

BRIGHTNESS CHANGES IN P/HALLEY

(Letter to the Editor)

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Abstract. Thirty photometric magnitudes, in each filter (UBV), of P/Halley (1982i) have been measured on 1986, January 12. They show short-term variability of about 0.15 magnitude. The present measurements show the active nature of the comet.

Comet P/Halley has drawn the attention of a large number of astronomers during its recent return in 1986. It has also become the most interesting object even for the general public. Even a layman is keen to know about its nature and behaviour. Because of its historical importance the scientific community is crazy to obtain different types of observational data. So far, it has completed 29 recorded apparitions till 1986. Its shortest period between returns being 74.42 years and the longest being 79.25 years.

After the brightness predictions of P/Halley for the 1986 apparition, in the Comet Halley Handbook, numerous of observed visual magnitude estimates appeared in literature (in IAU circulars). Photometric observations of comets are very useful and can provide useful informations on comets. In this report we present UBV photometric observations of P/Halley made on 1986, January 12.

The observations were made with the 38-cm reflector of the Uttar Pradesh State Observatory, Nainital, using a 1P21 photomultiplier thermoelectrically cooled to -20°C . The standard U, B, and V filters of Johnson and Morgan and standard d.c. techniques were employed for recording the signal. The entrance diaphragm of 75 arc sec was used for securing the observations. The comparison stars 10 Tau and η Aqr were observed alongwith the comet for deriving extinction coefficients and for determining the differential magnitudes. The magnitudes were converted to the standard system with the help of standard stars and following the standard usual method used in photometry.

In general, it is a standard practice to correct visual magnitudes of comets for aperture effect as described by Morris (1973). But for Comet P/Halley, however, it has been found by Morris (1986) that no aperture correction is required for the observations made from July to September 1985. In the latter months, however, the aperture correction does become necessary, but by January 1986, we made observations with smaller aperture instrument (38-cm telescope) which minimizes the aperture effect

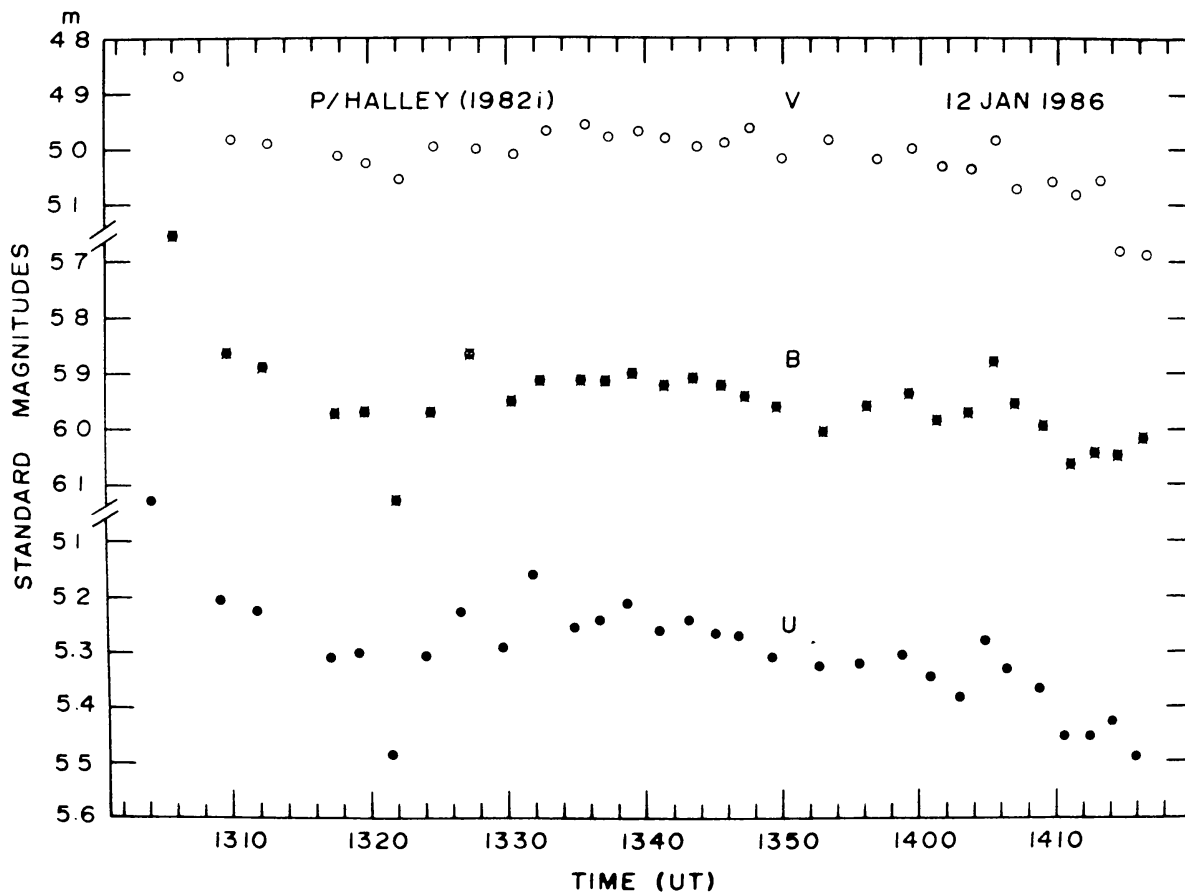


Fig. 1. Variations in the UBV magnitudes of P/Halley.

(Morris, 1986). Therefore, for the present observations no aperture correction has been applied.

The standard total U, B, and V magnitudes of Comet P/Halley measured by us are displayed in Figure 1. The short-term variations having an amplitude of about 0.15 magnitude in U and B and less in V filters are clearly present. These observations confirm the earlier claims on the existence of variations in P/Halley (Jewitt and Danielson, 1984; Lecacheux *et al.*, 1984a, b; Lecacheux and Le Fevre, 1984; Le Fevre *et al.*, 1984; West and Pederson, 1983, 1984).

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