

A Supermassive Success Story

The Royal Astronomical Society monthly podcast

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Abstract. The Supermassive Podcast is created monthly for the Royal Astronomical Society, and since its inception has become one of the most popular astronomy podcasts in the world. In this paper we describe its format and suggest reasons for its success, including its broad and (relatively) diverse audience, amplification on social media, and our approach to listener engagement.

Key words. Podcast, Online engagement, Astronomy, Learned society

1. Introduction

The Royal Astronomical Society (RAS) was founded in 1820, and is now the second-largest predominantly professional astronomy membership organisation in the world, with more than 4,000 members (all ‘Fellows’). Planning for our two hundredth anniversary included a series of events, an organisational rebrand, and the agreement to invest in the new podcast as an additional facet of our public engagement work. The aims of this were to provide a direct broadcasting vehicle (Society staff typically carry out around 25 radio and TV interviews each year but these are mainly in response to external events), to highlight different topics in astronomy and to ensure the representation of UK researchers (given we are a UK organisation) and thus demonstrate the

strength of astronomy here. The Supermassive Podcast sits alongside the work of our two education and outreach officers, and other staff, in direct face to face audience engagement and training programmes.

Supermassive was conceived by Richard Hollingham of Boffin Media, a company with some thirty years of experience in broadcast journalism, podcasting and science writing, and set up in partnership with the RAS. Each episode is presented by award-winning astrophysicist Dr Becky Smethurst, who herself has a large YouTube¹ and social media following used to good effect to cross-promote Supermassive, and science journalist and professional podcast producer Izzie Clarke. Dr Robert Massey, RAS Deputy

¹ YouTube: Dr Becky (accessed 2024 January 16)

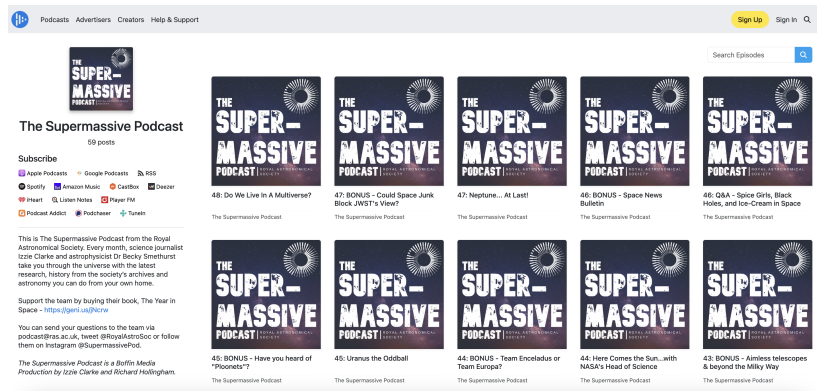


Fig. 1. The RAS Supermassive landing page

Executive Director, is a standing guest on the show.

2. Format

The podcast features different topics in astronomy and geophysics each month, and is very much aimed at a lay audience. The team also take questions from listeners, and end with a guide to the night sky. Since the beginning of 2023 bonus episodes have covered additional audience questions.

The format of the Supermassive Podcast, and choice of two hosts, was based on the previous (and ongoing) success of Boffin Media's Space Boffins Podcast and other podcasts developed or produced by the company. The format is largely unchanged from the initial episode – suggesting that it works – and includes a balance of scripted and unscripted material. The only significant adjustment has been the inclusion of more audience inspired content in the form of questions and future topic suggestions. We began the bonus episodes in response to the overwhelming number of questions we were receiving.

The hosts are good at seamlessly moving between scripted and unscripted – not something that always comes naturally. As a science journalist, Izzie tends to lead on asking questions on behalf of the audience and, as an astrophysicist, Becky usually takes the role of expert. Robert also answers audience questions and is always part of the 'on-air' team.

The podcast opening jingle includes a montage of highlights (or engaging 'teasers') from the episode. We add this at the end of the editing process. The idea is inspired by the TV series *Thunderbirds* and the *Mission Impossible* films. Although not (obviously) original, we have not heard this technique used in other podcasts. When we conceived the podcast, we wanted it to sound professional and distinctive from the very start to keep the audience engaged.

The first 'hello' link that introduces the hosts and the subject is scripted but the hosts are free to chat around the script at any point – and usually do. We always want to get straight into the topic we have chosen and set out clearly what the episode is about. We do this to prevent it sounding too 'clubby' and avoid irrelevant chat early-on, which could discourage new listeners.

Each episode typically includes two 'expert' interviews. The first often adds detail to the subject, the second either focuses on history or a particular mission. The priority for choosing interviewees is that they are both knowledgeable and also excellent communicators. We aim to ensure a good gender balance across podcast episodes.

Between the two interviews are sections for audience questions on the episode topic to Becky and Robert and – unscripted – comments about the topics. Following the two interviews, we have a section for audience ques-

tions (for both Becky and Robert). Each edition concludes with a look ahead to the night sky in the coming month. We have, occasionally, also included a chat around books or space media (film, music etc). As with all podcasts, we encourage audience interaction and to write reviews throughout – this has clearly worked for us!

Initially the podcast was recorded in-person at the RAS offices, but once Covid restrictions came into effect episodes were created with online studio software (initially Zencastr and now Riverside), something which continues to this day and allows for all participants to record remotely if required.

3. Production pipeline

Future topics are agreed at the start of the year with the RAS but can be moved around, dropped or replaced. One of the great strengths of the podcast is that the production team are left to work on their own, without interference. This means the podcast is led by audio professionals and avoids the danger of the podcast sounding like a corporate product. We suggest (but cannot prove) that listeners feel that the podcast is authentic and not a promotional exercise.

The process is overseen by the Executive Producer, Richard Hollingham from Boffin Media, who also does the bulk of the corporate liaison with the RAS. The producer, Izzie Clarke, sets up the interviews, chooses audience questions and writes the script, which is then edited by Richard. The final script is sent to Robert and Becky at least two days before recording, so they can prepare answers to audience questions.

We record remotely using the user-friendly Riverside recording platform (available on subscription). This allows us to connect over the internet (in a similar way to Zoom etc.) but the platform makes local recordings for each participant. We then download and combine these together using Adobe Audition mixing software. We all have identical Rode USB microphones. The aim is to record ‘as live’, with as few edits as possible. This helps with the sound and our engagement with listeners. We

often keep in mistakes or clip them and run them at the beginning or end of the podcast.

The podcasts are edited and mixed by Izzie and signed-off by Richard. As professionals, the standard of both mixing and editing are of broadcast-standard.

Each podcast typically takes three days to make: One day setting-up (spread over several days), one day scripting and recording and one day editing and mixing. It makes sense to use the skills of broadcast professionals to do this.

We use the Audioboom² platform to host the podcast (see Fig. 1). This provides a feed on all platforms, including Apple Podcasts and Spotify. It also allows us to embed a player on the RAS website.

4. Promotion and audience demographics

At the outset the RAS social media accounts gave a crucial initial boost to the podcast audience, predominantly via Twitter / X and Instagram, and both platforms offer another platform for direct audience engagement (for example in soliciting questions). Each new episode is still promoted in the same way, and the popularity of the podcast has grown organically without significant additional marketing. Subscribers receive alerts as each new episode goes live, and this has also helped us to retain and grow our audience base.

After four years, Supermassive has become one of the most popular astronomy podcasts in the world. The nearly 60 episodes (at the time of writing) have been listened to almost 1.25 million times, and the podcast often ranks first in the Apple³ astronomy chart in the UK and second in the United States.

The rapid and ongoing growth in the listener base (see Fig. 4 for an overview of most listened to episodes) was a surprise to us, and

² <https://audioboom.com/channels/5014098-the-supermassive-podcast> (accessed 2024 January 16)

³ Apple data gives information on podcast chart positions: <https://chartable.com/charts/itunes/gb-astronomy-podcasts> (accessed 2024 January 16)

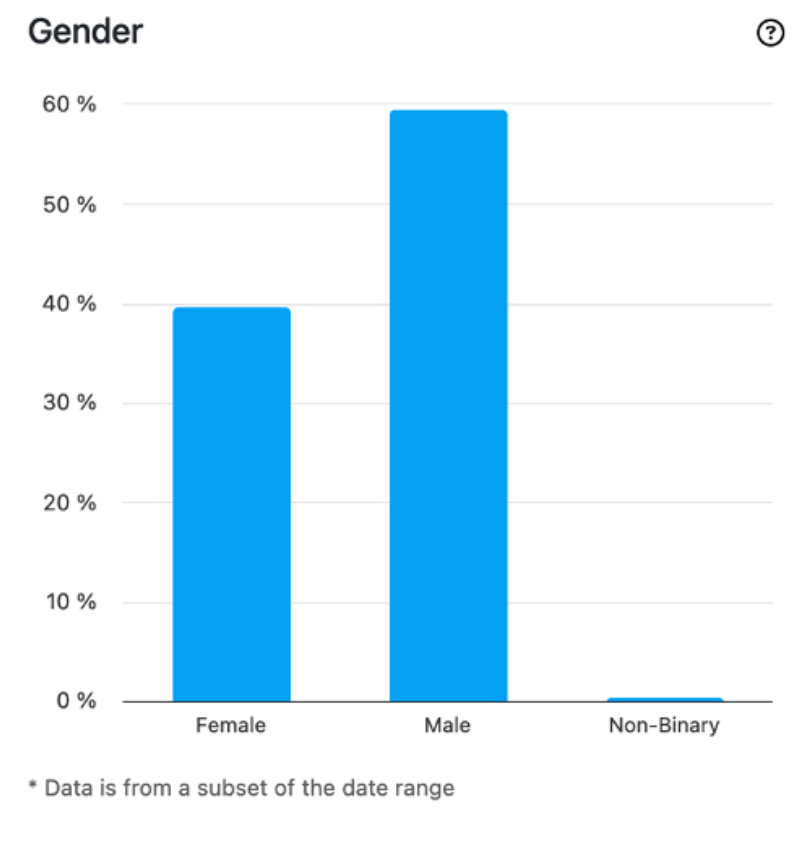


Fig. 2. Gender of Supermassive listeners. Listener numbers and demographic data from Audioboom.

compares very favourably with many podcasts supported by substantial budgets from private companies, which are often supported by paid advertising campaigns⁴. Our organic growth was enough to attract an unsolicited approach from Hachette Publishing Group, and as a result in 2022 we published “The Year in Space”, our first spinout book from the podcast (Royal Astronomical Society 2022).

Unusually for a science podcast, nearly 40% of our listeners are women (see e.g. Mackenzie (2019), where 87% of science podcast listeners responding to a survey were men), and we have a relatively even distri-

bution of listeners by age, with the peak between 35 and 44 years old (see Fig. 2 and 3). Podcasts typically have a relatively young user base, but in our case more than a fifth are older than 55 years old. We are also pleased to note that the listener consumption rate (a measure of engagement through the proportion of each show listened to from start to finish) stands at 95-130%, which compares very favourably with industry expectations of around 70% for a given episode. Where the rate exceeds 100%, this means that the episode is consumed more than once by some listeners.

⁴ “Benchmarking, oh benchmarking” (accessed 2024 January 16)

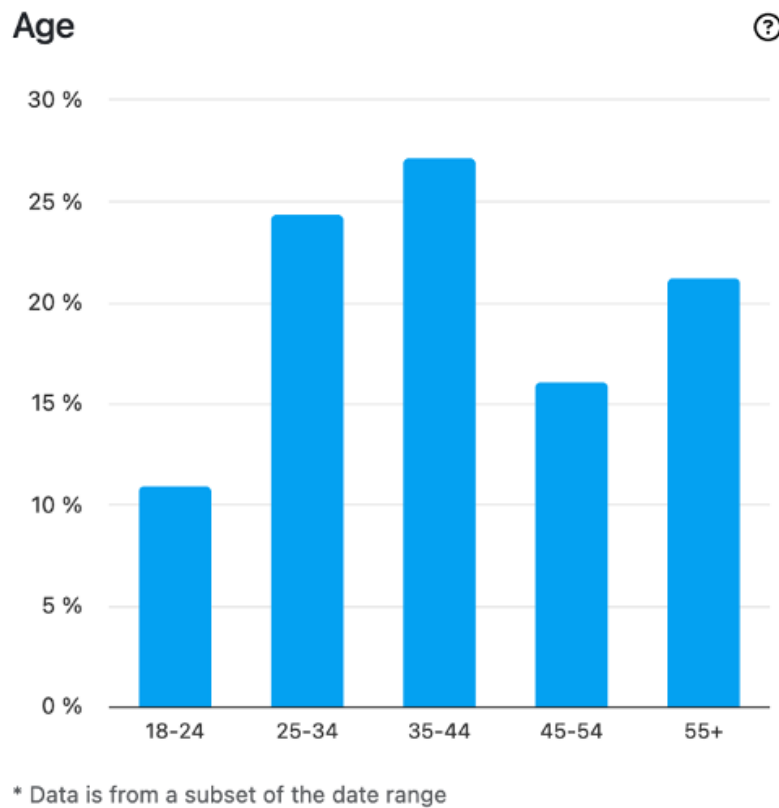


Fig. 3. Supermassive audience by age. Listener numbers and demographic data from Audioboom.

	Title	Published	Listens
1	Seeing The Invisible Universe	Jan 17, 2020	37,086
2	The End of the Universe	Nov 26, 2021	34,460
3	Gas Giants are Weird	May 31, 2022	31,254
4	Most of the Universe is missing...	Jul 28, 2023	30,285
5	How to Build a Galaxy	Mar 25, 2022	29,323
6	JWST First Images... FINALLY!	Aug 27, 2022	29,233
7	How to Kill a Galaxy	Apr 30, 2022	29,102
8	Rocky Planets Rock	Jul 01, 2022	28,398
9	Jupiter The Monster	Mar 24, 2023	27,781
10	It's All Relativity...	Feb 20, 2020	27,301

Fig. 4. The top ten most listened to episodes of the Supermassive podcast. Note that these are cumulative, so earlier episodes build an audience over time.

5. Listener feedback

We do not have the resources for a rigorous analysis of *why* our audience has these characteristics, but feedback and reviews from listeners suggest that the success of the podcast rests on the blend of lighter and more serious content, and the humour and good relationship between the two (women) presenters. We also strive to have a diversity of guests with a variety of backgrounds and expertise each time.

Listeners readily express their enthusiasm for our work, with these messages typical of their comments:

- “Insert classic “long time listener, first time caller” style intro here. I love the podcast, I love the dynamic between Izzie, Dr Becky, and Dr Massey. I love the format—I just love this show.”
- “Hi Dr Becky. I don’t know if you guys even read the reviews, but I’m the kid (Luke from Minnesota) who interviewed you for a school project. I just want to let you know that I’m still going to be an astrophysicist when I’m out of high school!”
- “Greatest podcast in the universe. Intelligent, fun, funny, energetic: Becky and Izzie are amazing hosts. I love all the science, which they take seriously, and I love even more being part of the great time they seem to have together. This is by far my favorite podcast of all, and there do seem to be more podcasts than stars these days ;)”

6. Conclusion

It is interesting to reflect on why our podcast is successful, and with a limited (commercial in confidence, but modest) budget has a much greater reach than many with substantial advertising and marketing campaigns.

We likely have an easier starting point, in that mass audiences are more interested in topics like astronomy (or history, politics, sport, and music) than say a corporate broadcast relating to a workplace. As long ago as 1996, Bill Gates stated that “content is king” on the then nascent World Wide Web (Gates 1996), and our episodes certainly meet that standard. Our investment in a partnership with Boffin Media is also crucial, in that we benefit from professional producers and editorial standards, without which the podcast would be much less consistent.

Supermassive also continues to build a community with its listeners. We mention the names of individuals who contact us, answer their questions, and respond to their queries in the main podcast and in our newer bonus episodes.

Perhaps we should be reluctant to encourage competitors, but given the enduring popularity of astronomy, more observatories, institutions and organisations should consider podcasting as part of their public engagement portfolio, capitalising on its ability to reach a global audience and ensuring our science has the public reach it deserves.

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