

REVIEWED

NIRVANA ES ULTRA-WIDE ANGLE 82-DEGREE EYEPIECES

In eyepiece nirvana

Steve Ringwood finds out whether three new versions of a classic eyepiece really are as heavenly as they sound.



▲ The Nirvana ES eyepiece team. Notice the generous knurling on the barrel, and the ergonomic shape. Image: Steve Kelly.

It is a long time since eyepiece tubes have been viewed as simply cylinders for holding lenses in place. Eyepiece 'jackets' now have a full set of functions all of their own – and as eyepieces develop and improve, this aspect receives as much attention by designers as any other. OVL's original

Nirvana eyepieces have been around since 2009 as an affordable eyepiece delivering an impressive apparent field of view of 82 degrees. Recently, however, despite the optics remaining the same, the eyepieces have been transformed by a rejuvenating mechanical facelift into the new range of Nirvana-ES eyepieces of three focal lengths: 16mm, 7mm and 4mm, all costing considerably less than the original Nirvana eyepieces.

At a glance

Focal lengths:	16mm, 7mm, 4mm
Apparent field diameter:	82 degrees
Weight:	~160g
Eye relief:	12mm
Construction:	Seven elements in four groups Fold-down rubber eyecups Threaded for 1.25-inch filters
Cost:	16mm £89.99, 7mm and 4mm £79.99
Details:	opticalvision.co.uk

Optical torpedoes

The first thing that you notice out of the box is that their previous, rather straight-laced, persona has been swapped for a rather elegantly tapered torpedo shape. This quite cleverly shifts the centre of gravity to the maximum barrel width where the generous knurled rubber grip sits. This careful ergonomic consideration means that there is



◀ Each eyepiece has a large eye lens which, together with a 12mm eye relief, makes the Nirvana 'heavenly' to use. Image: Steve Kelly.

no uncomfortable feeling of imbalance when handling one of these eyepieces in the normal way, between thumb and forefinger.

Another of the Nirvana's selling points is the cavernous eye lens and generous eye relief of 12mm, making it quite an accommodating eyepiece to use, both physically and optically. The Nirvana's fold down eyecups are comfortable up or down and, importantly, the full 82-degree apparent field is accessible either way.

Unusually for a seven-element eyepiece delivering such an extensive field, dimensions and weight have been kept to a minimum. Indeed, they pose no counterbalancing dangers for even small telescopes, weighing little more than 160 grams and with a girth of less than 45mm. As an imposition, they were mere pinpricks on my initial test instrument, a 305mm (12-inch), f/10 Meade LX200, and comfortably held without countermeasures by my second instrument, a portable 114mm (4.5-inch), f/4 reflector.

Planetary eyepieces

As anyone with new equipment to try out will tell you, bad weather leaps in to interfere. So it was upon delivery of these three eyepieces, although it was not cloud this time, but ferocious March winds that raged for days. These did at least sweep the sky clean, so when they abated some splendid nights followed.

These eyepieces are billed as being 'high performance', so I began with my LX200 and set its beady eye on Mars. Eight months after an unfavourable July 2018 opposition, the receding disc had shrunk to barely five arcseconds. Mars is a notoriously difficult object to observe at the best of times, a concentration of bright light into a small angular area. Yet the 16mm Nirvana, at 190x, still

managed to squeeze some indistinct features from the fierce orange pimple.

As a brilliant single object in the field, Mars also offered itself as a great test for internal reflections (or ghosting), obligingly confirming that none were present. I was also very impressed that an enforced march of the planet towards the field boundary showed little sign of aberrations. Not until the Martian disc touched the field-stop periphery were there signs of minor distortion. It was very impressive for an eyepiece of this price (£89.99).

Going from 190x to 435x with the 7mm was probably a little adventurous, given Mars' low elevation, but it did elicit further clarity of the dark shading. General performance of the higher power was similar to the 16mm, with perhaps even better edge-of-field correction. The low altitude meant that an attempted observation with the 4mm eyepiece was understandably disappointing – but no more disappointing than a comparison I executed with an eyepiece of similar focal length that cost considerably more.

The field boundary showed little sign of aberrations – very impressive for an eyepiece of this price

▼ The 16mm eyepiece being used on the author's 305mm (12-inch), f/10 LX200, delivering a moderately high power with a real field of nearly half a degree. Image: Steve Ringwood.





▲ Close up of the 1.25-inch nosepiece's tapered safety undercut – a thoughtful innovation. Image: Steve Kelly.

Unusually, the eyepieces' nosepiece has a security undercut profile that is tapered (towards the main barrel) rather than a horizontal, squared indentation as is conventional. I think the idea behind this is that as the eyepiece is gripped by the focuser, it is drawn by the slope's action into a firmer docking between eyepiece and focuser. This is an exemplary concept, but I found that this worked better with screw clamps. I had (just a few) occasions when a brass compression ring clamp was able initially to hold the eyepiece, at the slope's higher diameter, but then subsequently slipped towards the narrower neck of the undercut. No danger, just an inconvenience of re-tightening. Taking care to insert the eyepiece firmly against the focuser's shoulder during clamping did prevent this occurring.

Pinpoint stars

In a slew between Mars and the Moon, I stopped off briefly at the Pleiades, not for observation of the nebulosity, but simply to see how the 16mm eyepiece would present a scattering of stars. The eyepiece showed its mettle; the 82-degree apparent field captured almost half a degree's worth of this beautiful cluster with all the stars in view simultaneously in focus and symmetrical. I panned around 'within' the cluster, enjoying the delight of members leaving and entering the field with barely a shimmer.

For the Moon I stayed with the 16mm, for nothing shows off the advantages of a wide-field eyepiece better than a sweep across the lunar landscape.

My slew towards the Moon came to rest on the terminator close to Sinus Iridum (the Bay of Rainbows). West of the bay, between the crater Sharp and the terminator, a rubble-strewn 'coast' of Mare Imbrium was brought into sharp relief by the low sunlight. It was so detailed that it looked like someone had only recently tipped up a barrow of builder's waste onto the lunar surface. Tempted by the intricate detail, I swapped the 16mm for the 7mm eyepiece and was rewarded by more detail without loss of resolution.

Tracking south along the terminator, I came across the crater Gassendi. Within its ramparts, the 7mm and 4mm wide-eyed eyepieces easily presented in one view the many rilles that cut across its smooth floor, clearly depicting the tiny punctures of the many craterlets present. Contrast and fidelity were excellent. Near the crater's centre, a horseshoe of mountainous boulders silhouetted in their early-morning sunshine reminded me a little of Stonehenge – though I'm not inferring anything from that!

The eyepieces' delivery of good contrast, in the face of the brilliant lunar light, was such that I could nicely pick out the subtle arcs of frozen lava waves within the Imbrium basin.

Towards the southern uplands, Tycho was already warming from an ascending Sun. With the Moon's altitude being very high, and encouraged by favourable conditions, I risked the 4mm eyepiece's delivery of 762x to examine the crater's central peak. Bear in mind that even with this descent into the crater's mouth, the eyepiece's wide field was still giving me a contextual span of the surrounding lunar surface over 600 kilometres across. The 4mm eyepiece did well in eliciting detail in the central peak, including resolution of a much smaller, jagged crater on its western flank.

These are super eyepieces, delivering good quality at a low weight and cost

Three degrees of perfection

Telescopes of high focal ratio, like the LX200 (f/10), can, however, be very forgiving of eyepiece designs, so my next step was to deploy the Nirvana eyepieces on a rich-field f/4 114mm reflector, whose steeper focal cone would be a little more challenging.

On this telescope, the 16mm delivered a whopping field of view nearly three degrees across at only 28x, dwarfing the Moon's first quarter phase. It was a very attractive view though, as I could easily see features lit by earthshine within the 'dark' hemisphere. Rising to 65x with the 7mm, I pushed the sunlit hemisphere to one side, out of the field, and enjoyed a very well-defined view of the major features still under darkness. It was a good demonstration that the multi-coating and internal baffling on these eyepieces work very well.

The deployment on an f/4 instrument did make itself felt, with slight evidence of coma at the field extremities. However, it was very limited and not at all distracting – in fact, it was quite commendable since this was without the aid of a coma corrector.

On a later occasion, once the Moon had relinquished possession of the sky, I could not resist a three-degree view of M42 in Orion. An early-spring sky has this nebula advancing into late twilight, but it can still be enjoyed by those with a low western horizon. Of course, the 16mm easily encompassed the main nebulosity. What added to the enjoyment was that with the Trapezium centred in the field, my gaze also harvested the tight clutch of sixth- and seventh-magnitude stars over a degree away to the north-west. As always, the wider field also served to dampen down the background wash of light pollution, enhancing the contrast of the nebula's smoky detail.

My only suggestion for a design tweak on these eyepieces is that, having ceded space to the new, wider, barrel grip, the focal-length designation is now insignificantly engraved in the same 2mm font size as the rest of the barrel text. Why? Picking up an eyepiece in the dark should not entail use of a torch and microscopic inspection to see which focal length it is. If you are unlucky with the grasp, the barrel may have to be rotated almost a full turn to see which power you have picked up. The eyepieces' designers obviously do not have to work in the dark, but perhaps they should – having to switch on torchlight to read an eyepiece label seems patently absurd and counterproductive. I will reiterate my frequent lament that it is surely not beyond the wit of eyepiece designers to have raised or indented barrel IDs that can be read by a finger's touch. I'll be requiring a fee for the idea, too!



These are super eyepieces, delivering good quality at a weight and cost significantly less than other (ultra) wide field eyepieces doing the same. Their tenth-anniversary renewed ergonomics has been beneficial and will certainly keep these eyepieces a popular choice, particularly for those on a limited budget.

▲ The lightweight (~160 gram) eyepieces require no counter-balancing measures such as tube shift. Image: Steve Kelly.

Steve Ringwood is a regular contributor to *Astronomy Now*.



■ The 16mm Nirvana eyepiece deployed on the 114mm f/4 Newtonian. Image: Steve Ringwood.



■ The 16mm Nirvana ES eyepiece on the author's 114mm (4.5-inch), f/4 Newtonian. The lightweight eyepieces require no counter-balance measures such as tube shift, even on small instruments. Image: Steve Ringwood.