

# THE ODDIE - BAKER

## BULLETIN

Journal of the Ballarat Astronomical Society Inc., P.O. Box 284, BALLARAT Vic. 3353



Ballaarat Astronomical Society

# THE ODDIE - BAKER BULLETIN

Editor: Phil Greenbank

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## REGULAR MEETINGS

Members Night - 2 <sup>nd</sup> Friday 7:00pm	Every month except AGM night
AGM - 2 <sup>nd</sup> Friday September	
Committee Meeting – 2 <sup>nd</sup> Thursday 6:00pm	Every month
Junior Group –Contact Judith 0419103213	2 <sup>nd</sup> Friday of the month 6pm- 7pm

Every Members night - Training in telescope use, discussions etc.  
Viewing whenever possible, in addition to scheduled viewing nights.

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The Ballarat Municipal Observatory – (W) 03 5332 7526, (M).0429 199 312

Ballarat Municipal Observatory. Cnr. Cobden & Magpie St. Mt. Pleasant. BALLARAT  
 Latitude: 37.34S Longitude: 143.51E Elevation 468m

**B.A.S. Website** - <http://observatory.ballarat.net> **E-mail address** - [bas@cbl.com.au](mailto:bas@cbl.com.au)

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NOTE: Contributions for the next edition can be sent to the editor's E-mail address:  
[psckfamily@gmail.com](mailto:psckfamily@gmail.com).

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## BAS 50<sup>th</sup> Anniversary Moon Landing Celebrations

Our celebrations for the 50th Anniversary of the Landing on the Moon was an amazingly beautiful day, the sixth in a row. The odds of predicting such a day after weeks of wet, cold weather would be astronomical!

Children's activities, our rocket Man in the form of Phil Greenbank complete with space suit and space food, kept the children and adults occupied before our several events, the announcing of the winners in the Capturing the Moon competition and presented by Cr Mark Harris and a Lecture By Saeed Salimpour - **Fly me to the Moon: From Imagination to Exploration**

The Moon in all its beauty and mystery, although seemingly desolate, has a story to tell, a story that is nearly 4.5 billion years old. Saeed took us on a journey of discovery about the Moon – from the earliest times to the future of exploration. Learning about not only the science, technology and passion that drives us to explore new frontiers, rather the people who drive this exploration. Included was the JF Kennedy



*Photo Courtesy: Ballarat Courier*

Speech followed by Houston Clip of the Apollo 11 landing.

This was followed by beautiful harp music from Jacinta Irene Dennett

- Peggy Glanville-Hicks (Sonata for Harp, 1951)
- Helen Gifford (Fable, 1967)
- Elena Kats-Chernin (Chamber of Horrors, 1995)
- Eve Duncan (The Sun Behind It Burning It, 2004)
- Johanna Selleck (Spindrift, 2008)
- Alicia Grant (Three Pieces, 2017)
- Miriam Hyde (Sunlit Waterfall, 1993)

and followed by;

**'The Infusers' with Theme of the Moon** a local folk band that featured 3 harmony singers and use a variety of acoustic instruments. They performed a range of songs that have the theme of the Moon.- Harvest Moon, Fly Me to the Moon, Moondance, Blue Moon, Bad Moon Rising.

A Limited Edition of 50th Anniversary Moon mugs designed by Saeed Salimpour, two designs one in white and one in black, were very popular.

The evening viewing session was well attended and thanks to all the members who helped during the day and night. A memorable day for a momentous anniversary event.

**That's one small step for a man....**  
**BAS members experience of the Apollo 11 Moon landing 1969**

By Darren Bellingham

So, it is now 50 years since Neil Armstrong and Edwin 'Buzz' Aldrin became the first humans to set foot on the Moon. Many of us who were alive and old enough to remember this event will be dusting off those memories this year and this article is a result of me dusting off those memories.

I was 8 years and 51 weeks old on the 21<sup>st</sup> of July when this event happened in Australia and I saw it live from about 1 pm Eastern standard time in Victoria that day. The event did not come out of the blue. We at my primary school (about 100 students) at Hepburn Springs (Population about 700 at the time) had been looking forward to this day for years. There had been the "rounding" of the moon six months earlier by Apollo 8 and the amazing photograph taken on that trip of an Earthrise on the Moon, seen in our newspapers.

We had been collecting and swapping small plastic models related to the Moon Mission from our cornflakes (or was it Weeties?) packets for many months prior to this day. Models included the command module, Saturn 5 rocket and launch tower, Lunar landing module, Apollo astronaut, space station, rocket transporter and a radio dish that looked a lot like the Parkes dish ( Most still available on e-bay for \$25 each if you want to re-live that time) and I was reading all the facts on the side and back of my cornflakes packets about how NASA would get men to the Moon and back.

Our teachers had given us lessons about the Apollo missions and what the Astronauts would do once on the Moon. TV programs explaining NASA's mission were being broadcast on a weekly basis and nightly news programs had been focusing on the mission with great anticipation. Four days earlier we had seen the lift off of Apollo 11 on the evening news. Live broadcasts from the command module on its way to the Moon had been on the news for the past 3 or four days.

This event took place in the late 1960s and Australia was a very different place then. There was no question that it would be men going to the Moon. I did not see a single woman in the NASA control room unless it was an Astronauts wife. Many of the children I went to school with had no TV at home and in order to make sure all children saw the Moonwalk that afternoon the school had organised for all children to be in a room with one of the two black and white TV's we had in the school. I have heard stories of many city schools sending children home to watch the walk but that would have been a cruel blow to many kids I went to school with as they would have missed out.

So, we were all in a room watching the live satellite, microwave and undersea cable transmitted broadcast. I think we saw it on the ABC, but I am aware that Channel 9 were continuously broadcasting the whole 163 hours of the entire Apollo 11 flight, a world record length continuous broadcast at the time and maybe that was what we were watching I cannot remember that clearly.

Interesting to note at the time we had a choice of three TV channels in our central highland's location. Two of these channels had much the same content, drawn from the three commercial channels in Melbourne. (Some children in Daylesford, 3 kilometres away, could get Melbourne channels, a total of 4 different channels of programming, we were so jealous of them) We also had the ABC which at that time had some science content namely Julius Sumner Miller's " Why is it so?" which was practical physics on TV for Children.

So, what could we see? At first just shadows of light and dark and poor quality sound of Neil Armstrong and capcom discussing his progress down the ladder. He descended the last few steps and

we could see him on the ladder of the leg of the eagle lunar module lander and heard clearly his famous lines as he stepped onto the surface. As Armstrong started taking still photos and a contingency sample of soil and rocks the signal suddenly improved and there was more detail, but it was still from a fixed camera on the side of the lunar module.

Soon Buzz joined him and they set up a portable camera on a cable that gave a much clearer wide-angle view of the lunar module and the two astronauts as they worked. Not long after that they raised the American flag and Richard Nixon called them to say a few words.

We heard discussions about rocks, the views, how to walk on the moon, seismographs, cameras and drills. All too soon the Astronauts climbed back into the Lunar Module and it was time for us to go home from school. Over the next few hours and days we watched as the Astronauts lifted off from the Moon, returned to the command module, headed back to Earth and splashed down in the Pacific Ocean 1,400 KM from Hawaii to be greeted by Richard Nixon on the warship Hornet. They then spent 21 days in quarantine. I probably have a stronger memory of this period as it was longer than the whole mission in space but eventually, they were allowed out and the celebrations really started.

So how did all this effect a nine year old boy? Well it certainly gave me greater interest in science, and this was encouraged by my father, an Engineer. He purchased some Time life books on Astronomy and technology which I read over and over, and I maintained that interest (As a hobby not a career) into my adult life, eventually joining ASV in 1992 and BAS about 10 years ago. I still take a keen interest in NASA's activities and Space probes which seem to never stop coming up with amazing new views of the universe and finding new things for us all to marvel at.

If you wish to re-live the Apollo 11 Moonwalk in its entirety in a three hour video go to this link: <https://www.nasa.gov/specials/apollo50th/videos.html>

By Phil Greenbank

On the day of the Moon landing, I was meant to have been at Beaufort High School but was sick and my mother had to take me to work with her. She was working at the Burrumbeet General Store and Post Office at the time. Mr. & Mrs. Papper's (who owned the business) house was also attached. Mrs. Papper took me up to the top room, with a heater, and put the TV on. I don't remember if I knew that the landing was on but was lying on the floor watching the TV and I clearly remember watching Armstrong and Aldrin stepping on the Moon. Later on, I received a parcel from Mrs Papper. It was a copy of the Herald-Sun's Special Moon Landing Edition "Man on the Moon". A reminder of what I had experience that day.

By Judith Bailey

I recall vividly watching Neil Armstrong climbing down the ladder whilst a 6<sup>th</sup> form Student ( now Yr 12) student at High School. It seemed so remote the vision, being not very clear, but clear enough to make out what was happening on the very small screen.

I recently watched the new Apollo 11 Movie, just 2 days after it had opened at the Regent Theatre in Ballarat. The movie was tightly scripted and nothing was superfluous. When the Control room was waiting for the response from Columbia as it re-entered the atmosphere on the return journey, the editing was so tight and well done that the hairs raised on the nape of my neck as the technicians waited for the response that would tell them that the 3 astronoauts were still alive. The reliving of the moment was exceptionally well done.

I can recall vividly, our entire school- Boisdale Consolidated School- were situated in the large cookery centre.

We numbered about 170 or so... And we were watching the walk on a large B and W telly that was sitting on 1 of the long benches against a wall.

All the students were sitting on the floor riveted to the fuzzy images on the big box!



By Sraven Pingarli

Photo Date: December 9, 2017

Location: Chambers Flat, QLD

Time: 07:21 (photo taken during the day, in the morning)

Camera Body: Canon EOS 5D Mark II  
Telescope: Celestron 6inch Refractor with EQ mount

Focal Length: 1200mm with 2x barlow; further cropped & edited in Photoshop

Exposure: 1/50 second

ISO: 100

F Stop: f/8

## NASA's 'Lost' Apollo 11 Moon Landing Tapes Could Fetch \$2 Million

Get your credit card handy. NASA's original 'lost' video footage of the Apollo 11 moon landing is heading for auction at Sotheby's later this month, where it could sell for up to \$2 million. Yes, we said 'millions.'

The sale in New York will offer three video tapes containing unaltered footage of the historic moment, beamed directly to NASA Mission Control from the lunar surface on July 20, 1969. The tapes include Neil Armstrong's first steps and his iconic declaration "That's one small step for a man, one giant leap for mankind."; the crew's phone call from President Richard Nixon; and the planting of the American flag.



All original first-generation recordings of the mission were believed to have been lost or destroyed by NASA decades ago. However, the three tapes had survived for more than 40 years in the collection of Gary George, who had purchased them by accident in a government surplus auction in 1973. At the time George was a student serving an internship at the NASA Johnson Space Centre, and he spent \$217 on a job lot of over 1,000 reusable magnetic tapes with the idea to resell them at a profit to local TV stations.



(Left) The three tapes were amongst more than 1,000 bought by student Gary George for just \$217 during a government surplus auction in 1973 (Image: Sotheby's)

George had already sold some of the tapes, and donated others to his local church, before his father noticed three of them were labelled 'APOLLO 11 EVA | July 20, 1969 REEL 1 [-3]' and 'VR2000 525 Hi Band 15 ips.' He suspected they could be important and set them aside, but then soon forgot about them, and they remained tucked away in his collection until

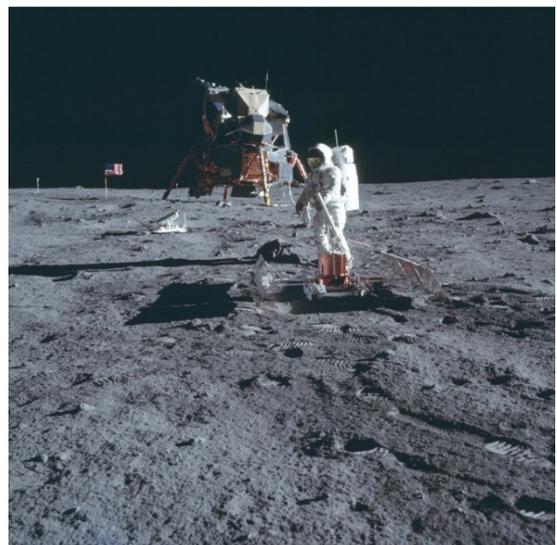
2008, as the world prepared for the 40<sup>th</sup> anniversary of the Apollo 11 mission.

NASA began a public search for any first generation recordings, after admitting their original tapes were lost; either recorded over during the intervening years or destroyed due to poor storage conditions. George quickly realized he may have been sitting on the original tapes without knowing – and he was right.

When he took them to a specialist and viewed them on vintage equipment for the first time, he became one of the few people in history to ever watch the moon landings in such high quality. Previously, the only people who had seen the clean, unenhanced and unremastered raw footage were those at Mission Control, as it was recorded onto 45 reels of high quality SSTV (slow scan) videotape.

At the same time, it was also converted to NTSC for network broadcast, and then recorded onto the reels of 2-inch Quadruplex videotape. As the footage was bounced across the U.S using microwave transmission towers, the quality of the video and audio decreased with each generation. Subsequent tapes recorded by TV stations lost the sharpness of the images and audio, meaning these original videos offer the highest quality recordings of the Apollo 11 moonwalk known to exist.

(Right) The tapes feature the only-known first-generation footage of the Apollo 11 landings and the moon walk carried out by Neil Armstrong and Buzz Aldrin known to exist (Image: NASA)



The tapes have now been digitised and are expected to sell for \$1 – \$2 million when they hit the block as part of a sale celebrating the 50<sup>th</sup> anniversary of Apollo 11. “The successful lunar landing of Apollo 11 captured the world’s attention 50 years ago, uniting us in a collective belief in the unlimited potential of mankind,” said Cassandra Hatton, Vice President & Senior Specialist in Sotheby’s Books & Manuscripts Department.

“From neighbours gathered around a television set to the cosmonauts in Star City and the astronauts and engineers in Houston, this was a unique event in history that people from all walks remember with excitement and positivity. “And what we universally recall about that event is best documented on these tapes – a glorious moment that united the people of earth in peace, as witnesses to mankind’s greatest achievement.”

*Source: Just Collecting News & Dave Reneke.*

<b>CAPTURING THE MOON 2019 – Photo Competition</b>
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**1<sup>st</sup> “First Quarter Moon” – Talia Carroll.** This First Quarter phase occurs roughly 7 days after the New Moon when the Moon is one quarter of the way through its orbit around the Earth. Exactly half of the Moon was illuminated and half dark. This was taken during the daylight before sunset with a Nikon D7100 and a Celestron Nexstar 4 SE Telescope. The best viewing/photographing time for the Moon is when it is not a full Moon as the craters become more prominent, this is demonstrated in this image.



**2<sup>nd</sup> “Bramble Cove Moonrise” – Bill Burrell.** Moon rising over mount Misery and shining over Bramble Cove. The photo was taken at the helm of a brigantine, altitude of lens recorded 2.53 metres above sea level (i.e. the aft deck plus the helmsman’s height). Location’s latitude and longitude was recorded at 43° 19’ 34.99” S by 145° 59’ 48.63” E. At the time of image capture (19 March 2019, 1953 hours + 10 UTC) the tide was 0.52 metres above lowest astronomical tide (LAT). Given the ship’s exact location we, at that

time and place, had 6.05 metres under our keel. This confirmed the (AUS 176) Chart Datum’s depth for that location. The Moon was still two days from full but still brilliant at 95.6% illumination. It was therefore impossible to capture the Moon’s surface in detail without casting the cove’s detail in darkness.



**3<sup>rd</sup> “First Quarter Moon 2” - Bob Smith.** The image was taken at Learmonth, Victoria on the 10<sup>th</sup> June 2019 using a 125mm telescope, f1.9, ISO 80.



**Commendable “Full Moon” – Bill Burrell,** Taken two hours from its last phase on 17<sup>th</sup> June 2019 at 8.39pm AEST. The Moon, at this time roughly 389,900km from Earth, it’s distance to earth still caused a lesser gravitational effect. However, being in alignment with the Sun with respect to the Earth, its gravity does affect Earth’s tides. So, although not perigean, tide variations between high and low were greater. Mare Tranquillitatis, where Apollo 11’s module landed, is still visible as a dark patch- this time in the left upper side of the photograph.

The axis’ longitudinal libration appears more pronounced than its +/- 8 degrees. This is due to the Moon’s latitudinal libration of +/- 6.5 degrees. These librations allow us to see up to 59% of the Moon’s surface. A graphic illustration from NASA of these oscillations can be seen at [https://www.youtube.com/watch?v=3f\\_21N3wcX8](https://www.youtube.com/watch?v=3f_21N3wcX8)

Other entries included;



**“Pearl Moon” – Gordon Harvey.** Bill May is the oldest male Chinese resident in Ballarat and gives him the title Uncle. The oldest Chinese dragon in the southern Hemisphere was found. It had gone missing for many years and was discovered under a staircase in Ballarat. Bill was called on to play the Chinese drum to awaken the dragon, this must be done two times. The ghost of the dragon when stirred sometimes appears in the sky. The photograph was taken after I heard Bill play the drum; the dragon on a windy night is flying by a Pearl Moon four nights after a full moon on the 23/3/2019. My mother told me about the shape of a Pearl Moon.



**“Full Moon” – Kay Stephens,** this image was taken on a full Moon. I thought the tree branch in front of the Moon made the craters and other features on the Moon “pop”. I am what astronomers call a romantic because “I like to look”. This is also a black and white image. Taken with a Canon 1100D, F/10, 1/125sec exposure, ISO-100, 75-300mm lens. 24/1/2019 at Lal Lal Vic.



**“Full Moon”- Kay Stephens** image taken from behind a tree trunk. This image shows the craters on the edge of the Moon. Astronomers call me “a romantic” because I like to look. This is a black and white image taken with a Canon 110D, F10, 1/125sec exposure, ISO-100, lens 75-300mm. 24/1/2019 at Lal Lal Vic.



**“Total Lunar Eclipse” – Talia Carroll.** This image was taken on the 7<sup>th</sup> July 2018 during the Total Lunar Eclipse. A Lunar Eclipse is when the Moon appears darkened when the Earth blocks part but not all of the Sun’s rays from reaching the Moon. In Australia, we weren’t able to see this whole event till the end because the Moon set below the horizon when it was still in its maximum phase, however we were able to see the penumbral, partial and full eclipse phases. This image was taken with a Nikon D750 and a Celestron 4 SE Telescope. This image demonstrates the brightness of the full Moon passing through a small amount of clouds during the partial eclipse phase.



**“Full Moon” – Frank Hecker,** taken at Lal Lal Falls Reserve 19/2/2018 at 8.40pm camera Nikon.



**“Blood Moon” – Frank Hecker,** taken at Lal Lal Falls Reserve 28/7/2018 at 5.34am. Taken on a Nikon camera.



**“Waxing Gibbous Moon”- Bill Burrell.** Taken one day from the 1<sup>st</sup> Quarter on 11<sup>th</sup> June lesser gravitational effect with respect to the Earth as it and the Sun are perpendicular to one another. Tide variations between high and low were significantly less. This is also the best time to study the line between light reflected from the Sun and the far side’s shadow (i.e. Lunar Terminator). Lunar topography is better contrasted now than when the Moon is full. From Earth we only see the near side by light reflected from the Sun (with a variation of +/- 8 degrees due to its axis’ longitudinal libration (“wobble”). The Moon appears stationary because it’s axis rotation (~ 27 days) is almost in synchronization with its sidereal (Lunar) orbit around the Earth (~27.32 days). Mare Tranquillitatis, where Apollo 11’s Lunar Module landed, is visible as a dark patch in the bottom centre of the Photograph. Mare Serenitatis is to its immediate right. The mighty Apennine Mountain Range is between the two plains. Apollo 15’s LM landed and extensively explored this region.



**“First Quarter Moon 1” - Bob Smith.** The image was taken at Learmonth, Victoria on the 10<sup>th</sup> June 2019 using a 125mm telescope, f1.9, ISO 80.



**“First Quarter Moon 3” - Bob Smith.** The image was taken at Learmonth, Victoria on the 10<sup>th</sup> June 2019 using a 125mm telescope, f1.9, ISO 80.

## IY of the Periodic Table of Elements 2019 - Periodic Table Word Quiz

[Congratulations to the Winners](#)

### [Periodic Table Magnets](#)

Elif Bayir - Coolaroo

Tammy and Peter Cox - Glenelg Sth

Ruth Varenica - Ballarat

### [Periodic T Shirts.](#)

James Williams - Geelong South

Boyle Family - Ballarat Central

Libby Rosin - Geelong West

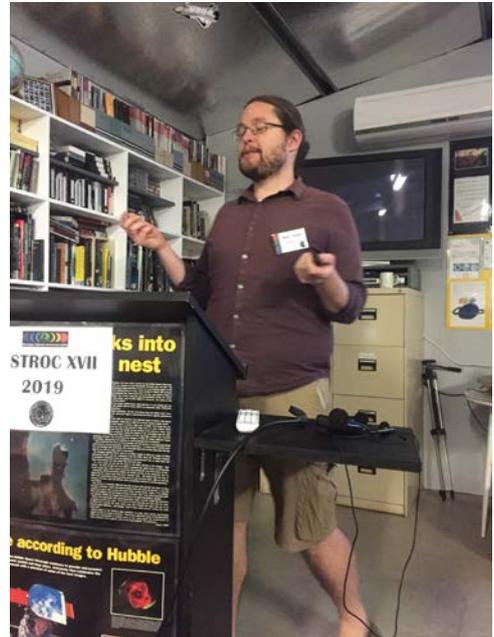
VASTROC 2019

VASTROC this year was held at The Briars where the Mornington Peninsula Astronomical Society has their home. It was mostly held on the Saturday with a two stream program, one for astrophotographers and the other for more amateur astronomers including history and spectroscopes.

I have purchased a new book for the Library " Imaging Sunlight Using a digital Spectroheliograph" by Ken Harrison, who gave an excellent talk on the subject. The MPAS generally run an astrophotography workshop and this year it coincided with VASTROC.

The keynote Speaker for the Saturday Evening talk was Dr Brad Tucker form the ANU. I have been speaking with Brad over several years mainly regarding the Guinness World Record attempts for observing the Moon through a telescope and more recently Stephen Slater's visit in conjunction with the 50th Anniversary of the Moon Landing. It was good to finally meet up with Brad. Brad gave an excellent talk on the future of space junk and space travel.

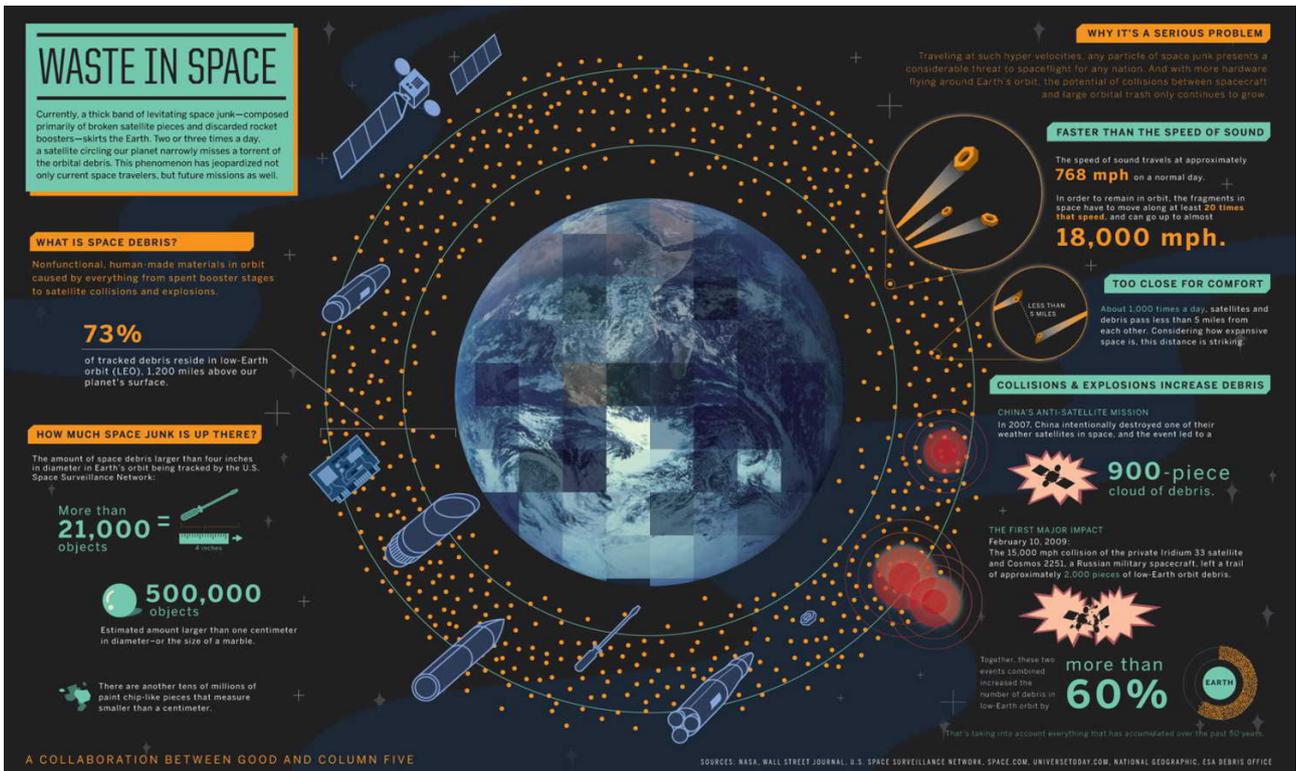
Australia is currently the only country which is entering into the elimination of small pieces of space junk using a powerful laser to disrupt their orbit and send them into an unstable orbit so that they burn up in the Earth's atmosphere. Brad also discussed the dangerous environment outside the Earth's atmosphere and its effect on humans. Which will happen first, finding life in some form no matter how small somewhere other than Earth or setting up a successful colony on Mars?



What do you think?



One of the remarkable occurrences at this year's VASTROC was the number of women attending, a precedent, I think. The former is mainly due to a lot of women who are interest in astrophotography.



Judy Bailey

**BAS & National Science Week 2009**

**NSWk in the Golden Plains Shire 12th August**

Barry Coverdale and I took some educational materials and a telescope out to Woody Yallock Community Centre for the School cluster and Community Bing, Bang, Boom! An explosive night of science fun. The clouds were numerous and just a few parents and students caught a fleeting glimpse of the Moon.

**Mt Pleasant PS Rocket Day 23rd August**

Another event for NSWk was with the students from Mt Pleasant St PS, as part of our engaging Mt Pleasant Community Program. Again, the weather was beautiful and the rockets, sunprints and other activities were a great success.



## Apollo 11 Movie Archive Producer Stephen Slater In Conversation 27th July

### Whirlwind visit!

It was a great pleasure to welcome Stephen to Ballarat. Brad Tucker from the ANU together with



Peter Skilton MPAS and I worked on getting a speaker for the Anniversary of Apollo 11. Fortunately, Stephen could fit a visit in on his way home from Canberra, back to the UK. Thanks to Barry Adcock who picked up Stephen from Melbourne, Graeme Knight who drove Stephen to the airport early Sunday morning and Doug Stenhouse who posted Stephen's very expensive earphones left behind to Qld to reach him before his final flight home.

Stephen took us on a behind the scenes fascinating journey about the making of the Apollo 11 movie and his work. Stephen's favourite footage is the part where the camera is travelling over the visitors to watch the actual launch.

One evening in May 2017, Stephen Slater got an unusual email from the US National Archives. NASA had left a trove of untouched Apollo 11 specific film reels sitting in cold storage, the message read. And he could access them. Slater, an archival producer and self-confessed space nerd, was "stunned."



He was at his home in Sheffield, England, waiting for his usual Skype call with director Todd Douglas Miller ..... They needed to complete the film in time for the moon landing's 50<sup>th</sup> anniversary this July.

That's when the email came in.

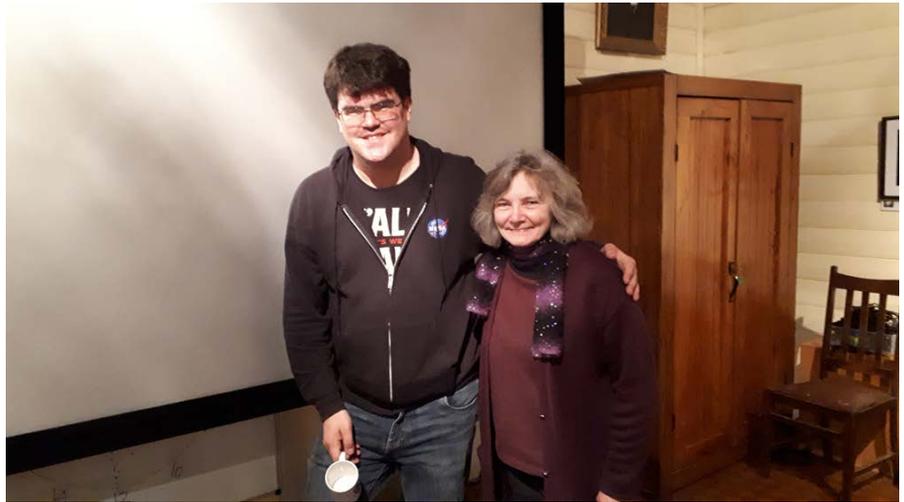
"[The US National Archives] didn't know much about the content, had no indication whether it was in good condition," Slater says. Finding records of the moon landing is a mission itself: NASA taped



over its own records of the landings to save costs, instead of having to buy more expensive tapes for future programs. Miller and Slater scavenged materials from everywhere: Old NASA engineers sent them cassette tapes from launch day, records kept in places like the Parkes Observatory in Australia.

.....they were in pristine condition. *And they'd never been seen before.*

I endeavoured to have my copy of the Apollo 11 movie which arrived 2 days before the talk (I ordered it way before Stephen's visit was on the horizon) to show on the night but was advised that the Regent Theatre in Ballarat had the rights and fortunately they had opened in Ballarat for Apollo 11 movie that day as well. After the talk most of us left to go and see Apollo 11 at the Regent Theatre and then afterwards for a drink and Q&A at the George Hotel a few doors away. A great ending to memorable night. The whirlwind preparations, all in the same week!! were a success.



Judith Bailey.



Moon songs
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Below is a sample of songs that I have come across that mention the word Moon in the title. I'm sure there is a lot more that I have missed. How many of these do you know? *Ed.*

1st Band on the Moon	Master of the Moon	Sail to The Moon
Bad Moon Rising	Mississippi Moon	Sea of Tranquility
Bark at the Moon	Monkberry Moon Delight	Shame on the Moon
Between Sun & Moon	Moon Baby	Shoot Down the Moon
Big Bad Moon	Moon Blue	Sister Moon
Big Sur Moon	Moon Dawg	Sisters of the Moon
Black Moon Creeping	Moon Dew	Sleeping Satellite
Black Moon	Moon Is a Harsh Mistress	Slow Dancing with the Moon
Blue Moon	Moon Is Up	Small Town Moon
Blue Moon Nights	Moon Madness	Song About the Moon
Buicks to the Moon	Moon Over Bourbon Street	Standing on the Moon
Caribbean Moon	Moon Over Marin	Sugar Moon
Casablanca Moon	Moon Over Miami	Sun on the Moon
Chase the Moon	Moon River	Tahitian Moon
Child on the Moon	Moon Rocks	Talking to the Moon
Clouds Across the Moon	Moon Song	The Killing Moon
Dancing Down the Moon	Moon, Turn the Tides	The Moon Got in My Eyes
Dancing in the Moonlight	Moonage Daydream	The Moon Is a Harsh Mistress
Drunk on the Moon	Moonchild	The Moon Just Looks Down and Laughs
Everyone's Gone to the Moon	Moondance	The Moon Struck One
Fall Dog Bombs the Moon	Moon	The Moon Was Yellow
Fingernail Moon	Moonlight	The Moon
Fly Me to the Moon	Moonlight Drive	The Rising of the Moon
Freezing Moon	Moonlight Mile	The Same Moon
Full Moon Night	Moonlight on Water	Ticket to the Moon
Full Moon Rising	Moonshadow	Till the Moon Comes Out
Full Moon	Mountains of the Moon	To the Moon & Back
Grapefruit Moon	Mr. Moonlight	Two Sides of the Moon
Half Moon	Must Be the Moon!!!	Under the Cherry Moon
Halfway To The Moon	My Moon My Man	Under the Funeral Moon
Harvest Moon	New Blue Moon	Under the Moon of Love
Havana Moon	New Moon on Monday	Under the Phantom Moon
Here Comes the Moon	New Moon Over Jamaica	Underneath the Harlem Moon
Honky Tonk Moon	At the Hill Where We Can See the Moon Tonight	Virginia Moon
How High the Moon	No Moon at All	Waiting for the Moon to Rise
I Wished on the Moon	Nothin' New Under the Moon	Walking on the Moon
It's Only a Paper Moon	Oh You Crazy Moon	Water from the Moon
Johnny Moon	Old Devil Moon	We in the Moonlight
Jump the Moon	Once in a Blue Moon	What's Next to the Moon
Kentucky Moon	Once in a Very Blue Moon	When My Blue Moon Turns to Gold Again
Let's Go to the Moon	Orange Moon	White Moon
Let's Pretend That There's a Moon	Party on the Moon	Whitey on the Moon
Like the Moon	Picasso Moon	Who Killed Mr Moonlight
Mad Man Moon	Pink Moon	You Hung the Moon
Man in the Moon	Puttin' People on the Moon	
Man on the Moon	Reaching for the Moon	
Marquee Moon	Red Hot Moon	

## Apollo facts: 11 Things You Don't Know About the Moon Mission

As the Apollo 11 moon landing's 50th anniversary nears on July 20, even the most avid space fans might think they know all there is to know about the historic first moon landing. Think again.

Using NASA documents, our Orlando Sentinel archives and other sources, we've created this list of 11 little-known facts about the Apollo 11 mission. Keep track of how many you know, and we'll grade you at the end.

### 1. Why is there a U.S. flag on the moon?

Neil Armstrong and Buzz Aldrin planted the American flag on the moon, but who made that decision? Would you believe Congress?

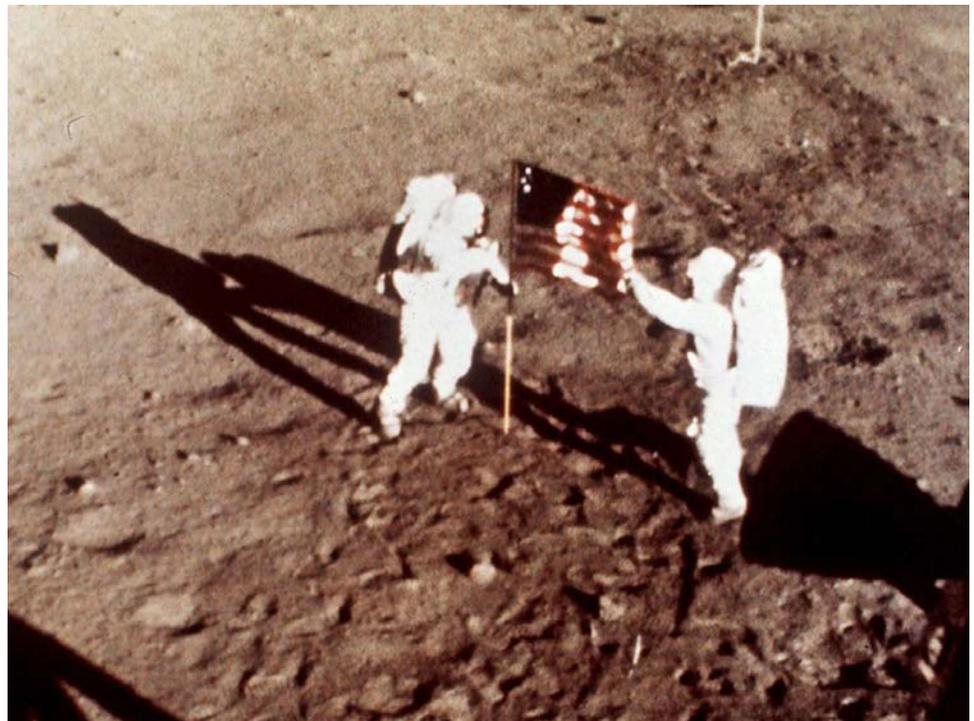


About a month before the mission, there was a growing call to place a United Nations flag on the moon, symbolizing the historic moment for the world and humans.

“You might have some nice international implications by using somebody else’s flag, but I think you would have some very bad internal reactions and a great reduction in funds for NASA if anything like that happened,” Rep. Burt L. Talcott, R-Calif., warned NASA Administrator Thomas Paine during a meeting of the House Appropriations Subcommittee on June 6, 1969.

(Right) Apollo 11 astronauts Neil Armstrong and Buzz Aldrin plant the U.S. flag on the lunar surface. (NASA via Associated Press / AP)

Just to make sure that Paine and NASA got the message, days later Congress added an amendment to a NASA budget bill prohibiting any flag except an American one from being placed on the moon.



The amendment's author, Rep. Richard Roudebush, R-Ind., noted that Americans had paid \$23 billion for the space program to that point. “And it doesn't seem far-fetched that the U.S. flag should be placed there on the moon as a symbolic gesture of national pride and unity. U.S. taxpayers paid for the trip.”

## 2. There are other flags on the moon?

Old Glory had company on the moon.

Did you know around 200 flags flew to the moon aboard Apollo 11?

NASA documents note, “It was decided that, in addition to the large [American] flag, 4-by-6-inch flags of the 50 states, the District of Columbia, the U.S. territories, and flags for all member countries of the United Nations and several other nations, would be carried in the lunar module and returned for presentation to governors and heads of state after the flight.”

## 3. Who designed Apollo 11’s mission patch?

Guess the Apollo 11 crew member who was an amateur graphic designer? Michael Collins, the command module pilot, actually designed the mission emblem, with input from Armstrong and others.



The Apollo 11 mission patch was created by astronaut Michael Collins, who piloted the Apollo 11 command module that orbited the moon. (Associated Press)

According to NASA, after the crew decided to name the lunar module Eagle, Collins found a picture of an eagle in a National Geographic book – tracing it on a piece of tissue paper.

“He then sketched in a field of craters beneath the eagle’s claws and the Earth behind its wings,” a NASA story noted.

“The olive branch was suggested by Tom Wilson, a computer expert and the Apollo 11 simulator instructor, as a symbol of the peaceful expedition.

Collins quickly modified the sketch to have the eagle carrying the olive branch in its beak.”

But the design was rejected.

“Bob Gilruth, the director of the then-named Manned Spacecraft Centre, saw the eagle landing with its talons extended as too hostile and warlike,” NASA said. “So, the olive branch was transferred from the eagle’s mouth to his talons, a less menacing position.

“Although happy with the design, Collins maintained that the eagle looked ‘uncomfortable’ in the new version and that he ‘hoped he dropped the olive branch before landing.’”



(Above) Apollo Commander Thomas P. Stafford (in foreground) and Soyuz Commander Alexei A. Leonov make their historic handshake in space during the joint Russian / American docking mission known as the Apollo Soyuz Test Project. The first joint U.S.-Russian space mission came in 1975. (NASA)

#### **4. One small step for a Ruskie?**

Did you know there might have been a Russian standing next to Armstrong on the moon if President Kennedy had his way?

On Sept. 21, 1963, Kennedy spoke at the United Nations and offered to make the lunar landing a joint venture between the U.S. and the Soviet Union.

“Why ... should man’s first flight to the moon be a matter of national competition?” Kennedy asked. Why make such an offer? The projected cost of the moon-landing program had ballooned to \$20 billion in 1963 and Congress threatened to cut NASA’s budget.

Kennedy’s idea fizzled, and when he was killed just weeks later, there was a renewed sense of purpose to fulfil his moon-landing goal.

#### **5. Running a little late?**

With no issues – technical or otherwise – to stop the countdown, Apollo 11 blasted off from Kennedy Space Centre at 9:32 a.m. on July 16, 1969.

But did you know that it was actually late? Launch director Rocco Petrone broke the news to the assembled media after the launch.

“We were 724 milliseconds later for the start of this mission that really started eight years ago,” he said.

#### **6. What historic date?**

What if there had been a major delay in the Apollo 11 countdown?

NASA had eight other dates picked for the launch: July 18 and 21; Aug. 14, 16, and 20, and Sept. 13, 15, and 18.

Those dates provided the correct azimuths for astronauts to get into Earth parking orbit and also, later, the right days for acceptable sun angles on the lunar landing sites.

So, instead of celebrating humans’ first moon landing on July 20, our Moon Day might have been Aug. 18 or even Sept. 22.

#### **7. What was the mission goal?**

NASA had a way of making things complicated. It called spacewalks “extravehicular activities,” for example.

For all of its jargon and super technical talk, NASA’s official mission objective for Apollo 11 was simple.

It was just seven words: “Perform a manned lunar landing and return.”

#### **8. Houston, is there a problem?**

Every crewed space mission has a backup crew. For Apollo 11, the backup crew was James Lovell, William Anders and Fred Haise.

Do you know why those names sound familiar?

Lovell and Haise were two-thirds of the crew of the ill-fated Apollo 13, the only moon mission that had to be aborted. Jack Swigert was the other Apollo 13 crew member.

If you've read history or seen the 1995 Ron Howard film about the mission, you know they all survived.



*(Right)* Apollo 11 Astronauts (L-R) Neil Armstrong, Michael Collins and Edwin Aldrin chat with President Nixon as he stands outside their mobile quarantine facility. Nixon flew to the Pacific recovery point to be on hand to greet the astronauts upon their return to Earth from the Moon, July 24, 1969. (BETTMANN-UPI)

## 9. Guess who's not coming to dinner?

Newly elected President Nixon was heavily involved with the Apollo 11 mission. He phoned the astronauts on the moon after their landing, and he was there to greet them when they splashed down. But he wanted to be even more involved.

“Officials here said the President will fly to Cape Kennedy the night before the July 16 launch to have dinner with the astronauts in their crew quarters,” the Sentinel reported on its front page on June 29.

The White House plan sent NASA's chief astronaut doctor into proverbial orbit.

Dr. Charles A. Berry strongly discouraged Nixon from dining with the Apollo 11 astronauts the night before their planned liftoff. He worried the president might pass germs to them that could complicate the lunar mission. So, the dinner was scrapped

Presidential press secretary Ron Ziegler said on July 7 that Nixon would skip the dinner “based on the NASA thinking on this matter.”

## 10. What'd he say?

Almost everyone knows Armstrong's first words when he set foot on the moon.

But when Aldrin became the second human to touch the lunar surface, what did he say?

NASA transcripts record his first words as, “Beautiful. Beautiful.” Others, when hearing the audio, say it's “Beautiful view.”

But at least we can agree his first word was “beautiful.”

### 11. What's that smell?

The Apollo 11 astronauts found a lot of craters and boulders on the moon. Did you also know they found the moon had a smell?

According to Smithsonian Magazine, when Armstrong and Aldrin ended their moonwalk, climbed in the lunar module and removed their helmets, they noticed a distinct smell.

“We were aware of a new scent in the air of the cabin that clearly came from all the lunar material that had accumulated on and in our clothes,” the magazine quoted Armstrong as saying.

Armstrong said the smell was similar to “the scent of wet ashes” while Aldrin described it as “the smell in the air after a firecracker has gone off.”

The strange thing is, the magazine reported, that once the moon dust got back to Earth, it lost its smell.

How did you do? Give yourself 1 point for each item you knew. If you got zero to three, you're worthy of a telescope. Four to eight, you might want to work at NASA. And nine to 11, you're ready to go into space.

