

# Zooming in on distant stars

## THE MARK III HYPERION ZOOM

**Neil English** puts to the test a new zoom eyepiece that promises clear views without fumbling to interchange eyepieces in the dark!

**T**he eyepiece market is booming. Every other month, a new line of oculars hits the shelves promising better eye relief, field-of-view or some other desirable feature. Zoom eyepieces, which offer a range of magnifications in one neat package, have also followed this trend, with a raft of new models available to the discriminating observer. But not all zooms are created equal, as you will discover by using them in the field.

Earlier zooms were blacklisted by many observers owing to their inferior performance compared with eyepieces offering a fixed focal length. They complained of decreased sharpness, loss of light and questionable mechanical construction among other things. But recently a new line of zooms promising much improved performance over their predecessors has helped to buck that trend. One such product is the Mark III Baader 8–24mm Hyperion zoom, which I was eager to put through its paces.

### First impressions

The Baader Hyperion zoom arrived well packaged inside a sturdy cardboard box, which included a soft leather pouch to store the eyepiece and a variety of adapters that allow you to use the zoom in either 1.25-inch or two-inch mode. All the adapters are threaded for filter attachment. The package also includes an alternative rubber eyecup with a raised shade to block off stray light. No written instructions

The Baader zoom has click stops to increase or decrease magnification.



The Baader Hyperion zoom attached to an 80mm f/5 refractor.

are provided with the product, although the box very clearly illustrates the way all the accessories relate to each other. I elected to order up the dedicated 2.25x Barlow lens with the eyepiece in order to coax a larger range of magnifications from the eyepiece. At the time of writing, retailers offer both as a package at a slightly reduced price compared with buying each item separately.

### Mechanics

The zoom is a seven-element, fully multicoated design and possesses click stops at 24, 20, 16, 12 and 8mm settings. The motions are smooth and the field-of-view 'opens out' as one dials in the shorter focal lengths from 50 degrees at the 24mm setting to 68 degrees at the 8mm setting. What is more, the eyepiece is continuously variable, allowing you to get additional magnifications between the click stop settings. The eye cup can also be adjusted in height so as to make viewing the entire field as comfortable as possible. Eye relief is a generous 12–15mm, enabling those who wear eyeglasses to make use of the zoom. Overall, the Baader zoom has the look and feel of a quality product but how did it square up under actual use? To answer this question, I tested the eyepiece on a 80mm f/5 short tube achromatic refractor as well as a 180mm f/15 Maksutov–Cassegrain.

### Notes from the field

The Mark III Hyperion zoom worked well when coupled to the fast achromatic refractor. Images were clean and bright with good colour fidelity and sharpness across most of the field-of-view. The field stop at the 24 and 20mm settings looked a bit soft compared to that observed at the higher power settings. Testing on a flat roof a couple of hundred yards distant showed excellent sharpness and contrast across most of the field-of-view. Some pincushion distortion was noted in the outer ten percent of the field at the 24mm setting (17x) but was noticeably improved when greater magnifications were dialled in. Although a little bit on the heavy side, the Baader zoom would make an excellent eyepiece for spotting-scope enthusiasts. Indeed, when coupled to the short tube 80mm it makes for a good quality 17–50x spotting-scope, thus providing a decent range of magnifications for terrestrial use. The various adapters accompanying the zoom will also allow you to attach it to a DSLR for daylight photography. When coupled to the dedicated 2.25x, I could extend the magnification range on the 80mm f/5 to 113x, a nice upper limit for a rich field telescope. No significant deterioration in the image was noted using the Barlow.

The majority of my tests were carried out on celestial targets and once again the Hyperion zoom did not disappoint. In the fast achromatic refractor, stars focused down to tiny pinpoints and remained sharp over most of the field-of-view. Only in the outer 15 percent or so could I see significant distortion at the 24mm setting. Increasing the magnifications improved the edge-of-field performance quite a lot. Indeed, at 50x (the 8mm setting), stars remained crisp and sharp nearly to the edge of the field. Unlike other zooms I have experienced, there was no sign of lateral colour. I consider this a very satisfactory result for such a fast telescope. When I switched to the 180mm Maksutov–Cassegrain, the performance of the Baader zoom was noticeably better. Stars resolved to tiny round Airy discs across the entire field-of-view under good conditions. No sign of ghosting was seen at any magnification indicating that the proprietary phantom anti-reflection coatings were working effectively.



What's in the box: the Mark III Baader Hyperion zoom comes with a good variety of accessories. All images: Neil English.

The traditional drawbacks of zoom eyepieces are best revealed when they are compared with high quality, fixed focal length oculars. In this capacity, I compared a good quality 20mm Plössl in the 180mm Maksutov to the view obtained using the 20mm setting of the zoom. My target was the bright star Vega and its hinterland. Switching between eyepieces, the views were more similar than

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they were different. The fixed focal length Plössl showed slightly less scatter and the sky was just a shade darker but I was genuinely impressed by how well the zoom eyepiece held its own in comparison.

The Baader Hyperion zoom is excellent value in today's market, offering versatile optical performance satisfyingly close to fixed focal length oculars. It is incredibly handy for finding celestial objects at lower powers and then one can dial in the right amount of magnification that best frames the target. Fumbling about in the dark interchanging eyepieces will become a thing of the past and that in itself is a worthy reason for using it. Highly recommended!

Neil English's latest book, *Grab 'n' Go Astronomy*, has just been published by Springer.

### At a glance

<b>Mark III Hyperion 8–24mm click-stop zoom</b>	
<b>Barrel size:</b>	31.7mm
<b>Optics:</b>	7 element with Phantom Group multi-coatings
<b>Focal length:</b>	variable (click-stops at 8, 12, 16, 20, 24mm)
<b>Field-of-view:</b>	50 degrees (24mm) 68 degrees (8mm)
<b>Eye relief:</b>	12mm to 15mm depending on magnification
<b>Price:</b>	£199
<b>Details:</b>	<a href="http://www.baader-planetarium.uk.com">www.baader-planetarium.uk.com</a>



The Baader Hyperion zoom has phantom coatings to increase contrast and minimise internal reflections.