

EXPLORE YOUR UNIVERSE

ATOMS TO ASTROPHYSICS



Explore Your Universe

Phase 2 Final Report

March 31st 2016

UK Association for
**Science and
Discovery Centres**



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Phase 1 & 2 Explore Your Universe Partner Map

The Association for Science and Discovery Centres Network

The Explore Your Universe Network



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Executive Summary

Explore Your Universe is a national strategic science engagement programme developed and delivered by The UK Association for Science and Discovery Centres (ASDC) in partnership with the Science and Technology Facilities Council (STFC) and other experts.

The vision of this ground-breaking programme is to inspire a new sense of excitement among young people around the physical sciences by sharing the amazing stories and technologies of STFC.

To develop the programme, ASDC worked in partnership with engagement experts in physics and engineering from The National Space Centre and Jodrell Bank Discovery Centre as well as over 70 scientists and engineers working in the physical sciences and STFC. In Phase 1 of the programme, ten UK science and discovery centres were selected, trained, equipped and supported to run the activities with their school and family visitors. Together, in the first year of delivery, they engaged 156,880 children and adults, who took part in a host of Explore Your Universe hands-on STEM workshops, activities and family across the UK and at 2 STFC facilities.

In Phase 2 of Explore Your Universe, ASDC selected another 10 centres (5 science centres and 5 universities) to deliver this high-end physics and engineering programme across the UK.

Explore Your Universe continues in Phase 2 to be a huge success, engaging people with hands-on physics and cutting-edge STFC research across the UK. We are delighted to report that Phase 2, which ran from March 2014 - March 2016, engaged 184,834 children and adults, in schools workshops and family activities and shows across the UK. This brings the total number of members of the public and schools who have taken part in Explore Your Universe to 341,714.

Phase 2 of Explore Your Universe was independently evaluated by academics at Bristol University, led by Professor Justin Dillon. They evaluated the responses of over 1500 school children who took part in the schools workshops, and 182 families who took part in the family show and found that:

- **79%** of 10 - 13 year olds stated that they were **more interested** in studying science after participating in the Explore Your Universe schools workshop.
- **71%** of 14 - 16 year olds stated that they were **more interested** in studying science after participating in the Explore Your Universe schools masterclass.
- **Interest in a career in science rose from 29% before the workshop to 61% after** the Explore Your Universe schools workshop with 10 - 13 year olds.
- **97%** of teachers of 10 - 13 year olds would recommend the workshops to other teachers.
- **62% of all school students** (aged 10 - 16) said they were more interested in a career in science after participating in an Explore Your Universe schools workshop.
- **86% of children** taking part with their families, said they were more interested in science after taking part in the family show.
- On average, **there was a greater impact on girls** who took part in the Explore Your Universe curriculum-linked schools masterclass. For girls, their interest in a career in science was 45% before the masterclass rising to 68% after the workshop.

We are delighted with these results across Phase 2. Overall, the ten Phase 2 delivery partners reached 77,143 people, and the original Phase 1 science centres continued delivering their Explore Your Universe programme to another 107,691 children and adults. Together they reached 184,834 people and demonstrated the effectiveness of Explore Your Universe and its robust legacy.

Programme Overview

Explore Your Universe: Phase 1

Phase 1 of the Explore Your Universe National Physics and Engineering Programme engaged 156,880 people in ten regions of the UK in the first year of delivery by the science centres. Of these, over 75,000 participants were girls and women.

Each of the ten science centres in Phase 1 received a full set of the project's exceptional equipment, along with funding to engage school children and families in their regions of the UK. The programme has been a huge success with school children, teachers, families and science centre staff. Evidence for this and specific learning impacts were given by a full academic evaluation by King's College, London, and this impact study is the UK's largest academic study into science learning in informal contexts. The research revealed clear and considerable impact on the students and families who took part. 56% of the school children evaluated aged 10 - 13 said that the one-hour workshop had made them more interested in studying science and of particular note was the finding that across this programme, girls and boys were equally inspired and interested in a career in this area. Delightfully for a physics and engineering programme, there was no gender difference in any area evaluated.

Explore Your Universe: Phase 2

Phase 2 of Explore Your Universe built on the successes of Explore Your Universe Phase 1. For Phase 2, ASDC developed a two-year national programme which would support the Explore Your Universe network to inspire more young people and strengthen and develop the partnerships between centres, scientists, engineers and the UK network as a whole.

The overall vision of Explore Your Universe is 'to inspire a new sense of excitement amongst young people around the physical sciences by sharing the amazing stories and technologies of STFC'.

The additional stated vision of Phase 2 is to increase the number and breadth of young people who are inspired to explore the physical sciences by expanding, supporting and further developing the highly successful 'Explore Your Universe' national strategic programme.

Phase 2 of the project was launched in May 2014, and in June 2014 ten new Explore Your Universe delivery partners were selected following an open call. These included five science centres and five Universities. These ten delivery partners are:

1. Cambridge Science Centre
2. National Museums Scotland
3. Techniquest
4. Thinktank, Birmingham Museum
5. W5
6. University of Manchester- School of Physics and Astronomy
7. University of Newcastle partnered with Tyne and Wear Museums
8. University of Northumbria
9. University of Warwick
10. University of York

ASDC and the project partners trained all the ten Phase 2 delivery partners at a training academy in October 2014 at the National Space Centre. Two staff members from each partner were trained on all aspects of the Explore Your Universe equipment, schools workshops, family show and other resources. The centres then started to implement the Explore Your Universe programme into their schools and public programmes.

ASDC led conference calls with all programme partners which enabled up-to-date information about STFC research to be disseminated to science centres and universities, and passed on directly to tens of thousands of members of the public and school children. Topics have included Gaia and Rosetta, future materials and the Solar Eclipse of March 20th. These conference calls have proved to be a popular tool for information sharing among the delivery partners.

The partners were delighted with the additional STFC funding in March 2015 which allowed Phase 2 partners to expand their Explore Your Universe equipment and increase the impact of their deliveries. This has further strengthened the programme delivery and impact.

In January 2015, ASDC also organised for all 22 Explore Your Universe delivery partners and the development team from Phase 1 & 2 to visit to CERN through funding from STFC. Throughout this trip, the 22 delivery partners were able to share their latest knowledge and methods of delivering Explore Your Universe, and explore the latest technologies and science with a unique opportunity to see inside the detector at CMS before the accelerator was due to become active. Images from this trip are now being used by each centre in their Explore Your Universe programmes as staff discuss their CERN experience directly with schools and families.

Each partner was required as part of their contract to submit a final report in November 2015 detailing everything they had delivered as part of their Phase 2 Explore Your Universe programme. Phase 1 partners were also requested to provide details to ASDC of their continuing delivery of the Explore Your Universe programme.

The Training Academy at The National Space Centre

The Training academy for all Phase 2 Explore Your Universe partners was held on the 16th and 17th October 2016 at the National Space Centre in Leicester. 25 delegates attended from all 10 Phase 2 delivery partners

The training was delivered by experts from ASDC, Jodrell Bank Discovery Centre and the National Space Centre, and focused on all aspects of the Explore Your Universe schools workshops, family programme, equipment, handbook materials, health and safety and other resources.



Although the ten Phase 2 partners were not provided with a full set of Explore Your Universe equipment, they received extensive and comprehensive training on the equipment and a full sponsorship pack, to help them fund its purchase. The ten partners were also given a full equipment list and details of how to purchase the equipment.



Quotes from Explore Your Universe Participants

Schoolchildren's Quotes:

"It was the best science lesson ever!"

"I've never experienced something that amazing in my life" Girl, aged 10

"I never liked science before but this is really cool"

"I wish we did this at school"

"the light lecture was the best thing I've ever seen! It amazed my brain." Year 4 child

"It furthered my knowledge in some aspects of physics like the electromagnetic spectrum"

"We were able to use equipment like a UV light scanner and laser emitter which made it more enjoyable than a regular science practical"

"It has educated me about science in a fun way"

"I was interesting to use all the equipment and learn about how they are used by scientists every day"

"We were able to use equipment like a UV light scanner and laser emitter which made it more enjoyable than a regular science practical"

Teacher's Quotes:

"The girls had a brilliant morning, they really enjoyed it and haven't stopped talking about it all afternoon! It is lovely to see them so enthused about Science!"

'Piqued the children's interest and delivered with enthusiasm and lots of key knowledge'

"Children were inspired to learn due to the fantastic enthusiasm and passion from the presenter. I would recommend this show to other teachers because getting the class interested and inspired by scientific knowledge is often overlooked" (Teacher Year 4)

"Really engaging for pupils, they enjoys taking part and learned!"

"It had lots of wow to keep the children engaged"

"We saw a lovely presentation in the afternoon (atoms to astrophysics) which fired the kids up with quotes for the rest of the week (particularly "Who thinks Barbie won't explode, but they wish she would...?")."

Visitors Quotes:

"Now I want to be a Scientist when I grow up!"

"My mind has totally changed about science. It's amazing!"

"I was interesting to use all the equipment and learn about how they are used by scientists every day"

"I liked that it covered a lot of topics, hands-on, good examples. My daughter loved it – think it is critical to make science visible & interesting for kids, girls especially"

"Where can I buy these spectroscopes? I want to continue exploring at home"

"Terrific event – well-planned, led with real enthusiasm, pitched very well and just the right amount of content and really hands-on. Thank you!"

Explore Your Universe Phase 2 participant numbers

Explore Your Universe Phase 2 aimed to reach 75,000 people through 10 new delivery partners. It was also estimated that 75,000 people would be engaged via the continuing work of the Phase 1 partners, although it should be noted that Phase 1 partners were not contracted to reach these numbers.

Overall the Phase 2 partners exceeded these targets and delivered to **77,143** people including public and school audiences at a wide range of events throughout the UK.

Phase 1 delivery partners have all reported that they continue to use the Explore Your Universe equipment within both the existing Explore Your Universe workshops and shows and in additional activities. Phase 1 partners have reported that they have delivered Explore Your Universe related materials and used Explore Your Universe equipment in activities engaging **107,691** people.

Overall, Explore your Universe Phase 2 and the continuing delivery of STFC science through Phase 1 partners have reached 184,834 people from school and public audiences.

Within Phase 2, some requests for changes in contracted delivery numbers were received from the delivery partners. Where the requests were deemed acceptable, and as reported in the April report, these changes were agreed. Overall we reached beyond the target number of participants.

Detailed information on the participant numbers

The table below gives the numbers of school children and the public reached by November 20th 2015.

As of November 20th 2015 the ten phase 2 delivery partners have reached 77,143 people, exceeding the target of 75,000. Phase 1 centres continued with Explore Your Universe and reached 107,691 people in Phase 2. giving a grand total for Phase 2 of 184,834.

The reach of the programme has been far wider than anticipated due to centres delivering at local festivals and public events, they also over delivered to under-served communities, as well as special events. Overall the centres reached 12,851 schoolchildren in curriculum linked schools workshops. This is against the target of 11,170. However, it should be noted that the delivery centres asked, and we and the board approved, that they could over-deliver schools workshops for 10-13 year olds, and under-deliver with schoolchildren aged 14 - 16.

(**Note:** The evaluation report from University of Bristol reports that 75,913 people attended Explore Your Universe Phase 2 events. Warwick University did not submit metric or evaluation data but engaged 1,230 people from underserved audiences which is added to the numbers below.

| Explore Your Universe Phase 2 Activity | Expected participant numbers by 20 th November 2015 | Participants reached by 20 th November 2015 |
|------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------|
| High-end masterclass for 14-16 year olds | 3,420 | 2,134 |
| Schools workshop for 10-13 year olds | 7,750 | 10,717 |
| A family show for 7-13 year olds and parents | 23,235 | 20,455 |
| A meet the expert series of events | 26,320 | 24,648 |
| Other | 13,960 | 17,959 |
| Warwick University Long-term engagement project with Underserved communities | 1,000 | 1,230 |
| Total | 75,685 | 77,143 |

| Explore Your Universe Phase 2 Activity | Percentage of audience target reached by November 2015 |
|-------------------------------------------------|--------------------------------------------------------|
| High-end masterclass for 14-16 year olds | 62.4% |
| Schools workshop for 10-13 year olds | 138.3% |
| A family show for 7-13 year olds and parents | 88% |
| A meet the expert series of events | 93.6% |
| Other | 128.6% |
| Warwick University with Underserved communities | 123%% |
| Total of overall target reached | 101.9% |

Meet The Expert activities continued to be very popular throughout Phase 2, allowing audiences to meet and ask questions to engineers, physicists and other experts. These interactions allowed people to meet 'real-life' scientist face to face and get a better understanding of the work they do. This in turn help break down misconceptions about jobs in science.

Many centres focused on attending large events such as festivals and engaging a wide range of audiences. As is shown in the table (in the 'Other' section) a large number of people were reached through this method of engagement as it was more cost-effective.

The target for underserved communities was exceeded. This is due to Explore Your Universe activities at festivals that reached out to specific local communities and was also due to the work conducted by Warwick University. Warwick University ran Explore Your Universe in a manner that reflected the specialised work they do with children from disadvantaged backgrounds. The results of their work was an extended Explore Your Universe project with specific groups of disadvantaged children using the Explore Your Universe materials combined with their Starlab planetarium system.

In Phase 2, no funding was provided to the partner centres to help with delivery. The 10 delivery partners said they found engaging the 14- 16 year old school groups more costly due to costs of travel, teacher cover and additional expertise of delivering to secondary schools.

It should be noted that during the first months of receiving the Explore Your Universe materials and training, all delivery centres needed to shape the materials to suit their individual delivery styles and audiences. The Phase 2 partners were not given any equipment or funding, so in the first months they also needed to purchase all the items in the kit they wanted to use. Procurement was supported by the ASDC project manager. This preparation work (and the visit to CERN) was a key focus in the first months of their programme. ASDC were delighted to be able to provide some capital funding to these centres in March 2015 and they were hugely grateful for this fund.

The centres have now completed their contracted deliverables for Explore Your Universe and continue to use the materials and share up-to-date STFC research. The original target goals for each section of the programme highlight the importance of ensuring centres are supported financially to enable school programmes to be delivered. This is especially important for upper secondary education. It is increasingly difficult for Science Centres and universities to encourage secondary school visits due to the costs of travel both for the schools and for the centres. The centres have however shown that their ability to reach public audiences is their key strength despite no funding for staff time in Phase 2.

The overall delivery numbers show that there is a keen appetite for the Explore Your Universe materials and information, and that the engagement with STFC science is positively received and sought by public audiences.

Delivery by Phase 1 partners in Phase 2

| Explore Your Universe Phase 1 partner Activity | Participants reached Nov 2014 - Nov 2015 |
|--------------------------------------------------|------------------------------------------|
| High-end masterclass for 14-16 year olds | 2,568 |
| Schools workshop for 10-13 year olds | 5,857 |
| A family show for 7-13 year olds and parents | 798 |
| A meet the expert series of events | 7,581 |
| Other (including engagements with EYU equipment) | 90,887 |
| Total | 107,691 |

Phase 1 partners continue to deliver elements of the Explore Your Universe materials, and have utilised the equipment in additional workshops and shows. This continues to show the legacy of the Explore Your Universe programme, and the popularity of the equipment and materials provided.

Discussions with Phase 1 partners have revealed that the majority of the modifications to the workshops and show were so the great content could be divided among a series of workshops and activities. Following the Explore Your Universe National Meeting held in At-Bristol Science Centre, all Phase 1 partners reported a lasting impact of the programme and a very positive opinion from all their presenting staff. There was also a keen interest from all Phase 1 centres to take part in a potential Phase 3.

The partners engaged schoolchildren from all backgrounds

Evaluation Data was collected both before and after the schools workshops that were part of the EYU programme and this is reported on fully in the academic evaluation report. Here we wanted to highlight that the science centres and Universities in Phase 2 attracted children from all backgrounds including a higher than average percentage from disadvantaged areas.

1,447 schools participants completed a questionnaire prior to attending a workshop and a similar number (1,268) provided feedback after the session. In total, 10,717 students attended a workshop run as part of the programme.

97% of attendees were from state schools in the UK. An analysis of the postcode data from English schools revealed there was reasonable spread across the categories of deprivation, with 23% in the most deprived category and around a quarter (24%) in the least deprived category. These proportions are above the averages for England where 20% of the population are in the most deprived group and the same in the least deprived group

Gender Analysis of Phase 2

Following analysis of the evaluation data by the University of Bristol, we can report that the gender split for schools workshops and masterclasses is approximately 50:50. Interestingly public events seem to attract a slightly higher percentage of boys than girls attending family events (52% male children), despite the adult percentage being higher for females (62% female adults attending family shows).

Interestingly, despite the higher number of boys attending the event, the evaluation results reveal that as a result of an Explore your Universe event, **95% of girls are more interested in science compared with 78% of the male child audience.**

The results show that the Explore Your Universe programme remains inspiring to both girls and boys, increasing their level of interest in science and hopefully helping to inspire more young people to follow a career in science in the future.

Below are the gender summaries provided by the delivery partners:

Cambridge - The EYU schools programme reached an estimated 2,020 girls and 1,992 boys. This is based on school groups being assessed to be 50:50 (apart from two girls-only groups (39) and one Masterclass group with 15 boys and 3 girls)

The EYU family programme reached an estimated 2,521 females and 2,521 males, based on family audiences assessed to be 50:50, a typical Science Centre visitor profile and event attending groups.

University of Manchester – audiences for events were 50:50 however audiences for masterclasses were only 20% female (reflecting the proportion of girls studying physics A-Level).

National Museums Scotland – audiences were equally split 50:50. Most groups or families involved in sessions have been split between male and female, with one group being exclusively male and one group being exclusively female. A school for girls and Brownies were targeted to increase the number of females involved. The Museum also included female Experts in order to provide female role models for children and young people. For example, Meet the Expert sessions featured female Volcanologists, Space scientists, and Geologists. National Museums Scotland are planning more female inspired Meet the Expert Sessions that will feature female Volcanologists, Space scientists and Geologist.

“The particle physics masterclass audience was estimated at around 20% female (unfortunately reflecting the proportion of girls studying physics A-Level)”

Newcastle University and Tyne and Wear Museums - audiences reached were approximately 50:50. No school activities involved single sex schools. The participants at the Meet the Expert Events were families with children and therefore representative of the general public with regard to gender mix.

Thinktank - For this project Thinktank estimates that 75% of the audiences reached were female. This is based on regular school visits being a 50:50 split, the same estimation for family audiences. However, during the project Thinktank visited a number of all girls' schools which has led them to the 75% female reach. In regards to group leaders attending the Explore Your Universe events, Thinktank reported that encouragingly “Recent research at the museum showed that 65% of the lead adults were female”.

Think Physics (Northumbria University) – For those activities within schools or involving mainly school children, the gender split was 50:50. At the pop-up shops, the gender split of children was approximately 50:50; however, the parents and carers who accompanied the children were more biased towards females or older males (i.e. children tend to be brought to the events by Child minders, mothers or grandparents). Some activities were more biased towards male students e.g. The Eclipse morning for local 6th Form students was approximately 75% male, and the Skills NE show was around 60% male students.

University of York- School events for primary school and KS3 children showed an approximately even gender split. At KS4, there was a slight gender imbalance at some events (60%:40% in favour of boys). Further discussion with the teachers is needed to find out why this may be the case.

There was no obvious gender imbalance at public events (based on observation at events). One event was run in conjunction with Science Grrl, an organisation promoting gender equality in Science. At this event, families generally came as a whole, and there was still an approximately equal gender split.

In Scouting and Guiding, there is an exactly even split between the male and female branches (by number of participants). However, it is worth noting that whilst Guiding is all girls, Scouting can be mixed groups and thus the numbers are slightly in favour of girls overall.

Techniquest- The family audiences were estimated to be evenly split 50:50 with family groups attending the activities. The schools workshops were also 50:50 with equal levels of engagement.

W5 – The Fantastic Females events, as described in the W5 case study, were marketed to all pupils and in the case of the Fantastic Females: EYU event, all participants were female. All other workshops were mixed audience with approximately 50% female/male ratio (no other single sex schools participated). It is estimated that out of 131 pupils who took part in the Masterclass workshops, 89 were female. Likewise, 140 out of 230 in the Schools workshops were female. This works out at a percentage of 67% and 61% female for each type of workshop respectively.

Due to the nature of the public shows and audience numbers exact ratios for gender reach were not recorded. Respondents to the family show evaluations show a 23:26 split of males to females however, and it is estimated that this mirrors the gender mix of the audience as a whole fairly accurately.

There have also been specific events run for girls by many centres such as:

- ‘Fantastic females’ events run by W5
- Brownies events

The Academic Evaluation of Phase 2

The programme was evaluated by Professor Justin Dillon and academics at University of Bristol following additional STFC funding in 2016. Their full report is submitted as an annex to this report. A summary of numbers of people evaluated and the instruments used is given below.

Numbers of people taking part in the Evaluation

| Evaluation Activity/audience | Numbers of people evaluated |
|----------------------------------------------|-----------------------------|
| School workshop – students (10-13 years old) | 1422 |
| School Workshop - teachers | - |
| Masterclass – students (14-16 years old) | 163 |
| Masterclass - teachers | 61 |
| Family show | 182 |
| Meet the expert | 197 |
| TOTAL | 2025 |

The Evaluation Programme for each science centre

| | | |
|---|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| A | Evaluation form for 14-16 year old Students attending a Masterclass x125 | Two-page evaluation form, administered by science centre, pre- and post-masterclass |
| B | Evaluation form for primary and secondary Students attending a School Workshop x125 | Two-page evaluation form, administered by science centre, pre and post workshop |
| C | Evaluation form for Teachers of 14-16 year olds in Student Masterclass X15 | Two-page evaluation form, administered by science centre |
| E | Survey form for Families taking part in a Family Workshop x10 | Two-page evaluation form, administered by science centre |
| F | Survey form for Families attending a Meet the Expert session X10 | Two-page evaluation form, administered by science centre |

Main Findings of the Academic Evaluation of Phase 2

- **75,913** people attended an EYU event.
- 79% attendees were more interested ('a lot'/'a little') in science after attending an event.
- 62% of both workshop and masterclass students said they were more interested in a career in science after attending the events.
- 84% said they would recommend the event to others.

- **Gender:** on average, there was a greater impact on girls attending the workshops and masterclasses, with a greater proportion of girls than boys reporting an increased interest in studying and/or a career in science as a result of the events. For example, interest in continuing to study science was 65% in both boys and girls before the masterclasses and rose to 66% in boys and 75% in girls after the event. Similarly, their interest in a career in science before the masterclass was 47% and 45% (for boys and girls respectively) and rose to 48% in boys and 68% in girls after the event.

- **Age:** on average, the impact of the workshops and masterclasses appeared to be higher amongst the younger age groups, for example the proportion of children stating that they were more interested in science as result of the student workshops ('a lot'/'a bit') ranged from 88% amongst 8 year olds to 42% for those aged 15; 78% of 8 year olds were more interested in a career in science after the student workshop compared to 32% amongst those aged 15.

- **Thematic outcomes:** The Phase 2 events resulted in very similar qualitative outcome themes as those identified in Phase 1. EYU outputs and outcomes that align to the STFC generic learning outcomes framework were used to show that EYU supports delivery of STFC outcomes.

- **Differences between Phase 1 and Phase 2:**
 - The proportion of attendees in Phase 2 who said they would be more interested in a career in science as a result of attending a workshop or a masterclass rose markedly compared to Phase 1 (Proportions rising from 41% in Phase 1 to 61% in Phase 2 for workshop attendees, and 37% in Phase 1 to 71% in Phase 2 for masterclass attendees.)
 - The proportion of attendees in Phase 2 who said that they would be more interested in studying science as a result of attending a workshop or a masterclass rose markedly compared to Phase 1 (Proportions rising from 56% in Phase 1 to 79% in Phase 2 for the student workshop, and 43% in Phase 1 to 58% in Phase 2 for the masterclass.)
 - It is difficult to interpret these differences as there were many differences between phases, including the venues, delivery models and evaluation; however it is also notable that the lessons learnt during Phase 1 were used to improve the quality of delivery in Phase 2.

Family sessions

- 86% of children said they were more interested in science after attending a family session.
- In many cases, the sessions built on an existing interest in science.

Meet the expert sessions

- 86% indicated that they were more interested in science ('a lot/ a bit') after a meet the expert session.

- The equipment used proved to be popular particularly the infrared camera, as evidenced by the verbatim comments.

Student Workshops

- 79% stated that their interest in studying science had increased as a result of the workshop.
- Interest in a career in science ('definitely/possibly') rose from 29% before the event to 61% after the event.
- 68% used equipment they had not used before.
- 83% said they would recommend the workshop to others.
- 97% of teachers would recommend the workshops to other teachers.
- Based on postcodes, the sample of schools attending was broadly representative of the UK deprivation indices (Percentages in the most and least deprived categories).

Student Masterclasses

- 71% of masterclass students said they were more interested in studying science after the event. (Interest in continuing to study science increased from 65% before attending the masterclass to 71% after attending.)
- Interest in a career in science was from 45% before attending a masterclass and 58% after the masterclass.
- 82% said they would recommend the masterclass to others.
- 27% of teachers were aware of STFC prior to attending the masterclass.
- 74% of teachers gave an overall rating of very good. The highest rating was given for the knowledge of the staff running the sessions (88%).
- All teachers who provided a rating agreed that the sessions were value for money.

Summary of Evaluation data

Evaluation was compared against the STFC evaluation framework and GLO's as given in the table.

| Participant s will... | Do | Feel | Value | Have skills to | Understand |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| These are the top-level outcomes for the STFC PE programme | Explore our science and technology further for themselves Share their understanding of our science & technology with learners, peers, family and their community Consider choosing, or encouraging others, to study & pursue careers in science & technology | Welcome Confident Inspired Involved Satisfied | Science & technology for its economic, social & cultural contribution of to society Employment in science & technology at all levels The sharing of their understanding & skills with others | Carry out scientific or technical activities themselves Participate in informed discussion about science & technology Share their skills, understanding & values with others | We study the universe on the very large and the very small scale This involves work in the areas of: • Big Telescopes • Our Material World • Inside the Atom • Big Data & Computing • The marriage of scientific method & large facilities • Finding tangible benefits for society |

- In total, 75,915 (not including 1,230 from the University of Warwick whose data is not included in the metric analysis) attended one of the EYU Phase 2 Programme events.
- **83%** of those asked stated that they would recommend the event attended (teacher masterclass, student masterclass and student workshop).

What participants felt:

- Around four-fifths (**79%**) indicated that they were more interested ('a lot/ a little') in science after attending an event (masterclass, workshop, family session, meet the expert).

Values:

- **71%** of participants at the workshop indicated that they were **more interested** in studying science after attending the event.

Skills:

- Almost two-thirds of participants at the masterclass and the workshop used equipment that they had not used before (35% and 69% respectively).
- When asked about aspects of the event that they did not normally have in school, the equipment used was the most commonly mentioned amongst both teachers and students.

Understanding:

- These can be found in the full evaluation report submitted by University of Bristol.
- A summary of the things students are most likely to remember after a workshop is given below.

Interest in a career in science by age – post workshop

| | AGE | | | | | | | |
|------------------------------------------------------|------------|------------|-------------|-------------|------------|------------|------------|------------|
| | 8 (94) | 9 (253) | 10 (314) | 11 (205) | 12 (80) | 13 (99) | 14 (69) | 15 (91) |
| Base | | | | | | | | |
| More interested (NET) | 88% | 89% | 86% | 80% | 78% | 79% | 68% | 42% |
| A lot more interested in studying science | 63% | 61% | 52% | 38% | 23% | 28% | 19% | 10% |
| A bit more interested in studying science | 26% | 27% | 34% | 42% | 55% | 51% | 49% | 32% |
| Neither more nor less interested in studying science | 10% | 9% | 11% | 16% | 20% | 19% | 29% | 57% |
| Less interested (NET) | 2% | 2% | 4% | 4% | 3% | 2% | 3% | 1% |
| Less interested in studying science | 1% | 1% | 1% | 2% | 3% | 1% | 1% | 1% |
| A lot less interested in studying science | 1% | 2% | 3% | 2% | 0% | 1% | 1% | 0% |

Comparisons with Phase 1

Results are not directly comparable due to changes in the venues and event types between Phase 1 and Phase 2, however it is useful compare the outcomes of the Phase 1 and Phase 2 evaluations.

Key findings are summarised below:

- Overall, the number of children and adults attending Phase 2 events is around half the volume that attended Phase 1 (c.75,000 v c.123,000). (**Note:** evaluation data does not include the 107,691 audience numbers reached through continued delivery by Phase 1 partners or 1230 engaged by Warwick University)
- In both years, feedback was overwhelmingly positive for all the event types, across all audiences.
- Similar positive outcomes/ likes were mentioned in both years, although some specific elements varied, probably reflecting the particular content of events.
- In Phase 1, 41% of workshop attendees and 37% of masterclass attendees stated that having attended the event they would be more interested in **a career in science**. This proportion increased markedly in Phase 2 to 61% of workshop attendees and 71% at the masterclasses.
- In Phase 1, 56% of workshop attendees and 43% of masterclass attendees stated that having attended the event they would be more interested in **studying science**. This proportion again increased markedly in Phase 2 to 79% of workshop attendees and 58% at the masterclasses.

Final report summaries from the ten delivery partners

Cambridge Science Centre

The Cambridge Science Centre has been excited to take part in the National Explore Your Universe EYU programme developed by ASDC, in partnership with the Science and Technology Facilities Council (STFC). The timing of the programme was ideal for the Cambridge Science Centre as it coincided with its own exhibition about space “Cosmic”, running from July 2015 to July 2016. The EYU interactive shows for schools and public have been an excellent complement to the Science Centre’s own interactive space-related exhibits. Highlighting the relevance and importance of current research through hands-on demonstrations of science principles is an area of focus for the Cambridge Science Centre in all its programmes, and is a shared aim of the EYU programme.

Using the high-quality technical equipment in the shows provided lots of “wow” factor moments, and contributed enormously to a memorable experience for the children and adults as well as the Science Centre’s own staff. The Cambridge Science Centre has reached 9,054 people with the EYU programme: 5,042 as family audience and 4,012 children as part of the schools programme. Interactive shows were delivered to schools both in the centre and as part of our outreach programmes. The Cambridge Science Centre has delivered the show to 3,288



pupils through our flagship “On the Road “programme, bringing a pop up science centre for a week to five communities that historically have had limited access to science enrichment opportunities. In addition, the EYU programme allowed the Cambridge Science Centre to start building a programme for 14- 16 year olds, an audience that the Centre hadn’t previously focused on.

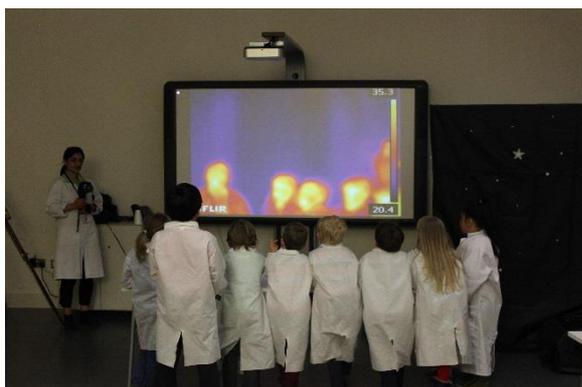
An important aspect of the participation in the EYU programme has been the timely further development of the relationship between the Cambridge Science Centre and the Institute of Astronomy as well as initiated the Centre’s relationship with the Royal Institution.



The Cambridge Science Centre plans to continue to deliver the EYU family show throughout the duration of its “Cosmic” exhibition, which runs until July 2016. The Interactive EYU school show and the Masterclass will continue to be part of the Centre’s schools programme for the foreseeable future, being delivered both in the Centre as well as through our On the Road Programme. The Cambridge Science Centre also envisages using EYU equipment for future shows for schools and in the Centre.

The Cambridge Science Centre is proud to have been part of the EYU programme. It has been exciting and rewarding and helped the Centre build capacity. Also, being complementary to the Centre’s own cosmic exhibition, the programme very much augmented the experience for all our audiences.

National Museums Scotland



National Museums Scotland undertook a range of activities as part of the Explore Your Universe programme, engaging with a wide variety of audiences on topics inspired by the Museum's collections. A successful schools programme reached hundreds of pupils, within both primary and secondary age range, on topics such as outer space, geology, and science communication. Families also enjoyed a wide variety of programmes including Labrats Space sessions,

Science Sunday, and summer holiday programmes on light, heat and photography. A hugely popular Superhero Science show was also launched at the National Museum of Scotland, for both families and school pupils. Meet the Expert sessions were held for a range of audiences and included experts from the Royal Observatory, University of Edinburgh, and Heriot-Watt University, as well as from within the Museum.

The project also extended beyond the walls of the museum, through community outreach activity. Children and their families at the Edinburgh Sick Kids hospital were given the opportunity to take part in Space Days, as part of the Explore Your Universe project. The Science Communication workshop developed for schools was also piloted with classes who could not otherwise visit the museum, due to travel or funding restrictions. Meet the Expert sessions were also broadcast live online to schools to allow them to take part in their classroom to open the project to a wider audience.



National Museums Scotland utilised their galleries, and temporary exhibitions, as inspiration for the Explore Your Universe programming. Temporary exhibitions included topics such as Game Masters, about the history of computer games, and Photography: A Victorian Sensation, about the development of photography. The Museum's Earth in Space and Restless Earth galleries were also used as a basis for programming.

The legacy of the Explore Your Universe project at National Museums Scotland will be far reaching, with the majority of the programming continuing to be offered beyond November 2015. The Explore Your Universe programme has been an opportunity for the Museum to pilot a range of science-based activities over the past year. With new Science and Technology galleries due to open in summer 2016, the project has provided National Museums Scotland with an excellent launch pad from which to further develop their science programming.

Techniquest

The Explore Your Universe materials have been integrated with great success into a range of programmes that are being delivered across south and mid wales. Equipment such as the spectral tubes and diffraction lens have been included as part of our portable planetarium shows so explain spectrum in the Universe. This has allowed both in house and outreach opportunities to engage students with the Explore Your Universe programme and STFC research.

Techniquest working in partnership with ASDC and STFC developed and delivered a range of hands on, engaging and fun activities that would inspire our audiences of all ages to want to learn more about the physical sciences.

The feedback from one young visitor to Techniquest after watching the Cool Science theatre show, "Now I want to be a scientist when I grow up!" encapsulates the objectives of the EYU project and shows its impact.

Thinktank

During the project Thinktank Science Museum created a Family Show to be presented to Families during School Holidays, remodelled an existing Space Show for Key Stage 2 to include aspects of Explore Your Universe and adapted an Atom based planetarium show for a masterclass to 14-16 year olds.

In addition to the family show and the schools sessions we also held a community open weekend where people from 'lower income areas' were allowed to enter the museum for free. These events normally include the family show, and Meet the Scientist activities.

The final 'Special Event' that the museum hosted as part of the project were Brownie days. There were 2 of these in total where many different brownie troupes came into Thinktank to take part in the family show, as well as some specially designed lab activities that would be counted towards their 'Science Investigator Badge'.

The majority of the delivery for Explore your Universe at Thinktank took place during the school holidays. We presented the show every weekday of the holidays between 20th November 2014 and 1st September 2015.

There were not many booking during this time for the schools session, we believe this was due to Thinktank joining the project late, meaning the school academic year had already started and therefore any marketing material had already been produced. This meant that Thinktank had to rely on termly email bulletins to promote the project and sessions. Other difficulties for delivery included a staffing restructure which meant that the organisation could no longer accommodate or devote time to the marketing aspect of the project or extra delivery opportunities.

Even though the museum was unable to meet our set targets for our schools sessions the Explore Your Universe Project has continued as part of Thinktank's Education Programme. The show will be aimed at Key Stage 3 and 4 and will discuss the electromagnetic spectrum based on experiments and elements from Explore Your Universe.

In terms of evaluation, Thinktank was able to collect forms from the families that attended the show during school holidays. However, because of timings during the working day, and staff time due to the restructure, we were unable to collect evaluation forms for the schools sessions.

This report from Thinktank Science Museum will now go into detail about the successes and difficulties associated with the Explore Your Universe Project and how it is to be implemented in the future.

W5, Belfast

The Explore Your Universe programme at W5 has been very successful. Before the programme began our ambitious participant target was 8160. In the end, the grand total of people who had engaged in a variety of ways with Explore Your Universe and STFC-themed events was well over 10,000.

However, it must be pointed out that while some targets were greatly exceeded, others were not achieved. The EYU show and the large-scale public engagement events proved very effective and the topics covered in EYU were ideal for this kind of activity. Individual school groups however were less drawn and the workshops proved to be a harder sell. Those that did participate however, thoroughly enjoyed their visits and were inspired by what was an interesting and very interactive workshop.

In total 131 pupils from three different schools (five workshops) participated in the Masterclass while 230 from seven schools (10 workshops) enjoyed the Schools Workshop. Two of both the Masterclass and the Schools Workshops were girls-only groups.

W5 held two Meet the Expert sessions, one with an astrophysicist and another with an expert from an engineering and physics background. The latter was part of a Fantastic Females event which aimed to encourage girls to think about STEM-based opportunities in study and employment. Some of these pupils also took part in the Masterclass during their visit. Though the Meet the Expert numbers were small (130) they had proved very effective and also an excellent way to create links for future events.



W5 was also lucky enough to take part in an EYU trip to CERN in January 2015. Not only did this provide valuable background information it was also capitalised on with an excellent blog which was used on social media and the W5 website to highlight the programme. Photos and information gained from the trip were used to enhance the workshops and it was felt, most importantly, that this added a real degree of integrity to the teaching. Because inspiring others is an essential value of W5, the trip to CERN

was seen as a key moment in the programme overall.

Over 2400 visitors enjoyed the family floor show which was performed 125 times to groups of all sizes. A further 8611 members of the public engaged with the EYU programme at a variety of different outreach events. These included EYU



science busking at the BT Young Scientist event at the RDS in Dublin (the biggest schools and public science event in Ireland), busking at Belfast Culture Night and an EYU-branded show at the World's Largest Science Lesson which was part of the inaugural Northern Ireland Science Festival.

In August, W5 took part in a day of CPD workshops for teachers at Stranmillis College in Belfast. This was attended by over 200 teachers. As well as manning a stand, an EYU talk and workshop was on offer as part of the day's programme. Only four teachers attended however.

EYU has enhanced W5's existing public engagement programme. The EYU show, Schools Workshop and Masterclass have been embedded into existing programme for schools and the excellent equipment W5 has gained can and will be used for a wide variety of activities in our ongoing programmes. It is always more difficult to encourage participation in physics-based events and programmes than those themed around other subjects but W5 feels that this challenge makes it all the more important to push this subject matter. With the help of ASDC and STFC W5 has been able to promote physics and space in a way that hasn't been done before.

University of Manchester

The University of Manchester's School of Physics & Astronomy engaged over 9000 children, teachers and members of the public under the Explore Your Universe project in 2015. The EYU equipment, demos, stories and resources were used across the School's programme of engagement with schools and the public, enhancing existing outreach activities and allowing researchers and students to communicate their science in accessible, interesting, interactive ways.

As well as schools visits and workshops on campus, we took Explore Your Universe stalls to science festivals in and around Manchester - including a research showcase event at the Manchester Science Festival that engaged 1500 visitors; a day at the British Science Festival fringe where a dozen student volunteers talked to 1200 people; the Big Bang Fair, where we estimate 2000 of the 75000 attendees tried our demos; a four-day British Science Week fair based on campus for almost 1000 local primary and secondary school pupils; and a Cheshire Science Festival event at Jodrell Bank with 400 attendees.

While these events reached both a lot of school pupils and many families already engaged with science outreach, one of our aims for the project was to reach family audiences who wouldn't necessarily choose to attend a science festival, or an event held on a university campus. To this end, two physics undergraduates spent summer 2015 developing an outreach programme around Explore Your Universe, and came up with a series of pop-up "science in the city" events. This involved taking demos (and a team of volunteers) out into Manchester city centre, with pop-up stalls in Piccadilly Gardens, Cathedral Gardens and the library, museum and art gallery during weekdays in August, talking to an estimated 2500 people over 9 events – mostly families with



children. The students who worked on this project had so much enthusiasm for it that they've carried it on into the academic year, and currently have 90 student volunteers.

EYU resources have been used by physics academics and researchers, PhD students (including those with a specific remit for widening participation), undergraduate societies and STEM researchers in the wider university; they have been incorporated into schools workshops, science festivals, careers talks, university recruitment events and family activities. A major benefit has been lowering the barriers to first-time involvement in public engagement by providing tested, high-quality demos and activities known to be appropriate for the target age groups.

Feedback from schools, teachers and the public has been very positive. With plans underway for further festivals and schools activities in 2016, and especially with Manchester being the European City of Science for that year, we anticipate EYU will continue to be integrated into our outreach activities in the next year and beyond.

Newcastle University

Newcastle University has provided an extensive range of science outreach activities through the Explore Your Universe: Atoms to Astrophysics programme during November 2014 to November 2015. The number of engagement physics activities with local schools has increased through the University's participation in the programme. A significant amount of staff time has been invested in presenting the workshops. Academic members of staff have visited local schools to deliver engaging workshops tailored to the current science curriculum of the students which has helped to broaden the students' knowledge and to deepen their understanding for the subject. Workshop topics included electromagnetic waves, radioactivity, light, beyond the earth and how we observe our Universe. Students were provided with the opportunity to meet scientists and to interact with exciting equipment including infrared cameras, spectroscopes, discharge tubes, plasma ball and meteorites. The hands on activities and introduction to the scientists helped to generate a greater interest in science amongst the school children. The workshops have been particularly popular with primary school children. Working relationships have been developed and established with the local schools through the delivery of the workshops and connections with the schools will be maintained through future outreach events. Members of the public, specifically families with young children were included in the engagement activities through the programme events delivered in collaboration with the Great North Museum and the Discovery Museums.



Meet the Expert events held at the museums allowed visitors to meet world leading scientific experts in their fields, to watch exciting demonstrations and to interact with specialist equipment including a plasma ball, infrared cameras, meteorites and spectroscopes. The equipment purchased as part of the programme will be continued to be used during forthcoming outreach events. Over 6000 people have participated in the Explore

Your Universe events carried out by the University. During every interaction the University's physicists have shared their enthusiasm and passion for the subject, shared their scientific knowledge and have inspired a greater interest in physics and science amongst the participants.

Northumbria University



Think Physics at Northumbria University has used Explore Your Universe to start conversations, discuss science and highlight career options. Our Infrared Selfies and Meteorite exploration have proven popular at science events and shows, and allowed us to show the links between school science and research. We've worked with researchers and other experts from the university to show the human face of science in Meet the Expert sessions.

We have taken Explore Your Universe to a variety of science events, and have held family shows and workshops at Think Lab, Northumbria University and in schools. Although we have not engaged with as many participants as originally hoped, the feedback and evaluation from those with whom we have worked has been extremely positive. Activities developed as part of Explore Your Universe will continue to be delivered in local schools and larger events as part of the Think Physics offer.



University of York

From demonstration lectures providing fun for all the family, to hands-on public exhibitions, to school workshops for 7-16 year olds, the University of York offers a diverse range of activities through the Explore Your Universe project. Over 8,000 young people and their families from York and across Yorkshire and the North East have engaged thus far with STFC science through the hands-on programme.



Events are delivered at a range of locations: The University's Astrocampus (Observatory) provides an inspiring space and astronomy themed venue where schools and the public can both discover cutting-edge STFC science through the Explore Your Universe programme, and explore a working observatory. Family-friendly demonstration talks take advantage of University lecture theatres and give young people the opportunity to gain a glimpse into University life, whilst activities in libraries, museums, city centre marquees and at cultural festivals engage those who might otherwise not seek out science-related events.

Delivered by a dedicated team from across the Department, all Explore Your Universe activities are staffed by Physics specialists and offer great opportunities to meet undergraduates just starting on their journey and experts from throughout the field of Physics.



Case Studies

Cambridge Science Centre

The Cambridge Science Centre used the Explore Your Universe equipment to develop a 2.5 hours Masterclass aimed at transforming students into science communicators.

Summary of the session:

At the start, the Centre's staff introduce the equipment to the participants, show them how it works, and for what purpose scientists use the equipment. They are then encouraged to experiment with the equipment, facilitated by the Science Centre staff, and select equipment that they are particularly interested in. They then have to come up with a question and/or story and plan and create a script for a presentation using a storyboard. The short presentation is filmed and at the end of the session, all groups watch each other's videos. One of the best performances was a group that used an IR Camera to prove that tea must be better when the cold milk is stirred. Another group answered "How do we know the universe is expanding?" and a third group was inspired by using spectrosopes to answer "Can white light be made by a light source".

Comments from the participants:

- "I learnt how to create a good science video which involved good science communication"
- "In Science, we get no time to really get to learn how to use the equipment and all of its functions whereas in this we got to learn how to use the equipment and then we did things with the equipment."
- "Firstly, when we got to try all the equipment out, by using it we learnt about its uses and the science of it. When it came to our presentation, we learnt about a particular piece of equipment in detail. I did not know much about the equipment so this will help me in class."

Observations and learning points:

- The majority of the participants said that they enjoyed the session and had fun, however the level of engagement varied. Some enjoyed the freedom and really got stuck in, while others were more interested in playing with the equipment and didn't focus on formulating a research question. This is reflected in the feedback.
- Many of the participants were self-conscious of being filmed
- All participants were very engaged when watching the videos of the other teams, showing great respect for their achievements.
- Many participants mentioned that they hadn't learned anything new, however, the Science Centre staff observed that they had developed a deeper understanding of the science concepts and equipment they used for their short presentation.
- Scripting with storyboarding helped the participants enormously and the Centre's staff observed that the filming was integral to their learning.

Next steps for the Masterclass:

- Using equipment stations, ideally with related themes (e.g. light related etc.) and with links to an area of the curriculum will support/reinforce pupils' learning of a topic and will appeal more to both pupils and teachers

National Museums Scotland

Overview

The museum lab rat scientists have been to space and back! Help them relive their astronomical adventures through fun demonstrations and hands-on experiments. Perfect for age 5-8 with an adult helper.

Lab Rats is a 45 minute workshop which aims to introduce 5-8 year olds to a range of scientific concepts and materials in a fun yet simple way. Developed and led by the National Museum's Learning Enabler Team, the content includes a combination of visually appealing demonstrations and experiments in which participants can be actively involved. Each child has their own adult/parent 'helper' to assist with any trickier parts, to work together on an activity, and to carry on the dialogue and shared experience post workshop. 2015 workshops were themed on space exploration.

Content themes/learning points

Use of telescopes, stars and gasses, infra-red/thermal imaging technology, electro-magnetic spectrum, James Webb Space Telescope, memory metal/solid phases, exo planets, gas clouds on Jupiter, rocky planets, Mars Rover (scale model of mars Rover was in museum during this period), butane rockets, role of scientists, astronomers, engineers, current research.

EYU equipment used

Infrared camera, memory metal, images/videos/EYU pack written content

Feedback

"interesting, right level, new information. Well-run activity, explanations good, staff very patient"

"terrific event – well-planned, led with real enthusiasm, pitched very well and just the right amount of content and really hands-on. Thank you!"

"liked that it covered a lot of topics, hands-on, good examples. My daughter loved it – think it is critical to make science visible & interesting for kids, girls especially"

"liked the science explanations of the experiments, especially how the telescope opens with memory metal. Also likes the diffusion explanation of Jupiter's stripes. Great stuff, brilliant to have free events that make science accessible"

Techniquet

The Explore Your Universe Meet the Expert specific event on October 17th was a great success. It was such a shame that the event had to compete with a sunny, warm October day and a World Cup rugby game in Cardiff and associated traffic issues, both of which had a negative effect on visitor numbers. However, the visitors that came had a really good time. There was a buzz in the centre as visitors could experience new things as there were lots of different things going on. This was cited in the evaluations by Techniquet members and repeat visitors.

The theatre was taken over by Space Made Simple and there were hourly 3D space themed shows. The visitors could visit busking stations on the exhibition floor and make molecules, use a thermal imaging camera and handle rocks from space. Visitors could also participate in a rocket workshop and there was such excitement when Rocket Man Tom launched each of their rockets and the adults were every bit as competitive as the children in aiming for the accolade of the rocket that went the highest!

It was a win, win day

- Visitors had new experiences during their visit
- Partners had a vehicle for public engagement
- Technquest enhanced existing relationships with partners and visitors/members.

Thinktank

Previous family shows at Thinktank have followed two distinct paths either linking to a current exhibition or holiday theme such as Amazing Brummies that focused on local scientists and inventors. Or the shows have taken a scientific principle or idea and have highlighted different elements using classic experiments, such as the Fire show which focused on the fire triangle.

The Explore Your Universe show has mixed together these different types of shows allowing the combination of some classic science experiments with a themed show about the links between atoms and astrophysics and the experiments that are taking place.

Being able to have that combination of story and experiments allows the younger members of the audience to be entertained throughout and also lets them and the adults in the audience learn something, about a topic they might have heard of and either shied away from, or just not known enough about.

The evolution of the show has allowed us as a team at Thinktank to try a new style of show and has challenged our knowledge and ability to communicate that knowledge effectively to a public audience.

Over February half term, we did a run through of the show to some of the staff in the museum, including museum enablers and visitor service assistants. The feedback received was overall positive and allowed us to make a few changes to the show to make certain aspects more accessible to everyone. There was also a feeling of being happy, because they'd been challenged by the content and that they'd been able to follow along.

In comparison to previous shows, this has seen a significant jump in difficulty, but the learning team seem to have taken it in their stride and have successfully delivered the show several times each. The Thinktank audience have enjoyed the challenge of this show, as have the team, and we will look at continuing working with higher level content in future shows we run.

W5

Over the course of the 2014-2015 academic year W5 has run a series of careers-based events for KS4/5 pupils under the title of 'Fantastic Females'. Each event consisted of short talks by female role models followed by networking opportunities for the pupils as well as an opportunity for some of the pupils to participate in hands-on workshops. Amongst the themes included were 'Chemistry making a difference' and 'Earth Sciences'.



In November W5 themed one of the events as Explore Your Universe and through STEMNET a range of female speakers were invited from local companies related to the EYU theme. These included representatives from a range of local aerospace companies such as Bombardier and BE Aerospace as well as Dr. Heather Cegla, from the Astrophysics Research Centre at Queen's University Belfast.

The event took place on the day the Philae probe landed on the surface of comet 67P/ Churyumov–Gerasimenko and Dr. Cegla in particular was a huge hit with the pupils. While pupils were in W5 in the morning she was able to show them the live feed to mission control and enthuse the students so that they might follow the progress of the lander later that afternoon.

In total 89 young women and 20 teachers attended the event and 56 went on to participate in the Explore Your Universe Workshop on the same day.

University of Manchester

In July 2015, two undergraduate physics students – Josh Hayes and Luke Simpson – were taken on as summer interns in the School of Physics & Astronomy. Working with the Ogden Science Officer, who coordinates public engagement and schools activities within SoPA, their remit was fairly broad: they were presented with the Explore Your Universe resource pack and asked to find and engage 2000 people.

With schools about to break up for the summer holidays, they decided to concentrate on engaging families and the public. A priority was going to people where they were, rather than expecting them to come onto campus for a science event, so Luke and Josh identified a number of public places in central Manchester where they could set up an Explore Your Universe stall. Some of these were outdoor spaces – Piccadilly Gardens and Cathedral Gardens – so they bought a gazebo, got permission from the council, recruited several dozen student volunteers, and looked at which items of kit could be run outdoors and without power.

Twice a week during August they took the solar telescope, thermal camera, the optics kit, meteorites, ferrofluid and a selection of other EYU equipment out into the city and talked to people about physics and how these demos link to current UK research. As well as their outdoor stalls (only rained off once, despite the Manchester weather) they staged events in Central Library, Whitworth Art Gallery, and Manchester Museum, where they added the powered and less mobile equipment like the plasma balls and cloud chamber. In total, they exceeded their target of talking to 2000 people, and then took a dozen student volunteers to a British Science Festival fringe event at the University of Bradford, engaging over 1000 more in an afternoon.

The students had so much enthusiasm for the project that they asked to keep it going into the academic year. Using the connections they developed in the course of their summer project, they've continued to deliver events in venues like the library and art gallery, and they're now looking at offering workshops to schools. They've widened their management team and recruited and trained more than 90 physics undergraduate volunteers – improving the communication, teamwork and project management skills of these students while sharing their knowledge of and enthusiasm for science with the public.



Newcastle University

A Meet the Expert event held at the Great North Museum on 24 October 2015 proved to be a great success. The event was intentionally scheduled during the October school half term to help maximise the number of participants. Two stands were purposefully located in the Living Planet gallery where all visitors enter the museum. This location helped to attract high numbers of visitors to the stand. The equipment demonstrated by the experts included infrared cameras, a plasma ball, spectrosopes and discharge tubes. The images from one of the infrared cameras was projected onto a large TV screen. This provided a strong visual impact and helped to attract the attention of the public as they passed the stand. The infrared camera demonstrations were extremely popular with all age groups and helped to ignite a sense of excitement and intrigue in the subject. The plasma ball was also very visually attractive and gained a lot of interest from the public. Four academics were in attendance providing visitors with the opportunity to meet and interact with the experts. To help support the event a current undergraduate student trained in delivering Explore your Universe experiments was also in attendance and helped to deliver the engaging demonstrations. Three Newcastle University student Street Scientists were also at the event, they interacted with the public as they entered the galley and delivered demonstrations with slinky springs and magnets. They then directed the visitors to the main stands where the experts were located and further interactive equipment was available. Positive feedback was received via the evaluation forms which highlights the success of the event.



Photographs of the Meet the Expert event held on 24 October 2015 at the Great North Museum

Northumbria University

Think Physics has taken the Explore your Universe Family show and developed it into a whole-day activity allowing primary school children to deliver the show to other pupils in their school and to their families. A member of Think Physics staff will arrange to spend the day with a small group of young people from a school (up to 12). First thing in the morning, he goes through the show, and then the pupils all share out the different demonstrations and learn about them – both the science and how to carry them out. After practicing the demonstrations and the show, the group then do a performance of the Family show to other children in the school and to their parents.

At a local Infant and Junior school, Think Physics ran a DIY Explore Your Universe show as the finale to the school's 'Space week'. Twelve year 6 students learnt about the science behind the family show, practiced the demonstrations and explanations, and then performed the show twice: once for all the children in the infant school and then again for all the children in the junior school and some parents. This was a very empowering experience for the children and made them feel that they could 'do science'.

University of York

The York branch of Children's University (CU) recently initiated a CU week with a range of activities – from chocolate making to football club tours. A demonstration lecture utilising Explore Your Universe resources was one of these events. Entitled 'Let there be Light!', this lecture took place in a University lecture theatre and thus gave children the idea of being a part of a 'real' University, but was designed with lots of demonstrations and hands-on activities to keep the whole family interested and entertained. Focussing on the use of light in Astronomy, it looked at both ground-based and space based telescopes and their use of different parts of the electromagnetic spectrum. Diffraction glasses were an excellent addition to enable the whole audience to appreciate spectroscopy, and the infra-red camera proved to be very popular. Of those attending, 42% of the families attending were from disadvantaged areas (based on their school). Thus an audience who might not usually engage with the University and with cutting edge science was attracted. The response to the talk was extremely positive. Two further talks have now been developed: 'To infinity and beyond...or at least as far as the ISS' (talking about Tim Peake and space exploration) and 'Science to make your hair stand on end' (utilising Explore Your Universe demonstrations around electricity and magnetism).

Phase 1 Partners

Aberdeen Science Centre (Satrosphere)

Aberdeen Science Centre was very proud to have successfully engaged 9,175 people between January and November 2013 as part of the Explore Your Universe (phase 1) project. As part of phase 2 we have successfully engaged with over 6,700 people, bringing our total numbers to over 15,800 people engaged with the Explore Your Universe project and STFC science stories to date.

As part of phase 2 Aberdeen Science centre continued to expand on the Explore Your Universe legacy while focusing on the international year of light for 2015. Part of the programming was a new show and work shop for Easter; “Light up your Life” a family show exploring light and “All that Glows” a family workshop exploring electricity; which ran from April to June 2015. This show was developed using Explore Your Universe equipment and STFC science stories, and attracted over 4000 visitors. We also used Explore Your Universe kit, and experience gained from the project to develop and deliver “Electricity and Magnetism: A tale of Two Forces” which ran from 19th September to the 4th October and attracted nearly 600 visitors.

Our staff have continued to benefit greatly from the expertly put together Explore Your Universe information folder, the extensive training sessions and the conference calls. The information was shared with all our STEM staff and they are now confident to conduct high level physics demos even though this is not an area of expertise among many of our current staff. It is also fantastic to know that we have the contacts to call for help or support should we need it, be it from other ASDC members or from experts at the STFC. The networking and sharing opportunities allowed by this project have been invaluable to Aberdeen Science Centre and we intend to maintain and continue to nurture and grow these relationships.

At-Bristol Science Centre

The education team has modified the workshop by incorporating elements of the key stage four workshop into the key stage three version. The team wanted to deepen the content for key stage three audiences. We now have one workshop that we offer to both key stages. At-Bristol have incorporated content and equipment from EYU into the home educator days (home educator days work with children that our home educated) Everyday Physics and Exploring Physics. Everyday Physics and Exploring Physics give a general introduction to physics and examples of research and technologies used to further our understanding of the Universe. The infra-red camera has been implemented into many different activities including Launch It show, Field Day Forces show and Take Off rotary flight day. In each of the activities the infra-red camera is used to observe friction. Spectroscopes and emission tubes are used during the key stage three and four Earth and beyond day. The students investigate spectroscopy as a method to determine the atmospheric composition of exoplanets. During the Light Fantastic show the Van der Graaff generator is used to demonstrate electric charge and later on in the show the infra-red camera is used to demonstrate different wavelengths of the electromagnetic spectrum. The EYU equipment will continue to be imbedded into future physics activities to engage the public and school groups.

Catalyst

Explore your universe is still offered as part of the schools programme delivered here at Catalyst Science Discovery Centre. The 14-16 masterclass is available for KS4 groups, while the 10-13 show is delivered to KS3 school groups; this show is included as part of school careers events, which are run every few months. At a recent careers day event, for year 8/9 pupils, we were privileged to have a representative from Daresbury laboratories talking about his career and work on spectroscopy for the STFC; which worked really well alongside with the EYU 10-13 session. Following this event, we received the following feedback from a teacher from a visiting school:

“By happy coincidence I was teaching about telescopes today which fitted in beautifully with your trip from Tuesday! Pupil X was the resident expert! He had retained so much information about this from Tuesday and was so keen and willing to share his knowledge. He was very enthusiastic about the trip so I just wanted to say thanks. “

The equipment from Explore Your Universe still sees regular use. During the latter part of 2015 the international year of light has been recognised with a public show based on light. This show makes use of the IR camera, the laser box and pens, the white light source and the discharge tube. The meteorite is regularly used for a variety of workshops, currently one based on building rockets to use to travel into space. A number of the materials (e.g. ferrofluid and memory metal) are used to in delivery of other workshops. The stories which made up the original EYU shows are influential when developing and delivering many of our other workshops – particularly those about “being a scientist” or careers events. I believe these stories will continue to influence the development of workshops and will be incorporated into future shows developed here.

Dundee Science Centre

Dundee science centre has continued to use the Explore Your Universe materials by delivering the following community events:

Stargazing Night

DSC held a stargazing night at a local community centre in an area of high deprivation during the initial project period. This event reached 200 people from the local community, many of whom had never visited a science centre before. Our team delivered the EYU family show, drop in activities using the kit and comet making sessions. Local organisations including Dundee Astronomical Society and Mills Observatory joined our team to deliver star gazing activities with telescopes and star maps. Throughout the night we engaged with 200 people living in the top 25% Scottish Index of Multiple deprivation.

Deaf Accessible Stargazing Event

Through our core community engagement work the DSC team built meaningful relationships with the deaf community in Dundee who expressed an interest in space themes after taking part in initial ‘taster’ sessions with interpreters. A deaf accessible ‘Stargazing and Wonders of the Universe’ event took place in Dundee Science Festival 2014, where a British sign language interpreted show from the Royal Observatory in Edinburgh was delivered to the deaf community from Dundee and surrounding

areas. Dundee Science Centre used the EYU kit to deliver drop in activities alongside interpreters. Feedback from the event was overwhelming with many of the deaf community stating that they had never had the opportunity to learn about space in such a supportive setting and this was the first time they had the chance to interact with equipment like the infrared camera and plasma ball.

One participant stated

“New activities give you the opportunity to try things out you might not have had the confidence to do before. People I meet are sympathetic towards my needs – not only my hearing but also others things. To go the science event was a big step for me I don’t usually admit to be hard of hearing where as I can in the group. Regarding the science event, people were confident to take part in activities and try new things, it was great to get to find out more about space, something I didn’t get the chance to do at school. I wonder if we had been in a different group somewhere else would we have had the confidence?”.



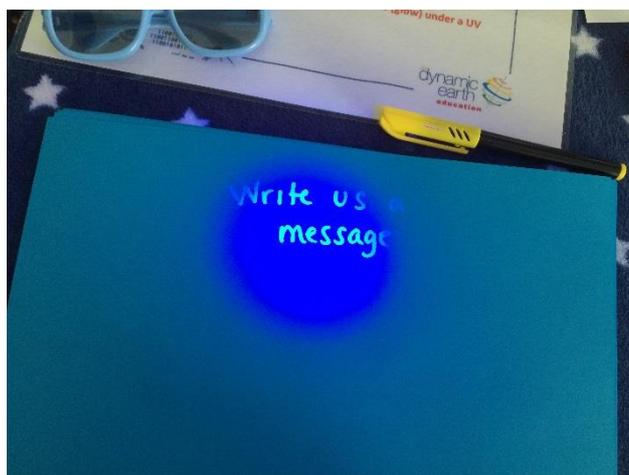
Saturday Science Live Outreach: Wellgate Shopping Centre

Dundee Science Centre have a partnership with a local shopping centre located in an area of high deprivation, where on the last Saturday of every month themed outreach activities take place in the centre whilst visitors are passing by. This is a great chance to engage people who may not choose to visit a science centre (because of any number of barriers) in their own community. Dundee Science Centre delivered an ‘Explore Your Universe’ themed outreach utilising the equipment and activities developed for the project. During the event 180 members of the public engaged with activities. Feedback from the event was very positive, anecdotal feedback demonstrating the activities increased participants understanding of space exploration and increased their confidence in approaching physics as a topic.

Dynamic Earth

Since November 2015 Our Dynamic Earth has delivered 16 Explore Your Universe school workshops reaching 368 pupils.

Special events such as our space themed 'Spaced Out', 'Stargazing' and 'Eclipse- Teacher CPD' have utilised the Explore Your Universe equipment and reached 180 people. During the science festival (10th and 17th April) Our Dynamic Earth attended the Scottish parliament and engaged 150 people over two days.



Royal Observatory Greenwich

The Royal Observatory Greenwich continues to deliver the Explore your Universe programme, engaging groups through masterclasses, workshops and planetarium shows. Through the period of November 2014 to November 2015 Royal Observatory Greenwich delivered to over 13,591 visitors, engaging audiences with the science of STFC. The Explore Your Universe equipment continues to be used throughout a broad range of programmes and activities, with the Thermal imaging camera proving highly popular. These workshops and shows will continue to run for the foreseeable future.

Glasgow Science Centre

Glasgow Science Centre continues to use the equipment provided in the Explore Your Universe programme to enhance its current range of workshops. These workshops include:

'Invisible Science' education workshop. This ran for 2 months (November 14 & October 15) and saw around **500** pupils aged 10 – 14. It is anticipated that this workshop will continue in the 2016/17 education programme.

"Invisible Science: Look beyond the visible by experimenting with thermal imaging, magnetic meteorites and a Van de Graaff generator as we investigate invisible energy."

The kit is also used as part of the Meet the Expert programme and engaging with around **1500** family visitors on weekends and holidays with EYU resources and material.

Science Oxford

Two versions of the EYU shows continue as part of our school outreach programme and are regularly delivered at larger scale events such as Big Bang near me. Much of the kit is well utilised at family drop in events; for example the IR camera, van der Graaff, spectroscopes and the meteorites. Science Oxford (and STEM Ambassadors) have used them at open days, science festival events, career fairs and as hands on activities at our own family events. Science Oxford have a family star gazing and planetarium events where the meteorites will be used as part of the programme.

Winchester Science Centre

Over the past year Winchester Science Centre has continued to run official EYU shows. The Explore Your Universe equipment has also been used to enhance additional shows and activities. This includes:

- using the Van de Graaff for public stage 'shows' where visitors can queue up to take a turn standing their hair on end
- using the discharge tubes, plasma ball, infra-red camera and Van de Graaff during World Space Week activities (schools & public).
- using the discharge tubes and plasma ball during public Stargazing events.

Another legacy is that of the Van de Graaff which eventually died, but it has been replaced to allow its continued use with the public during holiday periods (and even now have a working spare, as it is considered indispensable!). It is extremely unlikely that we would have been doing this without having been part of the EYU programme. During Easter there will be an electricity theme to all extra activities, which again may not have happened without having an impressive central demo to build things around.

The estimated figures from Nov 2014 – Nov 2015 are that 49,033 people have engaged with Explore Your Universe equipment during this period.

Marketing and Social Media Engagement by partners

Cambridge Science Centre

The EYU shows and masterclass are advertised to schools and teachers in the following ways:

- A physical copy of the Cambridge Science Centre Summer term schools programme, highlighting the EYU schools programme, has been sent to 300 schools and a newsletter will be sent to our educational mailing list (mainly science teachers and science co-ordinators) 1st week of May 2015
- The EYU school shows and Masterclass are marketed to target schools for the Centre's "On the Road" programme, bringing the Science Centre experience to communities that have little access to STEM enrichment

The participation of the Cambridge Science Centre with EYU activities was listed in advance of the event on the Institute of Astronomy website.

Social Media:

Twitter: The Cambridge Science Centre to date has Twitter 2929 followers, and the Communicator team has 402 followers. The science centre team is very active on twitter at the larger family events and the tweets were re-tweeted by the Cambridge Science Festival to 6100 of their followers and by the e-Luminate team to their 2700 followers.

National Museums Scotland

National Museums Scotland have utilised their website and social media outlets to promote the Explore Your Universe project, as well as teacher networks such as the Institute of Physics. Two blog posts have been written on the Explore Your Universe project which have generated 'read' figures as well as social media engagement.

<http://blog.nms.ac.uk/2015/01/29/exploring-our-universe-from-the-museum/> - 90 reads, Twitter 2,254 interactions

<http://blog.nms.ac.uk/2015/04/23/exploring-our-universe-from-cern/> - 62 reads, Facebook 4,700 views

The Schools programme for 2015-16 is also being designed during April-May 2015 and will include the EYU workshops and logos for next year.

Techniquest

All schools have been contacted via our email list to market the available Explore Your Universe workshops. Upcoming public audience shows have been marketed via flyers and use of the Techniquest Social media websites.

Thinktank

The Family Show has been included in the Thinktank annual brochure, is listed on our website as a part of the Public Program and will feature in our Facebook and Twitter media campaigns.

W5

The workshop is advertised in the education section of our website and includes a blog from Sean's visit to CERN <http://www.w5online.co.uk/education/special-events/explore-your-universe/>. Information on the programme and a link to this webpage have been included in our last two school e-zines which go to approx. 1734 teachers on our mailing list.

W5 has used social media to publicise and advertise the EYU programme including tweets about Sean's visit to CERN, busking at the RDS and the fantastic female's events.

University of Manchester

EYU branding has been used on science festival displays, and workshops have used the PowerPoint template provided. One priority for the summer students working on developing the project will be in improving our marketing and creating a social media presence.

Newcastle University

The school workshops and masterclasses have been advertised online via the University's Teachers' Toolkit resource which allows teachers to access information about the outreach events and activities offered by the institution. Local secondary and primary STEM school teachers were contacted via email. The activities were also promoted at the workshop that was delivered to local secondary schools teachers in November 2014. The Great North Museum and Discovery Museum publicised the Meet the Expert sessions on their events web pages on their websites.

ThinkPhysics – University of Northumbria

Think Physics publicises all public activities via twitter (<https://twitter.com/thinkphysicsNE>), facebook (<https://www.facebook.com/thinkphysics.org>) and our website. For an examples of how resources from Explore Your Universe have been integrated into delivery and advertised on our website, see <http://thinkphysics.org/activity/meteorites/>

University of York

The Explore Your Universe activities have largely formed part of other events, and have thus not been marketed independently. Instead, banner stands are used at all exhibitions, and PowerPoint slides are shown during demonstration lectures and workshops.

Events as a whole have been publicised through existing mailing lists and networks, but also through adverts and event listings in a local magazine (the Local Link), which is delivered to 10,000 homes across York and enables new audiences to be reached.

@PhysicsatYork and @astrocampus also have growing followings and tweet about events.

In March, a new website was also launched: www.astrocampus.org.uk. This enables the public, school groups, and Scouting/Guiding groups to book Explore Your Universe events electronically. Explore Your Universe is listed as a school activity, but the resources and associated STFC research are showcased at almost all events.

Explore Your Universe Additional Support

To further the in-depth training provided at the Training academy and to ensure that centres were kept up-to-date with STFC science a series of conference calls were held.

Explore Your Universe Presents: Gaia and Rosetta Space Missions.

August 27th 2014:

Speakers:

- Ross Burgon (RB)
- Gerry Gilmore (GG)
- Shaaron Leverment (SL)
- Dan Hillier (DH)
- (plus Anna Hourihane and Heather Campbell to answer questions on Gaia)

This Conference call was arranged to provide information and resources to centres and planetaria to inspire and support awareness of the Rosetta and Gaia missions, their science and technology, significance, and upcoming milestones.

Explore Your Universe Presents: Inspiring Girls with Physics and Engineering

November 4th 2014:

Speakers:

- Emily Dawson – University College London
- Andrea Meyrick and Beth Evan – Techniquet
- Kat Lee – Girl guiding

This call focused particularly on how, as a sector, we can help to address and decrease the gender gap of those choosing to study, and pursue careers in, science and engineering through providing a backdrop to the issues, practical recommendations, and space for discussion for those involved in this area of work.

Explore Your Universe Presents: Future Materials

December 18th 2014:

Speakers:

- Phill Day – STFC
- Dr Ann Terry – ISIS STFC
- Professor Stephen Bennington – ISIS STFC

This conference call was organised to highlight the innovative new materials that are being used within STFC science. This includes using naturally occurring silk proteins from spider's silk, to nanostructures that enable the storage of hydrogen. This knowledge can then be embedded into each centres Explore Your Universe programmes.

Explore Your Universe Presents: Trip to CERN:

January 22nd-23rd 2015

- A trip to the CERN facility for a member of each of the Explore Your Universe delivery partners.



- This was funded and organised through STFC and was a highly successful and inspiring opportunity for the delivery partners to see cutting edge STFC science in person.



- The timing of the visit allowed each participant to view inside the LHC at CMS before the shielding was reinstalled and the collider reinitiated.
- Feedback from the trip was exceptional and the Explore Your Universe delivery partners have now implemented the knowledge, insight and imagery gained from the visit into their programmes.

Explore Your Universe Presents: The Solar Eclipse 2015

March 4th 2015

Speakers:

- Dr Helen Mason – University of Cambridge
- Jamie Sloan – Jodrell Bank Discovery Centre
- Dr Chris Scott (formally Davies) – University of Reading

This conference call was arranged to inspire Explore Your Universe delivery partners to organise events to celebrate the 2015 partial Eclipse across the UK and to bring STFC Science to their events.

This Solar event was a perfect opportunity for the delivery partners to maximise the use of their Explore Your Universe Solar Telescopes to share safe viewing opportunities with public and school audiences.

The information and resources made available by Dr Helen Mason and Dr Chris Scott provided excellent opportunities for engaged audiences at the delivery centres to continue to explore the wonders of the Sun and STFC research following the event.

Explore Your Universe Presents: Sharing expertise across the UK

May 13th 2015

This conference call was in response to feedback from the delivery partners to have an ideas and experiences sharing opportunity with all members of the Explore Your Universe family.

The discussions included:

- How centres are utilising the Explore Your Universe Materials
- How audiences are reacting and engaging with the programme
- How delivery staff are engaging with the programme
- New ideas or alternative methods of using the Explore Your Universe kits
 - One great outcome was a method of making the Cloud chamber more portable by using a Peltier module to cool the chamber rather than dry ice. This therefore allows the cloud chamber to become more portable for use for outreach and busking opportunities.
- Problem solving and best methods of practice
- Highlighting equipment that is very successful and popular within the kit.

The National Meetings

Rutherford Appleton Laboratory 2014

The Explore Your Universe National meeting 2014 was held at the Rutherford Appleton Laboratory in Oxfordshire. 35 delegates from Explore Your Universe partner centres across the UK came to the meeting. The focus of the meeting was looking at the particles that make up our universe and how particle accelerators are being used to help identify these.

The day included talks about future plans for big accelerators delivered by Steve Watson and Emmanuel Olaiya from RAL, a creative workshop reviewing new ideas and uses of the EYU equipment, and a talk from Elizabeth Cunningham on STFC particle physics.

The delegates also received a tour of the RAL facilities and the Diamond Light Source particle accelerator. It was an engaging day and delegates took their experiences back to their centres and embedded their own experiences into the centres Explore Your Universe deliveries.



At-Bristol Science Centre 2015



Explore Your Universe, discuss future uses of the equipment and the possibility of a 'Phase

To continue the year's theme of space flight and to contrast the previous year's meeting looking at very small particles, the 2015 meeting focused on space and the very big. 18 delegates from Explore Your Universe partner centres across the UK came to the meeting to share their experiences of



3' programme. Guest speakers included Emma Wride from Space Made Simple demonstrating 3D space education shows, Neville Holloway talking about the STFC Luna and Meteorite samples loan scheme and Dr Chris Pearson from RAL Space, talking about new solar space technologies.

This was further enhanced by a visit to the UK's only 3D planetarium. A key aim of this national meeting was to inspire Explore Your Universe partners to continue to deliver this programme beyond Phase 2 and ways to link the programme with the UK celebrations of Space resulting from the launch of British ESA astronaut Tim Peake.

Summary and looking to the future

Explore Your Universe Phase 2 followed on from the enormous success of Phase 1. Explore Your Universe Phase 2 has proven that this programme continues to play a big part in engaging both school children and the public with Physics and the inspiring nature of STFC science and research. The successful delivery of the programme by the 10 new delivery centres highlights that the programme is engaging and robust and we have strived to ensure it is still as applicable and up-to-date as when it was created. The continued delivery and support of the Phase 1 centres highlights the legacy that this programme has created.

The lower level of funding to the ten partners in Phase 2 than Phase 1 and the inclusion of 5 Universities meant that delivery centres needed to find efficient and effective methods of delivering to their audiences, which has shown an impact on the ability to reach older school year groups with the masterclass aspect of the programme.

The programme continues to inspire males and females and now appears to be having a significant impact on raising the level of interest in science in girls, highlighting the importance of this type of hands-on practical engagement programme.

With the potential of funding for Phase 3 on the horizon, the project hopes to build on the successes and to focus on reaching more new audiences and engaging hard to reach audiences with this exciting and inspiring nature programme celebrating so many areas of great physics and engineering.

This programme along with its materials and equipment will have a lasting legacy on all of the delivery centres and partners involved ensuring they continue to deliver and that STFC and its science remains at the forefront of physics educational engagement within the UK.

We thank STFC for having the vision to fund Explore Your Universe which we believe has made a step change to the quality and reach of hands-on engagement with the latest physics and engineering in the UK.