



Canterbury Astronomical Society

CASMag

Upcoming Notable events for your calendar:

May 2nd – *Simon's Memorial at CAS Observatory, West Melton starting at 6:30 pm. Please bring a plate & your best Simon story to share*

May 1st, 8th, 15th, 22nd & 29th – *Public Open nights (Fridays)*

May 6th, 13th, 20th & 27th – *Groups Booked (Wednesdays)*

**** Please consider volunteering ****

May 6 – 7th – *Peak of Eta Aquarids Meteor shower*

May 15 – 17th – *RASNZ Conference in Blenheim*

May 19th – *CAS Monthly Meeting in Jack Erskine 111, University of Canterbury; Speaker Steve Weddell on Tracking, imaging and restoration of LEO satellites*

May 23rd – *CAS Members Night at the Observatory*

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Editor's Thoughts

April has been busy with the start of our winter open nights at the observatory. As I write this, we have had two successful nights out at the observatory – one with the Cashmere Cubs where we had about 47 total kids and parents attend the Wednesday and last Friday's open night where we had almost a full house of attendees. Fortunately, both times even though it looked a bit dicey at the start, the clouds parted to reveal a wonderful star filled sky. Best of all is the delight everyone had seeing the wonders of the night sky through the different telescopes and binoculars we had. The "ooh"s and "wow"s are always very gratifying to hear. I do urge anyone who has ever thought of volunteering to give these nights a go – if you are a member, you can attend these nights but better is to learn about the night sky and try your hand at showing off the splendor of our heavens. It does not take much as the stars and planets do all the heavy lifting. May is also going to be very busy – starting with a Memorial to Simon on Saturday May 2nd out at the observatory – we hope you will be able to join us in remembering our remarkable President and fellow astronomer – the BBQ will be lit and going with Chrissie (Simon's wife) as BBQ chef. Everyone can bring a plate to share along with your memories of Simon doing what he did best – talking about astronomy and astrophotography and manning the BBQ. There is also the RASNZ conference which I and some other CAS members will be attending from May 15 – 17 in Blenheim. Hopefully I'll be able to fill you in on that in the next CASMag. Until then, clear skies everyone – *Preetha*



This year Stardate SI ran from Thursday 19th to Sunday 22nd of March, which is a bit later than previous Stardates. It was attended by about 30 - 35 people where some, like myself, attended the whole event and others attended a night or just for the day. Attendees and presenters came from as far North as Auckland and as far South as Cromwell. I have enjoyed every astronomy camp I have attended so far even the ones where no stars showed up to the party. Stardate always has a good balance of talks, social time and stargazing time. This year we had Andrew Buckingham from AstrONZ and Auckland Astronomical Society do a very entertaining and informative night sky workshop INSIDE – this workshop is very useful for everyone to learn how to identify and navigate from some of the more prominent stars and objects. Andrew also kicked off Saturday morning with a talk about astronomy equipment and how to choose the ones that will work for your astronomy interests.

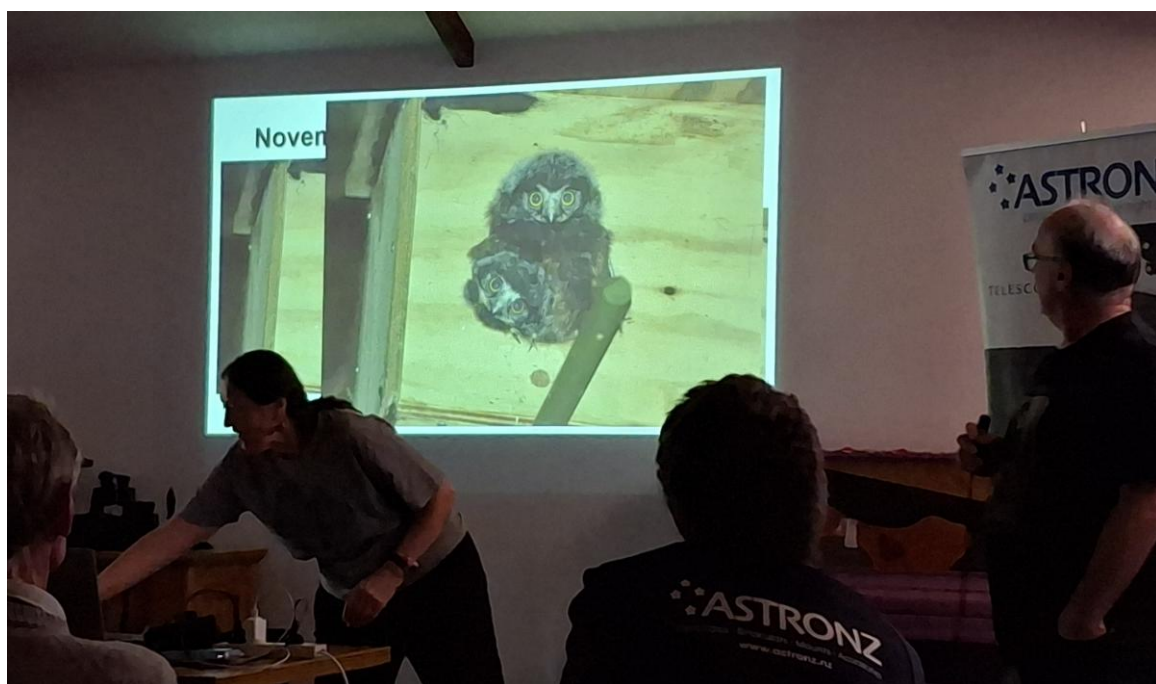
CAS member Prof. John Pickering gave a talk on “Skymapper.io”, which is an initiative to map our skies. This is currently in its beta test and mostly using Unistellar telescopes to form a worldwide network to which people can connect their Unistellar telescopes to for the purpose of gathering data to map our sky. This network working in concert with other telescopes will collect data not only on things like newly identified Near Earth Objects (NEO) but also provide data to satellite companies so they can refine and identify where their satellites are. John’s talk had much more details but the take home message was “We are getting close to the time when anyone without their own telescope can enjoy doing astronomy and 'viewing' through this telescope network”.

We had the pleasure of having Olga and Kevin from Auckland at Stardate SI this year and they gave a “astronomy adjacent” talk. Their talk was on the little Morpork Owl or Ruru and how their



interest in astronomy and ornithology crossed. As Olga pointed out, we have many Owl related objects in our night sky - the Little Owl constellation, the Owl nebula M97, the open star cluster NGC457 sometimes referred to as the Owl cluster. But

Olga and Kevin used some of their astronomy equipment to observe their neighborhood Rurus. They described how they tempted a pair of Rurus to nest in their native garden by designing and building a very attractive nesting by box (the design of which you can get from Kevin if you email him at olgakevin66@gmail.com). From there they described their adventure documenting the lifecycle of their Rurus, the trials and tribulations of this little family of small owls. It was great to see enthusiasm they had for their little owls and the kind of equipment they invested in to enable observing their little feathered neighbors, very much like astronomy, but I must say the Rurus are so much cuter.



They also advised on how to create a garden which will tempt Rurus to move in. Their key message “horizontal nesting boxes at least 8 - 10 m above ground in a thickly foliated tree free of wandering predators esp free ranging cats are the way to get little owls as neighbors”.

Some talks were highly entertaining, such as the one given by Chris. Chris is a longtime Stardate SI



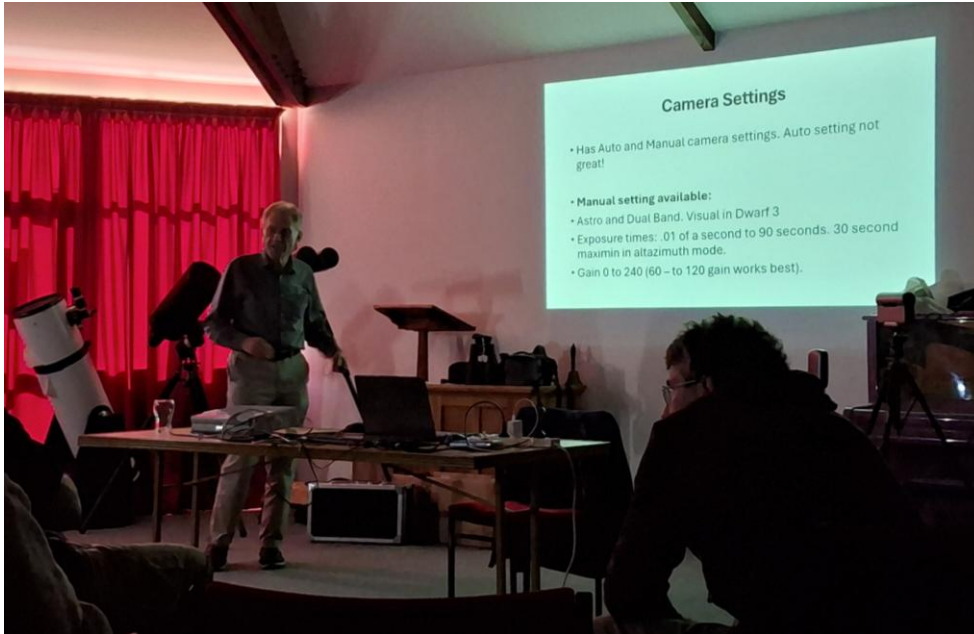
attendee. He gave a great talk on the science and (un)science in popular science fiction films, examining how much creative license was taken. At the end we were all convinced that the movie “The Core” is the least accurate sci-fi movie ever made and for anyone who watched the movie Armageddon – it was used by NASA to train staff in identifying the science errors in the movie - to date about 168 errors have been identified but there is no list of what these errors were and I was

surprised there were not more!!

At the end of Saturday’s talks members of other astronomical societies present gave an update on their societies:

- Andrew Buckingham on Auckland Astronomical Society - a very active society with 600+ members with many families being members, they livestream their monthly meetings which I have watched myself (You do not need to be a member of their society, just need to subscribe to their YouTube channel)
- Hibiscus coast Astronomical Society by Alistair - relatively small group of 30 members but very knowledgeable members. A member Chris Benton, who is an ex-GP and professional astronomer, does talks on space medicine. The society also has many children under 10 years of age who are members and these kids chair a members meeting once a year!
- Nelson Astronomical Society by Dennis Goodman – who talked about their outreach activities and how the society has attracted more and more enthusiastic younger members joining. Approaching 100 members now.
- Canterbury Astronomical Society by Terry Richardson - about 220 members and spoke about the challenges of trying to engage members in monthly meetings. He also spoke about how active CAS becomes in winter with our public open nights, kids’ fest and other outreach activities like having a presence at the Hororata Highland Games and Hororata Night Glow.
- Ashburton Astronomical Society by Alistair Perkins – they meet up once a month despite being a small group of 15 – 18 members. They do not have the benefit of an observatory but still do outreach activities. Greg Hay also announced that the Ashburton Art Gallery had approached their society looking for a wide field image for their Matariki campaign, specifically an image showing a field from Orion to Matariki - to cover a whole gallery wall. Anyone interested to submit an image for this can email Greg at “deb4greg@gmail.com”

With my own SeeStar Smart Telescope the talk by Gavin Logan on his experience with the Dwarf 3 and the Dwarf mini was very interesting. Given the physical size of the Dwarf smart



telescopes, the images they deliver are very impressive. I liked that the Dwarf telescopes come with their own Stellar studio which to me was a plus as there is no need to get different software for post processing. Gavin did highlight the strengths and the weaknesses of these telescopes but overall, he has been quite happy with the portability and quick setup from these little scopes. We are fortunate to have an article by Gavin in this issue on this topic

which I hope CAS members will find useful.



Saturday talks were followed by a Saturday night of great night of observing and socializing under a lovely star filled dark sky. These pictures are from a time lapse Rob did using the SeeStar S30 Pro of the activity on the field.

I went galaxy hunting with my SeeStar S50 and got nice a image of the Southern Cross galaxy...so named as the galaxy sits within stars in the shape of the Southern Cross; I also got a image of the Tweezer galaxy and the Southern Pinwheel galaxy.

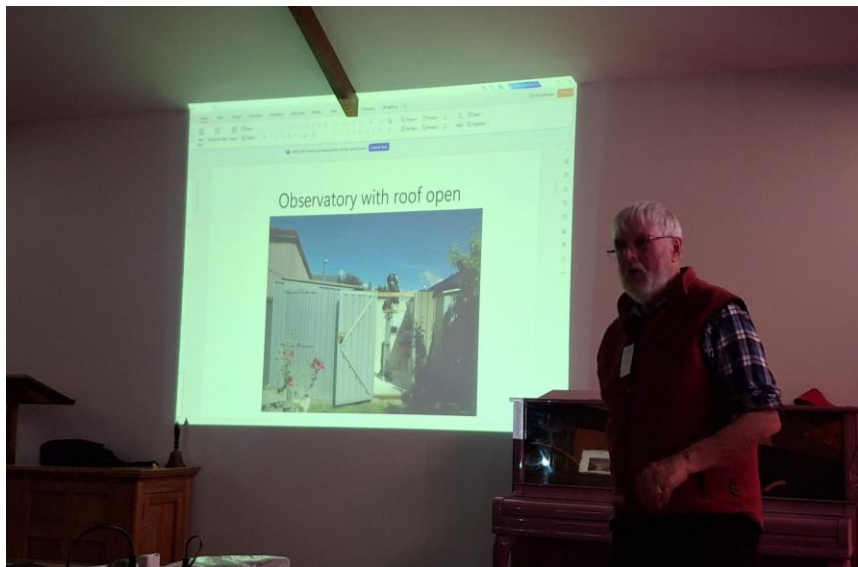


On Sunday, the fun did not stop with Rob doing his talk on the Clouds of Magellan where he provided tips on how you can navigate using the more prominent features in the clouds to navigate to some lovely objects with binos and/or telescopes in both the SMC and LMC. Rob has a few charts which he offered for people to download to explore areas in the LMC noting some interesting DSOs.



The next morning, we had a raffle and three people walked away with some great prizes donated by AstronZ. This was followed by two more talks - Rob talked about his project doing spectroscopy with the SeeStar S50, presenting some cool colorful findings using homemade gratings on his SeeStar S50 of a Wolf Rayet star and of evolving Nova.

This was followed by Ron Paine from Cromwell who presented on his project of how he captures the occultation of a star by an asteroid. It gave us all an appreciation of how interest and passion with much patience and dedication this type of project takes. Dale did very well to organize registrations and as always had a table of astronomy related items for people to browse and acquire. Mandy did very well organizing the group potluck. All in all, a well-organized astronomy camp.



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Next year Stardate SI 2027 will be held from Thursday February 4th – Monday February 8th (Waitangi long weekend) at Staveley Camp – 4 whole nights of possible dark skies!! You can choose to attend the whole weekend or a day or two days.

April Outreach activity – Rockets and Runways at the Wigram Air Force Museum by Mandy Heslop

CAS had a table at this event organized by the Christchurch Rocketeers. This year it was held on April 19th and was attended by 2,977 attendees. It was an incredibly busy morning for the CAS table! So much so I didn't even get the chance to do my usual "Hi we're the Canterbury Astronomical Society and we've got a fully functioning Observatory in West Melton...." etc etc. People just wanted to buy our merch! Thank you Ray, Terry, Carol and Heather for talking to the crowd about the scopes and the Society! We had a great location and were able to spread out. Thank goodness for the Rocket launch about midday which cleared the crowds for a short time. This allowed us a chance to go to the loo and grab a quick bite to eat. The afternoon crowd slowly filtered through and that's when after a table reset, we realized we had sold out of a LOT of items! Pretty sure our sales were impressive! If anyone has fun ideas they've thought of to do during outreach activities let us know! I grabbed some space books from the Scholastic book sale for myself and went back to get some for CAS. They were gone within the hour.

The little Telescopes that deliver big results: DWARF 3 and DWARF Mini – by Gavin Logan



The author with his 2 Dwarf Telescopes

Smart telescopes are a new popular phenomena in amateur astronomy. These small robotic instruments that plate-solve, track, and stack without the usual astrophotography ritual, are becoming increasingly popular. The smallest, most portable of these are made by Dwarf Labs.

Over the few months I've been running two of their latest models, the Dwarf 3 and the Dwarf Mini, in differing conditions from suburban Auckland's light polluted skies to the darker, rural skies, of the South Island and Wairarapa. Both are small enough to disappear into a backpack. They can be running exposures within minutes and are far more capable than their size suggests.

Both operate on a standard camera tripod or can be operated without a tripod, by putting them on a reasonably level solid surface like a park bench.

Two Different Designs

The Dwarf 3 is the more of an allrounder instrument. It's built around Sony's IMX678 sensor, a bigger 1/1.8" - 8.3 megapixel chip paired with a 35 mm F4.3 telephoto lens and a secondary wide-angle camera. It feels like a device designed to do everything: wide field nebulae, panoramas, terrestrial photography, even casual wildlife shots. It carries a built-in filter changer giving the choice of visual for terrestrial photography, astro and dual band filters for astrophotography. It has a generous 128 GB of internal storage.

The Mini, by contrast, is more specialized. It's lighter, smaller, and astro-focused. The IMX662 sensor is more modest on paper (2.1 megapixel), but the camera is tuned for astrophotography with a larger pixel size, deeper well, cleaner color and lower noise. The aperture is slightly smaller at 30mm running at F5. It doesn't attempt to be a hybrid device. It focuses on being a good astrophotography tool.

These are short focal length instruments so neither of these scopes are good for planetary imaging, which requires long focal lengths. They are made for deep sky imaging.

The Workflow

Anyone who has used a smart telescope knows the appeal: level the unit, connect your phone or tablet, pick a target, and watch the machine do the rest. Both Dwarf models follow that formula, but with options to manually control or change most of the parameters.

Once the telescope slews and centres the target, the live stack begins. Stars sharpen, nebulosity blooms and noise falls away. You can sit back and watch the image assemble itself like a Polaroid developing in slow motion.

Most Dwarf users will quickly abandon the auto settings which are serviceable, but not subtle and switch to using the manual exposure and gain settings. The sweet spot for these scopes is: 15 to 30 second subs, gain between 60

to 120, and enough total integration time to build a good image and let the noise settle. Usually, a stack of 70 to 100 frames is enough.

It's astrophotography without the ritual of polar alignment (although this mode is available), guiding, or cable management. It is not a replacement for a full rig, but a remarkably satisfying alternative.

These scopes track very well and will do 30 second frames in altazimuth mode without any difficulties. For longer exposures or long periods of taking frames on very faint targets equatorial mode can be used. This involves more set up time but allows for exposures of up to 90 seconds (3 minutes on the Mini) and eliminates the cropping of images caused by field rotation. This requires a reasonably good camera tripod, but is something worth graduating to.

The Dwarf Mini automatically subtracts dark frames, flat and bias in the exact quantity needed. The Dwarf 3 asks you to take some at the start of a session. You have the option to skip that and either it will use any darks already stored on the device or stack without Dark Frames.

Under the Stars: How They Actually Perform

In the city

Auckland's suburban glow is a difficult test for any form of astrophotography, yet both Dwarf models handle it surprisingly well particularly in Dual Band Mode.

The Mini, though, has an edge here. Its automatic dark-frame subtraction and larger pixel size and deeper well give it a cleaner, richer look. The color balance is more natural. The noise floor is lower. Even under sodium-orange skies, the Mini produces images that feel polished rather than rescued.



The Running Chicken Nebula taken in Dual Band with the Dwarf Mini in suburban Auckland.

Under dark skies

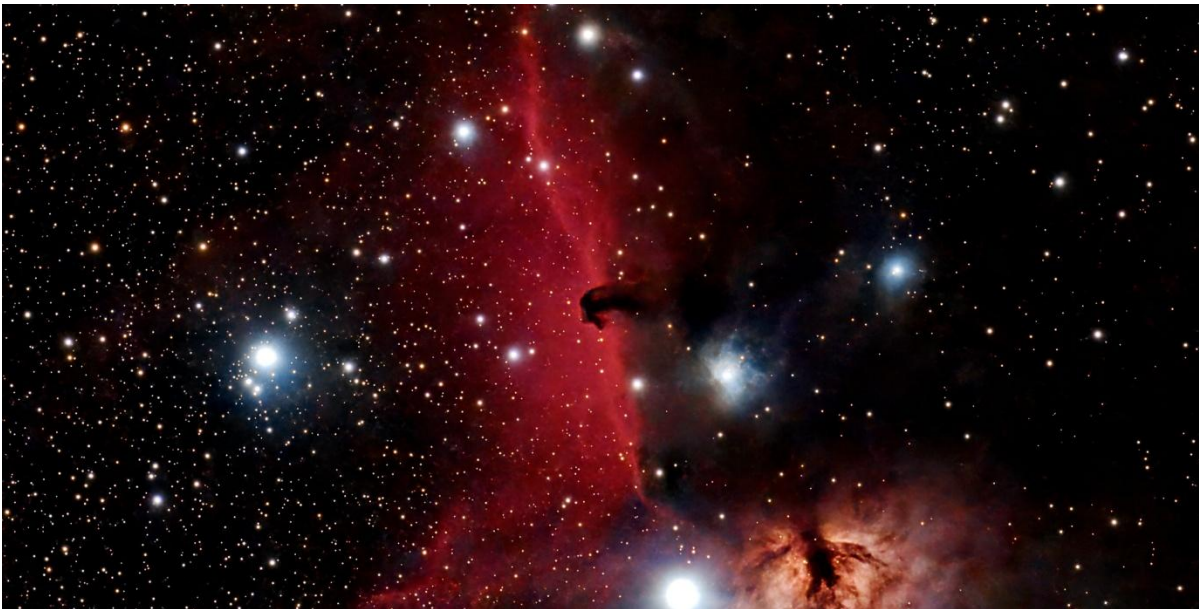
Take either telescope to the dark rural skies and they will amaze.

The Mini, in particular, becomes a little powerhouse. One hour on M83 reveals spiral structure with a clarity that belies the 30 mm aperture. The Statue of Liberty Nebula pops with sculpted detail. Eta Carinae becomes displays excellent colour and texture. The Horsehead Nebula looked great after only a 37 minute run of 30 second subs.

The Dwarf 3 also performs well, especially on wide-field targets like the Orion Nebula and Running Man combination, but the Mini's cleaner colour, better sensitivity to the reds of nebula and lower noise gives it a consistent advantage.

Control of dew is not an issue with these scopes. This is automatically controlled and I have never had a problem with the scopes dewing up or getting dirt on the front objective lens.

The Horsehead Nebula taken in 37 minutes from a rural location with Mini.



Where Each Telescope Stands Out

The Dwarf 3 is the better choice if you want versatility. Its wider field of view, panoramic mode, and daytime imaging make it a more flexible companion. It's the one you'd take on a

road trip if you want a single device that can shoot both astro images and landscapes.

The Mini is the better astrophotography instrument. It's lighter, easier to pack, quicker to deploy, and produces brighter, cleaner images with less fuss. It's the telescope you grab when you want to travel light and still come home with something worth sharing.

After months of side-by-side use, the conclusion is straightforward: for pure astrophotography, the Dwarf Mini is the stronger performer.

Stellar Studio processing

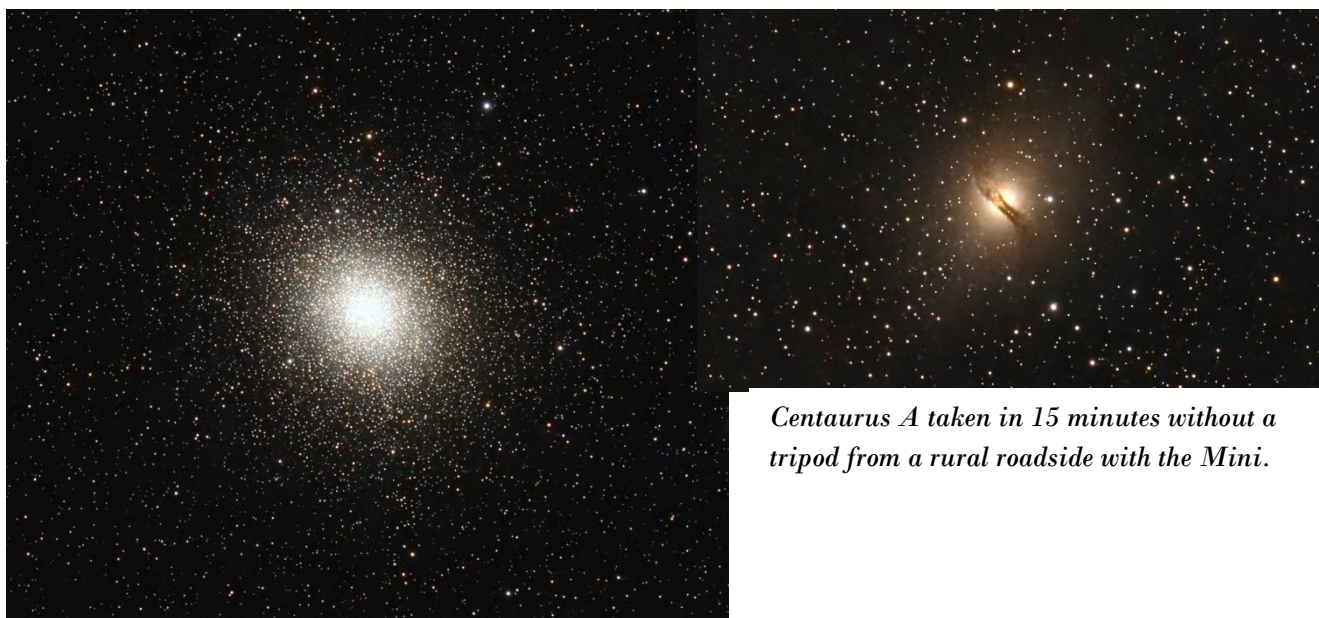
Dwarf Lab provide an excellent processing tool in Stellar Studio, which uploads the stacked images and offers, noise reduction, star correction or auto to improve your stacked image. This is great to get a quick result, but I

usually do more work on my images in Photoshop or sometimes restack all of the frames in dedicated astrophotography software to get the result that I want.

Stacked images can be downloaded as a Fit, PNG, or Jpeg file.

Neither of these instruments will fully replace a dedicated telescope and camera on a guided equatorial mount. They're not meant to. What they offer instead is immediacy and portability, the ability to capture deep sky objects on a whim, without setup anxiety or a car full of gear or to take an astrophotography device on an airline flight.

For people who want a portable, low maintenance way to image deep sky objects, both Dwarf models are genuinely compelling. But the Mini, with its cleaner output and effortless workflow, is the one that keeps ending up in my bag.



Centaurus A taken in 15 minutes without a tripod from a rural roadside with the Mini.

Omega Centauri taken from a Rural location with Mini.

CAS members in the news

Just before the launch of Artemis II on its trip around the moon in April, our very own Rob Glassey was interviewed by TVNZ on why this launch was important in getting back to the moon. The interview aired on March 29th 6pm TVNZ news. Not to be outdone, Prof John Pickering, our intrepid Unistellar enthusiast was featured in Euro news for his efforts in capturing Artemis II speeding past the stars. Check out the video credit <https://www.euronews.com/next/2026/04/15/watch-amateur-astronomers-on-earth-catch-artemis-ii-speeding-past-the-stars>

Events/Programmes of interest

The Ashburton Astronomical Society has organized the following talks in Ashburton:

- **Monday May 18th** - Dr Martin George will present a talk in Room 17, Ashburton Christian School, Albert Street Ashburton 7.30pm - the subject being 'Brilliances, blunders or just plain luck'.
- **Saturday May 23rd** - Wayne Orchiston will present a talk on Meteorites of New Zealand in Room 17, Ashburton Christian School, Albert Street Ashburton 7.30pm

All welcome though there may be a cover charge to cover cost of the venue

Te Tohu Tātai Whetū (Level 4) is a new programme from Te Wānanga o Aotearoa

- This programme introduces Māori astronomy. Explore how the sun, moon, and stars guide time, ceremony, and our connection to the natural world, while gaining practical knowledge of the maramataka, navigation, and cultural practices. Whether you're looking to deepen your understanding of Māori knowledge or reconnect with traditional ways of living, this programme offers a unique journey through the skies and into everyday life. Enrolments for programme starting in July are currently open and filling fast. You can get more information about this programme at <http://twoa.ac.nz/tatai-whetu>

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
19/5/2026	Jack Erskine 111	Tracking, imaging and restoration of LEO satellites by Steve Weddell
16/6/2026	Jack Erskine 111	Zac Lane (Postgrad in Supernovae/Cosmology) – topic TBA
21/7/2026	Ernest Rutherford 225	Karina Leppik, Engineer at the Giant Magellan Telescope Near Infrared Spectrograph – topic TBA
18/8/2026	Jack Erskine 111	To be advised
15/9/2026	Jack Erskine 111	To be advised
20/10/2026	Ernest Rutherford 225	To be advised
17/11/2026	Ernest Rutherford 225	To be advised

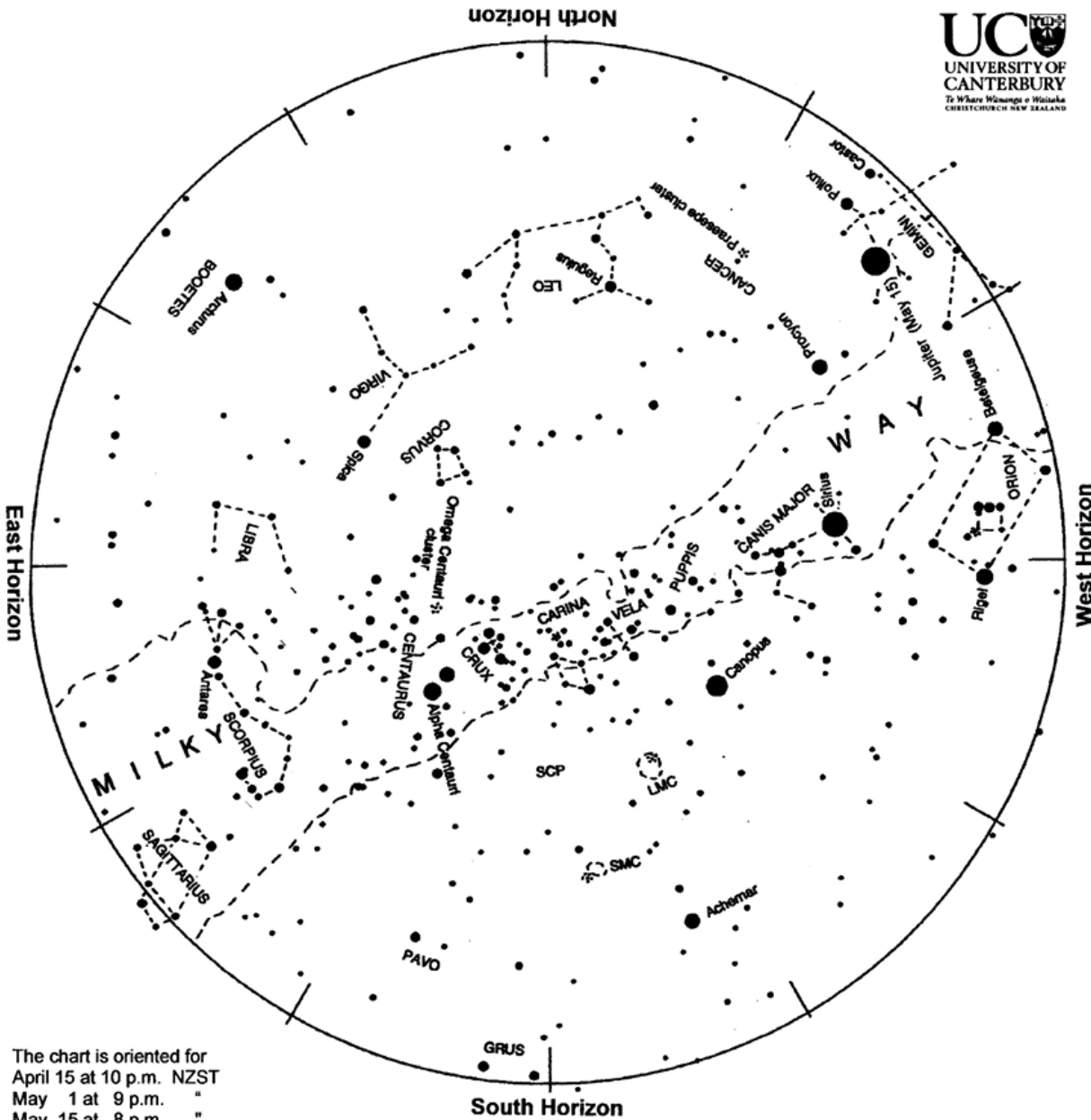
From CAS Membership - CAS Membership subscriptions are due 1st April 2026

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



The chart is oriented for
 April 15 at 10 p.m. NZST
 May 1 at 9 p.m. "
 May 15 at 8 p.m. "
 June 1 at 7 p.m. "

Evening sky in May 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 westward shift each night as we orbit the sun.

Jupiter and Venus are the 'evening stars', appearing in the north and northwest soon after sunset. Venus sets before 8 pm, so isn't on the chart. Sirius, the brightest true star, is midway down the western sky. Directly below it are bright stars Rigel and Betelgeuse with 'The Pot' between them. Canopus, the second brightest star, is southwest of overhead. Crux, the Southern Cross, and the Pointers, Alpha and Beta Centauri, are southeast of the zenith. Orange Arcturus, low in the northeast, often twinkles red and green. Scorpius, with orange Antares at its heart, is low in the southeast sky where the Milky Way is broadest and brightest.

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 Night Sky in May 2026

Venus and **Jupiter** are the 'evening stars'. Both appear in the northwest soon after sunset. Silver Venus is low in the sky; golden Jupiter is higher. Venus sets around 6:50 pm at the beginning of May and around 7:20 at the end (so isn't on the chart). Jupiter sets around 9:50 at the beginning of the month and soon after 8 pm at the end. By the end of the month the two planets will be getting close together. (They will be just 1.6°, three full-moon widths, apart on June 10.) The Moon will be near Venus on the 19th and near Jupiter on the 20th.

As the sky darkens **Sirius** appears midway down the western sky. It is the brightest true star and twinkles with all colours when setting in the southwest in the late evening. It is the 'Dog Star', marking the head of **Canis Major** the big dog, now head down, tail up. **Canopus**, the second brightest star, is southwest of overhead. Below Sirius are bluish **Rigel** and reddish **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.

Orange **Arcturus** is the brightest star in the northern sky, rising in the northeast at dusk. It often twinkles red and green when low in the sky. It is 37 light-years* away and about 120 times brighter than the sun.

Crux, the Southern Cross, is southeast of the zenith, to the right of 'The Pointers'. **Alpha Centauri**, the brighter Pointer, 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 light years away. Canopus is also very luminous and distant: 13 000 times brighter than the sun and 300 light-years away.

Following the Milky Way down into the southeast finds **Scorpius**. Orange **Antares** marks the Scorpion's body. The scorpion's upside-down tail curves to the right of Antares. There is a Greek legend that the Scorpion and Orion were always fighting so a goddess put them on opposite sides of the sky, so they never appeared in the sky together. It doesn't work for the southern hemisphere. The Moon hides (occults) Antares on May 31st. It moves in front of the star around 7:30 or later, depending on your location. Antares reappears around 8:40.

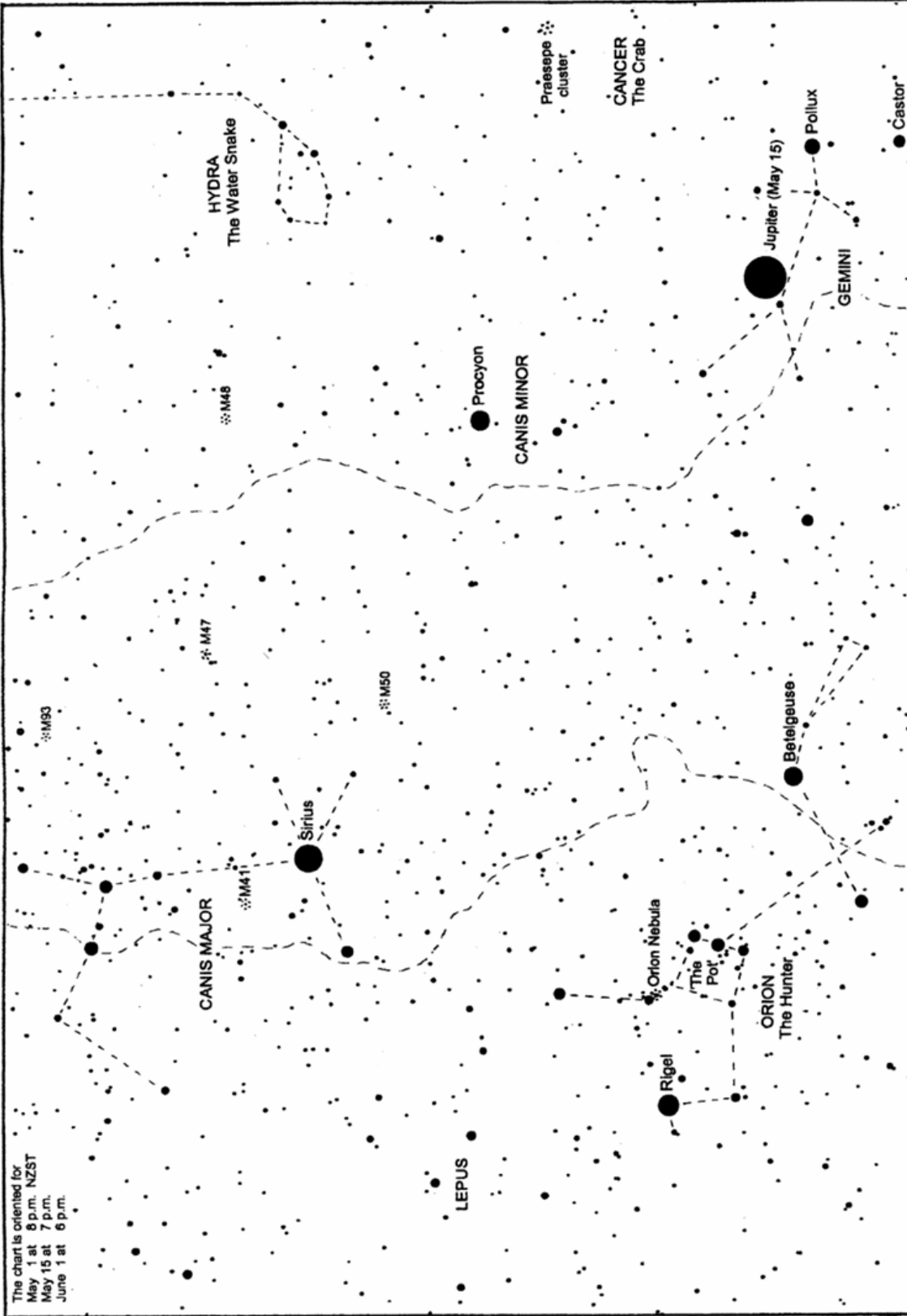
The **Milky Way** is brightest in the southeast toward **Scorpius** and **Sagittarius**. In a dark sky it can be traced up past the Pointers and Crux, fading toward Sirius. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The thick hub of the galaxy, 27 000 light-years away, is in Sagittarius. The nearby outer edge is by Orion where the Milky Way is faintest. A scan along the Milky Way with binoculars shows many clusters of stars and some glowing gas clouds, particularly in **Carina** and **Scorpius**.

The Clouds of Magellan, **LMC** and **SMC**, are midway down the southern sky, easily seen by eye on a dark moonless night. They are small galaxies. The Large Magellanic Cloud is 160 000 light-years away and the Small Cloud is around 200 000 light-years away. They are much smaller than our Milky Way Galaxy but there are many billions of stars in each.

Some meteors might be seen in the pre-dawn sky around May 6-7 as the Eta Aquarid meteor shower peaks. Up to 30 meteors per hour can be seen in a dark sky but at this year's peak there is a bright Moon hiding the fainter meteors. The shower runs from late April to late May. The meteors are dust from Halley's comet, hitting the air at high speed and burning up.

At the beginning of the month three medium-bright planets make a vertical line low in the eastern dawn sky. Saturn, cream coloured, is highest. Below Saturn, and a bit fainter, is reddish Mars. Mercury is at the bottom of the line, rising 70 minutes before the Sun. Mercury soon sinks into the twilight as it moves to the other side of the Sun. Saturn moves higher, rising around 2:30 a.m. at the end of May. Mars stays put, rising around 5 a.m. through the month.

*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 sunlight four years to reach the nearest star, Alpha Centauri.



Northwest Evening Sky in May 2026

The chart shows the northwest sky in the evening. Jupiter, the brightest 'star' in the evening sky (after Venus sets), 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.

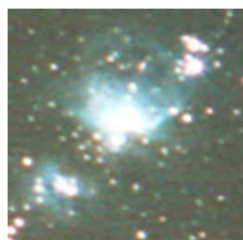
Chart produced by Guide 8 software: www.projectpluto.com. Labels and text added by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

Interesting Objects in the Northwest Evening Sky in May 2026

Jupiter, the higher of the two 'evening stars', is a beacon for this region. It appears low in the north soon after sunset. At the beginning of the month it sets in the northwest around 9:50 p.m. At the end of May it sets around 8:10. We are looking at Jupiter through a lot of air, so it is often 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 860 million km away mid-month.

Midway down the western sky is **Sirius**, the brightest true star, but fainter than Jupiter. 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 disperses its white light into separate colours.

Below Sirius are bluish **Rigel** and orange **Betelgeuse**, the brightest stars in **Orion** the hunter or warrior. Orion is upside down in our southern hemisphere view. The line of three stars between Rigel and Betelgeuse makes Orion's Belt. The line of faint stars above and left of the belt form Orion's Sword hanging from his belt in the northern hemisphere view. To most southern hemisphere sky watchers the belt and sword form **The Pot** or The Saucepan, now tilted on its side.



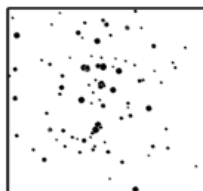
The **Orion Nebula** is visible in binoculars as a misty glow around the middle stars of Orion's Sword or the handle of The Pot. It is a vast cloud of dust and gas about 1300 l.y. away and more than 20 l.y. across. Ultra-violet light from a massive, extremely hot star in the cloud causes it to glow. 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.

Sirius 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. Well to the right of Sirius, and lower, is **Procyon**, marking the head of the small dog, Canis Minor.

Below Orion, near the northwest skyline, is orange **Aldebaran** making one eye of Taurus the bull.

To the right of Jupiter, and a little lower, are **Pollux** and **Castor**, the heads of **Gemini** the twins. 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.

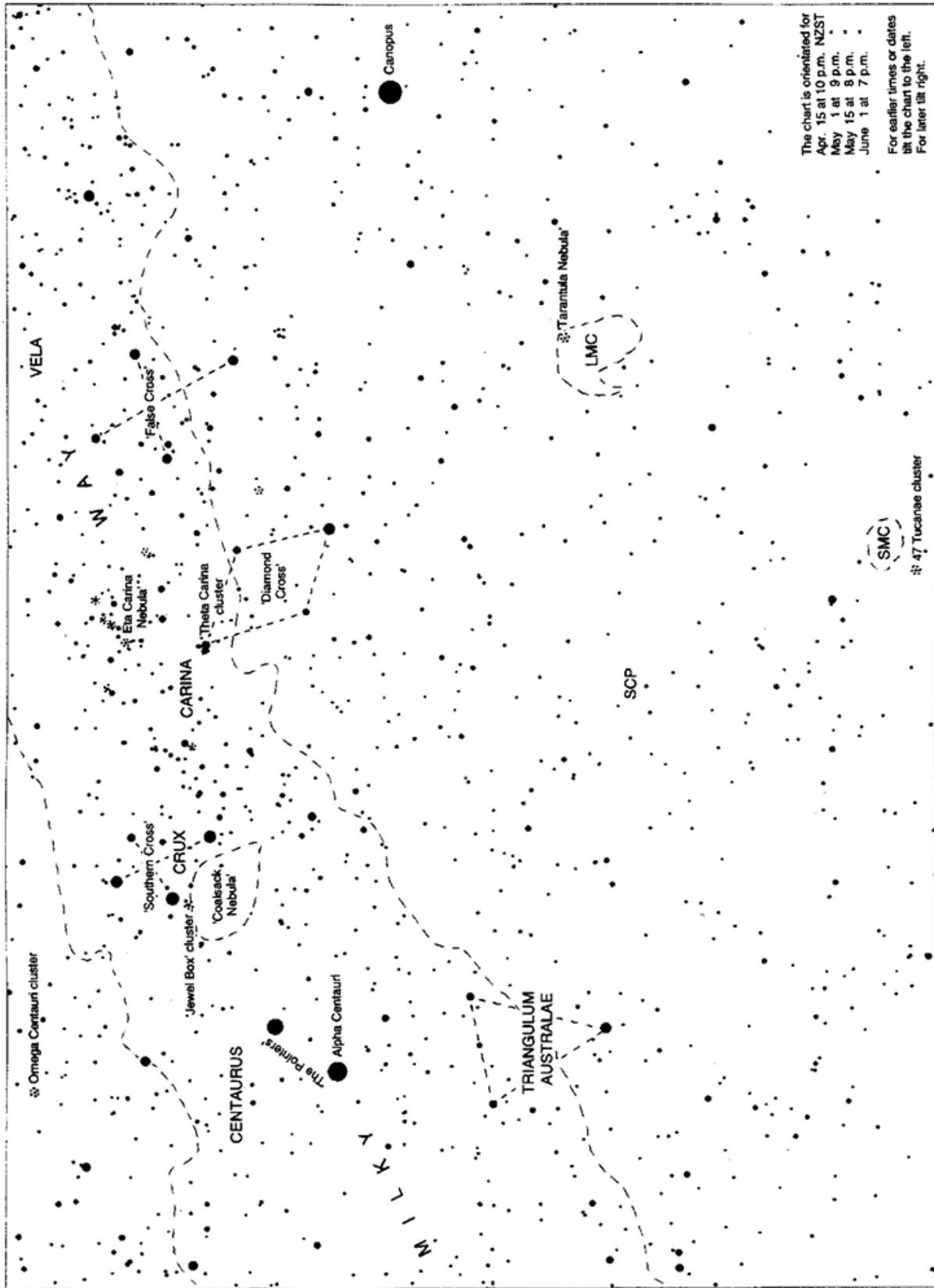
Well above and right of Jupiter and the Twins is a luminous spot, the **Praesepe** star cluster, marking the shell of **Cancer** the Crab.



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.



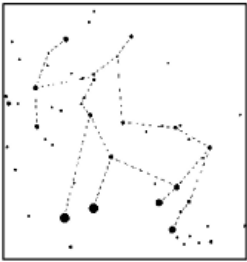
Southern Evening Sky in May

The chart shows the area of sky from just south of overhead to midway down the southern sky. Interesting star clusters and nebulae are indicated with asterisks. They are described on the other side of this page.

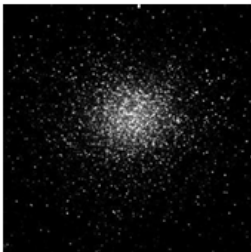
Chart produced by Guide 8 software: www.projectpluto.com. Labels added by Alan Gilmore, University of Canterbury's Mt John Observatory
 P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz



Interesting Objects in the Southern Sky



Centaurus, with the bright 'Pointers', and **Crux**, the Southern Cross are south-east of overhead, the tightest grouping of bright stars in the sky. 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.

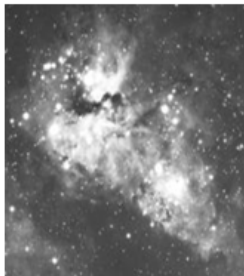


Omega Centauri, also southeast of the zenith, is a globular cluster, a ball-shaped cluster of millions of stars. Its total mass is six million times the sun's mass or weight. It is 17 000 light-years away and 200 light-years across. Globular clusters are very ancient, around 10 billion years old, twice 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.

47 Tucanae, by the SMC, is a similar sort of cluster 16 000 l.y. away.

Coalsack nebula, left of Crux, looks like a hole in the Milky Way. It is a cloud of dust and gas 600 light years away, dimming the distant stars in the Milky Way. Many 'dark nebulae' can be seen along the Milky Way, appearing as slots and holes.

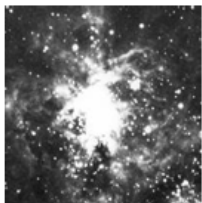
The Jewel Box is a compact cluster of young luminous stars 6400 light-years away. The cluster formed about 14 million years ago. To the eye it looks like a faint star.



Eta Carinae nebula, a luminous spot in the Milky Way to the right of 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 [Greek 'e'] Carinae. It is estimated to be to be 80 times heavier than the sun. It is four 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.

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 Large Cloud is 160 000 light-years away, the Small Cloud 200 000 light-years; 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 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, 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 to reach the nearest star, Alpha Centauri.

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, nebulas 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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