

Photographic observations of comet Swift-Tuttle (1992t)

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Received 12 April 1994; Accepted 20 May 1994

Abstract. Positions of comet Swift-Tuttle (1992t) have been measured from photographic plates taken at the Cassegrain focus of the 104-cm telescope of Uttar Pradesh State Observatory (UPSO).

Key words: comet — positions

1. Introduction

The orbit determination of comet Swift-Tuttle seems to be important for computing the future perihelion passages of the comet as emphasised by Marsden (1992). According to Marsden, a delay by +15 days in the next perihelion return of the comet predicted to be on July 11, 2126 would cause the comet to hit the earth on Aug 14, 2126. Chambers (1992) however, suggests that the next two perihelion passages of the comet would be within a day of the predicted dates and there is no possibility of a collision with the earth although the need to further examine the post perihelion observations during 1993 has been pointed out.

2. Observations and reduction procedure

The photographs of the comet Swift-Tuttle (1992 t) were taken at the Cassegrain focus of the 104-cm reflector of UPSO on December 1, 14, and 15, 1992. The plate scale at the Cassegrain focus of the telescope is $15 \text{ arcsec mm}^{-1}$ and the field covered is 40 arc-min^2 . The effective focal length of the telescope is 1330 cm. Two plates containing sufficient number of SAO stars were selected for position measurement of the comet. For measurement of the rectangular x and y coordinates on the plate of the reference stars and the comet, we have used the C. Reidel x coordinate measuring machine at UPSO. The x-Screw has a least count of 0.0001 cm. For y measurement the plate is turned 90° on the carriage and the same screw is used for measuring y. The procedures used for measuring the plates and subsequent reduction are the same as described in Joshi et al. (1987).

The error of the measured coordinates has been estimated to be 0.4 arcsec. The measured right ascension and declination of the comet on the two nights are given in the table below.

Table 1. Measured coordinates of comet Swift-Tuttle (1992 t).

Date (UT)	Mean epoch of exposure (UT)	Right Ascension (2000)	Declination (2000)]
1 Dec, 1992	13 ^h :45 ^m :30 ^s	19 ^h :02 ^m :43 ^s .83	-3°24'11".1
15 Dec, 1992	13 ^h :00 ^m :21 ^s	19 ^h :37 ^m :54 ^s .86	-9°31'19".8

References

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