

How Astronomers Focused the Scope of their Discussions: the Formation of the Astronomical Society of Australia

Abridged title: The Formation of the Astronomical Society of Australia

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Scientific societies provide an important forum for scientists to meet and exchange ideas. In the early days of European settlement in Australia the few people interested in the sciences joined together to form such societies that embraced all their individual disciplines. From 1888 the Australasian Association for the Advancement of Science with its different sections allowed a growing number of astronomers to share meetings only with researchers in the closely allied fields of mathematics and physics. Eventually, all three of these groups formed their own societies with the Astronomical Society of Australia being the last in 1966. Archival records are used to illustrate how the formation of the ASA came about and to establish the people involved. The makeup of Australian astronomy at that period and some of its research fields are looked at as well as the debates and discussions in the Society's first year while its future structure and role were established.

Introduction

Societies and associations are important to scientists in all fields as meetings and conferences allow discussions on research projects, arrangements of collaborations, receiving of support or criticism of results, hearing about the activities of other researchers and obtaining news of developments or opportunities. Even today with the availability of electronic communications such conferences where face-to-face meetings are possible have retained their importance. The Astronomical Society of Australia, for example, which is the organisation of the professional astronomers in the country, has held well-attended annual scientific meetings each year since its formation in 1966. The site of the meeting moves around the country, usually in or near capital cities, as each meeting is organised by a different university. The 2015 meeting is to be held in Fremantle and will be hosted by ICRAR/Curtin University.

Annual scientific meetings are only part of the current activities of the ASA that is now an integral part of the fabric of astronomy for Australian researchers.¹ The Society publishes a refereed journal, the Publications of the Astronomical Society of Australia that was originally called the Proceedings of the Astronomical Society of Australia. Before each annual scientific meeting a workshop is held for graduate students named after the Society's first president, the Harley Wood Winter School. The Society has four separate chapters that support early career researchers, education and public outreach, theoretical astrophysics and women in astronomy. Prizes, awards and travel grants are distributed by the Society that also provides a service for the dissemination of astronomical news.

Astronomers were part of the European settlement of the country from its early days, though initially only in small numbers. The first major observatory, set up in 1821 at Parramatta, began with three astronomers, but by its demise in 1847 there was only one.² The number of Australian astronomers grew with the establishment of Sydney, Melbourne and Adelaide observatories in the 1850s and 60s and Perth Observatory in 1896.³ However, the highest public profile activity of these observatories was not astronomy but weather observation and forecasting, so that when the new Commonwealth Government took over meteorology in 1908, they lost much of their public support.⁴ As a result, they were exposed to the whims of their state governments, especially at times of economic crises, so that Adelaide and Melbourne observatories were both closed in the 1940s. Despite a number of previous attempts at closure Sydney Observatory survived as a research institution until 1982, while research continued at Perth as late as 2013.

The Commonwealth Solar Observatory increased the number of astronomers from its beginnings in 1924, but especially after the Second World War when its director, Richard van der Riet Woolley, expanded its horizons to stellar astronomy and succeeded in obtaining a large modern 74-inch (1.9-m) telescope.⁵ Another major development after the Second World War was the decision by the CSIR (forerunner of the CSIRO) to turn over its Sydney-based Radiophysics Laboratory that had been hitherto engaged in secret work on radar to peaceful research. A significant part of this research was the observation of the sky with radio waves and many Radiophysics physicists and engineers became, to their own surprise, astronomers.⁶ These new astronomers were to provide a sufficient boost to the number of astronomers in the country to allow the formation of the ASA in 1966.

This paper begins with astronomers' involvement in early Australian scientific societies such as the state-based Royal Societies and the national Australasian Association for the Advancement of Science (later ANZAAS). It relates how astronomers shared a section of AAAS, Section A, with physicists and mathematicians for many decades and how the three groups from the 1950s onwards slowly moved away from ANZAAS and set up their own societies. The second half of the paper considers the formation of the Astronomical Society of Australia in some detail using archival records and letters. The story is taken through to the Society's second General Meeting in 1967 by which time its structure, its constitution and its publication were well established.

Early Australian scientific societies

Scientific societies have a long history in Australia going back to the early days of European settlement and astronomers were involved with them from the beginning. The first such society was the Philosophical Society of Australasia that began on 27 June 1821 with a gathering of a small group of half a dozen or so of the most influential men in the Colony.⁷ At their weekly meetings they planned to report on their enquiries and discoveries in different branches of the physical sciences as well as on the mineralogy and geology of the continent in which they found themselves.

In the next few months the original members were joined by a few others of similar status. Sir Thomas Brisbane joined the society in early 1822 shortly after taking over as

Governor of the Colony. Brisbane had a strong interest in astronomy and set up an observatory to survey the southern sky near his residence at Parramatta. He brought two people with him to help with the observations: Christian Rümker, who had been educated in Germany, and James Dunlop, who was self-taught and good at building instruments. Rümker joined the society, but Dunlop did not as presumably he was not regarded as having sufficient education or breeding to mix with the 'gentlemen' members.

The last person to join the society, Phillip Parker King in May 1822, also had strong astronomical interests.⁸ A Norfolk Island-born Royal Navy surveyor, he settled in NSW after his voyages and set up private observatories at his properties, first at Dunheved, near present day St Marys, and after 1839 at Tahlee near Port Stephens. In the late 1840s he was the only Australian astronomer publishing in international journals and can be regarded as the country's leading astronomer at the time.⁹

The Philosophical Society of Australasia only lasted for a year or so. The next similar society to be formed in NSW was the Australian Society in 1850. A few years later that was reorganised as the Philosophical Society of New South Wales and, finally in 1866, after receiving the Royal Assent from Queen Victoria, it became known as the Royal Society of New South Wales. By then there were already Royal Societies in Tasmania and Victoria.¹⁰

In 1876 with an increasing membership and ensconced in suitable premises, the Royal Society of New South Wales decided to form specialist scientific sections.¹¹ The section devoted to astronomy was Section A and chaired by the Government Astronomer and director of Sydney Observatory Henry Chamberlain Russell. By that time there were a few professional astronomers at Sydney Observatory and at the Lands Department but Section A also included some advanced amateur astronomers such as John Tebbutt from Windsor near Sydney whose prolific scientific output gave him a high international reputation.¹² Another was the bank manager William John Macdonnell who took part in the 1871 Australian Eclipse Expedition to far north Queensland as well as assisted with Sydney Observatory's transit of Venus observations in 1874.¹³ Although Section A only lasted for five years it was significant as it provided the first chance for local astronomers to come together to discuss and develop their interest in the subject.¹⁴

The Royal Society of Victoria also had a Section A from 1879 onwards. Under the leadership of the director of Melbourne Observatory, Robert Lewis John Ellery, the 40 or so members had interests covering astronomy and the physical and mechanical sciences together with engineering.¹⁵ The neighbouring state of South Australia also formed an Astronomy Section but only in 1892, after the ones in New South Wales and Victoria were no longer functioning. Charles Todd of the Adelaide Observatory, who became Sir Charles the next year, was elected president at the first meeting. Nine years later the section split off from its parent body and became the Astronomical Society of South Australia.¹⁶ ASSA has prospered since and is still operating successfully today, although now as a purely amateur group, and is the oldest extant astronomical society in the country.

To obtain sufficient numbers of workers in astronomy or any other scientific field for meaningful dialogue intercolonial cooperation was necessary. Until 1877 when the telegraph had linked the various colonial capitals and the 1880s when Adelaide, Melbourne, Sydney and Brisbane were connected by railway, contact between the colonies was difficult. In addition, each colony and its inhabitants looked more to London than to their neighbours for support.

Still the astronomers were in the lead in cooperation between the colonies. The Royal Society of Victoria organised an expedition to view the total solar eclipse of 12 December 1871 from far north Queensland. The expedition on board the steamer Governor Blackall included staff from both Sydney and Melbourne observatories, biologists and other scientists including one from Queensland.¹⁷ Sadly, the eclipse was clouded out but otherwise the expedition was a success.

The 1874 transit of Venus provided the three Australian observatories an opportunity to cooperate amongst themselves, as well with visiting astronomers from overseas. Longitude determination by exchange of telegraph signals was especially important.¹⁸ Melbourne Observatory exchanged signals with the party led by William Harkness of the US Naval Observatory in Hobart, while Sydney Observatory helped to determine the longitude of Queenstown in New Zealand to help another American party. A planned conference in Melbourne on the results after the transit had to be cancelled when the ship transporting the American expeditions was called home early.

The three government astronomers, Russell from Sydney, Ellery from Melbourne and Todd from Adelaide kept in contact and met formally in November 1879. The reason for their meeting was not astronomy but meteorology, which was another of their responsibilities. The conference was also attended by James (later Sir James) Hector, who was the Inspector of Meteorological Stations in New Zealand. It was obviously of importance to exchange meteorological information between the colonies and the conference discussed amongst other topics the standardisation of observing instruments and times and the system of exchanging weather telegrams.¹⁹ Two more of these Intercolonial Meteorological Conferences were held in 1881 and 1888 with the last of these having extra attendees including the confrontational Clement Wragge from Queensland.²⁰

The Australian Association for the Advancement of Science

This organisation to link the various Royal Societies and other scientific societies scattered around the different Australian colonies was finally formed in 1888 thanks to the efforts of Professor Archibald Liversidge. London-born Liversidge held the chair of Geology and Mineralogy at Sydney University from 1874; from 1882 the name of the chair was changed to Mineralogy and Chemistry.²¹ Liversidge had a wide range of interests: he had assisted with the transit of Venus observations arranged by Russell, he was a member of 13 learned societies in the UK and in Australia, he was largely responsible for the establishment of the Technological Museum in Sydney (now the Museum of Applied Arts and Sciences) and was elected a Fellow of the Royal Society of London in 1882.

While serving as the president of the Royal Society of New South Wales Liversidge arranged for a meeting of representatives of the different societies in Australia and New Zealand to be held in November 1886.²² The meeting supported Liversidge's proposed new association and by March 1888 it was time to elect its president. The obvious choice for the post was Henry Chamberlain Russell of Sydney Observatory, who was a fellow of the University Senate, a vice-president of the Board of Technical Education and also a Fellow of the Royal Society of London.

The first meeting of the AAAS began on 28 August 1888 with a garden party at Sydney Observatory hosted by Mr and Mrs Russell. In the evening there was the President's Address in the Great Hall of the University in front of 'upwards of 700 ladies and gentlemen'.²³ Russell in a long and stirring speech stressed the importance of scientific education and claimed that 'the world has learned to recognise the fact that science is the great lever in the material advancement of the people'. He defended the importance all sciences including that of the 'dreamy astronomer' against the view of those 'who would cultivate only what they characteristically call the bread and butter sciences'.²⁴

Ten sections were set up in the AAAS with Section A being Astronomy, Mathematics, Physics and Mechanics with the distinguished Victorian Government Astronomer Robert Ellery as its president. As at a large modern conference, these sections held parallel meetings in the different lecture rooms of the university. *The Australasian* reported on the popularity of these sectional meetings: 'at half-past 10 o'clock the passages were alive with eager men, many of them laden with portentous bundles of manuscript, following the placarded directions towards their special sectional rooms. Inside the rooms it was easy to feel the tension of excitement. Grey-haired scientists were chumming like boys over the touch of science'.²⁵

After the first meeting in 1888 the association continued to meet at roughly yearly intervals, though with occasional breaks, especially during the years of the first and second world wars. Section A remained as a forum for astronomers together with scientists from related disciplines. By 1921 mechanics had been dropped from the name of the section so that it became Astronomy, Mathematics and Physics. At the 1930 Congress held in Brisbane, the name of the association itself was changed to the Australian and New Zealand Association for the Advancement of Science or ANZAAS.²⁶

In addition to ANZAAS meetings occasionally local astronomers could meet with each other in Australia at specialised conferences. A meeting of the Australian National Committee of Radio Science (ANCORS) at Sydney University in mid-January 1950 was of great interest for those working with radio waves.²⁷ The two main parts of the meeting were on the study of the ionosphere and on radio astronomy. In the former section two papers were presented by an international visitor, Sydney Chapman, an Oxford mathematician and ionospheric scientist who has a crater on the Moon named after him, albeit on the far side. The radio astronomy section had contributions from many of the CSIRO radio astronomers including Ruby Payne-Scott who summarised what had been learnt to that date about solar radiation. In a thoughtful paper Joe Pawsey, the leader of the radio astronomy group at CSIRO Radiophysics, considered the relation between observations at radio frequencies and traditional optical astronomy.

Speaking of radio astronomy he said, 'Its value will depend on differences in generation and propagation between radio waves and light which permit the observation of phenomena by radio waves which were not detectable optically'.²⁸

Two years later there was a similar meeting at which the Australian radio astronomers were for the first time joined by their international counterparts: the General Assembly of the International Scientific Radio Union, known by the initials of the French form of its name as URSI. Held at Sydney University in August 1952, just nine days before the start of that year's ANZAAS congress, the URSI meeting attracted around 50 overseas scientists. Chief among them was the Nobel Prize winner Sir Edward Appleton, known for his work on the ionosphere and who had been president of URSI for 18 years.²⁹ Other notable visitors included Francis Graham-Smith with a newly-minted PhD from Cambridge and who later was to become Astronomer Royal, and Robert Hanbury Brown from Jodrell Bank, who a few years later was to move to Sydney University as professor of astronomy. According to the Sydney Morning Herald, the selection of Sydney for the one of URSI's two-yearly assemblies was 'a recognition of the remarkable achievements of scientists in Australia in this field'.³⁰ As at the earlier ANCORS meeting, one strand of discussions at the meeting was the ionosphere; in this field David Martyn of the Commonwealth Observatory, a Fellow of the Royal Society and a vice-president of URSI, took a leading role. Another was radio astronomy in which the CSIRO radio astronomers led by Joe Pawsey could show some of their achievements.

Sometimes distinguished visitors came for ANZAAS meetings such as Otto Struve, the director of the Department of Astronomy at the University of California and the then president of the International Astronomical Union, who came for the one held in Canberra in January 1954.³¹ At this meeting Section A held three all-day symposia: on the upper atmosphere; on the Earth, which was held together with Section C on Geology; and on the galaxy. The last symposium was the one with obvious interest for astronomers and it was opened by the director of the Commonwealth Observatory, later to be known as Mt Stromlo Observatory, Richard van der Riet Woolley, talking about the internal constitution of the stars. Struve followed with a discussion of ideas on the formation of stars and Edwin Salpeter, a prominent physicist from Cornell but with a strong Australian connection as he had received BSc and MSc degrees from University of Sydney and was then a Visiting Professor at the Australian National University, summarised nuclear reactions in stars. Contributions also came from other well-known Australian and international astronomers such as Ben Gascoigne, Gerald de Vaucouleurs, Frank Kerr and Joe Pawsey.³²

Another distinguished visitor, Vainu Bappu, director of the Kodaikanal Observatory in India and in 1979–1982 the president of the International Astronomical Union, came for the 1964 ANZAAS Congress, again held in Canberra. On arrival in Canberra he was met by Bart Bok, the director of Mt Stromlo Observatory and under whom he had completed his PhD at Harvard 15 years earlier.³³ Bappu gave a general talk on 'Solar Research in India', but most papers of astronomical interest were given in four symposia: the upper atmosphere, cosmic rays, massive stars and time measurement. Jack Piddington of CSIRO Radiophysics was a contributor to the cosmic ray symposium, while Bart Bok of Mt Stromlo spoke about supergiants in the Large Magellanic Cloud at the massive stars symposium. At the time symposium Harley Wood,

the director of Sydney Observatory and soon to be the first president of the Astronomical Society of Australia, spoke about defining the second using the properties of atoms in addition to a definition based on celestial motions.³⁴

Australian Mathematical Society

Out of the three professional groups that made up Section A of ANZAAS, the mathematicians were the first to form their own national society. They founded the Australian Mathematical Society on 15 August 1956. According to the account by one of the leading players in the new society, Larry Blakers, it began with his car trip across the Nullarbor in January 1954.³⁵ Blakers had returned to Australia two years earlier after his appointment as professor of mathematics at the University of Western Australia. He was unimpressed with finding that the only meetings of mathematicians in the country were at meetings of ANZAAS in a section shared with two other groups and that the section 'appeared to be dominated by Physics'. He was also concerned by the lack of a local journal devoted to mathematics.

Blakers' overland journey was to visit his fellow mathematics professors in the eastern states to discuss, among other subjects, the formation of a new society as well as to attend the January 1954 ANZAAS meeting in Canberra. He met with Tom Cherry in Melbourne, Thomas Room in Sydney and Edwin Pitman in Hobart. There was no immediate agreement on a new society but they agreed to continue discussions by correspondence. These discussions must have progressed for at the subsequent ANZAAS meeting held in August 1955 in Melbourne Professor Cherry chaired a meeting of a mathematics sub-section of Section A to consider with a wider group the possibility of forming a new society. The suggestion clearly fell on fertile ground as at this meeting a definite decision was made to set up the Australian Mathematical Society as well as publish a mathematical journal.

A provisional committee was appointed consisting of senior mathematicians: eight professors plus Edmund Cornish, the Chief of CSIRO's Division of Mathematical Statistics with Professor Cherry as the convenor. The initial meeting of the new society was to be in Melbourne in August 1956 to coincide with a planned visit by Albert Tucker, a distinguished mathematician from Princeton University, who had developed the well-known prisoner's dilemma to illustrate game theory.³⁶ After determining the basic structure of the society and its subscription fees a circular was sent out to a wide range of potential members at the end of 1955. The list of potential members contained at least 182 names based on a list prepared a year earlier for the International Mathematical Union and augmented with the names of others with whom committee members were familiar.

The Inaugural Meeting of Australian Mathematical Society was a four-day one, 15–18 August 1956, held at the University of Melbourne. Accommodation for men was at Ormond College where bed linen and towels were available for 'a limited number only of guests'. A similar standard of accommodation was available, if required, 'for a limited number of women', but not for the wives of attendees. Business meetings were held on the first and last days of the meeting with 70 mathematicians present for the first one out of the 107 who had registered for the meeting. Once again agreement was obtained to the formation of a new

society and Professor Cherry was elected as the first president supported by a council of 12 members.

Shortly after the Inaugural Meeting a circular announced that those who joined the new society by 30 September 1956 would be recognised as foundation members. The subsequent list of foundation members includes 123 names, among whom it may be of particular relevance to note that there are two future presidents of the Astronomical Society of Australia: Harley Wood (1966–67) and Kevin Westfold (1975–76).³⁷

Though the aim here is to summarise the formation of the Australian Mathematical Society, a brief mention of its early years may be helpful for comparison with those of the ASA. There were two main strands of discussion at council meetings and general meetings of the society over the next year. One strand concerned the rules of the society that were eventually adopted and became its constitution. An interesting change to the rules as proposed was the removal of restrictions ‘on the period for which Secretaries could hold office’. The other strand was the publication of a journal; its name and whether it was financially feasible were important points of consideration. The solicitation of society members to submit ‘a fair proportion of their best work’ was another, especially noting the appeal of publishing in better known overseas journals.

Australian Institute of Physics

Physicists, who made up the third strand in Section A of ANZAAS finally achieved their own local organisation, the Australian Institute of Physics, in August 1962, six years after the mathematicians.³⁸ However, there was a long prior history to the formation of the AIP stretching back almost four decades.

As with the mathematicians, the initial impetus for the formation of a body linking physicists in Australia came from Western Australia, which may indicate the extra isolation of scientists working so far from the more populous eastern states. Scottish-born Alexander David Ross, the professor of mathematics and physics at the University of Western Australia in the mid-1920s made the original suggestion, but felt that the time was not yet ripe for a fully local organisation and instead wanted to set up a branch of the recently formed Institute of Physics, based in London. In a 1923 letter he wrote that, ‘connection with the British Institute will ensure standing and encouragement which would be lacking in a society having no such connection’.³⁹

The next step was for Ross to write to the IoP in London seek their approval for an Australian branch. Not surprisingly, approval was not given as there were only three members of the Institute in the whole of Australia at the time, including Ross. Instead, they allowed Ross to style himself as the Institute’s Hon. Local Secretary for Australia. With the help of that title Ross successfully convinced a number of other Australian physicists with the right qualifications to join the Institute. As well, he managed to get approval from London for a small local committee, for which he was to be secretary, to be set up to vet future applicants.

Although Ross' original aim for the branch was to support the status of physicists, it began to organise research conferences. The first of these was in Canberra in August 1928 and was hosted by Geoffrey Duffield, the director of the then new Commonwealth Solar Observatory on Mt Stromlo. Held at the Hotel Canberra apart from an afternoon session at Mt Stromlo, the 34 participants came from Sydney, Melbourne, Perth, the Royal Military College at Duntroon and the Observatory.⁴⁰ The program included three discussions, one of which on the then new quantum theory was notably co-led by a woman, Edna Briggs, in an otherwise all male affair. As Edna Sayce, she had been the first woman to graduate in physics from Sydney University and at the time of the conference had recently returned from Cambridge where her husband George had completed a PhD.⁴¹ Duffield and his staff showcased their early work by presenting a number of astronomical papers including ones on arc spectra, spectral lines, photoelectric stellar photometry, spectroscopic parallaxes and the luminosity of the night sky. Another astronomical paper was from James Nangle, the honorary director of Sydney Observatory on what he called 'the Astrographic Chart'.⁴² Evidently the conference was regarded as highly successful for the unofficial branch went on to organise five more at intervals of roughly two years.⁴³

The 1933 conference of physicists was a difficult one for the astronomers in attendance for the Commonwealth Government asked the meeting to recommend which two of the country's observatories should be retained, while the remaining three were to be closed.⁴⁴ The Commonwealth request was made as an economic measure after consideration of the overlap of Commonwealth and State services. David Rivett, the chief executive officer of CSIR, announced at the conference that a committee had recommended retaining the observatories in Canberra and in Perth. Though a reprieve was given at the 1936 Premiers' Conference, two of the state observatories, Adelaide and Melbourne, survived only until the next decade.⁴⁵

Until 1939 the number of physicists in Australia was small with IoP having only 55 qualified members in Australia.⁴⁶ The approach of war and then World War II itself led to a sudden increase in demand for physicists. CSIR, the forerunner of the present CSIRO, established new physics -based divisions: the National Standards Laboratory, the Division of Aeronautics, and the secret Radiophysics Laboratory to work on radar under the leadership of David Martyn. There was also a new CSIR unit called the Lubricants and Bearing Section plus the Defence Department expanded the work of its Munitions Supply Laboratories in Melbourne.⁴⁷

The war also had major consequences for the Australian branch of the IoP as in May 1939 the board in London granted it 'autonomy in all matters arising in the Commonwealth'.⁴⁸ A draft constitution for the branch was drawn up in 1941, but due to wartime activities a final version was not available until 1944. This was sent to London from where the IoP replied by cable that it had approved the constitution and confirmed that its Australian Branch was created back in 1928.

By 1950 the number of IoP Australian members had reached 246 including a new graduate membership grade, that is, almost five times the membership 11 years earlier.⁴⁹ To

cater for these enlarged numbers the branch organised specialist conferences from 1948 onwards including the radio science conference held with the international radio science union, URSI, previously mentioned. More generalist meetings were those of Section A at meetings of ANZAAS. The programs for these became crowded as at the 1951 Brisbane Congress where 44 papers were presented to the section as well as a presidential address. To cope the organisers of the following meeting subdivided the program of the section into subsections.⁵⁰

The first push for an organisation independent from the British parent body came in 1951 from the president of the Branch, George Briggs, who was the chief of CSIRO's Division of Physics and the husband of the Edna Briggs who had talked about quantum physics at the 1928 conference. He outlined proposals to form an Australian Institute of Physics at general meetings of the Branch in 1951 and 1952. Some kind of vote was taken and the majority of physicists indicated opposition to an independent institute and wanted to continue their membership of the IoP. This may have been because many of them had moved to Australia from Britain and still retained loyalty back 'home' or, alternatively, because they did not want to lose their low price access to IoP publications.⁵¹

Over the next few years the proposal for an Australian institute was not forgotten. At one stage, however, it was somewhat side-tracked by Harry Messel, the Head of the School of Physics at the University of Sydney. Messel criticised the Branch for not organising sufficient conferences and instead wanted to set up a physical society that would concentrate on organising meetings unlike an institute that was also concerned with the status of the profession. Such a physical society did not eventuate.⁵²

The proposal for an independent body was reconsidered in 1960 under the presidency of Joe Pawsey, the Assistant Chief of Radiophysics at the CSIRO. This time the Branch committee prepared very carefully. They consulted the separate state based divisions of the Branch that were set up by then and they wrote to London. The IoP was most supportive and even suggested an arrangement by which membership could be retained with a low subscription fee for those who join the new Australian institute. A draft constitution for the proposed Australian institute was also drawn up.⁵³

All was now in place for a postal ballot of Branch members, who were asked not only if they wanted a new organisation but whether it should be an institute or a physical society. The results were announced at what turned out to be the final meeting of the Australian Branch of the IoP on 21 August 1962: 536 ballots had been sent out and 304 returned. There were 2 abstentions, 16 against and 286 in favour of forming the Australian Institute of Physics. With a clear majority in favour of the new body a resolution was moved, seconded most suitably by Alexander Ross, asking the IoP in London to dissolve its Australian Branch. With subsequent resolutions the Australian Institute of Physics came into existence.

International Astronomical Union and the National Committee of Astronomy

The International Astronomical Union (IAU), founded in 1919, is the international organisation for professional astronomers. Among its variety of activities, one of the most important is the

organisation of scientific meetings. In March 1963 a significant meeting was held under its auspices, partly at Mt Stromlo and partly in Sydney: IAU Symposium No. 20, *The Galaxy and the Magellanic Clouds*. Having the symposium in Australia was once again an indication of the esteem in which Australian astronomy was held internationally and, especially, the director of Mt Stromlo, Bart Bok, who was a highly vocal proponent of observing the Magellanic Clouds. The conference began with the 'turning of the first sod' for Stromlo's Duffield Building and before leaving Canberra for part two of the conference two of the 50 or so overseas and interstate guests, Jan Oort from Leiden and Victor Ambartsumian of the Byurakan Astrophysical Observatory, the then president of the International Astronomical Union, were presented with honorary DSc degrees by the Australian National University.⁵⁴ Edited by radio astronomer Frank Kerr of CSIRO Radiophysics and Alex Rogers of Mount Stromlo, the proceedings of the conference contained 77 papers.⁵⁵

Australia is formally connected to the IAU through the National Committee of Astronomy, which was set up for the purpose by the Australian National Research Council, the predecessor of the Australian Academy of Science, in March 1939.⁵⁶ Initially, it had Joseph Mason Baldwin, the Victorian Government Astronomer, as chair, Alexander Ross from the University of Western Australia as secretary, and as members the heads of the various observatories plus a couple of interested individuals, one of whom was the widely-respected amateur Walter Gale. The convenor or chair of the NCA in the mid-1960s was Arthur Hogg of Mt Stromlo Observatory; after his death on 31 January 1966 he was replaced by Harley Wood of Sydney Observatory. This appointment placed Wood, who was shortly to become president of the newly formed Astronomical Society of Australia, at the centre of Australian astronomy. For instance, it was he who received the formal invitation of the International Astronomical Union to hold its 1973 General Assembly in Australia.⁵⁷

Astronomical Society of Australia

There were a number of unsuccessful attempts to form an Australia-wide astronomical society before the successful formation of one in 1966. One was in 1892 when Walter Gale and Robert Innes, then an amateur but later a professional astronomer in South Africa, planned the Australian Astronomical Society.⁵⁸ This did not go ahead, probably because leading astronomer John Tebbutt advised that there were insufficient people in the country doing serious astronomical research.

A proposal for a '(Royal) Astronomical Society of Australia' came in a circular letter from William Cooke of Sydney Observatory in 1926.⁵⁹ Cooke states in the letter that the idea came up at meetings of the computing section of the NSW Branch of the BAA. The word Royal was to be omitted from the name until proper assent was obtained. A feature of the proposed society was to be a monthly bulletin of astronomical information. Joseph Baldwin of Melbourne Observatory strongly opposed the formation of the society as he felt that sufficient information was already available, presumably from the government observatories in each state.⁶⁰ The society did not proceed.

A proposal much closer to the date of the successful formation of the Society in 1966 came from Western Australia as had occurred previously in regard to the Australian

Mathematical Society and the Australian Institute of Physics. In a letter dated 14 June 1966 and addressed to Ben Gascoigne at Mount Stromlo, the Western Australian Government Astronomer John Harris said that he has heard about the proposal for a new Society and that, 'You will recall that I put this forward, without much success, at the last meeting of the National Committee of Astronomy in January 1964'.⁶¹

Gascoigne and three other astronomers came up with the proposal for the new Society in early 1966. According to a statement by Ron Giovanelli of the CSIRO at the first meeting of the Society (see next section) the others were William Buscombe of Mt Stromlo, Paul Wild of Radiophysics and himself. To formulate the proposal they are likely to have physically met; an exchange of letters would have been slow and interstate phone calls were as yet major events.

Australian astronomers received the first formal notification of the proposed society in the form of a circular sent out during August 1966. The circular began by stating 'By almost any criterion - weight of contributions, numbers of people involved, capital investment - Australia has become a major force in astronomy'.⁶² The circular was signed by six well-known astronomers: Ben Gascoigne of Mt Stromlo, Ron Giovanelli of CSIRO Physics, Frank Kerr and Paul Wild of CSIRO Radiophysics, Bernie Mills of Sydney University and Harley Wood of Sydney Observatory.

After elucidating the importance of astronomy the circular goes on to mention the need for a society to represent astronomers professionally and to organise scientific meetings once or twice a year, with the first meeting of the society foreshadowed for early December. Notably, it mentioned the possibility of sending the abstracts from the first meeting to a suitable journal and stressed that 'no further publications are contemplated, certainly no journal'. This position was soon to change. The circular ended with a request for interested recipients to complete an attached form.

According to the minutes of the Inaugural meeting about 150 copies of the circular were sent out to prospective members of the Society.⁶³ In the ASA archives there is an Invitation Membership List No 1 with 145 non-duplicate names.⁶⁴ The names were clearly put together by different members of the self-appointed initial committee who listed and added suitable people that they knew. The composition of the list gives a useful snapshot of Australian astronomy at the time and clearly indicates the dominance of three institutions: 47 names from CSIRO, mainly from Radiophysics plus a few from the Division of Physics, 29 names from Sydney University, mainly from Physics but also from Electrical Engineering and Applied Maths, and there were 40 from Mt Stromlo Observatory. The remaining 29 astronomers were spread across smaller institution such as Sydney and Perth observatories and the universities of Monash, Adelaide, Western Australia, Queensland, Tasmania, Newcastle and NSW. There was someone from the Atomic Energy Commission plus a few advanced amateurs.

Sadly, again indicating the state of astronomy in 1966, there were very few women on the circulation list: Dr Margaret Clarke from Radiophysics, Bev Harris at the Parkes Radio Telescope, amateur astronomer Berenice Page and five postgraduate students from Mt

Stromlo including three who would shortly be awarded PhD degrees, Donna Hain, Lindsey Smith and Louise Webster.

The inclusion of amateurs was contentious from the beginning as indicated by Ben Gascoigne when he sent an initial list to Paul Wild so that he and his CSIRO colleague Ron Giovanelli could add the names of people who had been missed. He goes on to say that, 'The converse problem of who not to include has already given rise to a certain anguish around here'.⁶⁵ An exception that Gascoigne wanted to make was 'Mr. Page of Brisbane (and his wife), amateurs but of such a standard that I had no doubt about inviting them'. Arthur Page had been a protégé of former Stromlo director Bart Bok and he and his wife Berenice observed flare stars, comets and variable stars in collaboration with professionals.⁶⁶

Of the 150 or so recipients of the circulars 121 returned the form enclosed with it to Ben Gascoigne in Canberra. Harley Wood replied even though he was one of the six signatories.⁶⁷ This exceptionally high rate of return demonstrated the great interest in the proposed society. A number of returnees included supporting remarks, such as:⁶⁸

Bruce Slee, CSIRO Radiophysics (then at the Royal Radar Establishment, Malvern, England), 'I am interested in becoming a Foundation Member. Such a society will do useful work for Australian Astronomy'.

Kevin Westfold, Monash University, 'The formation of such a society is overdue. One of its functions could be to hold 'proving-ground' symposia at which papers intended for presentation at international conferences could have a preliminary critical hearing outside the 'institution of origin''.

Ken McCracken, University of Adelaide, 'You are assured of a strong body of support from Adelaide'.

John Davis, Physics, Sydney University, 'I would like to endorse the proposals of the pro tem committee & willingly give my support'.

Taffy Bowen, CSIRO Radiophysics, 'I am all in favour'.

John Harris, Perth Observatory, 'I am very much in favour of the formation of this Society, and in general agreement with the proposal outlined in the circular'.

Berenice Page, Page Observatory, Brisbane, 'Invitation gratefully accepted - wishing every success to the proposed Society - awaiting further details and will be honoured to attend the inaugural meeting'.

A few people felt the need to remark on the membership of the society and whether to include amateurs or not. Leonard Searle of Mount Stromlo just had a slightly cryptic warning, 'Beware of the B.A.A.!' The BAA, of course, is a major and successful British amateur astronomical association that in 1966 still had a NSW branch (in which the soon-to-be-elected

founding President of the ASA, Harley Wood from Sydney Observatory, played a leading role, as did other members of his staff). Brian Robinson of Radiophysics was more explicit in his comments, 'The proposed society would surely be more effective if it were mainly professional - why not restrict entry to those of graduate level and to amateurs who have demonstrated by publication their ability to contribute to the subject. We are not short of ineffectual amateur societies!'. On the other side of the argument, Bill Robertson of Sydney Observatory, wrote, 'I doubt the necessity of any limitation on membership'.

With the good response to the initial circular the temporary committee began work to organise the promised first meeting in December. In August Ben Gascoigne wrote to Harley Wood asking him to phone some of the other members of the committee as they were all based in Sydney, while he was in Canberra.⁶⁹ Wood found that three of the six members were either away or about to go overseas so an expansion of the committee was needed in order that there would be people available to do the required work. Annotations on the letter from Gascoigne include the names of Jim Roberts and Steve Smerd from Radiophysics, who must have come up in the phone conversations. Soon they joined the committee together with Kevin Sheridan also from Radiophysics and Bob Shobbrook, the resident optical astronomer at the School of Physics, Sydney University.

The Inaugural Meeting of the ASA

The first meeting was to be held over two days, Thursday 1 and Friday 2 December 1966 in Lecture Room 1 of the Chemistry Building at Sydney University. However, due to the large numbers of submitted papers Bob Shobbrook as 'Administrative Secretary' informed registrants in a circular that a half-day extension had been arranged so that the meeting would start at 2 pm on 30 November.⁷⁰ There were a total of 125 people registered for the conference of whom four were women.⁷¹ Registration fee for the meeting was \$2, which is equivalent to \$34 in 2014 dollars (calculated by comparing the Federal minimum wage for adult males in Sydney in 1966 with the National minimum wage in 2014).

The meeting began on the Wednesday afternoon with a business session, the Inaugural General Meeting to establish the Society, chaired by Paul Wild and assisted by members of the interim committee (see Figure 1).⁷² First item was a short history of the Society's origins by Ron Giovanelli, solar physicist and Chief of the CSIRO Division of Physics.⁷³ According to the minutes of the meeting he

likened the final emergence of the Society to the build-up of a signal amidst noise. There had been rumblings over the years but it was not until early in 1966 that their amplitude exceeded that of statistical fluctuations. The names of W. Buscombe, S.C.B. Gascoigne, R.G. Giovanelli and J.P. Wild seemed to be linked with the first signal of statistical significance.⁷⁴

Next was a submission to the meeting of a list of ten proposals drawn up by the interim committee, now referred to as the Inaugural Committee. Proposals 1 and 2 were the purpose and the name of the Society, while proposal 3 suggested that 'membership should be basically professional'. Proposal 4 was for the governance of the Society by a Council with a

President, two Secretaries, a Treasurer and five other members. Proposals 5 to 8 were guidance on holding Council elections, the election of new members and the duty of the first Council to draw up a draft constitution for the Society.

[Insert Figure 1]

Proposal 9 was for publishing the proceedings of the first meeting as the Proceedings of the Astronomical Society of Australia, Volume 1, No. 1. This was a change from the first circular sent to prospective members that had stressed, as discussed earlier, that no journal was being contemplated. Not surprisingly, this issue was the most controversial and led, according to the minutes, to 'A very animated discussion'. Ron Giovanelli indicated that he would prefer not to add to the then existing list of scientific journals, while William Buscombe suggested publishing abstracts or short papers in the existing Australian Journal of Science (published by ANZAAS). Paul Wild defended the publication proposal and wanted a typeset journal that 'could be sold and referred to'. Jim Roberts then moved a motion to rescind or repeal the adoption of Proposal 9 but it was lost by a large majority.

Proposal 10 covered subscriptions and fees. The suggested annual fee for full members of \$6, \$103 in 2014 dollars, was needed to cover the cost of publishing the proceedings of possibly two meetings. There was some concern expressed that the fee was insufficient for this purpose, but then Jack Ramsay of CSIRO's Division of Physics ensured that there was to be no increase with a successful motion ensuring that fees could only be changed at an AGM.

Elections for the Council of the Society were held during the business meeting. The Inaugural Committee's nominations were: Harley Wood as President, Ben Gascoigne and Paul Wild as Vice-Presidents, Kevin Sheridan and Steve Smerd as Secretaries and Bob Shobbrook as Treasurer. The nominated members of the Council had a wide regional distribution indicating the Inaugural Committee's wish for a representative Society: John Carver of the University of Adelaide, Olin Eggen the new director of Mt Stromlo Observatory, Graeme 'Bill' Ellis of the University of Tasmania, Ron Giovanelli of the CSIRO and Donald Mugglestone of the University of Queensland. There was a touch of excitement during the elections when someone noticed that Ellis was not physically present at the business session and a substitute nomination had to be made. John Harris of Perth Observatory was duly nominated and all the nominees were then elected (see Figure 2).

[Insert Figure 2]

Two important announcements were made after the elections. The President indicated that there was a strong possibility of the 1973 General Assembly of the International Astronomical Union being held in Australia and Olin Eggen stated that there was a 'good chance' of a 150-inch (3.8-metre) telescope being installed in Australia.

After the business session the first scientific meeting of the newly established society began. It started with an invited talk by J Beverley Oke, an instrumentalist and spectroscopist

from Caltech who talked about observations of the Seyfert Galaxy NGC 4151. He discussed observations made with a photographic spectrograph and with the photoelectric spectrophotometer that he had developed.⁷⁵ The following short talks in the first session included a talk by Bernie Mills of Sydney University on radio observations of clusters of galaxies, one by Mt Stromlo PhD student Ron Ekers on the angular sizes of radio sources and one by Bev Harris, also a Stromlo PhD student, on time variations in the radio spectrum of the quasar 3C 279.⁷⁶

The scientific sessions continued over the next two days with a mixture of longer invited papers and shorter presentations. Keith Edward Bullen, Professor of Applied Mathematics at Sydney University, spoke of his research going back to the 1930s on the internal structures of the inner planets, Mars, Venus and Mercury. He mainly discussed the likely sizes and compositions of the inner cores of these planets and of the Earth.⁷⁷ Robert Hanbury Brown, of the School of Physics at Sydney University, talked about observations with the Narrabri Stellar Interferometer (Figure 3). The instrument could determine the angular diameters of bright stars, a measurement that could be converted into that of effective temperature in combination with the observed flux from the star. Hanbury reported that after three years of operation 15 stars had been observed with all except two double stars yielding their angular diameters.⁷⁸

[Insert Figure 3]

As at current meetings of the Society, the first meeting of the ASA was not entirely taken up by scientific sessions. On the evening of Wednesday 30 November there was a reception for members and guests at the cafeteria of CSIRO Radiophysics and National Standards Laboratories, both at that time in the Madsen building in the grounds of Sydney University. This was followed by the first meeting of the ASA Council. On the next evening the National Committee on Astronomy met at Sydney Observatory. The timing of this latter meeting was especially important to John Harris of Perth Observatory as he had a long and expensive flight to come to the eastern side of the continent and would have been unable to do so unless the NCA meeting coincided with the ASA meeting.⁷⁹ Finally, on the Friday evening, at the end of the meeting there was a society dinner, held at the Sydney University Staff Club with 123 guests at a cost to the Society of \$3.50, or \$60.25 in 2014 dollars, each.⁸⁰

The guests at the dinner included Miss Vera Raymond, the secretary at the Astronomy Department in Sydney University to professors Bernie Mills and Robert Hanbury Brown, who had been invited as thanks for her assistance to the treasurer, Bob Shobbrook. The helpers in the Radiophysics office led by Miss Sally Atkinson, secretary to the Chief of Radiophysics, Taffy Bowen, were instead presented with a box of chocolates. Harley Wood personally thanked the 'Manageress' of the CSIRO cafeteria for the service at the reception and wrote to the head of the School of Chemistry, Professor Raymond Le Fèvre, for the use of the Chemistry Lecture Theatre No. 1 for the meeting.⁸¹

The Proceedings, the Constitution and other business for the first Council

As mentioned above, the Council held its first meeting after the reception on Wednesday 30 November. Held in the library of the School of Physics it was a late meeting starting at 9:40 pm and ending just over two hours later. Most of the meeting was concerned with the proposed publication. Paul Wild stated that a paper in the Proceedings could 'be an only publication or be followed by a more detailed account'.⁸² As well, he passed on a suggestion from a CSIRO librarian that the Proceedings could be sold to non-members if a sample from the first issue were to be circulated and subscriptions were invited. Ron Giovanelli proposed that instead of the Proceedings the setting up of a fast international publication in astronomy along the lines of Physical Review Letters.

Olin Eggen made a third suggestion regarding publication referring to a letter sent to him by Helmut Abt, the president of the Astronomical Society of the Pacific and a future editor-in-chief of the Astrophysical Journal. In the letter Abt noted the plan for the formation of the new Australian Society and suggested that members of the Society use the Publications of the Astronomical Society of the Pacific as their outlet.⁸³ Abt stated that 'There is no reason why that journal could not bridge the Pacific' and, after extolling the virtues of the journal, ended by encouraging the idea of 'using the PASP as the official organ of your society'. On the basis of this letter Eggen tried to move a motion that the abstracts of the papers presented at the meeting be sent to PASP, but the motion lapsed as none of the other Council members was willing to second it. The conclusion of the discussion was that the Proceedings were to be published as had been proposed by Paul Wild.

An important task for the Council in its first year was the drawing up of a constitution. The initial draft was prepared by Wood after consulting the constitutions of a wide range of other scientific societies such as the Australian Association of Scientific Workers, the Australian Mathematical Society, the Royal Society of New South Wales and ANZAAS.⁸⁴ This draft was then refined at meetings of an Executive Committee that were attended by Wood, Giovanelli, Sheridan, Shobbrook and Wild. These meetings were held at Sydney Observatory and, according to the obituary for Ron Giovanelli prepared by Kevin Sheridan, 'After each lengthy meeting the committee adjourned to the nearby historic Hero of Waterloo hotel where further debate on the more difficult points continued'.⁸⁵

The draft constitution and by-laws together with an explanatory statement were circulated to members of the Council on 14 August 1967.⁸⁶ After three draft versions the constitution was ready for submission to the second Annual General Meeting on 29 November 1967.

During the first year of the Society the Council and the Executive had to make major decisions with regard to the Proceedings. At the second meeting of the Council on 3 February 1967 Paul Wild reported that the galley proofs of Volume 1 No. 1 had been corrected and returned to the printer, Ambassador Press. Wild was not completely impressed with the printers as he complained 'of the difficulties experienced with mathematical expressions'.⁸⁷ For future issues fewer problems were expected as, acting on a suggestion from Harley Wood, Paul Wild had contacted Sydney University Press to see if they could take over the publication

of PASA. The initial response was positive but a written application to the SUP board was needed together with copies of the first issue.

Paul Wild drafted the required letter to SUP and forwarded it to the president Harley Wood for any changes. Wood made minor alterations to the letter commenting in his reply that 'I think that it is somewhat unwise to mention our reputation in cricket just now'.⁸⁸ This cricket comment likely refers to Australia's 3-1 loss of a test series to South Africa that ended with the fifth and last test just three days before Wood's reply. Wood then goes on to make the cryptic remark, 'there might be a difference of opinion about ice-cream too'. The long letter as altered by Wood was to be sent by Wild on behalf of the ASA Council. It stated that if Sydney University Press were to take over publication, 'This would be great advantage to us since the business arrangements required in the enterprise are generally outside the experience and interests of our membership'. In return the ASA would edit the submitted material and ensure that 'the scientific contributions were of proper standard'.

The letter led to successful negotiations between the Council and SUP that resulted in the Press taking over the business side of the Proceedings.⁸⁹ For the first issue to be published by SUP, which was Volume 1, No. 2 and reported on a conference at Culgoora in September 1967, the commission of 12.5% was waived, 'to enable the publication to be established'.

The Executive Committee was keen to publicise the existence of the new Society and seek new members as well as to gain overseas subscribers for the Proceedings. Accordingly, they asked Ben Gascoigne to prepare an advertisement for insertion in relevant journals with large circulations such as *Sky & Telescope*, *The Observatory* and *PASP*.⁹⁰ The resultant advertisement in the October 1967 issue of *The Observatory* was a full page one with the top half discussing the Society and inviting 'Professional Astronomers' to join.⁹¹ The entrance fee and annual subscription costs were spelled out in the advertisement with the costs given in US dollars, in pounds sterling and in Australian dollars. Gascoigne had to change the sterling equivalents by cable at the last minute. The lower half of the page advertised the Proceedings with a list of the five invited papers in Volume 1, Number 1.

The Society held its first meeting on a specialized topic at the CSIRO Solar Observatory at Culgoora near Narrabri between 23rd and 25th September 1967. It followed the commissioning of the Radioheliograph and the official opening of the CSIRO Solar Observatory by Senator John Gorton, the Federal Minister for Education and Science, on Friday 22 September. The scientific meeting with 60 attendees began the next day with an address by the president, Harley Wood, followed by invited talks by Paul Wild and Ron Giovanelli. Over the two days of the conference there were also 23 other contributions.⁹²

In his invited paper Paul Wild described the radio frequency instruments installed at the observatory.⁹³ One was a radiospectrograph covering the range 5 to 8000 MHz that allowed the classification of solar bursts and other disturbances. The other was the newly-completed radioheliograph (Figure 4), an array of 96 steerable reflectors of 13-m width that provided two images each second of the Sun in a 60 by 48 grid at a frequency of 80 MHz. In the second invited paper Giovanelli described the optical instruments that shared the site with the

radioheliograph.⁹⁴ The major instrument was a 30-cm equatorially mounted f10 refractor that provided a 17-cm wide image of the Sun's disc through H α filters. There was also a 13-cm flare patrol telescope and plans for further instruments.

[Insert Figure 4]

During the first year of the ASA after the AGM in Sydney membership grew slowly as payments trickled in to the treasurer, Bob Shobbrook, from those invited to be foundation members and as others applied for membership. Payments were by cheque with only occasional cash payments by colleagues who worked in offices next to Bob Shobbrook in the Astrophysics and Astronomy departments at Sydney University's School of Physics. Cash payments could lead to problems though as Bruce McAdam found out a few years later when he was informed by the ASA secretary that he had not paid his 1968 and 1969 subscriptions.⁹⁵ Shobbrook then had to go through the Society's banking book to trace the payments made in March each year. McAdam vowed to 'pay the 1970 sub by cheque and save the headaches!'

Outright refusals to join the ASA by Australian astronomers were rare. One who did so was the eminent physicist/astronomer, David Martyn.⁹⁶ He had ignored the original invitation to join as a foundation member, but did reply to a letter from Steve Smerd in February 1968 giving details of how he could still join the Society. In reply he said that 'I would like to join the Astronomical Society for reasons of interest and sentiment', however, his extensive commitments would prevent him from attending meetings. Moreover, 'a recent substantial increase in salary is leaving me (at least temporarily) a poor man, because it raises Income Tax and especially Superannuation quite heavily'. He ends the reply by slightly misquoting Samuel Goldwyn, 'Please include me out' and incorrectly attributing the quote to another Hollywood mogul, Louis B Mayer.

By the time of the second Council meeting on 3 February 1967 90 membership fees had been paid and there were two applications for membership, both of whom had close research associations with Radiophysics' Bruce Slee: Francis Dickson of Philips Electrical Pty Ltd and Wayne Orchiston, then of Radiophysics and who became a well-known historian of astronomy, now at the National Astronomical Research Institute of Thailand.⁹⁷ A month later Shobbrook reported to the Executive Committee that there were 128 financial members, including students. By 18 October 1967 at the third Council meeting 172 financial members were reported with six applications for full membership and one for student membership; some of these became familiar names in the astronomical community and the Society in later years:⁹⁸

Miller Goss, who came to Radiophysics as a postdoctoral fellow from the US, was director of the Very Large Array and the Very Long Baseline Array in New Mexico from 1988 to 2002. He was to be a member of the ASA Council 1975–76 and a honorary fellow since 2010.

Don Herbison-Evans, then in Hanbury Brown's department at Sydney University, was known, in addition to his scientific prowess, for wearing purple clothes and later for his skills at ballroom dancing.⁹⁹

Marc Price, who was involved in the discovery of Faraday rotation in radio astronomy while a Fulbright Scholar at Parkes Observatory, and who worked for many years at the University of New Mexico, where he is now professor emeritus.¹⁰⁰

Mike Waterworth (incorrectly spelt Waterhouse in the minutes) became a member of the ASA Council at the second Annual General Meeting in November 1967 and is known for being largely responsible for the building of a 1-m telescope on Mount Canopus, 10 km north-east of Hobart.¹⁰¹

Raymond Haynes, at that time a graduate student in Physics at the University of Tasmania, spent 30 years at CSIRO Radiophysics and was the principal author of the book *Explorers of the Southern Sky*.¹⁰²

The second meeting of the ASA

The second Annual General Meeting of the society took place at the Australian National University in Canberra from 29 November to 1 December 1967 with 101 people attending. The meeting began with a business session, but that was insufficient for all that had to be discussed so a follow up session was held the next morning.¹⁰³

There was an election at the first business session for the new Council.¹⁰⁴ As is still customary, the previous Council nominated members of the new one. The nominated names were unchanged except that space scientist Ken McCracken, then a professor at the University of Adelaide, was to replace John Carver from the same university. An election for ordinary councillors became necessary when Mike Waterworth from Tasmania was nominated from the floor. In the election Waterworth came in ahead of John Harris from Perth Observatory, who was not at the meeting. Later Harley Wood wrote to Harris passing on the Council's desire to have him as a co-opted member for they appreciated 'the useful comments that you sent us on items for the agenda'.¹⁰⁵ In his reply Harris was grateful but did not accept co-option. He said that, 'I know that the By Laws provide for cooption to be used to ensure regional representation but, if it that is to be invoked, then I think that the coopted Councillor should not be either a defeated nominee or an inelligible [sic] ex-Councillor'.¹⁰⁶ In any case, he felt that the presence of a Tasmanian councillor was enough to satisfy the requirement for regional representation.

The draft constitution and by-laws were discussed at the second business session. Though there were objections from students to provisions that excluded them from voting at meetings and from being represented on Council, the constitution was adopted by the meeting with only some very minor amendments. The ASA now had a formally -adopted constitution that has stood it in good stead ever since. Over the years many of its articles have been slightly reworded but the basic structure of the Society as defined by the constitution has remained the same.

There was a meeting of the new Council on the evening of the day the constitution was adopted. Advantage was taken of the provision in article 6 of the constitution for the election by the Council each year of a person 'distinguished for promotion or extension of knowledge of astronomy' as Honorary Member and they immediately elected Bart Bok, who had been director of Mount Stromlo Observatory until the beginning of the previous year. On his return to Sydney after the meeting Harley Wood wasted no time to inform Bok, who was a good friend, of the Council decision. On 4 December 1967 Wood wrote to Bok, then at the University of Arizona: 'We had a pleasant and successful meeting of the Astronomical Society of Australia in Canberra last week' and 'At the Council meeting last Thursday evening you were unanimously elected as our first Honorary Member and I hope that it gives you as much pleasure to accept this as it does me to write and tell you of it'.¹⁰⁷

A few days later Bok wrote back saying that 'I am both pleased and honored to accept the Council's election of myself as an Honorary Member of the Astronomical Society of Australia. It is not only a very distinct honor to be the first to have been elected, but Priscilla [wife, also an astronomer] and I take it as one of the finest expressions of friendship and good will that has ever come our way'.¹⁰⁸

With the Society fully established by the end of its second AGM, Paul Wild felt it appropriate to give a humorous account of the origin of its name at the meeting dinner. According to Miller Goss, he began by saying something like, 'Well, I met the Queen and we had a discussion about this'.¹⁰⁹ He continued his talk by quoting the Queen saying during this imaginary discussion, 'Well, the Australian astronomers should be on their own' and should not have a society called the Royal Astronomical Society of Australia. That still left the possible name 'Australian Astronomical Society' but that had to be discarded due to possible confusion with the American Astronomical Society. The society became the Astronomical Society of Australia, a name it has retained for almost half a century.

Conclusion

For almost two centuries after European settlement Australian astronomers overcame their isolation from their peers in Europe and in other colonies/states by being active in scientific societies together with colleagues from other fields. With the advent of section As in the state-based Royal Societies and later with Section A in the Australasian Association for the Advancement of Science the fields of specialisation of the colleagues with whom they shared AAAS or later ANZAAS meetings converged to just the closely related fields of mathematics and physics. After many years of shared meetings the time was ripe in the 1950s and 1960s for each of these three groups to go their separate ways. In the 1950s the mathematicians formed their own society followed in the early 1960s by the physicists.

The astronomers followed the example of their mathematician and physicist colleagues in 1966, by which time, fortunately, there was a suitably critical mass of astronomers in Australia. Astronomers then were mainly concentrated in three groups: CSIRO, Sydney University and Mt Stromlo Observatory with smaller numbers of astronomers elsewhere including the state observatories of Sydney and Perth. Astronomers with the CSIRO

were mainly from its Radiophysics Laboratory then still in the grounds of Sydney University. The former physicists and engineers who had had great successes in observing the sky at radio wavelengths provided the new Society with members who helped to reach that necessary critical mass.

The formation of the Astronomical Society of Australia followed a similar pattern to that of the Australian Mathematical Society in the previous decade: a mailing list was prepared and then a circular announcing the new Society was mailed out to all potential members that were known about. The large and favourable response to the mail-out led the interim committee to persevere in their efforts to organise an initial or inaugural meeting at Sydney University in late 1966. At this well-attended meeting the ASA was formally established. For the next year its Council and, especially, the smaller Executive Committee, was busy developing the Society's constitution, which would provide the legal framework for its operation, and on setting up the Society's publication, the Proceedings of the Astronomical Society of Australia.

In the almost half a century since its formation the Society has become a fundamental part of astronomical life in the country through its annual meetings, its school for graduate students and its journal that became the Publications of the Astronomical Society of Australia in 1995. Over the years the Society has overcome major challenges and opportunities such as the holding of the International Astronomical Union General Assembly in Sydney in 1973 and again in 2003 and the building and the decisions on the management of the 3.9-metre Anglo-Australian Telescope. Today there are new challenges as astronomy is rapidly changing with the advent of giant telescopes such as the Square Kilometre Array and the processing of the associated large data streams, international collaborations amongst astronomers and an electronic instead of printed publication. With a long history behind it and a proven structure in place the Astronomical Society of Australia is well placed to continue and to flourish for its second half century.

Acknowledgments

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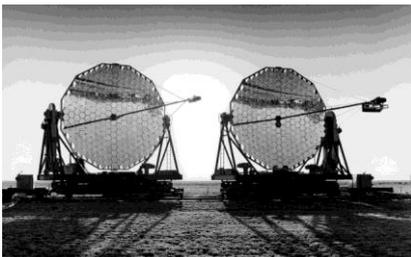
Figure Captions

Figure 1. Paul Wild (left), Harley Wood (centre) and Ben Gascoigne at the first ASA meeting, probably just before the start of the business session. Courtesy CSIRO Radio Astronomy Image Archive

Figure 2. Members of the first ASA Council, from left to right: Harley Wood, Olin Eggen, Ben Gascoigne, Donald Mugglestone, Bob Shobbrook, Ron Giovanelli, Steve Smerd, Paul Wild and John Harris. Absent are Kevin Sheridan and John Carver. Courtesy CSIRO Radio Astronomy Image Archive

Figure 3. The two large mosaic mirrors of the Narrabri Stellar Intensity Interferometer on their circular rail track. Courtesy Sydney University

Figure 4. Some of the antennae of the Culgoora Radioheliograph. Courtesy CSIRO Radio Astronomy Image Archive



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