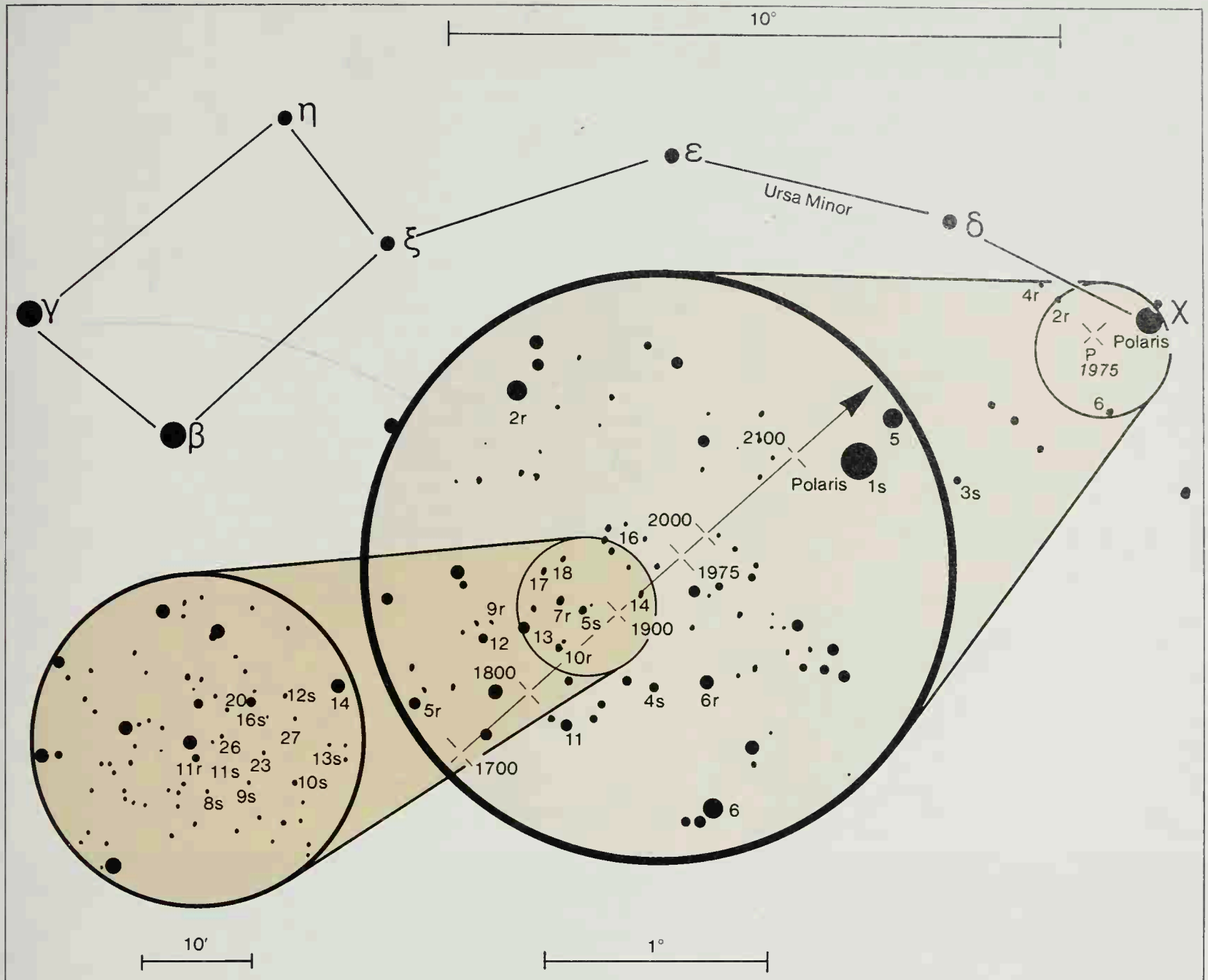

Top:
The North Polar Sequence of stars of known magnitude, part of which is shown here, is a useful means of determining a telescope's performance, and runs from Polaris (1s) at mag. 2.1, to star 16s at mag. 15.5.

and narrow-field finder telescopes, and a long-focus instrument of some form for use as a guide telescope when the primary instrument is being used for photography. Various wide-field cameras may be attached to the mount, thus benefiting from the accurate drive, while occasionally a specialized solar instrument may also be placed on the same mounting; all other telescopes and finders are covered for safety when it is in use.

The simplest and most essential accessories for any telescope are, of course, the eyepieces, and here there are many different types which can be used. One of the simpler and more common types is the achromatic Ramsden eyepiece (or the variant known as the Keilner). More highly-corrected, more complex and more expensive eyepieces of the Orthoscopic and Plösl types are also popular for high magnifications, with Erfle and König forms finding favour for wide fields. With any eyepieces, but most especially with the complex types containing many glass/air surfaces, it is important that they should be provided with anti-reflection coatings, as otherwise the light losses can be quite considerable. For the beginner, three eyepieces are normally sufficient: a low power for general work, a medium power for observation of the Moon and planets, and a high power for use on the rare occasions when the turbulence of the atmosphere permits. A Barlow lens, which increases the magnification that can be obtained with a given set of eyepieces, is also very useful – especially for lunar and planetary work.

Photographic equipment intended for use on the telescope is usually in the form of a standard SLR camera body mounted at the prime focus, but some observers go to the trouble of manufacturing special cameras, or holders for plates or – more usually nowadays – sheet film. These may incorporate special optical arrangements for guiding by means of a star at the edge of the telescope field – a method which is more reliable than using a separate guide telescope, which is subject to unavoidable flexure and consequent misalignment. A somewhat similar method of offset guiding is usually employed in conjunction with photoelectric photometers, where the star under observation must be kept on the limiting diaphragm during the measurements.

There are many items of specialized and complex equipment which have not been mentioned here, some of which are described in the relevant sections of this book.

However, it is perhaps worth emphasising again that astronomy is one of the few sciences where not only can a great deal of enjoyment be gained, but also a serious contribution to knowledge may be made with only the very simplest of equipment.