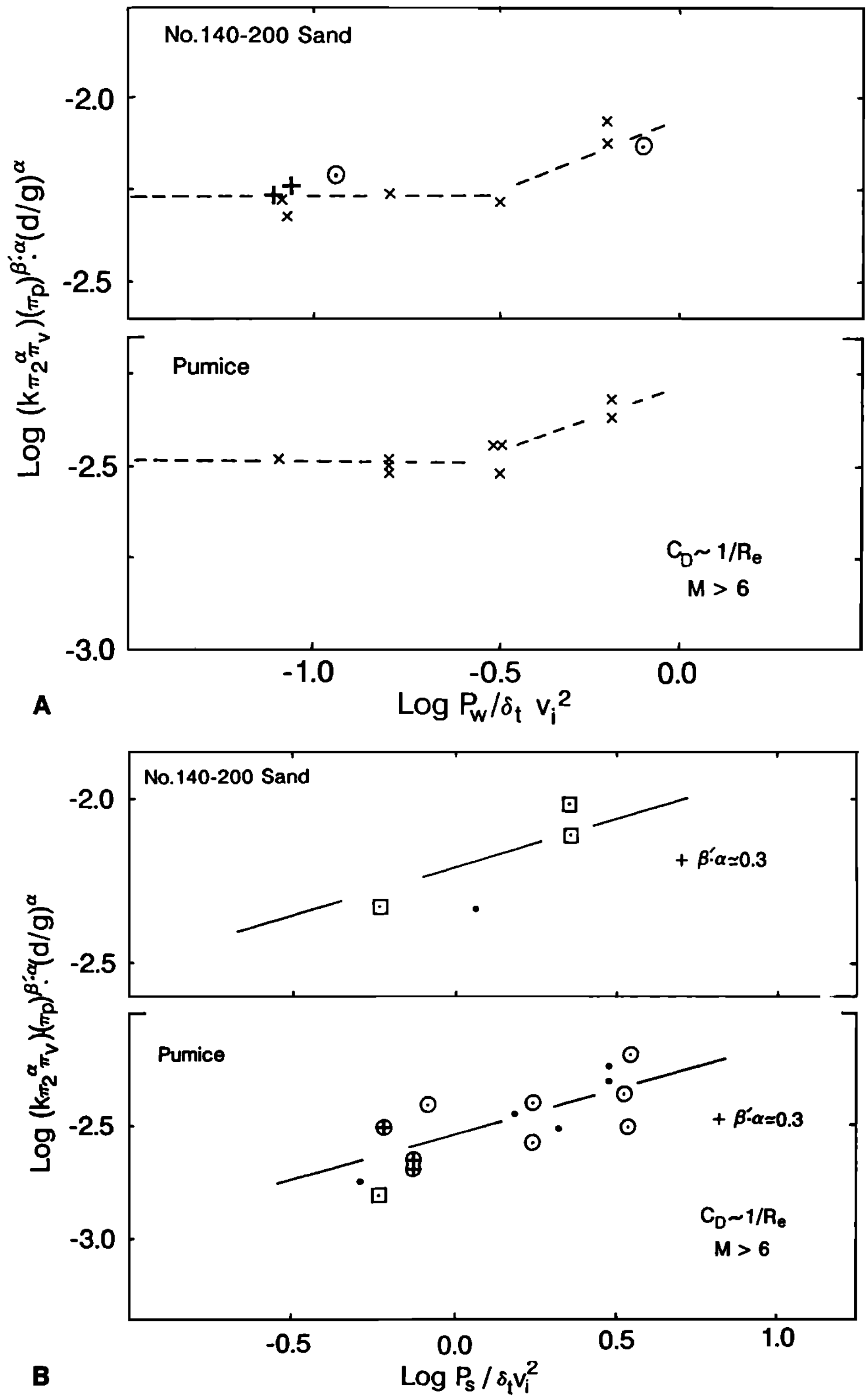

Fig. 14. Observed cratering efficiency corrected for ambient pressure π_p and aerodynamic drag (d/g) as given by equation (18) and expressed as functions of variables [illegible] dynamic pressure P_ω (Figure 14*a*) and the stagnation pressure P_s of the [illegible] (Figures 14*b* and 14*c*) as inferred from Figure 13. Figure 14*a* includes data over a limited range of Reynolds numbers (1-14) of the ejecta where $C_D \sim 1/Re$ and low Mach numbers ($M < 6$) for no. 140-200 sand and compacted pumice. Both targets exhibit enhancement of cratering efficiency above a critical value of the subsonic wake dynamic pressure ($P_\omega = \rho v_i^2$). Figure 14*b* considers hypervelocity at high Mach numbers ($M > 6$) and the assumption that the wake collides at supersonic velocities. Under such conditions, the wake resembles an impinging compressible gas jet, and the stagnation pressure P_s becomes $PM^2\gamma(\gamma - 1)$. Both sand and pumice exhibit relative enhancement of cratering efficiency over conditions minimizing wake effects. If the wake back pressure completely offsets ambient pressure effects, then the dimensionless wake pressure parameter might be expected to follow the same exponent but with opposite sign, i.e., $\beta'\alpha \sim 0.3$ as shown. The data shown are for a limited range of Reynolds numbers: 1-6 for pumice, 6-14 for sand. Figure 14*c* considers just pumice data over two restricted ranges of Reynolds numbers, thereby resulting in d/g becoming proportional to $C_D \rho R_v / \delta_t a$, where C_D is a constant (here d/g is taken simply as ρR_v with ρ referenced to air at one bar). At lower Reynolds numbers (~6), cratering efficiency appears to be enhanced with increasing stagnation pressure consistent with Figure 14*b*. But at higher Reynolds numbers (10), it decreases. This may reflect a change from wake effects decoupled from the impactor to wake effects coupled to the impactor, thereby modifying the effective energy density. (Abscissas are shown for density and pressure referenced to air at 1 bar with velocities in km/s and target density in cgs; the ordinate is in dimensionless form. Figure 14*c* uses $C_D = 1$.)