Vol. 69: No 1 FEBRUARY 2020 Issue Number 784

CASMAG

The official magazine of the Canterbury Astronomical Society

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

Monthly Meeting: 18TH FEBRUARY 2020

WE NOW HAVE A NEW VENUE FOR OUR MONTHLY MEMBERS MEETINGS:
OUR MEETINGS WILL BE IN ROOM ER225,
IN THE NEW ERNEST RUTHERFORD BUILDING.
UNIVERSITY OF CANTERBURY

We will have our flags and banners out to help you find your way, as well there is a map/photos on page 4 & 5 in this Casmag,
Refreshments start at 7.30. Meeting starts at 8pm

FEBRUARY MEETING SPEAKER: SIMON LEWIS

Howling at the Moon
A dummies guide to Narrow band Imaging" We have all experienced 'those' nights! You waited weeks for a break in the weather and that amazing 3 nights of cloud free skies coincides with the full moon…. again. So how to deal with it? Let me guide you through imaging under the full moon and how to never have to worry about a full moon again as we walk through an introduction to narrow band imaging and how that can achieved for very little outlay with your existing equipment.

STARDATE SOUTH ISLAND 21ST-23RD FEBRUARY 2020 MORE DETAILS ON PAGE 3

IN THIS MONTHS ISSUE

CAS Calendar, FEBRUARY 2020 – APRIL 2020

February 2020

Sunday 9th	Full Moon
Tuesday 11th	Committee Meeting
Sunday 16th	Last Quarter
Tuesday 18th	Members Meeting
Friday 21st	Stardate South Island Staveley
Saturday 22nd	Stardate South Island Staveley
Sunday 23rd	Stardate South Island Staveley
Monday 24th	New Moon

March 2020

Tuesday 3rd	First Quarter
Tuesday 10th	Full Moon
	Committee meeting
Monday 16th	Last Quarter
Tuesday 17th	CAS AGM
Saturday 21st	Members Night at Observatory
Tuesday 24th	New Moon
Saturday 28th	Earth Hour 8.30-9.30pm

April 2020

Wednesday 1st	First quarter
Friday 3rd	1st public Open Night
Sunday 5th	Daylight Saving Ends 2am
Wednesday 8th	Full Moon
Friday 10th-13th	Easter weekend
Tuesday 14th	Committee meeting
Wednesday 15th	Last Quarter
Friday 17th	Public Open Night
Tuesday 21st	Members Meeting
Thursday 23rd	New Moon
Saturday 25th	Anzac day
	Members Night at Observatory
Monday 27th	Anzac Day Observed

UPCOMING EVENTS:

2020 Calendar:

18th February 2020: 1st Members Meeting Night for 2020,

21st-23rd February 2020: Staveley Stardate South Island

17th March 2020: CAS AGM Meeting

21st March 2020: Members Club Night at Observatory

Earth Hour 2020: Saturday 28th March at Observatory

1st April 2020: 2020 CAS Membership Subs Due

Public Open Nights Start April 3rd (Full List to Follow)

Daylight Savings Ends April 5th

Easter Weekend 10th-14th April

STAVELEY STARDATE SOUTH ISLAND 2020

2020 Stardate South Island.
www.treesandstars.com/stardate/
21st 22nd 23rd February, Friday 3pm - Sunday 2pm
at the Christian hostel and Camp at Staveley with the following facilities, Full toilet and Showers, Bunkrooms, The auditorium, Full Kitchen with shared fridges and freezer with plenty of space for tents and caravans/campervans
Excellent horizons in all directions and heaps of room for many telescopes
$20 per night per adult, 5-15 years $5.00 per night under 5 free

Euan has asked for anyone who wishes to give a talk to please contact him, president@cas.org.nz
Or euan.mason@canterbury.ac.nz

Registration's are open and can be completed on this link
https://www.treesandstars.com/stardate/
use the registration link

MONTHLY MEETINGS:

New 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, As you come out of the lift, straight ahead to the lounge/kitchen area for our Cuppa, if using the stairs turn left to the kitchen lounge area, Our meeting room is round to the left from the kitchen,
We will have our Flags and Banners out to show the way. I have included some photos on the next page to assist with finding the right entrance and area

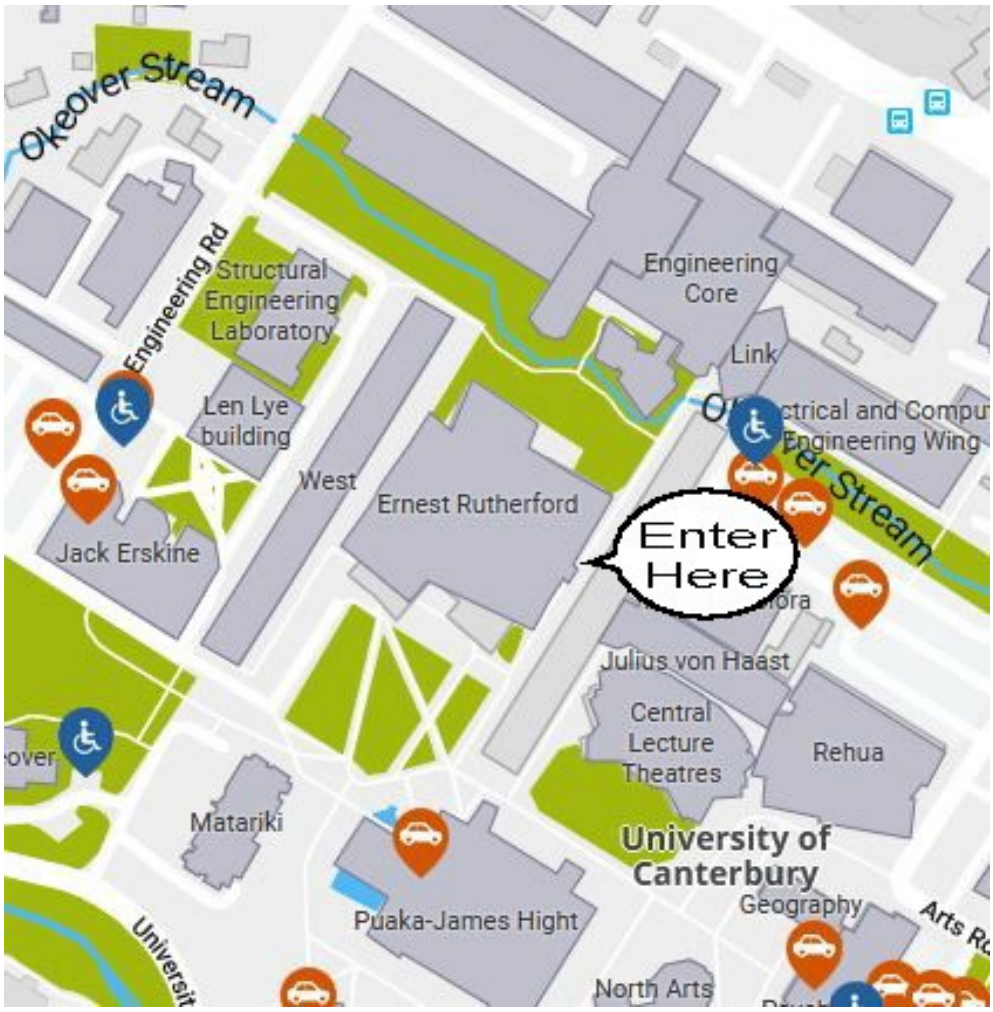
Carol McAlavey is asking you, our members to make suggestions or offer to give a talk at our monthly meetings.
PLEASE CONTACT CAROL WITH YOUR SUGGESTIONS OR IF YOU CAN GIVE A TALK via **member2@cas.org.nz**

Upcoming Meetings

18th FEBRUARY 2020.
Members meeting: Simon Lewis
17th MARCH.
Canterbury Astronomical Society AGM
21st April. TBA
19th May. TBA
16th June. TBA
21st July. TBA
18th August. TBA
15th September. TBA
20th October. TBA
17th November. TBA
(correct as at 8th February 2020, 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

MEETING VENUE ROOM ER225

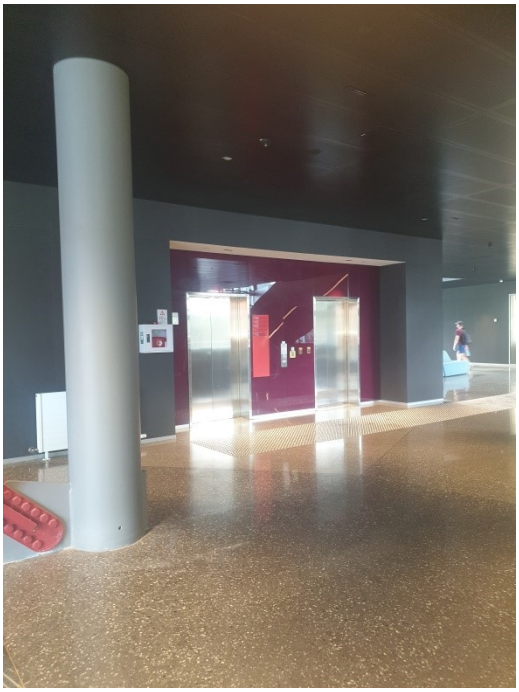


Map of Parking and Building

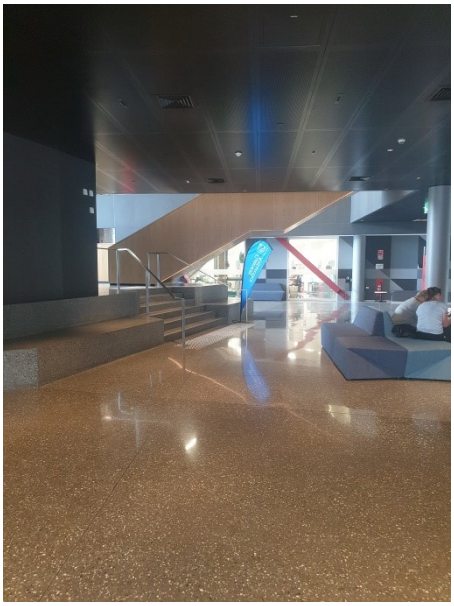
MEETING VENUE ROOM ER225

ENTRANCE INTO BUILDING VIA THESE DOORS

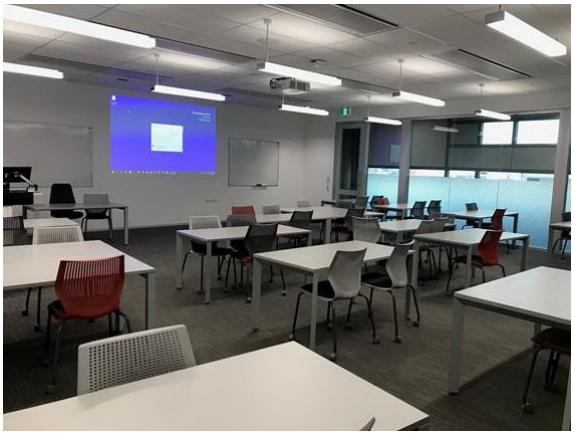
USE THE LIFTS TO LEVEL 2



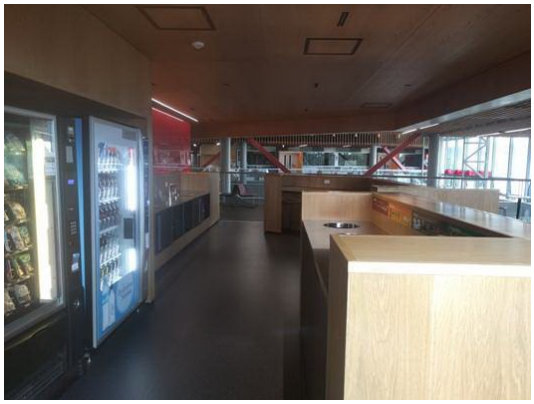
OR THE STAIRS



LOUNGE/ KITCHEN AREA



MEETING ROOM



WELCOME TO OUR NEW MEMBERS:

A warm welcome to our new members, We look forward to meeting you at our meetings 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 next meeting

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

OBSERVATORY NEWS

ALARM AT THE OBSERVATORY

The installation of our ALARM at the observatory is now fully operational, Ask a committee member for the password.

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 will present at the AGM to be 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

From Your Editor

While I am happy to continue as your Editor, If there is someone else who wishes to stand for this position please contact me or another committee member.
This is your Casmag, for YOU our members,
So I welcome any ideas or articles you would like to share with the other members.
So please email your Article or favourite photo with details for me to include in future issues.
Remember you can have your advert added in the future casmag's,
Contact me for detail's
Please email to editor@cas.org.nz
Dale Kershaw

METEOR SHOWERS FOR 2020

At time of publishing the RASNZ website does not have the updated the new chart for 2020.
Hoping it will be updated before our next issue

Information from the Royal Astronomical Society New Zealand website http/www.rasnz.org.nz

2020 Conference and RASNZ Centenary

RASNZ 100
The 2020 Conference will be held 8-10 May at Wellington with the Wharewaka Function Centre the venue (near the Michael Fowler Centre) in downtown Wellington. The Wellington Astronomical Society is hosting this conference.

2020 marks a significant milestone in the life of the Society as it was founded in November 1920 with 75 members.

The SCC invites ideas from members how the Society might commemorate its centenary at next year's conference.

Please send your suggestions to the SCC at

conference@rasnz.org.nz.

Conference registrations and more information at www.rasnz.org.nz

NOTES FROM YOUR COMMITTEE

SIGNING IN WHEN YOU ARE AT THE OBSERVATORY

Please remember to sign in the book on the table in the Lodge whenever you are out at the observatory, This helps give us an idea of who has been using the equipment etc, even if you are out there to do gardening or the like
PLEASE SIGN THE BOOK and add what you have been doing,
Also please note and issues that have happened or that need fixing, and its good to follow that up with a email or phone call to Terry or the committee

CAS COFFEE MUGS & PENS

With our new logo we have had Coffee Mugs printed and also Pens which we have for sale to our members,
Coffee Mugs are $15.00 each
Pens are $2.50 each
Payment can be cash or bank deposit

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

We are still looking at other items
like beanies and patches, And will advise when they are available for you to purchase

Canterbury Astronomical Society would like to acknowledge the following
Trees for Canterbury for the donation of tress and shrubs, which were planted along the bank,

Trees For Canterbury
The Green Effect Trust
Te Roopu Kakariki

AND
Southern Woods
for discounted trees to replace
the trees that were cut down over the last summer holidays

SOUTHERN WOODS

CAS Membership Subscriptions for 2020-2021

NEXT YEARS MEMBERSHIP SUBSCRIPTIONS WILL BE DUE FROM 1ST APRIL 2020
Discounted fees until 31st May 2020
Please use your name and member number as a reference when banking, then email membership@cas.org.nz to advise so payments can be matched to you correctly.

PLEASE also include any changes to your contact details (eg: phone, email, address)

It is important your details are kept up to date

Full details are included on the last page of this newsletter.
You are also welcome to pay by cash or cheque at our monthly meetings.

CANTERBURY ASTROMONICAL SOCIETY AGM
17TH MARCH 2020 7.30pm
ER225 University of Canterbury

This will include the presentation of annual reports from our President, Treasurer and other Committee Office holders.

Any notices of Motion and or By-Laws to be voted on by members

The Election of the Nine Officers of The society as follows

President
Vice-President
Treasurer
Secretary
Membership Secretary
CASMAG Editor
Librarian
Webmaster
Observatory Director

The Canterbury Astronomical Society Committee consists of Twelve members including:
The Officers of The Society and Committee up to Twelve Members

Any Officer of the Committee other than the President may hold a second
office if so elected at the AGM,

No member may hold more that 2 Offices

Other appointment's from within the membership are
Trustees, Deputy Director and Publicity officer (appointed by committee)

Appointees are not committee members unless they are actually elected to the committee in their own right

NOTICE OF MOTION

As required by our Constitution section 5,
The Committee is advising that the following will be presented at the AGM on 17th March 2020

SECTION 10: To Add the following.

10.1

The society's observatory and equipment are intended to further the Society's objects as set out in section 2.
They will not be used for the purposes of generating profits for any person or other organisation.

Then re-number all other clauses in section 10 by adding 0.1 to their labels

BY-LAWS: To ADD the following By-Law

LASER USE

Current members who have legally obtained green lasers may use them at the observatory.
Users of lasers at the observatory must observe the code of practice at all times (Published at the Observatory).
Unsafe use observed by any committee member will result in a warning and advice regarding safe use.
Continued unsafe use will result in a written warning from the committee.
If a person continues to use a laser in an unsafe manner after a written warning, the committee has the right to ban that person from using a laser at the observatory.
CAS does not take any responsibility for members or past members who use lasers.
Laser users are personally responsible for their behaviour.

CODE OF PRACTICE FOR THE USE OF GREEN LASERS AT THE OBSERVATORY (OR ANYWERE)

Lasers must only be operated by Laser owners who are permitted to use them.

They must not be given to, or used by third parties.

Astronomers must identify targets. Sometimes aircraft look like stars, and so if in doubt do not use a laser.

Generally waiting and watching for a minute will resolve the issue. If there is an approaching aircraft (lights or sound),

DO NOT USE the laser until the aircraft is no longer visible.

NOTE that Sometimes aircraft can suddenly appear from behind trees or buildings.

Point lasers at a specific targets rather than waving them around the sky.

Be aware that if you are pointing to objects low on the horizon, there may be people on a higher terrace who could walk past or into the beam.

A direct or indirect (reflected) beam can permanently damage eyes of an innocent victim.

Be careful not to shine on domes, buildings, or vehicles as bright reflections can occur.

Never use the laser inside. Reflections from windows, walls mirrors can be dangerous.

Be careful when retrieving a laser from a pocket as a button can be inadvertently pressed.

Lasers should be stored in a safe place out of reach of children

The Evening Sky in February 2020

Venus is the brilliant 'evening star' appearing in the west soon after sunset. It sets due west 90 minutes after the sun. In a telescope the planet looks like a gibbous moon: a moon between first-quarter and full. It is 150 million km from us mid-month, slowly overtaking Earth. The moon will be near Venus on the 27th. At the beginning of the month **Mercury** might be seen from places with a low western skyline setting 40 minutes after the sun. It fades into the twilight by mid-month.

The brightest 'real' stars are nearly overhead. **Sirius**, the brightest star, is north of the zenith. **Canopus**, the second brightest star, is south of the zenith. Below and left of Sirius are Orion's bright stars: bluish **Rigel** and reddish **Betelgeuse**. Between them is the line of three stars making Orion's Belt. The Belt line points left and down to orange **Aldebaran**, one eye of Taurus the Bull. Continuing the same line finds a tight bunch of fainter stars making the **Pleiades/Matariki** star cluster.

Sirius, 'the Dog Star', marks the head of **Canis Major** the big dog. A group of stars above and right of it make the dog's hindquarters and tail. **Procyon**, in the northeast below Sirius, marks the smaller of the two dogs that follow Orion the hunter across the sky.

The stars of Orion's belt make the bottom of 'the pot' or 'the saucepan'. The handle of the pot is the faint line of stars above the bright three, Orion's sword. At its centre is the Orion Nebula: a glowing gas cloud many light-years across and 1300 light years away. Here new stars are forming.

Aldebaran is at one tip of a V-shaped pattern of stars making the upside-down face of **Taurus**. 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, half the cluster's distance from us. The **Pleiades** or **Matariki** star cluster, low in the northwest, is also known as the Seven Sisters and Subaru. Six stars are seen by most eyes. Dozens are visible in binoculars. The cluster is 440 light years from us. Its stars formed around 100 million years ago.

From northern New Zealand the bright star **Capella** is on the north skyline. It is the sixth brightest star in the whole sky, planets excepted. It is 42 light years away and 190 times brighter than the sun.

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 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.

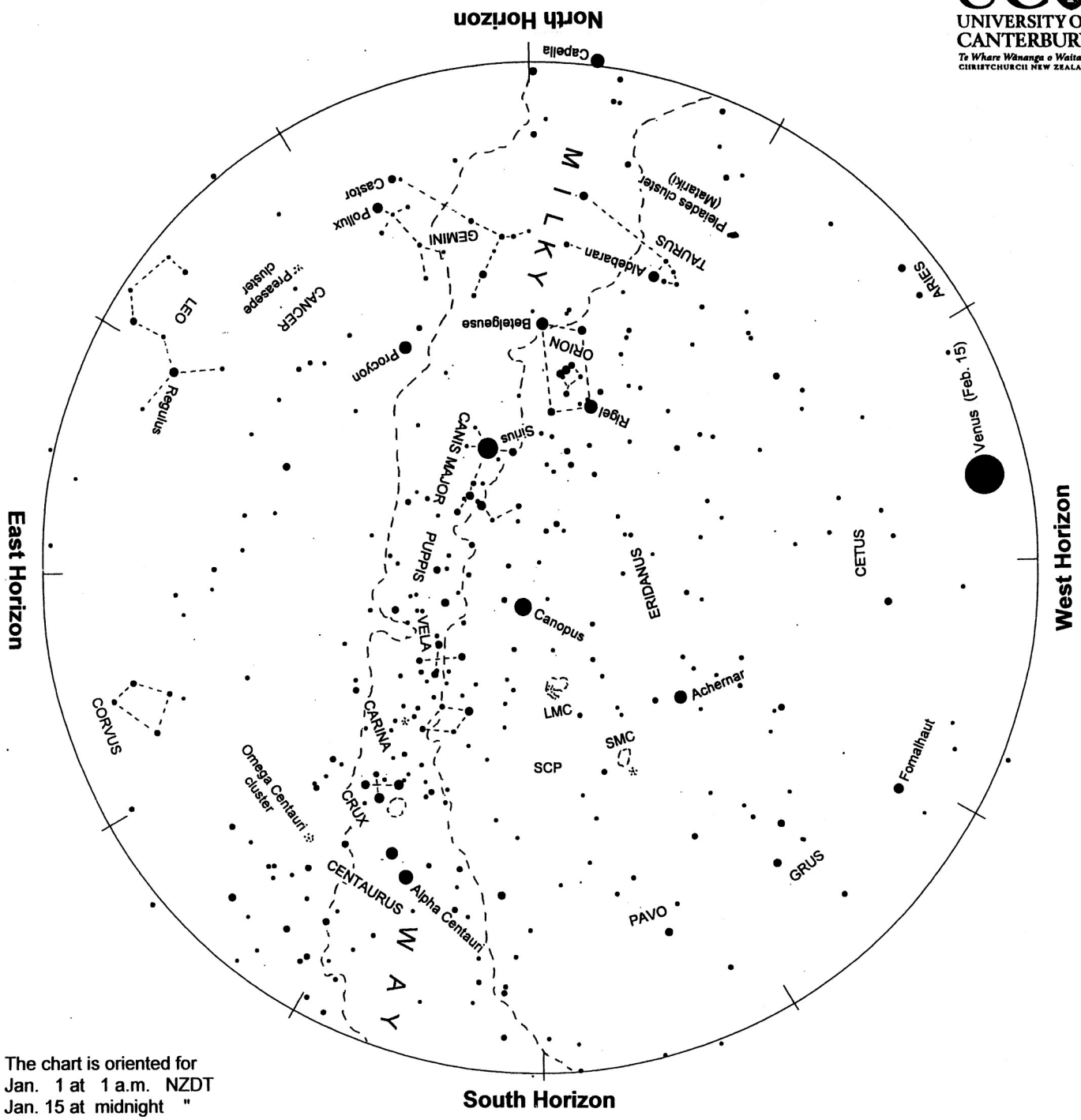
The Clouds of Magellan, **LMC** and **SMC** are high in the south sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away, nearby for galaxies. The Large Cloud is about 5% the mass of the Milky Way galaxy; the Small Cloud about 3%.

Mars, Jupiter and Saturn are all in the morning sky. **Mars** rises before 3 a.m. at the beginning of the month. It looks like a moderately bright reddish star. At first it is directly below Antares, an orange-red star of similar brightness. Mars holds its elevation in the morning sky while the starry sky advances upward past it. At the end of the month it is in the bright part of the Milky Way. Golden **Jupiter** is the brightest 'star' in the morning sky. It rises after 4 a.m. at the beginning of February; around 3 a.m. at the end. **Saturn** looks like a moderately bright star just below and right of Jupiter. At the end of the month Mars, Jupiter and Saturn will be equally spaced on a diagonal line. The Moon will be near Mars on the 19th, Jupiter on the 20th and Saturn on the 21st.

*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

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



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 2020

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.

Venus is the brilliant 'evening star', appearing in the west soon after sunset and setting 90 minutes after the sun. 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 up 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. Bright planets Mars, Jupiter and Saturn are in the morning 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 2020

The brilliant planet **Venus** is the 'evening star', appearing toward the northwest at sunset. It sets 90 minutes after the Sun. It is slowly catching up on Earth. At mid-month it will be about 120 million km away. In a telescope it looks like a tiny first-quarter Moon but just uniform white cloud. Venus is bright enough to see by naked eye in daylight if you can get your eyes focused on infinity in a clear sky. Around 4:30 pm NZDT it is due north and 1/3rd of the way up the sky, 30° elevation. A nearby Moon can help. On the afternoon of the 28th Venus will be 8° below and slightly right of the thin crescent Moon. Eight degrees is roughly half a hand-span at arm's length. On the afternoon of the 29th Venus will be about the same distance from the Moon but at an angle of 8 o'clock. Look from a shady place with a north view.

Northwest of overhead is **Sirius**. It is the brightest true star in the sky but much fainter than Venus. 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 9 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. It is a variable star, one that changes brightness. It has been unusually faint in the past month, similar to Bellatrix, the star to its left. Betelgeuse is 400 light years from us.

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.

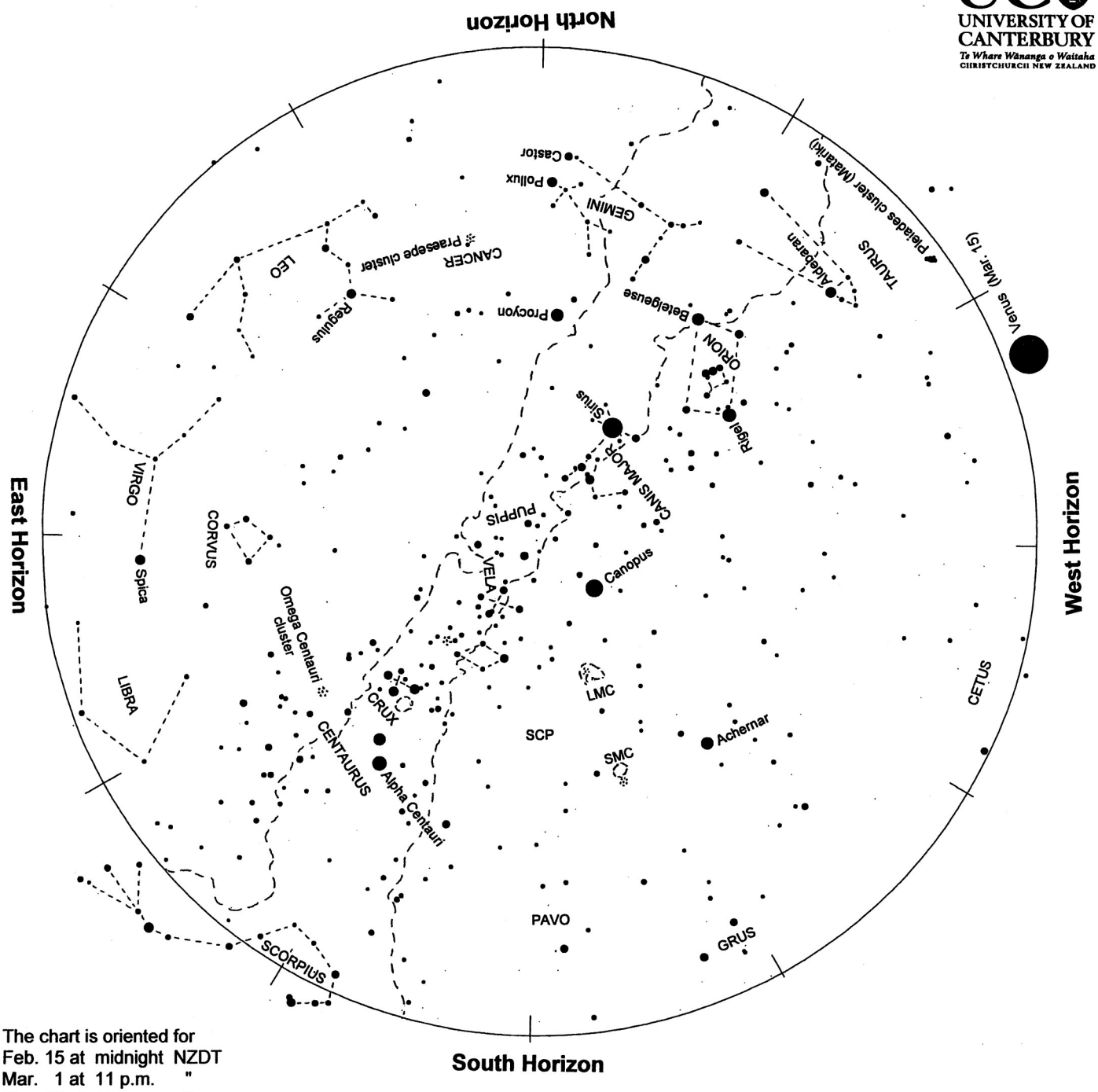
The **Milky Way** is brightest in the southeast toward Crux. It becomes broader lower in the southeast toward **Scorpius**. Above Crux the Milky Way can be traced to nearly overhead where it fades. It becomes very faint in the north, right of Orion where we are looking toward the Galaxy's nearby edge.

The 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 5% the mass of the Milky Way and the Small Cloud about 3%.

Mars, Jupiter and **Saturn** are in the morning sky (so not on the chart.) At the beginning of the month they are equally spaced along a diagonal down the eastern sky. Jupiter is the brightest 'star' in the morning sky, shining with a steady golden light. Orange Mars is above and left of Jupiter; creamy Saturn is below and right. Mars and Saturn are similar in brightness but much fainter than Jupiter. Mars rises around 2 a.m.; Saturn around 3:30. Jupiter and Saturn move steadily up the sky morning-to-morning while Mars stays put. By the 21st Jupiter is alongside Mars with only a full-moon's width between them. At the end of the month Saturn passes close to Mars. **Mercury** swings up into the dawn sky though March, rising two hours before the Sun mid-month. The Moon will be near Mercury on the 22nd. At mid-month Mercury is 115 million km away, Mars is 240 million km, Jupiter 830 million km and Saturn 1580 million km away.

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

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



The chart is oriented for
Feb. 15 at midnight NZDT
Mar. 1 at 11 p.m. "
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Evening sky in March 2020

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Venus is the 'evening star' appearing soon after sunset and setting 90 minutes after the Sun. Sirius is the brightest true star, northwest of the zenith. Orion, containing 'The Pot', is below Sirius in the northwest sky. Canopus, the second brightest star, is southwest of overhead. The Southern Cross and Pointers are midway up the southeast sky. Nearby galaxies the Clouds of Magellan, LMC and SMC, are high in the southern sky. Mars, Jupiter and Saturn are in the morning sky (so not on the chart.) Mercury makes its best morning sky appearance in late March.

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 2019/2020

Public Nights and Group Bookings		bookings.liaison@cas.org.nz
President:	Euan Mason	president@cas.org.nz
Vice President:	Rob Glassey	vice.president@cas.org.nz
Treasurer:	David Brian	treasurer@cas.org.nz
Secretary:	Dale Kershaw	secretary@cas.org.nz
Observatory Director:	Terry Richardson	observatory.director@cas.org.nz
Editor:	Dale Kershaw	editor@cas.org.nz
Membership Secretary:	Simon Lewis	membership@cas.org.nz
Librarian:	Colin Fortune	librarian@cas.org.nz
Web Master:	Simon Lewis	casweb@cas.org.nz
Committee Members:	Carol McAlavey	member2@cas.org.nz
	Mak Matthews	member1@cas.org.nz
	Marc Bunyan	member3@cas.org.nz
	Tracey Richards	member4@cas.org.nz
	Malcolm Flain	casweb@cas.org.nz

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

CAS Contact Information

Canterbury Astronomical Society Inc.
PO Box 25-137
City East
Christchurch 8141
Web: www.cas.org.nz

Canterbury Astronomical Society Facebook Group:
www.facebook.com/groups/CanterburyAstronomicalSociety

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

CAS Members Meetings:
The CAS monthly members meetings are currently held from 7.30pm onwards every third Tuesday of the month (except December and January) at the University of Canterbury, Venue for 2020 is still to be confirmed
Any member of the public who is considering in joining the society are most welcome to attend the meetings.

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 who renew before 31st May are at the discounted price shown on the membership form included on the back page of your Casmag, Full details are included on our website.

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

The Constitution of The Canterbury Astronomical Society Inc:
This is available on request, Please ask for a copy if required

DISCLAIMER:
This newsletter is for general information purposes only. The views expressed herein are not necessarily those of the Canterbury Astronomical Society Inc (CAS)
CAS has taken all reasonable measures to ensure that the material contained herein is correct, but gives no warranty for, and accepts no responsibility for its accuracy or completeness.
Readers are advised not to rely solely on this information, and should seek independent advice before making any decision, CAS reserves the right to make changes at any time, as deemed necessary.

Canterbury Astronomical Society Inc

APPLICATION FOR MEMBERSHIP

To: Membership Secretary
Canterbury Astronomical Society Inc.
P.O.Box 25-137
City East
Christchurch 8141

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)*
Discounted if Membership is renewed before 31st May
Online Banking Details (Please identify your payment): 03 0802 0098273 00

		Discounted	Full
☐	Adult (any person 18years of age or over who is not eligile for any other category)	$70	$80
☐	Family (two or more persons living at the same address)	$105	$120
☐	Junior (under 18 years of age on 1st April in the current year)	$35	$40
☐	Senior (over 65 Years)	$35	$40
☐	Community Services Card Holder	$35	$40
☐	Student (any person studying full-time at a tertiary institution, must reapply annually)	$35	$40
☐	Corporate (members have voting rights of one member, but cannot take office)	$210	$240

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

All CAS members receive CASMAG a monthly newsletter, Would you prefer to receive this (please tick)

☐ by email as a PDF attatchment ? ☐ or by post as a hard copy?

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:_____