



CASMAG

The official magazine of the Canterbury Astronomical Society

www.cas.org.nz www.facebook.com/CanterburyAstronomicalSociety

Monthly Meeting: Our Monthly Meetings are held on the 3rd Tuesday night of the month.

Our meeting venue is room ER225 in the Ernest Rutherford building at Canterbury University. Level 2

Refreshments from 7.30pm

Meeting starts at 8pm

19th July Members Meeting

Speaker: Prof John Hearnshaw

Topic: Satellite Constellations as a new threat to ground based astronomy
In this talk I will focus on the plans to launch tens of thousands of low-Earth-orbit (LEO)satellites by a number of companies, including SpaceX and OneWeb, for global internet communications. These satellites result in trails that degrade wide-field imaging by astronomical telescopes.

BONUS TALK:

John will also share the images produced from the James Webb Space Telescope (JWST) and give an insight into the scientific aspects of the images.

We are holding a 2nd BBQ & Bon-fire Event on 30th July 2022

No bookings necessary (new members please note)

Fun starts at 5.30-6pm until late.

As normal CAS will provide the all important basics: meat breads sauces etc. Please bring salads, sweet things, chips dips and soft drinks along to share, plus any special dietary needs of your own.

You are also welcome to BYOD as well but remember kids will be present. Marshmallows and sticks will be provided for dessert served al a carte.... round the bonfire!

We hope to have some special overseas guests present too!

Our BBQ's are always a winner - This event will happen wet or fine

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From Your Editor

This is your Casmag, for YOU our members,
So I welcome any ideas or articles you would like to share with the other members. Please email your Article or favourite photo with details so I can include it in future issues.

Deadline for each issue is 1st of each month

Remember you can have your advert added in the future casmag's,
(email editor using editor@cas.org.nz)

Any questions, Ideas or suggestions please email to editor@cas.org.nz

Dale Kershaw

From 7.2.4.6 on page 15 of Constitution of the Society

"Any member wishing to have an article or paper published in CASMAG or other publications of the society shall in the first instance, forward a copy to the editor who may request the approval of the committee before publication."

DISCLAIMER:

This newsletter is for general information purposes only. The views expressed herein are not necessarily those of the Canterbury Astronomical Society Inc (CAS)

CAS has taken all reasonable measures to ensure that the material contained herein is correct, but gives no warranty for, and accepts no responsibility for its accuracy or completeness.

Readers are advised not to rely solely on this information, and should seek independent advice before making any decision, CAS reserves the right to make changes at any time,

CAS Calendar July-September 2022



JULY

Saturday 9th	KidsFest Starts cont until 24th
Tuesday 12th	Committee Meeting
Thursday 14th	Full Moon
Tuesday 19th	CAstronauts @ University 6.30-7pm
	Members Meeting @ University from 7.30pm
Thursday 21st	Last Quarter
Sunday 24th	KidsFest Ends for 2022
Friday 29th	New Moon
Saturday 30th	<u>2nd Mid-Winter BBQ @ Observatory</u>

AUGUST 2022

Friday 5th	First Quarter
Saturday 6th	New Members Night @ Observatory
Tuesday 9th	Committee Meeting
Friday 12th	Full Moon
Tuesday 16th	CAstronauts @ University 6.30-7pm
	Members Meeting @ University from 7.30pm
Friday 19th	Last Quarter
Saturday 20th	Members Night @ Observatory
Saturday 27th	New Moon

SEPTEMBER 2022

Saturday 3rd	New Members Night @ Observatory
Sunday 4th	First quarter / Fathers Day
Saturday 10th	Full Moon
Tuesday 13th	Committee Meeting
Sunday 18th	Last Quarter
Tuesday 20th	CAstronauts @ University 6-30-7pm
	Members Meeting @ University from 7.30pm
Saturday 24th	Members Night @ Observatory
Monday 26th	New Moon

2022 Open Night Season

All members are able to attend our public nights and we would love it if you would give a hand on the night, Full training is given and it's a good way for learning how to operate the telescopes

Our 2022 **Public Open Night** season has started and is every fine Friday Evening. Updates are posted on the website in forums and also on our Face book page mid Friday afternoon

Volunteers are asked to sign up on our volunteer page as this helps the organisers to plan the nights events

<https://cas.ivolunteer.com/>

Kidsfest is on 9th -24th July this year further details closer to the time

Private Group Bookings normally are done on Wednesday evenings set at weekly or 2 week intervals and these are advised via the website and email

Our members as volunteers are requested to assist, full training is given if you are new to helping out. Ask if you have any questions

IMPORTANT UPDATE FROM YOUR COMMITTEE

Covid-19 level Operations

While most of this information has stayed the same there are some changes!!

Traffic Light **ORANGE** restrictions.

Public Open Nights: We have started these for this years session,

If you plan to volunteer please sign up via our volunteer page at

<https://cas.ivolunteer.com/>

(We will still be following all government rules/suggestions for safe events)

CAS Events At the UC:

We are now back to using our room at the University for our monthly Meetings Room ER225

Training nights and Members nights at the observatory have restarted on our normal Saturday nights, 1st Saturday and the Saturday following the Tuesday members meeting

Observatory Use. Do not visit the observatory if unwell.

Please sign in using the COVID tracer app using the QR code in the lodge.

If you intend to remain outside and not enter the lodge at anytime then there is no requirement to enter the lodge to sign the logbook.

If you wish to wear a mask please do so.

Please maintain your hygiene as per our past suggestions

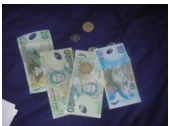
Wash / sanitise hands using the gear provided.

Do not clean optics as the sanitising chemicals can cause damage to equipment.

Please follow the rules at the observatory if visiting, and please stay safe



2022 ANNUAL SUBSCRIPTIONS/MEMBERSHIP



Payment for the **2022 Year is now due** and
can be paid
via internet banking, PayPal, cash in person,



Please use your name and member number for your reference when making payment, (this means it can be matched to your membership)

*Also the committee asks you to **PLEASE** advise any change to your details: Address, Phone Number, email,*

If these details are not updated we will be unable to contact you.

Membership Fees and Banking payment details are included on the back page of every CASMAG

MONTHLY MEETINGS:

Meeting Venue:

**Room ER 225 in the Ernest Rutherford Building, University of Canterbury,
(1 building over from the east building we used last year)
Entrance to the building will be via the north side entrance,
Then using the lift or stairs up to level 2**

Carol McAlavey is asking you, our members to make suggestions or offer to give a talk at our monthly meetings.

PLEASE CONTACT CAROL WITH YOUR SUGGESTIONS OR IF YOU CAN GIVE A TALK via member2@cas.org.nz

Upcoming Members Meeting Dates:

19th July: Prof John Hearnshaw

Topic; Satellite constellations as a new threat to ground-based astronomy

16th August: Ken Mc Masters

20th September: SoapBox

18th October:

15th November:

NO Meetings are held in December or January

2023

21st February:

(correct as at 10th July 2022, Subject to change as required)

Many thanks go to Sharlene Wilson and Orlon Petterson from the School of Physical and Chemical Sciences, University of Canterbury for arranging the meeting room for CAS this year.

Also Thanks to Associate Professor Karen Pollard for organising the Lecture theatres for our public talks

We will update the website if there are any changes and will host meetings via ZOOM if possible:

CAS YOUTUBE CHANNEL

Have a look at our new you tube channel

<https://www.youtube.com/channel/UChLhFm7yaLUTlgH3IjvA11g>

CAS MERCHANDISE

Cas branded items for sale

Coffee Mugs are \$15.00 each

Pens are also available to members (extras are \$2.50)

**A NEW STYLE OF PENS AND STAINLESS DRINK BOTTLES
ARE NOW ON ORDER WILL BE AVAILABLE SOON**

“Watch this space”

Waterproof Stickers with our logo are also available
2022 Cosmic Calendar

Reduced to \$7.50 please see Dale or Simon.

~~\$15.00 (Pickup)~~ ~~\$20.00~~ \$12.50 (Posted)

CAS Beanies: Now in stock.

Wool Blend Beanie with the CAS logo in the front: \$20.00

CAS Sew-On LOGO Badges: Now in stock \$10.00 each

The following we will take orders and then we will order the items, 1-2 weeks delivery from order)

We have samples of each of the following items

Cas Soft Shell Jackets = Sizes S— 8XL \$65.00

Cas Polo Shirts = Sizes S—5XL \$45.00

Cas Zip Front Polar Fleece Jackets = Sizes 2XS -5XL \$47.00

Cas T-Shirts = Sizes 3XS—8/9XL \$22.00

I have the full sizing charts on hand so you can make sure you are ordering the correct size.

Payment can be cash or bank deposit

They are available from Editor (Dale),

contact via editor@cas.org.nz

or 0272426376



Members Interest Section



This section is dedicated to members on what **you** have as an interest under the umbrella of Astronomy.

Do you like: 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 ?

Or

Do you have other interests that you would like to share and see who else would enjoy knowing some more? Form your own interest section.

Here's a couple of ideas that if you would like to know more about Then contact Terry or Simon.

You can also use the CAS forum to discuss other ideas to check out who else would be interested.

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.



Terry Richardson
member1@cas.org.nz
 Cell: 021 776 458

Bounce Signals off the Moon

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



Simon Lewis
Vice.president@cas.org.nz
 Cell: 022 640 6649

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.

Ray Pointon
rpointon@cyberxpress.co.nz

WELCOME TO OUR NEW MEMBERS:

A warm welcome to our new members, We look forward to meeting you at our meetings and/or events, Please make yourselves known to others. We like to welcome our new members here after the membership is accepted by the committee at the meeting following memberships are received.

Welcome to

Leigh Berg

Priti Patel

Fiona Bach

Karen Sloane

John Chua

Letitia Collins

Tyler Bowman



*Apologies if I have mis-spelled your name
Dale -Editor*

OBSERVATORY NEWS IMPORTANT INFORMATION

DOOR CODE & ALARM AT THE OBSERVATORY

The Door code and Alarm code available to members, Ask a committee member for the passwords.

INTERNET WI-FI:

Ask a committee member for the password

LASER POINTERS:

There is a legal requirement when importing them, and information is on our website and at the observatory, CAS has a drafted a set of guidelines which we were presented at our AGM and were voted and added to our By-Laws,

If you need a letter confirming your membership for your application, please contact either membership secretary or secretary, (This letter will state you are a current financial member of our society)

ACCREDITATION

A reminder that unless you have full accreditation on the equipment you are not to use the equipment unless there is an accredited person with you.

Full training is available, Please ask our Observatory Director how you can get your accreditation

There is a full list of accredited person's on the wall above the kitchen sink inside the lodge. contact Kieren (our Observatory directory via his email listed on our website or the inside back page casmag

2023 CAS CALENDAR

WE NEED YOUR PHOTOS!!!!

Cas is going to produce our very own calendar again for 2023.

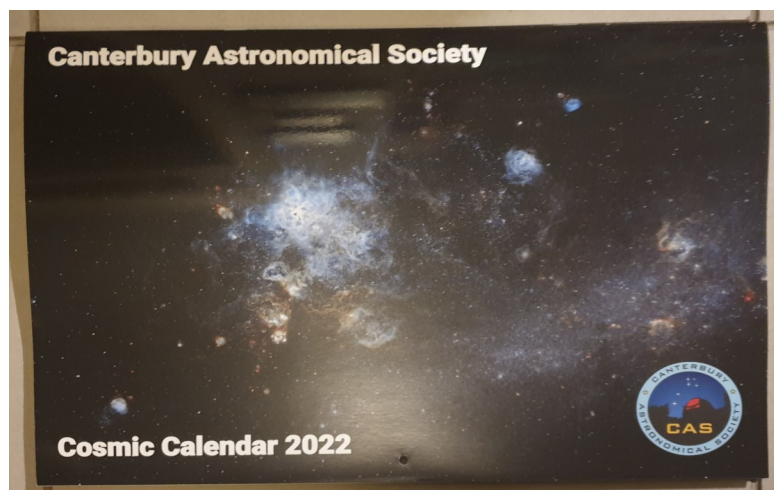
We need your astronomy photos for this and full credit is given.

We published our 1st calendar in 2022, this was very popular.

We are very proud that all the photos included are taken by our own CAS members.

We plan to publish earlier this year in time for sales for Christmas posting and at events CAS attends.

Please contact
Simon —- vice-president@cas.org.nz
Re submitting your photos



QUOTES FROM THE RASNZ E-NEWSLETTER

""There's a great power in words, if you don't hitch too many of them together." -- Josh Billings.

FRANK ANDREWS OBITUARY

It is with great sadness we announce that Frank passed away in Wellington on 11th July 2022.

Our sympathy's go to Anne, Family and friends.

According to the records I can see, Frank joined CAS 6th August 1950.
(2 years after it was formed) and was a life member for many years.



Although later in life he lived in the north Island he still enjoyed coming to CAS meetings when in visiting Christchurch and was often at RASNZ Conferences.

He was awarded the Murray Geddes Memorial Prize in 1980 from RASNZ. This is awarded by RASNZ to a person or persons for contributions to astronomy in New Zealand

RASNZ Register of Observatories in NZ New Zealand Observatories

A combined Australia and New Zealand Standard **AS/NZ 4282 Control of obtrusive effects of outdoor lighting** contains guidance which will help to protect observatories from outdoor lighting at night.

When your observatory is listed here, local council planners will be able to see your need to limit obtrusive lighting around your observatory.

The standard can be purchased from Standards New Zealand:

<https://www.standards.govt.nz/shop/asnzs-42822019/>

The Standard states that a list of observatories will be held by the Royal Astronomical Society of New Zealand - that's us!

If you wish to have your observatory included in this list please send your contact and location details. Your observatory will be included with the level of information you choose to display.

observatory@rasnz.org.nz

If you wish to limit contact information on this page you may include the previous email link for people to contact us. We will then forward enquiries to you to deal with. Observatories will be grouped into Research, Community and Private or Personal categories.

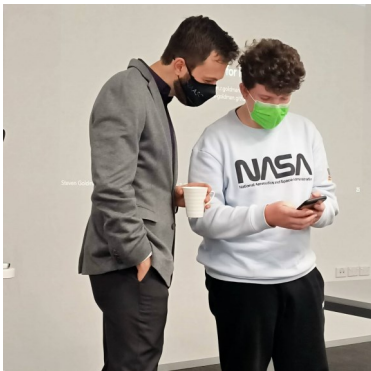
SOFIA IS BACK IN CHRISTCHURCH FOR 2022 SESSION

The 2022 deployment for SOFIA for Christchurch started with the arrival of the plane and 1st crew on 21st June.



Those who attended the 1st Mid-Winter BBQ & Bonfire also welcomed crew members able to Attend, and some members were lucky enough to get some patches, stickers, badges, cards and lots of information pamphlets.

The 2nd crew will depart Christchurch on 2nd August, I am sure we will in the future miss seeing the Plane and the Crews at the airport and our events. We also hosted an special extra members meeting on 7th July with Steve R Goldman (ARC-PX) from Universities Space Research Association who is working with SOFIA this deployment.



Of course its who you know (being very interested & enthusiastic) you get asked if you would like a private tour on board.



Photos: Sofia Facebook/Mandy Heslop

OBSERVATORY NEWS **IMPORTANT INFORMATION**

New Security System in Lodge

The new security system in the Lodge is up and running well. This takes the form of an intrusion sensor outside, and a Wifi cam inside the lodge in the back corner at the car park end. The intention is to add another camera outside the lodge overlooking the car park area. The advantage of these is that they will trigger on intrusion alert and can be viewed remotely in real time or reviewed within 2 weeks. These are not for the purpose of watching people, but rather to check that entry to the lodge is by legitimate members. Given the assets we have on site, this is necessary for any insurance claims.

Access to these cameras is limited to Webmaster, Vice President and Observatory director only. We already have a surveillance network installed (several years ago) which records to a hard drive but cannot be remotely viewed in real time.

If anybody needs to know more please feel free to email me
observatory.director@cas.org.nz

SECURITY FOR OBSERVATORY KEYS- Accredited Members

Committee have decided that we need improved security for access to the observatory equipment. From now all keys are stored in a lock box in the library.

Any accredited member will be given the combination (just ask me).

This includes the key to the equipment room and for the dobs.

Although the dobs do not require formal accreditation, they are precision instruments that can be damaged if not used correctly.

A member accredited on any of the scopes can open these for you.

Members still have free access to the lodge and its facilities, but any other access will require an accredited person to be present.

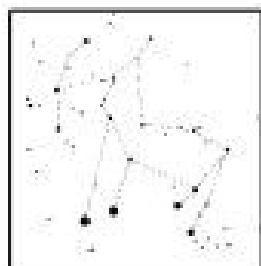
Any accredited member can get access to the keys, but of course can only use (or supervise) the instrument they are accredited for.

This sounds a bit restrictive, but has become necessary due to recent misuse and possible damage to some instruments.

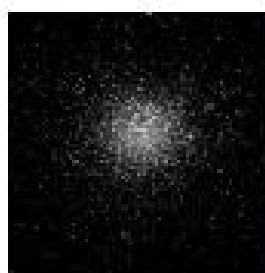
Any questions please email me
observatory.director@cas.org.nz
Kieren Eden



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.

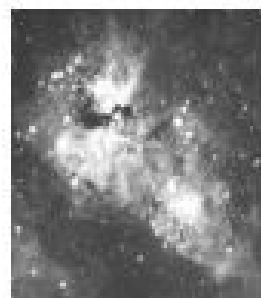


Omega Centauri, also southeast of the zenith, is a globular cluster, a ball-shaped cluster of millions of stars. Its total mass is six million times the sun's mass or weight. It is 17 000 light years away and 200 light years across. Globular clusters are very ancient, around 10 billion years old, twice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

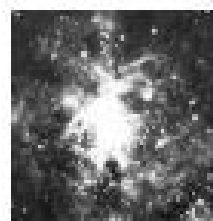
The Jewel Box is a compact cluster of young bright stars about 7000 light years away. The cluster formed around 16 million years ago. To the eye it looks like a faint star close by the second-brightest star in Crux. A telescope is needed to see it well.



Eta Carinae nebula, a luminous spot in the Milky Way 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.

The Night Sky in July 2022



Sirius, the brightest star, sets in the southwest as twilight ends, twinkling like a diamond. **Canopus**, the second brightest star, is also in the southwest at dusk. It swings south later. South of the zenith are The Pointers, Beta and **Alpha Centauri**.

They point to **Crux** the Southern Cross on their right. Midway down the north sky is orange **Arcturus**. It sets in the northwest around midnight, twinkling red and green as it goes. **Vega** rises in the northeast around 9 pm. It is on the opposite side of the sky to Canopus: low in the north when Canopus is low in the south.

Saturn is the only planet in the evening sky. It rises around 9 pm at the beginning of the month; around 7 at the end. It looks like a medium-bright cream-coloured star, all on its own. The near-full Moon will be above Saturn on the 15th and below it on the 16th.

Saturn is 1350 million km away mid-month, nearly as close as it gets this year. It is worth a look in any telescope but might be fuzzy when low in the sky. The ring can be seen at 20x magnification. Saturn largest moon, Titan, appears as a star four ring-diameters from the planet.

In the last week of July **Mercury** begins its best evening sky appearance of the year.

On the 25th it will be setting toward the northwest 40 minutes after the Sun (so it is not on the chart.) By the 31st it is setting 70 minutes after the Sun. It is the brightest star in that part of the sky. The crescent Moon will be near Mercury on the 30th. Mercury shows only a tiny disc in a telescope.

Alpha Centauri is the third brightest star. It is also the closest of the naked eye stars, 4.3 light years* away. Beta Centauri, like most of the stars in Crux, is a hot blue-giant star hundreds of light years away.

Canopus swings down to the southern skyline before midnight then moves into the southeast sky in the morning hours. It is a circumpolar star it never sets. Crux and the Pointers are also circumpolar. Canopus is a truly bright star: 13 000 times the sun's brightness and 300 light years away.

Arcturus, in the north, is the fourth brightest star and the brightest in the northern hemisphere sky. It is 120 times the sun's brightness and 37 light years away. It twinkles red and green when setting in the northwest around midnight. It is an orange colour because it is cooler than the sun; around 4000°C.

The **Milky Way** is brightest and broadest in the east 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, 30 000 light years away, is in Sagittarius. The actual centre is hidden by dust clouds in space. A scan along the Milky Way with binoculars shows many clusters of stars and some glowing gas clouds.

Except for Saturn and Mercury, the bright planets are in the late night and dawn sky.

Jupiter rises around 12:30 a.m. at the beginning of the month; around 10:30 at the end. It is the brightest star in the late night sky till Venus appears near dawn. Jupiter shines with a steady golden light. It hardly ever twinkles. Any telescope will show Jupiter as an oval disc with its four big Galilean moons lined up on either side.

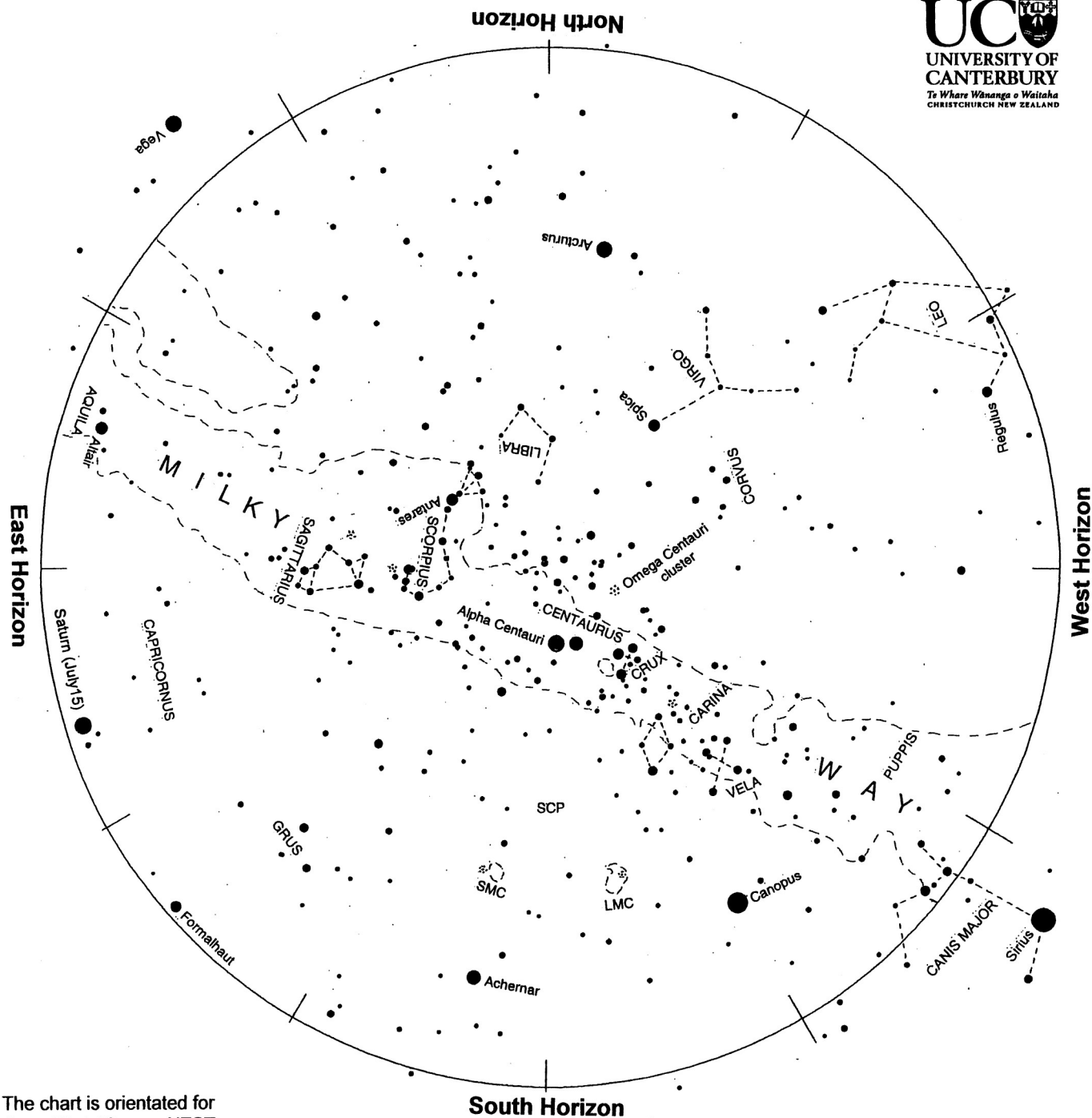
The Moon will be above Jupiter on the night of July 18th-19th and below it the next night.

Mars rises before 2 a.m. all month. It is about the same brightness as Saturn and orange-red in colour. It is slowly brightening as we catch up on it. We pass it by at the end of the year. The Moon will be close to Mars on the morning of the 22nd. At dawn Saturn, Jupiter and Mars make a line across the north sky.

Venus, the brilliant morning star is rising later as it moves to the other side of the Sun. At the beginning of July it rises in the northeast around 5:30. At that date Mercury might be seen an hour later, rising below and right of Venus. Mercury quickly slips into the dawn twilight as it rounds the far side of the Sun to reappear in the evening sky. By the end of the month Venus is rising just 70 minutes before the Sun. The thin crescent Moon will be near Venus on the mornings of the 26th and 27th.

*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.
www.canterbury.ac.nz 220601*



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

Evening sky in July 2022

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.

Saturn is the only planet in the evening sky. It looks like a medium-bright star low in the east. Sirius, the brightest true star sets in the southwestern twilight, sparkling colourfully. Low in the north is orange Arcturus, twinkling red and green when near setting. The Pointers and Crux, the Southern Cross, are south of the zenith. Canopus, the second brightest star, is low in the southwest. It swings down to the southern horizon later. Vega rises in the northeast around 9 p.m. Jupiter (not shown) rises after midnight at the beginning of the month; after 10 pm at the end.

The Evening Sky in August 2022

Bright stars and planets light up the evening sky. **Mercury** makes its best evening sky appearance of the year in August. At the beginning of the month it appears low in the northwest, setting 70 minutes after the Sun. It makes a close pair with Regulus on the 4th. Regulus is the brightest star in Leo but fainter than Mercury. By the end of August Mercury is setting due west two hours after the Sun. The thin crescent Moon will be near Mercury on the 29th and 30th. Mercury shows only a tiny disc in a telescope.

Saturn appears on the opposite horizon to Mercury an hour after sunset at the beginning of August. It rises four minutes earlier each night. By mid-month it is well above the eastern skyline at dusk. It looks like a medium-bright star with a cream colour. The Moon will be near Saturn on the 12th. Saturn is at its closest distance for the year, 1325 million km away. A small telescope will show the ring and planet blended into an oval. Larger telescopes show the ring and Saturn's biggest moon, Titan, four ring-diameters from the planet. Any faint 'star' closer to Saturn than Titan is likely to be a small moon.

Jupiter (not shown on the chart) rises due east after 10 pm at the beginning of August. It is the brightest 'star' in the late night sky and shines with a steady golden light. It also rises earlier each night. By the end of August it appears soon after 8 pm. The near-full Moon will be by Jupiter on the night of the 15th-16th.

Canopus twinkles colourfully on the south skyline. It is the brightest true star in the evening sky and the second-brightest star overall. It is balanced by **Vega** low in the north. Orange **Arcturus** is in the northwest, often twinkling red and green as it sets. Vega and Arcturus are the brightest stars north of the equator.

Midway down the southwest sky are 'The Pointers', Beta and **Alpha Centauri**. They point down and rightward to **Crux** the Southern Cross. Alpha Centauri is the third brightest star 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.

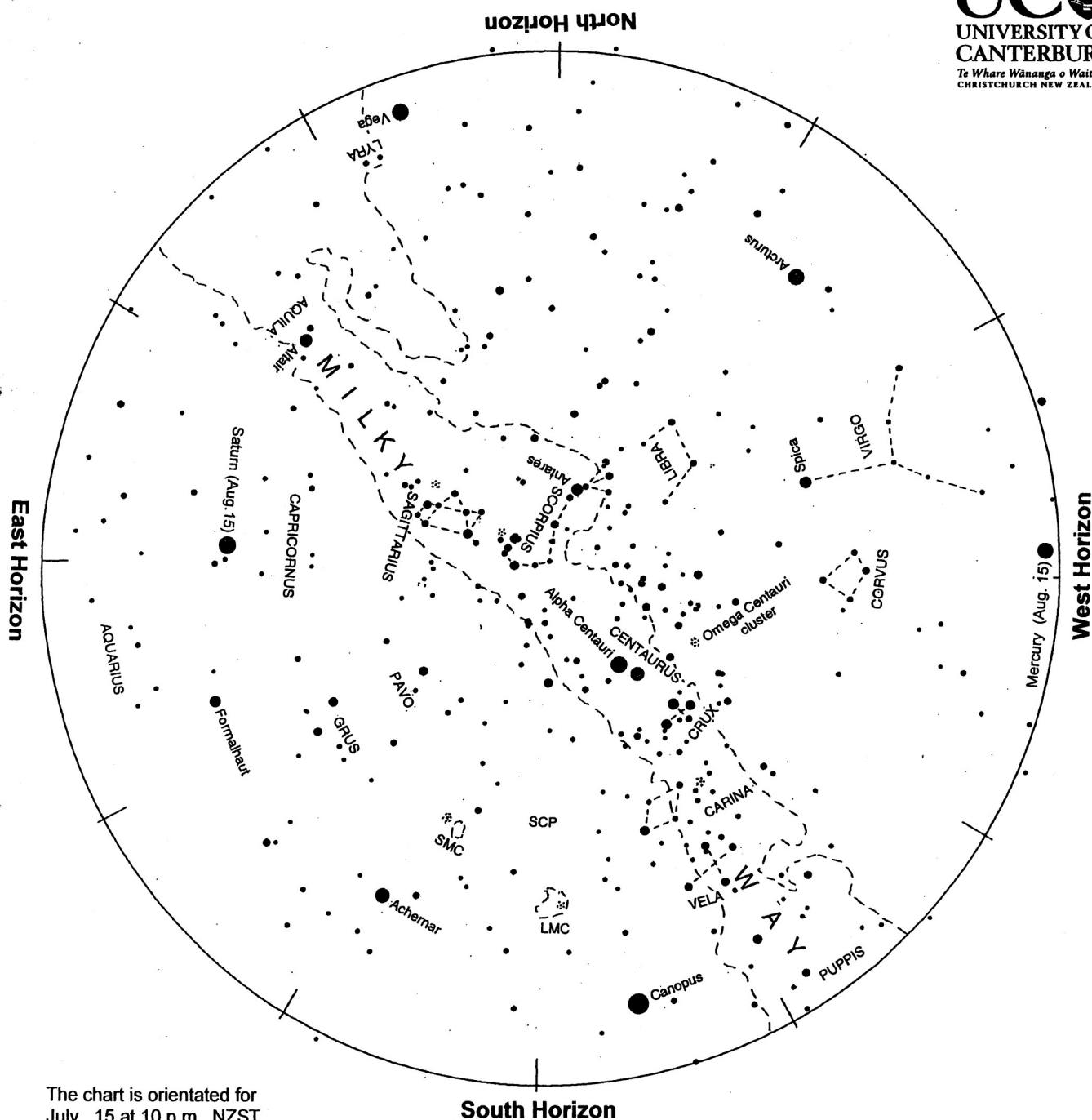
Antares marks the heart of the Scorpion. The Scorpion's tail hooks around the zenith like a back-to-front question mark. Antares and the tail make the 'fish-hook of Maui' in some Maori star lore. Antares is a red giant star: 600 light years away and 19 000 times brighter than the Sun. It is relatively cool for a star, 3300 C, giving its orange colour. 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.

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.

Mars rises around 1:30 a.m. It is the same brightness as Saturn but orange-red. At dawn mid-month, Mars is just above the Matariki/Pleades star cluster. To its right are similar orange stars: Aldebaran in Taurus and Betelgeuse in Orion. The last-quarter Moon will be near Mars on the morning of the 20th.

From places with a low eastern skyline brilliant **Venus** might be seen in the dawn twilight. It rises 70 minutes before the Sun at the beginning of the month; 30 minutes before at the end. It is leaving us behind as it moves to the far side of the Sun. It will reappear in the western evening sky at the end of the year.*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 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 2022

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.

Canopus, low in the south, twinkles all colours. It is balanced by Vega on the north horizon. Orange Arcturus is in the northwest, twinkling red and green as it sets. The Pointers and Crux, the Southern Cross, are midway down the southwest sky. Scorpius and Sagittarius are overhead. Mercury makes its best evening appearance of the year, setting due west two hours after the Sun. Saturn, similar in brightness, is in the eastern sky. Very bright Jupiter appears later in the evening.

CAS COMMITTEE AND OFFICERS 2022/2023

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For more specialized information please see the contact information page on www.cas.org.nz

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www.facebook.com/groups/CanterburyAstronomicalSociety

West Melton Observatory: 43° 29' 55.5" S, 172° 20' 59.0" E 218 Bells Road, West Melton

CAS Members Meetings:

The *CAS monthly members* meetings are currently held from 7.30pm onwards every third Tuesday of the month (except December and January) at the University of Canterbury,

Room ER225 Ernest Rutherford Building (2nd floor)

CAStronauts Meeting's are 6.30-7.30, in the same venue on the same night (3rd Tuesday of the month)

Any member of the public who is considering in joining the society are most welcome to attend the meetings.

Members Nights at the Observatory are detailed on our website

Observatory Members Nights:

Cas holds these nights as follows

Members Nights (Training) on the 1st Saturday of the month

Members Nights (General) on the 3rd Saturday of the month after the Tuesday Members meeting at UC, (be aware some months it is the 4th Saturday, depending on the start of the month) check the website for details

CAS on Facebook:

Cas has a Facebook presence, Useful to keep up to date with events, interesting articles, asking for advice, For members please use the website forums for more detailed information etc

CAS Membership:

Subscriptions are due 1st April each year

Fees for current members shown on the membership form included on the back page of your Casmag,

Full details are included on our website.

Contributions to CASMAG:

Member contributions to CASMAG are always most welcome (letters, observing notes, articles, news)

Please submit articles by email to editor@cas.org.nz

The deadline for each issue is the 1st of each month

Small personal advertisements are free to financial members, (less than 8 lines in a column)

Charges for larger items range from \$5 to \$40, email the editor for more details.

The Constitution of The Canterbury Astronomical Society Inc:

This is available on request, Please ask for a copy if required

DISCLAIMER:

This newsletter is for general information purposes only. The views expressed herein are not necessarily those of the Canterbury Astronomical Society Inc (CAS)

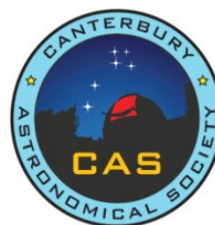
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Readers are advised not to rely solely on this information, and should seek independent advice before making any decision, CAS reserves the right to make changes at any time, as deemed necessary.

Canterbury Astronomical Society Inc

APPLICATION FOR MEMBERSHIP

To: Membership Secretary
 Canterbury Astronomical Society Inc.
 PO Box 25137
 Christchurch 8140



Applicants Name in Full _____

Address: (Note a P.O.Box is NOT a legal address) _____

Home Phone: _____ Cell Phone: _____

Email: _____ Date of Birth: (if under 18) _____

Membership Category (*tick, subscription must accompany application*)**Online Banking Details (Please identify your payment):** 03 0802 0098273 00

<input type="checkbox"/>	Adult (any person 18years of age or over who is not eligible for any other category)	Full \$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

Name:	Date of Birth(if Under 18yrs)	Signature

All CAS members receive CASMAG a monthly newsletter,

Do you have access to a telescope? What type and size? _____

I the undersigned declare that the information given herein is true.

Signature: _____ Date: _____

By signing this application the applicant agrees to comply with the Constitution and By-Laws
 of the Canterbury Astronomical Society Inc.

Date Approved: _____