Vol. 71: No 8 NOVEMBER/DECEMBER 2022 Issue Number 805

# 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

A RMEINDER WE HAVE A 2 MONTH BREAK FROM MEMBERS MEETINGS
SO THERE ARE NO MEETINGS FOR DECEMBER AND JANUARY
LOOK FORWARD TO OUR NEXT MEETING
21ST FEBRAURY 2023
SPEAKER DETAILS TO BE CONFIRMED

## 2022 CAS CHRISTMAS BBQ EVENT

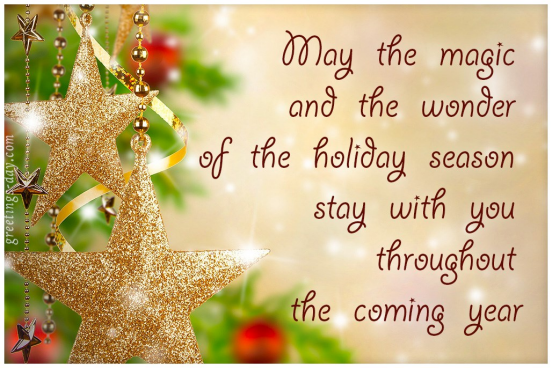
The 2022 Christmas BBQ is being held on 3rd December 2022 at the Observatory from 5.30pm.

The Committee will supply Meat and breads, sauces along with snacks and drinks,
We ask you to bring salads etc to share with others,
If you have any dietary requirements we ask you to bring what you require to cover this.
If you wish to have a tipple you more than are welcome to bring this but be aware there will be children attending and not to drive.
We look forward to seeing you attend

# MERRY CHRISTMAS AND AN ENJOYABLE HOILDAY SEASON FROM YOUR CAS COMMITTE



We hope you all have a great time over the holiday season and look forward to seeing you again in 2023




*Rob, Simon, Dave, Kieren,*

*Marc, Carol, Dale, Sean,*

*Terry, Orlon, Preetha, Goran*

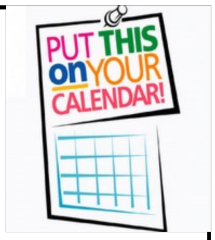
## IN THIS MONTHS ISSUE



## 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."




## CAS Calendar November 2022-February 2023

### NOVEMBER 2022

| | |
|---|---|
| Friday 11th | Canterbury Show Day Holiday |
| Tuesday 15th | CAStronauts @ University 6-30—7.15pm |
| | Members Meeting @ University from 7.30pm |
| Thursday 17th | Last Quarter |
| Saturday 19th | Members Night @ Observatory |
| Thursday 24th | New Moon |

### DECEMBER 2022

| | |
|---|---|
| Thursday 1st | First Quarter |
| Saturday 3rd | Christmas BBQ @ Observatory from 5-30pm |
| Thursday 8th | Full Moon |
| Tuesday 13th | Committee Meeting |
| Friday 16th | Last Quarter |
| Friday 23rd | New Moon |
| Sunday 25th | Christmas Day |
| Monday 26th | Boxing Day |
| Friday 30th | First Quarter |

### JANUARY 2023

| | |
|---|---|
| Sunday 1st | New Years Day |
| Saturday 7th | Full Moon |
| Sunday 15th | Last Quarter |
| Sunday 22nd | New Moon |
| Sunday 29th | First Quarter |

### FEBRUARY 2023

| | |
|---|---|
| Saturday 4th | New Members Night @ Observatory from 5pm |
| Monday 6th | Waitangi Day |
| | Full Moon |
| Tuesday 14th | Committee Meeting |
| | Last Quarter |
| Friday 17th- | |
| Sunday 19th | Stardate South Island |
| Monday 20th | New Moon |
| Tuesday 21st | CAStronauts @ University 6-30—7.15pm |
| | Members Meeting @ University from 7.30pm |
| Saturday 25th | Members Night @ Observatory from 6pm |
| Monday 27th | First Quarter |

## 2023 Open Night Season

The 2023 Open night season will start after daylight saving starts on 2nd April 2023
The 1st public night will be 14th April 2023 ( as the weekend prior is Easter Weekend )
Helping at the Public nights is very rewarding and a great opportunity to work towards accreditation on the telescopes We look forward to next years season and hope the weather etc is suitable to being open for as many nights as possible
Kids Fest Nights will be announced early in the new year. Keep and eye on the website and email notices for more updates.

# IMPORTANT UPDATE FROM YOUR COMMITTEE
## Covid-19 level Operations

Public Open Nights: These have finished for this year
CAS Events At the UC:
We are now back to using our room at the University for our monthly Meetings Room ER225, (finished for this year start again 21st Feb 2023)
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 *(check the website for these nights over the holiday season)*
Observatory Use. Do not visit the observatory if unwell.
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

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# SOUTH ISLAND STARDATE 2023

SI Stardate is booked for the weekend of
17th-18th-19th February 2023
Bookings are now open on the Stardate website
http://www.treesandstars.com/stardate/

Special Guest: "Amadeo"

REGISTRATION FEES: $25 per night per adult,
$5 per night for 5-16 year olds,
and free per child under 5 years.
The is no extra charge for a caravan point.
Keep up to date by following the Stardate SI face book page.

https://www.facebook.com/profile.php?id=100063786623600

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# 2022 ANNUAL SUBSCRIPTIONS/MEMBERSHIP

**Payment for the 2022 Year is now WELL OVERDUE 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**

***Your 2023 membership is due for payment from 1st April 2023***

## 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:

## NO Meetings are held in December or January 2023

21st February: TBC
21st March: CAS AGM
18th April:
16th May:
20th June:
18th July:
15th August:
19th September:
17th October:
21st November:
(correct as at 15th November 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:**

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## For Sale:

New (unopened) Benro GoPlus Travel tripod kit (FGP28A+B2 head), $425 ($598 @ Photo Warehouse).
New Tenba Fulton 16l Photo Backpack (tan/olive), $175 ($258 @ Photo Warehouse).

If interested please contact Markus on 021 1615 194.

# CAS MERCHANDISE

## Cas branded items for sale *See Page 13 for ordering details*

**Coffee Mugs** are $15.00 each


## NEW STYLE OF CAS PENS NOW AVAILABLE IN 2 STYLES $2.50

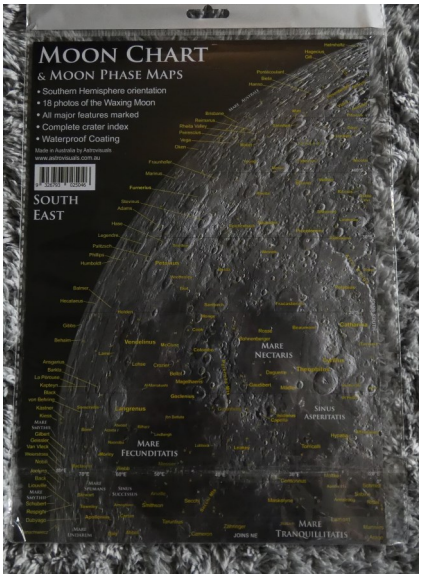

***These are all black ink and with a variety of barrel colours***


## STAINLESS DRINK BOTTLES: $15.00 with flip top 750ml


## 2023 CAS COSMIC CALENDAR: $15.00

**All new 12 photos taken by our Own CAS Members**


## MOON CHART $15.00 8 sheets showing Moon phase maps, with waterproof coating.




## DOUBLE –SIDED PLANISPHERE FOR SOUTHERN HEMISPHERE $20.00


## SUN-DISK KIT, $25.00

**Make a sundial at home**

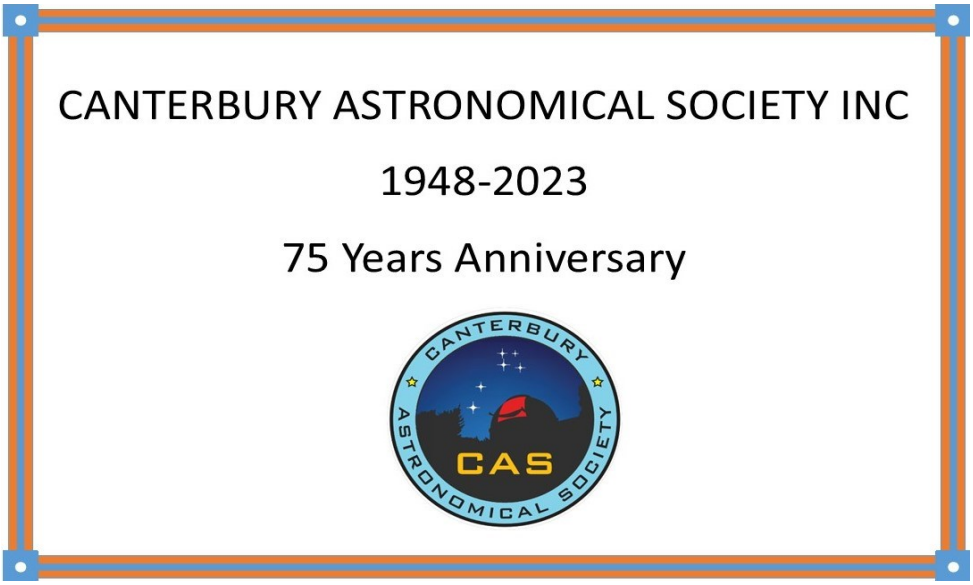
# CANTERBURY ASTRONOMICAL SOCIETY 75TH ANNIVERSARY 2023

On 20 July 2023 it will be 75 years since the first meeting of the Canterbury Astronomical Society was held.

This will be a special year for us and it is something to celebrate so I am asking for ideas, thoughts, volunteers, for how we can make this awesome!
There are some people who are going to be doing a few poster papers for the RASNZ Conference in Auckland next year and they are looking for old reports and memories of people who were among the first members of our Society, so please dig through that treasure box and delve into those memories and see what we can produce.

Also, please think about attending the RASNZ Conference next year as I believe that CAS' 75th Anniversary will be acknowledged and it will be fantastic to have a few people to help us celebrate.
One of the projects I am looking to do for the Anniversary is to collate the history of the Clive Rowe Memorial dome and the telescopes that have been in there so that future members will have a "cheat sheet" to refer to when asked about its history.

I have become aware that there is not many members around who knew that there were two telescopes that have been in that dome.
I thank you in advance for your assistance.
Carol McAlavey
cstars@xtra.co.nz



# 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, nebulas 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 all our New Members*
*I hope you enjoy reading CASMAG and remember to keep an eye on the website for any updates*

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## 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)*

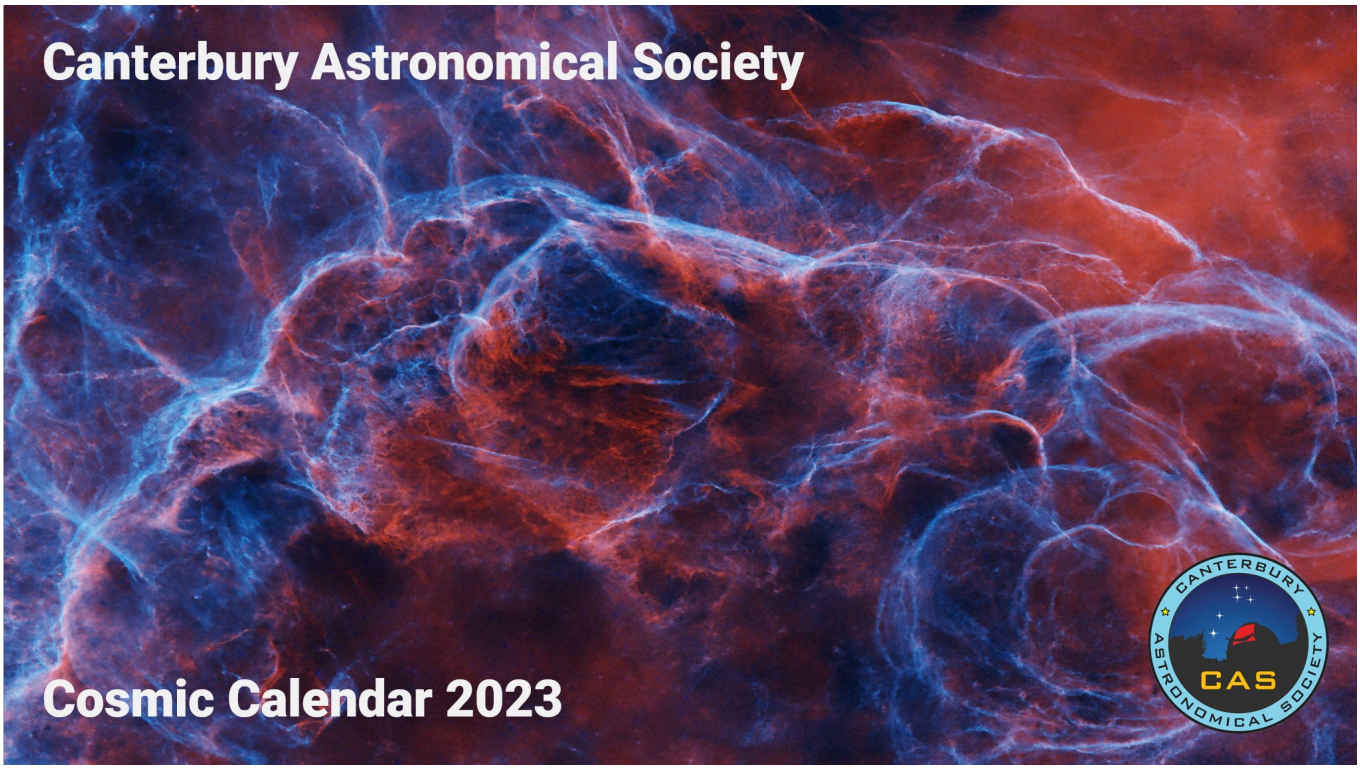
### ACCREDITATION
A reminder that unless you have full accreditation on the equipment you are not to use the equipment unless there is an accredited person with you.
Full training is available, Please ask our Observatory Director how you can get your accreditation
There is a full list of accredited person's 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

Our Cas 2023 Calendar is now available
Our thanks to those who kindly submitted photos.
All photos included in this calendar have been taken by our own CAS members

Calendars $15 (plus postage if required)

You can pick up your copy from either Simon or Dale
Simon—vice.president @cas.org.nz
Dale—editor@cas.org.nz
or ph 027 2426376



## Table of Southern Meteor Showers

| Shower | Dates | | Moon | Peak Rate | RA | Dec | Near Star |
|---|---|---|---|---|---|---|---|
| | Active | Peak | 2022 | | | | |
| Centaurids | Jan 28 - Feb 21 | Feb 8 | 1 day before First quarter | 5 (-25) | 14.1 | -59 | β Cen |
| gamma-Normids | Feb 25 - Mar 22 | Mar 13 | 3 days after First quarter | 8 | 16.6 | -51 | γ Nor |
| pi-Puppids | Apr 15 - Apr 28 | Apr 23 | Last quarter | var to 40 | 7.3 | -45 | σ Pup |
| eta-Aquariads | Apr 19 - May 28 | May 5 | 4 days before First quarter | 60 | 22.5 | -1 | η Aqr |
| Pisces Austrinids | Jul 15 - Aug 10 | Jul 27 | 2 days before New moon | 5 | 22.7 | -30 | α PsA |
| alpha-Capricornids | Jul 3 - Aug 15 | Jul 30 | 1 day after New moon | 4 | 20.5 | -10 | α Cap |
| Southern delta-Aquarids | Jul 15 - Aug 25 | Jul 27 | 2 days before New moon | 20 | 22.6 | -16 | δ Aqr |
| Southern iota-Aquarids | Jul 25 - Aug 15 | Aug 4 | 1 day before First quarter | 2 | 22.3 | -15 | ι Aqr |
| Northern delta-Aquarids | Jul 15 - Aug 25 | Aug 13 | 1 day after Full moon | 4 | 22.3 | -5 | θ Aqr |
| Northern iota-Aquarids | Aug 11 - Aug 31 | Aug 19 | Last quarter | 3 | 21.8 | -6 | β Aqr |
| Piscids | Sep 1 - Sep 30 | Sep 19 | 1 day after Last quarter | 3 | 0.3 | -1 | λ Psc |
| Orionids | Oct 2 - Nov 7 | Oct 21 | 3 days after Last quarter | 20 | 6.3 | +16 | γ Gem |
| Leonids | Nov 14 - Nov 21 | Nov 17 | Last quarter | 100+ | 10.2 | +22 | γ Leo |
| alpha-Monocerotids | Nov 15 - Nov 25 | Nov 22 | 2 days before New moon | var to 5 | 7.9 | +1 | δ Mon |
| Pheonicids | Nov 28 - Dec 9 | Dec 6 | 2 days before Full moon | var | 1.2 | +53 | Achernar |
| Geminids | Dec 7 - Dec 14 | Dec 14 | 2 days before Last quarter | 120 | 7.3 | +33 | Castor |

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## 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.

# CAS 2022 FUNDRAISING RAFFLE

Our 2022 Fundraising raffle was a great success with many donations from our sponsors (see our sponsor page and please support them, don't forget to say you are a CAS Member)
We were able to offer 20 prizes and the raffle was drawn at 3pm at the Hororata Highland games, with any winner present given their prize and those not present were contacted in the next couple of days.
This is the full list of winners, (if you still have not collected your prize please contact Simon @vice.president@cas.org.nz

| | | | | | |
|---|---|---|---|---|---|
| 1 | Explore Scientific 127mm Telescope Kit & CAS Membership Package | Matt Lane | 11 | Galileo STEM Refractor Kit | Peter Den Hollander |
| 2 | Explore Scientific 80mm Telescope Kit | Dominika Ogrodniczak | 12 | CAS 2023 Calendar / Drink Bottle / CAS Membership Pack | Helena Roskruge |
| 3 | Benro Photo Tripod / Tenba Back Pack | Markus Davis | 13 | Explore Scientific G600 Binos and CAS 2023 Calendar | Lee |
| 4 | Astronz 8" Dobsonian Kit & CAS Membership | Jodi Wilson | 14 | Galileo STEM Refractor Kit | Brent Heslop |
| 5 | Skywatcher 130mm Table Top Dobsonian | Dave Brian | 15 | CAS 2023 Calendar / Mug / CAS Membership Pack | Maneyana |
| 6 | Celestron LT70AZ Telescope Kit | Scott Leeson | 16 | Galileo STEM Refractor Kit | John Davis |
| 7 | Orion GoScope 70mm Travel Telescope | Jess Banfield | 17 | CAS 2023 Calendar / Drink Bottle / CAS Membership | Rich Leonard |
| 8 | Explore Scientific G600 Binos and CAS 2023 Calendar | Rob Chapman | 18 | Explore Scientific G600 Binos and CAS 2023 Calendar | Sonia Koschinski |
| 9 | Galileo STEM Refractor Kit | Alistair Gough | 19 | CAS 2023 Calendar / Drink Bottle / CAS Membership | Nick Bason |
| 10 | CAS 2023 Calendar / Mug / CAS Membership Pack | Irena Toocic | 20 | CAS 2023 Calendar / Drink Bottle / CAS Membership | Grace Kelly |

# CAS MERCHANDISE CONT

**Waterproof Stickers New TYPE** with our logo are also available $2.50 each
**CAS Beanies:** Now in stock. Wool Blend Beanie with the CAS logo $20.00
**CAS Sew-On LOGO Badges:** Now in stock $10.00 each
The following we will take orders and then order the items, 1-2 weeks Delivery from order) We have some 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



## We would like to thank the following sponsors for their generous donations to our 2022 Fund Raiser

JACOBSDIGITAL
EST. 1982

**https://www.jacobsdigital.co.nz/**

EXPLORE SCIENTIFIC

**https://explorescientificusa.com/**

PHOTO WAREHOUSE

**https://www.photowarehouse.co.nz/**

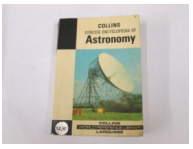
ASTRONZ

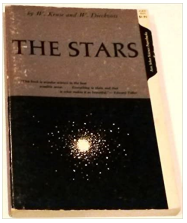
**https://astronz.nz/**

***Remember to mention you are a CAS Member when ordering***

# LIBRARY CORNER

Our CAS Librarian, Sean has been working through our library at the Observatory, sorting the many donated books, filing those returned to the shelves, often finding 2 and sometimes 3 copies of the same book.
Along with a general tidy up.
While doing this he has discovered that we have multiples of some copies, and the committee has agreed that we offer these to our members on a no return basis. (when you have finished with it (if ever) pass it onto someone else who will enjoy it).
Books will be listed in future casmags and can be claimed for adoption by emailing Sean at librarian@cas.org.nz.

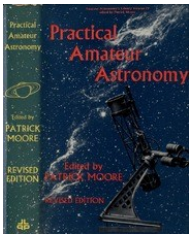



**<u>This Months Books for Adoption are:</u>**

1: Collins Concise Encyclopaedia of Astronomy

2: The Stars by W.Cruuise & W. Dieckvoss




3: Scientific American Amateur Telescope Making Book 1

4: Scientific American Amateur Telescope Making Book 3

5: Practical Amateur Astronomy, Edited by Patrick Moore Volume 4

6: Practical Amateur Astronomy, by Patrick Moore Volume 1

If you are interested in any of these books please email Sean which book/s you are after and he can organise getting the book/s to you
(1st in gets the book)

Remember these are not for return to the library

We will publish a new list each month for adoption

As we have had many generous donations of books over the years to avoid double ups and disappointment.

*<u>Please note if you or your family wish to donate books please contact Sean before hand, so he can advise the best plan for this.</u>*

*Email Sean @ librarian @cas.org.nz*

# HEATHERS NOTES:

My experience of the Lunar eclipse from Rolleston November 8 2022..

During the day, it is very cloudy, but I am not too worried, it is supposed to clear later in the afternoon, and yes, it is starting to clear and looking very promising for tonight's Lunar eclipse.
The evening, it is now perfectly clear so I will set up my 20X80 bino, and get my little beach chair all ready in the middle of the driveway where I have a good view of the moon now visible.. It is now 9.30, and I think I can see some shadowing and limb darkening, I will take a look through my bino, yes, definitely..... 10 pm, and yes, I can definitely see the shadow now. I am all rugged -up and feeling warm and toasty and I get myself hot drinks to keep me going.
As the night goes on, looking at the moon naked eye, it looks as though a chunk of the moon is 'missing'; I look through the bino and of course see all the moon and now, the shadow starting to change colour and go into that beautiful copper colour. As the eclipse progresses, I notice that the colour is now more intense seen naked eye than through my bino, so, I pack all my bino gear up, take it in doors and get myself another hot drink, then settle back in my little chair all toasty and warm with a rug wrapped around me and watch the beautiful show of the eclipse, and the moon now the most beautiful golden- copper colour..
In my line of sight, there is bright Saturn a little to the west, then the magnificently beautiful eclipsed moon, a little lower on the horizon and more to the east, is the lovely Pleiades cluster twinkling and 'glittering'. I know when we do viewing, we don't like to see twinkling, but tonight, it just adds to the beauty of it all. Then to the east of the Pleiades, is an inverted V of Taurus, the Pleiades being a part of Taurus. And, east of that again, Orion now higher in the sky as Scorpius sets to the west..
I am getting tired now, but I don't want to go to bed with the moon looking so beautiful.
Now much later, the sky is now starting to get a little lighter again, and the limb of the moon is starting to get a little lighter,
I am tired and my eyes are starting to close, I think I had better make a move and go back in the house to go to bed, if I don't make a move right now, I will fall asleep and find myself still sitting here in the middle of the driveway with rugs around me when the sun comes up and the birds start their dawn chorus, worst still, someone may be out for a walk past my gate and see me sitting there!!!!!
I feel honoured to have seen and been a part of this beautiful experience ..... I think there will be some lovely pics of those into astro photography we look forward to seeing them.
Take care everyone. From Heather...

*Thank you Heather from Editor*

# 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

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## 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.

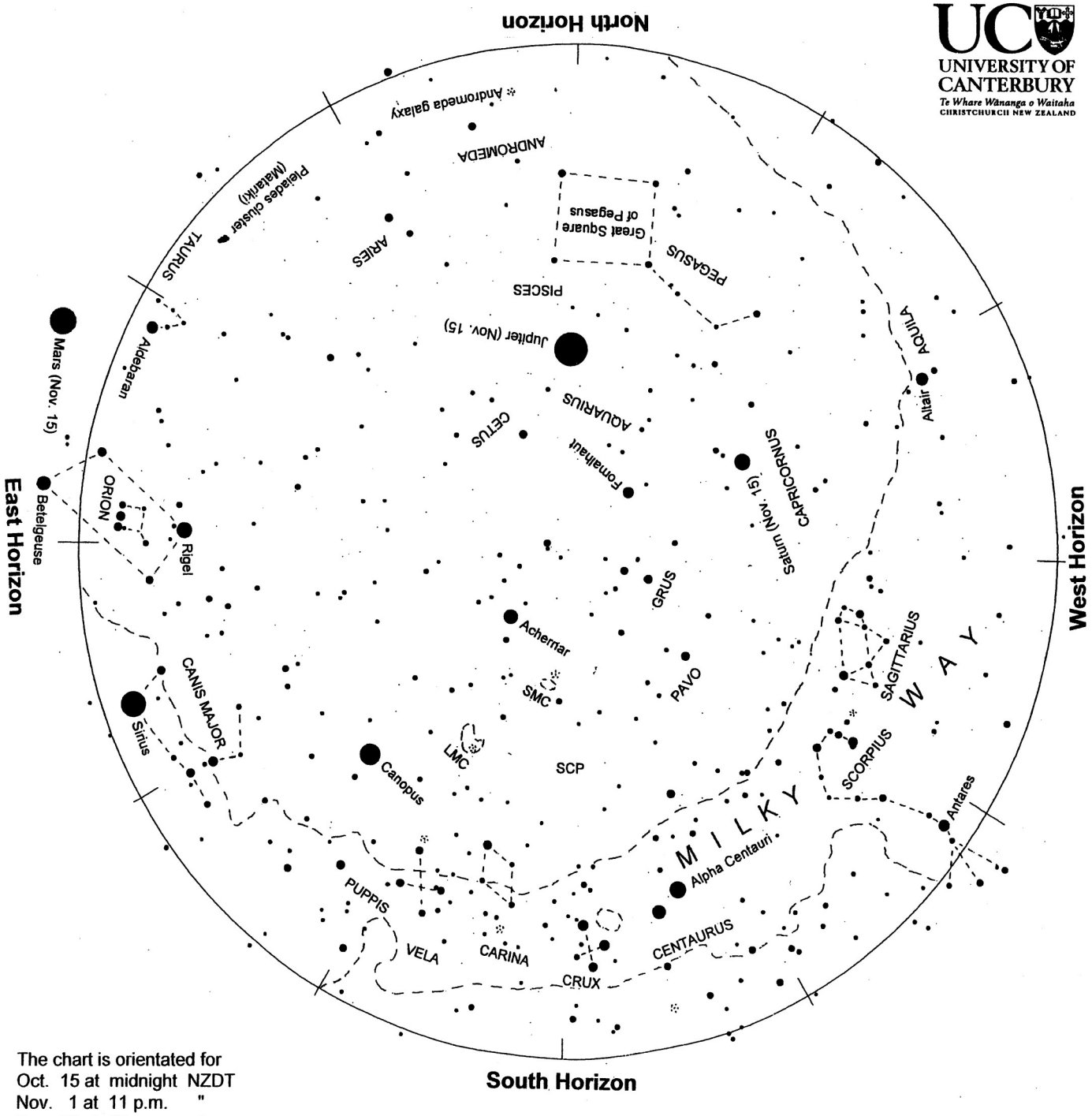
Members still have free access to the lodge and its facilities, but any other access will require an accredited person to be present.

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*




The chart is orientated for
Oct. 15 at midnight NZDT
Nov. 1 at 11 p.m. "
Nov. 15 at 10 p.m. "

## Evening sky in November 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.

Jupiter is the 'evening star', appearing north of overhead soon after sunset. Saturn is northwest of the zenith. Mars appears in the northeast in the late evening. Sirius, the brightest true star, appears in the east. Left of Sirius is Orion containing 'The Pot'. Further left are Taurus and the Pleiades/Matariki star cluster. Canopus, the second-brightest star, is midway up the southeast sky. The Pointers and Crux, the Southern Cross, are low in the south. The Clouds of Magellan, small nearby galaxies, are two misty patches high in the south. The Milky Way is wrapped around the horizon. Low in the north is the Great Square of Pegasus with the Andromeda galaxy below and right of it. There is a total eclipse of the Moon on the 8-9th.

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

## The Evening Sky in November 2022

**Jupiter** is the 'evening star', appearing north of overhead soon after sunset. As the sky darkens **Saturn** appears northwest of the zenith. **Sirius**, the brightest true star, rises a little south of due east. By the end of the month it is up at sunset. **Canopus**, the second-brightest star, is in the southeast. Both stars twinkle like diamonds as the air disperses their white light.

At the beginning of the month **Mars** rises in the northeast before midnight. It is orange-red and brighter than Sirius. In the late night sky it is the second-brightest 'star' after Jupiter. It rises earlier each night. By the end of November it appears around 9:30 NZDT.

The disk of Jupiter can be seen in binoculars along with one or two of its big moons close by. Any telescope will show all four moons, the ones discovered by Galileo in 1610. The ring of Saturn is also visible in a small telescope along with Saturn's biggest moon Titan, close to the planet. Mars is small in a telescope, appearing the same size as the globe of Saturn. The Moon will be near Saturn on the 2nd; near Jupiter on the 4th and 5th, and near Mars on the night of 11-12th.

Left of Sirius is the constellation of **Orion**, with 'The Pot' at its centre. **Rigel**, a bluish supergiant star, is directly above the line of three stars; **Betelgeuse**, a red-giant star, is straight below. Left again is orange **Aldebaran**. It is at one tip of a triangular group called the Hyades cluster. The Hyades and Aldebaran make the upside down face of **Taurus** the bull. Still further left is the **Pleiades** or **Matariki** star cluster, also called the Seven Sisters, Subaru and many other names. Six stars are visible to most eyes. Dozens are seen in binoculars. The cluster is 440 light years (l.y.)* away and around 100 million years old.

Sirius is the brightest star both because it is relatively close, nine l.y. away. Seen up close it would be 23 times brighter than the sun. By contrast, Canopus is 300 l.y. away and 13 000 times brighter than the sun.

The **Milky Way** is low in the sky, visible around the horizon from the northwest, through south into the eastern sky. The broadest, brightest part is in **Sagittarius**, to the right of the Scorpion's sting. 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 is 27 000 light years away in the direction of Sagittarius.

Low in the south are the Pointers, Beta and **Alpha Centauri**, and **Crux** the Southern Cross. In some Maori star lore the bright southern Milky Way makes the canoe of Maui with Crux being the canoe's anchor hanging off the side. In this picture the Scorpion's tail can be the canoe's prow and the Clouds of Magellan are the sails. Alpha Centauri is the closest naked-eye star; 4.3 light years away.

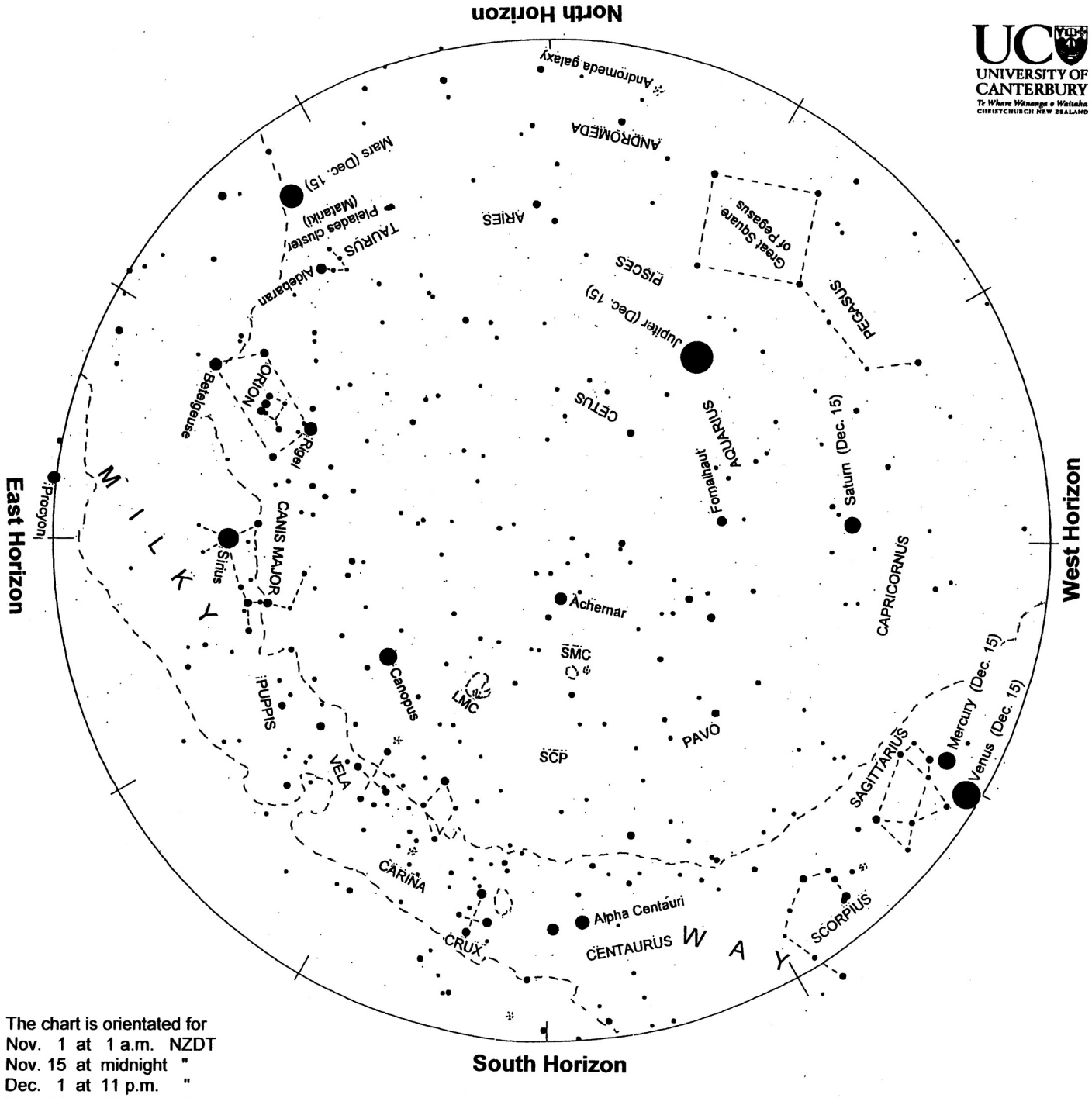
The Clouds of Magellan, (**LMC** and **SMC**), high in the southern sky, are two small galaxies about 160 000 and 200 000 light years away, respectively. They are easily seen by eye on a dark moonless night. The globular star cluster 47 Tucanae looks like a slightly fuzzy star near the top-right edge of the SMC. It is 'only' 16 000 light years away and merely on the line of sight to the SMC. Globular clusters are spherical clouds of stars many billions of years old.

Very low in the north is the **Andromeda Galaxy**, easily seen in binoculars in a dark sky and faintly visible to the eye. It appears as a spindle of light. It is similar to our galaxy and nearly three million light years away.

A **total eclipse of the Moon** occurs on the night of the 8-9th. The Moon begins to enter the outer part of Earth's shadow, the penumbra, at 9:02 NZDT. It won't show much darkening till it starts to enter the inner shadow, the umbra, at 10:09. By 11:17 the Moon will be completely in the umbra. Just how dark it gets depends on how much sunlight is bent around the Earth by the air. If a lot is, then the Moon will glow red, a 'blood Moon'. If there is much cloud around the Earth's edge, as seen from the Moon, then the Moon will become darker. The Moon will be at its darkest at midnight. It begins to exit the umbra at 12:42 and is fully clear of it by 1:49. It moves out of the penumbra at 2:56 a.m.

*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 sunlight 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 220926




The chart is orientated for
Nov. 1 at 1 a.m. NZDT
Nov. 15 at midnight "
Dec. 1 at 11 p.m. "
Dec. 15 at 10 p.m. "

## Evening sky in December 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 also shows a small extra clockwise rotation each night as we orbit the sun.

All five naked-eye planets are in the evening sky, but Venus and Mercury set early. Jupiter is the brightest 'star' in the night sky with Saturn well below and left of it. Mars is a bright orange-red 'star' low in the northeast. Due east is Sirius, the brightest true star, twinkling like a diamond. Left of it is Orion, with 'The Pot' at its centre. Bright Rigel is above the Pot and reddish Betelgeuse below. Left of Orion is orange Aldebaran with a V-shaped cluster making the face of Taurus the Bull. Further left is the Pleiades/Matariki/Seven Sisters star cluster. The Pointers and Crux, the Southern Cross, are low in the south. Right of Canopus, the second brightest star, are the Clouds of Magellan (LMC and SMC on the chart), two small nearby galaxies. The Great Square of Pegasus spans the lower northern sky with the Andromeda Galaxy below and right of it.

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

**T he Evening Sky in December 2022**

UC UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

All five of the naked-eye planets are in the early evening sky, but some are easier to find than others. **Venus** and **Mercury** are low in the southwest. At the beginning of the month brilliant Venus sets 40 minutes after the Sun. Mercury is then above Venus but may be hard to see in the twilight. By mid-month Venus is setting an hour after the Sun. Mercury, above and right of Venus, sets 30 minutes later. Mercury sinks back into the twilight as it moves between us and the Sun. On the 28th it will be just to the right of Venus but may be too faint to see by eye in the twilight.

Saturn, Jupiter and Mars are spaced across the evening sky. **Jupiter** is the brightest 'star' in the sky after Venus sets, shining in the northwest with a steady golden light. **Saturn** is due west, well below and left of Jupiter. It is the brightest 'star' in an empty region of sky. **Mars** is the brightest orange-red 'star' in the northeast. Nearby are orange stars Aldebaran and Betelgeuse. Mars is at its closest distance for this year on the 8th, 82 million km away. It is still small in a telescope. At 100x magnification it looks as big as the full moon does to the naked eye. The Moon will appear close to Jupiter on the 2nd and again on the 29th. It is near Mars on the 8th. The Moon is below Saturn on the 26th and above it on the 27th.

The brightest true stars are in the east and south. **Sirius,** the brightest star, but fainter than Jupiter and Mars, is due east at dusk, often twinkling like a diamond. Left of it is the bright constellation of **Orion.** The line of three stars makes Orion's belt in the classical constellation. To southern hemisphere sky watchers they make the bottom of 'The Pot'. The faint line of stars above the bright three is the Pot's handle or Orion's sword. At its centre is the Orion Nebula, a glowing gas cloud nicely seen in binoculars. **Rigel**, directly above the line of three stars, is a hot blue-giant star. Orange **Betelgeuse**, below the line of three, is a cooler red-giant star.

Left of Orion is a triangular group making the upside-down face of **Taurus** the bull. **Aldebaran**, at one tip of the V shape, is one eye of Taurus. The stars on and around the V, except for Aldebaran, are the Hyades cluster. Aldebaran is not a member of the cluster but on the line-of-sight. Further left is the **Pleiades/Matariki/Subaru** cluster, a tight grouping of six naked-eye stars.

**Canopus**, the second brightest star, is high in the southeast. Low in the south are the Pointers, Beta and **Alpha Centauri**, and **Crux** the Southern Cross upside down at this time of the year. In some Maori star lore the bright southern Milky Way makes the canoe of Maui with Crux being the canoe's anchor hanging off the side. In this depiction the Scorpion's tail, just setting, can be the canoe's prow and the Clouds of Magellan are the sails.

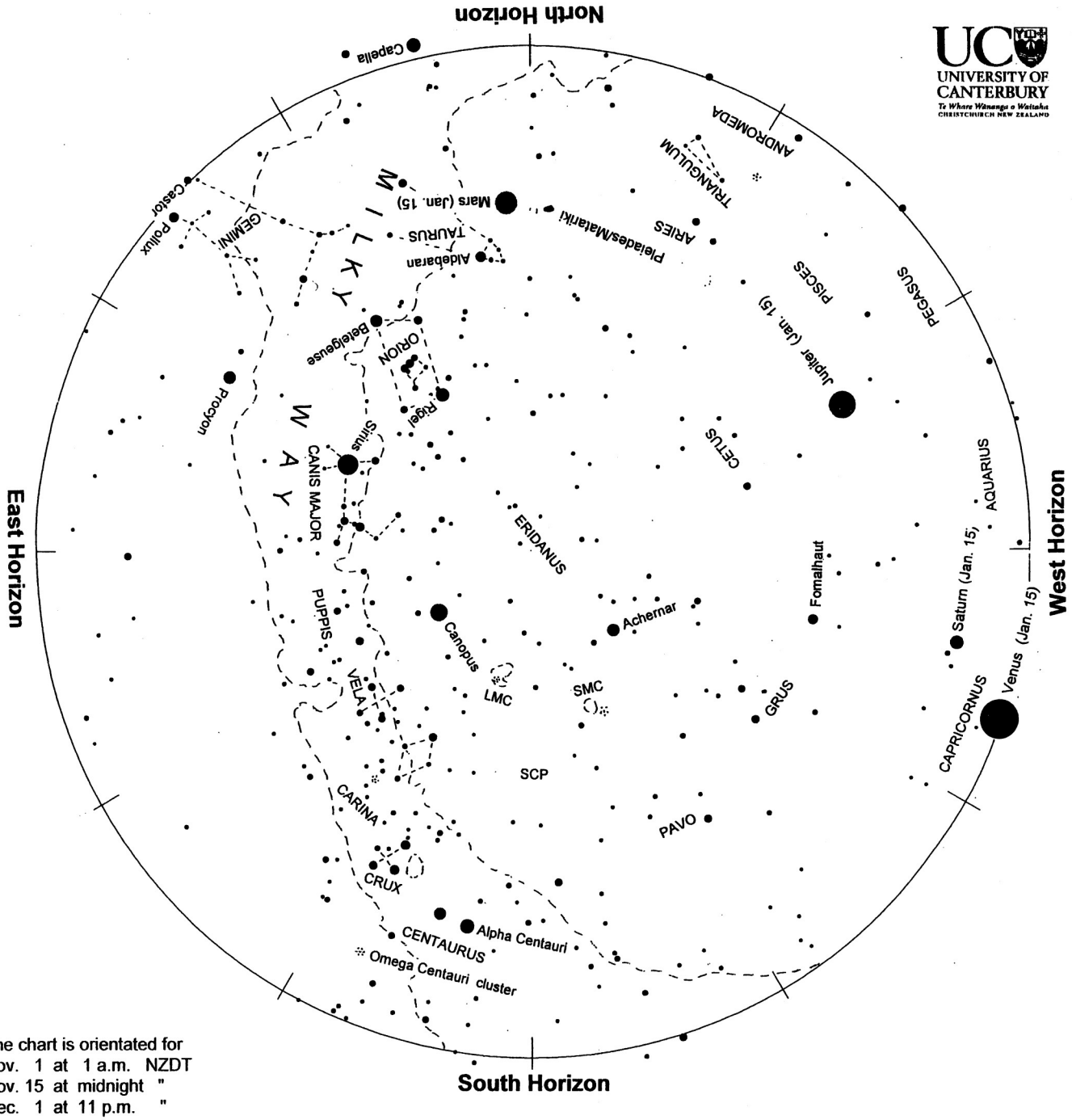
The **Milky Way** is wrapped around the horizon. The broadest part is in Sagittarius, low in the southwest around Venus. It narrows toward Crux in the south and becomes faint in the east below Orion. The Milky Way is our edgewise view of the Galaxy. The Galaxy's thick hub or central bulge is 27 000 light-years away, in Sagittarius. The nearby outer edge is the faint part of the Milky Way below Orion.

The Clouds of Magellan, **LMC** and **SMC**, high in the southern sky, are two small galaxies about 160 000 and 200 000 light-years away, respectively. They are easily seen by eye on a dark moonless night as misty patches of light.

Very low in the north is the **Andromeda Galaxy**. In binoculars in a dark sky it looks like a spindle of light. It is a bit bigger than our Milky Way Galaxy and nearly three million light-years away.

*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.

Notes by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand.
www.canterbury.ac.nz 221021




The chart is orientated for
Nov. 1 at 1 a.m. NZDT
Nov. 15 at midnight "
Dec. 1 at 11 p.m. "
Dec. 15 at 10 p.m. "

## Evening sky in January 2023

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 also shows a small extra clockwise rotation each night as we orbit the sun.

Brilliant Venus is the 'evening star' low in the southwest, setting 70 minutes after the Sun. Medium-bright Saturn is above and right of Venus at the beginning of the month but sinks lower to be beside Venus on the 22nd. Jupiter, in the northwest, is the brightest 'star' in the night sky. Mars is a bright orange-red 'star' low in the north. In the northeast is Sirius, the brightest true star. Between Sirius and Mars is Orion, with 'The Pot' at its centre. Bright Rigel is above the Pot and orange Betelgeuse below. Above Mars is orange Aldebaran with a V-shaped cluster making the face of Taurus the Bull. Left of Mars is the Pleiades/ Matariki/ Seven Sisters star cluster. The Pointers and Crux, the Southern Cross, are low in the south. Below and right of Canopus, the second brightest star, are the Clouds of Magellan (LMC and SMC on the chart), two small nearby galaxies.

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

# The Evening Sky in January 2023

Bright planets and bright stars are scattered over the evening sky. Silver **Venus** is the brightest 'star' in the early evening sky, low in the southwest at dusk, setting 70 minutes after the Sun. Golden **Jupiter**, second brightest after Venus, is in the northwest. It sets due west around midnight. Orange **Mars,** low in the north, is the brightest 'star' in that part of the sky. **Saturn** looks like a medium-brightness star above Venus at the beginning of the month. It slips lower. On the 22nd Saturn will be just a full-moon's width right of Venus. On the 23rd the thin crescent Moon will be near the two planets. The Moon will be near Mars on the 3rd and 4th and again on the 31st. It will be near Jupiter on the 21st.

Jupiter is worth a look in any telescope. Small telescopes show its disc and its four big moons. We are viewing their orbits edge-on so they appear to slide back and forth, night to night, like beads on a string. Larger telescopes show dark stripes in Jupiter's clouds. Mars, though bright, is small in a telescope. It will slowly fade as we leave it behind.

**Sirius**, the brightest true star, appears high in the east at dusk. Called 'the Dog Star' it marks the head of **Canis Major** the big dog. A group of stars to the right of it make the dog's hindquarters and tail, upside down just now. Sirius is the brightest star in the sky both because it is relatively close, nine light years* away, and 23 times brighter than the sun. **Procyon**, in the northeast below Sirius, marks the smaller of the two dogs that follow Orion the hunter across the sky.

Left of Sirius as the sky darkens are **Rigel** and **Betelgeuse**, the brightest stars in **Orion** the hunter. Between them, but fainter, is a line of three stars making Orion's belt. To southern hemisphere star watchers, Orion's belt makes the bottom of 'The Pot' or 'The Saucepan'. A faint line of stars above and right of the belt is the pot's handle or Orion's sword. It has a glowing cloud at its centre: the Orion Nebula.

Below and left of Orion and above Mars is the V-shaped pattern of stars making the face of **Taurus** the Bull. The V-shaped group is called the Hyades cluster. It is 150 light years away. Orange **Aldebaran**, making one eye of the bull, is not a member of the cluster but on the line of sight, at half the cluster's distance.

Left of Mars is the **Pleiades/Matariki/Seven Sisters/ Subaru** star cluster. Pretty to the eye and impressive in binoculars, it is 440 light years from us. From northern Aotearoa the bright star **Capella** is on the north skyline. It is 90,000 times brighter than the sun and 3300 light years away.

Low in the south are **Crux**, the Southern Cross, and 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 very luminous and distant: 13 000 times brighter than the sun and 300 light years away.

The **Milky Way** is in the eastern sky, brightest in the southeast toward Crux. It can be traced towards the north but becomes faint below Orion. The Milky Way is our edgewise view of the Galaxy, the pancake of billions of stars of which the sun is just one. Binoculars show many star clusters and a few glowing gas clouds in the Milky Way, particularly in the Carina region. The Milky Way is faint left, or north, of Orion because we are looking toward its thin outer edge. The centre region of the Galaxy, in Sagittarius, is hidden by the sun at this time of year.

The Clouds of Magellan, **LMC** and **SMC** are high in the southern sky and easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away.

*A **light year** 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 sunlight 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 221122

# CAS COMMITTEE AND OFFICERS 2022/2023

| | | |
|---|---|---|
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| Vice President: | Simon Lewis | vice.president@cas.org.nz |
| Treasurer: | David Brian | treasurer@cas.org.nz |
| Secretary: | David Brian | secretary@cas.org.nz |
| Observatory Director: | Kieren Eden | observatory.director@cas.org.nz |
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| Web Master: | Marc Bunyan | casweb@cas.org.nz |
| Committee Members: | Carol McAlavey | member2@cas.org.nz |
| | Terry Richardson | member1@cas. |
| | Preetha Sreedharan | member3@cas.org.nz |
| | Goran Balvan | member5@cas.org.nz |
| | Orlon Petterson | member4@cas.org.nz |

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

**CAS Contact Information**

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Christchurch 8140
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

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

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

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:_____