

Evaluating introductory seminars on observational astronomy, using the Europlanet Evaluation Toolkit

Konstantina Moutsouroufi (1,2), Grigoris Maravelias (1,3), Iakovos Marios Strikis (1), Emmanuel Kardasis (1),
Orfefs Voutyras (1,4), Giorgos Kountouris (1), Athanasios Evangelopoulos (1), Konstantinos Aggelis (1),
Pierros Papadeas (1), Tamara Schmidt (1), Apostolos Christou (5)

(1) Hellenic Amateur Astronomy Association, Athens, Greece, (2) National and Kapodistrian University of Athens, Athens, Greece,
(3) National Observatory of Athens, Greece, (4) National Technical University of Athens, Athens, Greece,
(5) Armagh Observatory, Armagh, UK

Abstract

During December 2018 - February 2019, the Hellenic Amateur Astronomy Association coordinated a series of seminars entitled “Introduction to Observational Astronomy”¹. The goal of this series was to introduce interested individuals to the aspects of the observational techniques for scientifically useful observations. Using the Europlanet Evaluation Toolkit we implemented a number of evaluation methods to receive feedback. The results show the participation of a mainly young audience (~60% between 18-39), where females are represented more than equally (~52%). Using the “pebbles in a jar” method a 94% of satisfied attendees was measured, while by using post-event surveys (questionnaires) the lectures were perceived as “(very) explicit” and “(very) interesting” (94%), fulfilling the attendees’ expectations (92%). It is important to note that 88% considers that their interest in Astronomy increased and is willing to get involved in observations.

1. Introduction

A typical activity of the Hellenic Amateur Astronomy Association (HAAA) is to organise seminars (e.g. Voutyras et al. 2013) and hands-on workshops (e.g. Maravelias et al. 2018; Kardasis et al. 2015), using open standards, on the observational techniques that lead to observations/results that can contribute to the science of Astronomy (e.g. Kardasis et al. 2016). During the 2018-2019 winter period a series of seminars entitled “Introduction to Observational Astronomy” took place, targeting the general public, high schools and university students, and amateur astronomers. The seminars introduced tools and techniques for observations of the Sun, artificial satellites, the planets and the minor bodies of our Solar system, and beyond that, stars and exoplanets, star clusters, nebulae, and galaxies. The speakers were experienced amateur and/or professional

astronomers, with a deep knowledge and practical experience on their subject.

2. Tools and Methodology

To properly evaluate our outreach activity and improve future participant’s experience we used the Europlanet Evaluation Toolkit², which was recently released in 2018. In particular, four different evaluation methods were applied: (a) “pebbles in a jar”, (b) post-event surveys, (c) “3 words”, (d) snapshot interviews. The first method was selected for being really easy to apply and can provide a highly visual and quick feedback. The “3 words” method was selected for a quick and focused feedback on specific parts (what worked well, what could be improved, how it made them feel) and were actually incorporated within the anonymous questionnaire for the post-event surveys, which were used to understand the experience of our audience. A variety of appropriate question sets were combined to evaluate several elements of the overall activity. The main questionnaire concerned the quality of the speaker and the lecture itself, along with an open question of what could be improved in the future. We also ethically collected some basic statistical data regarding sex and age range, relationship with the association (membership status, previous experience with the HAAA). To increase the feedback, people were continuously reminded to fill in the surveys, while some additional motivation was offered: for each complete questionnaire (for each lecture individually, as each day consisted of two lectures) the participant would get an additional ticket for the lottery at the end of the series to win a number of Astronomy-related prizes.

We have also experimented during the first day of the seminars with video snapshot interviews. However, it was realised that this approach is more demanding than anticipated as it requires certain equipment. Moreover, as

¹ HAAA’s link (<https://tinyurl.com/y3fyd8er>) and material available online (<https://tinyurl.com/y6nhagct>, in Greek)

² Europlanet Evaluation Toolkit (<https://tinyurl.com/yy8pa4ej>)

people tend to be less confident to provide feedback in such a frameset, the number of interviews is rather small.

3. Results and Discussion

In total, we collected 345 and 343 responses to “pebbles in a jar” and post-event surveys, respectively. Given the number of participants (~40-60 per seminar, 132 unique attendees) feedback was acquired from ~52-91% of the audience at each time, which does correspond to a representative sample to work with. The 3 word tool resulted in 487 words (93 individuals), 135 of them being “interesting” (Fig. 1).

Sex and age distributions from attendees that were willing to provide this information, resulted that ~44% were male and ~52% female (Fig. 2), which corresponds to a significant increased participation by females. The higher percentage of female is quite promising regarding the involvement of females in Science education. Moreover, we notice that the majority of the audience (~60%) is within the 18-39 age bins (~27% for 18-24 and ~33% for 25-39; see Fig. 3). This result is quite encouraging, since it indicates that the lectures attracted a mainly young that can become active with respect to contribution to Planetary Science and Astronomy in general.



Figure 1. A word cloud visualization of people's most common reactions collected using the 3 word technique ("interesting" corresponding to 135/487 words).

Regarding the lectures themselves, the feedback given on a scale was very positive. Averaging over all (12) lectures, 94% of participants considered them (very) explicit and (very) interesting. The main goal is to motivate people to get involved with Astronomy. By measuring the corresponding responses we noticed that 88% would like to know more about each subject presented while 91% admitted that their interest in Astronomy increased. A similar 88% would like to deal with observations in the future. On the most important question, whether the participant felt that their expectation was fulfilled, an

overwhelming 92% answered positively. At the same time, a 97% considered that the whole event was well-organized. All feedback, including negative one, was shared with the speakers to improve in future activities.

Although logging responses to paper surveys were time-consuming, and more demanding than expected, the preliminary analysis is rather promising regarding the quality of the content and the organization of our outreach activity. Further analysis is currently underway and a comprehensive and analytical study will follow in a future paper.

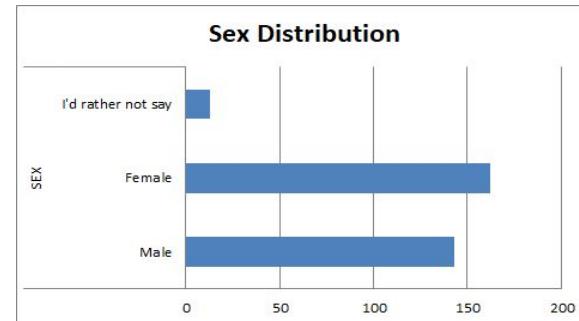


Figure 2. Sex distribution of the attendees (in numbers). The females represent the ~52% of the sample, significantly higher than ~44% of male participants.

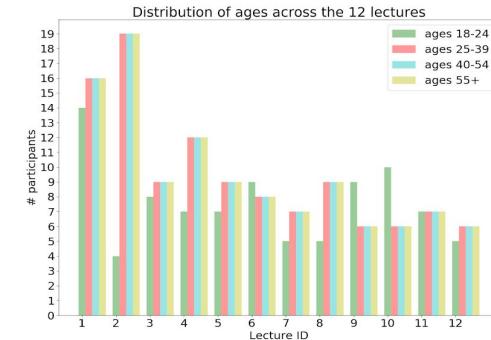


Figure 3. Age distributions of the attendees per lecture (not showing ages <18 years, which in most cases were 0). We notice that we managed to attract a mainly young audience (~60% within the 18-39 age bin).

Acknowledgements

We would like to thank the Municipal Library of Athens for hosting the seminars.

References

Kardasis et al. 2015, EPSC, id. EPSC2015-707
Kardasis et al. 2016, JBAA, 126, 29
Maravelias et al. 2018, arXiv: 1810.04562
Voutyras et al. 2013, EPSC, id. EPSC2013-798