Photo: Hugh Venables

Choosing the right telescope for you

Continuing our series on optical equipment, **Niall Hatch** turns his focus to telescopes.

In our previous two issues I wrote about choosing and selecting binoculars, which are undoubtedly the most important optical tool for a birdwatcher. After a while, however, many birdwatchers decide that they would also benefit from owning a telescope, or "spotting 'scope," as it is often called. It isn't an "either/or" decision: binoculars and telescopes perform different functions for the birdwatcher, and usually complement each other. It would be unusual, for example, to encounter a birdwatcher in the field who is carrying a telescope but who would not also have a pair of binoculars slung around his or her neck.

Telescopes offer higher magnification views than binoculars, but are much more restricted when it comes to many aspects of their use. Telescopes cannot really be used hand-held, for example, and it usually takes considerably longer actually to locate a target through them. It is also much easier to follow a moving bird through binoculars, whereas a telescope really comes into its own when a bird remains relatively still for a period of time or is particularly distant.

Binoculars also give you a three-dimensional view of the world, whereas the single-eye image produced through a telescope looks flatter and arguably less natural, and can take a little getting used to.

Buy the right kind of telescope

It might seem obvious, but please be sure only to purchase a telescope which is suitable for birdwatching: these are often referred to as "field scopes," as they are intended for use in the field. They tend to be durable and waterproof and usually boast a robust covering which will protect them from knocks.

For birdwatching, do not buy a telescope which is mainly intended for use in astronomy. Astronomical telescopes are usually more fragile and cumbersome, are not good at withstanding the elements, show a "mirror image" (which makes following a bird extremely difficult!) and, crucially, provide far too much magnification. They serve a completely different purpose, and the two types of telescope should not be confused.

Hawke 'Endurance' spotting scope

JASON WHITEHEAD (BESTBINOCULARSREVIEWS.COM)

A weighty problem

Exactly as is the case with binoculars, the general rule is that the larger a telescope's objective lens (i.e., the lens that is furthest from your eye), the brighter will be the image it produces. However, an increase in the diameter of this lens of necessity means an increase in the width of the telescope body, which in turn means an increase in weight. The effect can be quite dramatic. Higher-end 'scopes are often made from more expensive, lightweight materials, such as pricy magnesium, which can help to offset this effect.

IAN PATTERSON

Magnification

As magnification increases, so the brightness of the image decreases. Thanks to their much wider objective lenses, which gather more light, telescopes can afford to magnify the image to a much greater extent than binoculars, as the increased brightness offsets the effects of increased magnification.

As with binoculars, many manufacturers also put special proprietary coatings on their lenses to allow more light to reach the user's eye: these usually come at a premium, however, hence much of the sharp difference in cost between different models.

Telescopes generally range from 20x to 60x magnification, and most models, aside from some of the cheapest ones, are modular, allowing you to purchase different interchangeable eyepieces giving different levels of magnification. Some of these eyepieces are "fixed," meaning that they always provide the same degree of magnification, while others are "zoom" eyepieces, which offer variable magnification.

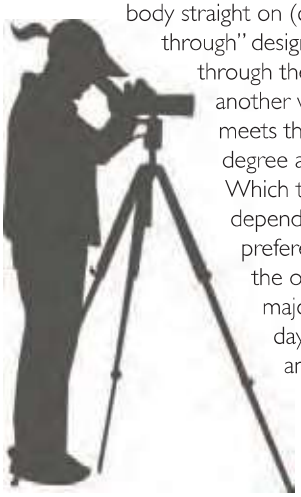
So, why not simply go for a zoom eyepiece which covers all of the magnification bases and be done with it? Or, why not just buy an eyepiece with the highest possible power of magnification, which might logically sound like the best option? Like anything to do with optical equipment, it all comes down to understanding the compromises involved. A 60x magnification eyepiece will give a larger image than one that provides 30x magnification, for example, but that image will also be darker and more restricted. In many field conditions, a 30x lens will actually allow you to see more, and indeed to see it better, than a 60x one. The lower the magnification, the wider the field of view, making it easier to find and follow birds, and the brighter the image reaching your eye.

Zoom lenses tend to offer slightly darker images again and, due to engineering constraints, they also usually offer a narrower field of view than would a fixed lens eyepiece at the same power. So, all other things being equal, the image given by a zoom eyepiece set at 30x magnification will appear slightly darker and often significantly narrower than that given by a 30x fixed eyepiece. Many fixed eyepieces actually come in "wide-angle" versions, usually somewhat more expensive than the standard models, but often offering a significant advantage in the field.

I usually recommend using a fixed wide-angle 30x eyepiece as the primary lens for a telescope, and if possible also carrying a

higher-powered eyepiece, perhaps a zoom, for the occasions where extra magnification can come in very handy, such as when watching flocks of waders or waterfowl at a distance.

Straight or angled?



Many telescope models come in two distinct variations: one where the eyepiece joins the body straight on (called a "straight-through" design, as you look straight through the 'scope) and another where the eyepiece meets the body at a 45 degree angle, or thereabouts. Which to go for really depends on personal preference, but, that said, the overwhelming majority of birders these days seem to prefer the angled models.

I personally find the angled design much easier to use in the field, as it feels much more comfortable to look down into a telescope that is positioned below eye level. It is also far easier for a group of people of differing heights to take turns looking through an angled telescope than through a "straight-through" model.

Without a leg to stand on

To be used properly and to achieve the best results, a telescope must be mounted on a tripod. There is little point in spending a fortune on a high-end 'scope and then attaching it to a lightweight, rickety tripod: even the slightest sway will, don't forget, be magnified roughly 20 to 60 times, which can completely ruin your view and even make using the telescope pointless.

Again, it all comes down to compromise. You need a tripod that is heavy and stable enough to give a good image, even in windy conditions, but that is not so heavy that it becomes overly burdensome or even painful to lug it around in the field all day.

Stability is another area where angled 'scopes confer an advantage over straight-through models: as you look down into the former design, it means that you can set your tripod to a shorter height, meaning greater stability and less chance of shaking.

A good, wide, carrying strap, attached to the tripod (never to the telescope) and slung over the shoulder, can help greatly to reduce the burden of carrying it. It is even possible to buy special tripod carriers, which are worn on the back rather like a rucksack and can be used with the 'scope attached.

Keeping a level head

Make sure also that your tripod has the correct type of head. Many heads that are primarily intended to be used for still photography, for example, work poorly with telescopes, as they were never designed to give a stable image when in motion and therefore do not "pan" or "tilt" smoothly. Tripod heads intended for use with video cameras often work much better: look for a "fluid head," which should ensure smoother, more controllable telescope movement than a "ball head," which uses a ball-and-socket joint to rotate the 'scope ■

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