Saturday 23 September 5.30-11pm at Scienceworks

**TALKS PROGRAM**

<table>
<thead>
<tr>
<th>TIME</th>
<th>AMPHITHEATRE</th>
<th>ENERGY LAB</th>
<th>SCIENCE STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.00 - 6.30 pm</td>
<td>Festival Opening</td>
<td>Gravitational Waves: a New Window on the Universe&lt;br&gt;Dr Paul Lasky, OzGrav</td>
<td>Space Telescopes and First Galaxies&lt;br&gt;Stephi Bernard, CAASTRO</td>
</tr>
<tr>
<td></td>
<td>Our Blue Marble PrimeSci!</td>
<td>What's so good about our planet Earth? Find out all about awesome air and invisible water in this fun show for families. Guaranteed to get your atoms excited!</td>
<td>Hubble and Spitzer Space Telescopes have given us extraordinary insight into the first stars and galaxies to form in the Universe. Stephi Bernard will discuss what we’ve learned, and how we’re preparing for Hubble’s successor, the James Webb Space Telescope.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Science Fiction Science Fact – Laser Combat in Movies&lt;br&gt;Prof Brant Gibson, Centre of Nanoscale BioPhotonics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Who doesn’t love a good light sabre battle!? Join Prof Brant Gibson as he unpacks the myths of lasers in the movies and gives a little insight into the magic and science of lasers.</td>
</tr>
<tr>
<td>6.45 - 7.15 pm</td>
<td>An Evening of Astronaut Stories&lt;br&gt;Astronaut Dominic 'Tony' Antonelli</td>
<td>Dr Gill Iles has trained astronauts to go into space and won a medal for extensive time spent experimenting in zero gravity. Come along to find out what it’s like to work in zero gravity, and why we do it.</td>
<td>Science in Zero Gravity&lt;br&gt;Dr Gill Iles, RMIT</td>
</tr>
<tr>
<td>7.30 - 8.00 pm</td>
<td>The Death of the Universe&lt;br&gt;Dr Katie Mack, University of Melbourne</td>
<td>Dr Gill Iles has trained astronauts to go into space and won a medal for extensive time spent experimenting in zero gravity. Come along to find out what it’s like to work in zero gravity, and why we do it.</td>
<td>The Spark of Life&lt;br&gt;Dr Hannah Brown, Centre of Nanoscale BioPhotonics</td>
</tr>
<tr>
<td></td>
<td>The 2017 AIP Woman in Physics, Cosmologist, Dr Katie Mack will be taking centre stage again this year to unravel the current understanding of the end of the Universe. Will it be a massive explosion? Will it create another Universe? A must see talk about epic endings.</td>
<td>Light is not just beautiful, it is also a useful tool in science. Find out how light-based technologies are helping us to unravel the biological events which underpin the first few days of life, and helping us to treat and cure infertility.</td>
<td>Listening to Gravitational Waves&lt;br&gt;Dr Letizia Sammut, Monash Centre for Astrophysics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>How can we get information from observing colliding black holes and other extreme events in the universe? Why do we need detectors longer than 20 football fields to measure the effect they have on the earth? Hear Dr Letizia Sammut speak about this fascinating area of research.</td>
</tr>
</tbody>
</table>

* = Best for families
**AMPHITHEATRE**

**The Evolving Quality of Light**

Bruce Ramus, Ramus Design Studio

Creative Director of Ramus design studio, Bruce Ramus will be speaking about his time lighting some of the world’s biggest music acts such as U2, REM and David Bowie. Come along and hear about the power of lighting to shift and play with people’s emotions and perceptions, and how lessons from rock concerts have led Bruce to lighting our public spaces to support thriving communities.

**ENERGY LAB**

**Fluorescent Proteins: From Nature to the Lab**

Emma Wilson, Centre of Nanoscale BioPhotonics

Many species in nature have evolved the mesmerising phenomenon of fluorescence. Join Emma Wilson to find out more about how we use this phenomenon in scientific research and why fluorescent proteins are an excellent tool for understanding genetics and how proteins operate in living organisms.

**SCIENCESTAGE**

**Space Science in 2030 – panel discussion**

Dr Sarah Wittig, European Space Agency
Dr Katie Mack, University of Melbourne
Astronaut Tony Antonelli

Join us for a discussion with an expert panel on where we are and where we’re going. We’ll discuss upcoming developments in space science including exploration in our own solar system and beyond.

**ASTRO LIGHT**

**Challenging Cosmology: Strange orbits in the Local Universe**

Prof Geraint Lewis, University of Sydney

How do galaxies form and move in the universe? We used to think that dwarf galaxies should be scattered around the large galaxy they orbit. 2016 Walter Boas medallist, Professor Geraint Lewis, explains his research that has turned this theory upside down. Now we have to rethink how we understand cosmology and our universe.

**The Science of LightTime**

Daniel Armstrong, Deakin University and Nick Anasthasiou, Skunk Control at Victoria University

A conversation with two artists from LightTime to explore this exciting art/science exhibition and the science behind some of the works. Exhibition Manager Monica Zetting (MV) will be in conversation with artists Nick Anasthasiou from Skunk Control and Daniel Armstrong about their artworks and the science that inspires them.

**The Light Fantastic**

Dr Tanya Hill, Museums Victoria

Almost everything we know about astronomy comes from light. We use our telescopes to capture light that has travelled across the universe and then investigate that light to learn more.

**THE EARTH SYSTEM - ONE MOON. THOUSANDS OF ARTIFICIAL SATELLITES**

Braeden Borg, Melbourne Space Program

From getting humans into space to your smart phone helping you navigate Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**Space Science in 2030 – panel discussion**

Astronaut Tony Antonelli
Dr Sarah Wittig, European Space Agency
Dr Gail Iles, RMIT

What will space science look like in 2030? Join us for a discussion with an expert panel on where we are and where we’re going. We’ll discuss upcoming developments in space science including exploration in our own solar system and beyond.

**How is artificial light messing with your body?**

Dr Sean Cain, Centre of Nanoscale BioPhotonics

How is artificial light messing with your body? Light helps synchronise our internal clocks to the day/night cycle, but increasing artificial lighting is confusing our internal clocks. This circadian disruption has many negative health consequences. This talk will review some of the dangers of light exposure patterns that disrupt the clock.

**Radio Astronomy through the eyes of a Cosmologist**

Dr Laura Wolz, CAASTRO

Australia is seen as a world leader in radio astronomy, but what can radio waves tell us about the nature and origin of the Universe? Join Dr Laura Wolz as she takes us through how Australia is leading the way in our understanding of the fundamentals of the Universe.

**The Influence of Light on Human Health**

Dr Sean Cain, Centre of Nanoscale BioPhotonics

The influence of light on human health is a growing field of study with growing ramifications for human wellbeing. Join Dr Sean Cain to learn about the influence of light on sleep, and mental wellbeing.

**WHO doesn't love a good light sabre battle!**

Prof Brant Gibson, Melbourne Space Program

Join Prof Brant Gibson as he unpacks the myths of lasers in the movies and gives a little insight into the magic and science of lasers.

**Thousands of Artificial Satellites**

Braeden Borg, Melbourne Space Program

Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**Easy Astrophotography**

Neil Creek

Join award-winning astrophotographer Neil Creek for a brief introduction to his work, and tips and tricks for taking beautiful photos of the night sky with only a DSLR camera and tripod.

**The Earth System - One Moon, Thousands of Artificial Satellites**

Braeden Borg, Melbourne Space Program

From getting humans into space to your smart phone helping you navigate Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**The Light Fantastic**

Dr Tanya Hill, Museums Victoria

Almost everything we know about astronomy comes from light. We use our telescopes to capture light that has travelled across the universe and then investigate that light to learn more.

**The Science of LightTime**

Daniel Armstrong, Deakin University and Nick Anasthasiou, Skunk Control at Victoria University

A conversation with two artists from LightTime to explore this exciting art/science exhibition and the science behind some of the works. Exhibition Manager Monica Zetting (MV) will be in conversation with artists Nick Anasthasiou from Skunk Control and Daniel Armstrong about their artworks and the science that inspires them.

**THE EARTH SYSTEM - ONE MOON. THOUSANDS OF ARTIFICIAL SATELLITES**

Braeden Borg, Melbourne Space Program

From getting humans into space to your smart phone helping you navigate Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**Space Science in 2030 – panel discussion**

Astronaut Tony Antonelli
Dr Sarah Wittig, European Space Agency
Dr Gail Iles, RMIT

What will space science look like in 2030? Join us for a discussion with an expert panel on where we are and where we’re going. We’ll discuss upcoming developments in space science including exploration in our own solar system and beyond.

**How is artificial light messing with your body?**

Dr Sean Cain, Centre of Nanoscale BioPhotonics

How is artificial light messing with your body? Light helps synchronise our internal clocks to the day/night cycle, but increasing artificial lighting is confusing our internal clocks. This circadian disruption has many negative health consequences. This talk will review some of the dangers of light exposure patterns that disrupt the clock.

**Radio Astronomy through the eyes of a Cosmologist**

Dr Laura Wolz, CAASTRO

Australia is seen as a world leader in radio astronomy, but what can radio waves tell us about the nature and origin of the Universe? Join Dr Laura Wolz as she takes us through how Australia is leading the way in our understanding of the fundamentals of the Universe.

**The Influence of Light on Human Health**

Dr Sean Cain, Centre of Nanoscale BioPhotonics

The influence of light on human health is a growing field of study with growing ramifications for human wellbeing. Join Dr Sean Cain to learn about the influence of light on sleep, and mental wellbeing.

**WHO doesn't love a good light sabre battle!**

Prof Brant Gibson, Melbourne Space Program

Join Prof Brant Gibson as he unpacks the myths of lasers in the movies and gives a little insight into the magic and science of lasers.

**Thousands of Artificial Satellites**

Braeden Borg, Melbourne Space Program

Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**Easy Astrophotography**

Neil Creek

Join award-winning astrophotographer Neil Creek for a brief introduction to his work, and tips and tricks for taking beautiful photos of the night sky with only a DSLR camera and tripod.

**The Earth System - One Moon, Thousands of Artificial Satellites**

Braeden Borg, Melbourne Space Program

From getting humans into space to your smart phone helping you navigate Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**The Light Fantastic**

Dr Tanya Hill, Museums Victoria

Almost everything we know about astronomy comes from light. We use our telescopes to capture light that has travelled across the universe and then investigate that light to learn more.

**The Science of LightTime**

Daniel Armstrong, Deakin University and Nick Anasthasiou, Skunk Control at Victoria University

A conversation with two artists from LightTime to explore this exciting art/science exhibition and the science behind some of the works. Exhibition Manager Monica Zetting (MV) will be in conversation with artists Nick Anasthasiou from Skunk Control and Daniel Armstrong about their artworks and the science that inspires them.

**THE EARTH SYSTEM - ONE MOON. THOUSANDS OF ARTIFICIAL SATELLITES**

Braeden Borg, Melbourne Space Program

From getting humans into space to your smart phone helping you navigate Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**Space Science in 2030 – panel discussion**

Astronaut Tony Antonelli
Dr Sarah Wittig, European Space Agency
Dr Gail Iles, RMIT

What will space science look like in 2030? Join us for a discussion with an expert panel on where we are and where we’re going. We’ll discuss upcoming developments in space science including exploration in our own solar system and beyond.

**How is artificial light messing with your body?**

Dr Sean Cain, Centre of Nanoscale BioPhotonics

How is artificial light messing with your body? Light helps synchronise our internal clocks to the day/night cycle, but increasing artificial lighting is confusing our internal clocks. This circadian disruption has many negative health consequences. This talk will review some of the dangers of light exposure patterns that disrupt the clock.

**Radio Astronomy through the eyes of a Cosmologist**

Dr Laura Wolz, CAASTRO

Australia is seen as a world leader in radio astronomy, but what can radio waves tell us about the nature and origin of the Universe? Join Dr Laura Wolz as she takes us through how Australia is leading the way in our understanding of the fundamentals of the Universe.

**The Influence of Light on Human Health**

Dr Sean Cain, Centre of Nanoscale BioPhotonics

The influence of light on human health is a growing field of study with growing ramifications for human wellbeing. Join Dr Sean Cain to learn about the influence of light on sleep, and mental wellbeing.

**WHO doesn't love a good light sabre battle!**

Prof Brant Gibson, Melbourne Space Program

Join Prof Brant Gibson as he unpacks the myths of lasers in the movies and gives a little insight into the magic and science of lasers.

**Thousands of Artificial Satellites**

Braeden Borg, Melbourne Space Program

Melbourne, there are thousands of artificial satellites providing dependable information and facilities. Join Braeden Borg, an avionics test engineer from the Melbourne Space Program, to learn about this technology that has been crucial for all sorts of human endeavours.

**Easy Astrophotography**

Neil Creek

Join award-winning astrophotographer Neil Creek for a brief introduction to his work, and tips and tricks for taking beautiful photos of the night sky with only a DSLR camera and tripod.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ORGANISATION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Ground Floor</td>
<td>Monash Centre for Astrophysics (MoCA)</td>
<td>Interactive stall with badge making and astronomy quizzes to keep you on your toes</td>
</tr>
<tr>
<td></td>
<td>Centre for Nanobiophotonics (RMIT)</td>
<td>Interactive stall and if you head into the Alpha and Beta rooms, there will be heaps of Light experiments to explore with CNBP</td>
</tr>
<tr>
<td></td>
<td>Melbourne Space Program</td>
<td>See what the engineers of Melbourne are working on to get Australia technology into space.</td>
</tr>
<tr>
<td></td>
<td>Deakin University Astronomy Art</td>
<td>The Welcome Room has been turned into a gallery of astronomy art from the students of Deakin University</td>
</tr>
<tr>
<td></td>
<td>Actura Australia</td>
<td>Want to be an astronaut when you grow up? This is a must see stall. NASA Space Camp people!</td>
</tr>
<tr>
<td></td>
<td>Women in Aviation</td>
<td>Dedicated to getting women up in the air, bring your daughter, sister, aunt and grandmother, they will want to know</td>
</tr>
<tr>
<td></td>
<td>AIAA and AYAA</td>
<td>Want to be an astronaut or work in astronautics, these are the people to talk to</td>
</tr>
<tr>
<td></td>
<td>Mount Burnett Observatory</td>
<td>Find out about one of the founding partners of AstroLight and the amazing astronomy they are doing in the mountains</td>
</tr>
<tr>
<td></td>
<td>Ballarat Observatory and Museum</td>
<td>The Ballarat Observatory is steeped in tradition and offers a fabulous view of the night sky, come and find out all about it</td>
</tr>
<tr>
<td></td>
<td>International Dark Sky Association</td>
<td>How can we preserve our night skies so that we can see the stars and ever so much more? Come and find out at this stall</td>
</tr>
<tr>
<td>Ground Floor</td>
<td>Star Wars photobooth</td>
<td>Come and get your picture taken with your favourite Star Wars character in the Turret Room</td>
</tr>
<tr>
<td></td>
<td>LightTime</td>
<td>Head to the special exhibition room where you can experience this amazing exhibit, included in the ticket price tonight only</td>
</tr>
<tr>
<td></td>
<td>Opaque Space</td>
<td>Head to the special exhibition room where you can experience this amazing exhibit, included in the ticket price tonight only</td>
</tr>
<tr>
<td></td>
<td>OzGrav</td>
<td>Find out all about gravitational waves and use virtual reality to explore the night sky</td>
</tr>
<tr>
<td></td>
<td>Scienceworks</td>
<td>Ticket to the Universe (30 min show) Six shows in total. You will need to purchase a ticket and nominate the time – see website.</td>
</tr>
<tr>
<td>Lightening Room</td>
<td>Scienceworks</td>
<td>Lightning Room Revealed (15 min show) Nine shows in total You will need to purchase a ticket and nominate the time – see website.</td>
</tr>
<tr>
<td>LOCATION</td>
<td>ORGANISATION</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Arena</td>
<td>Celestron</td>
<td>Demonstration of Celestron telescopes and special pop-up telescope shop</td>
</tr>
<tr>
<td></td>
<td>Telescopes in Schools</td>
<td>Telescopes to view the night sky</td>
</tr>
<tr>
<td></td>
<td>Mount Burnett Observatory</td>
<td>Telescopes to view the night sky</td>
</tr>
<tr>
<td></td>
<td>Food Trucks and Cafe</td>
<td>Lots of yummy food for everyone, or pack a picnic and sit under the stars</td>
</tr>
<tr>
<td>Pumping Station</td>
<td>Rollbots</td>
<td>Come navigate the maze with the amazing Rollbots. Can you drive them with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the tablets and make it to the end in time</td>
</tr>
<tr>
<td></td>
<td>PrimeSci!</td>
<td>Explore the ideas of light, play, question, wonder!</td>
</tr>
<tr>
<td></td>
<td>Roughbot</td>
<td>More robots! This time we need to drive them across Mars. Are you up to the</td>
</tr>
<tr>
<td></td>
<td>Telescopes in Schools</td>
<td>challenge?</td>
</tr>
<tr>
<td></td>
<td>CoEPP</td>
<td>Time to explore the solar system, make a model, find out about all things</td>
</tr>
<tr>
<td></td>
<td></td>
<td>astronomy. Lots of stuff to do</td>
</tr>
<tr>
<td>Front Entrance</td>
<td>Ramus Illumination</td>
<td>Science and Physics will be on display, come and explore the research and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>wonder of science</td>
</tr>
<tr>
<td>Everywhere</td>
<td>Star Wars cosplay characters</td>
<td>The Star Wars characters will be roaming around all night. You might just run</td>
</tr>
<tr>
<td></td>
<td></td>
<td>into Darth Vader and his troopers, so beware!</td>
</tr>
</tbody>
</table>

**ASTRO LIGHT**

**CREATIVE VICTORIA**

**SCIENCEWORKS**