

# The Study of Affected Factors for Color of the Sun

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## Abstract

The purpose of this project is to find the affected factors for color of the sun. In this project we used a camera with a black polymer solar filter, taking pictures while the sun rises and sets in the morning and evening, at the lower altitude of 15 degrees with constant settings, which controls the amount of light from the sun that passes through to the sensor of the camera. In order to get the results, it can be analyzed according to the color of the sun. The study found that the color of the sun is directly proportioned to altitude but temperature humidity and wind speed are not conclusive.

## Introduction

When observing the rise and set of the sun in the morning and evening, at the same altitude each day, one will find that the color of the sun is not the same. What we see is caused by the scattering of sunlight entering the atmosphere of the earth. Therefore, this study is to determine the relationship between the color of the sun in relation to temperature, humidity, wind speed and altitude of the sun.

## Method

### Data Collection

- Install camera and filter together with a hygrometer, a thermometer and an anemometer. By time shooting range of altitude less than 15 degrees and shoot every 3-5 seconds
- Document date, time, altitude, temperature, humidity and wind speed of the sun for analysing.
- Set all of the settings that are constant to control the amount of light from sun. To get a value that is suitable to continue the analysis.

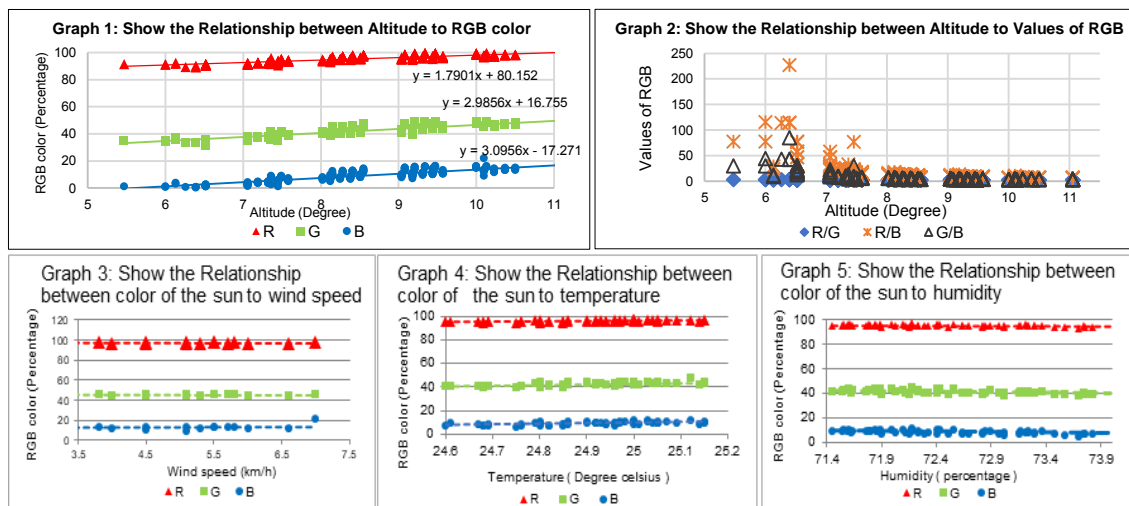


Fig 1 : Take photos while the sun is rising

### Data Analysis

- Calculate the percentage of RGB color levels by using the center of the sun as a reference for the color level.
- Make graphs to show the relationship between variables and the color of the sun. Analyse the graphs to find the relevance of each of the factors.

## Results and Discussion



## Conclusions

This project indicated that the color of the sun is directly proportioned to altitude but temperature humidity and wind speed are not conclusive. This may be due to the temperature, humidity and wind speed that measure at the global surface, may not mean the true value of the atmosphere. It should be used with more reliable measurement data to analyzing.

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## Reference

Matipon Tangmatitham. (2013). Astronomical Handbook. Chiang Mai, Educational Astronomic Information Service Center.