TABLE 6

REDDENING, UNREDDENED PARAMETERS AND DISTANCE FOR THE OPEN CLUSTER NGC 6830

ID	$E(b-y)$	$(b-y)_0$	m_0	c_0	β	V_0	M_V	DM	DST	[Fe/H]	Mbr
26	0.244	0.320	0.233	0.206	2.661	11.26	5.67	5.59	131	0.85	nm
2258	0.310	0.236	0.179	0.422	2.721	11.67	4.10	7.57	327		nm
13	0.371	0.396	0.245	0.306	2.605	11.19	3.43	7.76	357	0.46	nm
164	0.291	0.169	0.180	0.761	2.766	10.99	1.90	9.09	658		nm
5	0.326	−0.060	0.111	0.492	2.721	8.45	−0.65	9.10	661		m:
4	0.677	−0.077	0.103	0.342	2.685	9.71	−1.25	10.96	1559		m
14	0.412	−0.064	0.141	0.454	2.714	10.22	−0.76	10.98	1571		m
7	0.394	−0.041	0.125	0.747	2.689	9.48	−1.64	11.12	1676		m
2257	0.449	−0.059	0.127	0.499	2.706	10.23	−0.91	11.14	1692		m
39	0.436	−0.050	0.080	0.598	2.668	9.32	−1.89	11.21	1745		m
25	0.384	−0.051	0.127	0.588	2.718	10.81	−0.76	11.57	2063		m
15	0.461	−0.054	0.103	0.558	2.681	10.68	−1.49	12.16	2709		m
24	0.447	−0.056	0.100	0.527	2.635	9.72	−2.81	12.53	3200		m
2	0.385	−0.056	0.098	0.533	2.603	8.97	−4.40	13.37	4719		nm
8	0.420	−0.047	0.108	0.636	2.616	9.73	−4.08	13.81	5785		nm

4. ANALYSIS

In order to gain some insight into the clusters we must first find out which stars belong to each one. As was already mentioned, this is accomplished by constructing a histogram of the deduced distances. From the results listed in Tables 5 and 6 and shown in Figure 1, we can establish that NGC 6811 has a distinctive accumulation of thirty-seven stars at a distance modulus of 10.5 ± 1.0 mag, whereas NGC 6830 is merely an association of eight early type stars at DM 11.1 ± 1.6 mag, although emphasis should be made on the fact that we merely observed a small sample of stars in the direction of this cluster: nineteen of the brightest stars. According to the study of Netopil et al. (2007) four CP stars in NGC 6830 were found. Since Strömgren photometry is most suitable for this topic, we checked our measured stars for the Ap determination. Unfortunately, none of our measured stars lay in the regions defined by the boxes in the m_0, and c_0 diagram where the Ap stars should be, as in Golay's (1974, Figure 124). Hence, we cannot corroborate, nor discard the findings by Netopil et al. (2007). For NGC 6811 we determined four stars belonging to the Ap category, namely W9, W34, W105 and W491, all to the Sr-Cr-Eu class.

Age is fixed for the two determined clusters once we measured the hottest and hence the brightest stars for each one. The effective temperature of these hottest stars was determined by plotting the location of all stars on the theoretical grids of LGK86, once we evaluated the unreddened colors (Figure 2) for a solar chemical composition. We considered this metallicity based on the thirteen F type stars for which we determined the metallicity [Fe/H]; a mean value of -0.18 ± 0.30 was found. In the related figures, LGK86 in the upper left corner indicates that the grids were taken from the mentioned reference of LGK86 and the specified metalicity. We have utilized the $(b-y)$ vs. c_0 diagrams which allow the determination of the temperatures with an accuracy of a few hundreds of degrees. However, for NGC 6811, as can be seen in Figure 2, the stars are clustered together and the effective temperature cannot be easily determined. To measure the temperature with more accuracy, a plot of $(b-y)$ vs. β was constructed and compared with the theoretical grids of LGK86, Figure 3. The temperature for the hottest stars is around 11,700 K for NGC 6811, whereas for NGC 6830 it is much hotter (17,000 K). Once membership has been established, age is determined after calculating the effective temperature through the calibrations of Meynet, Mermilliod, & Maeder (1993) for open clusters; a log age of 8.266 (1.845×10^8 yr) is found from the relation $-3.611 \log\log T_{\rm eff} + 22.956$ valid in the range $\log\log T_{\rm eff}$ within the limits [3.98, 4.25] for NGC 6811; whereas for NGC 6830 the re-