DSLRShoot User Guide

Version 1.3

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1: Introduction

DSLRShoot is a first attempt at giving AstroPlanner the ability to control a camera. It is very limited (see section 2.2). For example, it cannot download images from the camera to the computer, neither does it do any sort of focussing. I tend to use it to do 'smash-n-grab' imaging sessions. These are series of very short exposures (typically 30seconds or less) for a bunch of objects across the sky.

As already mentioned, this is a first attempt. If there are additional features you would like to see, please let me know. You can contact me either directly (see Contact section) or on the Yahoo group.

2: Requirements & Caveats

2.1: Requirements

- AstroPlanner v1.5.8 or above.

- Camera with a serial port controlled shutter. I use a Canon EOS 300D; known as the Canon Digital Rebel to our colonial friends.

- Suitably sized image storage card for the camera.

- Appropriate serial cable to control the camera.

- Mount to point the camera. I use a Meade LX90 Classic (pre LNT) with the camera mounted at prime focus.

2.2: Caveats

- DSLRShoot will NOT download images to a computer. Images will be stored within the camera (internal card on my Canon EOS300D). You will need additional hardware/software to download images. This document does not cover downloading images.

- DSLRShoot does not detect whether a camera is actually attached to the serial port or not. It is up to you to get the port number selected correctly.

- To use ASCOM support you must have the ASCOM software installed. See http://www.ascom-standards.org for details. DSLRShoot was tested with v4.1.

3: Installation

Well … if you are reading this then the installation probably went ok! ☺

The DSLRShoot.txt file should go in the 'AstroPlanner Scripts' directory. It can then be run from the 'Scripts' menu.

Asking on the Yahoo forum is probably the best way to resolve any installation issues.

Note: Installing and using your camera is beyond the scope of this document. Refer to the manufacturers' documentation.

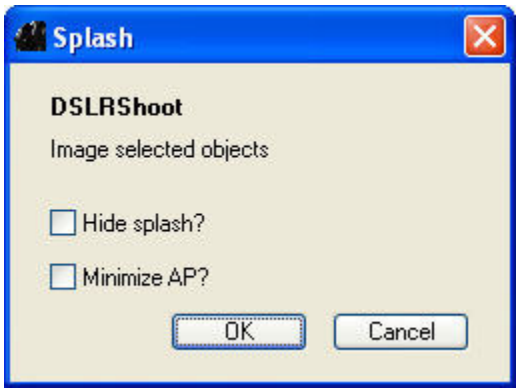
4: Usage Instructions

When the script is run, the user (you) is presented with a series of dialogue boxes that guide you through the creation of an imaging session. An imaging session may contain one or more objects with common or different exposure times.

Summary of session creation:

4.1: Script start

When the script is started the following dialogue is displayed:



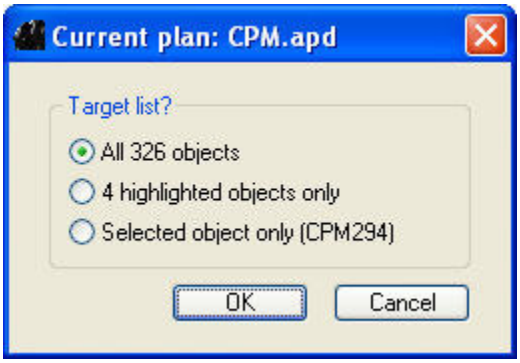
Hide splash?
Check this prevents the splash screen being displayed on subsequent startups. Personally I always leave it unchecked (my fat fingers are always starting up the wrong script!).

Minimize AP?
Windows ONLY. Minimize the AstroPlanner application during the imaging session. AstroPlanner is restored when the script ends.

OK
Continue with DSLRShoot.

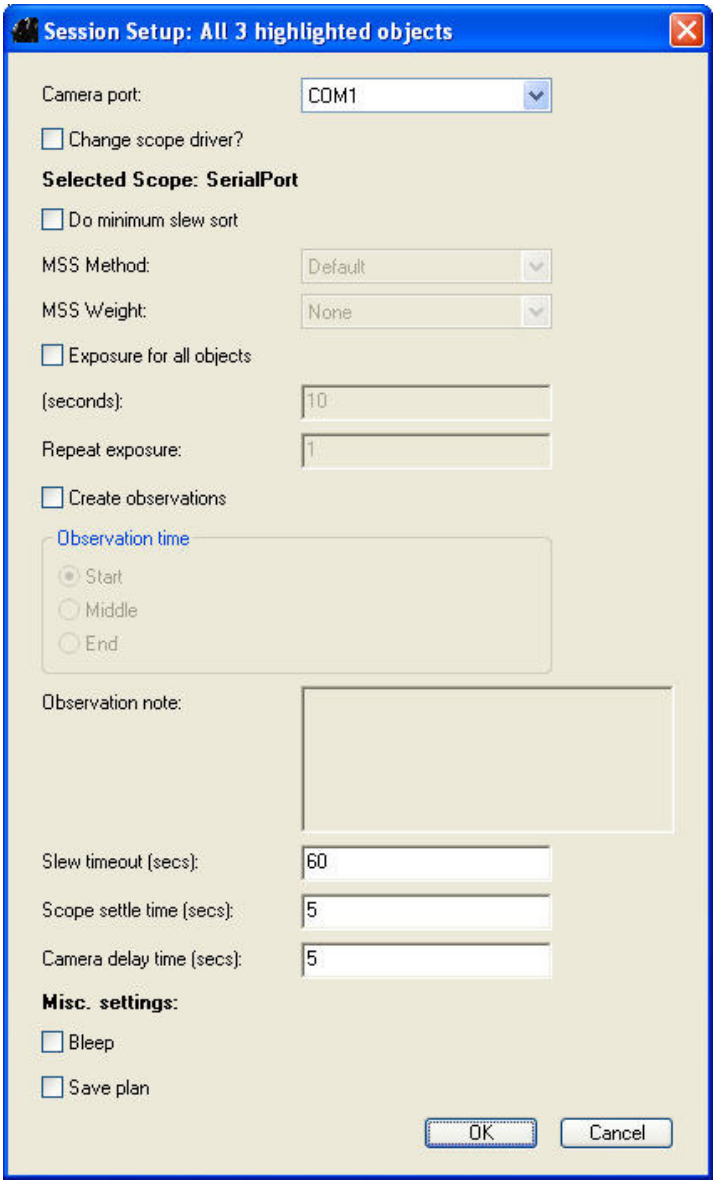
Cancel
Abandon DSLRShoot and return to AstroPlanner.

4.2: Object Selection



This should be fairly straight forward. Select the list of objects you wish to image.

4.3: Session setup



This dialogue sets the parameters required for an imaging session.

Camera port:
The serial port to which the camera cable is connected.

Change Scope Driver
Checking this box allows you to select a telescope driver (after completing this dialogue and clicking on 'OK'). The 'Selected Scope' line displays the currently selected driver. 'SerialPort' is the default AstroPlanner telescope serial port connection (see AstroPlanner manual for details).

Do Minimum Slew Sort:
This section only appears if the object list contains three or more items. Please refer to the AstroPlanner manual for information about the Minimum Slew Sort parameters MSS Method and MSS Weight.

Exposure For All Objects:
Checking this box enables the '(seconds)' and 'Repeat exposure' fields. Leaving this box unchecked means that a subsequent dialogue box will appear (when this dialogue is closed) requesting an exposure information for each individual object.

(seconds):
The exposure time (in sections) for ALL objects in the imaging list.

Repeat exposure
The number of images to be taken for ALL objects in the imaging list.

Create Observations:
Checking this box enables the creation of an observation report (see AstroPlanner manual ???) for ALL objects in the imaging list. One observation record will be created for each exposure.

Observation time
Sets the observation time to be the 'Start', 'Middle' or 'End' of the exposure.

Observation note
Text for the observation record.

Slew Timeout:
How long (in seconds) the mount has to complete a slew command. If the slew is not completed in time, imaging of the current object is aborted. Processing of remaining objects in the imaging list will be attempted.

Scope Settle Time:
This is a delay (in seconds) between the end of a slew and the start of an exposure.

Camera Delay Time:
This is a delay (in seconds) after an exposure has been completed and before the next exposure or slew command.

Bleep:
Sound the computer speaker at the end of the imaging session.

Save plan:
Checking this box causes the current plan file to be saved when all exposures are completed. This was added to ensure that any created observation records are preserved in the event of a computer failure.

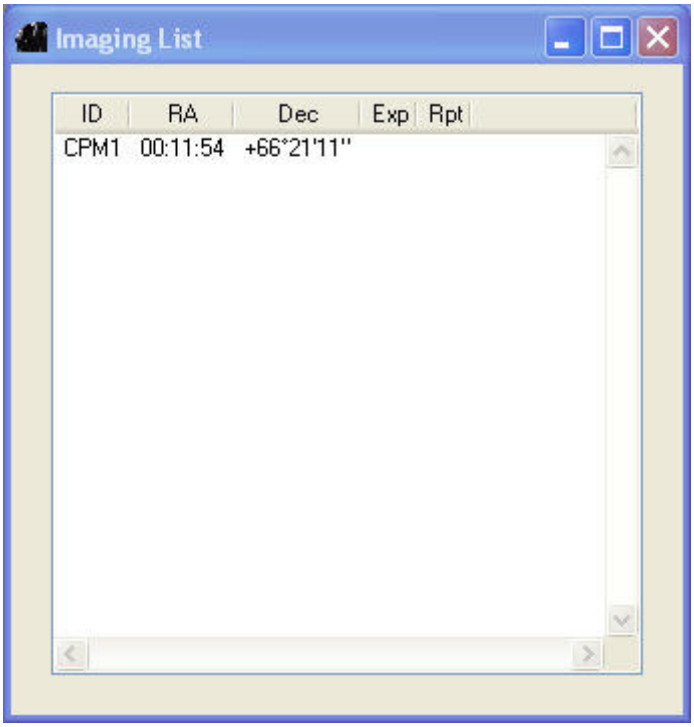
4.4: Telescope driver selection

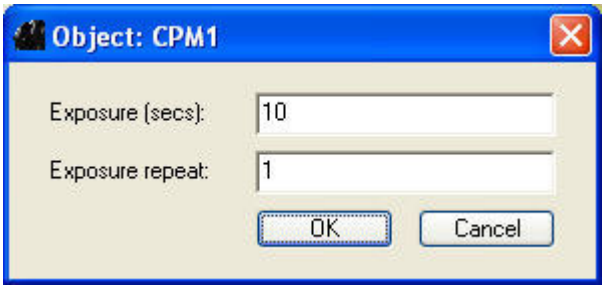
If the 'Change telescope driver' box was checked (in the previous dialogue) then this dialogue will be displayed:

This dialogue allows you to select and configure an ASCOM driver for your telescope.

IMPORTANT
Selecting the blank entry (top of the drop-down list) or clicking on 'Cancel' will select the default AstroPlanner serial port telescope driver. This is NOT an ASCOM driver – it is AstroPlanner native support for telescopes. See the AstroPlanner manual for details.

4.5: Exposure selection



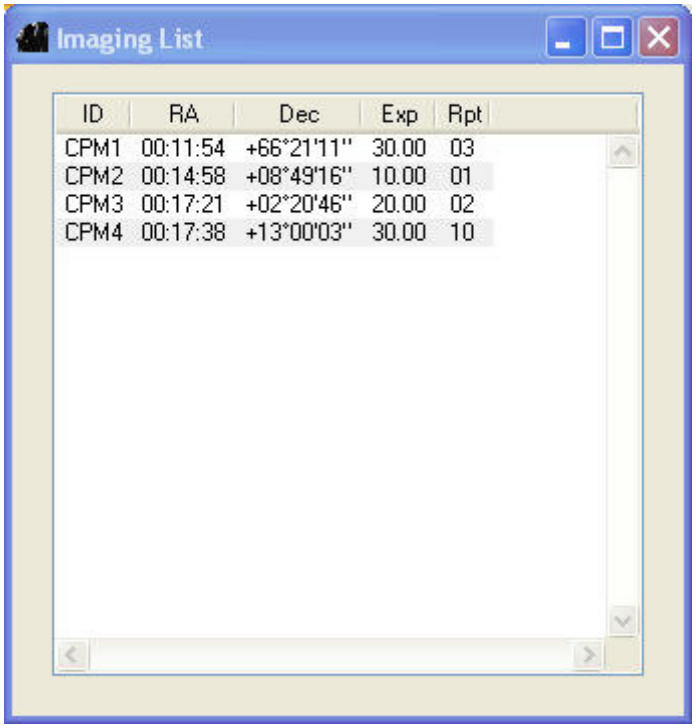


If the 'Exposure For All Objects' field is left unchecked (section 4.3) then the exposure dialogue box will be displayed for each object in the imaging list. As each exposure is entered the Imaging List will be updated.

Note: Take care when selecting your object list (section 4.2) and setting for 'Exposure For All Objects' (section 4.3). Assigning individual exposures for a few hundred objects could get a little tedious!

4.6: Shoot confirmation

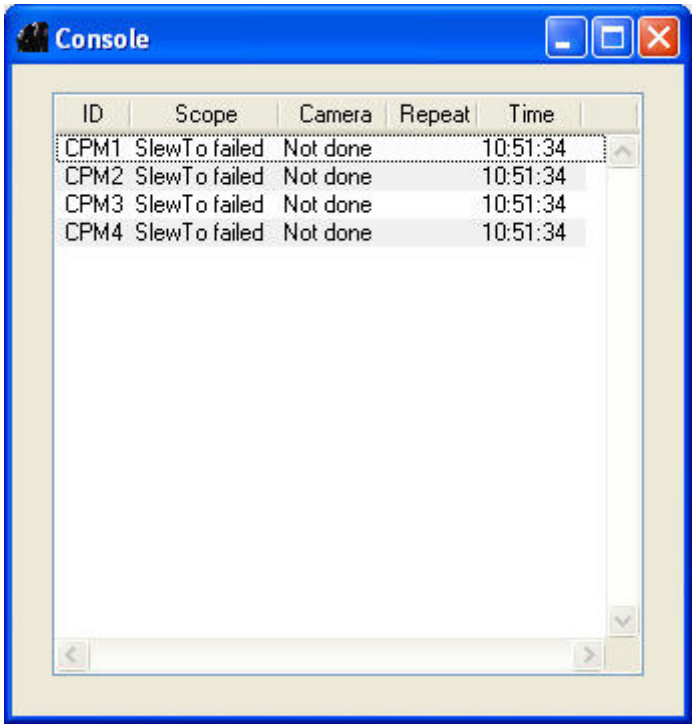
If the ‘Exposure For All Objects’ field is checked or when all exposure selections have been made then Image List should look something like this:



A dialogue box requesting confirmation to begin the imaging will also be displayed:

4.7: Shoot progress

As the imaging session progresses the current status, for each object, will be displayed in the Console window:



In this particular case all the object imaging attempts failed. That was because the desktop machine I was using to write this document did not have a telescope attached! Perhaps I'll lug the 'scope upstairs for version 2.

5: Future Developments

- I will be writing a script to save List Window contents to a text file. This is why the Image List and Console windows are left open at the end of the script.

- Add a feature to save the Image List to a text file.

- Add a feature to load the Image List from a text file.

- Clean up the code!!! The ASCOM stuff was shoehorned in. The method for switching between native AP telescope support and ASCOM is particularly gruesome. Need to get a couple of other projects finished first though!

- Disable ASCOM support if the platform is not Windows.

- Allow selection of all visible objects.

6: Contact Information

- Bug reports, feature requests, general requests or just to chat:

Email: rpehlm@btinternet.com

Group: astroplanner@yahoogroups.com

7: Acknowledgements

- Paul Rodman: None of this would be possible without Paul's dedication and infinite patience. Thanks Paul!

- Ken Harrison: Thanks for the testing and suggestions.