Vol. 72: No 7 SEPTEMBER 2023 Issue Number 812

# CASMAG

The official magazine of the Canterbury Astronomical Society

www.cas.org.nz 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

## SEPTEMBER MEMBERS MEETING

IAN COOPER

*Palmerston North Astronomical Society*

Halley is returning, in 2061
What do we expect to see ?


## 2023 ANNUAL SUBSCRIPTIONS/MEMBERSHIP

**Payment for the 2023 Year is now DUE**

**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 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@cas.co.nz***

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

*Please see page for notes:*

# CAS Calendar SEPTEMBER-NOVEMBER 2023


## SEPTEMEBR 2023

| | |
|---|---|
| Saturday 2nd | New Members Night @ Observatory |
| Sunday 3rd | Fathers day |
| Thursday 7th | *Last Quarter* |
| Tuesday 12th | Committee Meeting |
| Friday 15th | *New Moon* |
| Tuesday 19th | CAStronauts @ University 6.30-7.30pm |
| | Members Meeting @ University from 7.30pm |
| Friday 22nd | Final Public Open night |
| Saturday 23rd | *First Quarter* |
| | Members Night @ Observatory |
| Sunday 24th | Daylight saving clocks Change 2am |
| Friday 29th | *Full Moon* |

## OCTOBER 2023

| | |
|---|---|
| Saturday 7th | *Last Quarter* |
| | New Members Night @ Observatory |
| Tuesday 10th | Committee Meeting |
| Sunday 15th | *New Moon* |
| Tuesday 17th | CAStronauts @ University 6.30-7.30pm |
| | Members Meeting @ University from 7.30pm |
| Friday 20th | Nasa Observe the Moon Public Event at Observatory |
| Saturday 21st | Members Night @ Observatory |
| Sunday 22nd | *First Quarter* |
| Monday 23rd | Labour Day Holiday |
| Sunday 29th | *Full Moon* |

## NOVEMBER 2023

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

# 2023 Open Night Season

Its that's time again! Doesn't it come round quick!!! This years open night programme has started.
For the newcomers to the society, we run open nights every Friday night to the general public and some Tues/Weds nights for private groups.
Of course in July we have Kidsfest … we will confirm the dates closer to that happening .. but that's 15 nights of fun!

**Why are these so important to CAS?**

They give CAS an opportunity to engage with our local communities and build strong relationships with them and key stake holders like Selwyn Council. Provide a perfect opportunity to educate our visitors on the night sky and the hobby of astronomy. They are a great source of new members ! Assist in supporting the society financially.

**So how can you help?**

We need volunteers for our open nights to help run the evenings.
It takes about 6-7 people a night to run these, from helping people check in, our welcome brief, laser tour of the night sky and then running our scopes. We normally assemble at CAS around 6.30pm and run till about 9 -9.30 depending on bookings.
The more volunteers we get the less burden it places on others and helps spread the load but I can say its VERY rewarding and highly engaging activity, the kids love it and its amazing to see and hear them so excited about their time at CAS. If you would like to help you can approach any of the committee or reach out to Rob Glassey or myself if keen. We have a volunteer booking system we use so you can choose a night to volunteer for and the system will also send you reminder emails too!
**Check it out at** cas.ivolunteer.com
Please consider even helping out with a few as every slot filled helps the society.
Thanks
Simon
CAS President

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## 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**

## Upcoming Members Meeting Dates:

19th September: IAN COOPER: Halley is returning
What do we expect to see

17th October: Soap Box:

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

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

(correct as at 1st September 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.


August Meeting we accepted

*John Simpson Adult*
*Tania Watkins Family*
*Ben Watkins "*
*Evia Watkins "*

*Welcome to all our New Members*
*I hope you enjoy reading CASMAG 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, Members Nights and Events.

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## 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

# OBITUARY FOR LIONEL EDWARD HUSSEY 17/03/40 – 08/08/23

*By Carol McAlavey*

I first met Lionel when my daughter and I went to a meeting of the Canterbury Astronomical Society in February 1986. We had just come back from the USA on a trip to see the launch of a space shuttle and were still enthused and wanted to learn more about astronomy and space.

The meeting was held in the Boardroom of the present-day Arts Centre, formerly the Canterbury College. There were a number of people at the meeting and afterwards everyone stayed around to have supper.
It was at that point that Lionel made himself known to us and welcomed us to the meeting. We immediately felt at ease and from that point on, I have hardly missed a meeting!!

I soon realised that Lionel was a big part of the Society in that he seemed to be involved with many different aspects of Society life. It only took a short time and he made sure I was elected on to the committee and was part of the general activities the Society was involved with. Lionel took me under his wing and "showed me the ropes" and gave me the confidence to try new things and I have never looked back. If you wanted something done you went to Lionel and talked to him about your project, or needed help with your telescope, then he made it happen.

Lionel was an integral part of RASNZ Conferences, especially in the 80's and 90's and beyond, where he managed the audio/visual side of the Conference and when CAS was hosting a conference, then Lionel was usually found to be organising the volunteers and making sure nothing and no-one was left out. It was through him that I honed my own organising skills.

The biggest part of what Lionel did best was his outreach skills.
His knowledge of astronomy and telescopes was phenomenal and his way of passing that knowledge on to the members of the public and our own members is the stuff of legends. I, and other members of the Society used to help Lionel up at the Townsend Observatory in the Arts Centre and I learnt a lot from hanging around with him and listening to how he made the public feel when he spoke with them. He made sure that no-one was afraid to ask a question, no matter if they thought it was a stupid question.

He said that there were no stupid questions, as it was a chance for someone to learn something new.

*Cont next page*

# OBITUARY FOR LIONEL EDWARD HUSSEY cont

It was in 1992 that the Christchurch City Council started up a programme called Kidsfest for children during the July school holidays and Lionel put our hand up for running a programme at the Townsend Observatory.
We successfully ran that programme out of Townsend for the next 3 years and then shifted it to our observatory as it was easier to make sure everyone got a look through a telescope (the mayor at the time, Vicky Buck tried two years in a row to bring her son but we were always overwhelmed by adults and kids trying to see through one telescope at the top of a lot of stairs!)

Lionel also persuaded me that I needed to be on the committee that was organising the original Stardate SI (he was very good at making people "offer" to help) so consequently a number of us convened at George Patterson's place in 1988 to discuss the logistics of holding said Stardate in the following February.

I have been touching on my experiences with Lionel and the Canterbury Astronomical Society but my involvement with him went way further than that. Not only was he a great friend but he was also my landlord for over 21 years, up until the time he had to sell his properties at Brougham Street as he had been diagnosed with alzheimers.
That diagnosis was a huge blow as Lionel had been the go-to person if you wanted to fill in any gaps in our history, and something I have been struggling with over the past couple of years.
His recollection of all things astronomy and Society was legendary and he will be missed by so many people, not only in our Society, but past members and many people who knew him through his love of astronomy.

Rest peacefully old friend.

January 2018 - Lionel standing next to the Townsend telescope in the workshop/garage of Graeme Kershaw while it was still being renovated.

# Mid-Winter BBQ & Bonfire

While we moved our mid-winter BBQ and Bonfire forward 1 month it was still a great night with great food, company and of course the bon-fire





*Photos Mandy Heslop*



*Photos: Heather Sinclair_Wentworth*

Moon, Mercury and Mars

# 2024 CAS CALENDAR

# WE NEED YOUR ASTRO PHOTOS!!!!!

Cas is going to produce our very own calendar again for 2024.

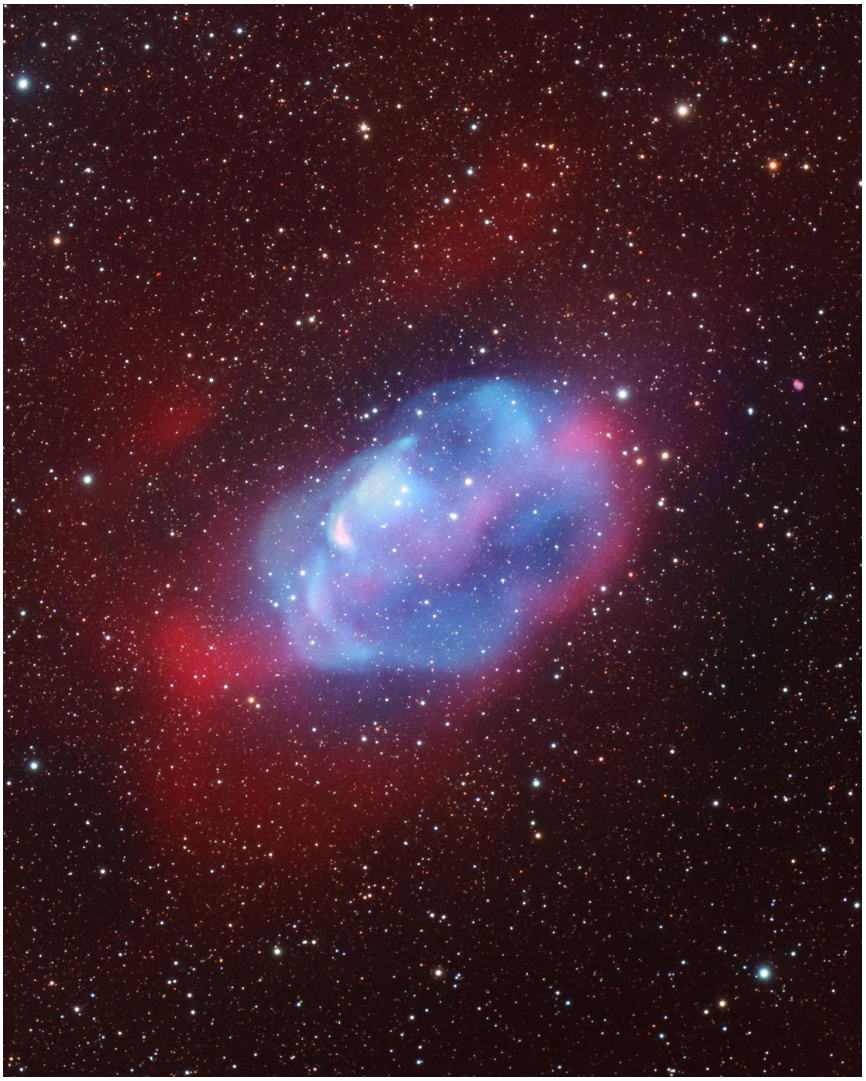
We need your astronomy photos for this and full credit is given.
We published our 1st calendar in 2022, and our 2nd in 2023
These were very popular.
We are very proud that all the photos included are taken by our very own CAS members.
We plan to publish earlier again this year in time for sales for Christmas posting and at any events CAS attends.

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


# PISTACHIO NEBULA DISCOVERY

Credit: Chester Hall-Fernadez
Facebook

Hey everyone, I discovered a nebula with my friend!
It's been officially catalogued as FalFer(Falls-Fernandez) 1 and we have called it the Pistachio Nebula.
Super exciting to have something in space named after you.
It's pretty large at about half the size of the full moon and has stayed hidden until now because it's ridiculously faint. I initially found it while working at Mount John Observatory as I was spending some of my clear nights there looking for something like this with my gear. Originally we caught a glimpse of it in April using one of my camera lenses, and then Bray spent over 100 hours exposing it with his remote telescope in Africa.
Bray put together a video on his youtube channel with a lot more info if you're interested (I also feature 👀)
https://www.youtube.com/watch?v=qhH_jQciyhE
Or you can check out the astrobin post https://www.astrobin.com/idmd45



**Congratulations to Chester and Bray**

*Chester is to give a talk at the November meeting about this discovery*

# CAS MERCHANDISE

## Cas Branded items for sale

Coffee Mugs are $15.00 each


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



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

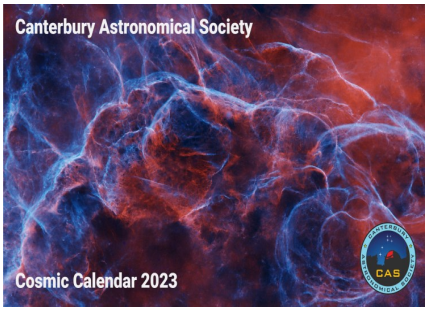
## STAINLESS DRINK BOTTLES: $15.00 with flip top 750ml


## 2023 CAS COSMIC CALENDAR:

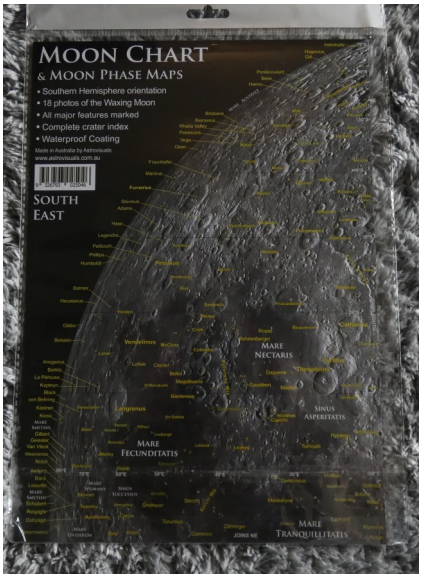
## NOW $5.00 EACH ~~$15.00~~

almost all sold

All new 12 photos taken by our own Members




## 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

## NEW ITEMS/ STOCK ARRIVING SOON.

## 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
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



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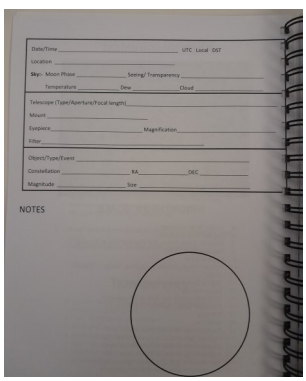
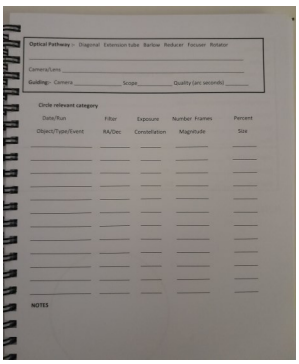
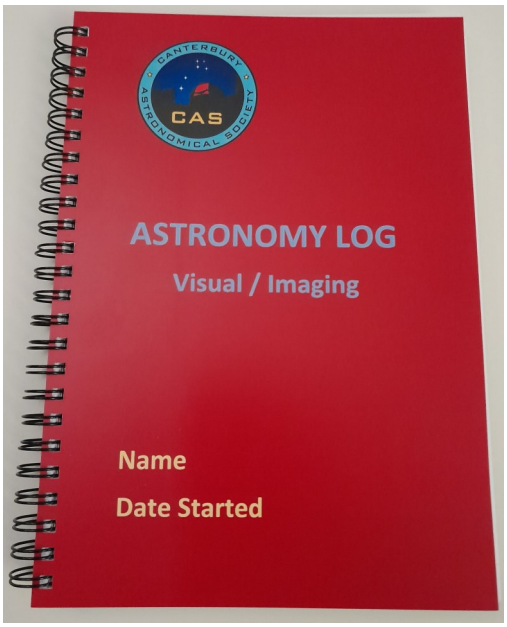
# CAS ASTRONOMAY LOG BOOKS FOR SALE

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

A5 size 100 pages ring bound.

Inside 1st 2 pages has handy hints for observing
*Assessment if Seeing
*Transparency
*Angle Measurement Guide
*Brightness Scale



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

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**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.


## 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*

## LIBRARY CORNER cont BOOK/DVD REVIEW
## Welcome to the BOOK/DVD REVIEW Page

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

I am reviewing two books together here because of the subject matter.
Terry Richardson

**Space Race Deborah Cadbury 629.409 CAD**

Russians in Space Evegeny Riabchikov 629 RAI

Deborah Cadbury is an English writer and BBC producer. She has written many different books and articles not necessarily related to Space. She writes Space Race as a well researched history of rocket development up to the first steps on the moon. She compares the Russian programme with the US programme with special reference to the two protagonists – Wernher von Braun and Sergei Korolef. Through the narrative of astonishing new developments on both sides over these years which she describes in chronological order, is an honest background and life history of these two brilliant men. The book expertly contrasts the very different organisations for which they worked, the tribulations and setbacks encountered through changes in politics and budgets. Throughout the narrative is a clear and honest history of development during this time. This is a well balanced story of the space race following near parallel developments on both sides.

Since I had not heard much about Korolef I was interested to read more and hence the second book.

**Russians in Space is written by Evgeny Riabchikov (translated by Guy Danniels).**

Riabchikov is a journalist and writer who has spent his career covering Aviation and Astronautics. I was struck early on by how brillianf Korolef was, and how a rosy picture of him was painted. The Russian program seems to have gone ahead with few mishaps, and the whole story is painted as a triumph of Russian ingenuity.

How come we know little of this man compared with von Braun? It is because Russian politics and development were shrouded in secrecy during these cold war years. It soon became clear that this writer was invited to all the Russian space development demonstrations, and has written his story in a way that satisfied the Russian administration. In other words it is pure propaganda without compromise or embarrassment. I did learn more about Korolef from this book, but not that at one stage he fell out of favour and was sent to the Gulag, only to be reinstated when it suited them as described in Space Race. What is extraordinary about Korolef is how he managed to achieve amazing results with little positive encouragement and almost negligible resources. This continued throughout his life. It was very interesting to read these two books back to back to get a clearer picture (perhaps) if the two programs and the individuals involved. It is a clear indication of the adage that “history is written by the winners”, both sides in this case being the winners.

*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.*

# 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
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

## QUOTES OF THE MONTH

"Wonder is the beginning of wisdom". *Socrates.*

"Science is organised knowledge. Wisdom is organised life". *Immanuel Kant.*

"We cannot solve problems with the same thinking we used when we created them". *Einstein.*

"The reasonable man adapts himself to the world; the unreasonable one persists to adapt the world to himself.
Therefore all progress depends on the unreasonable man". *Bernard Shaw.*

*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

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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.

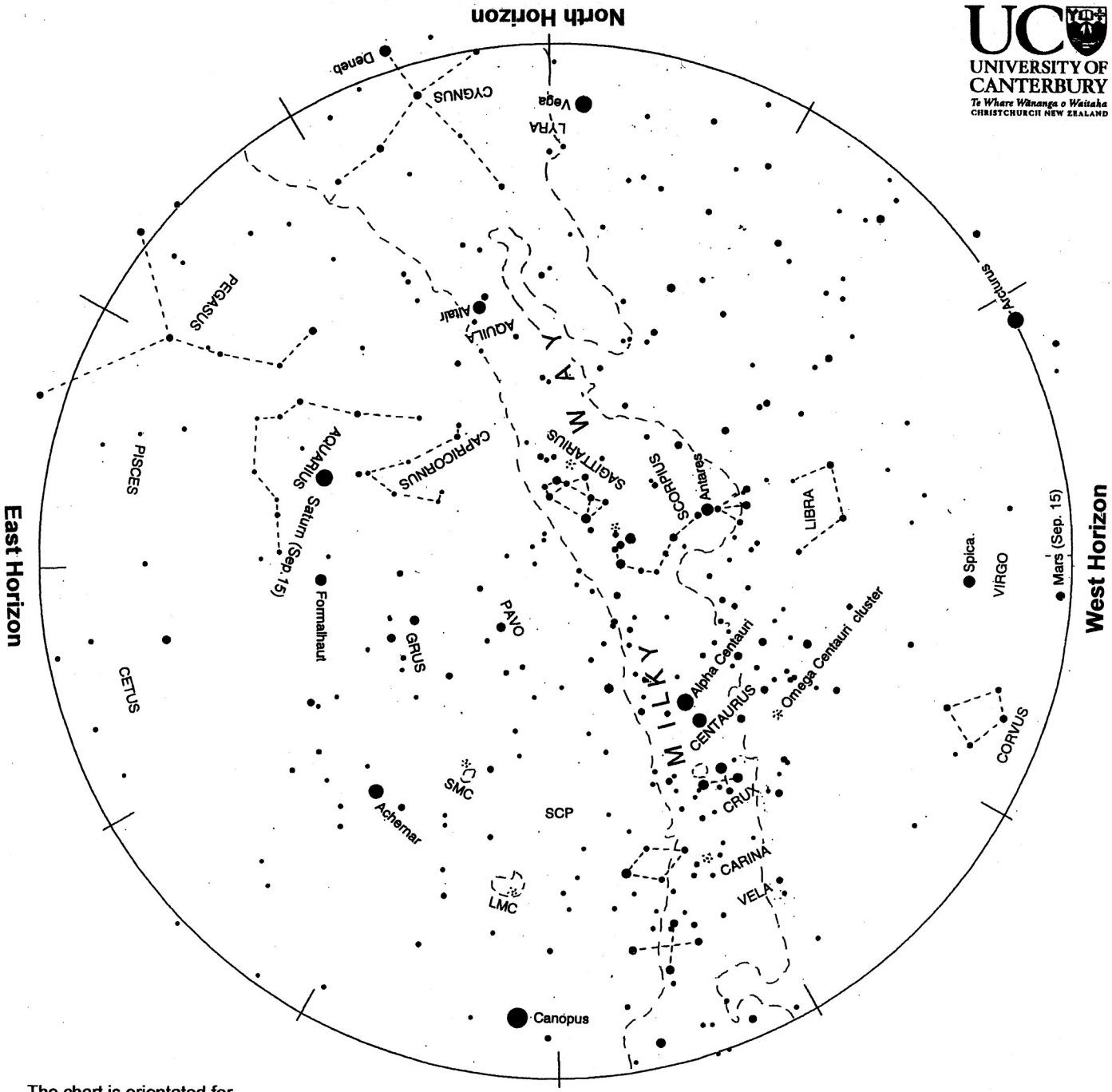
Any accredited member can get access to the keys,

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*

# EVENING SKY IN MAP FOR September 2023




The chart is orientated for
Aug. 15 at 10 p.m
Sep. 1 at 9 p.m.
Sep. 15 at 8 p.m.

## Evening sky in September 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 makes a small extra clockwise rotation each night as we orbit the sun.

Saturn appears as a cream-coloured star midway up the eastern sky. West of overhead is orange Antares marking the Scorpion's body. The Scorpion's tail curls above it like a back to front question mark. Orange Arcturus twinkles red and green as it sets in the northwest. Crux, the Southern Cross, and the Pointers are in the south-west. Canopus twinkles like a diamond near the southern horizon. Vega shines on the north horizon. The Milky Way spans the sky from north to south.

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 September 2023

The brightest stars are low in the north and south. **Canopus** is low in the southeast at dusk, often twinkling colourfully. It swings up into the eastern sky during the night. Canopus is 13 000 times the sun's brightness and 300 light years* away. On the north skyline is **Vega**, setting in the early evening. It is 50 times brighter than the sun, 25 light years away and the 5th brightest star in the sky. Places in the north of Aotearoa NZ will see **Deneb** near the north skyline in the middle of the Milky Way. Deneb is the brightest star in the cross-shaped constellation of **Cygnus** the swan. It is one of the most distant stars visible to the naked eye, around 2600 l.y away. Its brightness is uncertain because of the distance uncertainty but it could be as bright as 200 000 times the Sun's luminosity.

**Saturn** appears northeast of the zenith. It has a cream colour, unlike any star. It is at one end of a widely spaced line of stars going southward across the sky and down to Canopus. The star **Fomalhaut**, to the right of Saturn, marks the Southern Fish, Piscis Austrinus. Below and right of Fomalhaut is **Achernar**, the same brightness as Saturn. The line continues down the sky to Canopus.

Saturn appears as an oval in a low-powered telescope as the ring and planet merge. Larger telescopes show the ring and Saturn's biggest moon, Titan, four ring-diameters from the planet. Smaller moons are closer in. Saturn is 1360 million km away mid-month. The moon will be close to Saturn on the 24th.

**Jupiter** is a late 'evening star' at the beginning of the month, rising around 10:20. It is the brightest ‘star’ in the night sky, shining with a steady golden light. It rises four minutes earlier each night. By the end of the month it is up at dusk. At dawn it is in the northwest sky but then the second brightest ‘star’ after Venus (see below.) The Moon will be near Jupiter on the 1st and 2nd and again on the 28th and 29th.

Orange **Antares** is midway down the western sky. It marks the body of the Scorpion. The Scorpion's tail loops up the sky, making a back-to-front question mark with Antares being the dot. The curved tail is the 'fish-hook of Maui' in some Māori star lore. Antares is a red giant star: 600 light years* away and 19 000 times brighter than the sun. Above and right of the Scorpion's tail is 'the teapot' made by the brightest stars of **Sagittarius**. It is upside down in our southern hemisphere view.

In the southwest are 'The Pointers ', Beta and **Alpha Centauri**, making a vertical pair. They point down to **Crux** the Southern Cross. Alpha Centauri, the top Pointer, is the closest naked eye star at 4.3 light years away. Beta Centauri is a blue-giant star, very hot and very luminous, hundreds of light years away.

The **Milky Way** is brightest and broadest in Scorpius and Sagittarius. In a dark sky it can be traced down to the south. In the north it meets the skyline right of **Vega**. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the Sun is just one. The thick hub of the galaxy, 27 000 light years away, is in Sagittarius. The actual centre, with a black hole four million times the sun's mass, is hidden by dust clouds in space. Its direction is a little outside the Teapot's spout. The dust clouds appear as gaps and slots in the Milky Way. A scan along the Milky Way with binoculars shows many clusters of stars and some glowing clouds of left-over gas. There are many in Scorpius and Sagittarius and in the Carina region below Crux.

The Large and Small Clouds of Magellan, **LMC** and **SMC**, look like two misty patches of light in the southeast sky above Canopus. They are easily seen by eye on a dark moonless night. They are galaxies like our Milky Way but much smaller. The LMC is around 160 000 l.y. away; the SMC around 200 000 l.y. away.

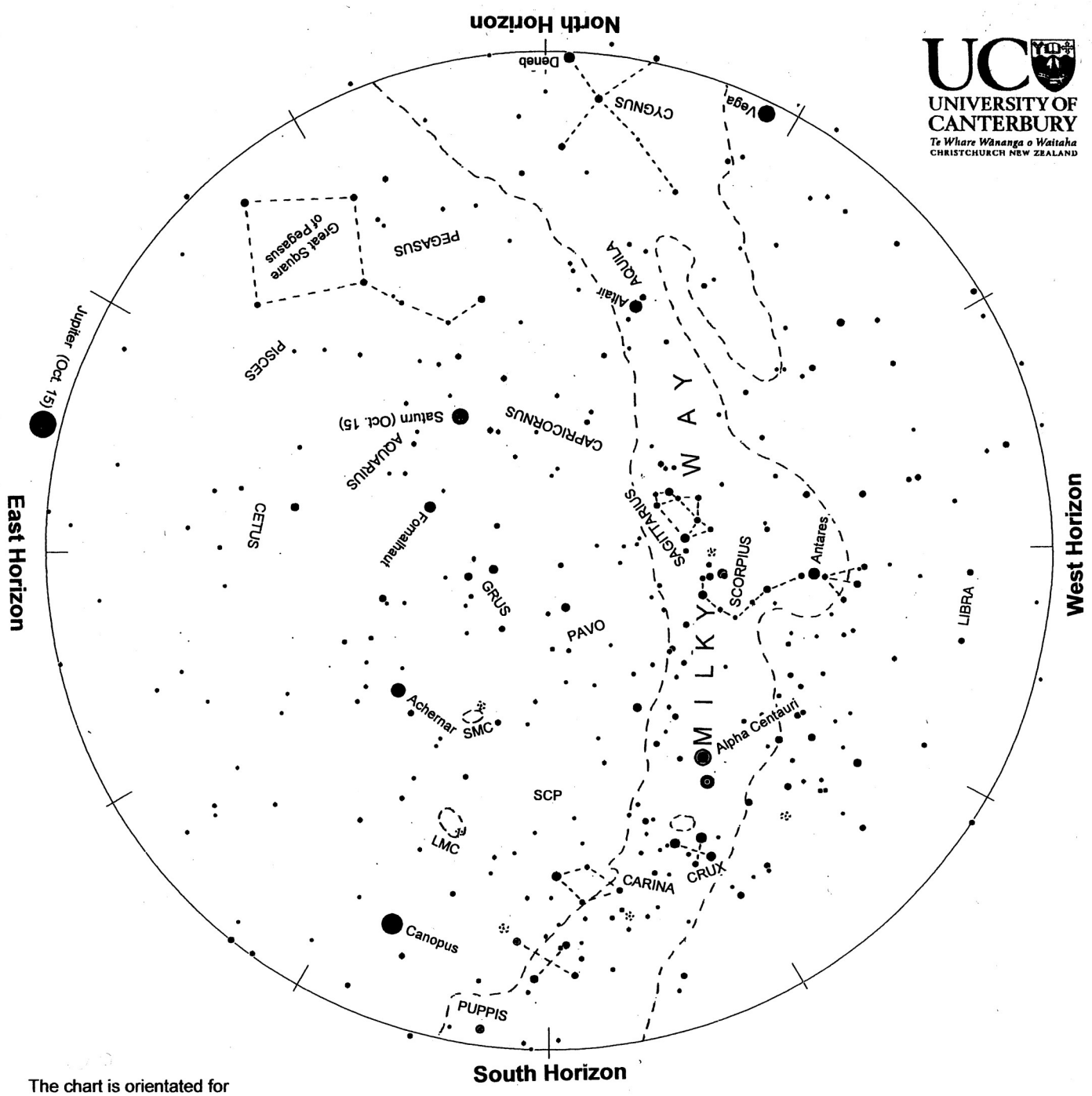
On moonless evenings in a dark rural sky the Zodiacal Light is visible in the west. It looks like late twilight: a faint broad column of light reaching up toward Antares, fading out at the Milky Way. It is sunlight reflecting off meteoric dust in the plane of the solar system. The dust may have come from a big comet, centuries ago.

Venus is the ‘morning star’, rising two hours before the Sun all month. It is brighter than Jupiter and silver- white in colour. The Moon will be below Venus on the 11th.

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

Notes by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand.
. www.canterbury.ac.nz 230819

# EVENING SKY IN MAP FOR October 2023




The chart is orientated for
Sep. 15 at 10 p.m. NZST
Oct. 1 at 10 p.m. NZDT
Oct. 15 at 9 p.m. "

## Evening sky in October 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 makes a small extra clockwise rotation each night as we orbit the sun.

Golden Jupiter is a late 'evening star' at the beginning of the month, appearing in the northeast around 9:30. It rises four minutes earlier each night. By the end of the month it rises at dusk. Saturn, cream-coloured, appears northeast of the zenith. Orange Antares is midway down the west sky. Canopus is low in the southeast, twinkling colourfully. Crux, the Southern Cross, and the Pointers, Alpha and Beta Centauri, are in the south-west. Vega sets on the northwest horizon. The Milky Way spans the sky from north through west and into the south. The Magellanic Clouds, nearby galaxies marked as LMC and SMC on the chart, are misty glows above Canopus.

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 October 2023

The brightest stars are low in the north and south. **Canopus** is low in the southeast at dusk, often twinkling colourfully. It swings up into the eastern sky during the night. Canopus is 13 000 times the sun's brightness and 300 light years* away. On the north skyline is **Vega**, setting in the early evening. It is 50 times brighter than the sun, 25 light years away and the 5th brightest star in the sky. Places in the north of Aotearoa NZ will see **Deneb** near the north skyline in the middle of the Milky Way. Deneb is the brightest star in the cross-shaped constellation of **Cygnus** the swan. It is one of the most distant stars visible to the naked eye, around 2600 l.y away. Its brightness is uncertain because of the distance uncertainty but it could be as bright as 200 000 times the Sun's luminosity.

**Saturn** appears northeast of the zenith. It has a cream colour, unlike any star. It is at one end of a widely spaced line of stars going southward across the sky and down to Canopus. The star **Fomalhaut**, to the right of Saturn, marks the Southern Fish, Piscis Austrinus. Below and right of Fomalhaut is **Achernar**, the same brightness as Saturn. The line continues down the sky to Canopus.

Saturn appears as an oval in a low-powered telescope as the ring and planet merge. Larger telescopes show the ring and Saturn's biggest moon, Titan, four ring-diameters from the planet. Smaller moons are closer in. Saturn is 1360 million km away mid-month. The moon will be close to Saturn on the 24th.

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# CAS COMMITTEE AND OFFICERS 2022/2023

| | | |
|---|---|---|
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| Vice President: | Terry Richardson | vice.president@cas.org.nz |
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| Committee Members: | Carol McAlavey | member2@cas.org.nz |
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| | Orlon Petterson | member4@cas.org.nz |
| | Ray Pointon | member3@cas.org.nz |

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

**CAS Contact Information**

Canterbury Astronomical Society Inc.
PO Box 25-137
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 instition, 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 |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

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:_____