SVBONY SV305C

SVBONY SV305C Astrophotography Camera Instruction Manual

Model: SV305C

1. Introduction

The SVBONY SV305C is a color astrophotography camera designed for planetary, lunar, and Electronically Assisted Astronomy (EAA) applications. It features an IMX662 sensor, offering good performance for capturing celestial objects. This manual provides essential information for setting up, operating, maintaining, and troubleshooting your SV305C camera.

2. Product Features

- **IMX662 Sensor:** Utilizes a 1/2.8-inch back-illuminated IMX662 sensor with 2.9μm pixel size, accommodating 38ke full well charge to prevent overexposure.
- **Low Noise Performance:** The IMX662 sensor features low readout noise, no glow, and improved Near-Infrared (NIR) sensitivity, particularly in the red spectral band.
- **SharpCap Integration:** Includes planetary high-speed mode and sky space long exposure mode presets in SharpCap software for quick setup.
- **128MB DDRIII Buffer:** Built-in memory caches images during USB transfer, preventing frame loss or damage.
- **Region of Interest (ROI):** Allows setting any resolution to read out smaller regions, maintaining image scale and increasing capture rates.
- **BIN Function:** BIN2x2 pixel merging improves camera sensitivity.
- **Removable Protective Glass:** The camera features a detachable protective glass. Note that the built-in UV/IR cut filter is not removable.
- **Versatile Interface:** Compatible with a 1.25-inch universal astronomical interface. The camera's front has a CS interface and includes a CS-C adapter ring for C-mount and CS-mount lenses.
- **HCG Noise Reduction:** Automatically activates HCG mode when gain is increased, significantly reducing readout noise.

3. Package Contents

Verify that all items are present in your package:

- 1x SV305C Camera

- 1x USB 2.0 Data Cable
- 1x 1.25-inch Extension Barrel
- 1x CS-C Adapter Ring
- 1x 1.25-inch Lid
- 1x Manual
- 1x Lens Cleaning Cloth

Image: Contents of the SVBONY SV305C camera package, including the camera, cables, adapters, and cleaning cloth.

4. Setup

4.1 Camera Overview

Image: Front view of the SVBONY SV305C camera, showing the sensor and mounting threads.

4.2 Attaching to a Telescope

The SV305C camera can be directly inserted into a 1.25-inch telescope focuser. Ensure the camera is securely fastened using the focuser's thumbscrew.

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Video: Demonstrates how to attach the SV305C camera to a telescope, including the use of the 1.25-inch adapter.

4.3 Using with a Guide Scope

The SV305C can function as a guiding camera when attached to a guide scope. This typically involves inserting the camera into the guide scope's focuser and securing it.

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Video: Illustrates the setup of the SV305C camera with a guide scope for guiding purposes.

4.4 Computer Connection

Connect the camera to your computer using the provided USB 2.0 cable. The USB 2.0 interface is suitable for basic planetary photography needs.

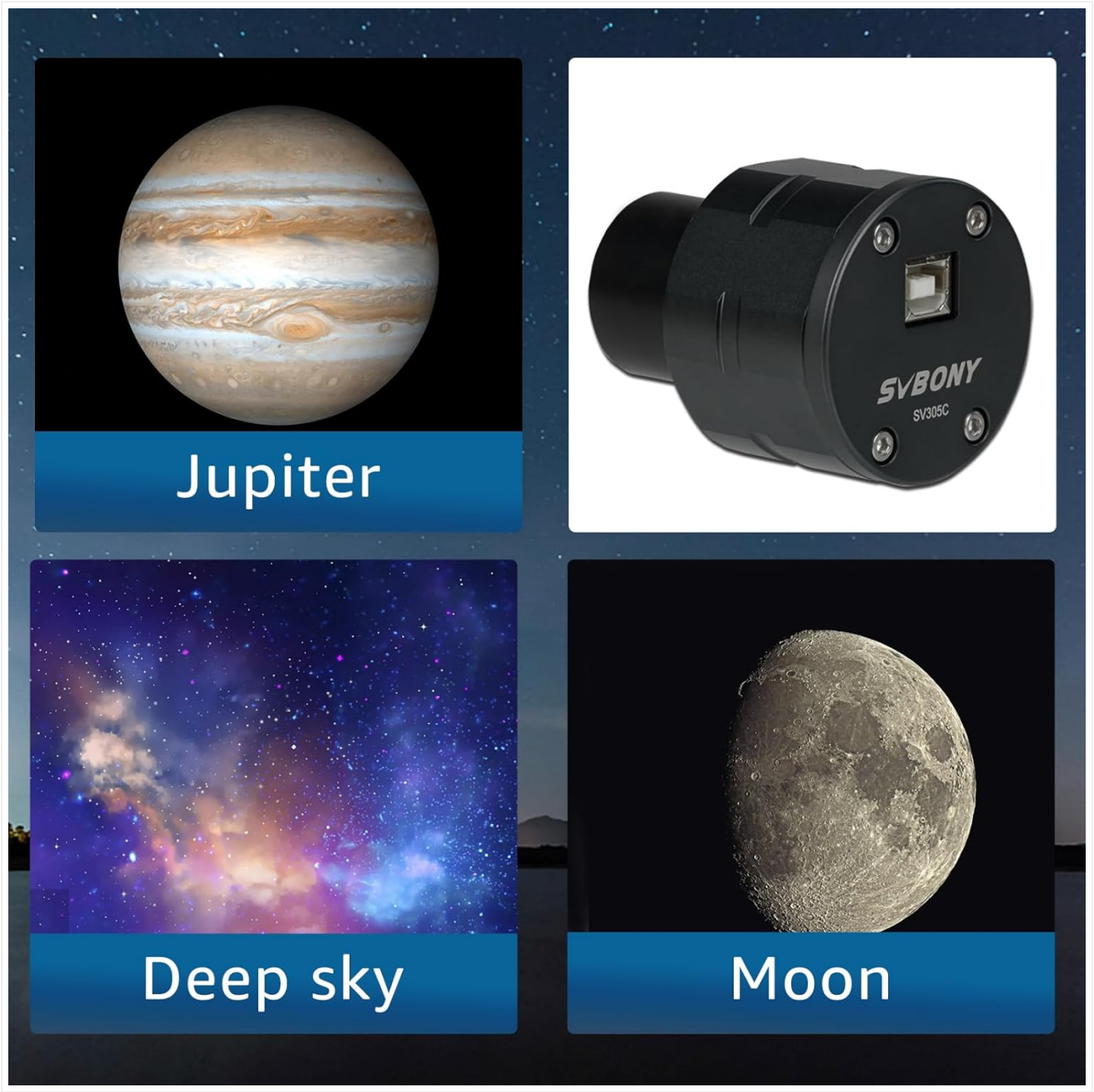

Image: Close-up of the SVBONY SV305C camera showing the USB 2.0 port and connected cable.

4.5 Driver and Software Installation

Before using the camera, install the necessary drivers and software. For Windows 11, it is crucial to download and install the specific SVBONY device driver from the official website. The camera is compatible with various operating systems including Windows, Linux OS, Raspberry Pi, and Mac OS. SharpCap is a recommended software for camera control and image acquisition.

Image: Diagram illustrating the compatibility of the SVBONY SV305C camera with Windows, Linux OS, Raspberry Pi, Mac OS, and Chrome OS.

5. Operating Instructions

5.1 Basic Imaging

The SV305C is optimized for planetary and lunar imaging, as well as EAA. Once connected and drivers are installed, open your preferred astronomy imaging software (e.g., SharpCap) to begin capturing images.

Image: Examples of celestial objects (Jupiter, Deep Sky, Moon) that can be captured with the SVBONY SV305C camera.

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Video: Overview of the SV305C camera's suitability for astrophotography and EAA.

5.2 Software Settings (SharpCap)

SharpCap software includes pre-configured modes for the SV305C:

- **Planetary High-Speed Mode:** Optimized for capturing planets and the Moon.
- **Sky Space Long Exposure Mode:** Suitable for EAA and capturing fainter deep-sky objects.

These modes allow for quick adjustments and can be saved for future use.

Image: Screenshot illustrating the 'one-click settings' feature in SharpCap for fast shooting with the SV305C camera.

5.3 Advanced Features

- **ROI Function:** Adjust the Region of Interest to focus on specific areas and increase frame rates.
- **BIN Function:** Use BIN2x2 mode to increase sensitivity, especially in low-light conditions.
- **HCG Noise Reduction:** This technology automatically reduces readout noise at higher gain settings, improving image quality.

Image: Comparison showing the effect of 'zero glow technology' on astrophotography images, reducing amp glow.

6. Maintenance

6.1 Cleaning the Camera

Use the provided lens cleaning cloth to gently clean the camera's exterior. For the protective glass, carefully detach it if necessary and clean with appropriate optical cleaning solutions and cloths. Avoid touching the sensor directly. The built-in UV/IR cut filter is not designed to be removed.

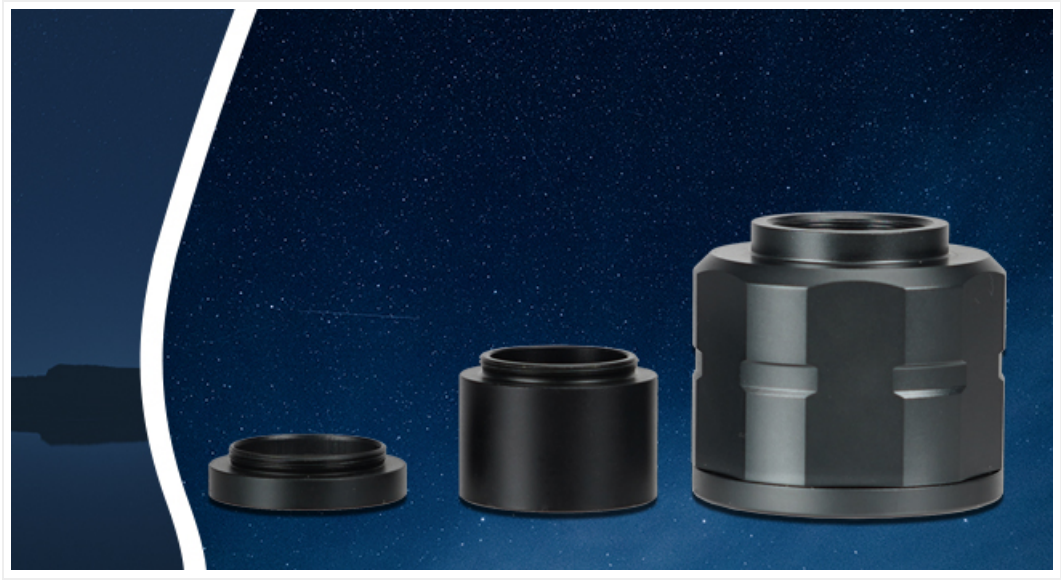

Image: Diagram highlighting the UV/IR cut protective windows and the sensor of the SVBONY SV305C camera.

6.2 Storage

When not in use, store the camera in a dry, dust-free environment, preferably in its original packaging or a protective case, to prevent damage to optical and electronic components.

7. Troubleshooting

- **Camera Not Detected (Windows 11):** Ensure you have downloaded and installed the specific SVBONY device driver for Windows 11 from the official SVBONY website. The camera is not plug-and-play with Windows 11 without this driver.
- **Frequent Disconnections:** If the camera disconnects frequently, especially when connected via a powered USB hub, try connecting it directly to your computer's USB port. Some USB hubs may not provide stable power or data transfer for imaging devices.
- **No Image or White Glare:**
  - Verify proper focus of your telescope and camera.
  - Check exposure settings in your imaging software. Overexposure can result in a completely white image, while underexposure may show nothing.
  - Ensure the camera is correctly inserted into the focuser and secured.
  - Confirm that the correct camera is selected in your imaging software.
- **Mac OS Compatibility:** While the camera is listed as compatible with Mac OS, some users have reported difficulties with connection or software. Ensure you have the latest drivers and software versions compatible with your Mac OS.

8. Specifications

Feature	Specification
Sensor	IMX662 Color CMOS
Resolution	2.1 Megapixels (1920x1080)
Pixel Size	2.9µm x 2.9µm
Sensor Size	1/2.8 inch

Feature	Specification
Full Well Charge	38ke
Quantum Efficiency (QE)	~91%
ADC	12-bit
Interface	USB 2.0
Image Buffer	128MB DDRIII
Protective Glass	Removable (built-in UV/IR cut filter is not)
Mounting Interface	1.25-inch astronomical interface, CS interface with CS-C adapter ring
Item Model Number	FF9198L
Item Weight	12.6 ounces
Product Dimensions	59.06 x 31.5 x 31.5 inches

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the official SVBONY website or contact SVBONY customer service directly. Keep your purchase receipt for warranty claims.