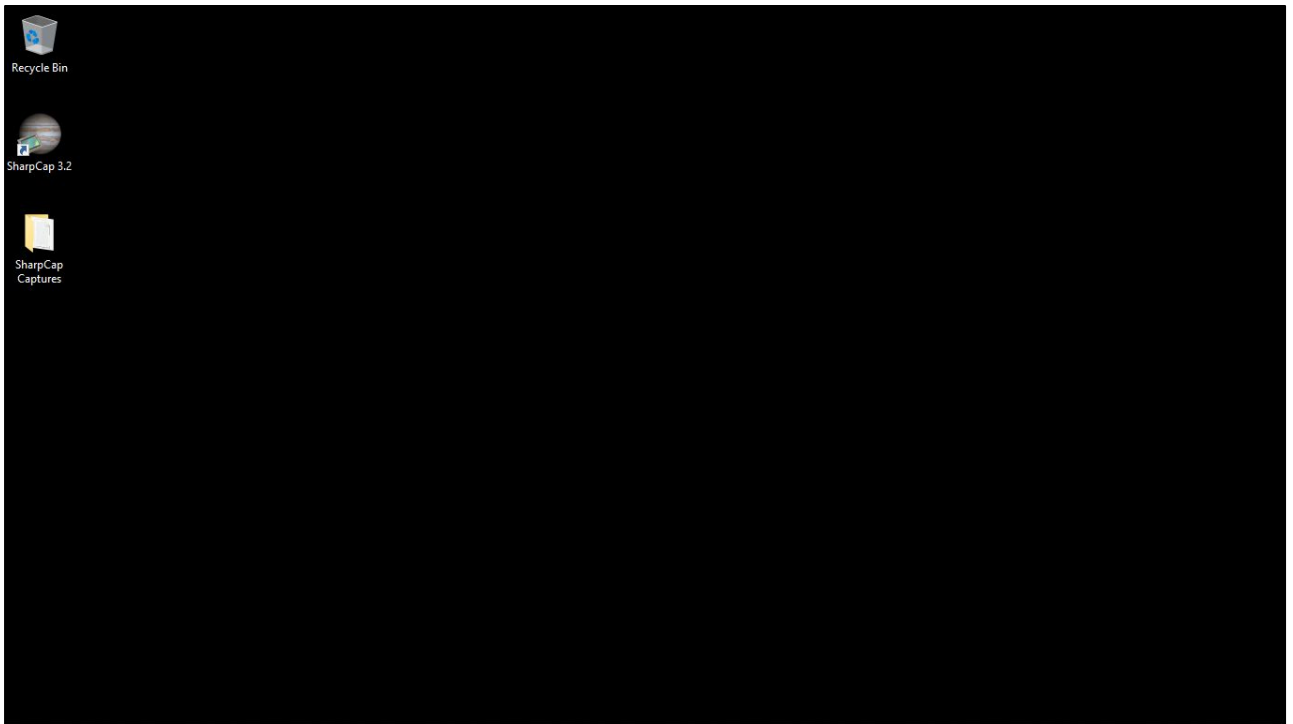


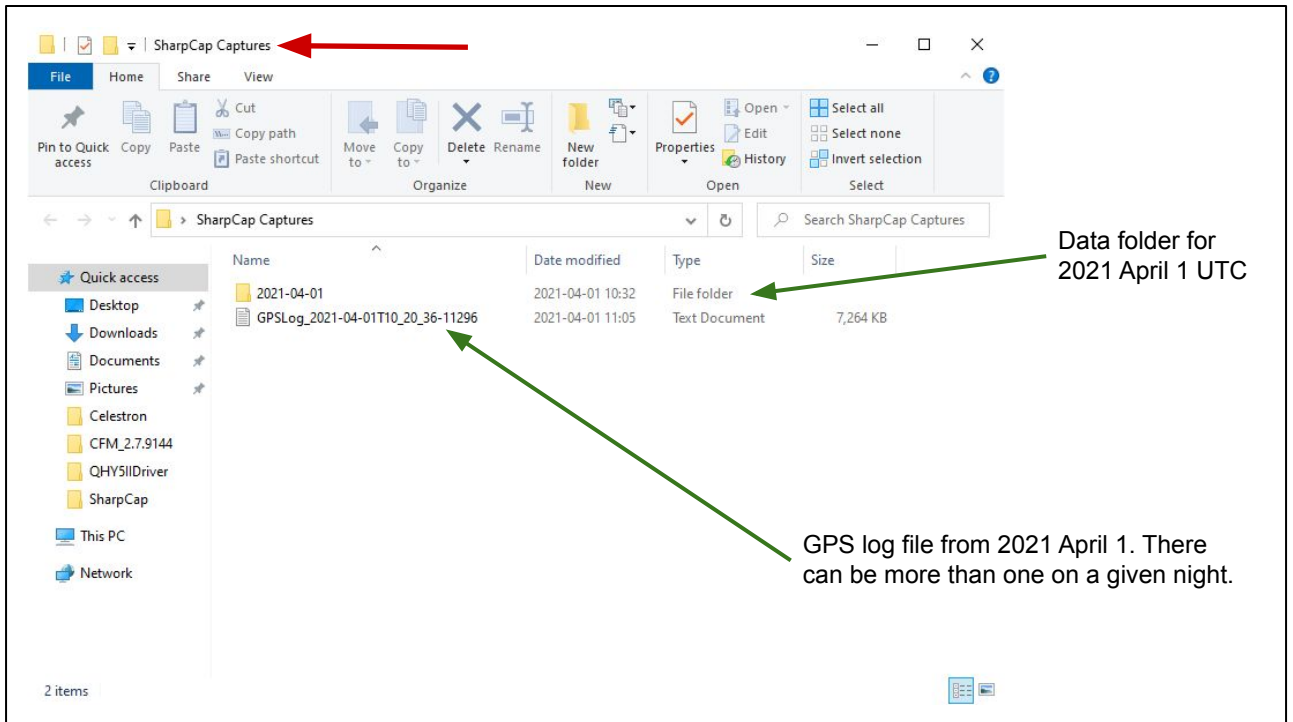
Standardized organization of occultation data

QHY174 data taken with SharpCap

Version 2021-04-13



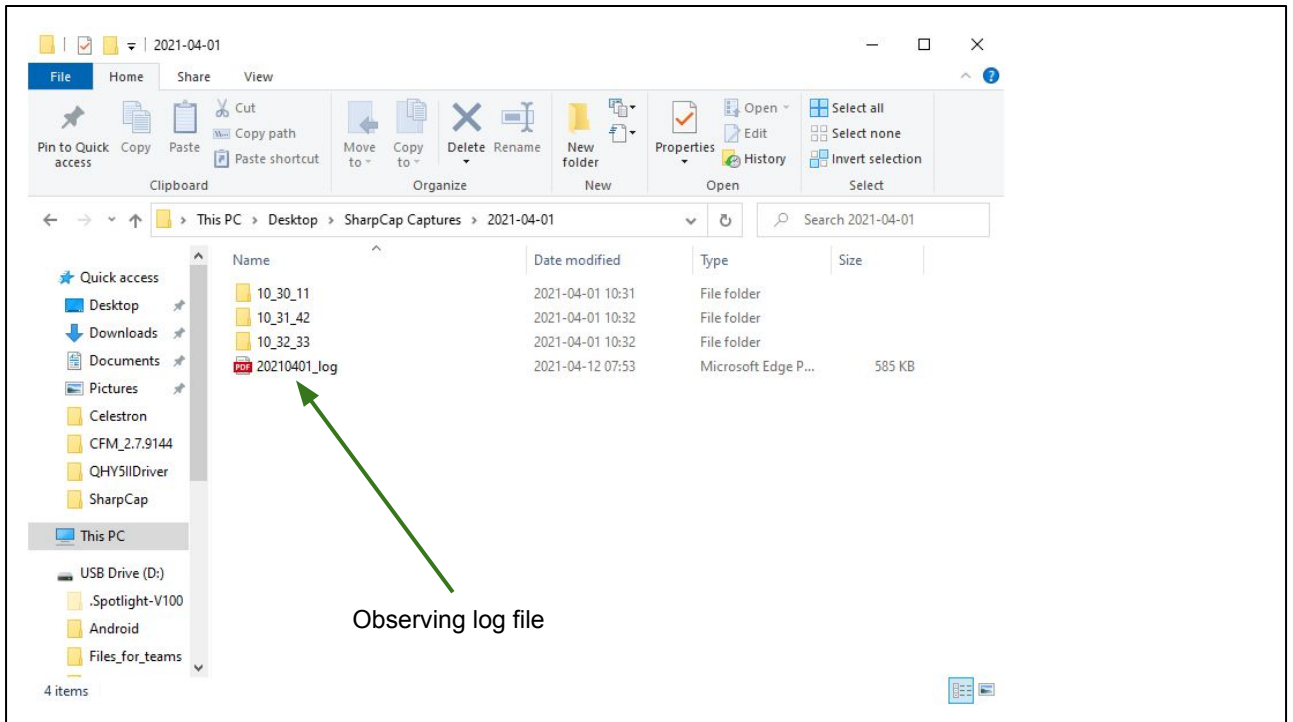
On a standard RECON system the desktop after log in looks something like this. A link for starting SharpCap and the folder, “SharpCap Captures” where all data will be stored. The task bar in the standard system is set to auto-hide so that the full screen is available to SharpCap. Double-click on the SharpCap Captures folder to move to the next step.



From here on, only the File Explorer window is shown (not the entire desktop). This is the view of the 'SharpCap Captures' folder and the name appears to the right of the red arrow. The contents here are with a single night of observations shown. In this case, you see two items in the folder. There is a folder named '2021-04-01' and a file named 'GPSLog_2021-04-01T10_20_36-11296'. The file actually has a suffix of .log but is not shown in this view. This file is called the "GPS log file". These are created by SharpCap if the configuration option is checked. See the SharpCap Usage and Settings document for how to do this. Note that the folder names and GPS log file names use the UT date and time, not local time.

Everytime you start SharpCap with the QHY camera connected it will create at least one of these GPS log files. After running SharpCap you will see a new file. If you don't, please check the configuration to make sure the option is turned on to create these files. You don't really need to know about the format of this file but it contains detailed information of the GPS status throughout your observing session. This can record how long it takes to achieve lock, how long to get the almanac update, and is a secondary source for your observing location. The primary source is from the data itself. Whenever you send data, include both the data folder (2021-04-01 in this case) and as many GPS log files as were created. When manually sending data, you would just upload the GPS log file(s) and the directory at this level. This will ensure sending everything needed.

Next, let's look inside the date folder.



Now we see inside the 2021-04-01 folder where there are three sub-folders and one file. Each of these sub-folders is the result of a single “Capture” command with SharpCap. The folders are named for the UT time of the start of the capture (HH_MM_SS). These folder names should appear in your log file describing what that capture is. The number of folders on a given night depends on what you are doing. It is normal to have only one for an occultation night. On practice nights there are quite often more folders.

Also in this folder is an observing log. In this example, I used the standard logsheet that I printed out and filled in by hand. Then, I scanned this logsheet creating the PDF file you see here. The name of the file is the date followed by _log. If you prefer, you can use the text template and fill that out with the same information just using something simple like Notepad (not a full-blown word processor). However, the format of this file is not that important. It is very important to document the observation. What are the data files taken and with what settings. Who and where were you observing. What were the conditions? Also, you should note down any other information that will help someone else understand the data you took.



QHY174M-GPS Observing Log

UT Date 2021 APR 01

Observers M. Skrutskie, A. Verbitser

Team Kelowna Camera SN 018699 Laptop Kelowna

Site Latitude N 49.123456 Longitude W 115.123456 Altitude 2432 m

Time setup 09:00 Temperature cold Wind Speed/Dir calm

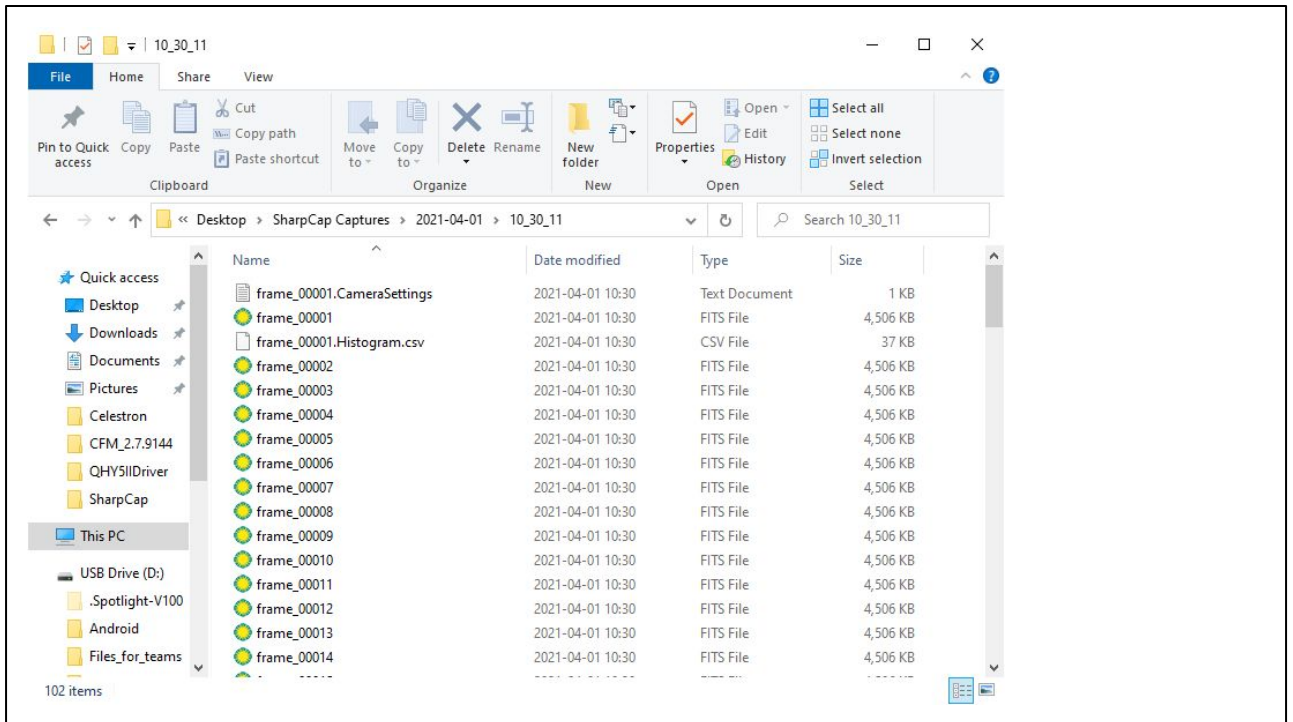
Time packed 11:00 RH%/Dewpt dry CCD temp 0°C

Clouds? clear Barometer Seeing good

UT folder name	Object Name	Next or Duration	Exposure	Gain	Comments
10_30-11	Apophis	6 ^m	500ms	300	Occultation data
10_31-42	"	100	260ms	300	test data
10_32-33	"	100	200ms	300	test data

Always: MONO16, FITS files, offset=100, USB Traffic=0, GPS on, Auto cooling, normal gain=300

This is an example (fictional) logsheet. Each data folder is documented on its own line. The observers, date, location, equipment details, and weather are captured on the top of the logsheet. The “team” is usually just the locality for the RECON or CanCON team. The “camera” and “laptop” information is most useful for the standard RECON setups and this will be something like RECON10. Right now the camera and laptop usually have the same ID but this can change in the future. For other teams you can note the camera serial number (like the made up example here) and the for the laptop anything that helps remember what system was used. For the weather data, actual numeric values are welcome but descriptive values are sufficient. You can use other space on the logsheet to describe additional details if needed. Note that all times listed on this logsheet are in UT (Universal Time). Do not use local time for anything.



This is what you should see in a single date-named folder. The image data are a series of files named `frame_nnnnn.fits` where `nnnnn` is the sequential number of the image, usually starting from 1. There are also two other supporting files written by SharpCap. The most important of these is `frame_00001.CameraSettings.txt`. This file contains a lot of information about the details of the configuration of SharpCap for the data collection. There is information about the data collection that exists only in this file and is very important for the data analysis. Under no circumstance should you ever delete, rename, or otherwise modify any of these files. Also, do not put any extra files in here. These should be just as they were written. Note also, that the directory structure created by SharpCap must remain intact. If this directory is separated from its parent directory it is no longer unique as all images in all sequences are named the same way.