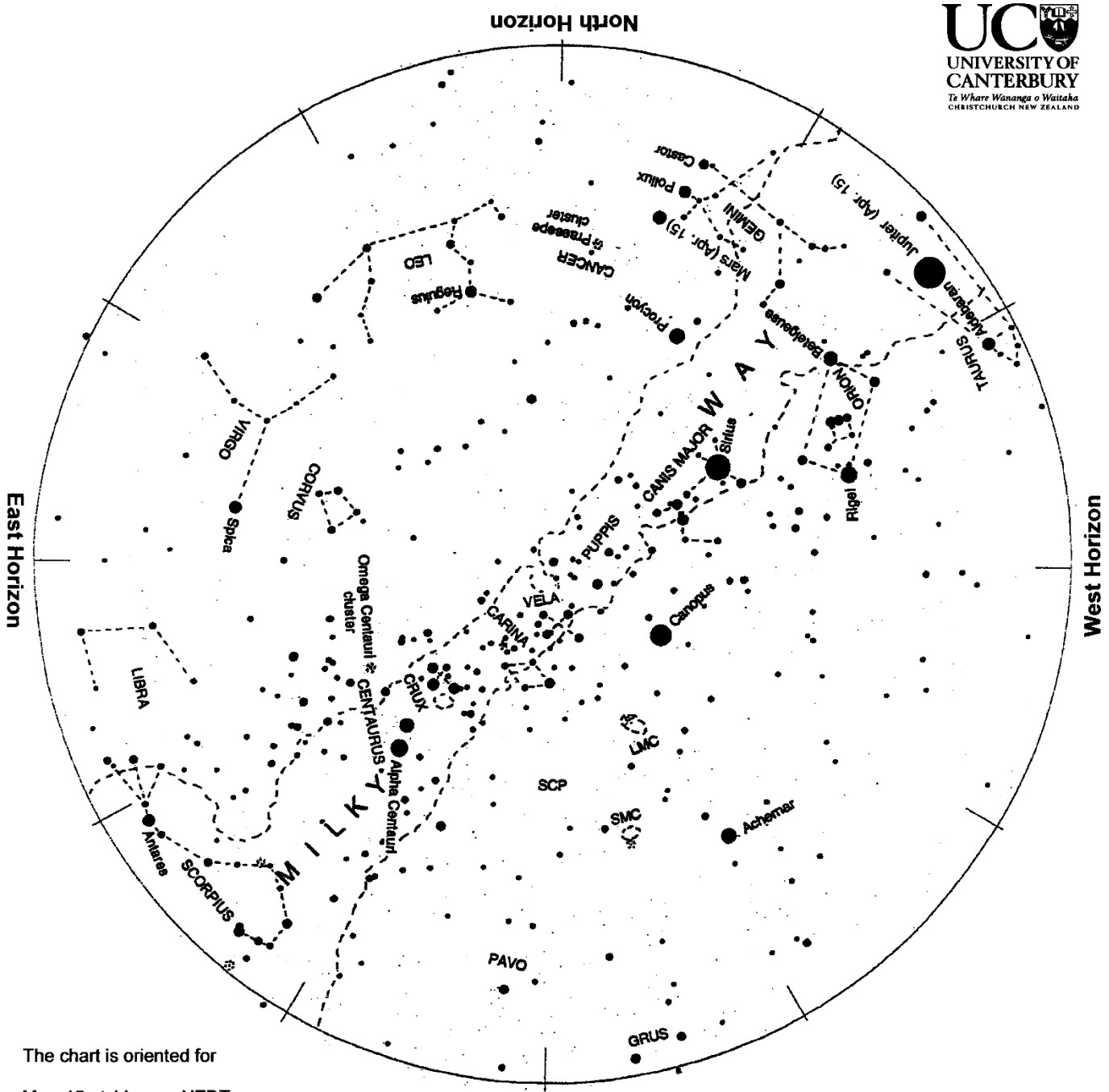

The chart is oriented for

Mar. 15 at 11 p.m. NZDT
April 1 at 10 p.m. "
April 15 at 8 p.m. NZST
May 1 at 7 p.m. "

Evening sky in April 2025

To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole, SCP on the chart. Stars rise in the east and set in the west, just like the sun. The sky makes a small extra westward or clockwise shift each night as we orbit the sun.

Jupiter is the 'evening star', setting before 9 p.m. mid-month. Mars is the only other planet in the evening sky, looking like an orange-red star of medium brightness, low in the north. Sirius, the brightest true star, is midway down the western sky. Below it is Orion with bright stars Rigel, blue tinted, and orange Betelgeuse. Canopus, the second brightest star, is southwest of overhead. Below Sirius, 'the dog star', is Procyon marking the smaller dog. Below it is Mars with Pollux and Castor, the Gemini twins, below Mars. Regulus in Leo is due north and Spica in Virgo is due east. Crux, the Southern Cross, and The Pointers, Alpha and Beta Centauri, are high in the southeast sky. Bright planets are in the dawn sky.

Chart produced by Guide 8 software; www.projectpluto.com. Labels and text added by Alan Gilmore, Mt John Observatory of the University of Canterbury. www.canterbury.ac.nz

The Evening Sky in April 2025

Jupiter is the 'evening star', appearing low in the northwest soon after sunset and setting around 9 pm NZST mid-month. The Moon will be to the right of Jupiter on the 3rd. **Mars** is low in the north at dusk, looking like a medium bright orange star. The Moon will be near Mars on the 5th and 6th.

Sirius, the brightest true star, appears midway down the northwest sky at dusk. It is soon followed by **Canopus**, southwest of the zenith. Below Sirius are bluish **Rigel** and orange **Betelgeuse**, the brightest stars in **Orion**. Between them is a line of three stars: Orion's belt. To southern hemisphere star watchers, the line of three makes the bottom of 'The Pot', now tipped on its side.

Below and right of Sirius is **Procyon** marking the head of Canis Minor one of the two dogs following Orion the hunter across the sky. Sirius marks the head of Canis Major, the big dog. The big dog's hindquarters are made by the bright stars above Sirius.

At the beginning of the month Mars is just above **Pollux**, the brighter of the two stars making the heads of **Gemini** the twins. Below Pollux is **Castor**, the other twin. Though related in myth, the Twins are quite different from each other. Pollux is an orange star 31 times brighter than the sun and 34 light-years (l.y)* from us. Castor is a hot white star about 47 times the sun's brightness and 51 l.y. away.

Through the month Mars moves left and upward. Around the 10th it is in line with the twins. By the end of the month it is close to the **Praesepe** star cluster. Praesepe looks like a hazy spot to the eye. It marks the shell of **Cancer** the Crab. Praesepe is also called the Beehive cluster, the reason obvious when it is viewed in binoculars. It is 600 light-years away. It is around 600 million years old so its biggest and brightest stars have long ago burnt out.

Right of Praesepe is the medium-bright star **Regulus**. It is the brightest star in **Leo** the Lion. The curve of stars below Regulus outlines Leo's mane, upside down in our southern hemisphere view. A crooked vertical line of stars right of Regulus makes Leo's hind quarters with the brighter star further right being his tail.

The lone bright star due east is **Spica**, the brightest star in **Virgo**. Spica marks the ear of wheat that the Roman goddess Ceres is holding. From her we get the word cereals for grain crops. Above Spica is the roughly kite-shaped constellation of **Corvus** the Crow. Some navigators called it "Spica's spanker (spinnaker)", the sail that towed Spica across the sky. Corvus was a handy cross-check that they were sighting on the right star.

Crux, the Southern Cross, is high in the southeast. Below it, and brighter, are Beta and **Alpha Centauri,** often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 light-years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of l.y. away. **Canopus** is also a very luminous distant star; 13 000 times brighter than the sun and 300 l.y. away.

The **Milky Way** is brightest in the southeast above Crux. It can be traced to nearly overhead where it fades and becomes very faint in the northwest, right of Orion. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one.

The Clouds of Magellan, **LMC** and **SMC** are midway down the southwest sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away.

Bright planets are in the eastern pre-dawn sky. At the beginning of the month Venus rises due east an hour before the Sun. It moves quickly up the sky morning to morning. By mid-month it will be rising 2½ hours before the Sun, a brilliant object in the dark sky. Then Saturn will be to the right of Venus and Mercury will be below Saturn. The Moon will be above Venus on the morning of the 25th and beside Mercury on the 26th.

*A **light year** (**l.y**.) is the distance that light travels in one year: nearly 10 million million km. Sunlight takes eight minutes to get here; moonlight about one second. Sunlight reaches Neptune, the outermost major planet, in four hours. It takes four years to reach the nearest star, Alpha Centauri.

Notes by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand.
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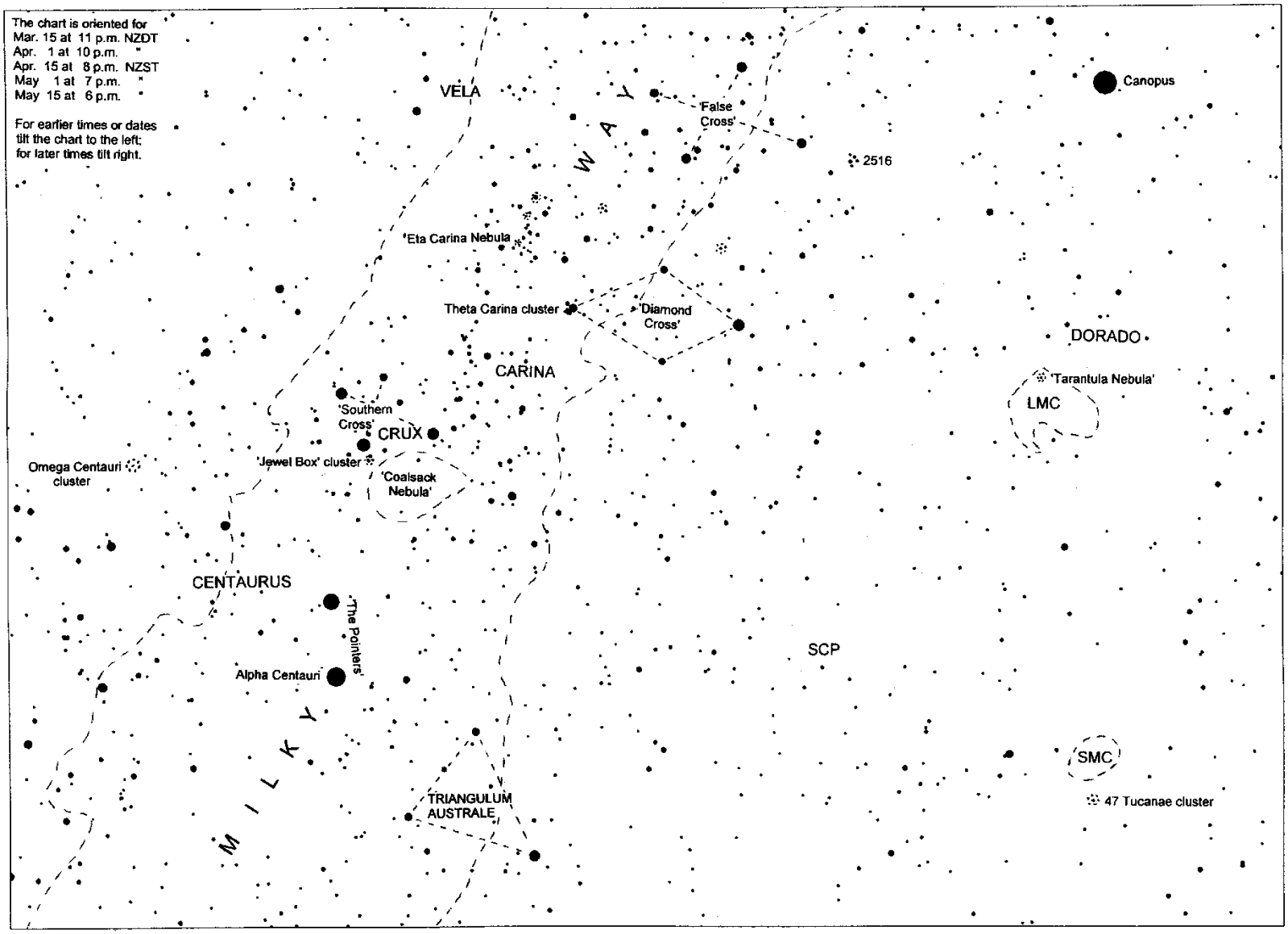

Southern Evening Sky in April-May

The chart shows the area midway up the southern sky. Interesting star clusters and nebulae are indicated with asterisks. They are described on the other side of this page.

Chart produced by Guide 8 software; www.projectpluto.com. Labels added by Alan Gilmore, Mt John Observatory of the University of Canterbury, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

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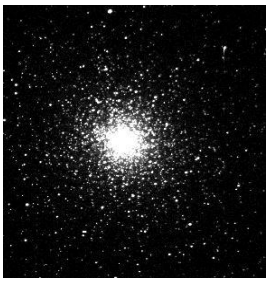
Interesting Objects in the Autumn Southern Sky

Large & Small Clouds of Magellan (LMC & SMC) appear as two luminous patches below Canopus on autumn evenings, easily seen by eye in a dark sky. They are two galaxies like the Milky Way but much smaller. Each is made of billions of stars. The Large Cloud contains many clusters of young luminous stars seen as patches of light in binoculars and telescopes. The LMC is about 160 000 light years away and the SMC 200 000 l.y away, both very close by for galaxies. (1 light year is about 10 000 billion km.)



47 Tucanae, looks like a faint fuzzy star just below the SMC. It is a globular cluster, a ball of millions of stars. A telescope is needed to see a peppering of stars around the edge of the cluster. Though it appears near the SMC it is much closer, 15 000 light years away, and is has no connection to the Small Cloud. Globular clusters are mostly very old, 10 billion years or more; at least twice the age of the sun. **Omega Centauri**, above and left of the Pointers, is similar but larger than 47 Tucanae, around 17 000 light years away.

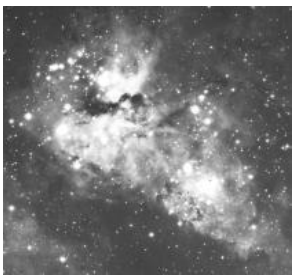
Tarantula nebula is a glowing gas cloud in the LMC. The gas glows in the ultra-violet light from a cluster of very hot stars at centre of the nebula. The cloud is about 800 light years across. It is easily seen in binoculars and can be seen by eye on moonless nights. This nebula is one of the brightest known. If it was as close as the Orion nebula (in The Pot's handle) then it would be as bright as the full moon. Both nebulae are places where vast clouds of dust and gas have recently condensed into clusters of stars.

Canopus is the second brightest star after Sirius. It is 14 000 times brighter than the sun and 313 light years away. The planets Venus and Jupiter, and sometimes Mars, are brighter.

Alpha Centauri, the brighter and lower Pointer, is the closest naked-eye star: 4.3 light-years away. Alpha Cen is a binary star: two stars about the same size as the sun orbiting around each other in 80 years. A telescope magnifying 50x will split the pair. (A very faint and slightly closer star, Proxima Centauri, orbits a quarter of a light-year, or 15 000 Sun-earth distances, from Alpha.)

Coalsack nebula is a cloud of dust and gas about 600 light years away, dimming the more distant stars in the Milky Way. Many similar ‘dark nebulae’ can be seen, appearing as slots and holes in the Milky Way. These clouds of dust and gas eventually coalesce into clusters of stars.

The Jewel Box is a compact cluster of young luminous stars 6400 light years away. The cluster formed about 14 million years ago. To the eye it looks like a faint star.



Eta Carinae nebula is a glowing gas cloud about 8000 light years away. The golden star in the cloud, visible in binoculars, is Eta Carinae. (Eta is the Greek 'e'.) It is estimated to be to be 60 times heavier than the sun and a million times brighter but is dimmed by dust clouds around it. It is expected to explode as a supernova any time in the next few thousand years. Many star clusters are found in this part of the sky.

The **Theta Carinae cluster** of stars is at one point of the 'Diamond Cross'. It is also called the 'Five of Diamonds' cluster, the reason obvious when viewed in a telescope. The cluster is 550 light years away and is around 14 million years old.

NGC **2516** is right of the False Cross. To the eye it looks like a faint comet. It is a nice sight in binoculars. The cluster is about 1300 light years away.

Text and photos by Alan Gilmore, Mt John Observatory of the University of Canterbury,
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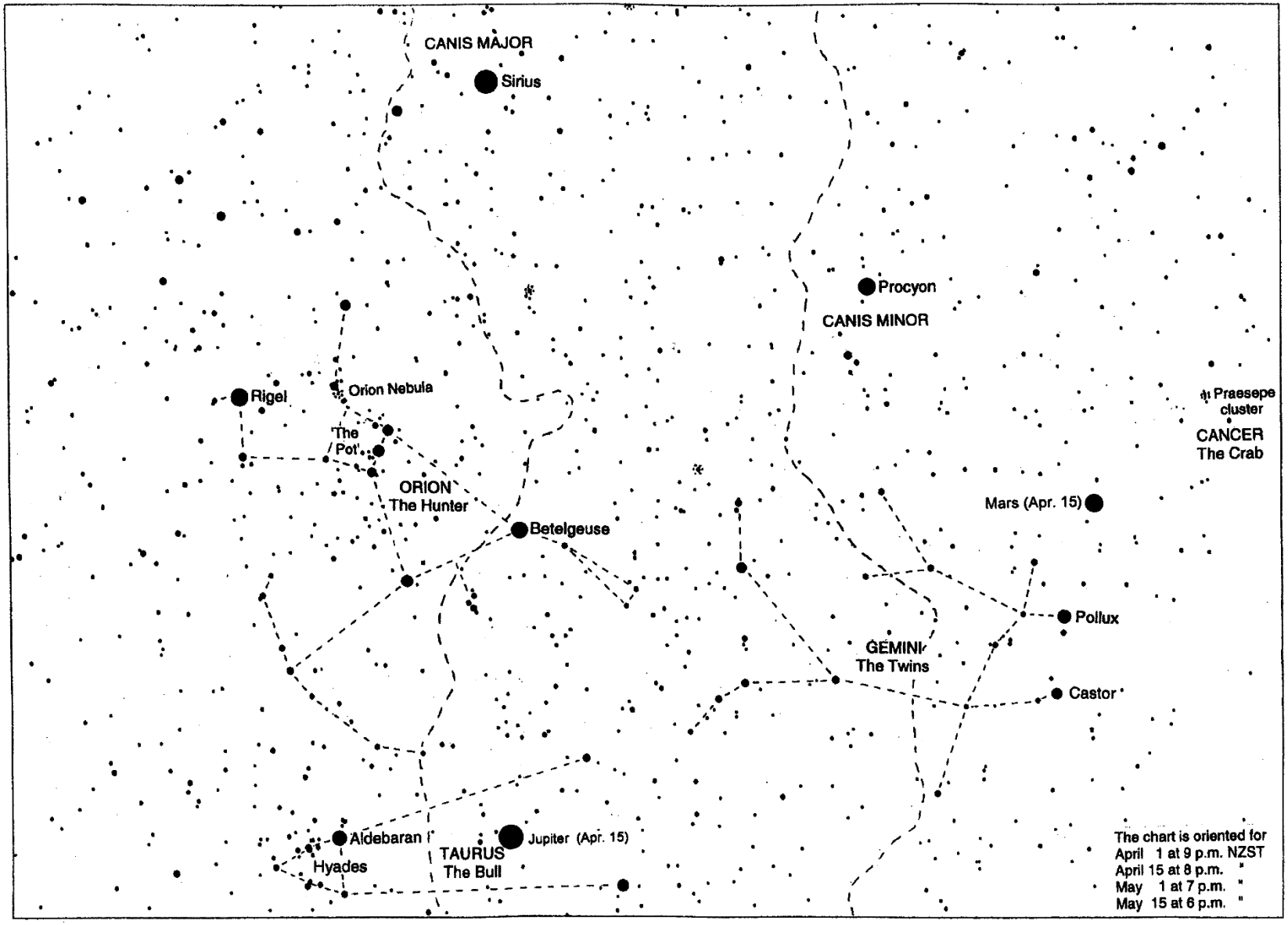

North to Northwest Evening Sky in April 2025

The chart shows the northwest to north sky in the evening. Jupiter, the brightest 'star' in the evening sky, is a beacon for the region before it sets around 9 p.m. The chart may need to be tilted to the left to match the sky, depending on the time.

Chart produced by Guide 8 software; www.projectpluto.com. Labels and text added by Alan Gilmore,
University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

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Interesting Objects in the Northwest Evening Sky in April 2025

Jupiter, the early 'evening star', is a beacon for this region before it sets. Level with Jupiter is orange **Aldebaran**, making one eye of Taurus the bull. Above Jupiter is orange **Betelgeuse**, making a shoulder of **Orion** the hunter or warrior. A long way to the right of Betelgeuse is an equally bright orange 'star', the planet **Mars**.

High above Jupiter in the northwest is **Sirius**, the brightest true star. It marks the head of Canis Major, the bigger of the two dogs following Orion the hunter down the sky. The dog's hindquarters are outlined by the stars above Sirius (off the top of the chart.) **Procyon**, roughly midway between Sirius and Mars, marks the head of the small dog, Canis Minor.

Below Mars are **Pollux** and **Castor**, the heads of Gemini the twins. Above and right of Mars is a luminous spot, the **Praesepe** star cluster marking the shell of **Cancer** the Crab. Mars moves toward the cluster through the month.

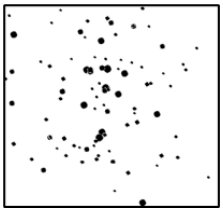
We are looking at Jupiter through a lot of air, so it is blurry in a telescope. Still, any telescope should show its four bright 'Galilean' moons lined up on each side. Not all four are seen every night as they pass in front of Jupiter and behind it and are eclipsed in the planet's shadow. Jupiter is 850 million km away mid-month as we move to the far side of the Sun from it. Mars is tiny in a telescope. It is 190 million km away mid-month and fading as we leave it behind.

Sirius is the brightest star, though star-like Venus and Jupiter, and sometimes Mars, are brighter. Sirius appears bright because it is 23 times brighter than the sun in true brightness and because it is relatively close at 8.6 light-years (l.y)* away. Sirius often twinkles like a diamond when it is low in the sky, as the air breaks its white light into separate colours.

Orion the Hunter, or warrior, is upside down in the west in our southern hemisphere view. The line of three stars makes Orion's Belt. The line of faint stars above and left of the belt form Orion's Sword in the northern view, hanging from his belt. To most southern hemisphere sky watchers the belt and sword form **The Pot** or The Saucepan, now tilted on its side.

The **Orion Nebula** is visible in binoculars as a misty glow around the middle stars of Orion's Sword or the handle of The Pot. It is a vast cloud of dust and gas about 1300 l.y. away and more than 20 l.y. across. Ultra-violet light from a massive, extremely hot star in the cloud causes it to glow. Some stars in this region are less than a million years old and a few of the brightest may be much younger still. The sun, by contrast, is 4.6 billion years old. There are many bright and dark nebulae in this part of the sky. The Horsehead nebula, a favourite of astronomy books, is beside the top star of Orion's Belt, but too faint to be seen in small telescopes.

Though paired in myths, Castor and Pollux are not related at all. Castor is a hot white star like Sirius but 52 light-years away. Golden Pollux is bigger and brighter but cooler than Sirius and 34 light-years away.



The Praesepe cluster is also called the Beehive. Binoculars show why. It is 620 million years old. Because it is old, its brightest stars long ago burned out. So its stars appear more similar in brightness than do the stars in the Pleiades/Matariki cluster (~100 million years old) or the Jewel Box (~16 million years old.) It is 580 light-years away.

The Milky Way is faint in this region as we are looking toward the nearby edge of the Galaxy's disk. Several star clusters visible in binoculars or small telescopes are marked with asterisks.

*A **light-year (l.y.)** is the distance light travels in one year: about 10 million million km (10^13 km) or 6 million million miles. Light from the sun reaches us in 8 minutes. Light from the moon gets here in 1 second. Sunlight takes 4 hours to reach Neptune, the outermost significant planet, and 4 years to reach Alpha Centauri, the nearest star.

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