

LUMINOSITY AND MASS FUNCTIONS FOR THE PLEIADES FROM THE SCHMIDT SURVEY

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From MAMA measurements of Tautenburg and OCA Schmidt plates we obtained proper motions and photographic UBV<sub>r</sub> photometry for ca. 45 000 stars up to B = 19 mag within a 17 square degree region in the Pleiades. An accuracy of 0.6 mag and 2 mas/year was estimated for magnitudes and proper motions, respectively. A sample of 554 cluster members was separated by use of both astrometric and photometric information on stars.

The resulting luminosity function (LF) is shown in Fig. 1a. An interesting feature of the LF is the ‘dip’ at  $M_v \approx 7$ , similar to the well-known ‘Wielen-dip’ in the field star LF. The steep decline of the LF beyond  $M_v \approx 11.5$  seems to be caused by the limiting magnitude of the survey. The LF was transformed into the mass function (MF) *via* the the mass- $M_v$  relation for two different ages of the Pleiades,  $7 \times 10^7$  and  $3 \times 10^8$  years (Fig. 1b). The slope of the MF seems to decrease toward lower masses.

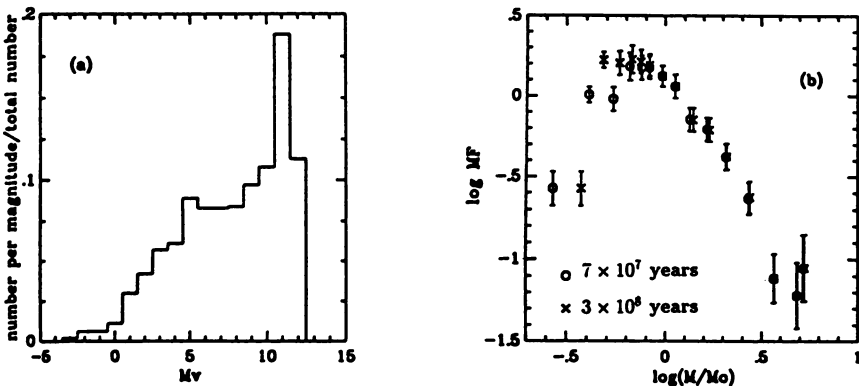


Figure 1. The LF (a) and MF (b) of the Pleiades from the present study. Here, the MF is defined as  $\frac{dN}{d \log(m/m_{\odot})}$ , and is normalized to 1.