"Secular Light Curve of Comets, III", Ferrín, (2005). Page 9P/Update, Submitted for publication. <u>http://webdelprofesor.ula.ve/ciencias/ferrin</u>



Figure 9P/Update. The updated light curve of 9P/Tempel 1 is presented. Negative logs imply observations before perihelion. The gap in the middle does not imply the lack of observations, but that the comet does not reach to R=1 AU. The parameters of the light curve have been upgraded with respect to those in Paper I (in Icarus). The most significant result is the change in slope evident at R= -2.08 AU from the sun. Before the brake point in the light curve, the law is linear which implies a power law of R^n, with n=8.2±0.1. After that point the secular light curve shows curvature. We are interpreting this change as a change of sublimating something more volatile than water ice (most probably CO2), to water ice sublimation. In Paper I comets 1P/Halley, 81P/Wild 2 and 21P/Giacobinni-Zinned did show breaks in their power law pre-perihelion. The photometric age has been recalculated and the new result is P-AGE= 21±2 comet years.