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S/2005 P 1 AND S/2005 P 2

H. A. Weaver, Applied Physics Laboratory, Johns Hopkins University; and S. A. Stern, Southwest Research Institute (SwRI) — on behalf of a team including M. J. Mutchler (Space Telescope Science Institute), A. J. Steffl (SwRI), M. W. Buie (Lowell Observatory), and W. J. Merline, J. R. Spencer, E. F. Young, and L. A. Young (SwRI) — report the discovery of two new satellites of Pluto. The objects, provisionally designated S/2005 P 1 and S/2005 P 2, were clearly detected ($S/N > 35$) in two different Hubble Space Telescope ACS/WFC images on May 15.05 and 18.14 UT. On May 15, S/2005 P 1 was 1''.85 from the center of Pluto in p.a. 264°.2, and S/2005 P 2 was 2''.09 from Pluto in p.a. 326°.9. On May 18, the locations were 2''.36 in p.a. 305°.8 and 2''.22 in p.a. 355°.5. The two objects have roughly comparable brightness, with $V = 22.96 \pm 0.15$ for S/2005 P 1 and $V = 23.41 \pm 0.15$ for S/2005 P 2. Unique orbits cannot be calculated from the available data, but the measured positions are consistent with nearly circular orbits in the orbital plane of Pluto I (Charon). On this assumption, preliminary orbital solutions yield $a = 64700 \pm 850$ km and $P = 38.2 \pm 0.8$ days for S/2005 P 1, and $a = 49400 \pm 600$ km and $P = 25.5 \pm 0.5$ days for S/2005 P 2. Examination of archival HST ACS/HRC data taken on 2002 June 14 (PI: M. W. Buie) shows two objects near the locations predicted by these orbits, providing independent support for the satellite detections. A search over the entire orbital stability zone (± 100'' around Pluto) does not show any other potential satellites to a limiting magnitude of $V \sim 27.1$ (5σ). For additional information, see `http://www.boulder.swri.edu/plutonews`.

SUPERNOVAE 2005hh, 2005hi, 2005hj, 2005hk

Three type-Ia supernovae have been reported, 2005hh and 2005hi (cf. *CBET* 265) by the "Nearby Supernova Factory" collaboration, and 2005hj (cf. *CBET* 266) by R. Quimby, P. Hoeflich, and S. J. Kannappan, University of Texas. A fourth apparent supernova, 2005hk in UGC 272, has been reported by J. Burket and W. Li (via LOSS/KAIT; cf. *IAUC* 8623); additional KAIT magnitudes for 2005hk: Oct. 25.26 UT, [19.0; 31.30, 17.0.

SN	2005 UT	α_{2000}	δ_{2000}	Mag.	*Offset*
2005hh	Oct. 20.5	$4^h13^m05^s.51$	$-25°04'00''.5$	19.3	–
2005hi	Oct. 23.3	2 41 00.24	+16 42 38.2	18.9	–
2005hj	Oct. 26.13	1 26 48.27	− 1 14 16.8	17.3	2''.8 W, 0''.5 N
2005hk	Oct. 30.25	0 27 50.87	− 1 11 52.5	17.5	17''.2 E, 6''.9 N

2005 October 31 *Daniel W. E. Green*