Wellington Astronomical Society
2020-06 eNewsletter

Wellington Astronomical Society Inc.
Email Newsletter for June 2020

Contents

1. WAS SOCIETY MEETINGS – JUNE 2020

Due to COVID-19 restrictions, WAS has postponed Society meetings in person until government advice on gatherings is relaxed and it is feasible to return to Space Place. Please keep an eye on our newsletters and follow us on Facebook to keep up to date with information regarding events and meetings as they will resume when it is safe to do so.

Though we are not meeting in person, we would still like to meet with your virtually! The June 2020 WAS meeting will be held on **Wednesday 3rd June at 7.30pm** online over Zoom. Register on the WAS website for the June 2020 Monthly Meeting and you will be

emailed a Zoom link to the meeting. Click on this link and you will be prompted to download the Zoom app if you don't already have it installed on your computer. Do this early so you have enough time to have it ready before the meeting. We will be using an Auckland University Zoom account for our trial. The account offers better security to all participants than the free Zoom meetings.

This online meeting will consist of the usual:

1. Night Sky
2. Astronomy News
3. Main presentation at 8pm.

Spying on the Universe - Jennie McCormick

Astronomy is a diverse and exciting science and offers a number of opportunities for amateur astronomers to be part of important research discoveries. It can also produce some unexpected surprises from time to time. This presentation by Jennie is a light-hearted, pictorial look at Farm Cove Observatory, its beginnings and the work carried out there.

Jennie is an amateur astronomer who conducts astronomical research from her observatory in Farm Cove, Auckland. She has been involved in the collaborative discovery of more than 20 distant planets, including a new solar system and Binary Star Solar System. She takes regular data on Cataclysmic Variable stars for the Center for Backyard Astrophysics and measures the positions of comets and asteroids for the Minor Planet Center.

In September 2009, Jennie discovered her first asteroid and officially named it, New Zealand!

In the late 1980's she joined the Auckland Astronomical Society and for 15 years worked as an educator at Auckland Observatory. Jennie is a Fellow of the Society of the Royal Astronomical Society of New Zealand (RASNZ)

In 2008/2009 she coordinated the International Year of Astronomy 2009's, 100 Hours of Astronomy event. This became the largest global science outreach event held to date and gave millions of people the chance to look through a telescope for the very first time while highlighting the wonders of astronomy to an extensive global audience.

When not 'spying 'on the Universe, Jennie can be found growing vegetables, playing tennis, taking photos of native birds, sunrise and sunsets from her Pakuranga garden and spending as much time as possible with her two young grandchildren.

2. EVENTS

WAS events are currently suspended due to the COVID-19 restrictions. Our monthly Society meetings at Space Place, Astrophotography / Dark Sky Observing at Star Field and Tawa College Observing events are likely to reconvened when we move to Level 1 after we have determined what the requirements are in accordance with the loosening of government restrictions.

Please keep an eye on the WAS website www.was.org.nz and our Facebook page Wellington Astronomical Society for updates. Any questions, suggestions, or for further information please email president@was.org.nz.

3. SOCIETY NEWS

WAS survey

To learn a little more about our members, and those with an interest in astronomy in Wellington, we created a short survey. It was live from 8th April till 20th May. The survey asked about your interests in

astronomy, your feedback on WAS events and how we can improve what we put on offer for you.

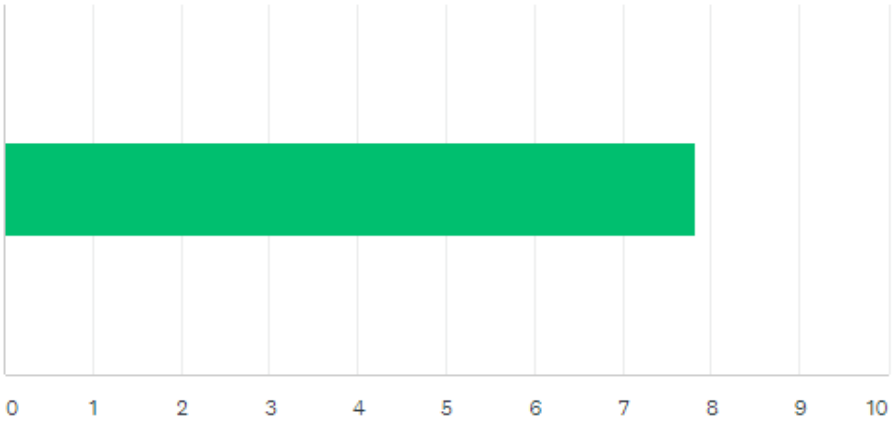
We'd like to thank everyone that took the time to complete the WAS survey. Your feedback is very much appreciated!

Here is what we learnt from your feedback:

When asked what about astronomy interests you, respondents told us the following:

- Astrophotography and physics
- Wide and deep sky photography as well as planetary photography
- Observing the night sky
- Sharing observing experiences with others
- Astronomical geodesy
- The beauty of the cosmos
- Space travel
- Cosmology
- Space exploration, including the engineering and innovation dimension.

On a scale of 1 to 10, how did you feel about the events run by WAS?



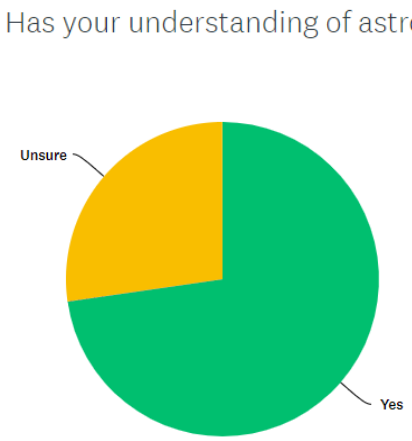
Respondents scored WAS events an 8 out of 10.

When asked what WAS can do to improve events / services, respondents told us the following:

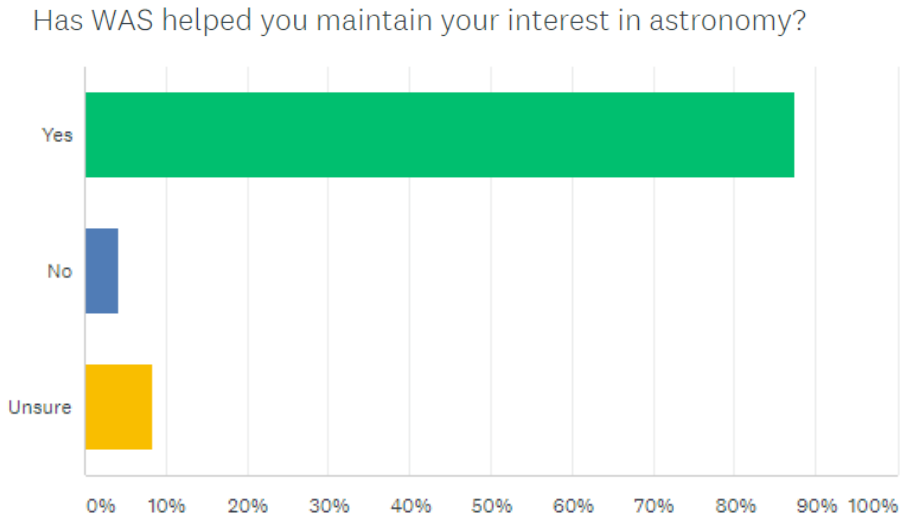
- More dark sky observing
- More local science talks
- Facilitating camping options for the Wairarapa dark sky events
- Presentations by kiwi researchers in New Zealand, including by PhD students
- Personalised communications via SMS with opt out options
- More reminders for Tawa College events
- Rearranging seating at Space Place at the monthly WAS meetings to ensure everyone can see the screen
- Increased encouragement for adults with a general interest in astronomy but with little expertise / knowledge in the field
- More online content
- More junior/youth focused activities / events
- Innovative ways of attending so people with babies and young children can also participate.

Our favourite feedback :-):

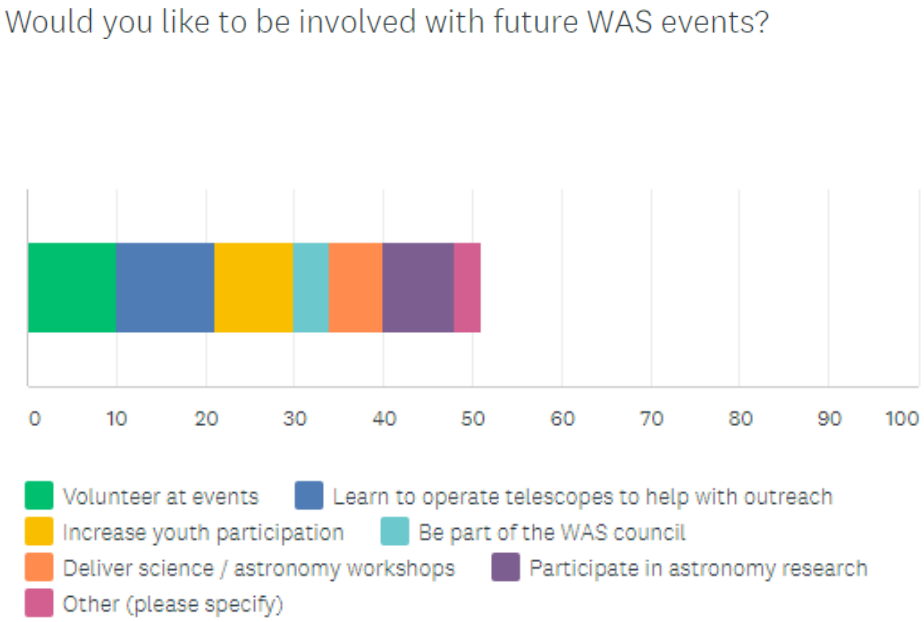
- More ‘free stuff’
- ‘Not much [to feedback], really. Since Antony became President, the Society has gone from strength to strength. It used to be dominated by old farts with bad haircuts’.



73% of respondents stated that their understanding of astronomy has increased since being part of WAS.



88% of respondents stated that WAS had helped maintain their interest in astronomy.



Respondents told us that they want to be more involved with WAS. This is something that we are hoping for to enable us to grow a diverse and inclusive society.

Respondents shared that they would also like to help us with communications, particularly explaining science to a general audience to increase interest.

Carkeek Observatory

PHOTO/HERITAGE NEW ZEALAND

On 20th May, WAS made a submission to Heritage New Zealand Pouhere Taonga (Heritage New Zealand) to enter Carkeek Observatory in Featherston on the New Zealand Heritage List/Rārangi Kōrero. The submission will be considered by the Heritage New Zealand Board in 25th June 2020.

Carkeek Observatory is New Zealand's earliest surviving astronomical observatory. It was built in about 1867, by civil servant, Featherston sheep farmer, and amateur astronomer Stephen Carkeek.

Read more about this at https://times-age.co.nz/observatory-needs-protection/.

NASA Scientist for a Day Essay Competition

WAS had a part in The NZ Space Agency's NASA Scientist for a Day Essay competition for Years 7-8 and 9-10. Our President, Antony, was one of three judges for the competition. WAS also sponsored the runners-up binocular prizes.

Both winners are from Invercargill. Sophie Ineson, an 11-year-old Southland Girls' High School student, has won New Zealand's inaugural NASA essay competition in the year 7 and 8 category. In a clean sweep for the south, Oshadha Perera from Southland Boys' High School has won the national year 9 and 10 competition.

Winners Oshadha Perera from Southland Boys' High School won the Year 9-10 competition with an essay urging NASA to search for alien life on Triton and Sophie Ineson from Southland Girls' High School won the Year 7-8 competition with her essay on Neptune's largest moon Triton.

A special thanks to Astronz for generously providing the prizes, two 6" Skywatcher telescopes and two pairs of binoculars at cost price.

An article on the winners is available on Stuff and their essays are on the MBIE website.

WAS RAG

Due to COVID-19 restrictions, the WAS research group (WAS-RAG) is suspending their monthly meetings until further notice. The group will keep contact via the WAS-RAG mailing list. Roland can be reached on roland@cno.org.nz in the meantime.

WAS meeting presentations on Video

If you were unable to attend any of the Society meetings but are interested in watching our brilliant speakers deliver their presentations, you can find them online at https://www.was.org.nz/2019-meeting-presentations/. To access the videos, you will need the password: *WASvideo*.

WAS newsletters

Similarly, if you are interested in accessing WAS newsletters, going all the way back to 2007, you can find them on the following link: https://www.was.org.nz/was-monthly-newsletters/. The newsletters are accessible for anyone that is interested in reading them.

The WAS newsletters will continue to be sent to members every month during the COVID-19 situation.

Helpful resources for parents educating kids at home

Our members with little ones at home have been sharing resources with WAS to share with others. A few of the links below offer advice on working from home, but most are fun lesson plans that will hopefully add a little excitement to traditional learning:

How to Work from Home Efficiently with Kids
http://wfmdepot.com/how-to-work-from-home-efficiently-with-kids/

The Buy-Nothing Home Office
https://www.nytimes.com/2020/04/15/style/working-from-home-setup.html

Tips For Creating a Home Office in a Small Space
https://www.westcoastselfstorage.com/tips-for-creating-a-home-office-in-a-small-space/

Resource Roundup: Free Educational Resources for Pre-K, K-12, College, and Continuing Education Students
http://earthsciencejr.com/resource-roundup-free-educational-resources-for-pre-k-k-12-college-and-continuing-education-students/

Teaching Kids at Home During Coronavirus: Pro Tips From Homeschoolers
https://blogs.edweek.org/edweek/rulesforengagement/2020/03/how_to_home_school_your_kids_during_the_coronavirus_pandemic_advice_from_homeschoolers.html

Storm Spotting for Children: At-Home Meteorology
https://www.redfin.com/blog/storm-spotting-for-children/

Easy Chemistry Experiments to Do at Home
https://www.thoughtco.com/top-chemistry-projects-604170

History Of Money And Credit: Explore The History of Ancient Money from Antiquity
https://www.mortgagecalculator.org/helpful-advice/history-of-money.php

Best Educational Social Studies Websites
https://www.weareteachers.com/social-studies-websites/

The Educator's Guide to Applying Real-World Math: 15 Resources with Over 100 Lesson Plans
https://www.homeadvisor.com/r/mathematics-application-in-

everyday-life/

Indoor Exercise for Kids: Online Classes and Games During Coronavirus
https://qns.com/story/2020/03/29/indoor-exercise-for-kids-online-classes-and-games-during-coronavirus/

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4. ASTRONOMY NEWS

Liftoff! SpaceX launches 1st astronauts for NASA on historic test flight
SpaceX launched astronauts for the first time ever today, making history and opening a new age of commercial spaceflight.

A shiny white Falcon 9 rocket lifted off from historic Pad 39A at NASA's Kennedy Space Center here today (May 31) at 7:22 a.m. NZST, carrying SpaceX's Crew Dragon capsule into orbit.

The launch kicked off SpaceX's landmark Demo-2 mission, which is sending NASA astronauts Bob Behnken and Doug Hurley to the International Space Station (ISS). Demo-2 marks the return of orbital human spaceflight to U.S. soil after a nearly decade-long absence, and it signals the beginning of a new era in space exploration — one led by commercial companies.

"It was incredible," Hurley radioed SpaceX's launch control. " I appreciate all the hard work and thanks for a great ride to space." Shortly after launching the Hurley and Behnken into orbit, SpaceX also notched another rocket landing under its belt. The Falcon 9 booster's first stage made a smooth landing on SpaceX's drone ship Of Course I Still Love You in the Atlantic Ocean. U.S.

Today's launch was originally scheduled to occur on Thursday (May 28), but bad weather forced the NASA-SpaceX team to scrub that attempt about 20 minutes before liftoff.
Read more about it here: https://www.space.com/spacex-demo2-nasa-astronaut-launch-success.html
To relive the historic launch, you can watch the video here: https://www.youtube.com/watch?v=_9ukdipDMQE

WORLD RECORD LIGHT

Help us map light pollution and BREAK A WORLD RECORD!
Sunday 21 June 2020 - The darkest day of year...
Have you heard about light pollution?
You could be a world record holder AND help scientists map light pollution and the impacts on the environment, by being part of "the world's largest online sustainability lesson (about light pollution)"
https://worldrecordlight.thinkific.com/pages/coming_soon

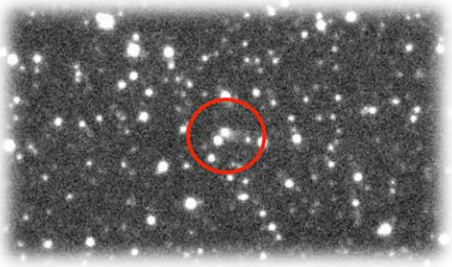
What do you need to do to be a part of this great challenge?

- Sign up - the earlier you do this the better. Weekly we're giving prizes away and tips for the event to registrants.
- Sign in - 21 June, 3pm NZST
- Watch some videos, answer all 5 questions, and do a night sky observation.
- Finish all parts of the lesson within 24 hours.

Will you help? WHY should you sign up?
It's not every day of the year you get asked to go outside at night and look up to the stars. So why should you do it on this night? So you can:

- Learn how easily you can help to reduce light pollution
- Be a citizen scientist for a night
- Say you've helped our natural environment
- Walk away a World Record Holder!
- Win PRIZES (paid registrations only)

Strange asteroid near Jupiter



Photo/JD Armstrong/IfA/LCOGT

Using the University of Hawaii's Asteroid Terrestrial-impact Last Alert System (ATLAS), researchers have found a 'strange, first-of-its-kind' Trojan asteroid that follows an odd orbit ahead of Jupiter and sports an icy tail. It is considered a unique 'crossover' between asteroid and comet.
Read more about it here: https://www.engadget.com/astronomers-spot-jupiter-trojan-120147018.html

'Ring of fire' galaxy

Artist's impression of R5519. (James Josephides, Swinburne Astronomy Productions)

An extremely rare galaxy in the early universe has just been found by astronomers. This 'ring of fire' is a giant doughnut-shaped galaxy, with a hole through the centre and is 10.8 billion light years away.
Read more about it here: https://www.sciencealert.com/something-punched-through-this-ancient-galaxy-leaving-a-ring-of-fire

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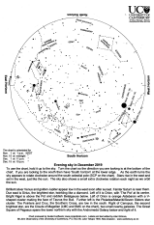
5. NIGHT SKY FOR JUNE 2020

The Night Sky for June 2020 courtesy of the University of Canterbury.



6 June 2020 — Penumbral Lunar Eclipse

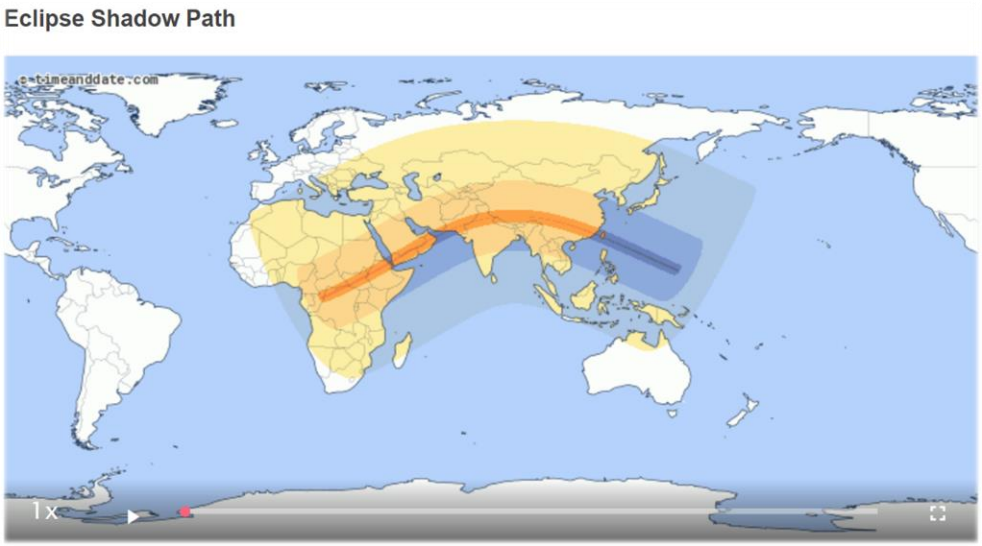
During this penumbral lunar eclipse, the Earth's main shadow does not cover the Moon. As the Earth's shadow (umbra) misses the Moon during a penumbral lunar eclipse, there are no other locations on Earth where the Moon appears partially or totally eclipsed during this event. A penumbral lunar eclipse can be a bit hard to see as the shadowed part is only a little bit fainter than the rest of the Moon.

Time	Phase	Event	Direction	Altitude
5:45 a.m. Sat, 6 Jun		Penumbral Eclipse begins The Earth's penumbra start touching the Moon's face.	258°	18.6°
7:24 a.m. Sat, 6 Jun		Maximum Eclipse Moon is closest to the center of the shadow. Moon close to horizon, so make sure you have free sight to West-southwest. Additionally, the eclipsed moon combined with dimming near horizon might make the Moon very hard or impossible to see.	243°	2.0°
7:41 a.m. Sat, 6 Jun	Setting	Moonset Setting	240°	-0.2°
9:04 a.m. Sat, 6 Jun	Not directly visible	Penumbral Eclipse ends Below horizon	226°	-12.8°

To see an animation for Wellington and other details go to https://www.timeanddate.com/eclipse/in/new-zealand/wellington

21 June 2020 Annular Solar Eclipse

The annular phase of this solar eclipse is visible from parts of Africa including the Central African Republic, Congo, and Ethiopia; south of Pakistan and northern India; and China. People in these areas will see the characteristic ring of fire.



The eclipse cannot be seen from Wellington and the best way to see it to goggle search for a livestream. The eclipse will begin at 3:45 pm on Sun 21 June.

June Solstice
The June Solstice where we switch from the shortest day / longest night to longer daylight hours takes place at 9:43 am Sun 21 June 2020.

NASA Night Sky Notes June 2020

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Vega - David Prosper and Vivian White
(Adapted for Southern Hemisphere)

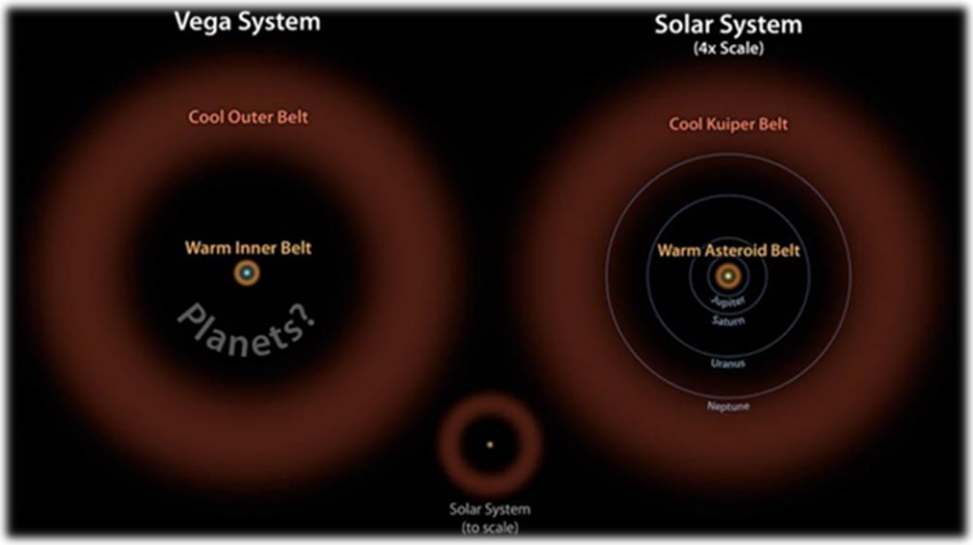
In the Southern Hemisphere, if you look North, you'll see the brilliant star Vega shining close to the horizon. Did you know that **Vega** is one of the most studied stars in our skies? As one of the brightest stars, Vega has fascinated astronomers for thousands of years.

Vega is the brightest star in the small Greek constellation of Lyra, the harp. It's also one of the three points of the large Northern Hemisphere "Summer Triangle" asterism, making Vega one of the easiest stars to find for novice stargazers. Ancient humans from 14,000 years ago likely knew Vega for another reason: it was the

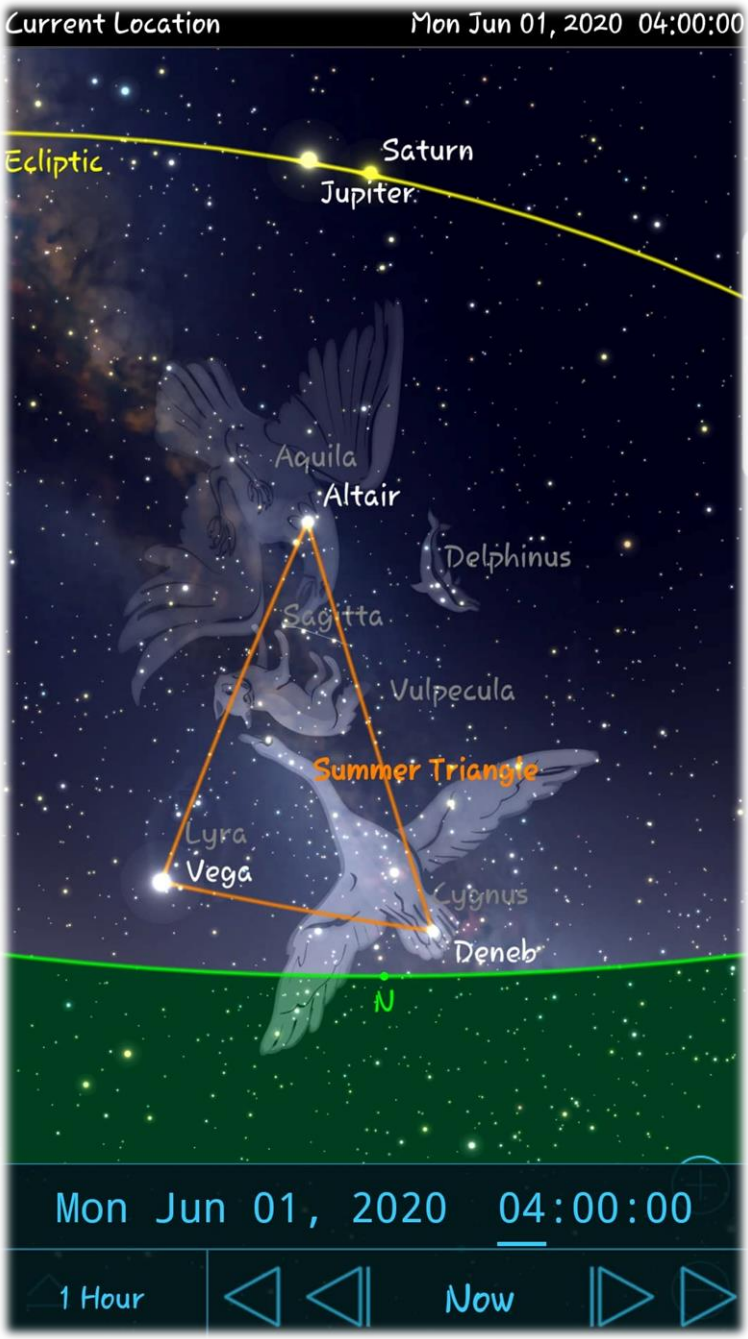
Earth's northern pole star! Compare Vega's current position with that of the current north star, Polaris, and you can see how much the direction of Earth's axis changes over thousands of years. This slow movement of axial rotation is called **precession**, and in 12,000 years Vega will return to the northern pole star position. Bright Vega has been observed closely since the beginning of modern astronomy and even helped to set the standard for the current magnitude scale used to categorize the brightness of stars. Polaris and Vega have something else in common, besides being once and future pole stars: their brightness varies over time, making them **variable stars**. Variable stars' light can change for many different reasons. Dust, smaller stars, or even planets may block the light we see from the star. Or the star itself might be unstable with active sunspots, expansions, or eruptions changing its brightness. Most stars are so far away that we only record the change in light, and can't see their surface.

NASA's TESS satellite has ultra-sensitive light sensors primed to look for the tiny dimming of starlight caused by transits of extrasolar planets.Their sensitivity also allowed TESS to observe much smaller pulsations in a certain type of variable star's light than previously observed. These observations of **Delta Scuti** variable stars will help astronomers model their complex interiors and make sense of their distinct, seemingly chaotic, pulsations. This is a major contribution towards the field of astroseismology: the study of stellar interiors via observations of how sound waves "sing" as they travel through stars. The findings may help settle the debate over what kind of variable star Vega is. Find more details on this research, including a sonification demo that lets you "hear" the heartbeat of one of these stars, at: bit.ly/DeltaScutiTESS

Interested in learning more about variable stars? Want to observe their changing brightness? Check out the website for the American Association of Variable Star Observers (AAVSO) at aavso.org. Variable Stars South (VSS) is a community of astronomers, mainly amateur, interested in researching the rich and under-explored myriad of southern variable stars. WAS-RAG members are actively involved in VSS. You can also find the latest news about Vega and other fascinating stars at nasa.gov.



Vega possesses two debris fields, similar to our own solar system's asteroid and Kuiper belts. Astronomers continue to hunt for planets orbiting Vega, but as of May 2020 none have been confirmed. More info: bit.ly/VegaSystem Credit: NASA/JPL-Caltech.



Vega, Altair and Deneb form the Northern Hemisphere "Summer Triangle", visible to Southern Hemisphere viewers low in the North during our Winter months.

6. CONTACTS

The following members were elected to Council at the November 2019 AGM:

President: Antony Gomez (president@was.org.nz) - 021 253 4979
Vice President: Andrew Fuller (vice-president@was.org.nz)

Secretary: Matt Boucher (secretary@was.org.nz)
Treasurer: Duncan Hall (treasurer@was.org.nz)

Membership Secretary: Shazia Gazi (membership@was.org.nz)
Newsletter Editor: Shazia Gazi (editor@was.org.nz)
Website: Peter Woods (webmaster@was.org.nz)
Telescope custodian: Chris Monigatti
Research Group coordinator: Roland Idaczyk

Council: Murray Forbes, John Homes, Isabella Eftimov, Grace Esterman

Postal Address:
Wellington Astronomical Society,
PO Box 3181,
Wellington 6140, New Zealand

Website: www.was.org.nz
Instagram: @was.nz
Facebook page: Wellington Astronomical Society.
Facebook group: WAS – Wellington Astronomical Society (for members)
Facebook Astrophotography group: WAS Astrophotography Group (for members).