TABLE 2

SPACE REDDENINGS FOR CEPHEID FIELDS

Cepheid	log P	E_{B-V}(B0) $< 2'$	E_{B-V}(B0) $< 3'$	E_{B-V}(B0) $< 4'$	E_{B-V}(B0) $< 5'$	E_{B-V} 2MASS	E_{B-V}(B0) Adopted	No. Stars	E_{B-V}(Cδ)
UY Mon	0.380	···	0.09	0.09	0.12 ± 0.01	0.07 ± 0.07	0.12 ± 0.01	4	0.11 ± 0.01
UY Mon[1]	···	···	0.42	0.44 ± 0.03	0.43 ± 0.02	0.37 ± 0.07	0.43 ± 0.02	3	···
CN CMa	0.390	0.62 ± 0.02	0.65 ± 0.02	0.66 ± 0.02	0.67 ± 0.02	0.63 ± 0.12	0.67 ± 0.02	11	0.63 ± 0.02
EW Aur	0.425	0.52	0.63 ± 0.06	0.61 ± 0.04	0.61 ± 0.04	0.53 ± 0.08	0.61 ± 0.04	6	0.58 ± 0.03
V1882 Sgr	0.433	0.60 ± 0.01	0.68 ± 0.03	0.70 ± 0.02	0.68 ± 0.02	0.69 ± 0.05	0.68 ± 0.02	20	0.64 ± 0.01
BE Pup	0.458	0.80	0.72 ± 0.04	0.69 ± 0.03	0.68 ± 0.02	0.73 ± 0.12	0.68 ± 0.02	20	0.64 ± 0.02
YZ CMa	0.499	···	0.71 ± 0.10	0.64 ± 0.09	0.60 ± 0.03	0.61 ± 0.07	0.60 ± 0.03	10	0.56 ± 0.03
LR Pup	0.523	0.44	0.47 ± 0.02	0.46 ± 0.01	0.45 ± 0.01	0.37 ± 0.07	0.45 ± 0.01	14	0.42 ± 0.01
BD Pup	0.593	0.63 ± 0.03	0.71 ± 0.03	0.74 ± 0.03	0.72 ± 0.02	0.69 ± 0.08	0.72 ± 0.02	19	0.67 ± 0.02
IO Cas	0.748	0.74	0.64 ± 0.03	0.62 ± 0.03	0.63 ± 0.03	0.63 ± 0.08	0.63 ± 0.03	14	0.59 ± 0.02
AY Sgr	0.818	···	1.04 ± 0.02	1.02 ± 0.04	1.00 ± 0.03	0.97 ± 0.05	1.00 ± 0.03	8	0.94 ± 0.02
FO Cas	0.832	0.99	0.99	0.83 ± 0.07	0.82 ± 0.06	0.78 ± 0.14	0.82 ± 0.06	7	0.76 ± 0.05
AC Mon	0.904	···	0.61	0.61 ± 0.02	0.59 ± 0.02	0.56 ± 0.05	0.59 ± 0.02	5	0.55 ± 0.01
HZ Per	1.052	1.39	1.39	1.48 ± 0.07	1.48 ± 0.05	1.42 ± 0.10	1.48 ± 0.05	4	1.36 ± 0.04
VY Sgr	1.132	···	1.50	1.41 ± 0.04	1.35 ± 0.04	1.24 ± 0.15	1.35 ± 0.04	3	1.24 ± 0.04
OT Per	1.416	···	1.70	1.52 ± 0.11	1.52 ± 0.09	1.47 ± 0.12	1.52 ± 0.09	5	1.39 ± 0.08

[1]Alternate solution for stars of large reddening near UY Mon.

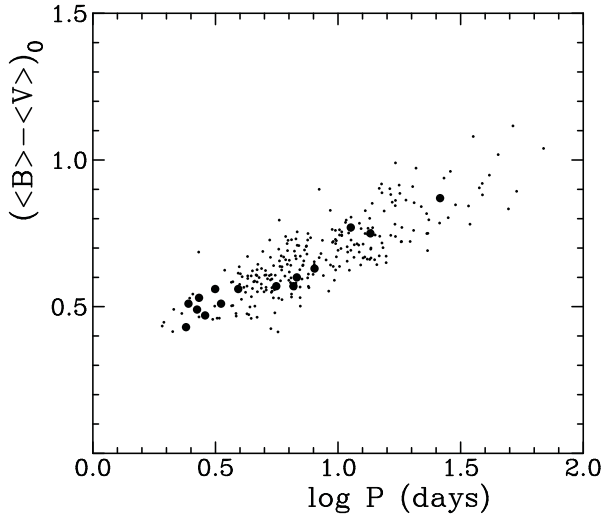

Fig. 6. Derived intrinsic $\langle B\rangle$–$\langle V\rangle$ colors for sample Cepheids (large symbols) relative to other Cepheids with derived reddenings (small symbols, Turner 2001), as a function of pulsation period.

star type designation for the object from the *General Catalogue of Variable Stars* (Samus et al. 2004). Type II Cepheids are designated as CWB for short period (1–8 days) BL Herculis variables, and CWA for longer period (8–20 days) W Virginis stars. The intrinsic $(\langle B\rangle$–$\langle V\rangle)_0$ colors are plotted in Figure 6 relative to a set of similar intrinsic colors calibrated relative to other Cepheids with field reddenings (binary, cluster or association members) and Cepheids with reddenings derived using reddening-free indices (Turner 2001).

All of the program stars studied here appear to have intrinsic colors consistent with those of classical Galactic Cepheids, despite remaining questions about the true population status for some of them. The spread in color at a given value of pulsation period P for the reference sample can be attributed to the natural width of the Cepheid instability strip, and in a few cases to erroneous reddenings. The location of individual Cepheids in our sample relative to the hot (blue) and cool (red) edges of the strip, if used in conjunction with light amplitude and rate of period change, provides useful information about what stage the Cepheids have reached in their evolution (Turner et al. 2006).

Figure 7 plots the inferred $(R$–$I)_J$ colors for our sample Cepheids relative to their $(\langle B\rangle$–$\langle V\rangle)_0$ colors, transposed from $(R$–$I)_C$ using the relationships of Fernie (1983). Included are inferred colors for AFGK supergiants from Johnson (1966), in similar fashion to the analysis of Dean et al. (1978). There is good agreement of the derived intrinsic colors for sample Cepheids with the colors expected for supergiant stars, with the exception of V1882 Sgr and YZ CMa. Both objects have faint optical companions that may contaminate the $(RI)_C$ photometry, so the results of Figure 7 do not necessarily indicate a significant difference in color between classical and Type II Cepheids. The data also indicate the general success of the procedure adopted in this study. The temperature spread of the instability strip is less marked in intrinsic $(R$–$I)_J$ and $(R$–$I)_C$ colors than in $(\langle B\rangle$–$\langle V\rangle)_0$ color, as expected.