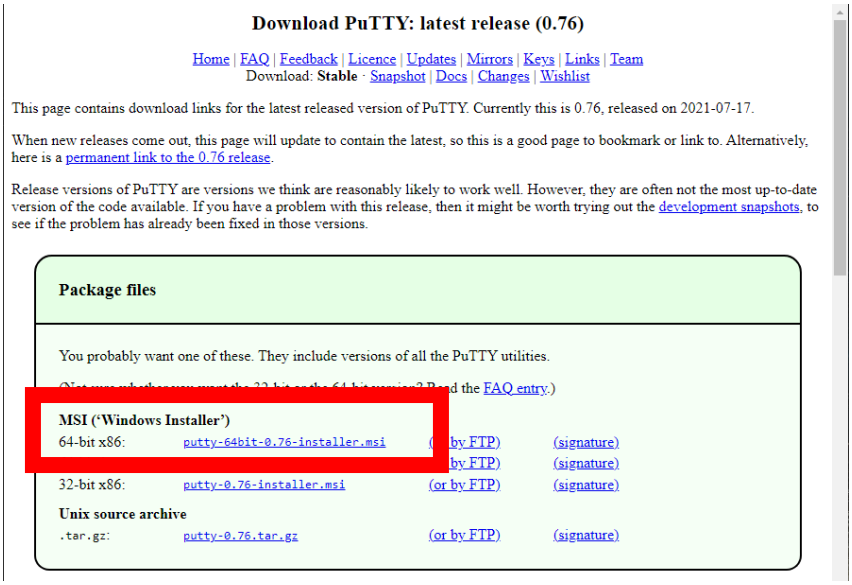
Kronos Timelapse Instructions

David Gable, 1/16/2022

Downloads

1. Download PuTTY. Follow install steps.

https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html



Download PuTTY: latest release (0.76)

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Download: **Stable** · Snapshot | Docs | Changes | Wishlist

This page contains download links for the latest released version of PuTTY. Currently this is 0.76, released on 2021-07-17.

When new releases come out, this page will update to contain the latest, so this is a good page to bookmark or link to. Alternatively, here is a permanent link to the 0.76 release.

Release versions of PuTTY are versions we think are reasonably likely to work well. However, they are often not the most up-to-date version of the code available. If you have a problem with this release, then it might be worth trying out the development snapshots, to see if the problem has already been fixed in those versions.

Package files

You probably want one of these. They include versions of all the PuTTY utilities.

(Not sure whether you want the 32-bit or the 64-bit version? Read the FAQ entry.)

MSI ('Windows Installer')

64-bit x86:	putty-64bit-0.76-installer.msi	(or by FTP)	(signature)
64-bit Arm:		(or by FTP)	(signature)
32-bit x86:	putty-0.76-installer.msi	(or by FTP)	(signature)

Unix source archive

.tar.gz:	putty-0.76.tar.gz	(or by FTP)	(signature)

2. Download WinSCP

https://winscp.net/eng/download.php (close the tab that pops up after clicking the green button below once the download is complete). Follow install steps.

WinSCP
Free SFTP, SCP, S3 and FTP client for Windows

Search...

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WinSCP 5.19 Download

WinSCP 5.19 is a major application update. New features and enhancements include:

- A complete list of files that are part of a background transfer can be shown.
- Support for PPK version 3 keys from PuTTY 0.75.
- `Stream` interface in .NET assembly.
- With SFTP protocol files can be streamed to stdout and from stdin in scripting.
- Support SHA-256 fingerprints of TLS/SSL certificates.
- Extension *Synchronize with another remote server.*
- Improved FTP support for VMS servers (and potentially for other non-Unix-like systems).
- Compatibility with Google Cloud Storage when using S3 protocol to access the buckets.
- List of all changes.

DOWNLOAD WINSCP 5.19.5 (11.3 MB)

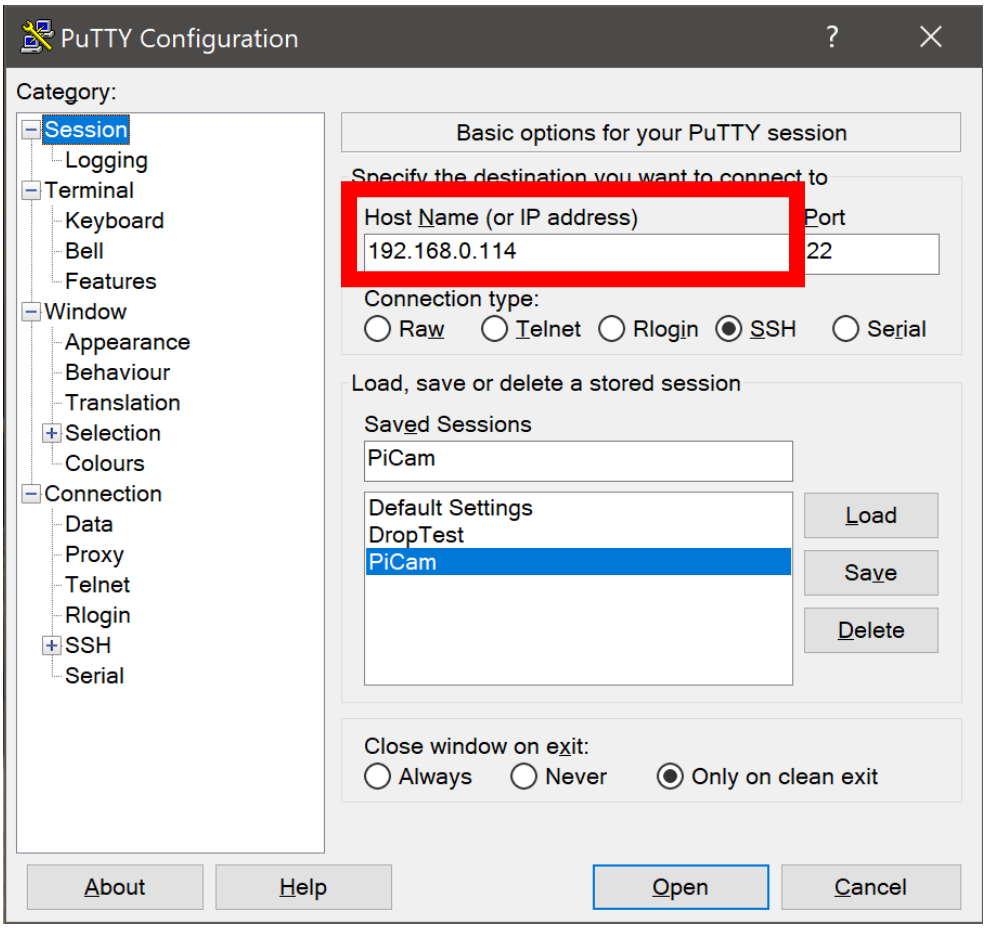
Get it from Microsoft

What is this?

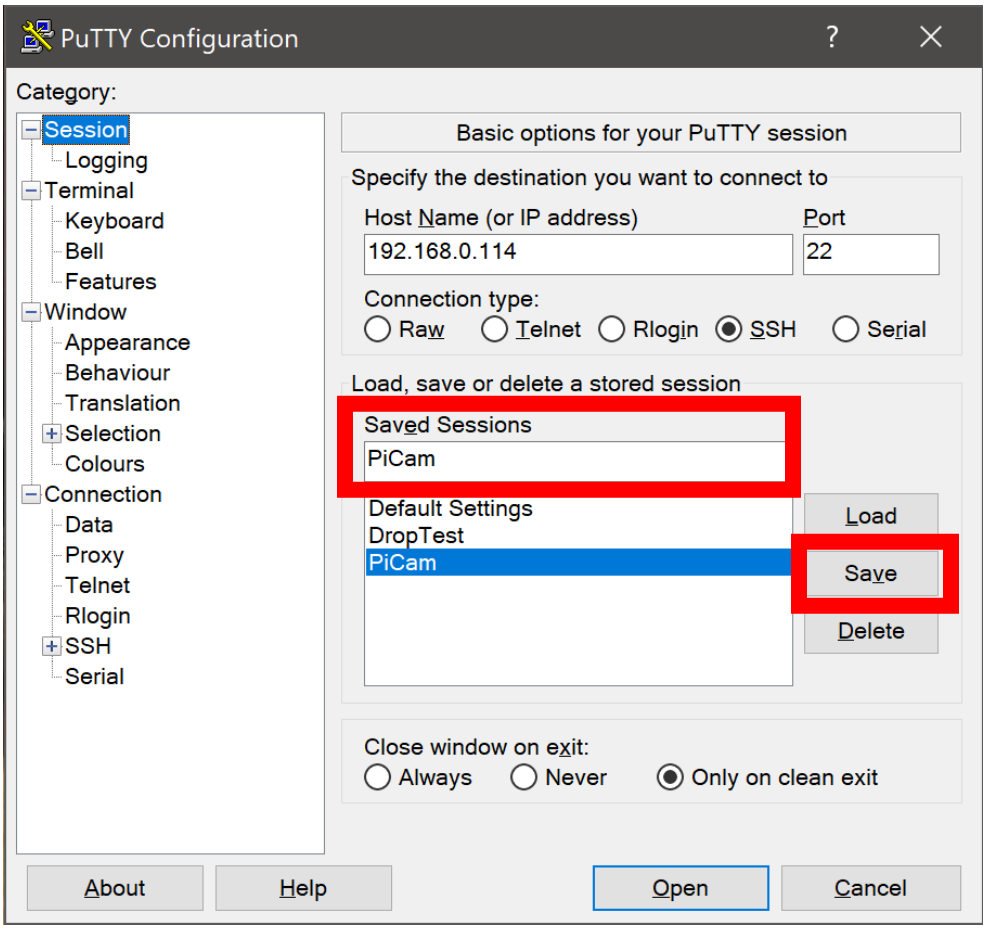
OTHER DOWNLOADS

Setting Up PuTTY and WinSCP

1. Launch PuTTY
2. Type the IP of the RPi (for example 192.168.0.114) in the Host Name line

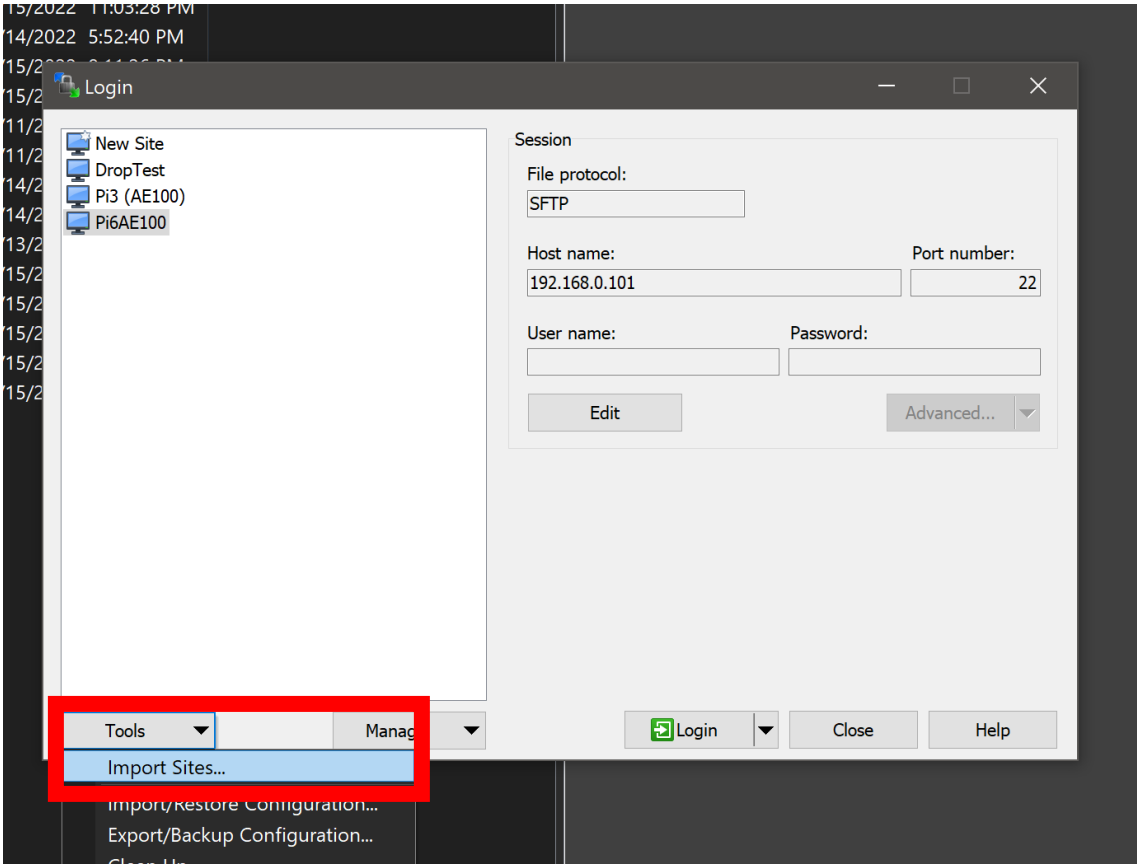


3. Give a name to the session (I used PiCam). Type in the name under Saved Sessions and click Save.

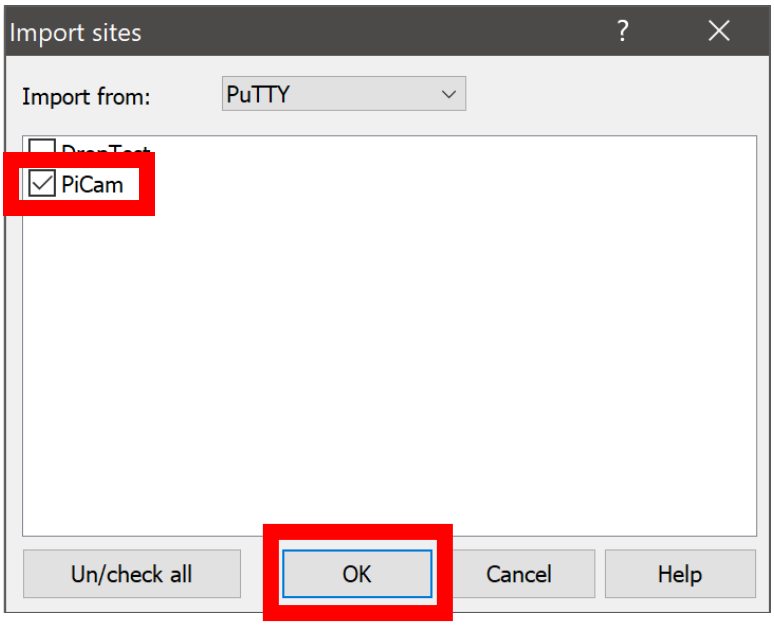


4. In the future you can double click the saved session to load directly into the RPi.

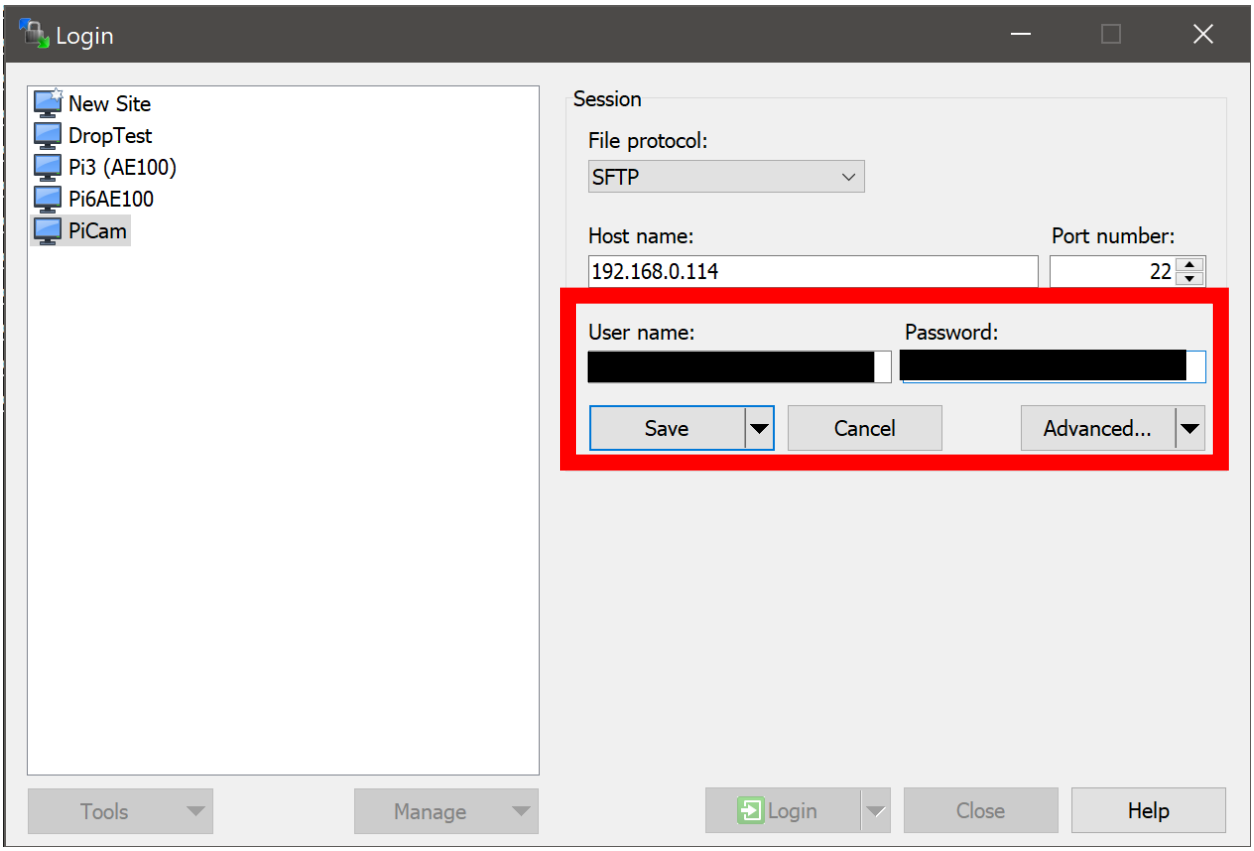
5. In WinSCP click on Tools and then import sites



6. Check PiCam or whatever you saved the session as in PuTTY and click **OK**

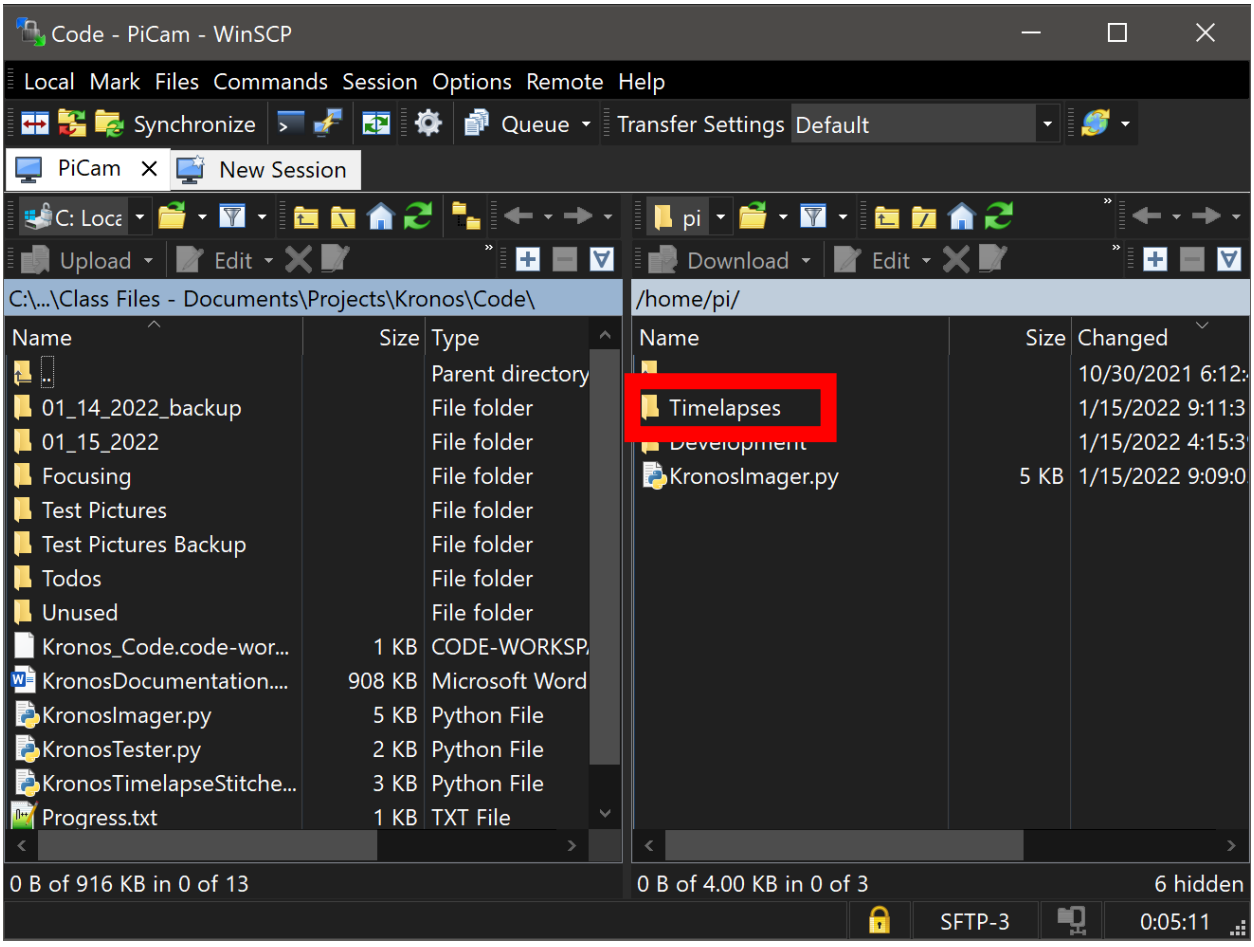


7. You can optionally click Edit and add the username and password so you will have an easier time signing in.



Using WinSCP

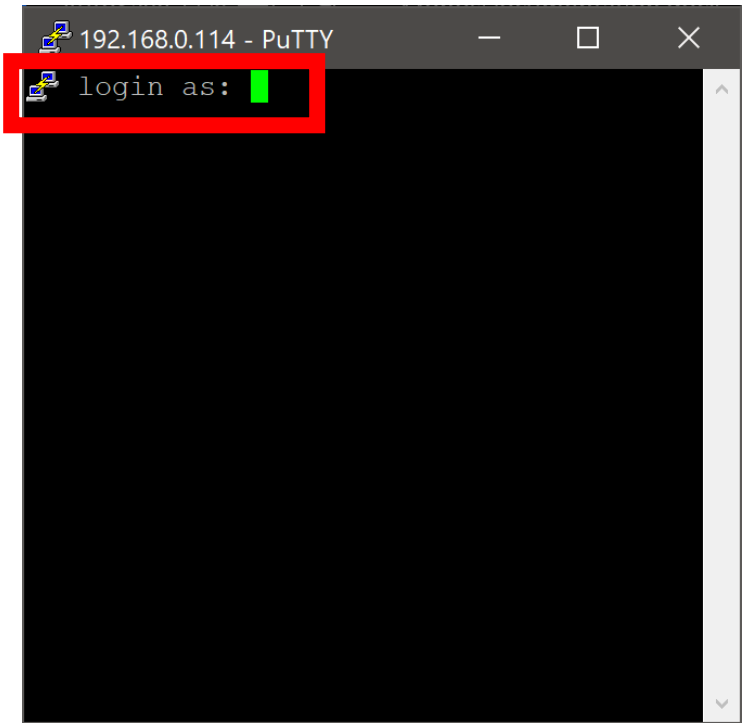
1. In WinSCP, click Login and type in username or password if prompted
2. There is a onetime alert warning about security or something, click yes.
3. On the left is your local machine and the right is the RPi. Transferring files works the same way as it would between two folders on your local machine. Click and drag files or folders to transfer them.
4. By default, images taken for the timelapse are stored in /home/pi/Timelapses/ on the RPi. Double click to enter folder.



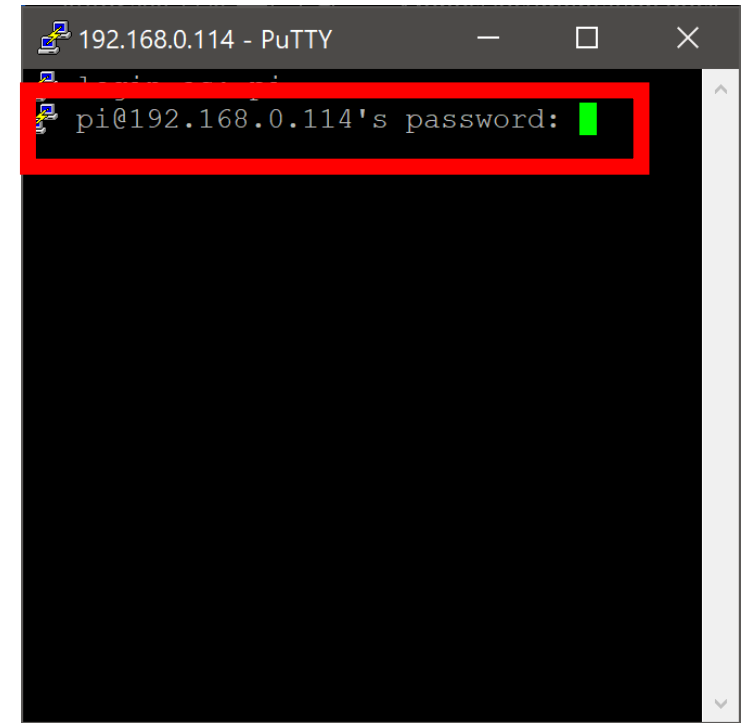
5. To update a file, click and drag the file from one side to the other as you would in File Explorer (updated side -> un-updated side)

Signing Into PuTTY

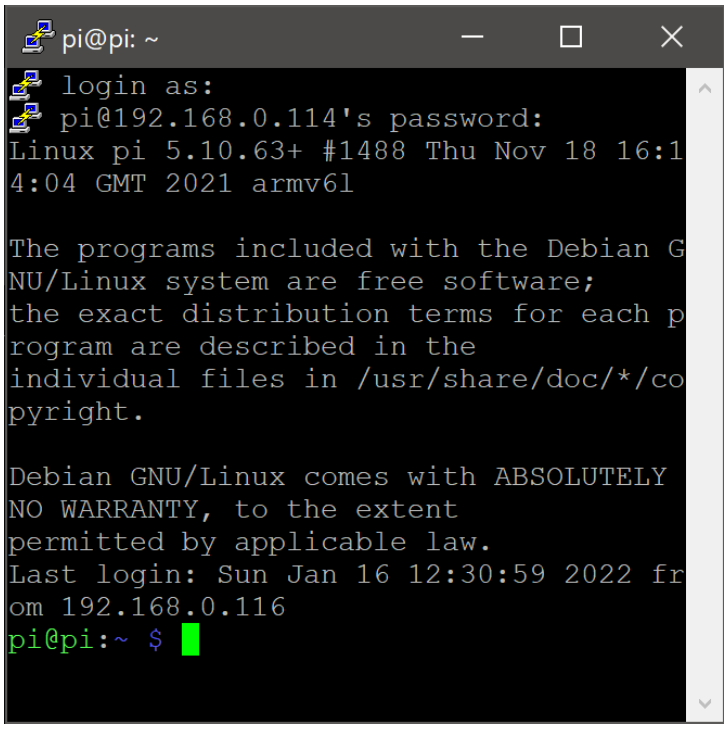
1. Double click the saved profile to load into PuTTY as shown below



2. Type the login name and press enter



3. Type the password and press enter (text will not display this is ok)
4. The screen should look like this



Kronos Installation

Windows

You will need to install Python on the Windows computer. I suggest this guide by IDG TECHtalk if you do not know how: https://www.youtube.com/watch?v=i-MuSAwgwCU

Modules

```
pip install datetime
```

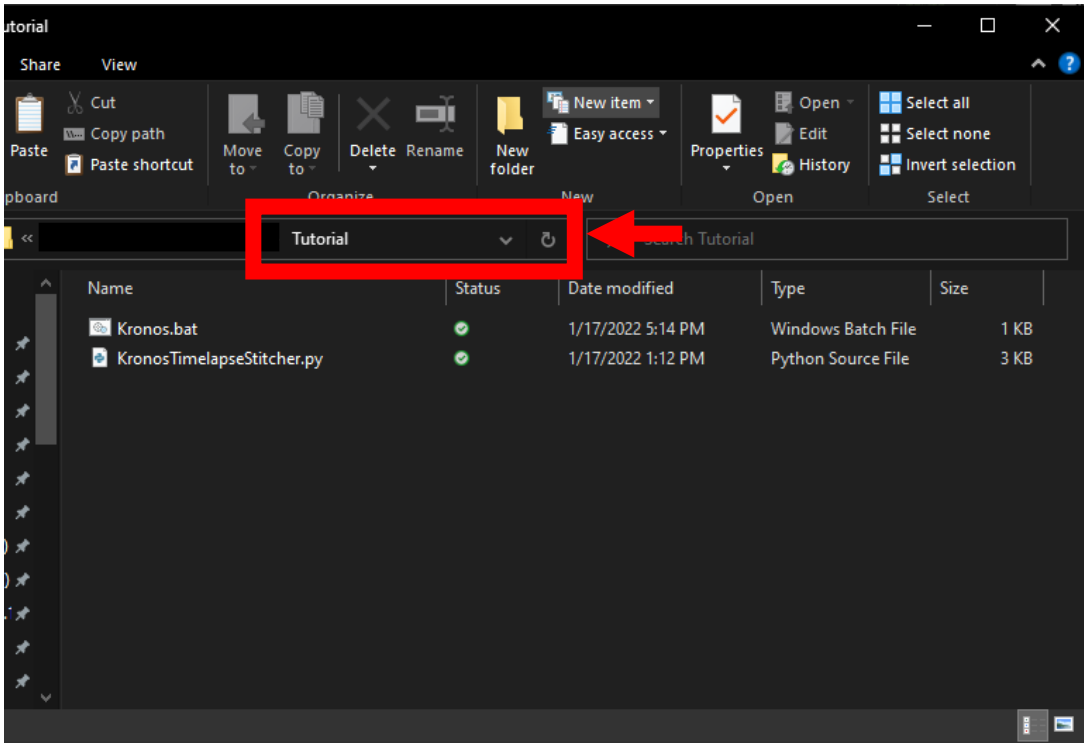
```
pip install opencv-python
```

```
pip install glob2
```

File Locations

Make a master folder for where you would like to store your timelapses and process files (in this example it is the Tutorial folder.

Place **Kronos.bat** and **KronosTimelapseStitcher.py** in this master folder. Run **Kronos.bat**.



Raspberry Pi

Modules

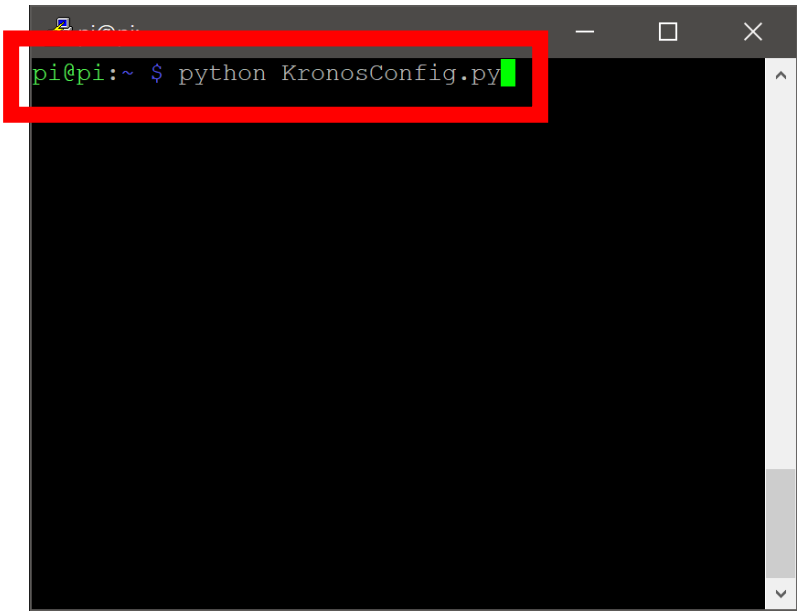
```
pip install datetime
pip install configparser
pip install python-math
pip install picamera
```

File Locations

Put **KronosImager.py** and **KronosConfig.py** in the root directory of the RPi using WinSCP.

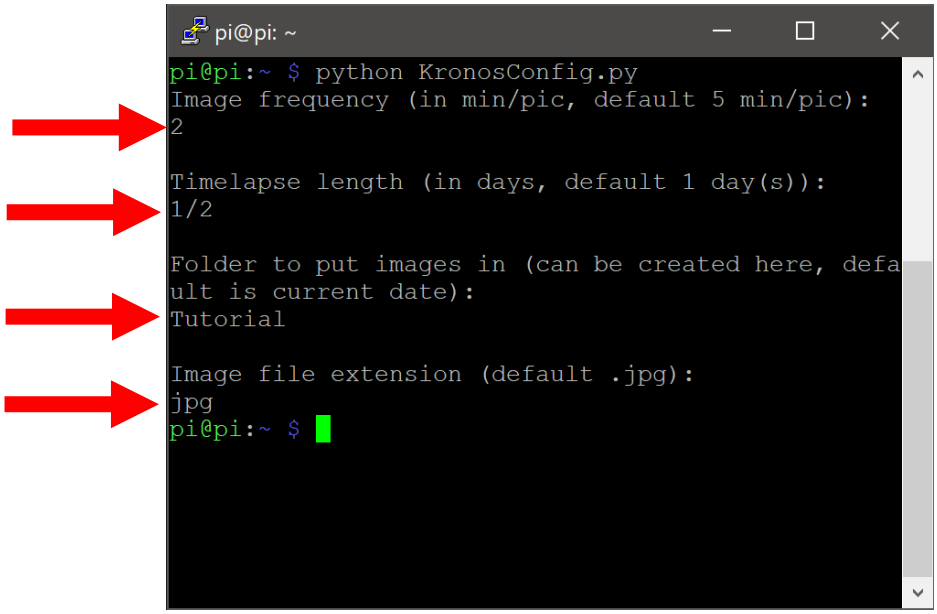
Configuring Timelapse

1. To configure a timelapse, type **python KronosConfig.py** in PuTTY. You can also paste text by right clicking.

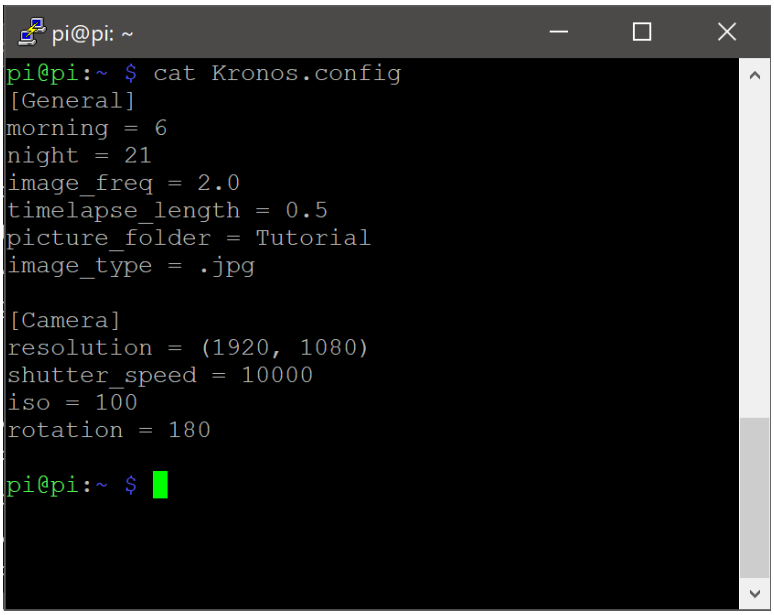


2. Type the values you would like, and press enter. Alternatively, press enter if you would like to use the default values.

In this example I will take a picture every 2 minutes, for half a day, save the images in a folder called “Tutorial”, with the file type jpg.

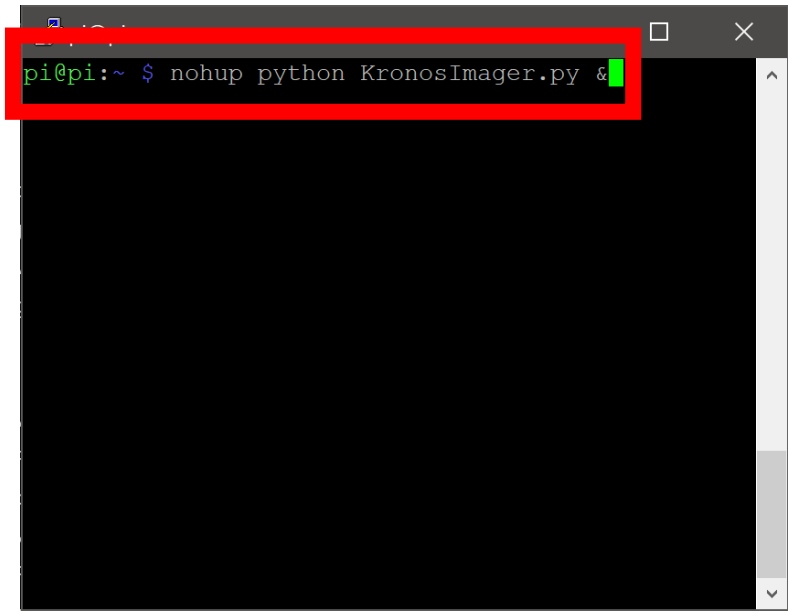


3. If you would like to look at the current configuration that will be used in the next timelapse type **cat Kronos.config.** Some of these variables you can change by editing in a text editor such as Morning and Night which are the times at which the timelapse will take pictures.



Running Timelapse

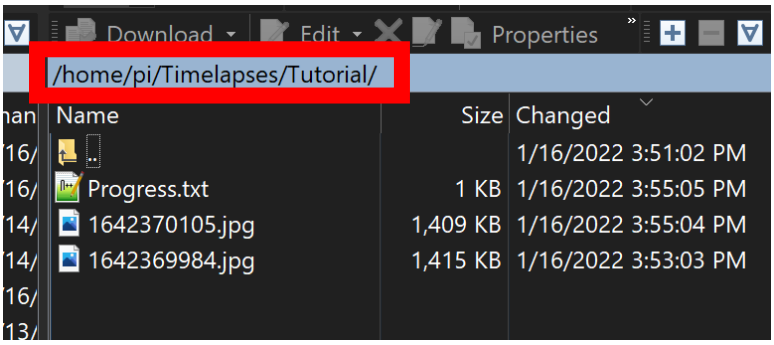
1. To begin running a timelapse with the current config file, type **nohup python KronosImager.py &**. You can also paste text by right clicking.



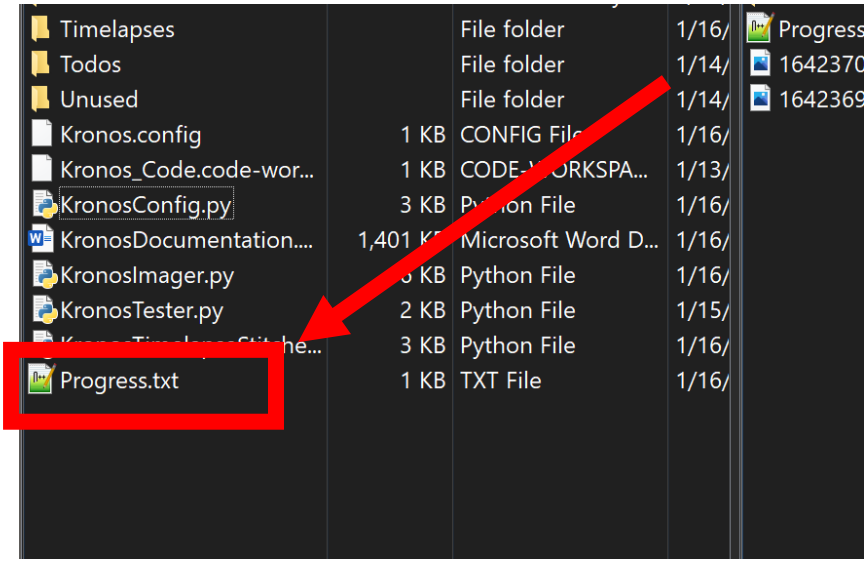
2. The terminal screen should now look like this and the timelapse is now running. Feel free to close the PuTTY window if you would like the timelapse to continue to completion. If you
3. To check the timelapse progress, see **Checking Timelapse Progress**.

Checking Timelapse Progress

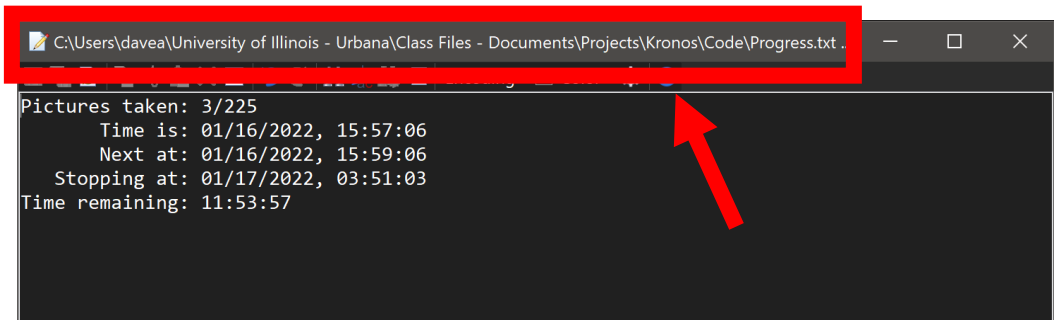
1. Checking timelapse progress is done in WinSCP. To begin, navigate to the folder "Timelapses" and then the folder you selected to save images to (in this case "Tutorial")



2. Click and drag the file **Progress.txt** to your computer



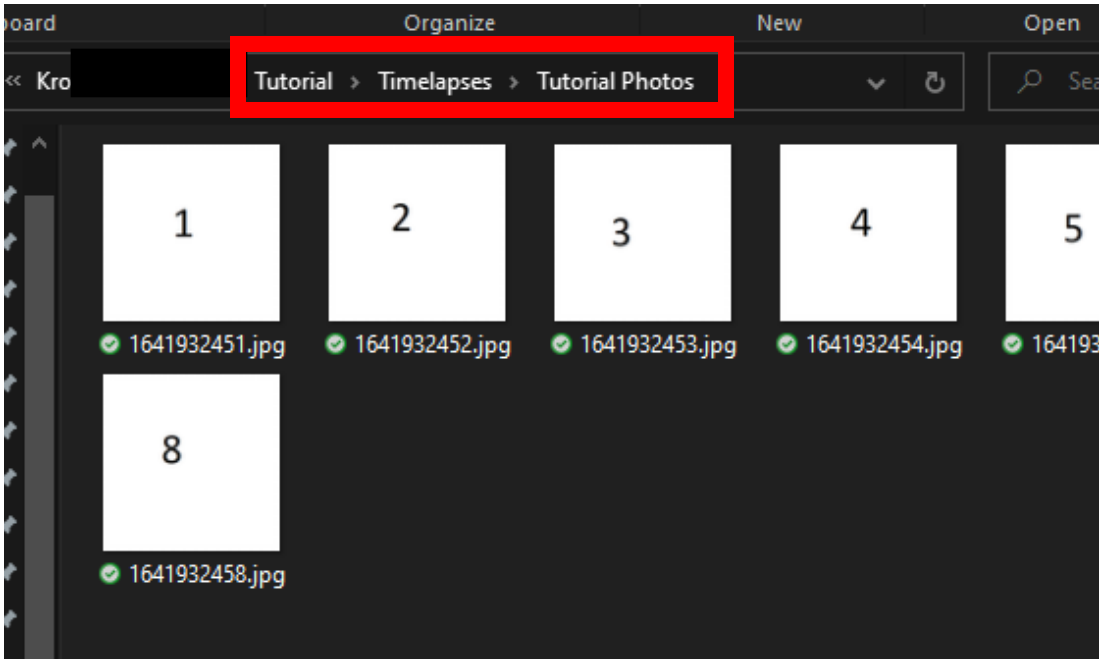
3. Double click the file on your computer to open it



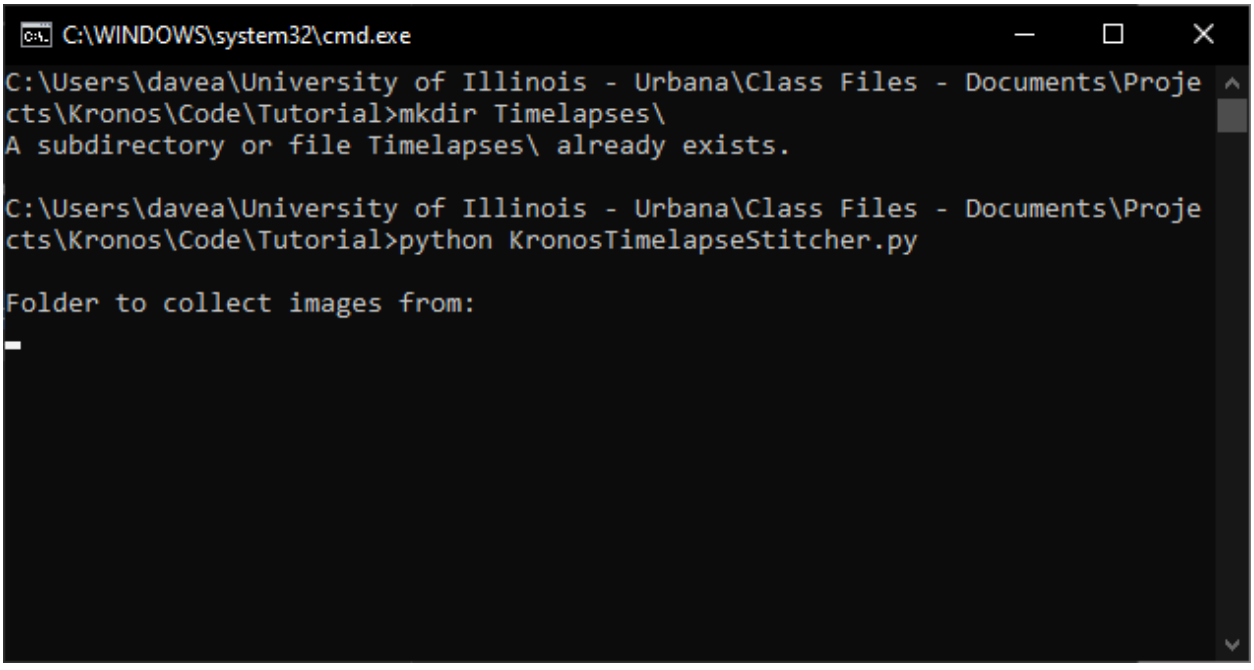
4. It is not suggested you open the file on the RPi while running KronosImager.py. The script will get hung up if the file is being read on the RPi and it will not take pictures if it cannot keep updating **Progress.txt.**

Stitching Photos Into Timelapse

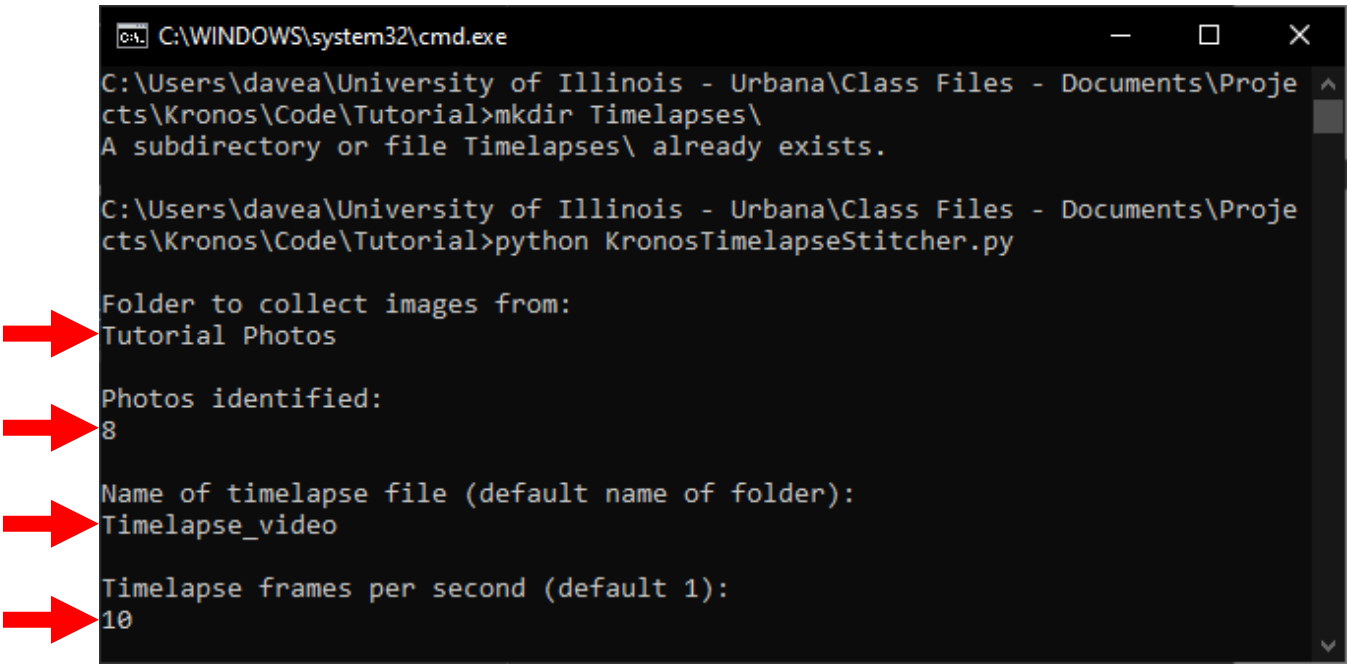
1. Transfer **Timelapses** folder on RPi to **Timelapses** folder on Windows. If you do not see the folder on Windows, run **Kronos.bat** by double clicking it. The images should be present in the subfolder in Timelapses.



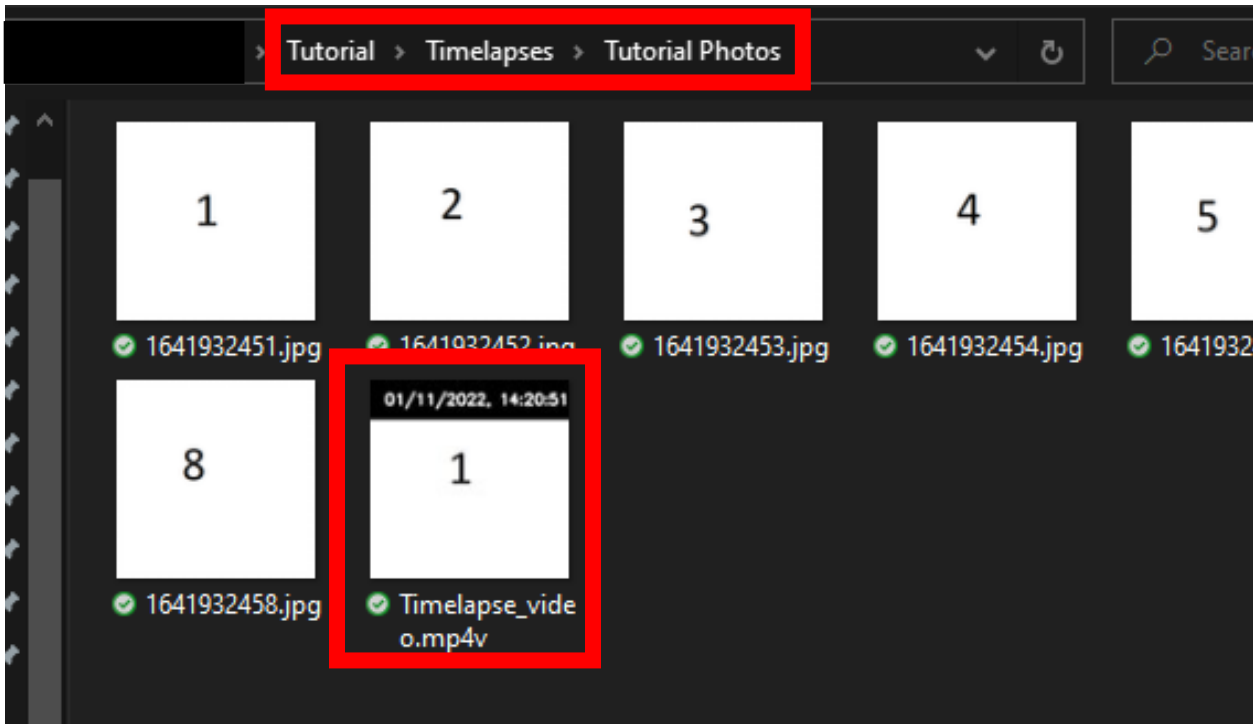
2. Run **Kronos.bat**



3. Type the name of the folder that contains the photos in the Timelapses folder. If no photos are identified, the folder may not be in the correct location.

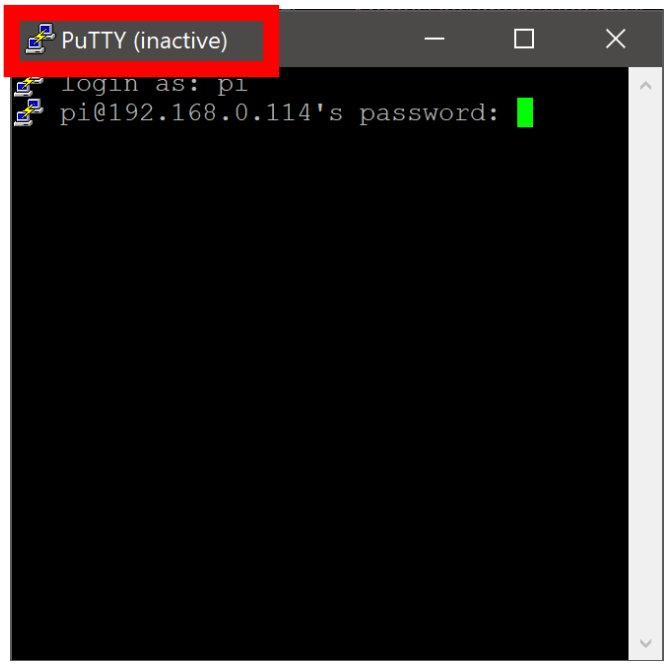


4. The timelapse video (.mp4v) is saved inside the folder with the photos it used to make the video



PuTTY Troubleshooting

1. Sometimes PuTTY will become unresponsive. If this happens you may see **PuTTY (inactive)** on the window title



2. **Right click** the top bar and click **restart session**. You will be prompted to sign in again. Return to Using PuTTY to continue.