Circular No. 8872

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P/2007 R5 = 1999 R1 = 2003 R5 (SOHO)

Continuing the remarks on *IAUC* 8871, regarding the past uncritical assumption that this object is a comet, the 'Kracht II' group has no known association with any comet or meteor streams, nor has there been any obvious tail or coma observed at any of the apparitions of this much smaller group of objects — unlike the cases involving the Marsden and 'Kracht I' groups of SOHO objects, which have been linked to comet 96P and at least two meteor streams (*e.g.*, Sekanina and Chodas 2005, *Ap.J. Suppl.* **161**, 551), and the Kreutz sungrazers. An analysis of the images of 1999 R1, 2003 R5, and 2007 R5 by M. Knight (University of Maryland) suggests that the expansion of the C2 images (which have a scale of $11''.8$/pixel) as it brightens may be an indication of coma material (the object remains pointlike in C3 images, with a scale of $56''$/pixel), and his analysis of the light curves for each apparition is suggestive more of a cometary light curve than an asteroidal light curve (though *asteroidal* photometric behavior at such high phase angles and small solar elongations has not been observed previously); peaks in brightness occurred a few hours after perihelion each time: near mag 6 on 1999 Sept. 5.1 and 2003 Sept. 8.4, and near mag 5.5 on Sept. 11.0 UT (and the magnitude tabulated on *IAUC* 8871 is from Knight). The images of 2007 R5 show it fading rapidly and disappearing around Sept. 12.3 as it made its turn to move toward superior conjunction with the sun after perihelion. According to K. Battams, both the 1999 and 2003 objects appeared from behind the C2 occulter and "started pretty much as point sources" (perhaps 2 pixels in diameter): as they crossed the C2 field-of-view, the objects each "grew in size and brightness at a very steady rate, but always retaining a well-defined edge (i.e., not diffuse)"; at the right-hand edge of the C2 field-of-view, the object images "were probably 4–5 pixels across and 5–6 pixels 'tall' and generally 'rounded'".

COMET C/2007 O1 (LINEAR)

S. Nakano, Sumoto, Japan, has identified this comet (cf. *IAUC* 8858) with an asteroidal object designated 2006 GA_{38} and observed on 2006 Apr. 2 by the LONEOS project and on Apr. 9 by the Catalina Sky Survey; revised hyperbolic osculating orbital elements appear on *MPC* 60282.

2007 September 18 *Daniel W. E. Green*