

**Telescopes are popular among birdwatchers. By offering higher magnification than binoculars, they add a new dimension to birdwatching. Telescopes typically come in component form – the body, eyepiece, and appropriate support, usually a tripod. It is important to choose your equipment with care and thought.**

A telescope is a major financial investment, and so it is very important that you take your time choosing the equipment, and that you are completely happy with it before you commit yourself to the purchase. Find out from suppliers what makes and models are available, and at what prices. Read articles on telescopes and reviews of individual models in the birdwatching magazines. Speak to other birdwatchers about their telescopes, get their opinions on the pros and cons of different models, and ask to try their scopes. Make a list of features you want in your telescope, and make a shortlist of models you want to try.

Once you have identified a number of telescopes that fit your criteria, you should try them out in field conditions. RSPB shops hold regular field days, when the shop has a bigger than normal range available to try, and experts available to answer questions and help you make the correct choice. The British Birdwatching Fair at Rutland, held annually in August, provides another good opportunity to try out a wide range of telescopes under field conditions. Start by comparing the models on your list before even thinking about others suggested to you. Take your time, and make sure the telescope you buy is right for you – do not be swayed by birding fashions or pushy salesmen.

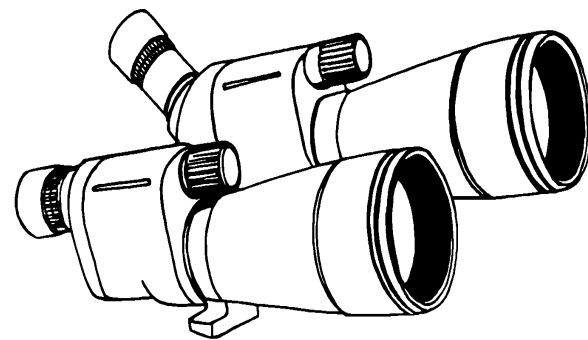
When choosing your telescope, make sure that it is easy to use. However good the image, a telescope that you find difficult to use will risk spoiling your birdwatching. The weight varies considerably with the size of the telescope as well as the material it is made of – all-metal models are heavier than those with a lightweight polycarbonate housing. Remember you need to consider the combined weight of the telescope and tripod. Focusing wheels vary in size and design, and some models can only be focused with one hand or the other. If you wear spectacles, choose an eyepiece with a twist-down or fold-back eyecup. Once you have chosen your telescope, eyepiece and tripod,

make sure you test them together before taking them home.

### Telescope types

Telescopes come in either straight or angled form. On the straight type, the eyepiece follows the light path from the objective lens. On the angled type, the eyepiece is at 45° angle to the telescope body. The angle of the eyepiece does not affect the performance of the telescope and your choice is a matter of personal preference.

Both designs have their advantages. It is easier to locate a bird with a straight telescope, and some people find it better when sitting down in hides. An angled telescope makes it easier to watch birds high in trees and in the sky, and to follow moving birds. It can be more comfortable to use, particularly by tall people, and often avoids straining the neck. As the tripod does not need to be erected so high, an angled scope is often more stable.



### Eyepieces and objectives

Objective lenses range 50-85mm in diameter. The larger this lens, the larger and heavier is the telescope. The image quality of the 60-65mm 'spotting scopes' is high, and they are the preferred choice of majority of birdwatchers. If you do a lot of birdwatching in gloomy light or from a stationary position such as a hide, or plan to do a lot of 'digiscoping', the heavy 70-80mm telescopes are worth considering. The 50mm pocket scopes have limited use, and have poorer optical quality than the larger models.

The magnification is determined by the eyepiece. Most telescopes, but not all, have interchangeable eyepieces. Magnifications range from 15x to 60x, and are available both as fixed magnification and zoom versions. A good range of interchangeable eyepieces is available for most telescopes on the market, so you can choose more than one to best suit the different birdwatching situations.

Wide-angle eyepieces of 20x to 30x are best for all-round birdwatching, while a 40x might be useful for longer distance work. A higher power eyepiece should be in addition to, not instead of, the wide-angle one, and is best used in bright conditions on stationary birds. Zoom eyepieces need more light to give you a clear image than fixed magnification ones, and they give a narrower field of view for a given magnification. Consequently, they are perhaps best suited to telescopes with larger objective lenses of 70 - 80mm, and can be limiting in dull weather conditions. However, the zoom eyepieces of the latest top-of-the-range models can be surprisingly good.

When choosing your eyepiece(s), you need to be mindful of the size of the objective lens, and thereby the light transmission through the telescope. As the magnification increases beyond a certain optimum point, there will be no further improvement in the performance, and at some point, the image quality and brightness will start to deteriorate. The shimmer in the air can also be a problem, and any shake from the support becomes more evident. The optimum for a 60mm telescope is 30x, increasing to 45x for an 85mm scope.

Many telescopes suffer from a greater or lesser degree of 'colour fringing' – objects are outlined with a coloured hue - which may only be apparent at higher magnifications. The low-dispersion (ED) glass used in many of the more expensive models eliminates colour fringing as well as gives a brighter and sharper image.

### Tripods and other supports

A support of some sort for your telescope is essential, as it is only possible to use it for a limited time and at low power while resting it on a fence or a ledge.

Therefore, you should consider the tripod an integral part of your telescope, not an optional accessory. Select a good sturdy tripod – a telescope is only as good as its support.

Choose your tripod with care. Extend the tripod to its full extent to check for its sturdiness, ideally with a telescope attached. Try erecting and collapsing it to see how easy it is to adjust. Imagine what it is like trying to do this in cold weather. Many models have different heads to choose from. A fluid head allows smooth panning. A locking quick release plate can be invaluable, especially in hides. If you want to use a carrying strap, make sure it can be attached.

Other supports, although not a replacement for a tripod, are good for specific uses:

*Mini tripod:* useful as a support on a hide shelf or car roof.

*Hide mount:* good lightweight support for clamping to the shelves in hides.

*Car window mount:* of limited use as they only clamp to the window of a car and are prone to vibration from other traffic.

*Monopod:* this does little more than steady the telescope but can be useful if size and weight are a problem.

*Universal mount:* ideal for clamping to fences, etc; can also be used in some hides.

### How much should I pay?

Generally speaking, the more you pay the better quality telescope you get. The starting point for a budget range 60mm telescope with an eyepiece is around £250, with many top of the range telescopes around £1,200-1,500. Telescopes with ED glass start around £600.

Be sure to take into account the cost of a good tripod when making your selection. You need to budget around £100 for a good quality tripod, although top makes can be far more than this.

Some telescopes are waterproof, but it is worth getting a case. Stay-on cases are available to fit most models. These offer better weather protection and help protect against knocks.

## Can I use my telescope for photography?

Yes! Though telescopes have long been used for photography, the past few years have seen the emergence of a technique known as 'digiscoping', where a digital camera is held to the eyepiece of a telescope, either manually or with an attachment. Though it has its limitations, pleasing results can be obtained with practice and special adapters and other accessories are available. Large-objective telescopes with low-magnification eyepieces are ideal, as good light is important. A camera with an internal zoom mechanism is preferable as it can be held to the eyepiece safely.

## How to use your telescope and tripod

A telescope is never a substitute for a binocular and it takes time to learn to use one, but it is worth the effort. The following points should help you:

- Learn to keep both eyes open when you look through the telescope. This will help reduce eyestrain over long periods. Learn to use either eye, and in bright light use your hand as a shade.
- Do not breathe on the eyepiece, especially in cold weather, as this will cause the lens to fog up.
- When trying to line the telescope up on the subject, the sight line on the side will help. If you do not have one, look along the barrel as if aiming a gun.
- Use a tripod or other support – it is only possible to use a telescope for a limited time and at low power without a proper support.
- When using a tripod, always make sure the legs are locked tight and are placed on a firm surface. For safety, it is always advisable to have only one of the tripod legs facing away from the wind.
- Only extend the tripod as far as you need to – sitting or kneeling with a partially extended tripod can be useful in strong winds, hides and many other situations.
- It is a good idea to carry your telescope ready mounted on a tripod so that it is easy to use quickly. A strap can be useful, although many birders carry their telescope and tripod on their shoulder.
- A tripod with a quick-release plate, which allows you to remove your telescope from it more easily,

will be useful in hides. If your tripod does not have this, it is possible to fit one as an accessory.

- When you are out in the rain and not using your telescope, keep the lens cap on. A 'stay on case' is a good idea for extra protection. Once fitted, this should be regarded as a permanent part of your telescope.

## Looking after your telescope

A telescope is the most expensive tool used for birdwatching, and so it is worth taking care of it in order to achieve the best results and keep it in good working order for years to come.

Telescopes require very little maintenance, only a little cleaning now and again. Clean the lenses as little as possible. If a lens has become smudged or dirty, first remove any grains of sand or salt with a lens blow brush and then wipe it clean with a clean lens cloth. If your telescope has interchangeable eyepieces, be very careful with when and how you change them – every time you remove the eyepiece, dust can get into the telescope. After using your telescope in the rain, always wipe it dry. If moisture has got inside, leave it in a warm place to dry.

A telescope may be knocked out of alignment if you drop or knock it. A trained repairer can easily carry out realigning and other maintenance. Never be tempted to dismantle a telescope yourself, but leave such jobs to a specialist.

**A wide range of binoculars and telescopes is available from the following RSPB Gift Shops:**

### ENGLAND

Bempton Cliffs, East Yorkshire, tel: 01262 851179  
Carsington Water, Derbyshire, tel: 01629 541842  
Darts Farm, Devon, tel: 01392 879438  
Dungeness, Kent, tel 01797 320588  
Fairburn Ings, West Yorkshire, tel: 01977 628191  
Leighton Moss, Lancashire, tel: 01524 701601  
Minsmere, Suffolk, tel: 01728 648281  
Old Moor, South Yorkshire, tel: 01226 751593  
Pulborough Brooks, West Sussex, tel: 01798 875851  
Radipole Lake, Dorset, tel: 01305 778313  
Rainham Marshes, Essex, tel: 01708 899840

Ribble Discovery Centre, Lancashire, tel: 01253 796292  
Saltholme, Tees Valley, tel: 01642 542081  
The Lodge, Sandy, Bedfordshire, tel: 01767 680541  
Titchwell Marsh, Norfolk, tel: 01485 210779  
Top Lodge, Northamptonshire, tel: 01780 444691

### SCOTLAND

Lochwinnoch, Strathclyde, tel: 01505 842663  
Loch Garten, Strathspey, tel: 01479 831476 (April to early September only)  
Vane Farm, Kinross, tel: 01577 862355

### WALES

Conwy, Conwy, tel: 01492 584091  
Lake Vyrnwy, Powys, tel: 01691 870278 (weekends only in Jan – March)  
Newport Wetlands, Newport, tel: 01633 636363

### The RSPB

**UK Headquarters**, The Lodge, Sandy, Bedfordshire SG19 2DL. Telephone 01767 693690

**Northern Ireland Headquarters**, Belvoir Park Forest, Belfast BT8 7QT. Telephone 028 9049 1547

**Scotland Headquarters**, 25 Ravelston Terrace, Edinburgh EH4 3TP. Telephone 0131 311 6500

**Wales Headquarters**, Sutherland House, Castlebridge, Cowbridge Road East, Cardiff CF11 9AB. Telephone 029 2035 3000

[www.rspb.org.uk](http://www.rspb.org.uk)

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The RSPB speaks out for birds and wildlife, tackling the problems that threaten our environment. Nature is amazing - help us keep it that way. We belong to BirdLife International, the global partnership of bird conservation organisations.

The Royal Society for the Protection of Birds (RSPB) is a registered charity: England and Wales no. 207076, Scotland no. SC037654

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## INFORMATION

# Selecting and using your telescope



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