

SharpCap/IotaGFTapp/FitsReader setup

In order for the IotaGFTapp to communicate with SharpCap, a startup script must be added to SharpCap.

The startup script is called SharpCapServer.py can be found in the distribution folder in the folder [SharpCap-IOTA-GFT-scripts](#).

To add the startup script to SharpCap click [File | SharpCap Settings | Startup Scripts](#)

Click the [Add](#) button to open a file browser. Navigate to the scripts folder inside the distribution folder and click on [SharpCapServer.py](#)

This startup script will take effect the next time SharpCap is opened.

The script establishes a TCP “listener” in SharpCap. When subsequently the IotaGFTapp is opened, it will set up a TCP socket connection to SharpCap. That establishes a two-way communication link so that IotaGFTapp can send “start capture” and “stop capture” commands to SharpCap. That same link enables IotaGFTapp to ask SharpCap what the current camera exposure is and, at the end of the capture, where SharpCap placed the recording folder.

Typical workflow:

Open SharpCap and configure the camera settings appropriate for the upcoming observation.

Apply any SharpCap facilities such as “plate solve”, “goto”, etc.

Open IotaGFTapp and schedule the observation recording by giving the UTC time of the center of the event and the desired length of the recording (in seconds) and clicking the [Arm UTC start](#) button (which turns green when armed). A schedule will be computed by IotaGFTapp using GPS time for:

1. recording start
2. first goalpost flash (after a “leader” to establish baseline)
3. second goalpost flash (timed such that the event time will be centered between the end of flash one and the beginning of flash 2)
4. recording end (allowing for a “trailer” after the end of flash 2)

Note: using the camera exposure time reported by SharpCap, a flash duration will be set such that at least 10 readings will be recorded while the flash LED is on. If, for example, the camera was set for a 2 second exposure time, a flash duration of 20 seconds will be set automatically.

When the recording ends, the FitsReader app will be started by IotaGFTapp and given the path to the SharpCap folder containing the fits files.

IotaGFTapp also adds to that folder the flash edge event time folder and the log file from all the GPS sentences received from the IotaGFT device.

When the FitsReader app starts up, it is expected that the user will click the [Select fits folder](#) button and then click on [Open file browser](#). The proper path to the observation will be pre-filled so that only clicking the [Open](#) button will be needed – no navigation required. If enabled, the first time that file is opened, FitsReader will process the file to extract the flash lightcurve, and, in conjunction with the flash edge times, compute GPS accurate timestamps and insert them in the DATE-OBS card of each fits file.