

CAS MAG

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

CANTERBURY ASTRONOMICAL SOCIETY
ANNUAL GENERAL MEETING 2022
17th May 2022
Room ER 225 University of Canterbury

Refreshments from 7.30pm
Meeting starts 8pm

Come along to hear what the society has been doing
in this last year,
What and how your committee has been looking after
the society
and
Vote for this next years committee



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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

CAS Calendar April- June 2022



APRIL 2022

Saturday 23rd Last Quarter
Monday 25th ANZAC Day

MAY 2022

Sunday 1st May New Moon
Saturday 7th New members night at Observatory
Sunday 8th Mothers Day
Monday 9th First Quarter
Tuesday 10th Committee Meeting
Monday 16th Full Moon
Tuesday 17th CAS AGM Meeting (note new date for this year)
Saturday 21st Members night at Observatory
Monday 23rd Last Quarter
Monday 30th New Moon

JUNE 2022

Saturday 4th New Members night at Observatory
Monday 6th Queens Birthday Holiday
Wednesday 8th First Quarter
Tuesday 14th Committee Meeting
Full Moon
Tuesday 21st Last Quarter
Members Meeting from 7.30pm
Friday 24th Matariki Holiday
Saturday 25th Members meeting at Observatory
Wednesday 29th 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 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 have just been advised we are able to use the room at the UC

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:

17th May: **AGM from 7.30pm**

21st June:

19th July:

16th August:

20th September:

18th October:

15th November:

NO Meetings are held in December or January

2023

21st February:

(correct as at 1st May 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)



Waterproof Stickers with our logo are also available

2022 Cosmic Calendar

Price is \$15.00 (Pickup) \$20.00 (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

observatory.director@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

So check it out and so who else will be interested



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.



It is always great to see our new members coming along to our Members Meetings, Members Nights and Events.

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 Terry (our Observatory directory via his email listed on our website or the inside back page casmag

VISIT TO WEST MELTON SCHOOL 11TH MAY 2022

Following a request to visit our observatory for 200 from West Melton School, it was decided we would visit them with some of our portable telescopes, The evening saw 9 telescopes set up along the cricket pitch with volunteers.



From school email the following morning:

“We just wanted to say a massive thank you to you, Simon and all the volunteers. We have had so many families say what a fantastic event it was and the children today were buzzing with what they got to see through the telescopes.”

Photos: Kieren Eden

2022 RASNZ CONFERENCE

RASNZ Conference and AGM will be hosted by the Northland Astronomical Society over the weekend of Friday 3rd to Sunday 5th June 2022.

The venue for the conference will be the Barge Community Events Centre, Whangārei.
Submissions of conference papers are being accepted now .

CHECK THE CONFERENCE WEBSITE FOR MORE INFO
<https://rasnzconference.org.nz/>

THE DARK SKIES RETREAT—JUNE 24-26TH 2022

The Dark Skies Retreat, June 24th-26th , Note updated dates for this event.
Supported by ASTRONZ.

A weekend getaway of astronomical proportions!
Astronomy, astrophotography, night sky education, outreach,
with a big focus on dark skies.

Held over the first Matariki Public Holiday in June,
under the dark skies of

Camp Iona, Herbert Forest, Herbert
(20-minutes south of Oamaru).

Contact Damien McNamara, solaur.science@gmail.com

QUOTES FROM THE RASNZ E-NEWSLETTER

"A committee is a group that keeps minutes and loses hours." --
Milton Berle

"Spiders are the only web developers in the world that enjoy finding bugs." -- From 'Where The Science Things Are'.

Repurposed Latin

Pro rata - native tree advocate.

Camera obscura - a hidden camera is operating.

Ad infinitum - Freeview television.

Non sequitur - I've lost the pruning shears.

-- from the NZ Listener, 22 May 2021, p.57.

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.

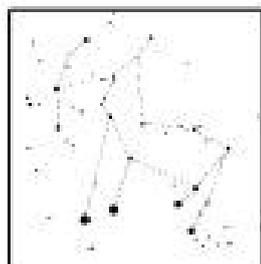
This sounds a bit restrictive, but has become necessary due to recent misuse and possible damage to some instruments.

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

Terry Richardson



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.

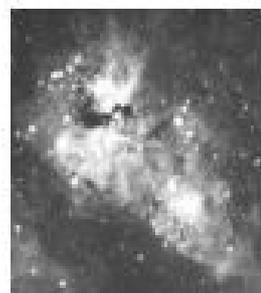


Omega Centauri, also southeast of the zenith, is a globular cluster, a ball-shaped cluster of millions of stars. Its total mass is six million times the sun's mass or weight. It is 17 000 light years away and 200 light years across. Globular clusters are very ancient, around 10 billion years old, twice 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 Evening Sky in May 2022

As the sky darkens **Sirius** appears midway down the western sky. It is the brightest star and twinkles with all colours when setting in the southwest around midnight. Sirius, 'the Dog Star', marks the head of **Canis Major** the big dog, now head down, tail up. **Canopus**, 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.

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. **Antares** is a red-giant star like Betelgeuse: around 12 times the mass of the sun but wider than Earth's orbit. It is 600 light years away and 19 000 times brighter than the sun.

Orange **Arcturus** is the brightest star in the northern sky. It often twinkles red and green when low in the sky. **Arcturus** is the brightest red star in the sky but, at 37 light years, is much closer than Antares. It is about 120 times brighter than the sun.

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 and 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 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**.

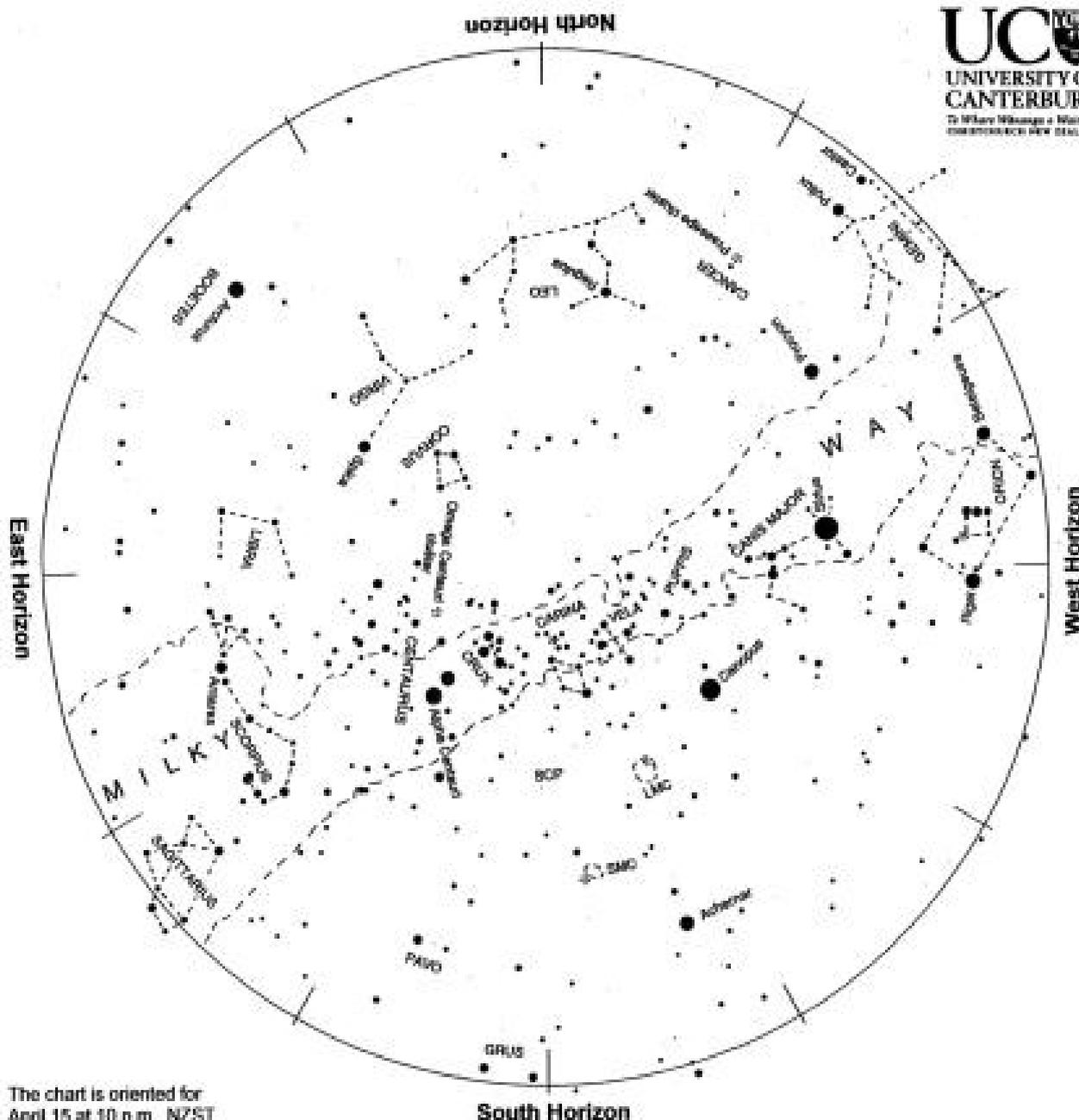
The Clouds of Magellan, **LMC** and **SMC**, are midway down the southern sky, easily seen by eye on a dark moonless night. They are small galaxies. The Large Magellanic Cloud is 160 000 light years away and the Small Cloud is around 200 000 light years away. They are much smaller than our Milky Way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

The bright planets are all in the morning sky (so are not on the chart.) **Saturn** is the first to appear, rising in the east around 1 a.m. at the beginning of the month. It is cream-coloured and of medium brightness, but the brightest 'star' in this part of the sky. **Mars** follows it around 2:30. It is the same brightness as Saturn but red coloured. Around 4 a.m., at the beginning of the month, bright **Jupiter** and brilliant **Venus** appear looking like a pair of unmatched headlights. Venus is silver, Jupiter is golden. By that time Saturn, Mars and the Venus-Jupiter pair are equally spaced down the eastern sky.

Saturn and Jupiter rise four minutes earlier each morning as we catch them up. Mars continues to rise around 2:30 while Venus slowly slips lower as it moves to the other side of the Sun. In the last week of May Jupiter will be approaching then passing Mars. On the morning of the 25th the Moon will be above the two planets. The Moon will be above Venus on the 27th and below it on the 28th.

There is an **eclipse of the Moon** on May 16 but we see only the end of it. The moon will rise partly eclipsed. It moves clear of the Earth's inner shadow by 5:55 pm and clear of the outer shadow an hour later.

*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 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 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 westward shift each night as we orbit the sun.

Sirius, the brightest 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, in the north, 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.

The bright planets are in the morning sky so not shown on the chart. We see the end of an eclipse of the Moon on May 16. The full Moon will rise while still half in the Earth's shadow.

The Night Sky in June 2022

Sirius is the 'evening star'. At the beginning of the month it appears due west at dusk and sets in the southwest before 10 pm. By the end of June it sets at 8 pm. Being bright and white, Sirius twinkles with all colours when low in the sky. **Canopus**, the second brightest star, is higher in the southwest sky, swinging lower in the south later.

Like Sirius it twinkles colourfully. Canopus is 310 light years* away and 13,000 times brighter than the sun.

Arcturus is a lone bright orange star in the north sky. Lacking any blue light it twinkles red and green when low in the sky. It sets in the northwest in the morning hours.

Crux, the Southern Cross, is south of the zenith. Beside it and brighter are Beta and **Alpha Centauri**, often called 'The Pointers' because they point at Crux. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri and many of the stars in Crux are hot, extremely bright blue-giant stars around 550 light years away.

Antares is a medium-bright orange star midway up the eastern sky. It marks the scorpion's body. Antares is a red giant star: about 600 light years away and 19 000 times brighter than the sun. Red giants are much bigger than the sun but cooler, hence the orange-red colour. Below Scorpius is **Sagittarius**, its brighter stars making 'the teapot'.

The **Milky Way** is brightest and broadest in the southeast toward Scorpius and Sagittarius. It remains bright but narrower through Crux and Carina then fades in the western sky. 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. A scan along the Milky Way with binoculars will find many clusters of stars and some glowing gas clouds. Relatively nearby dark clouds of dust and gas dim the light of distant stars in the Milky Way. The dust clouds look like holes and slots in the Milky Way. These clouds eventually coalesce into new stars.

The Clouds of Magellan, **LMC** and **SMC**, in the lower southern sky, are luminous patches easily seen by eye in a dark sky. They are two small galaxies about 160 000 and 200 000 light years away, close by as galaxies go.

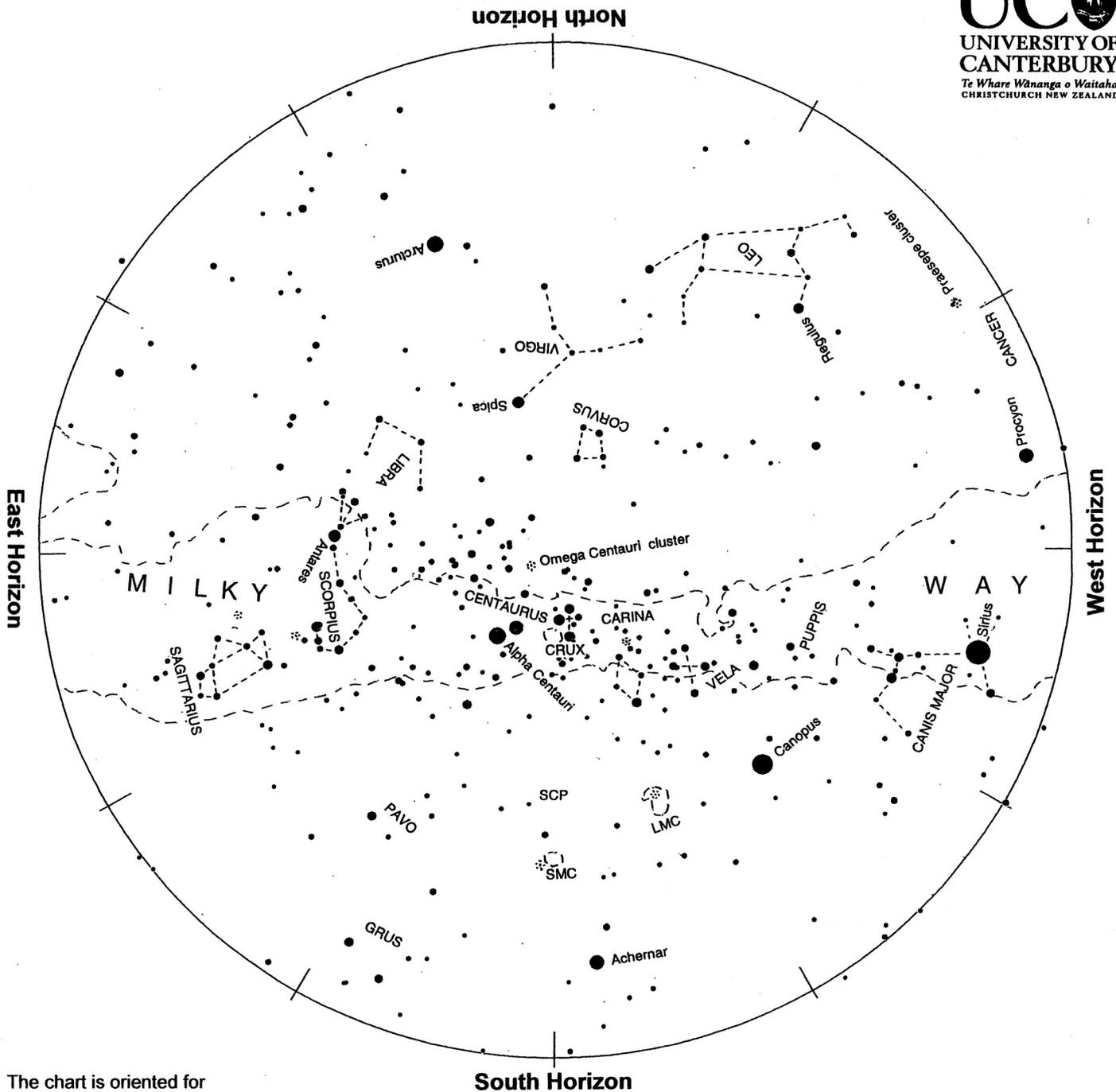
All the naked-eye planets are all in the late evening to dawn half of the sky, so are not shown on the chart. **Saturn** is first up. It rises around 11 pm at the beginning of the month and 9 pm by the end. It looks like a cream-coloured star and doesn't twinkle much. It is the brightest object in an empty region of sky. The Moon will be near Saturn on the night of the 18th-19th.

Jupiter rises around 2 a.m. at the beginning of the month and around midnight at the end. It is golden-coloured and the brightest 'star' in the morning sky till Venus appears. Jupiter doesn't twinkle at all. **Mars** appears just below Jupiter at the start of June. It looks like a medium-bright orange-red star. Jupiter continues moving up the sky, morning to morning, leaving Mars behind. The Moon will be near Jupiter on the morning of the 22nd and very close to Mars on the 23rd.

Venus is the brilliant 'morning star'. It rises around 4:30 at the beginning of the month and around 5:30 at the end. It is leaving us behind and moving to the far side of the Sun. **Mercury** begins a morning sky appearance in the second week of June when it appears below and right of Venus. It keeps that position for a fortnight then slips down into the dawn twilight by the end of the month.

Venus is directly above the **Matariki**/Pleiades star cluster on the morning of the 15th, about when Matariki can be first seen. The cluster is 12° below Venus, roughly half a hand-span at arm's length. Mercury is closer and at an angle of 2 o'clock from the cluster. By the 27th Venus is 7° to the right of Matariki. The thin crescent Moon will be just above Matariki on the 26th.

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



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

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

Sirius is the 'evening star'. It appears in the west at dusk and sets in the southwest twinkling like a diamond. Canopus is in the southwest, swinging down to the south skyline later, also twinkling colourfully. South of overhead are the Pointers, Alpha and Beta Centauri, with the Southern Cross (Crux) to their right. High in the eastern sky is Scorpius, upside down, with orange Antares marking the scorpion's heart. Below Scorpius's string is the teapot pattern of Sagittarius. Orange Arcturus, low in the north, often twinkles red and green. All the planets are in the late night and morning sky.

CAS COMMITTEE AND OFFICERS 2021/2022

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Canterbury Astronomical Society Facebook Group:

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)

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, 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, subscripton must accompany application*)

Online Banking Details (Please identify your payment): 03 0802 0098273 00

	Full
<input type="checkbox"/> Adult (any person 18years of age or over who is not eligile 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 instition, 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: _____