

STARDOME OBSERVATORY & PLANETARIUM
 FACTS, RESOURCES AND ACTIVITIES ON...

STAR NAMES

Learning what we see in the night sky can be confusing because many of the stars, nebulae and other faint objects have more than one name.

Most of the celestial objects that families and the public will look at have 'common' or 'proper' names (traditional/non-scientific names), which have been passed down over the centuries.

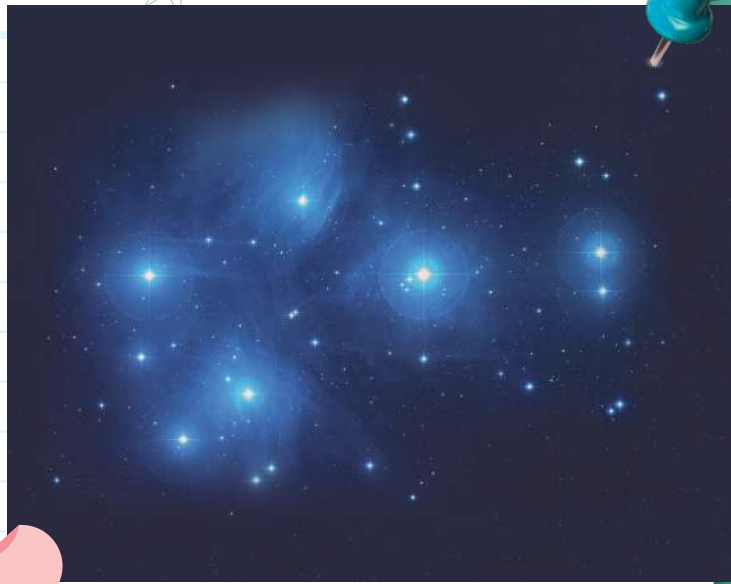
The brightest stars have 'common' names like Toliman, Rigil Kentaurus, Betelgeuse, Canopus and Sirius. About two dozen stars are named after individuals, e.g. Barnard's Star.

Bright stars also have systematic astronomical names based on the constellation to which they belong (Bayer system). The brightest stars are prefixed with Greek letters in order of decreasing apparent brightness, e.g. Alpha Centauri, Beta Centauri, Gamma Centauri, etc.

Some faint stars in well-recognised star groups (asterisms) also have individual names. These often arise from traditional stories about the stars from cultures around the world. Probably the most widely known are the seven stars of the Pleiades star cluster, known in New Zealand as Matariki, in the constellation of Taurus.

Flamsteed designations consist of a number and a Latin name of the constellation the star lies in, e.g. 51 Pegasi and 61 Cygni. They are commonly used when no Bayer designation exists or when the Bayer designation uses numeric superscripts such as in Rho¹ Cancri. In this case, the simpler Flamsteed designation, 55 Cancri, is often preferred.

Many modern common star names come from Arabic star names (although fewer in the Southern Hemisphere).



Greek	Maori	Flamsteed
Alcyone	Matariki	25 Tauri
Merope	Ururangi	23 Tauri
Electra	Waipuna-ā-rangi	17 Tauri
Maia	Waita	20 Tauri
Atlas	Waiti	27 Tauri
Taygeta	Tupu-ā-rangi	19 Tauri
Pleione	Tupu-ā-nuku	28 Tauri

Star names beginning with 'HIP' are from the Tycho-2 Catalogue (2000) of 2.5 million stars observed by the Hipparcos space telescope 1989-93. The Stardome 'Adopt a Star' gift programme uses these star names.

The Gaia space mission is currently measuring the precise brightness, position, distance etc. of more than 1 billion stars and other objects in our Milky Way Galaxy. While it's a mind blowing task, this is still only about 1% of the Milky Way!

Check out these other resources...

en.wikipedia.org/wiki/Astronomical_naming_conventions#Names_of_stars

What names would you give the stars you can see only with a telescope?

Why is Johann Bayer important?

What names would you give the stars you can see in the night sky?

DISCUSSION POINTS



ACTIVITY

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THE BRIGHTEST STARS

Students can put their research skills to use by investigating the names of the brightest stars in our night sky.

ACTIVITY ONE

Investigate the Māori names for each of these bright stars.

- Sun
- Achernar
- Aldebaran
- Antares
- Bellatrix
- Beta Centauri
- Betelgeuse
- Canopus
- Regulus
- Rigel
- Rigil Kentaurus
- Sirius

Research the names used in Samoan and Tongan astronomy.

ACTIVITY TWO

Help students become familiar with the Greek alphabet. Locate a list of the Greek alphabet letters and symbols and have students think about:

- How many names of the Greek letters have they heard or read before?
- Which symbols do they recognise?

FOR YOUNGER STUDENTS

Help students learn the Greek alphabet using memory card games!

ACTIVITY THREE

Find the Bayer designation for these bright stars of the southern sky:

- Sirius
- Canopus
- Rigil Kentaurus/
Toliman
- Betelgeuse
- Mimosa
- Rigel
- Achernar
- Acrux
- Fomalhaut
- Spica

How many of these stars can you find on a star chart, and in the night sky?

Information on these stars to help with your research:

adsbit.harvard.edu/full/1918PA....26..387M/0000390.000.html



There are too many stars to give each a separate name. Credit: ESA/Hubble, CC BY 4.0

TAKE A PHOTO OF YOUR ACTIVITY AND SEND IT TO US.
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