Best buy *spotting scopes*

PETER RYAN

USING A GOOD SPOTTING SCOPE is one of the best ways to enhance your enjoyment of watching birds, and to improve your birding ability. Binoculars remain the primary tool in most birding situations, but the advent of small, compact spotting scopes now allows unrivalled views of birds. Thanks to digital cameras, these images can even be captured by digiscoping, which is great for documenting rarities. The growing popularity of scopes has spawned a diversity of models in a wide range of prices.

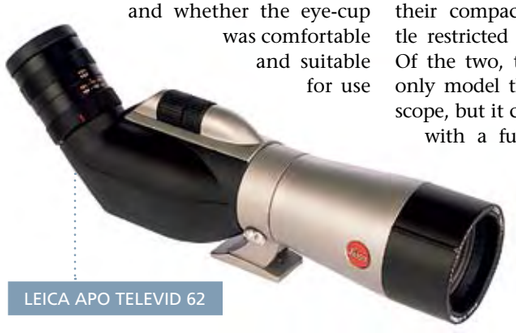
Peter Ryan and a panel of birders report on a cross-section of the market.

PRODUCT IMAGES: ALEX BOZAS

KOWA TSN 883 PROMINAR

Birding is dependent on technology. Just as binoculars were essential for the advent of birding in the 1930s, so telescopes revolutionised bird identification in the 1970s. The ability to see distant birds at close quarters allowed birders to appreciate many of the fine details that help to separate some of the trickier groups of species. Early telescopes were long, unwieldy objects, which largely confined their use to static pursuits and the observation of far-away birds, such as waders and sea-birds. The hardy souls who pioneered sea-watching were considered distinctly odd, not only because of their anti-social habits, but because they endured long hours lying on their backs, propping up their telescopes with their feet! Fortunately, optical companies saw the need for more compact designs, and the use of prisms has largely done away with the long, telescoping tube. At the same time, advances in lens technology have improved image quality even at high magnification. Modern spotting scopes are reasonably small, compact devices that can be used in all habitats and deliver high-quality images up to 60x magnification.

Africa – Birds & Birding's call for review models from suppliers in South Africa yielded 22 telescopes. They were assessed in much the same way as were the binoculars reported on in the December 2006/January 2007 issue, with scores for optical performance and 'feel' (ease of use, robustness and appearance). These two categories were broken down into a number of specific attributes and scored from 1 to 5. Optical quality was rated on brightness, colour rendition, chromatic aberration, flare when looking into the light, width of the field of view, depth of field, close-focus distance, the speed of focus action, whether the focus was crisp, and whether the image was flat and sharp across the entire field of view. Feel was scored on balance, weight, size, aesthetic appeal, apparent robustness, whether the focus mechanism was easy to reach and use, and whether the eye-cup was comfortable and suitable for use with glasses. We also noted whether the manufacturer claimed the scope was waterproof, but didn't put this to the test.



LEICA APO TELEVID 62

The assessment was done without knowing the price of the various models being reviewed. Scores were simply averaged across all panel members to give a rating from 1 to 5 for optics and feel. The combined score was then compared to the cost to derive an index of value for money. The results are summarised in the table on page 58.

NIKON RA III 82 WP

We had 20 conventional telescopes to review and two compact models that were really high-powered monoculars. The latter two, both by Leupold, scored well for their compact design, but were a little restricted in terms of field of view. Of the two, the 15–30x zoom was the only model that warrants the title of a scope, but it couldn't really hold its own with a full-size model in terms of image size. Another 'odd' model was the 25–75x mirror reflector from UltraOptec. There are some very good reflector scopes available (at a price), but this is not one of them. Its low price may be attractive, but its image quality certainly is not.

All the conventional scopes were equipped with zoom lenses (usually 20–60x, but 15–45x or 16–48x in some of the smaller models). Fixed-magnification wide-angle eyepieces were supplied for only a few scopes, despite their inherent advantages. In each case, where both eyepieces were available, the fixed-magnification lens scored roughly half a point higher for optical performance. We strongly encourage potential buyers to consider a fixed-magnification eyepiece, especially if you are going to be digiscoping. For this review, however, we compared models using their zoom lenses.

Unlike binoculars, the relationship between cost and quality is roughly linear for telescopes, so you really do get what you pay for. The panel was unanimous in discriminating three categories of scopes.

try before you buy

When buying a scope, check the following points.

- ✓ How does it feel? Try it on a tripod. Simulate viewing and focusing at a range of angles.
- ✓ Is the tripod attachment point at the scope's centre of gravity, so that the scope is balanced on the tripod?
- ✓ Is the focus wheel accessible? (This is especially important if you are left-handed.)
- ✓ Is the close-focus distance 6 metres or less?
- ✓ How fast is the focus? (You shouldn't have to have to turn the focus wheel more than five times to track from infinity to closest focus.)
- ✓ How does the eye-cup feel? Is it likely to perish? (For example, is it made of soft rubber?)
- ✓ Is the field of view adequate? If you find the view restricted, try a fixed-magnification, wide-angle eyepiece.
- ✓ Is the image nice and bright and are the colours true to life? Does this change markedly as you zoom in using a zoom eyepiece?
- ✓ Is there excessive chromatic aberration? (Look for ghostly blue or yellow edges to objects when viewed towards the edge of the field of view.)
- ✓ Is the focus sharp across the field of view, or does it soften towards the edges?
- ✓ Is the image flat? (Try panning quickly and look for bulging in the central portion of the image.)
- ✓ Is there a problem with flare? Take the scope outside and look towards the sun (not at it – that can seriously damage your eyes!); does the image get washed out by ghostly internal reflections?
- ✓ Does the slip-out sun-shield for the objective lens stay in place?
- ✓ Is it robust? If armour- or rubber-coated, is this securely attached to the body?
- ✓ Are both the body and eyepiece waterproof? Is there any guarantee if they leak?
- ✓ Is the body of the scope nitrogen-filled? (This ensures it is sealed, and prevents internal fogging or problems with fungal growth on the lenses.)
- ✓ Are the lens covers practical? (Caps that screw on often slow the action; having the option of tying the eyepiece cover onto the scope is nice, especially for scopes with angled eyepieces.)

THE CREAM OF THE CROP

At the top of the list, with aggregate scores of 4 or more, were scopes from the usual premium suppliers: Kowa, Leica, Swarovski and Zeiss. Optically, the huge fluorite lens of the Kowa TSN 883 marginally shaded the opposition, but the difference between it and the Swarovski ATS 80 was minimal, despite the fact that the top-of-the-range HD Swarovski was not submitted for review. Overall, the Swarovski came out top, thanks to its smaller size and lower weight, but there wasn't much in it. Both the Leica Televid 77 and Zeiss Diascope 85 were optically superb, but the Leica suffered from a slightly smaller field of view and excessive weight, whereas the Zeiss was let down by the slow operation and poor ergonomics of its focus mechanism. All the scopes in this group are pricey, ranging from R19 000 to R29 000. If you have that much to spend, the Swarovski probably offers best value for money.

A GOOD COMPROMISE

If your budget is a bit smaller, several scopes from Kowa and Nikon scored 3 to 3.5 points overall for a more affordable R7 000 to R12 000. The least attractive of these is the rather large, bulky and somewhat optically inferior Kowa TSN 821. So it comes down to a choice between the bottom-end Kowas and the two Nikon models. I didn't particularly like the Nikon zoom eyepiece (the zoom action was awkward, and it lost a little optically at mid-zoom), but I suspect that the Nikon would be very competitive with a fixed-magnification lens. Both small Kowas provided fine images, but they felt decidedly less robust than their bigger siblings, and only the body is listed as waterproof, not the eyepieces. Bushnell weren't able to supply an Elite to test. I like to think it would also compete in this category, but at R11 500 it would have to do well to surpass the Nikons and small Kowas in value for money.

THE BEST OF THE REST

The rest of the models on offer all had aggregate scores of less than 3. The best of the bunch were the Kamakuras, which were optically quite good, but fell away a little in terms of finish and handling. The Bushnell Legend and Tasco had slow focusing mechanisms, as well as poor close-focus distances. The most disappointing scope optically (apart from the UltraOptec mirror), was the Leupold Sequoia. Perhaps we got a defective model, because I have come to expect better from this company. In terms of value for money, most of the scopes in the group were not much cheaper than the Nikons and small Kowas. I would consider the Tasco as a cheap, entry-level scope at R3 000 only if I were on a really tight budget.

We tried to reduce subjective elements in the review process, but within each category, it comes down to personal taste between closely matched models. There's no substitute for checking out a model in person before you take the plunge. Happy shopping! ▷

steady as she goes *mounting your scope*

The high magnification of scopes also exaggerates any small movements or vibrations. Surprisingly, no scopes reviewed had image-stabilisation (IS), despite its success in long telephoto lenses, and its gradual penetration into the binocular market. It is surely only a matter of time before IS technology becomes a standard option on scopes. Until then, you have to seat a scope securely to get a stable image, ideally on a tripod or window mount. You can use a bean bag, but this is not good for following moving birds.

The image quality, and ultimately your enjoyment of your scope, depends on having a steady support, yet it's amazing how often you see people using good scopes on inferior tripods. A mount has two components: a head that allows smooth tracking (video heads are best), and a steady support (tripod or window mount). Coupled with this, you want something that is not too heavy and is easy to use. Get one with quick-locking leg sections (screwing locks closed is time consuming and can cost you a bird), and check that you are happy with the head controls, especially if you are left-handed.

We were offered seven tripods for review: Manfrotto 700 RC2 – 190V kit, Slik 504 QF II, Swarovski CT 101, Velbon CF 530 Sherpa Pro, Carl Zeiss Stativ, and two no-name models from the suppliers of UltraOptec scopes – one rather flimsy aluminium tripod that was nice and light, but couldn't support a scope adequately in any sort of a wind, and one very sturdy model which used the same quick-release head as a Manfrotto, and provided a similar quality of support, but was appreciably heavier.

SWAROVSKI ATS 80

SWAROVSKI CT 101

Like the scopes themselves, these tripods ranged substantially in price, and there was a strong correlation between quality and cost. Most birders are likely to go for a Manfrotto (R2 000) or Slik (R1 300), both of which offer good, solid tripods with smooth-turning heads. The larger, no-name model from UltraOptec (Tripod FT6307) cost only slightly less than the Slik, but weighed a third more and isn't the kind of tripod you'd want to carry too far in the field. The Zeiss Stativ is similar to the Manfrotto, but is also heavier.

At the top end of the market are tripods with carbon-fibre legs that reduce weight without compromising stability. This freedom comes at a price, however. The Velbon CF 530 Sherpa Pro (2 kg) is about R4 000 (depending on the head choice) and the Swarovski CT 101 (2.1 kg) is R4 750.

MODEL	MAGNIFI-CATION	OPTICS	FEEL	VALUE	COST (R)*	MASS (kg)	CLOSE FOCUS (m)	FOCUS TURNS	WATER-PROOF
Swarovski ATS 80	20–60x80	★★★★☆	★★★★☆	★★★★☆	20 000	1.6	5	2	yes
Kowa TSN 883 Prominar	20–60x88	★★★★☆	★★★★☆	★★	29 500	1.85	5	1.8	yes
Leica Televid 77	20–60x77	★★★★☆	★★★★	★★★☆	19 100	2.1	4	4	yes
Carl Zeiss Diascope 85 T*FL	20–60x85	★★★★☆	★★★★	★★★☆	19 400	1.8	4.5	5.5	yes
Leica APO Televid 62	16–48x62	★★★★	★★★★	★★★	20 300	1.4	3.5	4.5	yes
Kowa TSN 771	20–60x77	★★★★	★★★★	★★☆	19 100	1.65	5	1.3	yes
Kowa TSN 661	20–60x66	★★★☆	★★★☆	★★★☆	8 900	1.25	6	5	body
Nikon RA III 65 WP	16–48x65	★★★☆	★★★☆	★★★★	7 000	1.15	4	3.5	yes
Kowa TSN 601	20–60x60	★★★☆	★★★☆	★★★	7 800	1	6	5	body
Nikon RA III 82 WP	20–60x82	★★★☆	★★★☆	★★	9 000	1.45	6	3.5	yes
Kowa TSN 821M	20–60x82	★★★☆	★★★	★	12 000	1.7	6	5	body
Kamakura SP 66 ED	20–50x66	★★★	★★★	★★	6 200	1.5	5	6.5	yes
Kamakura SP 80 ED	20–60x80	★★★	★★★	★	9 000	1.7	6	6.5	yes
Bushnell Legend	20–60x80	★★★	★★★	★	7 000	1.6	10	10	yes
Tasco	20–60x80	★★☆	★★☆	★★★☆	3 000	1.2	6	15	yes
Leupold Sequoia	20–60x80	★★☆	★★☆	★	5 600	1.8	8	4	yes
Kenko Pro Field 80A	20–60x80	★★☆	★★☆	★☆	4 700	1.4	6	5	shower
UltraOptec WSG	20–60x90	★★☆	★★☆	★	4 100	1.45	14	8	?
Bushnell Spacemaster	20–60x60	★★	★★☆	★	4 000	1	8	1.5	?yes
UltraOptec WFT mirror	25–75x70	★☆	★★☆	★★	1 725	0.75	5	8	?no
Leupold Gold Ring 15-30	15–30x50	★★★	★★★	★★★	4 800	0.6	4.5	0.5	yes
Leupold Gold Ring 10-20	10–20x40	★★★	★★★	★★☆	3 750	0.45	2.5	0.5	yes

Scores (1–5) for the 22 scopes tested, in descending order of overall performance.

MODEL Make and model number
MAGNIFICATION Zoom range and objective lens diameter
OPTICS 1–5 stars for optical quality
FEEL 1–5 stars for feel, handling and robustness
VALUE 1–5 stars for value for money
COST Recommended retail price (incl. VAT) for body and zoom eyepiece
MASS Approximate mass in kilograms
CLOSE FOCUS Closest focus distance (metres)
FOCUS TURNS Number of turns from closest focus to infinity
WATERPROOF Yes or no

**The prices shown in this table were correct as at the end of August 2007 – they are intended as a guide only and we cannot take into account import currency fluctuations and retail price increases.*

IT WENT THAT WAY...

Finding your bird

Because of the higher magnification, the field of view of a scope is appreciably narrower than that of a pair of binoculars. Even at 20x, a typical scope sees less than one third of the area of a decent pair of binoculars, and by the time you get to 60x, this has dwindled to less than one sixth. The narrow field of view makes finding what you want to see a little tricky. Some scopes offer sighting aids, ranging from subtle grooves and small tubes to optical devices that clip onto the scope. (Nikon has one that makes their otherwise fairly elegant scopes look like a lopsided Starship Enterprise – fortunately it is only an option!) Such devices aren't really necessary and can be a liability, especially if you are trying to find a moving bird. Just as locating a bird using binoculars becomes second nature with practice, so can tracking one in your scope.

EYEPIECES

• Straight or offset?

Early telescopes were long tubes, with the eyepiece in line with the viewing direction. However, the use of prism arrays to make scopes more compact also allows for the eyepiece to be angled relative to the viewing direction. Most models are available with either straight or offset eyepieces.

BUSHNELL SPACEMASTER

Which should you choose? Bushnell's Spacemaster avoids this dilemma by offering a variable offset from 0–90°. We were concerned about dust/moisture penetration through the RoboCop-type sliding plates (although Bushnell claims it is fully waterproof).

At first, having an offset eyepiece may seem to exacerbate the problem of finding what you're looking for through the scope, but you soon get used to it. The main advantage is a more comfortable viewing angle, especially when tracking birds flying overhead or in the forest canopy. Offset eyepieces also make it much easier for people of different heights to use the same scope, and allow a lower tripod height (with concomitant reduced vibration). These days, most birders opt for angled eyepieces.

• Zoom or wide-angle?

Unlike binoculars, most scopes come with a variety of eyepieces, offering a range of magnification options. Many birders favour a zoom, because of its greater flexibility, but you do pay a price in terms of field of view and image quality (and it costs more too). The loss of quality is relatively minor in top-of-the-range scopes, but the smaller field of view is quite marked. After using a 25x or 30x wide-angle eyepiece, reverting to a zoom is quite claustrophobic. With the luxury of having both to choose from, I find that I very seldom bother to use the zoom. The larger image size of a fixed wide-angle also makes it easier to capture good digiscope images. □

ULTRAOPTEC WFT MIRROR

A MATTER OF CHOICE
The panel's preferences

Some people never learn. The members of last year's binocular-review panel returned, augmented by top birders John Graham and Barrie Rose. Their personal preferences were as follows:

CLIFF DORSE – Current scope: Swarovski AT 80 HD. His choice: Swarovski ATS 80

JOHN GRAHAM – Current scope: Kowa TSN3 Prominar. His choice: Kowa TSN 883 Prominar

LILLY POULSOM – Current scope: none. Her choice: Kowa TSN 883 Prominar

BARRIE ROSE – Current scope: Swarovski AT 80 HD. His choice Swarovski ATS 80

PETER RYAN – Current scope: Swarovski AT 80 HD. His choice: very close between the Swarovski and Kowa 883, but given my current scope, I'd go for the Swarovski tripod!

SURETHA VAN ROOYEN – Current scope: none. Her choice: Leica APO Televid 62

capture the moment *digiscoping*

We were asked to consider the suitability of each model for digiscoping. Unfortunately this is not a simple task. Digiscoping requires the marrying of camera and telescope, typically using some kind of contraption to hold the camera in place so that it can be triggered remotely, reducing vibration. Even then, it requires practice to obtain reliable results. Although it's not feasible to review a scope in isolation for this purpose, I did try taking pictures through a range of models using a hand-held Nikon Coolpix 4500, one of the first cameras widely used for digiscoping.

The results were clear: the better the scope, the better the digiscope image. I had little trouble obtaining passable images with the Kowa TSN 883 (**example shown, right**) and the Swarovski ATS 80, both with 30x wide-angle lenses, but struggled with many of the cheaper scopes.

PETER RYAN