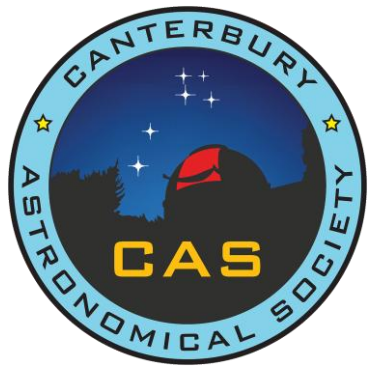




Canterbury Astronomical Society

CASMag

Upcoming Notable events for your calendar:

Aug 5, 12, 19 & 26 – Wednesday Group bookings

Aug 7, 14, 21 & 28 – Friday Public Open Nights

WE NEED YOU!!

**** Please volunteer for at least Wed and/or Friday nights – it really helps share the load & helps CAS outreach efforts – subscribe to Forum on CAS website to keep updated****

Aug 12 – 13th – Peak of Perseid Meteor Shower

Aug 18th – CAS Monthly Meeting, Jack Erskine 111 @7:30pm

- New Astronomers session 630 – 730 pm run by Orlon Petterson

- Meeting Speaker: Marcos Van Dam - Taking the twinkle out of the stars: adaptive optics on extremely large telescopes

Aug 22nd - CAS Members Night at the Observatory 600pm onwards

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Editor's Thoughts

I was out of the country for first half of July and missed all the epic nasty weather. This made for a somewhat dismal 1st week of Kids Fest until the clouds relented a little bit on July 10th!! The second week was much better and we had a few nights of really clear night and all the Kids Fest nights that went ahead were fully subscribed!! Thank you to ALL the volunteers who came out to support Kids Fest and your ongoing support for our public outreach program. The normal Wednesday group nights and Friday Public Open nights have resumed and will go on until end of September – so plenty more nights to volunteer to those interested. In this issue, a reminder to submit your astrophoto for the 2027 CAS calendar. Mandy has also written on her and John's outreach to Tamariki at Redcliffs kindergarten. Mandy has been busy and has also put together a collage of the night we lit the bonfire at CAS!! Don't forget that this month we have the Perseid Meteor Shower. This zippy light show will peak August 12 -13th and for us, it will be best in the early morning especially since it will be a very new moon 😊 Grab a rug, a hot water bottle and find a nice dark spot to see how many meteors you can spot – don't forget to do a "go away cloud dance" in the days before. The Perseid meteor shower happens each year as the earth flies through the debris of comet Swift-Tuttle. Make sure to check out Alan Gilmore's "Night Sky in August" for other wonderful things to see in our lovely winter sky. Until the next issue, clear skies everyone – Preetha

★ Help us light up ★ the 2027 Calendar!



We're on the hunt for YOUR amazing space shots!

Got a jaw-dropping nebula, a stunning galaxy,
or a local night sky that makes people go "WOW"? ★

Your photo could be in the next Cosmic Calendar! 📸



Send your best image to

calendar@cas.org.nz

Images to be submitted by **1 Oct 2026**

Let's make 2027 out of this world! 🚀

With thanks, Mandy and Dale ★



Inspiring Future Astronomers: A Stellar Matariki Outreach – by Mandy Heslop

When Bays Kindergarten in Redcliffs reached out for a Matariki celebration, Canterbury Astronomical Society member John Pickering jumped at the chance to share the wonders of the night sky. Armed with his telescope, John completely captivated the eager crowd of young tamariki and parents alike. He gave the Kindy a special Matariki pukapuka (book) and plenty of space stickers for the tamariki!

The special event kicked off with an engaged audience gathered inside, where John shared his stellar knowledge and set the perfect tone for Matariki.



Outside on the lawn, the excitement continued as the children got a thrilling, close-up look through the telescope.

The event was a massive success, wrapped up perfectly with a lovely, handwritten thank-you note from the kindergarten celebrating the donated book and stickers that were a total hit.



As the kindergarten beautifully put it: "Let's hope we have inspired future astronomers!" A massive thank you to John for volunteering his time, spreading the CAS word, and delivering such a meaningful community outreach event.





Thanks to Mandy for the photos of the bonfire we lit at the observatory for members night on July 25th. Despite the rain, thanks to Terry's judicious use of accelerants, we had a lovely blazing bonfire to toast our marshmallows.

CAS Monthly Meeting venues for the rest of 2026 at the University of Canterbury

– It's a bit of a mix so do make sure you make a note of it and head to the right room!

Date	Location	Speaker
18/8/2026	Jack Erskine 111	Marcos Van Dam - Taking the twinkle out of the stars: adaptive optics on extremely large telescopes
15/9/2026	Jack Erskine 111	Paula Jofre – Topic to be advised
20/10/2026	Ernest Rutherford 225	Ryan Ridden – Topic to be advised
17/11/2026	Ernest Rutherford 225	To be advised

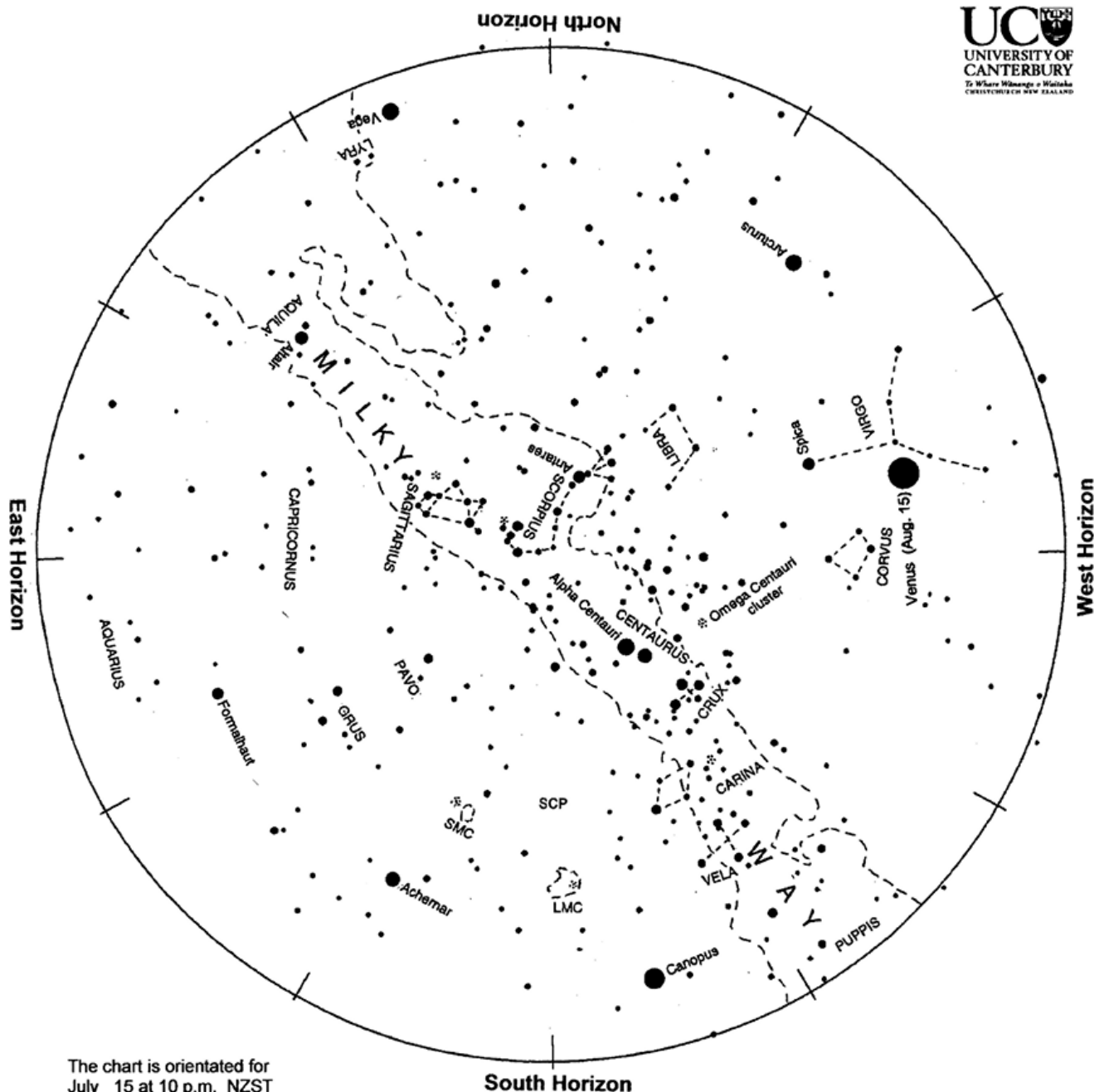
From CAS Membership - CAS Membership subscriptions were due 1st April 2026

Payment by either, bank deposit or eftpos at a meeting. If by bank deposit, please use your name and membership as a reference so it can be matched to your membership. (if you know your member number please use this). Also advise any of your contact detail changes for your membership (e.g.: address, phone number) to membership@cas.org.nz

Online Banking Details (Please identify your payment):

03 0802 0098273 00

		Full
☐	Adult (any person 18 years of age or over who is not eligible for any other category)	\$70
☐	Family (two or more persons living at the same address)	\$105
☐	Junior (under 18 years of age on 1st April in the current year)	\$35
☐	Senior (over 65 Years)	\$35
☐	Community Services Card Holder	\$35
☐	Student (any person studying full-time at a tertiary institution, must reapply annually)	\$35
☐	Corporate (members have voting rights of one member, but cannot take office)	\$210



The chart is orientated for
July 15 at 10 p.m. NZST
Aug. 1 at 9 p.m. "
Aug. 15 at 8 p.m. "
Sep. 1 at 7 p.m. "

Evening sky in August 2026

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 clockwise rotation each night as we orbit the sun.

Brilliant Venus is the 'evening star', appearing in the west soon after sunset. It sets before 10 pm. Orange Arcturus is in the northwest, often twinkling red and green. Vega is on the north skyline, balanced by Canopus low in the south. Canopus twinkles all colours. Orange Antares, the heart of Scorpius, is north of overhead with Scorpion's tail curled around the zenith. The Pointers and Crux, the Southern Cross, are midway down the southwest sky. The Milky Way spans the 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, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

The Night Sky in August 2026

Venus is the 'evening star', appearing in the west soon after sunset (or before, if you know where to look.) It sets around 9:30 pm at the beginning of the month and 10 pm at the end, a brilliant object in the dark sky. The crescent Moon will be close to Venus on the 16th. Around 3:30 pm the pair will be due north midway up the sky. Venus will be $2\frac{1}{2}^\circ$, five Moon diameters, to the right of the Moon. Once you locate the Moon in the sky, Venus will be obvious.

Though brilliant, Venus is rather boring in a telescope. It looks like a small first-quarter Moon. It is covered in dense white clouds so shows no features at all. Venus is catching up on us from the far side of the Sun and is now at its greatest angle from the Sun. Through September and October it will slip lower in the evening sky as it moves between us and the Sun.

Bright stars are widely scattered over the sky. **Vega** on the north skyline is balanced by **Canopus** low in the south. Canopus twinkles with all colours as its white light is broken up by the air. So does Vega but, being fainter, it's not so obvious. Vega sets in the northwest around midnight while Canopus swings up into the southeast sky. Canopus is the second brightest true star. (Sirius, the brightest star, is in the morning sky.) Orange **Arcturus** is in the northwest, twinkling red and green as it sets. Arcturus is the fourth-brightest star in the sky and the brightest north of the equator. Vega is the fifth brightest of all the stars and the second brightest north of the equator.

North of the zenith is orange **Antares**, marking the body of Scorpius. The Scorpion's tail hooks around the zenith like a back-to-front question mark. Antares and the tail make the 'fish-hook of Maui' in Māori star lore. Antares is a red giant star: 600 light-years* away and 19 000 times brighter than the sun. Below or right of the Scorpion's tail is 'the teapot' made by the brightest stars of **Sagittarius**. It is upside down in our southern hemisphere view.

Midway down the southwest sky 'The Pointers', Beta and **Alpha Centauri**, point down and rightward to **Crux** the Southern Cross. Alpha Centauri is the third brightest star in the sky (planets not counted) and the closest of the naked-eye stars, 4.3 light-years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away and thousands of times brighter than the sun.

The **Milky Way** is brightest and broadest overhead in Scorpius and Sagittarius. In a dark sky it can be traced down past the Pointers and Crux into the southwest. To the northeast it passes **Altair**, meeting the skyline right of Vega. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The thick hub of the galaxy, 27,000 light years away, is in Sagittarius. The actual centre is hidden by dust clouds in space. The nearer dust clouds appear as gaps and slots in the Milky Way. Binoculars show many clusters of stars and some glowing gas clouds in the Milky Way.

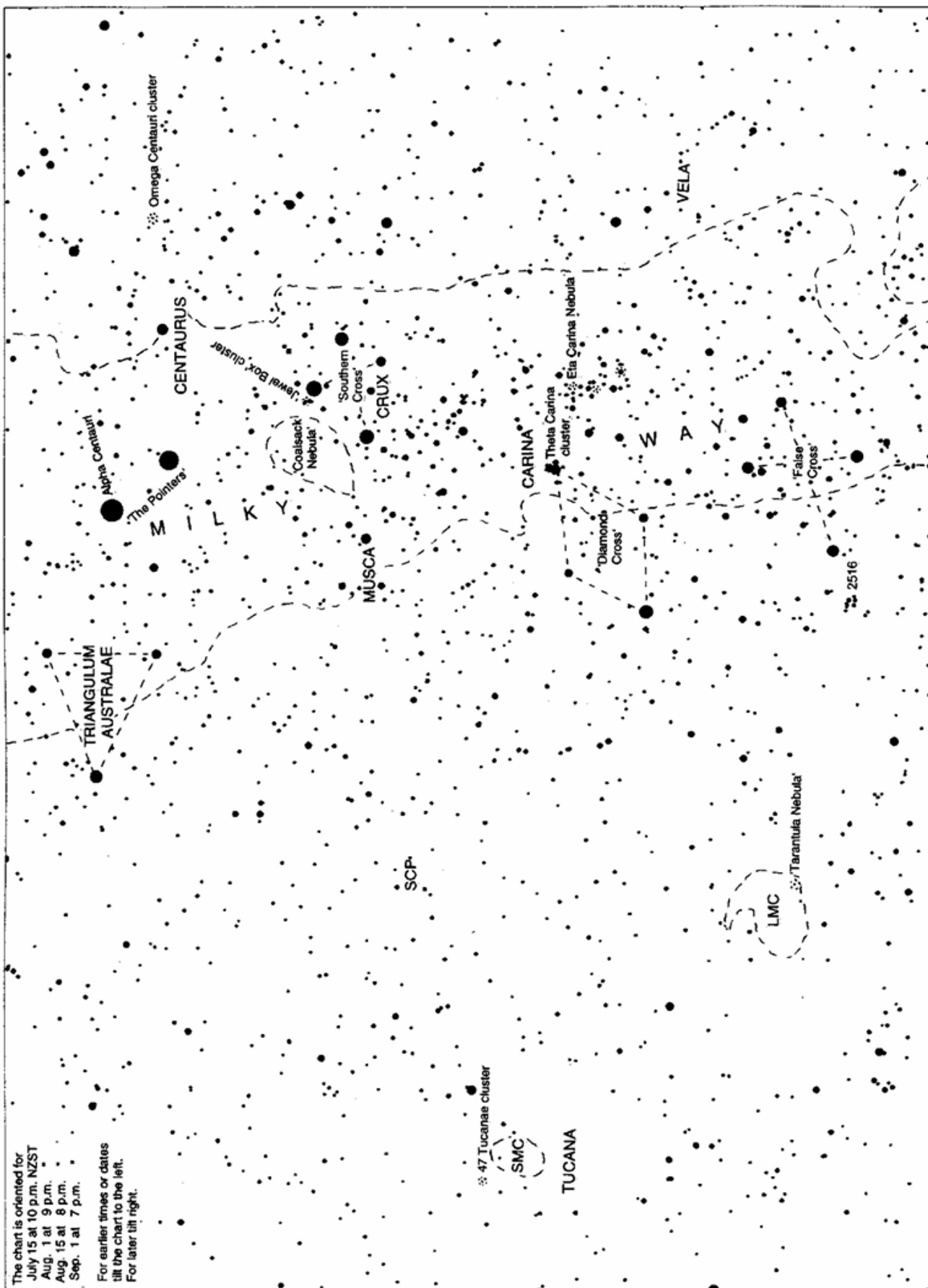
The Large and Small Clouds of Magellan **LMC** and **SMC** look like two misty patches of light low in the south, easily seen by eye on a dark moonless night. They are galaxies like our Milky Way but much smaller. The LMC is about 160 000 light years away; the SMC about 200 000 light years away.

Saturn rises due east around 11 p.m. at the beginning of the month and around 8:50 at the end (so isn't on the chart.) It looks like a medium-bright star with a cream tint, all on its own.

At the end of the month golden Jupiter is rising an hour before the Sun, so might be seen in the dawn twilight from places with a low eastern skyline.

On the 28th the rising full moon might look a little odd. It has just emerged from the dark centre of Earth's shadow, the umbra, and is moving out of the shadow's fuzzy edge, the penumbra. It leaves the penumbra just after 7 pm.

*A **light year (l.y.)** is the distance that light travels in one year: nearly 10 million million km or 10^{13} 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 for sunlight to reach the nearest star, Alpha Centauri.



The chart is oriented for
 July 15 at 10 p.m. NZST
 Aug. 1 at 9 p.m.
 Aug. 15 at 8 p.m.
 Sep. 1 at 7 p.m.

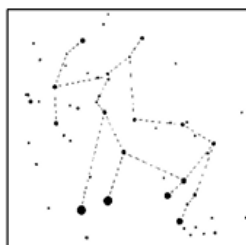
For earlier times or dates
 tilt the chart to the left.
 For later tilt right.

Southern Evening Sky in August

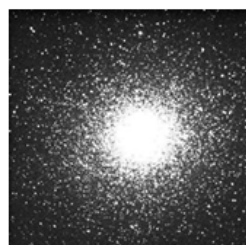
The chart shows the southern and southwest sky. Interesting star clusters and nebulae are indicated with asterisks. They are described on the other side of this page.

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

Interesting Objects in the Southern Sky



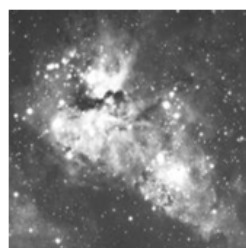
Centaurus, with the bright 'Pointers', and **Crux** the Southern Cross, are in the southwest sky. They make a tight grouping of bright stars. Originally Crux was the hind legs of the Centaur, the horse-man of Greek mythology. The complete Centaur, with bow, is outlined at left. It was only in the 17th Century that Crux was split off as a separate constellation. The slow wobble of Earth's axis allowed this part of the sky to be seen from more northerly places in ancient times. The fainter Pointer and the three bluish-white stars of the Crux are all super-bright stars hundreds of light years* away. Alpha Centauri is just 4.3 light years away and the reddish top star of Crux is 90 light years from us.



Omega Centauri, to the right of the Pointers, is a globular cluster, a ball-shaped cluster of millions of stars. Its total mass is six million times the sun's mass or weight. It is 17 000 light years away and 200 light years across. Globular clusters are very ancient, around 10 billion years old, twice the age of the sun. Omega Centauri is the biggest of the hundred-odd globulars randomly orbiting our galaxy. It may originally have been the core of a small galaxy that collided with the Milky Way and was stripped of its outer stars.

Coalsack nebula, above and left of Crux, looks like a hole in the Milky Way. It is a cloud of dust and gas 300 light years away, dimming more distant stars. Many 'dark nebulae' can be seen along the Milky Way, appearing as slots and holes. These clouds eventually form new stars.

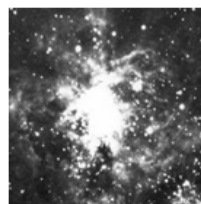
The Jewel Box is a compact cluster of young bright stars about 7000 light years away. The cluster formed less than 10 million ago. To the eye it looks like a faint star close by the second-brightest star in Crux. A telescope is needed to see it well.



Eta Carinae nebula, a luminous spot in the Milky Way below Crux, is a glowing gas cloud about 8000 light years from us. The thin gas glows in the ultra-violet light of nearby hot young stars.

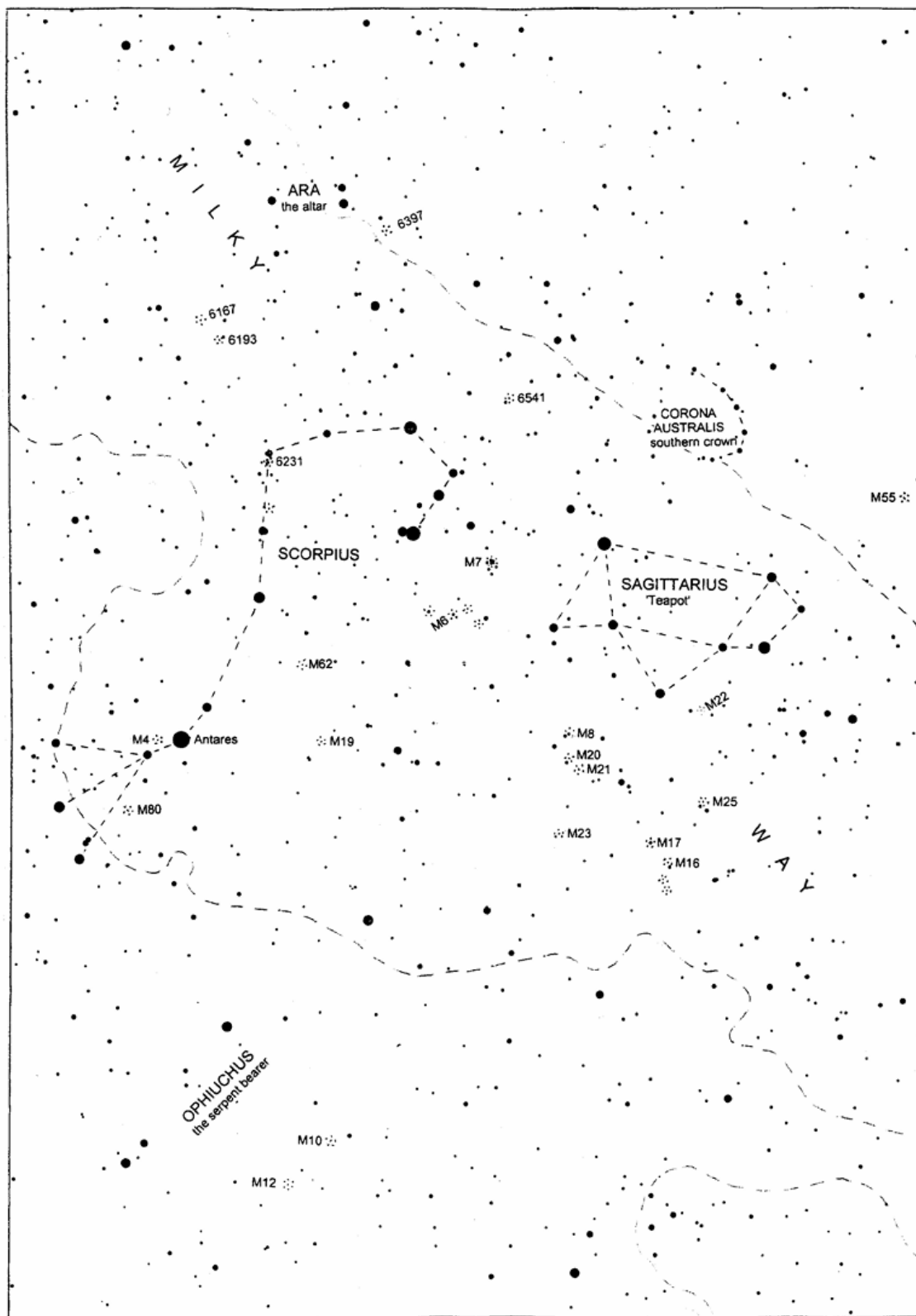
The golden star in the cloud, visible in binoculars, is Eta Carinae. It is estimated to be 60 times heavier than the sun. It is a million times brighter than the sun but is dimmed by dust clouds around it. It is expected to explode as a supernova in the next few thousand years. Many star clusters are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

Large & Small Clouds of Magellan (LMC & SMC) appear as two luminous clouds, easily seen by eye in a dark sky. They are galaxies like the Milky Way but much smaller. Each is made of billions of stars. The Large Cloud contains many clusters of young bright stars seen as patches of light in binoculars. The LMC is about 160 000 light years away; the SMC is around 200 000 light years away, very close by for galaxies.



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 the 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 (seen in 'The Pot' in the summer evening sky) then it would be as bright as the full moon.

*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.



The Sky North of Overhead at Evening in August

The chart shows the sky north of the zenith at nightfall. The Milky Way is here bright and broad as we look toward the centre of the galaxy. Many star clusters and a few nebulae are seen, some obvious to the naked eye. Those visible in binoculars or small telescopes 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, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz



Interesting Objects North of Overhead in August

Antares is the brightest star in the region. It is orange coloured; being a 'red giant' star. (The 'red' of red giants is usually more an orange tint.) It is around 600 light years* away, 19 000 times brighter than the sun, and three times bigger than Earth's orbit. Its mass or weight is about 12 times that of the sun, so most of the star is very thin gas spread around a hot dense core. Red giants are the last stage in the evolution of stars. The dense core of the star has shrunk and heated. The outer regions of the star have expanded to a very spread-out gas. The core is wringing the last of the thermo-nuclear energy out of elements like helium, carbon, oxygen and neon. Relatively soon the core of Antares will run out of energy and collapse, triggering a spectacular supernova explosion. (The sun will become a red-giant in about seven billion years time but it ends up as a white dwarf star, not a supernova.)

Antares marks the heart of Scorpius. In the evening around this time of year the Scorpion has its tail curled around the zenith and its head down into the north sky. The sting is the near-vertical line of bright stars pointing toward Antares. In Maori star lore the tail's hook is the 'fish hook of Maui'.

At the right-angle bend in the tail is a large and bright cluster of stars, NGC **6231**, looking like a small comet. It is around 6000 l.y. away. Its brightest stars are 60 000 times brighter than the sun. The cluster is about 8 light years across, similar in size to the Pleiades/Matariki cluster in our summer sky. Were it as close as the Pleiades (400 l.y.) then its brightest stars would be as bright as Sirius. Below and right of the Scorpion's sting is **M7** a cluster obvious to the eye and nicely seen in binoculars. M7 is about 800 l.y. away and around 260 million years old. (The older a star cluster, the fewer bright stars it has.)

Below the sting and fainter is **M6**, the 'butterfly cluster'. M6 is around 1300 l.y. away and is half the age of M7. Other clusters worth a look in binoculars are **M21**, **M23**, NGC **6167**, and NGC **6193**. The 'M' objects were listed by the 18th Century French astronomer Charles Messier. He hunted comets, so made a catalogue of fuzzy objects that could be mistaken for comets. The NGC (New General Catalogue) objects shown are bright enough to have been seen by Messier but are too far south to be seen from Paris.

Below and left of the Sagittarius 'Teapot' is the glowing gas cloud **M8**, the 'Lagoon Nebula'. It is a star-forming region where gas and dust have recently gathered into new stars. ('Recently' = the past million years or so.) Ultraviolet light from one particularly hot star is lighting up the leftover gas, making it glow. On colour photos it appears pink due to hydrogen atoms fluorescing in the UV light. Below M8 is **M20**, the Trifid Nebula, small glowing patch in binoculars, also a pink hydrogen region in photos. Right alongside it is a blue reflection nebula where starlight is scattered by dust. Other nearby nebulae (gas and dust clouds) are **M16** and **M17**.

Globular clusters, spherical clusters of ancient stars, are found throughout the region. The brightest is **M4** by Antares. It is also one of the closest at 10 000 l.y. away. In binoculars and small telescopes 'globes' appear as round fuzzy spots. Others marked on the chart are **M9**, **M10**, **M12**, **M14**, **M19**, **M22**, **M55**, **M54**, **M62**, **M80** and NGC **6541**. The concentration of globular clusters in this area was an early clue that the centre of the galaxy lay in this direction.

This part of the Milky Way is broad and bright as we are looking to the centre of the galaxy. The actual centre, 27 000 light years away, is hidden from our view by intervening dust clouds. The nearer clouds make gaps and slots along the Milky Way. The hub of the galaxy is a great sphere of stars, called the 'central bulge'. Some of the central bulge is glimpsed in gaps between the dust clouds. At the very centre lies a black hole four million times the sun's mass but only the size of our solar system. Infra-red telescopes, peering through the dust, show stars orbiting the invisible black hole at high speed. By plotting the movements of these stars over the past two decades, astronomers have been able to deduce the mass of the central black hole and its distance. All big galaxies have a massive black hole at their centre.

Members Interest Section

This section is for members who have as an interest under the umbrella of Astronomy. Your interests could be around Meteors / Comets / Photometry / Solar observing / Photography / Telescope building / Spectroscopy / Aurora's / Occultation's / Variable Stars / Satellite tracking / Lunar observations/ Jupiter impact monitoring / Radio Astronomy / Eclipses. You are welcome to share your thoughts and see who other like minded people would like to join you. You can form your own interest section. Below are a few members who have started their own interests sections. You can also use the CAS forum to discuss other ideas to check out who else would be interested in starting a new members interest section.

- **Tune into Jupiter or the Sun with Radio Astronomy**

Radio astronomy can be done during the day and even cloudy nights. Terry has built a receiver and with his computer can log activity of the Sun and Jupiter.

For more information contact Terry Richardson, email: president@cas.org.nz Cell: 021 776 458

- **Bounce Signals off the Moon**

Beam a signal at the Moon or at a lunar orbiting satellite

For more information email: president@cas.org.nz

- **Spectroscopy**

CAS has recently purchased a diffraction grating which can be attached to a telescope eyepiece or camera on the telescope. The grating, like a prism, spreads the light from starlight into component colours (distribution of wavelengths). Thus begins the engaging look into the not so private lives of stars, nebulae and galaxies.

For more information contact Ray Pointon, email: rpointon@cyberxpress.co.nz

Other Information

***** IMPORTANT NOTE - UC PARKING *****

There are bollards now installed by the Rehua Building and these will be raised at 6pm daily till 7am. Do not park in the areas by these as you risk getting locked in! Please note its just this one area where the EV chargers are located that has been protected by bollards. All the rest of the campus remains the same. Be wary where you are parking!! The map at this link shows where accessibility parks are >>> <https://www.canterbury.ac.nz/about-uc/our-campus-and-environment/maps>

CASMag will be published every alternate month at the very least but if there are sufficient articles of interest submitted, CASMag can be published monthly. CASMag will contain information on CAS activities, articles contributed by CAS members or others with interest in astronomy which members may find interesting, monthly star charts. Members new and experienced, young and mature are invited to send in your contributions and these can be short articles (50 – 100 words) on what your experience has been being a CAS member, what you have learnt, what astronomy projects you're working on, astronomy or astronomy related images etc. Send your contributions to Editor@cas.org.nz by the 3rd week of the month at the latest.

Application for Membership

If you wish to apply for CAS membership, then please head on over to our website <https://cas.org.nz/register> to register and apply for membership.

Contacts information:

For Public Group Bookings - bookings@cas.org.nz

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