

## Binocular Sky Review: Pentax SP 20x60 WP

### Manufacturer's Specification

Weight (g)	1400
Field of View (°)	2.2
Close Focus (m)	8.0
Eye Relief (mm)	21
IPD (mm)	57-72
Waterproof	Yes (JIS Class 6)
Prism Type	Porro
UK Guarantee	30 year
Origin	Japan
Body Material	Magnesium Alloy
Armour Type	Full
Nitrogen Gas Filled	Yes
Prism Material	BaK4
Prism Coating	Multi-coated
Lens Coating	Fully multi-coated with protective overcoat
Eyecup Type	Twist-up 3-stop



**Price: £179**

**Available from:** [First Light Optics](#)

### Initial Impressions

The binocular seems to be of B&L-type construction, i.e. the objective tube is integral to the prism housing.

The binocular is covered in a substantial rubber armour, which has thumb recesses underneath the prism housings in order to give a secure and consistent way of holding it, but this may be largely redundant as the binocular really needs to be mounted. The lockable centre-focus is perfectly smooth throughout its range with no initial "stiction". The right eyepiece dioptre adjustment is similar and is easy to adjust, even with gloved fingers, owing to two substantial knurled lugs on the adjuster ring. The hinge is smooth and sufficiently tight so as not to accidentally slip once it is adjusted. The three-position twist-up eyecups "click" into place and do not move under longitudinal pressure. They are tapered (like "volcano-top" astronomical eyepieces), which makes them comfortable against the eye sockets. The eyepiece bridge is internal and the eyepieces barely move under moderate pressure.

The coatings look evenly applied and reflect a minimal amount of light. There are rudimentary (not as prominent as in the 10x50) light-baffles inside the objective tubes, suggesting that control of stray light should be good. There are no cut-offs in the exit pupil, suggesting that the prisms are adequately sized.

The soft, slightly padded case is sufficient to keep the binocular clean, but will only protect it against the lightest of knocks. It has no strap, but is designed so that the binocular straps can be used to carry the cased binocular. The untethered objective covers are a reasonable fit, but tend to come off when you take the binocular out of its case. The eyepieces have an untethered single-piece raianguard-type cover that falls off far too easily to be useful other than in a closed; otherwise it is likely to get lost. It is wide enough so as not to restrict the maximum IPD when it is in place.

### Testing the Specifications

When I tested the effective aperture by shining collimated light down the eyepiece and measuring the exit beam from the objective, I found it to be 58.5mm, not the full 60mm. Examination of reflections when a bright light is shone down the objective end confirms the fully multi-coated spec. There are no grey segments in the exit pupil, confirming that the prisms are of high-index glass. The minimum interpupillary distance is 56.5 mm. The eye cups are 48 mm diameter, tapering to 40mm. so there is a minimum 9 mm between them at their closest, widening to 17mm at their extremities; this should accommodate most noses. The objective lenses are recessed 11mm into their barrels, giving some defence against accidentally touching the glass. The full field of view is visible when observing with spectacles with the eyecups both fully down and in their half-way position; I found the half-way position to be preferable. With fully-corrected vision, the right eyepiece dioptre is set at zero, suggesting that it is properly adjusted. There is a sufficient “beyond infinity” focus to enable it to be used without spectacles by people with moderate myopia.

### Under the Stars

Although it is light enough to be hand-held, shake will always be obtrusive at 20x magnification, so the binocular really needs to be mounted. It can be mounted on a tripod or monopod, using a standard L-bracket. I found a monopod and trigger-grip head to be usable but not entirely satisfactory, so for testing I put the binocular on a tripod-mounted *Virgo Skymount* parallelogram. This easily held the binocular and balanced it with the counterweight unextended. (This mount is no longer available, but is superseded by the [Orion Paragon](#), which is of nearly identical design.)

Collimation was, as far as I could ascertain, perfect. Although the 2.2° field of view is a bit narrower than I would have liked from a 20x binocular, it is extremely sharp and flat over the central 95% of the field, and only drops off very slightly outside this; Albireo was easily split, with intervening dark sky, at the extreme edge of the field. I could detect vignetting towards the edge only with difficulty: I would not have noticed it had I not been looking for it. Control of false colour (chromatic aberration) is very good on axis, but becomes noticeable on bright objects (e.g. the lunar limb) off-axis, although it is still well-controlled here; it was not noticeable on first magnitude stars.



There is a tiny amount of pincushion distortion: it is sufficient to eliminate the nauseating “rolling ball” effect that can occur without it. Control of stray light is very good (although not as good as in the 10x50 version), a testament to properly applied multicoatings and the efficacy of the baffles in the objective tubes: there was a tiny amount of light from a gibbous Moon when it was immediately outside the field of view, but none at all when it was more than about a quarter of a degree away. The colour rendition is excellent.

The focus can be locked by sliding the focus-wheel forward. This eliminates the possibility of accidentally defocussing the binocular once you have attained perfect focus.

**“The Andromeda Galaxy showed a lot of structure [and] I could see three of the Trapezium stars in M42”**

The Dumbbell Nebula shows shape and some structure. The Andromeda Galaxy showed a lot of structure; I could easily distinguish a sharper cut-off in brightness from the dust lane at the nearer edge. Io was just distinguishable when only 33 arcseconds from the glare of the limb of Jupiter. I could see three of the Trapezium stars in the Orion Nebula (M42). This suggests that the binocular can resolve 13 arcsec but not 8.5 arcsec.

I found the tapered, rubberised eye-cups to be comfortable in my eye sockets.

### Conclusions

This is a very good binocular for someone who wants a step-up from a hand-held binocular but still wants something that is quite portable. It is light enough not to need a substantial, and therefore heavy, mount.

The binocular is let-down only by its case and lens caps; I would have expected significantly better to protect an instrument of this quality.

The lockable focus is a very valuable feature for astronomical use. It is light enough not to need a particularly substantial mount. The good control of stray light and the very sharp and flat field of view gives a very pleasing, “contrasty” image which is ideal for astronomical purposes.

The price reduction to £179 makes this superb value for money!

<b>Binocular Sky Ratings (/10)</b>	
Sharpness of Image	10
Size of usable field	8
Colour Correction	8
Control of stray light	9
Eye relief	10
IPD	10
<b>Overall Optical Quality</b>	<b>9.2</b>
Focus mechanism	10
Right eyepiece adjustment	10
Eye cups	10
Hinge	10
Armour	10
<b>Overall Mechanical Quality</b>	<b>10</b>
Case	4
Neck-strap	8
Objective caps	6
Eyepiece caps	4
<b>Value for Money</b>	<b>10</b>
<b>Overall</b>	<b>9.1</b>

[Click here](#) to see the **Pentax SP 20x60 WP** on [First Light Optics](#) website

**Stephen Tonkin**  
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