

*II. PHOTOMETRIC RESEARCH PROGRAMMES*

*b) Poster papers*

uvby PHOTOMETRY WITH A CCD

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Initial observations using uvby filters with a CCD detector were completed in June of 1985, using the Cerro Tololo 4m PFCCD system. It has been possible to derive all Strömgren indices ( $b-y$ ,  $m_1$  and  $c_1$ ) for  $V < 18$  from frames with acceptable integration times. For fields in the open cluster IC 4651, averages of 2 to 3 frames with exposure times of 15, 20, 40, and 500 seconds for the  $y$ ,  $b$ ,  $v$ , and  $u$  filters, yielded high precision magnitudes and indices for  $V < 15$ . Exposure times up to 5 times longer were required for the  $v$  and  $u$  filters in order to derive  $c_1$  indices of sufficient precision for stars with  $V$  between 15 and 16. One result of our survey is the apparent absence of main sequence stars below  $V = 15$ .

The nearby globular cluster NGC 6397 was also observed. Frames with exposure times of 200, 400, 750 and 2500 seconds were used to construct the color-magnitude diagram shown. Analysis of the  $m_1$  and  $c_1$  indices in comparison to Vandenberg and Bell's (1985) isochrones indicate  $Z = 0.0003$  and an age of  $14 \times 10^9$  years; higher  $Z$  would imply an even younger age.

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Vandenberg, D.A., and Bell, R.A. 1985. *Astrophysical Journal Supplement*, 58, 561.

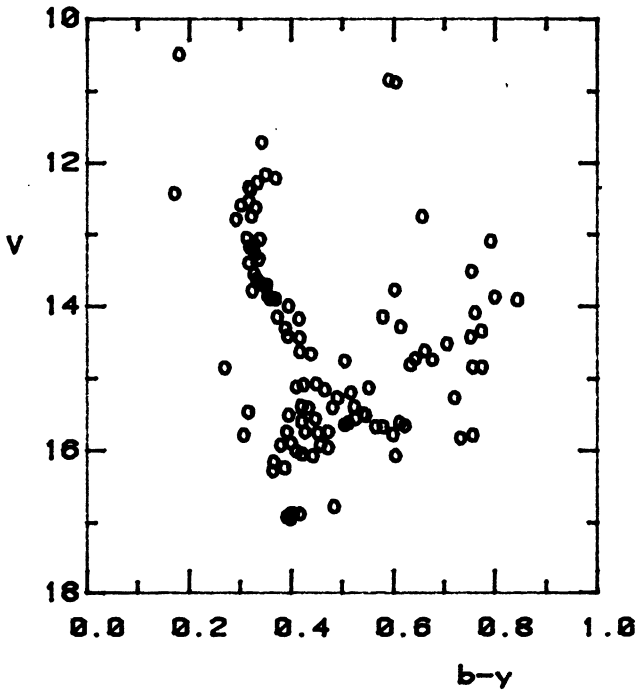


Figure 1. Color-magnitude diagram for the open cluster IC 4651.

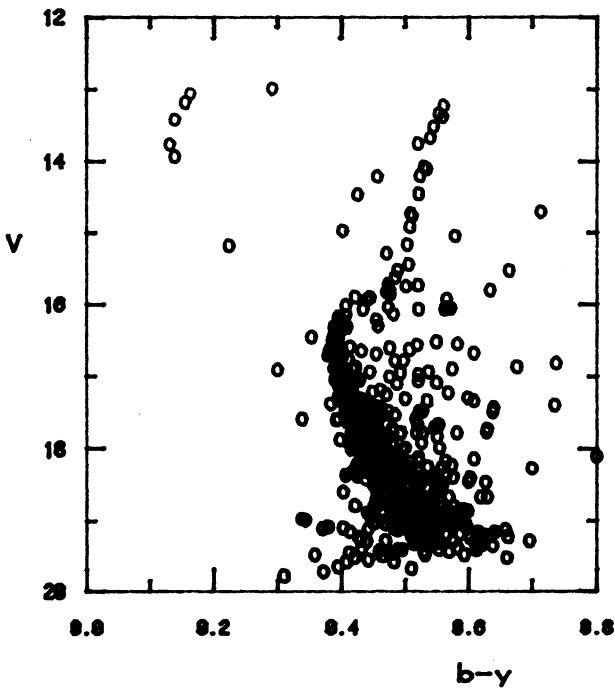


Figure 2. Color-magnitude diagram for the globular cluster NGC 6397.