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COMET P/2009 R2 (PIGOTT-LINEAR-KOWALSKI)

Further to *IAUC* 9072, elements by B. G. Marsden for epoch 2003:

$$\text{Epoch} = \text{2003 Feb. 10.0 TT}$$

$$\begin{array}{llll} T = \text{2003 Feb. 1.2551 TT} & \omega = 357^\circ.0844 & & \\ e = 0.480777 & \Omega = 55.1940 & \Big\} 2000.0 & \\ q = 1.915714\ \text{AU} & i = 46.2617 & & \\ a = 3.689579\ \text{AU} \quad n^\circ = 0.1390717 & P = 7.09\ \text{years} & & \end{array}$$

On *IAUC* 8044, the suggestion was made that P/2003 A1 = 1783 W1, although it was not possible unequivocally to demonstrate this at the time. Running the above orbit back to 1783 (closest approach to Jupiter 0.19 AU in 1971) yields

$$\text{Epoch} = \text{1783 Nov. 10.0 TT}$$

$$\begin{array}{llll} T = \text{1783 Nov. 23.1803 TT} & \omega = 354^\circ.0531 & & \\ e = 0.578766 & \Omega = 58.5969 & \Big\} 2000.0 & \\ q = 1.458960\ \text{AU} & i = 45.7727 & & \\ a = 3.463539\ \text{AU} \quad n^\circ = 0.1529058 & P = 6.45\ \text{years} & & \end{array}$$

This result compares very favorably with the orbit by C. H. F. Peters (1860, Brünnow's *Astron. Notes*, No. 19), notably with T, q, and Ω agreeing to 2.275 days, 0.0003 AU, and $0^\circ.08$, respectively. Although the quality of the observations is poor, the above orbit by Marsden satisfies fourteen of them made during 1783 Nov. 22–Dec. 4 to within $< 10'$ in each coordinate, provided that T is corrected to 1783 Nov. 19.59.

COMET 88P/HOWELL

J. Crovisier, P. Colom, N. Biver, and D. Bockelée-Morvan, LESIA, Observatoire de Paris, report that observations of the 18-cm lines of OH in comet 88P/Howell with the Nançay radio telescope show an increase in the average OH-production rate from $1.0 \pm 0.2 \times 10^{28}$ molecules/s during Aug. 1–13 to $4.3 \pm 0.5 \times 10^{28}$ molecules/s during Aug. 28–Sept. 3.

COMETS 223P/SKIFF, 224P/LINEAR-NEAT, 225P/LINEAR

Comet P/2009 L18 = 2002 S1 (cf. *IAUC* 9066) has been assigned the permanent number 223P. Comet P/2009 Q2 = 2003 XD_{10} (cf. *IAUC* 9068) has been assigned the permanent number 224P. Comet P/2009 Q3 = 2002 T1 (cf. *IAUC* 9068) has been assigned the permanent number 225P. (See also *MPC* 66864).

2009 September 11 *Daniel W. E. Green*