C/2002 T7 Isophotes distribution

Juan Lacruz, 2004.03.20
La Cañada Observatory J87

Abstract

CCD images taken from La Cañada observatory spanning from 2003 Dec the 12th to 2004 Feb 11 are analyzed to show a distinct tilt of the curves of constant brigtness.

Introduction

Comet 2002T7 was discovered as an asteroidal object by the LINEAR survey on 2002 Oct 14.

The IAU published circular 8003 on 2002 Oct the 29th, with reports from Peter Birtwhistle noting that the object was softer than the nearby stars on images taken from Great Shefford observatory with a 30cm telescope and from Timothy Spahr showing it very slightly diffuse on pictures from Whipple Observatory with a 1.2m telescope.

This comet reaches the perihelion on April 2004 and is expected to be visible to the naked eye.

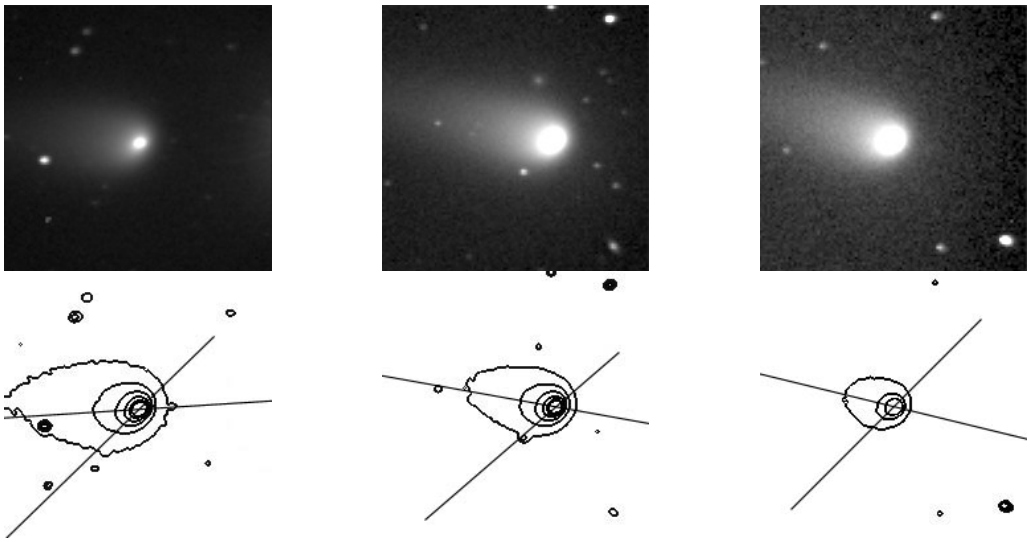
Observations

On pictures taken from many observatories it was apparent the weird morphology of the comet showing a tilted false nucleus relative to the gas tail. The following table shows the details of the images taken from La Cañada, all with the same integration time of 60 secs, the resolution of the images is about 2.5 arc sec per pixel.

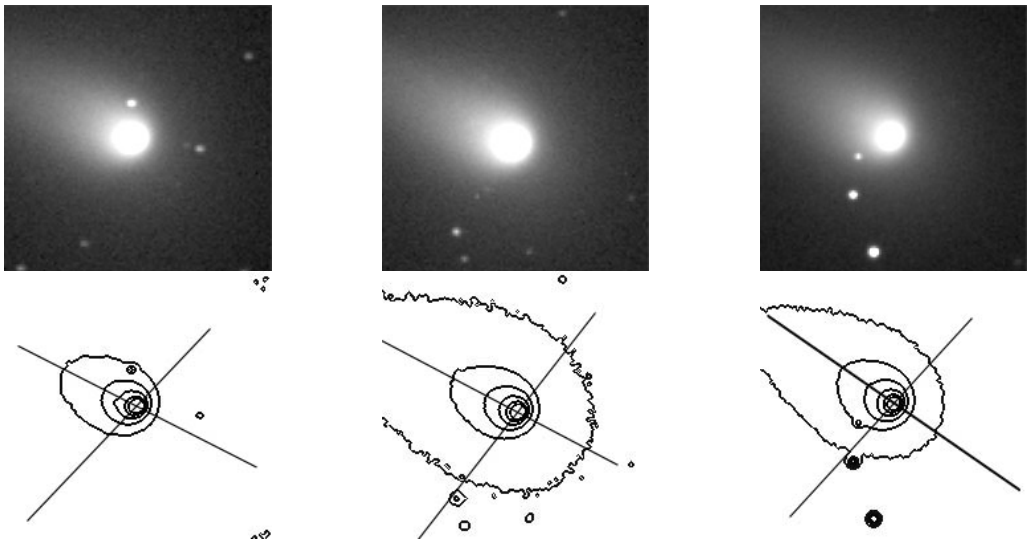
C/2002T7 pre-perihelium

Date	Time	r	delta	SN.ang	Airmass	%Illum	S-O-T	Res (km/pxel)
2003.12.12	18:19	2.4	1.56	273.84	1.2	98.3	140.4	2327
2003.12.22	20:17	2.26	1.57	260.07	1.5	96.6	123	2345
2003.12.26	19:03	2.21	1.59	256.3	1.8	95.8	116.13	2381
2004.01.19	19:28	1.87	1.79	243.04	14.1	92.8	78.864	3243
2004.01.21	19:14	1.84	1.81	242.31	23.9	92.7	76.09	3280
2004.02.11	19:09	1.53	1.97	235.18	n/a	93.6	49.4	3570

The images were cut down to a 200x200 pixel size centered on the nucleus, a logarithmic scaling was done before the isophotes were traced., the direction to the Sun and the inner comma symmetry axis have been drawn.



2003.12.12 2003.12.22 2003.12.26



2004.01.19 2004.01.21 2004.02.11

Conclusion

A distintic rotation of about 45 deg in 62 days is derived.