

Far left:
The celestial sphere for an observer at latitude $51\frac{1}{2}^\circ$ N.
Star (1) is circumpolar; star (2), on the celestial equator, rises due east (E) and sets due west (W); star (3) is never visible.

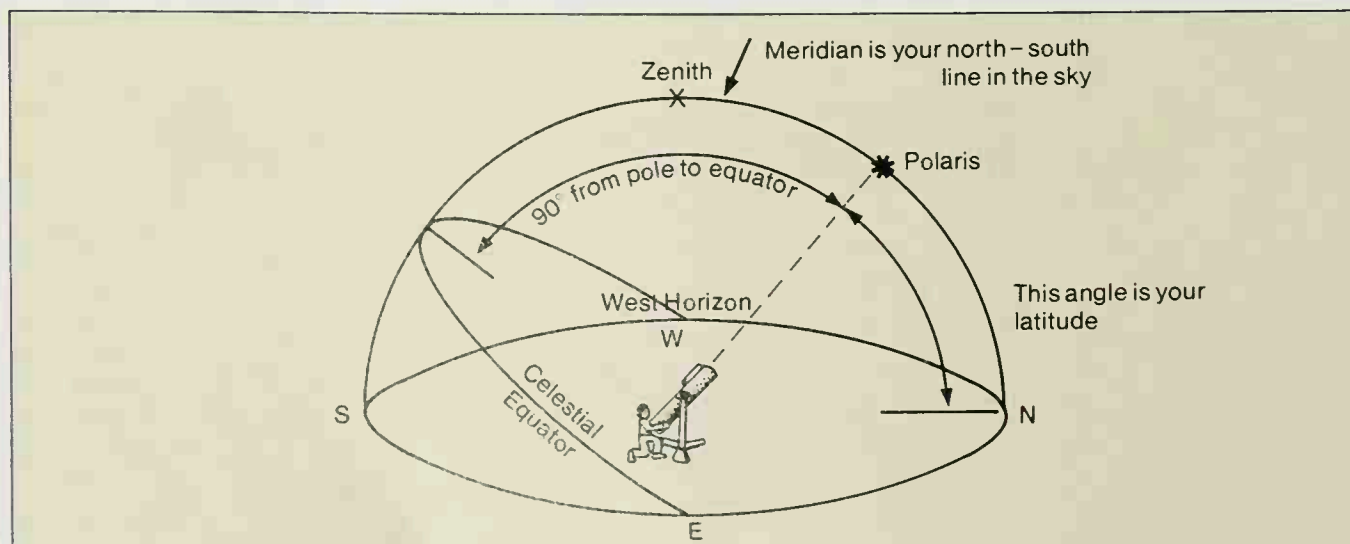
Left:
The visibility of objects close to the ecliptic is influenced to a great extent by the latitude of the observer, and may improve at higher latitudes.

Moonlight is a nuisance because it lessens the contrast between the objects being examined and the sky background by causing the latter to be increased in brightness. It can also contribute to an observer failing to become fully dark-adapted. Dark-adaptation is a most important factor in efficient observing, and consists of the formation over a period of about 20–30 minutes of a pigment in the retina of the eye which gives greater visual sensitivity under low-light conditions. It should not be confused with the nearly instantaneous adjustment of the size of the pupils of the eyes to changes in brightness. True dark-adaptation requires low light-levels for it to come into force, so that ample time must be allowed for this to take place before attempting the most demanding observations. Dark-adapted vision is most sensitive to wavelengths centred in the green region, but is comparatively insensitive to long wavelengths. For this reason, red light is used by astronomers to illuminate charts and notebooks and find their way around. Bright lights will destroy the sensitivity at any time.

Even the most casual observer will find that it is well worth while keeping a proper notebook for observations, and for any work of a serious or scientific nature it is absolutely essential. Even for beginners it is helpful to be able to look back to earlier observations – if only to learn by the mistakes. Quite apart from the actual drawing or other observational details which may be required, it is usually

necessary to give full information about the equipment being used and the sky conditions. Naturally each type of observation will require certain specific details, and it is important to ensure that none of these are forgotten. Errors inevitably occur, even with the most experienced observers, and the more information there is, the easier it is to detect them. Most important of all, the date and time must be noted in full (being only too easy to forget). The time must be expressed in Universal Time rather than any local time, which may or may not be subject to the additional complication of some daylight-saving adjustment. Universal Time is just that, being used and understood by all astronomers, everywhere.

Observations should be made whenever possible, not just for the sake of coverage of the objects being studied, but also because as with all fields of endeavour, practice does make perfect; and even in so simple a thing as finding one's way around the sky, increasing confidence will bring greater enjoyment. For it should never be forgotten that although amateur astronomers may be making a very valuable contribution to knowledge, with professional astronomers welcoming their observations, it is a hobby. The satisfaction that one derives comes principally from the making of observations rather than from an appreciation of their value; whether or not they are scientifically useful is a secondary consideration.



The correct alignment of the polar axis of an equatorial telescope is of great importance, especially for critical work such as long-exposure photography.