

RASNZ Occultation Section

Supporting “Lucky Star”

Steve Kerr

Director RASNZ Occultation Section

What is the RASNZ?

- The Royal Astronomical Society of New Zealand (RASNZ) is a national (to New Zealand) organisation of astronomers – both amateur and professional. (Australia has the Astronomical Society of Australia – a professional body. There is no national body for amateurs other than the organisation of a biennial conference).
- Acts as an “Umbrella” organisation for local and regional clubs and societies across New Zealand.
- Organises an annual conference at different locations around New Zealand as well as supporting ‘Star Parties’, photography competitions etc.

RASNZ Sections

- RASNZ Contains a number of 'Sections'. These are special interest/focus groups that have been formed in response to interest shown by members. Examples include Astrophotography, Comets, Aurora etc. Two major sections have significant amateur/professional science focus – Variable Stars South (Variable Star Section) and Occultation Section.
- Because of the wider science focus, both of these sections have a reach well beyond New Zealand with a major presence (perhaps even majority) in Australia where there are no equivalent national organisations.

Occultation Section History

- Formed in 1978 by Graham Blow – then in Auckland, New Zealand.
- Graham worked as a professional astronomer (at times) so occultation observing was scientifically oriented.
- He was very keen to organise networks of observers to maximise science outcomes for occultations extending throughout Australia and at times had an observer in Papua New Guinea.
- Established network of volunteers to support the sections operations and communications with observers.
- Graham passed away after a long fight with cancer in December 2014.
- Steve Kerr appointed new section director by RASNZ Council.

RASNZ Occultation Section Objectives

- To facilitate New Zealand/Australia amateurs involvement in occultation observing and science. Observers can be involved if they wish to whatever extent they want. Cooperation with professional groups very advantageous to all concerned but maybe not everyone will want to be involved.

Occultation Section Today

- Main objectives at the moment are ‘renewal’
 - Section’s communications channels are now old and not that effective. Need to revamp website and email practices, exploring ‘social media’.
 - Recruiting new volunteers to support activities – amateur astronomy is seen as an ‘old persons’ activity and many are starting feel their mortality.
 - Re-establish links with ‘society’ networks – although society networks are themselves somewhat in decline in some places.
- Moving forward
 - Establish links to ‘institution’ observatories – schools, universities etc.

Observing Network

- Observers concentrated in relatively small areas.
 - South-east Queensland
 - Sydney Canberra
 - Melbourne
 - Wellington area at the south end of North Island of New Zealand
 - South Island of New Zealand.
- However, high profile TNO events draw more observers out in other locations. The challenge is to keep in contact with those people between events. BUT THERE NEEDS TO BE PLENTY OF NOTICE.

Observer Communications

- OccultWatcher is the preferred channel for the more engaged observers.
- Fall back to emails for others ... Prone to being out of date
- Role of the RASNZ Occultation Section to maintain this network and facilitate communication and coordination.

Observing Strategy

Currently focussed on Watec style cameras – On/Off type observations. Looking for dimensions and asteroid/TNO astrometry. Challenges with timing qualification.

Early days for quality photometry – still learning the subtleties of camera behaviour/atmospheric issues.

Little visibility of professional occultation observing techniques.

Amateur Questions

- How do professional observers make observations with quality timing (interlaced analogue, digital)?
- Questions around the process of identifying events (has been answered informally yesterday)?
- Is there another set of events that are more accessible to amateurs (brighter stars) that are not being captured in current TNO programs – low precision orbits/low interest objects. Should amateurs set up additional OW feeds?
- Can OccultWatcher be more “agile” to respond to “last minute/week” updates?

More Amateur Questions

- Many lower grade cameras (traditional amateur minor planet occultation strategy) versus fewer high performance cameras chasing other science objectives? What other science objectives are out there and how to learn about new ones (e.g. Sputnik Planum issue could not have been envisaged prior to New Horizons).
- Higher performance cameras out of reach of most amateurs – can amateur groups seek to obtain higher performance cameras funded from other sources?
- Training of amateurs for loan higher performance cameras. What is Lucky Star's expectations? Higher risk of no results with more complex setup.
- How good are the newer cameras really? 25cm scope + Raptor Kite @ 1 second exposure under average skies = ? Limiting magnitude at what SNR? Are Watec cameras really that bad?

More Amateur Question

- Recruiting new observers – common with other non-TNO occultation observing. Network of information available. For amateur video observers.
<http://www.occultations.org.nz/videotime/manual.htm>
- Do the Paris/Rio groups want to be actively engaged in new observer recruiting?

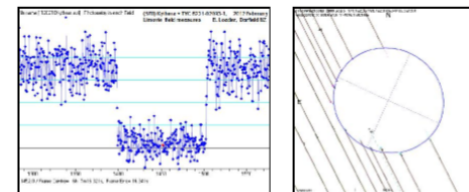
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Royal Astronomical Society of New Zealand Occultation Section

Observing Occultations Using Video: A Beginner's Guide

For the Australia/New Zealand Region



VERSION 1.2

More Amateur Questions

- Observation archiving – what should we collect from observers and how best to store them?
- What changes will amateurs “see” with the commencement of Lucky Star? Changes in Occult and OccultWatcher?
- Should we have a forum/mechanisms for an ongoing conversation?