



ASTRONOMICAL SOCIETY OF AUSTRALIA

Incorporated in the ACT
ABN 37 660 297 848

President's Report for 2021/2022

Wednesday 29th July 2022

1. Council 2021-2022

John Lattanzio	President
Joss Bland-Hawthorn	Vice President
Cathryn Trott	Immediate Past President
John O'Byrne	Secretary
Marc Duldig	Secretary
Yeshe Fenner	Treasurer
Richard de Grijs	Councillor
Richard McDermid	Councillor
Barbara Catinella	Councillor
Sarah Pearce	Councillor
Bernhard Mueller	Councillor
Matt Roth	Student Representative
Stas Shabala	Chair, PASA Editorial Board
Tanya Hill (Co-opted) (on leave)	Prizes and Awards Co-ordinator
Krzysztof Bolejko	Prizes and Awards Co-ordinator (acting)
Michael Brown (Co-opted)	Media and Outreach Co-ordinator

I would like to thank all Council members for their time and efforts in the past year in support of the Society. Particular thanks are due to the Council members holding ongoing roles in the Society (John O'Byrne, Marc Duldig, Stas Shabala, Tanya Hill). Thanks go also to Gary Da Costa for continuing in his role as our "Public Officer", and to previous and new Chapter Chairs:

ANITA Chair: Ilya Mandel

ECR Chair: Nichole Barry

EPOC Chair: Jackie Bondell

GAP Co-Chair: Alexander Heger (there is also an AIP Co-Chair: Celine Boehm)

IDEA Chair: Katie Jameson

SWG Co-Chairs: Themiya Nanayakkara and Clancy James

I would also like to acknowledge the outstanding work of Krzysztof Bolejko as Acting Prizes and Awards Co-ordinator, while Tanya Hill was on leave.

A special thanks to Deb Gooley who has continued to provide excellent administrative support for the ASA, and also our book-keeper Molly Lee.

2. Challenges

2021-22 continued to be a challenging time for us all, due to the various effects of the pandemic, including the lack of international travel and the associated decrease in international student numbers. It has been particularly challenging for HDR students struggling to undertake effective research. The ASA introduced a COVID fund to help with financial assistance to HDR and ECR where needed. In the last 12 months we made grants to only 5 students and ECRs providing some support for those unable to seek assistance from their institutions. This has been superseded with the new IDEA Community Fund (See below).

The 2022 ASM has a large in-person component, which probably indicates a desire for more personal interactions following a couple of years of online meetings. Motivated primarily by concern for sustainability, it is now ASA policy that all meetings must have a meaningful online component. Many have taken advantage of that for the 2022 ASM (such as myself).

3. Highlights

Despite the challenges of the past year, there are clear highlights to note:

- COVID fund: this fund has now operated throughout the pandemic, and in the last year it has supported 5 students and ECRs with \$1305 funding for a range of items, including virtual conference attendance, home office computing needs, data storage, and internet costs. Since we started the fund, we have supported 27 people with a total of \$13,330.
- We initiated the IDEA Community Fund as a way of supporting members through difficult times. This replaces the COVID fund, but is far more general and has few restrictions. See below for details. Hearty thanks to Katie Jameson and the IDEA Chapter for this initiative.
- The ECR Chapter presented a very successful series of "How To" programs, now available on YouTube (see section 15 below).
- Many ASA members were recognised through various awards and prizes, as detailed below.

- New PASA Contract with CUP: PASA continues to grow in importance (as measured by the high Impact Factor and the number and quality of submissions). The publication of PASA produces a small profit for the Society every year (see PASA report for details).
- Formation of the Group for Astroparticle Physics GAP. This was started last year, but being a joint group (with the AIP) some changes to the By-Laws of both societies were required. The Chapter is now up and running with 66 ASA members and 188 AIP members (see report below for more details).

4. Code of Conduct and Equity and Conduct Committee

It is the policy of the Astronomical Society of Australia (ASA) that all participants in its activities are able to enjoy an environment that is free from discrimination and harassment, and that its members conduct themselves appropriately during all professional activities. Council has also convened an Ethics and Conduct Committee (ECC). The ECC is charged with oversight of the ASA Code of Conduct and Statement of Ethics as well as handling of potential breaches. There have been no investigations required from the ECC in the last 12 months.

5. Awards and Honours

Members of the ASA were recognized with several awards over the past 12 months:

- Emeritus Professor Anne Green (U Sydney) was recognised in the Queen's Birthday Honours.

Companion in the General Division (AC)

For eminent service to science, particularly physics and astrophysics, as an educator and researcher, as a mentor to colleagues and students, and a role model to women.

Anne is a former President of our Society, and we instituted The Anne Green Prize in 2018 for mid-career researchers. She has had a distinguished career with roles as Head of School in Physics, Director of the Molonglo Observatory (1994-2006), Director for AAL, member of the NCA, and various roles in the development of the SKA. Importantly, she was the inaugural Co-Chair of the IAU's Women in Astronomy Working Group, a role she held from 2003-2009.

- Dr Marc Duldig (ASA Co-Secretary) was recognised with two awards:
 1. The Australian Institute of Physics Award for Outstanding Service to Physics.

Marc's work for the disciplines of Physics and Astronomy is legendary and he was recognised in 2021 by both the AIP and the ASA. I remind you that Marc was one of the inaugural winners of the ASA's Roy Allen Medal for Exceptional Service (along with Roy Allen himself, and our other Co-Secretary, John O'Byrne).

2. University of Tasmania Vice Chancellors Award for Adjunct of the Year.

Congratulations to Marc!

- Two ASA members were elected as Fellows of the Academy of Science.

1. Professor Matthew Bailes (Swinburne University)

The Academy's citation reads: Matthew Bailes is an astrophysicist who has specialised in the study of pulsars, transient radio bursts and gravitation, making major contributions to establishing Australia's high international profile in these areas. In particular, he has played a pivotal role in the development of a new branch of astrophysics, Fast Radio Bursts, guiding projects that led to Australia's dominance of the field. He established the Swinburne University Centre for Astrophysics and Supercomputing, recognised internationally as a centre for astrophysics and virtual-reality content for public outreach.

2. Professor Naomi McClure-Griffiths (ANU)

The Academy's citation reads: Naomi McClure-Griffiths is Australia's pre-eminent expert on the atomic hydrogen gas distribution and evolution in our galaxy, the Milky Way, and its neighbours, the Magellanic Clouds. She has made seminal contributions to our understanding of atomic gas and magnetism within these galaxies through leadership of high-fidelity observational surveys undertaken with Australia's radio telescope facilities. Her work includes the discovery of a new spiral arm within the Milky Way, the first detection of neutral gas out-flowing from the nucleus of the Milky Way, and the pioneering demonstration of the importance of magnetic fields in the flow of matter into the Galactic disk.

- Claudia Lagos (ICRAR, UWA) was been awarded the 2020 IUPAP Commission 19 Young Astronomer Prize

The citation reads: For her insightful contributions to the subject of the role of baryons (gas) in the evolution of galaxies, including its role in the chemical and angular momentum evolution of galaxies and in the promotion and suppression of the formation of stars.

- And it was a bumper year for Keith Bannister (CSIRO), recognised with two awards.
 1. Keith won the 2021 Malcolm McIntosh Prize for Physical Scientist of the Year. Keith's award was announced as part of the Prime Minister's Prizes for Science. The award recognises his ground-breaking research using ASKAP to investigate FRBs.
 2. Keith also won the 2022 Pawsey Medal from the Academy of Science. The citation reads: Dr Keith Bannister is an exceptional scientist who has led several projects at the forefront of radio astronomy, especially in the area of fast radio burst (FRB) research. His great strength is that he has a deep understanding of both astronomy and radio-science engineering. These qualities enable him to envisage novel and powerful techniques to advance key science goals, to bring systems based on these techniques to fruition, and then to harvest the scientific returns. By exploiting the unique wide-field capabilities of CSIRO's ASKAP radio telescope, Dr Bannister and his team doubled the number of FRBs known at the time. He then went on to devise and implement a scheme to determine their precise sky positions, thereby identifying their source location in distant galaxies. These results provided vital clues on FRBs' astrophysical origin and also identified the location of 50 per cent of the missing baryons in the universe.

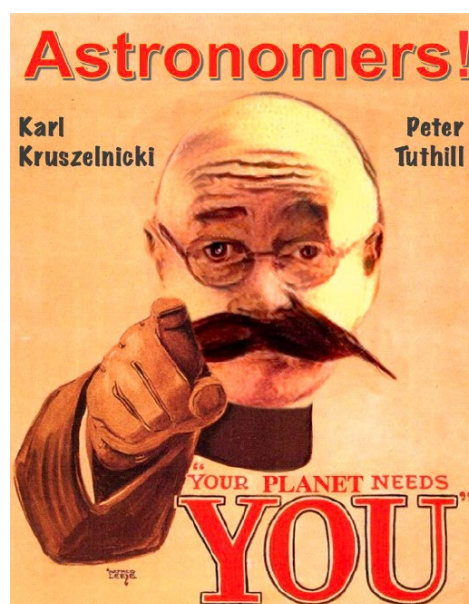
- Finally, although not a member of the Society, we note that in the Australia Day awards for 2022 it was announced that David Luchetti (DISER) had received the Public Service Medal. David has been pivotal in assisting astronomy, and was given a Certificate of Appreciation by the ASA last year *“In recognition of his long-standing support of the Australian astronomical community to advance the Square Kilometre Array project in Australia and support engagement with the European Southern Observatory.”* His Public Service Medal citation reads: For outstanding public service to science and industry policy in Australia, particularly in the Square Kilometre Array project.

6. ASA Meetings

The Annual Scientific Meeting: The 55th Annual Scientific Meeting (ASM) was held in “hybrid” mode, hosted by the University of Melbourne, from July 12-16, 2021. There were a series of in-person hubs around the country (Melbourne, Tasmania, Adelaide, Curtin and ANU) and everything was also available online. The word of 2021 was “pivot” and indeed your society was forced to pivot rapidly when unexpected lockdowns caused the cancellation of the hubs in Sydney and Brisbane at the last minute. The SOC was Co-Chaired by Christian Reichardt (U of Melbourne) and Emma Ryan-Weber (Swinburne). The LOC was Chaired by Kim Dorrell, and ably assisted by various local Hub contacts. A total of 423 people registered, with 105 opting for online only and 327 attending a hub – until the cancellation of the Sydney and Brisbane hubs due to Covid lockdowns forced them to move online.

The meeting was run as a zoom webinar, with parallel sessions managed via two meeting rooms. Participants were able to move from one session to the next. There were 132 talks, primarily from students (who were prioritised), and 17 Plenary sessions. The 61 posters were either shown as pdf or broadcast online in a loop during breaks. The meeting hosted 8 Town Hall meetings or Special Interest sessions, which are an increasingly important part of the ASM.

A highlight of the program was a talk on climate science featuring Dr Karl S. Kruszelnicki, Julius Sumner Miller Fellow at the University of Sydney and his colleague Prof Peter Tuthill. Various resources described in this presentation, and suitable for use in both teaching and outreach, are available on the Sustainability Working Group webpage.



Some new initiatives were trialled during the event. Several 'student challenges' were promoted with prizes up to \$500. There were many minor prizes offered in a variety of categories including 'First Student Question Asked' which proved successful in encouraging participation from the more junior members of the community.

Prizes for student presentations at the ASM include the following:

Best student posters

1st Anna-Maree Syme (UNSW)

"Trihybrid Linelists: A CN Example"

2nd Sonja Panjkov (U Melbourne)

"Placing Progenitor Constraints on the Supernova Remnant Population of the Large Magellanic Cloud"

3rd Marcus Lower (Swinburne)

"How do young pulsars spin down?"

Best student talks

1st Stephanie Monty (ANU)

"Astrometry with MAVIS: Pushing Past the Limits of Gaia to the Crowded Centres of Globular Clusters"

2nd Caro Derkenne (Macquarie U)

"Density slopes of early-type galaxies from spatially resolved MUSE stellar dynamics up to redshift ~ 0.5 "

3rd place was a tie between:

-Sara Webb (Swinburne)

"Fast Flares in the Galaxy, and the unsupervised machine learning used to find them"

-Georgie Taylor (ANU)

"Developing Supernova Models for Cosmology Applications"

The Harley Wood School of Astronomy (HWSA) was in-person at the La Trobe University campus at Wodonga (Vic). COVID again played a role, with attendees from Qld, WA, NSW and ACT being locked out by border closures, some only a few days prior to the event. A total of 39 were able to attend in-person. Others were able to zoom into the meeting sessions, and these participants included some from outside Australia.

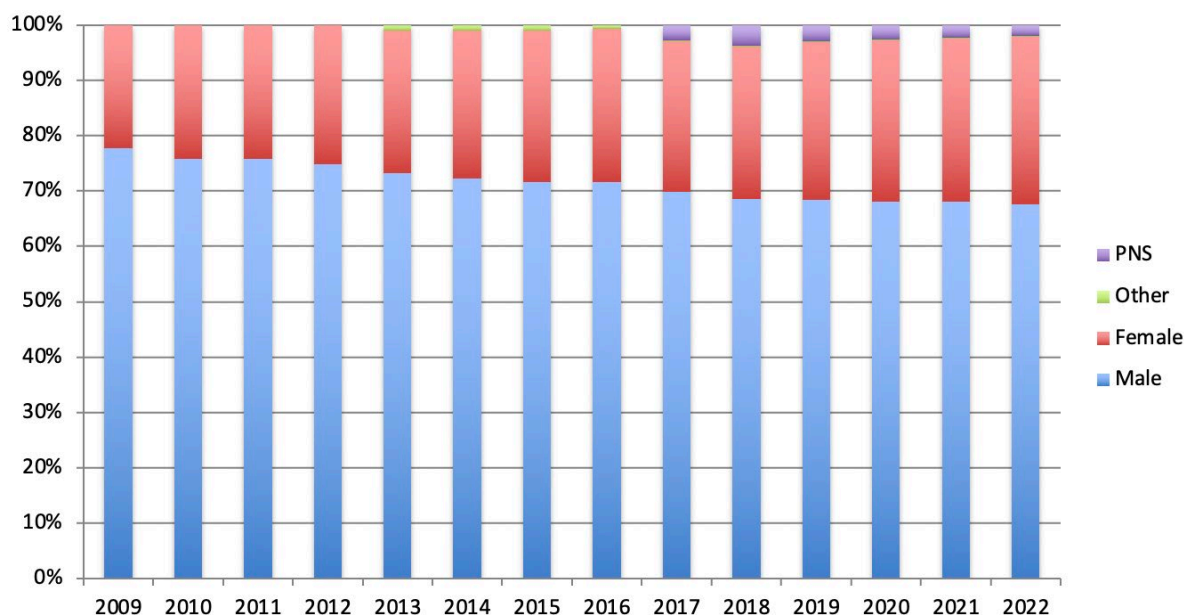
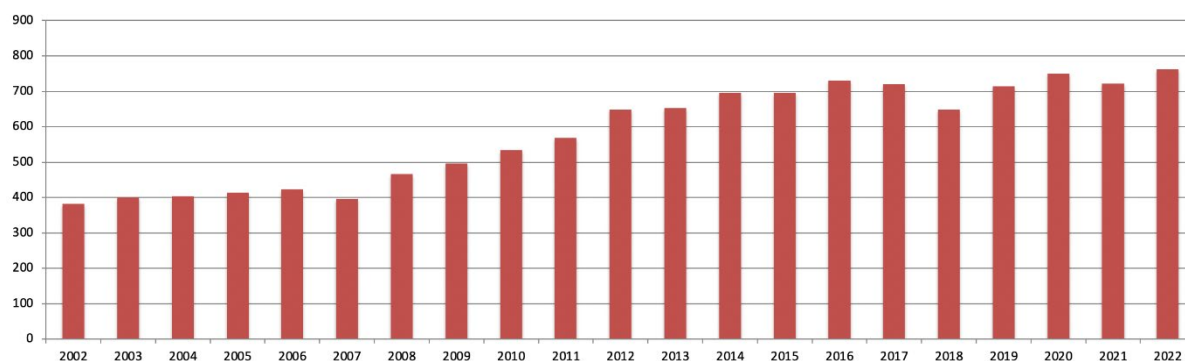
The 2022 ANITA Workshop: this was held in hybrid mode, at Macquarie University and over zoom on Feb 10 and 11. See section 14 below for more information.

The ANITA Summer School for 2022: this was on the topic of Galactic Archaeology and was held over Feb 7 to 9 at Macquarie University, again with some participants joining over zoom.

"How To" Seminars for ECRs: The ECR Chapter held a total of six "How To" seminars (online) and one on mental health. These attracted a total of 179 attendees, and are now available on YouTube (search for "ASA ECR Chapter How To Series"). See section 15 below for more details.

7. ASA membership

The ASA membership has increased by 40 over the past 12 months. Membership numbers are now 762 - these are all classified as 'Active' - 130 have payments overdue, of whom 59 are more than 18 months overdue (and will be removed shortly if they remain unfinancial). The gender breakdown is 231 (F), 515 (M), 1 (Other), 15 (Prefer not to say - includes Corporates). The graphs below show the historical data. The percentage of female members is now just over 30%.



8. Honorary Fellow

The ASA Council elected Professor Virginia Kilborn, Chief Scientist at Swinburne University, to Honorary Fellowship of the Society. Virginia has served the Society as President (1 year as Vice-President, 2 as President and 2 as Immediate Past-President), and has a remarkably successful research career before she became Swinburne's Deputy Vice-Chancellor (Research) and more recently Swinburne's inaugural Chief Scientist. These contributions are widely recognised by members, and now by the Council through this Honorary Fellowship.

9. Financial

The ASA finances are in a healthy position, with an average surplus of around \$45,000 p.a. over the past five years.

As at March 31, 2022, the Society had net equity of \$526,443 compared with \$510,270 at the same time 12 months before.

Given the current financial situation of the Society, and COVID, ASA Council has agreed to again keep the membership fees frozen for 2022/2023.

Reduced expenditure due to few student travel grants and very little Council travel, has been used for the ASA COVID fund, now replaced and extended by the IDEA Community Fund. We are cautiously hopeful of a return to normality in the coming year.

Given the healthy financial position, one important aspect of the upcoming Member Survey will be suggestions on how to use this money most effectively. In the past, the Society endeavoured to maintain sufficient funds to enable it to continue to publish PASA for about two years, in the event of a substantial drop in income. With PASA now generating money, this is no longer a concern. Hence, we will be seeking members' views on how best to use the money to serve the professional interests of the Society's members.

The Foundation for the Advancement of Astronomy has \$253,718 as of 31 Mar 2022. This charitable Foundation supports all the ASA Prizes. Donations are tax deductible.

10. Publications of the ASA (PASA)

PASA has continued to see an increased volume of submissions compared to pre-COVID levels. There was a slight decrease in 2022 compared to 2021, but submissions are still 22% higher than 2020 levels. The overall quality remains at a high level. The Impact Factor for 2020 was 5.57, and although the 2021 value is not yet available, all indications are that it will increase slightly again.

A new publishing contract has been signed with Cambridge University Press, for a period of 5 years. Our Editor-in-Chief Stas Shabala has negotiated an improved 50% surplus share arrangement for the ASA, up from 45%. Over the years, CUP have been an excellent partner, responsive to our community needs and constantly helping to improve the journal.

A recent Read-and-Publish deal provides open access to PASA articles for authors at almost all Australian institutions. PASA has inaugurated an Outstanding Reviewer award to recognise the work performed by our reviewers. The *Outstanding Reviewer* awards will be conferred on approximately two percent of PASA reviewers, and only those who have provided consistently outstanding reviews on multiple manuscripts. *We remind you that all PASA reviewers are eligible for a 30% discount on Cambridge University Press books.*

Editorial board

Small changes were made to the structure of the Editorial Board, to ensure continuity and development of editorial expertise in the community. The current Editor-in-Chief Stas Shabala will be retiring from this position at the end of 2022, and he is taking up the role of Vice-President of the ASA from this AGM. In accord with the new succession plans, the current Deputy EiC Ivo Seitzzahl will be succeeding Stas as Editor-in-Chief from January 2023. A new Deputy will be selected either from the existing Editorial Board or possibly from one of the new positions, currently being advertised.

PASA performance

The submission rate continues to be very high. Of 2021 manuscripts with decisions, 60% were rejected at some stage of the reviewing process (36% reject-inappropriate, 11% reject after review, 12% reject-resubmit). This rejection rate is broadly consistent with previous years: 50% (2020), 60% (2019), 45% (2018); and up from a few years ago (37% in 2017, 35% in 2016), reflecting the increase in the quality of work published by PASA.

Peer review process

PASA Associate Editors have been working hard on turnaround times, which have continued to decrease in the last year. The average time to first decision for papers sent out for review was 24 days in 2021, 26 days in 2020, 42 days in 2019, and 52 days in 2018.

Impact Factor

The 2021 Impact Factor is not yet available, but is due for release on June 30. The 2020 Impact Factor, covering papers published over the period 2018-2019 and cited in 2020, is 5.57. This puts PASA ahead of PASJ (5.02) and PASP (3.98), and now becoming comparable with the major journals and exceeding MNRAS (MNRAS=5.36, ApJ=5.75, AJ=5.84, A&A=5.64), exceeding MNRAS. I would like to thank and commend Editor-in-Chief Stas Shabala (University of Tasmania) for his excellent stewardship of PASA, and its continued success.

11. ASA Prizes and awards

The ASA has engaged the services of Science in Public to help promote the ASM and the Prizes. The Berenice and Arthur Page Medal received a great deal of publicity, with one of the winners (Trevor Barry) appearing in various newspapers as well as on the Channel 7 program Sunrise.

The ASA Prizes and Awards Co-ordinator (acting) Krzysztof Bolejko, collates gender and geographical statistics for ASA prizes to ensure that there is a good balance. For the 2022 prizes, the gender statistics are shown in the table below.

	Bok Prize	Heisler Prize	Webster Prize	Green Prize
Total	9	12	4	9
% female nominations	67%	42%	50%	33%
% female short-list	67%	33%	50%	50%
Gender of winner	F	F	M	F

The Society expects that female candidates should comprise at least 30% (increased from previous expectations of 20%) of the nominations for each prize and encourages institutions to help achieve this goal. This figure matches the percentage of female members in the ASA. The percentage of female nominations is variable because of the relatively small total number of applicants, but the statistics over recent years are as follows:

Prize	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Bok	67%	46%	37.5%	61%	0%	29%	50%	83%	50%	0%
Heisler	42%	18%	45%	38%	44%	43%	25%	40%	33%	25%
Webster	50%	80%	50%	50%	100%	0%	0%	100%	33%	0%
Green	33%	29%	40%	40%	50%	--	--	--	--	--

Many thanks to Krzysztof Bolejko for overseeing the awards, Tanya Hill's oversight of the process, and to all of the judges of the awards.

The following prizes have been awarded during the 2022 Annual Scientific Meeting (ASM):

Bok Prize - outstanding research in astronomy or a closely related field, by an Honours student or eligible Masters student at an Australian university.

Maria Djuric - The University of Sydney
Honours Thesis Title: *Stellar spiral structure in the Milky Way Galaxy*

Maria's project required significant initiative and insights. Maria had to develop complicated computational tools. The Judging Panel made its assessment based on the work done and broader impact and contribution to the field of galactic archaeology.

Honourable mention: Isaac Colleran (Curtin)

Charlene Heisler Prize - most outstanding PhD thesis in astronomy or a closely related field, accepted by an Australian university

Adelle Goodwin - Monash University

Doctoral Thesis: *On the Nature of Neutron Stars in Accreting Systems*

The Judging Panel reported that the thesis was exceptional both for breadth and depth of content. Adelle's work breaks new ground in several areas of astrophysical modelling and observation. It introduces new tools to the field, as well as presents some interesting findings about specific astronomical objects. It is also an example of an excellent integration with an open-source software ecosystem. The thesis led to 7 first author papers published and material from it has also been used in several other publications with Adelle as co-author.

Louise Webster Prize - outstanding research by a scientist early in their postdoctoral career

Adam Stevens (UWA)

"Atomic hydrogen in IllustrisTNG galaxies: the impact of environment paralleled with local 21-cm surveys", MNRAS, 483, 5334 (2019)

Adam's paper describes the use of the Illustris-TNG simulations to explore the effects of environment on multi-phase gas properties in galaxies. He applies an extensive and well-justified suite of post-processing steps to make predictions about the multi-phase gas in galaxies and the effect of environment. This careful analysis is a significant body of work in itself, with broad impact. The extra work to understand the observational implications of these predictions with current and upcoming surveys links the theory to the observation, and makes this a highly-impactful and influential paper.

Anne Green Prize - significant advance or accomplishment by a mid-career scientist

Natasha Hurley-Walker – Curtin University

Natasha's nominated work was dedicated to her leadership in producing an important new all-sky radio catalogue based on the MWA GLEAM. This led to wide range of research and had a broad impact across astrophysics. In particular, work led by Natasha resulted in identification of a new class of long-period magnetars. This discovery gained very large publicity with wide popular media coverage and outreach.

The Peter McGregor Prize – for exceptional achievement or innovation in astronomical instrumentation.

ASKAP Team - CSIRO

The Panel judged that the key technical innovation of the multi-element Phased Array Feed was an exceptionally innovative development, and formed the basis of the Prize.

The Berenice and Arthur Page Medal – for excellence in amateur astronomy

For the first time we have Joint winners:

1. *Trevor Barry*

Trevor Barry single-handedly built an observatory in Broken Hill. This amateur observatory is capable of providing state-of-the-art planetary imagery. On its own, this is a significant achievement. Trevor's work on the differential rotation of the polar hexagon on Saturn gives a greater handle on the internal atmospheric dynamics. This is careful work, and it complements spacecraft measurements. Trevor's work is widely known and highly regarded by NASA. The difference and contribution that Trevor can make is that he can almost continuously observe Saturn to analyse dynamic process over hours, days and weeks. This is something HST or satellite missions cannot do.

2. *The BOSS Team*

The BOSS Team is a well-coordinated, collaborative program with a focus on SN studies. The coordination of the team is what makes its achievement unique. They are able to monitor many galaxies, and detect supernovae in their early stages, often way ahead of professional programs. The importance of the initial discoveries, and tracing the light curves led to an impressive sweep of late stellar evolution science. It also led to cooperation with Purdue University and had impact on their REFITT program.

I would like to make a special thank you to Krzysztof Bolejko for this outstanding work as Prize Coordinator while Tanya Hill has been on leave.

ASA Certificate of Appreciation

The ASA Council voted to present a Certificate of Appreciation to Professor Daniel Price (Monash University) for his excellent work as Editor-in-Chief of PASA from 2015 to 2017. The Certificate reads: *“In recognition of his long-standing support and pioneering leadership of the Publications of the Astronomical Society of Australia.”*



12. Inclusion, Diversity and Equity in Astronomy (IDEA) Chapter

Katie Jameson is Chair of IDEA, which has 277 members (45% male and 54% female, 1% “prefer not to say”; hereafter PNTS, which also includes non-binary categories).

The current Deputy Chair, Devika Kamath, is expected to succeed Katie as Chair after the next elections.

The Community Action Committee has been formed, with an initial focus being to determine best practices for diversity, inclusion, and equity related issues in the community that will be shared through the IDEA website.

The major action for the last year has been the creation of the IDEA Community Fund. This is intended as a means of providing financial assistance when members face difficult times. The Fund has few restrictions, and is intended as a short-term resource for members. Effort has been taken to keep applications anonymous except where unavoidable. Details are on the ASA website.

I’d like to thank the IDEA Steering Committee, and especially Katie, for introducing this initiative.

13. Education and Public Outreach Chapter (EPOC)

Jackie Bondell is Chair of EPOC, which has 242 members (60% male and 38% female, 2% PNTS).

EPOC activities:

- Updated EPOC website
- Formed a partnership with P&O Cruises for members to serve as experts for eclipse cruises
- Liaised with Council to select and connect Eclipse cruise liaison
- Advanced plans for Outreach Small Grants Scheme to commence later in 2022

14. Australian National Institute for Theoretical Astrophysics (ANITA)

Ilya Mandel is Chair of ANITA, which has 246 members (67% male and 30% female, 3% PNTS).

The ANITA 2022 annual workshop was held in hybrid mode, from Macquarie University, on Feb 10 and 11, 2022. There were 77 registered participants presenting 31 talks. Ella Wang (ANU) was awarded the J-P Macquart Prize for the Best Student Talk, along with a \$100 gift certificate.

The ANITA 2022 Summer School was on "Galactic Archaeology" and was held on Feb 7-9 again at Macquarie, with some joining via zoom.

ANITA is again recording seminars on theoretical astrophysics, which are available on the ANITA YouTube channel. The Summer School talks are also available there. See the ANITA website for details.

15. Early Career Research Chapter (ECR)

Nichole Barry is the Chair of the ECR Chapter, which has 324 members, a 14% growth on the previous year (59% male and 39% female, 2% PNTS).

The ECR Chapter delivered an online seminar "Let's talk mental health" and a very valuable series of 6 "How To" seminars (virtually) in Feb and March on the following topics:

1. How to write proposals: telescopes, supercomputing, and more
2. How to write an industry resume: interactive workshop
3. How to transition to industry: advice from astronomers in industry
4. How to apply for an academic job
5. How to interview
6. How to polish, publish, and cite code

They also led the proposal from the ARDC for an ECRF award dedicated to the development of Astronomy Software. This will be completed and announced soon.

16. Group for Astroparticle Physics Chapter (GAP)

This year saw the formation of our first joint Chapter, between the ASA and the Australian Institute of Physics (AIP). There is a Co-Chair from the ASA (Alexander Heger) and a Co-Chair from the AIP (Celine Boehm). The Chapter has 66 ASA members (67% male and 29% female, 4% PNTS) and 188 AIP members (67% male and 31% female, 2% PNTS; but note that about 2/3 of these are undergraduate AIP members).

GAP is preparing its webpage and has begun exploration of various initiatives, such as a cross-institutional honours and MSc courses in 2023. Importantly, they have a nice logo:



GROUP FOR
ASTROPARTICLE
PHYSICS

17. Sustainability Working Group (SWG)

The SWG is a Working Group, rather than a Chapter, and does not have formalised reporting channels like the Chapters do. It has about 30 members. It was formed to advise the ASA on various issues related to sustainability and best practice in the area.

Activities in the past year include:

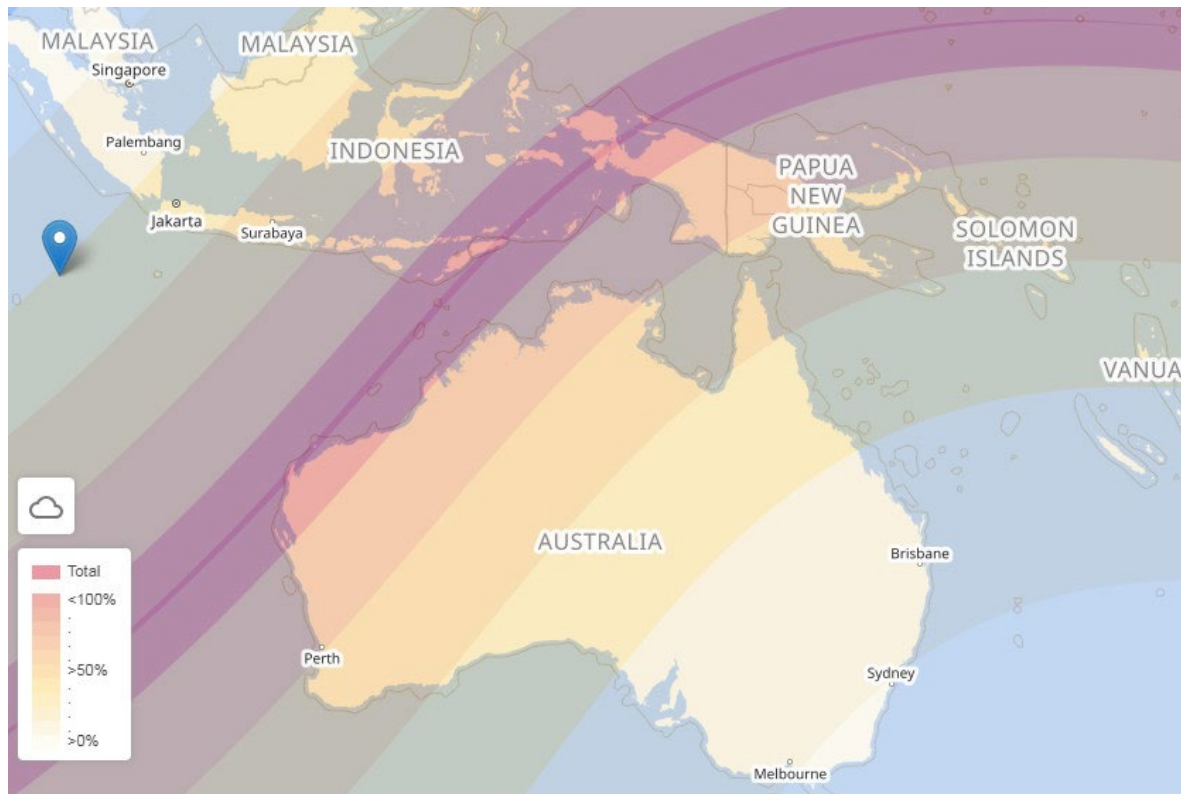
- Preparation of a letter to external organisations, informing them about ASA values on sustainability and requesting coordinated efforts (work in progress)
- Begun inquiries into the sustainability of computing for the astronomical community (Which is the largest contribution to our carbon footprint, as a community)

18. Designated Observatories

The ASA has been requested by Standards Australia to maintain a list of *designated* optical observatories that are judged to be valuable resources for (i) research, (ii) education and (iii) community use. Acceptance as a designated observatory does not imply any form of legal status, but it should enhance a case for protection against obtrusive lighting. There have been no additions to this list in the last year.

19. Upcoming Eclipse and Cruise

There will be a total solar eclipse on April 20 2023. This will be a hybrid eclipse, meaning that it is both annular and total, depending on the location on the Earth. The path of totality passes just off the coast of WA.



The ASA has entered into an agreement with P&O to partner with them on their Ningaloo Eclipse Cruise, a 5-night cruise that will position the ship in the best place for totality, given the weather forecasts. The ASA will provide material for guests as well as deliver lectures on board. In return the lecturers will receive a free cruise for themselves and one guest. In addition, the ASA will receive 5 free cruises (for two people) for our members. The EPOC Chapter is the main interface between P&O and the ASA.

We are forming an Eclipse Taskforce to ensure that good information is available to the public in general. Progress on the cruise details has been slow, due to the restarting of cruises in Australian waters just recently. Members will hear more through the ASA email exploder as the date gets closer.

20. Communications

The ASA email list remains the primary communication avenue for ASA news. Members can post directly to the list asa@mailman.sydney.edu.au.

This list is also used for Communications from the ASA Council to members regarding items of broad interest.

Michael Brown is the ASA's media and outreach coordinator and oversees the ASA facebook and twitter accounts and provides general media advice to the society. The ASA twitter account (@AstroSocAus) has 1,685 followers (an increase of 140 on 12 months ago) and regularly tweets ASA and general astronomy news.

The ASA Events Calendar lists all ASA sponsored events as well as conferences, workshops and meetings that are open to broad Australian and international participation (see <https://asa.astronomy.org.au/events/calendar/>).

The ASA (and many other bodies) has provided input to the National Research Infrastructure roadmap. The initial draft failed to mention ESO, which was quite a concern. This has been corrected after much activity from your Society as well as others.

We were contacted by the ARC to check the journals classified as “astronomy” for the upcoming ERA exercise. This was completed.

The ASA was very active in making our views known to the ARC after they ruled grant proposals ineligible if they referred to preprints. As a result of the many submissions they received, the ARC has changed its policy. In an attempt to minimise the damage done by this policy, those who were ruled ineligible due to referencing preprints and would not have been eligible to apply in the next round, have been informed that they can submit a proposal for the next round.

We recently wrote to the incoming Minister for Industry and Science (Ed Husic) as well as the Minister for Education (Jason Clare) welcoming them to the role and expressing the hope that we can work with them in the future to our mutual benefit. We offered to assist Minister Husic if he was interested in a tour of SKA or ESO facilities.

The ASA made a submission the Senate Education and Employment Legislation Committee on the Australian Research Council Amendment (Ensuring Research Independence) Bill 2018. This bill aimed to remove the ability of the Minister to veto proposals recommended for funding by the ARC. Despite the overwhelming support for removing the veto in the 85 submissions received, the bill was defeated. The discussion made the Editorial in *Nature* (who also argued for removal of the veto).

21. Science & Technology Australia

The ASA is a member of Science & Technology Australia (STA), which is Australia’s peak body across Science and Technology. ASA members attended major STA events in the past year, including *Science Meets Parliament* (SmP) and have participated in STA programs such as the post-budget briefing. STA is working toward avenues for greater indigenous participation. They also published their annual survey on STEM remuneration, offering a crucial set of insights of the impact of COVID-19 on Australia’s scientific workforce.

Science Meets Parliament was run in hybrid mode, with a large online activity, and city-based hubs for the dinner. ASA representatives were our Vice President Joss Bland-Hawthorn (U Sydney) as well as Themiya Nanayakkara (Swinburne) and Rosanna Ruggeri (UQ). As in 2021, the view was that the virtual SmP is not as successful as the in-person events of the past. We can only hope that this becomes an option in the near future.



Themiya Nanayakkara with MP Madeleine King and other SmP delegates

STA was very active in the ARC issues from the last 12 months: the preprint ruling and the attempt to remove the Ministerial veto from ARC grants.

22. National Committee for Astronomy

The ASA President is an ex-officio member of the NCA, which continues to be active in many areas.

Satellite Constellations:

Although there are many discussions it seems difficult to get action. The commercial interests associated with the satellites seems to outweigh the concerns of astronomers. That said, recent mitigation actions include new non-reflective coatings and some progress is being made. Note of course the recent formation of the IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference.

Astronomers on the College of Experts:

The NCA has lobbied for increased representation on the ARC College of Experts and that seems to have happened, with 5 astronomers on the College of Experts at present.

Space Astronomy:

We note the publication of “Australia in Space: a decadal plan for Australian space science 2021–2030” and possible opportunities for mutual collaboration with the growing space sector. I urge you to attend the Space Astronomy special session on Thursday 30 June where you can hear Fred Menk as well as the Director of the Australian Space Agency (Enrico Palermo) and the ANU Institute for Space (Anna Moore).

23. European Southern Observatory

The major outstanding item from recent Decadal Plans has been Australia's membership of ESO. The 10-year Strategic Partnership between ESO and Australia began in 2017, with an aim to be followed by a bid for Full Membership. DISER formed the ESO Coordinating Group (ESO-CG) to prepare for this bid, with members from various Australian astronomy organisations as well as DISER. The ASA President is an ex-officio member of this group.

Full membership will be expensive, with a joining fee (payable over 10 years) of order \$200M, followed by a decade of annual contributions of around \$30M, for a total over the decade of about \$500M. Note that these are very approximate figures.

The Minister will need to argue persuasively in Cabinet for ESO funding, which will be in competition with other proposals that may have more immediate and tangible benefits. This is a challenging case and will need to be backed by strong evidence. We need to be able to make a case based not only on scientific benefits, but also economic growth, and demonstrate the broader return on the substantial investment by the Government. They will want to see justified estimates of how many jobs would be created, in what sectors, and on what timeframes.

Securing external funds to come into Australian Industry to build instruments or indeed software is critical. To this end, AAL has been emphasising and detailing examples of Australian astronomy technology that have migrated to Industry.

One potential avenue involves an in-kind contribution, normally limited to about 25%. Australia could seek a larger than normal in-kind contribution, and the ESO-CG is working to identify something that would be acceptable to ESO in this regard. This would obviously decrease the initial cash required. However, this still requires Australian funds (e.g. LIEF etc) to be raised and spent on the in-kind component.

A very promising vehicle for an in-kind contribution is the WST (Wide-field Spectroscopic Telescope; previously known as SpecTel). This is similar to the Mauna Kea Spectroscopic Explorer – a wide field of view, 10-12m diameter, thousands of fibres, med and hi-res spectrograph etc. Expected cost is between 0.5 and 1.0 billion USD. This is the sort of technology and science that Australia is good at and would have much use within the community. Funding has been sought through the EU Horizons Program for a design study, and Australian partners include Astralis, ANU, U Sydney, UNSW, UWA, Swinburne and Macquarie.

The ESO Technology Development Program offers about \$1.5 million in competitive contracts each year to develop new astronomy technology for use by ESO, including new types of detectors, etc. Australia joined this in Feb 2022, and this provides an avenue that we need to try to engage with.

This year is ESO's 60th Anniversary (5 October). This provides an opportunity to sell ESO to Australia - both the public and the Government. The ESO-CG is working with ESO on this, and ESO is keen to organise an 'ESO Day' (or 'ESO Week') in Australia, including visits by senior ESO staff.

24. Astronomy Australia Limited

The Society is not formally involved with AAL, except through the activities of our members. Nevertheless, AAL plays a critical role in astronomy infrastructure related to the Decadal Plan. Hence their activities toward ESO membership are of great import to the members of the Society. Hence, we report here a summary of their activities for 2022.

NRI Roadmap:

AAL provided feedback on the National Research Infrastructure Roadmap (along with many others, including the ASA). The result was that key astronomy priorities were referenced in this current Roadmap document.

ESO Technology Development Fund:

In Feb 2022, The Australian Government and ESO signed a significant amendment to their existing Strategic Partnership, giving Australian companies and astronomy groups new opportunities to work with ESO to develop future ground-based telescope technologies. Under its Technology Development Program, ESO releases a number of competitive contracts every year, including those to develop new types of detectors, advanced optical coatings, and new laser sources. The recent amendment now enables Australian companies, universities and institutes to tender for these astronomy technology contracts.

GMT:

The Giant Magellan Telescope (GMT) project was supported by the 2020 United States Decadal Survey on Astronomy and Astrophysics. This placed the US Extremely Large Telescope Program (US-ELTP) at the top of its list of priorities for ground-based astronomy. AAL is one of the founding partners of the GMT, and joined with ANU in supporting the project during its early stages, with Australia currently holding a 10% share in GMT project.

New Staff and Canberra Office:

In the first half of 2022, AAL welcomed two new staff members – Vimal Parashar and Katherine Hinton. Katherine started as AAL's new Business Administrator in early April, a role that is based in the Melbourne office. Vimal commenced with AAL on the 2nd of May in the newly created role of Chief Strategic Partnerships Officer, a position which aims to maximise how the current ESO partnership brings economic value to Australia. Vimal is based in Canberra, at AAL's new office hosted by Australian National University's Institute for Space (InSpace).

Dr Ilana Feain also joined the AAL as a consultant to help discover new commercial applications for astronomy. Dr Feain is a founding Director of Quasar Satellite Technologies Pty Ltd – an Australian start-up company using Phased Array Feed technology (developed by CSIRO).

Industry Engagement:

Along with the appointment of Dr Feain, AAL launched a new astronomy research translation program in the hopes of attracting participants who can use Dr Feain's commercialisation 'discovery process' to unlock potential opportunities from their research/projects. Two excellent examples of industry engagement were also recently added to AAL's new website:

The Rosella Program

Dr James Gilbert from The Australian National University is the program lead for Rosella, a device that will translate the knowledge and high-end imaging technology employed by astronomers to other sectors. Rosella is a pixel digitisation device – a 'detector controller' that provides an intermediary connection between high-

performance optical/infrared image sensors used by astronomers and normal computing hardware, and is perfect for the burgeoning industry of space-based Earth observations.

AAT's Hector instrument and Nicholas Hacko Watchmakers

A major new instrumentation project for the AAT has led to a partnership with one of the most specialised watchmakers in Australia. The instrument, Hector, is a multi-Integral Field Unit spectrograph built for the AAT by the Astralis Instrumentation Consortium. The team from Astralis, led by Associate Professor Julia Bryant needed to source a new supplier for the machining of small parts as Hector called for a level of precision that was not achievable by any of the Astralis's conventional machining suppliers. In response, the team formed a partnership with Nicholas Hacko Watchmakers, an Australian company that specialises in very high precision machining of miniature parts for their range of exclusive watches.

As well as promoting specific case studies, AAL is also aiming to create a capability statement for each Australian institution/department with a significant astronomy capability. These statements will then be hosted on our new website. Please contact James Murray or your local industry engagement champion if you are interested in getting involved or wish to know more.

25. New Priorities and Planned Activities for 2022/2023

Council has identified the following possible priorities to concentrate on for the next 12 months **(for discussion)**:

- Pursue links to Space Societies
- Provide seed funding for exploration of effective tools for virtual/hybrid meetings
- Undertake an audit of institutions against Bronze Pleiades award with a view to mentoring to meet this level
- Conduct a survey of the Membership to see how we can best assist members, maximize benefits of the ASM to membership, and to seek ideas on how to effectively use the Society's finances.
- Finalise the ECR and ARDC award for a software development prize

26. Harley Wood School of Astronomy and ASM/AGM 2023

After years of meeting primarily online, the Council was of the opinion that the community would greatly benefit from a face-to-face meeting. Hence the priority for 2023 is a meeting that is mostly in-person, but with an online component on offer. We will investigate ways to help encourage people to attend the meeting, and seek the input from the SWG on how to compensate for the impact of this travel.

Further, 2023 is the 100th anniversary of the Auckland Astronomical Society. We will investigate ways to try to maximise involvement of astronomers in New Zealand.

The 2023 ASM will be jointly organised by Macquarie University and CSIRO, and held at Macquarie University Wallumattagal Campus, in North Ryde, Sydney. The proposed dates are July 3 to 7, to be confirmed.



The 2023 ASM theme will be **“Our Connected Community”** placing emphasis on re-establishing the bonds within the existing ASA community, and fostering connections with recent and future members. The newly-renovated central courtyard provides several covered and open areas that will host coffee breaks, poster sessions, and general circulation of ASM participants, encouraging the networking and community interaction that has been missing since the pandemic began. Co-Chairs are Richard McDermid (Macquarie) and George Heald (CSIRO).



27. By-Law Changes

Under Article 20 of the Constitution the Council may make or alter By-Laws to the constitution and must notify the membership within six months of doing so. If Members are concerned by any such changes, they can bring this to the attention of Council.

The Council amended By-Law A2 to enact a motion passed at last year’s AGM and By-Law A7 to reduce the fee for international Members and Fellows to the same rate as Student members on the basis that those members do not receive the same benefits as locals.

Council also redrafted Section J of the By-Laws relating to the PASA and the Editorial Board to reflect current succession planning practices for the Editorial Board that ensures a continuing high-quality Journal. Our publisher, CUP, refers to the Editor-in-Chief and so this title is now also reflected in the By-Laws and is equivalent to the “Editor” in the Constitution.

The changes have been circulated to all members along with other papers for the AGM.

28. ASA Council for 2022/2023

At the last AGM we announced the Professor Lisa Kewley (ANU) would join the Council as the incoming Vice-President. Unfortunately, due to increased workload and new opportunities, Lisa felt it necessary to resign as VP. She was replaced by Professor Joss Bland-Hawthorn (U Sydney) by the Council in accordance with Article 16 of the ASA Constitution.

However, increases in the demands on Joss' time led to him also deciding that he had to step down from the position. Council sought a replacement (again in accordance with Article 16 of the Constitution) and I am pleased to say that Dr Stas Shabala has agreed to take the position. Stas is currently the PASA Editor-in-Chief, and he will take on the VP role effective today. He will resign the PASA EiC role from Jan 1 2023, when the current Deputy EiC Ivo Seitzzahl will take over as EiC, following a gradual transition through the rest of 2022.

Our student representative Matt Roth has reached the end of his term and will be replaced by Alma Sebastian (Swinburne), who was elected unopposed.

Note that Tanya Hill returns (from leave) to her role as Prize Coordinator, and Krzysztof Bolejko leaves the Council after 5 years of service. Again, I'd like to thank Krzysztof for his excellent work both as a Councillor and as Prize Coordinator.

I'd like to welcome the new members to the Council and very gratefully thank the outgoing members for their work, on your behalf, with the Society. The Council for the next year will be:

John Lattanzio	President
Stas Shabala	Vice President
Cathryn Trott	Immediate Past President
John O'Byrne	Secretary
Marc Duldig	Secretary
Yeshe Fenner	Treasurer
Richard de Grijs	Councillor
Richard McDermid	Councillor
Barbara Catinella	Councillor
Sarah Pearce	Councillor
Bernhard Mueller	Councillor
Alma Sebastian	Student Representative
Stas Shabala (in 2022)	Chair, PASA Editorial Board
Ivo Seitzzahl (in 2023)	Chair, PASA Editorial Board
Tanya Hill (Co-opted)	Prizes and Awards Co-ordinator
Michael Brown (Co-opted)	Media and Outreach Co-ordinator

29. Closing Remarks

Your Society remains in a strong position from the perspective of membership, PASA, and finances. We have a strong student membership, and we are dedicated to assisting their careers (especially through the ECR Chapter). The IDEA Chapter continues to provide assistance and advice for members, and the recently initiated Community Fund is one good example.

Traditionally the ASA is synonymous with the ASM/HWSA in July, and PASA. It is important that we continue to provide this and other pre-eminent fora (e.g. Chapter meetings) for the Australian astronomy to meet and confer, and provide a highly-competitive journal to publish results from Australian facilities. But we are aware that the needs of the community change, and this is for example witnessed by the growing number of Special Sessions and Town Hall meetings at the ASM. We seek advice on how best to serve the members, initially through the upcoming Member Survey but feel free to email any member of the Council with suggestions or comments.



Professor John Lattanzio

President