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COMET 96P/MACHHOLZ

D. Schleicher, Lowell Observatory, obtained three sets of narrowband photometry of comet 96P on May 12 (r = 1.07 AU) using the Hall 1.1-m telescope at Lowell Observatory, with the following averaged results: log Q(OH) = 27.33; equivalent log Q(water; vectorial) = 27.45; log Q(NH) = 25.47; log Q(CN) = 22.4; log $Q(C_2)$ = 23.7; log $Q(C_3)$ = 22.3; log $Af\rho$ = 1.5 (cf. *IAUC* 7342). The resulting abundance ratios indicate that, while the NH-to-OH ratio is on the high side of the normal range, the CN-to-OH ratio is low by about a factor of 200; C_2 and C_3 are also low but by factors of 10–20 from "typical" composition (based on A'Hearn *et al.* 1995, *Icarus* **118**, 223). A single observation on May 24 (r = 1.30 AU) shows production rates having decreased by a factor of 1.7, but to within uncertainties (3×for CN and C_3, and much smaller for other species), production-rate ratios are confirmed. This extremely low CN-to-OH ratio for 96P indicates that it is either compositionally associated with comet C/1988 Y1 (Yanaka; 1988r = 1988 XXIV), which was strongly depleted in CN and C_2 but not NH_2 (Fink 1992, *Science* **257**, 1926), or represents a new compositional class of comets, since C/1988 Y1 had a much greater depletion of C_2 (> 100×) than does 96P.

REQUEST FOR JOVIAN-SYSTEM OBSERVATIONS

H. Weaver, Applied Physics Laboratory, Johns Hopkins University, writes that the New Horizons (NH) spacecraft is making the first-ever journey down the magnetotail of Jupiter: "The NH plasma energetic-particle instruments (PEPSSI and SWAP) have been measuring interesting spatial structure, particle composition, and temporal variability during their *in situ* observations. We encourage remote observations of the Jovian system that are relevant to the magnetosphere during the next few weeks, including investigations of aurorae, the Io plasma torus, and Io's volcanic activity. Observations between now and 2007 June 21, when PEPSSI and SWAP will be turned off to prepare for the hibernation of the NH spacecraft, are particularly important. However, remote observations somewhat after that time may still be useful for piecing together a coherent picture of the state of the Jovian magnetosphere during the NH encounter. Interested observers may contact John Spencer (spencer@boulder.swri.edu) for further information."

2007 June 6 *Daniel W. E. Green*