

Creating a Plan for Live Viewing – SPIRIT 1 and 2

When using SPIRIT 1 and 2 you can create a plan for your viewing. This is helpful if you are wanting to take a series of pictures over a long period of time or a series of objects at different times of the night.

It is also a helpful way to introduce students to simple programming.

Please note: You will need to log in at the start time of your plan to get it started, you are then able to shut down your computer without logging out for the time that the plan is running.

Also, you will need to have time booked for the entirety of time your plan takes place even though you may not be at the computer during that time.

Glossary and guide for creating a plan:

; lines starting with a semicolon are notes for the programmer and have no effect on the program itself. You might include your name, date or the item you are viewing on lines beginning with ;

lines starting with # are the directions for the telescope. You will include things like how long to expose for, filters, binning, how many pictures to capture.

#INTERVAL is the length of exposure time in seconds. For example, putting 60 on the interval line will give you an exposure of 60 seconds. If you are taking more than one exposure separate the intervals with commas. For example, 60,60,45. These will line up in the same order as your filters.

#COUNT is the amount of pictures you want captured. We suggest taking at least 3 to compensate for any manmade objects or clouds that may interfere with the pictures. Again, if you are taking a series of pictures separate each request with a comma. These will line up in the same order as your filters.

#FILTER is the filter you want to use. You must type the colours out in full including clear. Your options are clear, blue, green, red, HA, B and V. If you want to take a series of pictures, then separate the filters using a comma. For example clear,red,green,blue. These will set the order for your other directions.

#BINNING is to specify what type of binning you want to use. To learn more about binning and how it may affect your images click [here](#). We recommend sticking with the default binning for each telescope that can be found [here](#).

#waituntil 1 is for use when you want to take photos of the same or different objects at a different time. For example, if you want to take a photo of the same object every hour you would use this direction repeatedly for each hour. You need to list the time in UTC (coordinated universal time) which is 8 hours before Western Australian Standard Time.

Plan example

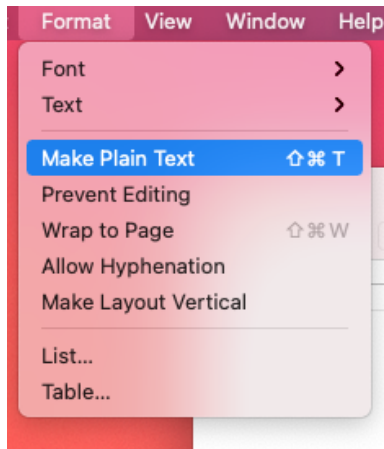
This plan is to observe two celestial objects.

```
; Test Plan - SPIRIT 2
; Example
; April, 2021
;
; Ghosts of Jupiter
#FILTER Red,Blue,Green,Clear
#INTERVAL 60,60,60,45
#COUNT 3,3,3,3
#BINNING 3,3,3,3
NGC 3242
;
; Southern pleiades colour series
#waituntil 1, 27-Apr-2021 12:35:00 ; UTC (20:35:00 local)
#INTERVAL 0.7,1,1,1
#COUNT 3,3,3,3
#FILTER Clear, Red, Blue, Green
#BINNING 3,3,3,3
IC 2602
;
;End of plan
```

1. The ghosts of Jupiter (NGC 3242) will run immediately. It will take pictures using the red, blue, green and then clear filter with exposure times of 60, 60, 60 and 45 seconds respectively. It will take 3 pictures of each using binning 3. The celestial object's catalogue number is listed last without a # as it is the item and the lines listed with # are parameters.
2. The Southern Pleiades (IC 2602) will not run until 8.35pm local time (12.35pm UTC). It will take pictures using the red, blue, green and then clear filter with exposure times of 1, 1, 1 and 0.7 seconds respectively. It will take 3 pictures of each using binning 3. The celestial object's catalogue number is listed last without a # as it is the item and the lines listed with # are parameters.

Programs

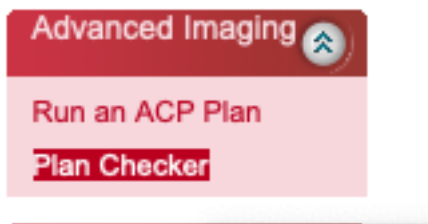
On Mac use TextEdit but make sure to save all files as plain text files. Found in the format menu.



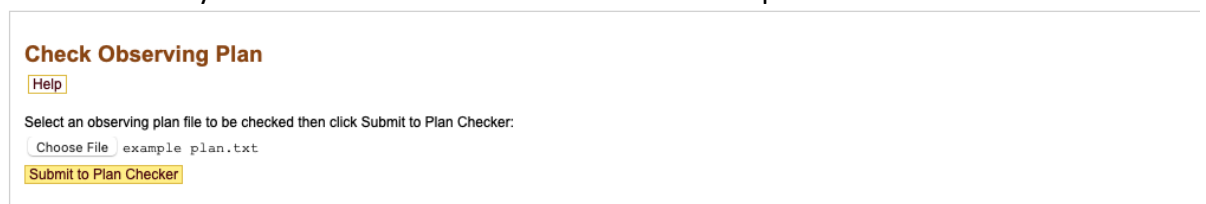
On windows use Notepad, which will automatically save as a plain text file.

Checking, uploading and using your observing plan

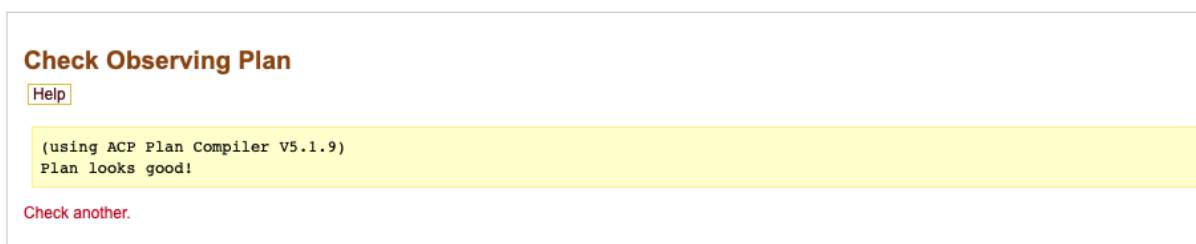
1. Open plan checker under advanced imaging on the menu on the left-hand side of the SPIRIT website. You can do this at any time, not just during your scheduled time.



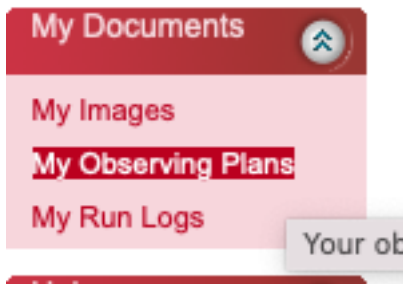
2. Choose the file you want to check and then click submit to plan checker.



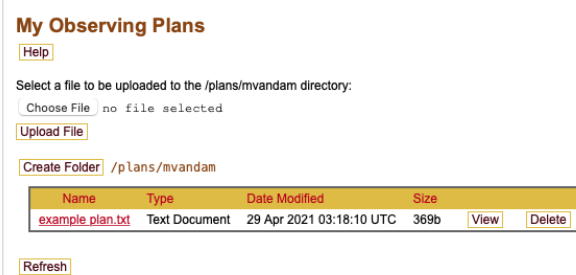
The plan checker will then give you feedback and the option to check another.



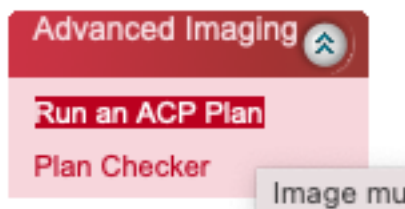
3. Once you are happy with your plan it is time to upload ready for your observing time. Click on 'my observing plans' under my documents on the left-hand side menu. Again, you can do this at any time.



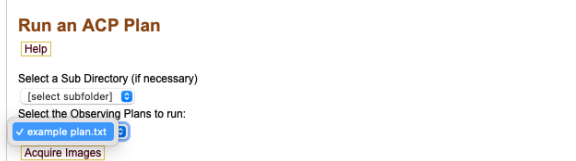
4. Choose a file to upload and then click upload file. You will need to refresh to see your successfully uploaded file.



5. **When it is your scheduled time** login into the web interface for your telescope. Click 'run an ACP plan' under advanced imaging on the left-hand side.



6. Select the plan you want to run from the drop-down menu. Then click on acquire images.



The plan will now run to completion. **You must not logout of the web interface**, but you can shut down and leave your computer to run the plan.