



New Zealand's National Observatory

Priorities & business

Dr Robert Shaw

Today

1. The Carter Observatory
2. The National Observatory
3. Secondary School Astronomy





Charles Rooking Carter



The Athenaeum and Mechanics Institute, Wellington, meeting place of the New Zealand Society, 1851. Photo: Alexander Turnbull Library.

What is the National Observatory?

- Committee 7 – 12 people
- Appointed by Government
- Purpose is
 - To advance astronomy
 - In the National Interest

The National Observatory

Board:

- Richard Bentley
- Alex Shaw
- Chris Parkin
- Judith Aitken
- Robert Shaw
- Peter Graham
- Gary Wilmhurst

Chair, Quality Panel

- Phil Yock

Chief executive

- Jacqueline Marchant

FT Staff

- Brian Carter, John Field,
Simon Glasgow, Accountant



Judith Aitken

The Carter Observatory Act

- Establishes both the Carter & the National Observatory
- Defines 2 roles
 - Run the Observatory
 - Advance astronomy in the national interest
- Establishes a private trust
 - Independent (directors protected)
 - owns assets
 - OIA and OA do not apply
 - reports to Parliament (not government)
 - Public Finance Act applies
 - annual grant (\$1,500)
 - pays no tax

The National Observatory

Is NOT

- a local astronomical society
- a membership organisation
- a research provider
- a funding body
- composed of astronomers

IS

- a priority setting committee
- a link between astronomers and the community
- a link between astronomers and government
- directed at New Zealand's national interest

Current direction

- Last review of priorities was 3 years ago
- Considered
 - national needs
 - government's priorities
 - how to advance “astronomy”
 - resource constraints
 - opportunities

Government's priorities

1. Raise participation rates and achievement for underachieving students
2. Give students access to a wider range of options
3. Better provide for Maori and Pacific Island students
4. Take full advantage of information technology
5. Produce a strong research, science and technology workforce
6. Develop the skills of self-directed, life-long learning
7. Fund public good research according to Government priorities and expert assessment.
8. Expand the role of the Royal Society – research funding agency

Options we evaluated

1. Research provider
2. Tourism / visitor industry provider
3. Adult education provider
4. Primary and secondary school provider
5. Tertiary education provider
6. Be a local astronomy organisation
7. Advocate for astronomy
8. Co-ordination of astronomy

Realistically, what is the national need?

Secondary school astronomy

1. Curriculum weakness
2. Teacher shortage
3. Science promotion
4. Technology promotion
5. Pathway students to tertiary astronomy
6. Low achieving students
7. Academic students extension
8. Capitalise on astronomy's allure
9. Within the Carter's capability
10. National impact
11. Innovative education/delivery techniques

Strategic vision

"The Carter Observatory will be a specialist 'outside' provider of astronomy courses for secondary school students, to assess student achievement and have students gain credit for this learning on the New Zealand Qualifications Framework."

Future directions?

- Astronomy promotion
- Wellington visitor industry
- Primary school education
- Advocate for research funding
- Support regional organizations
- Support science education
- Become a membership organisation
- Home for amateur researchers

Your suggestions, please ...

Professor Bessell's review

- Ministry contract, 2005
- He concluded
 - the Carter did not have the confidence of the astronomy community
 - National Observatory “badge” should go to Canterbury University
 - Repeal the Act
 - Give \$1M to Canterbury University
- Little functional detail

Ministry's response

“MoRST believes that the issues discussed in the report have broader relevance than just research, science and technology. The report provided us with the wider context for NZ astronomy, and we see opportunities to link the research, education, cultural and international aspects together to deliver on Government's education and innovation goals.”

Carter's response

- Exploring options with Government
- The Carter could
 - Become a local astronomical society (Trust)
 - Work closely with Wellington City Council
 - Run the distance education business
 - Seek sponsorships
 - Get \$1.5M from Government for capital works
 - Seek members and provide for local research
 - Ditch the national responsibility

Secondary School Education

Our two roles in Secondary Education

1. National role (as National Qualifications Advisory Organisation)
2. Carter's business
 - teaching online
 - awarding credits (as a registered and accredited provider)
 - working with schools

National Qualifications Advisory Organisation

- Working with NZQA
- Appointment possible next March
- Would be responsible for astronomy
 - standards (curriculum)
 - awards (certificates, diplomas)
 - quality of assessment (moderation)

Who has a NQAO role?

1. Ministry of Education (secondary schools, NCEA)
2. Universities (their own degrees)
3. NZ Qualifications Authority (polytechnic diplomas and degrees)
4. Industry Training Organisations (trades)
5. Catholic Education Authority (Catholicism, pending)
6. National Observatory (astronomy, pending)

Why would we want to do it?

Set astronomy at the heart of secondary school science

Which we see as being in the national interest

Proposed secondary curriculum

- About 10 astronomy unit standards - over 50 credits, levels 1,2, 3
- National Certificate in Astronomy – for 15 year-old-students, term1 year 11, “taster”
- National Diploma in Astronomy – for senior students

- Two streams
 - Physics & mathematics
 - Humanities

- Unit standard development priorities are
 - Cosmology, levels 1, 2, 3
 - Traditional Pacific Navigation, level 1
 - Space Exploration, level 2
 - Maori Astronomy, level 1
 - Practical project, levels 1,2,3

Reminder - Current unit standards

Space Exploration – 4 credits, level 1

Our Solar System – 4 credits, level 1

The Milky Way and other Galaxies – 4 credits, level 1

The Carter's business

- 3 courses
- 400 students
- 75 schools
- \$200 per course
- Paid by
 - schools
 - parents
 - trusts

Online business staff

- Manager / Principal – Dr Robert Shaw
- Executive Officer – Anna Honore
- Senior Web Systems Manager – William Bryson
- Lead Teacher – John Field
- Teachers - various



William at work

The Carter Observatory
New Zealand's National Observatory

Distance Learning

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Astronomy Research Funding

- Science reforms
- Foundation for RST Act
 - Public good / operational categories
 - Priorities from Government
 - Projects selected on their merit by scientists
- Marsden Fund
- Student funding includes research component (for the moment)

Your questions please ...