



MUSIC IN SPACE



On March 27, Texas elementary music students participated in the first ever Music in Space live webcast, sharing music with astronauts on the International Space Station and with other schoolchildren in Canada. This live event was an installment of NASA's Digital Learning Network (DLN). NASA began this educational program 10 years ago to offer students and teachers science, technology, engineering, and mathematics (STEM) content featuring NASA missions and research. Given this STEM focus, it is particularly significant that NASA chose to feature music content via this program.

Astronauts have been living on the ISS since November of 2000, and Canadian Astronaut Chris Hadfield took command on March 13. Hadfield has been a long-time champion of Pearl Hall Elementary's Building Cultural Bridges (BCB) program, supporting the school's science and arts programs. He also is an accomplished guitarist and singer who plays in two astronaut bands and has appeared in several concerts on stage with the Houston Symphony and the Pearl Hall choirs performing at two world premier events.

The Webcast

A vocal ensemble of Pearl Hall Elementary third graders joined American astronauts Dan Burbank and Cady Coleman (also accomplished musicians) at NASA's Johnson Space Center in the Digital Learning Network studio. Like Hadfield, Burbank and Coleman have been to Pearl Hall (in Pasadena ISD) to inspire students in their educational endeavors. Burbank was commander of the ISS last year and also performed with students eight years ago at the NASA Educators Conference.

During the webcast, astronauts Burbank and Coleman and Pearl Hall Music Specialist Jami Lupold accompanied the students as they performed folk songs contributed to their BCB program by astronauts, engineers, and musicians from the countries of the ISS partners. The languages shared during this event represented the five major space agencies building, living, and working on the International Space Station. Music Specialist Pat Surface conducted the Pearl Hall student ensemble in performing songs in Russian representing ROSCOSMOS, in Japanese for JAXA, in Swedish representing the European Space Agency (ESA), and in English representing the Canadian Space Agency (CSA) and NASA.

Music and Tech Specialist Seth Fewell led students at Pearl Hall Elementary in South Houston and at the Chris Hadfield Public School in Milton, Ontario, Canada (Hadfield's hometown), as they interacted directly with Commander Hadfield orbiting at 17,500 mph around our planet. They took turns asking a variety of questions via HD live video downlink through the DLN studio.

Students Inspired

After the event, students explained what it meant to them:

- I loved learning songs from different countries and in different languages. I think it was cool that I was singing in a

different language that I didn't know, and I had learned it in only a few days! — Meghan (Canada)

- It was shocking when I was selected. I was kind of shy but I have gained great confidence after participating in this choir with astronauts. — John (Texas)
- I learned about rockets NASA is building for future space flights to the moon and to Mars that I might get to go on someday. If I get to go to the moon, I will sing songs to tell the story of *my* adventure. That's exciting! — Janeth (Texas)
- If you are in a special choir, you have to do your best every day to sing well and get better. Everyone has to do their part or we won't be the very best we can. I felt so proud when the show ended because astronauts Cady Coleman and Dan Burbank told us we were really great! — Aaliyah (Texas)
- I could tell that all of my friends and peers were very excited for this event. It was really interesting when Chris told us some things he does in space. — Abdullah (Canada)
- I wasn't sure I could learn songs in Japanese, Russian, and Swedish. But when the day of the event came, I felt so happy that we had achieved our goal, and I was very proud of all the hard work we put into it. — Samuel (Texas)

Building Bridges

With NASA's Digital Learning programs, Pearl Hall teachers were able to create a virtual classroom, bringing together students 1,300 miles apart with Hadfield orbiting 240 miles above Earth. This extraordinary event is just the most recent opportunity Pearl Hall Elementary students have benefited from through their school's 13-year Building Cultural Bridges program. This program was featured in the February 2007 and February 2011 issues of *SOUTHWESTERN MUSICIAN*. Go to www.tmea.org/magazine to find these articles in the archives and learn more about this incredible program. Through BCB, Pearl Hall students have explored international music, culture, science, and literature, especially by meeting with international guests from the Houston Symphony, NASA, CSA, and others.

Help Your Students Connect

Even if a NASA center or large performing arts organization isn't in your backyard, you can still launch a program like Building Cultural Bridges to benefit your students. In 2000, Pearl Hall music educators founded BCB on the basic idea that for music education to survive, music educators need to tap into community resources to establish a connection between education and the students' place in the community. So wherever you are, look at your community. Learn about business and community leaders and their backgrounds. Think about what they can share with your students. Furthermore, consider what defines your community. With the Internet and live video chat technologies available, your community can extend anywhere around the world. And with that, the educational possibilities become limitless.



Out-of-This World Performances



Chris Hadfield



Cady Coleman


All photos courtesy of NASA.

This May, ISS Commander Hadfield will again collaborate with students hundreds of miles below his position from the space station. On May 6 (just days before his return to Earth), Hadfield and students from across Canada will perform an original song Hadfield cowrote with Ed Robertson. "I.S.S. (Is Somebody Singing)" is the official song for Music Monday, an annual event hosted by Canada's Coalition for Music Education. Go to www.tmea.org/smlink/musicinspace1 to watch a video of Hadfield performing from the ISS with Ed Robertson and a school glee club.

An Earth-to-space musical duet isn't a new thing, however. In 2011, Cady Coleman (who hosted the DLN webcast discussed here) collaborated with Ian Anderson for the first ever Earth-space duet. Go to www.tmea.org/smlink/musicinspace2 to watch video of this performance. Coleman gained notoriety as an astronaut when she brought several flutes to the ISS, including a 150-year-old

E-flat Irish flute belonging to Matt Molloy of the Chieftains.

Astronauts Coleman and Burbank play with Hadfield as "Bandella" when they are all present on our planet. Their group also recently performed from Earth and space when Hadfield, playing from the ISS, joined Coleman and Burbank who were with the Chieftains performing "Moondance" at the Houston Symphony. Go to www.tmea.org/smlink/musicinspace3 to see this collaboration.

While serving as ISS Commander, Burbank also enjoyed the honor of performing with his musical inspiration, James Taylor, in a private link up between the ISS and the western Massachusetts barn where Taylor's band records. After discussing how human physiology adapts to microgravity and how the various systems of the ISS work to provide a habitable environment for humans to live and work in space, Burbank joined Taylor in an Earth-space duet of "Secret O' Life." 

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