



Colour Imaging

Project Instructions



Education and Culture

Socrates

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Introduction

This document will outline the processes you will need to go through to get your own data to produce a colour image with. If you have not read the Introduction and Background Science to Colour Imaging documents, you might want to go back and read them before you continue.

It is a good idea to use the sample data sets and software instructions to practice with before you get to the more complicated levels. The FITS files provided in this pack have been tested with SalsaJ and therefore should produce nice images easily.

When you have been through the other documents provided, come back to this document to learn how to obtain your own data sets and produce your own unique images.

Data Sets

The single most important item you need to this project are your FITS files. These are the files you will use to produce your images. In order to get your own FITS files, you need an observing session on a telescope.

Go to www.faulkes-telescope.com and register for an account and when your registration is confirmed you can request your own telescope time. However, before you book any time on the telescope, you need to plan your observing session.

Planning

Planning is a very important aspect of any observing session in order to decide on which objects you want to image, and to use your limited time to best effect.

There are many different ways to plan a session. One way is to visit the Sky Charts page on the Faulkes Telescope website, it contains sky charts with an accompanying image archive and object table that allows you to preview an image of each object.

Other planning tools include planetarium software such as Stellarium and Cartes du Ciel which are free and supported by the Faulkes Telescope Project. There is also an Observation Planner spreadsheet on the website and support is also available for Starry Night Pro (this is not free software).

Web based solutions include websites such as the Sky View Cafe.

It is useful to create an observing log to follow during your session so that you have the details for you object organised and you can slew to new objects quickly. This makes efficient use of your observing time. For more help on things to consider when planning, visit the Faulkes Telescope Online Training page.

When you have decided on all the details for your observing session, you should go ahead and book an observing session on the telescope.

Observing

When observing, follow the log you made during the planning process. It allows you to quickly enter the data for your observations which minimises the amount of time the telescope is inactive.

When you are using the Faulkes Telescope, a “quick look” JPEG is returned of your object after each observation, for this project you will need to wait for the raw data files from the telescope system. These are typically available after 24 hours, but are normally available much sooner and often within 30 minutes of your observation.

When the FITS files are available, download the data for the red, green and blue images.

Processing

This part of the project is where you will follow the SalsaJ instructions in this pack that explain how to go about processing your data files to produce a colour image.

You should take careful note of any specific problems you have with the images, so that you can add them to your log, and use it to improve the images you take during your next session. Also take note of any particular features of your images that stand out, this will help you process your images to best effect.

Now refer to the SalsaJ software instructions again to produce your own colour image.

Evaluating

Once you have completed your colour processing, it is worth looking back at the procedure you carried out to see if there was anything that you think went particularly badly that you could improve, or anything that you did that went very well that you would like to try again or even improve upon.

This includes your observing and processing techniques.

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