



STARDUST

The Universe in You



Concept Overview

This exhibition is in development and is subject to change.

Introduction



Stardust: The Universe in You includes the following sections:

1. Introduction - Where did it all begin?
2. Atoms Form, Stars Form - The Formative Years
3. Galaxies Form - The Milky Way Galaxy
4. Supernova - The Biggest Explosion You've Ever Seen
5. Life on Earth and You - The Story Doesn't End Here

The sections include a combination of immersive projections, soundscapes, and interactives to explain key moments in the history of the universe.

Each moment is made relatable through the use of real life examples, analogies, reflective questions, and tactile interactives. Interactives are started with 'handprint stations' using a visitor's own hand and energy. This helps to solidify that we are part of the larger cosmic story and are connected to everything around us.

The Big Idea



The process of universe formation has taken place over billions of years and continues to shape everything around us as stars produce elements needed for life and spread them across the universe.

We are connected to everyone and everything around us because everything is made of stardust.

Key Themes



Wonder and amazement



There is an incredible amount of beauty and magic in the universe around us, and each of us has the ability to experience it and be part of this special life. The exhibition encourages visitors to reflect and become inspired and curious about the universe.

A sense of scale and time



The huge amount of time and the vast difference in scale covered in this exhibition can make certain concepts hard to understand.

By comparing sizes and timeframes, we make difficult concepts more relatable.

All things are interconnected



This is a key point of the *Stardust and You* children's book, and translates well into the exhibition.

Making the connections between something of massive scale and significance such as a star to you fosters a sense of wonder and curiosity in visitors.

The human body and the elements of life



Tying the threads of life together and explaining the relationship between the human body and those elements helps visitors understand where they come from and what gives them life. This helps to further enforce that all things are interconnected.

Important scientific concepts

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A few scientific concepts are important baselines to understanding more complex ideas presented throughout the exhibition. These concepts are repeated throughout the exhibition to ensure that all visitors have enough information to reflect on new ideas presented.

Energy

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The universe started as energy and energy is what causes things to happen in the universe.

- The Big Bang Theory
- Nuclear fusion
- Supernovae

Atoms

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Atoms are the building blocks for life and the smallest units of matter.

- Matter
- Mass

Elements

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Elements come together to form different things in the universe.

- Supernovae release elements

Forces

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Forces interact with each other and cause changes.

- Pressure
- Gravity
- Balanced vs unbalanced forces

Gravity

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Gravity is a force that pulls things together.

- Stars
- Galaxies

Life

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Life is made possible by the elements that come from stars.

- Common elements on Earth come from stars
- Where elements can be found in the human body

1. Introduction: Where did it all begin?



The introductory area grounds visitors in the idea that we, in the present day, are connected to the universe and its evolution, going all the way back to the Big Bang. An animation is activated by the visitor placing their hand on a handprint sensor. Visitors are immersed in a large projection of the Big Bang and can interact with the concept of the big bang expansion through a hands-on interactive.

Multimedia



Visitors see and hear what the Big Bang looked and sounded like, starting from a tiny point and expanding rapidly outward. This projection visually illustrates what happened during the Big Bang and how that created an environment suitable for energy to turn into matter.

Interactives



The Big Bang

This interactive visualizes how the universe expanded and continues to expand outward from a very small origin point in space and time. Visitors see that the size and distance of everything in the universe continues to expand.

A visitor's photo is taken and projected onto a balloon shaped object at the center of a table. At first, the object and the visitor's face appears very small and proportional. Visitors provide an energy input through an air pump with a resulting output of the object and their face slowly expanding and stretching to represent the continued expansion of the universe and everything in it.



2. Atoms form and Stars form: The Formative Years



This section of the exhibition discusses the formation of atoms and their collection into clouds that form stars, a process that started 380,000 to 2 million years ago and continues today. Forces, atoms, and star formation are key concepts in this section and scientific information about those topics are presented through a series of hands-on interactives that break down concepts through interpretive text and eye-catching imagery.

Multimedia



Visitors see the “soup” of the early universe turn into the first atoms. These atoms gather into a large cloud that grows until a nearby supernova bumps the atom cloud causing it to collapse and become a star.

Interactives



Atoms

Visualize how atoms are the base level components that come together to form elements, and eventually life. Visitors are provided with organically shaped building toys and prompted to create a structure/lifeform. Prompts are displayed on changing LED cube lights showing different living forms.

Star Formation

Visitors disrupt the balance between the forces of gravity and pressure and initiate a star’s formation. On a drum set, visitors cause a “disruption” that represents energy from a supernova triggering an imbalance of forces.



3. **Supernova:** The Biggest Explosion You've Ever Seen



This section is the highlight of the exhibition. An immersive projection space shows the process of a supernova, the beauty of it, and the way it allows for life by releasing elements out into the universe. The periodic table of elements is introduced as a framework through which to learn about the elements that come out of supernovae.

Multimedia



Here visitors are immersed in a powerful supernova experience. A star slowly runs out of fuel followed by a collapse of the star which explodes elements outwards. This is a colorful experience that shows how elements are spread throughout the universe in this explosion.

Interactives



Elements - Periodic Table

Visitors form different combinations of elements from a few elements that are connected to the formation of life elements and predetermined combinations and prompts (like a recipe). When combined, a large visual displays a scene on Earth made from those elements. Example: H₂O shows a beautiful clip of the ocean.



4. Galaxies Form: The Milky Way Galaxy



The galaxies section focuses on how gravity pulls together groups of stars that eventually form galaxies of different shapes and sizes.

There is focus on the scale of the universe by contextualizing a single galaxy within the universe and our solar system inside the Milky Way Galaxy. An orrery helps provide this context.

Interactives

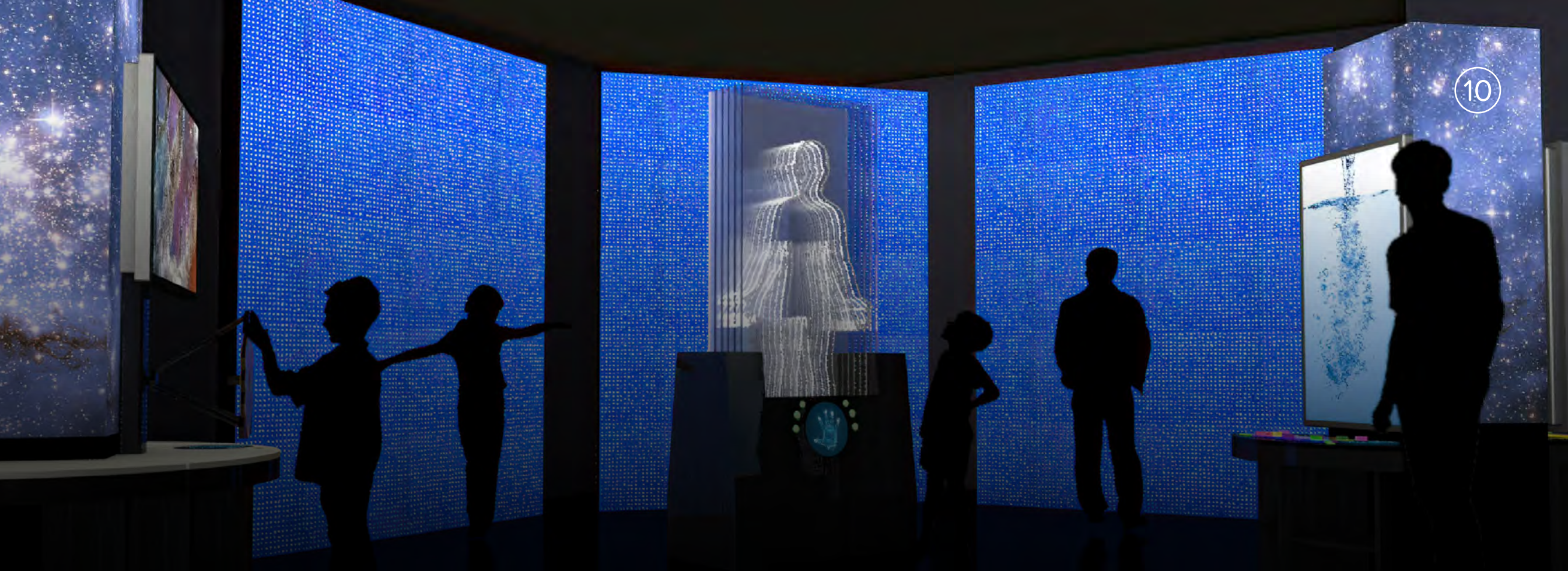


Color a Galaxy

Visitors color their own galaxy and scan it to animate it and add it to a dynamic projection of the vast universe of other galaxies.

Orrery

By pressing buttons, visitors light up parts of an orrery and pinpoint areas within our solar system to explore. The orrery hangs above visitors and helps them to examine orbits and learn about how these large bodies of our galaxy are interconnected.



5. Life on Earth and You: The Story Doesn't End Here



Here visitors connect all they have learned in the previous sections to life on Earth and fully make the connection that the elements produced inside stars are what make us, and the life around us, possible.

This section directly relates some of those elements to the human body.

Interactives



Human Body Elements

Visitors see what elements are in the human body through an interactive human body filled with fiber optics that isolate the different elements using buttons.

James Webb Telescope Reflection

Visuals from the James Webb space telescope provide visitors with the opportunity to make connections to the key points explored throughout the exhibition. Visitors see stunning visuals and science being gathered with this new technology.

Produced and toured by:



FLYING FISH

With support from:



COSMOSPHERE
INTERNATIONAL OBSERVATORY CENTER
SPACE MUSEUM

Stardust: The Universe in You is a traveling exhibition produced and toured internationally by Flying Fish, with support from Cosmosphere.

This exhibition is in development and is subject to change.

Space required



3,500 - 5,000 sq. ft.

Target audience



Families with children, school groups

Freight



Two (2) 53 ft. trailers (estimated)

Premiere



Fall 2024

Tour availability



Fall 2024 and beyond