



# 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: TUESDAY 15TH OCTOBER 2019**

From 7:30p.m, room 701 on the 7th floor of the West building (Old Rutherford) (Physics and Astronomy) at the University of Canterbury (see page 4 for a detailed map).

Refreshments start at 7.30. Meeting starts at 8pm

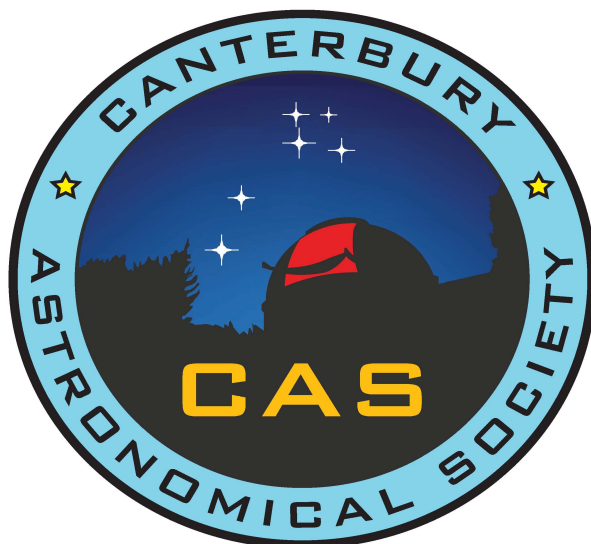
## **OCTOBER MEETING: ROB GLASSEY**

**“Messier Madness:** My quest to observe all the Messier Objects”  
I did a similar talk a few years back, introducing the concept of a Messier Marathon. Since then I have attempted a few epic observing session based around the Messier Objects, and this year I’ve been on a quest to observe and image all the visible from here.  
So lots of Photos,  
with the story of my adventures  
and challenges.



## **CANTERBURY ASTRONOMICAL SOCIETY NEW LOGO!!**

Tracey Richards has been working hard on creating our new logo, lots of discussion at committee and this is the final result. Many thanks to Tracey for her efforts, look out for our new Flags and pull up Banners at our meetings.



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## CAS Calendar, OCTOBER 2019 - DECEMBER 2019

### October 2019

Monday 14th	Full Moon
Tuesday 15th	Members Meeting from 7.30pm
Friday 18th	BHT Lecture (see page 3 for more information)
Saturday 19th	Members Night at Observatory
Tuesday 22nd	Last Quarter
Monday 28th	Labour Day
	New Moon

### November 2019

Monday 4th	First Quarter
Tuesday 12th	Committee Meeting
Wednesday 13th	Full Moon
Friday 15th	Canterbury Show Day
Tuesday 19th	Members Meeting from 7.30pm
Wednesday 20th	Last Quarter
Saturday 23rd	Members Night at Observatory
Wednesday 27th	New Moon

### December 2019

Wednesday 1st	First Quarter
Saturday 7th	CAS Christmas BBQ, Party from 5.30pm
Thursday 12th	Full Moon
Thursday 19th	Last Quarter
Saturday 21st	Members Night at Observatory from 7.30pm
Wednesday 25th	Christmas day
Thursday 26th	Boxing day
	New Moon
Tuesday 31st	New Years Eve
Wednesday	
1st January 2020,	New Years Day

## UPCOMING EVENTS:

### BEATRICE HILL TINSLEY 2019 LECTURE TOUR.

Christchurch (Christchurch Astronomical Society): October 18, time 7:00 p.m. Venue : University of Canterbury, C2 Lecture Theatre.

Admission charge: Free

Event details and bookings: Tickets via Eventbrite <https://www.eventbrite.co.nz/d/new-zealand--christchurch/science-and-tech--events/>

Babak A. Tafreshi is a photojournalist and science communicator.

The National Geographic night sky photographer, merging art and science, he is also the founder and director of The World At Night program, a board member of Astronomers Without Borders organization, a contributing photographer to Sky&Telescope magazine and the European Southern Observatory. Born in 1978 in Tehran, Babak lives in Boston, but he is often on the move and could be anywhere, from the heart of Sahara to the Himalayas or Antarctica. He received the 2009 Lennart Nilsson Award, the world's most recognized award at the time for scientific imaging, for his global contribution to night sky photography.

#### Lecture Title is The World at Night

Bridging science, art and culture by connecting the Earth & sky in photography.

Babak Tafreshi spent the past two decades photographing surreal scenes of night sky in all continents, an adventurous journey to the world at night where the wonders of Earth & sky merge in photography.



### ASTRONZ DISPLAY/SALES AT MEMBERS NIGHT SATURDAY 19TH OCTOBER

Andrew Buckingham will be displaying and selling some astronomy items in the lodge a Observatory, He is travelling down to Tekapo on Sunday for the Starlight Conference, As you may know Cas gets a donation from Astronz with each purchase you make (please advise them you are a CAS Member)

### CAS MEMBERS CHRISTMAS PARTY/BBQ



Committee have set the date for this event Saturday 7th December at the Observatory, Mark it on your calendar  
More information to follow



### STAVERLEY STARDATE SOUTH ISLAND 2020

The date has been set for 2020 Stardate SI  
21st 22nd 23rd February,  
Mark this in your calendars.

Bookings will be available soon and notified via  
Casmag and website

## MONTHLY MEETINGS:

# Carol McAlavey has asked for you, our members to make suggestions or offer to give a talk at our monthly meetings

If you have any suggestions for topics please contact Carol via [cstars@xtra.conz](mailto:cstars@xtra.conz)

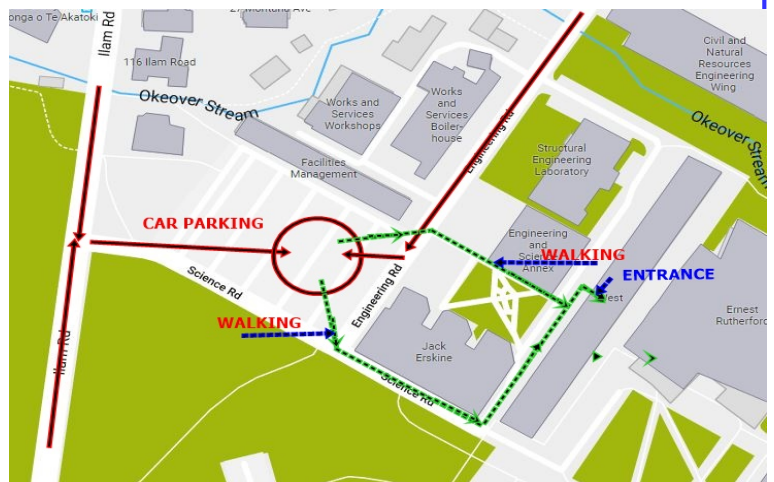
The meeting venue is now held in room 701 on the 7th floor of the West building (Old Rutherford) (Physics and Astronomy) of the University of Canterbury

Car parking is available in the car park with entrances in Science Road or Engineering Road.

Disabled parking is in Engineering Rd



shutterstock - 104064977



## Upcoming Meetings

### 15TH OCTOBER 2019

**Rob Glassey**

“Messier Madness”

### 18TH OCTOBER 2019

**BEATRICE HILL TINSLEY 2019 LECTURE**

Babak A.Tafreshi

### 19TH NOVEMBER 2019

**John Drummond**

“E.E Barnard, A 19th Century Astrophotographer whose photos still WOW us all”

(correct as at 9th October 2019, Subject to change as required)

Many thanks go to Orlon Petterson and Rosalie Reilly 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



**Raewyn Marles**  
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## **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. The following were accepted as members at the September Committee meeting

### **Welcome to:**

Barry Milicich  
Mark Saunders

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




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## **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

### **CLIVE ROWE DOME:**

The doors have been repaired after some long hours by Terry, Next project is the dome repairs and this is pending to start in February next year,

### **TREE PLANTING:**

Terry has obtained 25 Pittosporum Tenuifolium from Southern Woods and there will be a planting event on Saturday 19th October in the afternoon before members club night

### **ACCREDITATION LIST:**

This has been updated and a current copy will be on the wall inside the lodge

### **From Your Editor**

I am always looking for items or photos to include in YOUR CASMAG 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

## METEOR SHOWERS FOR 2019

Shower	Dates		Moon	Peak Rate	RA	Dec	Near Star
	Active	Peak	2019				
<b>Centaurids</b>	Jan 28 - Feb 21	Feb 8	3 days after New moon	5 (-25)	14.1	-59	$\beta$ Cen
<b>gamma-Normids</b>	Feb 25 - Mar 22	Mar 13	1 day before First quarter	8	16.6	-51	$\gamma$ Nor
<b>pi-Puppids</b>	Apr 15 - Apr 28	Apr 23	4 days before Last quarter	var to 40	7.3	-45	$\sigma$ Pup
<b>eta-Aquariads</b>	Apr 19 - May 28	May 5	New moon	60	22.5	-1	$\eta$ Aqr
<b>Pisces Austrinids</b>	Jul 15 - Aug 10	Jul 27	2 days after Last quarter	5	22.7	-30	$\alpha$ PsA
<b>alpha-Capricornids</b>	Jul 3 - Aug 15	Jul 30	2 days before New moon	4	20.5	-10	$\alpha$ Cap
<b>Southern delta-Aquarids</b>	Jul 15 - Aug 25	Jul 27	5 days before New moon	20	22.6	-16	$\delta$ Aqr
<b>Southern iota-Aquarids</b>	Jul 25 - Aug 15	Aug 4	3 days after New moon	2	22.3	-15	$\iota$ Aqr
<b>Northern delta-Aquarids</b>	Jul 15 - Aug 25	Aug 13	3 days before Full moon	4	22.3	-5	$\theta$ Aqr
<b>Northern iota-Aquarids</b>	Aug 11 - Aug 31	Aug 19	3 days after Full moon	3	21.8	-6	$\beta$ Aqr
<b>Piscids</b>	Sep 1 - Sep 30	Sep 19	3 days before Last quarter	3	0.3	-1	$\lambda$ Psc
<b>Orionids</b>	Oct 2 - Nov 7	Oct 21	1 day before Last quarter	20	6.3	+16	$\gamma$ Gem
<b>Leonids</b>	Nov 14 - Nov 21	Nov 17	3 days before Last quarter	100+	10.2	+22	$\gamma$ Leo
<b>alpha-Monocerotids</b>	Nov 15 - Nov 25	Nov 27	New moon	var to 5	7.9	+1	$\delta$ Mon
<b>Pheonids</b>	Nov 28 - Dec 9	Dec 6	2 days after First quarter	var	1.2	+53	Achernar
<b>Geminids</b>	Dec 7 - Dec 14	Dec 14	2 days after Full moon	120	7.3	+33	Castor

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

## 2020 Conference and RASNZ Centenary

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](mailto:conference@rasnz.org.nz).

## NOTES FROM YOUR COMMITTEE

With the end of daylight saving our public open nights finish this month, Thanks to those who come out to the observatory to assist with these nights,

### 2019 OPEN NIGHT/KIDSFEST REPORT

We had 13 planned Kidfest nights and ran 7 successful nights, (approx 80 booked each night).

We had 21 Friday Public Open Nights for this winter season and had to cancel 13 of them, (the weather hit us hard this year) The 8 that were open were very successful with approx 80 -90 tickets each night we were open.

We also ran 5-6 Special Wednesday Group bookings, for smaller groups, We regularly had folks asking on Friday afternoons for tickets, but tickets were sold out, We also added new members through these events

Again Thanks to you from your Committee for your efforts with these events

### Accreditations on equipment at Observatory,

A reminder that unless you have full accreditation on the equipment you are not to use unless there is an accredited person with you,

Canterbury Astronomical Society would like to acknowledge the following

Trees for Canterbury for the donation of trees and shrubs, which were planted along the bank,



AND



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

## CAS Membership Subscriptions for 2019-2020

### THIS YEARS SUBSCRIPTIONS ARE NOW OVERDUE FOR PAYMENT

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 contact details (eg: phone, email, address)

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.



## HEATHERS NOTES

The public's nights are now over for another year. There were few no-go nights, and, on the occasional night, when we had our visitors the night sky clouded over, and all that could be seen was just a glimpse of a bright object, or, a very hazy moon. But, the public still enjoyed their night anyway, being shown the scopes, the equipment, my bino and just generally talking and learning about our society, and enjoying looking at any objects when the clouds cleared a bit. They found it all very interesting. We also had some lovely clear nights too, and on many nights, the moon was visible which the crowds just loved. Mostly only looking up with eyes, for most, it was the first time they had ever seen the moon through a scope or giant bino; Wow, and [Ow] – it is So Bright! Also, a couple of comments about being able to see the American flag; “No, No” we say, but, “Yes, I Can see it;” - um well, you have exceptional eye-sight,-- NEXT to have a look at the moon.....Kids Fest went very well and there were just a few nights when the night had to be cancelled, myself, I am not sure exactly how many nights, but we were busy on most of the Kid's Fest nights. Except for one night when we had a very small group, we had a good turnout. The members had their own targets they were concentrating on, mine was the moon when visible, -which it was on many of the nights, eta Carina, The Southern Pleiades, and, towards the end of September, when it wasn't quite so high and more comfortable to look at, M6, The Butterfly cluster in Scorpius. There was the odd night when we were let's say, 'Kid Challenged,' but for most of the time, the kids were very well behaved and it was a joy to show everyone around the night sky. Apart from getting a bit tiered, boggled -eyed, and dry in the throat from so much talking, I must say, on the nights I was there, I found it very rewarding, and also, rewarding to be amongst my CAS family which mean a lot to me.. ..

Now, to look forward to our Summer constellations.  
Clear skies everyone..  
From Heather.....

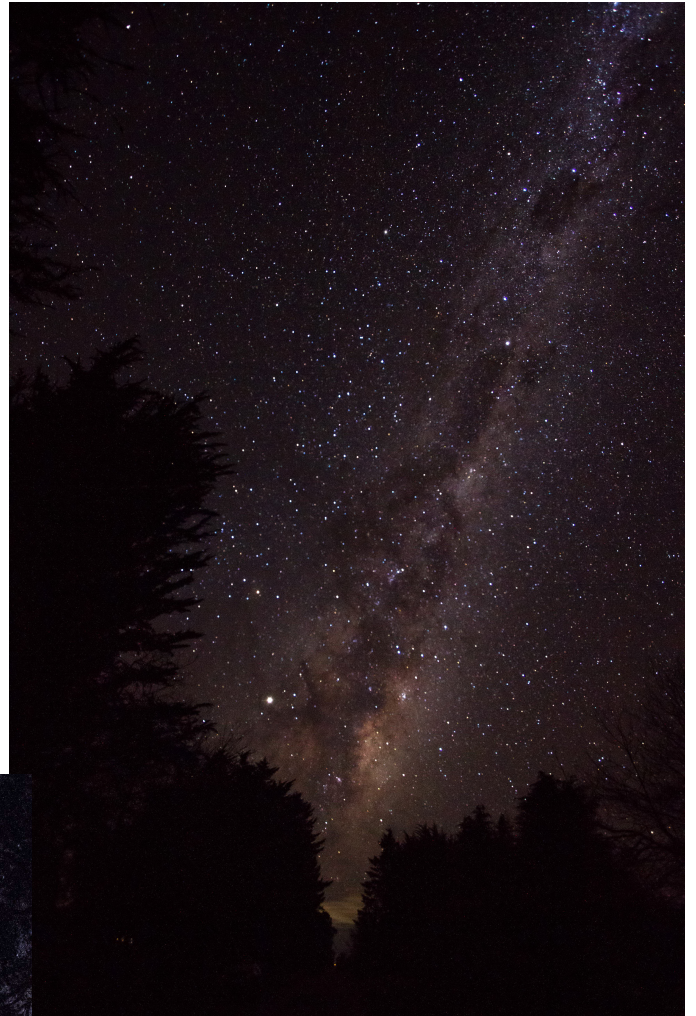


## PHOTOS FROM OUR MEMBERS PAGE

This months featured photos are from Tracey Richards:

### The Emu:

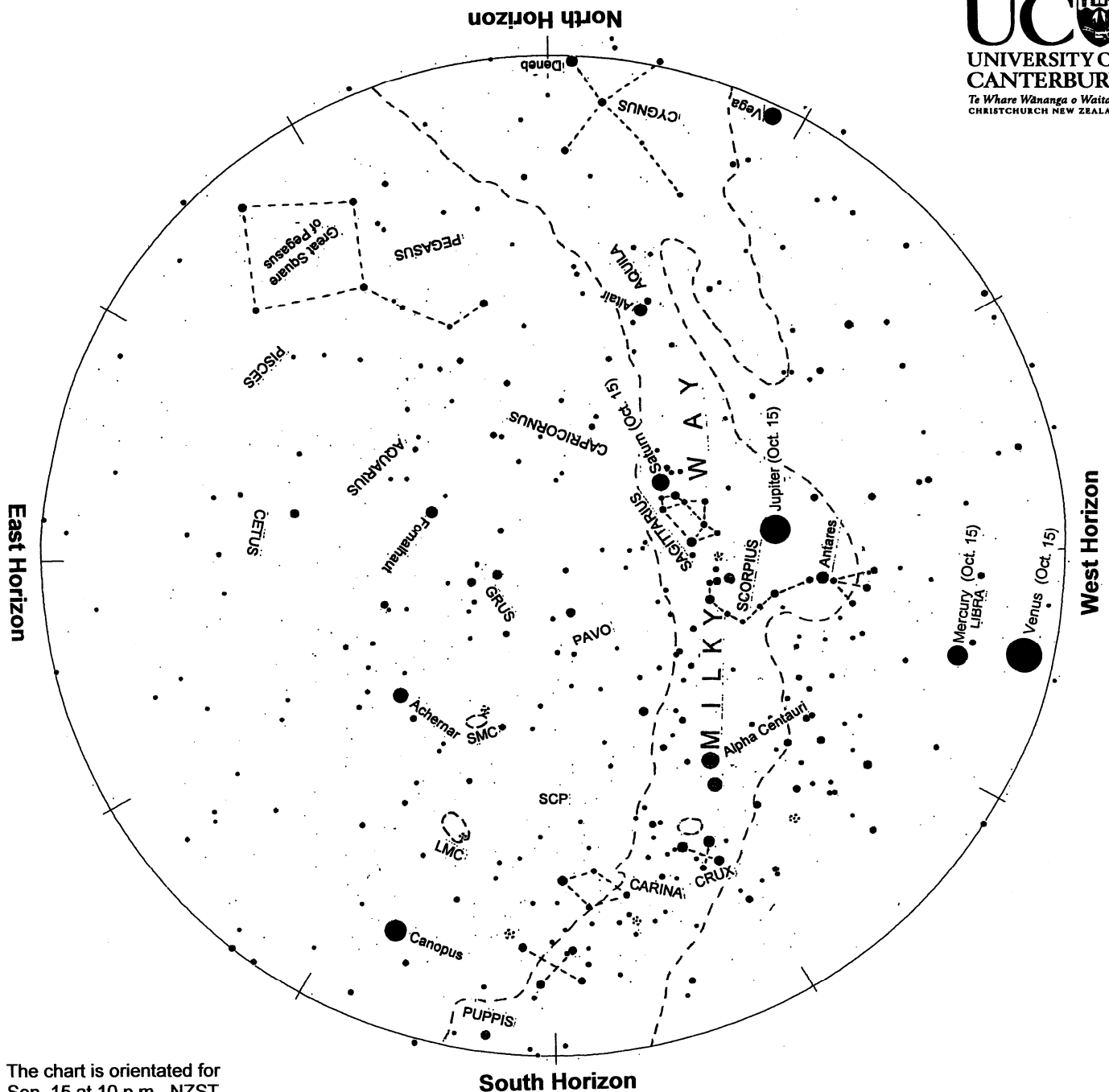
Single Exposure,  
Canon 7D Focal length 10m,  
ISO-1600,  
F4, 24 secs.



### Ember path to the Stars

Canon 7D,  
Focal length 10mm,  
f4, 30 second, ISO-1600

South Pacific Star Party -  
May 2019



The chart is orientated for  
Sep. 15 at 10 p.m. NZST  
Oct. 1 at 10 p.m. NZDT  
Oct. 15 at 9 p.m. NZST

### Evening sky in October 2019

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

Silver Venus and golden Jupiter are 'evening stars' at the beginning of the month. Brilliant Venus is low in the west, setting an hour after the Sun at first. Mercury appears above Venus as the sky darkens. Golden Jupiter is midway down the western sky. Saturn, less bright, is above Jupiter. Orange Antares is below and left of Jupiter. Canopus is low in the southeast, twinkling colourfully. Vega sets on the north horizon. Crux, the Southern Cross, and the Pointers are in the south-west. The Milky Way spans the sky from north through west and into the south. The Magellanic Clouds, nearby galaxies marked as LMC and SMC on the chart, are misty glows above Canopus.

## The Evening Sky in October 2019

Four planets light up the western evening sky. The brightest is **Venus**, appearing low in the west soon after sunset. It sets an hour after the Sun at the beginning of the month, nearly two hours after the Sun at the end.

Above Venus is **Mercury**. It is much fainter than Venus but still a bright 'star'. It falls level with Venus at the end of the month. Midway down the western sky is golden **Jupiter**, the brightest 'star' after Venus. Jupiter sets in the southwest around midnight. Well above Jupiter is cream-coloured Saturn, fainter than Jupiter but still the brightest 'star' in its part of the sky.

Mercury and Venus are small in a telescope. Venus is on the far side of the Sun, 240 million km away mid-month. Mercury appears as a tiny disk at first. It will become a little bigger and crescent-shaped as it moves to our side of the Sun. The thin crescent Moon will pass by Mercury and Venus on the 29th and 30th.

Jupiter and Saturn are much more interesting in telescopes. Even a small telescope shows Jupiter's disk. Larger 'scopes will show the parallel bands across Jupiter caused by temperature differences in its clouds. Jupiter's four big moons are lined up on either side of the planet, swapping positions from night to night. Jupiter is 850 million km from us mid-month and Saturn 1510 million km away. The Moon will be near Jupiter on the 3rd and 4th and near Saturn on the 5th and 6th.

**Antares** marks the body of the Scorpion. The Scorpion's tail loops up the sky in the evening, making a back-to-front question mark with Antares being the dot. The curved tail is the 'fish-hook of Maui' in Maori star lore. Antares is a red giant star: 600 light years\* away and 19 000 times brighter than the sun. Red giants are dying stars, wringing the last of the thermo-nuclear energy from their cores. Above and right of the Scorpion's tail is 'the teapot' made by the brightest stars of **Sagittarius**. It is upside down in our southern hemisphere view. Saturn is near the teapot's handle.

**Canopus** is low in the southeast at dusk often twinkling colourfully. It swings up into the eastern sky during the night. Canopus is 13 000 times the sun's brightness and 300 light years away. On the north skyline is **Vega**, setting in the early evening. It is 50 times brighter than the sun, 25 light years away and the 5th brightest star in the sky.

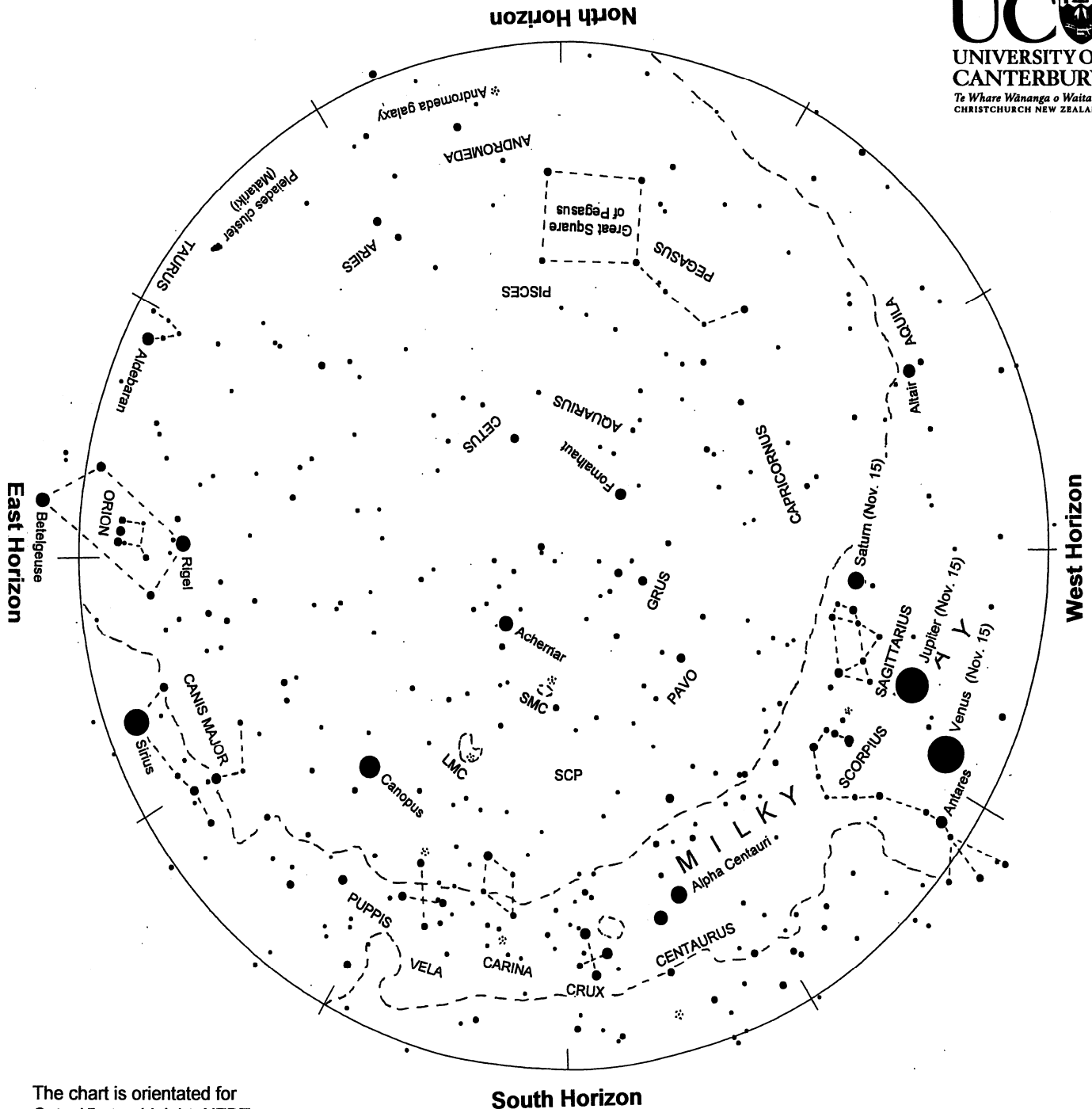
In the southwest are 'The Pointers', Beta and **Alpha Centauri**, making a vertical pair. They point down to **Crux** the Southern Cross. Alpha Centauri, the top Pointer, is the closest naked eye star at 4.3 light years away. Beta Centauri is a blue-giant star, very hot and very luminous, hundreds of light years away.

The **Milky Way** is brightest and broadest in Scorpius and Sagittarius. In a dark sky it can be traced down to the south. In the north it meets the skyline right of **Vega**. From northern New Zealand the star **Deneb** can be seen near the north skyline in the Milky Way. It is the brightest star in **Cygnus** the Swan. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The thick hub of the galaxy, 30 000 light years away, is in Sagittarius. The actual centre, with a black hole four million times the sun's mass, is hidden by dust clouds in space. Its direction is a little outside the Teapot's spout. The nearer 'interstellar' clouds appear as gaps and slots in the Milky Way. The dust and gas has come from old stars that have thrown much of their material back into space as they faded or blew up. New stars eventually condense from this stuff. A scan along the Milky Way with binoculars shows many clusters of new stars and some glowing clouds of left-over gas. There are many in Scorpius and Sagittarius and in the Carina region.

The Large and Small Clouds of Magellan, LMC and SMC, look like two misty patches of light in the southeast sky. They are easily seen by eye on a dark moonless night. They are galaxies like our Milky Way but much smaller. The Large Cloud is about 5% the mass of our Galaxy and the small one 3%. That is still many billions of stars in each. The LMC is around 160 000 light years away; the SMC around 200 000 l.y.

On moonless evenings in a dark rural sky the **Zodiacal Light** is visible in the west. It looks like late twilight: a faint broad column of light around Venus and Mercury, fading out at the Milky Way. It is sunlight reflecting off meteoric dust in the plane of the solar system. The dust may have come from a big comet, centuries ago.

\*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.



The chart is orientated for  
Oct. 15 at midnight NZDT  
Nov. 1 at 11 p.m. "  
Nov. 15 at 10 p.m. "

### Evening sky in November 2019

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

Silver Venus and golden Jupiter light up the western sky at dusk. Saturn is above them. Mercury is beside Venus on the 1st but soon sinks lower in the twilight. Jupiter and Saturn move slowly down the sky. Around the 23rd Jupiter and Venus make an eye-catching pair. Canopus is midway up the southeast sky. Sirius, the brightest true star, appears in the east. Left of Sirius is Orion containing 'The Pot'. Further left are Taurus and the Pleiades/Matariki star cluster. The Pointers and Crux, the Southern Cross, are low in the south. The Milky Way is wrapped around the horizon. The north sky is empty but for the Great Square of Pegasus with the Andromeda galaxy below and right of it.



## The Evening Sky in November 2019



Bright planets light up the western evening sky while bright stars appear in the east. Soon after sunset brilliant **Venus** appears in the west. It is followed by **Jupiter**, seen above Venus. As the sky darkens Saturn appears well above Jupiter, in line with Jupiter and Venus. On November 1st **Mercury** will be left of Venus but much fainter. It quickly falls lower in the twilight, disappearing in the first week of the month (so isn't on the chart.) Venus sets about two hours after the Sun through the month. Jupiter and Saturn slip down the sky toward Venus. Around the 23rd golden Jupiter and silver Venus will make an eye-catching pair. They will be less than two degrees apart, in the same binocular view.

On the 2nd the Moon will cross in front of Saturn in the twilight. From Dunedin the planet will disappear behind dark side of the Moon at 8:47 pm and reappear on the bright side at 9:51; from Christchurch 8:55, 9:55; Wellington 9:03, 9:58; New Plymouth 09:09, 9:58; Gisborne 09:12; 10:03; Hamilton 9:14, 9:59; Auckland 9:18, 9:58; Whangarei 9:23, 9:56; North Cape 9:33, 9:41. On the evening of the 28th the thin crescent Moon will be just below Jupiter. It crosses over the planet after the two have set from NZ.

**Canopus**, the second brightest 'true' star is well up the southeast sky at dusk. **Sirius**, the brightest star, rises a little south of east. It appears in the later evening at the beginning of the month. By month's end it is in the sky at dusk, twinkling like a diamond as the air disperses its white light. Right of Sirius is the triangle of bright stars that make the big dog's hind quarters.

Left of Sirius is the constellation of **Orion**, with 'The Pot' at its centre. **Rigel**, a bluish supergiant star, is directly above the line of three stars; **Betelgeuse**, a red-giant star, is straight below. Left again is orange **Aldebaran**. It is at one tip of a triangular group called the Hyades cluster. The Hyades and Aldebaran make the upside down face of **Taurus** the bull. Still further left is the **Pleiades** or **Matariki** star cluster, also called The Seven Sisters, Subaru and many other names. Six stars are visible to the eye; many more are seen in binoculars. The cluster is 440 light years\* away and around 70 million years old.

Sirius is the brightest star both because it is relatively close, nine light years away. Seen up close it would be 23 times brighter than the sun. By contrast, Canopus is 300 light years away and 13 000 times brighter than the sun.

The **Milky Way** is low in the sky, visible around the horizon from the northwest, through west and south and around into the eastern sky. It is our edgewise view of the galaxy, the pancake of billions of stars of which the Sun is just one. The broadest, brightest part is in **Sagittarius** in the west between Jupiter and Saturn. That's where the thick hub of the galaxy lies, 30 000 light years away, mostly hidden by clouds of smoke-like dust. The thin nearby edge of the Milky Way is below **Orion** on the opposite side of the sky.

Low in the south are the Pointers, Beta and **Alpha Centauri**, and **Crux** the Southern Cross, upside down. In some Maori star lore the bright southern Milky Way makes the canoe of Maui with Crux being the canoe's anchor hanging off the side. In this picture the hook of the Scorpion's tail, left of Jupiter, is the canoe's prow and the Clouds of Magellan are its sails. Alpha Centauri is the closest naked-eye star; 4.3 light years away. It is actually two Sun-like stars orbiting each other in 80 years.

The Clouds of Magellan, (**LMC** and **SMC**), high in the southern sky, are two small galaxies about 160 000 and 200 000 light years away, respectively. They are easily seen by eye on a dark moonless night. The larger Cloud is about 1/20th the mass of the Milky Way galaxy, the smaller Cloud 1/30th. That's still billions of stars in each. The globular star cluster 47 Tucanae looks like a slightly fuzzy star near the top-right edge of the SMC. It is 'only' 16 000 light years away and merely on the line of sight to the SMC. Globular clusters are spherical clouds of stars many billions of years old.

Very low in the north is the **Andromeda Galaxy**. It appears as a spindle of light, faintly visible to the eye in a dark sky and easily seen in binoculars. It is similar in size and shape to our galaxy but is a little bigger and nearly three million light years away.

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

## CAS COMMITTEE AND OFFICERS 2019/2020

Public Nights and Group Bookings		bookings.liaison@cas.org.nz
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	Malcolm Flain	casweb@cas.org.nz

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

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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) in Room 701 on the 7<sup>th</sup> floor of the WEST BUILDING (old Rutherford) Physics and Astronomy at the University of Canterbury,  
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 on Twitter:

Cas is on Twitter at <https://twitter.com/canterburyastro>

### CAS Membership:

Subscriptions are due 1<sup>st</sup> April each year

Fees for current members who renew before 31<sup>st</sup> 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](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 can be found on our website, Please ask for the link 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**



Applicant's name in full (Block letters): \_\_\_\_\_

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; subscription must accompany application)

**Discounted if membership is renewed before 31 May**

**Online banking details (Please identify your payment): 03 0802 0098273 00**

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

§ If family membership, please list the other persons involved.

Name	Date of birth (if under 18)	Signature

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

☐ by email as a .pdf attachment? ☐ 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. A copy of the Constitution may be downloaded from [http://www.cas.org.nz/constitution/CAS\\_constitution.pdf](http://www.cas.org.nz/constitution/CAS_constitution.pdf).

Date Approved: \_\_\_\_\_