Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION
Mailstop 18, Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
IAUSUBS@CFA.HARVARD.EDU or FAX 617-495-7231 (subscriptions)
CBAT@CFA.HARVARD.EDU (science)
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Phone 617-495-7440/7244/7444 (for emergency use only)

COMET 17P/HOLMES

D. Schleicher, Lowell Observatory, obtained eight sets of narrowband photometry of comet 17P/Holmes on Nov. 1 ($r = 2.47$ AU) using the Hall 1.1-m telescope at Lowell Observatory. Projected aperture radii ranged from 14500 to 120200 km, and derived production rates exhibited large trends with aperture size for all species — with the highest values always at the largest apertures, consistent with a slowly decreasing rate of overall activity since the initial outburst. Production-rate ranges for each species are: log Q(OH) = 29.60–29.80; equivalent log Q(water; vectorial) = 29.54–29.74; log Q(NH) = 27.65–27.89; log Q(CN) = 27.26–27.51; log $Q(C_2)$ = 27.33–27.61; log $Q(C_3)$ = 26.64–26.87; log $[Af\rho]$ (526 nm) = 5.13–5.74 (cf. *IAUC* 7342). The resulting abundance ratios indicate that comet 17P has 'typical' composition (based on A'Hearn *et al.* 1995, *Icarus* **118**, 223), but an exceptionally high dust-to-gas ratio, possibly associated with the finite lifetimes of the gas molecules released at the onset of the outburst as compared to long-lived dust grains. A significant contribution to relatively high dust abundance may also be caused by a portion of the dust tail remaining within the photometer apertures due to projection effects from the comet's small phase angle.

Further naked-eye total-magnitude estimates (cf. *IAUC* 8887): Oct. 27.63 UT, 2.4 (Y. Nagai, Gunma, Japan); 28.10, 2.5 (J. Rao, Putnam Valley, NY, U.S.A.); 28.75, 2.5 (H. Dahle, Les Olives, France); 29.54, 2.3 (S. Yoshida, Ibaraki, Japan); 30.76, 2.4 (T. Karhula, Vasteras, Sweden); 31.76, 2.5 (K. Cernis, Vilnius, Lithuania); Nov. 1.79, 2.3 (J. J. Gonzalez, Leon, Spain); 2.96, 2.5 (A. Pereira, Cabo da Roca, Portugal).

COMETS C/2007 L12, C/2007 L13, AND C/2007 M4 (SOHO)

Further to *IAUC* 8888, additional Kreutz sungrazing comets have been found on SOHO website images ("discovery" observations tabulated below). C/2007 L12 was extremely faint (mag ~ 8.5–9.0). C/2007 L13 and C/2007 M4 were stellar (mag ~ 5.5) in C3 images. C/2007 L13 appeared slightly diffuse with a very faint tail in C2 images. C/2007 M4 was slightly diffuse and showed a short, thin, faint tail in C2 images.

Comet	2007 UT	α_{2000}	δ_{2000}	Inst.	F	*MPEC*
C/2007 L12	June 14.854	$5^h25^m.8$	$+21°22'$	C2	RM	2007-T122
C/2007 L13	15.138	5 26.2	+19 58	C3/2	AK	2007-T122
C/2007 M4	24.696	6 01.0	+19 16	C3/2	TH	2007-U15

2007 November 2 *Daniel W. E. Green*