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COMET P/2010 A2 (LINEAR)

An apparently asteroidal object reported by the LINEAR project (discovery observation tabulated below) and placed on the NEO Confirmation Page has been reported as cometary and difficult to measure by several CCD astrometrists. P. Birtwhistle (Great Shefford, Berkshire, England, 0.40-m *f*/6 Schmidt-Cassegrain reflector, Jan. 7.0) found the object to be a headless comet with a straight tail in individual 20-s exposures (in a 2600-s integration, the tail has a length of at least 130$''$ in p.a. 280° and a width of 10$''$–14$''$ along its entire length — brightest in a 20$''$ area starting 6$''$ from the eastern end, fading gradually to the west); there is no obvious central condensation, but the center of brightness may be $\approx$ 11$''$ from the eastern end, and the positional measurement was very difficult. On images obtained during Jan. 7.84–7.87, Birtwhistle found a similar appearance to the previous night but found the tail to be at least 260$''$ long in p.a. 279°. W. H. Ryan (Magdalena Ridge Observatory, 2.4-m *f*/8.9 reflector, Jan. 7.20–7.29) reports an ill-defined elongated nuclear condensation and a very distinct, bright tail in p.a. $\sim$ 280°. H. Sato (Ota-ku, Tokyo, Japan, remotely using a 0.25-m f/3.4 reflector of the RAS Observatory, near Mayhill, NM, U.S.A., Jan. 7.2) notes a very diffuse coma 10$''$ in diameter and a 2$'$.2 tail toward p.a. 280°. On Jan. 7.3, E. C. Beshore (Mt. Lemmon Survey, 1.5-m reflector) followed the tail out to nearly 4$'$ in p.a. 285°. K. Kadota (Ageo, Saitama-ken, Japan, 0.25-m *f*/5 reflector, Jan. 7.7) found the comet to be diffuse, with a weak central condensation and a faint coma of diameter 0$'$.5, showing a straight, narrow tail 5$'$ long in p.a. 280°.

2010 UT	α_{2000}	δ_{2000}	Mag.	*Observer*
Jan. 6.27428	$7^h10^m16^s.81$	$+28°21'35''.1$	19.9	LINEAR

Further astrometry, the following very preliminary elliptical orbital elements, and an ephemeris are given on *MPEC* 2010-A32.

$$\begin{array}{llll} T = 2010\text{ May } 7.565\text{ TT} & & \omega = 227^\circ.300 & \\ e = 0.63483 & & \Omega = 313.525 & \Big\}\,2000.0 \\ q = 1.35759\text{ AU} & & i = 6.068 & \\ a = 3.71766\text{ AU} & n^\circ = 0.137499 & P = 7.17\text{ years} & \end{array}$$

COMET C/2007 Q3 (SIDING SPRING)

Visual total-magnitude estimates by M. Meyer, Limburg, Germany (15-cm refractor): Dec. 21.19 UT, 9.7; 26.21, 9.7; 29.20, 9.6.

  Daniel W. E. Green