Royal Astronomical Society of New Zealand

2025 Conference

9 – 11 May

Gateway Theatre – 30 Gateway Drive, Whakatāne

Hosted by the Whakatāne Astronomical Society

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RASNZ Conference Code of Conduct

This conference is dedicated to providing a harassment-free conference experience for everyone regardless of gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age or religion.

We do not tolerate harassment of conference participants in any form. Sexual language and imagery are not appropriate for any conference venue including talks.

Conference participants violating these rules may be sanctioned or expelled from the conference without a refund at the discretion of the conference organisers.

Invited Speakers

Professor Anna Scaife, University of Manchester.

Anna is a Professor of Radio Astronomy at Jodrell Bank Centre for Astrophysics and one of the five inaugural AI Fellows of the UK's Alan Turing Institute. Previously she has worked at the University of Southampton, the Dublin Institute for Advanced Studies and the University of Cambridge. She has a PhD from the University of Cambridge and an undergraduate degree from the University of Bristol.

She is part of a team working on the Square Kilometre Array (SKA) radio-telescope, and she led the design of the computing and storage for the European SKA Regional Centre. She is currently the UK representative to the International Union of Radio Sciences for Radio Astronomy and Deputy Editor-in-Chief of the Royal Astronomical Society's Techniques & Instruments (RASTI) journal.

In 2014, Anna was honoured by the World Economic Forum as one of thirty scientists under the age of 40 selected for their contributions to advancing the frontiers of science, engineering or technology in areas of high societal impact. In 2017 she was awarded the Blaauw Chair in Astrophysics (prize chair) at the University of Groningen in The Netherlands for excellence in research, broad knowledge of astronomy and an outstanding international status in astronomy. In 2019, Anna received the Jackson-Gwilt Medal of the Royal Astronomical Society, awarded for outstanding invention, improvement, or development of astronomical instrumentation or techniques.

Professor Rene Breton, University of Manchester.

Rene Breton received his PhD in Physics from McGill University, Canada, in 2009. He is a Professor of Astrophysics at the Jodrell Bank Centre for Astrophysics and is currently Deputy Head of the Department of Physics and Astronomy at the University of Manchester. He has held multiple prestigious grants such as a Marie Skłodowska-Curie Fellowship, a European Research Council Starter Grant and a GCRF Foundation Grant.

His main research interests revolve around the study of pulsars, which he uses to attempt to understand matter under extreme density, gravity and magnetic fields. Some of his past work enabled us to test 'geodetic spin precession' - a phenomenon predicted to exist in General Relativity - for the first time in the strong gravity environment. He is internationally known for his research in the field 'spider binaries', which are very energetic millisecond pulsars that have very low-mass companions in compact orbit.

Rene also has a keen interest for science communication and has delivered hundreds of public talks (and occasional radio and television interviews) since he was a teenager. Rene's science curiosity has led him to apply his data analysis skills for research in the area of agriculture, more specifically to detect and map the spread of invasive plants using satellite imaging. He is also interested in image analysis for DNA research.

All events at the Gateway Theatre, unless stated otherwise

Friday 9 May

1:00 pm **Registration desk open**

4:00 pm **Affiliated Societies Meeting**
Moutohora Room, EastBay REAP, 21 Pyne St, Whakatāne

7:30 pm **Conference opening**
Karakia – Bruce Ngataierua
Welcome by Keith Blair - President, Whakatāne Astronomical Society
Welcome by Duncan Hall – President, RASNZ
Official Opening: Victor Luca – Mayor of Whakatāne

8:00 pm **Astronomy Quiz by Gareth Davies**

8:45 pm **Refreshments and socialising (cash bar)**

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Saturday 10 May

7:00 am: **SWAPA breakfast meeting with Anna and Rene**
Whakatāne High School

Session 1 **Chair: Duncan Hall**

9:00 am **Shea Esterling** – Protecting our dark skies: indigenous knowledge and the law

9:20 am **Gareth Davies** – How to become an International Dark Sky place

9:40 am **Steve Butler** – The management of light at night

10:00 am **Adrien Vilquin Barrajon** – Simplifying data collection for dark sky places

10:20 am **Nalayini Davies** – NZ's pursuit to become a Dark Sky Nation

10:35 am **Morning Tea**

Session 2 **Chair: Petra Lucioli**

11:00 am **Anna Scaife (Invited Speaker)** – How Artificial Intelligence is changing the way we do astronomy – and why that's not necessarily a bad thing

11:45 am **Stephen Kerr** – Amateur occultation observing – changing techniques and science objectives

12:05 pm **Dave Herald** – Occultation astrometry by amateurs; obtaining results from the DART impact that have not yet been detected by any other means

12:25 pm **Astronz presentation**

12:30 pm **Conference photograph**

12:45 pm **Lunch**

Session 3 **Chair: Emma Fairweather**

SWAPA talks

1:30 pm **Aidan Blakie** - The importance of astronomy in the modern age

1:38 pm **Jonah Cameron** - Elaine P. Snowden Astronomy School

1:45 pm **Emily Chambers** - The intersection of arts, culture, and astronomy

1:53 pm **Bill Gu** - Machine learning contribution to astronomy

2:01 pm **Adam Kibblewhite** - A passion for astronomy

2:09 pm **Hannah Park** - Finding my orbit: why astronomy matters to me

2:16 pm **Anika Ramos** - My astronomy passion

2:24 pm **Valerie de Vries** - My way into astronomy

2:32 pm **Charlotte Warman** - My interest in astronomy

2:40 pm **Antony Gomez** – The role of the National Outreach Coordinator

3:00 pm **Afternoon Tea and RASNZ AGM**
SWAPA meeting with Anna and Rene

7:00 pm **RASNZ Award Ceremony**
2025 Murray Geddes Prize
Bright Star Award
President's Award

7:30 pm **Conference Dinner**
After dinner speaker: Waverley Klein Ovink (*Starry nights and possum fights – my astrophotography adventure*)

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Sunday 11 May

Session 4 **Chair: John Hearnshaw**

9:00 am **Wayne Orchiston** – Astronomy in the Bay of Plenty-Taupō-Coromandel area: an historical overview

9:20 am **Hisashi Hayakawa** – Implications of the New Zealand archival records for reconstructions of past extreme solar storms

9:50 am **John Drummond** – The Great January Comet of 1910 – did many Kiwi's see it?

10:10 pm **Roy Axelsen** – Analysis of period change in the High Amplitude Delta Scuti star ZZ Microscopii

10:30 am **Morning Tea**

Session 5 **Chair: Tom Love**

11:00 am **Rene Breton** - The secret life of spider pulsars

11:40 am **Chris Gordon** – How the curved space around neutron stars affects possible dark matter signals

12:05 pm **John Hearnshaw** – The James Webb Space Telescope and how it is revolutionising astronomy

12:35 pm **Lunch**

Session 6 **Chair: Demi Kirkpatrick**

1:30 pm **Chris Benton** – Mars-bound astronaut radiation exposure

1:50 pm **Wayne Orchiston** – Introducing New Zealand meteorites: welcome visitors from outer space

2:10 pm **Alex Liang** – Building an app to enable an iPhone to function as a meteor camera

2:30 pm **Steve Wynn-Harris** – An update on the Takapō Meteorite and the search for the Mahoe Meteorite

2:50 pm **2026 Conference Hosts** – Omaka Observatory Charity Trust

2:55 pm **Conference closure** – Duncan Hall, RASNZ President
Karakia – Bruce Ngataierua

Post-conference activity (optional and self-directed)

Norman Izett Whakatāne Observatory Education Centre
17 Hurinui Avenue (off Hillcrest Road in Whakatāne)

Opportunity to visit the observatory's facilities

4:00 pm Join members of the Whakatāne Photography Club as Astronz presents information and equipment for astrophotography

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Monday 12 May

9:00 am – 4:00 pm **19th Trans-Tasman Symposium on Occultations**
Whakaari Room, EastBay REAP, 21 Pyne St

Abstracts for Oral Papers

Anna Scaife – Invited Speaker

How Artificial Intelligence is changing the way we do astronomy - and why that's not necessarily a bad thing

We may not always notice it, but Artificial Intelligence (AI) is having an increasingly pervasive effect on our everyday lives: subtly altering the patterns of how we live, and how we work. The same is true for astronomy, where AI (and machine learning more generally) is now acknowledged as an essential tool for extracting useful scientific information from the vast volumes of data being recorded by current and up-coming telescopes. In this talk I will describe some of the ways that AI has recently been used very effectively in astronomy, why we need to continue developing new AI methods, and how these changes can lower the barriers to more people becoming involved in research.

Rene Breton – Invited Speaker

The secret life of spider pulsars

Pulsars are among the most extreme celestial objects in our Universe, characterised by their exceptionally high densities, rapid rotations, and colossal magnetic fields. At the pinnacle of pulsar extremes lies a special group of binary pulsars named after the infamous arachnids called “black widows” and “redbacks” due to their tendency to prey upon their unfortunate stellar companions. In this talk, I will describe how the synergy of observational work conducted across the whole electromagnetic spectrum alongside with theoretical work has provided us with remarkable insights into the lives of these spider pulsars and is ultimately unravelling some of the mysteries surrounding the nature of neutron stars.

Shea Esterling - Protecting our dark skies: indigenous knowledges and the law

Given the situation of Aotearoa New Zealand as one of the most important preserves of dark skies, and the importance of ensuring that Māori can exercise tino rangatiratanga over their taonga under the framework of Te Tiriti o Waitangi, it is critical for an appropriate balance to be struck between access and use of dark skies for scientific and commercial purposes and mātauranga Māori. This means that the law must be able to effectively protect mātauranga Māori and guarantee that iwi retain control over taonga including astronomical knowledges associated with dark skies, while also ensuring that the dark skies of Aotearoa New Zealand may be appropriately accessed and used for different purposes, including scientific research and commercial developments.

My presentation will detail this research project, which is funded by the Borrin Foundation Aotearoa New Zealand. The aim of this project is to develop governance for the promotion and protection of dark skies in the face of light pollution from the build-out of satellite constellations in the near-Earth environment (NEE). To achieve this end, I will travel to locations certified by the non-profit organization DarkSky International as International Dark Sky Places (IDSP) in Aotearoa New Zealand and Australia for a period of eight weeks in total during 2025. These visits will involve conducting interviews with stakeholders (i.e. the individual(s) and/or organization(s) that applied for certification as well as the broader local community) to determine if certification as an IDSP has secured the benefits that DarkSky International articulates as well as indigenous knowledges.

This research project asserts that any regulation of darks skies must be balanced with the promotion and protection of indigenous knowledges. However, at present, legal frameworks at both the domestic level in Aotearoa New Zealand and the international level for the regulation of anthropogenic light pollution in the NEE are inadequate to strike such a balance to the detriment of both dark skies and Indigenous Peoples.

Consequently, this presentation weaves together both a descriptive and prescriptive narrative. On the one hand, it identifies the various fragmented legal frameworks pertinent to the protection of the night sky from light pollution. On the other hand, it details the development of a legal regime for the protection of the night sky through an indigenous lens. Ultimately, it argues that in Aotearoa New Zealand the protection of the night sky should be aligned with mātauranga Māori and Te Tiriti o Waitangi.

Gareth Davies - How to become an International Dark Sky Place

Certified 'Dark Sky Places' are areas that are recognised for protecting the quality of their night skies by controlling the current and future effects of artificial light at night (ALAN). These sites usually offer excellent astronomical observation opportunities and promote environmental conservation. DarkSky International is dedicated to protecting the night sky across the globe, advocating for responsible outdoor lighting, and supporting the establishment of 'Dark Sky Places'. This talk will address 'an effective path to Dark Sky Place certification' and will be of particular interest to those interested in developing an action plan to establish their own certified 'Dark Sky Place'.

Steve Butler - The management of light at night

The ability to light our night environment is a recent development but the willingness to manage the lighting of our night is still emerging. Some reflections on progress.

Adrien Vilquin Barrajon – Simplifying data collection for dark sky places
Introducing a web-based tool that aims to simplify sky quality meter and light sources data collection for dark sky places (and aspiring).

Nalayini Davies - NZ's pursuit to become a Dark Sky Nation
From its start as a mere thought at the first International Dark Sky Conference in Europe on 20-22 September 2017 in Galloway, whilst comparing the light pollution maps of the UK and NZ, the pursuit of Dark Sky Nation status by New Zealand has evolved progressively. On 4 March 2025, the New Zealand Government stated to the House of Representatives that "the Government is investigating what the requirements are for New Zealand to be nationally accredited with DarkSky International to be a 'dark sky' nation". This talk traces what has been achieved to-date, the initiatives currently underway and outlines the path to Dark Sky Nationhood that lies ahead.

Stephen Kerr - Amateur occultation observing - changing techniques and science objectives
Occultation observing has been a staple of amateur astronomical citizen science since the 1970's. The last five to fifteen years has seen a rapid change in the techniques used by observers as new technologies put more capable equipment in observers' hands. Science objectives have also changed as planetary science has advanced through a range space craft missions rendering many of the previous amateur focus areas obsolete but opening up new fields of involvement. This talk will cover what has changed and where things may be headed.

Dave Herald - Occultation astrometry by amateurs; obtaining results from the DART impact that have not yet been detected by any other means
Following the DART impact, occultation astrometry of the Didymos system was obtained by amateurs using portable telescopes. The precision of this 'amateur' astrometry has exceeded that of any other source, including both Radar, and the DART optical navigation system. This presentation will give a brief outline of what is involved, and an indication of the resulting unexpected findings about the Didymos system.

Antony Gomez - The role of the National Outreach Coordinator
The National Outreach Coordinator (NOC) is appointed for a three-year term by the International Astronomical Union's (IAU) Office for Astronomy Outreach (OAO). The OAO is an office of the IAU dedicated to engaging the public in astronomy through access to astronomical information and communication of the science of astronomy. Most countries have one or more NOCs. The NOCs implement the IAU outreach initiatives at the national level, disseminate information nationally, and bridge the IAU with local/national communities. The NOCs are part of a global network operating

under the OAO. So in reality how does this all work especially here in Aotearoa New Zealand?

Wayne Orchiston - Astronomy in the Bay of Plenty-Taupo-Coromandel Area: An Historical Overview
In this paper we briefly review the astronomical history of the Bay of Plenty—Taupo—Coromandel area from Māori times through to the present day, with emphasis on ancient eclipses, nineteenth century Great Comets, two noted Thames astronomers, local meteorites, and Frank Bateson and the RASNZ's Variable star Section.

Hisashi Hayakawa - Implications of the New Zealand archival records for reconstructions of past extreme solar storms
Large solar eruptions occasionally cause considerable impacts to the Earth, such as solar particle storms, geomagnetic storms, and mid-latitude aurorae. Their extreme cases are of significant threat for the modern civilization, owing to our accelerated dependency on the technological infrastructure such as power grids and satellite networks. However, the scientific databases do not have enough chronological coverage to cover their infrequent occurrences. Historical records mitigate such headaches. This presentation introduces some case studies where New Zealand archival records have helped reconstructions of the extreme solar storms in the past and their implications for the scientific discussions in the modern time.

John Drummond - The Great January Comet of 1910 - did many Kiwis see it?
C/1910 A1 blazed forth in January and February 1910. Despite widespread anticipation for Halley's Comet some months after C/1910 A1, how many New Zealander's actually saw the Great January Comet beforehand? The answer may startle you!

Roy Axelsen - Analysis of period change in the High Amplitude Delta Scuti star ZZ Microscopii
The high amplitude delta Scuti star ZZ Mic has a period of 0.06717915 d (~ 96.74 min) and an amplitude of ~ 0.4 V. This presentation describes the most comprehensive analysis to date of period change in this star based on times of light curve peaks obtained over 64 years to September 2024, and gleaned from publications, public-access databases of the AAVSO (American Association of Variable Star Observers) and TESS (the Transiting Exoplanet Survey Satellite), and personal photometric observations, some previously published. An O-C (observed minus computed) diagram using the VSX(2) period shows two groups of data. The first, comprising times of 17 light curve peaks obtained between 1960 and 1977, shows no significant fit of a linear or higher order function. Whether the period was constant or changing thus cannot be determined, but an assumed linear fit yields a period of 0.06717917 (0.00000001) d. The second group, comprising 16 times of light curve

peaks from one publication, 29 from public access databases and 46 from personal observations obtained between 1995 and 2024, is well described (P << 0.00001) by a second order polynomial fit in the format O-C = aE^2 + bE +c where E is the epoch (cycle number) and a, b and c are the coefficients. The specific values are:
O-C = -4.7(0.4) x 10^-13E^2 + 7.4(0.6) x 10^-8E + 0.0030 (0.0002).

The rate of period change is given by the first differential of the coefficient of the E^2 term, generically 2a, and specifically -9.3(0.3) x 10^-13 d/cycle, or -5.1(0.2) x 10^-9 d/yr, a value within the published range for delta Scuti stars. It is a very small number and is best appreciated by considering that the range of the observed minus expected times of the peaks of the light curve is only 7.9 min across 29 years. An ephemeris derived from the data reveals that the period at the epoch of the last personal observation in September 2024 was 0.067179097 (0.000000006) d or 96.7379 min.

Although the rates of change in the period of ZZ Mic and other delta Scuti stars are described by very small numbers, they are nevertheless about an order of magnitude too large to be attributed to stellar evolution. The cause remains unknown.

Chris Gordon - How the curved space around neutron stars affects possible dark matter signals

Axions are a leading candidate for dark matter and might reveal themselves through distinct radio signals from neutron stars. These extremely dense stars create intense gravitational fields that can curve the surrounding spacetime. Most predictions of axion-related radio signals assume a simpler “flat” spacetime model, but our study shows that including the actual curved spacetime can change the strength of these signals by up to around 26% for particularly massive neutron stars. For less massive neutron stars, the difference is much smaller because the axion-to-photon conversion happens farther from the star’s strongest gravitational effects. By refining our models to include spacetime curvature, we aim to improve the reliability of future radio observations in the search for axion dark matter.

John Hearnshaw - The James Webb Space telescope and how it is revolutionising astronomy

I will discuss the main scientific mission of JWST and some of the early results. The JWST has opened up entirely new types of astronomical research which were not possible hitherto, thereby revolutionizing astronomy, notably for early universe cosmology, exoplanet atmospheric chemistry and star formation.

Chris Benton - Mars-bound astronaut radiation exposure

One of the main challenges astronauts will encounter when travelling to Mars is exposure to radiation. This presentation discusses the key sources of radiation

exposure and their effect on the human body, followed by proposed countermeasures to ensure a safe journey.

Wayne Orchiston - Introducing New Zealand meteorites: welcome visitors from outer space

In this paper we provide information about different types of meteorites and their origins, before introducing New Zealand's 10 'official' meteorites. We then discuss ways in with the RASNZ's Fireballs Aotearoa and the Historical Section are trying to find more New Zealand meteorites.

Steve Wyn-Harris - An update on the Takapō Meteorite and the search for the Mahoe Meteorite.

A talk on behalf of Fireballs Aotearoa to inform attendees on what the scientific analysis has uncovered about NZ's 10th meteorite. And a brief account of the search for the Mahoe Meteorite in March 2025.

Poster Papers

Visual double stars and the Carter Observatory Cooke Refractor | Michael Rhodes, Edwin Budding, Tom Love, Timothy Banks and Anvith Vanukuri
Optimisation techniques were applied to relative positional data so as to provide estimates and associated uncertainties for the orbital parameters of 7 visual double stars. The observational data included those collected by the Cooke Refractor (currently housed in Carter Observatory, Wellington, NZ) when that telescope was used in the United Kingdom as a research instrument during the second half of the Nineteenth Century. The results are in good agreement with the solutions adopted by the Washington Double Star catalog as the `best' parameters for the systems. Double Star observations and analysis make for good student projects. Some suggestions are made on resources for such projects, given that they could be a good way to interest the next generation in astronomy and to connect them with earlier generations of astronomers who collected observations of these stars orbiting about their companions.

Close binary case studies: VV Ori | E. Budding, J. Southworth, T. Pavlovski, M. Blackford, V. Bakis, A. Erdem, T. Love, M. Rhodes, A. Tan and, Z. Wu
New BVR photometry and TESS data were combined with spectroscopic observations of the Orion Ib pulsating triple-star VV Ori. The MJUoC spectra were analysed using the FDBinary program. Precise new parameters; including masses, radii, luminosities, orbital separations, distance and age; were derived. The primary's b Cep type oscillations support these properties and confirm our general understanding of the system's evolutionary status. Examination of the He I line profiles showed the primary to have a significantly low projected rotation speed: some 80% of the synchronous value. This can be explained on the basis of precession of an unaligned spin axis. This idea can also resolve observed variations of the apparent inclination and address other longer-term irregularities of the system reported in the literature. This work invites further observations and follow-up theoretical study of the dynamics of this intriguing object.

Henry Severn of Thames and his 11-in newtonian reflector: the largest telescope in New Zealand in 1874 | Wayne Orchiston
Thames' first amateur astronomer was an Englishman named Henry Severn, who lived in the thriving gold-mining town for six years during the 1870s. At that time Severn owned the largest reflecting telescope in New Zealand. A keen observational astronomer, the most important project that he made a commitment to during his brief residence in Thames was the 1874 transit of Venus.

In this poster we provide biographical information about Severn, who was a talented public lecturer. We also describe his telescope, and the outcome of his transit of Venus project.

University of Canterbury research in radar meteor astronomy: the Rolleston field station | Jack Baggaley and Wayne Orchiston
This paper details the research work carried out over some 35 years at the University of Canterbury's research station near Rolleston in mid-Canterbury on radar meteors and their radiants; on the ionic processes that control the duration of both radar and visual long enduring trains; radar work on the aurora; and an extensive programme of radar work mapping the details of the dynamics of the Earth's mesosphere.

Māori cometary astronomy and the Tarawera eruption | Wayne Orchiston and John Drummond
In *The Astronomical Knowledge of the Maori*, which was first published in 1922, the Dominion Ethnologist Elsdon Best mentions that the name *Tiramaroa* was applied to a comet, and that *Tiramaroa* was seen about the time of the Tarawera eruption (which occurred on 10 June 1886), and also during the siege of Te Tapiri in 1865.

In this paper we identify naked eye comets that were visible from New Zealand in 1865 and 1886, and we also list other Māori names that were used for comets.

The Whakatāne Astronomical Society and the historic 8-inch Grubb 'Tebbutt Telescope' | Wayne Orchiston and Norman Izett
The Whakatāne Astronomical Society was the first regional astronomical society founded in Bay of Plenty area. It also was home to an 8-inch Grubb refractor, made famous through the astronomical accomplishments of an earlier owner, John Tebbutt, of Windsor near Sydney.

In this poster we track the chain of ownership of this historic telescope; how in 1969 the Society purchased the telescope from Frank Bateson following his retirement from observational astronomy; and describe the repatriation of the telescope to Windsor in 1985.

Peter Read and his observations of the Moon and planets: a selection of drawings from his observing book | Wayne Orchiston
Wellington astronomer Peter Read was committed to popularizing astronomy and contributing to observational astronomy at a time when there was only token Government support for astronomy. Through his popular television show "The Night Sky" he became a household name and was recognized as the 'Patrick Moore of New Zealand Astronomy'.

In this poster we display a selection of original lunar and planetary drawings that Read made, taken directly from his own Observations Book.

Carter Observatory's involvement in early New Zealand radio astronomy: Ivan Thomsen's 1948 '*Nature*' paper | Wayne Orchiston

During the 1940s New Zealand was one of the world's leading nations involved in the new field of radio astronomy, although this is not given adequate recognition by present-day radio astronomers.

In this poster we focus on just one of these pioneering projects, Ivan Thomsen's demonstration in his 1948 *Nature* paper that there was of a direct link between optical and solar radio emission.

The historic 6-inch refractor at the New Plymouth Observatory: New Zealand's only known Alvan Clark telescope | Wayne Orchiston and Rod Austin

When the New Plymouth Astronomical Society established their observatory in 1920, they purchased a 6-inch Alvan Clark refractor from the well-known Sydney amateur astronomer Walter Gale and installed this in the observatory. To our knowledge, this is the only Alvan Clark telescope in New Zealand.

In this paper we discuss Alvan Clark's reputation as a telescope-maker, and we track the Australian history of the New Plymouth telescope.

The international importance of the 9.5-inch Cooke Refractor at Wanganui Observatory | Wayne Orchiston and Ross Skilton

One of the three historic nineteenth century refracting telescopes in New Zealand is the 9.5-inch Cooke at the Wanganui Observatory. This telescope was made for the English amateur astronomer Isaac Fletcher, the passed to another Englishman, Samuel Chatwood, before moving to New Zealand and the Wanganui Astronomical Society in 1902.

In this poster we focus on this telescope's claim to fame as the first 'large refractor' (in those days) to boast an all-metal English equatorial mounting, and its odd association with Indian astronomy.

Grigg, Skjellerup and their comet: the Kiwi connection | Wayne Orchiston and John Drummond

New Zealand astronomers have a modest record of comet discoveries (unless one includes the remarkable record of the late Kiwi-born rocket scientist Bill Bradfield, who scored all his discoveries when living in Australia).

In this poster we discuss Periodic Comet 26P/Grigg-Skjellerup, a truly Antipodean affair, which was discovered by Thames' John Grigg in 1902, and then lost to science until recovered in 1922 by Australia's Frank Skjellerup whilst observing in South Africa.

New Zealand observations of the Great Comet of 1881 | John Drummond and Wayne Orchiston
Comet C/1881 K1 (Tebbutt) was another Great Comet of the nineteenth century and was the first comet to be successfully photographed in its entirety (and not just the head). It also provided valuable spectroscopic data on the nucleus.

In this poster we review New Zealand observations of this comet.

New Zealand observations of Coggia's Comet in 1874 | Wayne Orchiston and John Drummond
Comet C/1874 H1 (Coggia) was one of the Great Comets of the nineteenth century and provided valuable information on the evolution of cometary heads and tails.

In this poster we review New Zealand observations of this comet.

The 1989 Opotiki Bolide: in search of a new carbonaceous chondrite meteorite from the North Island of Aotearoa / New Zealand | Wayne Orchiston, John Drummond
On Monday 12 June 1989 a detonating fireball was widely observed from the East Coast–Bay of Plenty region of New Zealand, and subsequently a number of small meteoritic fragments were recovered near Opotiki. These were submitted to the DSIR in Wellington where they were identified as fragments of a carbonaceous chondrite meteorite. However, no detailed account of this meteorite was written up and published either at the time or subsequently.

This poster summarises what we know about the Opotiki Bolide, based on contemporary newspaper reports, and fieldwork conducted in the impact area at the time by the two authors of this paper.

John Grigg: Thames' Other Talented Amateur Astronomer | Wayne Orchiston
In the course of a 30-year 'career' as an amateur astronomer John Grigg constructed two different observatories in Thames, and installed a Wray refractor and a small transit telescope in these.

As we show in this poster, Grigg used the refractor to observe known comets and discover new ones, and to pioneer astrophotography in New Zealand. He also maintained a local time service, and avidly popularized astronomer. At the end of the nineteenth century, he was New Zealand's leading astronomer.

Observations by Cook and Green of the 9 November Transit of Mercury from the Coromandel Peninsula | Wayne Orchiston, Darunee Lingling Orchiston and Glen Rowe
Following their successful 2 June 1769 observations of the transit if Venus from Tahiti, Cook and the *Endeavour* sailed south, and subsequently westwards, in search in the

mooted Great Southern Continent. Instead, they encountered New Zealand, and on 9 November they observed a transit of Mercury from the Coromandel Peninsula.

In this poster we review the observations made by James Cook and Charles Green at what is now known as Mercury Bay. Today a monument marks the site.

Welcome to the RASNZ's Historical Section: researching the past to understand the present and the future | Wayne Orchiston and Glen Rowe

In this poster we discuss the founding of the Section and summarize current research projects undertaken by Section members. There are other projects that await investigation. The ideal outcomes of these projects are oral papers and posters at RASNZ conferences and targeted overseas conferences, and publication of the resulting research papers in *Southern Stars*, international journals and in books.

Attendees

Roy Axelsen	AAQ, AAVSO, Variable Stars South
Victor Bao	RASNZ
Chris Benton	Auckland Astronomical Society
Keith Blair	Whakatāne Astronomical Society
Aidan Blakie	SWAPA (King's High School, Dunedin)
Rene Breton	University of Manchester
David Britten	Auckland Astronomical Society
Andrew Buckingham	Astronz, Auckland Astronomical Society
Steve Butler	RASNZ, Southland Astronomical Society, AMIDSR
Jonah Cameron	SWAPA (St John's College, Hamilton), Hamilton AS
Thomas Chadwick	
Emily Chambers	SWAPA (St Margaret's, Christchurch)
Ian Cooper	Palmerston North AS, Horowhenua AS
Charlie Cooper	Hamilton Astronomical Society
Darren Corbett	
Gareth Davies	RASNZ, DarkSky International, Auckland AS
Nalayini Davies	RASNZ, DarkSky International, Auckland AS
Ross Dickie	RASNZ
John Drummond	University of Southern Queensland, Gisborne AS
Alastair Emerson	Auckland A.S., Hibiscus Coast Astro. Soc.
Shea Esterling	University of Canterbury
Emma Fairweather	RASNZ
Murray Forbes	RASNZ, Occultation Section, Wellington AS
Alan Gilmore	RASNZ
Ken Gledhill	RASNZ
Antony Gomez	RASNZ, Wellington Astronomical Society
Dennis Goodman	RASNZ, Nelson Astronomical Society
Chris Gordon	University of Canterbury
Terence Gordon	Whakatāne Astronomical Society
Peter Graham	RASNZ, Wellington Astronomical Society
Bill Gu	SWAPA (ACG Parnel College, Auckland)
Duncan Hall	RASNZ, Wellington Astronomical Society
Hisashi Hayakawa	Nagoya University
John Hearnshaw	University of Canterbury (retired), AMIDSR, AAA, IAU
Lodewijk Henneveld	
Dave Herald	Trans-Tasman Occultation Alliance
John Homes	Wellington Astronomical Society
Aline Homes	Wellington Astronomical Society
Vicki Irons	Wellington Astronomical Society
Nina Izett	Whakatāne Astronomical Society
Norman Izett	Whakatāne Astronomical Society
Peter Jaquiery	RASNZ, Dunedin Astronomical Society

Graeme Jonas	RASNZ, New Plymouth Astronomical Society, KiwiStar
Stephen Kerr	
Adam Kibblewhite	SWAPA (Te Kura, Blenheim)
Pam Kilmartin	RASNZ
Demi Kirkpatrick	RASNZ Lecture Trust
Warwick Kissling	RASNZ, Wellington Astronomical Society
Alex Liang	SWAPA (Westlake Boys' High School, Auckland), AAS
Andrew Lorenc	RASNZ
Tom Love	RASNZ
Simon Lowther	RASNZ
Petra Lucioli	Whakatāne Astronomical Society
Carol McAlavey	Canterbury Astronomical Society
Peter McKellar	Fireballs Aotearoa
Terry McMahon	Hawkes Bay Astronomical Society
Christopher Monigatti	RASNZ, Wellington Astronomical Society
John Newman	Trans-Tasman Occultation Alliance
Bruce Ngataierua	RASNZ
Erin Nolan	
Darunee Orchiston	
Wayne Orchiston	RASNZ
Ron Paine	RASNZ, Dunedin Astronomical Society
Jonathan Park	
Hannah Park	SWAPA (Hillcrest High School, Hamilton)
Rosalind Pittar	
Samual Pittar	
David Platts	Hamilton Astronomical Society
Anika Ramos	SWAPA (Henderson High School, Auckland)
Terry Richardson	Canterbury Astronomical Society, Fireballs Aotearoa
Jeremy Robertson	Wellington Astronomical Society
Glen Rowe	RASNZ
Samantha Rowe	
Stephen Russell	NACAA, CWAS, ASNSW
Anna Scaife	University of Manchester
Sarah Shaw	
Margaret Streamer	
Stephen Stuart	RASNZ, New Plymouth Astronomical Society
Bill Thomas	Auckland Astronomical Society
Ian Transom	RASNZ, Hamilton Astronomical Society
Adrien Vilquin Barrajon	
Trevor Vowles	Hamilton Astronomical Society
Valerie de Vries	SWAPA (Rototuna Senior High School, Hamilton)
Jono Walker	RASNZ
Charlotte Warman	SWAPA (Epsom Girls' Grammar School, Auckland)
Diana Watson	

George Wingate	Auckland Astronomical Society
Steve Wyn-Harris	
Penglong Zhou	RASNZ

Abbreviations

AAA	Aotearoa Astrotourism Academy
AAQ	Astronomical Association of Queensland
AAS	Auckland Astronomical Society
AAVSO	American Association of Variable Star Observers
AMIDSR	Aoraki Mackenzie International Dark Sky Reserve
AS	Astronomical Society
ASNSW	Astronomical Society of New South Wales
CWAS	Central West Astronomical Society (N.S.W.)
IAU	International Astronomical Union
NACAA	National Australian Convention of Amateur Astronomers
RASNZ	Royal Astronomical Society of New Zealand
SWAPA	Students With A Passion for Astronomy