

Review of the SVBONY SV113 16mm WA65 eyepiece

This is a great eyepiece with a wide FOV and tack sharp images across the entire field. It outperformed an eyepiece costing up to 10 times as much!

Figure 1 shows the eyepiece and the packaging the SV113 16mm comes in. I particularly liked the rubber caps for both the top and bottom of the eyepiece. Some eyepieces come in a plastic case without these covers, but I, like a lot of amateurs, keep my eyepieces in a large carrying case so these protective covers are perfect for storing them and keeping them safe for years.



Figure 1: SV113 16mm 65° AFOV Eyepiece

I performed my tests on three separate telescopes, two Explore Scientific ED refractors, one 80mm f/6 and the other a 127mm f/7.5, and a Meade LX200 16" ACF f/10. I compared this eyepiece against an Explore Scientific 14mm 100° AFOV 2" eyepiece shown in Figure 2. You might question comparing the SV113 to the ES 14mm which retails at almost 10 times the price. The ES14 is one of my primary eyepieces that I use on my LX200 16". I have always noticed that it did not seem real sharp. Table 1 gives the power and the true Field of View (FOV) of each eyepiece on the three test scopes. The true FOV is calculated by dividing the AFOV by the magnification and is shown in minutes of arc ('). I tested each telescope/eyepiece combination on four test objects: The Moon, Jupiter, the globular cluster M13 and the Ring Nebula M57. On the 80mm scope there was not much of an apparent difference



Figure 2: SVBONY SV113 16mm and ES 14mm eyepieces used for the tests.

Telescope	Focal Length	Explore Scientific 14mm		SvBony 16mm	
		Power	FOV (')	Power	FOV (')
Explore Scientific ED80	480	34	175.0	30	130.0
Explore Scientific ED127	952	68	88.2	60	65.5
Meade LX200 16 inch	4064	290	20.7	254	15.4

Table 1: Eyepiece and Telescope Parameters

between the two eyepieces with the 16mm showing slightly sharper images on the Moon and Jupiter. This difference became more pronounced in the 127mm when it became obvious on the Moon that the 16mm was much sharper. The craters and mountains on the Moon were far sharper in the 16mm than the 14. On Jupiter the equatorial bands were more pronounced and the contrast was greater with the 16mm as well. On M13 the individual stars in the cluster were better resolved than with the 14mm. The Ring Nebula looked very similar between the two, but it was slightly more defined in the 16mm. When I moved to the 16" scope the difference between the two became more pronounced. The 100° AFOV of the ES 14mm is incredible when looking at the Moon. It fills the eyepiece and you get the sense of looking at the Moon from the porthole of a spaceship orbiting the Moon. The 16mm gives a great, wide angle view, but this is the only place the 14mm performed better. The 16mm was far sharper and the craters and mountains were far better defined. Since the Moon filled the entire field of view I looked for differences in sharpness between the center and the edges of the FOV, it was sharp across the entire

FOV. On Jupiter the 16mm outperformed the ES 14mm by far. Although both eyepieces were able to fit Jupiter and its 4 main moons into the field of view (important when having lay people observe) the view was far sharper in the 16mm than the 14mm. The same is true of M13. The cluster really popped out in the 16mm. The difference in the Ring Nebula was less pronounced, but the 16mm definitely showed a better defined ring. One minor requirement I have is the ability for visitors to be able to take an image of the Moon with their smartphones. Figure 3 is an image I captured with my iPhone 8 handheld through the SV113 16mm eyepiece.

Conclusions: This is a great eyepiece. It is sharp and has a great field of view. In addition to the test scopes I also was able to use it on an Orion 6" f/8 Dobson telescope and it performed flawlessly. It is a great eyepiece for the Moon, the planets and deep sky objects at a great price. It will become one of the primary eyepieces I use for visual observing.

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Figure 3: Image of the Moon taken with the SV113 16mm Eyepiece and an iPhone 8.