with $Q<7$ a.u. and in this way get the final value of n. In order to study the residuals, however, it is better also to correct the individual data by subtracting 0.30 from all the values of $\log \tau_p/\rho_m^2$ belonging to meteors with $Q>7$ a.u.

After the reduction of all meteors to the average density of the group of the Jupiter family, the least-squares method gives

$$n=1.01\pm0.15; \tag{16}$$

$$\log \frac{\tau_{op}}{\rho_m^2}=-17.80\pm0.98. \tag{17}$$

The error in τ_{op}/ρ_m^2 is quite large, because of the large extrapolation involved from the meteor velocities' range to $v=1$ cms^{-1}. The actual error in τ_p in the range 10–70 kms^{-1} in which we are interested is, however, small enough. The least error in the determination

TABLE 2.—*Sporadic Super-Schmidt meteors divided in two groups, short-period (Q<7 a.u.) and long-period (Q>7 a.u.): $\log \tau_p/\rho_m^2$ as a function of meteor velocity for each group.*

Velocity, v (10^5 cms^{-1})	$Q<7$ a.u.				$Q>7$ a.u.			
	no.	$\log v$	$\log \tau_p/\rho_m^2$	S.d. of mean	no.	$\log v$	$\log \tau_p/\rho_m^2$	S.d. of mean
10–15	9	6. 124	−12. 065	±0. 301	1			
15–20	51	6. 245	−11. 384	0. 097	1			
20–25	40	6. 346	−11. 418	0. 113	5	6. 353	−11. 262	±0. 290
25–30	32	6. 433	−11. 324	0. 124	8	6. 447	−10. 896	0. 127
30–35	15	6. 508	−11. 081	0. 119	9	6. 499	−10. 857	0. 181
35–40	4	6. 569	−11. 090	0. 387	6	6. 573	−10. 576	0. 253
40–45	3	6. 621	−10. 616	0. 161	9	6. 637	−10. 769	0. 210
45–50	1				7	6. 680	−10. 810	0. 171
50–55					6	6. 720	−10. 544	0. 230
55–60					10	6. 760	−10. 465	0. 139
60–65					13	6. 791	−10. 887	0. 198
65–70					12	6. 829	−10. 934	0. 164
70–75					5	6. 854	−10. 534	0. 454

Mean values of basic quantities for short-period (Q<7 a.u.) and long-period meteors (Q>7 a.u.):

(1) $Q<7$ a.u.: no.=155; $\log v=6.338\pm0.007$; $\log \tau_p/\rho_m^2=-11.368\pm0.039$; $\epsilon_\infty=-0.49\pm0.02$.
$Q>7$ a.u.: no.=92; $\log v=6.621\pm0.013$; $\log \tau_p/\rho_m^2=-10.803\pm0.041$; $\epsilon_\infty=-0.22\pm0.03$.

By reducing the values of $\log \tau_p/\rho_m^2$ to equal velocity v' by successive approximations, we obtain

$$(\log \tau_p/\rho_m^2)_{\substack{Q>7\\ v=v'}}-(\log \tau_p/\rho_m^2)_{\substack{Q<7\\ v=v'}}=0.28\pm0.12.$$

(2) The overlapping velocity region is 20–45 kms^{-1}. For meteors having velocities between these two limits we have:
$Q<7$ a.u.: no.=94; $\log v=6.417$; $\log \tau_p/\rho_m^2=-11.295\pm0.047$; $\epsilon_\infty=-0.50\pm0.02$.
$Q>7$ a.u.: no.=37; $\log v=6.499$; $\log \tau_p/\rho_m^2=-10.878\pm0.062$; $\epsilon_\infty=-0.26\pm0.05$.

Then: $(\log \tau_p/\rho_m^2)_{\substack{Q>7\\ v=v'}}-(\log \tau_p/\rho_m^2)_{\substack{Q<7\\ v=v'}}=0.33\pm0.12.$

From the results listed in (1) and (2), I have assumed:

$$(\log \tau_p/\rho_m^2)_{\substack{Q>7\\ v=v'}}-(\log \tau_p/\rho_m^2)_{\substack{Q<7\\ v=v'}}=0.30.$$

(3) For low-fragmentation meteors ($|x|<0.2$), in the overlapping velocity range:
$Q<7$ a.u.: no.=33; $\log v=6.462$; $\log \tau_p/\rho_m^2=-11.167\pm0.082$.
$Q>7$ a.u.: no.=18; $\log v=6.512$; $\log \tau_p/\rho_m^2=-10.866\pm0.086$.

Then: $(\log \tau_p/\rho_m^2)_{\substack{Q>7\\ |x|<0.2\\ v=v'}}-(\log \tau_p/\rho_m^2)_{\substack{Q<7\\ |x|<0.2\\ v=v'}}=0.25\pm0.17.$