

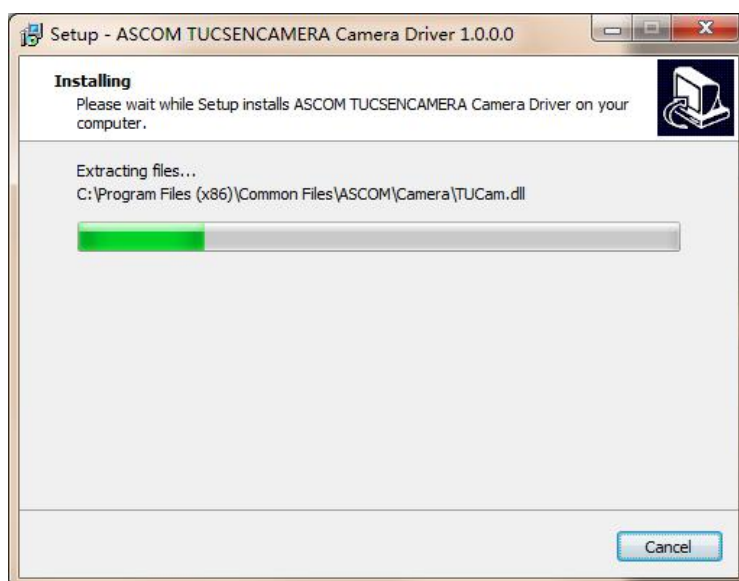
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## Instructions for using the Tucsen camera in MaxIm DL

MaxIm DL is a powerful astronomical application that integrates camera control, equatorial mount control, telescope and dome control, and astronomical image processing. It also supports automatic identification of stack object IDs and batch processing of images.

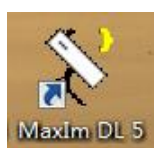
### 1. Installation of software and driver

- (1) Install the 'MaxIm DL Pro 5' or 'MaxIm DL 6' software.
- (2) Install the 'ASCOMPlatform64.exe' software platform.
- (3) Install the Tucsen camera driver. If the software 'MaxIm DL' is 32bit, you need to install the 'TUCSENCAMERA\_x86 Setup.exe'. If the software 'MaxIm DL' is 64bit, you need to install the 'TUCSENCAMERA\_x64 Setup.exe'. The install path is 'C:\Program Files (x86)\Common Files\ASCOM\Camera'.



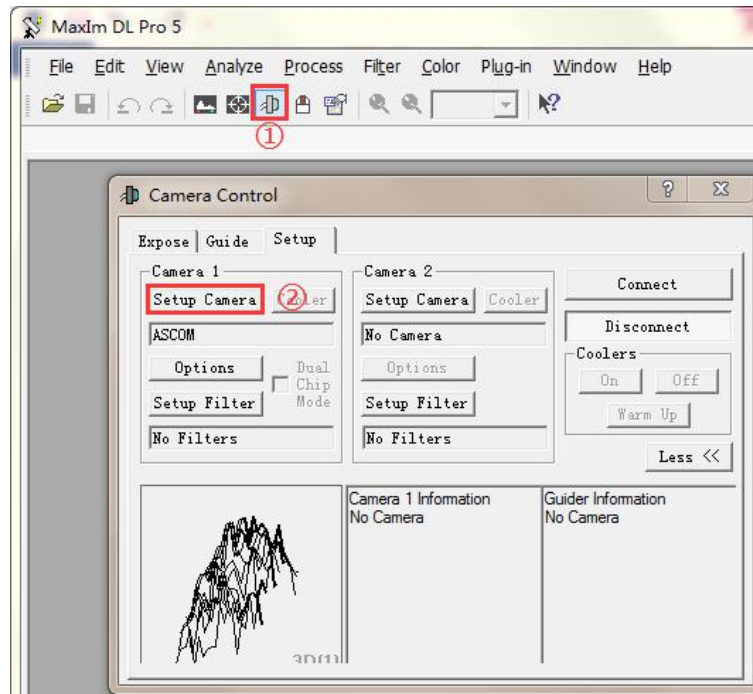
### 2. Run

- (1) Open the software 'MaxIm DL'.



## (2) Configuration of the camera

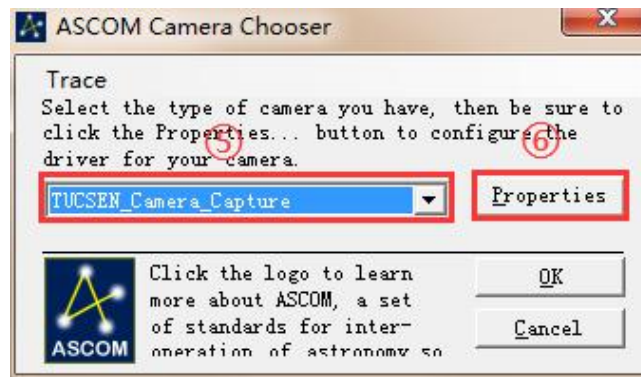
- ① Open the 'Camera Control' interface.
- ② Click the 'Setup Camera' button in 'Setup' option.



- ③ Set 'Camera Model' as 'ASCOM'.
- ④ Click the 'Advanced' button. This interface can set the exposure time accuracy of the camera.



- ⑤ Select 'TUCSEN\_Camera\_Capture'.
- ⑥ Click the 'Properties' button to open the 'TUCSEN CAMERA SETUP' interface to set the camera parameters.



⑦ The interface includes five functional module.

**Camera Information:** Users can check the relevant information and version of the camera. SN code and firmware version are only displayed under USB interface and CameraLink interface does not support display.

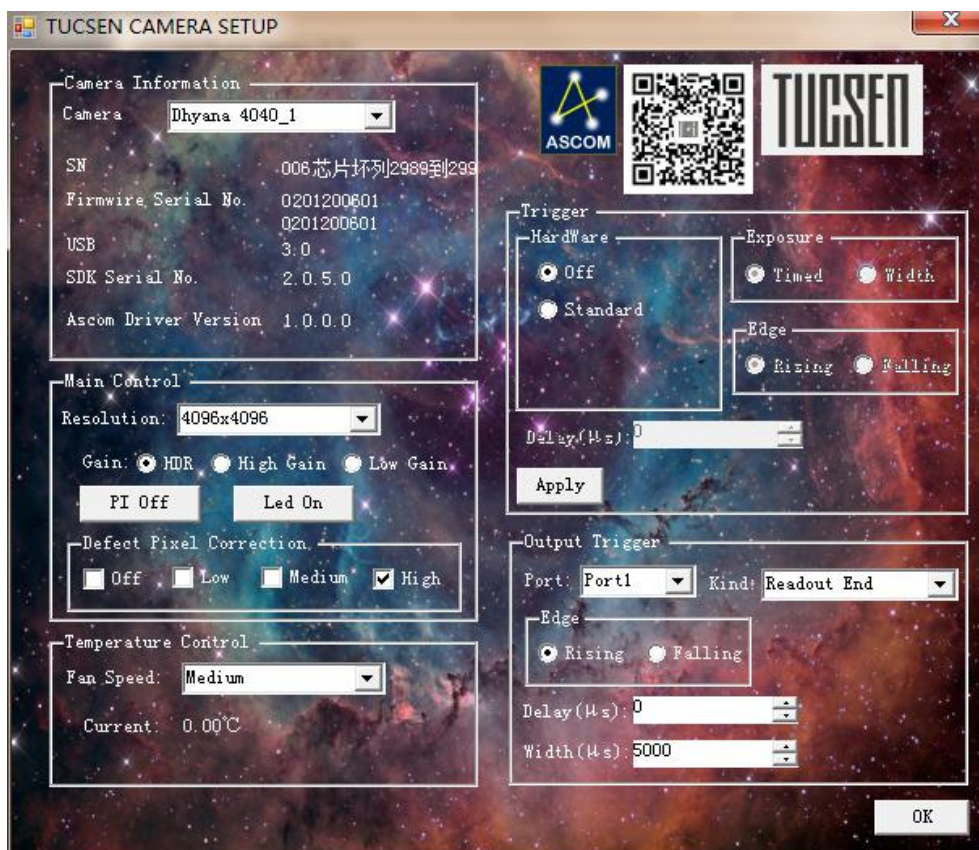
**Main Control:** Users can set resolution (Binning), gain mode, LED, PI and DPC.

**Temperature Control:** Users can set the fan speed and check the cooling temperature.

**Trigger:** Just support hardware trigger (Standard mode).

**Output Trigger:** Output trigger signal module.

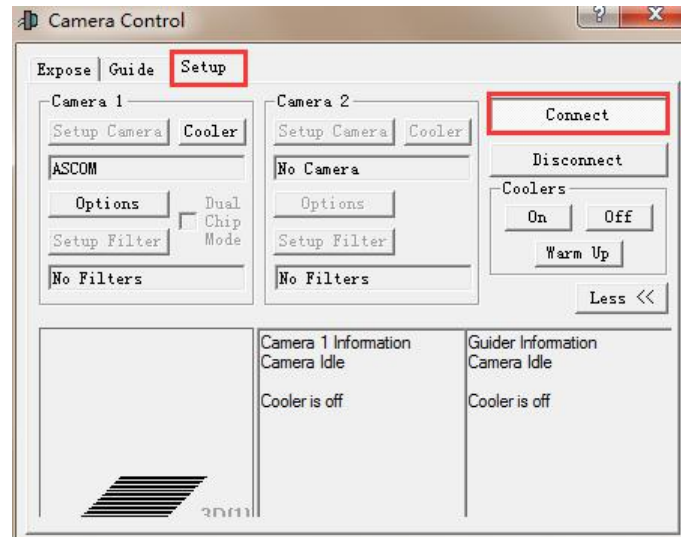
**Others:** ASCOM website, TUCSEN WeChat and TUCSEN website.



⑧ After setting parameters, click 'OK' on the interface one by one to complete the parameters setting.

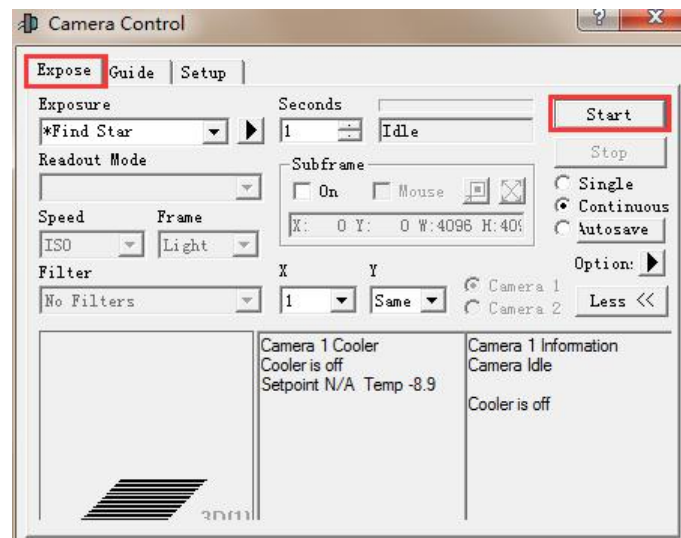
### (3) Connect camera

Click the 'Connect' button to connect the camera, the camera name can only be displayed as 'ASCOM'.



### (4) Preview

Click the 'Start' button to preview the images. Select 'Single' just output one image, and select 'Continuous' output images continuously.

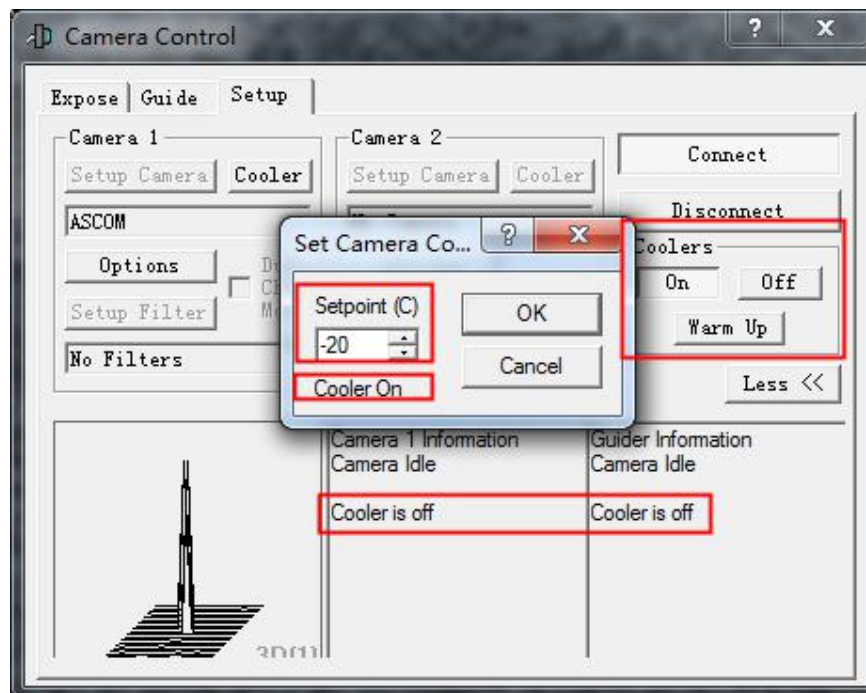


### (5) Cooling

Cooling switch: 'On' is turn on the cooling and 'Off'/'Warm Up' is turn off the cooling.

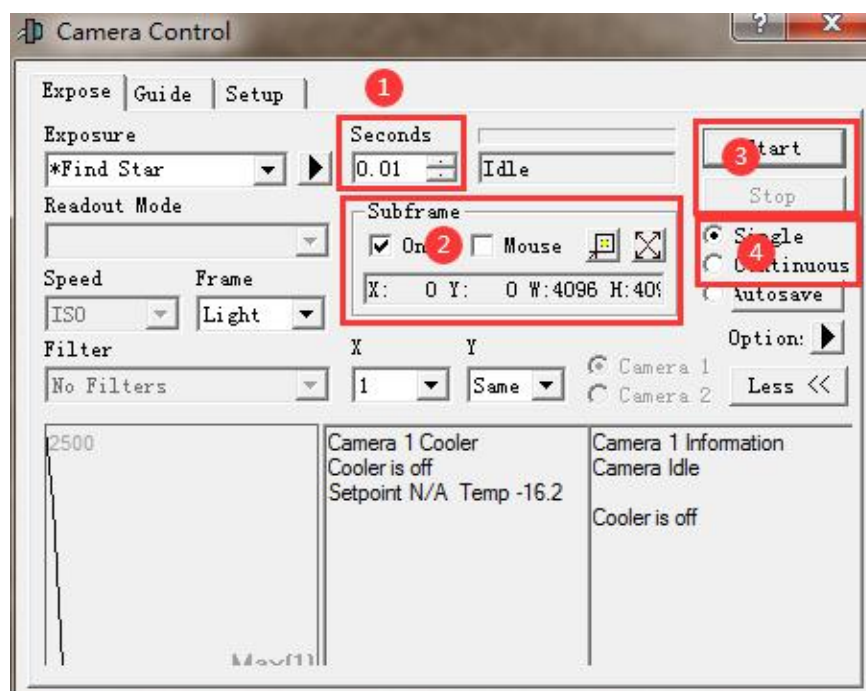
The cooling target temperature cannot be controled and the cooling state cannot be

update in Camera Control interface.



## (6) Other functions

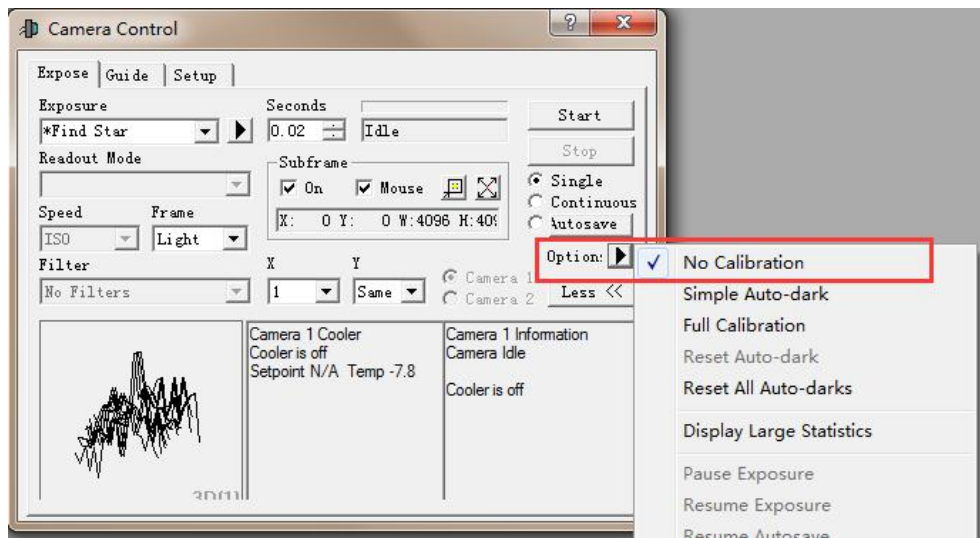
- ① Set exposure time.
- ② Set ROI. If select 'Mouse', users can draw a ROI region via mouse.
- ③ Start or stop preview.
- ④ Set the preview mode , single or continuous.



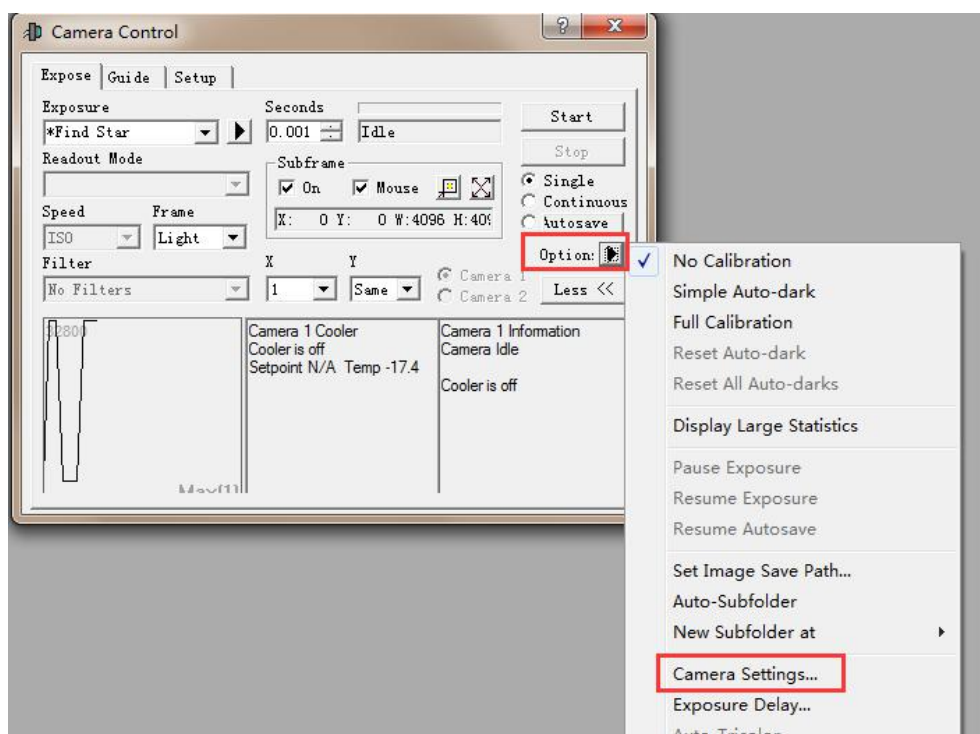
## (7) Options



Click 'Options' and select 'No Calibration' to preview the raw data of the camera without processing by the software algorithm.



Click 'Options' and select 'Camera Settings...' to open the 'TUCSEN CAMERA SETUP' interface to set the camera parameters.



## (8) Image saving

When the camera previews the image, and the menu bar 'File - Save as' can select different image formats for saving. The image has the same effect when saved as TIF, RAW, JPG, PNG and BMP. The image is vertically with the image in other formats when saved as FIT.

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SBIG Type 3 Images (\*.sbig;\*.st\*;\*.237;\*.255)  
SBIG ST-4 Images (\*.st4)  
PC-Lynxx Images (\*.ccd)  
FITS Images (\*.fit;\*.fts;\*.fits)  
Raw Binary Images (\*.raw)  
TIFF Images (\*.tiff;\*.tif)  
JPEG Images (\*.jpg;\*.jpeg)  
PNG Images (\*.png)  
BMP Images (\*.bmp)

Notes:

1. The path of configure file is 'C:\Users\Administrator\Documents\MaxIm DL 5'.
2. The testing software and platform are 'MaxIm DL V5.15' and 'ASCOM Platform 6.4 SP1-6.4.1.2695'.
3. The version displayed in 'Ascom Driver Version' interface is the released version. The 'ASCOM.TUCSEN.Camera.dll' version is the internally modified version number. The file version should be the same as the product version.
4. The parameters of trigger input and output are stored in the memory. These parameters will return to default value when the 'MaxIm DL' is closed. Other parameters are saved in the SDK configuration file.