Sky-Watcher Skymax-102 (AZ-EQ AVANT)

The already popular Maksutov is back with a brand-new mount and maintains the features we have come to love with the Sky-Watcher brand

Telescope advice

Cost: £315.00 (approx $448.00)
From: Optical Vision Ltd
Type: Maksutov-Cassegrain
Aperture: 4"
Focal length: 51"

Best for...

- Beginners
- Medium budget
- Planetary viewing
- Lunar viewing
- Bright deep-sky objects

March has arrived, signalling the end of the annual prime time observing period. The nights are getting shorter, but that doesn't mean you can't have as much fun. Especially when Sky-Watcher have now fitted a brand-new AZ-EQ AVANT mount on to a fan-favourite Skymax-102 beginners telescope. With a mount that can be controlled with both alt-azimuth and equatorial configurations, a host of new possibilities await with the combination of this already impressive Maksutov-Cassegrain telescope.

To start with, it may be best to know what is included with this kit. The main elements of the bundle include a sturdy tripod, capable of expanding to 1.5 metres (five foot) with the new, well-engineered AZ-EQ AVANT mount, and the Skymax-102 telescope itself, with a focal ratio of f/12.74. Accompanying instruments also include a tripod accessory tray, a 21-centimetre (8.3-inch) extension tube, 90-degree star diagonal, a one kilogram (2.2-pound) counterweight, a red dot finderscope and two Sky-Watcher Super eyepieces, one 10 and one 25 millimetre. What doesn't come in the bundle, but we would highly recommend purchasing, are two of Sky-Watcher's slow motion flexible handles. This would allow for more controlled movement of the mount while navigating around the celestial sphere.

The telescope has been largely advertised as compact, lightweight and easily assembled. After erecting the telescope ourselves, we were impressed with how lightweight it was, making it easy to transport. The telescope tube in particular is very compact, and the overall weight of the telescope adds up to just eight kilograms (17.6 pounds), which makes it ideal for hauling equipment around from field to field. When someone first gets their telescope, arguably the first thing they're going to think is: 'how easy is it to set up?'. In this case, it is essentially trouble-free. Not only is it clearly described in the manual, but also with only four main components, the task is not complex or demanding.

The Maksutov-Cassegrain design allows for a long focal length in a compact telescope tube

The main aspect of this telescope is the AZ-EQ AVANT mount, which is a new addition to the Sky-Watcher telescopes. This mount is now able to employ both alt-azimuth mount movement, which is simple horizontal and vertical rotation, and equatorial movement, which can navigate through the right ascension and declination axes. Both of these modes have their own advantages: alt-azimuth allows for simple and easy movement of the mount, whereas equatorial is better suited to tracking a star's movement as it rotates around the north star/south star. With both options at your disposal, it can also help you get used to setting-up and using an equatorial mount.

The Skymax-102 is a good, solid starter telescope. Its Maksutov-Cassegrain design allows for a long focal length when focusing the light from a celestial object. The long focal length is what gives the telescope its high focal ratio, which has its benefits, but also its disadvantages. The main advantage is that it is excellent for bright celestial objects, such as lunar and planetary observations. When observing these types of targets, the high focal ratio generates crisp and contrasting images – which will be explained further shortly. On

The optics are best suited for the brightest celestial objects

the other hand, the high focal ratio means that less light is being focused and the objects appear dimmer. It is possible to get a greater increased view of the brightest deep-sky objects, such as the Orion Nebula (M42) and the Andromeda Galaxy (M31), but the less luminous objects will be more of a challenge.

We decided to begin our testing period by observing our biggest and brightest neighbour, the Moon. As it was only a few days before the 'super blue moon', it was shining tremendously bright with an illumination of 96 per cent. The Skymax-102 was perfect for this sort of observation, and we were in awe of the Moon. Using the 25-millimetre eyepiece (giving a magnification of 52x) we got a full view of the Moon, and the clarity of the seas and craters was magnificent. When we switched to the 10-millimetre eyepiece (giving a magnification of 130x), we got a much closer look at the each lunar feature, including the Tycho, Copernicus and Stevinus craters, among many others. The contrast of the different seas, also known as mares, was very enjoyable to view as well.

Unfortunately, there were no planets around for viewing at the time, so we couldn't test out its capabilities for viewing them. We did try it out on some bright deep-sky objects, however, putting ourselves in a beginner's shoes and aimed for the easiest target, Pleiades (M45). Even using the 25-millimetre eyepiece, the target was too big for the field of view, but the stars were still clear and blue with no noticeable aberration. From this, we moved on to the Orion Nebula (M42), which was again best suited for the 25-millimetre eyepiece, as it could gather much more light. The telescope resolved the nebulosity where stars are born and light up surrounding gas, but it was dimmer than other telescopes' views.

Astrophotography is a hobby that most amateur astronomers move on to once they've conquered the eyepiece. Although the telescope has a mount that is capable for tracking stars as they move through the sky during the night, this telescope is not the tool to use for such a hobby. Due to the telescope's high focal ratio, you'd have to use a long exposure time for a relatively bright object, which welcomes a lot of unnecessary background noise, ruining the picture. You could change the Skymax-102 for something more suitable, but the specifications state that the mount has a maximum payload capacity of 3 kilograms (6.6 pounds). A more appropriate telescope for astrophotography could exceed this payload capacity, causing potential harm to the mount.

Based on all of this information, we were overall very impressed with its lightweight, 'grab-and-go' simplicity, its sturdy and durable structure and its clear and crisp views. It is a perfect beginner telescope with good capabilities. However, the telescope's optics limit you to the basic celestial objects, and the equatorial mount is nothing more than practice for upgrading on to a different equatorial telescope package that is better suited for astrophotography. We would recommend this telescope to a beginner that enjoys the finer details of bright celestial objects, including double stars, and wishes to utilise the two modes of mount motion.

This package comes with Sky-Watcher's Super 10 and 25 millimetre eyepieces

The mount allows for both equatorial and alt-azimuth mount movement