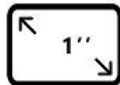


## Product Description

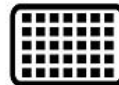
### ASI183MM Pro



Sensor  
IMX183



1''  
13.2\*8.8mm



Resolution  
5496\*3672



ADC  
12bit



Read Noise  
1.6e



Cooling Temp  
↓45°C



DDR3 Buffer  
256mb



USB  
3.0



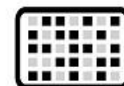
FPS  
19



Full well  
15000e



QE  
84%

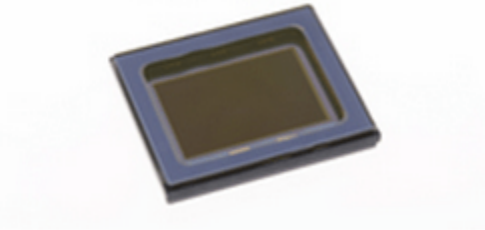


Pixe Size  
2.4μm

Introducing the ASI183 camera series, the most sensitive cameras in ZWO history. Peak Q.E. of the mono sensor reaches 84%!

## ▶ IMX183CLK-J/CQJ-J

Diagonal 15.86 mm Approx. 20.48M-Effective Pixel Monochrome/Color CMOS Image Sensor

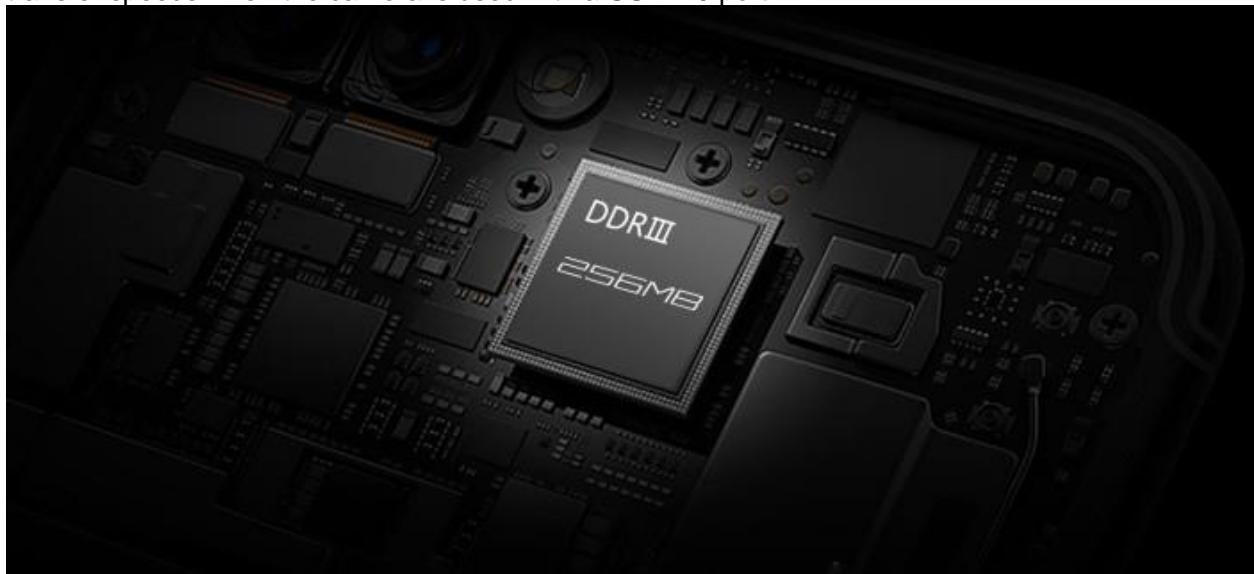


## ▶ High-Speed and High-Picture-Quality Rolling Shutter-Type Back-Illuminated CMOS Image Sensors

In the astronomic application field, Sony IMX183CLK-J (monochrome) and IMX183CQJ-J (color) sensors uses a very high sensitivity back-illuminated structure with high resolution 2.4  $\mu\text{m}$  square unit pixel. The optical size is **1 inch**.

## DDR Memory Buffer

The ASI183 Pro camera includes a 256MB DDR3 memory buffer to help improve data transfer reliability. Additionally, the use of a memory buffer minimizes amp-glow, which is caused by the slow transfer speeds when the camera is used with a USB 2.0 port.

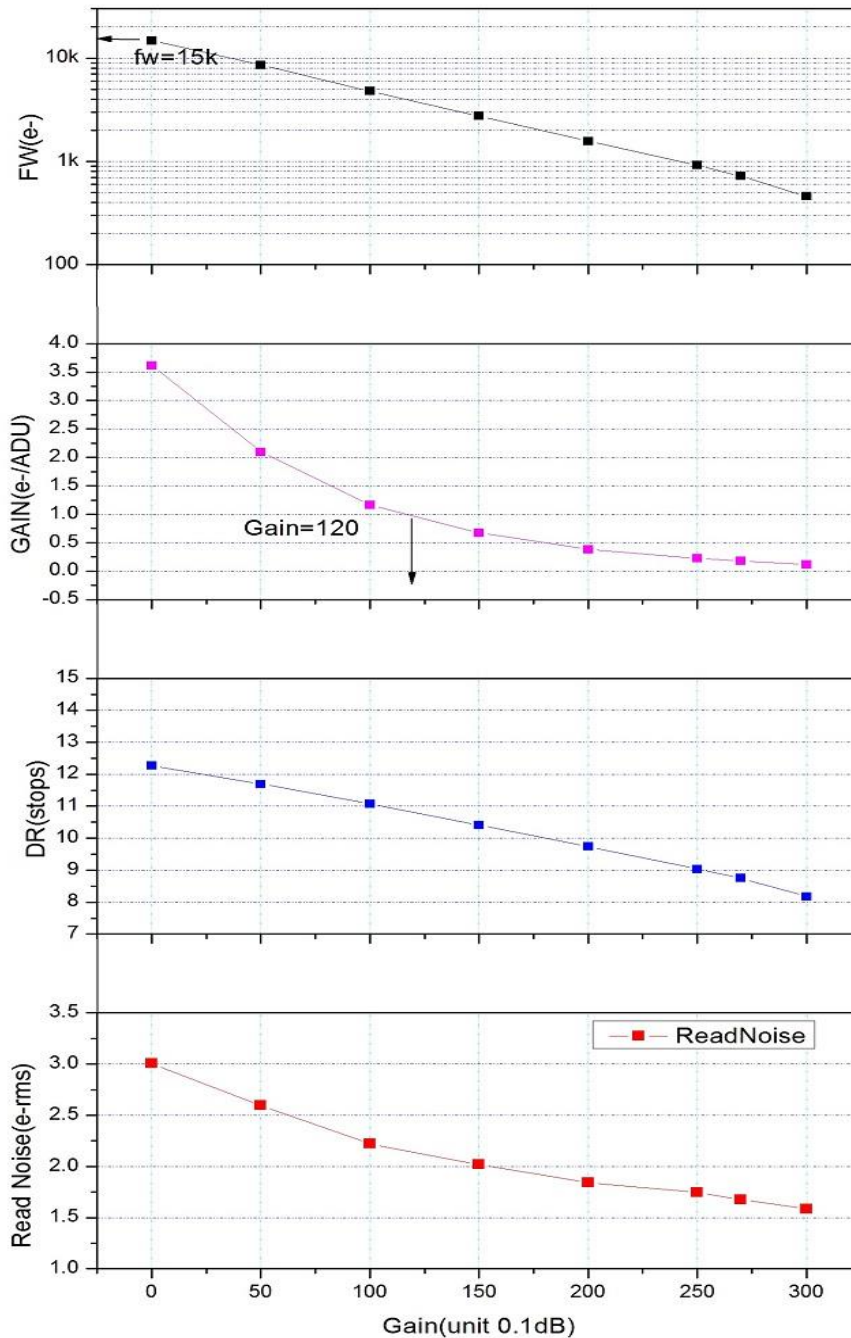


DDR memory buffer is the main difference between ASI "Cool" and "Pro" cameras.

## Astrophotography Performance

The ASI183 cameras has a very large full well capacity (**15000e**) for such small pixel size, **1.6e** read noise @ 30DB, and **12stops** dynamic range @ Gain=0. The ASI183 cameras also utilize firmware features to minimize amplifier glow for maximum performance in astrophotography.

Read noise, full well, gain & dynamic range for ASI183



## Reliable Mechanics

ASI183 Pro has same mechanics as ASI1600 Pro. There are four screws that seal the sensor chamber. Our camera design has been extensively tested and is very stable. Even when used in higher humidity environments, ASI183 Pro will still work fine without dew problems.

## High Speed

Fast FPS can be used in solar and lunar imaging, as well as for live viewing/EAA. The high-speed readout may also be used for real-time focusing, true lucky imaging of double stars and other small objects, planetary imaging of the major planets in the solar system, and much more.

### 10Bit ADC

5496x3672	19fps
3840x2160	41.04fps
1920x1080	80.10fps
1280x720	117.30fps

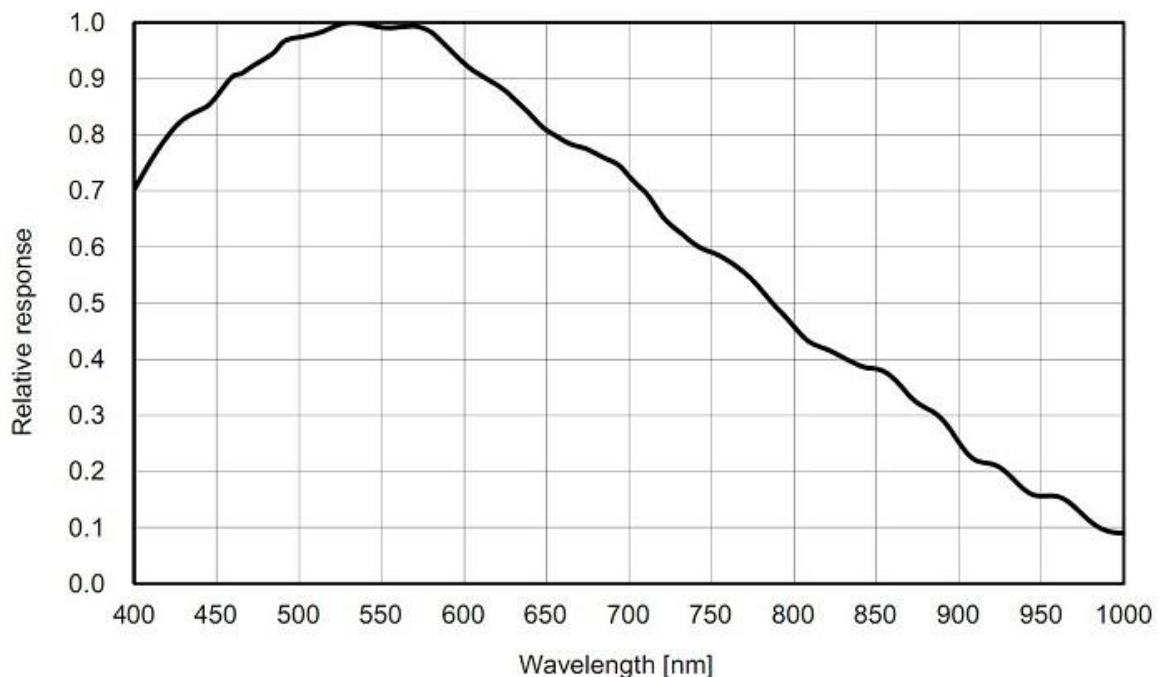
### 12bit ADC

5496x3672	19fps
3840x2160	36.12fps
1920x1080	70.48fps
1280x720	103.23fps

## High QE

Sony's back-illuminated Exmor R technology, giving it excellent Deep Sky performance. ASI183 QE peak reaches a remarkable 84%. In Ha channel, QE is still over 60%.

Having high QE means more of the light that enters your telescope and reaches the sensor is actually used. With 84% peak Q.E. and no less than ~50% within the visible spectrum, the ASI183 will utilize a high percentage of the light that reaches it, improving your signal quality.

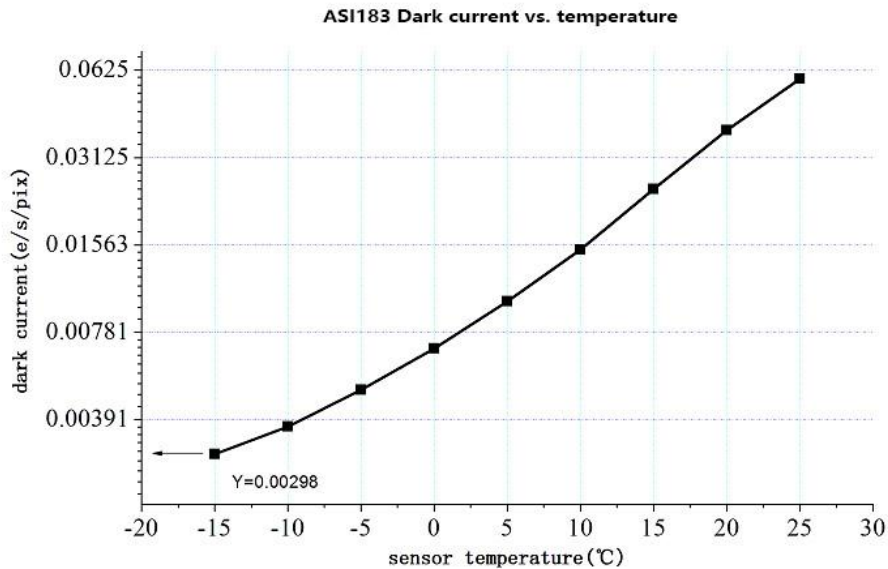


## Dark Current

The dark current of the ASI183 is extremely low, based on our test results.

Dark frame sample @ Highest dynamic range settings(gain=0), 300s, -10°C, bin1. Please check the dark frame to make sure you are fully knowing the performance.

[ASI183 Pro Dark Frame](#)



## USB 3.0 Port & USB2.0 HUB

**USB 3.0 Port:** Provide 5Gb bandwidth to make it possible for ASI183 Pro to run at 19 fps (12bit, normal mode) or 19 fps (10bit, high speed mode) at full resolution(20.18Mega).

**USB 2.0 HUB:** can connect with various accessories, such as filter wheel, guide camera and electronic focuser, so you can better manage your cables. The ASI183 Pro includes two short 0.5m USB 2.0 cables. The integrated USB 2.0 hub is powered by the external power source if you connect one.



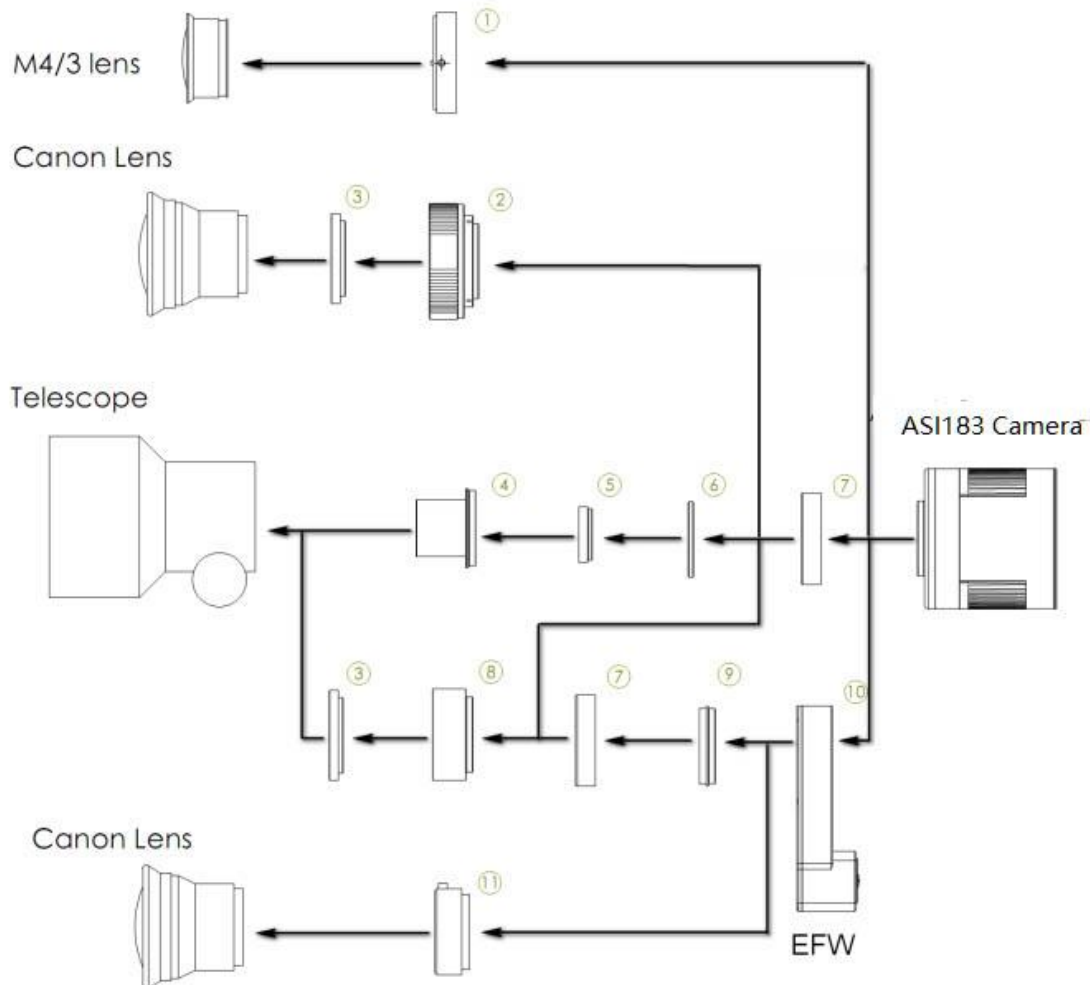
## Cooling System

The ASI183 Pro has a 2-stage TEC cooling system that enables deep cooling (40°C-45°C below ambient). The cooler requires an external power supply, which is not included with the camera. You may order a suitable power supply from [here](#).

Recommended cooler power supply: 12V @ 3-5A (or more) DC adapter (2.1x5.5mm, center pole positive). Also, suitable: DC battery with 9-15V.

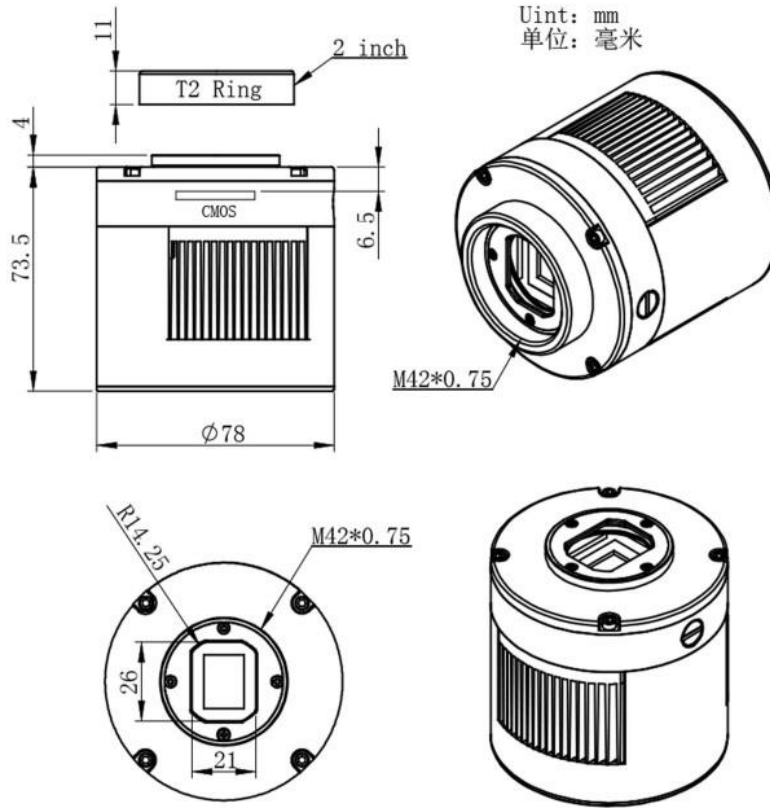
Using a battery with 9-15V is also suitable for the cooler power supply.

## Connecting Diagram



1. M43-T2 adapter (optional)
2. EOS-T2 adapter (optional)
3. 2" Filter (optional)
4. 1.25" T-Mount
5. 1.25" Filter (optional)
6. M42-1.25" Filter (optional)
7. T2 extender 11mm
8. M42-M48 extender 16.5mm
9. T2-T2 adapter
10. EFW mini(optional)
11. EOS adapter for EFW (optional)

## Mechanical Diagram



## What is in the box?

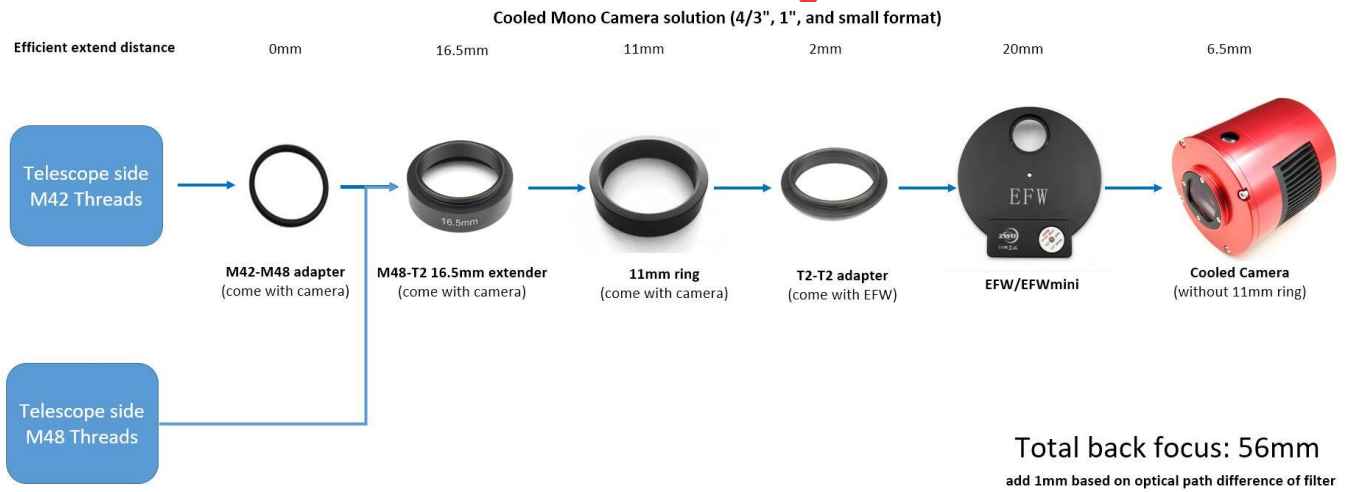
ASI183 Pro box includes all necessary cables, adapters, and manuals.



Notice : Cooled cameras need a 12v power adapter, If you don't have one, please click this link to buy a 12V power adapter. There are 4 different standard for different country, please choose it carefully.

<https://squareup.com/store/imagingstarlight/item/zwo-dc-v-a-us>

## The best solution of 55mm back focus length



Read more: <https://astronomy-imaging-camera.com/tutorials/best-back-focus-length-solutions-55mm.html>



## Camera technical details

Sensor: 1" CMOS IMX183CLK-J/CQJ-J  
Diagonal: 15.9mm  
Resolution: 20.18Mega Pixels 5496\*3672  
Pixel Size: 2.4µm  
Bayer Pattern: None  
Shutter:Rolling shutter  
Exposure Range: 32µs-2000s  
ROI: Supported  
Read Noise: 1.6e @30db gain  
QE peak: 84%  
Full well: 15ke  
ADC:12bit  
DDRIII Buffer: 256MB  
Interface: USB3.0/USB2.0  
Adaptor: M42X0.75  
Protect window:AR window  
Dimensions: 78mm Diameter  
Weight: 410g  
Back Focus Distance: 6.5mm  
Cooling: Regulated Two Stage TEC  
Delta T: 40°C-45°C below ambient  
Camera Power consumption: 650mA at 5V  
Cooler Power consumption: 12V at 3A Max  
Working Temperature: -5°C—45°C  
Storage Temperature: -20°C—60°C  
Working Relative Humidity: 20%—80%  
Storage Relative Humidity: 20%—95%  
Max FPS at full resolution:  
10Bit ADC  
5496x3672 19fps  
3840x2160 41.04fps  
1920x1080 80.10fps  
1280x720 117.30fps  
640x480 169.92fps  
320x240 308.17fps  
12bit ADC  
5496x3672 19fps  
3840x2160 36.12fps  
1920x1080 70.48fps  
1280x720 103.23fps  
640x480 149.53fps  
320x240 271.19fps  
more resolutions are in software, support customize resolution.

## Drivers and Softwares:

Our website has newest camera drivers and many DSO and Planetary capture software's. Please make sure the newest driver and software has been installed before you start shooting:

<https://astronomy-imaging-camera.com/software/>