

The Webb Star Atlas

THE ATLAS

With the advent of the publication of the *Hipparcos and Tycho Catalogues* in 1997 it has become possible to produce a star atlas with a greater degree of accuracy in relation to star magnitudes. Nearly all atlases prior to this date suffer from an elastic limiting magnitude, the fainter the atlas went the greater the chance of error in omissions and additions. The only certainty was that all stars brighter than 6.0 had accurate magnitudes.

This Atlas has a limiting magnitude of 7.10 and was chosen to match the limit of the *Yale Bright Star Catalogue and Supplement*. These two works together list 11,699 stars - of which 99.9% are brighter than 7.11. They are not complete to 7.10 - many fainter stars were omitted because they lacked accurate magnitudes. But they did indicate that there were probably somewhere in the region of 16,000 stars brighter than 7.10. With the publication of the *Hipparcos and Tycho Catalogues* we now know it should be nearer to 18,000 (if all components of close doubles are included).

Norton's Star Atlas shows about 8,800 stars down to a magnitude of 6.49, but if this is extended by only 0.6 mag. to 7.10 then the number of stars nearly doubles to 17,494. There is obviously a corresponding increase in the number of Doubles and Variables - from over 500 Variables on *Norton's* to over 1,800 in this Atlas. The higher number is also due in part to the new Doubles and Variables discovered by the Hipparcos mission.

THE CHARTS

The 44 main charts are plotted using three simple projections - Polar (+60° to +90°/-60° to -90°), Conical (+20° to +60°/-20° to -60°) and Cylindrical (+20° to -20°), generally with a 5°/20 or 30 arc minute overlap between charts. Labelling, identification of double and variable stars, novae and non-stellar (deep-sky) objects have been omitted from the overlap areas. The charts have a scale of 4.9mm to 1°. (Due to the method of production, a minor variation may occur). The two polar charts (Chart A) have a limiting magnitude of 7.50.

THE CONTENT

There are 17,494 individually plotted stars on the main sections of the 44 charts that comprise this Atlas. Of these 3,824 are plotted as double, 1,348 are variable and 489 are plotted as both double and variable. 79 historical novae and supernovae and 1,810 deep-sky (non-stellar) objects are also plotted.

THE LABELLING

The stars are labelled according to importance - a number of the brightest stars are identified by their well-known names, e.g. Castor and Pollux. Then comes their Bayer (Greek) letter, a Roman (A to Q, a to z - usually in the Southern Hemisphere) letter and finally a Flamsteed Number. Sometimes a superscript number is used when several close stars have the same Bayer or Roman letter.

Double stars are not labelled.

Variable stars are labelled according to their *General Catalogue of Variable Stars (GCVS)* designation - Bayer or Roman letter / R to Z / RR, RS etc to ZZ / AA, AB etc to QZ / and from V335 onwards [the letters R to QZ account for the first 334 variables in any given constellation].

Novae and Supernovae are labelled "N" or "SN" followed by the year of discovery. The only exception to this is where the nova is "recurrent" and is labelled according to its *GCVS* designation. There are only four such variables plotted on the charts - T Pyx, T CrB, RS Oph and WZ Sge.

Non-Stellar Objects are annotated with various labels. The most common are the *Messier* (M) number [e.g. M57] usually followed by the *New General Catalogue* (NGC) number [e.g. 1961], and the *Index Catalogue* (IC) number [e.g. IC1805]. Other labels used include *Collinder* (Cr) for Open Clusters, *Perek/Kohoutek* (PK) for Planetary Nebulae and *Barnard* (B) for Dark Nebulae. If an Object also appears on the Enlarged Areas chart the label is followed by a 'B' [e.g. IC2602 (B)].