



NASA's Cosmic Pitch: Where Sports Meet Space Science

A Resource for Library & Community Spaces —
2026 World Cup & Beyond

(Launching May 18, 2026)

This document provides a framework for U.S. libraries, schools, community spaces and other partners to leverage the excitement of the 2026 World Cup in North America, and beyond, by connecting sports with space science through [NASA's Cosmic Pitch](#) program, with evergreen content and amazing new images from NASA's Chandra X-ray Observatory, James Webb Space Telescope, and Hubble Space Telescope.

Program Overview

[The Cosmic Pitch program](#), developed by NASA's [Universe of Learning](#) and NASA's Chandra X-ray Observatory, connects the excitement of World Cup athletics with the science of the Universe. Through striking visuals, interactive media, and multimodal learning tools, *Cosmic Pitch* invites audiences to explore how the physical principles that drive athletes on Earth also power the cosmos — from spin and speed to acceleration and collisions.

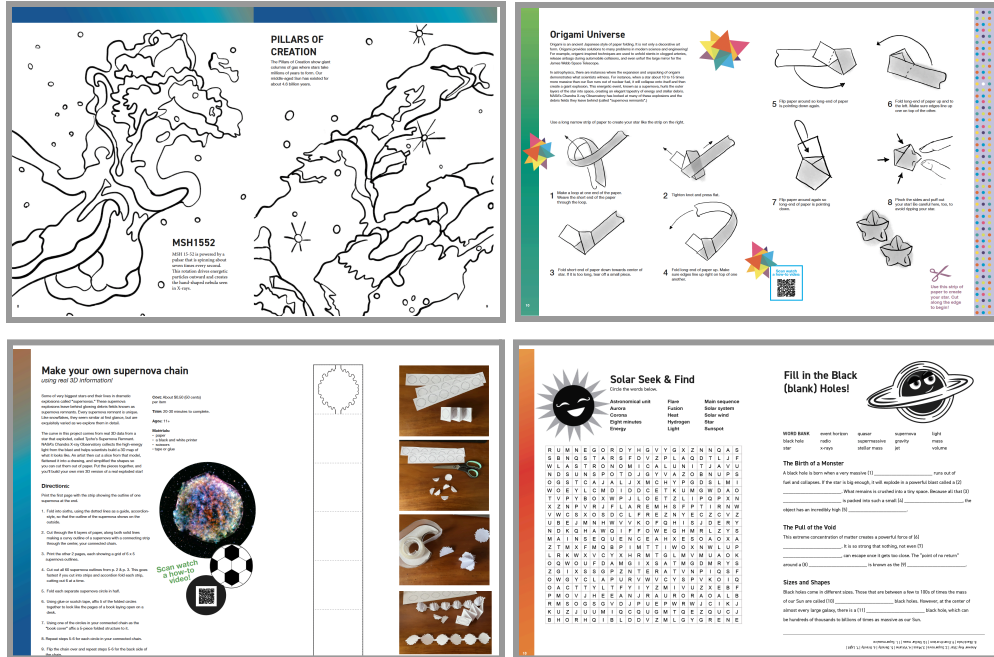
Available Resources

1. Posters & Handouts

- High-resolution posters in English and Spanish
- **Download the Cosmic Pitch [Activity booklet](#)** for school-aged learners, from coloring pages & word searches to more advanced 3D paper & origami activities (20 pg PDF).
- **LINK TO POSTER PDFs ([full set](#))**



Workbook screenshots:



2. Short Videos

- "Cosmic Pitch" short videos (~30sec)
 - Introduction
 - Youtube: <https://youtu.be/Mt6akdG8mD8>
 - [Download horizontal version](#)
 - [Download vertical version](#)
 - Brief concept teaser (~30sec)
 - Youtube: <https://youtube.com/shorts/oVbw0hxQWfK>
 - [Download horizontal version](#)
 - [Download vertical version](#)
- Ideal for playing or looping on digital displays or embedding in presentations
- Downloadable and on YouTube for looping.



3. Presentation & Film Loop

- PowerPoint presentation of **Cosmic Pitch** visuals
- Can be run as a continuous loop for event kiosks or screens, adaptable for events, visits, or exhibit formats.
- [LINK to PPT file](#) (large file) | Link to [lower resolution PDF](#)
 - [Slides from Kim's](#) presentation to NASA's SSA



4. 3D Print & Tactile Kits

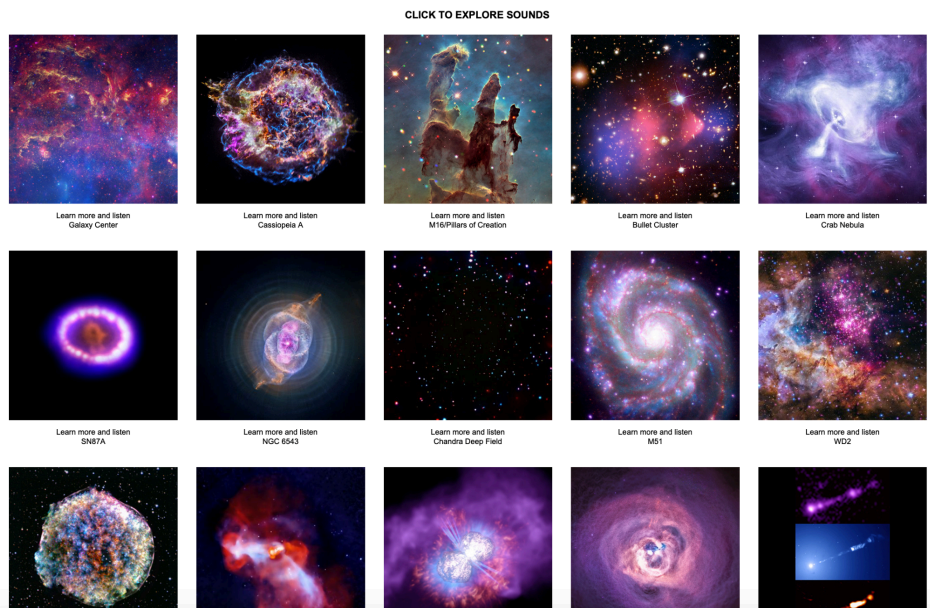
- 3D Printed models of astronomical objects (e.g., supernova remnants, pulsars) for connecting to the poster content
- Accessible for blind or low vision learners; supports tactile engagement for different audiences
- Mini Stars Kit (pictured below/outside its box) available for shipment in limited quantities
- **LINK to printable stl files:** <https://chandra.si.edu/3dprint>



5. Sound & Sonification Experiences

- Audio translations of NASA data (sonifications) from Chandra/other multiwavelength missions for the poster content, and beyond

- Listening stations or headphone-based installations could be setup; we have these in a “playlist” format on [YouTube as well](https://www.youtube.com/playlist?list=PL8181818181818181) for looping
- **LINK:** <https://chandra.si.edu/sound/>



6. Community Activities

Example Activity: World Cup Daily (or weekly) Science Connections

Audience: All ages (adaptable for youth, families, and general audiences)

Time: 5–10 minutes per day during the World Cup Games

Materials: Astrolympics posters, shared display space, NASA imagery

Each day or week of the World Cup, a featured strategy, goal or win from a recent game is paired with a core science concept from the *Cosmic Pitch* posters. A brief daily highlight—shared verbally, posted digitally, or displayed in a public space—introduces the sport and its associated concept, eg, kicks.

Following each highlight, the corresponding *Cosmic Pitch* poster is added to a shared display area. Posters can be accompanied by images from NASA missions such as [Webb](#), [Hubble](#), and [Chandra](#), showing how the same science concepts help scientists study stars, galaxies, and other cosmic phenomena.

Over the course of the games, the display grows into a cumulative exhibit—linking soccer, everyday physics, and space science in a way that is accessible, visual, and engaging for a wide range of audiences.

Optional extensions include:

- Inviting participants to identify the science concept in the sport as they watch events
- Encouraging comparisons between how the concept appears on Earth and in space
- Asking participants to guess which science concept will be featured next

Adapted from Solar System Ambassador Tom Estill

7. Facilitator Survey:

Please fill out our brief anonymous survey after your events so we can report back to our funders and support future STEM resources for your communities! Take the survey at:

<https://www.surveymonkey.com/r/cosmicpitch>

NASA Multiwavelength Science of Cosmic Pitch

To understand the physics of the *Cosmic Pitch*, NASA scientists look beyond what the human eye can see. Just as a soccer coach uses different camera angles and data analytics to track a player's performance, astronomers use a fleet of *Great Observatories* and missions to capture the Universe in different types of light. High-energy X-ray data from NASA's [Chandra X-ray Observatory](#), plus ESA's XMM-Newton, reveal the extreme physics of the cosmos—such as the 10-million-mph blast wave of [Tycho's Supernova Remnant](#) or the frantic spin of pulsars like [MSH 15-52](#). These missions allow us to visualize the invisible forces of acceleration and rotation that mirror the most intense moments on a soccer field.



Above from left: Vesta, Sun, Tycho SNR, Puppis SNR, Zeta Ophiuchi, Pillars/M16, MSH 15-52, Hercules A

By combining these X-ray action shots with infrared views from NASA's [James Webb Space Telescope](#) and (retired) [Spitzer Space Telescope](#) as well as the visible light clarity of the [Hubble Space Telescope](#), we get a more complete picture of the cosmos. From the slow, majestic time required for stars to form in the [Pillars of Creation](#) to the kicks that eject stars like [Zeta Ophiuchi](#) from their homes, *Cosmic Pitch* utilizes data from across the electromagnetic spectrum. By including observations from NASA's [Solar Dynamics](#)

[Observatory](#) (SDO) to study our Sun, NASA's (retired) [Dawn mission](#) to explore collisions via the asteroid [Vesta](#), and support from ground-based radio telescopes, *Cosmic Pitch* demonstrates that whether it is on the pitch or in a distant galaxy like [Hercules A](#), the laws of physics are the ultimate playbook.

Other Resources as needed

- **Virtual NASA/Smithsonian scientist talks, Q&A:** Connect audiences with U.S. researchers, by request
 - **Cross-promotion materials:** graphics, signage, and brief descriptions for event calendars
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Why Cosmic Pitch?

- Bridges science, sports, and culture
 - Useful evergreen connection to youth soccer seasons in U.S.
 - Promotes curiosity & STEM learning through multimodal engagement
 - Provides a turnkey, visually striking experience aligned with World Cup excitement
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Contact:

For further information and resources, please contact [Kimberly Arcand](#)

Dr. Kimberly Arcand

NASA's Chandra X-ray Observatory
Smithsonian Astrophysical Observatory
<https://chandra.si.edu/cosmicpitch/>