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Electronic Telegram No. 2134

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COMET P/2010 A2 (LINEAR)

[Editor's note: this CBET contains additional information that could not be published on IAUC 9109 because of printing/space constraints, due to the great interest in this unusual object.]

Further to IAUC 9105, the following improved orbital elements (from MPEC 2010-A78) for this comet are like those of a minor planet in the inner part of the main belt:

T = 2009 Nov. 17.248 TT	Peri. = 125.600
e = 0.13178	Node = 321.073 2000.0
q = 1.97580 AU	Incl. = 5.099
a = 2.27570 AU	n = 0.287099
	P = 3.43 years

J. V. Scotti, Lunar and Planetary Laboratory, reports on additional CCD images of this comet taken by R. S. McMillan with the Spacewatch 1.8-m f/2.7 reflector on Jan. 8.2 and 12.4 UT, in which there was no distinct nuclear condensation, though the presumed location of the nucleus would be the eastern end of the elongated coma structure. On Jan. 8, the coma size was about 8" x 11", with a sharper edge on the northern boundary, and a long, narrow tail extended to at least 4'.6 in p.a. 279 deg; a faint spike extended 0'.34 in p.a. 137 deg. Nine co-added images (effective integration time 1390 s) from Jan. 12 show the width of the elongated coma to be about 11", and its length to be about 13" in p.a. 297 deg, with a tail at least 4'.8 long in p.a. 278 deg.

J. Licandro, Instituto de Astrofísica de Canarias (IAC); G. P. Tozzi, Istituto Nazionale di Astrofisica, Arcetri; and T. Liimets, Nordic Optical Telescope (NOT) and Tartu Observatory, report that 5-min R- and V-band exposures obtained on Jan. 14.945-14.985 UT in very good (0".6) seeing with the 2.5-m NOT (+ ALFOSC) shows the presence of an asteroidal object 2" east of (and moving at the same rate as) the uncondensed "dust swarm" of P/2010 A2, which itself is 4' long and about 5" wide (177000 and 3700 km, respectively, at the comet's distance) in p.a. 277 deg. Licandro adds that these observations suggest a connection between the asteroidal object and the dust swarm; a short-lived event, such as a collision, may have produced the observed dust ejecta. Together with A. Cabrera-Lavers and G. Gomez, IAC and Gran Telescopio Canarias (GTC) Project Office, Licandro further writes that a series of fifty-four 30-s images obtained on Jan. 16.070-16.133 with the 10.4-m GTC (+ OSIRIS + g, r, and i Sloan filters) again shows the asteroidal object about 2" to the east of the comet.

R. Haver and A. Caradossi, Frasso Sabino, Italy, report that the comet appears as a tail 1'.8 long in p.a. 278 deg on Jan. 15.95 UT on CCD images taken with a 0.37-m f/6.8 Cassegrain telescope; on Jan. 16.90, the tail appeared longer (2'.7 in p.a. 276 deg). No condensation was visible with this small an instrument. L. Buzzi, Varese, Italy, notes a 240" tail in p.a. 279 deg on stacked CCD images (totally 35 min of exposure; limiting mag 21.5) taken on Jan. 16.04-16.11 with a 0.60-m f/4.6 reflector.

NOTE: These 'Central Bureau Electronic Telegrams' are sometimes superseded by text appearing later in the printed IAU Circulars.

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