



STARS

There are many stars of interest in the circumpolar constellations.

The first of these is the North Star or Polaris which was a variable star of the cepheid type, but its small pulsations ceased in 1995. This 2nd magnitude yellow star has a bluish 9th magnitude companion. *Cassiopeia* has several variable stars worth watching.

γ *cassiopeiæ* is an irregular eruptive variable which normally hovers around 2.2^m. It brightened to 1.6^m in 1937 and faded to 4.0^m by 1940. It could be ready for another outburst soon!

RZ cassiopeiæ is an eclipsing binary system which fades from its normal 6.4^m down to 7.8^m over 2 hours and then back again every 29 hours. You should be able to follow this over two successive nights through binoculars.

The Plough hosts the most famous double star, Alcor and Mizar. These are not gravitationally bound, but Mizar itself is a true double when seen through a modest telescope.

In *Cepheus* there is the prototype variable: δ *cepheii*, a pulsating star that varies between 3.5^m and 4.4^m with a period of 5d 8h 48m. These variations can be followed by naked eye or binoculars.

μ *cepheii* was named the Garnet Star by William Herschel because of its distinctive ruddy hue. It is a Mira-type pulsating variable (3.7 - 5.0) with a long period.

NEBULÆ

One of the brightest planetary nebulæ of its kind lies in *Draco* - NGC 6543. It appears as a vivid blue disk in modest telescopes and is nicknamed the Cat Eye nebula.

Just below the blade of the Plough is another planetary - M97, or the Owl Nebula. This ghostly disk can be glimpsed with a modest telescope, but to see the two dark patches or "eyes" requires a 12" instrument or larger.

CLUSTERS

Cassiopeia contains many clusters (49 actually!) all of which are open or galactic clusters. The following are good binocular objects: NGC 225, NGC 663, NGC 457 (bright and contains 100 stars), M103 (contains about 40 stars), M52 (a large scattered cluster of young blue stars) and NGC 7789 (contains roughly 1000 members and looks like a dull misty patch through binoculars).

GALAXIES

Ursa Major is the site of some interesting galaxies, most notably M81 and M82 which are both fairly nearby in galactic terms. M81 is a beautiful spiral, whilst M82 is an active, irregular galaxy. Both are visible in 10 x 50 binoculars on a dark night. M101 above the handle of the Plough is a fairly faint, face-on spiral famous for producing supernovæ (three this century).