Here I bring the so far available results of our simulations where I replaced the Grün et al. (1985) collisional lifetime model based on lunar microcrater counting with their model based on data from interplanetary spacecraft only. Recall the main difference is basically a longer lifetime for particles with sizes $\leq 100\ \mu$m.

Since I want to rush with first results I fix at this stage $\tau_{\rm decay} = 1$ My, choose three values of $\alpha_1 = -2$, $\alpha_1 = -2.25$ and $\alpha_1 = -2.5$. For each of them I run a set of simulations with α_2 varied.

Results and implications.

Figs. 1 through 6 show spike profile and SFD of TPs used in the simulation for the so far available runs. As expected, the signal is more "spiky" now because initial small particles are let to rush toward the Earth without being mostly collisionally broken. As a result the comparison with the data, Fig. 7, indicates that now a little longer $\tau_{\rm decay}$ should be perhaps needed (say $1.5 - 2$ My) or, alterantively, little shallower $\alpha_2 (\simeq -3.1)$.

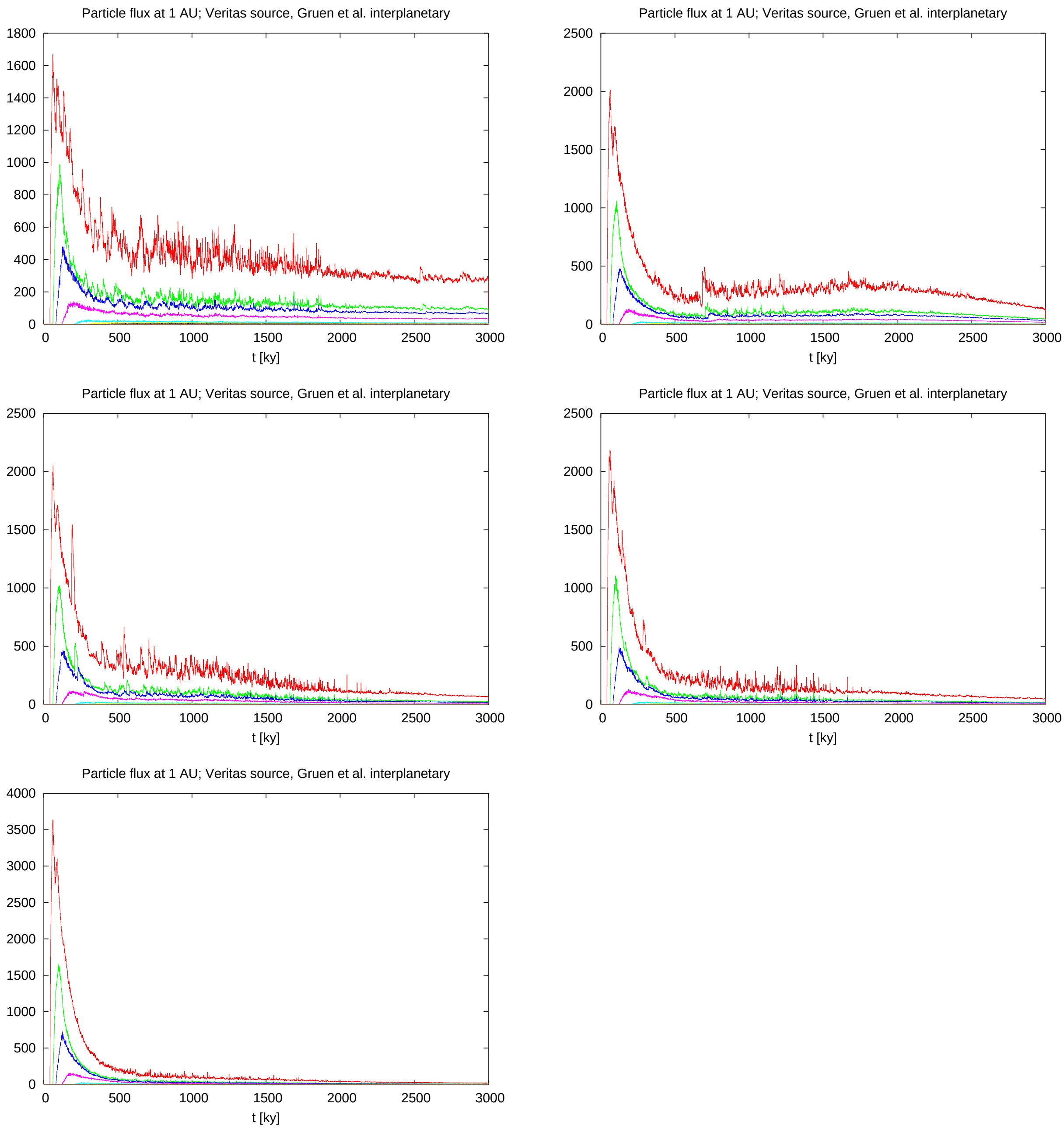

Figure 1: Models with a 'sliding knee': flux of the Veritas TPs through 1 AU heliocentric sphere as a function of time after the parent-body breakup. Here $\alpha_1 = -2$ and $\tau_{\rm dec} = 1$ My fixed and different panels show results for different values of α_2: (i) -3 (top, left), (ii) -3.2 (top, right), (iii) -3.25 (middle, left), (iv) -3.3 (middle, right), and (v) -3.5 (bottom, left). Different curves in each of the panels correspond to TPs in different size ranges. The uppermost red curve is for $(10-15)$ μm particles, green curve is for $(15-20)$ μm, blue curve is for $(20-30)$ μm, and so on.

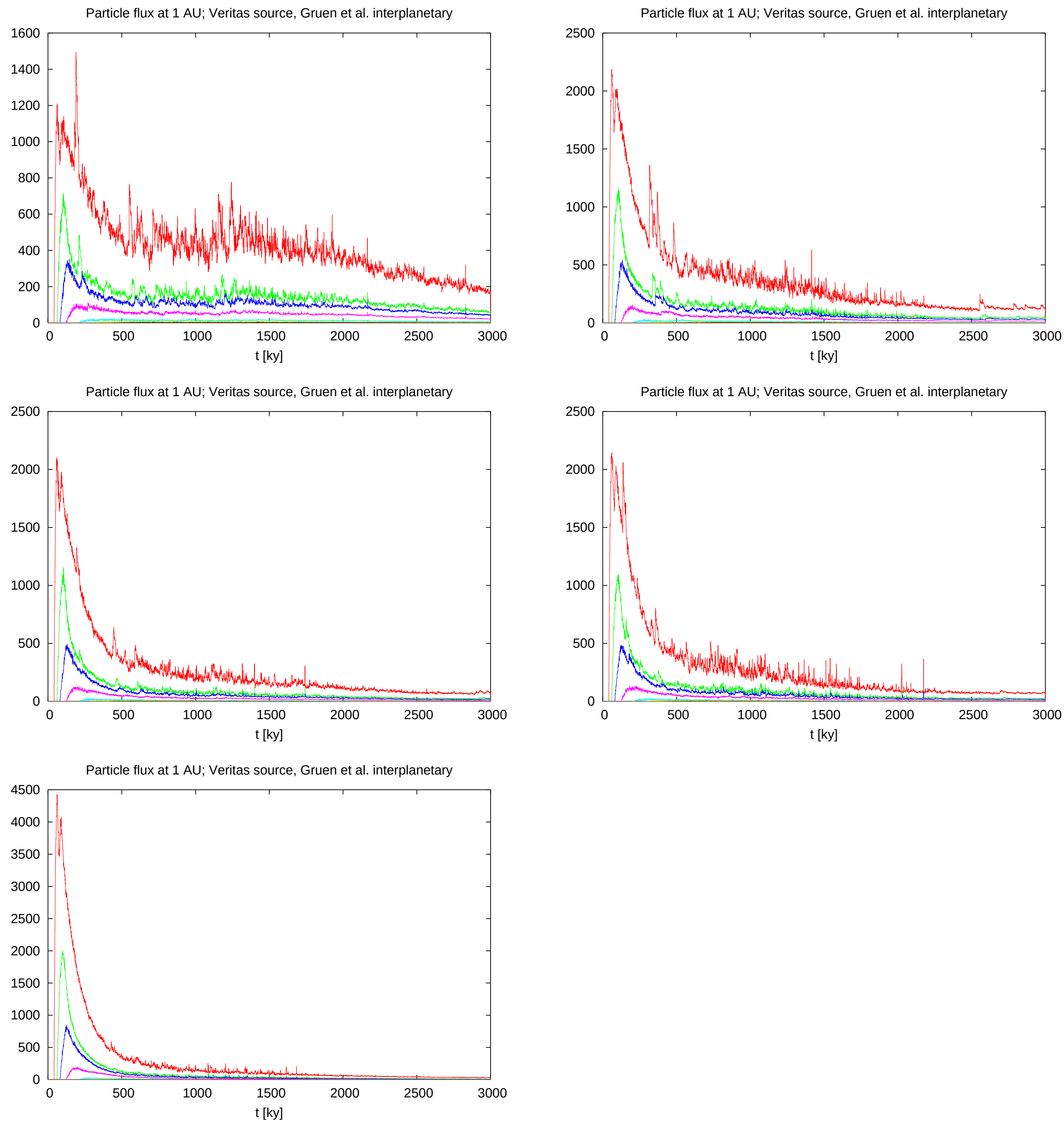

Figure 2: Models with a 'sliding knee': flux of the Veritas TPs through 1 AU heliocentric sphere as a function of time after the parent-body breakup. Here $\alpha_1 = -2.25$ and $\tau_{\rm dec} = 1$ My fixed and different panels show results for different values of α_2: (i) -3 (top, left), (ii) -3.2 (top, right), (iii) -3.25 (middle, left), (iv) -3.3 (middle, right), and (v) -3.5 (bottom, left). Different curves in each of the panels correspond to TPs in different size ranges. The uppermost red curve is for $(10-15)$ μm particles, green curve is for $(15-20)$ μm, blue curve is for $(20-30)$ μm, and so on.

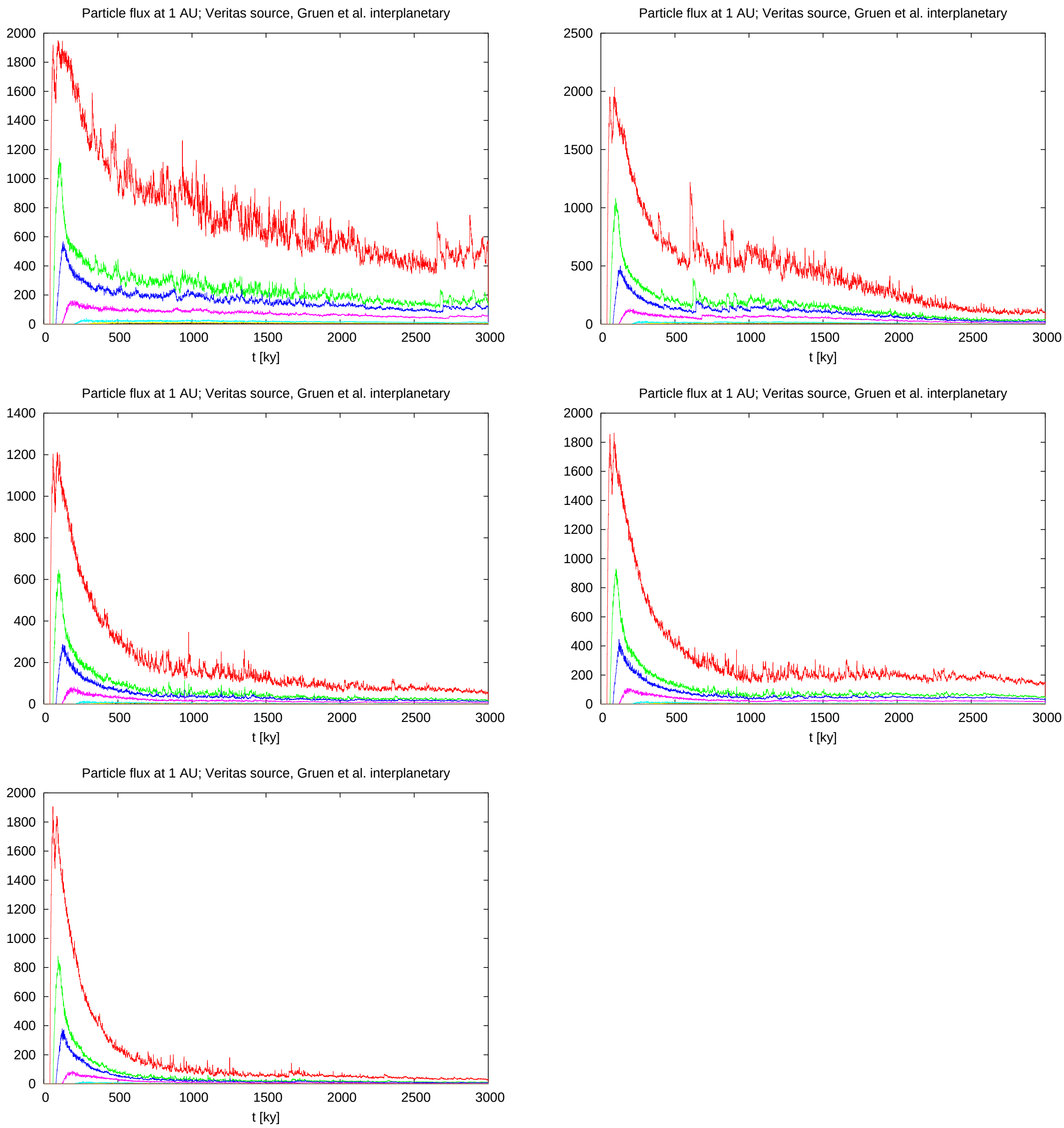

Figure 3: Models with a 'sliding knee': flux of the Veritas TPs through 1 AU heliocentric sphere as a function of time after the parent-body breakup. Here $\alpha_1 = -2.5$ and $\tau_{\rm dec} =$ 1 My fixed and different panels show results for different values of α_2: (i) -3 (top, left), (ii) -3.2 (top, right), (iii) -3.25 (middle, left), (iv) -3.3 (middle, right), and (v) -3.5 (bottom, left). Different curves in each of the panels correspond to TPs in different size ranges. The uppermost red curve is for $(10-15)$ μm particles, green curve is for $(15-20)$ μm, blue curve is for $(20-30)$ μm, and so on.

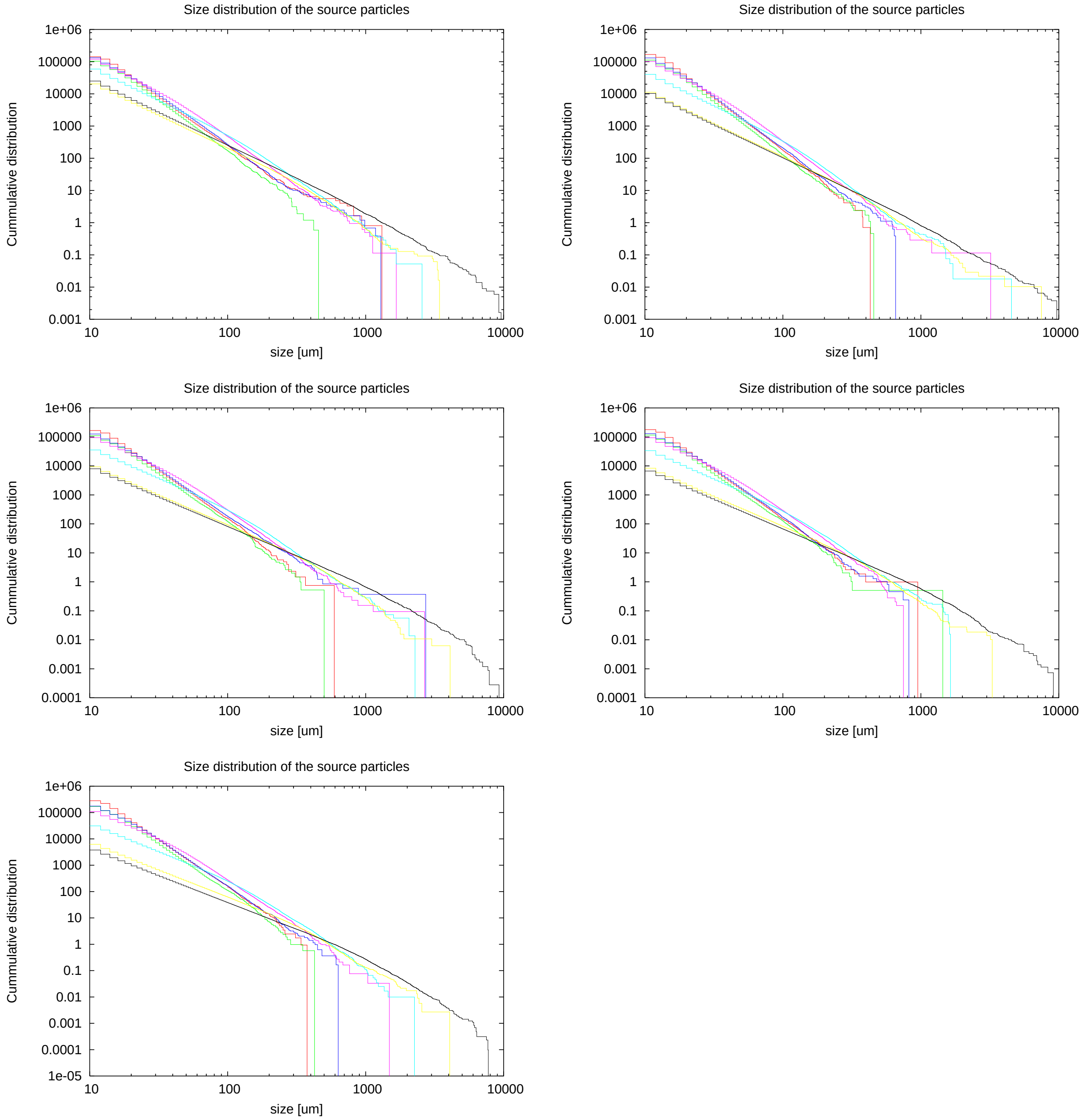

Figure 4: Models with a 'sliding knee': cummulative size distribution of TPs released in our simulation from the source (Veritas) in the time intervals $(0, 50)$ ky, $(50, 100)$ ky, $(100, 200)$ ky, $(200, 400)$ ky, $(400, 700)$ ky, $(700, 1000)$ ky and 1+ My. Here $\alpha_1 = -2$ and $\tau_{\rm dec} = 1$ My fixed and different panels show results for different values of α_2: (i) -3 (top, left), (ii) -3.2 (top, right), (iii) -3.25 (middle, left), (iv) -3.3 (middle, right), and (v) -3.5 (bottom, left). Different curves in each of the panels correspond to TPs in different size ranges. The uppermost red curve is for $(10 - 15)$ μm particles, green curve is for $(15 - 20)$ μm, blue curve is for $(20 - 30)$ μm, and so on.

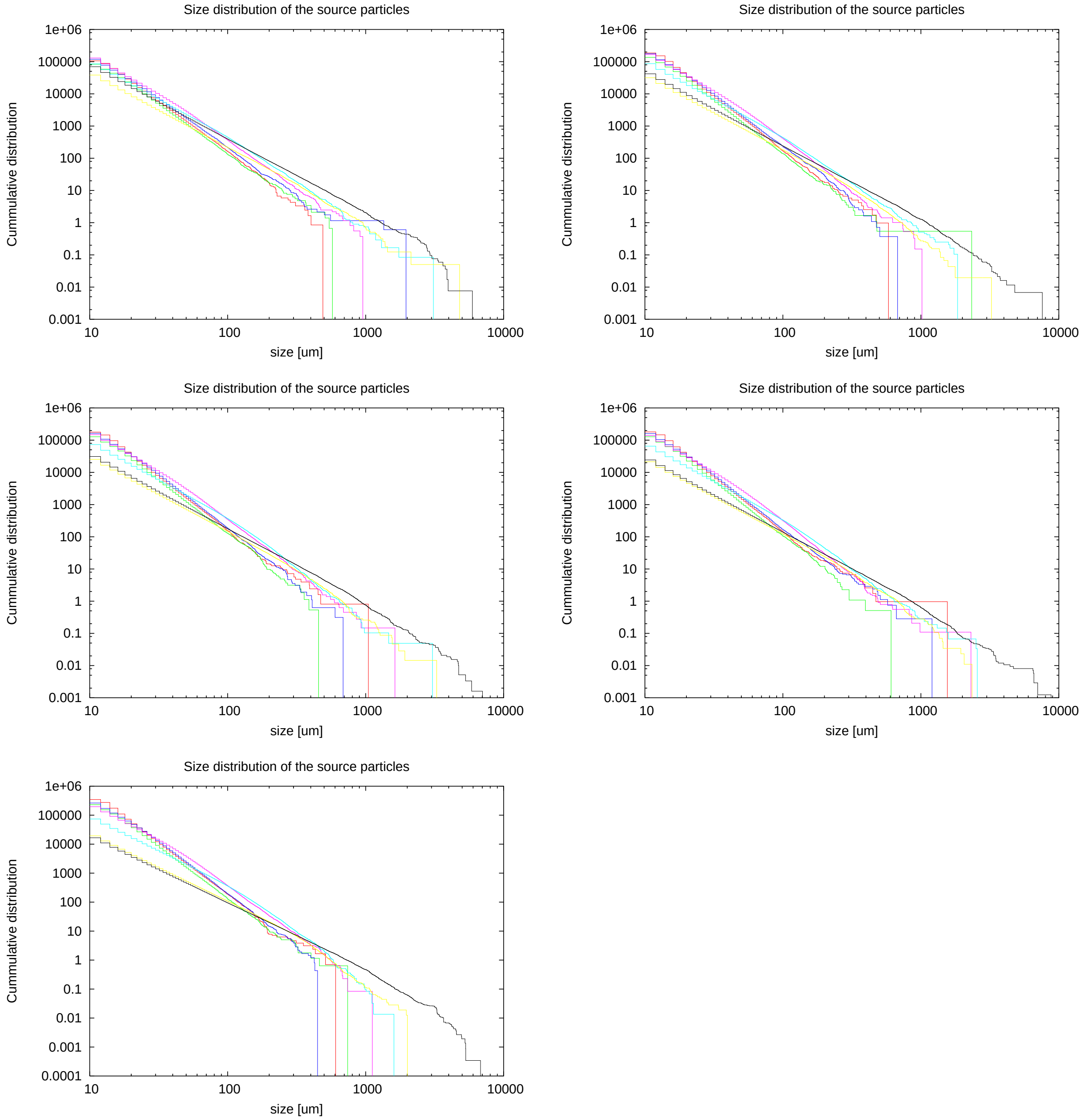

Figure 5: Models with a 'sliding knee': cummulative size distribution of TPs released in our simulation from the source (Veritas) in the time intervals $(0, 50)$ ky, $(50, 100)$ ky, $(100, 200)$ ky, $(200, 400)$ ky, $(400, 700)$ ky, $(700, 1000)$ ky and 1+ My. Here $\alpha_1 = -2.25$ and $\tau_{\rm dec} = 1$ My fixed and different panels show results for different values of α_2: (i) -3 (top, left), (ii) -3.2 (top, right), (iii) -3.25 (middle, left), (iv) -3.3 (middle, right), and (v) -3.5 (bottom, left). Different curves in each of the panels correspond to TPs in different size ranges. The uppermost red curve is for $(10 - 15)$ μm particles, green curve is for $(15 - 20)$ μm, blue curve is for $(20 - 30)$ μm, and so on.

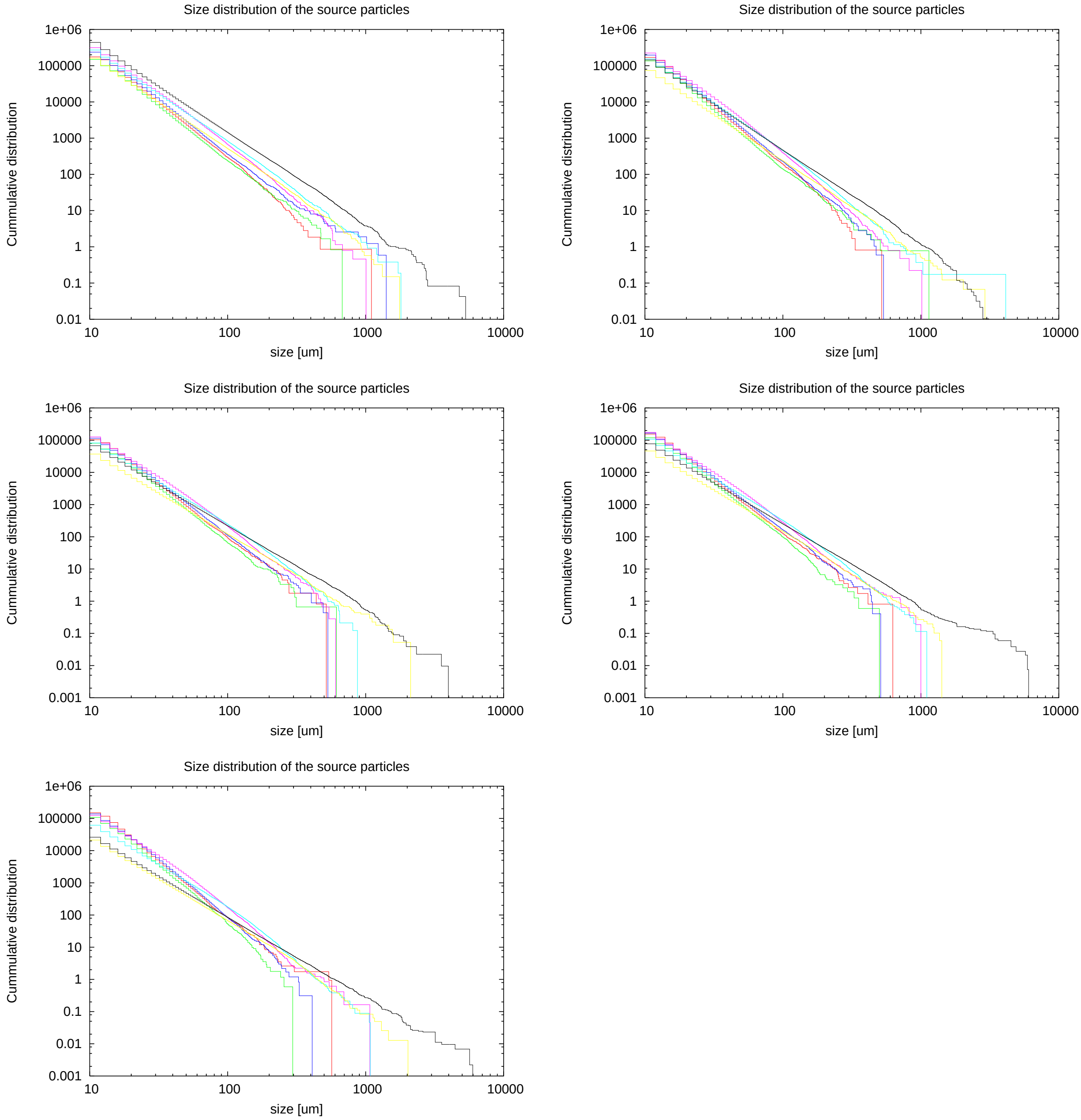

Figure 6: Models with a 'sliding knee': cummulative size distribution of TPs released in our simulation from the source (Veritas) in the time intervals $(0, 50)$ ky, $(50, 100)$ ky, $(100, 200)$ ky, $(200, 400)$ ky, $(400, 700)$ ky, $(700, 1000)$ ky and 1+ My. Here $\alpha_1 = -2.5$ and $\tau_{\rm dec} = 1$ My fixed and different panels show results for different values of α_2: (i) -3 (top, left), (ii) -3.2 (top, right), (iii) -3.25 (middle, left), (iv) -3.3 (middle, right), and (v) -3.5 (bottom, left). Different curves in each of the panels correspond to TPs in different size ranges. The uppermost red curve is for $(10 - 15)$ μm particles, green curve is for $(15 - 20)$ μm, blue curve is for $(20 - 30)$ μm, and so on.

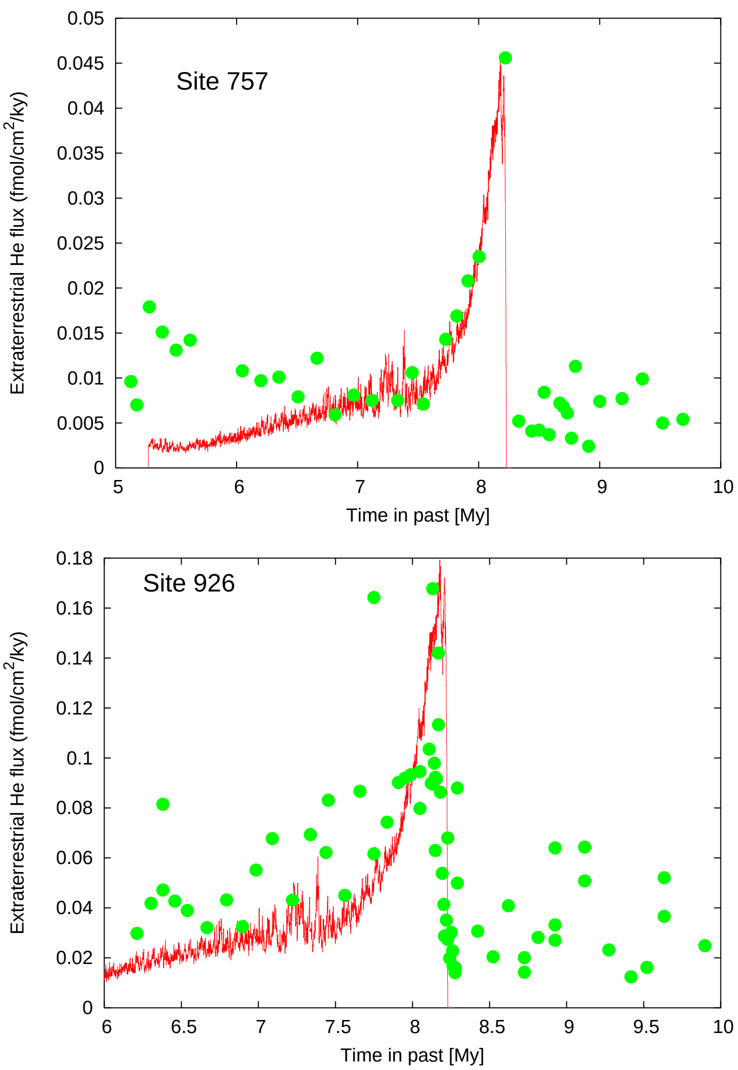

Figure 7: Comparison of model with $\alpha_1 = -2.5$, $\alpha_2 = -3.2$ and $\tau_{\rm dec} = 1$ My with data at Sites 757 and 926.