A NEW OBJECTIVE PRISM CATALOGUE OF OB AND SUPERGIANT B, A, F AND G STARS IN THE MAGELLANIC CLOUDS

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The Michigan Curtis Schmidt telescope at Cerro Tololo Inter-American Observatory has been used with the "thin" prism (Blanco 1974) to survey the Large and Small Magellanic Clouds. Four plates, covering approximately 90 square degrees, and three plates, covering approximately 70 square degrees, were taken of the Large and Small Magellanic Clouds respectively. One hour exposures on nitrogen baked, IIIa-J plates were obtained. The limiting magnitude of the plates is V ≈ 16 mag. At the dispersion of 1360 Å/mm OB stars can be recognized by their long uv extension, in which no sign of a Balmer discontinuity can be seen. The supergiants can be recognized by the appearance of a Balmer discontinuity and classified into temperature types by the strength of the hydrogen lines.

Positions will be obtained by measuring the Hodge Wright Atlas charts and will be accurate to 0.1 minute in right ascension and 1 minute in declination. Approximate magnitudes (to the nearest 0.5 mag.) will be obtained from the image size on the Hodge Wright charts.

A comparison with the earlier Sanduleak survey (1969) of the LMC (which was complete to a limiting magnitude of V = 14) indicates that our new catalogue will contain approximately five times as many stars. If a new, deeper study is ever made it will probably be made in smaller, selected areas, due to the vast number of stars to be found in a study to V = 18 mag., for example.

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We hope to complete the spectral classification work in a year. The final catalogue will be published as a Dudley Observatory Report. We acknowledge the support of the National Science Foundation under grants AST 76-11431 (A.G.D.P.) and AST 75-17583 A01 (N.S.).

REFERENCES

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DISCUSSION

Blanco: I understand that the positions to be published will have precisions on the order of a minute of arc. Your work is very good and you are to be congratulated in undertaking this survey. However, the published results could be more useful if the astrometry were more precise. It is possible with one direct plate taken with the Curtis Schmidt telescope and SAO stars as astrometric standards to achieve a precision of about one arc second.

Code: You indicated that you would cross index identifications. If it is true that most of your objects at this magnitude limit will be new objects, I hope you can improve the positions as suggested by Blanco.

Philip: Yes, the majority of our objects will be new. (In discussion after the session with Nandy, it was proposed that the COSMOS machine be used to obtain accurate positions. Nandy estimated that it might take a month to do this, which would not add too much time to the process of making the catalogue ready for publication.)

Geyer: Do you have problems with overlapping spectra in the Magellanic Clouds?

Philip: The spectra are very small and one can classify stars in very crowded regions. However, in the most crowded regions there are places where stars cannot be classified because of overcrowding.

Jaschek: I would just like to mention the problem of the cataloging of information. Nowadays there are too many results which are not being used fully because of bibliographic inaccessibility. One solution would be that all catalogs containing more than one or two hundred objects should be automatically put on magnetic tape and stored at any one of the stellar data centers (NASA, USSR Academy of Sciences, Strasbourg) because it is becoming clearly impossible for the data centers to do what the authors themselves should do.

Philip: Our catalog will be punched on cards and then will be available on tape.