



CASMAG

The official magazine of the Canterbury Astronomical Society

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

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

6.30–7.30pm - CAstronauts & Introduction to Astronomy for Beginner's

7.30 - 8pm - Refreshments

8pm - Meeting Starts

**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.**

OCTOBER MEETING: 19th October 2021

JOHN PICKERING

"Searching for Alien Worlds"

*This will be via ZOOM online meeting and the link is
included on page 6 and will be on our website*

**WE are unable to use the Uc Room to meet until we are
at level 1**

CAS Membership Subscriptions for 2021

THIS YEARS MEMBERSHIP SUBSCRIPTIONS ARE NOW OVERDUE

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 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

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From Your Editor

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,
(see page 14 for details)

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

Dale Kershaw

From 7.2.4.6 on page 15 of Constitution of the Society

"Any member wishing to have an article or paper published in CASMAG or other publications of the society shall in the first instance, forward a copy to the editor who may request the approval of the committee before publication."

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.

COMING UP IN NEXT MONTHS ISSUE

More Puzzles
Puzzle answers

IMPORTANT UPDATE FROM YOUR COMMITTEE

Covid-19 level Operations

Please find below an update from the committee on observatory operations during COVID Level 2 restrictions.

Public Open Nights While in principle we could hold public facing events such as open nights, the practicality of trying to maintain social distancing, contact tracing, and mask requirements make this impractical.

Additionally, there is a high likelihood demand for spaces would be low and the operation of these nights places an unnecessary burden on volunteers at this time.

As we only have a few nights left before the season ends, the COVID Response Committee has made the decision to cancel the remaining three nights this season, due to end on 24 September.

If circumstances change rapidly we could squeeze in nights in early October, but this remains unclear at this time. A further announcement will be made if changes allows us to operate.

CAS Events At the UC will not allow access until Level 1, the next members meeting (21st September) will be via zoom only.

An invite will be sent out before the meeting. Training nights and members nights at the observatory are cancelled until further notice.

We will continually evaluate when we may be able to safely restart these.

Observatory Use Adhoc use of the observatory is allowed under Level 2 Delta but with the following guidance and parameters:

Do not visit the observatory if unwell.

Please sign in using the COVID tracer app using the QR code in the lodge.

Prior to your visit please post on the observatory activity forum when you intend visiting, or contact Terry our observatory director (number is on the site contacts page).

If you intend to remain outside and not enter the lodge at anytime then there is no requirement to enter the lodge to sign the logbook.

Maintain 2 m distancing inside or out.

You must wear a mask inside, or where 2m distancing cannot be safely maintained outside

No more than 4 people in the lodge at any one time and social distancing must be maintained at all times.

No more than one person in telescope buildings, both inside, or in roll off areas, unless assistance is required (use masks if more than 1 person).

Please maintain your hygiene and be aware that surfaces and equipment may be contaminated and we cannot guarantee your safety. Wash / sanitise hands using the gear provided.

Do not clean optics as the sanitising chemicals can cause damage to equipment.

We will keep you informed as to any changes when the government announces them.

Please follow the rules at the observatory if visiting, and please stay safe

CAS Calendar OCTOBER- DECEMBER 2021



OCTOBER 2021

Thursday 7th	New Moon
Tuesday 12th	Committee Meeting
Wednesday 13th	First Quarter
Tuesday 19th	Castronauts meeting 6.30-7.30pm
	Members Meeting at University from 7.30pm(ZOOM)
Thursday 21st	Full Moon
Saturday 23rd	Members Night at Observatory ???
Monday 25th	Labour Day Holiday
Friday 29th	Last Quarter

NOVEMBER 2021

Friday 5th	New Moon
Saturday 6th	New Members training at Observatory??
Tuesday 9th	Committee Meeting
Friday 12th	Canterbury Anniversary Holiday
Tuesday 16th	Castronauts meeting 6.30-7.30pm
	Members Meeting at University from 7.30pm
Friday 19th	Full Moon
Saturday 20th	Members night at Observatory
Sunday 28th	Last Quarter

DECEMBER 2021

Saturday 4th	New Moon
	CAS Christmas BBQ
Saturday 11th	First Quarter
Tuesday 14th	Committee meeting
Sunday 19th	Full Moon
Saturday 25th	Christmas Day
Sunday 26th	Boxing Day
Monday 27th	Last Quarter
Friday 31st	New Years Eve

PUBLIC OPEN NIGHTS

The Committee would like to thank our volunteers who have assisted with the open nights/kidsfest nights that we were able to hold this year.

Lets hope that 2022 is a better year for open nights/kidsfest



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**

Upcoming Members Meetings

19th October: **John Pickering**

"Searching for Alien Worlds"

Online via zoom link on page 6 and will be posted on our website

16th November: **Simon Lewis**

"Interpreting Astronomical Images"

*Reminder we do not hold any CAS Members meetings in
December or January*

(correct as at 6th October 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 Covid-19 Level 1**

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

CAS YOUTUBE CHANNEL

Have a look at our new you tube channel

<https://www.youtube.com/channel/UChLhFm7yaLUTlgH3IJvA11g>

CAS CHRISTMAS BBQ NIGHT



Committee have set the date for this years Christmas BBQ

SATURDAY 4TH DECEMBER

Mark this in your calendars and we will have more information in next months Casmag for you



OCTOBER MEMBERS MEETING ZOOM LINK

Topic: CAS monthly meeting

Time: Oct 19, 2021 07:30 PM Auckland, Wellington

Join from PC, Mac, iOS or Android: <https://otago.zoom.us/j/93720837840?pwd=WEV6aWp1cmZmNytYTEpxMTI1cTY2Zz09>

Password: 816801

Or join by phone:

If calling from within New Zealand, dial: 09 884 6780 or 04 886 0026 (Toll charges may apply)

Meeting ID: 937 2083 7840

Password: 816801

If calling from outside New Zealand, please see list of available international numbers: <https://blogs.otago.ac.nz/zoom/phone/>

Or join from a H.323/SIP room system (e.g. LifeSize, Polycom, Tandberg, Sony) dial: 162.255.37.11 or 162.255.36.11

Then enter Meeting ID: 937 2083 7840

Password: 816801

For more info on H323/SIP room connections, please see: <https://blogs.otago.ac.nz/zoom/h323>

OBSERVATORY NEWS IMPORTANT INFORMATION

DOOR CODE & ALARM AT THE OBSERVATORY

The door code and Alarm code has been changed since our March AGM
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

There is a full list of accredited person's on the wall above the kitchen sink inside the lodge

contact Terry (our Observatory directory via his email listed on our website or the inside back page casmag

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	β Cen
gamma-Normids	Feb 25 - Mar 22	Mar 13	New moon	8	16.6	-51	γ Nor
pi-Puppids	Apr 15 - Apr 28	Apr 23	3 days after First quarter	var to 40	7.3	-45	σ Pup
eta-Aquariads	Apr 19 - May 28	May 5	1 day after Last quarter	60	22.5	-1	η Aqr
Pisces Austrinids	Jul 15 - Aug 10	Jul 27	3 days after Full moon	5	22.7	-30	α PsA
alpha-Capricornids	Jul 3 - Aug 15	Jul 30	2 days before Last quarter	4	20.5	-10	α Cap
Southern delta-Aquarids	Jul 15 - Aug 25	Jul 27	5 days before Last quarter	20	22.6	-16	δ Aqr
Southern iota-Aquarids	Jul 25 - Aug 15	Aug 4	3 days after Last quarter	2	22.3	-15	ι Aqr
Northern delta-Aquarids	Jul 15 - Aug 25	Aug 13	3 days before First quarter	4	22.3	-5	θ Aqr
Northern iota-Aquarids	Aug 11 - Aug 31	Aug 19	3 days after First quarter	3	21.8	-6	β Aqr
Piscids	Sep 1 - Sep 30	Sep 19	2 days before Full moon	3	0.3	-1	λ Psc
Orionids	Oct 2 - Nov 7	Oct 21	Full moon	20	6.3	+16	γ Gem
Leonids	Nov 14 - Nov 21	Nov 17	2 days before Full moon	100+	10.2	+22	γ Leo
alpha-Monocerotids	Nov 15 - Nov 25	Nov 22	3 days after Full moon	var to 5	7.9	+1	δ Mon
Pheonicians	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

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 MERCHANDISE

We are in the process of sorting some new items and will advise you when the new items are available.

Coffee Mugs are \$15.00 each

Pens are also available to members (extras are \$2.50)

Waterproof Stickers with our 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



EDITOR NOTES

It seems we are still living with restrictions and this affects all parts of our lives, Hopefully there might be a change for the better in the near future

I have seen that many have made use of the time for some observing at home and producing some wonderful photos

Personally I would like to say many thanks to those essential workers who continued to carry on with their jobs, Thanks also to All who worked from home during this time,

I am looking forward to being able to meet up with my CAS friends out at the observatory once we change to level 1.

Hoping for clear skies

Dale.K



OBSERVATORY NEWS **IMPORTANT INFORMATION**

New Security System in Lodge

We are trialling a new security system in the Lodge. 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
Terry Richardson

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
Terry Richardson



CASMAG PUZZLE PAGE

NEPTUNE

1. Neptune is about 2.8 _____ miles from the Sun

2. One of Neptune's rings appears to be _____

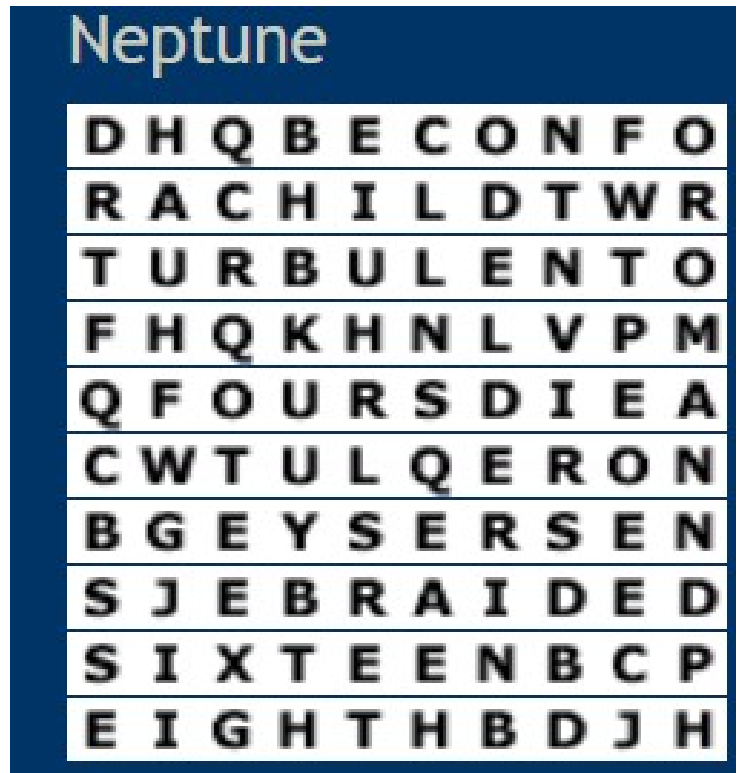
3. Instead of a Great Red Spot, Voyager saw a Great ___ Spot on Neptune

4. Neptune is the _____ planet from the Sun

5. Neptune has at least _____ moons

6. Neptune has a set of _____ rings

7. Voyager sent back pictures of _____ erupting on Triton



Break the Code: Astronomy

Use this code to help you answer each item:

A=1	B=2	C=3	D=4	E=5	F=6	G=7	H=8	I=9	J=10	K=11	L=12	M=13
N=14	O=15	P=16	Q=17	R=18	S=19	T=20	U=21	V=22	W=23	X=24	Y=25	Z=26

1. An 1-21-18-15-18-1 is a glow in a planet's ionosphere.
2. A 3-18-1-20-5-18 is a formation on a planet's surface caused by a meteorite's impact.
3. 12-9--7-8-20 is electromagnetic radiation that we can see.
4. 13-5-20-5-15-18-15-9-4-19 are small rocks in space.
5. An 15-18-2-9-20 is the path of an object as it moves around another object.
6. People see a 19-21-14-19-16-15-20 as a dark spot on the sun.
7. A 3-15-13-1 is the dust and gas surrounding the nucleus of a moving comet.
8. The gravity of a 2-12-1-3-11 8-15-12-5 is so strong that light cannot escape.
9. 7-18-1-22-9-20-25 is a mutual physical force which attracts two bodies.
10. The earth's atmosphere effectively blocks out most 21-12-20-18-1-22-9-15-12-5-20 light.

Answers in next months issue

The Evening Sky in October 2021

Three bright planets light up the evening sky. The brightest is **Venus**, appearing midway down the western sky soon after sunset. It sets in the southwest near midnight, a brilliant 'star' in the dark night sky. **Jupiter** appears northeast of the zenith in the bright twilight. As the sky darkens **Saturn** is found left of Jupiter. Both planets are in the sky till morning hours when they set in the southwest.

Venus is at its greatest angle from the Sun in late October. It is north of overhead in the late afternoon. Around 4:30 it can be found 10-15 degrees north of the zenith, depending on your latitude. It is easily seen by eye if you can get focused on infinity. On the afternoon of the 10th Venus will be 5° left of the crescent Moon and slightly higher, assisting focusing. (A hand span at arm's length is about 20°.) In a telescope Venus looks like a first-quarter Moon but without any craters. It is 116 million km away mid-month and getting closer.

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. Saturn appears oval in binoculars as the planet and ring blend. Telescopes separate the ring and planet and show Saturn's biggest moon, Titan, four ring diameters from the planet. Jupiter is 660 million km from us mid-month and Saturn 1440 million km away. The Moon will be near Saturn on the 14th and near Jupiter on the 15th.

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**, upside down to us.

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.

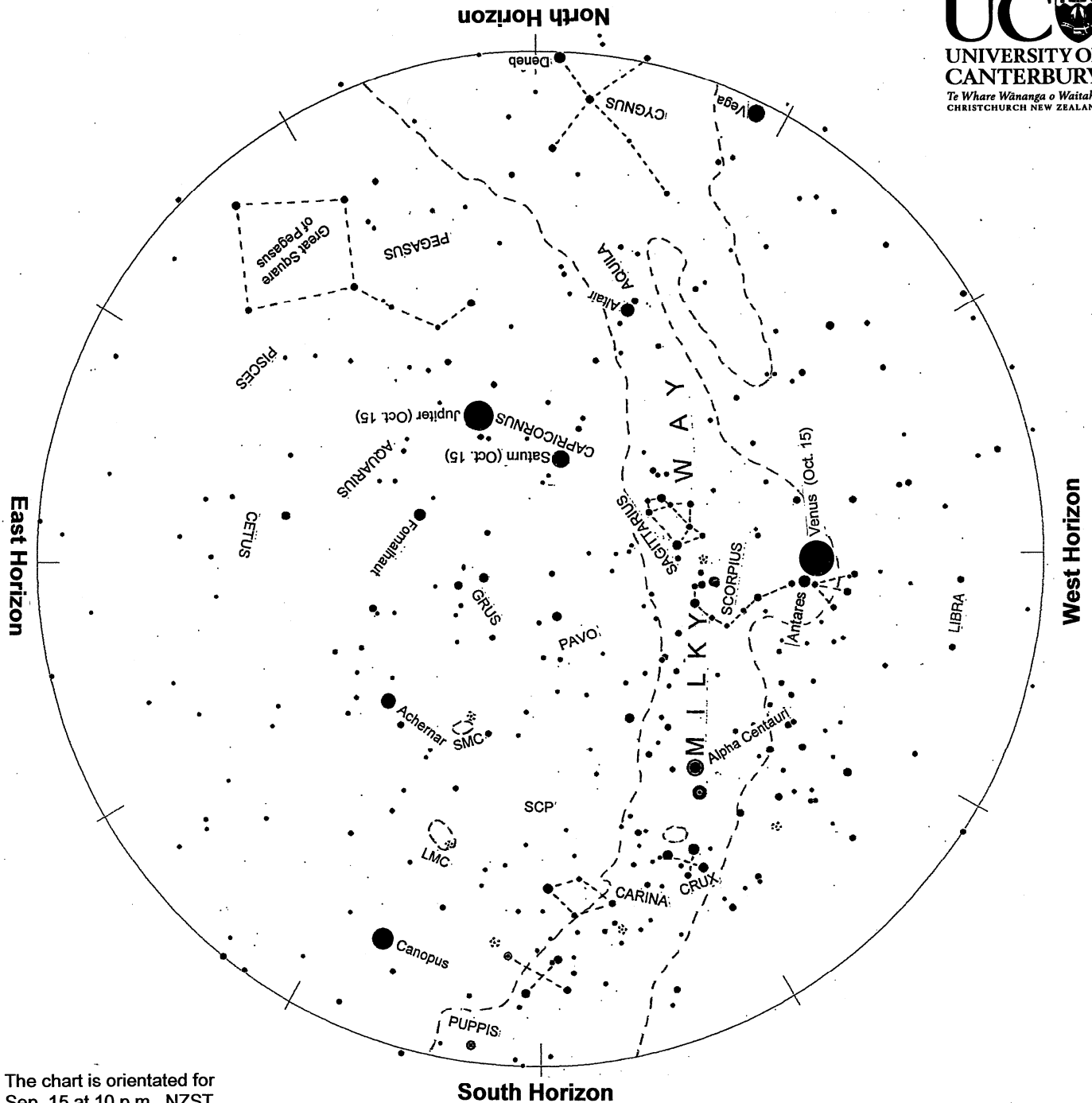
The **Milky Way** is brightest and broadest in Scorpius and Sagittarius. In a dark sky it can be traced down to the south. In the north it meets the skyline right of **Vega**. From northern New Zealand the star **Deneb** can be seen near the north skyline in the Milky Way. It is the brightest star in **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 10-25% of the mass of our Galaxy and the Small Cloud around 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 reaching toward Venus and 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 for light to reach the nearest star, Alpha Centauri.



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. "

Evening sky in October 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 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 midway down the western sky at sunset. It sets in the southwest near midnight. Jupiter is northeast of the zenith at sunset. Saturn, less bright, is left of Jupiter. Orange Antares is above Venus at the beginning of the month, beside Venus mid-month, and below Venus at the end. 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.

CAS COMMITTEE AND OFFICERS 2021/2022

Public Nights and Group Bookings		bookings.liaison@cas.org.nz
President:	Rob Glassey	president@cas.org.nz
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For more specialized information please see the contact information page on www.cas.org.nz

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Canterbury Astronomical Society Inc.

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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, 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

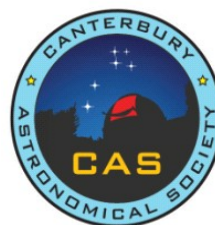
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Canterbury Astronomical Society Inc

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