On 18 May 2015, the RAS opened the doors of Burlington House to primary school children for the first time. This inaugural visit was the brainchild of RAS Librarian and Archivist Sian Prosser, and the Education, Outreach and Diversity Officer Sheila Kanani. It took place in conjunction with Sheila’s work as a space ambassador for the European Space Education Resource Office UK (ESERO-UK).

ESERO-UK has appointed seven regional space ambassadors, who can be contacted by schools for free advice and guidance on space activities and useful teaching resources. There are also ambassadors in companies and organizations with space interests: this is Sheila’s role. The current focus for space ambassadors is ESERO-UK’s primary schools project, in which they provide “interventions” for children and staff at schools throughout the academic year. Sheila has worked with six different state primary schools across London and the southeast in this academic year, with interventions including paper rocket launching, “ask an astronomer” sessions, lessons about stars, and teacher training.

We were keen to set up a primary school event that included a visit to the RAS Library in order to make the most of the resources and facilities we have here in Burlington House; merging this with an ESERO-UK intervention seemed an obvious step. We want to encourage a passion for astronomy and geophysics in novel ways that students can’t access in school and came up with the idea of an exciting show combining science, the arts, Library visits and a tour of Burlington House.

Three acts
The three main elements each lasted 30 minutes: a science show in the Lecture Theatre; a visit to the Library to explore relevant material from the RAS archives, manuscripts and book collections; and a session in the Council Room with an actor playing an appropriate scientist from the

1 Caroline Herschel returns to the RAS Library to talk to the primary school visitors. (Sian Prosser)

Sian Prosser and Sheila Kanani describe the inspiration and outcome of a visit by primary school children to Burlington House – a successful event that may be the first of many.
Caroline Herschel Outreach

During discussions with Spectrum Drama, who specialize in historic drama for schools and museums, it became clear who the focus of our event should be: astronomer Caroline Herschel, who assisted her brother William in his observations, as well as making many discoveries of her own, including eight comets. Everything fell into place once she was chosen. It became obvious that the science talk should be about comets, the actor should play “Lina” (she already had an appropriate dress, figure 1) and the Library visit should include some of Caroline Herschel’s beautifully handwritten comet observation notebooks preserved in the RAS archive (figure 2). We had created a cross-curricular primary programme to rival any science centre and all we had left to do was book some students in!

The pilot event was for a mixed class of year 4 and 5 students (ages 9 and 10) from Monken Hadley Primary School in Barnet. After a quick toilet stop and some housekeeping rules, the students settled into their first activity: a science lecture and demonstration in the Lecture Theatre. Sheila took the students on a whistle-stop tour of the solar system, finishing with a detailed discussion about comets and whether they were harbingers of doom or bringers of life to Earth. She explained how comets have been documented for centuries, for example in the Bayeux Tapestry, using naked eye, telescope and space observations. Discoveries from the Rosetta mission were highlighted and we concluded with some panic about comets causing the death of the dinosaurs. A dry-ice comet-making demonstration had to be traded for a YouTube video of Sheila making such a comet, as unfortunately, the equipment was not delivered on time, but the show ended with rapturous applause nonetheless.

Horse manure

The students then went to the Council Room where they were greeted by Caroline Herschel (actor Jane Cartwright). She narrated her journey from domestic drudgery in her family home in Hanover to a musical career in Bath, then a second career as astronomical assistant to her brother William. With wit and humour, she told the story of how she integrated into English society and supported her brother’s research, which still involved drudgery—the children were amused to learn that Caroline had to sieve horse manure for the speculum moulds. At the end of her tale the audience applauded her achievement of being the first woman to receive a salary for her astronomical work.

The final session featured primary sources and hands-on activity in the Library. Caroline Herschel’s comet observation notebooks are part of the invaluable Herschel archive. Her handwriting was easily deciphered by the children as they read accounts of her comet discoveries and saw the sketches she had made of these celestial objects. Also on display was a spare speculum from William’s 9-inch telescope. The children learned that Caroline discovered nebulae as well as comets, and that even she made mistakes: one “comet” turned out to be a light in a barn window. The children were then invited to sketch comets, observing them through “telescopes” made of cardboard tubes with a transparency of a comet photograph stuck on the end. The photographs included images from the RAS collection.

The first primary school visit to the RAS was a success. “The activities were hands-on and educational and varied in objective so the children were engaged and learning all the time,” according to the teacher. It was great fun to explore comet discoveries in the past and present with this group, and Sheila and Sian look forward to working with new audiences in the future.

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IMAGES

Images of Caroline Herschel’s notebooks, including her comet observations, are available through the Science Photo Library (http://www.sciencephoto.com) in the RAS Collection.