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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 $\sim$ 7.5). C/2008 L6 was stellar in appearance (mag $\sim$ 6.5). C/2008 L7 was tiny and stellar in appearance (mag $\sim$ 8). C/2008 L8 was very diffuse (mag $\sim$ 8.5).

Comet	2008 UT		α_{2000}	δ_{2000}	Inst.	F	*MPEC*
C/2008 L5	June	7.246	$4^{h}59^{m}.7$	$+20^{\circ}55'$	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 $\sim$ 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, $\omega = 58^{\circ}.9343$, $\Omega = 359^{\circ}.7975$, $i = 12^{\circ}.1505$ (equinox 2000.0), $P = 5.76$ years.

2008 September 28 *Daniel W. E. Green*