

Relationship Between Light Intensity Change and Spectrum in Variable Stars

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When the light intensity of the variable stars changed, we examined how the spectrum changes. This time I studied Gamma Cassiopeiae (gam Cas). We observed the gam Cas several times using our telescope and cooled CCD camera. In order to obtain the magnitude, HD 5408 was taken as the standard star. We investigated the relationship between luminosity and spectrum in the cycle of light change. The result showed that the spectrum also changed as the light intensity changed. In particular, the intensities of $H\alpha$ and $H\beta$ changed.

Because the intensity of the emission line representing the existence of the gas ring became stronger, we thought that the light intensity became brighter as the gas ring expanded. Also, there are some places where the gas ring has a large density and a small density, and it can be considered that the intensity of the emission line has changed due to the rotation. In addition, it is possible that the emission line was buried because the continuous component changed due to the change of the star itself.

In the future, I would like to increase the amount of data of gam Cas, and also observe other variable stars.

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