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COMETS C/2008 L5–L8 (SOHO)

Further to *IAUC* 8982, additional near-sun presumed comets have been found on SOHO website images: C/2008 L5 and C/2008 L8 being Kreutz sungrazers, and the other two belonging to the “Kracht II” group — and suggested by R. Kracht to be returning split components of C/2002 R5 (cf. *IAUC* 7984), with corresponding two-apparition sets of orbital elements by B. G. Marsden on *MPEC* 2008-O23. K. Battams writes that C/2008 L5 was small and slightly diffuse (mag ~ 7.5). C/2008 L6 was stellar in appearance (mag ~ 6.5). C/2008 L7 was tiny and stellar in appearance (mag ~ 8). C/2008 L8 was very diffuse (mag ~ 8.5).

Comet	2008	UT	α_{2000}	δ_{2000}	Inst.	F	<i>MPEC</i>
C/2008 L5	June	7.246	4 ^h 59 ^m .7	+20° 55′	C2	HS	2008-O16
C/2008 L6		10.038	5 05.5	+23 10	C2	RK	2008-O23
C/2008 L7		10.038	5 05.8	+23 11	C2	RK	2008-O23
C/2008 L8		10.229	5 09.8	+21 03	C2	MA	2008-O23

Z. Sekanina, Jet Propulsion Laboratory, reports that he made an attempt to constrain the probable time of breakup of the SOHO comet C/2002 R5 into its fragments, C/2008 L6 and C/2008 L7. The approach was based on fitting the geocentric positional offsets of C/2008 L7 from C/2008 L6, derived from the June 10 astrometric observations made with the C2 coronagraph (*MPEC* 2008-O23). The low-accuracy data and the short orbital arc available ruled out the possibility of a more comprehensive modeling, and allowed him only to conclude that the event occurred most probably between 2 and 10 weeks before the 2002 perihelion, when C/2002 R5 was 0.6 to 1.7 AU from the sun. When imaged in 2002, the comet must have been already double, but the separation distance did not exceed 2'' and the duplicity could not be resolved by either coronagraph. The rms residual of these solutions was $\pm 3''.9$, and for the seven used offsets (of 11 measured) the residuals did not exceed 6''. Another positive sign of these solutions was a low separation velocity, reaching submeter-per-second values for the early breakup times and never getting greater than ~ 2 m/s. No outgassing-driven differential nongravitational accelerations were found to have been affecting the motions of the fragment comets between 2002 and 2008. With B. G. Marsden’s set of elements for C/2008 L6 (*MPEC* 2008-O23), the following orbit is representative of C/2008 L7: Epoch = 2008 June 23.0 TT, $T = 2008$ June 10.1704 TT, $e = 0.985704$, $q = 0.045957$ AU, $\omega = 58^\circ 93' 43''$, $\Omega = 359^\circ 79' 75''$, $i = 12^\circ 15' 05''$ (equinox 2000.0), $P = 5.76$ years.