



Player One

PRODUCT CATALOG

2025

Player One Astronomy (Suzhou) Co., Ltd



Innovation in exploration

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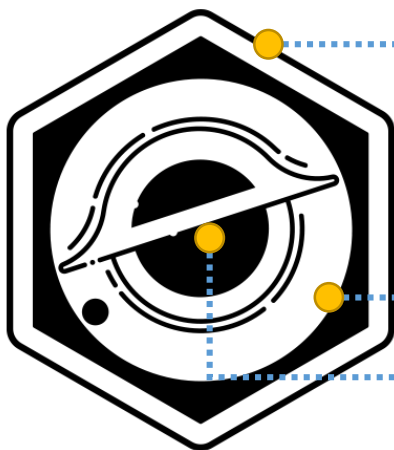
Who are we?

Player One Astronomy Co., Ltd is a high-tech enterprise specializing in R&D, production, sales, and service of astronomical cameras and supporting products. With a strong R&D team that moves forward in innovation, the company has successfully launched a series of astronomical cameras and supporting products with independent intellectual property rights, covering a wide range of needs from beginners to professionals. Our camera series are highly praised by users for their excellent image quality, stability, and ease of use. At the same time, we attach great importance to customer service, providing users with technical support in a timely manner, and find solutions quickly and accurately. We also actively participates in domestic and international astronomical exchanges and cooperation to jointly promote the progress and development of astronomical science and technology.

Looking ahead, Player One will continue to adhere to the concept of "innovation, quality, and service", constantly introduce new products, and contribute more to the development of the global astronomical field.

Why Player One?

Player One is not only the name of our company, it's also our core values. Be the top one player in astronomy market ! As a technologically innovative company, we are committed to make professional, sophisticated astronomy equipment with our cutting-edge technology.

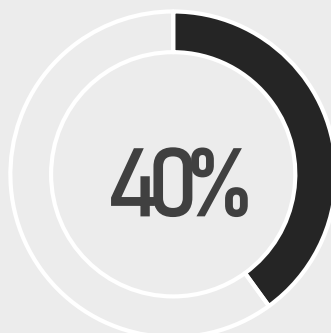


The regular hexagon is a very technological shape, which is also the outer layer of the logo, and we also apply it to the appearance of our products.

Circle is an indispensable element in astronomical products. The lack of arc, just like the lack of wheels, the car can not move forward.

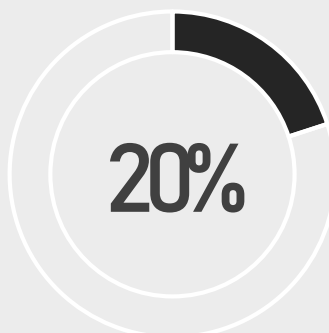
The core in our logo is a black hole and accretion disk. It is the most powerful gravitational object in the universe, so that the logo is full of power and attraction. Even if it is a static graphic, it will make people feel the curvature of space-time caused by gravitational effects.

Teamstructure



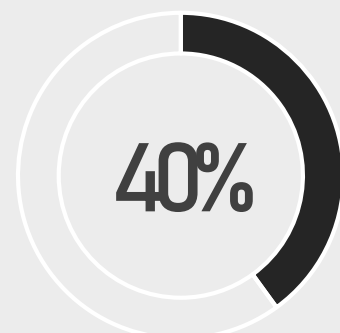
R&D

10 members



Marketing

5 members



PD

10 members

Camera Line

Cutting-edge Design

Scientific and technological, look luxurious and cool,
highlighting the style of high-end players

Innovation

Focus on independent intellectual property rights
and product innovation

High Quality

Use high quality electronic components

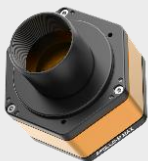
Various Product line

Covers all aspects of astrophotography



Planetary Camera

- Mercury Series
TBD
- Venus Series
TBD
- Mars Series
IMX290/462
- Mars II Series
IMX462/662
- Jupiter Series
TBD
- Saturn Series
IMX533
- Uranus Series
IMX585
- Neptune Series
IMX178
- Neptune II Series
IMX464
- Neptune III Series
IMX664



Solar Camera

- Apollo MAX Series
IMX432/428
- Apollo Series
IMX174
- Apollo MIN Series
IMX429



Guiding Camera

- Xena Series
IMX249
- Sedna Series
IMX178
- Ceres Series
AR0130/IMX224
- Ceres II Series
IMX462



ALDSO Camera

- Zeus Series
IMX455
- Poseidon Series
IMX571
- Artemis Series
IMX492/294



CFDSO Camera

- Ares Series
IMX533
- Uranus Series
IMX585
- Apdlo MAX Series
IMX432/428



Design for deep sky imaging!

Player One cooled camera series name after gods in ancient Greek mythology.

This series using STARMS technology BSI Sony sensors.

Innovative technology. Rear tilt plate, Deep Cooling, USB3.0 Type-C Port, BFL solutions

Model	Sensor	Format	Resolution	Pixel	Noise	QE	FW	Delta-T	ADC
Zeus 455M PRO	IMX455 mono	36×24mm (FF)	9576×6388	3.76μm	4.2-1.27e	≈ 91%	71.6ke	-35°C	16bit
Zeus 455C PRO	IMX455 color	36×24mm (FF)	9576×6388	3.76μm	4.2-1.27e	≈ 80%	71.6ke	-35°C	16bit
Poseidon-M PRO	IMX571 mono	23.5×15.7mm (APS-C)	6252×4176	3.76μm	3.9-1.0e	≈ 91%	71.7ke	-40°C	16bit
Poseidon-C PRO	IMX571 color	23.5×15.7mm (APS-C)	6252×4176	3.76μm	3.9-1.0e	≈ 80%	71.7ke	-40°C	16bit
Artemis-M PRO	IMX492 mono	19.2×13mm (4/3")	8288×5648	2.3μm	7.7-1.46e	≈ 90%	18.6ke	-40°C	12bit
Artemis-C PRO	IMX294 color	19.2×13mm (4/3")	4144×2824	4.63μm	7.8-1.2e	≈ 75%	65.8ke	-40°C	14bit
Ares-M PRO	IMX533 mono	11.31×11.31mm (1")	3008×3008	3.76μm	4.46-1e	≈ 91%	73ke	-40°C	14bit
Ares-C PRO	IMX533 color	11.31×11.31mm (1")	3008×3008	3.76μm	4.46-1e	≈ 80%	73ke	-40°C	14bit
Uranus-M PRO	IMX585 mono	11.2×6.3mm (1/1.2")	3856×2180	2.9μm	6.5-0.7e	≈ 91%	47ke	-40°C	12bit
Uranus-C PRO	IMX585 color	11.2×6.3mm (1/1.2")	3856×2180	2.9μm	6.5-0.7e	≈ 91%	47ke	-40°C	12bit
Apollo-M MAX PRO	IMX432 mono	14.5×9.9mm (1.1")	1608×1104	9μm	22.9-2.6e	≈ 79%	100ke	-40°C	12bit
Apollo 428M MAX PRO	IMX428 mono	14.5×9.9mm (1.1")	3216×2208	4.5μm	5.5-1.4e	≈ 79%	25.3ke	-40°C	12bit



VdB 141 The Ghost Nebula, [Tony Hallas](#), Planewave CDK 14+Zeus 455M PRO camera



WR 134 RGB + H- α + OIII, [Tony Hallas](#), Planewave CDK 14+Zeus 455M PRO camera



ZEUS 455M PRO

IMX455 Monochrome BSI CMOS sensor

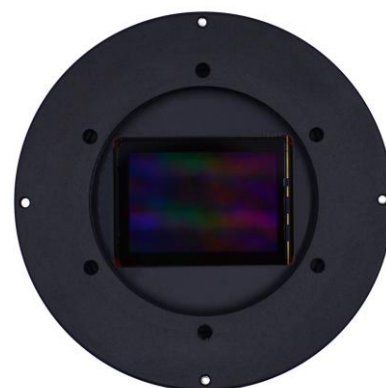


ZEUS 455C PRO

IMX455 Color BSI CMOS sensor

Ultimate dream for DSO imaging!

- ZEUS 455M/C PRO coded camera is a non-amp-glow camera, full frame format, 16bit on-chip ADC and 1.27e ultra low noise make this camera has incredible results on wide filed APO, and long focal length telescope like large RC and Newtonian in remote observatory.
- Compatible with Phoenix Wheel 5"2"/7"2"/7"50mm FHD-OAG MAX, Filter Drawer MAX



Sensor
IMX 455



Format



9576*6388
61 Mega Pixels



ADC
16Bit



USB 3.0



DDR3 Buffer



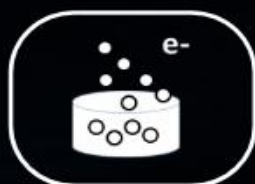
6.5 FPS



Delta-T 35°C



Non-Amp-Glow



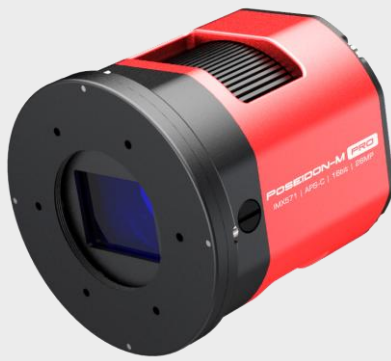
Full Well
71.6Ke



QE
Mono ≈ 91%
Color ≈ 80%



Read Noise
1.27e

**POSEIDON-M PRO**

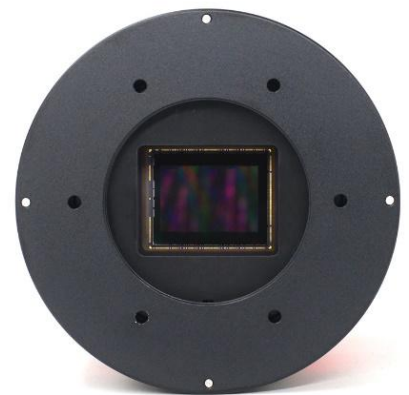
IMX571 Monochrome BSI CMOS sensor

**POSEIDON-C PRO**

IMX571 Color BSI CMOS sensor

Master's choice for DSO imaging!

- Poseidon-M/C PRO cooled camera is a non-amp-glow camera, APS-C format is supported by almost all photographic telescopes and flattener, 16bit on-chip ADC and 1e ultra low noise make this camera has perfect result in DSO imaging.
- Compatible with Phoenix Wheel 7*36mm/5*2"/7*2"/7*50mm FHD-OAG MAX, Filter Drawer MAX



Sensor
IMX 571



Format



6252*4176
26Mega Pixels



ADC
16Bit



USB 3.0



DDR3 Buffer



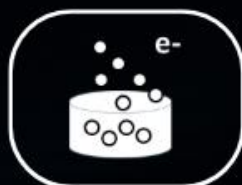
15 FPS



Delta-T 40°C



Non-Amp-Glow



Full Well
71.7Ke



QE
Mono ≈ 91%
Color ≈ 80%



Read Noise
1e

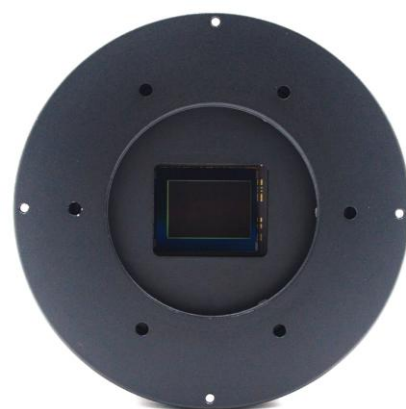


ARTEMIS-M PRO

IMX492 Monochrome BSI CMOS sensor

Enter professional level in DSO imaging!

- Artemis-M/C PRO cooled camera with 4/3" format, it is big enough for most deep sky objects, high sensitivity and low noise make this camera doing great in DSO imaging.
- Hardware BIN2 makes Artemis-M has same advantages as Artemis-C.
- Compatible with Phoenix Wheel 7*36mm/5*2"/7*2"/7*50mm F/D-OAG MAX, Filter Drawer MAX



Sensor
IMX 492



Format



Bin1: 8288*5648
Bin2: 4144*2824
Bin1: 47Mega Pixels
Bin2: 11.7Mega Pixels



ADC
Bin1: 12 Bit
Bin2: 14 Bit



USB 3.0



DDR3 Buffer



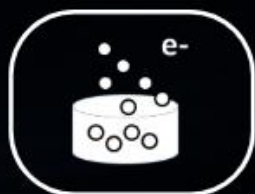
Bin1: 8 FPS
Bin2: 33 FPS



Delta-T 40°C



Amp-Glow



Full Well
Bin1: 18.6Ke
Bin2: 65.8Ke



QE ≈ 90%



Read Noise
Bin1: 1.46e
Bin2: 1.25e

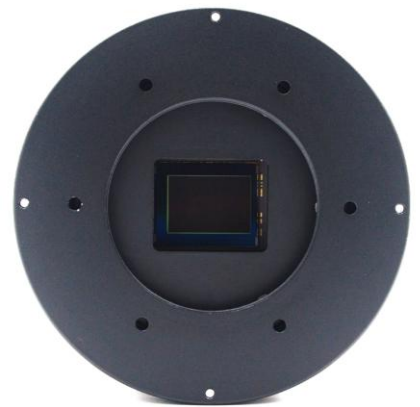


ARTEMIS-C PRO

IMX294 Color BSI CMOS sensor

Enter professional level in DSO imaging!

- Artemis-M/C PRO cooled camera with 4/3" format, it is big enough for most deep sky objects, high sensitivity and low noise make this camera doing great in DSO imaging.
- Hardware BN2 makes Artemis-M has same advantages as Artemis-C.
- Compatible with Phoenix Wheel 7*36mm/5*2"/7*2"/7*50mm, F-D-OAG MAX, Filter Drawer MAX



Sensor
IMX 294



Format



4144*2824
11.7Mega Pixels



ADC
14 Bit



USB 3.0



DDR3 Buffer



33 FPS



Delta-T 40°C



Amp-Glow



Full Well
65.8Ke



QE ≈ 76%



Read Noise
1.25e

**ARES-M PRO**

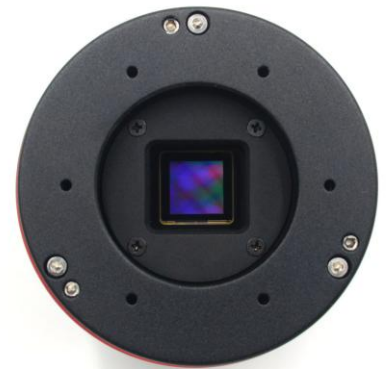
IMX533 Monochrome BSI CMOS sensor

**ARES-C PRO**

IMX533 Color BSI CMOS sensor

Best entry-Level model in DSO imaging!

- Ares-M/C PRO cooled camera with 1" square non-amp-glow sensor, its high QE and low noise performance can bring beginners with very comfortable imaging experiences.
- Sensor Tilter Plate and Anti-Dew are integrated.
- Compatible with Phoenix Wheel 8*1.25", F-D-OAGMN, Filter Drawer MN.

**Sensor**
IMX 533**Format****3008*3008**
9Mega Pixels**ADC**
14 Bit**USB 3.0****DDR3 Buffer****43FPS****Delta-T**
35°C-40°C**Non-Amp-Glow****Full Well**
73Ke**QE**
Mono ≈ 91%
Color ≈ 80%**Read Noise**
1e



URANUS-C PRO

IMX585 Color BSI CMOS sensor

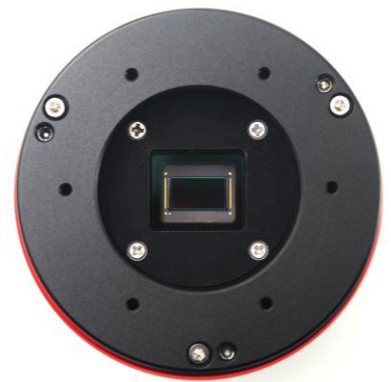


URANUS-M PRO

IMX585 Mono BSI CMOS sensor

New entry-Level model in DSO imaging!

- Uranus-M/C PRO cooled camera with 1/1.2" non-amp-glow sensor, its high QE, low noise performance and reasonable price is best for beginner who want to try DSO imaging. It also can be used for planetary imaging or special celestial events.
- Sensor Tilter Plate and Anti-Dew are integrated.
- Compatible with Phoenix Wheel 8*1.25", F-D-OAGMN, Filter Drawer MN.



Sensor
IMX 585



Format



3856*2180
8.3Mega Pixels



ADC
12 Bit



USB 3.0



DDR3 Buffer



47FPS



Delta-T
35°C-40°C



Non-Amp-Glow



Full Well
47Ke



QE ≈ 91%



Read Noise
0.7e

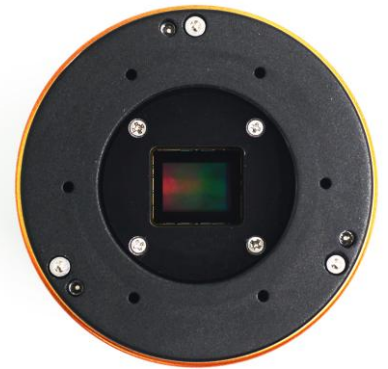


APOLLO 428M MAX PRO

IMX428 Monochrome Global shutter CMOS Sensor

Design for professional solar imaging

- Apollo 428M MAX PRO cooled camera with 1.1" non-amp-glow sensor, It is cooled version of famous Apollo 428M MAX camera. Cooled version can cooling down about 35-40 degrees, keep sensor at same temperature to make perfect calibration and noise control, it also can be used in scientific research.
- Sensor Tilter Plate and Anti-Dew are integrated.
- Compatible with Phoenix Wheel 8"1.25", FHD-OAGMN, Filter Drawer MN.



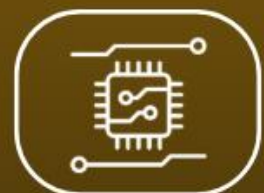
Sensor
IMX 428



Format



3216*2208
7.1Mega Pixels



ADC
12 Bit



USB 3.0



DDR3 Buffer



51FPS



Delta-T
35°C-40°C



Global shutter



Full Well
25.3Ke



QE≈79%



Read Noise
1.4e

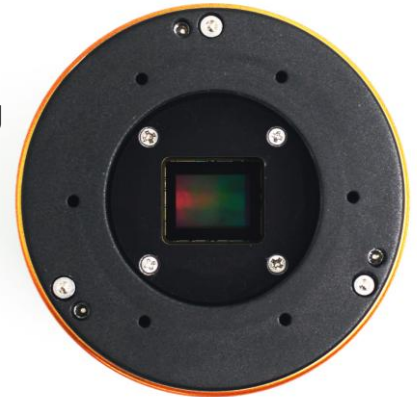


APOLLO-M MAX PRO

IMX432 Monochrome Global shutter CMOS Sensor

Design for professional solar imaging

- Apollo-MMAX PRO cooled camera with 1.1" non-amp-glow sensor, It is cooled version of famous Apollo-MMAX camera. Cooled version can cooling down about 35-40 degrees, keep sensor at same temperature to make perfect calibration and noise control, it also can be used in scientific research.
- Sensor Tilter Plate and Anti-Dew are integrated.
- Compatible with Phoenix Wheel 8*1.25", F-D-OAGMN, Filter Drawer MN.



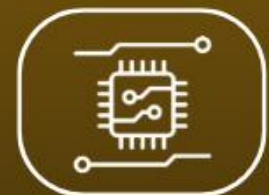
Sensor
IMX 432



Format



1608*1104
1.7Mega Pixels



ADC
12 Bit



USB 3.0



DDR3 Buffer



126FPS



Delta-T
35°C-40°C



Global shutter



Full Well
100Ke



QE≈79%



Read Noise
2.6e



Focus on Solar imaging!

Apollo series is the world's first camera line designed specifically for solar imaging, named after Apollo.

This series using monochrome and global shutter Sony sensors.

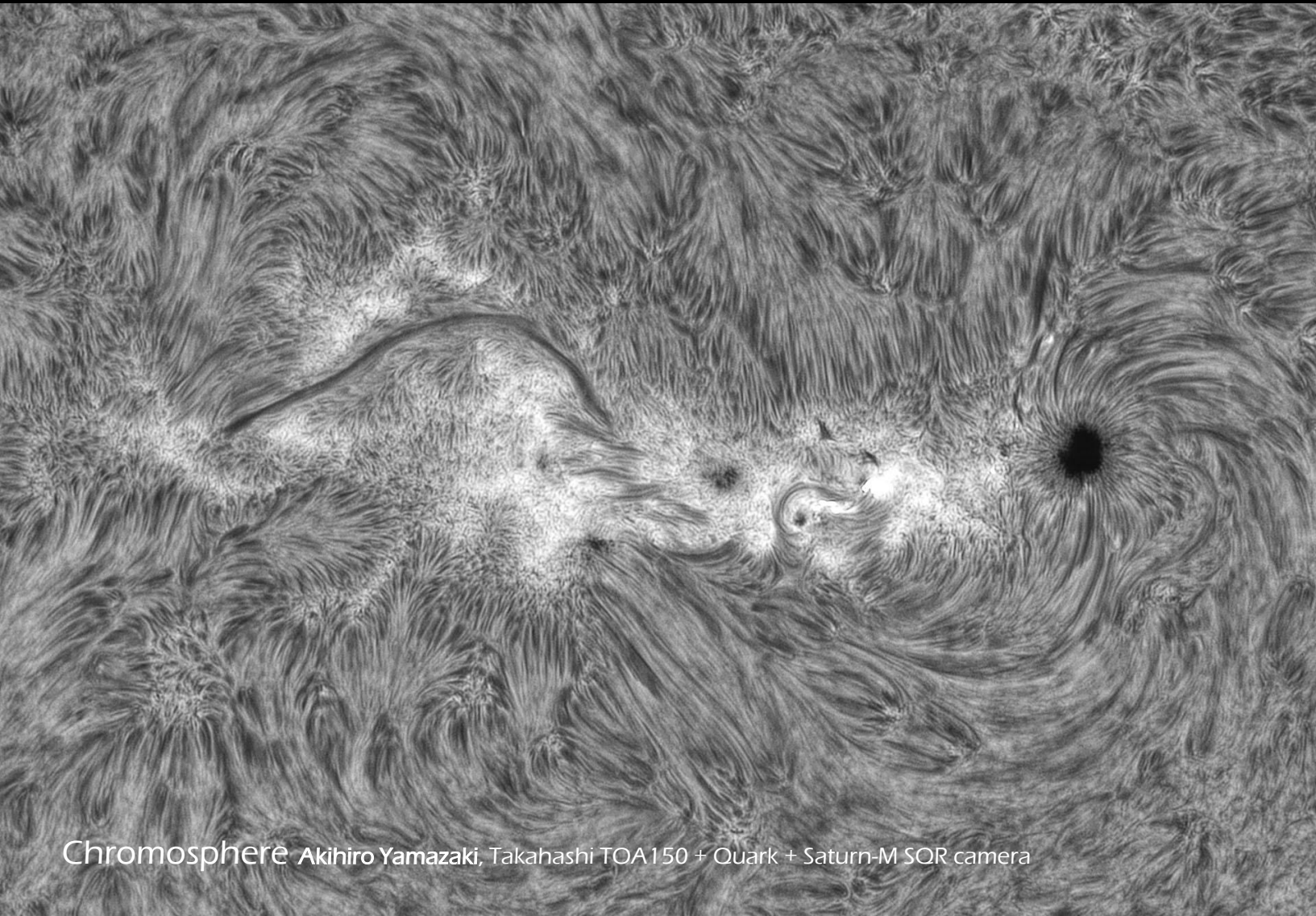
5 innovative technologies: DDR3 256MB buffer, DPSTech, Passive Cooling, Nova Boosting, Sensor tilt plate

Model	Sensor	Format	Resolution	Pixel	Noise	QE	FW	FPS	ADC
Apollo 428M MAX	IMX428 mono	14.5×9.9mm(1.1")	3216×2208	4.5μm	5.5-1.4e	≈79%	25.3ke	51FPS	12bit
Apollo-M MAX	IMX432 mono	14.5×9.9mm(1.1")	1608×1104	9μm	22.9-2.6e	≈79%	100ke	126FPS	12bit
Apollo-M MN	IMX429 mono	8.75×6.6mm(2/3")	1944×1472	4.5μm	5.6-1.45e	≈79%	25ke	84FPS	12bit
Apollo-M	IMX174 mono	11.3×7.1mm(1/1.2")	1936×1216	5.86μm	6.3-3.5e	≈77%	24.8ke	164FPS	12bit
Apollo-C	IMX174 color	11.3×7.1mm(1/1.2")	1936×1216	5.86μm	4.46-1e	≈77%	24.8ke	164FPS	12bit



Solar Eclipse Mehmet Ergün, Lunt60 + Neptune-M

Mehmet Ergün
PHOTOGRAPHY



Chromosphere Akihiro Yamazaki, Takahashi TOA150 + Quark + Saturn-M SOR camera

New flagship camera for solar imaging!

- Apollo 428MMAX camera adopts 1.1" Sony IMX428 global shutter mono sensor, The 4.5um pixel size accommodates a well depth of 25.3ke with a total of 7.1MP (the resolution is 3216×2208), and the diagonal is 17.5mm
- Passive Cooling System is integrated.
- 135FPS in RAW8 format, based on Nova Boosting technology.



DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate

Nova Boosting

Most popular camera for Ha solar imaging!

- Apollo-MMAX camera adopts 1.1" Sony IMX432 global shutter mono sensor, The 9um pixel size accommodates a well depth of 100ke with a total of 1.7MP (the resolution is 1608*1104), and the diagonal is 17.5mm
- Passive Cooling System is integrated.
- 126FPS in RAW8 format, based on Nova Boosting technology.



DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate

Nova Boosting

High resolution solar and space station imaging!

- Apollo-MMN camera adopts 2/3" format Sony IMX429 global shutter monochrome sensor. The 4.5um pixel size accommodates a well depth of 24.8Ke with a total of 2.8MP (the resolution is 1944*1472), and the diagonal is 11mm
- Passive Cooling System is integrated.
- 84FPS in RAW8 format.



DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate

Classic camera for solar imaging!

- Apollo-M camera adopts the Sony IMX174 1/1.2" format monochrome sensor. The 5.86um pixel size accommodates a well depth of 32Ke with a total of 2.3MP (the resolution is 1944*1216), and the diagonal is 13.3mm
- Passive Cooling System is integrated.
- 164FPS in RAW8 format.

DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate



Color camera for special usage!

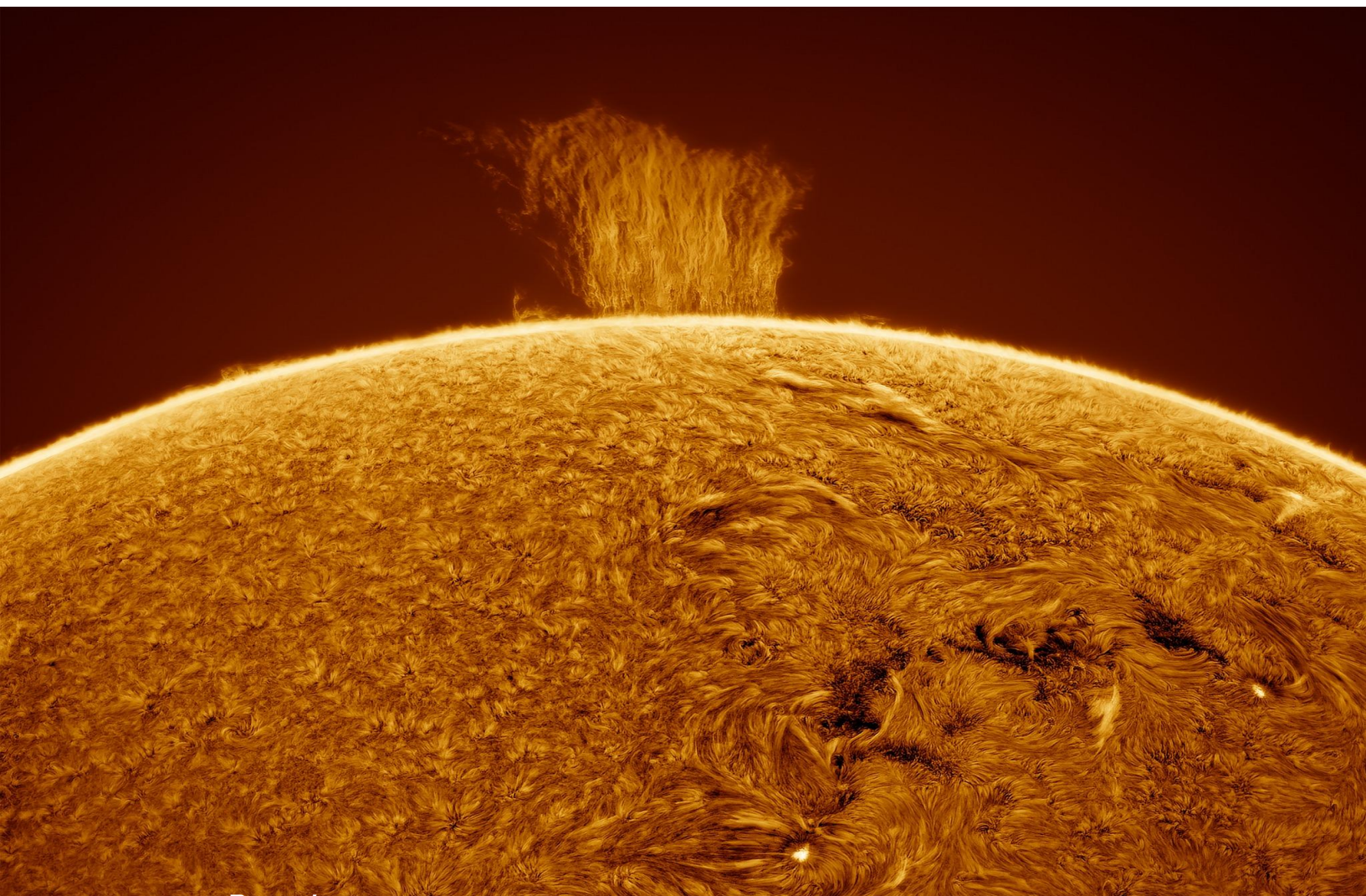
- Apollo-C camera adopts the Sony IMX174 1/1.2" format color sensor. The 5.86um pixel size accommodates a well depth of 32Ke with a total of 2.3MP (the resolution is 1944*1216), and the diagonal is 13.3mm
- Passive Cooling System is integrated.
- 164FPS in RAW8 format.

DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate

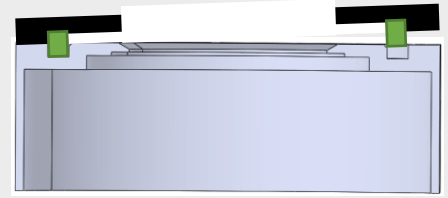
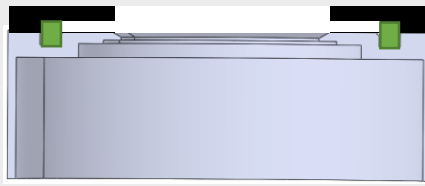


Solar and Planetary Camera Design

2nd Gen Sensor Tilt Plate

- 5mm sponge spacer
2mm deep groove

2nd Gen can provide larger tilt angle and against light leak



- 3.5mm sponge spacer
No groove

1st Gen Tilt plate



Built-in sponge spacer

Sensor tilt adjustment screw set

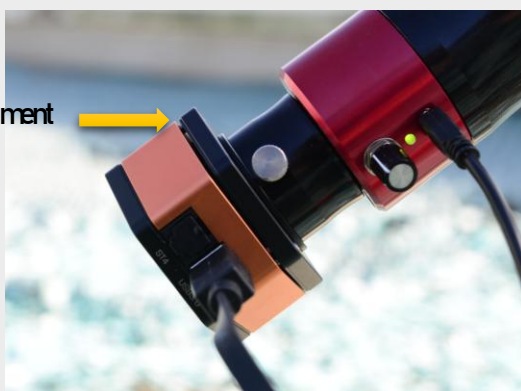
Newton Ring is a common thing in H α Solar imaging, use build-in or extra tilt plate can perfectly remove it.

Without tilt adjustment

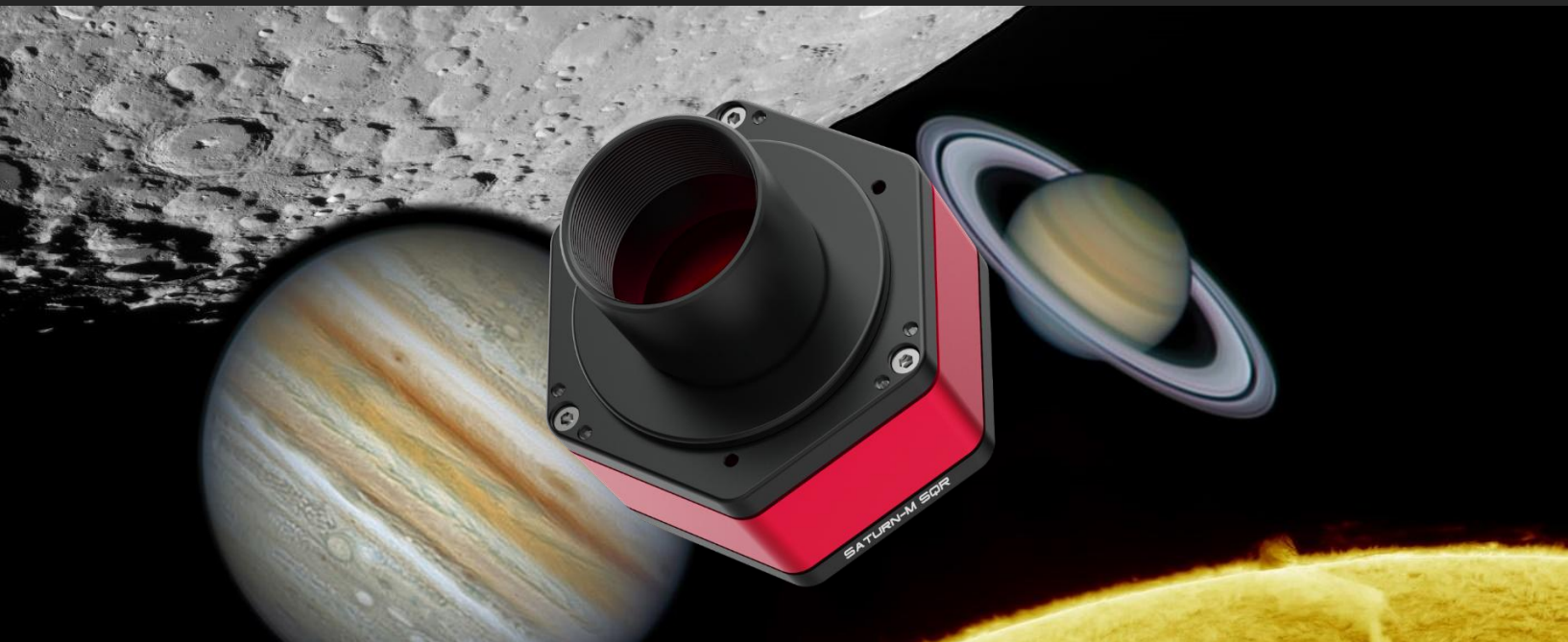


IMX432 flat with Quark

1.5-3mm tilt adjustment

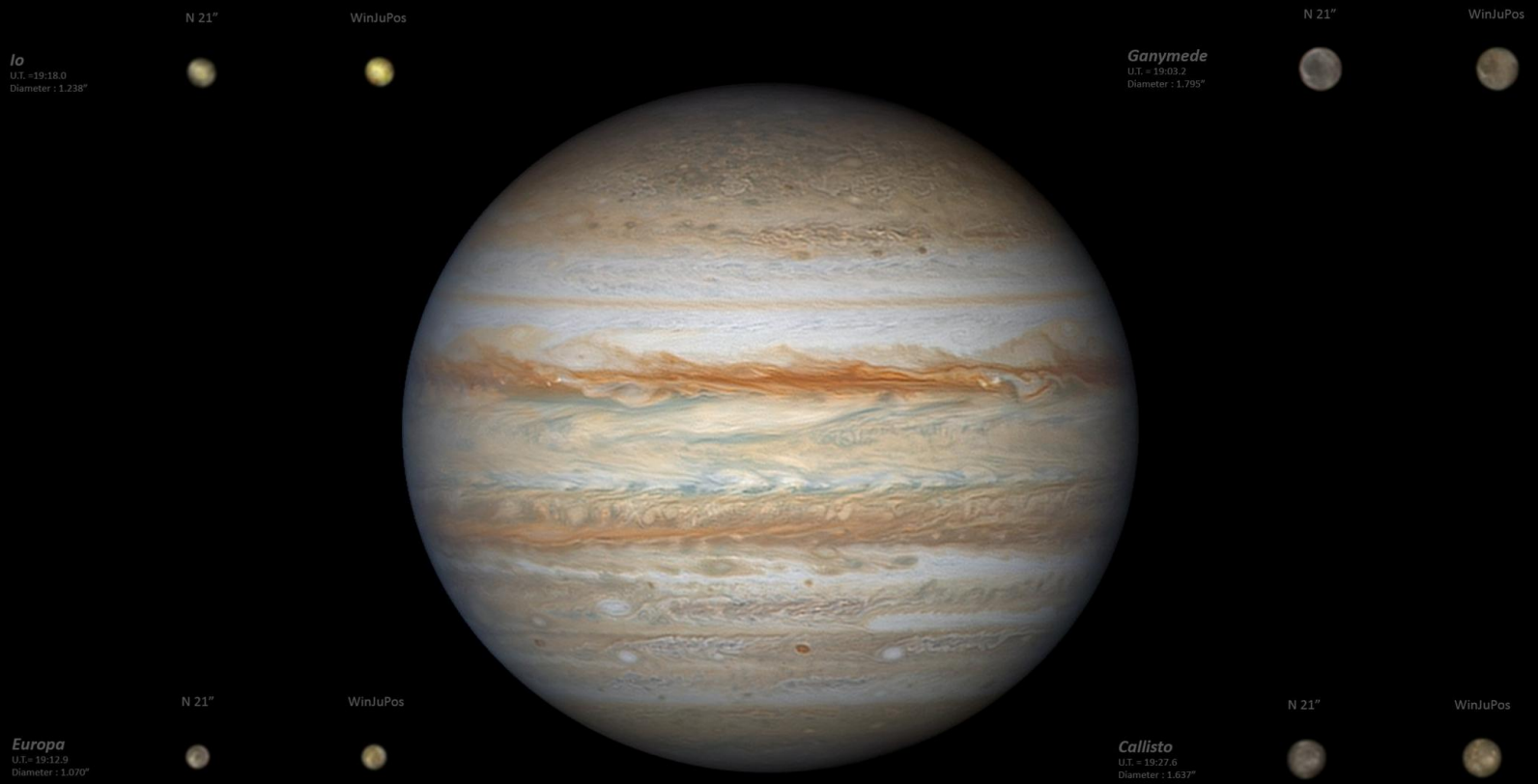


IMX432 flat with Quark



The naming of Player One Astronomy cameras is unique. We name the planetary cameras after planets (Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune. Earth is not included). The size of each planet to a certain extent represents the size of camera sensors.

Model	Sensor	Format	Resolution	Pixel	Noise	QE	FW	FPS	ADC
Saturn-MSQR	IMX533 mono	11.31×11.31mm(1")	3008×3008	3.76μm	4.46-1e	≈ 91%	73ke	43FPS	14bit
Saturn-CSQR	IMX533 color	11.31×11.31mm(1")	3008×3008	3.76μm	4.46-1e	≈ 80%	73ke	43FPS	14bit
Uranus-M	IMX585 mono	11.2×6.3mm(1/1.2")	3856×2180	2.9μm	6.5-0.7e	≈ 91%	47ke	47FPS	12bit
Uranus-C	IMX585 color	11.2×6.3mm(1/1.2")	3856×2180	2.9μm	6.5-0.7e	≈ 91%	47ke	47FPS	12bit
Neptune 664C	IMX664 color	7.8×4.5mm(1/1.8")	2704×1540	2.9μm	6.1-0.67e	≈ 91%	38.5ke	93FPS	12bit
Neptune-CII	IMX464 color	7.9×4.5mm(1/1.8")	2712×1538	2.9μm	2.9-0.7e	≈ 90%	12ke	93FPS	12bit
Neptune-M	IMX178 mono	7.4×5.0mm(1/1.8")	3096×2078	2.4μm	2.2-1.3e	≈ 80%	15ke	60FPS	14bit
Neptune-C	IMX178 color	7.4×5.0mm(1/1.8")	3096×2078	2.4μm	2.2-1.3e	≈ 80%	15ke	60FPS	14bit
Mars-MII	IMX462 mono	5.6×3.2mm(1/2.8")	1944×1096	2.9μm	2.6-0.7e	≈ 91%	12ke	136FPS	12bit
Mars 662M	IMX662 color	5.6×3.2mm(1/2.8")	1936×1100	2.9μm	6.7-0.7e	≈ 91%	54ke	108FPS	12bit
Mars-CII	IMX662 color	5.6×3.2mm(1/2.8")	1936×1100	2.9μm	6.7-0.7e	≈ 91%	54ke	108FPS	12bit
Mars-M	IMX290 mono	5.6×3.2mm(1/2.8")	1944×1096	2.9μm	3.2-0.98e	≈ 80%	14.7ke	136FPS	12bit
Mars-C	IMX462 color	5.6×3.2mm(1/2.8")	1944×1096	2.9μm	2.6-0.7e	≈ 90%	12ke	136FPS	12bit



Jupiter [Marco Lorenzi](#), Navris 21" F3.8@f/19 + Saturn-M SQR camera



Saturn [Marco Lorenzi](#), Navris 21" F3.8@f/19 + Saturn-M SQR camera

Most powerful camera for Lunar, Solar mosaic and DSO lucky imaging!

- Saturn-M/C SQR camera adopts 1" Sony IMX533 mono/color sensor,
- The 3.76µm pixel size accommodates a well depth of 73ke with a total of 8.3MP (the resolution is 3008*3008), and the diagonal is 17.5mm
- Passive Cooling System is integrated
- 43FPS in RAW8, based on Nova Boosting technology.



DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate

Nova Boosting

Most popular camera for planetary and DSO lucky imaging!

- Uranus-M/C camera adopts the Sony IMX585 1/1.2" format color sensor. The 2.9µm pixel size accommodates a well depth of 47Ke with a total of 8.3MP (the resolution is 3856*2180), and the diagonal is 12.85mm
- Passive Cooling System is integrated
- 47FPS in RAW8, based on Nova Boosting technology.



DDR3 256MB

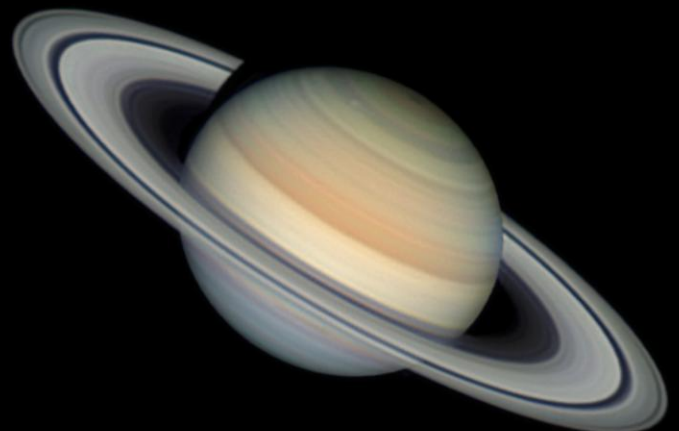
DPS

Passive Cooling

Sensor Tilt Plate

Nova Boosting

Jupiter [Damian Peach](#), C14HD + Uranus-C camera



Saturn [Damian Peach](#), C14HD + Saturn-M SQR camera

Neptune 664C

- 3rd Gen Neptune664C camera adopts the Sony IMX664 1/1.8" format sensor, no amp-glow make this camera to be successor of 2nd Gen IMX464 camera.
- The 2.9um pixel size accommodates a well depth of 38.5ke with a total of 4.2MP (the resolution is 2704*1540), and the diagonal is 9mm
- 93FPS in RAW8 format.



DDR3 256MB

DPS

Passive Cooling

Sensor Tilt Plate

Best NIR camera for Lunar and planetary imaging!

- Neptune-CII camera adopts the Sony IMX464 1/1.8" format sensor. The 2.9um pixel size accommodates a well depth of 12ke with a total of 4.2MP (the resolution is 2712*1538), and the diagonal is 9mm
- 93FPS in RAW8 format.



DDR3 256MB

DPS

Sensor Tilt Plate

Classic 1/2" camera for Lunar and planetary imaging!

- Neptune-M/C camera adopts the Sony IMX178 1/1.8" format sensor. The 2.4um pixel size accommodates a well depth of 15ke with a total of 6.4MP (the resolution is 3096*2078), and the diagonal is 9mm
- 60FPS in RAW8 format.



DDR3 256MB

DPS

Sensor Tilt Plate

The Latest Addition to the Mars Series—Mars 662M

- Mars 662M adopts the newest 1/2.8" Sony IMX662 mono sensor, full well is 54Ke.
- 2.9μm pixel size with a total of 21MP, diagonal is 6.44 mm
- Mars-662M run 108FPS in RAW8 format.



DDR3 256MB

DPS

Sensor Tilt Plate

New entry-level standard!

- Mars-MII adopts the newest 1/2.8" Sony IMX462 mono sensor, full well is 12Ke.
- Mars-CII adopts the newest 1/2.8" Sony IMX662 color sensor, full well is 54Ke.
- 2.9μm pixel size with a total of 21MP, diagonal is 6.44 mm
- Mars-MII run 136FPS in RAW8 format, Mars-CII run 108FPS in RAW8 format.



DDR3 256MB

DPS

Sensor Tilt Plate

Classic entry-level planetary camera!

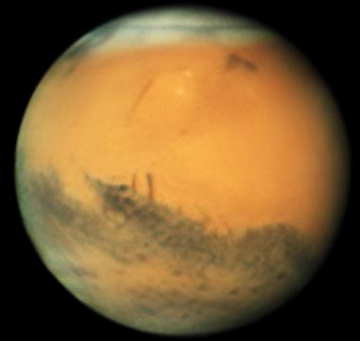
- Mars-M adopts the classic 1/2.8" Sony IMX290 mono sensor, full well is 14.6Ke.
- Mars-C adopts the newest 1/2.8" Sony IMX462 color sensor, full well is 12Ke.
- 2.9μm pixel size with a total of 21MP (1944*1096), diagonal is 6.44 mm
- 136FPS in RAW8 format.



DDR3 256MB

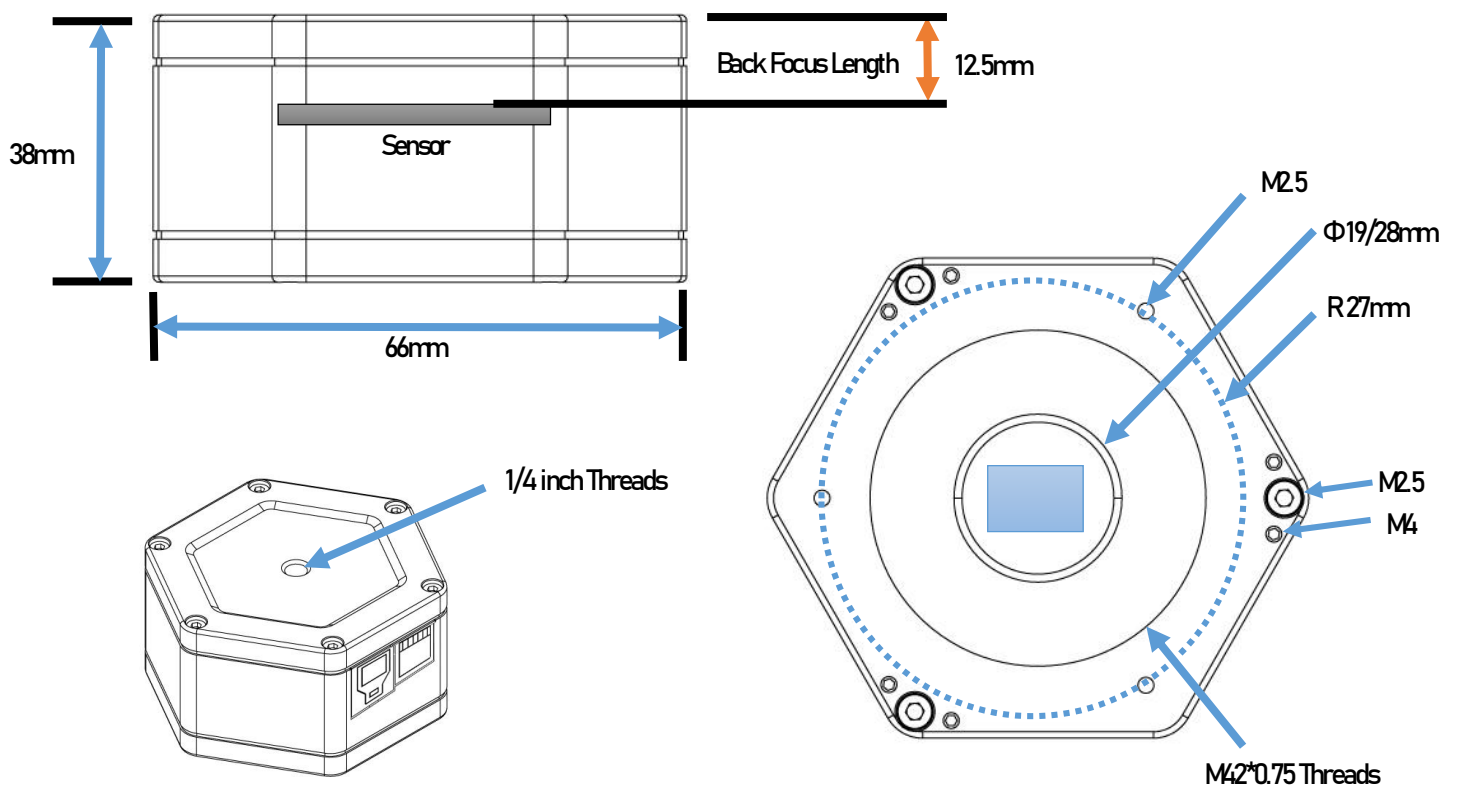
DPS

Sensor Tilt Plate



Mars [Damian Peach](#), C14HD + Uranus-C camera

Solar camera and Planetary camera structure



Player One Technology

DPS technology

Dead Pixel Suppression

New sensor still have some dead pixels, it's "dead" not really mean it totally white or black, just because it's brightness is out of 3 sigma range, and it's position fixed (not random hot pixels).

This technology according to analyze many dark frames to find out fixed abnormal pixels and record the map in camera memory. In imaging, those position of dead pixels will be given a median value according to the active pixels around that abnormal pixel.

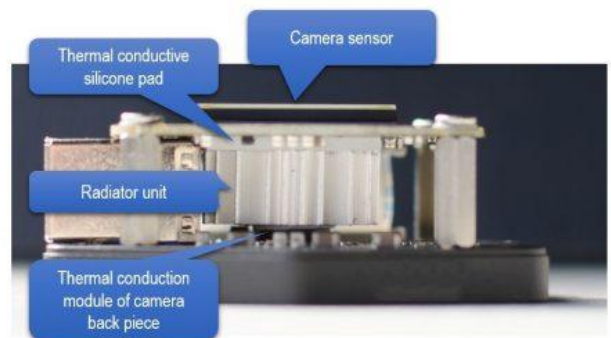
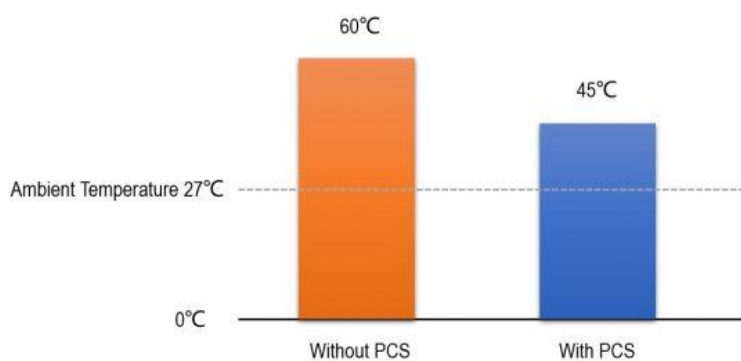


PCS technology

Passive Cooling System

Player One add a new feature called Passive Cooling System to conduct the heat from the sensor out. PCS designed for 2/3" or bigger format uncooled cameras.

PCS integrated Models : Apollo series, Uranus series, Saturn series.



Nova boosting

Increase the frame rate

This technology improves the frame rate of the sensor to a certain extent through secure hardware technology.

Overvoltage and overcurrent protection mechanism

Camera hardware protection

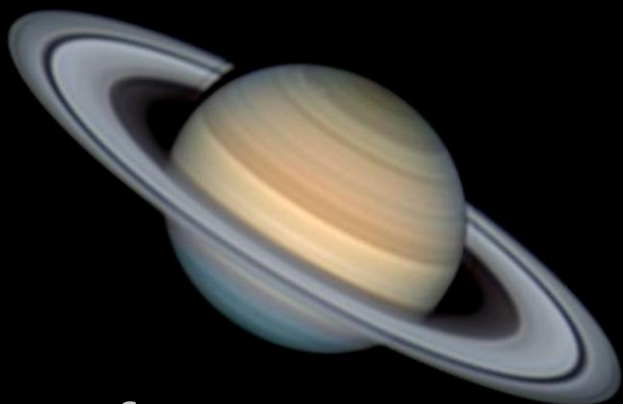
Ensures the safety of your camera and other equipment through overvoltage and overcurrent protection mechanisms.



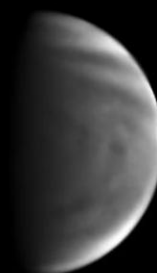
Half Moon [気気気Star](#), C8 + Neptune-C II camera



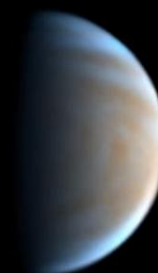
Tulip Nebula [Luke Newbould](#), RASA8 + Uranus-C camera



Saturn [Ecleido Azevedo](#)
C11 + Uranus-C camera



Ultraviolet
Baader UVenus filter



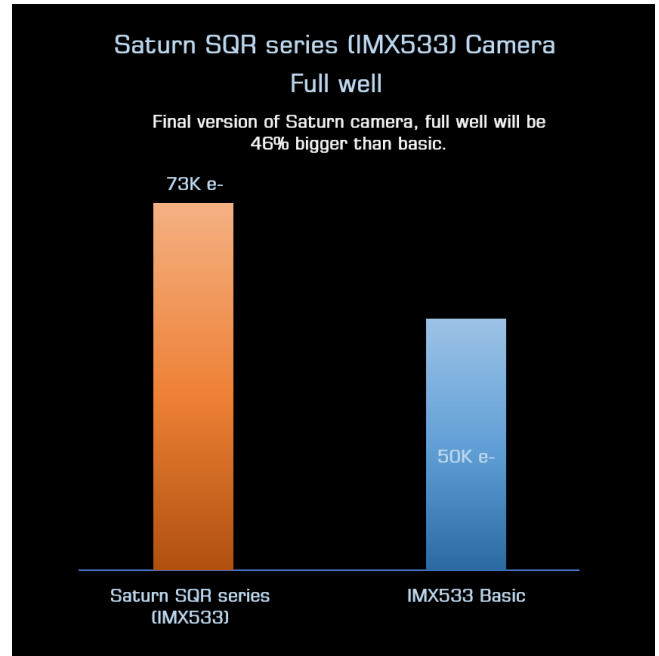
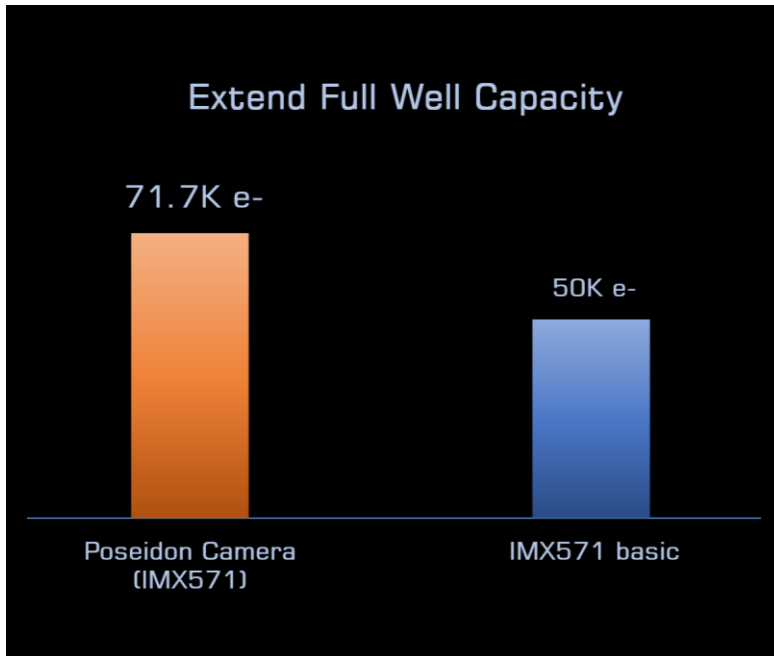
[GUV](#)

Venus [Fabio and Gabriela](#)
16" Newtonian + Neptune-C II camera

Player One Technology

Extend Full Well Capacity technology

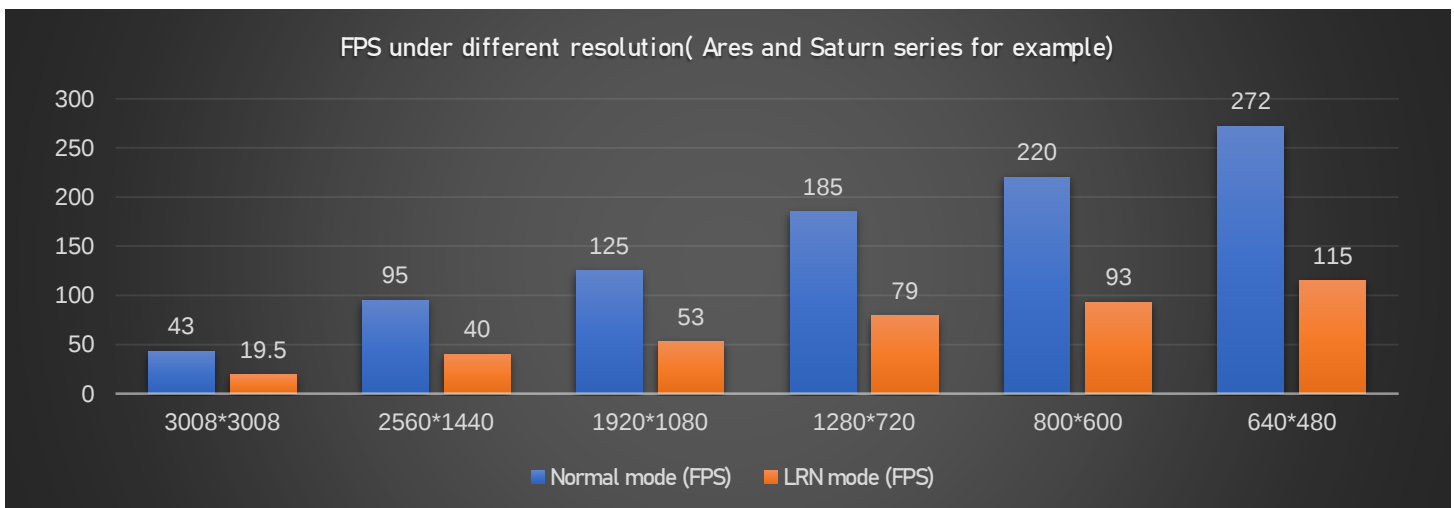
Player One has a unique technology to extend the full well of camera. We use this it on Zeus PRO, Poseidon PRO series, Ares PRO series, Saturn SQR series, and so on.



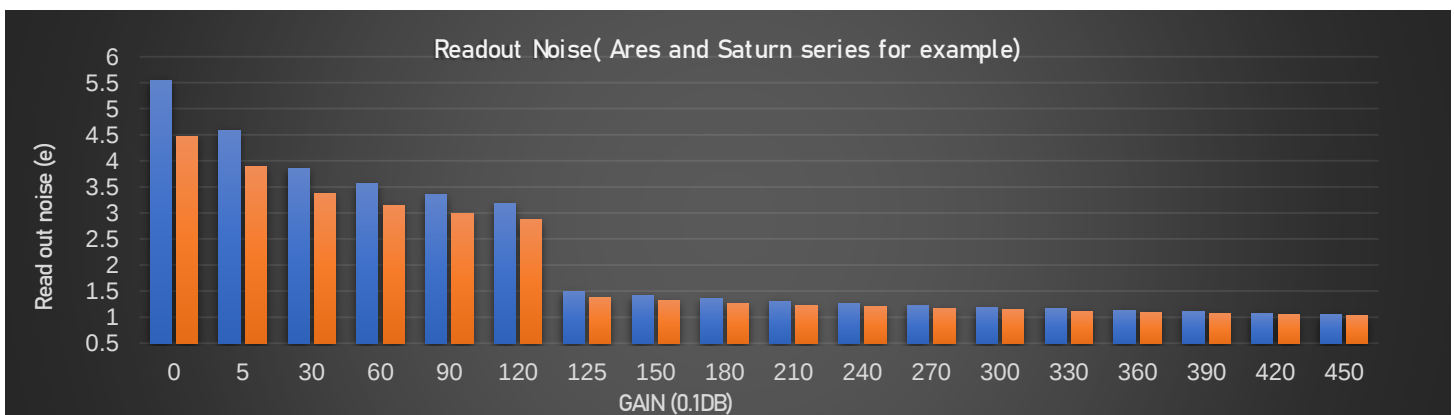
Dual Sampling Mode

Player One has a unique technology to make Zeus PRO, Poseidon PRO series, Ares PRO series, Saturn SQR series has dual sampling mode. Normal mode and LRN mode, they has different advantages in imaging.

1. Normal mode has faster FPS, it is more suitable for planetary imaging.



2. LRN(low readout noise) mode has lower readout noise and higher dynamic range. it is more suitable for DSO lucky imaging.





The naming of Player One guiding cameras is interesting. Guiding camera is smaller than planetary camera, that's why we choose dwarf planets to name it.

Model	Sensor	Format	Resolution	Pixel	Noise	QE	FW	FPS	ADC
Xena-M	IMX249 mono	11.3×7.1mm(1/1.2")	1936×1216	5.86μm	6.0-3.5e	≈77%	32ke	48FPS	12bit
Sedna-M	IMX178 mono	7.4×5.0mm(1/1.8")	3096×2078	2.4μm	2.2-1.3e	≈80%	15ke	60FPS	14bit
Ceres 462M	IMX462 mono	5.6×3.2mm(1/2.8")	1944×1096	2.9μm	2.6-0.7	≈90%	12.3ke	136FPS	12bit



CERES 462M
Mono camera

1944×1096@136fps

720P@205fps

Best for guiding scope.

- **High Sensitivity** | Well-known Sony IMX462 monochrome sensor.
- **USB3.0** | Up to 136FPS
- **DPS Technology** | Suppress dead pixels, improve image quality.
- **ST4 Port** | Easy for guiding.
- **Lightweight** | 1.25" Diameter, only 65g.



XENA-M
Mono camera

1936×1216@48fps

1080P@52fps

720P@77fps

Best for OAG guiding with long focal length, such as RC system.

- **High Sensitivity** | Well-known Sony IMX249 Monochrome sensor.
- **Nova Boosting Technology** | Break 30FPS limit, 60% Faster.
- **USB3.0** | Up to 48FPS
- **DPS Technology** | Suppress dead pixels, improve image quality.
- **ST4 Port** | Easy for guiding.
- **Lightweight** | 1.25" Diameter, only 65g.



SEDNA-M
Mono camera

3096×2078@60fps

2K@90fps

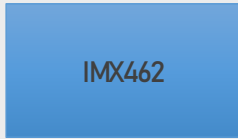
1080P@120fps

Best for OAG guiding with median focal length, such as Newtonians.

- **High Sensitivity** | Well-known Sony IMX178 Monochrome sensor.
- **USB3.0** | Up to 60FPS
- **DPS Technology** | Suppress dead pixels, improve image quality.
- **ST4 Port** | Easy for guiding.
- **Lightweight** | 1.25" Diameter, only 65g.

Guiding Camera Design

1/3"



IMX462

CERES 462M

IMX462 Mono

USB3.0 136FPS

1/2"



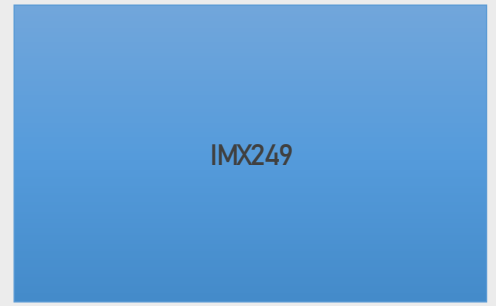
IMX178

SEDNA-M

IMX178 Mono

USB3.0 60FPS

1/1.2"



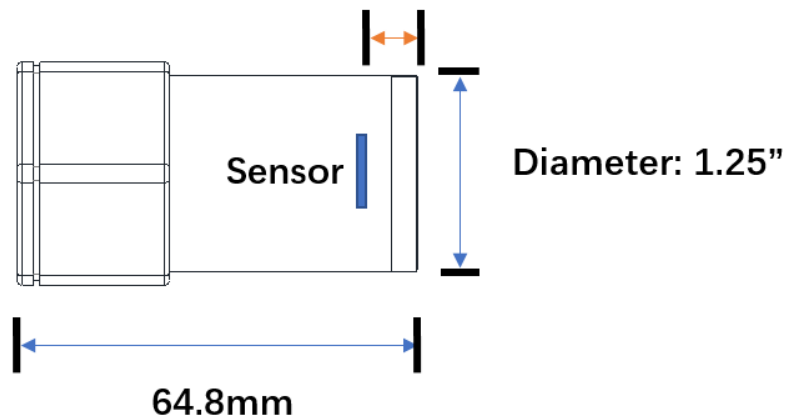
IMX249

XENA-M

IMX249 Mono

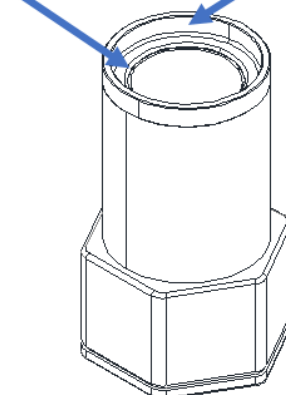
USB3.0 48FPS

Back Focus Length
7.5mm



Φ 17mm

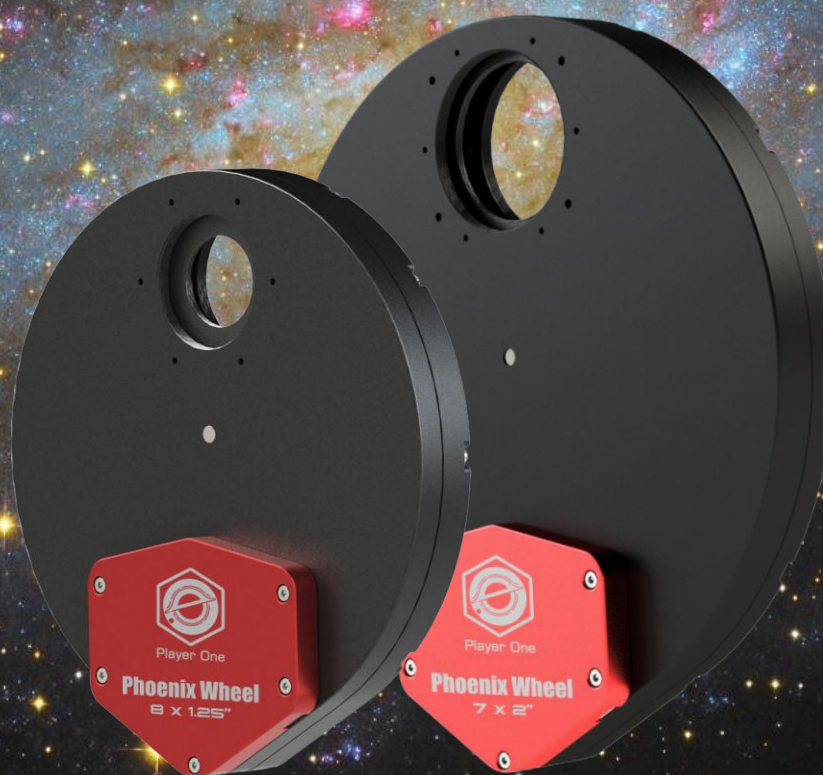
M28.5*0.6
Threads



» 06

Filter and Filter Wheel

Improve imaging effect



Model	Clear Aperture	Thickness	Body Threads	Data Port	Weight	Support cameras	Support OAG	Support Filters
8×1.25"	Φ27	21mm	M42×0.75	USBType-C	522g	CF cooled cameras, planetary cameras, guiding cameras	OAG-MIN	1.25"
7×36mm	Φ84.5mm	21mm	M48×0.75	USBType-C	522g	Poseidon, Artemis	OAG-MAX	36mm
5×2"	Φ47mm	21mm	M54×0.75	USBType-C	522g	Poseidon, Artemis, Zeus	OAG-MAX	2"/50mm
7×2"	Φ47mm	21mm	M54×0.75	USBType-C	655g	Poseidon, Artemis, Zeus	OAG-MAX	2"/50mm
7×50mm	Φ49mm	21mm	M54×0.75	USBType-C	655g	Poseidon, Artemis, Zeus	OAG-MAX	50mm

Filters and Wheels

1.25"-2"



Standard Filter Wheels

Phoenix Wheel 8x1.25"

- Design for planetary and DSO imaging, support 1.25" filters.
- Support Ares cooled cameras, and all uncooled cameras.

Phoenix Wheel 7x36mm

- Design for DSO imaging, support 36mm unmounted filters.
- Support Artemis and Poseidon cooled cameras.

Phoenix Wheel 5x2"

- Design for DSO imaging, support 2" mounted / 50mm unmounted filters.
- Support Artemis, Poseidon, Zeus cooled cameras.

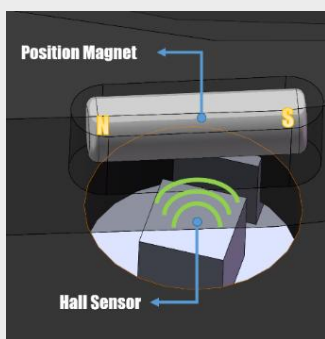
Big Filter Wheels

Phoenix Wheel 7x2"

- Design for DSO imaging, support 2" mounted / 50mm unmounted filters.
- Support Artemis, Poseidon, Zeus cooled cameras.

Phoenix Wheel 7x50mm

- Design for DSO imaging, support 50mm unmounted filters.
- Best for full-frame Zeus cooled camera, without vignette problem.
- Support Artemis, Poseidon, Zeus cooled cameras.



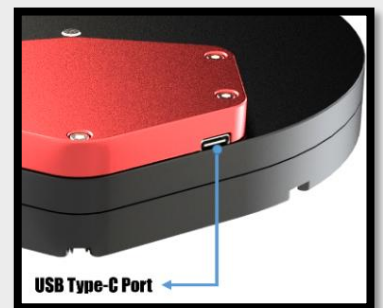
Hall magnetic positioning technique

Accurate positioning

Player One's motor filter wheel use Hall sensor to do accurate positioning.

USB2.0 Type-C DATA port

Type-C Port can make the wheel smaller and easy to plug in.



Filter Drawer Series

Filter Drawer MAX

- Support Artemis, Poseidon, Zeus cooled cameras.
- Support FH-D-OAG MAX

Filter Drawer MN

- Support Ares cooled cameras, and all uncooled cameras.
- Support FH-D-OAG MN.





ERF filter



Design for Quark Chromosphere

- Reject energy of the Sun.
- Protect you Quark, extend the lifetime.
- Assistant filter, (DO NOT use it for observing)

UVenus filter



Design for planetary imaging

- Transmittance 80%, Bandwidth: 60nm
- Blocking depth:
- OD5 (200-700nm), OD4(700-1100nm), OD3(1100-1500nm)

Photosphere 7.5nm filter



Design for photosphere imaging

- Increase details from photosphere.
- Suitable with Baader film and Herschel Wedge.
- Assistant filter, (DO NOT use it for observing)

CH4 8nm filter



Design for planetary imaging

- Transmittance 90%
- Bandwidth: 8nm
- Blocking depth: OD4 (200-1100nm)



Anti-Halo Pro 2" Ha+OIII filter

Dual band filter for color cameras

- Anti-Halo coating: Eliminate halo problem around bright stars.
- Excellent effect, real 3.5nm-4.2nm bandwidth.
- Off-band rejection: OD5.0 (1/100000)



Positive side



Negative side

Anti-Halo 2" UV IR-cut filter

Dual band filter for color cameras

- Anti-Halo coating: Eliminate halo problem around bright stars.
- Off-band rejection: OD4.0 (1/10000)



Series	Model	Size	Mount Thickness	Glass Thickness	Threads	Support Filter Wheel	Support Filter Drawer
Anti-Halo PRO	Ha+OIII	2"	5mm	1.85mm	M48×0.75	5×2"/7×2"	MAX/MN
Anti-Halo	UVIR-CUT	2"	5mm	1.85mm	M48×0.75	5×2"/7×2"	MAX/MN
E-series	Photosphere 7.5nm	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
E-series	CH4 8nm	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
E-series	UVenus	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
S-series	UVIR-CUT	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
S-series	IR685	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
S-series	IR850	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
S-series	ERF	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN
S-series	Photosphere 10nm	1.25"	5mm	1.85mm	M28.5×0.6	8×1.25"	MN

FHD-OAG series : No Vignetting Design

- FHD-OAG use 8*14mm prism, it is close to 16:9 format. No vignette problem with big sensor such like Xena-M camera. The prism height is only 8mm, it can be setup closer to light path center and get more light.
- Helix focuser included
- FHD-OAG MAX design for Filter Drawer MAX, Phoenix Wheel 7x36 / 5x2" / 7x2" / 7x50.
- FHD-OAG MN design for Filter Drawer MN, Phoenix Wheel 8x1.25".



8x14mm Prism



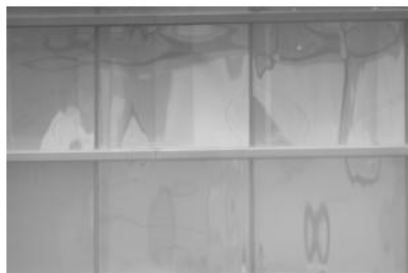
FHD-OAG MAX Vignetting Test



Sensor: IMX462
1/3" Format



Sensor: IMX178
1/2" Format



Sensor: IMX174/249
1/1.2" Format





ACS (Active Cooling System) : Best assistant for solar imaging.

What is ACS?

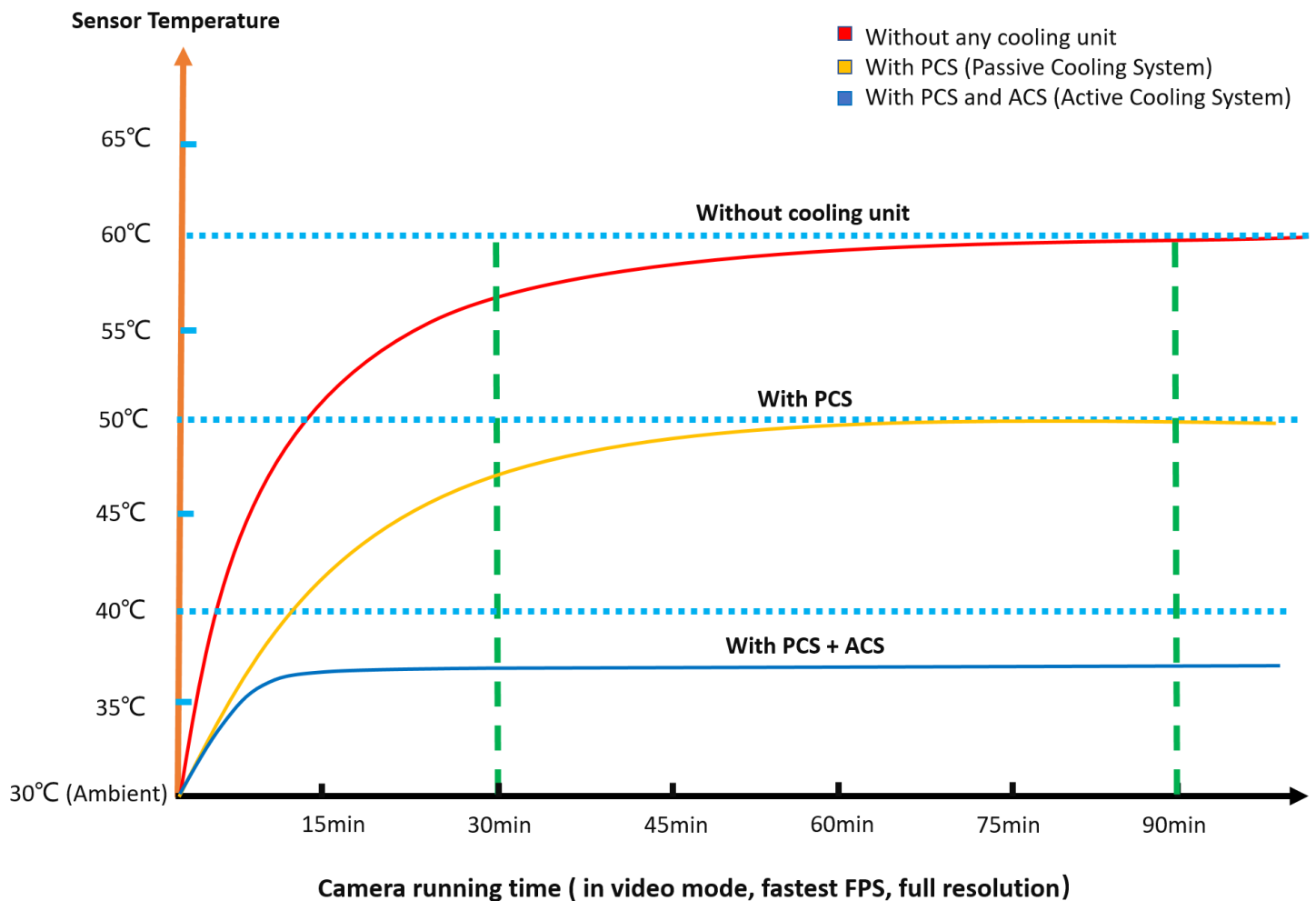
- ACS (Active Cooling System) is a external air-cooled system designed for solar and big format planetary cameras.

Why I need ACS?

- ACS (Active Cooling System) is a external air-cooled system designed for solar and big format planetary cameras.
- ACS can provide much better temperature control for uncooled cameras. We all have some bad experiences in hot summer. The temperature of sensor rising up and camera shield is too hot to touch, afraid of the camera can't working normally. We have been aware of the heating problem before, so we added PCS (Passive Cooling System) to the camera. However, looks it is not enough! In 2022, summer ambient temperature even over 40°C (104°F) for a month, camera sensor temperature might close to 60°C in long time using under sunlight. Although our users said Player One camera is still working well in hot day, but we think it's still has damage risk. So we decide to make this ACS unit, to provide much better temp control.



Comparison between 3 different setup



Customer Service

Manuals

Product manuals and usage manuals can help beginners to learn fast.

Tutorials

We will upload tutorials about planetary and DSO imaging, and post-processing too.

Activity

Hold online activities, especially when some astronomical phenomena happens.

Promotion

On Black Friday and Christmas will have a very attractive promotion.



Technical support

Player One love astrophotography very much, and we like to share and communicate with astronomers, any technical question or issue will be answered in 24hrs.

Consultation, Purchase and After-sales service: support@player-one-astronomy.com

Business and Cooperation: vanessa.zhang@player-one-astronomy.com

Facebook Message: <https://www.facebook.com/PlayerOneAstronomy>

FAQ

1. I have never heard of this camera, is it reliable?

We are called Player One, like our company name, the main electronic components are in high quality, all aspects of the performance has reached the high standard of the market.

2. Do they familiar with astrophotography?

Yes, we are. The CEO of Player One is an experienced astrophotographer, and our engineers are familiar with astronomical products.

3. What's the difference between your camera and other brands

Our camera has a lot of advantages. We add DDR buffer, DPS technology, Sensor Tilter, Nova Boosting, Passive Cooling System into our planetary camera, and created solar cameras. In last year, we made new cooled camera, it is more advanced, Rear 4P tilter, Deep Cooling System, USB Type-C port and entire EFL solution.

4. How many different drivers of the camera?

Basic:

- Camera native driver (Windows 7/8/10/11)
- ASCOM driver (ASCOM 6.5 required)
- Camera Directshow driver (Windows 7/8/10/11)
- INDI & INDI GO driver for Linux and Raspberry Pi.

For developer:

- WINDOWS SDK
- Linux SDK
- Mac OS SDK
- Labview SDK

5. Support Software

- | | |
|-----------------------------|--|
| • Sharpcap 4.0 and upper | • The SKY Imaging bundle and X2 plugin |
| • Firecapture 2.7 and upper | • SGP (via ASCOM) |
| • NI.NA21 and upper | • Maxim DL (via ASCOM) |
| • Astro DMx 1.7.2 and upper | • APT (via ASCOM) |
| • MetaGuide 6.1 and upper | • Nebulosity (via ASCOM) |
| • PHD2 and upper | • ANDRON |

Worldwide Dealers



Official Dealer (Germany)
Telescope-Service
 Pansburg GmbH Von-Myra-Straße 8 85599 Parsdorf
 TEL: +49-(0)89-9922875-0
 FAX: +49-(0)89-9922875-99



Official Dealer (France)
Univers Astro
 25 route du pont de bois
 44640 VUE, France
 E-mail: info@univers-astro.fr



Official Dealer (France)
SKEYEtek
 7 rue principale, 68780 MORTZWILLER
 France
 Tel: 0033 (0)6 08 73 46 90
 Mail: contact@skeyetek.space



Official Dealer (France)
Piero-astro
 114 Avenue Georges Clemenceau
 34500 Beziers - France,
 +33(0)467006626
piero@piero-astro.com (orders/commercial)



Official Dealer (France)
La Clef des Étoiles
 6 avenue Léonard De Vinci
 31880 La Salvetat-Saint-Gilles- France
 Email: contact@laclefdesetoiles.com
 TEL: +33 5 61 22 58 55



Official Dealer (Switzerland)
Optique Perret
 Rue du Perron 17, 1204 Genève,
 Tél. +41 22 311 47 75
 CH-107.742.103



Official Dealer (Switzerland)
DEEP SPACE ASTRONOMY
 Rue du Vieux-Marché 9,
 1260 Nyon, Switzerland
 Tél. +41 79 646 15 09
 Email: info@deep-space-astronomy.ch



Official Dealer (UK)
Dark Clear Skies
 E-mail: Contact@darkclearskies.co.uk



Official Dealer (UK)
Pro Astronomy
 E-mail: robert.wells@proastronomy.co.uk



Official Dealer (UK)
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 Kennets Cottage, Beauworth,
 Alresford, England, SO24 0NZ
 United Kingdom
 E-mail: info@specialistcameras.co.uk



Official Dealer (Italy)
Tecnosky di Monti Giuliano
 Via Rubine 79
 15023 Felizzano (AL), Italy
 TEL: +39 0131.772241
 E-mail: info@tecnosky.it



Official Dealer (Italy)
Skypoint
 Via Zorutti, 145/10-11
 33030 - Campoformido (UD), Italy
 TEL: +39-0432-652609
 E-mail: info@skypoint.it



Official Dealer (Spain)
Alpha Cygni SL
 C/ San Agustín, 23
 38410 - Las Realejos
 S.C. de Tenerife, Canary Islands - Spain
 Tel: 0034 922 34 30 38
 Email: info@alphacygni.com



Official Dealer (Netherlands)
Ganymedes Optische Instrumenten
 Middelburgstraat 1, 1182-H Amsterdam
 The Netherlands
 TEL: +31206412083
 Email: info@ganymedes.nl



Official Dealer (Bulgaria)
Optics Lux LTD
 j.k. Lulin bl. 133, fl. 8 ap. 28
 Sofia 1335, Bulgaria
 Tel: +359889398555
 E-mail: astronomy@mail.bg



Official Dealer (Russia)
astron.ru
 Sushchevsky Val ul.,
 d.14/22, korp.3, Moscow,
 127018, Russia
 E-mail: info@astron.ru



Official Dealer (United States)
Astro Hutech
 Hutech Corporation
 25691 Atlantic Ocean Dr., Unit B-17
 Lake Forest, CA 92630
 TEL: 877-289-2674



Official Dealer (United States)
Astro World Telescopes
 Levittown, NY 11756
 TEL: 516-273-3771



Official Dealer (United States)
Stellarvue
 11802 Kemper Road
 Auburn, CA 95603 USA
 TEL: (530) 823-7796



Official Dealer (Canada)
Ontario Telescope and Accessories
 670 Hardwick Rd, Unit 5, Bolton Ontario
 TEL: 905 487 6363



Official Dealer (Canada)
O'Telescope Corporation
 1951 Landry Street, Clarence Creek,
 Ontario, CANADA
 TEL: 613-612-2518



Official Dealer (Canada)
Astronomy Plus
 373 De Gentilly West, Longueuil, Quebec,
 J4H1Z9, Canada
 Tel: 450 463-5072
 Email: info@astronomyplus.com



Official Dealer (Brazil)
Foton Astro
 Rua São Sebastião, 389 - Sala 01 -
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