



# CASMAG

The official magazine of the Canterbury Astronomical Society

[www.cas.org.nz](http://www.cas.org.nz) [www.facebook.com/CanterburyAstronomicalSociety](https://www.facebook.com/CanterburyAstronomicalSociety)

## 75th ANNIVERSARY YEAR 1948-2023

**Monthly Meeting:** Our Monthly Meetings are held on the 3rd Tuesday night of the month. Refreshments from 7.30pm Meeting starts at 8pm  
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

Our Members Meeting's have finished for this year.

Next Meeting is

Tuesday 20th February 2024

The CAS committee hope you all have a  
Merry Christmas and wonderful New Year  
and look forward to seeing you again  
next year

### 2023 ANNUAL SUBSCRIPTIONS/MEMBERSHIP

Payment for the 2023 Year is now OVERDUE

This 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)  
*PLEASE advise if there are any changes to your details: Address, Phone  
Number, email, Please email any changes to [membership@cas.org.nz](mailto:membership@cas.org.nz) so the  
records can be updated.* 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

MEMBERSHIP

[membership@cas.co.nz](mailto:membership@cas.co.nz)



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## From Your Editor

*Firstly my apologies for no Casmag the last 2 months, for those of you who do not know, I fell while gardening and fractured my right wrist and ended up in plaster cast for 5 weeks, until you can not use your dominant hand you realise how much is done and how limited you are when you can not use it, On the mend now, and yes gardening can be dangerous, Hope you all have a happy and safe holiday season — Dale.k*

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,

Any questions, Ideas or suggestions please email to [editor@cas.org.nz](mailto:editor@cas.org.nz)

Dale Kershaw

[Please see page 20 for notes:](#)

## CAS Calendar NOVEMBER 2023-FEBRUARY 2024



### NOVEMBER 2023

|               |  |
|---------------|--|
| Saturday 4th  | New Members Night @ Observatory          |
| Sunday 5th    | <i>Last Quarter</i>                      |
| Monday 13th   | <i>New Moon</i>                          |
| Tuesday 14th  | Committee Meeting                        |
| Friday 17th   | Canterbury Show Day Holiday              |
| Monday 20th   | <i>First Quarter</i>                     |
| Tuesday 21st  | CAStroNauts @ University 6.30-7.30pm     |
|               | Members Meeting @ University from 7.30pm |
| Saturday 25th | Members Night @ Observatory              |
| Monday 27th   | <i>Full Moon</i>                         |

### DECEMBER 2023

|                |                      |
|----------------|----------------------|
| Saturday 2nd   | Cas Christmas BBQ    |
| Tuesday 5th    | <i>Last Quarter</i>  |
| Tuesday 12th   | Committee Meeting    |
| Wednesday 13th | <i>New Moon</i>      |
| Wednesday 20th | <i>First Quarter</i> |
| Monday 25th    | Christmas Day        |
| Tuesday 26th   | Boxing Day           |
| Wednesday 27th | <i>Full Moon</i>     |
| Sunday 31st    | New Years Eve        |

### JANUARY 2024

|               |                      |
|---------------|----------------------|
| Monday 1st    | New Years Day        |
| Thursday 4th  | <i>Last Quarter</i>  |
| Friday 12th   | <i>New Moon</i>      |
| Thursday 18th | <i>First Quarter</i> |
| Friday 26th   | <i>Full Moon</i>     |

### FEBRUARY 2024

|               |  |
|---------------|--|
| Saturday 3rd  | <i>Last Quarter</i>                              |
|               | New Members Night @ Observatory                  |
| Tuesday 6th   | Waitangi Day Holiday                             |
| Friday 9th-   | Stardate South Island continues till Sunday 11th |
| Saturday 10th | <i>New Moon</i>                                  |
| Tuesday 13th  | Committee Meeting                                |
| Saturday 17th | <i>First Quarter</i>                             |
| Tuesday 20th  | CAStroNauts @ University 6.30-7.30pm             |
|               | Members Meeting @ University from 7.30pm         |
| Saturday 24th | Members Night @ Observatory                      |
| Sunday 25th   | <i>Full Moon</i>                                 |

## 2023 Open Night Season

A huge thank you to all of those who assisted with our Open Nights/ Wednesday Groups and of course Kidsfest this past year, This last year was very successful with great numbers attending these nights.

These nights are run as part of our Public Outreach.

This is our main income towards running our society and of course the observatory.

These events also bring in our new members.

Our 2024 Open night season will start after the daylight saving change on 7th April 2024. Notices will be posted on our website. We look forward to seeing you at these events.

Your CAS Committee

## MONTHLY MEETINGS:

### Meeting Venue:

**Room ER 225 in the Ernest Rutherford Building, University of Canterbury, 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](mailto:member2@cas.org.nz)

### Upcoming Members Meeting Dates:

**21st November: Chester Hall-Femandaz : Discovery of the Pistachio Nebula**

**Reminder there is NO Members meetings in December or January**

**20th February 2024: TBC**

**19th MARCH 2024: CAS AGM.**

**16TH APRIL 2024: TBC**

**(correct as at 1st November 2023, 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

## 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 these New Members we accepted recently:

Glenice Agnew  
Robert Kidd  
Quin Davis  
James Courtier  
Adrian Sands  
Maadesh Kumar  
Nataliya Ivasgenko and Family  
Peter, Heather, Amelia, Alice West Family  
Anna, Reuben, William, Elizabeth & Harriet Beer  
James Glucksman  
Arun Linus  
Anne Scott  
Jillian Scott  
Raymond Parker and Family  
Loku Yaddhige Akash Sandakelum. - Family  
Megan Hieatt  
Ram Ravi Singh Khalsa, Pritham Khalsa, Kaha Packman, Maru Packman & Forest Khalsa  
Martin Pettigrew  
Janet Arthu  
Peter Glasson  
Richard Lane  
Pam Peters



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

*Apologies from the editor for any spelling mistakes in the names*

It is always great to see our new members coming along to our Members Meetings,

## OBSERVATORY IMPORTANT INFORMATION

### DOOR CODE & ALARM AT THE OBSERVATORY

**The Door code and Alarm code has been changed** with the new lock being installed 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



# CAS STAND AT HORORATA HIGHLAND GAMES 11/11/23

CAS again had a wonderful day with Telescopes/Solar Scopes/ Merchandise at the Hororata Highland Games. Thanks to those who assisted with this huge event.



Our line up of assorted telescopes were on display, The public were encouraged to view the sun and other objects viewable on the day.



Merchandise and displays inside our gazebo.

Photos: Mandy Heslop

# STARDATE SOUTH ISLAND 2024

2024 Event is 9th 10th 11th February

Check out the Stardate website

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

Registrations are now open.

Camp Fees: \$30 per night per adult, \$10 per night per child  
5-15yrs free for children under 5years

Refund cut-off date is 1st February 2024 and after this date  
no refunds for cancellations.

Registrations remain open up to the start of the event,  
including on Saturday.

There is no extra charge for a caravan power point,  
(12 points available. 6 old type and 6 new)

Please register even if you are bringing your own Tent or  
caravan, so we can plan accordingly.

We restrict the numbers using the bunks to 72 and total to  
96 so register early to secure your booking.

Don't forget your Bedding, Towels, Warm Clothes Eating and  
Cooking utensils and of course your Food along with your  
contribution towards the Saturday Night Pot-Luck dinner.

And of course your observing equipment  
Full details are on the Stardate website

Or you can contact Euan at  
[ewan@treesandstars.com](mailto:ewan@treesandstars.com)

Or Dale at  
[2dale.graeme@gmail.com](mailto:2dale.graeme@gmail.com)



# CAS CHRISTMAS BBQ

## 2ND DECEMBER 2023

Our annual Christmas Bbq was held on 2nd December, It was great to see all those who came along for this. Lots of food and great conversations were had.



Photos;  
Mandy Heslop





## CAS MERCHANDISE

### Cas Branded items for sale

**NEW STYLE OF CAS PENS NOW AVAILABLE IN 2 STYLES \$3.00**



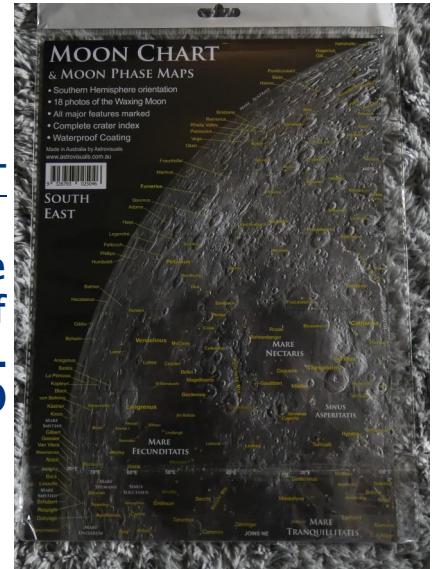
*These are all black ink and with a variety of barrel colours*



**STAINLESS DRINK BOTTLES: \$15.00 with flip top 750ml**

### MOON CHART

**8 sheets showing Moon phase maps, with waterproof coating.  
\$15.00**



**DOUBLE -SIDED PLANISPHERE FOR SOUTHERN HEMISPHERE  
\$20.00**

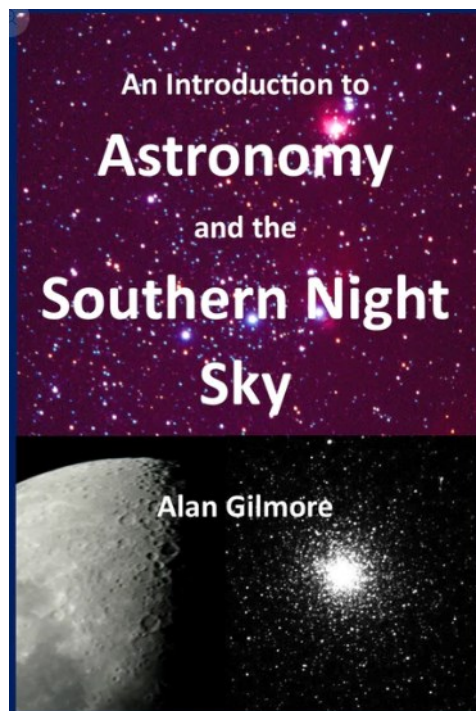


**SUN-DISK KIT, \$25.00  
Make a sundial at home**



We have a wide selection of other merchandise items available, including:

Earrings, Necklaces, Magnets, Children's Sox's, String Lights, Moon Lights, Fleece Blankets, Bags, Red light torches, Space Plasters, Placemats. To view /purchase contact Dale editor@cas.org.nz or 0272426376



**An Introduction to Astronomy and the Southern Night Sky,  
by Alan Gilmore  
\$45.00**

## CAS CLOTHING RANGE

**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

Full size charts available for ordering the correct size. Payment can be cash or bank deposit

They are available from Editor (Dale), contact via [editor@cas.org.nz](mailto:editor@cas.org.nz) or 0272426376



## CAS ASTRONOMY LOG BOOKS FOR SALE

The CAS Committee lead by Terry have designed and produced these Log Books for sale.

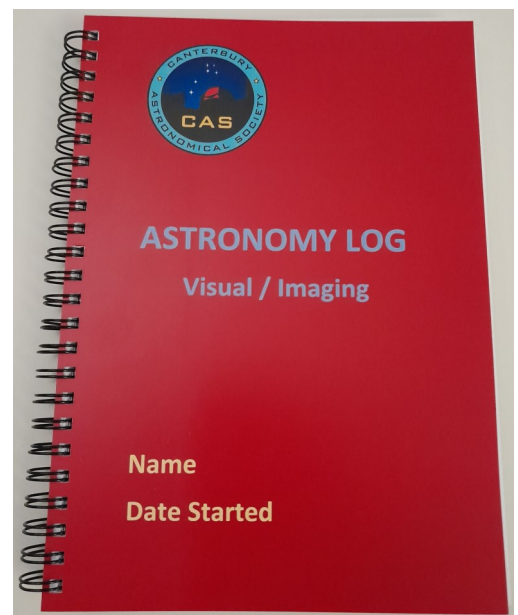
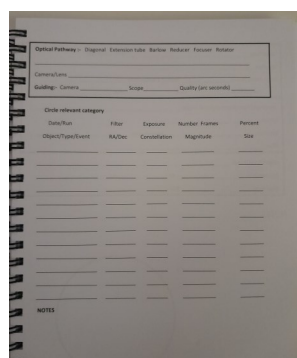
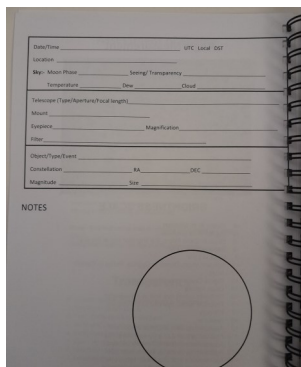
\$15.00 each. (Plus postage if required)

Contact Dale for your copy. Email: [editor@cas.org.nz](mailto:editor@cas.org.nz)

A5 size 100 pages ring bound.

Inside 1st 2 pages has handy hints for observing

- \*Assessment if Seeing
- \*Transparency
- \*Angle Measurement Guide
- \*Brightness Scale



## 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](mailto:librarian@cas.org.nz).

### This Months Books for Adoption are:

1. The Face of the Sun by H W Newton
2. The Sun by R A Sampson
3. Scientific American Amateur Telescope Making Book 3
4. Sky Atlas 2000.0 (Second Edition)



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 aim to publish a new list each month for adoption

### NEW BOOKS:

If you have seen a new book available and think it would be a good addition to our CAS Library please email the details to Sean and he can sort purchasing this

### BOOK COLLECTION DONATIONS:

As we have had many generous donations of books over the years to avoid double ups and disappointment Please contact Sean before hand, if you or your family wish to donate books so he can advise the best plan for this.

*Email Sean @ [librarian@cas.org.nz](mailto:librarian@cas.org.nz)*



## LIBRARY CORNER cont BOOK/DVD REVIEW

### Welcome to the BOOK/DVD REVIEW Page

*Please email your review to editor @cas.org.nz*

*We have 2 books reviewed this issue.*

### Albert Einstein by Banesh Hoffmann.

*Library code 530.92 HOF*

This biography of Einstein is an ancient book published in 1975 after his death.. As such it is dogeared and tattered with pages threatening to fall out. However it is a fascinating read filling in a lot of detail about his early life and later triumphs.

The book very well describes in simple terms the theories of relativity (both special and general) as well as much of his work in other areas that usually get lost in the big picture. It is fair to say that he was not a scholar in his earlier years but engaged in innovative thought experiments that led to his theories. While there are no mathematics in the book, his grasp of maths is described as somewhat below the highest standards of the day, but sufficient to fill out and present his theory.

It was of course left to many great experimenters of the day and later, to prove his theories correct so far.

Einstein came from a Jewish family, although (apart from his earliest years) he professed no particular theism.

Because of his family history, his position in Germany approaching the second world war became more difficult.

He applied for Swiss citizenship, but in order to swear allegiance he needed a book to swear on, so nominated himself as a Jew.

This "Jewishness" haunted him throughout his later years as Germany seems to have always been his real home.

He later moved to America (Princeton) and retired there.

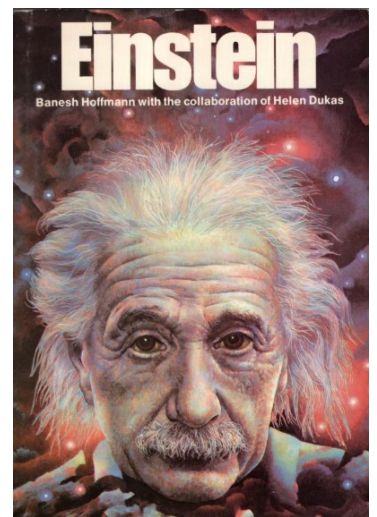
The book also goes into detail about his pacifism, a view he held against many difficulties throughout his life. This especially became an issue when the atomic bomb, conceived at least on some of his theory, was first tested then used.

Overall he is described as a genius who grappled with moral issues for most of his life.

An interesting read

Terry Richardson

*So please send in some reviews to be published,  
We have fantastic library out at the observatory and  
its there for you the members to make the most of.*



[LIBRARY CORNER cont BOOK/DVD REVIEW](#)  
[Welcome to the BOOK/DVD REVIEW Page cont](#)  
*2nd Book Review*

**An Introduction to Astronomy and the Southern Night Sky.**  
**Author - Alan Gilmore.**

*Library reference 520.Gil*

This is an A4 sized soft cover book with 225 pages (including the index) packed with information. It is a comprehensive reference to our own southern night sky without the need to translate information to our southern latitudes as many other books are written for the northern hemisphere.

The book is well written for any observer whether they are a beginner or more experienced. It gives basic information and develops the knowledge base with many useful facts.

The book covers many topics including the movement of objects in the sky, the moon and eclipses, the solar system, the sun, stars and nebulae, galaxies, telescopes and how to use them including imaging, history of astronomy, star and constellation references, star charts, and what to look at. Other useful chapters are explanations of longitude and latitude, astronomical coordinates, equinoxes etc.

Also there is a section on frequently asked questions.

This is a simply written, clear and concise, but comprehensive book for any observer and is a good read from cover to cover, or it can be employed as a very useful reference. Almost every line is packed with useful facts and information. It is not a professional astronomy text, but it gives more than sufficient detail to satisfy most readers. Some information is repeated in different chapters so that any one chapter can be read in isolation from the rest of the book.

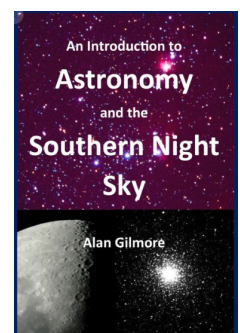
There are many clear explanatory figures and diagrams as well as many photographs. The book is printed on high grade paper so they are very clear and attractive.

I would regard this book as a must have for any amateur astronomer and is a very good reference for becoming an astronomy guide.

The book is in the library, but I would recommend buying it for your own book shelf. These are available from our CAS merchandising (talk to Dale or Orlon) at \$45 per copy.

A signed copy can be requested if you have the patience to wait for it! Be quick though as this book will prove to be very popular.

Terry Richardson



## 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 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](mailto: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](mailto:Vice.president@cas.org.nz)

Cell: 022 640 6649

### **Spectroscopy**

CAS has recently purchased a diffraction grating which can be attached to a telescope eyepiece or camera on the telescope.

The grating, like a prism, spreads the light from starlight into component colours (distribution of wavelengths). Thus begins the engaging look into the not so private lives of stars, nebulae and galaxies.

Ray Pointon

[rpointon@cyberxpress.co.nz](mailto:rpointon@cyberxpress.co.nz)




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## QUOTES OF THE MONTH

“The duty that comes with knowledge is to share it “ *Hazrat Ali*.

“Whatever is begun in anger, ends in shame”. *Benjamin Franklin*.

“The place between your comfort zone and your dream is where life takes place”. *Helen Keller*.

“Every triangle is a Love Triangle when you love triangles”.  
*Pythagoras (possibly edited)*.

“A banker is a fellow who lends you his umbrella when the Sun is shining, but wants it back the minute it begins to rain”.  
*Mark Twain*.

*Quotes sourced from RASNZ Newsletter*



## **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](mailto: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,

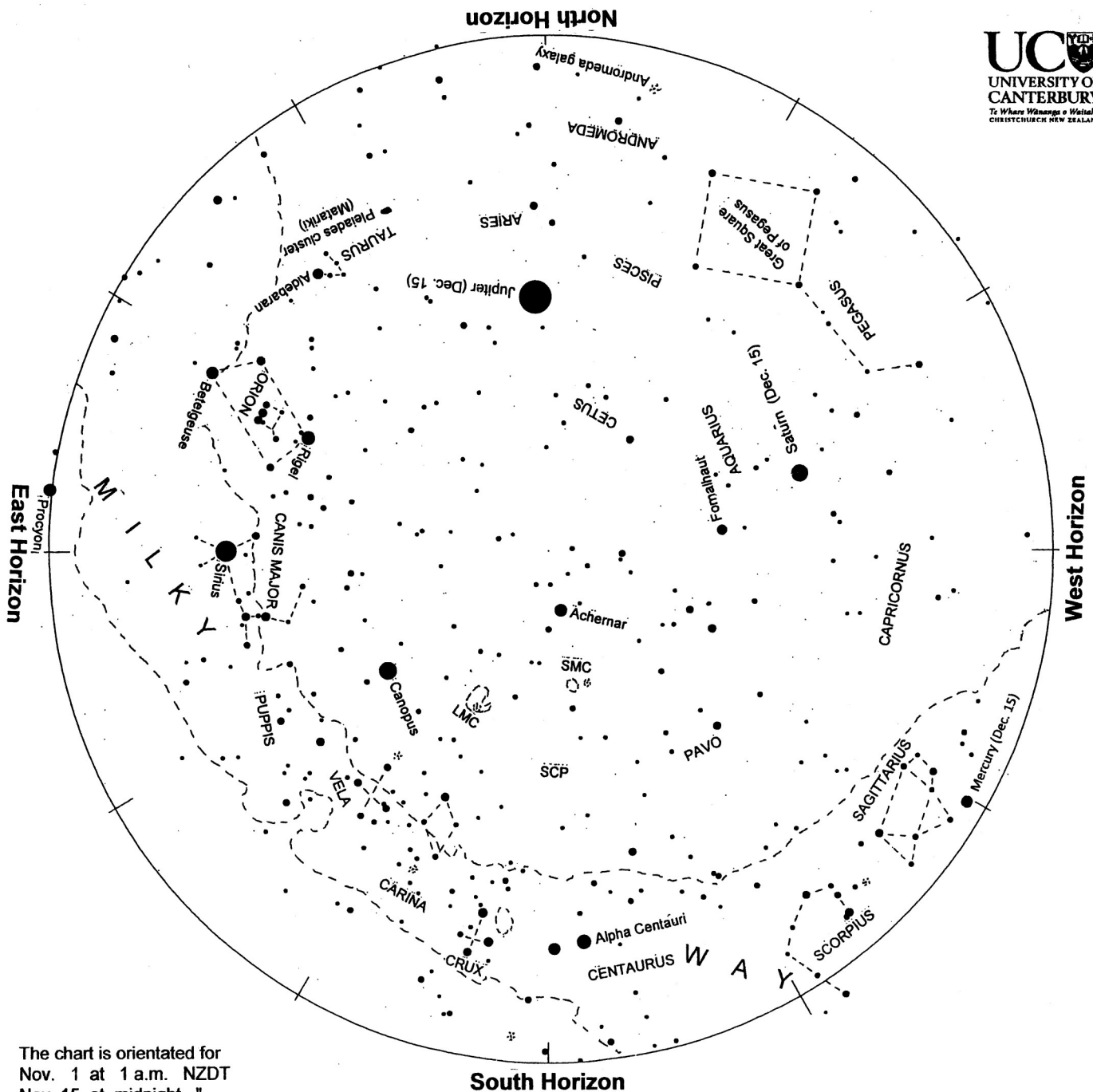
but of course can only use (or supervise) the instrument they are accredited for.

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](mailto:observatory.director@cas.org.nz)  
*Kieren Eden*



## EVENING SKY MAP FOR DECEMBER 2023



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 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.

Jupiter is the brightest 'star' in the night sky. Saturn is midway down the western sky. Mercury is a bright star low in the southwest in the first half of the month. 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.

## EVENING SKY Text FOR DECEMBER 2023

### The Evening Sky in December 2023

**Jupiter** is the 'evening star', appearing in the northeast not long after sunset. It is soon joined by the true stars **Sirius**, low in the east, twinkling colourfully, and **Canopus**, a bit higher in the southeast. Almost overhead is **Achernar**. Midway down the western sky is **Saturn**, the same brightness as Achernar but cream coloured. At the beginning of the month **Mercury** will be a bright 'star' low in the southwest, roughly where the Sun went down.

Left of Sirius is the constellation of **Orion**. Bluish **Rigel** and orange **Betelgeuse** are Orion's brightest stars. Between them is the line of three stars marking Orion's belt in the classical constellation. To southern hemisphere sky watchers they make the bottom of 'The Pot'. A 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.

Left of Orion is a triangular group making the upside-down face of **Taurus** the bull. Orange **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 closer and on the line-of-sight. Further left is the **Pleiades/Matariki/Subaru** cluster, a tight grouping of six naked-eye stars. Many more stars are seen in binoculars.

Low in the south are the Pointers, Beta and **Alpha Centauri**, and **Crux** the Southern Cross, upside down at this time of the year. The **Milky Way** is wrapped around the horizon. The broadest part is in Sagittarius, low in the southwest (around Mercury in early December.) It narrows toward Crux in the south and becomes faint in the east 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.

**Jupiter** and **Saturn** are good targets for any telescope. Binoculars show the disk of Jupiter and maybe one or two of its bright moons close to the planet. Any telescope will show all the 'Galilean' moons, but not all four every night as they cross in front of and behind Jupiter and are eclipsed in its shadow. A small telescope will show the disk of Saturn with the ring now becoming edge-on. The Moon will be below Saturn on the 17<sup>th</sup> and above it on the 18<sup>th</sup>. It will be near Jupiter on the 22<sup>nd</sup>.

**Mercury** ends an evening sky appearance in the first half of the month. At the beginning of the month it is setting nearly two hours after the Sun. It slowly falls lower, night-to-night. It also fades as it moves between us and the Sun and more of its sunlit side is turned away. By mid-month it is setting an hour after the Sun. The thin crescent Moon will be above Mercury on the 14<sup>th</sup>.

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.

There is a possibility of a **meteor shower** on the evening of the Tuesday 12<sup>th</sup> when a stream of dust from Periodic Comet Wirtanen is forecast to hit the Earth. The prediction is uncertain, but it would be worth watching for between dusk and midnight. This is a one-off event, not a regular annual meteor shower. Shower meteors will appear to radiate from a point west of the zenith.

\*A **light-year (l.y.)** is the distance that light travels in one year: nearly 10 million million km,  $10^{13}$  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.



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 or westward rotation from night to night as we orbit the sun.

Golden Jupiter is the 'evening star', appearing in the northwest soon after sunset. Sirius, the brightest true star, appears high in the east at dusk. Left of it is Orion, containing 'The Pot', with Taurus and the Pleiades/Matariki star cluster further left toward the north. Canopus, the second brightest star after Sirius, is southeast of the zenith. Crux, the Southern Cross, and the Pointers are low in the south. From northern New Zealand the bright star Capella is near the north skyline. Saturn is a lone medium-bright star, low in the west.

## The Evening Sky in JANUARY 2024

### The Evening Sky in January 2024

Golden **Jupiter** is the 'evening star', appearing in the northwest soon after sunset. **Sirius**, the brightest true star, appears east of the zenith as the sky darkens. **Canopus**, the second-brightest star, is southeast of overhead. **Achernar**, fainter than Canopus, but one of the brightest southern stars, is southwest of overhead. Low in the west is **Saturn**. It sets after midnight at the beginning of the month; around 10 pm at the end. Jupiter sets around 2:30 a.m. at the beginning of the month; around 12:40 at the end. The Moon will be beside Saturn on the 14<sup>th</sup> and near Jupiter on the 18<sup>th</sup>.

**Sirius** is called 'the Dog Star' because it marks the head of **Canis Major** the big dog. A group of stars to the right of Sirius make the dog's hindquarters and tail, upside down just now. Sirius is bright both because it is relatively close, nine light-years\* away, and 23 times brighter than the sun.

**Procyon**, in the northeast below Sirius, marks Canis Minor, 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. **Rigel** is a bluish supergiant star, 70 000 times brighter than the sun and much hotter. It is 800 light-years away. Orange **Betelgeuse** is a red-giant star, cooler than the sun but hundreds of times bigger: a ball of extremely thin hot gas. It is around 400 light-years away. 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.

Left of Orion 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 again, toward the north and lower, 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 New Zealand 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. The Milky Way is faint left 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.

Venus is the brilliant 'morning star', rising around 4 a.m. through the month. (So it's not on the chart.) The Moon will be near Venus on the morning of the 9<sup>th</sup>. Mercury, much fainter, might be seen below and right of Venus most of the month. The Moon will be above Mercury on the morning of the 10<sup>th</sup>. Mercury holds its position relative to Venus till around the 20<sup>th</sup>, then it slips lower in the twilight.

\*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.

## CAS COMMITTEE AND OFFICERS 2022/2023

|                       |                  |                                 |
|-----------------------|------------------|---------------------------------|
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For more specialized information please see the contact information page on [www.cas.org.nz](http://www.cas.org.nz)

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Canterbury Astronomical Society Facebook Group:

[www.facebook.com/groups/CanterburyAstronomicalSociety](https://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 1<sup>st</sup> 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](mailto:editor@cas.org.nz)

The deadline for each issue is the 1<sup>st</sup> 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.



# 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

|                          |  |       |
|--------------------------|--|-------|
| <input type="checkbox"/> | Adult (any person 18years of age or over who is not eligile 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 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: \_\_\_\_\_