



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

2023 ANNUAL SUBSCRIPTIONS/MEMBERSHIP

Payment for the 2023 Year is now OVERDUE

This can be paid via internet banking, PayPal, cash in person, Please use your name and member number for your reference when making payment, (this means it can be matched to your membership) **PLEASE advise if there are any changes to your details: Address, Phone Number, email**, Please email any changes to membership@cas.org.nz 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,
I hope you all had an enjoyable Christmas/New Year/ Holiday time
It seems the weather really is not sure what it wants to do, be really
hot or very wet. Hoping it settles for the winter season and we get
lots of clear dry nights for observing--- Dale.k*

This is your Casmag, for YOU our members,
So I welcome any ideas or articles you would like to share with the other
members. Please email your Article or favourite photo with details so I can
include it in future issues.

Deadline for each issue is 1st of each month

Remember you can have your advert added in the future casmag's,

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

Dale Kershaw

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

CAS Calendar JANUARY—MARCH 2024JANUARY 2024

Monday 1st New Years Day
 Thursday 4th Last Quarter
 Friday 12th New Moon
 Thursday 18th First Quarter
 Friday 26th Full Moon

FEBRUARY 2024

Saturday 3rd Last Quarter
 New Members Night @ Observatory
 Tuesday 6th Waitangi Day Holiday
 Friday 9th Stardate South Island continues till Sunday 11th
 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

Saturday 2nd New Members Night @ Observatory
 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
 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

2024 Open Night Season

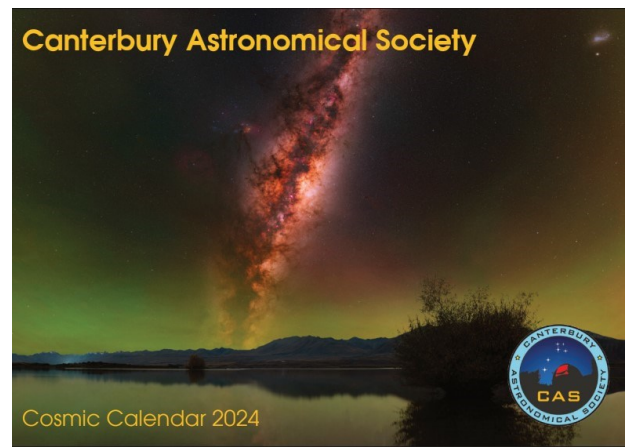
Our 2024 Open night season will start after the daylight saving change on 7th April 2024. Notices will be posted on our website. We look forward to seeing you at these events. These nights are run as part of our Public Outreach. This is our main income towards running our society and of course the observatory. 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 January 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:

Didier Vanderbroeck
David Rolfe



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

Apologies from the editor for any spelling mistakes in the names

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

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

STARDATE SOUTH ISLAND 2024

2024 Event is 9th 10th 11th February

Check out the Stardate website

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

Registrations are now open.

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

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

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

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

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

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

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

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

Or you can contact Euan at
ewan@treesandstars.com

Or Dale at
2dale.graeme@gmail.com

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.

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

Cas Branded items for sale

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



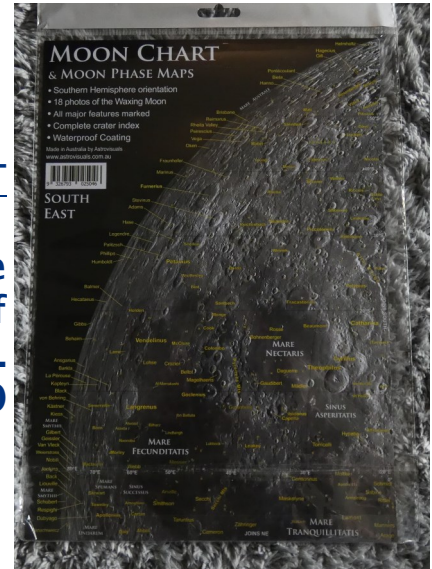
These are all black ink and with a variety of barrel colours



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

MOON CHART

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



DOUBLE -SIDED PLANISPHERE FOR SOUTHERN HEMISPHERE
\$20.00

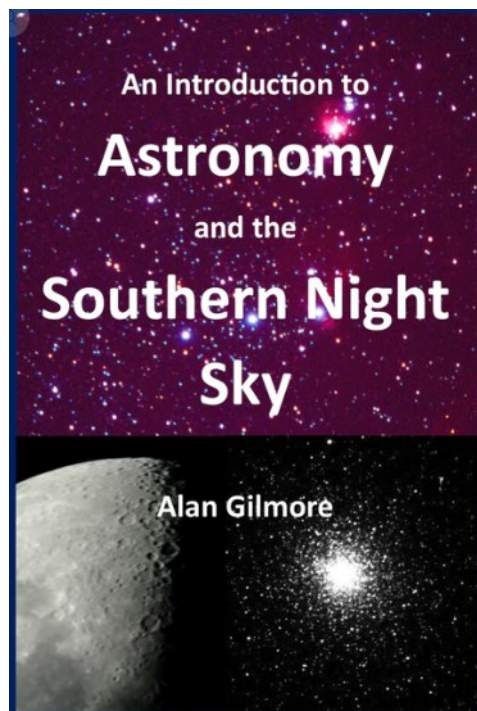


SUN-DISK KIT, \$25.00
Make a sundial at home



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

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



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

CAS CLOTHING RANGE

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

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

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

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

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

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

Cas Polo Shirts = Sizes S—5XL \$45.00

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

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

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

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



CAS ASTRONOMY LOG BOOKS FOR SALE

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

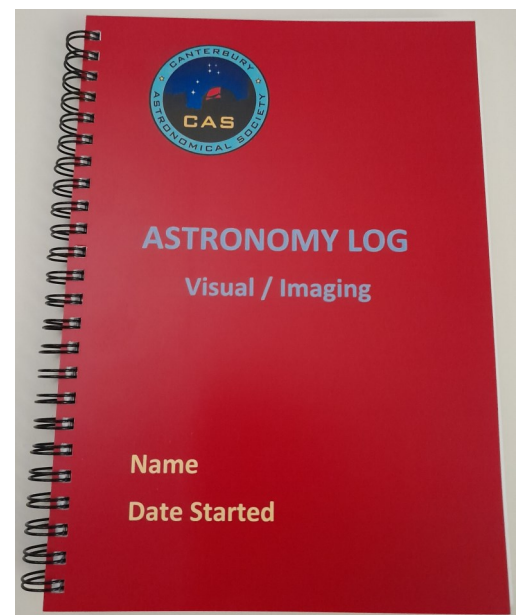
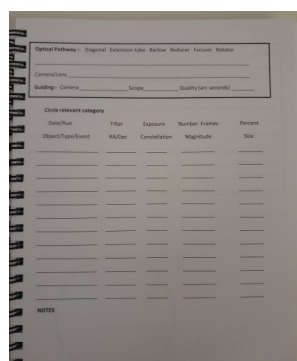
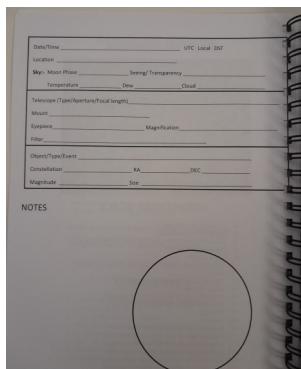
\$15.00 each. (Plus postage if required)

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



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



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: 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

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

“In order to attain the impossible, one must attempt the absurd”. Miguel de Cervantes.

“Value the future on a timescale longer than your own”. Richard Dawkins.

“The aim of argument should not be victory, but progress”. Karl Popper.

“At the end of the game, the king and the pawn go back in the same box”. Italian proverb.

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.

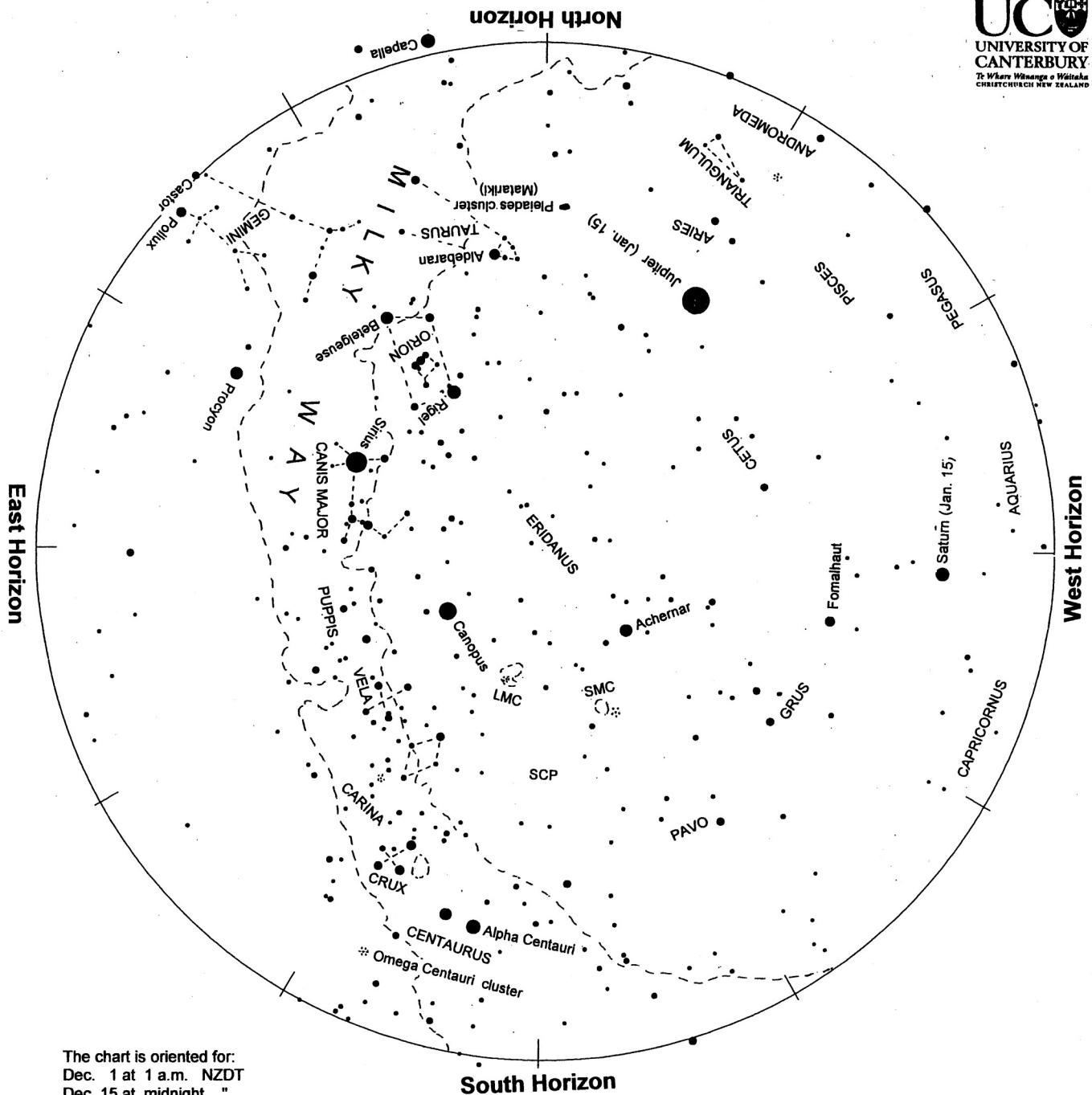
This sounds a bit restrictive, but has become necessary due to recent misuse and possible damage to some instruments.

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

Kieren Eden



The Evening Sky Map for JANUARY 2024



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

Evening sky in January 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 clockwise or westward rotation from night to night as we orbit the sun.

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

The Evening Sky in JANUARY 2024

The Evening Sky in January 2024

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

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

Procyon, in the northeast below Sirius, marks Canis Minor, the smaller of the two dogs that follow Orion the hunter across the sky.

Left of Sirius, as the sky darkens, are **Rigel** and **Betelgeuse**, the brightest stars in Orion. **Rigel** is a bluish supergiant star, 70 000 times brighter than the sun and much hotter. It is 800 light-years away. Orange **Betelgeuse** is a red-giant star, cooler than the sun but hundreds of times bigger: a ball of extremely thin hot gas. It is around 400 light-years away. Between them, but fainter, is a line of three stars making Orion's belt. To southern hemisphere star watchers, Orion's belt makes the bottom of 'The Pot' or 'The Saucepan'. A faint line of stars above and right of the belt is the pot's handle or Orion's sword. It has a glowing cloud at its centre: the Orion Nebula.

Left of Orion is the V-shaped pattern of stars making the face of **Taurus** the Bull. The V-shaped group is called the Hyades cluster. It is 150 light-years away. Orange **Aldebaran**, making one eye of the bull, is not a member of the cluster but on the line of sight, at half the cluster's distance.

Left again, toward the north and lower, is the **Pleiades/Matariki/Seven Sisters/ Subaru** star cluster. Pretty to the eye and impressive in binoculars, it is 440 light-years from us. From northern New Zealand the bright star **Capella** is on the north skyline. It is 90,000 times brighter than the sun and 3300 light-years away.

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

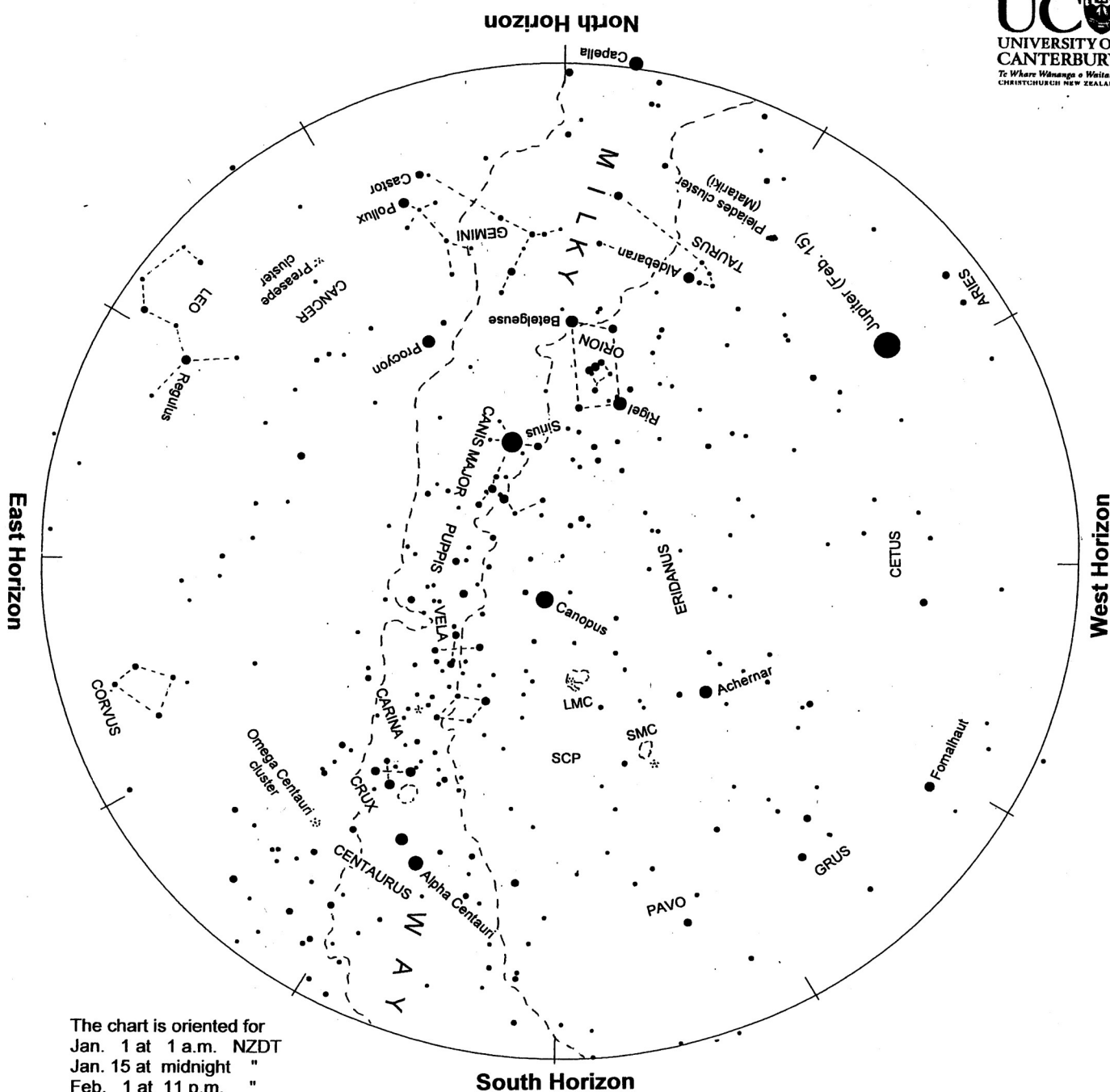
The **Milky Way** is in the eastern sky, brightest in the southeast toward Crux. It can be traced towards the north but becomes faint below Orion. The Milky Way is our edgewise view of the Galaxy, the pancake of billions of stars of which the sun is just one. The Milky Way is faint left of Orion because we are looking toward its thin outer edge. The centre region of the Galaxy, in Sagittarius, is hidden by the sun at this time of year.

The Clouds of Magellan, **LMC** and **SMC** are high in the southern sky and easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light-years away.

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

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

The Evening Sky Map for FEBRUARY 2024



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.
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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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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: _____