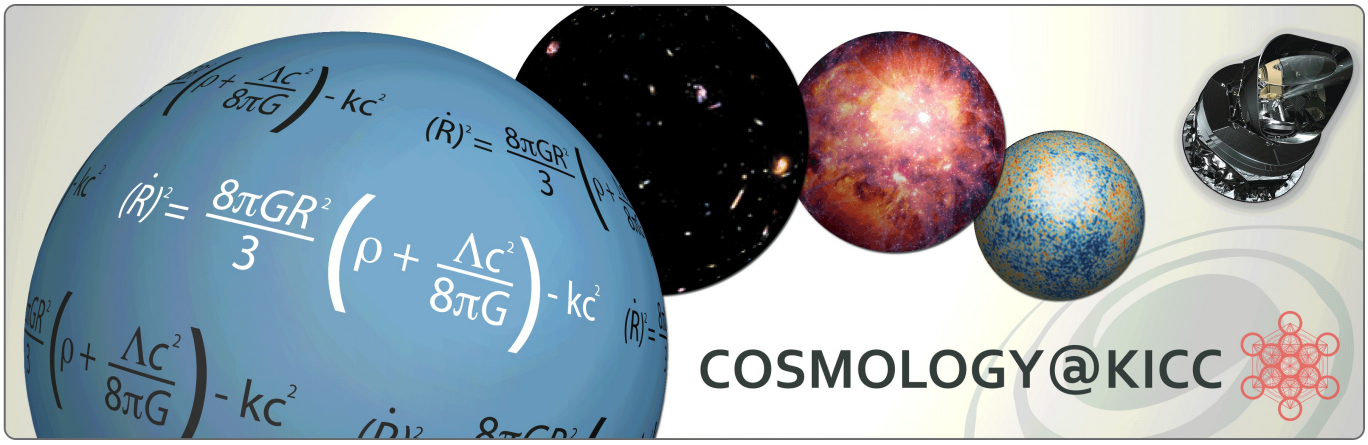

KAVLI INSTITUTE FOR COSMOLOGY, CAMBRIDGE

Cosmology@KICC – Feedback

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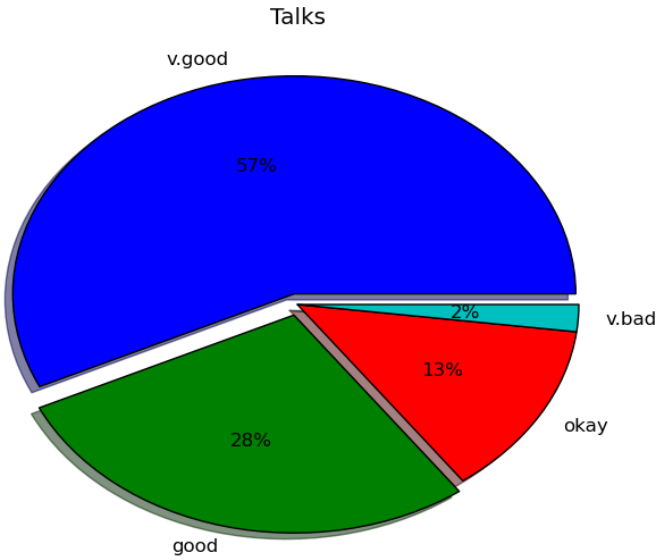
Outreach: KICC, Cambridge, Sept 2014

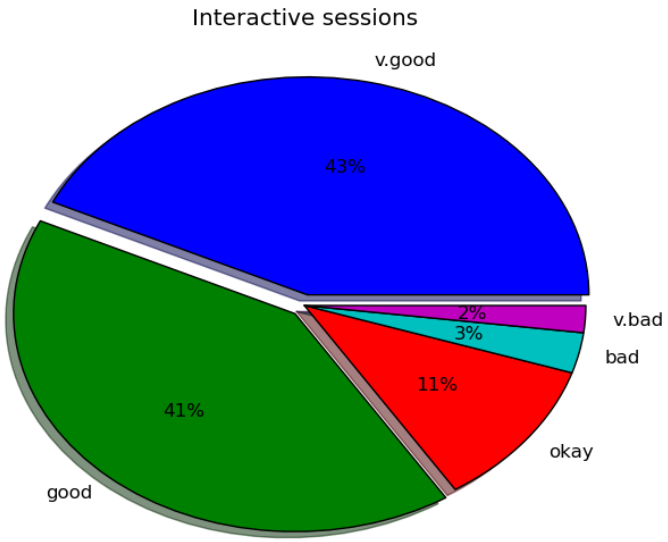
Overview

Presented here are the results from the Post Event Feedback form. Out of the 60 participants (55 students and 5 teachers) we had 54 (90%) of the forms returned, and the results are summarised below.

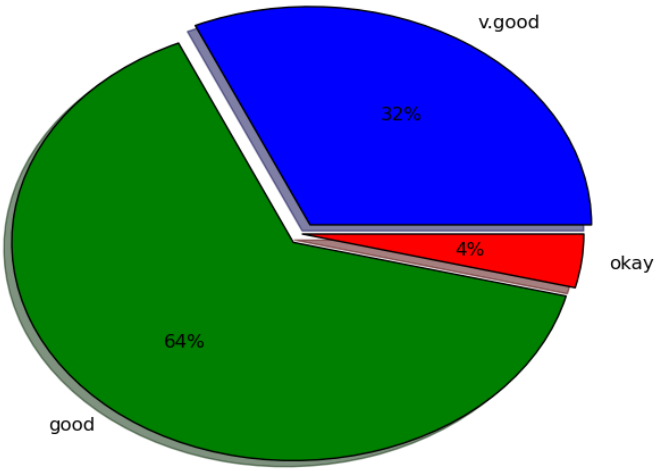
5 category assessment

We asked the participants to rate five aspects of the event from 'very good', 'good', 'ok', 'bad', and 'very bad'.

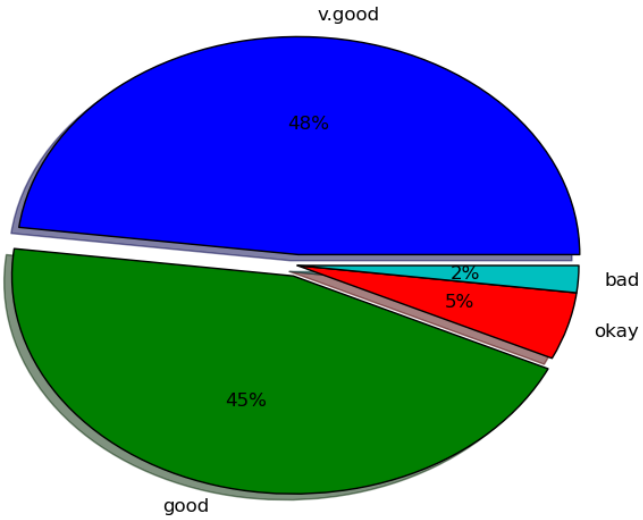


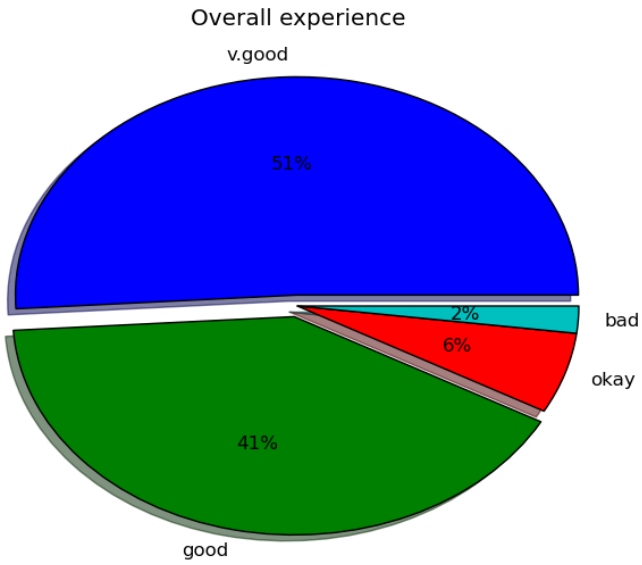


Breaks



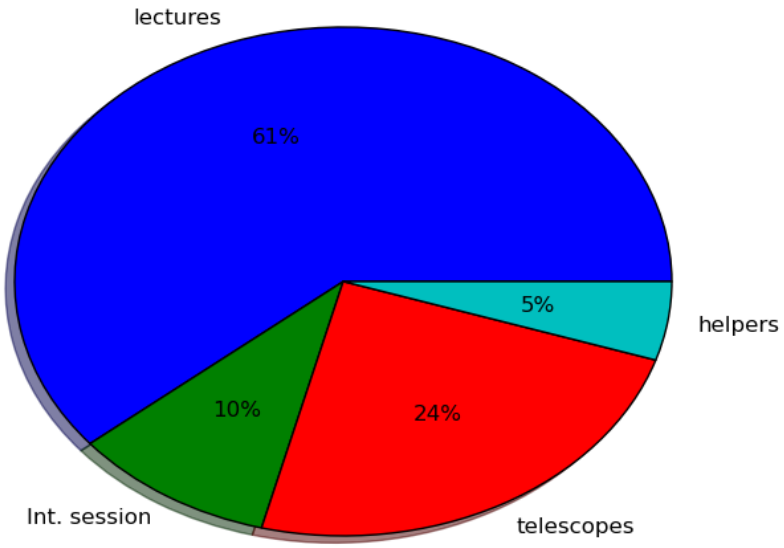
Facilities





What was the most interesting or enjoyable part of the day for you, and why?

The participants broke down their responses into the four categories shown in the pie-chart below, and frequently would select more than one of the categories.



The data would suggest that the number and range of talks was good, as was having hands on telescope time, which included the Cambridge Astronomical Association (CAA) and solar telescopes available at lunch-break.

"... all the helpers were very approachable and great to talk to"

"all the talks were intriguing and fascinating"

"staff so enthusiastic"

"[talks] content I recognised from my studies ... went further into details"

"[talks] weren't too long and very understandable"

"[talks] suitable level of understanding"

What was the least interesting or enjoyable part of the day for you, and why?

10 forms (18%) had no response, and of the remainder most comments related to both the talks and interactive sessions. Interestingly this was not related to content of the talks, although a few commented that they had not met this type of physics on their course:

"Everything was excellent"

"There wasn't much I didn't find enjoyable. It was all very engaging."

Rather they referred to being tired by the time of the last lecture, and so did not enjoy it, or instead they were not considering pursuing physics at a higher level anyway so could not see its relevance:

"The last careers talk as I'm not interested in studying Physics at Uni."

Some found the 'random walk' not involved enough, but the 'galaxy collision' the opposite. For some it was the number of talks:

"The number of talks"

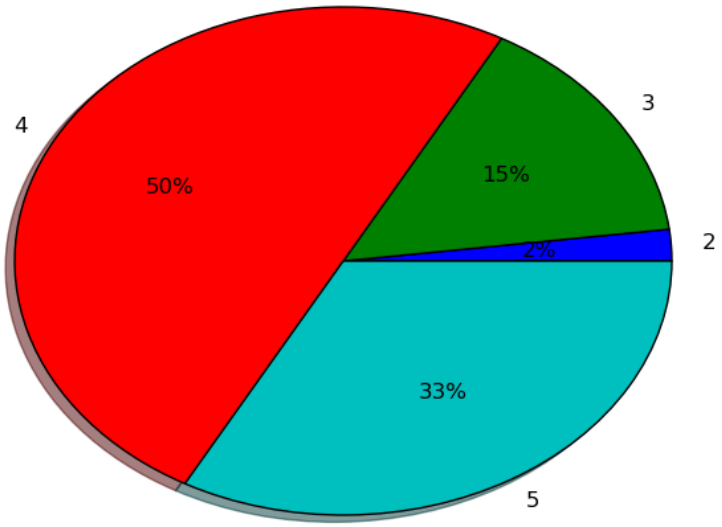
"The Cosmology in Future talk because I was tired"

Students also complained about not getting enough time with telescopes having enjoyed this practical aspect of the event, and lunch might have been better organised:

"Confusion about lunch (solved easily)."

After today's event how inspired do you feel about physics and cosmology?

Participants again were asked to rate their response on a scale of 1–5 where 1 is 'not very' and 5 is 'enthused'.



A total of 83% reported being inspired by physics and cosmology, which was a very positive outcome.

Do you have any suggestions for us to improve our cosmology event if we run it again in the future?

37 forms (∼70%) had a response, which ranged from requesting more interactive sessions, with perhaps more hands-on-practical elements, to having none! Similarly, some wanted less talks, others more talks with more mathematical or advanced physics content, with one requesting a quiz:

"... to scale [see] how much was learnt."

while another wanted more Q&A time.

One even suggested shifting the date of the event:

"Maybe if the event was held on a Wednesday, and then carried on into the evening where we could also attend the astronomy events."

which would have perhaps met the request for:

"... and maybe a chance to look through the big telescopes."

"be able to look at/use smaller optical telescopes, be able to see planets etc."

"actually using telescopes at night"

and to finish on a more practical note regarding the catering:

"Better catering facilities for food at lunch."

Any other comments?

We had 18 comments returned, a third of all forms, and of those ~80% were very positive, typically:

"The staff and students were very good, thank you"

"Was an excellent experience"

"... substantially increased my interest in physics"

"Very enjoyable and inspiring"

"Very well organised and well done"

"10/10 for effort"

"... good to get an insight into more advanced levels of astronomy and physics

"Do contact us if there is another day planned"

Of the five remaining comments, two were neutral:

"I don't feel inspired ... cosmology does not intrigue me as much as other fields in physics"

"Having material available for further reading ... but would not rely upon anyone reading it beforehand"

Of the remaining three, one was struggling to understand the foreign accents, and the other suggested:

"... most people are shy and don't want to ask questions, rhetorical questions would be good"

with one final comment on the mid-morning break snack:

"Nice biscuits. Good range."

Feedforward

In this section I will include feedback from local members of staff who helped with the event, in order to provide feedforward to any discussion for hosting the event again in the future.

The responses in the comments alone reflected the attitude from the overall feedback form, which was very positive from both students and teachers about the whole event. One teacher reported the following day:

"I have just caught up with one of the boys, who has come in all enthusiastic about the Cosmology day, so a big thank you to everyone involved."

In fact it may be possible to summarise the overall response using a single overheard comment from one of the students to another on that afternoon to the effect that that it was pitched exactly right for them, and that it was one of the best field trips they'd done.

This would imply that only minor changes or tweaks are perhaps required if this event is to be run again in the future.

Although we advertised 100 places in the end we had 55 places allocated:

"I think it was probably the optimum amount of students as any more I think the interactive sessions would have been less informal/personal."

"I think the groups were the right size. The largest group *only just* fitted in the 36'' telescope together and was at the maximum capacity for the amount of computers we had for Galaxy Crash (though one teacher didn't get a chance to try Galaxy Crash out himself). I don't think we'd want more computers in the HCR as it'd just be a bit crowded and very hot!"

Perhaps it might be better to consider advertising only 60 to 80 places, so that small groups would be the outcome.

The overall balance of talks and interactive sessions was very good:

"I heard many compliments from teachers and students about all of the talks, and not a single negative comment, so they were clearly done well. Will's talk went down especially well."

In some of the feedback forms students reported feeling tired by the end of the day, which I think explained some of the slight negative response to the last talk of the day, which was related to careers in physics, and in response we could consider possibly dropping the number of technical talks from 4 to 3. As for the interactive sessions:

"Galaxy Crash seemed to be pitched nicely at the right level and the sixth form students interacted well in all 4 sessions."

but some of the negative feedback regarding the other interactive session (random walk) implied it could have been more extensive, although all students involved in that event seemed to be having fun. However, some thought should be given how one deals with time over-runs and time allocated to move between events:

"There was a little problem with communication when a talk overran. It'd be handy if we decided in advance what to do if that happens - to stick to the timetable and to 'rush' through one shorter session to catch up, or to just keep all future sessions the same length and run a bit late. Walkie talkies/mobiles are sometimes pretty handy for communication during an event. It also might be worth allocating time for moving between sessions on the timetable (eg one session ending at 12:55, the next starting at 13:00)"

The hands-on-telescope time during lunch-break, including the telescope tours, was very positively received with some responses that this opportunity is not often available:

"It was a great idea to add in the solar telescope! Everyone seemed to like that."

With one complaint from a student that they didn't get an opportunity to look at the Sun, having more astronomical instruments available to handle would be better on future occasions. Regarding this and other comments in the suggestions for improvements section, it might perhaps be worth investigating how one could include an opportunity to involve a practical observing session using one of the Faulkes Telescopes.

The packs provided to the students and teachers, full of freebies including a notebook and pen, seemed to be well appreciated as anticipated, with one teacher responding:

"Thank you also for the poster and pack, I will look forward to going through it all and putting it to good use."

However, we could consider spending more on some of the items, as lasting impressions of an event are influenced by many small details:

"... some of the students joked about how cheap the free Planck-pens were that they got! (one of the pens broke...)"

In fact providing a lunch for the students would also have the same effect:

"It's unusual for a schools outreach event to not provide lunch for the students and staff. I worked on a lot of similar events at Durham and we always provided attendees with food so it might be nice to do that in future. Many grad student/postdoc helpers were also unaware that lunch would not be provided, and some were not happy about having not been told this and having to go and buy lunch."

This would require dealing with the problem of ensuring dietary requirements were met, which was why we went with the decision to request students to bring their own lunch on this occasion.

Some of the students who would be applying to university places within the fortnight after the outreach event seemed to already have made their mind up about which courses they were applying for by this stage. We might therefore consider targeting the lower sixth with an interest in physics so that it might have time to influence their future choice of degree at university.

It is interesting to end with one response from a teacher that said there was a distinct gap for this type of outreach event aimed at students in the age range 17-18 (sixth form level), which exposes them to quite technical details in a university/undergraduate environment, as most events seem to target typically a younger audience of 12-16.