

range of 3,200Å to 8,100Å for three O emission, nine Be, and two Ae stars observed by two-channel scanner at the observatoire de Lyon and Laboratoire d'Astronomie Spatial.

Balmer discontinuities are estimated by means of BCD(1939, Barbier and Chalonge) from the measured energy distributions by comparing them with those of the normal stars. Among Be many have small Balmer discontinuity than that exhibited by the main sequence stars of similar spectral type.

Our de-reddened fluxes together with the ultraviolet measurements of Thomson et al. (1978) are compared to those of Kurucz's model atmospheres(1979) to derive effective temperatures of these stars. With the measured monochromatic fluxes we determined their angular diameters and luminosities. It is found that the majority of these stars are cooler than the zero age main sequence (ZAMS) in the H-R diagram, suggesting that they are slightly more evolved than the ZAMS stars.

Mass-Luminosity Relation for Main-Sequence Stars

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The mass-luminosity relation for main-sequence stars is derived from the 58 visual binary systems, which is found to be $(L/L_{\odot}) \propto (M/M_{\odot})^{3.6}$. In this study, the change of exponent suggested by Strand and Worley(1963) near $M_{bol}=7.5$ mag. is not found. Some explanations for the difference between our result and others will be discussed.

Long-Term Luminosity Variation and Dynamo Cycle in Late Type Dwarfs

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Making use of our revised Öpik's convection theory, we have calculated magnetic cycle periods of late type stars by using Parker's dynamo theory to analyze observed magnetic activities of later type stars and long-term luminosity variations observed in spot stars.

From the present investigation it is found that (1) the stellar magnetic cycle period increases towards the later spectral type, (2) the rapid rotation facilitates the activity-related luminosity variation for stars later than about K5 and (3) differential rotation plays a critical role in determining the magnetic activity-cycle period. Finally, it is suggested that the non-local effects should be taken into account in order to understand the observed long-term luminosity variations.

Period Change of BW Vul

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Photoelectric observations of β Cephei star, BW Vul were carried out with UBV and Strömgren b

filters during the period between 1982 and 1984. The light curves show a stillstand near the phase, $\phi = 0.8$ and the slight amplitude variations in the light curve which have been noted by Cherewick and Young(1975).

Using maximum times obtained from 70 photometric data and 20 spectroscopic data, we derived the period of light variation, $p=0.20102977$ days and the rate of period change, $\dot{p}=2.2\text{sec/century}$. The (O-C) diagram shows a cyclic variation with a period of about 27 years and an amplitude of 17.9 minutes.

Fourier Analysis of T Tauri Light Variations

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In order to investigate the characteristics in the short-term light variations of T Tauri type stars, we have monitored the T Tauri on November 15, 1984 and January 11, 1985 for an hour each night. We have applied standard time-series analysis to the data. The power spectra of the T Tauri light variation increases toward low frequency in a power-law of $P(f) \propto f^{-\gamma}$. Preliminary interpretation of the power-law frequency spectrum suggests that the short-term light variations of the T Tauri may be originated from many hot clumpy regions of the stellar envelope.

Decomposition of Surface Brightness Profile of Barred Galaxies

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We propose an objective method of decomposition of surface brightness profile of barred galaxies based on Kormendy's(1977) iterative method. This method can be applied to the barred galaxies with different degree of inclination. Some preliminary results of decomposition of several barred galaxies including nearly face-on galaxy NGC 4643 will be presented.

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< 招 請 講 演 >

Star Count and the Galactic Galactic Structure

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It has been said that our Galaxy is composed of the two populations of the celestial objects, which