Circular No. 8628

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INTERNATIONAL ASTRONOMICAL UNION

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SUPERNOVAE 2005io, 2005ip, 2005iq

Three apparent supernovae have been reported from unfiltered CCD images: 2005io independently by E. Lee and W. Li (via LOSS/KAIT; cf. *IAUC* 8625; the tabulated data below for 2005io are from KAIT) and by T. Boles (Coddenham, England, 0.35-m reflector); 2005ip by Boles; and 2005iq by H. Khandrika and W. Li (LOSS/KAIT). Additional magnitudes for 2005io for SN 2005io in UGC 3361: 1989 Dec. 3, [21.0 (Digitized Sky Survey red plate; via Boles); 1992 Nov. 24, [21.5 (DSS, blue); 2005 Mar. 14 UT, [19.5 (Boles); Oct. 10, [19.5 (Boles); 28.46, [19.5 (KAIT); Nov. 4.007, 18.6 (Boles; position end figures $24^{s}.62$, $06''.4$). Additional magnitudes for 2005ip in NGC 2906: 1994 Feb. 9, [20.5 (DSS, blue, via Boles); 1999 Feb. 20, [21.0 (DSS, red); 2004 Dec. 6 and 2005 Jan. 21, [19.5 (Boles); Nov. 5.261, 14.6 (C. Colesanti, C. Jacques, E. Pimentel, and T. Napoleao, Belo Horizonte, Brazil); 5.682, 14.8 (K. Itagaki, Yamagata, Japan; via S. Nakano, Sumoto; position end figures $06^{s}.40$, $44''.2$). Additional KAIT magnitudes for 2005iq in MCG –03-1-8: Oct. 9.22, [19.0; Nov. 6.21, 17.0.

SN	2005 UT	α_{2000}	δ_{2000}	Mag.	*Offset*
2005io	Nov. 3.47	$5^{h}50^{m}24^{s}.64$	$+49^{\circ}43'06''.5$	18.5	$6''.1$ W, $17''.6$ N
2005ip	Nov. 5.163	9 32 06.42	+ 8 26 44.4	15.5	$2''.8$ E, $14''.2$ N
2005iq	Nov. 5.20	23 58 32.50	–18 42 33.0	17.2	$8''.6$ E, $17''.7$ N

A. V. Filippenko and R. J. Foley, University of California, Berkeley, report that inspection of CCD spectra (range 330–920 nm), obtained on Nov. 5 UT with the Keck I 10-m telescope (+ LRIS), shows that SN 2005io is of type II, shortly after the explosion. The broad hydrogen Balmer lines exhibit P-Cyg profiles, but in the case of Hα the emission component greatly dominates over the absorption component. The continuum is very blue, and He I 587-nm absorption is present.

M. Modjaz, R. Kirshner, and P. Challis, Harvard-Smithsonian Center for Astrophysics, report that a spectrogram (range 350–740 nm) of 2005ip, obtained by M. Calkins on Nov. 6.50 UT with the Mt. Hopkins 1.5-m telescope (+ FAST), shows it to be a type-II supernova, probably within a few weeks past explosion. The spectrum consists of a blue continuum (indicating a young age), the P-Cyg line of Hα, and other absorption troughs. Adopting a recession velocity of 2440 km/s for the host galaxy (from Falco *et al.* 1999, *PASP* **111**, 438), the expansion velocity derived from the minimum of the Hα line is 15400 km/s. An absorption trough observed at $\sim$ 425.0 nm seems to be too blue to be identified with Hβ.

2005 November 6 *Daniel W. E. Green*