AWB Time Lapse Video Help

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Contents

1 Introduction 2
2 Startup 3
3 How to use the application 4
4 Video Parameters 10
5 My All Sky Camera 11
6 Further Information 14

1 Introduction

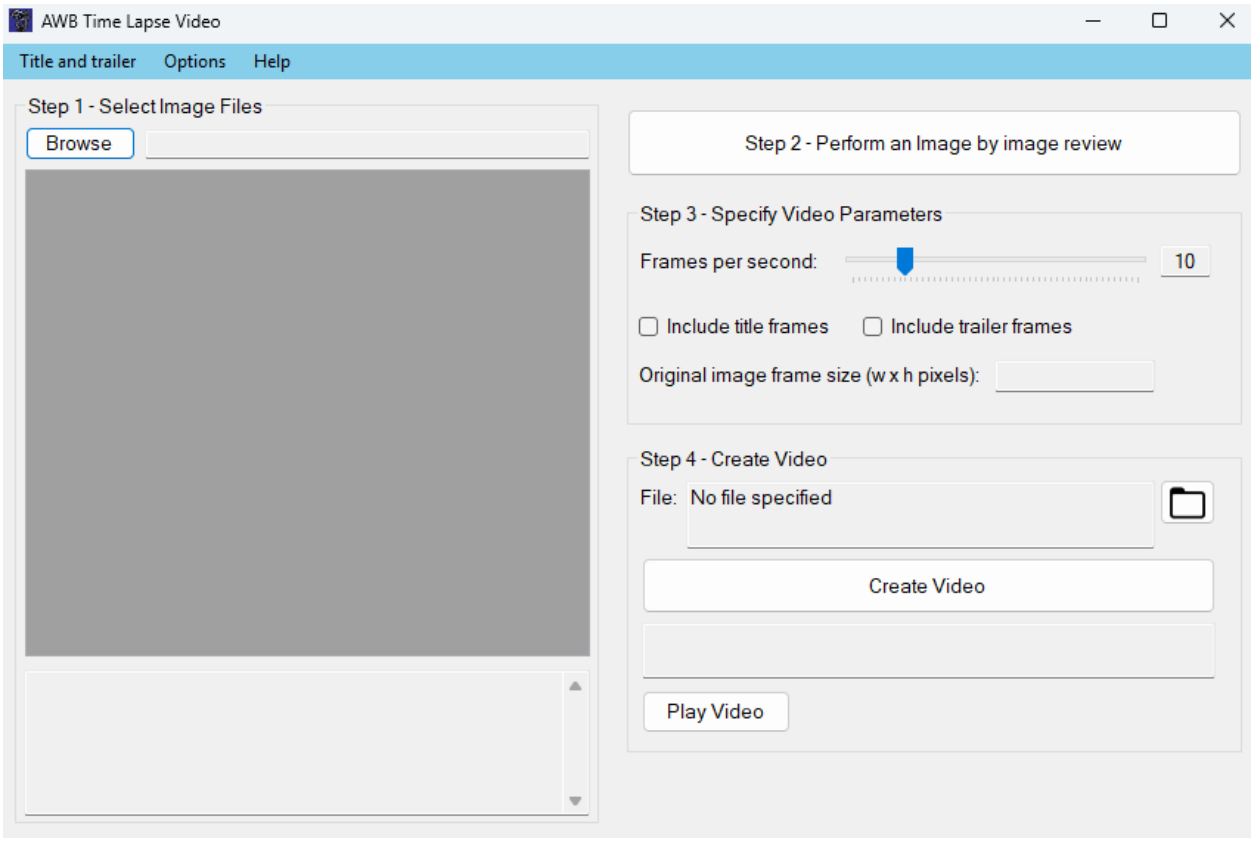
This application is designed to produce a video from individual jpeg images captured during an observing run of an all sky camera, or any other camera used to take a large sequence of jpeg images.

An all sky camera can typically produce a thousand images from a single nights imaging run and having tried several other applications capable of creating a video from a large number of jpeg images I found none quite contained the functionality I was looking for, or they had significant issues with attempting to process so many image files, and hence I wrote this application.

See section 0 for a description of my All Sky Camera.

2 Startup

Upon starting the application, the following screen will be presented:



The screen is split into the following main areas of functionality which also indicate the flow of actions to perform:

- Step 1 - Select image files: Select the jpeg images to be used as the source frames for your video. The browse button invokes a file selection dialogue window (you can then use ctrl-A to select all the jpg files in a folder);
- Step 2 – Perform an Image by image review: This is optional. It brings up another screen where you can step through, and hence review, every image that you have selected. This is very useful to detect any particularly good transient phenomenon (for example a particularly pleasing meteor) that may only exist on one image. Bad images can be excluded from the final video during this step.
- Step 3 - Specify video parameters: See section 4 below for details;
- Step 4 - Specify the output video (mp4) file name and destination and create the video.

3 How to use the application

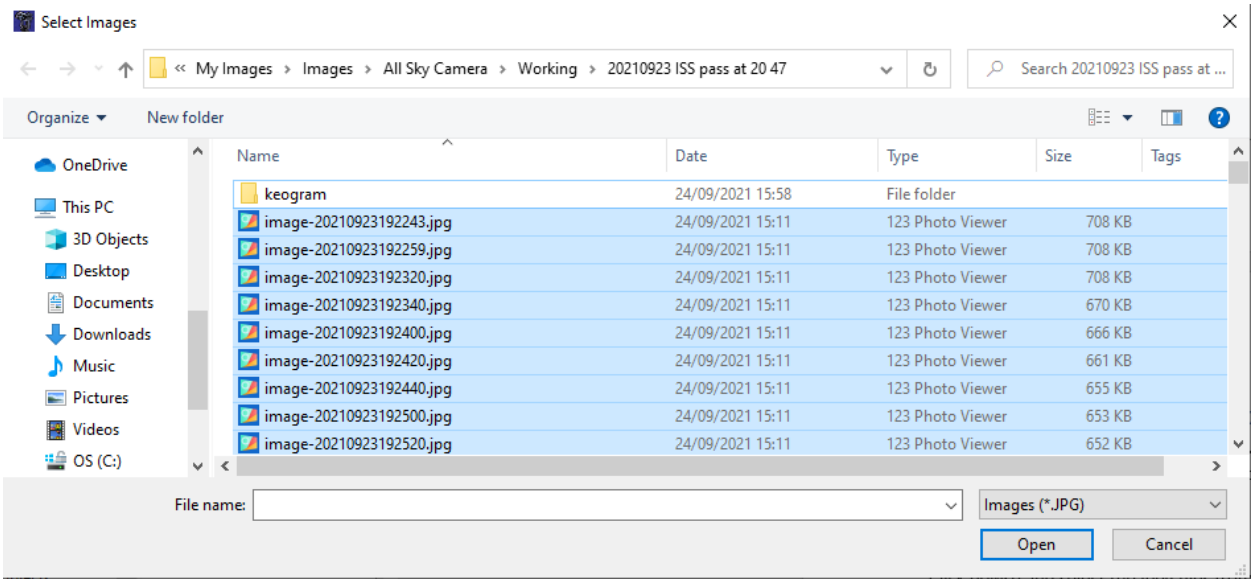
The workflow to produce a video from your individual jpeg files is as follows.

On the main screen click the *Browse* button and use the resultant file dialogue window to select the jpeg files you wish to use for your video.

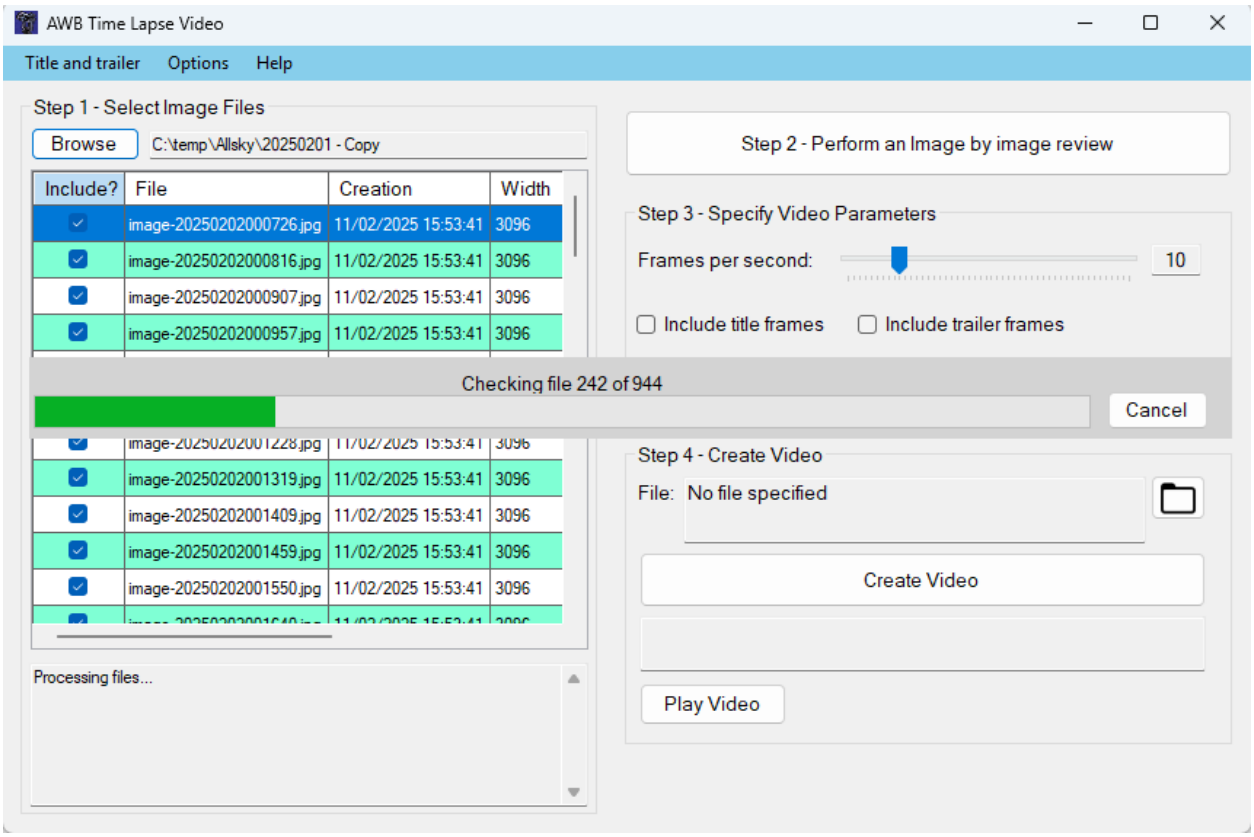
The image below shows the file dialog window that opens when the *Browse* button is clicked. Navigate to your folder that contains your jpeg images and select all that you require. Note that ctrl-A is a quick way to select all files in a folder.

Note:

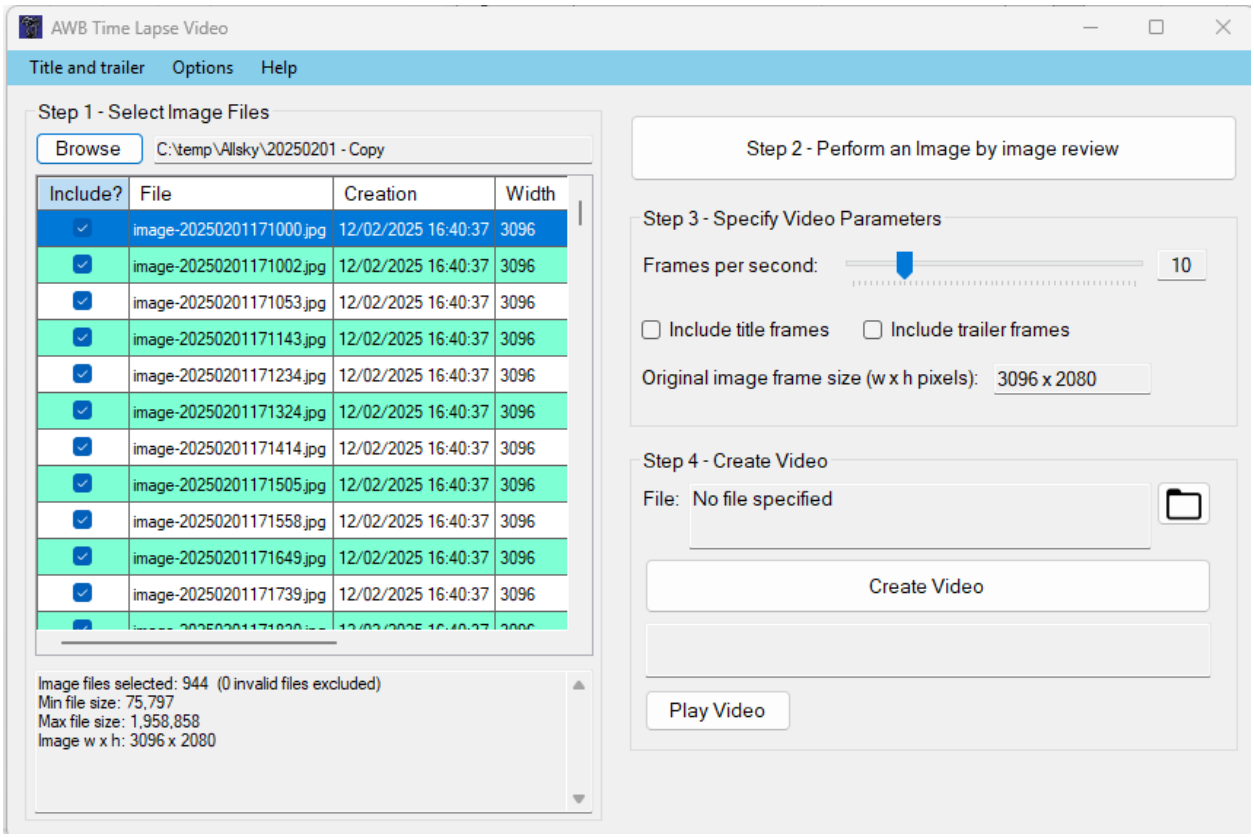
- The jpeg files must all be the same X and Y pixel dimensions which will be the case for a typical all sky camera nightly run. For example a ZWO ASI120MM camera will produce images 1280 by 960 by default. The image file sizes will of course vary as can be seen in the example screen snapshot below.
- The files in the folder must be in the correct order that you wish them to appear in the final video. The easiest way to ensure this is to have your capture software name the files so that they are ordered correctly. In the image below the files are named using the format *image-YYYYMMDDHH24MMSS.jpg* which ensures that Windows will order them correctly when sorted by name as in the example below.



Once you have selected the jpeg files you require click the *Open* button and control will return to the main screen and the application will start checking the selected files. An example is shown below.

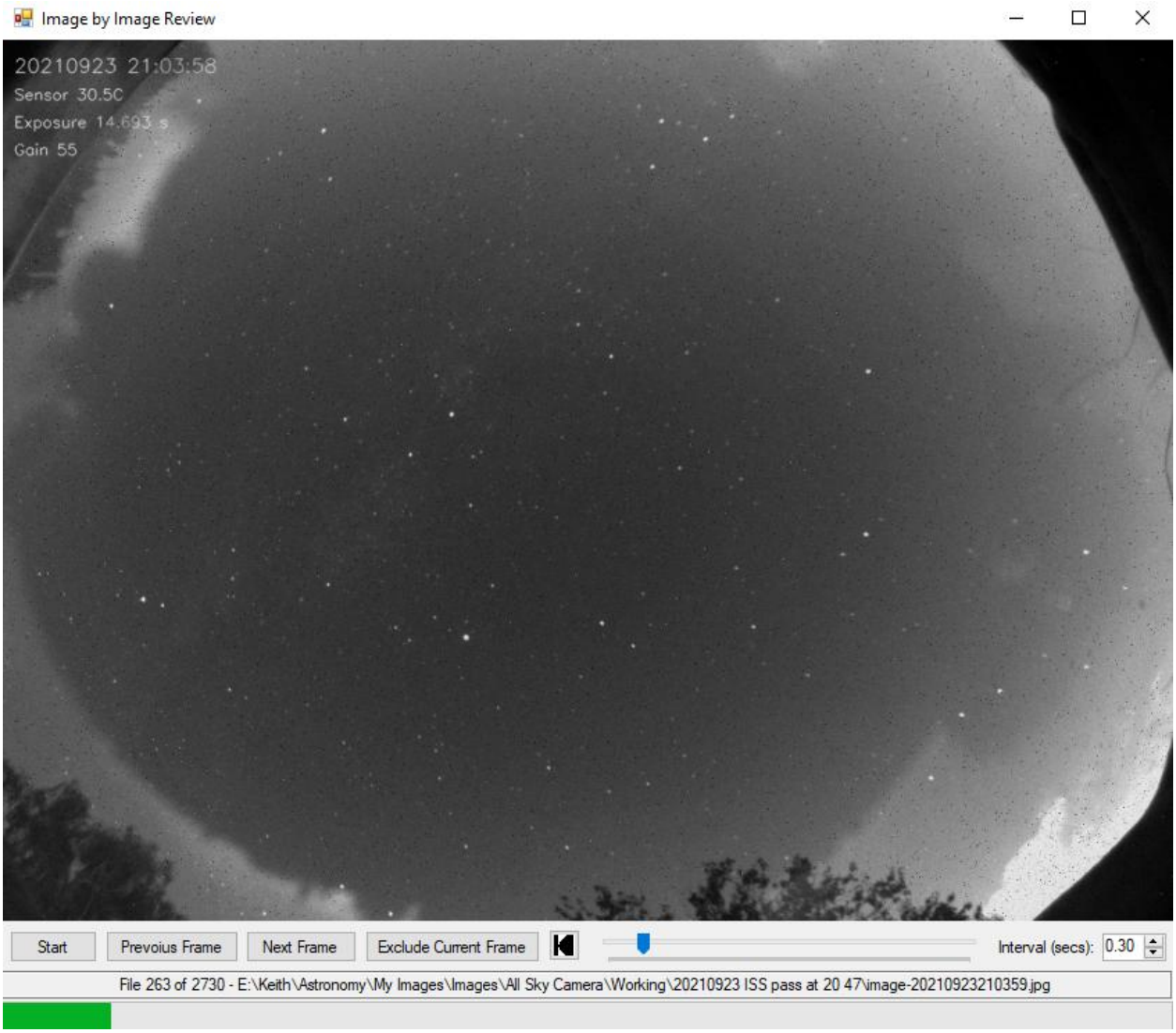


If you know that there is a high probability that that all files are ok then you can use the *Options->Preferences* screen to skip this validation phase which will speed things up, but will cause a run time error when creating the video if any of the image files are bad. Once all the selected files have been (optionally) checked the results will be presented. An example is shown below.



In the example above all files (944) have been checked and found to be valid jpeg images. If a file does not contain a valid jpeg then the associated *Include?* column value will be unchecked and it will not be included in the final video. You can also manually check/uncheck for inclusion. All images selected in the above example are 3096 x 2080.

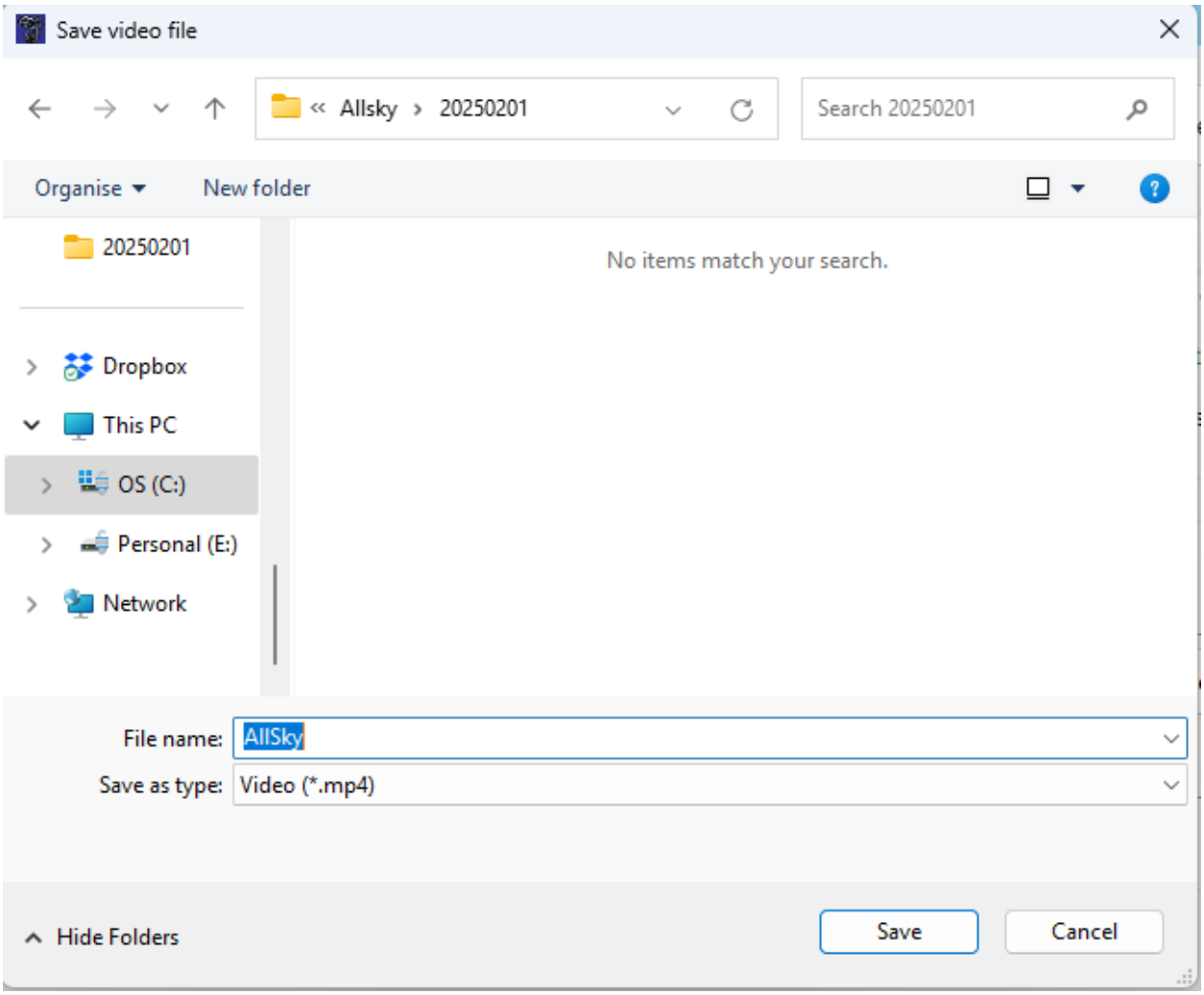
If you now click on the Image by Image review button the following screen is presented allowing you to individually review every image selected above. You can also exclude individual images from the final video if desired.



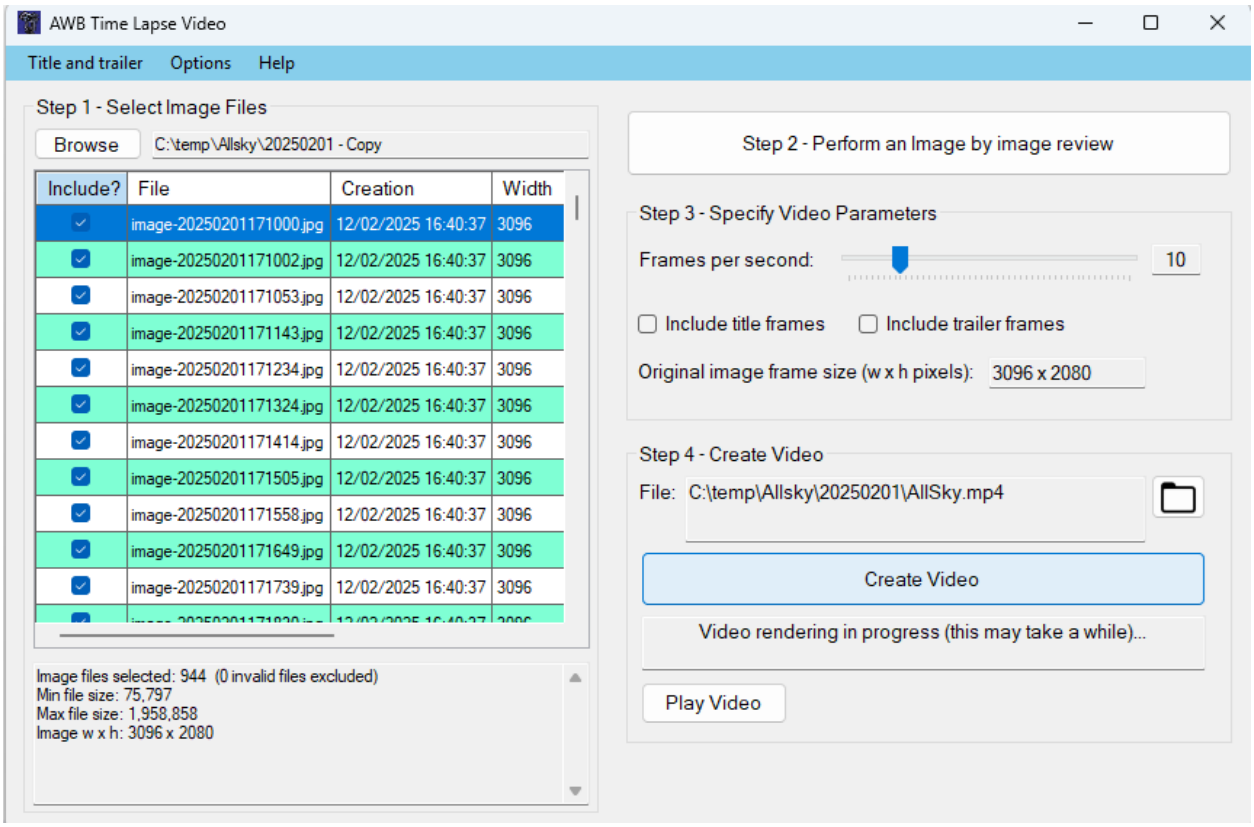
Once you have completed your review return to the main screen.

You may now optionally change the video parameters, see section 4 below for details.

The next required action is to specify the name and location of the video file to create. Click on the folder icon button and the following save dialogue window will appear. Navigate to your desired destination folder and enter the name of the mp4 video file you wish to create. In the example below the video file to create has been specified as C:\temp\AllSky\20250201\AllSky.mp4.



Click the *Save* button. Control will now return to the main screen, click the *Create Video* button and the video creation will begin as shown in the example below. Note that for a thousand jpeg images this may typically take a few minutes.



You will now have a video file consisting of all your selected jpeg images and optionally title and trailer frames. The video file may be played In any appropriate media player or you can click on the Play Video button which will present another screen and play the video in the Windows media player. An example is shown below.

4 Video Parameters

The following parameters may be specified on the main screen:

- Frames per second: Specifies how many jpeg images per second of video.
- Include title frames: Use the menu option *Title and trailer* to specify optional text to appear at the start of your video. See the example below.
- Include trailer frames: Use the menu option *Title and trailer* to specify optional text to appear at the end of your video. See the example below.

The image below shows an example of how to use the title and trailer facility. Depending upon your final video frame size you will have to experiment with the margin size to place your text in the desired position.

5 My All Sky Camera

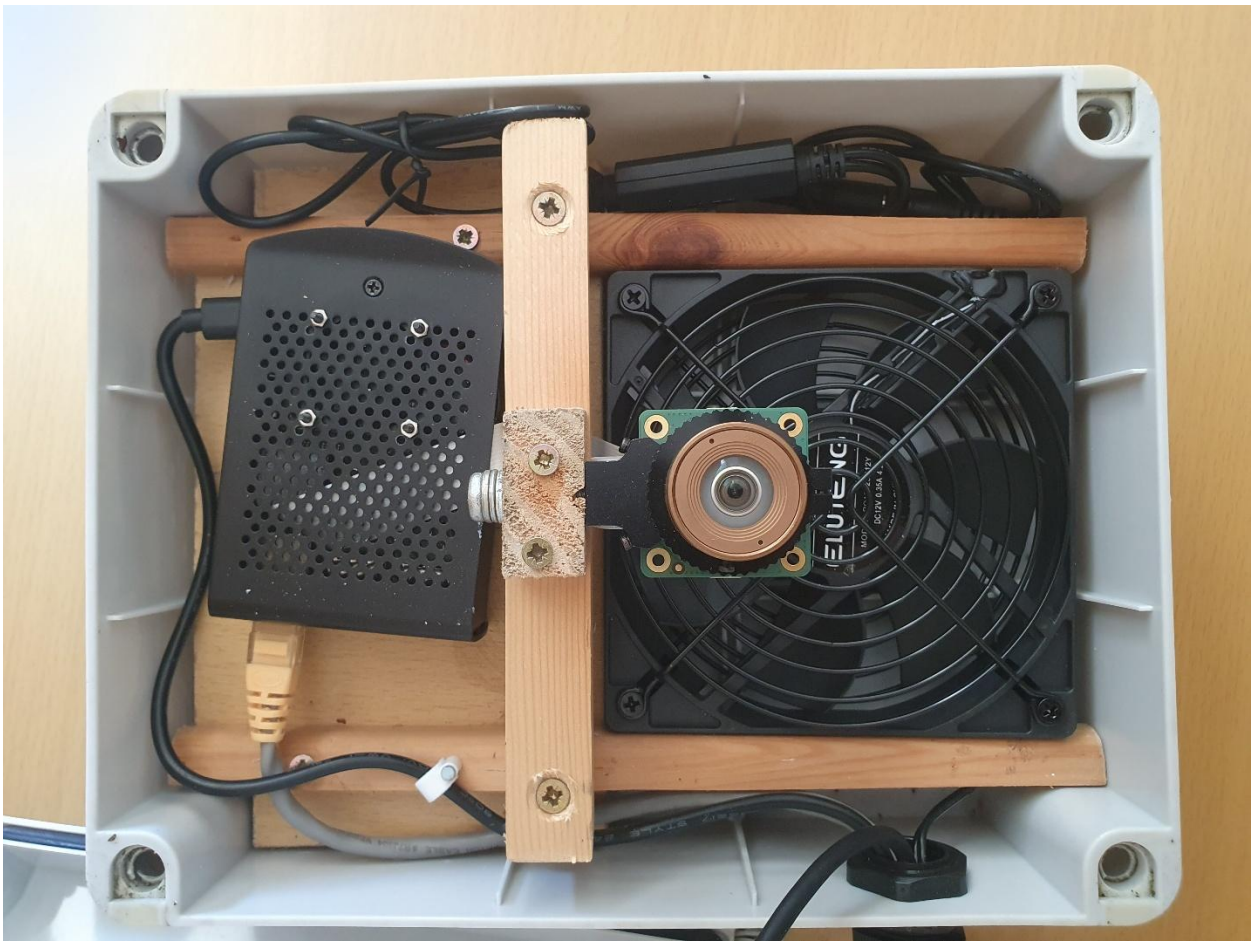
Just in case you are curious about my all sky camera, I made it using the excellent software running on a Raspberry PI created by Thomas Jacquin which can be found at https://github.com/thomasjacquin/allsky/blob/master/README.md where you can find links for how to build an All Sky Camera and how to download and install the control and capture software.

The two images below show my completed All Sky camera which consist of a Raspberry Pi model 3B, camera and a PC fan. This is all fitted into a weather proof plastic outdoor electrical junction box (from Amazon) with an acrylic dome and dew heater both of which easily available from the internet such as https://www.dewcontrol.com .

The power leads are connected to a plug timer which switches the power on just before sunset and off again after dawn. When the power to the Raspberry PI is switched on Thomas Jacquin's software runs automatically and captures the images for that night.

This is a completely hands off set-up and I typically just log on about once a week to download that week's daily images for processing with my application described in this document.

The PC fan and dew heater combination are probably a bit of an overkill but I have never suffered from condensation or dew inside the box or dome!



6 Further Information

Please visit my website www.astroworkbench.co.uk for further applications, documents and articles.

Thanks.

Keith.