ON PHASE DEPENDENCIES OF COMETARY LIGHT CURVES. V. S. Filonenko[1] and K. I. Churyumov[2], [1]Astronomical Institute of Kharkov National University (Sumskaja str., 35, Kharkov-22, Ukraine, filonenko@astron.kharkov.ua), [2]Astronomical Observatory of Kiev National University (Observatornaja str., 3, Kiev-53, Ukraine, klim.churyumov@observ.univ.kiev.ua).

Generally, cometary visible integer brightness is sum of brightness of gas and dust components of cometary atmosphere and of hard nucleus. On the parts of orbits where the comets are visually observed a contribution of cometary nucleus to integer brightness is unessential. The gas component of integer brightness depends of full number of carbon molecules in cometary atmosphere and it is function of heliocentric distance. But dust component of integer cometary brightness depends furthermore from phase angle. Therefore, in principle, cometary phase dependencies may be determined from visually light curves of comets, which rich the dust.

The light curves of 12 comets had been constructed and investigated. The statistical significant influence of phase dependencies on the light curves of 7 comets had been found. The values of phase coefficient of these comets had been determined. The obtained results are given below in the Table.

For 2 comets the values of phase coefficient are subzero. For other 5 comets the mean value of phase coefficients is 0.047 m/grad that practically coincides with mean value of phase coefficients of C-type asteroids (0.041 m/grad). Apparently the phase dependencies of these comets determines by dark carbon particles in their atmospheres.

Table. Phase coefficients of eight comets

Comets	beta	alpha	N
C/1970 N1 (Abe)	0.019 ± 0.006	23^o-53^o	70
C/1983 O1 (Cernis)	0.06 ± 0.01	7-18	236
C/2001 A2 (LINEAR)	0.086 ± 0.027*	40-96	343
C/2001 OG108 (LONEOS)	0.032 ± 0.025*	38-59	28
C/2001 OG108 (LONEOS)	0.052 ± 0.016**	46-67	101
2P/Encke	-0.014 ± 0.003	38-130	162
27P/Crommellin	-0.09 ± 0.03	41-69	283
67P/Churyumov-Gerasimenko	0.031 ± 0.004	12-38	333

Notes:
beta - phase coefficients;
alpha - phase angles;
N - number of observations;
* - pre-perihelion;
** - post-perihelion.