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COMET P/2004 V5 = P/2003 YM_{159} (LINEAR-HILL)

While the initial report inferred that the discovery of comet P/2003 YM_{159} at Catalina was a team discovery (thus the name 'LINEAR-Catalina' given on *IAUC* 8433), it has since been determined that observer Rik Hill was alone in discovering, measuring, and reporting the comet — thereby allowing his name to be used in place of the survey name (as also approved by the Catalina team). Consultation with the IAU Committee on Small-Body Nomenclature has yielded the decision to introduce for this comet the new principal designation P/2004 V5 and to replace the name 'LINEAR-Catalina' with 'LINEAR-Hill'. The components A and B are defined as before. The following improved orbital elements from *MPEC* 2004-V79 are for component A, with the preliminary elements for component B being well satisfied with the same elements but with $\Delta T = +0.23$ day.

Epoch = 2005 Mar. 11.0 TT

$$\begin{array}{llll} T = 2005\ \text{Feb. } 28.6935\ \text{TT} & \omega = 87^\circ.6836 & \\ e = 0.445237 & \Omega = 47.8590 & \Big\}\ 2000.0 \\ q = 4.410971\ \text{AU} & i = 19.3582 & \end{array}$$

$a = 7.951091$ AU $n^\circ = 0.0439606$ $P = 22.42$ years

COMET P/2004 V3 (SIDING SPRING)

Improved elliptical orbital elements from *MPEC* 2004-V77:

$$\begin{array}{llll} T = 2004\ \text{Nov. } 13.938\ \text{TT} & \omega = 322^\circ.759 & \\ e = 0.45163 & \Omega = 356.082 & \Big\}\ 2000.0 \\ q = 3.94084\ \text{AU} & i = 50.454 & \end{array}$$

$a = 7.18647$ AU $n^\circ = 0.051160$ $P = 19.3$ years

COMET P/2004 V4 (NEAT)

Improved elliptical orbital elements from *MPEC* 2004-V78:

$$\begin{array}{llll} T = 2005\ \text{Jan. } 31.1328\ \text{TT} & \omega = 347^\circ.0816 & \\ e = 0.475536 & \Omega = 103.7625 & \Big\}\ 2000.0 \\ q = 1.920247\ \text{AU} & i = 12.4600 & \end{array}$$

$a = 3.661350$ AU $n^\circ = 0.1406832$ $P = 7.01$ years

2004 November 15 *Daniel W. E. Green*