we recognise come from considering only the brighter stars. For those unfamiliar with the night sky the best thing is to use an easily recognisable constellation as a starting point, and then use the charts to find others. For the northern hemisphere, the constellations of the Plough (the seven brightest stars of Ursa Major), the 'W' of Cassiopeia, and Orion are the most convenient starting points. For readers in the southern hemisphere, who should turn the charts upside down, convenient guiding constellations are Crux and Centaurus, while the Larger Magellanic Cloud is also a useful indicator.

Using charts and atlases

Once one has become accustomed to them, star charts such as these, where the stars appear black against a white background, are just as easy to use as those which more nearly represent the night sky. Similarly most atlases, even those prepared from photographic plates, show black stars against a white background. Observers are able to mark the objects in which they are interested, or to plot the positions of comets, minor planets and other objects. Indeed the charts reproduced here are available in a larger-sized, modified version which is used by many amateurs for such purposes, and some examples are shown elsewhere in this book. Sometimes, and especially because they are less likely to cause loss of dark-adapted vision when illuminated by a red light at night, charts with black backgrounds are preferred for use 'at the telescope'. Several atlases are available in both versions so that the most suitable ones may be used.

Epochs

Because of the effects of precession (pages 15–16) the positions of all celestial objects as measured by right ascension and declination (page 13) are continually changing, since the coordinates themselves are fixed relative to the Earth. For many accurate scientific observations it is therefore necessary for the

MAGNITUDES
6
5
4
3
2
1
0
-1

VARIABLES

DOUBLE STARS

OPEN CLUSTERS
<30'
>30'
on scale

GLOBULAR CLUSTERS
<10'
>10'

PLANETARY NEBULAE
<1'
>1'

DIFFUSE NEBULAE

GALAXIES
<10'
>10'

MILKY WAY ISOPHOTES

GALACTIC EQUATOR

ECLIPTIC

CONSTELLATION BOUNDARIES