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CASMAG

The official magazine of the Canterbury Astronomical Society

www.cas.org.nz www.facebook.com/CanterburyAstronomicalSociety

Monthly Meeting: Our Monthly Meetings are held on the 3rd Tuesday night of the month. Our meeting venue is room ER225 in the Ernest Rutherford building at Canterbury University. Level 2 Refreshments from 7.30pm Meeting starts at 8pm

16TH AUGUST Members Meeting

Speaker: Ken McMasters

My view on the JWST.
I originally intended that the talk on the new James Webb Space Telescope prior to its launch but unfortunately Covid interfered. Much the same talk will still be given, now post launch. There are lots aspects to this whole observatory and I will cover many of these with a broad brush background talk from its early beginnings.

20th SEPTEMBER Members Meeting

Members SOAPBOX

Please contact Carol to advise if you wish to give a small talk (email on page 5)

From your Editor

MY Apologies to all:
I have been unwell the last 2 weeks and this has prevented me from being able to complete the August Issue, I have decided to cover that and the September issue in a combined publication,

Dale.K

We are holding a 2nd BBQ & Bon-fire Event 20th August2022

NOTE NEW DATE!!

No bookings necessary (new members please note)
Fun starts at 5.30-6pm until late. As normal CAS will provide the all important basics: meat breads sauces etc. Please bring salads, sweet things, chips dips and soft drinks along to share, plus any special dietary needs of your own.
You are also welcome to BYOD as well but remember kids will be present.
Marshmallows and sticks will be provided for dessert served al a carte....
round the bonfire! Our BBQ's are always a winner - This event will happen wet or fine

IN THIS MONTHS ISSUE

From Your Editor

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

From 7.2.4.6 on page 15 of Constitution of the Society
"Any member wishing to have an article or paper published in CASMAG or other publications of the society shall in the first instance, forward a copy to the editor who may request the approval of the committee before publication."

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,

CAS Calendar August-October 2022

AUGUST 2022

Friday 12th	Full Moon
Tuesday 16th	CAStronauts @ University 6.30-7pm
	Members Meeting @ University from 7.30pm
Friday 19th	Last Quarter
Saturday 20th	2nd BBQ & Bonfire night Members Night @ Observatory
Saturday 27th	New Moon

SEPTEMBER 2022

Saturday 3rd	New Members Night @ Observatory
Sunday 4th	First quarter / Fathers Day
Saturday 10th	Full Moon
Tuesday 13th	Committee Meeting
Sunday 18th	Last Quarter
Tuesday 20th	CAStronauts @ University 6-30-7pm
	Members Meeting @ University from 7.30pm
Saturday 24th	Members Night @ Observatory
Sunday 25th	Daylight Saving Ends
Monday 26th	New Moon

OCTOBER 2022

Saturday 1st	New Members Night @ Observatory
Monday 3rd	First Quarter
Monday 10th	Full Moon
Tuesday 11th	Committee Meeting
Tuesday 18th	Last Quarter
	CAStronauts @ University 6-30-7pm
	Members Meeting @ University from 7.30pm
Saturday 22nd	Members night @ Observatory
Monday 24th	Labour Day Hoilday
Tuesday 25th	New Moon

2022 Open Night Season

All members are able to attend our public nights and we would love it if you would give a hand on the night, Full training is given and it's a good way for learning how to operate the telescopes

Our 2022 ***Public Open Night*** season has started and is every fine Friday Evening. Updates are posted on the website in forums and also on our Face book page mid Friday afternoon

Volunteers are asked to sign up on our volunteer page as this helps the organisers to plan the nights events

https://cas.ivolunteer.com/

Private Group Bookings normally are done on Wednesday evenings set at weekly or 2 week intervals and these are advised via the website and email

Our members as volunteers are requested to assist, full training is given if you are new to helping out. Ask if you have any questions

IMPORTANT UPDATE FROM YOUR COMMITTEE
Covid-19 level Operations

While most of this information has stayed the same there are some changes!!

Traffic Light **ORANGE** restrictions.

Public Open Nights: We have started these for this years session,
If you plan to volunteer please sign up via our volunteer page at
https://cas.ivolunteer.com/
(We will still be following all government rules/suggestions for safe events)

CAS Events At the UC:
We are now back to using our room at the University for our monthly Meetings Room ER225
Training nights and Members nights at the observatory have restarted on our normal Saturday nights, 1st Saturday and the Saturday following the Tuesday members meeting
Observatory Use. Do not visit the observatory if unwell.
Please sign in using the COVID tracer app using the QR code in the lodge.
If you intend to remain outside and not enter the lodge at anytime then there is no requirement to enter the lodge to sign the logbook.
If you wish to wear a mask please do so.
Please maintain your hygiene as per our past suggestions
Wash / sanitise hands using the gear provided.
Do not clean optics as the sanitising chemicals can cause damage to equipment.
Please follow the rules at the observatory if visiting, and please stay safe

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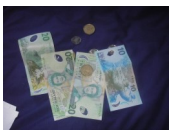
2022 ANNUAL SUBSCRIPTIONS/MEMBERSHIP



Payment for the 2022 Year is now OVERDUE and can be paid via internet banking, PayPal, cash in person,

Please use your name and member number for your reference when making payment, (this means it can be matched to your membership)

Also the committee asks you to PLEASE advise any change to your details: Address, Phone Number, email,

If these details are not updated we will be unable to contact you.

Membership Fees and Banking payment details are included on the back page of every CASMAG

MONTHLY MEETINGS:

Meeting Venue:

Room ER 225 in the Ernest Rutherford Building, University of Canterbury,
(1 building over from the east building we used last year)
Entrance to the building will be via the north side entrance,
Then using the lift or stairs up to level 2

Carol McAlavey is asking you, our members to make suggestions or offer to give a talk at our monthly meetings.
PLEASE CONTACT CAROL WITH YOUR SUGGESTIONS OR IF YOU CAN GIVE A TALK via **member2@cas.org.nz**

Upcoming Members Meeting Dates:

16th August: Ken Mc Masters

20th September: Members SoapBox
Please email Carol if you wish to give a small talk
18th October:

15th November:

NO Meetings are held in December or January

2023
21st February:

(correct as at 10th August 2022, Subject to change as required)

Many thanks go to Sharlene Wilson and Orlon Petterson from the School of Physical and Chemical Sciences, University of Canterbury for arranging the meeting room for CAS this year.
Also Thanks to Associate Professor Karen Pollard for organising the Lecture theatres for our public talks

We will update the website if there are any changes and will host meetings via ZOOM if possible:

CAS YOUTUBE CHANNEL

Have a look at our new you tube channel
https://www.youtube.com/channel/UChLhFm7yaLUTIgH3IJvA11g

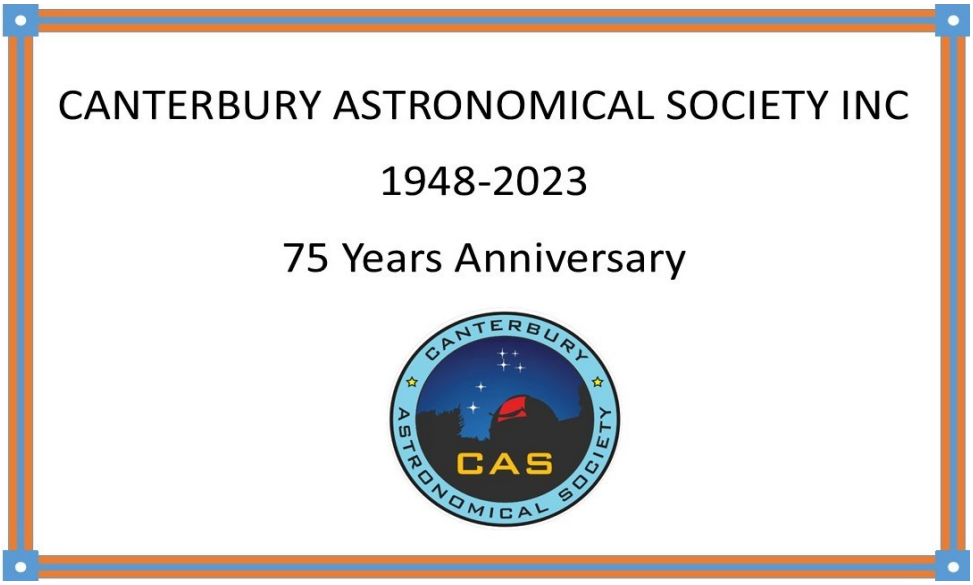
CANTERBURY ASTRONOMICAL SOCIETY 75TH ANNIVERSARY 2023

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

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

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

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



CAS MERCHANDISE

Cas branded items for sale
Coffee Mugs are $15.00 each
NEW STYLE OF CAS PENS NOW AVAILABLE IN 2 STYLES $2.50

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

STAINLESS DRINK BOTTLES
ARE NOW ON ORDER WILL BE AVAILABLE SOON
"Watch this space"

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

Members Interest Section

This section is dedicated to members on what **you** have as an interest under the umbrella of Astronomy.
Do you like: Meteors / Comets / Photometry / Solar observing / Photography / Telescope building / Spectroscopy / Aurora's / Occultation's / Variable Stars / Satellite tracking / Lunar observations / Jupiter impact monitoring / Radio Astronomy / Eclipses ?
Or
Do you have other interests that you would like to share and see who else would enjoy knowing some more? Form your own interest section.
Here's a couple of ideas that if you would like to know more about
Then contact Terry or Simon.
You can also use the CAS forum to discuss other ideas to check out who else would be interested.

Tune into Jupiter or the Sun with Radio Astronomy
Radio astronomy can be done during the day and even cloudy nights. Terry has built a receiver and with his computer can log activity of the Sun and Jupiter.

Terry Richardson
member1@cas.org.nz
Cell: 021 776 458

Bounce Signals off the Moon
Beam a signal at the Moon or at a lunar orbiting satellite

Simon Lewis
Vice.president@cas.org.nz
Cell: 022 640 6649

Spectroscopy
CAS has recently purchased a diffraction grating which can be attached to a telescope eyepiece or camera on the telescope. The grating, like a prism, spreads the light from starlight into component colours (distribution of wavelengths). Thus begins the engaging look into the not so private lives of stars, nebulas and galaxies.

Ray Pointon
rpointon@cyberxpress.co.nz

WELCOME TO OUR NEW MEMBERS:

A warm welcome to our new members, We look forward to meeting you at our meetings and/or events, Please make yourselves known to others. We like to welcome our new members here after the membership is accepted by the committee at the meeting following memberships are received.
Welcome to

David Neil

Apologies if I have mis-spelled your name
Dale -Editor

OBSERVATORY NEWS
IMPORTANT INFORMATION

DOOR CODE & ALARM AT THE OBSERVATORY

The Door code and Alarm code available to members, Ask a committee member for the passwords.

INTERNET WI-FI:

Ask a committee member for the password

LASER POINTERS:

There is a legal requirement when importing them, and information is on our website and at the observatory, CAS has a drafted a set of guidelines which we were presented at our AGM and were voted and added to our By-Laws,
If you need a letter confirming your membership for your application, please contact either membership secretary or secretary, (This letter will state you are a current financial member of our society)

ACCREDITATION

A reminder that unless you have full accreditation on the equipment you are not to use the equipment unless there is an accredited person with you.
Full training is available, Please ask our Observatory Director how you can get your accreditation
There is a full list of accredited person's on the wall above the kitchen sink inside the lodge. contact Kieren (our Observatory directory via his email listed on our website or the inside back page casmag

2023 CAS CALENDAR

WE NEED YOUR PHOTOS!!!!!

Cas is going to produce our very own calendar again for 2023.

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

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

QUOTES FROM THE RASNZ E-NEWSLETTER

One for the amateur astronomers:
'Amateur' comes from the Latin word 'amare', which means to love.
To do things for the love of it."
Mozart in the Jungle.

Table of Southern Meteor Showers

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

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RASNZ Register of Observatories in NZ

New Zealand Observatories

A combined Australia and New Zealand Standard ***AS/NZ 4282 Control of obtrusive effects of outdoor lighting*** contains guidance which will help to protect observatories from outdoor lighting at night.
When your observatory is listed here, local council planners will be able to see your need to limit obtrusive lighting around your observatory.
The standard can be purchased from Standards New Zealand:
https://www.standards.govt.nz/shop/asnzs-42822019/
The Standard states that a list of observatories will be held by the Royal Astronomical Society of New Zealand - that's us!

If you wish to have your observatory included in this list please send your contact and location details. Your observatory will be included with the level of information you choose to display.
observatory@rasnz.org.nz

If you wish to limit contact information on this page you may include the previous email link for people to contact us. We will then forward enquiries to you to deal with.
Observatories will be grouped into Research, Community and Private or Personal categories.

SOFIA'S LAST VISIT TO CHRISTCHURCH

The 2022 deployment (and the last) for SOFIA in Christchurch ended sadly with the plane and the last crew leaving Christchurch @12.30 11th August 2022.
Due to the damage which occurred 18th July 2022, the remaining southern deployment flights were cancelled while repairs were made to the aircraft, The crew then did a test flight and flypast over Christchurch on Monday 8th,
It has been a great pleasure for Cas to host the crews at different events since 2015. including Cas members being able to view onboard the plane.

I took these photos on the Monday 18th of the test flight from my home

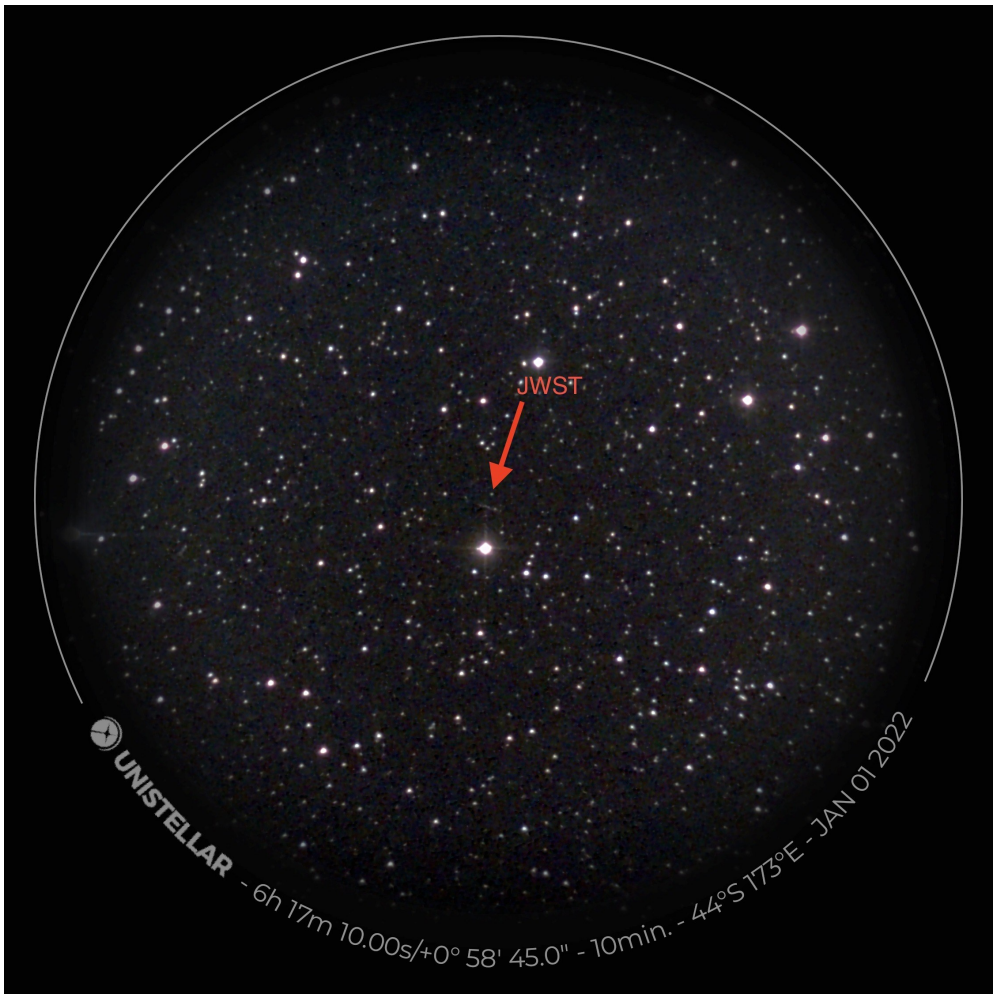
Photos: Dale Kershaw

JAMES WEBB SPACE TELESCOPE

From John Pickering
It's been an exciting week with the release of JWST's first images - aren't they inspiring!
Exciting for me as I found myself as a named author on a paper with JWST in the title! https://arxiv.org/abs/2207.04337
Now, I've published a lot in medical journals of all kinds, but this is ultra cool!
Also cool is the new title and address "Unistellar Citizen Scientist, Earth."

55 Citizen Scientists throughout the world, including Christchurch, with almost identical telescopes (Unistellar eVscopes and eQuinoxes) observed the JWST from just 6 hours after it's launch last Christmas day until after it had reached its Lagrange point 2. The NASA folk were skeptical it could be observed at all, particularly further out, but astronomers at the SETI Institute, led by Drs Ryan Lambert and Franck Marchis, organised the campaign. The visual magnitude varied from ~12 near launch to ~16.5 at L2 with individual measurements from a minimum of mag 18 to 10.5.
The latter was by one citizen astronomer, Kendra Sibbernsen in Nebraska.
Her observations were shortly after the third Mid-course corrections and may be a result of a change in the orientation of the solar panel causing specular reflection observable from Earth. We observed the changes due to deployment of the sunshield.
Some even captured the booster after detachment during those first few hours.
Ongoing observations over time may be useful to reveal any degradation due to solar wind and micro-impacts. The paper is available at: https://arxiv.org/abs/2207.04337

I had the pleasure of meeting John in his favourite place in Worsley's road on the evening of 1st January 2022 to look for comet Leonard and we were also able to see this,
The James Webb Space Telescope
(Dale)



MID-WINTER BBQ & BON-FIRE NIGHTS

This year with it being the last deployment to Christchurch for SOFIA, the committee decided they would like to hold 2 events so this would cover both crews from SOFIA.

The 1st was held on 2nd July and was well attended by members and some of the Crew from Sofia, those lucky few members were given assorted goodies from the crew and these will be treasured for years to come.

Photo: Carol McAavely
(with crescent Moon in background)

The 2nd was to be held on 30th July but due to the bad weather and flooding at observatory this was moved until 20th August (our normal members night)
This saw a much smaller group attending but those who did enjoyed the food, bonfire, and conversation with others.

Photos:
Orlon Petterson

Shaw-IAU Workshop Registration and Abstract submission live now

Forwarded by Orlon Petterson

Sehr geehrte(r) Frau/Herr ,

*As you may be aware, the topic for this year's Shaw-IAU Workshop on Astronomy for Education is '**Leveraging the potential of astronomy in formal education**' and is scheduled to run 15 to 17 November 2022 as a fully virtual event on Hopin as in previous years.*

*This year's Shaw-IAU Workshop on Astronomy for Education focuses on the role of astronomy in the core regions of formal, primary and secondary, education: How do we teach astronomy as its own subject? What is the role of astronomy in teaching physics or chemistry – or in communicating such a central future topic as climate change? In sessions marked with a * we aim to hear specifically from teachers. We also address the question of how to approach those who set the framework for teaching: How can you get your administration, or at a much higher level: your education ministry, to listen to you? Last but not least we look at how to bridge the divide between the fundamentals that are commonly taught in school and results from cutting-edge research, which tend to be fascinating to students and the general public alike.*

1. Teaching astronomy in primary schools: How, why, and in what context*
2. Teaching astronomy as its own subject in secondary schools*
3. Teaching astronomy as part of physics, chemistry, geography (and others) in secondary schools – astronomy as a "gateway science"*
4. Teaching astronomy as part of non-STEM subjects in secondary schools: art, music, philosophy and beyond*
5. Students in a changing climate: how can astronomy help?*
6. Astronomy education research on the role of astronomy in schools
7. Student interest in astronomy and other subjects: research and practical experience
8. Astronomy in schools: how do you get your administration and your ministry to listen?
9. How to develop an astronomy curriculum
10. Gravitational waves, black hole shadows and exoplanets: Can we make a place for cutting-edge results in schools?

Registration and abstract submission is live. Please check the website!

Please do not hesitate to contact me if you have any questions.
Kind regards
Gwen

sanderson@astro4edu.org

OBSERVATORY NEWS
IMPORTANT INFORMATION

New Security System in Lodge

The new security system in the Lodge is up and running well. This takes the form of an intrusion sensor outside, and a Wifi cam inside the lodge in the back corner at the car park end. The intention is to add another camera outside the lodge overlooking the car park area. The advantage of these is that they will trigger on intrusion alert and can be viewed remotely in real time or reviewed within 2 weeks. These are not for the purpose of watching people, but rather to check that entry to the lodge is by legitimate members. Given the assets we have on site, this is necessary for any insurance claims.

Access to these cameras is limited to Webmaster, Vice President and Observatory director only. We already have a surveillance network installed (several years ago) which records to a hard drive but cannot be remotely viewed in real time.

If anybody needs to know more please feel free to email me observatory.director@cas.org.nz

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SECURITY FOR OBSERVATORY KEYS– Accredited Members

Committee have decided that we need improved security for access to the observatory equipment. From now all keys are stored in a lock box in the library.

Any accredited member will be given the combination (just ask me).

This includes the key to the equipment room and for the dobs.

Although the dobs do not require formal accreditation, they are precision instruments that can be damaged if not used correctly.

A member accredited on any of the scopes can open these for you.

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

Any accredited member can get access to the keys,

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

This sounds a bit restrictive, but has become necessary due to recent misuse and possible damage to some instruments.

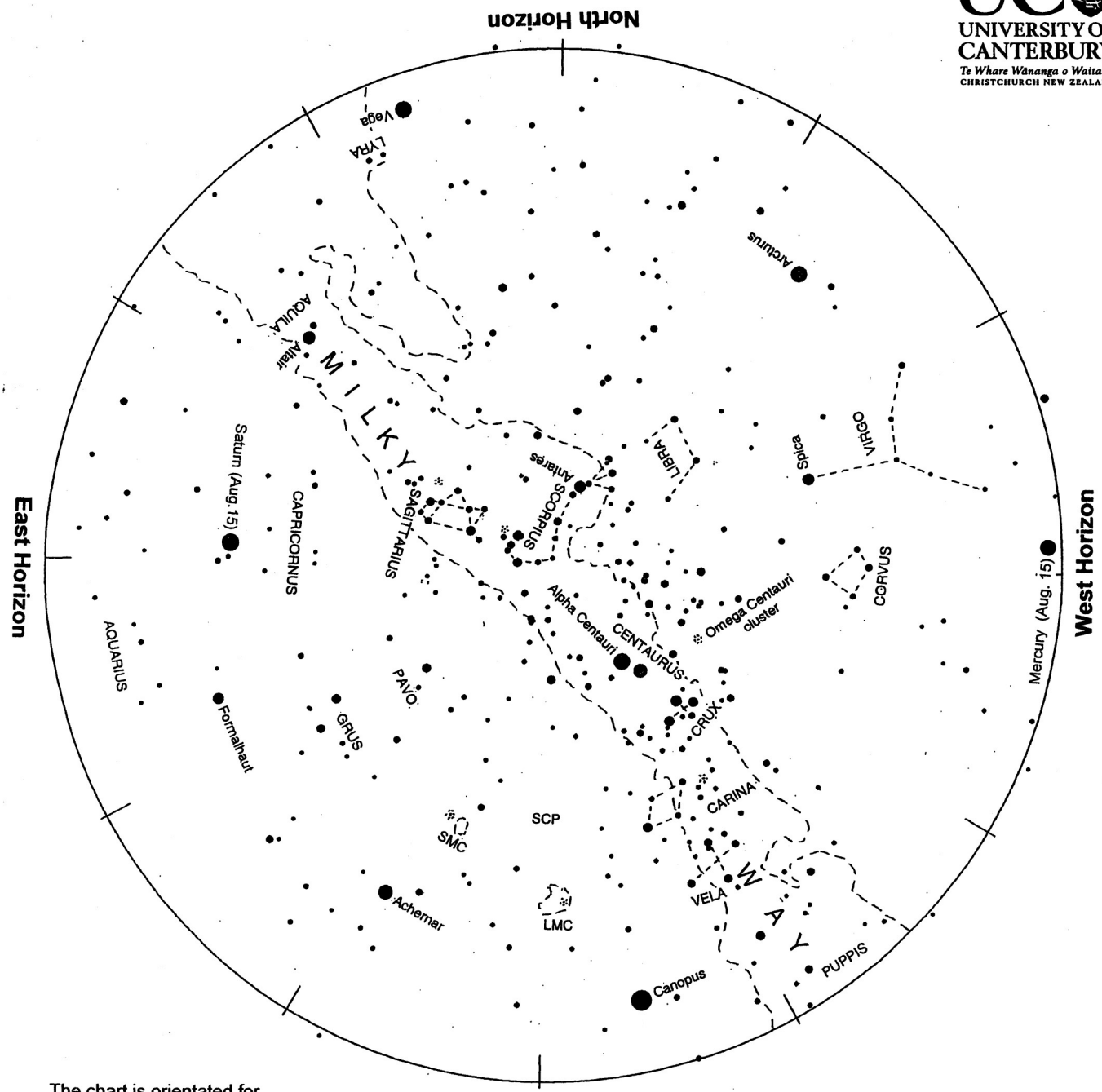
Any questions please email me
observatory.director@cas.org.nz
Kieren Eden

The Evening Sky in August 2022

Bright stars and planets light up the evening sky. **Mercury** makes its best evening sky appearance of the year in August. At the beginning of the month it appears low in the northwest, setting 70 minutes after the Sun. It makes a close pair with Regulus on the 4th. Regulus is the brightest star in Leo but fainter than Mercury. By the end of August Mercury is setting due west two hours after the Sun. The thin crescent Moon will be near Mercury on the 29th and 30th.
Mercury shows only a tiny disc in a telescope.
Saturn appears on the opposite horizon to Mercury an hour after sunset at the beginning of August. It rises four minutes earlier each night. By mid-month it is well above the eastern skyline at dusk. It looks like a medium-bright star with a cream colour. The Moon will be near Saturn on the 12th. Saturn is at its closest distance for the year, 1325 million km away. A small telescope will show the ring and planet blended into an oval. Larger telescopes show the ring and Saturn's biggest moon, Titan, four ring-diameters from the planet. Any faint 'star' closer to Saturn than Titan is likely to be a small moon.
Jupiter (not shown on the chart) rises due east after 10 pm at the beginning of August. It is the brightest 'star' in the late night sky and shines with a steady golden light. It also rises earlier each night. By the end of August it appears soon after 8 pm. The near-full Moon will be by Jupiter on the night of the 15th-16th.
Canopus twinkles colourfully on the south skyline. It is the brightest true star in the evening sky and the second-brightest star overall. It is balanced by **Vega** low in the north. Orange **Arcturus** is in the northwest, often twinkling red and green as it sets. Vega and Arcturus are the brightest stars north of the equator.
Midway down the southwest sky are 'The Pointers ', Beta and **Alpha Centauri**. They point down and rightward to **Crux** the Southern Cross. Alpha Centauri is the third brightest star 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.
Antares marks the heart of the Scorpion. 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 some Maori star lore. Antares is a red giant star: 600 light years away and 19 000 times brighter than the Sun. It is relatively cool for a star, 3300 C, giving its orange colour. 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.
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.
Mars rises around 1:30 a.m. It is the same brightness as Saturn but orange-red. At dawn mid-month, Mars is just above the Matariki/Pleaides star cluster. To its right are similar orange stars: Aldebaran in Taurus and Betelgeuse in Orion. The last-quarter Moon will be near Mars on the morning of the 20th.
From places with a low eastern skyline brilliant **Venus** might be seen in the dawn twilight. It rises 70 minutes before the Sun at the beginning of the month; 30 minutes before at the end. It is leaving us behind as it moves to the far side of the Sun. It will reappear in the western evening sky at the end of the year.*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 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 220628

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



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 2022

To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole (SCP on the chart). Stars rise in the east and set in the west, just like the sun. The sky makes a small extra clockwise rotation each night as we orbit the sun.

Canopus, low in the south, twinkles all colours. It is balanced by Vega on the north horizon. Orange Arcturus is in the northwest, twinkling red and green as it sets. The Pointers and Crux, the Southern Cross, are midway down the southwest sky. Scorpius and Sagittarius are overhead. Mercury makes its best evening appearance of the year, setting due west two hours after the Sun. Saturn, similar in brightness, is in the eastern sky. Very bright Jupiter appears later in the evening.

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 2022

Three bright planets light up the evening sky along with some of the brightest stars.
At the beginning of the month Mercury appears as a lone medium-bright white star low in the west at dusk. It sets two hours after the Sun. On the opposite side of the sky is Saturn, the same brightness as Mercury but cream-coloured. Around 8 pm golden Jupiter rises in the east. It is the brightest 'star' in the night sky. It rises earlier each night so is in the evening sky at dusk by the end of September. Mercury fades and falls lower in the twilight, disappearing by the 18th.

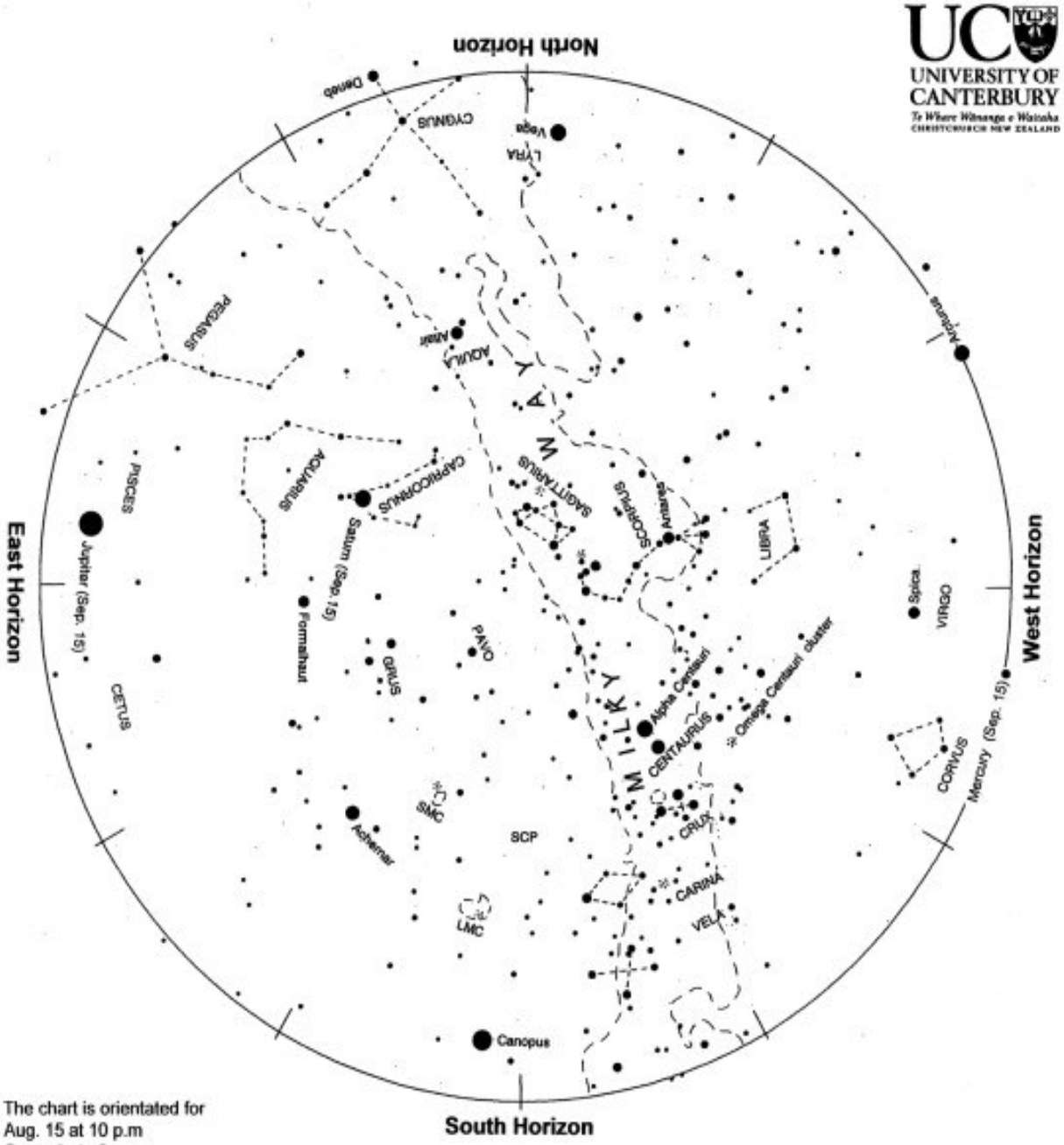
Jupiter and Saturn are worth a look in any telescope. A small telescope shows Jupiter's disk and the four 'Galilean' moons lined up on each side of it. A larger telescope shows stripes across the planet made by warm and cold clouds on Jupiter. Occasionally the shadow of a moon crosses Jupiter, making a tiny black spot. Jupiter is at its closest for this year, 590 million km away. Almost any telescope will separate Saturn and its ring. Saturn is 1350 million km away mid-month. The Moon will be near Saturn on the 8th and near Jupiter on the 11th.

Of the bright stars, Arcturus is on the northwest skyline. Its orange light is often broken up into red and green twinkling. On the north skyline is Vega, a white star, the second-brightest northern star after Arcturus. Vega is balanced by Canopus, the brightest true star in the evening sky, skimming along the southern skyline. Both stars are shining through a lot of air which makes them twinkle colourfully. From northern New Zealand the star Deneb can be seen near the north skyline in the Milky Way, well right (east) of Vega. Deneb is the brightest star in Cygnus the Swan, a large cross-shaped constellation.

Orange Antares, northwest of the zenith, marks the body of the Scorpion. The Scorpion's tail hooks toward the zenith like a back-to-front question mark. It is the 'fish-hook of Maui' in Maori star lore. 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 are 'The Pointers ', Beta and Alpha Centauri. They point down to Crux the Southern Cross. Alpha Centauri is the third brightest star. It is also the closest of the naked-eye stars, 4.3 light years* away. Beta Centauri, along with most of the stars in Crux, is a blue-giant star hundreds of light years away.

The Milky Way spans the sky from north to south. It 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. Dust clouds near us 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 in the south sky. They are 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.
On moonless evenings in a dark sky the Zodiacal Light is visible in the west. It is a broad faint column of light extending upward (around Mercury at the beginning of the month.) It is sunlight reflecting off meteoric dust in the plane of the solar system. The dust may have come from a big comet, many centuries ago.
Mars is in the morning sky (so not on the chart), rising after 1 a.m. It looks like an orange-red star, brighter than Saturn but much fainter than Jupiter. At the beginning of the month it will be between the Pleiades/Matariki star cluster and Aldebaran, the brightest star in Taurus. Aldebaran has a similar colour to Mars but is fainter. The Moon will be near Mars on the morning of the 17th.

*A light year (l.y.) is the distance that light travels in one year: nearly 10 million million km. Sunlight takes eight minutes to get here; moonlight about one second. Sunlight reaches Neptune, the outermost major planet, in four hours. It takes sunlight four years to reach the nearest star, Alpha Centauri.
Notes by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz 220822



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 2022

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Mercury ends its best evening sky appearance of the year, appearing low in the west in the first half of the month. Saturn appears as a cream-coloured star in the east. Golden Jupiter is the brightest 'star' in the sky, rising after 8 pm at the beginning of the month then four minutes earlier each night. Near overhead is orange Antares marking the Scorpion's body. 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

CAS COMMITTEE AND OFFICERS 2022/2023

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

CAS Members Meetings:

The *CAS monthly members* meetings are currently held from 7.30pm onwards every third Tuesday of the month (except December and January) at the University of Canterbury,
Room ER225 Ernest Rutherford Building (2nd floor)
CAStronauts Meeting's are 6.30-7.30, in the same venue on the same night (3rd Tuesday of the month)
Any member of the public who is considering in joining the society are most welcome to attend the meetings.
Members Nights at the Observatory are detailed on our website

Observatory Members Nights:

Cas holds these nights as follows
Members Nights (Training) on the 1st Saturday of the month
Members Nights (General) on the 3rd Saturday of the month after the Tuesday Members meeting at UC,
(be aware some months it is the 4th Saturday, depending on the start of the month) check the website for details

CAS on Facebook:

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

CAS Membership:

Subscriptions are due 1st April each year
Fees for current members shown on the membership form included on the back page of your Casmag,
Full details are included on our website.

Contributions to CASMAG:

Member contributions to CASMAG are always most welcome (letters, observing notes, articles, news)
Please submit articles by email to editor@cas.org.nz
The deadline for each issue is the 1st of each month
Small personal advertisements are free to financial members, (less than 8 lines in a column)
Charges for larger items range from $5 to $40, email the editor for more details.

The Constitution of The Canterbury Astronomical Society Inc:

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

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

Canterbury Astronomical Society Inc

APPLICATION FOR MEMBERSHIP

To: Membership Secretary
Canterbury Astronomical Society Inc.
PO Box 25137
Christchurch 8140

Applicants Name in Full_____

Address: (Note a P.O.Box is NOT a legal address)_____

_____

Home Phone:_____ Cell Phone:_____

Email: _____ Date of Birth: (if under 18)_____

Membership Category *(tick, subscripton must accompany application)*

Online Banking Details (Please identify your payment): 03 0802 0098273 00

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

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

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:_____