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CASMAG

The official magazine of the Canterbury Astronomical Society

CAS home page: http//www.cas.org.nz

Members Meeting: CAS Quiz Night -Tuesday 19th November

from 8:00 p.m, in room F3 of the School of Forestry, University of Canterbury.

IMAGE CREDIT : Blair Wilson

Blair Wilson took this image of the first quarter moon with his 16“ Truss Tube Dobsonian telescope at the Cowan’s Hill Starlight BBQ during the Aoraki Mackenzie Starlight Festival last month. For more about the Festival see pages 6 and 7.

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West Melton Observatory

43° 29' 55.5" S, 172° 20' 59.0" E

218 Bells Road, West Melton
Observatory phone: 347-9261

Public open nights for 2013 will be held every second Friday evening Friday 19th April – Friday 20th September. To make a booking inquiry follow the Open Nights link on the CAS website to find out which nights are available. For all other inquiries and bookings please email bookings@cas.org.nz

CAS Meetings

Monthly meetings are held on the 3rd Tuesday of each month from February to November at 7:45 pm, in room F3 of the School of Forestry building, University of Canterbury. Meetings begin with tea/coffee, followed by a 45 minute talk from an invited speaker as advertised on the front cover of CASMAG. Meetings are preceded by Practical Astronomy, from 7:00-8:00 pm in room F3 of the School of Forestry building. This is a friendly, informal meeting open to all interested people, with particular emphasis on new and beginning astronomers. Check the CAS website for details of the topic to be covered each month. Attendees are welcome and encouraged to stay for both meetings.
N.B. Meetings were previously held in the Law Building but remediation of that building has required our change of venue for 2013.

CAS Membership

Subscriptions (as listed below) are due 1 April. Fees for current members who renew before 31 May, and new members joining in 2013/14, will be discounted to the amount shown in brackets, i.e., there is a $10 discount for Adult members etc.
Financial year: April to March
Adult (full) membership $70 ($60)
Family membership $105 ($90)
All other classes (Junior, Senior citizen, Student, Community Services $35 ($30))

Contributions to CASMAG

Member contributions to CASMAG (e.g., letters, observing notes, articles, news) are most welcome. Please submit articles to The Editor, CASMag, PO Box 25-137, Christchurch 8144, or email to editor@cas.org.nz. The deadline for the next issue is the 1st of that month.
Small personal advertisements (less than 8 lines in a column) are free to financial members. Charges for larger items range from $5 to $40; email the editor for full details.

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.

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

CAS Calendar, November 2013 - January 2014

November						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

January						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Special event Monthly meeting Members open night

No Members Meeting during the months of December and January.

November Events

Tuesday 19th November CAS Quiz Night

The last meeting of the year, in November, is our annual Quiz Night. Come along and enjoy what is always a great evening, and one of the social highlights of the year.

Saturday, 23rd November CAS Members' Night

This month we're holding a mini Working Bee, followed by pot-luck dinner and telescope training on the 16". If weather allows, a solar scope will be set up for viewing during the afternoon.

Timetable of events:

3pm - 6pm Mini working bee (rain or shine):

Jobs-list to be confirmed, and will include:

replace latch inside the 12" building
install bracing on the 16" building roof-winder wall
fill hole in the top terrace and level off
lawns
pruning of shrubbery as necessary

Solar viewing

6pm - 7pm BYO dinner (fish and chips from Templeton go down well)
7pm - 9pm 16" Telescope Training
9pm to late 16" Drift-alignment.

DVD night if weather is unsuitable for observing.
All members welcome.

Looking forward

Saturday 7th December -CAS Summer Star Party at the West Melton Observatory, 4:00pm.
Our annual Mid Summer Star Party, wet or fine.
This is a great opportunity to catch up with other members of the society.
All members and their families welcome. See you there.

No Members Meeting during the months of December and January.

Friday 28th February 2014-Monday 3rd March 2014-Stardate SI-Staveley .
Mark it in your calendar and stay tuned for more details closer to the time.

Notices

New Members A BIG WELCOME

The committee would like to welcome David Chapple,a new members who has joined the Society.

The 16" Telescope

The 16" telescope has been polar aligned and as a result of this the way we use and align the telescope has changed. There will be a training session during the Novembers' members night on Saturday 23rd November. Please see Observatory Director Report and website for more details

For Sale

Meade series 4000 26 mm, 15 mm and 9.6 mm Plossl eyepieces in excellent condition with original cases and packaging. $50 each (I will sell them separately if you wish). Euan Mason, Ph: 3482671, 022 6470088, or email: euan.mason@canterbury.ac.nz

CAS Members' Meetings 2013

The CAS main meeting is held at 8:00pm on the 3rd Tuesday of the month (except December & January), in room F3 of the University of Canterbury School of Forestry. The main meeting at 8:00pm is preceded by the Practical Astronomy for All Ages meeting from 7:00pm to 7:45pm, in room F3 of the University of Canterbury School of Forestry. All members are welcome to attend either or both meetings.

February	Euan Mason	In the footsteps of Tycho Brahe: A pilgrimage to Hven
March	Graeme Kershaw	TOWNSEND TELESCOPE How bad is the damage?
April	Ryan Ridden-Harper	Miss, Are there other planets?
May	Prof. John Hearnshaw	Aoraki Mackenzie Starlight Festival and Dark Sky Reserve.
June	Doug Walker	Work on variable stars and eclipsing binaries with GNAT (The Global Network of Astronomical Telescopes)
July	Andrei Cotiga	Astrophotography
August	Martin Unwin	The Unique Astronomer: Occultations, Eclipses and the Transit of Venus
September	Dr. Loretta Dunne	Seeing the Stolen Starlight with Herschel
October	Prof. Robert Lambourne	Faster than Light Galaxies
November	Annual Quiz	The last meeting of the year is our annual Quiz Night.

Observatory Director Report- Blair Wilson

Great work from the volunteers at the October working-bee, huge thanks again for all your help. We will be running the final mini working-bee for 2013 on the afternoon of this coming members' night, November 23rd.

16" Telescope Changes

A small group of keen members have finally sorted out the 16" telescope polar alignment. As a result of this, the way we use and align the telescope has changed. We will be holding a training session on the November members' night where those involved will demonstrate the changes so accredited members can maintain their accreditation and continue operating the telescope.

2014-2015 Observatory Director

It is with a touch of sadness that I have to announce I will not be standing for Observatory Director next year. I took on the role this year as there were specific jobs I wanted to see completed at the observatory, and with a lot of help from a number of enthusiastic members many of these jobs have been completed or are near completion. I do regret not having the time to come back next year and continue the momentum, finally sorting out our storage problems, maybe replacing the overgrown pines with a fence and native planting, and most importantly working on reducing the maintenance workload the site puts on its members; but whoever the new Observatory Director is, I feel satisfied to be leaving the observatory in a better state than I found it and I wish them all the best in the role.

2014-2015 Webmaster

I will also be unavailable for CAS committee next year, which means I will also not be standing for Webmaster. If you're interested in taking on this responsibility but are not sure what's involved, all you need to know is basic HTML and have some PHP scripting ability (which is easy to learn). Of course, if you're a web-design guru then you should already be putting your hand up and demanding to be allowed to turn the CAS website into the best looking astronomy society website ever!

From the Librarian-Colin Fortune

We humans live in two worlds, the physical universe whose evolution from the big bang to the present day and the world of our human thought. Lloyd Geering has provided much during his ninety odd years towards our understanding of the physical world and our part in it.

Until two hundred years ago, most people in the Western world believed that earth and sky were no more than six thousand years old. Then science brought that date into question. In the pages of From the Big Bang to God, Geering simply and concisely tells the story of evolution and traces the rise and fall of God as a human response to discoveries about the universe.

Lloyd shows that the commonly supposed conflict between religion and science arises from a failure to appreciate the role of what he calls the 'human thought world'. The realm of the gods, created by human imagination, was the ancients' way of understanding nature. For them it was both their science and their religion. By sketching the history of 'God', Lloyd shows that the centrality of this idea provided an essential premise for the emergence of empirical science.

This has enabled the human species to dominate planet Earth and usurp roles once attributed to God. The story of evolution helps us understand the past — but the future of the human race now rests on our shoulders.

From the Big Bang to God, Lloyd Geering, D.D. Uni of Otago

This recently published work will be added to the CAS Library in the near future.

A little gossip:-

Meade Instruments Corp. has recently been acquired by Sunny Optics Inc a unit of Ningbo Sunny Electronic Co. Ltd. Of Shanghai, a large optical company listed as -

"Sunny Group's Sports and outdoors optics Manufacture Base - Ningbo Sunny Electronic Co.,Ltd. Equipped with first grade production facilities ,advanced environmental and optical testing devices ,a core member of the Sunny Group,Ningbo Sunny Science & Technology Co.,Ltd. develops, makes and sells sport and Outdoor Optical products,such as binoculars, telescopes, spottingscope, riflescope and diverse optical components and accessories . The company is ISO9001,2000certified" – Business Week

Hopefully they can inject a little cash into Meade to improve their financial woes.

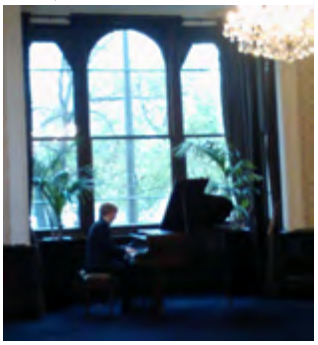
Meeting Marsha Ivins- Sharlene Mullen

Last month saw the first Aoraki Mackenzie Starlight Festival take place in Tekapo. Ashley Marles has written about his festival experience . See his article on page 7 for the full schedule of events.

As one of the event organisers I had the great pleasure in working with the Hon. Margaret Austin and our very own CAS patron Prof John Hearnshaw. The festival was to celebrate the creation of the southern hemisphere's first International Dark Sky Reserve and was a wonderful weekend filled with astronomically related events for the entire family!
Festivities began earlier in the week for Blair and I as we were privileged to attend the mayoral reception where Bob Parker welcomed the festival's special guest, retired NASA astronaut, Marsha Ivins to Christchurch.

Me, Marsha Ivins(Centre), Blair Wilson

As the rain fell outside, Blair and I stood by one of the Canterbury Clubs large fireplaces and listened to Andrew Leathwick a talented young pianist play. It was a memorable evening speaking to various supporters of the Festival, Mayor Bob Parker and where we first met Marsha. I had been in email communications with Marsha prior to her arrival and was excited to finally meet her in person.
After the Mayoral Reception a small group accompanied Marsha to dinner at the Curators House on Hagley Park . Over dinner,Marsha shared her story of how she became an Astronaut and told us about how the body adapts to off the planet living . How having to quickly drink over 2 litres of salty water prior to reentry was sometimes an issue and how when back on earth and being constrained by the laws of gravity, trying to float to the bathroom in the middle of the night was an occupational hazard alleviated by leaving the light on. Blair and I were captivated by Marsha and her extraordinary experiences and felt wholly blessed to be there that night.



Andrew Leathwick playing at the Mayoral Reception for Marsha Ivins

The following night Marsha spoke at a public event at the University organised by the Press. My phone was red hot with people enquiring about the event and wanting tickets. Close to 1000 people in 3 lecture theatres heard Marsha's talk 'Spaceflight, past, present and indefinite future'. The images she showed of life on the space shuttle, in the space station and of earth from "off the planet" enthralled the audience and cheers rang out as she showed an image of Christchurch from the ISS.
Marsha spoke about the human journey into space from the early astronauts who spent 15 days crammed into a craft no larger than a sedan, to the future of space flight after NASA.

I feel extremely privileged to have been involved in the Starlight Festival, such a wonderful event right here on our doorstep and to have met Marsha Ivins, one of just a small group of people who have seen our planet from such a unique vantage point, 350 kms up.

Lake Tekapo vista.

At Cowan's Hill Starlight BBQ. Rob Glassey(Left,looking through Blair Wilson's Scope), Blair Wilson

Malcolm Carr with his Galileoscope at Cowan's Hill Starlight BBQ

Cowan's Hill Starlight BBQ

Aoraki Mackenzie Starlight Festival, Tekapo 11-13 Oct 2013- Ashley Marles

Recently I travelled down to Lake Tekapo to attend the very first Aoraki-Mackenzie Starlight Festival.
This Festival was a celebration of the creation of the southern hemisphere's first International Dark Sky Reserve, in the Mackenzie Basin and at Aoraki/Mt Cook National Park in the centre of New Zealand's South Island.

The opening was held at the Godley Hotel on Friday night to a sold out house of 120 people where we had a welcoming powhiri, then speeches from the organizers, sponsors and introductions to the weekend's speakers. The photographic exhibition of local flora and fauna and the night skies by various local photographers was opened. Then after some light refreshments, we watched a film entitled " Venus – A Quest" about the connection between Jeremiah Horrocks who in 1639 first predicted and then observed the Venus transit in England and Kiwi writer and artist Dylan Horrocks.
That evening, for those who had booked early, Earth and Sky were running tours to Mt John to observe through their scopes, although the weather was iffy.

Saturday morning events were held at the Tekapo Community centre. Firstly telescope viewing of the Sun with white light telescopes with filters and hydrogen-alpha telescopes which show the prominences. There was also a spectroscope showing the absorption lines in the Suns spectrum to view through.
The main event for the morning was a talk by NASA Astronaut, Marsha Ivins about Human Spaceflight. Past, present and future including her experiences during her five space missions. It was very good and very popular as it was also sold out once the hall capacity was filled at over 240 attendees.

The afternoon involved cultural and practical events for younger people, announcing the winners of a poetry/essay competition and then a session of building your own Galileoscope with the intention of using it observing that evening.
Continuing the youth theme, the Christchurch Youth Orchestra had travelled down and performed on the 'un-iced' ice-skating ring for an astronomical themed classical concert featuring Also sprach Zarathustra [2001. A Space Odyssey theme], Star Wars themes medley and of course, Holst's The Planets [Mars and Jupiter]. I was keen to hear them as I was once a member of the orchestra when at high school 30yrs ago!

Saturday evening/night was observing up at Mt John. Sold out again but there was also observing at Cowan's Hill, where Earth and Sky have a second site. This time there was a sausage sizzle and many Canterbury Astronomical Society [CAS] members from Chch had bought along their own telescopes to show fellow Festival attendees' the Mackenzie dark skies and relieve the pressure off the Earth and Sky employees with the numbers of tourist and festival visitors. CAS members were also able to assist some of the Earth and Sky people in getting to know their scopes and the way around the sky a little better.
There were at least four E&S scopes including the one permanently in the dome and about a dozen or more from the CAS members which all helped with the 100+ people that came through.

The guest speaker for Sunday was Dr Karen Masters who spoke about her Galaxy Zoo project and the Zooniverse website. That was really interesting and is worth checking out at www.zooniverse.org. good online, citizen science stuff. I unfortunately missed her NSS talk at NMIT on the Monday prior, so was really glad to catch it now.

Later in the afternoon back up on Mt John the Earth & Sky staff had a continuation of their treasure hunt for the young ones and parents, which featured astronomy activity books and prizes and running all over the mountain in the howling wind, great fun. For the rest of us, the observatory was having a public open day where we could wander around from observatory to observatory and talk to the person attending about the telescope and the research conducted with it. Unfortunately everyone got their visit cut short as the winds picked up to much for safety; they were steady at around 90-100km per hr with gusts up to 140kph. So it was time to slowly roll the car down the hill admiring the expansive views of Lake Tekapo, Lake Alexandrina and the Godley valley.

I only hope this becomes an annual event as it was a great celebration of Astronomy, Science and Tekapo.

Cowan's Hill Starlight BBQ

Keep your eye out on future Casmags for details of the next Starlight Festival.

MR TOWNSEND'S TELESCOPE.- A PEEP AT THE SUN.

Press, Volume XLVIII, Issue 7874, 27 May 1891

The article can be seen in its original form in the page view here

When it was announced in the Press that Mr Townsend had presented his large telescope to the Astronomical Society here, perhaps few people understood the importance of the gift. Apart from the considerable value of the instrument (and it is a very costly piece of mechanism), it should be recognised that this telescope opens up a new and wonderful region of interest to the people of Canterbury.

Many authors have written on the mysteries and wonders of astronomy. Mr Kalley Miller, in the preface of his delightful book "The Romance of Astronomy," says, " The science which fathoms the infinite and reckons up the eternal, which pierces the abysses of space, grasps the orb which we see now by the light that left it eighty thousand years ago, measures its distance and traces its movements—'the science which accomplishes such marvels as these—must surely furnish many themes, and contain many episodes of a character as wonderful and as truly romantic as we can find within the airy realms of faction or of poetry." This statement is fully borne out by the revelations in his own book, and many of the wonders he depicts are laid open to Christchurch people through the aid of such a telescope as that which Mr Townsend gave to the Canterbury Astronomical Society, and which the College Governors are going to erect and house. Even in broad daylight this telescope reveals wonders that have given rise to much speculation and many new theories. On Saturday afternoon Mr Townsond kindly admitted two comparative strangers, of whom the writer was one, into his observatory. We entered the circular apartment with the dome-shaped roof, noted with curiosity the intricate mechanism of the great telescope, saw the narrow shutters drawn up and the moveable roof revolve until the sunlight shone through tho opening and cast a circle of prismatic colors from some part of tho instrument on to the opposite wall. We saw the telescope nicely adjusted by Mr Townsend, and then our turn came to mount the steps and gaze through a tiny orifice set at right angles to the long tube. Through this the sun's disc was robbed of its brilliance, aud on it could be discerned the famous sun spots, black, shaped like grains of gunpowder, surrounded by a fringe of lighter color, the fringe itself being bordered by a darker edge.

Sir John Herschel's theory on the origin of those spots, which is very widely accepted, is that " the sun has two separate atmospherical strata, or rather gaseous envelopes of cloud - like consistency, both several thousand miles in thickness— the outer one (the source of the solar light and heat) being of some extraordinarily phosphorescent character, while the inner one is non-luminous in itself, but possessed of a highly reflective surface. Upon this theory the spots are caused by atmospherical agitations on a most enormous scale. A huge chasm, sometimes not less than fifty thousand miles in diameter, opens in the outer stratum, while a corresponding rift of lesser size in the inner one reveals the dark body of the sun itself behind." So the spots are actually vistas of the sun seen through thousands

A rare view of the Biological Laboratory and Observatory before the extension was added linking the building to Physics in 1918.

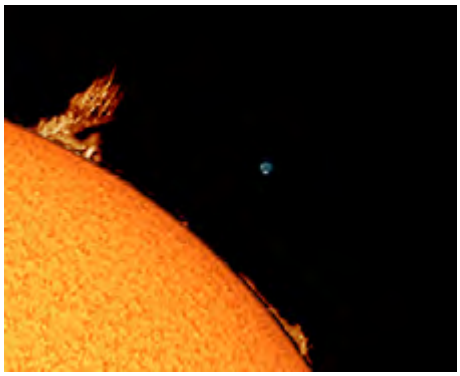
of miles of fiery clouds. But these spots are not the most interesting phenomenon presented to us by the sun. There are many interesting problems yet to be solved as to the source of its heat and energy. Astronomers look forward to the time when both shall fail. The sun's heat, we are told, is gradually wasting away. In millions of years it will become wan and cold, and as Miller says —"Looking into the ages of a future eternity we can see nothing but a cold and burnt out mass remaining of that glorious orb which went forth in the morning of time joyful as a bridegroom from his chamber, and rejoicing as a. strong man to run a race."

When it was announced in the PRESS that Mr Townsend had presented his large telescope to the Astronomical Society here, perhaps few people understood the importance of the gift. Apart from the considerable value of the instrument (and it is a very costly piece of mechanism), it should be recognised that this telescope opens up a new and wonderful region of interest to the people of Canterbury.

The Restoration The historic Townsend telescope, a 6-inch refractor made by Thomas Cooke and Sons of York, England in 1864, was recovered from the rubble of the Arts Centre. The telescope is badly damaged but miraculously the objective lens was completely unscathed. The delicate gears of the clock drive and governor that drove the telescope in right ascension were also recovered and are not badly damaged. The telescope tube is not a pretty sight, but there is hope that the whole instrument can be restored. Please following the progress of the restoration project on Facebook. Click the Facebook logo or search for Townsend Telescope Christchurch.

Sun in H-alpha +earth to scale - Ashley Marles

Composite/Mosaic of images from .avi video clips taken with a DMK41 CCD camera on a Lunt 100 H-alpha solar telescope.
Original video taken22 Apr 2012 and reprocessed 26 Sept 2013 with Registax6 and Photoshop CS3.
Note the image of the Earth to scale to upper right.



Heather's obs.. BINO POWER.

Hello again everyone... One of my [many] favourites is Orion, and though it still rises fairly late, it is starting to rise a little earlier as Scorpious is setting a little earlier.. M42 the great Orion Nebular is really spectacular through binos and has a huge fan-shape.. It is a gigantic nebular of gas and dust which is illuminated by the stars of The Trapezium -the multiple group of stars at the heart of the nebular. Small scopes and binos show four stars, but using a larger aperture and 'upping' the power will show more. I enjoy taking time looking at M42 and seeing all the detail I can. Just above M42 is a smaller rounder misty patch which is M43, although it is seperated by a dust lane and has a different 'M' no. it is really part of the same nebular.. I read that the dust lane that separates the two nebulae is called 'The Fish Mouth'! I never knew that!! The top left star Rigel, is the brightest star in Orion. It is also called 'The Giant's Leg' .. Well to us, Orion the Hunter is standing on it's head, sword [M42] pointing up, and it's legs pointing up in the 'air' [imagination's a wonderful thing!]
Going 'down' to the three prominent stars of the belt, [anyone who has seen the film Men in Black will know that the Belt of Orion is mentioned. It is on a collar round a cats' neck!] Talking about flims, --well I am,-- I went and saw Gravity 3D;---WOW !!! But my stomach was staring to do flip-flops when she was in space and tumbling over and over ..... You know the one, if something starts to move in a vacuum, or in space which is damned-near to it, and something starts to move, there is nothing to stop it so it just keeps going.. Anyway, good film so I thought... Back to Orion, where was I? Right, lets go to the Belt of Orion left star Mintaka, shows a wide companion which is unrelated. I read the brighter star is also an eclipsing binary.. The star to the right, Alnitak has a close companion which Is a true binary. Going up from Alnitak, there is a star,-naked eye, but when looking through a scope or binos, you can see that it is a mulitple and very nice to view.. You will see that around The Belt, the area is quite rich in stars. Now going down from Alnitak, you may find a whispy nebulous patch which is M78. Slightly elongated in shape it is centred on a 10th mag double star,[I only see one.] Now doooown we go to bright orange Betelgeuse, -the kids find this quite amusing as we perhaps wrongly? pronounce it as 'Beetlejuice'... There was a film about that too, and you mustn't say it three times or Beetlejuice, --a nasty character will appear!! Anyway, some facts;-- Betelgeuse is a red supergiant 400X the diameter of the sun, and so large that it is unstable.. So, we have stars being born in M42, and a star at the end of it's life.. Orion is both interesting and very nice to view.. We have had several good nights one after the other, but as I write this, it is - shall we be polite and say 'hosing' down, but I have some plants I have put in my garden so that's O.K for a couple of hours!! ---No Longer!!! Hang on, it's now thundering too.. back to clear nights please..... Happy Hunting... from Heather.....

The Evening Sky in November 2013 - Alan Gilmore, University of Canterbury's Mt John

Venus is the 'evening star', appearing in the western sky at sunset, or earlier if you know where to look. It sets in the southwest after midnight, a brilliant object in the dark sky. In a telescope it looks like a slightly crescent moon. It is around 80 million km away mid month but coming closer as it catches us up.

The brightest true stars are in the eastern sky. Midway up the southeast sky is Canopus, the second brightest star. Canopus is 300 light years* away. Seen up close it would be 13 000 times brighter than the sun. Sirius, the brightest star, rises in the later evening at the beginning of the month. It is in the sky at dusk by month's end, twinkling like a diamond as the air disperses its light. It is the brightest star both because it is relatively close, nine light years away, and 23 times brighter than the sun.
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; dozens are seen in binoculars. The cluster is 400 light years* away and around 70 million years old.

The Milky Way is low in the sky, visible around the horizon from the northwest, through south into the eastern sky. The broadest, brightest part is in Sagittarius, to the right of the Scorpion's sting. Venus crosses this region in the first half of the month. 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 is 30 000 light years away in the direction of Sagittarius.

Low in the south are the Pointers, Beta and Alpha Centauri, and Crux the Southern Cross. 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 Scorpion's tail can be the canoe's prow and the Clouds of Magellan are the sails. Alpha Centauri is the closest naked-eye star; 4.3 light years away.
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 appears near the SMC but is 'only' 16 000 light years away. Globular clusters are spherical clouds of stars many billions of years old.

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

Jupiter is the only bright planet in the late night sky. It rises in the northeast before 2 a.m. at the beginning of the month; a bright golden 'star' shining with a steady light. It appears earlier as we catch up on it. By mid-month it will be rising before 1 a.m. when Venus is setting on the exact opposite side of the sky.
Binoculars and small telescopes show Jupiter's brightest moons on either side of the planet, swapping sides from night to night. Jupiter is around 680 million km away from us now. There is an old and unreliable rule that stars twinkle and planets don't. It works for Jupiter. The planet's disk blurs the air's twinkling effect.

The other naked-eye planets are in the morning sky. Mars rises about 3:30 a.m., looking like a red star in empty sky between Regulus and Spica. It is 270 million km away and tiny in a telescope. Mercury and Saturn are both low in the dawn twilight. They make a close pair around the 27th low in the eastern dawn. Just line-of-sight, of course: Mercury is 180 million km away; Saturn is 1620 million km from us.

*A light year (l.y.) is the distance that light travels in one year: nearly 10 million million km or 1013 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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CASKids Space

News and information for the little astronomers

Roaring Fire of the Night

On 5th November every year, thousands of giant bonfires are lit all across the United Kingdom. This is a tradition to remember the night a man called Guy Fawkes was caught trying to blow up the UK parliament and kill the King, around 400 years ago.

Although the celebration of Guy Fawkes' failure only takes place across the United Kingdom, the entire world can enjoy a similar sight this year! If you use your imagination, you can see a bonfire in this photo of the night sky, something that crosses all borders and is enjoyed by people of every culture! The red cloud plays the role of the roaring bonfire and the blue-white stars are the sparks shooting up from the flames. In reality, this fantastic red cloud of gas and dust and the young stars scattered around it are all part of a star cluster called NGC 3572. Most stars are not born alone but in clusters, with many siblings born at about the same time, from a single cloud of gas and dust. They are almost the same age, but vary widely in size, mass, temperature and colour.

Astronomers at ESO have captured the best image so far of the curious clouds around the star cluster NGC 3572. This new image shows how these clouds of gas and dust have been sculpted into whimsical bubbles, arcs and the odd features known as elephant trunks by the stellar winds flowing from this gathering of hot young stars. The brightest of these cluster stars are much heavier than the Sun and will end their short lives as supernova explosions.

The lifetime of a star depends greatly on how big it is when it is born. A star fifty times more massive than the Sun will have a life of only a few million years, compared to the Sun, which will live for about ten billion years.

Stars much smaller than the Sun can live for trillions of years—much longer than the current age of our Universe. Because of this, star clusters like NGC 3572 provide astronomers with perfect laboratories for studying stars in various stages of their lives and learning how they evolve.

Thankyou to unawe.org for use of this Space Scoop based on a Press Release from ESO.

Canterbury Astronomical Society Inc.

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Canterbury Astronomical Society Inc.
P.O.Box 25-137
Victoria Street
Christchurch 8144

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