OPTICAL SPECTROSCOPY OF AN A-TYPE STAR

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Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Physics
in the Faculty of Applied Sciences
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MAY 2008

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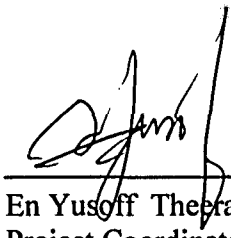

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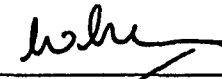

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ABSTRACT

OPTICAL SPECTROSCOPY OF AN A-TYPE STAR

In this research, the researcher performs the astronomical spectroscopy of an A-type star by using the 20-inch telescope, CCD and spectrograph at Langkawi National Observatory. The researcher chose A-type stars such as Sirius and Vega. The researcher successfully obtained absorption lines spectrum of the A-type star at 3 different exposure times. From the analysis of the A-type star spectrum, the results show only one Hydrogen Balmer lines that is Hα and one oxygen absorption lines for both star (Sirius and Vega). The analysis also shows that the radial velocity of Sirius was 6.604 x 10^3 m/s for 10s exposure time, 5.518 x 10^3 m/s (for 20s) and 6.604 x 10^3 m/s (for 30s). Its means that the star was moving away from earth. For the Vega, the radial velocity was -15.484 x 10^3 m/s at 40s exposure time and it means the star was moving toward earth. The error in obtaining the spectra was reduced by lowering the CCD's temperature, subtracting the dark current and flat fielding the image obtained.

CHAPTER 1

INTRODUCTION

1.1 Background

Astronomy is the study of celestial objects such as stars, planets, comets, and galaxies and the study of phenomenon in the outside of earth's atmosphere such as cosmic radiation. The study brings a new evolution for the sciences subjects such as physics, chemistry, biology and meteriology. It also helps scientists to understand more details about the sciences occurance and initiate them to study more specify about the sciences phenomenon such as the occurance in the earth's sky. The word *astronomy* itself means "law of the stars". This word is derived from the Greek word that is astronomia. The word astronomia is a combination of two words that is "astron" means stars and "nomos" means law.

As we know, astronomy is the oldest sciences among the others sciences and it also known as the father of sciences. The study about the space has been done by the ealiest civilizations such as Babylonians, Egyptians and Hindus. From the study also, people get the idea to believe God. That is why; there are many religions in the history of human's civilization such as Buddha and Hindu. There are also many texts based on the astronomical description such as Rig veda.The early of astronomy discovery; astronomers only limited the observation of the night sky and