

SharpCapのproライセンス 機能の使いどころ

2025/9/19 14h35m-15h05m

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伝えたいこと

- proライセンスの導入方法
- 情報へのポインタ（ドキュメントとか）

ライセンス不要

「野田が考えた」使いどころ

- Level1 ぜひ実施（メモリ管理）
- Level2 やるとよさそう
 - 観測慣れてない方用（プレートソルブ、アノテーション、極軸合わせ、自動開始終了）
- Level3 マニア向け：pythonが書ける方
 - 1 ボタン作成コード（露光時間を手で打つのが面倒な方）
 - 2 Forumコード使用例：Jean-Francois氏が作成された「UCAC4星表のアノテーション」

参考用配布物

- スクリプトの例（ZWOカメラ露光時間を設定するボタン）
[IronPyCnt.py](#) （テキスト）
- シーケンサーの例（待ち、開始、待ち、終了）
[wait_take_wait_end.scs](#) （テキスト）
- Arduino nano everyで動くGPS 1ppsに同期したLED照射soft
[sketch_25aug27a_GPS_intrpt_2way.ino](#) （テキスト）
- フォーラムにあったUCAC4アノテーション
[Occultation_1.6.0.zip](#)

ライセンス購入 & activation



ヘルプ> SharpCap proのライセンス

当日資料の一部の情報を削除しました

<https://www.sharpcap.co.uk/>

費用は2,700 円/年
複数のPCに入れられる
個人での利用のみ可能

まとめ頁

できることがかいつまんで書いてある



The screenshot shows the SharpCap Pro website. At the top, the URL is displayed. The main header features the 'SharpCap' logo in a glowing orange font, with a planet Jupiter and a camera sensor icon to its right. Below the header is a navigation menu with links: Home, Downloads, Cameras, Features, SharpCap Pro, Gallery, Misc, Support, FAQ, and Thanks To. The left sidebar contains a 'Learn More' button circled in red, and a list of links: Downloads, Documentation, Forums, Polar Alignment, Live Stacking, and Gallery. At the bottom of the sidebar is a logo for 'GPA' (Garry Palmer Astronomy) with the text 'SHARP CAP SYSTEM IMAGING CO. UK' and 'SharpCap Courses'. The main content area is titled 'About SharpCap Pro' and contains a list of features. A 'SharpCap PRO' logo is also visible on the right side of the main content area.

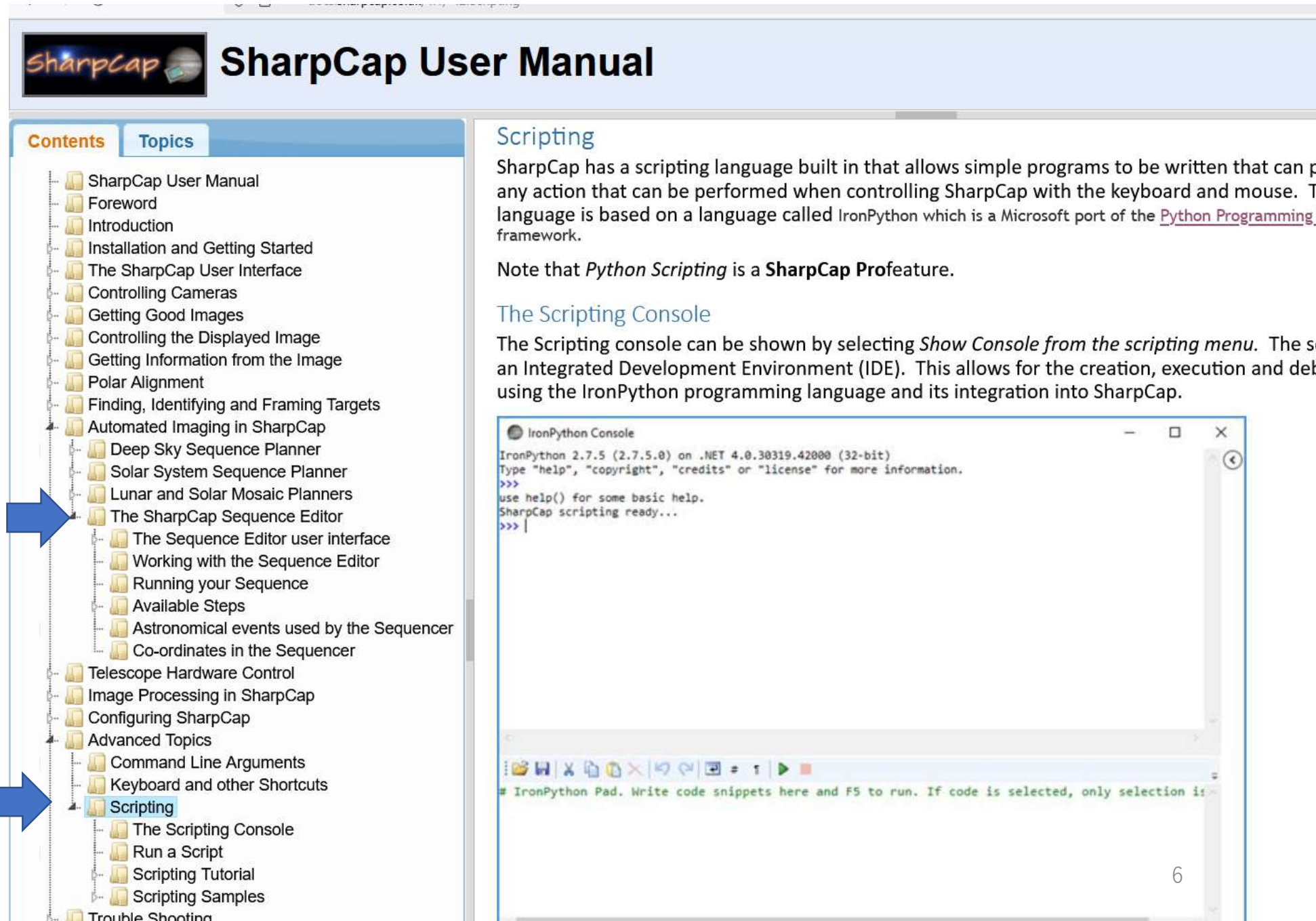
About SharpCap Pro

Here's a list of the great features that you get when you upgrade from the free version of SharpCap to SharpCap Pro.

- **Polar Alignment Adjustment Guidance**
- **Planetary Live Stacking** – includes live stacking and wavelet sharpening, also works for solar and lunar images.
- **Live Image processing** – Flat frame correction, Dark subtraction, Background subtraction, Banding suppression and Satellite trail removal
- **Advanced Live Stacking** – Sigma clipped stacking, comet alignment, automatic dithering, colour balance adjustments, sharpening and noise reduction
- **Automated Imaging** – Deep Sky sequence planner, Lunar/Solar Mosaic planner, Solar System sequence planner, advanced sequence editor, seeing triggered captures
- **Focus Assistance** – Automated focus scans, fully automatic refocus
- **Target finding and tracking** – Click to Recenter, Feature Tracking, custom deep sky catalogs, Push-To assistance
- **Usability** – Image auto-stretch, Two monitor view
- **Camera analysis and settings guidance** – Custom deep sky exposure setting guidance, export data from Sensor Analysis,
- **Other** – ADC alignment from image features, live stellar photometry estimation, Python scripting language, increased memory usage limits

You can also find out more by reading the [SharpCap Pro FAQ](#), or you can [buy SharpCap Pro](#) to purchase a one year license.

Polar Alignment Adjustment Guidance



SharpCap User Manual

Contents **Topics**

- SharpCap User Manual
- Foreword
- Introduction
- Installation and Getting Started
- The SharpCap User Interface
- Controlling Cameras
- Getting Good Images
- Controlling the Displayed Image
- Getting Information from the Image
- Polar Alignment
- Finding, Identifying and Framing Targets
- Automated Imaging in SharpCap
 - Deep Sky Sequence Planner
 - Solar System Sequence Planner
 - Lunar and Solar Mosaic Planners
 - The SharpCap Sequence Editor**
 - The Sequence Editor user interface
 - Working with the Sequence Editor
 - Running your Sequence
 - Available Steps
 - Astronomical events used by the Sequencer
 - Co-ordinates in the Sequencer
- Telescope Hardware Control
- Image Processing in SharpCap
- Configuring SharpCap
- Advanced Topics
 - Command Line Arguments
 - Keyboard and other Shortcuts
 - Scripting**
 - The Scripting Console
 - Run a Script
 - Scripting Tutorial
 - Scripting Samples
- Trouble Shooting

Scripting

SharpCap has a scripting language built in that allows simple programs to be written that can perform any action that can be performed when controlling SharpCap with the keyboard and mouse. The language is based on a language called IronPython which is a Microsoft port of the [Python Programming](#) framework.

Note that *Python Scripting* is a **SharpCap Profeature**.

The Scripting Console

The Scripting console can be shown by selecting *Show Console from the scripting menu*. The console is an Integrated Development Environment (IDE). This allows for the creation, execution and debugging using the IronPython programming language and its integration into SharpCap.

IronPython Console

```

IronPython 2.7.5 (2.7.5.0) on .NET 4.0.30319.42000 (32-bit)
Type "help", "copyright", "credits" or "license" for more information.
>>>
use help() for some basic help.
SharpCap scripting ready...
>>> |
            
```

IronPython Pad. Write code snippets here and F5 to run. If code is selected, only selection is:

シーケンスエディター

スクリプト

フォーラム

よく読むと便利そうなものがある
UCAC4星表のアノテーション機能

<https://forums.sharpcap.co.uk/viewtopic.php?t=8492>

forums.sharpcap.co.uk/viewtopic.php?t=8492

🔍 📄 ⭐

📄 📄 📄 📄 📄



SharpCap Forums
Help, Support and Discussions about SharpCap

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🔗 Quick links 📄 FAQ

[🏠 SharpCap](#) < [Forums](#) < [Using SharpCap](#) < [Scripting](#)

[📄 Register](#) [🔌 Login](#)

Script for the observation of an occultation

[Post Reply](#) ↩️ ⚙️ 🔍 ⚙️

Search this topic...

3 posts • Page 1 of 1

Script for the observation of an occultation

#1 📄 by **Jean-Francois** » Tue Feb 25, 2025 8:35 pm

Hello,

Here the script for the observation of an occultation.

Occultation_doc_17.jpg

Occultation_doc_17.jpg (431.4 KiB) Viewed 87 times

The scripts and the additional files (*.exe and *.pdf) can be found in the ZIP file.

Download and unpack the ZIP somewhere on your computer.

Download the PDF file and read it for the detailed installation steps.

🗨️ 1 ❤️

Jean-Francois
Posts: 656
Joined: Sun Oct 13, 2019 10:52 am
Location: Germany

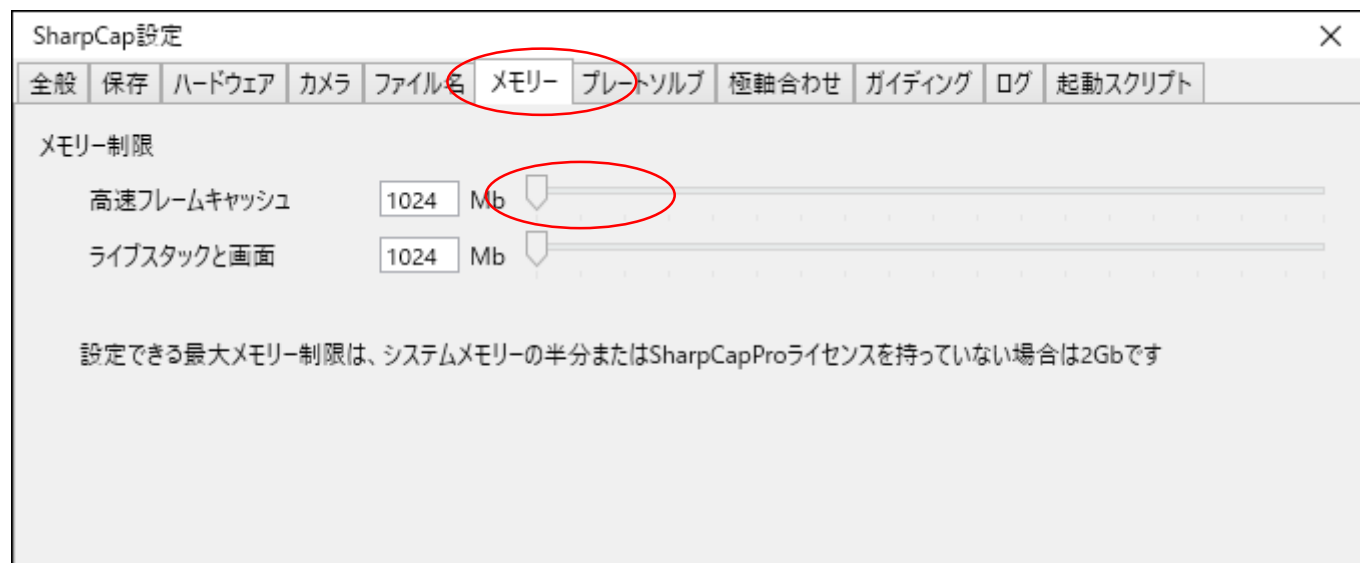
①ぜひやった方がいい事

- メモリー拡張設定

通常最大2GBをシステムの半分まで拡張できる

※どの程度有効かは未検証

メモリー設定



設定したら再起動必要

PCの性能を確認

ウィンドウズの設定>
システム>バージョン情報

当日資料の一部の情報を削除しました

②やるとよさそうなもの

- 2-1プレートソルブ、アノテーション（無料アカウントでOK）
- 2-2極軸合わせ補助
- 2-3シーケンサー（例：撮影開始終了時刻を設定）
- バンド状ノイズ抑制

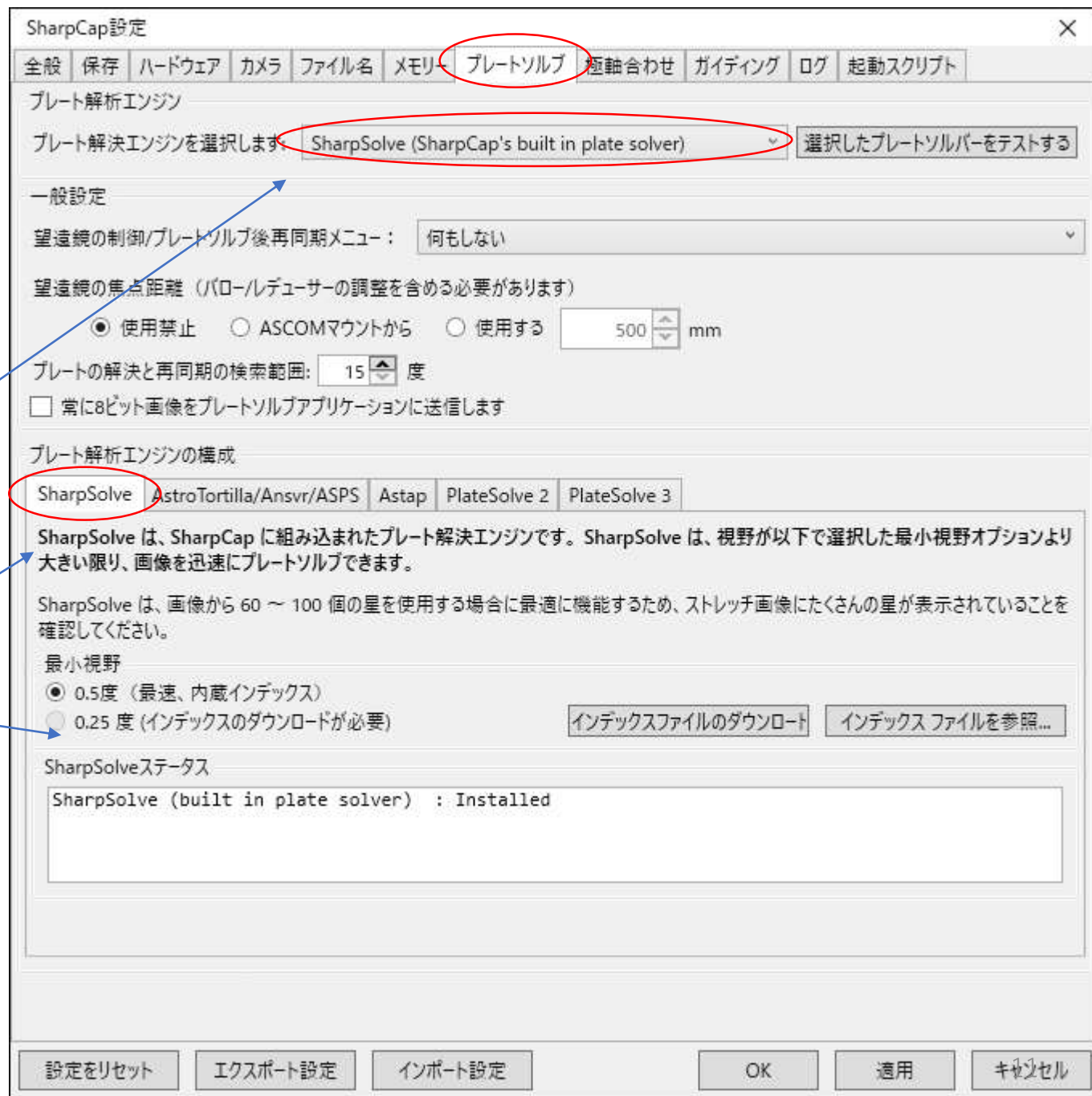
2-1プレートソルブ

- ・ビルトインのソルバー
- ・Astrometry.netのラッパーである
ASPS(All sky Plate Solver)
などが選択可能

とりあえず**ビルトインのSharpSolver**でよい

視野内の星が60個ー100個必要らしい

必要に応じてインデックスファイルをDL



(続)プレートソルブ

ツール>プレートソルブ (ソルブのみ)

SharpCap Pro (v4.1.13621, 64 bit) - Ceres-C (IMX224) - C:\Users\noda\Videos\SharpCap Captures

ファイル (F) カメラ (C) キャプチャ (U) 表示 (V) ツール (O) シーケンサー (E) スクリプト (I) ヘルプ (H)

ライブビュー (W) 撮影開始 (S) クイック撮影 (Q) 撮影停止 (T) 一時停止 (P) スナップショット (A) ライブスタック (L) 天体名: ライトフレーム 効果: なし

Plate solve succeeded, currently pointing at RA=02:18:05.8, Dec=+88:20:39 (J2000), field of view is 2.1834x1.6342 degrees, up is 46.5 degrees E of N, focal length is 128.3mm. [Copy](#)



モード RAW 8
ビニング 2
ビニングモード 平均
ディバイザーモード オフ

カメラコントロール

露出時間 500 ms

プリセット

アナログゲイン

フレームレート 最大

オフセット

USB速度

モノビニング オフ

温度

高速モード オン

反転 両方

ツール>DSIA (ディープスカイイメージアノテーション) ショートカット **Alt-D** プレートソルブの後に実施
アノテーション=天体名を印字してくれる機能 アイコン

DSIA (Deep Sky Image Annotation)

SharpCap Pro (v4.1.13621, 64 bit) - Ceres-C (IMX224) - C:\Users\Yamada\Documents\SharpCap Captures

ファイル (F) カメラ (C) キャプチャ (L) 表示 (V) ツール (O) シーケンサ (S) スクリプト (I) ヘルプ (H)

ライブビュー (W) 撮影開始 (S) クイック撮影 (Q) 撮影停止 (T) 一時停止 (P) スナップショット (K) ライブスタック (L) **DSIA** 天体名: _____

Plate solve succeeded, currently pointing at RA=00:43:01.1, Dec=+40:36:37 (J2000), field of view is 2.1878x1.6375 degrees, up is 73.0 degrees E of N, focal length is 128.0mm. [X]

M110
Galaxy
Mag: 8.15

NGC0206
Association of stars

M31
NGC 224, Andromeda Galaxy
Spiral Galaxy
Mag: 3.40

NGC0221
M32
Galaxy
Mag: 8.13

プロフィール

開く 保存 別名で保存 管理...

フォーマット

出力形式: FITSファイル (*.fits) 自動

キャプチャエリア: ROIの選択 1304x976

モード: RAW 16

ピンング: 2

ピンングモード: 平均

ディバイザーモード: オフ

カメラコントロール

露出時間: 250 ms 長秒モード

プリセット: 1/4s 自動

アナログゲイン: 自動 689

フレームレート: 最大

Previewing : 6213 frames (0 dropped) in 0:29:42, 4.0 fps | Memory: 2 of 4956 frames used, Disk: 399 GB free

HACSTIP2005

表示 ...

更新日時

25/03/11(火) 7:14

25/08/28(木) 8:32

Deep Sky Annotation Results

Objects In View	Objects Nearby
ID	Name
M31	NGC 224, Andromeda Galaxy
NGC0224	M31, Andromeda Galaxy
M32	NGC 221, Satellite of M31
NGC0221	M32
NGC0205	M110
M110	NGC 205, Satellite of M31
NGC0206	

13



表示項目を選択可能

(※固定撮影だったためずれている)

(続)プレートソルブ →WCS反映

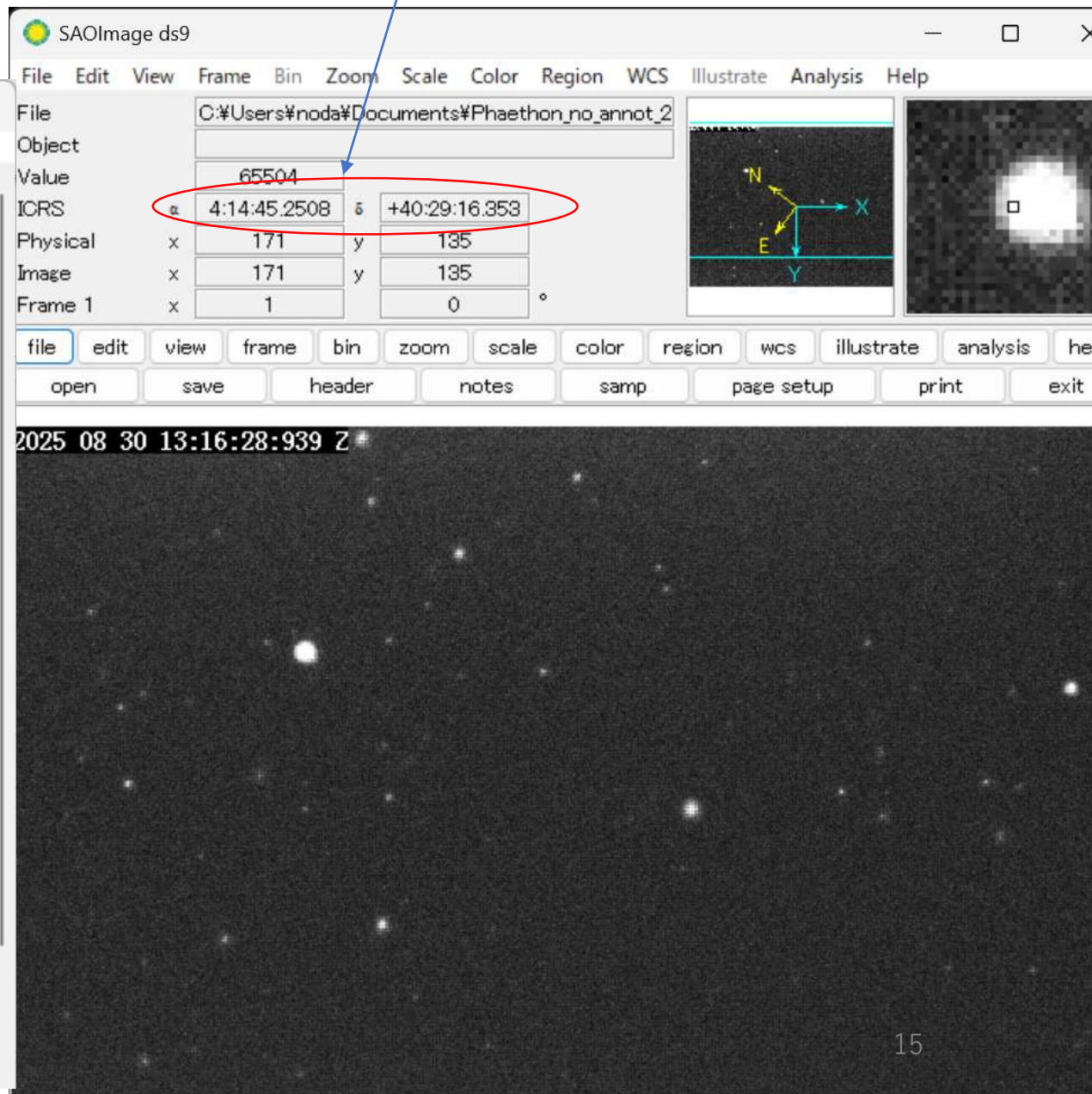
星にマウスを当てると座標がわかる

```
C:\Users\noda\Documents\Phaethon_no_annot_20250830_22_16_29Capture_00001.fits

File Edit Font

SIMPLE = T / C# FITS: 08/30/2025 22:16:29
BITPIX = 16
NAXIS = 2 / Dimensionality
NAXIS1 = 652
NAXIS2 = 488
CRVAL1 = 63.65057945251465 / Reference Pixel RA (deg)
CRVAL2 = 39.851985931396484 / Reference Pixel Dec (deg)
CDELT1 = 0.003361048074 / X Pixel Size (deg)
CDELT2 = 0.003361048074 / Y Pixel Size (deg)
CROTA1 = 232.19707931052164 / Rotation of image (deg - up is east-of-north)
CROTA2 = 232.19707931052164 / Rotation of image (deg - up is east-of-north)
CD1_1 = -0.002056392841 /
CD1_2 = 0.002659308491 /
CD2_1 = -0.002651977586 /
CD2_2 = -0.002062988235 /
GAIN = 560 /
FOCALLEN = 127.8 /
CRPIX2 = 244 / Reference Pixel Y Co-ordinate
OFFSET = 0 /
BLKLEVEL = 0 /
CAMID = 'CAMG71936DA041109000' /
EGAIN = 0.0085 / Electrons per ADU at true ADC bit depth
ADCBITS = 12 / Bit depth of camera sensor ADC in current mode
BIASADU = 15.930909156799316 / ADU for bias level (no photons) at current sett
EGAINSAV = 0.00053 / Electrons per ADU at saved bit depth
RELGAIN = 568.45 / Multiplicative gain relative to mininum
WARNING = 'No GOTO mount connected, Plate solve header info may not be accurate.
CRPIX1 = 326 / Reference Pixel X Co-ordinate
CTYPE2 = 'DEC--TAN' / Tangential Projection of Declination
RDNOISE = 1.6 / Read noise in electrons
EXTEND = T / Extensions are permitted
BZERO = 32768 /
BSCALE = 1 /
ROWORDER = 'TOP-DOWN' /
```

FITS撮影すると
FITSヘッダーに結果が反映される



2-2極軸合わせ補助

- ・最初に北極の5度以内に合わせてから
- ・画像取得 & プレートソルブ、
- ・星を指定位置に導入するようにマウントを動かす

Requirements:

- An Equatorial Mount!
- A camera/scope combination that provides a field of view of between about 0.6 and 5 degrees.
- A 200mm focal length finderfinder + guide camera is ideal.
- To be able to see at least 10-15 stars in the field of view of the camera.
- Initial rough polar alignment - within 5 degrees of the pole.
- Your mount should start in the 'home' position with weights down, scope up, DEC= +/-90

You Don't Need:

要求事項の説明書き

- ・0.6－5度の視野、星10－15個以上が必要
(焦点距離200mm、ファインダーカメラが最適)
- ・望遠鏡のホームポジションから開始する

The screenshot shows the 'Polar Align' window of SharpCap software. It is divided into several sections: 'Step 1 - Capture First Image' with instructions on how to use the software; 'Location & Refraction Correction' with fields for coordinates and hemisphere selection; 'Star Detection' with sliders for sensitivity and noise reduction, and checkboxes for 'Suppress Hot Pixels' and 'Use Display Stretch'; 'Plate Solving Status' showing the current frame as 'Could not'; and 'First Frame' with status indicators for 'Status', 'Detected Stars', 'Used Stars', 'Field of View', 'Pixel Size', 'Centre RA', 'Centre Dec', and 'Solve Time'.

First Frame	
Status :	Working
Detected Stars :	0
Used Stars :	0
Field of View :	
Pixel Size :	
Centre RA :	
Centre Dec :	
Solve Time :	0ms

最初だけやってみたところ

SharpCap Pro (v4.1.13621, 64 bit) - Ceres-C (IMX224) - C:\Users\Ynoda\Videos\SharpCap Captures

ファイル (F) カメラ (C) キャプチャ (U) 表示 (V) ツール (O) シーケンサー (E) スクリプト (I) ヘルプ (H)

ライブビュー (W) 撮影開始 (S) クイック撮影 (Q) 撮影停止 (T) 一時停止 (P) スナップショット (A) ライブスタック (L) 天体名: ライトフレーム 効果: ズーム:

Press the "Fit" button before rotating the RA Axis

UMi

Polar Align

Step 1 - Capture First Image

SharpCap is scanning each frame for stars and matching them against its own list of stars near the pole. Detected stars are outlined in yellow or red.

SharpCap needs to find at least 10-15 stars. Detected stars are outlined in yellow or red.

Start with a high gain value and an exposure of 1-2s, then adjust as required.

When the status to the right shows that SharpCap has located a match, you can press Next to move to the next stage.

Problems? [Click Here for Help](#)

Location & Refraction Correction

39.100N, 141.000E
Refraction correction: Off
Goto File->Settings to update location info

Auto Advance

☐ Automatically advance to the next stage when the current stage is completed.

Advanced

☐ Allow smaller rotation angles (may be less accurate)

Star Detection

Sensitivity: 75
Noise Reduction: 1.0
☒ Suppress Hot Pixels
☒ Use Display Stretch
Reset All

Plate Solving Status

Most Recent Frame: **Could not solve**

First Frame

Status:	Completed
Detected Stars:	6
Used Stars:	6
Field of View:	2.19x1.64°
Pixel Size:	12.09"
Centre RA:	00:01:19
Centre Dec:	+89:02:53
Solve Time:	0ms

Restart Previous Next

Camera Controls

モード: RAW 8
ピンング: 2
ピンングモード: 平均
ディベイヤーモード: オフ

カメラコントロール

露出時間: 500 ms ☐ 長秒モード
プリセット: 1/2s ☐ 自動

アナログゲイン

自動 560

フレームレート

最大

オフセット

25

USB速度

100

モノピンング

オフ

温度

32.4

高速モード

オン

反転

両方

露出/ゲインシフト

0.00

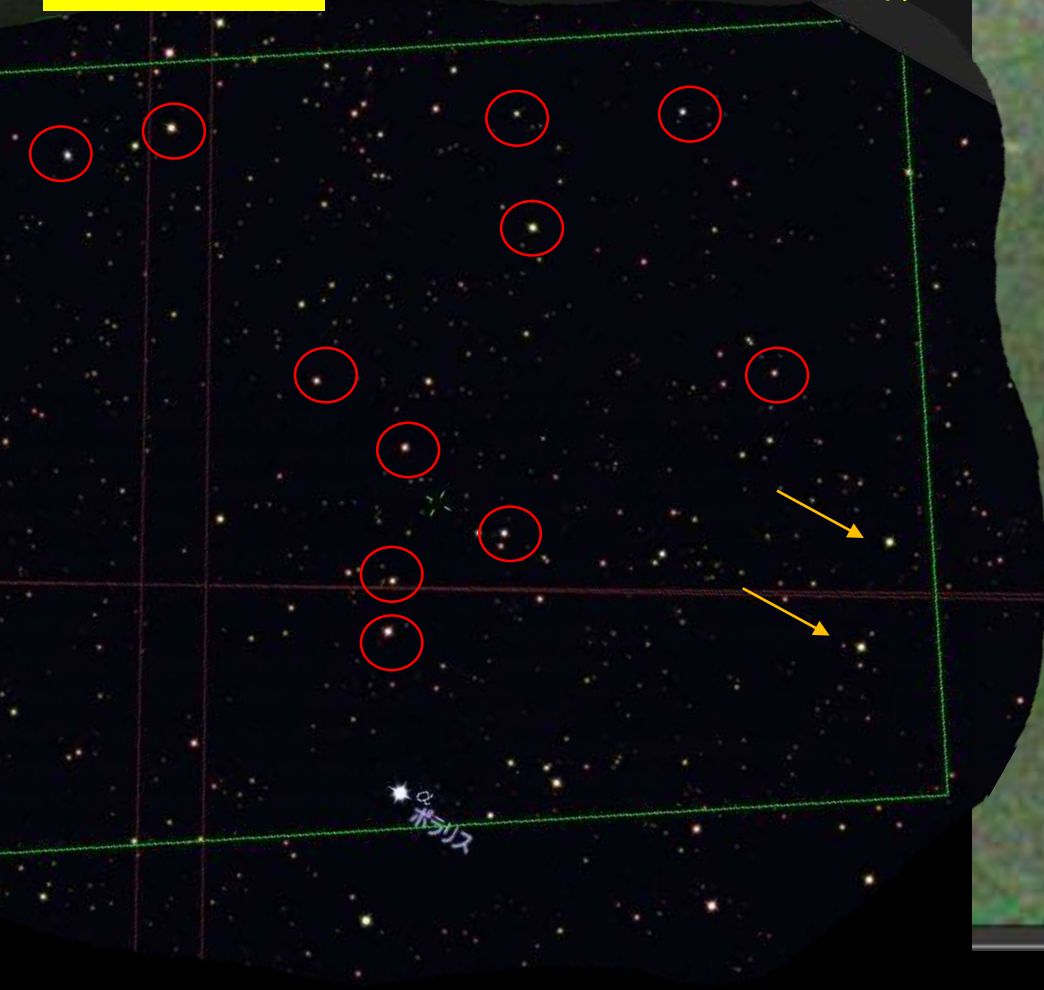
画像調整

Previewing: 1490 frames (0 dropped) in 0:10:59, 2.2 fps | Memory: 1 of 13231 frames used, Disk: 94 GB free

21:08 2025/08/27(水)

拡大・比較

比較用星図



ズーム: 複数列

長秒モード

自動

自動 560

25

100

32.4

0.00

露出/ゲインシフト

画像調整

シーケンサー>シーケンスエディター

シーケンス開始ボタン

2-3 シーケンサー

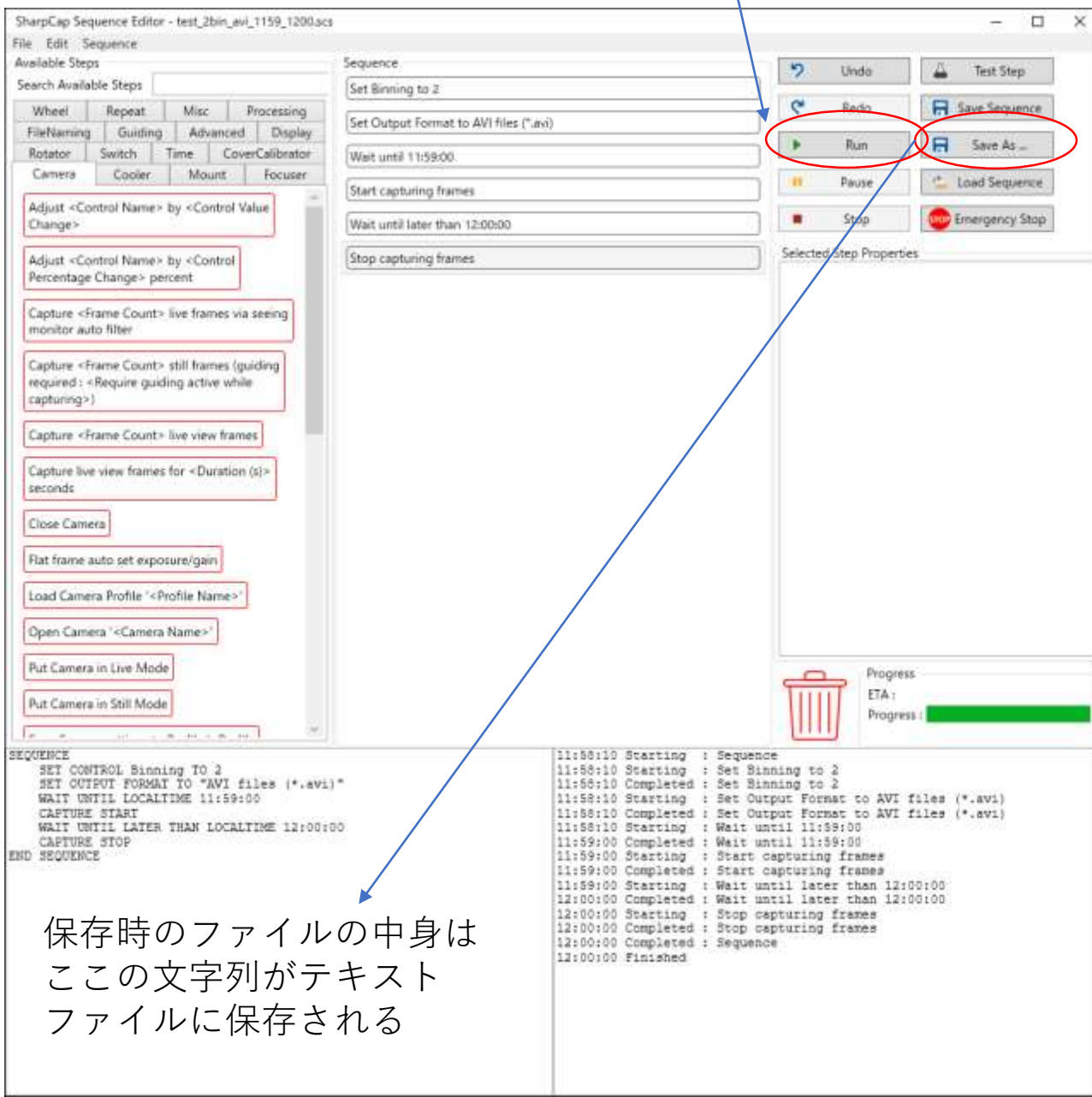
左のメニューから、
真ん中の実行窓に
項目をドラッグして
プログラムを作る

使いそうなメニューは

- ・ TIME
- > Wait until <Time of Day>
- ・ Camera
- > set <Control Name> to <Control Value>
- > start capturing frames
- > stop capturing frames

など

<>には真ん中窓の「Sequence」に取り込んだ時に
右窓「Selected Step Properties」で値を設定できる



保存時のファイルの中身は
ここの文字列がテキスト
ファイルに保存される

(続)シーケンサー フィルター機能

例：waitと打つと、
waitを含む項目が表示されるので、
タブを選んで探してみる

The screenshot shows the SharpCap Sequence Editor window. The 'Available Steps' list on the left is filtered to show only steps containing the word 'wait'. The 'Time' tab is selected. The 'Sequence' list in the center shows the steps: 'Wait until 4:01:00', 'Start capturing frames', 'Wait until 4:03:00', and 'Stop capturing frames'. The 'Selected Step Properties' panel on the right shows the 'Time of Day' property set to '4:01:00'. A red trash can icon is visible in the bottom right corner of the interface.

SharpCap Sequence Editor - Unsaved sequence

File Edit Sequence

Available Steps

Search Available Steps wait

Camera Misc Guiding Time

Wait for <Delay> seconds

Wait until <Time of Day>

Wait until <Astronomical Event> happens
(or has already happened)

Wait until later than <Time of Day>

Wait until local sidereal <Time>

Wait until local sidereal above <Time>

Wait until next <Astronomical Event> occurs

Sequence

Wait until 4:01:00

Start capturing frames

Wait until 4:03:00

Stop capturing frames

Undo

Redo

Run

Pause

Stop

Test Step

Save Sequence

Save As ...

Load Sequence

Emergency Stop

Selected Step Properties

Time of Day 4:01:00

Progress

ETA :

Progress :

```
SEQUENCE
  WAIT UNTIL LOCALTIME 4:01:00
  CAPTURE START
  WAIT UNTIL LOCALTIME 4:03:00
  CAPTURE STOP
END SEQUENCE
```

(続)シーケンサーの具体例

配布資料wait take...scs

決まった時刻まで待ち、
撮影開始、
決まった時刻まで待ち、
撮影終了

SharpCap Sequence Editor - Unsaved sequence

File Edit Sequence

Available Steps

Search Available Steps

Wheel Repeat Misc Processing
FileNaming Guiding Advanced Display
Rotator Switch Time CoverCalibrator
Camera Cooler Mount Focuser

Adjust <Control Name> by <Control Value Change>
Adjust <Control Name> by <Control Percentage Change> percent
Capture <Frame Count> live frames via seeing monitor auto filter
Capture <Frame Count> still frames (guiding required : <Require guiding active while capturing>)

Sequence

Wait until 4:01:00
Start capturing frames
Wait until 4:03:00
Stop capturing frames

Undo Redo Run Pause Stop Test Step Save Sequence Save As ... Load Sequence Emergency Stop

Selected Step Properties

Time of Day 4:01:00

Progress ETA : Progress :

SEQUENCE
WAIT UNTIL LOCALTIME 4:01:00
CAPTURE START
WAIT UNTIL LOCALTIME 4:03:00
CAPTURE STOP
END SEQUENCE

*.SCSという拡張子の
ファイルに書かれている
内容

カーソルを合わせると
時刻設定窓に
時刻が表示されるので
編集する

(参考)Arduino nano everyを使った 自動開始のためのLED照射プログラム 配布資料 sketch_....zip

- ・ LED 2つのうち、一つは常時点滅、一つは設定時間のみ点滅できます
- ・ 開始、終了を2回設定できます
- ・ 配布したスケッチの2つの時間帯を書き換えて使います
(・ 同じ名前のフォルダーに入っている必要があるようです)



```
sketch_25aug27a_GPS_intrpt_2way | Arduino IDE 2.3.6
ファイル 編集(E) スケッチ ツール ヘルプ(H)
ボードを選択
sketch_25aug27a_GPS_intrpt_2way.ino
1 #include <TinyGPS++.h>
2 #include <SoftwareSerial.h>
3
4 #define PPS_PIN 2 // PPS信号 (INT0)
5 #define LED_ALWAYS_PPS 7 // LED1: 常にPPS同期 (例: 赤)
6 #define LED_TIMED 13 // LED2: 時間帯限定でPPS同期 (例: 青)
7
8 SoftwareSerial gpsSerial(3, 4); // GPS TX→3, RX→4
9 TinyGPSPlus gps;
10
11 // 現在時刻 (割り込み内でも使うため volatile)
12 volatile int currentHour = 0;
```

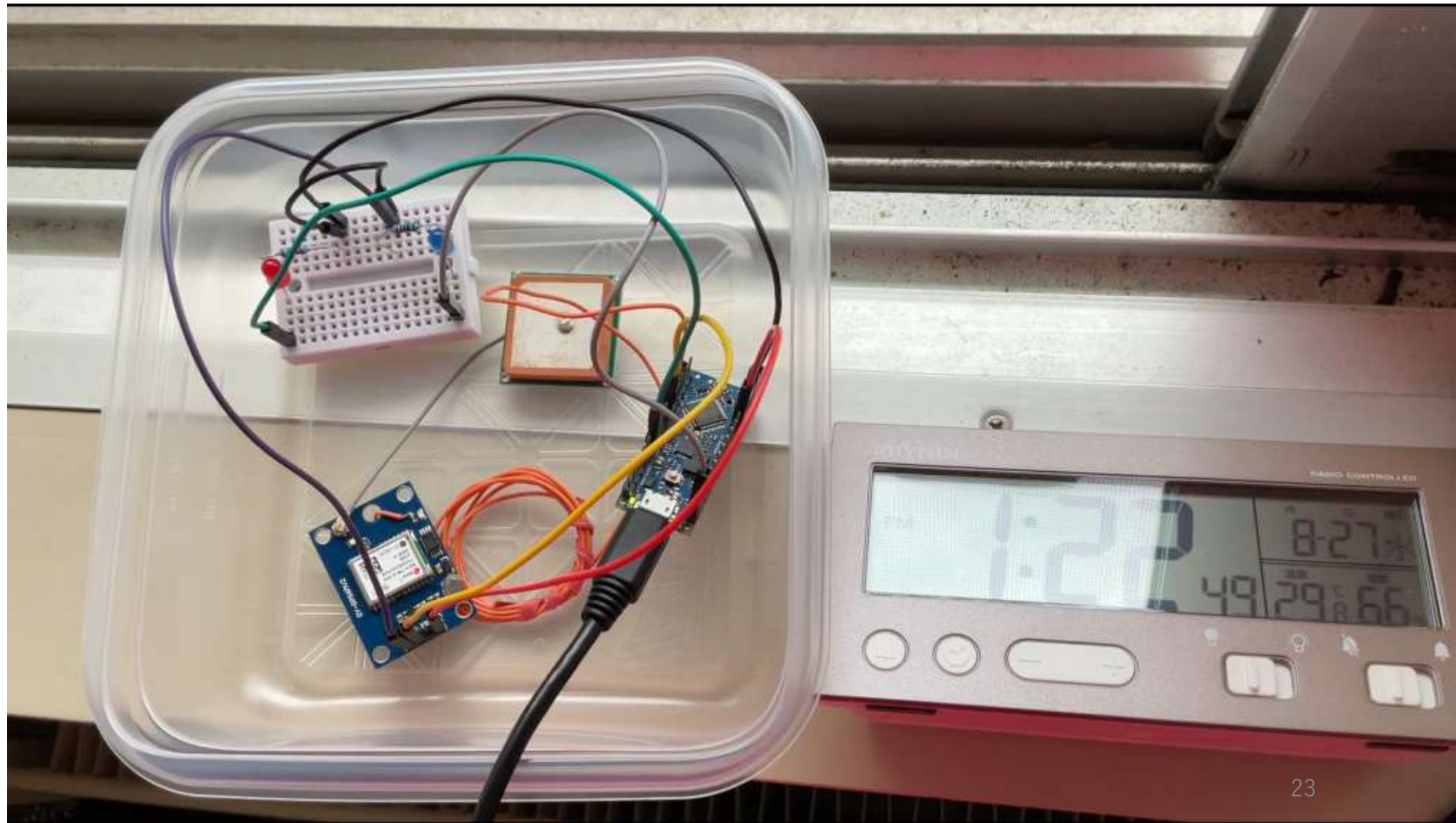
書き換えるところ

```
22
23 // 時間帯の初期設定 (UTC)
24 TimePoint start1 = {4, 21, 0};
25 TimePoint end1   = {4, 21, 30};
26
27 TimePoint start2 = {4, 23, 0};
28 TimePoint end2   = {4, 23, 20};
29
30 String inputBuffer;
```

自動ON/OFFの例

※マイコン経由なので
遅れ測定が必要

(ms未満のはずだが)



③マニア向け？

- 3-1 コンソールでコマンドを直書き

- 3-2 スクリプト

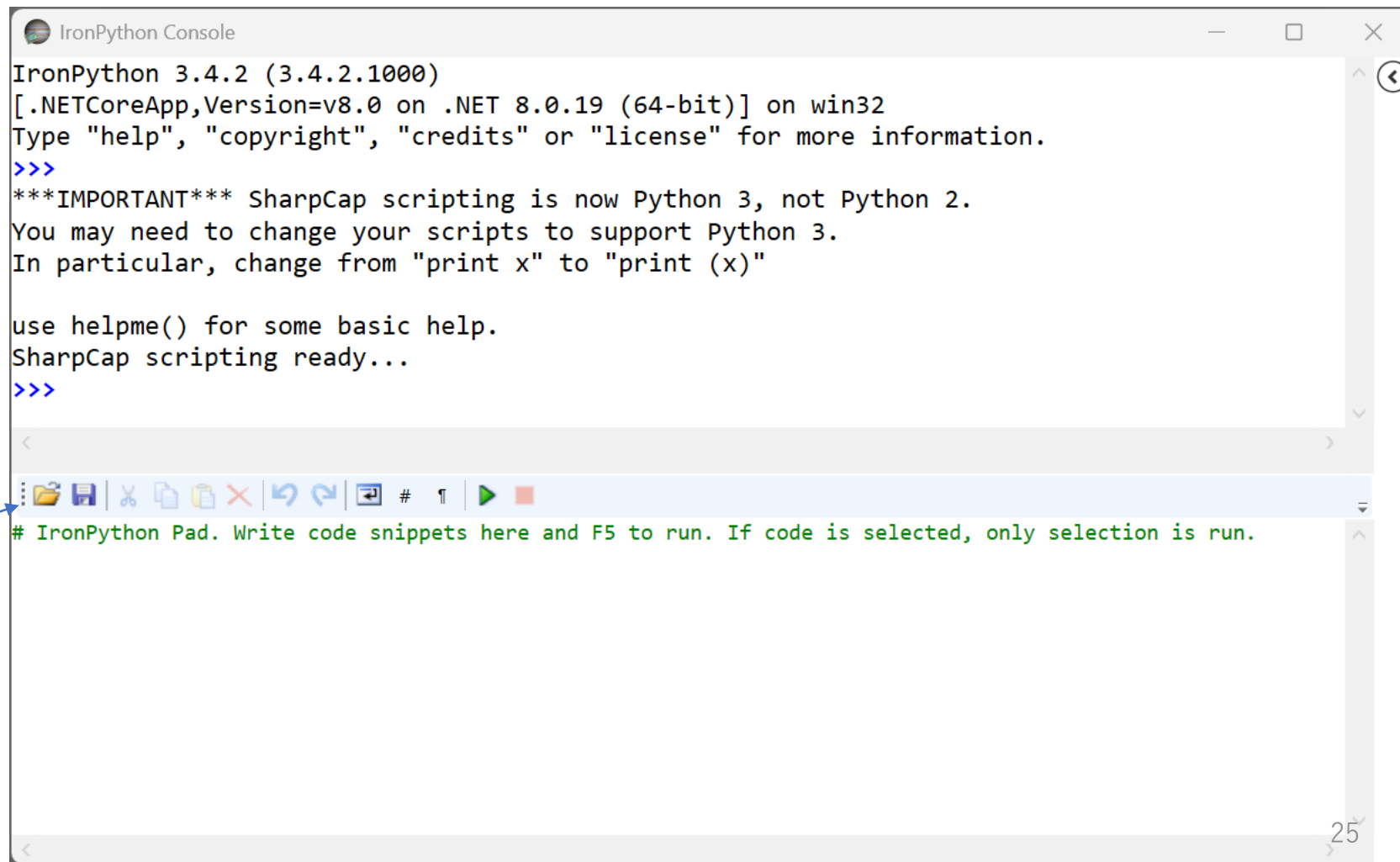
ボタン窓を作って露光時間などをボタンで設定（配布資料）

スクリプト>コンソールを表示

画面

上：コンソール

コマンドを打てる



下：スクリプト読み出し窓

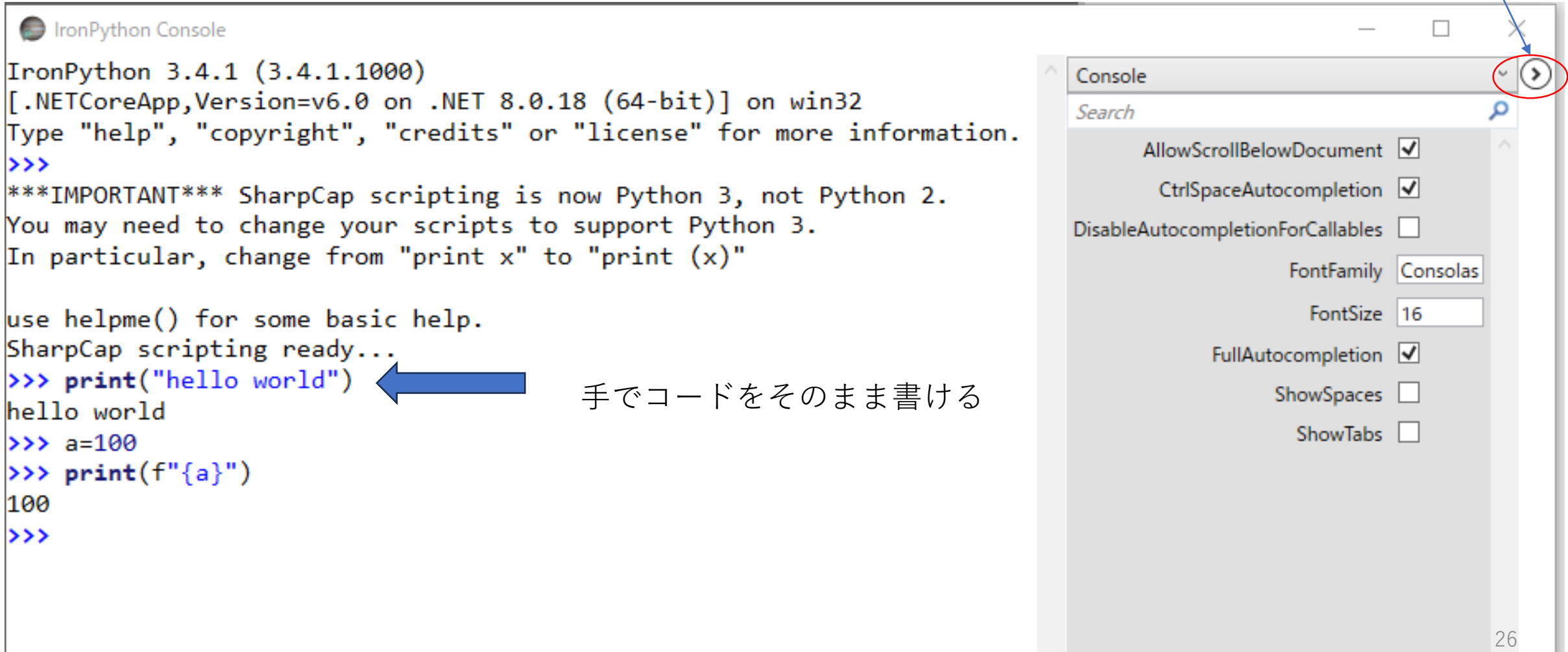
アイコンからスクリプト選択

または

スクリプト>スクリプトを実行

3-1 python 直書き

フォント選択などが出る



The image shows the IronPython Console window and its settings panel. The console window displays the IronPython 3.4.1 (3.4.1.1000) prompt and a message about SharpCap scripting being now Python 3. A blue arrow points to the prompt, indicating where to type code. The settings panel is open, showing various options like AllowScrollBelowDocument, CtrlSpaceAutocompletion, DisableAutocompletionForCallables, FontFamily (set to Consolas), FontSize (set to 16), FullAutocompletion, ShowSpaces, and ShowTabs. A red circle highlights the font selection dropdown in the settings panel, with a blue arrow pointing to it from the text 'フォント選択などが出る'.

```
IronPython Console
IronPython 3.4.1 (3.4.1.1000)
[.NETCoreApp,Version=v6.0 on .NET 8.0.18 (64-bit)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
***IMPORTANT*** SharpCap scripting is now Python 3, not Python 2.
You may need to change your scripts to support Python 3.
In particular, change from "print x" to "print (x)"

use helpme() for some basic help.
SharpCap scripting ready...
>>> print("hello world")
hello world
>>> a=100
>>> print(f"{a}")
100
>>>
```

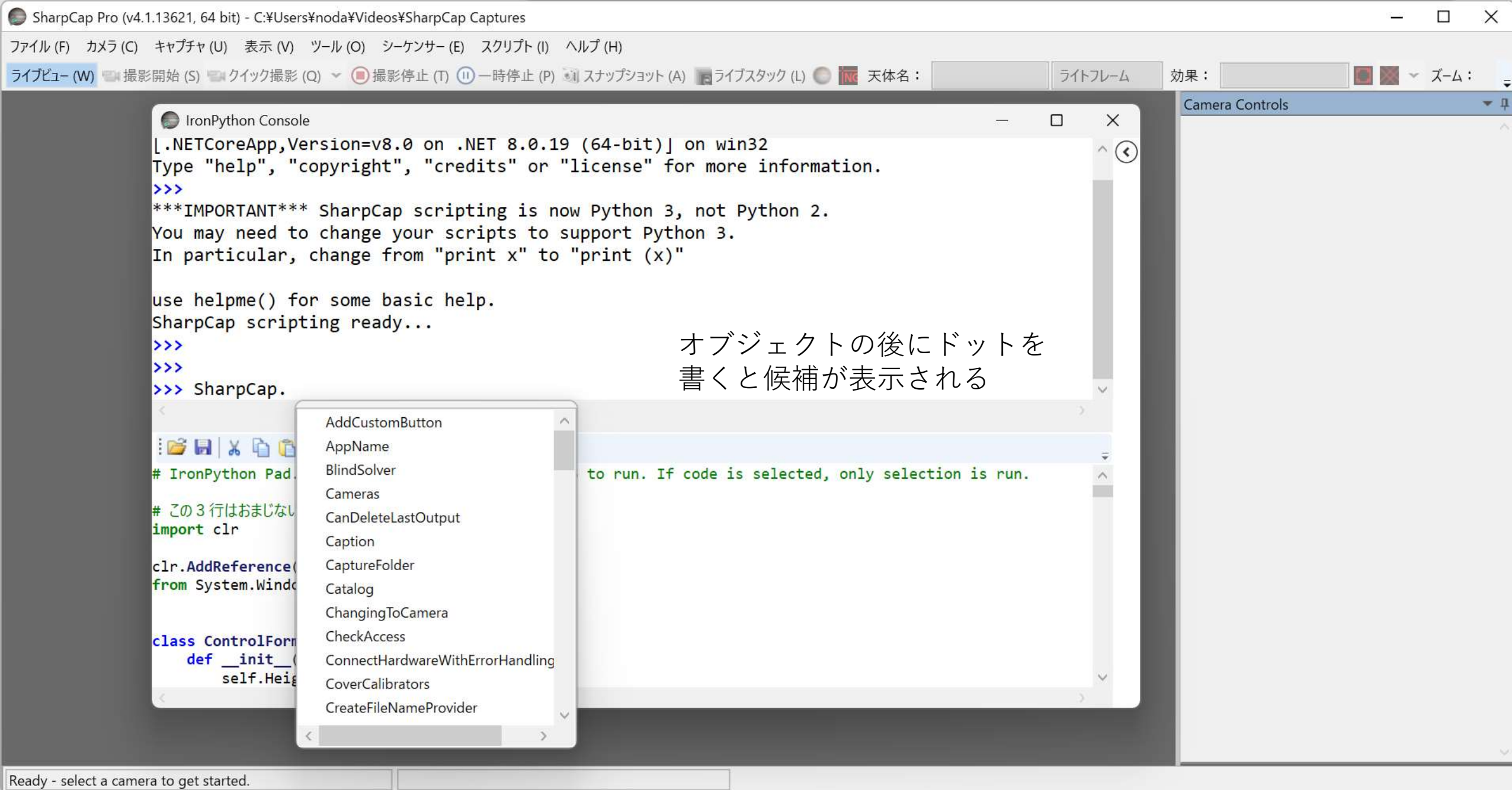
手でコードをそのまま書ける

Console

Search

- AllowScrollBelowDocument ☒
- CtrlSpaceAutocompletion ☒
- DisableAutocompletionForCallables ☐
- FontFamily
- FontSize
- FullAutocompletion ☒
- ShowSpaces ☐
- ShowTabs ☐

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pythonの object list

使用可能オブジェクトの中身が
書かれている

<https://docs.sharpcap.co.uk/4.1/>

SharpCap

SharpCap User Manual

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SharpCap Scripting Object Model Reference

The major objects available to control the application are:

SharpCap	The main application object, all other objects are accessed via this object.
SharpCap.Cameras	A collection of available cameras (as shown in the Cameras menu)
SharpCap.SelectedCamera	The camera that is currently open (or 'None' if no camera open)
SharpCap.SelectedCamera.Controls	The controls available on the currently open camera. Many common controls can be access directly, but others will need a check of each item in the array to find the control needed.
SharpCap.Focusers	A collection of (ASCOM) focusers detected by SharpCap. SharpCap.Focusers.SelectedFocuser can be used to connect to a specific focuser and then access it via the SelectedCamera.Controls collection.
SharpCap.Mounts, SharpCap.Wheels, SharpCap.Rotators, SharpCap.SwitchDevices	Collections of ASCOM mounts, filter wheels, rotators and switch devices, work in the same way as Focusers.
SharpCap.Transforms	A collection of frame transforms that can be applied to the preview window by setting the SharpCap.Transforms.SelectedTransform property (buggy at the moment)
SharpCap.MainWindow	The main application window of SharpCap. Take care changing properties or calling methods on this as it may break things.
SharpCap.Reticules	Collection of reticule overlays that may be selected for drawing on the screen (like the transforms, also currently buggy)
SharpCap.Settings	Selected application settings, alter with care and call 'Save()' after any changes to make them take effect
SharpCap.Sequencer	Access the sequencer, allowing sequences to

オブジェクト中身例

```
>>> print(SharpCap.SelectedCamera.DeviceName)  
ZWO ASI462MC
```

```
>>> print(SharpCap.SelectedCamera.IsPreviewing)  
True
```

J2000から現在時刻での天体座標変換の例

```
>>> from SharpCap.Base import RADecPosition  
>>> from SharpCap.Base import Epoch  
>>> pos = RADecPosition(1,45, Epoch.J2000)  
>>> print (pos.AdjustToEpoch(Epoch.JNOW))  
RA=01:01:29.0,Dec=+45:08:10
```

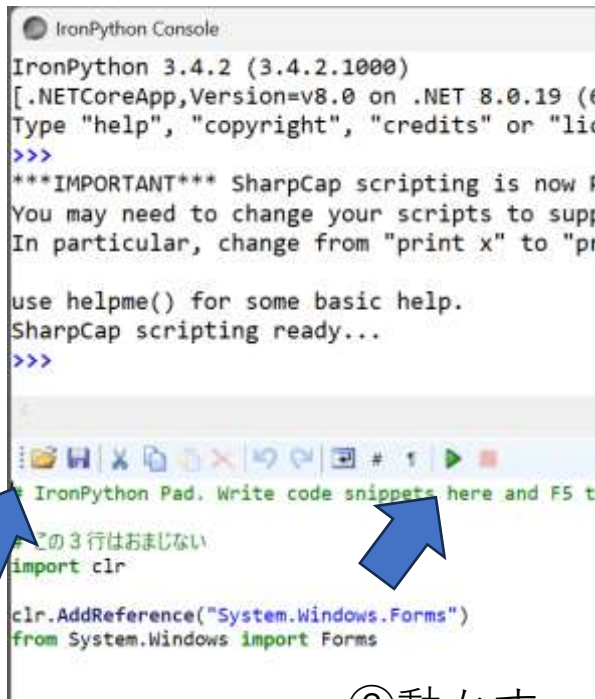
※ただし、astropyなど便利なmoduleを取り込めない

SharpCap内で完結するコードか、sys等で外部コマンドを駆動させる必要あり

3-2 スクリプト(1)

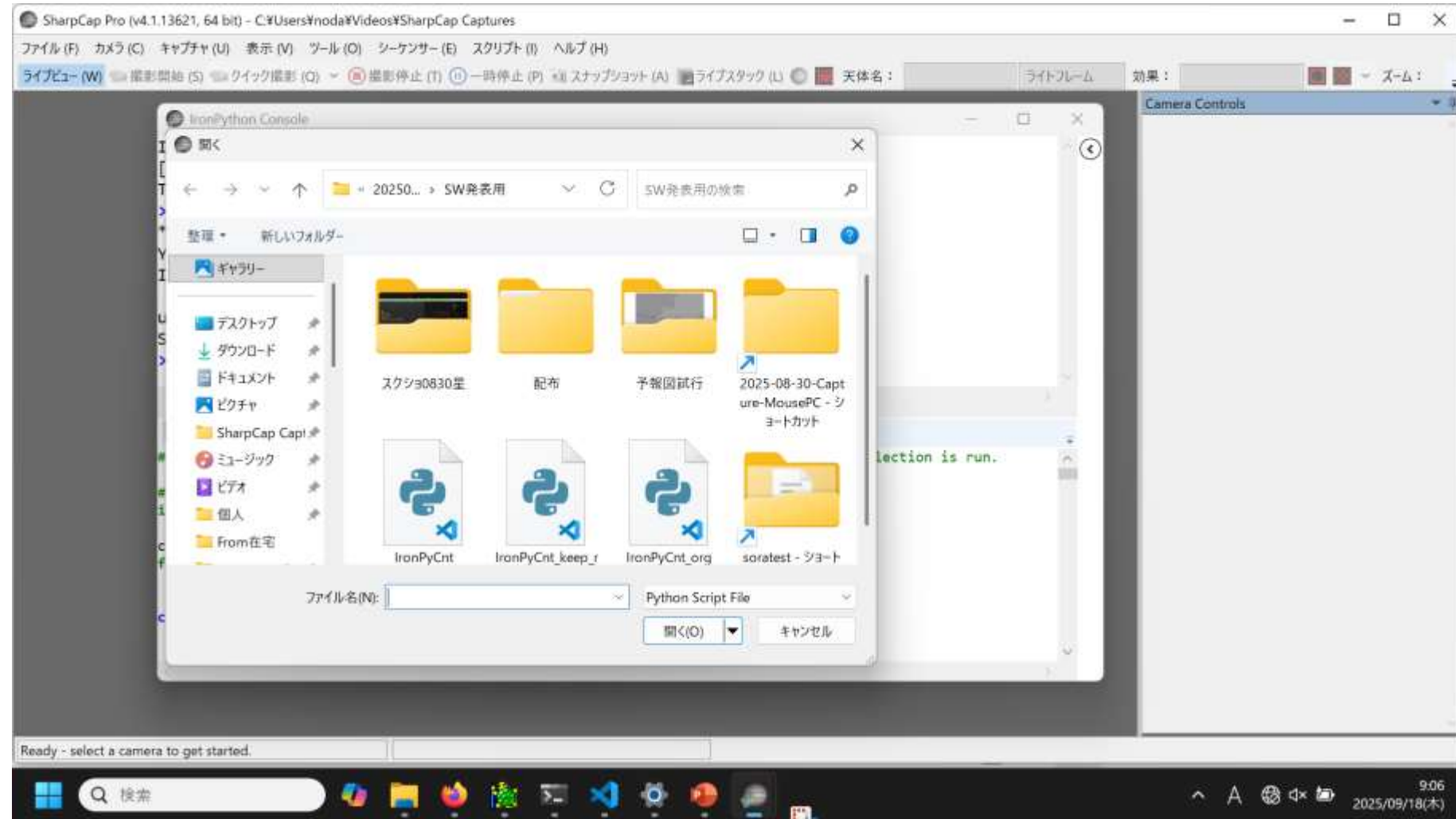
設定をボタンで表示する例

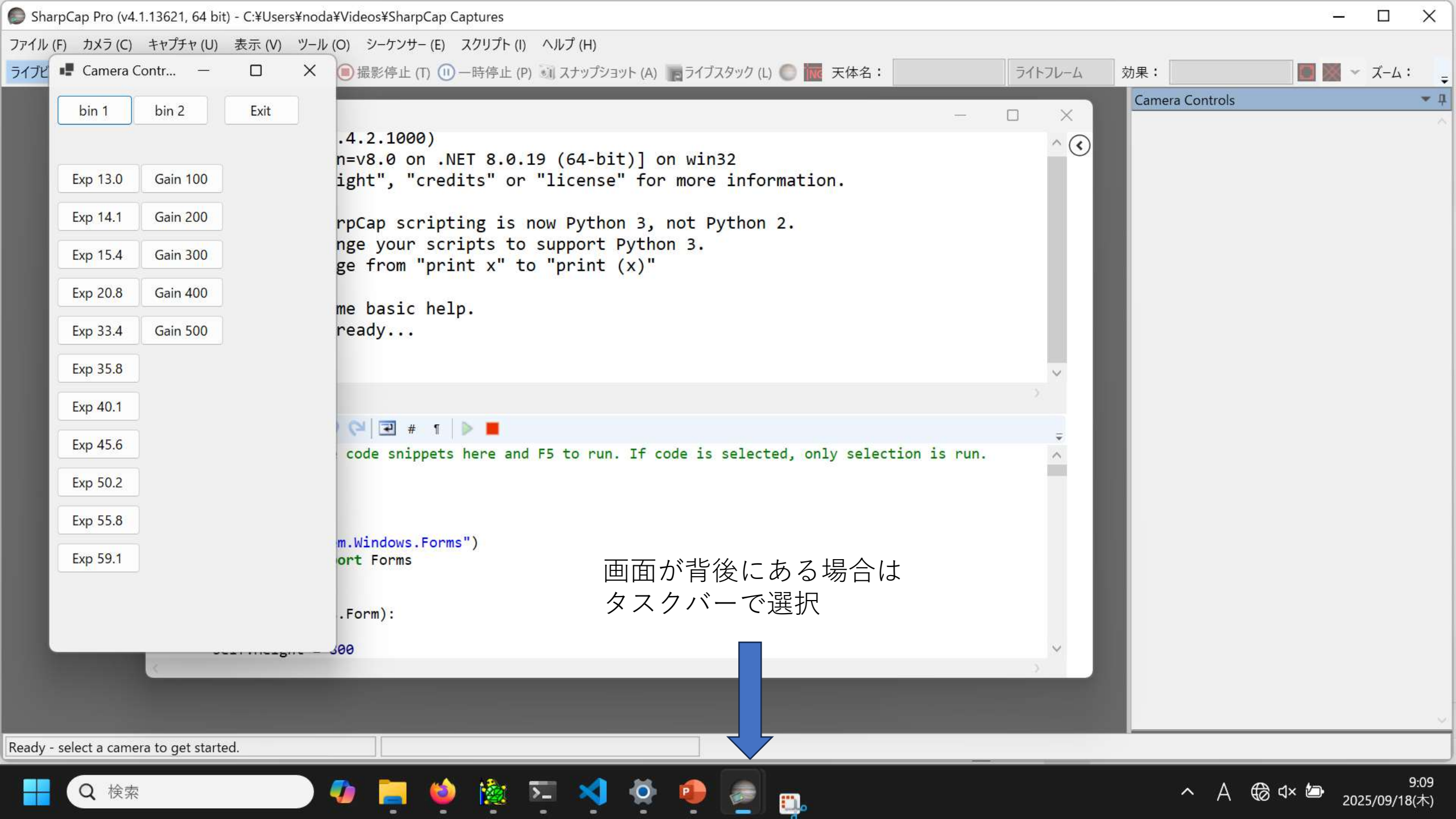
配布資料IronPyCnt.py



①開く
→プログラムが
展開される

②動かす
再生ボタン





画面が背後にある場合は
タスクバーで選択

コードの一部

①クラスControlFormを定義

```
10 class ControlForm(Forms.Form):
11     def __init__(self):
12         self.Height = 800
13         self.Width = 400
14         self.Text = "Camera Control"
15         # 常に全面に表示
16         self.TopMost = 1
17
18         # button size
19         width = 100
20         height = 40
21
22         # タプル("text", handler) のリスト定義
23         button_exps = [
24             ("Exp 13.0", self.OnClickExp13ms),
25             ("Exp 14.1", self.OnClickExp14ms),
26             ("Exp 15.4", self.OnClickExp15ms),
27             ("Exp 20.8", self.OnClickExp21ms),
28             ("Exp 33.4", self.OnClickExp33ms),
29             ("Exp 35.8", self.OnClickExp36ms),
```

②クラス中、ボタン作成とイベントハンドラ関連づけ

```
58         for i, (text, handler) in enumerate(button_exps):
59             btn = Forms.Button(
60                 | Text=text, Left=10, Top=100 + i * 50, Width=110, Height=40
61             )
62             btn.Click += handler
63             self.Controls.Add(btn)
64
```

③クラス中、イベントハンドラ作成

```
118     def OnClickExp13ms(self, sender, args):
119         | SharpCap.SelectedCamera.Controls.Exposure.Value = 13000
120
121     def OnClickExp14ms(self, sender, args):
122         | SharpCap.SelectedCamera.Controls.Exposure.Value = 14100
123
124     def OnClickExp15ms(self, sender, args):
125         | SharpCap.SelectedCamera.Controls.Exposure.Value = 15400
126
127     def OnClickExp21ms(self, sender, args):
128         | SharpCap.SelectedCamera.Controls.Exposure.Value = 20800
```

④メイン

```
178
179     if __name__ == "__main__":
180         app = ControlForm()
181         Forms.Application.Run(app)
182
```

フォーラム

よく読むと便利そうなものがある

UCAC4星表のアノテーション機能

<https://forums.sharpcap.co.uk/viewtopic.php?t=8492>

SharpCap Forums

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Scripting

Script for the observation of an occultation

3 posts • Page 1 of 1

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⚙

Script for the observation of an occultation

#1 by Jean-Francois » Tue Feb 25, 2025 8:35 pm

Hello,

Here the script for the observation of an occultation.

Occultation_doc_17.jpg

Occultation_doc_17.jpg (431.4 KiB) Viewed 87 times

The scripts and the additional files (*.exe and *.pdf) can be found in the ZIP file.

Download and unpack the ZIP somewhere on your computer.

Download the PDF file and read it for the detailed installation steps.

“

1

❤

Jean-Francois

Posts: 656

Joined: Sun Oct 13, 2019 10:52 am

Location: Germany

3-2 スクリプト(2) UCAC4アノテーション ツール(配布資料)

・野田未使用、IOTA本家の会合で
多分紹介された

・ UCAC4星表ダウンロード必要
(~9GB) 長時間かかる
・ ダウンロードコマンド
> wget -r -np -nH --cut-dirs=5
https://cdsarc.u-
strasbg.fr/ftp/l/322A/UCAC4/u4b

・ UCAC4ファイルのありかを書き
換える

・ スクリプト読み出し窓で
"UCAC4_annotation_1.8.py"を選択

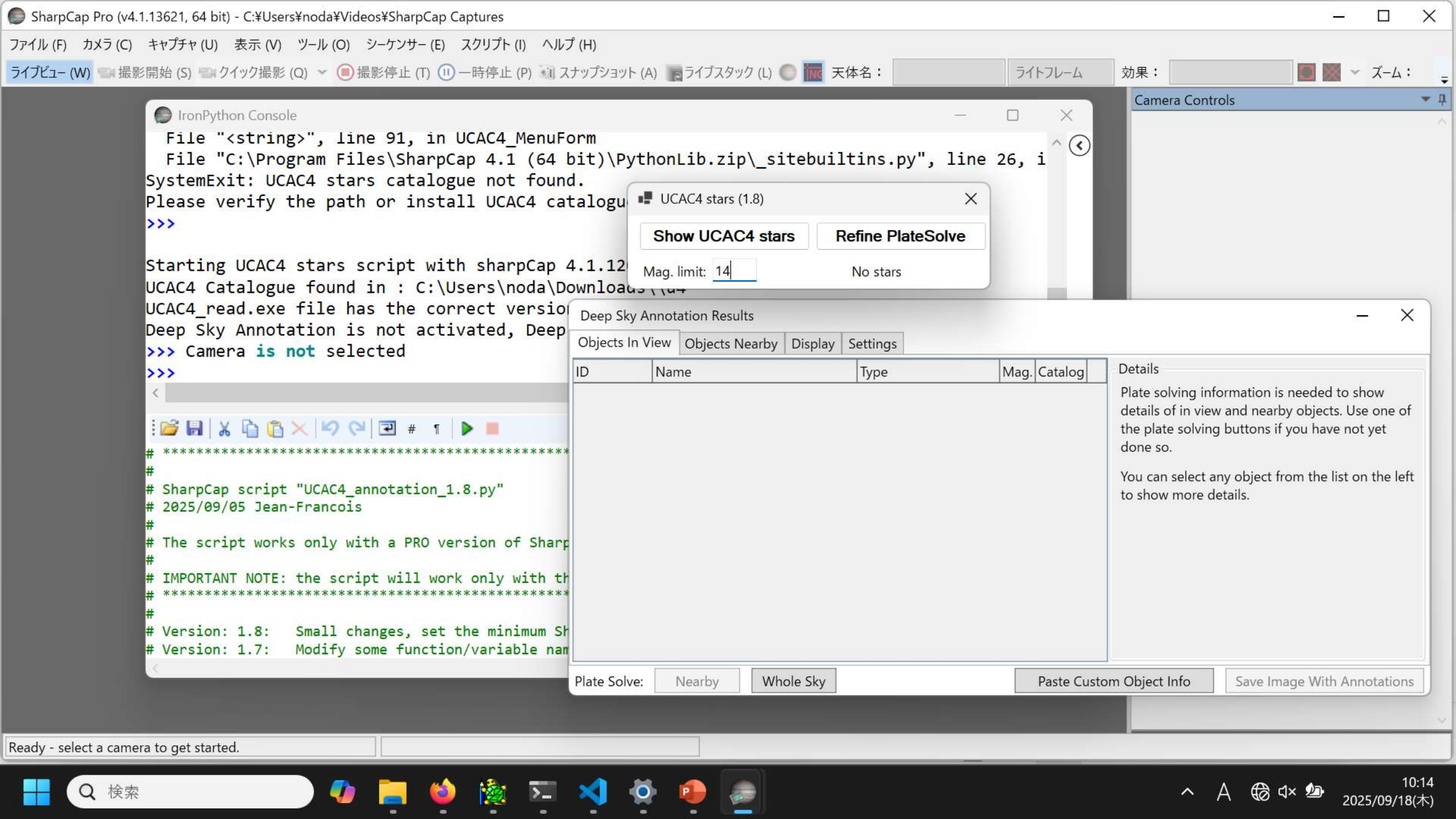
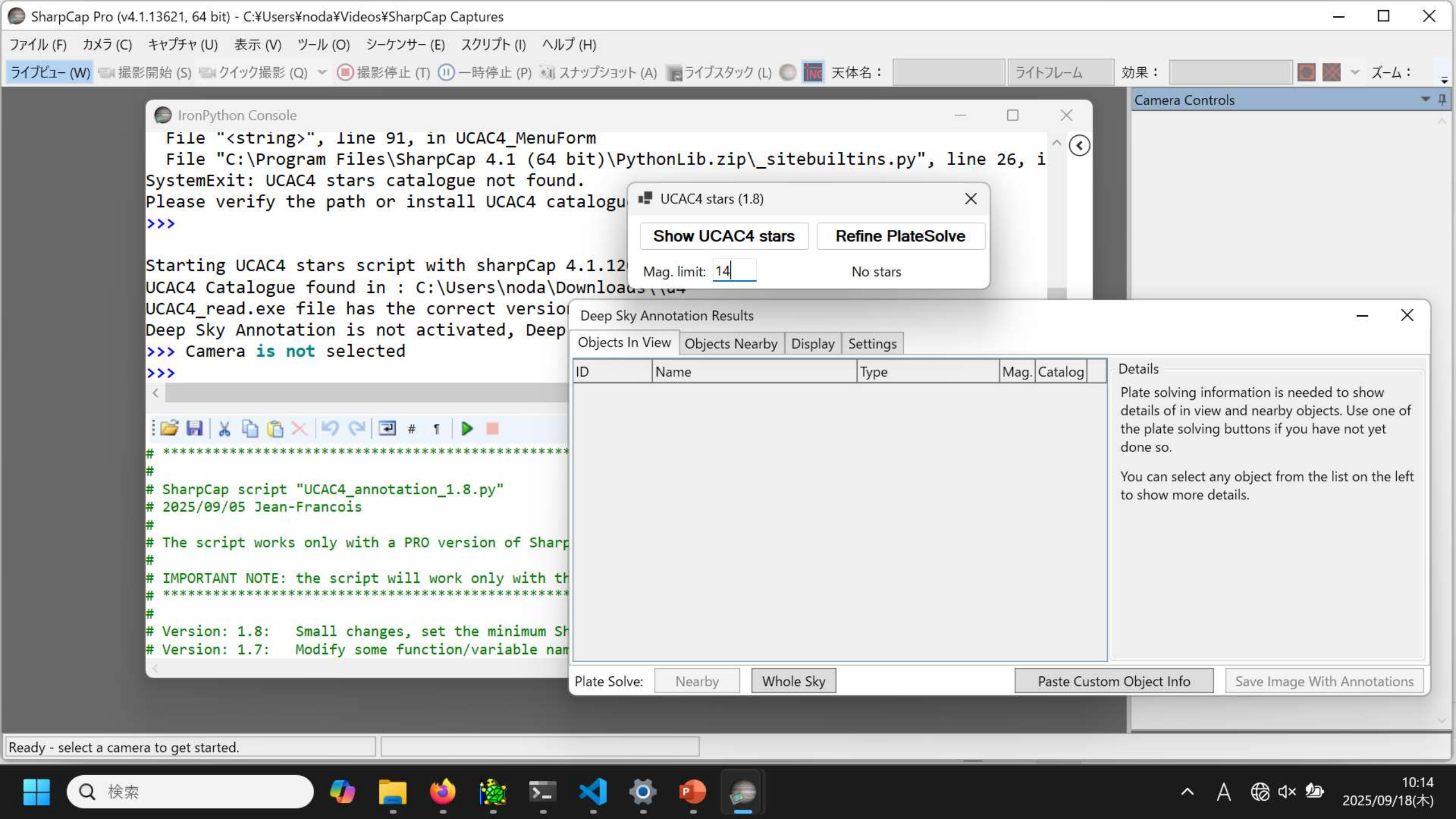
```
Script for the observation of an occultation
#1 by Jean-Francois » Tue Feb 25, 2025 8:35 pm

56 # *****
57 # To be modified by the user
58 # *****
59 #UCAC4 = "D:\\Astro_Katalog\\UCAC4\\u4b"           # Full path location of the UCAC4
60 UCAC4 = "C:\\Users\\noda\\Downloads\\u4"           # Full path location of the UCAC4
61 # *****
```

The screenshot displays the UCAC4 annotation software interface. The main window shows a star field with various stars labeled with UCAC4 IDs and magnitudes. A central event is highlighted: "2023-09-08 19:02:17 Occulted by asteroid (1490) Limpopo Mag: 11.30". Below the star field, there is a control panel with buttons for "GOTO", "Plate Solve", and "LED Calibration". The "Plate Solve" button is highlighted in green. Below these buttons, there is a "Camera Exposure (second):" field set to 0. A "Mag. limit:" field is set to 16. A "Show UCAC4 stars" button is present, and a status bar indicates "326 stars found in 510".

Deep Sky Annotation Results

ID	Name	Type	Mag.	Catalog	Det
2023-09-08	UCAC4 502-141527	Occulted by asteroid (1490) Limpopo	11.30	Pasted	
501-144891		UCAC4	15.00	Pasted	
501-144897		UCAC4	14.02	Pasted	
501-144899		UCAC4	12.54	Pasted	
501-144902		UCAC4	14.61	Pasted	
501-144905		UCAC4	14.33	Pasted	
501-144906		UCAC4	8.56	Pasted	
501-144907		UCAC4	15.55	Pasted	



まとめ

- 2枚目「伝えたいこと」ご参照

———

- Level1 ぜひ実施 (メモリ管理)
- Level2 やるとよさそう
 - 観測慣れてない方用 (プレートソルブ、アノテーション、極軸合わせ、自動開始終了)
- Level3 マニア向け：pythonが書ける方
 - 1 ボタン作成コード (露光時間を手で打つのが面倒な方)
 - 2 Forumコード使用例：Jean-Francois氏が作成された「UCAC4星表のアノテーション」

———

- 便利そうなものはありましたでしょうか…