



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

AUGUST MEMBERS MEETING

Prof John Hearnshaw

The International Astronomical Union and its work.

Abstract: I will describe the history, structure and work of the International Astronomical Union.

The IAU is now interacting far more with amateur astronomers, so all amateurs should be aware of what the IAU is doing and how IAU members (who are professional astronomers) can help amateur societies

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

membership@cas.co.nz



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From Your Editor

This is your Casmag, for YOU our members,
 So I welcome any ideas or articles you would like to share with the other members. Please email your Article or favourite photo with details so I can include it in future issues.
 Deadline for each issue is 1st of each month
 Remember you can have your advert added in the future casmag's,
 Any questions, Ideas or suggestions please email to editor@cas.org.nz
 Dale Kershaw

[Please see page 22 for notes:](#)

CAS Calendar JULY-SEPTEMBER 2023



JULY 2023

Saturday 1st	Kidsfest Starts until 16th July (NO Training Night)
Monday 3rd	<i>Full Moon</i>
Monday 10th	<i>Last Quarter</i>
Tuesday 11th	Committee Meeting
Friday 14th	Matariki Holiday
Sunday 16th	Kidsfest Last Night
Tuesday 18th	<i>New Moon</i>
	CAstronauts @ University 6.30-7.30pm
	Members Meeting @ University from 7.30pm
Thursday 20th	75th Anniversary of 1st CAS Meeting
Saturday 22nd	Members Night @ Observatory
Wednesday 26th	<i>First Quarter</i>

AUGUST 2023

Wednesday 2nd	<i>Full Moon</i>
Saturday 5th	New Members Night @ Observatory
Tuesday 8th	<i>Last Quarter</i>
	Committee Meeting
Tuesday 15th	CAstronauts @ University 6.30-7.30pm
	Members Meeting @ University from 7.30pm
Wednesday 16th	<i>New Moon</i>
Saturday 19th	Members Night @ Observatory from 5pm
	<u>MID WINTER BBQ & BONFIRE NIGHT</u>
Thursday 24th	<i>First Quarter</i>
Thursday 31st	<i>Full Moon</i>

SEPTEMBER 2023

Saturday 2nd	New Members Night @ Observatory
Sunday 3rd	Fathers day
Thursday 7th	<i>Last Quarter</i>
Tuesday 12th	Committee Meeting
Friday 15th	<i>New Moon</i>
Tuesday 19th	CAstronauts @ University 6.30-7.30pm
	Members Meeting @ University from 7.30pm
Saturday 23rd	<i>First Quarter</i>
	Members Night @ Observatory
Friday 29th	<i>Full Moon</i>

2023 Open Night Season

It's that time again! Doesn't it come round quick!!! This year's 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 stakeholders 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 it's VERY rewarding and highly engaging activity, the kids love it and it's 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

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:

~~18th July: Euan Mason : Amateur Projects in Astronomy~~

15th August: John Hearnshaw:

The International Astronomical Union and its work

19th September: IAN COOPER: Halley is returning

What do we expect to see

17th October: Soap Box:

21st November: Rob Glassey:

(correct as at 1st July 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

CAS ASTRONOMY LOG BOOKS FOR SALE

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

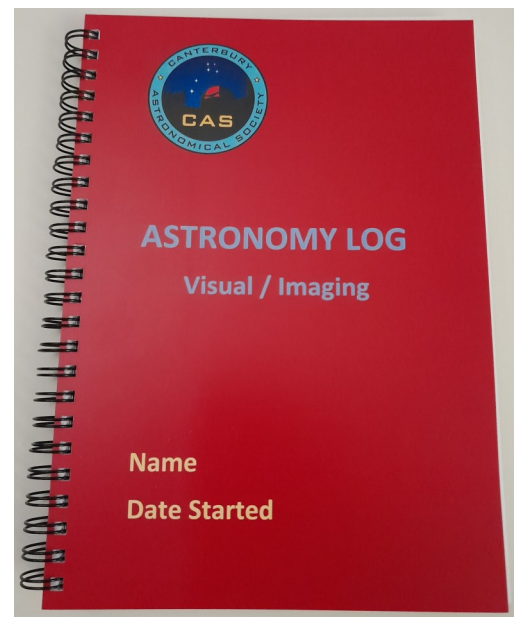
\$15.00 each. (Plus postage if required)

Contact Dale for your copy. Email: editor@cas.org.nz

A5 size 100 pages ring bound.

Inside 1st 2 pages has handy hints for observing

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



SKY & TELESCOPE MAGAZINES

The committee has decided to share the Sky & Telescope magazines stored in the library to new owners. (readers)

There are 12 magazines per box so 1 year in 1 box and about 35plus years of magazines.

Dale/Mandy have been handing them out to Kidsfest children/Open Night attendees when they ask questions at the end of the lodge talk.

If you wish to take some home with you please see either myself (Sean) or Dale/Mandy). These are the same as adopting a book, no returns.

If you know of anywhere that would be interested in these please contact me.
Sean Mullis

Cas Librarian librarian@cas.org.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.

June Meeting we accepted

Carolyn Brown, Tim Baker, David Baker, Kimberley Baker (Family)
Helene Roskruge
Rosanna Wheeler
Raul Elias-Diago
Till Peter, Tina Peters, Neil Peters Louis Peters (Family)
Joseph Chamsay
Ben Rodriguez, Verena Pabst (Family)
Victoria Niha, Paul Niha, Elijah Niha, Isaac Niha (Family)
Isla Fisher
Rhys Corbett
Alex Hodgson, Michael Hodgson (Family)
Alan Viles
Suzanne Knapp



July Meeting we accepted

Samatha Woolls, Nathen Woolls, Seth Woolls, Joni Woolls (Family)
Stuart Ralston
Miles McCauley
Rebecca Morris, Tim Morris, Hannah Morris Katie Morris (Family)
James Lind, Sarah Lind, Simon Lind, Aurelia Lind (Family)
Ethan Bull
Heather Sinclair-Wentworth
Zachary Lane
Michelle McDonald, Kingsley McDonald, Phoebe McDonald, Astrid McDonald (Family)
Arron Stewart, Shelley Stewart, James Stewart, William Stewart (Family)
Campbell Sterling Blaas

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

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 75TH BIRTHDAY / CAKE

At the 20th July members meeting at the uc we had cake for our 75th birthday.



AND At the Members meeting at the observatory on 22nd July we had cake.



Simon & Carol ready to cut the cake



ASTEROID (32150) CRUMPTON

From Star News 27th July 2023

A late reverend's dedication to astronomy has forever been remembered by an asteroid named after him.

Reverend Ian Crumpton, who died age 82 in December last year, is a former president of the Canterbury Astronomical Society and helped establish a New Zealand network of cameras that help NASA map meteor showers.

The asteroid numbered 32150 has been named Crumpton in his honour. Asteroids are sometimes called minor planets. They are left over from the formation of the solar system 4.6 billion years ago. They range in size from less than 1km to more than 1000km.

Crumpton has a diameter of about 10km. It is located in the main asteroid belt, which is between the orbits of Mars and Jupiter, and contains a large number of asteroids.

Wife Tricia Crumpton said her husband would have been surprised at the news of the asteroid naming, formally announced by the International Astronomical Union.

"He just quietly got on with his astronomy, it was quite a passion for him.

The thing I think that was a bit sad is he wasn't here to appreciate it."

Ian had been a Presbyterian minister, who served in Dunedin, Gisborne and Christchurch. While serving at a parish in Spreydon he had built his own observatory out of paper mache on a wooden frame behind the manse.

Then at West Melton, where they had moved about 30 years ago due to the area's stunning night skies, he built another observatory in his backyard with a slide-off roof.

What he liked about astronomy was how amateurs could make a difference to the world-wide body of knowledge by what they observed in the night skies.

"If you have that enthusiasm, the sky is the limit," Tricia said.

Ian was crucial in establishing and operating the Cameras for All-sky Meteor Surveillance (CAMS) New Zealand for the NASA Ames Research Centre.

Automated video surveillance of the night sky is sent from the cameras, which are at areas including West Melton, Ashburton and Tekapo, to the research centre. The data is used to derive the geometrical orbit of each recorded meteor in the Solar System.

Canterbury University astronomer Jack Baggaley explained 32150 was the number of the asteroid that has now been named Crumpton.

"Asteroids are numbered 1 to about 50,000 roughly in order of their discovery. The first named Ceres was discovered in the year 1801."



Ian Crumpton's Asteroid Naming Citation

https://www.minorplanetcenter.net/db_search/show_object?utf8=%E2%9C%93&object_id=32150

(32150) Crumpton = 2000 LJ31 = 1979 OU7
Discovered at Anderson Mesa on 2000-06-06 by LONEOS.

(32150) Crumpton
New Zealand Reverend Ian Spencer Crumpton (1940–2022) was the president of the Canterbury Astronomical Society and helped establish the Cameras for All-sky Meteor surveillance (CAMS) New Zealand network for mapping meteor showers in the southern hemisphere. He built and supported the West Melton CAMS station. [Ref: WGSBN Bull. 3, #9, 23]

Orbit Orbit type: Main Belt

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.

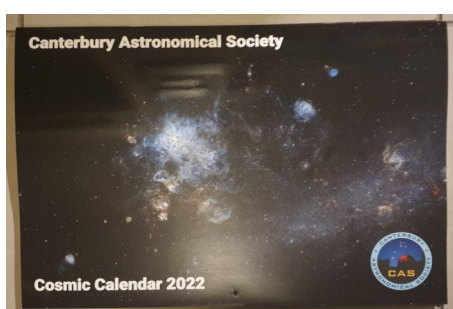
We published our 1st calendar in 2022, and our 2nd in 2023

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



CELESTRON C8 DONATED SCOPE FOR AUCTION

We have been donated a Celestron C8 which we would like to offer to our members.

I have cleaned this scope up, Looks a bit rough but a goodie.

Nice sharp images and collimation is good.

This is a manual fork mounted scope with mains operated synchronous motors for tracking in RA.

There is a box that plugs into 12 volts and drives the motors with push buttons for fast and slow.

Comes with assorted eyepiece, visual back with star diagonal and also a rich field adapter (Focal reducer)

Home made finder but works ok

No Tripod but will clamp onto a level table is quite stable.

Packed with all accessories in an aluminium trunk.

The winner of this auction was Tom Heslop,
well done Tom and look forward to seeing your work with
this scope



Terry Richardson
Cas Vice-President



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

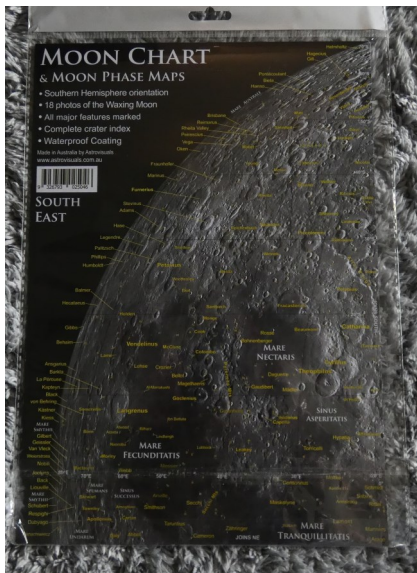


2023 CAS COSMIC CALENDAR:
NOW \$5.00 EACH ~~\$15.00~~
almost all sold



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



EDITORS NOTES

As you may have noticed, this is a combined July/August CASMAG. With having had a very busy June/July including a fantastic busy Kidsfest, meetings and other things happening, I had decided to combine 2 months of casmag,

Merchandising has been hugely busy with fantastic sales during Kidsfest due to having the eftpos available to use at the lodge,
(Watch this space as to when we get our own permanent eftpos machine)

We are now in the process of finding and acquiring new stock for sale to our members, the public at Open nights and for our upcoming events later in the year
Those who ordered clothing items in the last couple of months, Your items are now ready for pickup, check your email re payment etc

We have several CAS T Shirts in stock so If you are wanting to buy one, Please contact me

I always welcome your input to CASMAG, please send any items of interest to me via email to editorcas.org.nz.

To our newer members, Welcome to CAS and we look forward to meeting you at a meeting or event, don't forget to introduce yourselves

Yours
Dale.k
Editor

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

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EXPLORE[®]
S C I E N T I F I C

<https://explorescientificusa.com/>



<https://www.photowarehouse.co.nz/>

The logo for AstronZ features five blue stars of varying sizes arranged in a semi-circle to the left of the word "ASTRONZ". The word "ASTRONZ" is written in a large, bold, blue sans-serif font.

<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

Each month I am asking for Book/DVD reviews from our members. It only needs to be several lines, but mostly about some of its content and your thoughts,

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

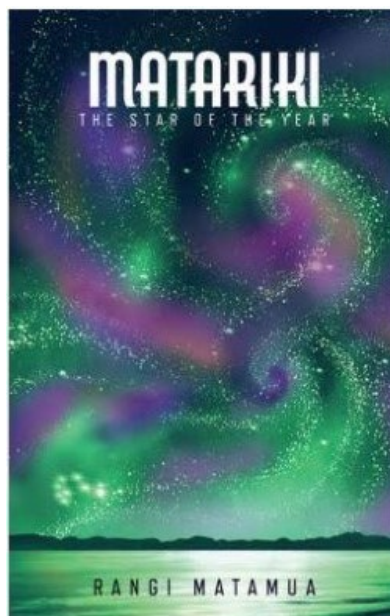
This months review from Sasha Crawford

Matariki - The Star of the Year by Dr Rangi Mātāmua.

In Matariki - The Star of the Year, Mātāmua gives an overview of the meaning and significance of Matariki and compares it to understandings and observations from around the world.

He also explains how matariki was and is celebrated and how the position of the stars has been used to determine the time of year and what food was in season etc.

This book is a useful coverage of Matariki, written for a general audience, and I recommend it for anyone wanting to learn more about an important part of New Zealand culture and heritage regardless of your current knowledge of Matariki.



Other recommended resources:

Anything by Rangi Mātāmua, Pauline Harris, Hemi Whaanga easily found on google scholar.

Also: <https://www.tepapa.govt.nz>.

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, nebulae and galaxies.

Ray Pointon

rpointon@cyberxpress.co.nz



QUOTES OF THE MONTH

“Life shrinks or expands in proportion of one’s courage.” *Anais Nin.*

“The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge.” *Daniel Joseph Boorstin.*

“He who learns but does not think, is lost. He who thinks but does not learn is in great danger.” *Confucius.*

“The greatest deception men suffer is from their own opinion.” *Leonardo da Vinci.*

Website: We use cookies to improve performance.

Me: Same.

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

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,

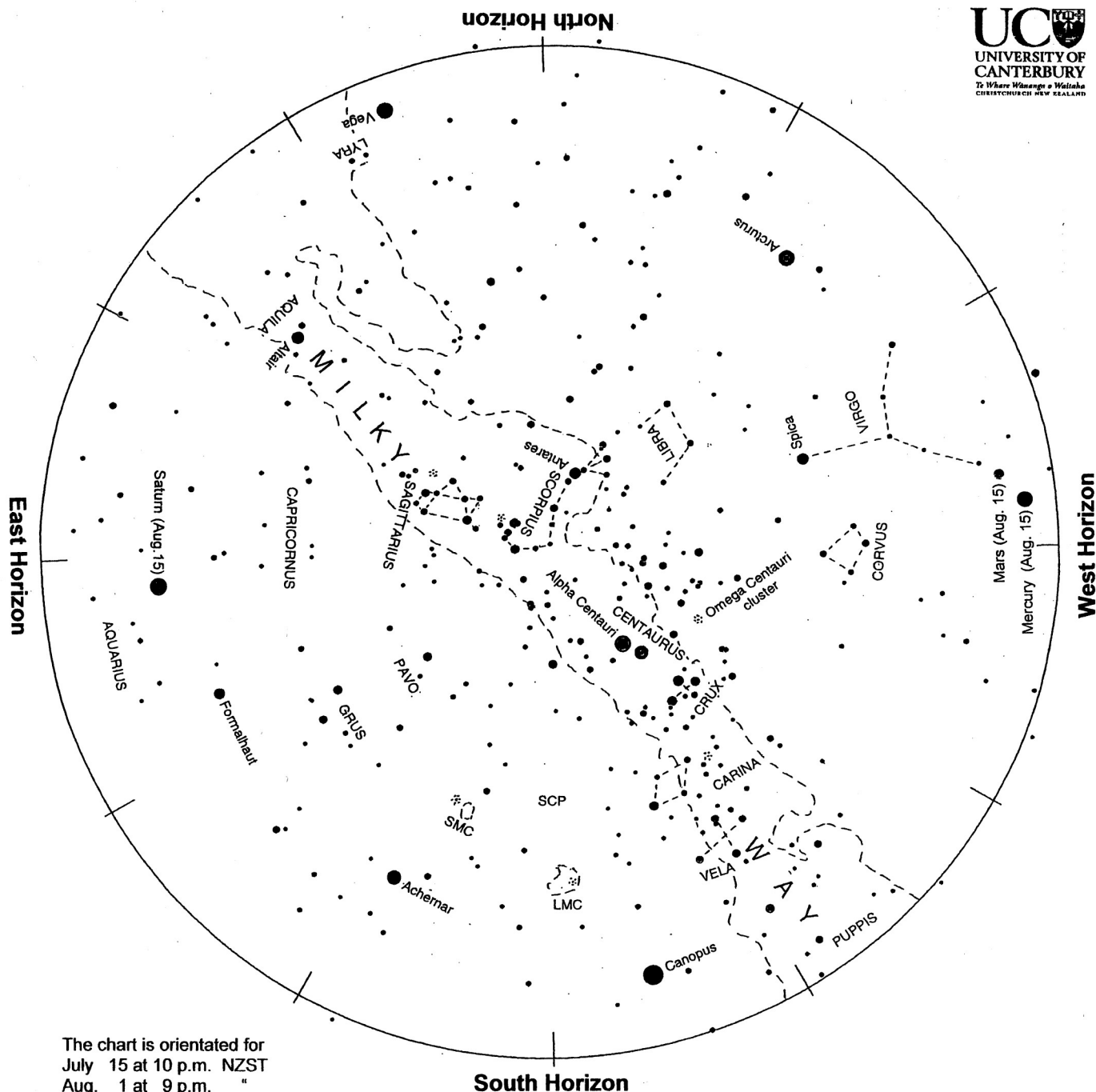
but of course can only use (or supervise) the instrument they are accredited for.

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 AUGUST 2023



The chart is orientated for
 July 15 at 10 p.m. NZST
 Aug. 1 at 9 p.m. "
 Aug. 15 at 8 p.m. "
 Sep. 1 at 7 p.m. "

Evening sky in August 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.

Venus is the 'evening star', at the beginning of the month but disappears before the 15th so isn't on the chart. Mercury makes its best evening appearance as the brightest 'star' in the west after Venus has gone. Mars is above and right of Mercury for most of the month. Saturn is a medium brightness 'star' low in the east. Orange Arcturus is in the northwest, often twinkling red and green. Vega is on the north skyline. The Pointers and Crux, the Southern Cross, are midway down the southwest sky. Canopus, low in the south, twinkles all colours. The Milky Way spans the sky.

The Evening Sky in August 2023

Venus is the brilliant 'evening star' at the beginning of the month, setting around 7:30. It slips lower night-to-night as it moves between us and the Sun. By the 10th it is setting 40 minutes after the Sun. It disappears in the twilight soon after that (so isn't on the chart.) After passing between us and the Sun on the 13th, Venus appears in the eastern dawn sky. By the 20th it is rising an hour before the Sun.

Mercury makes its best evening sky appearance of the year in August. At the beginning of the month it is above and right of Venus, and is the second brightest 'star' in the western sky after Venus. At mid-month Mercury is setting due west two hours after the Sun. **Mars** is then above and right of Mercury, looking like a reddish star. Mercury sinks lower in the twilight in the second half of August as it moves between us and Sun. It also fades as more of its sunny side is turned away from us. The Moon will be below Mercury and Mars on the 18th and above and right of Mars on the 19th.

Saturn rises due east before 8 pm at the beginning of the month. It looks like a medium bright star with a cream tint. By the end of the month it is up at dusk. Saturn's ring is visible in any telescope magnifying 20x or more. Its biggest moon, Titan, is four ring-diameters from the planet. Big telescopes show other moons looking like faint stars closer in than Titan. The Moon will be near Saturn on the night of August 2nd-3rd and again on the 30th-31st. At dawn Saturn is low in the western sky.

Bright stars are widely scattered over the sky. **Vega** on the north skyline is balanced by **Canopus** low in the south. Canopus twinkles with all colours as its white light is broken up by the air. So does Vega but, being fainter, it's not so obvious. Orange **Arcturus** is in the northwest, twinkling red and green as it sets. Canopus is the second brightest true star. (Sirius, the brightest star, is in the morning sky.) Arcturus is the fourth-brightest star in the sky and the brightest north of the celestial equator. Vega is the fifth brightest of all the stars and the second brightest north of the equator.

North of the zenith is orange Antares, marking the body of Scorpius. The Scorpion's tail hooks around the zenith like a back-to-front question mark. Antares and the tail make the 'fish-hook of Maui' in Māori star lore. Antares is a red giant star: 600 light years away and 19 000 times brighter than the sun. Below or 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.

Midway down the southwest sky 'The Pointers', Beta and **Alpha Centauri**, point down and rightward to **Crux** the Southern Cross. Alpha Centauri is the third brightest star in the sky (planets not counted) and the closest of the naked eye stars, 4.3 light years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away and thousands of times brighter than the sun.

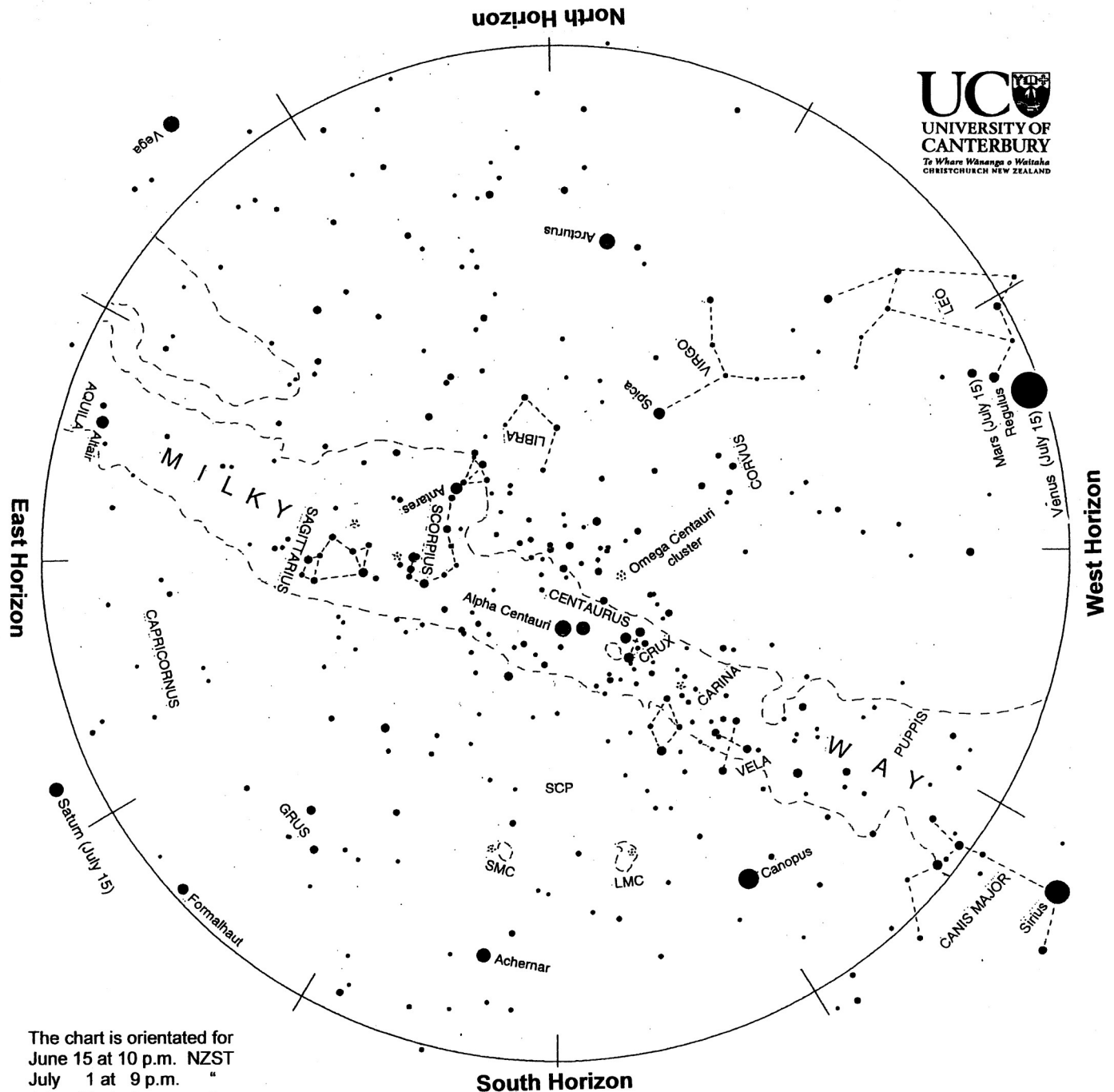
The **Milky Way** is brightest and broadest overhead in Scorpius and Sagittarius. In a dark sky it can be traced down past the Pointers and Crux into the southwest. To the northeast it passes Altair, meeting the skyline right of Vega. The Milky Way is our edgewise view of the galaxy, the pancake of billions 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 is hidden by dust clouds in space. The nearer dust clouds appear as gaps and slots in the Milky Way. Binoculars show many clusters of stars and some glowing gas clouds in the Milky Way.

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

Jupiter rises after 1 a.m. at the beginning of the month, and before midnight at the end. It is the brightest 'star' in the morning sky till Venus appears. It shines with a steady golden light. The Moon will be near Jupiter on the morning of the 9th.

*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.

EVENING SKY IN MAP FOR JULY 2023



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

Evening sky in July 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.

Venus is the brilliant 'evening star' appearing in the northwest soon after sunset. Reddish Mars, much fainter, is near it. Late in the month Mercury moves up the twilight sky and appears alongside Venus. (Mercury isn't on the chart.) Saturn rises due east after 10 pm at the beginning of the month; around 8 at the end. Low in the north is orange Arcturus, often twinkling red and green. The Pointers and Crux, the Southern Cross, are south of the zenith. Sirius, the brightest true star, sets in the southwestern twilight, sparkling colourfully. Canopus, the second brightest star, is low in the southwest. It swings down to the southern horizon later. Vega rises on the opposite horizon around 9 pm.

The Evening Sky in July 2023

Venus is the brilliant evening star, appearing in the northwest soon after sunset. It is beginning to fall lower in the twilight as it moves between us and the Sun. At the beginning of July it sets around 8:40. By the end of the month it is setting an hour earlier. Though bright, Venus isn't of much interest in a telescope, looking like a tall thin white crescent. It is 60 million km away, mid-month.

At the beginning of the month **Mars** appears as a medium-brightness reddish star above and to the right of Venus. At that time the star Regulus will be on the top end of the Venus-Mars line and similar in brightness to Mars. Regulus moves down the sky, night to night, making a close pairing with Mars around the 10th. Mars holds its position as Venus and Regulus set earlier. On the 13th Venus, Regulus and Mars will be in a line. The Moon will be near the two planets and star on the 21st. Mars is 343 million km away mid-month, so is just a tiny disk in a telescope.

Saturn is up late in the evening. It rises after 10 pm at the beginning of the month; around 8 at the end. It looks like a medium-bright star, due east, all on its own. The near-full Moon will be above Saturn on the 6th and below it on the 7th. By dawn Saturn is northwest of the zenith. Saturn is 1350 million km away mid-month. It is worth a look in any telescope but might be fuzzy when low in the sky. The ring can be seen at 20x magnification. Saturn's largest moon, Titan, appears as a star four ring-diameters from the planet.

Mercury begins its best evening sky appearance of the year in the third week of July. On the 15th it will be well below and left of Venus, setting 50 minutes after the Sun (so it is not on the chart.) On the 29th it will be 5° (a binocular field width) right of Venus, making a close pair with Regulus. The crescent Moon will be below Mercury on the 19th.

Sirius, the brightest true star, sets in the southwest as twilight ends, twinkling like a diamond. **Canopus**, the second brightest star, is also in the southwest at dusk. It swings down to the southern skyline before midnight then moves into the southeast sky in the morning hours. It is a 'circumpolar star': seen from NZ it never sets. Canopus is a truly bright star: 13 000 times the sun's brightness and 300 light years* away.

South of the zenith are 'The Pointers', Beta and **Alpha Centauri**. They point to **Crux** the Southern Cross on their right. Alpha Centauri is the third brightest star in the sky. It is also the closest of the naked eye stars, 4.3 light years away. Beta Centauri, like most of the stars in Crux, is a hot blue-giant star hundreds of light years away. Crux and the Pointers are also circumpolar.

Midway down the north sky is orange **Arcturus**. It sets in the northwest around midnight, twinkling red and green as it goes. It is the fourth brightest star and the brightest in the northern hemisphere sky. It is 120 times the sun's brightness and 37 light years away. It has an orange colour because it is cooler than the sun; around 4000°C. **Vega** rises in the northeast around 9 pm. It is on the opposite side of the sky to Canopus: low in the north when Canopus is low in the south.

The **Milky Way** is brightest and broadest in the east toward **Scorpius** and **Sagittarius**. In a dark sky it can be traced up past the Pointers and Crux, fading toward Sirius. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The thick hub of the galaxy, 30 000 light years away, is in Sagittarius. The actual centre is hidden by dust clouds in space. A scan along the Milky Way with binoculars shows many clusters of stars and some glowing gas clouds.

Jupiter is the brightest 'star' in the morning sky. It rises after 3 a.m. at the beginning of the month and around 1:40 a.m. at the end. By dawn it is midway up the north sky. Jupiter shines with a steady golden light, rarely twinkling. Any telescope will show Jupiter as an oval disc with its four big 'Galilean' moons lined up on either side. The Moon will be near Jupiter on the morning of the 12th.

*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.

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Canterbury Astronomical Society Facebook Group:

www.facebook.com/groups/CanterburyAstronomicalSociety

West Melton Observatory: 43° 29' 55.5" S, 172° 20' 59.0" E 218 Bells Road, West Melton

CAS Members Meetings:

The *CAS monthly members* meetings are currently held from 7.30pm onwards every third Tuesday of the month (except December and January) at the University of Canterbury,
Room ER225 Ernest Rutherford Building (2nd floor)

CAStronauts Meeting's are 6.30-7.30, in the same venue on the same night (3rd Tuesday of the month)

Any member of the public who is considering in joining the society are most welcome to attend the meetings.

Members Nights at the Observatory are detailed on our website

Observatory Members Nights:

Cas holds these nights as follows

Members Nights (Training) on the 1st Saturday of the month

Members Nights (General) on the 3rd Saturday of the month after the Tuesday Members meeting at UC,
(be aware some months it is the 4th Saturday, depending on the start of the month) check the website for details

CAS on Facebook:

Cas has a Facebook presence, Useful to keep up to date with events, interesting articles, asking for advice,
For members please use the website forums for more detailed information etc

CAS Membership:

Subscriptions are due 1st April each year

Fees for current members shown on the membership form included on the back page of your Casmag,

Full details are included on our website.

Contributions to CASMAG:

Member contributions to CASMAG are always most welcome (letters, observing notes, articles, news)

Please submit articles by email to editor@cas.org.nz

The deadline for each issue is the 1st of each month

Small personal advertisements are free to financial members, (less than 8 lines in a column)

Charges for larger items range from \$5 to \$40, email the editor for more details.

The Constitution of The Canterbury Astronomical Society Inc:

This is available on request, Please ask for a copy if required

DISCLAIMER:

This newsletter is for general information purposes only. The views expressed herein are not necessarily those of the Canterbury Astronomical Society Inc (CAS)

CAS has taken all reasonable measures to ensure that the material contained herein is correct, but gives no warranty for, and accepts no responsibility for its accuracy or completeness.

Readers are advised not to rely solely on this information, and should seek independent advice before making any decision, CAS reserves the right to make changes at any time, as deemed necessary.

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: _____