

Adelaide Planetarium

Guide for Schools



Contents

About the Planetarium.....	3
How to get the best out of the Planetarium experience	3
Sky and Space.....	3
Solar System topics.....	3
Basic questions about the stars	4
Some useful information when visiting the Planetarium.....	4
Movie List	5
Tycho to the Moon.....	5
Tycho Goes to Mars	5
The Great Solar System Adventures	5
Tilt.....	6
Astronaut	6
Wildest Weather in the Solar System.....	6
Starlight	7
Black Holes – Journey into the Unknown	7
Cosmic Collisions.....	7
The Sun, Our Living Star.....	8
Sunstruck.....	8
MOON 2019.....	8
The Hot and Energetic Universe.....	9
From Earth to the Universe	9
Capturing the Cosmos.....	9
Phantom of the Universe – The Hunt for Dark Matter	10

About the Planetarium

The Planetarium is located at the University of South Australia, Mawson Lakes Campus and is part of the UniSA STEM Unit.

The Adelaide Planetarium astronomy educators take the audience on a virtual guided tour of the Solar System and the universe. Our specialised software simulates the starry sky on an 8-metre dome and plays our fulldome movies.

The experience provides a remarkably realistic sense of being under the real night sky. It is used to show the sky as seen from the Southern Hemisphere, pointing out constellations, the Milky Way, the Magellanic Clouds and the positions of the planets. It also demonstrates the general celestial motions that cause the sky to rotate throughout the night and appear different at various times of the year.



The Planetarium can seat a maximum of 45 people.

We welcome students of all year levels from junior primary to adult level.

Being one of the smaller planetariums in Australia, we have the advantage of being able to interact and engage with the audience. This provides a unique and rewarding experience for all.

How to get the best out of the Planetarium experience

Students that are prepared in advance with some information about the Solar System, space exploration and stars are more likely to ask questions and get value from the session.

Monthly Southern Star maps can be downloaded for free from this weblink: <http://skymaps.com>. Be sure to select the Southern Hemisphere version for the current month.

We follow the ACARA Framework Strand: Earth and Space Sciences and our sessions are tailored to the attending year levels.

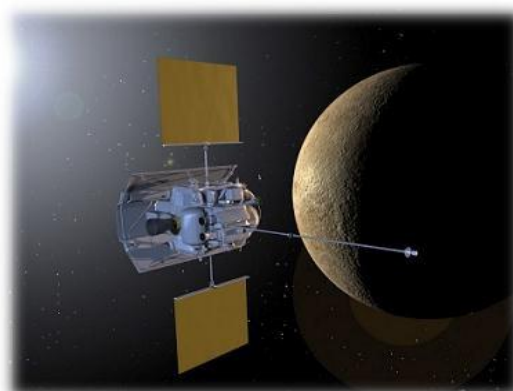
Some topic ideas for students to research or ask about during their planetarium session:

Sky and Space

- What are constellations?
- What is the difference between a star and planet?
- Why does the Moon change phases during the month?
- How do the cycles of the Sun and Moon affect us on Earth?
- Animals that use the stars for navigation?
- How far out have humans travelled in space?
- What can a pair of binoculars show in the sky?

Solar System topics

- The order and distances of planets
- The difference between rocky planets and gas giants
- Why gas giants are so big and rocky planets small
- Where do asteroids and comets come from?
- How was the Moon formed?
- Planetary exploration with space craft



Basic questions about the stars

- What is a star?
- How are they formed; how do they die?
- The nature of the Milky Way (is it a galaxy)?
- How big is the Milky Way?
- How old is the universe?
- What are black holes?
- Have we found life out in space?

There are also handouts and worksheets available at the Planetarium or can be emailed upon request.



Some useful information when visiting the Planetarium

As the planetarium is located within the *College of Science* there are often classes and tutorials in progress in adjacent rooms during weekdays.

We ask that when visiting the Planetarium please keep the noise level to a minimum as your students enter the building and head up the stairs, and while entering the planetarium.

- Please arrive **10-15mins before** the scheduled session to allow time to use the toilet facilities and be ready in the foyer area on level 2 to begin at the allocated time.
- Please check-in with a staff member upon your arrival to confirm numbers.
- Toilets are located on level 2, the same level as the Planetarium, diagonally across the foyer.
- When inside the planetarium we ask that everyone respects the equipment and chairs.
- Please refer to the booking form for prices.
- The Planetarium has a maximum seating capacity of 45 people.
- Use of mobile phones, electronic devices and photography are prohibited inside the Planetarium.
- Be aware that the lights will be turned down and it will be dark for most of the session.
- If you want to take photos inside the planetarium, please ask the astronomy educator running your session.
- A session lasts for approx. 50-60 minutes. Extended sessions can be arranged prior to your visit with the Planetarium Coordinator. *Extra charges apply.
- A parking information sheet is attached with the booking form.
- There is a lift located in the building for access up to level 2.

TO BOOK: Please call 8302 3138 or email: planetarium@adelaide.edu.au

We trust that everyone will find the planetarium visit educational and enjoyable!

Movie List

They are fun, educational and something to suit everyone!

Click [here](#) to view our Movie trailers

Tycho to the Moon

'Tycho to the Moon' is a show produced especially for the kids - shown on the Planetarium 360-degree full digital dome. Tycho is the dog that doesn't just howl at the moon...he goes there. Blast off on an amazing ride with Tycho and his friends, Ruby and Michael on a great adventure in space. Learn about night and day, phases of the moon, space travel and the lunar surface. See what it is like to play in zero gravity, watch meteors shoot across the night sky, witness earth from space and get a close look at the sun.

Suitable for: ages 4-8 **Movie Duration:** 20 minutes



Tycho Goes to Mars

Tycho, our favourite cheeky dog with a knack for getting into trouble, is finally blasting off to discover the red planet, Mars! We'll learn all about the major features of Mars, including the ancient volcano Olympus Mons and the canyons of the Valles Marineris. Tycho is in search of water to fly his steam-powered space kennel back home. But how will he find water on Mars, when it looks so cold, dusty and dry? Luckily, he discovers a new friend, Oppy, who is all too eager to help. Oppy - the NASA rover, Opportunity - has lots of experience exploring Mars and hunting for water. She is thrilled to share her knowledge of the red planet with a fellow space explorer.

Suitable for: ages 5-8 **Movie Duration:** 27 minutes



The Great Solar System Adventure

Join showman extraordinaire "The Great Schiaparelli" as he takes the audience on a death-defying space-time adventure within his wondrous Observatory.

From the sun-scorched surface of Mercury to the icy expanses of Pluto and beyond, prepare to be subjected to the myriad dangers and wonders of our Solar System, on a breathtaking tour that reveals just how precious our home planet really is.

Be warned though, the Observatory isn't just for show. It will transport the audience right to the heart of some of the deadliest locations in our slice of the heavens. It's going to take some fancy flying to get everyone back in one piece!

Suitable for: ages 5+ **Movie Duration:** 25 minutes

Tilt

Join Annie and Max and their robot friend as they fly into space to discover how the seasons work. They examine the apparent path of the Sun and the tilt of the Earth to find out about the day-night cycle and why it is different at different places on Earth and at different time of the year. They understand how the seasons are opposite in the Northern and Southern Hemispheres and are caused by two factors, the tilt of the Earth and the path of the Earth around the Sun.

Suitable for: ages 7-10 **Movie Duration:** 25 minutes

Astronaut

The exploration of space is the greatest endeavour that humankind has ever undertaken. What does it take to be part of this incredible journey? What does it take to become an astronaut?

Experience a rocket launch from inside the body of an astronaut. Explore the amazing worlds of inner and outer space, from floating around the International Space Station to manoeuvring through microscopic regions of the human body.

Suitable for: ages 8+ **Movie Duration:** 23 minutes



Wildest Weather in the Solar System

Join National Geographic on a spectacular journey to witness the most beautiful, powerful, and mysterious weather phenomena in the solar system. From a storm the size of a 100-megaton hydrogen bomb, to a 400-year-old hurricane, to a dust storm that could engulf entire planets.

Audiences will fly through the thick atmosphere of Venus, encounter magnetic storms on the sun, liquid methane showers on Titan, and anticyclones whirling at hundreds of miles per hour on Jupiter. Packed with eye-popping visuals, amazing computer-generated imagery and cutting-edge science.

After this whirlwind adventure, you'll be glad you live on Earth!

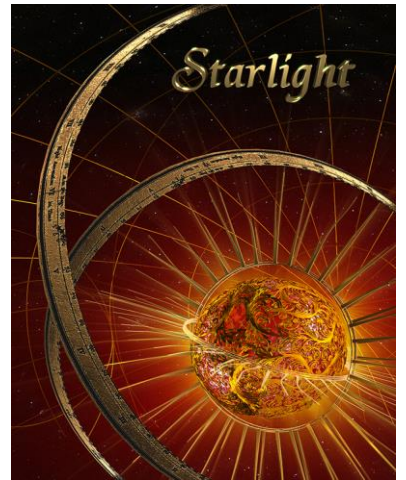
Suitable for: ages 8+ **Movie Duration:** 20 minutes



Starlight

For thousands of years, we have looked to the stars at night in wonder and awe. Their mysteries have inspired curiosity across all cultures and civilisations. Narrated by multi-award-winning Australian actress Sigrid Thornton, *Starlight* is told through the eyes of Margaret, as she steps back in time to relive childhood fears of the dark that awoke her curiosity about the night sky. Join Margaret as she takes you on an out-of-this-world journey to discover constellations and ancient cultures, the birth and death of a star and the inner workings of our Sun. *Starlight* features stunning full-dome visualisations of being inside a supernova explosion and drifting through a stellar nursery, a rich gaseous nebula that is collapsing into stars.

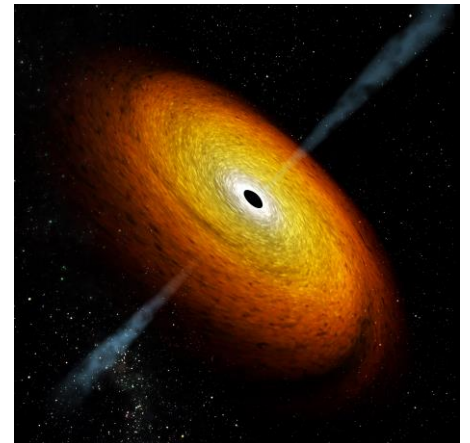
Suitable for: ages 8+ **Movie Duration:** 27 minutes



Black Holes – Journey into the Unknown

Imagine a place where time stands still, and the known laws of physics don't apply. A place where reality as we know it breaks down. Welcome to the world of black holes. Narrated by Geoffrey Rush, this planetarium show brings to life all that is fascinating and extreme about black holes. What makes a black hole? How do we find them? Would you survive falling into one? No longer the stuff of science fiction, the discovery of black holes is a triumph of modern science. Follow their story from an extraordinary idea of the late 18th century to their unexpected detection almost 200 years later.

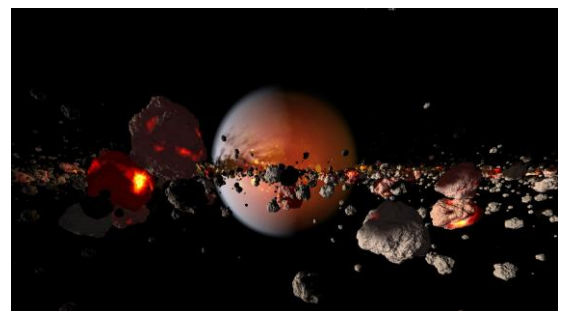
Suitable for: ages 10+ **Movie Duration:** 25 minutes



Cosmic Collisions

A radical change from our peaceful night sky. *Cosmic Collisions* presents the spectacular result of gravity pulling together planets, stars, and galaxies. Here are explosive encounters that ended the age of the dinosaurs and gave birth to new stars but also created conditions essential for life on earth the Sun's warmth, ocean waves. *Cosmic Collisions* provides an extraordinary view of these forces - constructive or catastrophic - that continue to affect our universe.

Suitable for: ages 10+ **Movie Duration:** 23 minutes



The Sun, Our Living Star

The Sun has shone on our world for four and half billion years. The light warms our skin today has been felt by every person who has ever lived.

It is our nearest star and our planet's powerhouse, the source of the energy that drives our winds, our weather and all life.

The passage of the Sun's fiery disc across the sky – day by day, month by month – was the only way to keep track of time for countless past civilisations. Don't be fooled by the terminology; although it is a typical dwarf star, the Sun consumes 600 million tons of hydrogen each second and is 500 times as massive as all the planets combined.

Discover the secrets of our star in this Planetarium show and experience never-before-seen images of the Sun's violent surface in immersive fulldome format.

Suitable for: ages 10+ **Movie Duration:** 25 minutes



Sunstruck

Travel back to the beginning of time and experience the birth of the Sun. Discover how it came to support life, how it threatens life as we know it, and how its energy will one day fade away.

A visually captivating experience and easy to understand dialogue makes it a great one for students.

Suitable for: ages 8+ **Movie Duration:** 21 minutes



MOON 2019

First steps on another world – The 50th Anniversary of the Apollo Moon Landing. This fulldome movie commemorates Apollo 11's touchdown and exploration at Tranquillity Base on 20 July 1969.

This remarkable event was a watershed in human history and a technological achievement of astounding proportions: the mission went to the Moon and back with less computing power than a modern smart phone.

This brilliant documentary reveals the origins of Werner von Braun, the man who dreamed from age 16 of sending rockets into space, and how his infamous V1 and V2 missiles became the blueprint of NASA's most famous rocket of all: the Saturn V.

Suitable for: ages 10+ **Movie Duration:** 12 minutes



The Hot and Energetic Universe

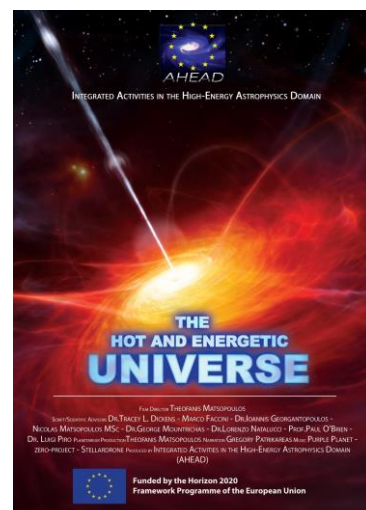
The Hot and Energetic Universe presents with the use of stunning, immersive visualisations and real images the achievements of modern astronomy, the most advanced terrestrial and orbital observatories, the basic principles electromagnetic radiation and the natural phenomena related to High Energy Astrophysics.

High Energy Astrophysics plays a key role in understanding the universe. These radiations reveal the processes in the hot and violent universe.

High Energy Astrophysics probes hot gas in clusters of galaxies, which are the most massive objects in the universe. It also probes hot gas accreting around supermassive black holes in the centres of the galaxies.

Finally, high energy radiation provides important information about our own galaxy, neutron stars, supernova remnants and stars like our Sun which emit copious amounts of high energy radiation.

Suitable for: ages 12+ **Movie Duration:** 30 minutes



From Earth to the Universe

The night sky, both beautiful and mysterious, has inspired awe and been the subject of campfire stories, and ancient myths for as long as there have been people. A desire to comprehend the Universe may well be humanity's oldest shared intellectual experience. Yet only recently have we truly begun to grasp our place in the vast cosmos.

To learn about this journey of celestial discovery, from the theories of the ancient Greek astronomers to today's grandest telescopes, we invite you to experience From Earth to the Universe. This stunning, 30-minute voyage through space and time conveys, through sparkling sights and sounds, the Universe as revealed to us by science.

Suitable for: ages 12+ **Movie Duration:** 32 minutes



Capturing the Cosmos

Australian Astronomers today are exploring the universe on a grand scale. But knowing what's out there is just the first step. Putting the pieces together to unlock the mysteries of the universe is the goal. Discover the new astronomy being carried out under the breathtaking skies of the Australian outback. What will be learnt about our place amongst the stars?

Suitable for: ages 13+ **Movie Duration:** 27 minutes



Phantom of the Universe – The Hunt for Dark Matter

Phantom of the Universe is an exciting exploration of dark matter, from the Big Bang to its anticipated discovery at the Large Hadron Collider.

Narrated by Tilda Swinton, this amazing story reveals the first hints its existence. It describes the astral choreography witnessed by Vera Rubin in the Andromeda galaxy and then plummets deep underground to see the most sensitive dark matter detector on Earth, housed in a former gold mine.

From there, it journeys across space and time to the Large Hadron Collider at CERN, speeding alongside particles before they collide in visually stunning explosions of light and sound.



Suitable for: ages 13+ **Movie Duration:** 28 minutes