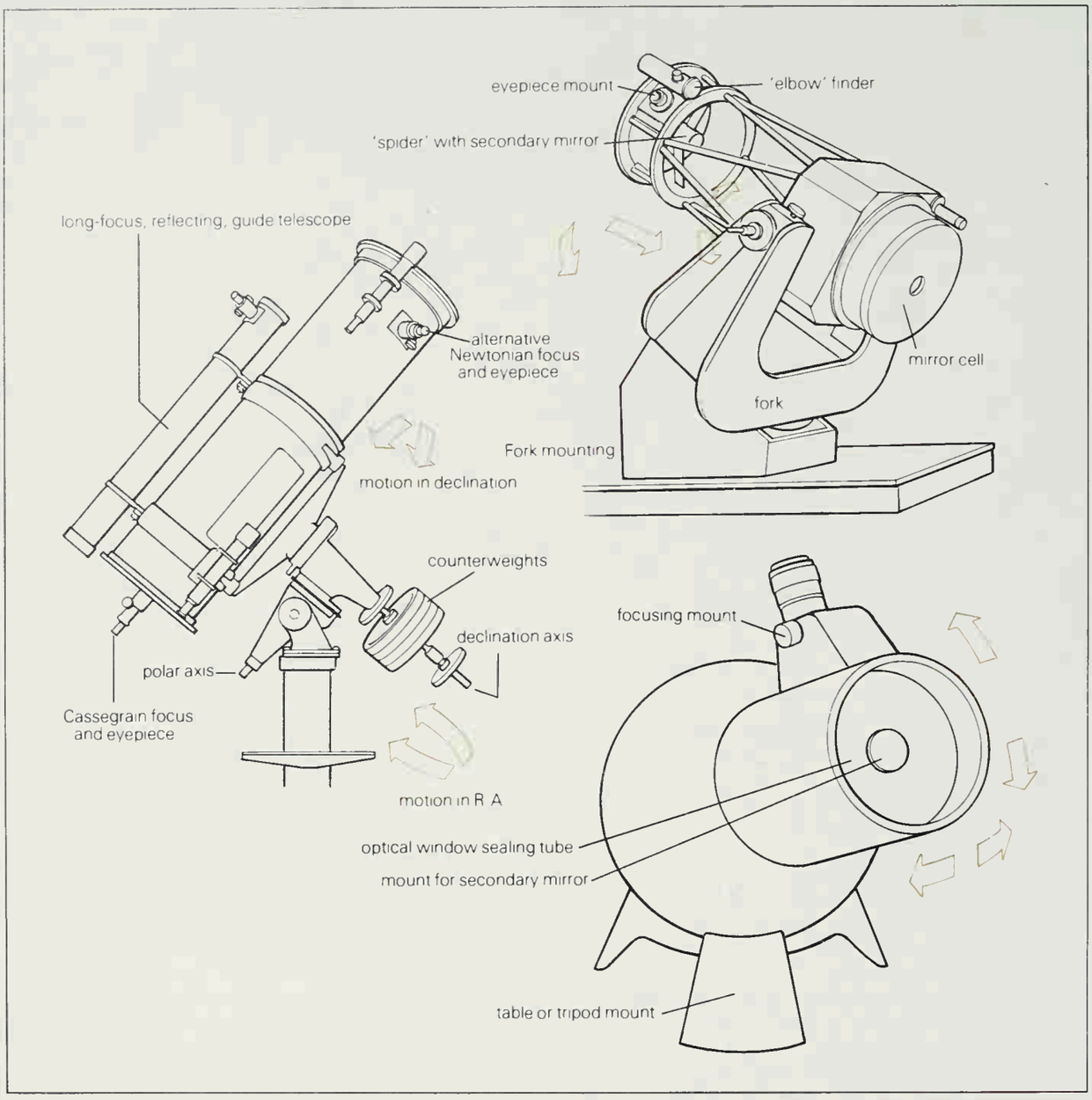

Top:
The generally greater light grasp of reflectors is an advantage in studying faint nebulae and galaxies, as well as for many photographic purposes.

Far left:
This is a typical commercially available Cassegrain telescope which, with its long focal ratio and considerable light-grasp, would be very suitable for planetary observation.

Left:
Some telescopes are specifically designed to be fully portable, as in the case of this small (105mm f/4.2) reflector on a ball and socket mount.

usually offer these facilities, but with refractors and reflectors a fixed permanent mount will be required.

There are many different forms of mounting which may used, but that known as the German mount is one of the best for refractors, while the Fork mounting is particularly suitable for reflectors and is the type most frequently chosen for Maksutovs and Schmidt-Cassegrains.

A permanently-mounted telescope obviously needs to be housed in an observatory. However, even the portable forms require a firm base, and, more important, the observer will benefit from the protection – especially from cold winds – afforded by a proper observatory, and will be able to observe for longer periods and make less errors. There are, of course, many other advantages to having an observatory, such as having everything to hand when observing, but space can be a major problem.

Amateur observatories come in all shapes and sizes, from sheds which are literally lifted up and over the telescope, to fully rotating hemispherical domes. Perhaps one type which deserves wider use is that with a 'run-off' roof: this is basically four walls covered by a roof which is rolled back out of the way when the equipment is to be used.

It is now quite common for equatorially-mounted telescopes to be provided with an electric variable-speed drive for motion in right ascension, together with a similar drive – usually slightly less sophisticated – to position the telescope in declination. Some amateurs have even linked microcomputers to their telescopes to give complete control of the drives on both axes, thus providing for any required rate, or combination of rates, of motion. (Driving may be required on both axes simultaneously to follow comets and minor planets, and there are also sidereal, solar and lunar rates which may be required.) Such sophistication can also provide for push-button setting of the telescope on to the required object, in addition to the digital readout of position which some telescopes already possess. However, it should never be forgotten that all this electronic gadgetry is of little value unless it, and the telescope, is properly and fully used. Many of the most accomplished amateur observers may be found using binoculars or simple telescopes without drives or setting circles. Furthermore, complicated electronic drives may still be inadequate to compensate for a fast-moving comet or minor planet, and the observer may have to resort to using hand-operated slow motion controls. As always, it is the experience of the observer, not the equipment, which is all-important.

It is quite common practice for various pieces of auxiliary equipment to be mounted on the main telescope. The most common items are wide-field