events **Discovery!**
$K^+ \to \mu^+\nu\gamma$	$(1.33 \pm 0.12) \times 10^{-5}$	1000	χPT study 1st observation of SD$^+$ part ~ 900 events **Discovery!**
$K^+ \to \pi^+X^0$	$< 3 \times 10^{-10}$	127	new particle search; future: find/rule out f^0
$K^+ \to \mu^+\nu\mu\mu$	$< 4.1 \times 10^{-7}$	$2.4M$	Higgs hunting ground; no previous limit
$K^+ \to e^+\nu\mu\mu$	$< 5 \times 10^{-7}$	$2.0M$	χPT study; no previous limit
$\pi^0 \to \nu\bar{\nu}$	$< 8 \times 10^{-7}$	10	Also search for new light particles
$\pi^0 \to \gamma X^0$	$< 5.3 \times 10^{-4}$	1900	New light vectors no previous limit