Vol. 71: No 3 JUNE 2022 Issue Number 800

CASMAG

The official magazine of the Canterbury Astronomical Society

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

Monthly Meeting: Our Monthly Meetings are held on the 3rd Tuesday night of the month.
Our meeting venue is room ER225 in the Ernest Rutherford building at Canterbury University. Level 2
Refreshments from 7.30pm
Meeting starts at 8pm

21st June Members Meeting

Speaker: Rob Glassey
Topic: ASTROPHOTOGRAPHY

Saturday 25th June

Members Night @ Observatory
From 6pm, (wet or fine)

MID-WINTER BBQ & BON-FIRE NIGHT

Due to this being the final year for SOFIA to visit Christchurch, the committee has decided so we can invite the 2 sets of crews, to hold 2 events
The 1st will be our annual
Mid-Winter BBQ & Bon-fire on 2nd July 2022
And
The 2nd event will be a
BBQ on 30th July 2022
More information will be posted on the website in the next few days.

IN THIS MONTHS ISSUE

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,
(email editor using editor@cas.org.nz)
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."

CAS Calendar June-August 2022

JUNE 2022

Tuesday 21st	Last Quarter
	Members Meeting from 7.30pm
Friday 24th	Matariki Holiday
Saturday 25th	Members meeting at Observatory
Wednesday 29th	New Moon

JULY 2022

Saturday 2nd	Mid-Winter BBQ & Bon-Fire @ Observatory
Thursday 7th	First Quarter
Saturday 9th	KidsFest Starts cont until 24th
Tuesday 12th	Committee Meeting
Thursday 14th	Full Moon
Tuesday 19th	CAStronauts @ University 6.30-7pm
	Members Meeting @ University from 7.30pm
Thursday 21st	Last Quarter
Sunday 24th	KidsFest Ends for 2022
Friday 29th	New Moon
Saturday 30th	2nd Mid-Winter BBQ @ Observatory

AUGUST 2022

Friday 5th	First Quarter
Saturday 6th	New Members Night @ Observatory
Tuesday 9th	Committee Meeting
Friday 12th	Full Moon
Tuesday 16th	CAStronauts @ University 6.30-7pm
	Members Meeting @ University from 7.30pm
Friday 19th	Last Quarter
Saturday 20th	Members Night @ Observatory
Saturday 27th	New Moon

2022 Open Night Season

All members are able to attend our public nights and we would love it if you would give a hand on the night, Full training is given and it's a good way for learning how to operate the telescopes

Our 2022 ***Public Open Night*** season has started and is every fine Friday Evening. Updates are posted on the website in forums and also on our Face book page mid Friday afternoon
Volunteers are asked to sign up on our volunteer page as this helps the organisers to plan the nights events
https://cas.ivolunteer.com/
Kidsfest is on 9th –24th July this year further details closer to the time
Private Group Bookings normally are done on Wednesday evenings set at weekly or 2 week intervals and these are advised via the website and email
Our members as volunteers are requested to assist, full training is given if you are new to helping out. Ask if you have any questions

IMPORTANT UPDATE FROM YOUR COMMITTEE
Covid-19 level Operations

While most of this information has stayed the same there are some changes!!

Traffic Light **ORANGE** restrictions.

Public Open Nights: We have started these for this years session,
If you plan to volunteer please sign up via our volunteer page at
https://cas.ivolunteer.com/
(We will still be following all government rules/suggestions for safe events)

CAS Events At the UC:
We are now back to using our room at the University for our monthly Meetings Room ER225
Training nights and Members nights at the observatory have restarted on our normal Saturday nights, 1st Saturday and the Saturday following the Tuesday members meeting
Observatory Use. Do not visit the observatory if unwell.
Please sign in using the COVID tracer app using the QR code in the lodge.
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.
If you wish to wear a mask please do so.
Please maintain your hygiene as per our past suggestions
Wash / sanitise hands using the gear provided.
Do not clean optics as the sanitising chemicals can cause damage to equipment.
Please follow the rules at the observatory if visiting, and please stay safe

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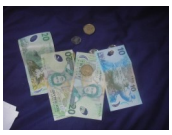
2022 ANNUAL SUBSCRIPTIONS/MEMBERSHIP



Payment for the 2022 Year is now due and can be paid via internet banking, PayPal, cash in person,

Please use your name and member number for your reference when making payment, (this means it can be matched to your membership)

Also the committee asks you to PLEASE advise any change to your details: Address, Phone Number, email,

If these details are not updated we will be unable to contact you.

Membership Fees and Banking payment details are included on the back page of every CASMAG

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 Meeting Dates:

21st June: Rob Glassey
19th July: Prof John Hearnshaw
Topic;Satellite constellations as a new threat to ground-based astronomy
16th August:
20th September:
18th October:
15th November:

NO Meetings are held in December or January

2023

21st February:

(correct as at 10th June 2022, 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

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/UChLhFm7yaLUTIgH3IJvA11g

CAS MERCHANDISE

Cas branded items for sale
Coffee Mugs are $15.00 each

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

Waterproof Stickers with our logo are also available

2022 Cosmic Calendar
Reduced to $7.50 please see Dale or Simon.
~~$15.00~~ (Pickup) ~~$20.00~~ $12.50(Posted)
CAS Beanies: Now in stock.
Wool Blend Beanie with the CAS logo in the front: $20.00

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

The following we will take orders and then we will order the items, 1-2 weeks delivery from order)
We have samples of each of the following items

Cas Soft Shell Jackets = Sizes S— 8XL $65.00
Cas Polo Shirts = Sizes S—5XL $45.00
Cas Zip Front Polar Fleece Jackets = Sizes 2XS -5XL $47.00
Cas T-Shirts = Sizes 3XS—8/9XL $22.00
I have the full sizing charts on hand so you can make sure you are ordering the correct size.
Payment can be cash or bank deposit
They are available from Editor (Dale),
contact via editor@cas.org.nz
or 0272426376

Members Interest Section

This section is dedicated to members on what **you** have as an interest under the umbrella of Astronomy.
Do you like: Meteors / Comets / Photometry / Solar observing / Photography / Telescope building / Spectroscopy / Aurora's / Occultation's / Variable Stars / Satellite tracking / Lunar observations / Jupiter impact monitoring / Radio Astronomy / Eclipses ?
Or
Do you have other interests that you would like to share and see who else would enjoy knowing some more? Form your own interest section.
Here's a couple of ideas that if you would like to know more about
Then contact Terry or Simon.
You can also use the CAS forum to discuss other ideas to check out who else would be interested.

Tune into Jupiter or the Sun with Radio Astronomy

Radio astronomy can be done during the day and even cloudy nights.
Terry has built a receiver and with his computer can log activity of the Sun and Jupiter.
Terry Richardson
member1@cas.org.nz
Cell: 021 776 458

Bounce Signals off the Moon

Beam a signal at the Moon or at a lunar orbiting satellite
Simon Lewis
Vice.president@cas.org.nz
Cell: 022 640 6649

Spectroscopy

from Ray Pointon

In the 'Members Interest Section' of the April-May CASMAG, one of the interest options available for members to enjoy is spectroscopy. CAS has recently purchased a diffraction grating which can be attached to a telescope eyepiece or camera on the telescope.
The grating, like a prism, spreads the light from starlight into component colours (distribution of wavelengths). Thus begins the engaging look into the not so private lives of stars, nebulas and galaxies.
The chemical composition of stars nebulas and galaxies (and other properties) can be determined by examining the detail in their spectra. Some parts in the spectra may contain strong emission lines or dark absorption lines. The spectrum of Sirius for example has dark absorption lines in its spectrum due to hydrogen in the outer layers absorbing some of the radiation from the interior. Regor is a star that has strong emission lines in its spectrum due to high mass loss (strong stellar wind). It will probably meet its end as a supernova.

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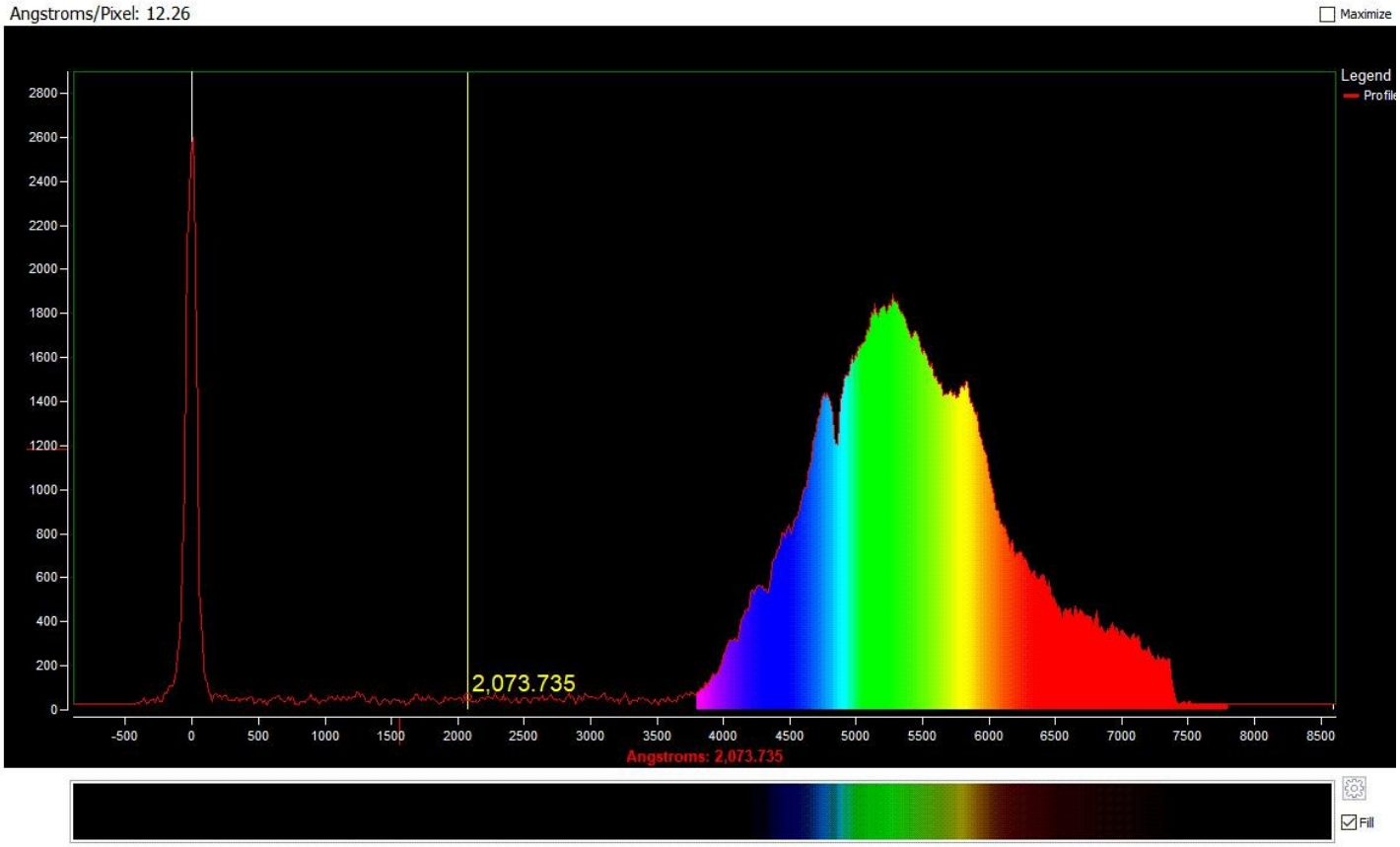
Members Interest Section cont

The image below is the spectrum of Regor.
(A better image of the spectrum will soon be on the CAS site image section.)

An evening at the observatory on members night can include an enjoyable inspection of various star types with the grating in the eyepiece of a telescope, or capturing an image of the star and its spectrum with a camera and telescope and adding to an image collection. For the enthusiast, further investigation can be made by downloading the image into an observatory laptop and using the RSpec software to obtain a profile of the spectrum. The profile can be calibrated and details of the stars composition extracted.



Come and enjoy this colourful experience. The answers are out there.

Ray Pointon

CANTERBURY ASTRONOMICAL SOCIETY INC
2022 AGM NOTES/ELECTION OF OFFICERS/COMMITTEE

Our AGM this year was postponed from our normal March date until 17th May 2022 due to covid restrictions.
It was great to be able to meet everyone in person and share a cuppa before the meeting.

Full reports will be printed in the coming issues of Casmag for those who were unable to attend.

Election of Officers for CAS Committee results:

President:	Rob Glassey
Vice-President:	Simon Lewis
Treasurer:	David Brian
Secretary:	David Brian
Observatory Director:	Kieren Eden
Editor:	Dale Kershaw
Librarian:	Sean Mullis
Webmaster:	Marc Bunyan
Membership secretary:	Marc Bunyan
Committee:	Carol Mc Alavey
	Terry Richardson
	Goran Balvan
	Preetha Sreedharan
	Orlon Petterson

LIFE MEMBERSHIP:
This year we voted on and awarded life membership to

Alan Teague and Heather Skinner

in recognition of valuable contributions to
Canterbury Astronomical Society

Congratulations to you both.

2022 AGM REPORTS

Treasures Report 2021

2021 we continued to work through the trials and challenges of COVID. Within CAS was no exception. With the work of many of you the Society has continued to grow in members interest and activity development.
A success in more ways that one.
With all the challenges that has been faced by all CAS has shown that our resolve and willingness to adapt has never been stronger.
The CAS accounts have been audited by Roland Chisholm and signed off on 6 th March 2022.
CAS expenditure for 2021 was $19,992.69.
Expenditure was relatively subdued and well managed by the respective office holders.
With both maintenance work and setting up new equipment the observatory has been in great hands being run by Observatory Director Terry and his accompanying crew. Costs around this continued work and upgrade refinement is testament to the work that has been put in.
Income in the 2021 year was great.
Membership was strong, and again I would like to thank the existing membership and all of the new members showing an interest in the hobby of astronomy.
Open nights: Given the fragmented weather and the fickle COVID lockdowns has gone strong.
The ASTRONZ initiative is also going strong, whereby members who by equipment from ASTRONZ and tell ASTONZ you are a member a small portion of the sale come to CAS. These donations from
ASTRONZ gain a little more than $891.86.
Total income for the 2020 year was $24,202.60
The bottom line for the 2020 accounts was a Profit of $4,209.91
The 2021 year has been a very successful year for the society as a whole and has further set us up for an efficient path forward for our existing and new membership to enjoy.
On the note of memberships, subscriptions for the 2022 year will remain unchanged.
Thank you very much for your continued support of this awesome society.
Dave
CAS Treasurer

AGM Observatory Report.

This year has been dogged by bad weather and covid. There has been some activity by individual members on clear nights. Open nights last winter were badly affected by weather and more recently we have not been open for groups due to covid. We did however manage the winter bonfire which was enjoyed by the many. This season opened with a great night, then two following have been cancelled.

Cont next page

2022 AGM REPORTS cont

AGM Observatory report cont.

We had a very successful night in the West Melton community with 200 guests at the school.

We have completed refurbishment of the 14 inch dome which was a major project and expensive. It is now complete, waterproof, Moss treated and painted. Scruffy border plants have been removed and rails added to the balustrades for safety.

The 120 dome has had major leaks which have been difficult to trace. This is now more secure with some minor issues yet to chase.

The CPC11 enclosure is also prone to dampness and is soon to be in need of refurbishment or replacement.

The Issue of these 2 domes at their end of life and subsequent landscaping is being addressed in the long term planning.

Projects completed during my 3 years as Observatory Director.

- New drainage line for septic tank
- Replacement of lodge roof
- Landscaping lower terrace and building of new retaining wall.
- Established mains power from main board to Nankivell dome and fiber-glass dome.
- Installation of internet at the lodge
- Construction and Installation of Graeme Kershaw sky camera
- Commissioned burglar alarm and (later) installation of surveillance cameras.
- Installation of dehumidifiers in 16 inch and 120.
- Refurbishment of 5 meter dome (14 inch) with replacement of rotten struts.
- Build pedestal and installation of C11 in fiberglass dome.
- Purchased and commissioned CEM 40 mount
- Purchase and installation of CPC1100, replacement for the 12 inch.
- Sale of Meade LX200 and 24 inch Dob
- Purchase of laser collimator and adjustment of dobs.
- Purchase of good quality wide view eyepieces for the dobs
- Removal of Cyprus trees along roadside bank and replanting
- General maintenance and improvement of buildings and grounds.

It is with some sadness that I stand down from my role as observatory director for the last 3 years. I have had much pleasure in making improvements and I think I leave things in good order apart from the next project of replacing the CPC1100 enclosure and the Nankevill dome. It is time for new ideas and a fresh approach which will bring the observatory forward. In this respect I am delighted that I will be handing over to good hands. This will in no way curtail my happy involvement in events at the observatory.

Terry Richardson

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2022 AGM REPORTS cont

Editor Report 2022 AGM

This past year has again been a very strange year for all of us,
Most of our members meeting and committee meetings have been held online
CASmag has and is ever evolving, with content that has included star charts, contact information, meeting information where possible, public events and social events along with members items forwarded to me for publication, I always enjoy receiving these and hope the members will continue to write items for the casmag.
This year has seen a reduced number of issues of casmag but thanks to Simon for his email newsletters to fill in those gaps
As we all do in our busy lives we do our cas commitments alongside our own personal / family commitments, I have also been doing some work on parts of the Townsend Teece telescope restoration,
Organizing and running Stardate with Carol & Euan.
Were possible I have assisted at the public open nights / private groups and members nights along with events, and enjoy this contact with the members and the public out-reach
This past year I assisted Simon in the publishing of our 1st yearly Cas Calendar which was very successful.
I have also worked on the sourcing and orders of our new CAS Clothing items for sale to our members.
CAS coffee mugs are still available for members to purchase. long with the Cas pens,
We (the committee) are looking at other items to add to the selection
I look forward to another year as your editor/ committee member if you chose to re-elected me and would like to thank the rest of the committee for all the support and friendship shown to me

Dale Kershaw

More reports in the next casmag

The full financial treasurers report can be emailed to you if requested by emailing either
Dale —— editor@cas.org.nz or
David Brain ——- treasurer @cas.org.nz

WELCOME TO OUR NEW MEMBERS:

A warm welcome to our new members, We look forward to meeting you at our meetings and/or events, Please make yourselves known to others. We like to welcome our new members here after the membership is accepted by the committee at the meeting following memberships are received.

Welcome to
Barry Simpson
John Bucker
Rob Antonivich
Suzi Williamson
Sean Weaver
Aurora Lopaz

:Apologies if I have mis-spelled your name
Dale -Editor

OBSERVATORY NEWS
IMPORTANT INFORMATION

DOOR CODE & ALARM AT THE OBSERVATORY
The Door code and Alarm code available to members, Ask a committee member for the passwords.

INTERNET WI-FI:
Ask a committee member for the password

LASER POINTERS:
There is a legal requirement when importing them, and information is on our website and at the observatory, CAS has a drafted a set of guidelines which we were presented at our AGM and were voted and added to our By-Laws,
If you need a letter confirming your membership for your application, please contact either membership secretary or secretary, (This letter will state you are a current financial member of our society)

ACCREDITATION
A reminder that unless you have full accreditation on the equipment you are not to use the equipment unless there is an accredited person with you.
Full training is available, Please ask our Observatory Director how you can get your accreditation
There is a full list of accredited person's on the wall above the kitchen sink inside the lodge. contact Kieren (our Observatory directory via his email listed on our website or the inside back page casmag

2023 CAS CALENDAR

WE NEED YOUR PHOTOS!!!!!

Cas is going to produce our very own calendar again for 2023.

We need your astronomy photos for this and full credit is given.
We published our 1st calendar in 2022, this was very popular.
We are very proud that all the photos included are taken by our own CAS members.
We plan to publish earlier this year in time for sales for Christmas posting and at events CAS attends.

Please contact
Simon —- vice-president@cas.org.nz
Re submitting your photos

THE DARK SKIES RETREAT—JUNE 24-26TH 2022

The Dark Skies Retreat, June 24th-26th , Note updated dates for this event.
Supported by ASTRONZ.
A weekend getaway of astronomical proportions!
Astronomy, astrophotography, night sky education, outreach,
with a big focus on dark skies.
Held over the first Matariki Public Holiday in June,
under the dark skies of
Camp Iona, Herbert Forest, Herbert
(20-minutes south of Oamaru).
Contact Damien McNamara, solaur.science@gmail.com

QUOTES FROM THE RASNZ E-NEWSLETTER

"It is not who is right, but what is right, that is of importance." - Thomas Huxley.
"It takes considerable knowledge just to realise the extent of your own ignorance." - Thomas Sowell.
"For every complex problem there is an answer that is clear, simple, and wrong." - H.L. Menken.

HEATHERS NOTES

Off to the member's night at the observatory and I was all rugged- up and ready for a chilly night with my 20x80 bino and stand in the back of the car. The night sky was picture-perfect. Well, I got there later than I had hoped Because,- I found a road closed sign.. Where is the alternate route sign with the arrow pointing the way?? No not there, or there;- I will follow this road and hope for the best, no that is not it. Another road that looks familiar, that led me back to where I had started from! W.T F !!!! I am not giving up,- start again lady and don't go home disappointed and sulking!
O'K, go up this road and keep going, There is a sign, -Thank you Very Much! Found it! I was very pleased I kept going, there were quite a few astronomers there with voices coming from various parts of the observatory and domes, I got my astro gear out of the car and parked on the first terrace. The little group of us there had fun, shared our viewings and had a friendly argument about, -it's a tea-pot- [Sagittarius] me, -No, it is Not a tea- pot, it doesn't have a flat bottom… ha—ha… Anyway, there were some stunning views with so much colour and detail to see that one astronomer had, another, was using her new scope and had a great and happy time finding everything she wanted to; I was sharing my bino with a gentleman rugged up in a warm dressing gown, and I was having a happy time hunting around, looking at some favourites and some objects I had not seen in a while. Yes, lovely night, crystal clear, socialising and happy astronomers… Stay warm everyone and happy hunting.. from Heather 21st May 2022

OBSERVATORY NEWS
IMPORTANT INFORMATION

New Security System in Lodge

The new security system in the Lodge is up and running well. This takes the form of an intrusion sensor outside, and a Wifi cam inside the lodge in the back corner at the car park end. The intention is to add another camera outside the lodge overlooking the car park area. The advantage of these is that they will trigger on intrusion alert and can be viewed remotely in real time or reviewed within 2 weeks. These are not for the purpose of watching people, but rather to check that entry to the lodge is by legitimate members. Given the assets we have on site, this is necessary for any insurance claims.

Access to these cameras is limited to Webmaster, Vice President and Observatory director only. We already have a surveillance network installed (several years ago) which records to a hard drive but cannot be remotely viewed in real time.

If anybody needs to know more please feel free to email me observatory.director@cas.org.nz

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SECURITY FOR OBSERVATORY KEYS– Accredited Members

Committee have decided that we need improved security for access to the observatory equipment. From now all keys are stored in a lock box in the library.

Any accredited member will be given the combination (just ask me).

This includes the key to the equipment room and for the dobs.

Although the dobs do not require formal accreditation, they are precision instruments that can be damaged if not used correctly.

A member accredited on any of the scopes can open these for you.

Members still have free access to the lodge and its facilities, but any other access will require an accredited person to be present.

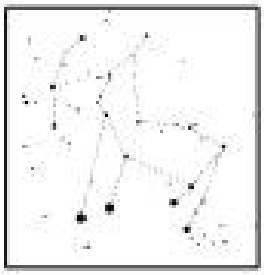
Any accredited member can get access to the keys,

but of course can only use (or supervise) the instrument they are accredited for.

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

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

Interesting Objects in the Southern Sky

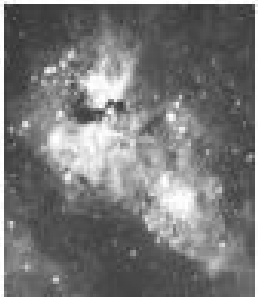


Centaurus, with the bright 'Pointers', and **Crux**, the Southern Cross are south-east of overhead, the tightest grouping of bright stars in the sky. Originally Crux was the hind legs of the Centaur, the horse-man of Greek mythology. The complete Centaur, with bow, is outlined at left. It was only in the 17th Century that Crux was split off as a separate constellation. The slow wobble of Earth's axis allowed this part of the sky to be seen from more northerly places in ancient times. The fainter Pointer and the three bluish-white stars of the Crux are all super-bright stars hundreds of light years away. Alpha Centauri is just 4.3 light years* away and the reddish top star of Crux is 90 light years from us.

Omega Centauri, also southeast of the zenith, is a globular cluster, a ball-shaped cluster of millions of stars. Its total mass is six million times the sun's mass or weight. It is 17 000 light years away and 200 light years across. Globular clusters are very ancient, around 10 billion years old, twice the age of the sun. Omega Centauri is the biggest of the hundred-odd globulars randomly orbiting our galaxy. It may originally have been the core of a small galaxy that collided with the Milky Way and was stripped of its outer stars.
47 Tucanae, by the SMC, is a similar sort of cluster 16 000 l.y. away.

Coalsack nebula, left of Crux, looks like a hole in the Milky Way. It is a cloud of dust and gas 600 light years away, dimming the distant stars in the Milky Way. Many 'dark nebulae' can be seen along the Milky Way, appearing as slots and holes.

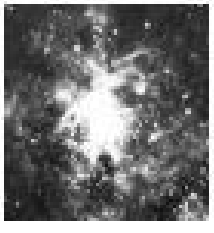
The Jewel Box is a compact cluster of young bright stars about 7000 light years away. The cluster formed around 16 million years ago. To the eye it looks like a faint star close by the second-brightest star in Crux. A telescope is needed to see it well.



Eta Carinae nebula, a luminous spot in the Milky Way to the right of Crux, is a glowing gas cloud about 8000 light years from us. The thin gas glows in the ultra-violet light of nearby hot young stars.

The golden star in the cloud, visible in binoculars, is Eta [Greek 'e'] Carinae. It is estimated to be to be 80 times heavier than the sun. It is four million times brighter than the sun but is dimmed by dust clouds around it. It is expected to explode as a supernova in the next few thousand years. Many star clusters are found in this part of the sky.

Large & Small Clouds of Magellan (LMC & SMC) appear as two luminous clouds, easily seen by eye in a dark sky. They are galaxies like the Milky Way but much smaller. Each is made of billions of stars. The Large Cloud contains many clusters of young bright stars seen as patches of light in binoculars. The Large Cloud is 160 000 light years away, the Small Cloud 200 000 light years; very close by for galaxies.



Tarantula nebula is a glowing gas cloud in the LMC. The gas glows in the ultra-violet light from a cluster of very hot stars at the centre of the nebula. The cloud is about 800 light years across. It is easily seen in binoculars and can be seen by eye on moonless nights. This nebula is one of the brightest known. If it was as close as the Orion nebula then it would be as bright as the full moon.

*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.

Text and pictures by Alan Gilmore, University of Canterbury's Mt John Observatory,
P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

220406

The Night Sky in June 2022

Sirius is the 'evening star'. At the beginning of the month it appears due west at dusk and sets in the southwest before 10 pm. By the end of June it sets at 8 pm. Being bright and white, Sirius twinkles with all colours when low in the sky. **Canopus**, the second brightest star, is higher in the southwest sky, swinging lower in the south later.
Like Sirius it twinkles colourfully. Canopus is 310 light years* away and 13,000 times brighter than the sun.

Arcturus is a lone bright orange star in the north sky. Lacking any blue light it twinkles red and green when low in the sky. It sets in the northwest in the morning hours.

Crux, the Southern Cross, is south of the zenith. Beside it and brighter are Beta and **Alpha Centauri,** often called 'The Pointers' because they point at Crux. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri and many of the stars in Crux are hot, extremely bright blue-giant stars around 550 light years away.

Antares is a medium-bright orange star midway up the eastern sky. It marks the scorpion's body. Antares is a red giant star: about 600 light years away and 19 000 times brighter than the sun. Red giants are much bigger than the sun but cooler, hence the orange-red colour. Below Scorpius is **Sagittarius**, its brighter stars making 'the teapot'.

The **Milky Way** is brightest and broadest in the southeast toward Scorpius and Sagittarius. It remains bright but narrower through Crux and Carina then fades in the western sky. 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. A scan along the Milky Way with binoculars will find many clusters of stars and some glowing gas clouds. Relatively nearby dark clouds of dust and gas dim the light of distant stars in the Milky Way. The dust clouds look like holes and slots in the Milky Way. These clouds eventually coalesce into new stars.

The Clouds of Magellan, **LMC** and **SMC**, in the lower southern sky, are luminous patches easily seen by eye in a dark sky. They are two small galaxies about 160 000 and 200 000 light years away, close by as galaxies go.

All the naked-eye planets are all in the late evening to dawn half of the sky, so are not shown on the chart.
Saturn is first up. It rises around 11 pm at the beginning of the month and 9 pm by the end. It looks like a cream-coloured star and doesn't twinkle much. It is the brightest object in an empty region of sky.
The Moon will be near Saturn on the night of the 18th-19th.

Jupiter rises around 2 a.m. at the beginning of the month and around midnight at the end. It is golden-coloured and the brightest 'star' in the morning sky till Venus appears. Jupiter doesn't twinkle at all. **Mars** appears just below Jupiter at the start of June. It looks like a medium-bright orange-red star.
Jupiter continues moving up the sky, morning to morning, leaving Mars behind. The Moon will be near Jupiter on the morning of the 22nd and very close to Mars on the 23rd.

Venus is the brilliant 'morning star'. It rises around 4:30 at the beginning of the month and around 5:30 at the end. It is leaving us behind and moving to the far side of the Sun. **Mercury** begins a morning sky appearance in the second week of June when it appears below and right of Venus. It keeps that position for a fortnight then slips down into the dawn twilight by the end of the month.

Venus is directly above the **Matariki**/Pleiades star cluster on the morning of the 15th, about when Matariki can be first seen. The cluster is 12˚ below Venus, roughly half a hand-span at arm's length. Mercury is closer and at an angle of 2 o'clock from the cluster. By the 27th Venus is 7˚ to the right of Matariki.
The thin crescent Moon will be just above Matariki on the 26th.

*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.

Notes by Alan Gilmore, University of Canterbury Mt John Observatory,
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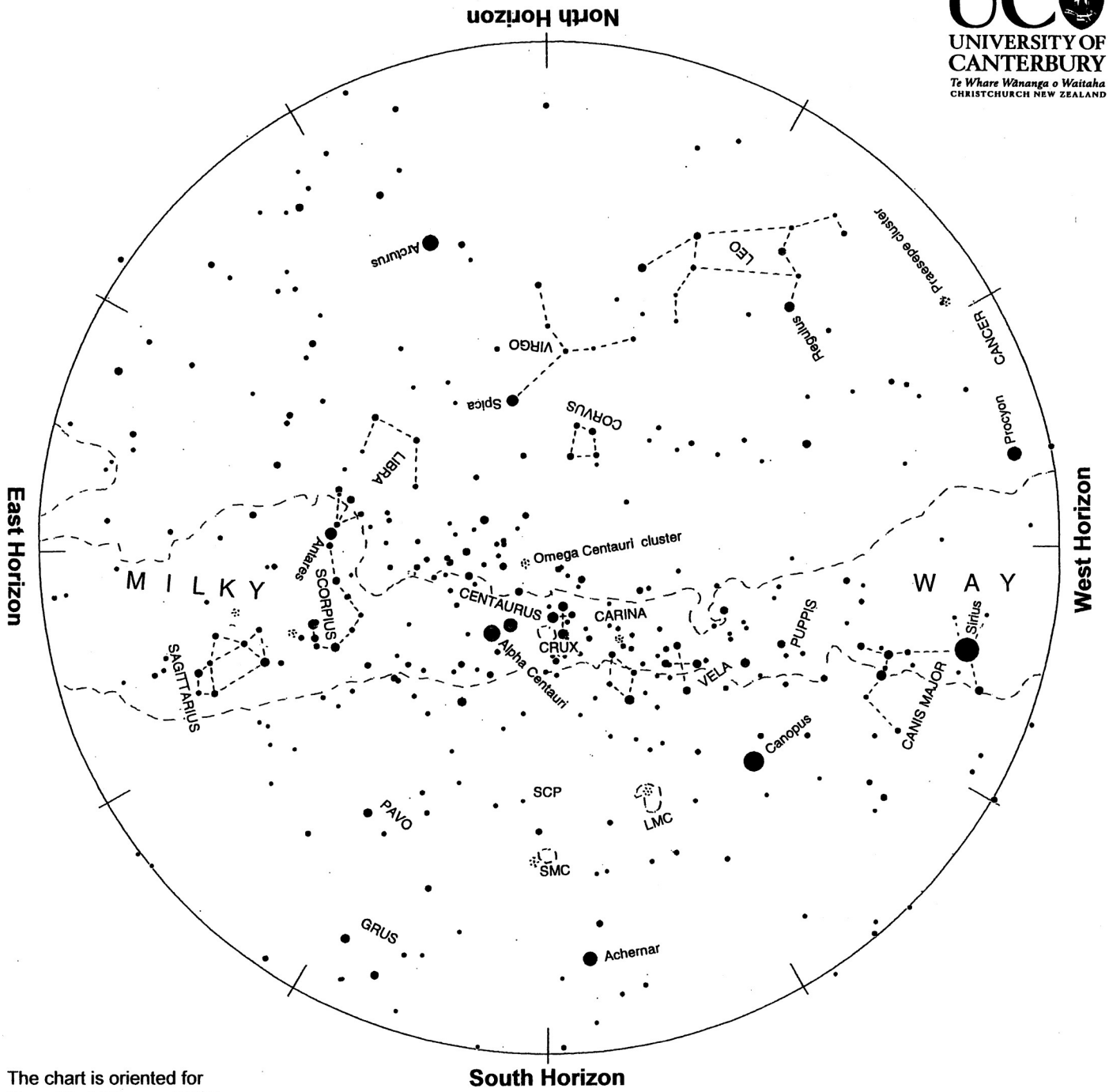
www.canterbury.ac.nz 220503



The chart is oriented for
May 15 at 10 p.m. NZST
June 1 at 9 p.m. "
June 15 at 8 p.m. "
July 1 at 7 p.m. "

Evening sky in June 2022

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 is the 'evening star'. It appears in the west at dusk and sets in the southwest twinkling like a diamond. Canopus is in the southwest, swinging down to the south skyline later, also twinkling colourfully. South of overhead are the Pointers, Alpha and Beta Centauri, with the Southern Cross (Crux) to their right. High in the eastern sky is Scorpius, upside down, with orange Antares marking the scorpion's heart. Below Scorpius's string is the teapot pattern of Sagittarius. Orange Arcturus, low in the north, often twinkles red and green. All the planets are in the late night and morning sky.

Chart produced by Guide 8 software; www.projectpluto.com. Labels and words added by Alan Gilmore, University of Canterbury Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

The Night Sky in July 2022

Sirius, the brightest star, sets in the southwest as twilight ends, twinkling like a diamond. **Canopus**, the second brightest star, is also in the southwest at dusk. It swings south later. South of the zenith are The Pointers, Beta and **Alpha Centauri.** They point to **Crux** the Southern Cross on their right. Midway down the north sky is orange **Arcturus.** It sets in the northwest around midnight, twinkling red and green as it goes. **Vega** rises in the northeast around 9 pm. It is on the opposite side of the sky to Canopus: low in the north when Canopus is low in the south.

Saturn is the only planet in the evening sky. It rises around 9 pm at the beginning of the month; around 7 at the end. It looks like a medium-bright cream-coloured star, all on its own. The near-full Moon will be above Saturn on the 15th and below it on the 16th.

Saturn is 1350 million km away mid-month, nearly as close as it gets this year. It is worth a look in any telescope but might be fuzzy when low in the sky. The ring can be seen at 20x magnification. Saturn largest moon, Titan, appears as a star four ring-diameters from the planet.

In the last week of July **Mercury** begins its best evening sky appearance of the year.

On the 25th it will be setting toward the northwest 40 minutes after the Sun (so it is not on the chart.) By the 31st it is setting 70 minutes after the Sun. It is the brightest star in that part of the sky. The crescent Moon will be near Mercury on the 30th. Mercury shows only a tiny disc in a telescope.

Alpha Centauri is the third brightest star. It is also the closest of the naked eye stars, 4.3 light years* away. Beta Centauri, like most of the stars in Crux, is a hot blue-giant star hundreds of light years away.

Canopus swings down to the southern skyline before midnight then moves into the southeast sky in the morning hours. It is a circumpolar star it never sets. Crux and the Pointers are also circumpolar. Canopus is a truly bright star: 13 000 times the sun's brightness and 300 light years away.

Arcturus, in the north, is the fourth brightest star and the brightest in the northern hemisphere sky. It is 120 times the sun's brightness and 37 light years away. It twinkles red and green when setting in the northwest around midnight. It is an orange colour because it is cooler than the sun; around 4000˚C.

The **Milky Way** is brightest and broadest in the east toward **Scorpius** and **Sagittarius**.

In a dark sky it can be traced up past the Pointers and Crux, fading toward Sirius.

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 is hidden by dust clouds in space. A scan along the Milky Way with binoculars shows many clusters of stars and some glowing gas clouds.

Except for Saturn and Mercury, the bright planets are in the late night and dawn sky.

Jupiter rises around 12:30 a.m. at the beginning of the month; around 10:30 at the end. It is the brightest star in the late night sky till Venus appears near dawn. Jupiter shines with a steady golden light. It hardly ever twinkles. Any telescope will show Jupiter as an oval disc with its four big Galilean moons lined up on either side.

The Moon will be above Jupiter on the night of July 18th-19th and below it the next night.

Mars rises before 2 a.m. all month. It is about the same brightness as Saturn and orange-red in colour. It is slowly brightening as we catch up on it. We pass it by at the end of the year. The Moon will be close to Mars on the morning of the 22nd. At dawn Saturn, Jupiter and Mars make a line across the north sky.

Venus, the brilliant morning star is rising later as it moves to the other side of the Sun. At the beginning of July it rises in the northeast around 5:30. At that date Mercury might be seen an hour later, rising below and right of Venus. Mercury quickly slips into the dawn twilight as it rounds the far side of the Sun to reappear in the evening sky. By the end of the month Venus is rising just 70 minutes before the Sun. The thin crescent Moon will be near Venus on the mornings of the 26th and 27th.

*__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 four years to reach the nearest star, Alpha Centauri.

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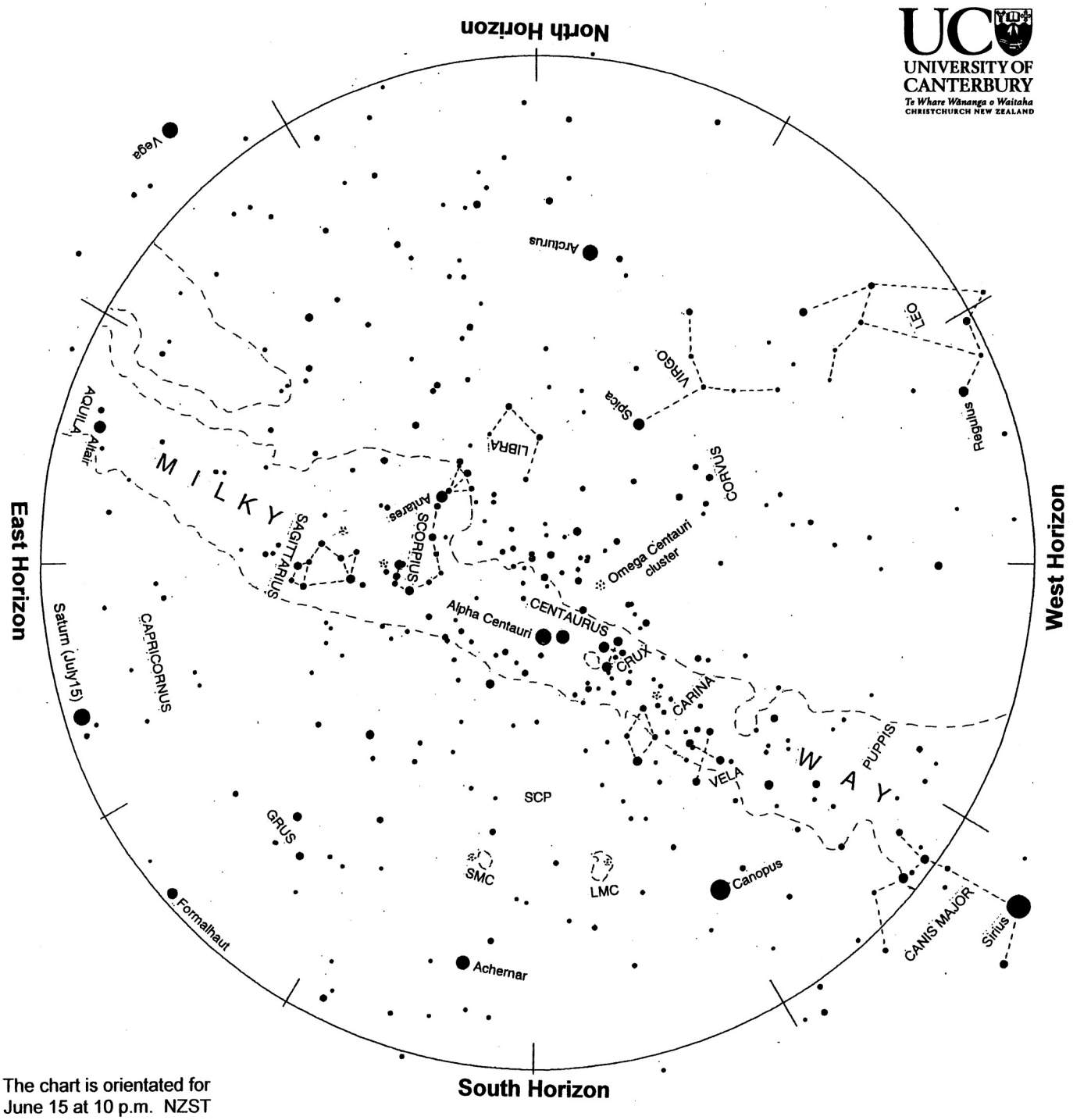
www.canterbury.ac.nz 220601



The chart is orientated for
June 15 at 10 p.m. NZST
July 1 at 9 p.m. "
July 15 at 8 p.m. "
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Evening sky in July 2022

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Saturn is the only planet in the evening sky. It looks like a medium-bright star low in the east. Sirius, the brightest true star sets in the southwestern twilight, sparkling colourfully. Low in the north is orange Arcturus, twinkling red and green when near setting. The Pointers and Crux, the Southern Cross, are south of the zenith. Canopus, the second brightest star, is low in the southwest. It swings down to the southern horizon later. Vega rises in the northeast around 9 p.m. Jupiter (not shown) rises after midnight at the beginning of the month; after 10 pm at the end.

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 2022/2023

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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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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.
PO Box 25137
Christchurch 8140

Applicants Name in Full_____

Address: (Note a P.O.Box is NOT a legal address)_____

_____

Home Phone:_____ Cell Phone:_____

Email: _____ Date of Birth: (if under 18)_____

Membership Category *(tick, subscripton must accompany application)*

Online Banking Details (Please identify your payment): 03 0802 0098273 00

		Full
	Adult (any person 18years of age or over who is not eligile for any other category)	$70
	Family (two or more persons living at the same address)	$105
	Junior (under 18 years of age on 1st April in the current year)	$35
	Senior (over 65 Years)	$35
	Community Services Card Holder	$35
	Student (any person studying full-time at a tertiary institution, must reapply annually)	$35
	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:_____