



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. 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

FEBRUARY MEMBERS MEETING

TOM HESLOP

Topic: SOFIA

Stratospheric Observatory for Infrared Astronomy
Life and Retirement of NASA/DLR Boeing 747SP

MARCH MEETING

CAS AGM

19th MARCH 2024

2024 ANNUAL SUBSCRIPTIONS/MEMBERSHIP

Payment for the **2024 Year is due from 1st April 2024**

This can be paid via internet banking, PayPal, eftpos/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

Welcome to 2024,

Where did January go?

Next month is the AGM, your chance to have your say for the committee so they can look after CAS for you.

Library Corner is always looking for Book/Video Reviews to be Submitted. See page 16 for info

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 20 for notes:](#)

CAS Calendar FEBRUARY — APRIL 2024



FEBRUARY 2024

Saturday 10th **New Moon**
 Tuesday 13th Committee Meeting
 Saturday 17th **First Quarter**
 Tuesday 20th CAstronauts @ University 6.30-7.30pm
 Members Meeting @ University from 7.30pm
 Saturday 24th Members Night @ Observatory
 Sunday 25th **Full Moon**

MARCH 2024

Monday 4th **Last Quarter**
 Sunday 10th **New Moon**
 Tuesday 12th Committee Meeting
 Sunday 17th **First Quarter**
 Tuesday 19th CAstronauts @ University 6.30-7.30pm
 AGM Members Meeting @ University from 7.30pm
 Friday 22nd BHT Lecture Prof Lisa Kaltenegger @uc venue tbc
 Saturday 23rd Members Night @ Observatory
 Monday 25th **Full Moon**
 Friday 29th **Easter Friday Holiday**
 Saturday 30th **Easter Saturday**
 Sunday 31st **Easter Sunday**

APRIL 2024

Monday 1st **Easter Monday Holiday**
 Tuesday 2nd **Last Quarter**
 Sunday 7th Daylight saving change's 2am
 Friday 12th Open Night Season starts
 Tuesday 9th **New Moon**
 Committee Meeting
 Tuesday 16th **First Quarter**
 CAstronauts @ University 6.30-7.30pm
 AGM Members Meeting @ University from 7.30pm
 Saturday 20th Members Night @ Observatory
 Wednesday 24th **Full Moon**
 Thursday 25th **ANZAC Day Holiday**

2024 Open Night Season

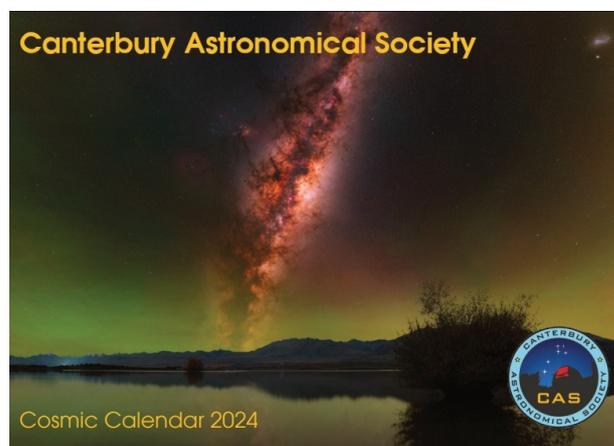
Our 2024 Open night season will start after the daylight saving change on 7th April 2024. Notices will be posted on our website. We look forward to seeing you at these events. These nights are run as part of our Public Outreach. This is our main income towards running our society and of course the observatory. These events also bring in our new members. Full training is available for those who come along to help. This can also work towards your accreditation
Your CAS Committee

2024 CAS COSMIC CALENDAR

Limited numbers left

Amazing images from our very own CAS Members

A4 size format
\$15.00 each +shipping
Pickup from Edgeware
or post \$4.60
Contact:
Dale
editor@cas.org.nz
Or Mandy
secretary@cas.org.nz



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:

20th February 2024: TOM HESLOP- Topic: SOFIA

19th MARCH 2024: CAS AGM.

16TH APRIL 2024: TBC

(correct as at 10th February 2024, Subject to change as required)

Many thanks go to Sharlene Wilson and Orlon Petterson from the School of Physical and Chemical Sciences, University of Canterbury for arranging the meeting room for CAS this year.

Also Thanks to Associate Professor Karen Pollard for organising the Lecture theatres for our public talks

WELCOME TO OUR NEW MEMBERS:

A warm welcome to our new members, We look forward to meeting you at our meetings and/or events, Please make yourselves known to others.

We like to welcome our new members here after the membership is accepted by the committee at the meeting following memberships are received.

Welcome to these New Members we accepted recently:

Kevin Brown Senior
 Warren Gleeson & Family
 Tim Maley Family
 Sara Broglio “
 Ginevra Maley “
 Vittoria Maley “
 Mike Cloake Adult
 Ruth Snashall Senior
 James Tse Senior
 Andrew McWhirter Family
 Pam McWhirter “
 Willis McWhirter “
 Evie McWhirter “



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

It is always great to see our new members coming along to our Members Meetings, Members Nights and Events.

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 of this casmag

LETTER TO MEMBERS FROM YOUR CAS PRESIDENT SIMON LEWIS

Hi everyone,

Well its not too far from the start of our winter season. I know it doesn't feel like it, especially as it's been so warm and dry, it's been a very different summer from previous years, and we've had some amazing clear nights, but I could barely stand up due to the winds outside. We astronomers are never happy and it seems like we can never find a good balance!

What's great is that I am noticing a big change in the daylight hours and it's getting dark earlier and light later in the mornings. When I get up now for work it's a lot darker which means winter astro imaging is just around the corner!

Lots happening right now, and I would also send our thoughts to those currently affected by the large fire that's currently burning on the Port Hills. I hope that those members that live in that area manage to find a way through this and things get contained quickly.

With AGM coming up soon I thought it was worthwhile to recap how we did in 2023.

To sum it up, we had a banger of year! With some improved weather we managed to hit a near record number of open nights and Kidsfest nights which is awesome for us as that means an increase in visitors and public exposure. All this means a good amount is appearing in our bank, which is great as we have some fabulous plans for some observatory improvements planned for the end of this season. Of course, we did plenty of other events and had a fabulous day out at the Hororata Highland Games and at Nightglow. It's great to be invited to these huge events and awesome to see CAS being seen by so many people although we still have a big job to do here.

The number of people who had never heard of CAS or know there is an observatory in West Melton is quite surprising. So, we still have a good audience to pull on for open nights and new members!

We have a healthy bank balance and a good membership of over 225 members and end the 2023 year in a very healthy status.

As we close out our past year and look to the AGM, I'd like to say a huge thank you to all on the committee for their hard work. Having been on committee in various roles for several years, I know how much effort goes into organising events, managing open nights and private groups, and just keeping the observatory ship shape and the lights on! So, thanks to all of you that are planning to stand in 2024 and for those who are taking a well-earned break. I would also like to send a heartfelt thanks to all our open night volunteers who turn out tirelessly night after night during the winter. I really appreciate the effort you give in helping these nights go smoothly and making them a fun night out for our visitors. We get some fantastic reviews and that's solely due to the commitment and enthusiasm you bring to these nights.

Cont next page

LETTER TO MEMBERS FROM YOUR CAS PRESIDENT SIMON LEWIS cont

So what do the next few months look like?

Well coming up soon is AGM on 19 March at the UC.

This is a great opportunity to hear what's been happening this year, catch up on plans for the 2024 winter season and vote for your committee for this year and an opportunity to get involved. We need to keep new blood coming into the committee and it's a good opportunity to play a role in the running of your society. So please take a few hours out of your schedule to come along and catch up with other members and take part in this important night. Of course, once AGM is out the way it's all downhill to open nights! This year open nights will run from 10 April, the first Wednesday after daylight savings and run through to the end of September. It's a long season this year and I hope with El Nino we might get a run of some crisp icy nights for some fabulous viewing.

As we head into our winter season, I would like to call for volunteers to help and I will post details soon of the 2024 volunteer site so you can enter and manage your own volunteer bookings. You don't need to be an expert but a friendly voice in the dark and helping guide people around the site is a huge help. Open nights are also a fabulous opportunity to buddy up with one of the accredited volunteers and get some experience on the scopes and if the weather is good then after the public are gone you can guarantee there will be a bunch of us ready to get some scope time in and it's an awesome opportunity to get some training in.

Apart from Friday nights we also run private groups on Wednesdays and if you can't make Friday's but could make Wednesday's, our private group co-ordinator, Rob Glassey would love for some eager volunteers for those sessions!

And to get a feel for this season we have 22 Friday night slots and 22 Wednesday slots to fill with volunteers! Please use the volunteer site links when published – even if you are a regular volunteer, it helps me sleep at night knowing the slots are filled and we have people ready to help!

Speaking of training, we are planning to make some changes to our training night schedule. It's been increasingly difficult with our busy schedule to add another night to our volunteers during the winter and so committee have made the decision to collapse the training night into our social night on the 3rd Saturday of each month, in the hope that more people will be around to support training but also give a boost to social night attendance. So, we will update calendars to reflect that change.

Cont next page

LETTER TO MEMBERS FROM YOUR CAS PRESIDENT SIMON LEWIS cont

Winter of course also means Kidsfest! And this year Kidsfest will run from July 6 – 20, coinciding with the school holidays. We will be open every night during this time apart from our UC Tuesday meeting. Similarly, to other open nights we need volunteers during this time and please consider helping here too. Kidsfest is an amazingly fun time and it's awesome to see all those excited faces when they arrive at the observatory!

So what else are we planning this year?

If you have been closer to the observatory operations, you may be aware that some of our buildings are starting to feel their age and becoming difficult to keep watertight. Kieren and Terry have done a great job doing repair work on the 14" dome previously and on the 16" internal roof over last winter but we still have much work to do.

One of the first jobs will be to replace the woodwork on the 16" frame/roof rails that holds the roof as it rolls back. They are quickly approaching the end of life and are rotten in places and in need of replacement.

So that will be one job we need to attack.

The other big job that needs to be looked at is the 120" Nackerville dome. This building has been under constant patch up over the past five years or more and still leaks like a sieve in winter! Committee has decided we need to have a replacement planned for this by the end of the season as we can't keep having good gear exposed to water and dampness every winter. So we are going to take an opportunity to look at this alongside the 11" building and see what we can do to do a replacement that will last us another 30 years and meet the growing needs of open nights.

I will keep you updated as we progress the plans, but we will need to do this properly. The days of doing a DIY job are long gone and any structure needs to be compliant and consented as well as structurally signed off and built to code. So, this will need some proper planning and execution, but we will have a fabulous new facility at the end of it.

We will also take the opportunity to look at the lodge facilities and see if we can bring them a little more up to date for our visitors.

As you can see, we have a vibrant and successful society and I hope you will support me in our plans to move us forward this coming year at the AGM. Lots more planned for 2024 so stay up to date on the website, at our monthly meetings and social nights. Regards and see you soon at a CAS meeting soon.

Simon

CAS President

Constitutional Change Proposals CAS Annual General Meeting, 2024

The Committee has realised that it would be beneficial to the running of the Society to make a few amendments to the Constitution. These proposals have arisen mainly due to the advent of more efficient and reliable electronic communication, in addition to help make the current constitution compliant with the privacy act and the way in which CAS collects, stores and manages members personal information.

To better understand the rationale and implications, we have added a brief, explanatory statement after each of the changes. These explanations will, of course, not be included in the Constitution but are presented here for the Membership's benefit.

Amendments to CASmag section

Currently the constitution has an operational requirement for the delivery of at least 10 CASmags in a calendar year. With communication being sent out to members by both CASmag and also regular monthly members update emails.

The committee is proposing to remove the quantity requirement to allow the editor to control the release and publication on CASmag.

MOTION of Notice of Constitutional Change proposal:

Delete :

7.2.4 EDITOR

7.2.4.3 The Editor shall be responsible for the publication of the society's magazine, CASMAG. CASMAG shall be the official publication of the Society and shall be produced at least ten times per year.

ADD :

7.2.4 EDITOR

7.2.4.3 The Editor shall be responsible for the publication of the society's magazine. CASMAG shall be the official publication of the Society.

Amendments to constitution to ensure the CAS constitution complies with the Privacy Act

3 MEMBERSHIP

Delete :

3.1 The Society's membership is made up of the persons whose names, addresses and occupations appear in the membership records of financial members of The Society prior to the registration of this Constitution and those persons or bodies admitted by the Committee in accordance with this Constitution after the date of registration.

Add:

3.1 The Society's membership is made up of the persons whose names, addresses, contact phone numbers, and email address appear in the membership records of financial members of The Society prior to the registration of this Constitution and those persons or bodies admitted by the committee in accordance with this Constitution after the date of registration.

Removal of the requirement to records members occupation withing the membership database. Including the additional requirement for members email address.

We need this for communication and there is also a further reference to using emails address to notify members – section 6.7.5.5.

Constitutional Change Proposals CAS Annual General Meeting, 2024 cont

3.6 APPLICATIONS FOR MEMBERSHIP

Delete :

3.6.1 Every person or organisation wishing to become a member of The Society shall make application, using the Society's Application Form, stating name, address and email address and other details as may be required by The Society. The application shall be proposed and seconded by two financial members of the Society.

The application must be accompanied by the appropriate subscription in accordance with the by-laws.

Add :

3.6.1 Every person or organisation wishing to become a member of The Society shall make application, using the Society's Application Form, stating names, addresses, contact phone numbers, and email address and other details as may be required by The Society.

The application shall be proposed and seconded by two financial members of the Society. The application must be accompanied by the appropriate subscription in accordance with the by-laws.

7.2 DUTIES:

Delete :

7.2.3.2 The Membership Secretary keeps the register of members containing their names, addresses, occupations and the dates on which they became members and ceased to be members in accordance with legislation. Twice- yearly, at the February and August Committee meetings, he presents to the Committee a list of all members, distinguishing financial from unfinancial ones. A copy of the register of current members is made available for inspection at each Annual General Meeting.

Add:

7.2.3.2 The Membership Secretary keeps the register of members containing their names, addresses, contact phone numbers, email address and the dates on which they became members and ceased to be members in accordance with legislation. Twice-yearly, at the February and August Committee meetings, he presents to the Committee a list of all members, distinguishing financial from unfinancial ones. A copy of the register of current members is made available for inspection at each Annual General Meeting.

CAS is required to make sure our actions are compliant with privacy act.

We don't have to write them into the constitution, as we can't contract out of the Privacy Act, applying a constant wording across the constitution will ensure a consistent information gathering approach.

2024 RASNZ BHT LECTURE 22nd March 2024

The RASNZ Lecture Trust is pleased to announce that the 2024 BHT lecturer is Professor Lisa Kaltenegger.

Lisa Kaltenegger is the Director of the Carl Sagan Institute for the Search for Life in the Cosmos at Cornell and Associate Professor in Astronomy. She is a pioneer and world-leading expert in modeling potential habitable worlds and their detectable spectral fingerprint.

Venue will be at University of Canterbury, The room is to be confirmed and will be posted on our website



SEARCHING FOR ALIEN EARTHS

Dr Lisa Kaltenegger

Director of Carl Sagan Institute for Life
Associate Professor Astronomy Cornell University

Are we alone? The question should have an obvious answer: yes or no. But how do you find life over cosmic distances?

RASNZ 2024 CONFERENCE

24th-26th May 2024

Prepare for the highlight of 2024 - the RASNZ Conference in Nelson! Gather with leading astronomers and passionate enthusiasts to discuss, share, and expand knowledge in astronomy and related sciences.

The Nelson Astronomical Society proudly hosts this year's event, offering a platform for dialogue and collaboration among astronomers, astrophysicists, and related professionals.

Whether you're a seasoned expert or a curious beginner, there's something to spark your interest. Seize the chance to network, engage in hands-on sessions, and explore fresh ideas with fellow astronomy lovers and scientists. Don't let this opportunity pass you by!

More information and bookings at
<https://www.rasnzconference.org.nz/>

NEW ZEALAND STARLIGHT CONFERENCE 2024

The New Zealand Starlight Conference in Tekapo, New Zealand will take place between the **20th and 23rd of October 2024**.

The main theme of the Starlight Conference 2024 is

Dark Skies for All: a Call for Action!

The conference helps to promote New Zealand as a world leader for dark skies protection and astro-tourism.

It also highlights the health and environmental impacts of artificial light at night (ALAN) by engaging with world experts who contribute conference presentations.

Presentations of the latest research on the hazards of blue light emissions from LED streetlights will be made, so that New Zealand communities, local government officials and lighting engineers can install lights which comply with the best international practices.

<https://starlightconference.org.nz/registration/>

CAS MERCHANDISE

EFTPOS now available for payments

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



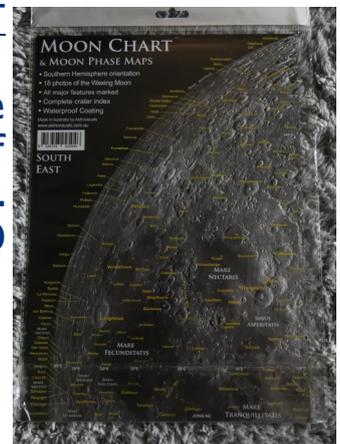
These are all black ink and with a variety of barrel colours

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



MOON CHART

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



DOUBLE -SIDED PLANISPHERE FOR SOUTHERN HEMISPHERE

\$20.00

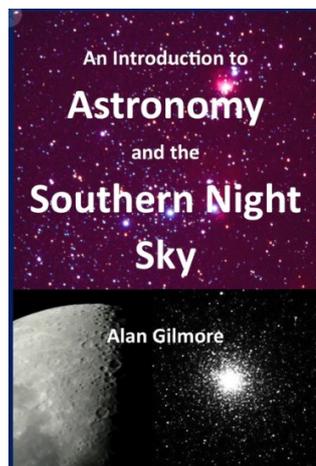


SUN-DISK KIT, \$25.00
Make a sundial at home



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

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



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

CAS CLOTHING RANGE

Waterproof Stickers **New TYPE** with our logo are also available \$2.50 each

CAS Beanies: Now in stock. Wool Blend Beanie with the CAS logo \$20.00

CAS Sew-On LOGO Badges: Now in stock \$10.00 each

The following we will take orders and then order the items, 1-2 weeks

Delivery from order) We have some samples of each of the following items

Cas Soft Shell Jackets = Sizes S— 8XL \$65.00

Cas Polo Shirts = Sizes S—5XL \$45.00

Cas Zip Front Polar Fleece Jackets = Sizes 2XS -5XL \$47.00

Cas T-Shirts = Sizes 3XS—8/9XL \$22.00

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

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



CAS ASTRONOMY LOG BOOKS FOR SALE

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

\$15.00 each. (Plus postage if required)

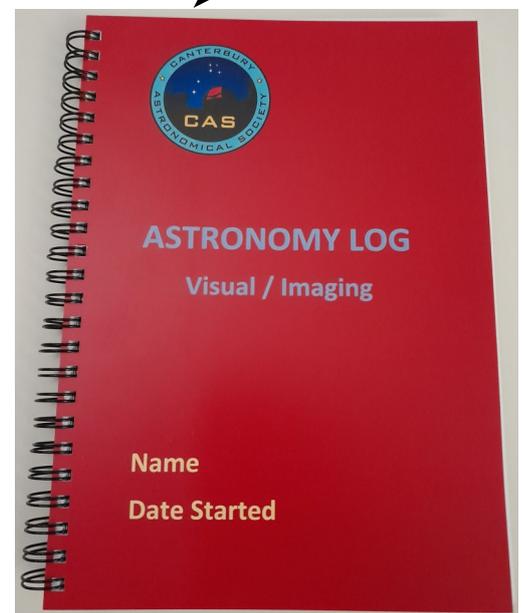
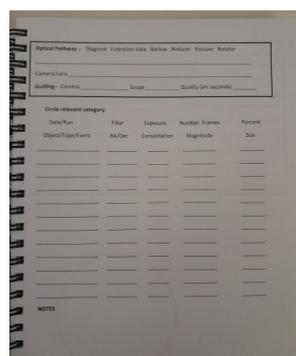
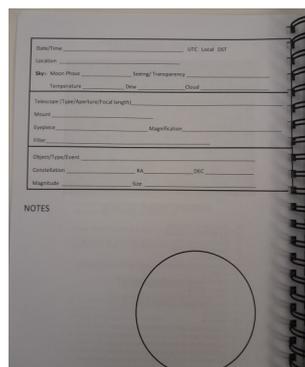
Contact Dale for your copy. Email: editor@cas.org.nz

A5 size 100 pages ring bound.

Inside 1st 2 pages has handy hints for observing

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

**EFTPOS
Available**

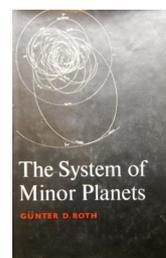
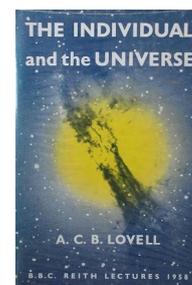
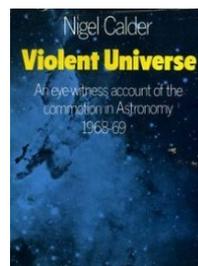


LIBRARY CORNER

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. Violent Universe by Nigel Calder.
2. The Individual and the Universe.
3. The System of Minor Planets by Gunter D Roth
4. The Face of the Sun by H W Newton
5. 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

NEW BOOKS: New to the Library:

An Introduction to Astronomy and the Southern Night Sky. By Alan Gilmore.

'Turn left at Orion' by Guy Consolmagno

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

Measuring the Universe by Kitty Ferguson.

Published in 2000

Library code 520.1 FER

Kitty Ferguson was actually a professional musician with a keen interest in Maths, Physics and Cosmology.

She worked in Cambridge in applied Maths and theoretical physics and now writes about science.

The book starts with Archimedes measuring the diameter of the sun using a stick with a sliding disc to occlude the sun.

From triangulation he was able to estimate the angular diameter of the sun.

Then follows Eratosthenes' measurement of the diameter of the earth derived from the sun shining directly down a well at midday in one place, and the angle of a shadow further away on the same longitude.

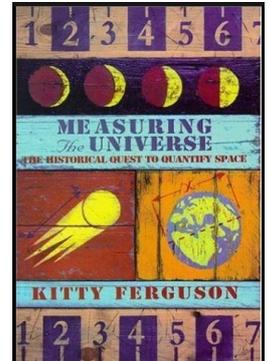
The account then moves through all the famous philosophers and scientists with the stories we all know from Aristarchus, Ptolemy, Copernicus, Galileo, Kepler Newton and Einstein. There are of course others mentioned in between. On the way it describes Cassini's measurement of mars distance using parallax which led the way to measure closer stars by parallax (using the extremes of earth's orbit round the sun).

The last part of the book looks at discovery of galaxies, and measurement of their distance using Cepheid variables, and later the spectra from the early development of a nova. There is also some discussion of black holes, Cosmic background radiation and expansion of the universe.

The difference about this book is that it is a journey through time explaining how our picture of the universe was built up. Most of the stories we already know as isolated stories, but it is fascinating to see how our understanding of the universe has built up on previous insights and measurements.

It is a very readable book with no maths, but some clear diagrams explaining parallax, ellipses etc.

Although it covers a subject that is inherently technical, it manages to explain things in a non technical way. Being a relatively recent publication it is reasonably up to date (compared to some other technical books in the library!)



*A thoroughly entertaining read.
Reviewed by Terry Richardson*

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

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

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

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

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

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

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

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.

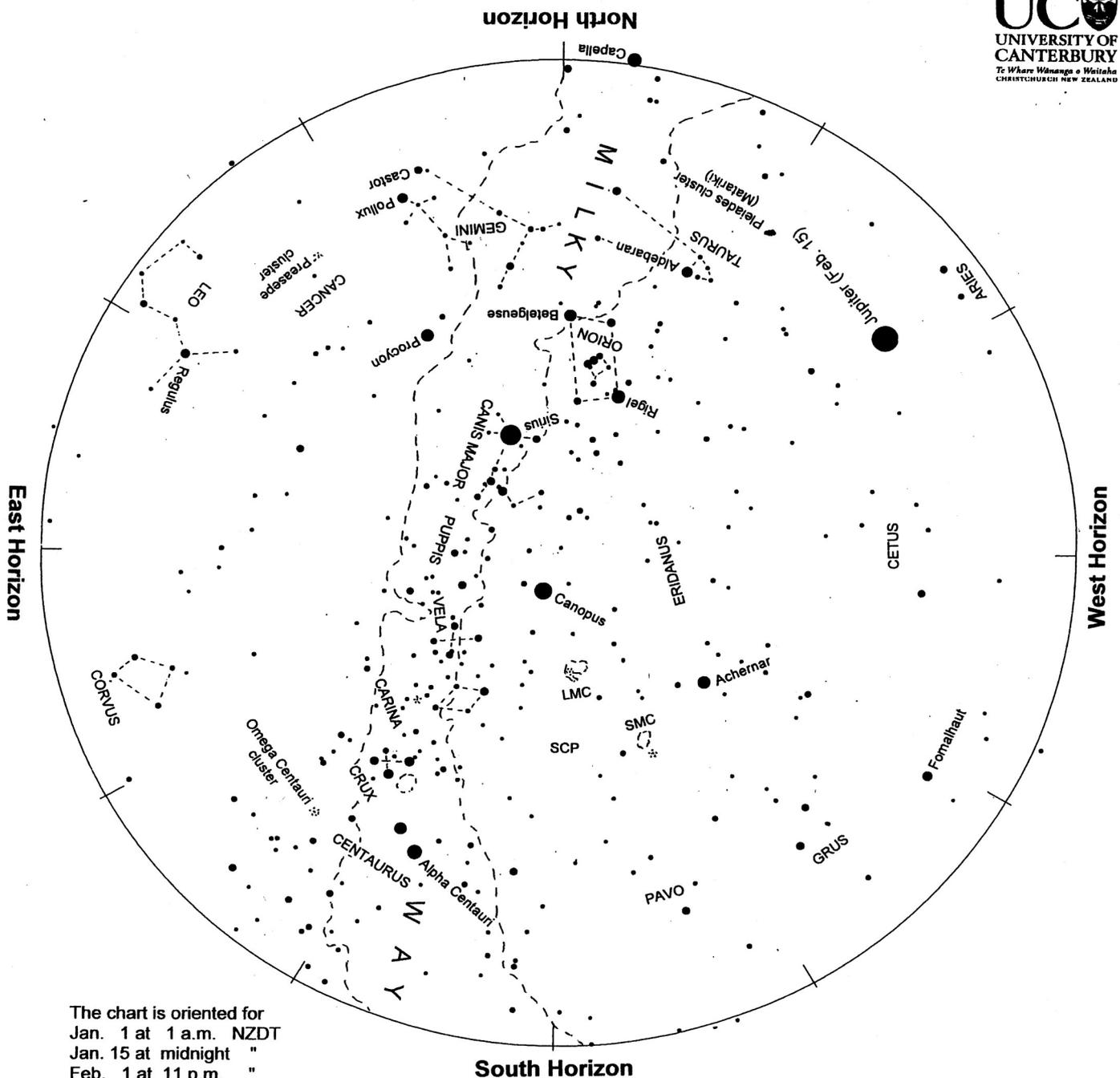
This sounds a bit restrictive, but has become necessary due to recent misuse and possible damage to some instruments.

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

Kieren Eden



The Evening Sky Map for FEBRUARY 2024



The chart is oriented for
Jan. 1 at 1 a.m. NZDT
Jan. 15 at midnight "
Feb. 1 at 11 p.m. "
Feb. 15 at 10 p.m. "

Evening sky in February 2024

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 westward shift each night as we orbit the sun.

Jupiter is the 'evening star', low in the northwest. It sets after midnight at the beginning of the month and around 10:30 at the end. Sirius, the brightest true star, appears north of overhead at dusk. Canopus, the second brightest star, is south of the zenith. Orion, containing 'The Pot', is midway down the north sky. Below and left of Orion are Taurus and the Pleiades/Matariki star cluster. The Southern Cross and Pointers are midway up the southeast sky. The Clouds of Magellan, LMC and SMC, two nearby galaxies, are high in the south sky.

The Evening Sky in FEBRUARY 2024

Jupiter is the 'evening star', appearing in the northwest soon after sunset. It sets after midnight at the beginning of the month and around 11 pm at the end. The Moon will be near Jupiter on the 15th. We are moving to the far side of the Sun from Jupiter, hence its slow fall, night to night. It is 780 million km away mid-month.

Sirius and Canopus are the brightest true stars. Sirius, the brightest of all the stars, is north of overhead. Canopus, the second brightest star, is a bit south of overhead. Both stars are white in colour.

Sirius, "the Dog Star" marks the head of Canis Major the big dog. Sirius is 8.6 light years* away and 30 times brighter than the Sun. A group of stars above and right of it make the dog's hind-quarters and tail, upside down. Procyon, in the northeast below Sirius, marks the smaller of the two dogs that follow Orion the hunter across the sky.

Below and left of Sirius are bluish Rigel and orange Betelgeuse, the brightest stars in Orion. Between them is a line of three stars: Orion's belt. To southern hemisphere star watchers, the line of three makes the bottom of "The Pot". The handle of The Pot is Orion's sword, a fainter line of stars above the bright three. At its centre is the Orion Nebula; a glowing gas cloud 1300 light years away, seen in binoculars.

Orion's belt points down and left to the orange star Aldebaran. Continuing the line finds the Pleiades or Matariki star cluster. Aldebaran makes one eye of Taurus the bull. It is on one tip of an upside-down V of stars making the face of Taurus. These constellation pictures were thought up by northern hemisphere folk so are upside down to us.

The V-shaped group is called the Hyades cluster. It is 130 light years away. Aldebaran is not a member of the cluster but merely on the line of sight, 65 light years from us. It is a red-giant star 145 times brighter than the sun. The Pleiades/Matariki star cluster is also known as the Seven Sisters and Subaru among many names. The cluster is 440 light years from us. From northern Aotearoa the bright star Capella is on the north skyline. It is 90,000 times brighter than the sun and 3300 light years away.

Crux, the Southern Cross, is in the southeast. Below it are Beta and Alpha Centauri, often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri is a blue-giant star hundreds of light years away, as are most of the stars in Crux. Canopus is also a very luminous distant star; 13 000 times brighter than the sun and 300 light years away.

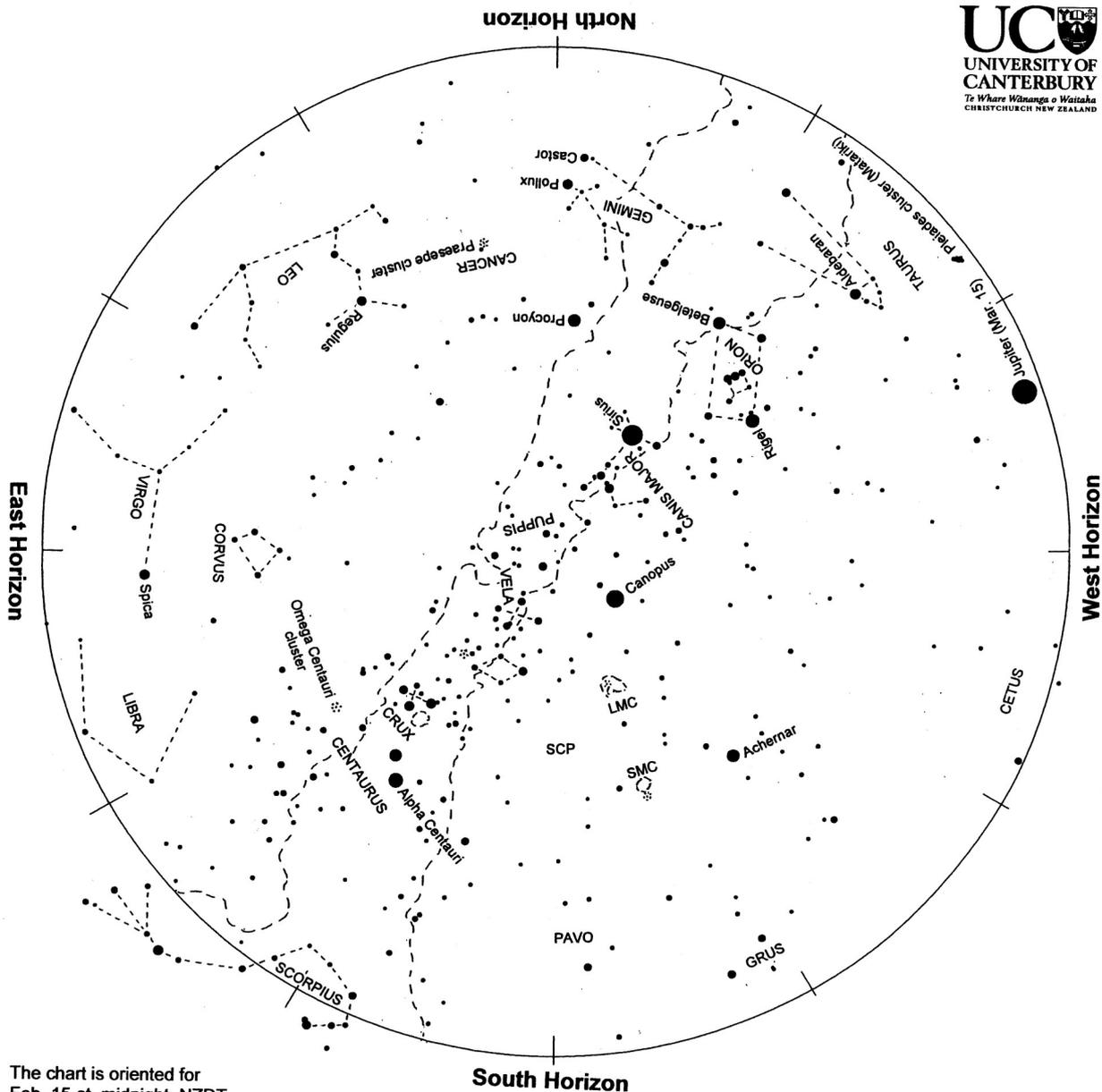
The Milky Way is brightest in the southeast toward Crux. It can be traced up the sky, fading where it is nearly overhead. It becomes very faint east, or right, of Orion. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The Clouds of Magellan, LMC and SMC are high in the south sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away.

Three planets are in the dawn sky, all low in the east. Venus is the brilliant 'morning star', rising around 5 a.m. Its rising time gets later through the month but stays two hours ahead of sunrise. Venus is leaving us behind and moving to the other side of the Sun. At the beginning of the month Mercury is below and right of Venus. It looks like a bright star but much fainter than Venus. Between Venus and Mercury is Mars, fainter again and reddish coloured. Mercury soon slips down into the dawn twilight as it leaves us behind. We are catching up on Mars, so it moves higher in the dawn, closing the gap with Venus. On the 22nd Mars will be just to the right of Venus. After that it appears above Venus. The Moon will be near Venus on the 8th and above Mercury on 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 for sunlight 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 240103

The Evening Sky Map for MARCH 2024



The chart is oriented for
 Feb. 15 at midnight NZDT
 Mar. 1 at 11 p.m. "
 Mar. 15 at 10 p.m. "
 April 1 at 9 p.m. "

Evening sky in March 2024

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 westward shift each night as we orbit the sun.

Jupiter is the 'evening star', appearing in the northwest soon after sunset. Sirius, the brightest true star, appears northwest of the zenith in early twilight. Orion, containing 'The Pot', is below Sirius in the northwest sky. Canopus, the second brightest star, is southwest of overhead. The Southern Cross, Crux, and the Pointers are midway up the southeast sky. Nearby galaxies the Clouds of Magellan, LMC and SMC, are high in the south looking like misty patches in a dark sky.

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 MARCH 2024

Jupiter is the 'evening star', appearing in the northwest at early twilight. It sets around 11 pm at the beginning of the month and 9 pm at the end. The Moon will be near Jupiter on the 14th. Northwest of overhead is Sirius. It is the brightest true star in the sky. Southwest of the zenith is Canopus, the second brightest star. Below Sirius are bluish Rigel and orange Betelgeuse, the brightest stars in Orion. Between them is a line of three stars: Orion's belt. To southern hemisphere star watchers, the line of stars makes the bottom of 'The Pot'. Orion's belt points down and left to a V-shaped pattern of stars. This makes the face of Taurus the Bull, upside down to us. The orange star Aldebaran is at one tip of the V making one eye of the bull. Continuing the line from Orion down and left finds the Pleiades or Matariki star cluster, low in the northwest. It sets after 10 pm, mid-month. The cluster is about 440 light-years* away. Sirius is the brightest star both because it is relatively close, nine light years away, and 23 times brighter than the sun. Rigel is a bluish supergiant star, 40 000 times brighter than the sun and much hotter. It is 800 light years away. Orange Betelgeuse is a red-giant star, cooler than the sun but much bigger and 9000 times brighter. Betelgeuse is 400 light years from us. The handle of 'The Pot' or Orion's sword, has the Orion Nebula at its centre; a glowing gas cloud many light-years across and 1300 light years away. It is a place where dust and gas in space is gathering together to make new stars. Some of the stars are much bigger and hotter than the Sun. Ultra-violet light from them causes the left-over gas to glow, making the nebula. Near the north skyline are Pollux and Castor marking the heads of Gemini the twins. Though paired in mythology, the two stars are not related at all. Castor is a hot white star like Sirius but 52 light years away. Golden Pollux is bigger and brighter but cooler than Sirius and 34 light years away. Above and right of them is the star cluster Praesepe, marking the shell of Cancer the crab. Praesepe is also called the Beehive cluster, the reason obvious when it is viewed in binoculars. It is some 500 light years from us. Crux, the Southern Cross, is in the southeast. Below it are Beta and Alpha Centauri, often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away. Canopus is also a very luminous distant star; 13 000 times brighter than the sun and 300 light years away. The Milky Way is brightest in the southeast toward Crux. It becomes broader lower in the southeast toward Scorpius. Above Crux the Milky Way can be traced to nearly overhead where it fades. It becomes very faint in the north, right of Orion where we are looking toward the Galaxy's nearby edge. The centre of the Galaxy is in the broad part of the Milky Way below Scorpius in the southeast. The Clouds of Magellan, LMC and SMC are high in the south sky. They are easily seen by eye on a dark moonless night, looking like misty patches. They are two small galaxies about 160 000 and 200 000 light years away. The Large Cloud is around a quarter the mass of the Milky Way. The full Moon may look a little odd on the 25th as it grazes the outer part of Earth's shadow, the penumbra. It will be most in the shadow around 8:13 pm NZDT. The top edge of the Moon will be darkest. Bright planets are in the dawn sky. Venus is the brilliant 'morning star', rising soon after 5 a.m. at the beginning of the month and around 6:30 at the end. At the beginning of the month Mars is just above Venus, looking like a medium-bright reddish star. It moves up and away from Venus. Later in the month, Saturn appears and moves up the sky morning-to-morning. It is the same brightness as Mars. On the 22nd Saturn will be just to the right of Venus, with less than a full Moon's width between them. Mars and Saturn move up the sky while Venus stays put. By the end of the month Mars, Saturn and Venus are roughly equally spaced on a line. The Moon will be near Venus on 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 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 240128*

CAS COMMITTEE AND OFFICERS 2022/2023

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

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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 (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 \$70
<input type="checkbox"/>	Family (two or more persons living at the same address)	\$105
<input type="checkbox"/>	Junior (under 18 years of age on 1st April in the current year)	\$35
<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: _____