

## Variable Star Names

Most naked-eye stars have traditional Arabic/Latin/Greek names (e.g., Rasalgethi, Sirius, etc.) and Bayer system names ( $\alpha$  Cygni,  $\beta$  Cygni, etc. up to  $\omega$  Cygni). Beyond that, Flamsteed numbers were often assigned (e.g., 61 Cygni) to make up for the lack of names or letters in the Greek alphabet.

Among those stars with traditional or Bayer system names, a few have been recognized even from classical times to be variable stars, and so retain their original names. For example:

$\beta$  Persei = Algol a famous eclipsing binary  
 $\chi$  Cygni  
o Ceti = Mira the “marvelous star”  
 $\delta$  Cephei

As more variable stars were discovered, a more systematic method of naming them was adopted. This effort was led primarily by British astronomers who were then engaged in large-scale surveys of the sky (much of it supported by the British Admiralty to establish better standards for long-distance celestial navigation at sea).

In this system, the first variable star discovered in a constellation (excepting previously-named stars) is assigned the letter R, for example, R Andromedae or R Cygni (the latter being the variable star discovered in Cygnus after  $\chi$  Cygni). The reason for R instead of A is that in the southern hemisphere the British adopted a parallel system to Bayer’s that assigned roman letters A through Q (except J) to stars instead of  $\alpha$ ,  $\beta$ ,  $\gamma$ , etc. So as to maintain some semblance of order in both celestial hemispheres, the first variable was named R, followed by S, T, U. etc.

Beyond Z (nominally the 10<sup>th</sup> variable found in a constellation), the next variable is named RR (e.g., RR Lyrae), followed by RS, RT, etc. up to RZ. After that comes SS, ST, ... SZ, then TT, TU, ... and so until all 2-letter combinations up to ZZ are used. The convention used dictates that the second letter must be either the same or greater than it in the alphabet. This helps to avoid notational problems caused by accidental juxtaposition of letters (e.g., erroneously writing SR instead of RS).

After ZZ the names start with AA, AB, ... AZ, then BB, BC, BD, and so on, always skipping the letter J (which is too easily confused with “I”), until the last remaining letter name, QZ, is assigned to the nominal 334<sup>th</sup> variable star in that constellation.

Beyond QZ, astronomers assign numbers prefixed by “V” for “Variable”, starting with 335. Thus, after QZ the names are in sequence V335, V336, and so forth. For example, V404 Cygni.