

SASTA

May 2021

Newsletter



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Upcoming Events

Thinking Science (Secondary)

Monday 31 May 2021, Education Development Centre
See page 3 for details.

Purposeful Science (Secondary) Workshop - Take a dive into the Department for Education's Science Curriculum resources

Monday 7 June 2021, Education Development Centre
See page 3 for details.

Early Career Teachers Conference

Monday 27 September 2021, Nazareth Catholic College
Call for workshops now open. See page 5 for details.



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South Australian Science Teachers Association Inc.

Association member of the Australian Science Teachers Association (ASTA)

249 Henley Beach Road, Torrensville SA 5031

P 08 8354 0006 | E office@sasta.asn.au | W www.sasta.asn.au

Supporting Teachers of Science | Advancing Science Education

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249 Henley Beach Road, Torrensville SA 5031
ABN: 22 938 317 192
P: 08 8354 0006 F: 08 8354 0008
E: office@sasta.asn.au W: www.sasta.asn.au

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Newsletter copy deadlines 2021

(Advertising deadlines one week earlier)

Edition	Deadline
August	16 July
November	15 October

Advertising

Advertising rates & booking form available online at www.sasta.asn.au

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Adhering to the following guidelines would be appreciated:

- Save as a Microsoft Word document
- Tables to be set up as text with one tab between columns and a return at the end of each row.
- For spelling please use the Macquarie Dictionary and where several alternatives are listed, use the first. The exception to this is when you are citing, referencing or quoting directly from a source which uses alternative spelling.
- Photographs should be high quality untouched digital photographs.

Professional Learning for Term 2 2021

Thinking Science (Secondary)

Monday 31 May

Education Development Centre, Hindmarsh

9.00 am – 3.00 pm

Presented by Lara Lang (Reynella East College)

Big Thinking Science will provide teaching strategies, processes, structures and tools for science teaching and learning that is inclusive, curious, inquiry-based, engaging, active, interdisciplinary, audacious and authentic. The aim of this workshop is to provide teachers with the WHY, and the HOW of capability-based science learning.

The Why

- Why do we teach science? - purpose of science teaching activity
- Why do we need to teach science by inquiry? - Fourth Industrial Revolution and future skills activity

The How

1. Tools for planning a unit that is interdisciplinary, co-designed, aligned to Australian Curriculum, inquiry based
 2. Tools for in lessons
- Inquiry tools for Science (card sort, games, analogies, models, data collection, explore>explain, POE, TPS etc)
 - Developing capabilities in Science (split-intentions, the 80-20 rule, active teaching)
 - Specific literacy-development tools and strategies

By the end of the day, attendees will have

- A collaboratively designed inquiry unit
- A collection of teaching strategies and resources aligned to 7-10 science curriculum

Templates for tasks that encourage big thinking in science

Purposeful Science - Take a dive into the Department for Education's Science Curriculum resources (Secondary)

Monday 7 June

Education Development Centre, Hindmarsh

9.00 am – 3.00 pm

Presented by Katrina Elliott and Caroline Dean (Department for Education)

This workshop will unpack an example unit from Year 9, looking at the Why? How? & What? of the unit of work, with the aim of teachers being able to implement the units in their classrooms as they are released.

Content descriptions don't always give teachers enough information about what they need to teach and how deep to go. These units unpack the concepts that need to be taught, the pedagogy that will promote understanding and engagement, and clearly highlight success criteria.

Teachers will be engaged in purposeful activities that build pedagogical tools as well as an understanding of how to connect classroom learning to the Australian Curriculum.

The workshop will also take teachers through the development of the Scope and sequence documents, as well as flexible and practical units of work that teach directly to the curriculum and are designed specifically for South Australian students.

This is the second in a series of workshops unpacking these units of work. Look out for the others to be advertised soon!

Registration fees

Personal Member	\$145
SASTA Student Member	\$50
Corporate Member (SA School)	\$185
Non Member	\$225

Morning tea and lunch provided.

For more information and to register, go to sasta.asn.au/professional_learning

Opportunity to be part of the consultation for the review of the Australian Curriculum

You are probably aware that the eight learning areas Australian Curriculum are currently being reviewed by ACARA. It is anticipated this review will be completed by the end of the year, and if approved by education ministers, the revised Foundation to Year 10 Australian Curriculum will be released by the start of 2022.

Throughout the review process ACARA has sought feedback from a range of reference groups, including our own national professional association, ASTA (Australian Science Teachers Association).

From the 29th April until 8th July there is a 10 week window of opportunity for everyone to have a say on the proposed curriculum revisions. We all know the importance of a well written curriculum for both teacher work and student learning, so we hope you will take advantage of this opportunity to make sure the revisions will have the intended positive impact.

The aims of the review are to:

- refine and reduce the amount of content, with a priority on the primary years
- focus on essential content or core concepts
- improve the quality of content descriptions and achievement standards by removing ambiguity and unnecessary duplication, and ensuring consistency and clarity of language and cognitive demand
- declutter the curriculum by improving the relationship of the general capabilities and cross-curriculum priorities to the content of the learning areas

The proposed revisions to the F-10 Australian Curriculum can be found on a new consultation website: <https://www.australiancurriculum.edu.au/consultation/>

You can also keep informed by subscribing to the ACARA newsletter <https://www.acara.edu.au/news-and-media/subscribe-to-acara-update>



SASTA Stage 2 Topic Tests

SASTA is excited to make available sets of Topic Tests that may be used as formative or summative Skills and Applications Tasks (SATs) in Stage 2 Biology, Chemistry and Physics. These tests are of the highest quality and feature a comprehensive range of original questions including science understanding, science inquiry skills and science as a human endeavour.

There are 4 tests available for each subject.

Prices start from \$100 for individual tests and bundles are available with SASTA Stage 2 Trial Exams. *2021 Trial Exams have been completely re-written based on feedback received in 2020.*

For the list of topics available, full price guide and purchase details visit www.sasta.asn.au



Call for Workshops now open

Setting up for Success

“The new teacher assumes full pedagogical and legal responsibility as soon as they enter the school. No other profession has such high expectations of its newest members.” (Tynjala & Heikkinen, 2014)

The aim of the conference is for our early career teachers to walk away equipped with the resources and best practice strategies for building their confidence and capabilities.

The Conference will include specialised workshops for both Primary and Secondary Teachers.

Have you thought about sharing your experiences?

You may wish to consider choosing from the categories below when determining the focus of your presentation:

The Early Years

- exploration of the reality of teaching experiences and the chance to address challenges that may arise in these early years.
- professional and personal wellbeing

Unpacking the curriculum

- highlighting the essential components of the science curriculum e.g. SHE, General Capabilities, to allow teachers to develop effective and engaging lessons and teaching programs
- teaching specific aspects of the science understanding content
- STEM education

Inquiry-based learning

- developing creative strategies to integrate the science inquiry skills and critical and creative thinking into the teaching of science
- building student capacity to construct their own learning.

Assessment

- discussing how different types of assessment can be used to monitor student achievement and guide future learning opportunities
- e-exams

Workshop proposals must be submitted before Friday 2 July. For more information, go to www.sasta.asn.au/professional_learning



Save the Date - CONASTA 69

The CONASTA 69 theme of ‘Science Revealed’ has been chosen to inspire all educators to focus on the less obvious and most intriguing aspects of science and how this contributes to the broader body of scientific knowledge that supports breakthrough technologies.

Keep an eye on the SEAECT website for full program and registration information: <https://seaect.act.edu.au/conasta69/>



The 2021 SASTA Annual Conference was held on Monday 12 and Tuesday 13 April at Pulteney Grammar School and was our first face to face major conference since COVID-19! We were excited to see over 115 delegates in attendance.

Professor Chris Daniels opened the Conference with an interesting keynote presentation on 'The Role of Experiential Connection with Nature as Educational Tools for Conservation Science: The Cleland Experience'. **Dr Hannah Brown** from the Victorian Heart Institute discussed 'Communicating for Change!' in Tuesday's keynote presentation.

A wide variety of workshops were available to attendees with over forty workshops to choose from. The program included the opportunity to engage in hands-on science activities linked to the conference theme '**Science: saving the planet**'. There were also five Cutting Edge Workshops where delegates were able to learn from engaging presenters about current research in their field including pregnancy and IVF outcomes, parasite biology, innovative electronic tagging of sharks and 'the nurture of nature'.

SASTA Annual General Meeting Results

SASTA's Annual General Meeting was held on Tuesday 13 April at Pulteney Grammar School in conjunction with the Annual Conference. At the AGM it was announced that Glen Arthur, Meegan Ballantyne, Anthea Ponte and Anita Trenwith had been elected to the board for a three-year term of office.

Recent changes to the ASTA capitation levy (the amount that we pay to ASTA per member) has resulted in significant savings for SASTA. This is a saving that we want to return to members through a reduction in our SASTA Membership

fees. A motion for a reduction in membership fees for 2022 SASTA membership was passed.

SASTA Honour Award

At the opening address Professor Caroline McMillen, Chief Scientist of South Australia, presented **Yvonne Zeegers** with the SASTA Honour Award. Yvonne has shown leadership in the area of primary science professional learning throughout the last 30+ years. She was a member of the South Australian Primary Science Teachers Association (SAPSTA) which was at first an independent group and then amalgamated with SASTA in 1987. During her long involvement with SAPSTA she helped to organise and run a number of conferences and workshops for primary teachers.



In the last decade, Yvonne served two terms on the Board. She was also on the Board in the 1990s, serving as a Vice-President for a number of years. Yvonne contributed as a member of the CONASTA 63 planning committee.

Yvonne's continued service to both the SASTA Board and to the professional development of Science teachers throughout South Australia make her a worthy recipient of a SASTA Honour Award.

Helen Castle Memorial Scholarship

The 2021 recipient of the Helen Castle Memorial Scholarship was **Grace Edwards from Mount Gambier High School**. The scholarship is designed to assist country science teachers access professional development and supports the recipients attendance at the Annual Conference.



Grace is a second-year teacher whose colleagues admire her enthusiasm for teaching. Grace’s enthusiasm comes from being passionate about her subject matter. She brings in current, real world experiences which are relevant for the students and uses technologies and platforms students are familiar with that are appropriate and engaging to make the students want to learn and be willing to learn.

Outstanding Teacher Award

John Elvin from Credit Union SA, presented the SASTA / Credit Union SA Outstanding Contribution to the Teaching of Science Award to **Katie Gloede**, in the Senior Secondary category.



Katie has an extensive background as both a facilitator and participant in professional development. Her roles include Lecturer in Education, Connect Officer at the University of South Australia, and STEMfooty Programs manager at the Adelaide Football Club. She is currently studying for her PhD in Education through the University of South Australia. Katie also volunteers her time as a member of the SASTA Board. Through her work Katie is committed to building a more diverse STEM workforce through a focus on increasing the participation of girls and women and of Aboriginal and Torres Strait Islanders in STEM programs across all education levels.

I'm an SSO I can benefit!

I'm a teacher I can benefit!

I'm studying education I can benefit!

I work for a school so I benefit!

I'm a contract teacher so I benefit!

My daughter is a teacher so I benefit too!

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Premier's Reading Challenge

SASTA and the Oliphant Science Awards are proud to be partnering with Inspiring SA and the Premiers Reading Challenge (PRC) to support this year's STEM Reading and Design Challenge.

The challenge encourages students to read about Science, Technology, Engineering and Maths (STEM) in the lead up to National Science Week. The Premier's Reading Challenge booklist contains excellent STEM books and to enter the STEM Reading and Design Challenge, students need to read at least one book from the Premier's Reading Challenge booklist from any of the following categories: STEM, Science, Science Fiction or Nature.

Using the text as inspiration, they then either Create, Invent, Design or Review according to their age category. There are great prizes to be won in 4 age categories.

For full details about the STEM Reading and Design Challenge visit: <https://bit.ly/3npj774>

Links to the Oliphant Science Awards

There are many opportunities for students to combine their OSA project work with the STEM Reading and Design Challenge.



We have created STEM booklists for each age category from the PRC booklist. Students can select books from these booklists that will support them with their OSA project.

Teachers can use these lists as a resource to engage students in Science and STEM learning.

Examples:

- An R-2 student may be working on a Poster for OSA around the theme of Sustainable Food Production. They could source inspiration for their OSA Poster from one of the books listed in our STEM booklist (e.g., I Spy Food: with Penny Pear and Friends by Sue Hill and Fiona Bowden). They could then also complete the STEM Reading and Design Challenge task for entry to that competition.
- A Year 3-5 student can use a STEM booklist book (e.g., How to be the Best by Charlotte Barkla) to inspire their OSA invention or model and then submit a copy of their invention plan/description to the STEM Reading and Design Challenge.

Age	PRC Task	Possible OSA link
R-2	Create	Posters
3-5	Invent	Models & Inventions
6-9	Design	Posters
Mature	Review	Science Writing

Biology: Levels of Life

Brian LeCornu and Tony Diercks

Biology: Levels of Life - Australian Curriculum Edition Textbook

\$63.40

This textbook provides detailed coverage of all the content (Science Understanding) of the SACE Stage 2 Biology subject. The new content is relevant, up-to-date and addresses Science as a Human Endeavour, with many examples throughout. It is attractively presented in full colour with numerous links to videos, animations, and useful resources. The textbook is divided into four topics, with each topic presented in chapters designed to make the material easy to follow, with study questions at the end of each chapter. Updated to match minor changes in the subject outline for 2020.

Biology: Levels of Life - Australian Curriculum Edition Workbook

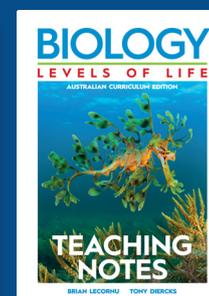
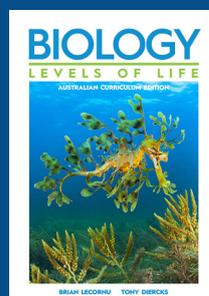
\$24.40

Written specifically to complement the textbook, this workbook covers all Science Understandings of the Biology subject outline. It can be used in conjunction with the textbook or on its own as an aid for understanding and revision. By completing answers to the workbook questions, students will develop their knowledge and understanding of biological principles and concepts.

Biology: Levels of Life - Teaching Notes

\$120.00

Teachers will find the Teaching Notes invaluable in ensuring that all Science Understandings are covered for each of the four topics. There are teaching tips throughout as well as additional information. Answers to questions in the Workbook will assist teachers in explaining concepts to students.



SASTA 70th Anniversary

The Evolution of the Annual Conference

SASTA held many professional learning events in its early years, however the first reference to ‘the Annual SASTA Conference’ was mentioned in the June 1971 Journal. The first Annual Conference was convened by Deane Hutton, Science TV presenter, and cost \$1.00 for members and \$2.00 for non-members!

In the 2010 Conference Program booklet, President Bronwyn Mart wrote “The SASTA Conference has built a reputation as being the premier professional event for science educators in South Australia. Our commitment to improving professional knowledge and skills, coupled with a desire to share our stories of success brings together teachers, lab officers, tertiary students and educators. The success of the Conference is due to the commitment and support of a range of individuals and organisations.” This is all still true today and we are very appreciative of all the support we receive to keep the Annual Conference running after 50 years!



Take a walk down memory lane on the SASTA Blog with some reflections from past Conference Convenors and a full list of past Conference themes.

The Annual Conference has been an institution for decades. I was always amazed at the number of people who would volunteer their time to either help organise or present workshops to their professional colleagues. Having schools prepared to open their laboratories and classrooms made the job of organising the event so much easier. Over time, the conference changed venues less often. This way teething problems with supply of equipment, IT issues and catering would reduce as the school became familiar with the needs of the conference. I always found the mix between cutting-edge lectures by local or interstate experts was well balanced by workshops presented by educators, where various activities and teaching ideas were presented and could be used immediately in the classroom.

Finding recipients for the various awards has always been difficult. Not because of the quality of the winners but due to the reticence of teachers to talk about their achievements. Teachers have always been team players, not wanting to stand out from the crowd. However, the talent of the various award winners made them worthy recipients.

It was inspiring to see teachers, both offering workshops and receiving awards, and how they were improving the academic lives of their students.

Chris Jordison, past Annual Conference Convenor & chair of the Professional Development Reference Group

Past Conference Themes

1971	Science and the community	1993	Science with meaning
1979	Science education & technology	1994	Responding to changes in Science Education
1980	Science teaching: a human perspective	1995	Working scientifically
1981	The why, what and how of teaching science	1996	Students, Science and success
1983	Is Science practical?	2016	Raising Standards of Teaching & Learning
1984	Futures study and Science education 1984 - 2001	2017	Human Endeavours
1985	Changes in the value of Science	2018	Spotlight on the Science in STEM
1988	Science for all	2019	Thinking Science



It's time once again for School Coordinators to register and download the information booklet from the SASTA Oliphant Science Awards website:

www.oliphantscienceawards.com.au.

The website and booklet have everything you need to know about this year's competition, including registration fees, deadlines, rules, forms, and titles (where relevant).

Key dates

- **Thursday 3 June:** Student registrations close
- **Friday 4 June:** Judges registrations close
- **Thursday 1 July – Wednesday 21 July:** Multimedia, Science Writing, Scientific Inquiry entries and Reports for Programming, Apps and Robotics to be submitted online
- **Saturday 7 August:** Programming, Apps & Robotics Judging Day
- **Thursday 19 August:** Crystal Investigation, Models & Inventions, Photography, Games & Poster entries to be delivered. Submission details provided closer to the date.
- **Saturday 21 August:** Final Judging Day
- **Sunday 22 August:** Open Day
- **Friday 17 September:** Presentation Ceremony (subject to change)

2021 Category Titles

Photography:

- Paddock to Plate
- When Materials Fail?
- Hidden World
- Science of Safety
- Local Habitats

Posters:

- Natural History Illustration (hand drawn)
- Superbugs
- Bushfire Safety
- Indigenous Land Management
- Sustainable Food Production
- The Art of Chemistry

Science Writing:

- The World in 2050
- Playing with Light
- Physics: the very tiny & very large!
- Global Warming is still so important - what is new in the field?
- What happens to the International Space Station (ISS) after 2024?
- Statistics going Viral
- Science as a Human Endeavour (YEAR 11-12 LEVEL ONLY)

New and Country Schools Incentive

Support for country schools or new school participation:

Schools who have not participated in the past five years and country schools seeking assistance for registration fees are eligible to apply. Applicants have the opportunity to enter the SASTA Oliphant Science Awards by applying for a grant of up to \$200.00 towards student registration fees.

Applications close Sunday 16 May.

For full details and to apply visit www.oliphantscienceawards.com.au.

Don't forget to check out the Oliphant Science Awards blog posts and stay up to date on social media!



Like us on Facebook!

www.facebook.com/oliphantscienceawards

1981 Oliphant Science Awards Winner - David Tilley

Winning the inaugural Oliphant Science Awards in 1981 was a defining moment in my life. It led to many opportunities that I could only dream of. I undertook my entry into the Oliphant Science Awards while in Year 12 at the Mount Gambier High School. I was 16 years of age.

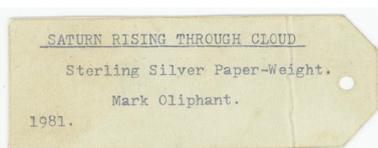
The title of my entry was "Opposition '81". Over a two week period when Jupiter was opposite the Sun and closest to Earth, I observed the planet's upper atmosphere in intricate detail using my astronomical telescope. I recorded my observations as a series of drawings and photographs in a journal. Along with changes in Jupiter's atmosphere, I observed movements of the four Galilean moons, including their transits across the face of Jupiter.

I was thrilled when I was told by my chemistry teacher that I had won the award for experimental investigation. Everyone at school and my family were so proud of me. The prize, a sterling silver paperweight handcrafted by Sir Mark Oliphant, was presented to me by Monica Oliphant at a ceremony at the Australian Mineral Foundation Centre in Glenside, Adelaide. I was so excited to receive the prize which was in the shape of the planet Saturn rising through cloud.

However, it didn't stop there. I had also entered my project into the inaugural BHP Science Prize. I was one of 25 young science students who were flown to Canberra for the awards ceremony at the Australian Academy of Science in 1982. Although not a winner, I met the then Governor General of Australia Sir Zelman Cowen and had the opportunity to thank Sir Mark Oliphant in person for the silver paperweight he had made.

40 years have now passed since winning the Oliphant Science Awards. It has been a great honour to be recognised as the first ever winner.

I am now living at Parkes in central western NSW where I work as a mineralogist for Northparkes Mines looking after their X-ray diffraction laboratory. I often recall the memories of adventure, discovery and recognition that I have received throughout my career. I strongly believe that if I hadn't accepted the challenge that day when my chemistry teacher came to me about entering the Oliphant Science Awards, I may not have had the wonderful life that I have been blessed with. Thank you SASTA for starting and continuing these prestigious science awards.



These images are part of the MS031 Oliphant Collection at the Australian Academy of Science, MS031/32



To read the full article visit the Oliphant Science Awards website: www.oliphantscienceawards.com.au

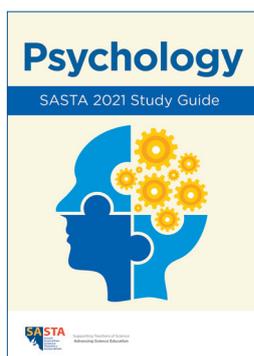
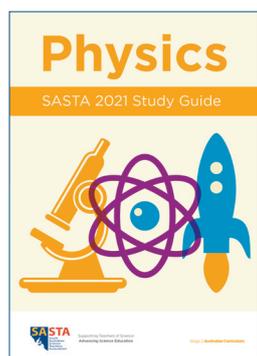
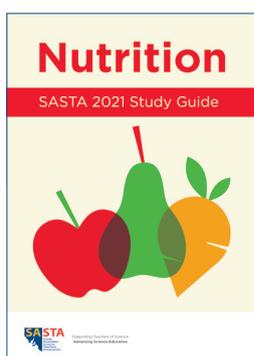
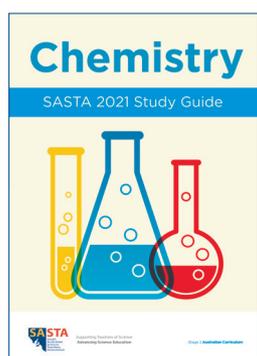
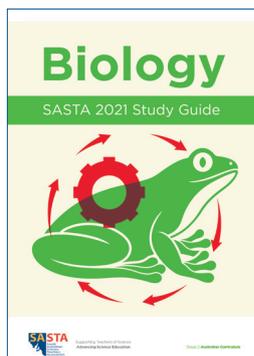
Keep an eye on the website as we will be featuring a past trophy winner on the OSA Blog each month!

2021 STUDY GUIDES

Pre-order your copies now to ensure you don't miss out!

SASTA Study Guides are the complete resource for students preparing for Stage 2 SACE exams. These guides include questions with worked solutions covering each topic of the Subject Outline and address all sections of the exam.

\$29 each
+ delivery
or collect
orders from the
SASTA office



All new for 2021:

- Suggested solutions to the 2020 exams.

Biology

- All sections reviewed and any parts to questions beyond the scope of the course have been removed or modified.
- New questions have been added to all sections.
- New SHE questions added.

Chemistry

- All sections reviewed and any parts to questions beyond the scope of the course have been removed or modified.
- New questions in most sections.
- Codes to indicate all SIS and SHE parts to questions.
- Any parts of questions that are from Stage 1 have been identified (Stage 1 Science Understanding).
- SHE section with 5 new questions and extensive potential responses.

Nutrition

- The Study Guide reflects the New Course for Stage 2 Nutrition to be taught in 2021.
- All sections reviewed and any parts to questions beyond the scope of the course have been removed or modified. New questions added to support the new course outline.
- Chapters have been adjusted to be more user friendly and reflect the new topics.
- Science as a Human Endeavor (SHE) has been added with explanations and guidelines as well as some practice questions.
- Preparation for Investigations and Exams has been reviewed and updated to reflect the advice from SACE Lead Practitioners.

Physics

- Revision questions updated and new questions added.
- Suggested solutions to the 2020 examination.
- Solutions to questions updated to align with course requirements and expectations.
- Updated formatting of questions and solutions.
- All sections reviewed to align with the 2021 Subject Outline.

Psychology

- All sections reviewed.
- Additional test questions provided for all topics.

Available to pre-order at sasta.asn.au