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SUPERNOVAE 2005co AND 2005cp

Further to *IAUC* 8544, E. Lee, N. J. Ponticello, and W. Li report the LOSS discovery of two apparent supernovae on unfiltered KAIT images:

SN	2005 UT	α_{2000}	δ_{2000}	Mag.	*Offset*
2005co	June 20.48	$23^h30^m53^s.58$	$-2°56'18''.4$	17.3	$1''.1$ E, $16''.0$ S
2005cp	June 21.49	23 59 30.88	+18 12 09.6	17.4	$5''.8$ E, $2''.2$ S

Additional approximate magnitudes from KAIT images: SN 2005co in IC 1496, 2004 Dec. 12.16 UT, [19.5; 2005 June 21.47, 17.4. SN 2005cp in UGC 12886, Jan. 6.16, [19.5; June 22.47, 17.3.

COMET 9P/TEMPEL

F. Bensch, Radioastronomisches Institut, Universität Bonn, and Harvard-Smithsonian Center for Astrophysics (CfA); and G. J. Melnick and B. M. Patten, CfA, write: "Starting on June 5, daily monitoring of the ortho water 1(10)-1(01) rotational line emission at 556.936 GHz from comet 9P (the target of the Deep Impact mission) has been made with the Submillimeter Wave Astronomy Satellite (SWAS). During the period June 5.29–15.67 UT, the average integrated line intensity detected within the $3'.3 \times 4'.5$ elliptical beam of the SWAS telescope was 0.32 ± 0.02 K km/s (main beam brightness). The total water-production rate, $Q(H_2O)$, is derived assuming an H_2O ortho-para ratio of 3 and using the model by Bensch and Bergin (2004, *Ap.J.* **615**, 531), which is based on a spherical outflow (Haser density profile) and the Monte Carlo radiative transfer code by Hogerheijde and van der Tak (2000, *A.Ap.* **362**, 697). We obtain $Q(H_2O) = (1.1 \pm 0.1) \times 10^{28}$ s^{-1} for the SWAS observations made between June 5.29 and 15.67, assuming an electron abundance similar to those derived by in-situ measurements in the coma of 1P/Halley. However, the electron density in the cometary coma is uncertain, and a 21-percent-greater water-production rate is obtained for an electron abundance reduced by a factor of 0.2 (water-electron collisions significantly contribute to the excitation of the water rotational line, in addition to water-water collisions and infrared fluorescence). Previous studies of the 556.936-GHz transition toward several other comets by SWAS and by the (sub)millimeter-wavelength satellite Odin have indicated that the electron density in cometary comae might be smaller by a factor of ~ 0.2 (N. Biver, private communication, based on data from Lecacheux *et al.* 2003, *A.Ap.* **402**, L55, and Bensch *et al.* 2004, *Ap.J.* **209**, 1164)."

2005 June 22 *Daniel W. E. Green*