



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 monthly members meeting will start again in February
At time of publishing the venue is still to be confirmed due to the new Covid traffic light system and what requirements any venue will have in place

**The CAS Committee wishes all
Our Members
a very Happy and Safe Holiday season.**



Hoping for some clear nights and great viewing/observing.
If you get any great photos or written observations
please send them to
editor@cas.org.nz for publishing

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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,
(see page 17 for details)

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, as deemed necessary.

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: These will start again in April when daylight saving starts. The Covid-Sub-Committee and full committee have been and continue to discuss the requirements that will be put into place and advise when decided. (We will be following all government rules)

CAS Events At the UC: At this stage we will have to wait till end of January to hear if we are allowed to use the rooms, If not We will look at other options. Training nights and Members nights at the observatory are cancelled until further notice.

We will continually evaluate when we may be able to safely restart these.

Observatory Use. Adhoc use of the observatory is allowed under **Orange** Traffic Light but with the following guidance and parameters:

Do not visit the observatory if unwell.

Please sign in using the COVID tracer app using the QR code in the lodge. Prior to your visit please post on the observatory activity forum when you intend visiting, or contact Terry our observatory director (number is on the site contacts page).

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.

Maintain 2 m distancing inside or out.

You must wear a mask inside, or where 2m distancing cannot be safely maintained outside

No more than 4 people in the lodge at any one time and social distancing must be maintained at all times.

No more than one person in telescope buildings, both inside, or in roll off areas, unless assistance is required (use masks if more than 1 person).

Please maintain your hygiene and be aware that surfaces and equipment may be contaminated and we cannot guarantee your safety.

Wash / sanitise hands using the gear provided.

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

We will keep you informed as to any changes when the government announces them.

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

CAS Calendar JANUARY 2022-FEBUARY 2021

JANUARY 2022

Saturday 1st	New Years Day
Monday 3rd	New Moon
Monday 10th	First Quarter
Tuesday 18th	Full Moon
Wednesday 26th	Last Quarter

FEBUARY 2022

Monday 1st	New Moon
Friday 4th -7th	STARDATE SOUTH ISLAND Cont till
Monday 7th	
Sunday 6th	Waitangi Day
Monday 7th	Holiday Day for Waitangi Day
Tuesday 8th	Committee Meeting
Wednesday 9th	First Quarter
Tuesday 15th	Castronauts Meeting at UC 6.30-7-30pm
	Members meeting at UC from 7.30pm
Thursday 17th	Full Moon
Saturday 19th	Members Night at Observatory
Thursday 24th	Last Quarter



CAS MERCHANDISE NOW AVAILABLE

We now have our very own **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 Badges: Now in stock
 With the CAS logo: \$10.00 each

Contact either:
 Dale. editor@cas.org.nz
 Simon. casweb@cas.org.nz

T-Shirts, Polo Shirts, Zip front
 hoodie and Soft Shell Jackets
 Samples will be here soon so that
 you can then order your item in your size:



STAVELEY STARDATE SOUTH ISLAND 2022

2022 Stardate South Island.

www.treesandstars.com/Stardate/

4th - 7th February 2022 Friday from 3pm- Monday 2pm

Held at the Christian Hostel and Camp at Staveley with the following facilities, Full toilets and showers, Bunkrooms, The auditorium, Full Kitchen with shared fridges and freezer with plenty of space for tents, Caravans and campervans, (some electric points available)

Excellent horizons in all directions and heaps of room for many telescopes and equipment.

Register at <https://www.treesandstars.com/stardate/>

Fees: this year are as follows;

\$25 per night per adult, \$5 per night for 5-16 year olds, and free per child under 5 years.

There is no charge for a caravan point.

If you wish to stay in a cabin, then you must create your "Bubble" and book beforehand

NB: All attendees older than 12 MUST present a COVID19 vaccination passport on arrival.

Masks must be worn in all indoor public areas, apart from when you are eating

Vaccine passports must be presented on arrival, and you must also scan the COVID19 QR tracer code.

If you do not have a valid vaccine passport then you will not be allowed to attend

Check the website two days prior to Stardate to ensure it is still going ahead

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 Meetings

15th February 2022: **Cameron McEwing**

15th March: **AGM**

19th April: **TBC**

17th May: **TBC**

*Reminder we do not hold any CAS Members meetings in
December or January*

(correct as at 14th December 2021, 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

**PLEASE Remember we are only able to hold our meetings
at the University at Covid-19 Level 1**

**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>

BHT LECTURE TOUR 2022

DR. HELOISE STEVANCE

2 FEB - HAMILTON
4 FEB - WHANGAREI
6 FEB - NEW PLYMOUTH
7 FEB - WHANGANUI
9 FEB - HOROWHENUA
10 FEB - WELLINGTON
13 FEB - NELSON
15 FEB - TEKAPO
17 FEB - QUEENSTOWN
18 FEB - CHRISTCHURCH
23 FEB - INVERCARGILL
25 FEB - DUNEDIN
27 FEB - NAPIER
28 FEB - AUCKLAND

A deadly dance: When black holes and neutron stars collide

What happens when the densest objects in the universe collide at half the speed of light? It starts with a stretch of a wobble in the fabric of spacetime, and sometimes ends in cosmic explosions that create some of the rarest and shiniest elements in the Universe. Together we'll learn how some of the most massive stars in the cosmos live and die with bang, to create the black hole and neutron star mergers we can "hear" colliding a hundred million light years away. This 45 minute "lecture" will combine cutting edge science and wacky humour to make the mysteries of merging black holes and neutron stars accessible to all ages and backgrounds.

**Venue is to be confirmed and will be advised
via our website**

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



NOVEMBER 2021 LUNAR ECLIPSE PHOTOS

HEATHERS NOTES:

The Lunar Eclipse November 19th 2021.

I was keeping an eye on the sky conditions hoping it would stay clear, and it did, -mostly,- for most of the night.

The moon rose in semi-eclipse from my horizon and I had a good view to observe it in my driveway. I have a comfortable outside chair, called a moon chair, so I was sitting in my moon chair, watching the moon. I had my 20X80 bino set up too, and I was watching the shadow slowly creep across the moon with a beautiful burnt orange colour. Seeing it through my bino gave a beautiful three D effect. Below and slightly to the west, was the beautiful Pleiades cluster, and 'rising over our roof' was Orion. There was also the planets of Venus and Jupiter.

I kept myself going with tea and coffee and a scone and sat back soaking in the spectacular view of it all and watching as the moon was almost in full eclipse with just a little of the bright moon showing. It had the weird look of the shadow of an object in Front of the moon rather than the shadow On the moon, except, when I enjoyed seeing it through my bino which had that lovely three D effect.

I enjoyed viewing it until the shadow was mostly gone and by then, wispy cloud had covered most of the sky, but there was still enough to see and enjoy. I finished viewing around midnight.

I look forward to seeing some of the images that would have been taken, and for those who had cloudy a sky, I hope you could get to see it through live streaming..

Clear skies, from Heather....

Photo:

Brent Nicholls

Taken in Nelson

60mm 2 x Barlow and

Canon 6D

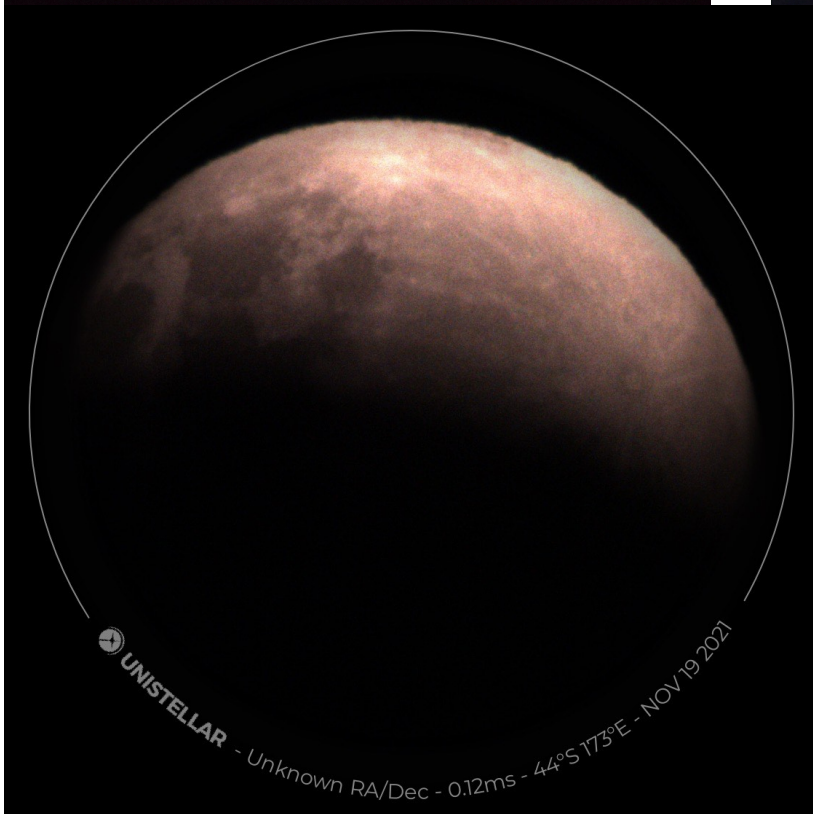


NOVEMBER 2021 LUNAR ECLIPSE PHOTOS

Photos from
Alan Teague



NOVEMBER 2021 LUNAR ECLIPSE PHOTOS



Photos from
John Pickering

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. (When these can happen)

OBSERVATORY NEWS IMPORTANT INFORMATION

DOOR CODE & ALARM AT THE OBSERVATORY

The door code and Alarm code has been changed since our March AGM
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

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

NOTES FROM YOUR COMMITTEE

SIGNING IN WHEN YOU ARE AT THE OBSERVATORY

Please remember to sign in the book on the table in the Lodge whenever you are out at the observatory, This helps give us an idea of who has been using the equipment etc, even if you are out there to do gardening or the like PLEASE SIGN THE BOOK and add what you have been doing,

Also please note and issues that have happened or that need fixing, and its good to follow that up with a email or phone call to Terry or the committee

CAS MERCHANDISE

We are in the process of sorting some new items and will advise you when the new items are available.

Coffee Mugs are \$15.00 each

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

Waterproof Stickers with our logo are also available

Payment can be cash or bank deposit

They are available from Editor (Dale),

contact via editor @cas.org.nz
or 0272426376



EDITOR NOTES

As I write this, the 2022 CAS calendars are available to purchase, details on page 4.

I was able to pick up the new CAS Beanies and Monogrammed Sew on Badges just before Christmas and have these for purchase

I will have the samples of T-Shirts, Polo Shirts, Zip front Hoodie and Soft Shell Jackets in the next few days and then will be taking orders in the size you require. Keep an eye out on the website

I am looking forward to catching up with folks at Stardate South Island Waitangi Weekend,

Hoping for clear skies

Dale.K



OBSERVATORY NEWS **IMPORTANT INFORMATION**

New Security System in Lodge

We are trialling a new security system in the Lodge. 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
Terry Richardson

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



The Evening Sky in February 2022

At the beginning of the month **Jupiter** might be seen near the western horizon soon after sunset. It looks like a bright golden star. It sets a little earlier each night so fades into the twilight by mid-month. On the 2nd the very thin crescent Moon will be left of Jupiter. Jupiter is on the far side of the Sun from us, 880 million km away.

The brightest 'real' stars are nearly overhead. **Sirius**, the brightest star, is north of the zenith. **Canopus**, the second brightest star, is south of the zenith. Below and left of Sirius are Orion's bright stars: bluish **Rigel** and reddish **Betelgeuse**. Between them is the line of three stars making Orion's Belt. The Belt line points left and down to orange **Aldebaran**, one eye of Taurus the Bull. Continuing the same line finds a tight bunch of fainter stars making the **Pleiades/Matariki** star cluster.

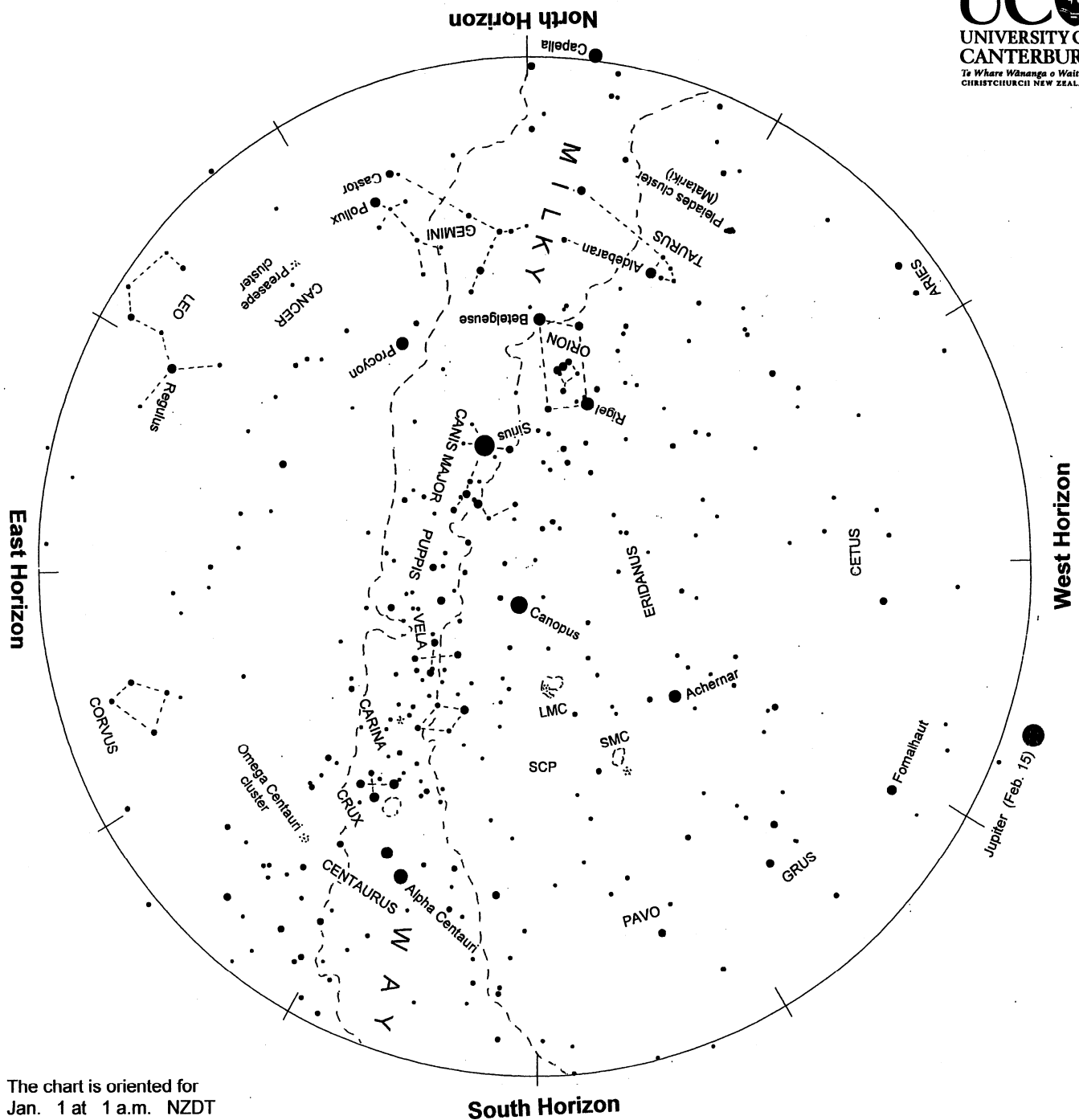
Sirius, 'the Dog Star', marks the head of **Canis Major** the big dog. A group of stars above and right of it make the dog's hindquarters and tail. **Procyon**, in the northeast below Sirius, marks the smaller of the two dogs that follow Orion the hunter across the sky. The stars of Orion's belt make the bottom of 'the pot' or 'the saucepan'. The handle of the pot is the faint line of stars above the bright three. It is Orion's sword in the northern hemisphere view. At its centre is the Orion Nebula: a glowing gas cloud many light-years across and 1300 light years away*. Here new stars are forming. The nebula is easily seen in binoculars.

Aldebaran is at one tip of a V-shaped pattern of stars making the upside-down face of **Taurus**. The V-shaped group is called the Hyades cluster. It is 130 light years away. **Aldebaran** is not a member of the cluster but merely on the line of sight, half the cluster's distance from us. The **Pleiades** or **Matariki** star cluster, low in the northwest, is also known as the Seven Sisters and Subaru. Six stars are seen by most eyes. Dozens are visible in binoculars. The cluster is 440 light years from us. Its stars formed around 100 million years ago. From northern New Zealand the bright star **Capella** is on the north skyline. It is the sixth brightest star in the whole sky, planets excepted. It is 42 light years away and 190 times brighter than the sun.

Crux, the Southern Cross, is in the southeast. Below it are Beta and **Alpha Centauri**, often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away. **Canopus** is also a very luminous distant star; 13 000 times brighter than the sun and 300 light years away. The **Milky Way** is brightest in the southeast toward Crux. It can be traced up the sky, fading where it is nearly overhead. It becomes very faint east or right of Orion. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the Sun is just one. The Clouds of Magellan, **LMC** and **SMC** are high in the south sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away, nearby for galaxies.

Mercury, **Venus** and **Mars** are all in the dawn sky. Brilliant **Venus** is the beacon for the region. It rises around 4:20 a.m. at the beginning of the month and 3:30 by the end. **Mars** looks like a medium-brightness red star above Venus at first. Venus catches up on Mars so the two are nearly level by the end of February. **Mercury** is below and right of Venus and similar in brightness to Mars at the beginning of the month. It slowly brightens. At the end of the month **Saturn** appears below and right of Mercury. The Moon will be near Mars and Venus on the 28th and above Mercury and Saturn on March 1st. The grouping of planets is just line-of-sight, of course. At mid-month Mercury is 140 million km away from us, Venus is 65 million km away, Mars 310 million km and Saturn 1630 million km away.

*A **light year (l.y.)** is the distance that light travels in one year: nearly 10 million million km or 10^{13} km. Sunlight takes eight minutes to get here; moonlight about one second. Sunlight reaches Neptune, the outermost major planet, in four hours. It takes four years for sunlight to reach the nearest star, Alpha Centauri.



The chart is oriented for
Jan. 1 at 1 a.m. NZDT
Jan. 15 at midnight "
Feb. 1 at 11 p.m. "
Feb. 15 at 10 p.m. "

Evening sky in February 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.

At the beginning of the month Jupiter might be seen setting due west an hour after the Sun. Sirius, the brightest star, appears north of overhead at dusk. Canopus, the second brightest star, is south of the zenith. Orion, containing 'The Pot', is midway up the north sky. Below and left of Orion are Taurus and the Pleiades/Matariki star cluster. The Southern Cross and Pointers are midway up the southeast sky. The Clouds of Magellan, LMC and SMC, two nearby galaxies, are high in the south sky. From northern Aotearoa the bright star Capella is near the north horizon. (In the eastern dawn sky is brilliant Venus with Mars and Mercury nearby.)

CAS COMMITTEE AND OFFICERS 2021/2022

Public Nights and Group Bookings		bookings.liaison@cas.org.nz
President:	Rob Glassey	president@cas.org.nz
Vice President:	Simon Lewis	vice.president@cas.org.nz
Treasurer:	David Brian	treasurer@cas.org.nz
Secretary:		secretary@cas.org.nz
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Librarian:		librarian@cas.org.nz
Web Master:	Marc Bunyan	casweb@cas.org.nz
Committee Members:	Carol McAlavey	member2@cas.org.nz
	Sean Mullis	member1@cas.org.nz
	Raewyn Marles	member3@cas.org.nz
	Kieran Edan	member4@cas.org.nz

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

CAS Contact Information

Canterbury Astronomical Society Inc.

PO Box 25-137

City East

Christchurch 8141

Web: www.cas.org.nz

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

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Canterbury Astronomical Society Inc

APPLICATION FOR MEMBERSHIP

To: Membership Secretary
 Canterbury Astronomical Society Inc.
 P.O.Box 25-137
 City East
 Christchurch 8141

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
<input type="checkbox"/>	Family (two or more persons living at the same address)	\$70
<input type="checkbox"/>	Junior (under 18 years of age on 1st April in the current year)	\$105
<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: _____