

Development of Astrophotography Mount for DSLR Camera

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Abstract

Astrophotography in the tracking system is the use of Tracking Mount, but because the tracking mount has expensive and is currently imported from abroad. The project manager has delvelopment and create a Tracking Mount for DSLR cameras to support amateur astronomers

Method

1.Design process

- Design a tracking mount by looking at the application. It is determined by the weight of the DSLR Camera, Motor size, The size of the circuit, wire, Battery position Ball head and Tripod Stand style.
- Then calculate the weights and Write to bring the smith to form.

2.Creation Process

- Write a set of instructions in the Arduino program that is used to drive the microcontroller to control the speed of the Right Ascension, the speed of rotation is 1 cycle/24 hours.
- Connect the Arduino to the motor. To build a tracking mount. Install tracking set on tripod.
- Adjust the weight position so that the camera's set is in balance.

3.Performance Testing

- Install the DSLR Cameras to the tracking mount and polar alignment. Set the speed shutter to 30 seconds and add more 15 second in the next. Notice the quality of the image.

Results and Conclusion

Speed Shutter	30 s	45 s	60 s	75 s	90 s
Photo					

Fig3 : Show the image of the star taken at various times.

From the bulb mode, when shooting for 30 seconds, and increasing the time to 15 seconds, the image of the star is still circular. There is no stretch of the star. This star tracking kit can be used in AstroPhotography. However, there may be several shortcomings, such as;

- Tracking Mount Can not tell the maximum weight of the camera to be used.
- It can rotate freely even if not connected circuit.
- Measurement using Latitude apps while adjusting the RA may result in discrepancies.

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Suggestion

This project can be further developed i.e. lightening up, setup camera for shoot star, Add worm gear mechanism and calculate the maximum time that can be used.

Reference

- <http://thaiastro.nectec.or.th/library/article/236/>
- <http://aimagin.com/blog/driving-step-motor-and-rc-servo-motor/?lang=t>

