

THE C/M5+ RATIO IN THE GALACTIC DISC

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ABSTRACT. It is now well established the importance of carbon stars as indicators of the intermediate age stellar population (Blanco, Hoag and McCarthy 1978). Among the results derived from surveys carried out in the Galaxy, the Magellanic Clouds, and in spheroidal dwarf galaxies of the Local Group it has been found that the number ratio between the carbon stars and M stars of spectral type M5, or later, (C/M5+) is significantly correlated with the metal content of these star systems.

In this paper a determination of the C/M5+ ratio in the galactic disc along a line galactic center-Sun-anticenter is presented. Previous space density analysis for M and C stars derived from near-infrared objective-prism surveys carried out in the direction of the galactic center and anticenter have been used. The C/M5+ ratio varies from 0.1 toward the galactic center to 0.3 toward the anticenter. This tendency is opposite to the running of the metal abundance on the galactic disc, from the center outward. The mean value of the C/M5+ ratio for the Galaxy (0.2), the Large Magellanic Cloud (2), the Small Magellanic Cloud (33) and the spheroidal dwarf galaxies (50-100) are significantly correlated with the metal index of these star systems.

Key words: GALAXY-STRUCTURE — STARS-LATE TYPE — STARS-CARBON

REFERENCE

Blanco, V.M., Hoag, A.A., and McCarthy, M.F. 1978, in *The HR Diagram*, eds. Phillip and Hayes (Dordrecht: Reidel), p. 33

DISCUSSION

WING: Would you please clarify how you estimate the absolute magnitudes and distances of your carbon stars? For the galactic center and the Magellanic Clouds we know the distances of the stars involved, but in the anti-center direction we do not have this advantage.

FUENMAYOR: The magnitudes of all the carbon stars studied were measured on spectral plates using appropriate photoelectric sequences. The interstellar absorption was determined with the help of Wolf diagrams. Finally, I adopted a mean value of the infrared absolute magnitude $M_I = -5$. The space densities of the stars for different heliocentric distances could be determined.

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