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SVBONY SV520

Svbony SV520 Astronomical Telescope User Manual

Model: SV520 (EUW9302A-W9110A)

1. Introduction

This manual provides comprehensive instructions for the assembly, operation, and maintenance of your Svbony SV520 Astronomical Telescope. Designed for both beginners and astronomy enthusiasts, this telescope features a 90mm aperture and 800mm focal length, offering clear and bright views of celestial objects. Please read this manual thoroughly before using your telescope to ensure proper setup and optimal performance.

2. Package Contents

Verify that all components listed below are present in your package:

- 1x Optical Tube (90mm aperture, 800mm focal length) with Focuser
- 1x Compact Altazimuth Mount
- 1x Stainless Steel Tripod
- 1x K25mm Eyepiece
- 1x 10mm Eyepiece
- 1x 2x Barlow Lens
- 1x Zenith Mirror
- 1x Moon Filter
- 1x Finder Scope
- 1x Eyepiece Phone Holder
- 1x Dovetail Phone Holder
- 1x Wireless Remote Control
- 1x Tray
- 1x Connecting Rod
- 2x Fine Adjustment Knobs
- 2x Locking Screws
- 1x User Manual



Image: All components included in the Svbony SV520 Telescope package, laid out clearly.

3. Setup Instructions

Follow these steps to assemble your Svbony SV520 Telescope:

1. **Set up the Tripod:** Extend the legs of the stainless steel tripod to a stable height. Attach the accessory tray to the center brace for convenient storage of eyepieces and accessories.
2. **Attach the Altazimuth Mount:** Secure the compact altazimuth mount to the top of the tripod using the provided screws. Ensure it is firmly attached.
3. **Mount the Optical Tube:** Slide the optical tube onto the altazimuth mount's dovetail saddle. Tighten the locking screws to hold the tube securely in place.
4. **Install the Finder Scope:** Attach the finder scope to its designated bracket on the optical tube. Align the finder scope later during operation.
5. **Insert the Zenith Mirror:** Place the zenith mirror into the focuser. This accessory provides a more comfortable viewing angle, especially for objects high in the sky.

6. **Insert an Eyepiece:** For initial setup, insert the K25mm eyepiece into the zenith mirror. Secure it with the small thumbscrew.
7. **Attach Phone Holders (Optional):** If desired, attach the eyepiece phone holder to an eyepiece for smartphone photography, or the dovetail phone holder to the optical tube for guiding software.



Image: Step-by-step diagram illustrating the quick assembly process of the Svbony SV520 Telescope.

4. Operating Instructions

4.1 Aligning the Finder Scope

The finder scope helps locate objects before viewing them through the main telescope. To align it:

1. Point the main telescope at a distant, easily identifiable terrestrial object (e.g., a distant tree or building) during daylight hours.
2. Center the object in the main telescope's eyepiece.
3. Look through the finder scope and adjust its alignment screws until the crosshairs are centered on the same object.



Image: Diagram showing how to adjust the finder scope's screws to center the reticle on an object.

4.2 Focusing the Telescope

To achieve a clear image:

1. Point the telescope at your desired object.
2. Slowly turn the focuser knob until the image appears sharp and clear. The helical gear focusing system ensures smooth and precise adjustments.



Image: Illustration demonstrating the focusing mechanism, showing a blurry image becoming clear after adjustment.

4.3 Changing Magnification

The telescope comes with two eyepieces (K25mm and 10mm) and a 2x Barlow lens. Magnification is calculated by dividing the telescope's focal length (800mm) by the eyepiece's focal length.

- **K25mm Eyepiece:** 800mm / 25mm = 32x magnification.
- **10mm Eyepiece:** 800mm / 10mm = 80x magnification.
- **K25mm Eyepiece + 2x Barlow:** (800mm / 25mm) * 2 = 64x magnification.
- **10mm Eyepiece + 2x Barlow:** (800mm / 10mm) * 2 = 160x magnification.

To change magnification, simply swap eyepieces or insert the Barlow lens between the zenith mirror and the eyepiece. Start with the lowest magnification (K25mm eyepiece) for a wider field of view, then switch to higher magnifications for more detail.



Image: Visual comparison of lunar craters at 32x, 64x, 80x, and 160x magnification using different eyepieces and a Barlow lens.

4.4 Altazimuth Mount Operation

The altazimuth mount allows for 360° horizontal rotation and 90° vertical adjustment. Use the fine adjustment knobs for

smooth and precise tracking of celestial objects.

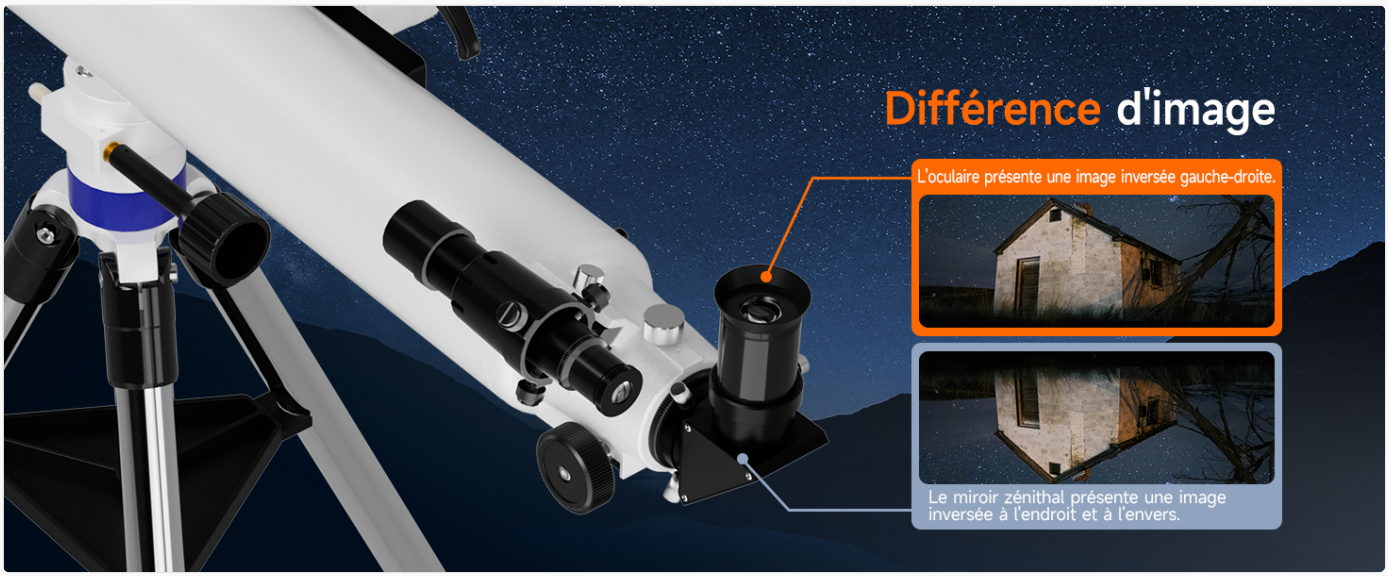


Image: Diagram illustrating the 360° horizontal and 90° vertical adjustment capabilities of the altazimuth mount.

4.5 Image Orientation

Refractor telescopes with a zenith mirror typically produce an image that is correctly oriented vertically but reversed horizontally (mirror image). This is normal for astronomical viewing.



Image: Comparison showing a normal terrestrial view versus the inverted and reversed image seen through the telescope with a zenith mirror.

5. Maintenance

- **Cleaning Lenses:** Use a soft, lint-free cloth specifically designed for optical lenses. Gently brush away any dust before wiping. Avoid touching the lens surfaces with your fingers.
- **Storage:** Store the telescope in a dry, dust-free environment. Use the original packaging or a dedicated telescope case for protection when not in use.
- **Tripod and Mount:** Periodically check all screws and fasteners on the tripod and mount to ensure they are tight.
- **Avoid Extreme Temperatures:** Do not expose the telescope to extreme temperature changes, as this can affect optical components.

6. Troubleshooting

Problem	Possible Cause	Solution
Image is blurry or out of focus.	Focuser not adjusted correctly.	Adjust the focuser knob slowly until the image is sharp.
Cannot find objects easily.	Finder scope is not aligned with the main telescope.	Align the finder scope during daylight hours using a distant terrestrial object.
Image appears dim or dark.	Using too high magnification for current viewing conditions; light pollution.	Switch to a lower magnification eyepiece (e.g., K25mm). Observe from a darker location away from city lights.
Image is upside down or reversed.	Normal for astronomical telescopes with a zenith mirror.	This is expected behavior for astronomical viewing.

7. Specifications

Feature	Detail
Model Name	SV520
Optical Design	Refractor
Aperture	90 mm
Focal Length	800 mm
Focal Ratio	f/8.8
Eyepiece Lens Description	Multi-coated glass
Mount Type	Altazimuth Mount
Focus Type	Manual Focus (Helical Gear)
Finder Scope	5x24
Tripod Material	Stainless Steel
Product Dimensions (L x W x H)	17.5 x 48.5 x 82 cm
Product Weight	8.67 kg
Compatible Devices	Other filters, high magnification eyepieces, camera, smartphone

8. Warranty and Support

Warranty: Svbony provides a lifetime warranty for the telescope or OTA (Optical Tube Assembly) and a 30-day return policy without reason. Beyond the warranty period, maintenance services are offered, with buyers responsible for associated costs.
Support: For any questions or assistance, please contact Svbony customer support via Amazon. Responses are typically provided within 12 hours.

For additional resources and product information, visit the official Svbony store:Svbony Store

9. Additional Resources

9.1 Product Videos

Svbony SV520 Telescope Assembly Video

Your browser does not support the video tag.

Video: A quick preview demonstrating the assembly process of the Svbony SV520 Telescope. This video provides a visual guide to setting up your telescope.

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