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*COMET 73P/SCHWASSMANN-WACHMANN*

G. A. Blake and C. Salyk, California Institute of Technology; B. P. Bonev, G. L. Villanueva, M. A. DiSanti, and M. J. Mumma, Goddard Space Flight Center; K. Magee-Sauer, Rowan University; and E. L. Gibb, University Missouri at St. Louis, report that component ‘C’ was observed on Apr. 7 and 16 UT using NIRSPEC at the W. M. Keck Observatory. On Apr. 7, H<sub>2</sub>O (twelve lines, 2.9- $\mu$ m hot-bands), C<sub>2</sub>H<sub>6</sub> (<sup>R</sup>Q<sub>0</sub> and <sup>P</sup>Q<sub>1</sub> near 3.35  $\mu$ m,  $\nu_7$  band), and HCN (six lines near 3.0  $\mu$ m,  $\nu_3$  band) were detected. Sensitive upper limits for CH<sub>4</sub> (R0 and R1 near 3.3  $\mu$ m,  $\nu_3$  band), CH<sub>3</sub>OH (3.52  $\mu$ m Q-branch,  $\nu_2$  band), and H<sub>2</sub>CO (3.59  $\mu$ m Q-branch,  $\nu_1$  band) were also obtained. H<sub>2</sub>O (eight lines) yielded a rotational temperature of  $55 \pm 6$  K; for HCN (six lines) the value was 52 K, and a rotational temperature of 55 K was assumed for other species. Production rates ( $10^{25}$  molecules/s) or upper limits ( $3\sigma$ ) for Apr. 7 are as follows: H<sub>2</sub>O ( $590 \pm 60$ ), C<sub>2</sub>H<sub>6</sub> ( $0.9 \pm 0.2$ ), HCN ( $1 \pm 0.1$ ), CH<sub>4</sub> ( $< 1.5$ ), CH<sub>3</sub>OH ( $< 3$ ), H<sub>2</sub>CO ( $< 3$ ). The preliminary abundance ratios are then H<sub>2</sub>O : C<sub>2</sub>H<sub>6</sub> : HCN : CH<sub>4</sub> : CH<sub>3</sub>OH : H<sub>2</sub>CO = 100 : 0.15 : 0.2 :  $< 0.25$  :  $< 0.5$  :  $< 0.5$ . On Apr. 16, the abundance ratios were: H<sub>2</sub>O : HCN : CH<sub>4</sub> : H<sub>2</sub>CO = 100 : 0.2 :  $< 0.25$  :  $0.5 \pm 0.13$ , respectively. The abundance ratios (relative to H<sub>2</sub>O) of C<sub>2</sub>H<sub>6</sub>, HCN, CH<sub>4</sub>, and CH<sub>3</sub>OH in component ‘C’ of 73P are similar to those seen in C/1999 S4 (LINEAR), and are much lower than those of most other comets.

Further to *IAUC* 8703, three additional components to 73P have been observed on three or more nights and thus given designations (‘AN’, ‘AO’, and ‘AP’) and first announced on *MPEC* 2006-H26.

*COMET P/1999 RE<sub>70</sub> = (118401)*

H. H. Hsieh and D. Jewitt, University of Hawaii (UH), report that two 120-s *R*-band images of this object (with  $a = 3.20$  AU,  $e = 0.19$ ), obtained on 2005 Nov. 26, show a tail  $< 7''$  long in p.a. 90°; the images were made at the Gemini North Telescope during their survey of Themis-family objects under the suspicion that (118401) might show cometary activity along with other objects having similar main-asteroid-belt orbital elements [133P/Elst-Pizarro = (7968) and P/2005 U1]. Confirming observations from 2005 Dec. 22, 24, 25, 26, and 27 with the UH 2.2-m telescope also show the cometary appearance of (118401) — the Dec. 22 observation being made by J. Pittichová, and the rest by Hsieh; a co-added 9900-s image from Dec. 27 shows a faint coma with a fan-shaped tail  $\sim 9''$  long in p.a. 90°.