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COMET 17P/HOLMES

M. Drahus and L. Paganini, Max-Planck-Institut für Sonnensystemforschung; and L. Ziurys, W. Peters, M. Soukup, and M. Begam, Arizona Radio Observatory (ARO), report their monitoring of comet 17P at millimeter wavelengths between Oct. 25.5 and 31.5 UT with the ARO 12-m telescope on Kitt Peak. Evolution of the outburst was traced through the HCN(1-0) transition. The following integrals of the antenna temperature were obtained, with the three hyperfine components summed, given in units of K km/s: Oct. 25.54, 5.0 ± 0.1; Oct. 27.58, 1.3 ± 0.1; Oct. 28.38, 0.58 ± 0.05; Oct. 30.40, 0.62 ± 0.05; Oct. 31.50, 0.39 ± 0.06. The gas-expansion velocity, measured on the blue wing of the strongest HCN line component, was fairly constant during the observations and equal to 0.50–0.55 km/s. The shapes and intensities of the HCN(1-0) triplet on Oct. 25.54 and 27.58 confirm the presence of the "chunk", and the isotropic "bubble" (cf. *CBETs* 1111, 1118), the "chunk" being redshifted with respect to the nucleus. Both features were continually fading, likely due to photodissociation and because of moving away from the beam center. Since Oct. 28.38, the "chunk" has not been visible in the line shapes, and the intensity of HCN(1-0) has simultaneously stabilized; therefore, the measurements obtained since then likely result from a regular (non-explosive) post-outburst activity of the nucleus. On Oct. 26.51, five lines of CH_3OH were detected around 157 GHz, whose relative intensities give a rotational temperature of 50 ± 5 K. The area of the strongest line, 4(0,3)-4(1,4), was 0.78 ± 0.04 K km/s. Also detected were CS(3-2) on Oct. 26.58 (1.48 ± 0.04) and 29.38 (0.25 ± 0.02); H_2CO(2(0,2)-1(0,1)) on Oct. 27.53 (0.08 ± 0.04); and H_2S(1(1,0)-1(0,1)) on Oct. 31.41 (0.13 ± 0.02). Sensitive 3-sigma upper limits were obtained on CO(1-0) on Oct. 25.64 (< 0.2; however, a positive residuum of 0.05 is visible) and 27.46, (< 0.08). The half-power radius of the beam ranged from 19″ to 36″, depending on the observed frequency. The absolute calibration and stability of the instrument is estimated to be better than 20 percent.

COMETS C/2007 K21 AND C/2007 M10 (SOHO)

Additional Kreutz-sungrazing comets (cf. *IAUC* 8890) — both of mag ~ 7 and stellar, though C/2007 M10 appeared diffuse in C2 images:

Comet	2007 UT	α_{2000}	δ_{2000}	Inst.	F	*MPEC*
C/2007 K21	May 23.358	$3^h59^m.9$	$+18^\circ50'$	C2	KB	2007-U23
C/2007 M10	June 29.846	6 23.8	+20 53	C3/2	BZ	2007-U16

2007 November 6 Daniel W. E. Green