CC/NUMBER 9
MARCH 1, 1982

This Week's Citation Classic

Blanco V M, Demers S, Douglass G G & FitzGerald M P. Photoelectric catalogue, magnitudes and colors of stars in the U, B, V and U_c, B, V systems. (whole issue). *Publ. US Nav. Observ. Second Ser.* **21**, 1968. 772 p.

The magnitudes and colors of stars with published U, B, V or U_c, B, V photometry up to January 1, 1967, are presented together with identifications, celestial coordinates, coded spectral types, and pertinent references. [The *SCI*® indicates that this paper has been cited over 430 times since 1968.]

Victor M. Blanco
Observatorio Interamericano
de Cerro Tololo
Casilla 603
La Serena
Chile

December 9, 1981

"A dramatic increase in the accuracy of measurement of the brightness of stars occurred when specially sensitive photoelectric cells became available after World War II. Unfortunately, early published lists of stellar photoelectric magnitudes differed from one another because the photometric data obtained by various astronomers had not been standardized. A major event that remedied this situation was the publication in 1953 by H.L. Johnson and W.W. Morgan of a fundamental paper[1] which related carefully made photoelectric measurements in three different spectra regions with a system for classifying stellar spectra that had, by then, been adopted by many astronomers. From the three spectral regions in which stellar magnitudes were observed, the measurements were, therefore, designated as U, B, and V magnitudes.

"I first became interested in the U, B, V photometric system when I noticed that it was so well defined that one could predict theoretically how the U, B, V magnitudes would be affected if a given star was partially obscured by interstellar dust. In 1956 I published a paper[2] describing the expected effects. This paper led me to the idea that perhaps one could, by using published lists of U, B, V magnitudes, determine the location in space of regions containing appreciable amounts of interstellar dust. Thus, I started collecting on 3 × 5-inch cards every published U, B, V photometric measurement that I could find. After preparing several thousand such cards it became obvious that I had a major job on my hands since by then many astronomers were publishing U, B, V observational results.

"At the time, I was teaching at the Case Institute of Technology and a young Canadian student named M.P. FitzGerald became interested in taking over the mapping of interstellar dust regions, as a doctoral dissertation project. FitzGerald prepared IBM punched cards from my handwritten cards and collected many additional measurements. These were used by FitzGerald to complete successfully a study of the location in space of interstellar obscuring regions. Also, with the IBM cards we computer-printed a primitive edition of a U, B, V photoelectric catalogue and distributed it. It soon became apparent that such a catalogue would be very useful. After I went to work at the US Naval Observatory in 1965, I obtained the collaboration of S. Demers and G.G. Douglass in cleaning up errors in the primitive catalogue and in bringing it up to date. The final publication was coauthored by myself and the collaborators named here, and we were listed as authors in alphabetical order according to the custom in US Naval Observatory publications. The fact that this catalogue is credited to me in *Science Citation Index*® rather than to, say, FitzGerald, is thus rather accidental.

"The final publication is remarkable in that, to my knowledge, it contains no errors. This, and I think, its completeness and convenient format are the reasons why astronomers still refer to it when they use any pre-1967 U, B, V observational results. Recent work in the field has been published.[3,4] By the way, the Betty Mintz mentioned in the acknowledgements of the catalogue as responsible for computer programming is now my wife."

1. **Johnson H L & Morgan W W.** Fundamental stellar photometry for standards of spectral type on the revised system of the Yerkes spectral atlas. *Astrophysical J.* **117**:313-52, 1953.
2. **Blanco V M.** Some remarks on the U, B, V system. *Astrophysical J.* **123**:64-7, 1956.
3. **Neckel T & Klare G.** The spatial distribution of the interstellar extinction. *Astron. Astrophys. Suppl. Ser.* **42**:251-81, 1980.
4. **Perry C L & Johnston L.** A photometric map of the interstellar reddening within 300 parsecs. *Astrophys. J. Suppl. Ser.* **In press, 1982.**