Circular No. 8457

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COMET C/2004 X3 (LINEAR)

An apparently asteroidal object discovered by the LINEAR project (discovery observation below), and posted on the 'NEO Confirmation Page', has been found to show a round 4″ coma in CCD images taken in poor seeing on Dec. 20.5 and 21.5 UT by J. Young with the 0.6-m reflector at Table Mountain, who adds that five stacked images taken on the latter date show the head to be slightly elongated. Images taken by M. Tichý at Kleť on Dec. 21.1 (1.06-m reflector) show a diffuse 8″ coma.

2004 UT	α_{2000}	δ_{2000}	Mag.
Dec. 15.46391	$11^h47^m32^s.84$	$+6°26'11''.2$	20.1

The available astrometry, the following preliminary parabolic orbital elements, and an ephemeris appear on *MPEC* 2004-Y36.

$$\begin{array}{llll} T = 2005\ \text{June}\ 9.166\ \text{TT} & \omega = 200°.782 & \\ & \Omega = 343.065 & \text{2000.0} \\ q = 4.42890\ \text{AU} & i = 80.940 & \end{array}$$

COMET P/2004 X1 (LINEAR)

Improved orbital elements from *MPEC* 2004-Y17 (cf. *IAUC* 8449):

$$\begin{array}{llll} T = 2004\ \text{Nov.}\ 2.805\ \text{TT} & \omega = 346°.962 & \\ e = 0.76145 & \Omega = 6.132 & \text{2000.0} \\ q = 0.78612\ \text{AU} & i = 5.223 & \end{array}$$

$$a = 3.29532\ \text{AU} \qquad n° = 0.164762 \qquad P = 5.98\ \text{years}$$

SUPERNOVA 2004gu

N. Morrell, G. Folatelli, M. Hamuy, and M. Roth, Carnegie Supernova Project, report that a CCD spectrogram of SN 2004gu (*IAUC* 8454), obtained on Dec. 19.33 UT with the 6.5-m Magellan II Clay Telescope (+ LDSS2) at Las Campanas, confirms this to be a type-Ia supernova. The spectrum strongly resembles that of SN 1999aa near maximum light except for the Ca II H and K absorption which is stronger in SN 2004gu. The expansion velocity inferred from the minimum of the Si II 635.5-nm absorption is 11600 km/s, assuming for the host galaxy a recession velocity of 13600 km/s (derived from the absorption lines present). The Si II 597.2-nm line is apparently absent, indicating a high-luminosity event.

2004 December 21 *Daniel W. E. Green*