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COMET C/2010 A1 (HILL)

R. E. Hill, Lunar and Planetary Laboratory, reports his discovery of a comet on CCD images taken with the Catalina 0.68-m Schmidt reflector (discovery observation tabulated below), describing the object from co-added exposures in 2''–4'' seeing as having a nuclear condensation $\sim 4''$ –5'' across with a 12''–15''-radius coma beyond that and no obvious tail (but a slight east-west elongation) in moonlight; his follow-up images in thin haze on Jan. 7.24–7.25 UT show a similar appearance but with a short, fan-shaped tail 20''–30'' long in p.a. $\sim 270^\circ$. Four co-added images obtained by E. C. Beshore with the Mt. Lemmon 1.5-m reflector on Jan. 6.5 showed a very faint tail perhaps 15'' long in p.a. 270° . Following posting on the Minor Planet Center's 'NEOCP' webpage, other CCD astrometrists have noted the object's cometary appearance. Y. Ikari (Moriyama, Shiga-Ken, Japan, 0.26-m *f*/7 reflector, Jan. 6.6) measured a coma diameter of 0'.2. P. Birtwhistle (Great Shefford, Berkshire, England, 0.40-m *f*/6 Schmidt-Cassegrain reflector, Jan. 7.1) found a diffuse coma of size 15'' \times 22'', elongated in p.a. 310° , with a weak condensation offset to the southeast (the brightest part of the surrounding coma is 6'' \times 12'' and extends in p.a. 50° and 230°). 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) finds a 20'' coma elongated toward p.a. 110° . W. H. Ryan (Magdalena Ridge Observatory, 2.4-m *f*/8.9 reflector, Jan. 7.3) remarked on a distinct coma.

| 2010 | UT | α_{2000} | δ_{2000} | Mag. | Observer |
|--------------|----|--|-----------------|------|----------|
| Jan. 6.46381 | | 9 ^h 11 ^m 26. ^s 44 | +33°08'34".6 | 17.6 | Hill |

Further astrometry, the following preliminary parabolic orbital elements, and an ephemeris are given on *MPEC* 2010-A31. It is possible that the comet is of short period.

$$\begin{array}{rcl}
 T & = & 2010 \text{ June } 24.055 \text{ TT} \\
 q & = & 1.02031 \text{ AU}
 \end{array}
 \quad
 \left.
 \begin{array}{l}
 \omega = 219.047 \\
 \Omega = 6.140 \\
 i = 11.782
 \end{array}
 \right\} 2000.0$$

COMET 81P/WILD

Visual total-magnitude estimates: Nov. 24.17 UT, 10.5 (J. J. Gonzalez, Leon, Spain, 20-cm reflector); Dec. 12.16, 10.3 (Gonzalez); 29.21, 10.3 (M. Meyer, Limburg, Germany, 15-cm refractor).