

Professional and Amateur Astronomy and Astrophysics

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Introduction

A recent survey was undertaken by the Royal Astronomical Society of New Zealand on what support could be useful to foster links between amateur and professional astronomers. New Zealand has a long history of high quality astronomy work done by people whose primary employment is not in that arena. The interest and energy of that amateur community has long been acknowledged and the quality of the work is often consistent with that recognised by international peer-review as fit for publication.

The Royal Astronomical Society of New Zealand (RASNZ)

RASNZ supports astronomy activities across New Zealand through its subsidiary Groups and Sections. Each of these subunits maintain contact with both professional or amateur astronomers who share the same specific interests.

Astrophotography
Historical Section
Occultation Section
Space Weather Section

Comet and Meteor Section
Dark Sky Group
Professional Astronomers' Group
Variable Stars South

Several of these groups comprise RASNZ members who have contributed observations that have been used in international peer-reviewed journals, see e.g., [1-4].

Professional or Amateur?

RASNZ comprises both amateur and professional New Zealand astronomers and astrophysicists. This is an uncommon situation: other nations have different societies serving the amateur and professional astronomy sectors. RASNZ has recognised the opportunity this provides for the professional astronomers to support more amateur New Zealand astronomers to contribute to peer-reviewed research.

The Survey

The survey was targeted to amateur astronomers who have already been involved in research. The reason for targeting these respondents was to collate information relating to the factors that either supported or hindered those amateurs in performing their observations or analysis. The survey comprised XX questions, and was implemented on the SurveyMonkey platform during the period 16 November 2022 to 31 December 2022.

Survey Results

The full set of survey results will be reported in a future publication [5] and only a brief precis is offered here. There were 93 respondents to the survey who could be characterised as amateur astronomical researchers. Of these, more than 50% respondents:

1. Had been active in astronomy research within the last five years,
2. Use their own personal equipment,
3. Have had their work published in peer reviewed journals,
4. Are members of a RASNZ-affiliated astronomical society.

The single most common area of research was variable stars (44% of respondents), followed by minor planets and comets (35%, including occultation observations), astrometry (28%) and exoplanet observations (23%).

Common themes in the responses to an open-ended question relating to what support would be welcome included:

1. An enhanced sense of community, to enable connections within the amateur community and between amateur and professional researchers,
2. Directed observation projects,
3. Assistance with technical aspects,
4. Equipment and resources.

The Workshops

In March 2023, a series of workshops were conducted with amateur astronomers, representatives from local astronomical societies and professional university-based researchers. These workshops were used to obtain context in which to understand the findings from the survey and to gain further insights into the barriers for amateur participation in research.

Conclusion and Next Steps

The findings of the survey and workshops show that there is a substantial body of amateur astronomers who routinely perform observations and analysis and who are publishing as co-authors on peer-reviewed journal articles. Most respondents would welcome assistance on technical matters or advice on research methodology, and assistance in finding professional astronomers who could guide or suggest valuable research projects. While some respondents noted that financial support for equipment or resources would help their work, this was less frequently cited as a barrier.

The main elements of the support identified in the survey and workshops will be reported in [5] as well as a set of positive steps that RASNZ can take to facilitate the removal barriers to amateur astronomical research in New Zealand.

Interested in Contributing or Knowing More?

If you are an amateur astronomer who is involved in research observations or who is interested in getting involved in astronomy research, please contact the authors. The International Astronomical Union also has a Working Group for Professional-Amateur Relations in Astronomy [6].

References

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- [4] Olmschenk, G., et al., 2023, MOA-2020-BLG-208Lb: Cool Sub-Saturn-mass Planet within Predicted Desert, AJ, 165, 4, 175
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