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## THE FORTHCOMING MORGAN-ABT-TAPSCOTT SPECTRAL ATLAS

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### ABSTRACT

Since the publication of the MKK atlas in 1943, there has been much progress in (1) the construction of fast spectrographs of higher resolution, (2) faster fine-grain emulsions and sensitizing techniques, (3) the partial or complete explanations of certain spectroscopic effects, (4) the discovery of other spectroscopic effects, and (5) refinements in the classification system based on new spectra and data on luminosities. An interim atlas entitled An Atlas of Low-Dispersion Grating Stellar Spectra was published in 1968 by Abt, Meinel, Morgan, and Tapscott but it is out of print and was not reissued in anticipation of the forthcoming greatly-improved atlas.

It was decided that Morgan, Abt, and Tapscott would concentrate on the early-type stars while Keenan and McNeil would describe the late types; the solar type (G2) would be the point of division.

The forthcoming atlas is planned and organized by Morgan, based on spectra taken by Abt with photographic work by Tapscott. The atlas will consist of about 30 separate sheets giving luminosity classes from O6 to G0 (15 sheets), sequences in types, and special stars; the latter include strong helium stars, classical and proto AM stars; ZAMS stars, shell stars, and stars with diffuse K Lines. Most of the original spectra were of  $128 \text{ \AA mm}^{-1}$  but some were of  $39 \text{ \AA mm}^{-1}$ . We tried to pick stars near the equator so that they could be observed from both hemispheres.

This atlas provides criteria for the determination of spectral types and luminosities of early-type stars and also points out new

or unexplained effects, such as (1) the behavior of the N IV and He lines below the Balmer discontinuity, (2) the late B-type giants having both sharp lines (of Ca II, Si II, C II) and broad lines of He I in the same spectra, (3) the proto Am stars (ones with small differences in types from different lines) of early and late A-type, and (4) stars with unusually broad Balmer lines that are found only in young clusters and that are probably on the ZAMS. The Atlas will be available from the authors late in 1978; individual copies will be distributed at the cost of shipment only because the U. S. National Science Foundation is paying for the printing.