



# CASMAG

The official magazine of the Canterbury Astronomical Society

[www.cas.org.nz](http://www.cas.org.nz) [www.facebook.com/CanterburyAstronomicalSociety](https://www.facebook.com/CanterburyAstronomicalSociety)

**Monthly Meeting:** Our Monthly Meetings are held in Ernest Rutherford Building ROOM ER225

Refreshments start at 7.30pm and Meeting begins at 8pm

**PLEASE REMEMBER TO SIGN THE ATTENDANCE BOOK AS WE STILL NEED TO KEEP A RECORD FOR CONTACT TRACING AS WELL AS USING THE NZ COVID SCAN WE HAVE AVAILABLE**

**MARCH MEETING: 16TH MARCH 2021**

## **ANNUAL GENERAL MEETING FOR 2021**

Current Office bearers will present their reports for the last year, and the election of committee and office holders will be held.

This is your chance to have your say on who will help run our society

**PLEASE NOTE:**

**The AGM may be postponed to a later date depending on Covid-19 Levels.**

**We are only able to use the venue at level 1.**

**Updates and changes will be notified on our website**

## **CAS Membership Subscriptions for 2021**

**THIS YEARS MEMBERSHIP SUBSCRIPTIONS ARE NOW DUE**

Please use your name and member number as a reference when banking, then email [membership@cas.org.nz](mailto:membership@cas.org.nz) to advise so payments can be matched to you correctly. **PLEASE also include any changes to your details (eg: phone, email, address)**

**IT IS VERY IMPORTANT THESE 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 at our monthly meetings.

**NOTE: We can no longer accept cheques for payments**  
(If you have joined Cas in the last couple of months your membership is not due till April 2022)

## IN THIS MONTHS ISSUE

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### CAS Calendar MARCH-APRIL 2021

#### MARCH 2021

Saturday 6th	<b>Last Quarter</b> Members Training Night at Observatory from 5pm
Tuesday 9th	Committee meeting
Saturday 13th	<b>New Moon</b> Induction Day at Observatory 2-4pm
Tuesday 16th	CAstronauts Meeting 6.30-7.30
Saturday 20th	AGM Meeting (see front page for details)
Monday 22nd	Members Night at Observatory
Monday 29th	<b>First Quarter</b> <b>Full Moon</b>

#### APRIL 2021

Friday 2nd	<b>Good Friday</b>
Saturday 3rd	<b>Easter Saturday</b> Members Training Night at Observatory from 5pm
Sunday 4th	<b>Easter Sunday</b> Daylight savings change 2am
Monday 5th	<b>Last Quarter</b> <b>Easter Monday</b>
Friday 9th	Public Night session starts (see page 3 for detailed dates)
Monday 12th	<b>New Moon</b>
Tuesday 13th	Committee Meeting
Tuesday 29th	CAstronauts Meeting 6.30-7.30 Members Meeting at University
Saturday 24th	<b>First Quarter</b> Members Night at Observatory
Sunday 25th	<b>ANZAC Day</b>
Monday 26th	<b>ANZAC Observed</b>
Tuesday 27th	<b>Full Moon</b>

## UPCOMING EVENTS:

### 2021 Calendar:

#### **PUBLIC OPEN NIGHTS**

Our public open night session starts on 9th April this year, and we always welcome your help on these night.

Open nights this year are set as follows:

April: 9th, 16th, 23rd, 30th

May: 7th, 14th, 21st, 28th

June: 4th, 11th, 18th, 25th

July: 2nd, 30th (see below for kidsfest dates)

August: 6th, 13th, 20th, 27th

September: 3rd, 10th, 17th, 24th



Any changes to Open Nights will be published on our Facebook public page and our website

#### **KIDSFEST 2021**

This year it runs from **Saturday 10th - Saturday 25th July** Excluding 13th Committee Meeting Night and 20th Members Meeting

As you can see a very busy winter season for us at CAS and we ask all who are able to help out to advise us by using the above website calendar and keep an eye out on the forums

*Remember as a Paid member of Cas you are able to attend any of our events free of charge, BUT we would love you to help out as you are able to, Training is always available to you and this works towards accreditation on the equipment.*

#### **INDUCTION FOR NEW MEMBERS**

We are having the 2nd of our induction session for new members on **Mar 13** from 2-4pm. These sessions are designed to give new members an introduction to the operation of the observatory, an understanding of how access works and how new members get access to training. Although designed for new members, any current member that is unsure of how to use the observatory is also very welcome to come along and do an induction refresher! Tea and Coffee will be provided – and you are more than welcome to bring something along and enjoy an afternoon picnic on the observatory terraces. If the weather is fine we will do some solar observing too!

## UPCOMING EVENTS: Continued

### **Changes to our Monthly Observatory Nights for 2021**

Some of the observant amongst you may have noticed a change to our CAS calendar, which has been updated for our winter 2021 programme.



This year to accommodate the growing number of new members we have added an additional observatory night to our programme. Members nights are now tagged in the calendar as Training or General:

**Members Nights (Training)** – held on the **1st Saturday of each month** -specifically aimed at induction training and members training. We will have accredited members onsite to support training aimed at adult and kids. Session starts earlier to allow the younger members some telescope time before bed! All members are welcome to attend and bring along gear. The intention of this session is to encourage all members to become familiar with observatory scopes and encourage usage of the observatory with a focus on training our new junior members. These sessions start earlier than normal to accommodate this.

**Members Nights (General)** – held on the Saturday following our Tuesday members meeting 'Free for All' – no specific training planned – All members welcome to bring along gear or use CAS gear if accredited or accredited members are in attendance. Members nights are a great time to get out and enjoy a night under the stars at the observatory and do a little socialising. Many members bring out their dinner and enjoy that on the terraces before dark. Come out stay a while or stay all night, the observatory is warm and you can dip in and out all night as you like.

Reminder: Our members nights at the observatory go ahead regardless of the weather!

Enquiries regarding members nights can be posted on the CAS Members forum:  
<https://cas.org.nz/forums/forum/canterbury-astronomical-society-forums/cas-members>

### **Changes to UC Members Meetings (3rd Tuesday each month)**

From March onwards there are some changes to the members meetings at the UC to accommodate the new CASternauts kids and beginners to astronomy programme:

6.30pm – 7.30pm	CASternauts & Introduction to Astronomy for beginner's session.
7.30pm – 8pm	Tea/Coffee Break.
8pm – 9pm	Normal CAS members meeting, general business and talk by Guest Speaker

The earlier session is designed for our newcomers to astronomy and our kids CASternaut programme and content will be pitched at this level. More seasoned astronomers are requested to join the 8-9pm session as spaces are limited.

Enquires about the CASternaut and beginner's session should be sent to the CAS Vice President, Simon Lewis, at [vice-president@cas.org.nz](mailto:vice-president@cas.org.nz)

General information on our UC members nights and lecture topic will be posted in the CASMAG and on our CAS website

MONTHLY MEETINGS:**Meeting Venue:**

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

**Carol McAlavey is asking you, our members to make suggestions or offer to give a talk at our monthly meetings.**

**PLEASE CONTACT CAROL WITH YOUR SUGGESTIONS OR IF YOU CAN GIVE A TALK via [member2@cas.org.nz](mailto:member2@cas.org.nz)**

**Upcoming Meetings**

**March: CAS AGM**

**April: Tbc**

**May: Tbc**

**June: Tbc**

**July: Tbc**

**August: Tbc**

**September: Tbc**

**October: Tbc**

**November: Tbc**

**(correct as at 1st March 2021, 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

**PLEASE Remember we are only able to hold our meetings at the University at Level 1**

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



**Raewyn Marles**  
Licensed Sales Consultant  
M 027 277 97 36 P 03 322 1197  
[raewyn.marles@harcourts.co.nz](mailto:raewyn.marles@harcourts.co.nz)  
**Grenadier Real Estate Ltd** Licensed Agent REAA 2008  
379 Halswell Road, Halswell  
Christchurch 8025  
[www.harcourtshalswell.co.nz](http://www.harcourtshalswell.co.nz)



## 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 meeting:

Welcome to:



Wilson Family - Jeremy, Jodi, Zoe  
 Heath Family - Alison, Ava, Matthew  
 Craighead-Marshall Family - Emilie, Crusoe, Mackenzie, Vaughan  
 Morrissey  
 Maryam Abdali  
 Calab Brand  
 Kenneally Family - Grace, Zander  
 Cartwright Family - Belinda, Justin, Ivy, Amber  
 Heslop Family - Mandy, Brent, Samantha, Thomas, Victoria  
 Murfin Family - Kate, Mark, Roman, Orion  
 Lloyd Gauntlett  
 Hunt Family - Joanna, Philip, Lachlan, Jamie  
 Hobkirk Family - Frances, John, Abgigail  
 Jan Kennedy  
 Chappell Family - Angus, Lee, Samantha, Kevin  
 Peacocke family - Marianne, Bill, Lisa  
 George Hawkins  
 Deverson Family - Eryn, Peter, Henry, Kent  
 Wayne Cook  
 James Matteus  
 Rolls Family - Shannon, Cassandra, Asher, Leo, Caiden  
 Andrew Family - Kathryn, Dorothy, Geoffrey, George  
 Amedwo Servi & Mary Ogburn (Family)  
 Raymond Ince  
 Claire Bryant

If I have missed you off this list, my apologies email me and I will add it to next months list, [editor@cas.org.nz](mailto:editor@cas.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 also available to members

Waterproof Stickers with our new logo are also available

Payment can be cash or bank deposit

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



## CAS YOUTUBE CHANNEL

Have a look at our new you tube channel

<https://www.youtube.com/channel/UChLhFm7yaLUTlgH3IjvA11g>

## 2021 Conference and RASNZ Centenary

### NEW DATES SET FOR 2021 CONFERENCE

After the 2020 planned RASNZ Conference was postponed then changed to an online presentation due to Covid-19 restrictions,

## **RASNZ has announced**

Planning is underway to hold our AGM and Conference over the weekend of 9 to 11 of July 2021 in Wellington.

Please send your suggestions to the SCC at [conference@rasnz.org.nz](mailto:conference@rasnz.org.nz).

Conference registrations and more information at [www.rasnz.org.nz](http://www.rasnz.org.nz)

## 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 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.

## OBSERVATORY IS OPEN TO OUR MEMBERS:

The current Covid-19 levels set by the government means we can now use the observatory with some restrictions,

Please use the Covid-19 tracing scan when you arrive.

**WE STILL** request you always **SIGN THE BOOK** on the table in the lodge and continue to follow the guidelines outlined on the notice (on table by the lodge door along with some cleaning equipment).

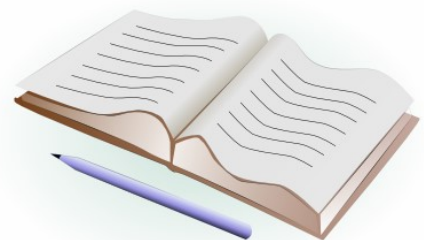
Best practice to follow these guidelines for your own safety.

PLEASE DO NOT come out to the Observatory to use the facilities if you or someone in your home is unwell.



## Please scan in

Always use the NZ COVID Tracer app to help keep you, our staff and our communities safe





## TABLE OF SOUTHERN METEOR SHOWERS 2021

Shower	Dates		Moon	Peak Rate	RA	Dec	Near Star
	Active	Peak	2021				
Centaurids	Jan 28 - Feb 21	Feb 8	3 days after Last quarter	5 (-25)	14.1	-59	$\beta$ Cen
gamma-Normids	Feb 25 - Mar 22	Mar 13	New moon	8	16.6	-51	$\gamma$ Nor
pi-Puppids	Apr 15 - Apr 28	Apr 23	3 days after First quarter	var to 40	7.3	-45	$\sigma$ Pup
eta-Aquariads	Apr 19 - May 28	May 5	1 day after Last quarter	60	22.5	-1	$\eta$ Aqr
Pisces Austrinids	Jul 15 - Aug 10	Jul 27	3 days after Full moon	5	22.7	-30	$\alpha$ PsA
alpha-Capricornids	Jul 3 - Aug 15	Jul 30	2 days before Last quarter	4	20.5	-10	$\alpha$ Cap
Southern delta-Aquarids	Jul 15 - Aug 25	Jul 27	5 days before Last quarter	20	22.6	-16	$\delta$ Aqr
Southern iota-Aquarids	Jul 25 - Aug 15	Aug 4	3 days after Last quarter	2	22.3	-15	$\iota$ Aqr
Northern delta-Aquarids	Jul 15 - Aug 25	Aug 13	3 days before First quarter	4	22.3	-5	$\theta$ Aqr
Northern iota-Aquarids	Aug 11 - Aug 31	Aug 19	3 days after First quarter	3	21.8	-6	$\beta$ Aqr
Piscids	Sep 1 - Sep 30	Sep 19	2 days before Full moon	3	0.3	-1	$\lambda$ Psc
Orionids	Oct 2 - Nov 7	Oct 21	Full moon	20	6.3	+16	$\gamma$ Gem
Leonids	Nov 14 - Nov 21	Nov 17	2 days before Full moon	100+	10.2	+22	$\gamma$ Leo
alpha-Monocerotids	Nov 15 - Nov 25	Nov 22	3 days after Full moon	var to 5	7.9	+1	$\delta$ Mon
Pheonids	Nov 28 - Dec 9	Dec 6	2 days after New moon	var	1.2	+53	Achernar
Geminids	Dec 7 - Dec 14	Dec 14	3 days after First quarter	120	7.3	+33	Castor

### From Your Editor

### Welcome back to your Casmag

As we all found 2020, was a very strange year and affected us all differently, My thanks to my fellow committee members for the support you showed to me and thanks to Simon for sending out newsletters when I was not able to publish the monthly Casmag. 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](mailto:editor@cas.org.nz) Dale Kershaw

*In next months issue a report from Stardate SI held over Waitangi weekend, plus full reports from committee presented at the upcoming AGM*

## The Evening Sky in March 2021

Bright stars are overhead in the early evening. Northwest of the zenith is **Sirius** the brightest star in the sky (but outshone by star-like Venus and Jupiter when they are around). Southwest of the zenith is **Canopus**, the second brightest star. Below Sirius are **Rigel** and **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'. Orion's belt points down and left to a V-shaped pattern of stars. These make the face of **Taurus** the Bull. The orange star is **Aldebaran** making one eye of the bull. Continuing the line from Orion down and left finds the **Pleiades** or **Matariki** star cluster.

**Mars** is the only naked-eye planet in the evening sky. It appears as a reddish star low in the northwest, setting three hours after the sun. At the beginning of the month it makes a rough line with Aldebaran and Betelgeuse, stars similar to Mars in brightness and colour. Mars is just above the Pleiades/Matariki cluster in the first week of April. It is 240 million km from us mid-month so shows only a tiny disk in a telescope.

**Sirius** is the brightest star in the sky both because it is relatively close, nine light years\* away, and 23 times brighter than the sun. **Rigel**, above and left of Orion's belt, is a bluish supergiant star, 40 000 times brighter than the sun and much hotter. It is 800 light years away. Orange **Betelgeuse**, below and right of the line of three, is a red-giant star, cooler than the sun but much bigger and 9000 times brighter. It 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.

Near the north skyline are **Pollux** and **Castor** marking the heads of **Gemini** the twins. Low in the north 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. The cluster 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.

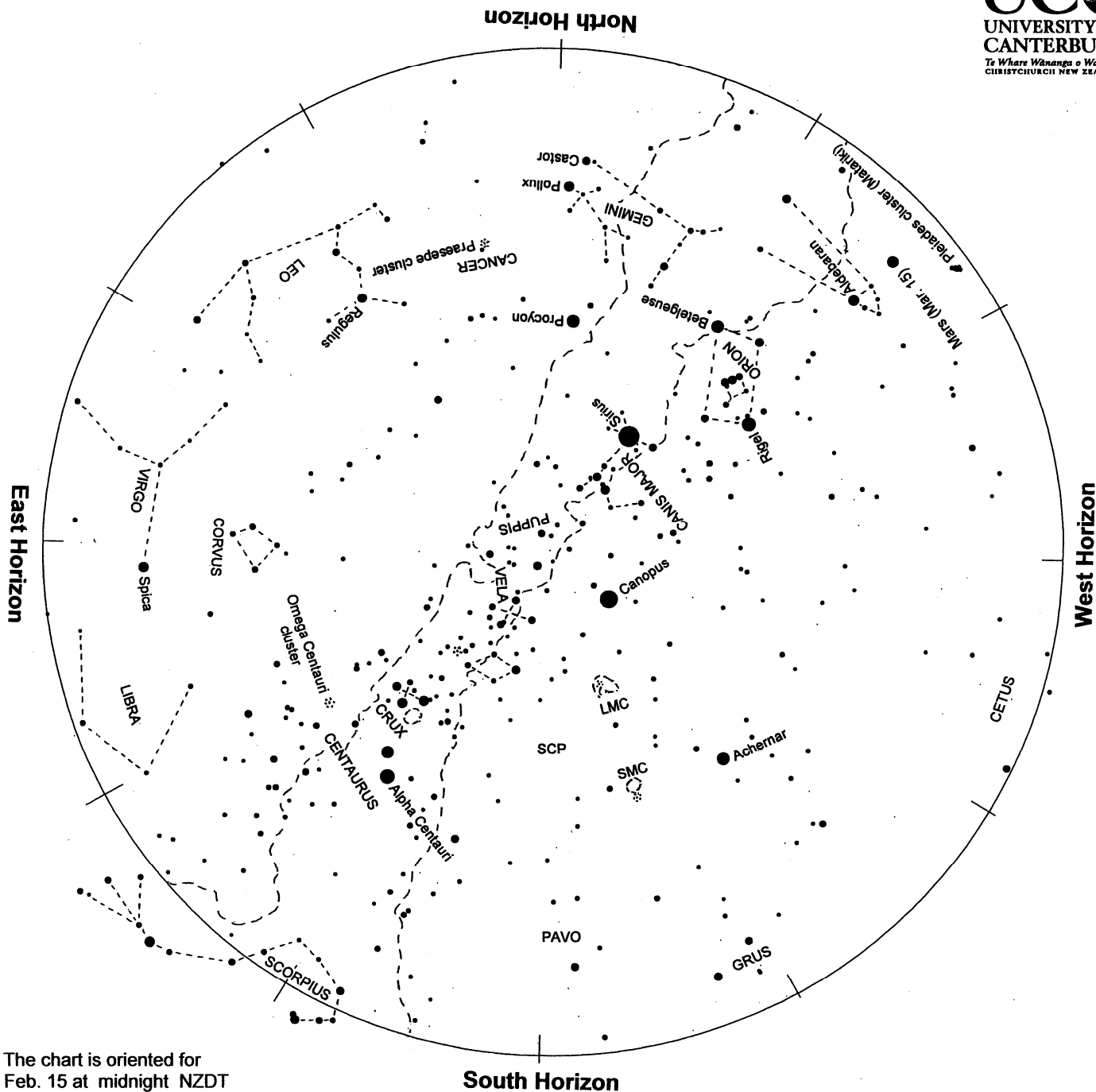
The **Milky Way** is brightest in the southeast toward Crux. It becomes broader lower in the southeast toward **Scorpius**. Above Crux the Milky Way can be traced to nearly overhead where it fades. It becomes very faint in the north, right of Orion. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. We are 30,000 light years from the galaxy's centre, below Scorpius.

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 bright planets appear in the morning sky (so don't appear on the chart). **Saturn** rises in the southeast around 4:20 a.m. at the beginning of the month. It is the brightest 'star' in an empty region of sky till **Mercury** rises 30 minutes later. Then **Jupiter** rises soon after 5. It is much brighter than Saturn and Mercury and shines with a steady golden light. Jupiter and Saturn rise about four minutes earlier each day so Jupiter catches up on Mercury. On the morning of the 5th Jupiter and Mercury will be half a degree apart, a full-moon's width. Thereafter Jupiter moves higher. By mid-month Saturn, Jupiter and Mercury will be equally spaced on a diagonal line down the eastern dawn sky. The crescent Moon will be above Saturn on the 10th, beside Jupiter on the 11th and below Mercury on the 12th.

Brilliant **Venus** might be seen in the dawn twilight at the beginning of the month from places with a sea horizon. It rises 30 minutes before the Sun a bit south of due east. It soon disappears in the twilight as it moves to the far side of the Sun.

\*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.



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 2021

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.

Sirius the brightest star is northwest of overhead. Canopus, the second brightest, is southwest of the zenith. Orion, containing 'The Pot', is below Sirius in the northwest sky. 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. The Scorpion rises in the southeast later. Mars appears as a medium-brightness reddish star near the northwest skyline, setting three hours after the sun. Bright planets appear in the dawn sky (so aren't on this chart.)

## CAS COMMITTEE AND OFFICERS 2020/2021

Public Nights and Group Bookings		bookings.liaison@cas.org.nz
President:	Rob Glassey	president@cas.org.nz
Vice President:	Simon Lewis	vice.president@cas.org.nz
Treasurer:	David Brian	treasurer@cas.org.nz
Secretary:	David Hill	secretary@cas.org.nz
Observatory Director:	Terry Richardson	observatory.director@cas.org.nz
Editor:	Dale Kershaw	editor@cas.org.nz
Membership Secretary:	Marc Bunyan	membership@cas.org.nz
Librarian:	Sasha Crawford	librarian@cas.org.nz
Web Master:	Marc Bunyan	casweb@cas.org.nz
Committee Members:	Carol McAlavey	member2@cas.org.nz
	Mak Matthews	
	Raewyn Marles	
	Kerien Edan	

For more specialized information please see the contact information page on [www.cas.org.nz](http://www.cas.org.nz)

### CAS Contact Information

Canterbury Astronomical Society Inc.

PO Box 25-137

City East

Christchurch 8141

Web: [www.cas.org.nz](http://www.cas.org.nz)

Canterbury Astronomical Society Facebook Group:

[www.facebook.com/groups/CanterburyAstronomicalSociety](https://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

### 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 1<sup>st</sup> 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](mailto:editor@cas.org.nz)

The deadline for each issue is the 1<sup>st</sup> 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)

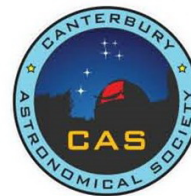
CAS has taken all reasonable measures to ensure that the material contained herein is correct, but gives no warranty for, and accepts no responsibility for its accuracy or completeness.

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)****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 eligible for any other category)	\$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, 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: \_\_\_\_\_