

Occultation-Manager

SharpCap add-in

Streamlined and automated event recording and reporting

There must be an easier way!

Event workflow with CMOS cameras is cumbersome

- OW Cloud
- OW Desktop
- Manually copy or download coords and details
- Manual scope operation
- Visual identification of target
- Manual recording
- Manual or semi-automated reporting

What if this could be automated within SharpCap?

Occultation Manager SharpCap Add-in

- Downloads events announced in Occult Watcher Cloud
- Record events live or using sequencer
- Automated, unattended recording for multiple events
- Report generation
- NTP and GPS flash analysis tools

Occultation Manager - SharpCap Integration

File Events Quick Filters Observation Sequences Tools Help

Download Refresh Generate Dummy Events All Stations Event Details Edit Settings Create Sequences Run Sequences Generate Report Night Mode

Quick Filters: Today Future All On/Off Delete (1 selected)

Observation Preparation - Interactive Setup + Testing: Load Event GOTO Plate Solve Setup Test Recording Stop

No event loaded for preparation

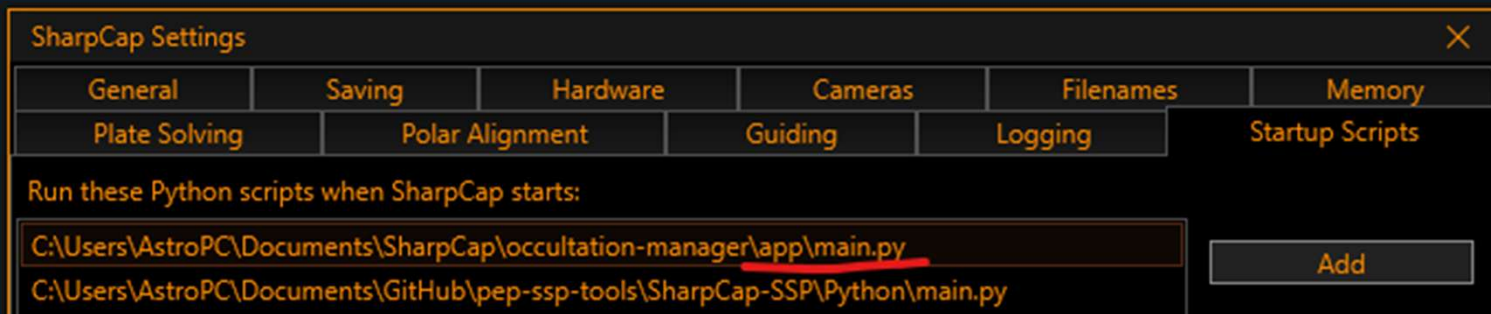
	Event Name	Station	Date/Time UTC	Mag	Comb	Drop	Exp (ms)	Gain	Record (s)	Max Dur (s)	Alt-Az	Status
<input type="checkbox"/>	(81730) 2000 JZ37	Camilleri M Home	2026-03-01 08:26:39±1s	9.4	9.4	9.9	40	450	60	0.4	36@76	Past
<input type="checkbox"/>	(249270) 2008 SA167	Camilleri M Home	2026-03-02 08:35:01±4s	13.0	13.0	7.8	160	450	82	0.4	45@331	Past

Night mode disabled 21 events

Simple Installation - SharpCap Pro

Download zip file from <https://github.com/labstercam/occultation-tools>

Unzip to \Documents or similar, point SharpCap startup to main.py in that folder



Restart SharpCap and press the Occultations button



No Python install – already built into SharpCap IronPython

No extra files or programs to install

No extra configuration or setup or code editing

Simple User Setup

Occult Watcher Cloud setup with same email/password and full instructions
User settings for even recording etc
Observer details for reportin

Configuration Settings

Credentials File Paths User Settings Observer/Telescope

OWC Email:

OWC Password:

API Host:

API Key:

Days to Retain:

[How to Get Your OWC Credentials](#)

Credentials File Paths User Settings Observer/Telescope

Base Duration (s): [Explain](#)

GOTO Lead Time (s): [Explain](#)

Mag for 40 ms exp: [Explain](#)

Default Gain (0-600): [Explain](#)

Sync Mount with GOTO [Explain](#)

Display UTC in Grid [Explain](#)

Output Debug Logs [Open Debug Logs Folder](#)

Occultation Manager Workflow

Announce in OWC and prepare events

Download your events from OWC
Handles multiple stations

Select events to observe and either:

- Create sequences to record automatically
- GOTO the star and preview to adjust recording parameters

The screenshot shows the Occultation Manager - SharpCap Integration software interface. The window title is "Occultation Manager - SharpCap Integration". The menu bar includes "File", "Events", "Quick Filters", "Observation", "Sequences", "Tools", and "Help". The main interface features a toolbar with buttons for "Download", "Refresh", "Generate Dummy Events", "All Stations" (dropdown), "Event Details", "Edit Settings", "Create Sequences", "Run Sequences", "Generate Report", and "Night Mode". Below the toolbar, there are "Quick Filters" (Today, Future, All, On/Off, Delete) and "Observation Preparation - Interactive Setup + Testing" (Load Event, GOTO, Plate Solve, Setup, Test Recording, Stop). A status bar indicates "1 selected" and "No event loaded for preparation". The main data table has columns: Event Name, Station, Date/Time UTC, Mag, Comb, Drop, Exp (ms), Gain, Record (s), Max Dur (s), Alt-Az, and Status. The table contains two rows of event data. At the bottom, a status bar shows "Night mode disabled" and "21 events".

	Event Name	Station	Date/Time UTC	Mag	Comb	Drop	Exp (ms)	Gain	Record (s)	Max Dur (s)	Alt-Az	Status
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Observation Preparation (optional)

Select event to prepare and load event coords etc

GOTO the target coords

Plate Solve and label the target on the image

Setup – Set gain/exposure to test visibility, copy coords

Test Recording – do a test recording so to analyse and check SNR

Once ready can Create Sequences and Run Sequences to record or record manually.



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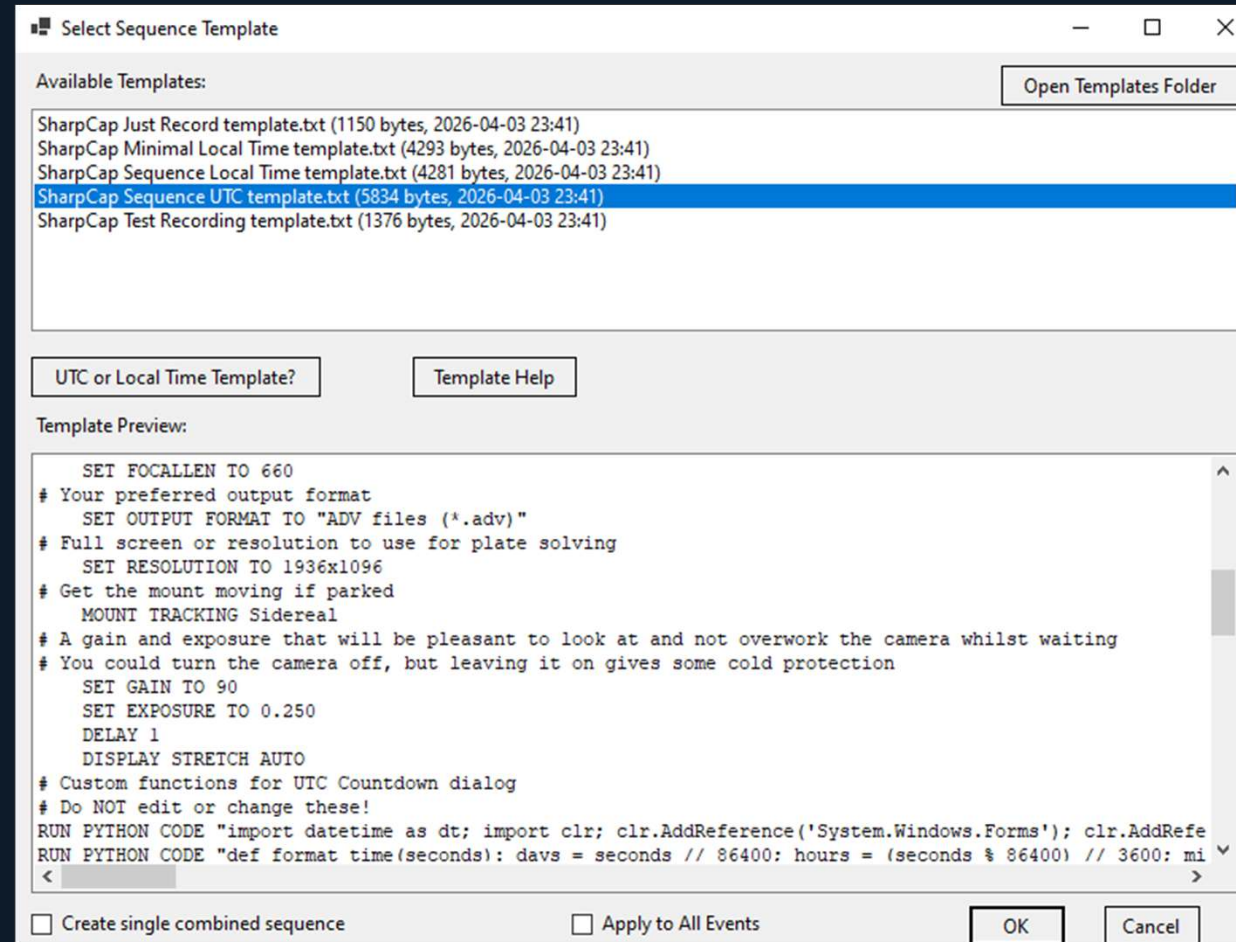
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Create Sequences for Events

- Select events
- Press Create Sequences
- Choose your sequence template
- Generate single event sequences or
 - single combined sequence for all events
- Ready to run the sequences for any or all of the events.

Note: Safer to run sequences using SharpCap alone, not directly from Occultation Manager especially for unattended events



Sequencer Templates

- Templates allow you to do almost any SharpCap operation and control any equipment that SharpCap can control
- Sample templates have my own full control templates with fancy countdown, and simplified templates with basic operation only
- Add or remove sequence commands for your setup (e.g. focuser, dew heater control)
- Adjust the Plate solving commands so they work for your setup
- Test, test and test again until you have a reliable sequence for your setup

Main Gotcha's

- Plate solving issues
- Failing to restart mount tracking
- Failing to set or reset focal length, camera ROI, file format etc
- My sample templates do most of this so follow the pattern

Unattended Operation

- Ensure you have tested, reliable templates
- Ensure they end and/or fail safely to a safe parking direction (my templates do this already)
- Use the 'Create Single Combined Sequence' option for each station's events
- Close Occultation Manager
- Open the SharpCap Sequencer and run the combined sequence directly from there
– *it is safer to NOT use Occultation Manager for long, unattended events.*
- My templates are self-contained and will run without Occultation Manager so you can send the sequences to other scopes or observers that have SharpCap Pro

Reporting

Use Occultation Manager to Generate Reports for TT, NA and SODIS

Reporting

Generates reports for TT, NA and SODIS reporting systems and Occult OBS.XML

Prefills almost everything

Much faster and more reliable than manual processes

Does not require Excel to be installed as OW desktop addin does

No additional setup – all built into the Occultation Manager tool

Not yet tested and approved by the reporting teams so use with caution

Reporting Step 1

Site location read from event
Google map lookup and elevation lookup

Optional NTP analysis

Confirm Observation Location ✕

Step 1: Confirm the observation location

Event: (10043) Janegann - Camilleri M Home

Date: 2026-03-27 08:40 UTC

Observation Location (editable)

Station: Camilleri M Home

Observing Location:

Auckland, NZ

Lookup

Latitude (°):

XXX

Longitude (°):

XXX

Elevation (m):

23.0

View on map:

[Open Google Maps](#)

Lookup Elevation

Enter/verify observation location and coordinates.

Use 'Lookup' to find city/town name from coordinates.

Use 'Lookup Elevation' to get elevation (WGS84 datum).

Step 2 (Optional): NTP Analyzer

Analyse offset/uncertainty at event time, or open full interactive analyzer.

NTP stats folder: C:\NTP\etc

Browse...

dataset: 2026-03-27 [loopstats.20260327, peerstats.20260327] (closest sample: 17s) | loop:

Analyse NTP

Open NTP

offset: +0.760 ms

uncertainty: +/- 0.835 ms (95%)

data age: 1 min before

server: 127.127.20.8

Reporting Step 2

Select report type

Scope and Camera selection

D/R and times directly from files

Conditions

Generate report outputs

Generate Report

Generating Report for: (10043) Janegann

1. Report Format

- IOTA North America (V5.6.12r)
- Trans-Tasman / RASNZ (V4.1.2.G)
- IOTA-ES / SODIS (Form 2.03)

2. Equipment Selection

Telescope:

Camera:

3. Observation Result

- Positive - Observed disappearance and reappearance (AOTA required)
- Negative - No occultation occurred (AOTA optional)
- Unsure - Possible event but uncertain (AOTA required)

4. Observation Files

Folder containing AOTA, Tangra CSV, and AOTA Report files:

AOTA Files:	Tangra CSV:	AOTA Report:
1 file found	2 files found	1 file found
<input type="text" value="08_39_42Z_aota.xml"/>	<input type="text" value="08_39_42Z_csv test.csv"/>	<input type="text" value="20260327_10043_Janegann_UCAC4_514_025312+"/>
D: 8:40:11.80 R: 8:40:13.08	Start: 08:39:44.438 End: 08:40:41.719	D: 8:40:11.80 R: 8:40:13.08

5. Conditions

Clouds: Stability: Other Conditions:

Ready to generate report

Report

Ready to send

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	Observation was:						Asteroid Occultation Report Form																						
2	Positive						All times MUST be reported using UTC															V4.1.2.G							
4	Year: 2026				Month: March			Day: 27			Predicted Time (UTC):						hh: 08		mm: 40		ss: 12								
6	Asteroid: # 10043				Name: Janegann			Star: UCAC4			Catalog - format Number						514-025312												
7					RIO-TNO Prediction ?			No																					
9	Observer(s): Michael Camilleri						Email:																						
10	Mailing Address:						Phone:																						
11																													
12	City, State, Country: Auckland, NZ						Fax:																						
13																													
15	Observing Location: Auckland, NZ						<---(nearest City/Town, with State/Country only)																						
17	Latitude: deg.d.ddd						N/S			Longitude: deg.ddd			E/W			Elevation: 23			m/ft		Datum: WGS84								
18							S						E																
19	unit																												
20	Telescope: Aperture: 23.5						cm			f/ratio: 3.3			Magnification:			Type: SCT including Cass and Mak													
21																													
22	Timing: other						Method: Video Recording						Asteroid visible? No																
23	Timing Device: Computer NTP						OTA Used: AOTA (part of OCCULT4)																						
24	Some of the cells in row 25 are free form. Look at Comments provided.						Video						Exposure						Other Detector related info										
25	Detector: Model/Type: Other - List in Comments						Format: ADVS			Integration: 0.32			Unit: Seconds																
26																													
27	Conditions: Clouds: Clear						Camera Delay Correction: 0.007			VTI Correction: Sec			Has this been Applied? yes			Other conditions: near moon													
28																													
29	Observations: Apply Integrating camera delay corrections before entering times. Go to CORRECTIONS page for R-OTE, Ocular, and VTI correction values.																												
30							Times			Accuracy			PE			PE/Delay applied?			Remarks (show integration corrections here)										
31	Started Observing:						08 : 39 : 44.438																						
32	Star and asteroid merged:																												
33	Disappearance:						08 : 40 : 11.8			0.16																			
34	Est. Closest Approach:																												
35	Reappearance:						08 : 40 : 13.08			0.16																			
36	Star & Asteroid separated:																												
37	Stopped Observing:						08 : 40 : 41.719																						
38							hh mm ss.sss																						
39																no Was this a Miss?													
40	No 2nd star visible?						Select Yes if this report is for the second star of a double.						S/N = 8.3 (if known)																
41																													
42	Additional asi462mm																												

More Features for the next release

*Ready Now: Measure Camera acquisition delays
NTP timing analysis*

*Planned: Full integration of acquisition delays and NTP analysis
into analysis and reporting workflow*

*OW Cloud reporting
Vizier Light Curve*

Occultation Manager

Streamline and automate event management, recording and reporting

Only need SharpCap, OW Cloud login and TANGRA to start

Easiest setup for new observers

Links

NTP Installer

github.com/labstercam/occultation-ntp-installer

Tools & docs

SharpCap Occultation Manager and NTP/GPS tools

github.com/labstercam/occultation-tools