



BOOK LAUNCH: 2 DECEMBER 2013

Minister, Joy Burch, Vice-Chancellor, Ian Young, Director, Matthew Colles, Ladies and Gentlemen.

The idea of writing this book came from Harvey Butcher. About two years ago he phoned me to come over and have a chat with him. After drinking lots of coffee and talking about the universe and all that, he asked me with his charming smile, will you write a book on Mount Stromlo Observatory for Canberra's centenary celebrations. That is how this book came to be written by Harvey, Ralph and me. In fact, Ralph began the book. The book is about a group of astronomers and their wonderful telescopes.



Albert Einstein

Mount Stromlo Observatory is a remarkable institution. It is all the more remarkable because in 1905 two things took place which had an important bearing on this institution. In that year, an unknown clerk in the patent office in Switzerland by the name of Albert Einstein published his Theory of Special Relativity which questioned the very foundations of Newtonian physics. 12 years later he published his Theory of General Relativity and introduced a fudge factor called the Cosmological Constant to stop the universe from expanding as this was the conservative view in astronomical circles. The universe was supposed to be static according to Newton. It is rather amazing that a revolutionary had become a conservative in so short a time.

About 80 years later Brian Schmidt, at Mount Stromlo Observatory, tackled the Cosmological Constant and won the Nobel prize for his work on the accelerating universe. It

was a conceptual shift in our thinking very similar to that introduced by Copernicus in the 16th century. This event traces a link back to Einstein and our association with him.



Brian Schmidt receiving the Nobel prize



Walter Duffield

In the same year an unknown Australian physics student by the name of Walter Duffield while studying in England had the audacity and vision to propose that a solar observatory should be established in Canberra. He formed a one man international lobby group to realise his dream. In the process he involved 4 prime ministers of Australia and the English and Australian scientific elites in his endeavour. 18 years later, in 1924 he was appointed the first director of the Observatory. When asked why he was appointed, Professor Turner, one of the members of the selection Committee said, “Why the man who told you there was need of it”.

In the years that followed the Observatory came under the influence of a number of directors, the English (1930s – 40s), the Americans (1950s – 1970s), the Australians (1980s – 1990s), and again an American and an American-Dutch (2002 – 2012). In February 2013 we have an Australian director. This I think is one of the strengths of the Observatory because each director not only brought a new cultural perspective but also a new vision and new research directions. All the directors were chosen very carefully by the University. Each was and is a top person in his/her field and belonged not only to the visible but also to the invisible college of astrophysics.



Richard Woolley

Richard Woolley's achievement was to transfer the Observatory from a government observatory to a university observatory and to change the entire direction of the

observatory from solar physics to astrophysics, the new astronomy. It was the most significant change and paid tremendous dividends in the years to come.



Bart Bok

Bart Bok was perhaps the most colourful of all the directors. He not only sold the Milky Way to the Parliamentarians and the public but was also the only astronomer to speak to both houses of Parliament. He says in the Archives of the American Institute of Physics, “He could pick up the phone and talk directly to Prime Minister of Australia”. Amazingly, he was the only Director who had his annual report censored by the university authorities. He was told to rewrite it. He was also the first director to be told “to go back where you came from” by none other than a President of the Australian Academy of Science. His legacy was to build the international graduate school which is one of the showcases of Australian astronomy. He was known as the Godfather to his students.



Olin Eggen

Olin Eggen built the intellectual capital of the Observatory. He was a man who lived for astronomy and spent all his nights on the dome floor. He woke up at 4 pm in the afternoon everyday!



Don Matthewson

Don Matthewson not only discovered the Magellanic Stream which is still throwing up more questions than answers but he also constructed the 2.3m Advanced Technology Telescope with Gary Hovey, Herman Wehner and John Hart. He also dragged Australia, as Mike Dopita said, “kicking and screaming into the space age”.



Alex Rodgers

Alex Rodgers gave the Great Melbourne Telescope a new lease of life and was the key person to get the Observatory involved in the great MACHO project to probe the dark

secrets of the universe. In fact, it was Ken Freeman who told us that there was dark matter in the universe. The project put the Observatory right at the centre of the international astrophysical stage. It was as Ken Freeman said “one of the great physics experiments” to search for the elusive dark matter.



Jeremy Mould

Jeremy Mould, brought a fresh approach to the programs of the Observatory and was steeped in the American philosophy of Big Science. He immersed the Observatory into the centre of an international astronomical controversy that had been raging from the 1950s to the 1990s about the age of the universe. With Wendy Freedman, Mould solved the problem of the age of the universe and ended the controversy. In the year that Mould was the Director, Matthew Colless produced the largest map of the galaxies in the universe while Brian Schmidt made his outstanding discovery that the universe is accelerating. The astronomers at Mount Stromlo had become the Masters of the Universe.



Penny Sackett

It must have been written in the book of fate. **Penny Sackett** had the most challenging and hardest task as the Director of Mount Stromlo. Six months into her directorship the Observatory was destroyed by a fire the likes of which no one had ever seen. With great determination she rebuilt the Observatory and brought it back to its international standing. Her decision to embark and involve the Observatory with the Great Magellan Telescope was her most audacious and visionary decision for Australian astronomy.



Harvey Butcher

Harvey Butcher continued and enhanced the tradition that Sackett had begun. He got the Observatory to be fully involved in the Great Magellan Telescope to reap the benefits of future discoveries in the age of very large telescopes. This is his legacy to Mount Stromlo and Australian astronomy. He was helped in this by Ian Chubb who as you know is now our

Chief Scientist. Being a passionate instrumentalist Harvey also got the Observatory involved in the construction of highly sophisticated astronomical instruments for the international market under the leadership of Peter McGregor.



Prime Minister's Science Prize: Ken Freeman

It was during Harvey's years that Brian Schmidt won the 2011 Nobel prize for physics with his American colleagues. Ken Freeman won the Prime Minister's Science Prize in 2012.

After almost a hundred years, Harvey fulfilled Duffield's dream. "It is my earnest desire" Duffield had written in 1905, "that we should take our place among the great observatories of the world". We have done that.



Matthew Colless

In February 2013, **Matthew Colless** took over as the Director of Mount Stromlo and I am sure that he will take it to greater heights in the next five years.

It would be false to say that the achievements of the Observatory rest only on its directors. The strength of the Observatory lies in its philosophy of parallel intellectual leadership by the directors on the one hand and the astronomers on the other. You will see this exemplified in the book. The Directors worked and work with a group of incredible and highly creative astronomers who are world authorities in their own right. In 2001, six Mount Stromlo astronomers were recognised as Citation Laureates. They were: Mike Bessell, Matthew Colless, Mike Dopita, Ken Freeman, Jeremy Mould and Bruce Patterson.



Citation Laureates: Front row: Left to right: Jeremy Mould, Ken Freeman, and Bruce Patterson. Back row: Left to right: Michael Dopita, Mike Bessell, and Matthew Colless.

Ken Freeman is a national treasure and one of the most prolific writers of research papers in the Australian astronomical community. John Norris has recently been elected a Fellow of the Australian Academy of Science. Mike Dopita continues his highly productive career which began at Isaac Newton's tomb. He was cheeky enough to name Lionel Murphy's

rather large nose the Lionel Murphy nebula. Mike Bessell is an international authority on photometric standards and has been involved in the discovery of extremely metal deficient stars.

I also want to pay tribute to the highly innovative technical staff who have made some wonderful and sophisticated instruments to explore the universe. The workshop has always been and will remain the heart of the Observatory. I agree with Alex Rodgers that the workshop is a vital part of Mount Stromlo's identity and is vital to its future.

Lastly, I want on behalf of my fellow authors to thank everyone who has been involved in one way or another with the publication of this book. We have thanked them in the book. However, I would like to thank a few of them personally. First of all we would like to thank Julia Stuthe and Briana Meldino from CSIRO Publishing for championing this book with her Publications Committee and also for persuading her Committee to include Brian Schmidt's Nobel lecture in the book. I am sure in a hundred years from now this book will be remembered for Brian's lecture. Incidentally, Brian has agreed to sign Chapter 13 of the book which is his Nobel Lecture.

I also want to thank Mike Bessell for providing us with valuable comments and lots of information that you will not find in the archives of the Observatory. I also want to thank Gary Da Costa for valuable information he gave us for the book. My special thanks go to Ken Freeman. He was just wonderful. I am not sure how he found the time from his very busy schedule to not only read but also provide valuable comments on the entire book. I also want to thank Georgia, Casey, Vince, Michelle and staff of CSIRO Publishing for organising the book launch. And last but not least we wish to thank the Minister and the Vice-Chancellor for the book launch and Mathew Colless for all the assistance he has given us. Everyone has been so wonderful to us.

May we go on for another hundred years.

Thank you.

Ragbir Bhathal

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