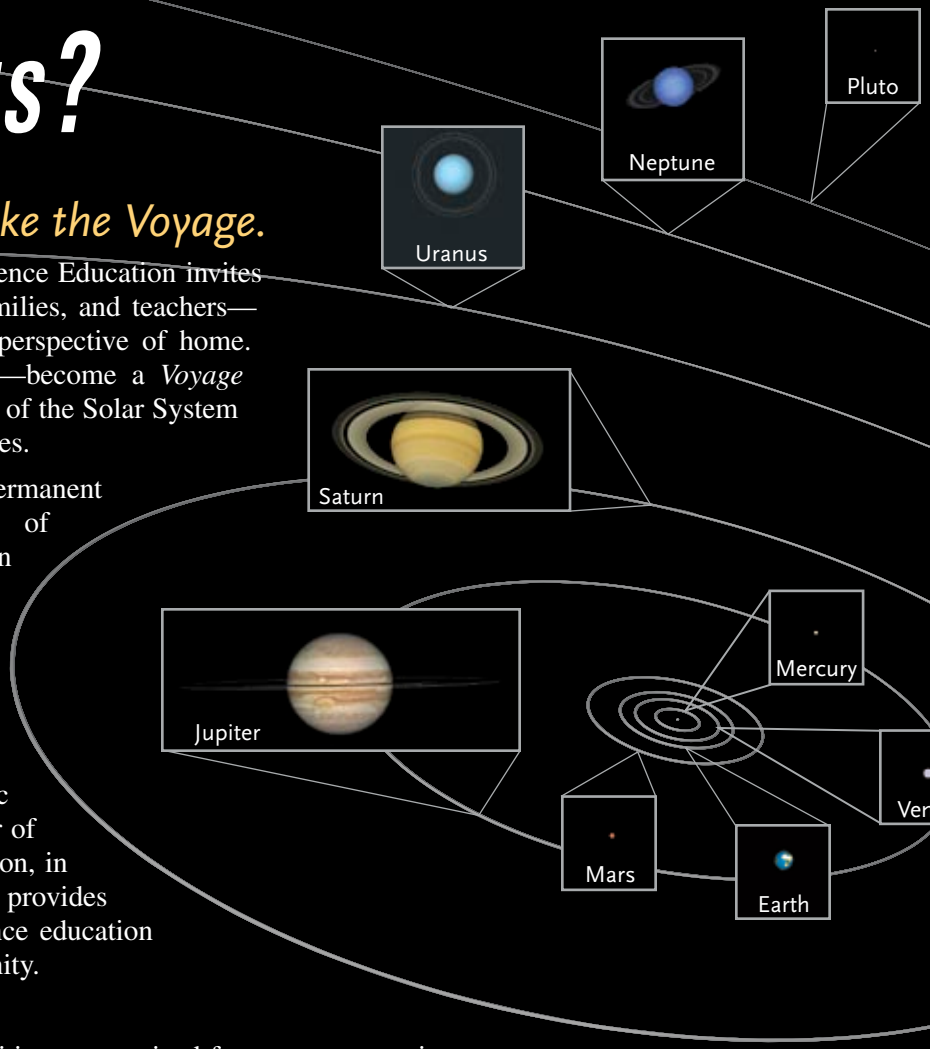
VOYAGE

A Journey Through Our Solar System

Want to go to Pluto and Back in 40 Minutes?



Now your community can take the Voyage.

The National Center for Earth and Space Science Education invites your entire community—children, adults, families, and teachers—on a *Voyage* that will forever change your perspective of home. Be a part of the national *Voyage Program*—become a *Voyage Community*—and receive a remarkable model of the Solar System along with extensive community-wide resources.

The Program began in October 2001 with permanent installation of the *Voyage* scale model of the Solar System on the National Mall in Washington, DC. Stretching from the National Air and Space Museum to the Smithsonian Castle, the exhibition was undertaken in partnership with the Smithsonian Institution and NASA. Also developed were exhibition tours, grade K-13 lessons, educator workshops, grade K-20 classroom programs, and public and family events, all of which use the power of models to understand our world. The exhibition, in combination with these educational resources, provides a remarkable breadth of experiences in science education for diverse audiences across an entire community.

Now your community can have it all!

Imagine a version of the National Mall exhibition, customized for your community, placed outside your museum, in your park, downtown, or on a university campus, and training for your community's educators on lessons meant to be used before and after a tour through the Solar System. Engage your entire school district, science center/museum, university, and civic organizations in a community-wide celebration of what we know about our place in space… *and that we can know it.*

Computer-generated image of Earth created from a digital model of the visible planet. Face of the Earth™, ARC Science Simulations, © 2000.

INSIDE:

VOYAGE

A Journey Through Our Solar System

Voyage is an experience that will forever change your perspective of home.

The Experience

A portion of the *Voyage* scale model of the Solar System on the National Mall in Washington, DC, is shown in the photograph. The real Solar System is exactly 10 billion times larger than the model. *Voyage* stretches from the east side of the National Air and Space Museum to the Smithsonian Castle, as seen on the map below. The planets depicted on the cover of this brochure are the same size as *Voyage's* model worlds.

Imagine leaving the grapefruit-sized Sun walking westward toward the Washington Monument. After walking just 50 feet (15 m) you encounter Earth, home of the human race, and smaller than the head of a pin. The entire orbit of the Moon fits comfortably in the palm of your hand. The 50-foot distance between the Earth and Sun represents 17 years of travel at the speed of a commercial jet.

After a comfortable 20-minute walk, stopping along the way to visit a number of other worlds, you arrive at the Smithsonian Castle Building, 6.5 football fields west of the model Sun (2000 ft or 600 m). Here, just visible, is tiny Pluto—far smaller than the head of a pin. Looking back at the model Sun, across over 6 football fields of empty space, you realize that Earth is no more than a small speck of dust orbiting close to the Sun. How does the human race even know Pluto exists?

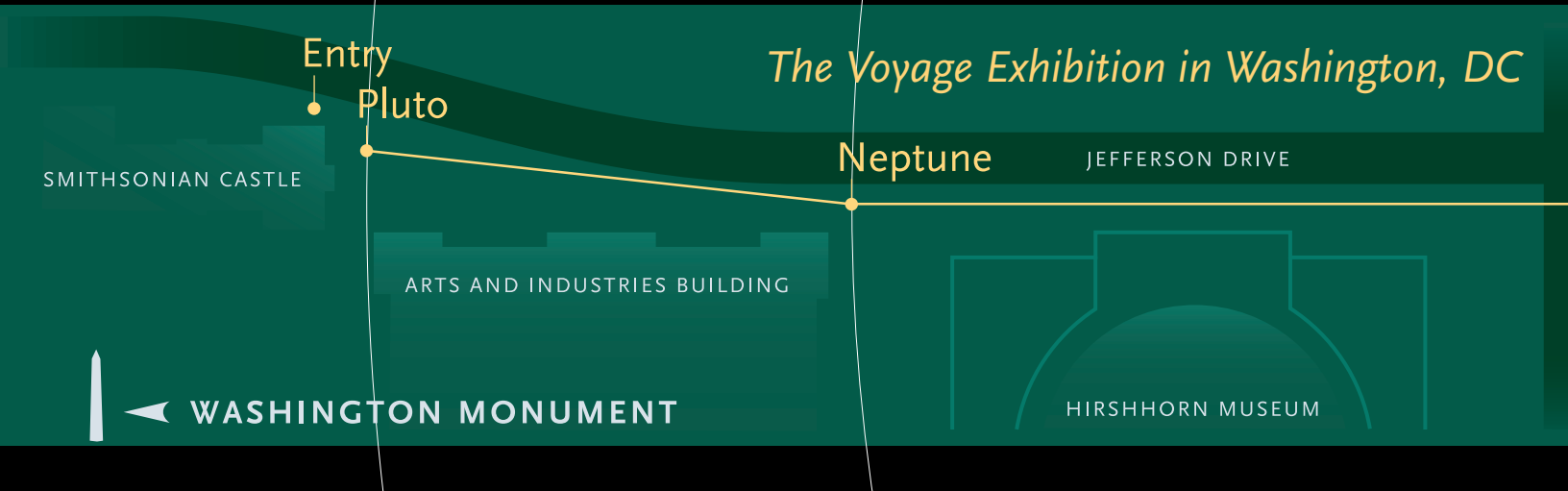
If you could continue your walk westward you wouldn't find the nearest star to our Sun—Proxima Centauri—until you had reached the California coast. The Sun and Proxima Centauri are just two stars in our home 'city of stars'—the Milky Way galaxy. The Milky Way, an insignificant plot of real estate in the greater universe, contains enough stars to give 50 to every human being on Earth. How insignificant is the Milky Way? It is only one of over 100,000,000,000 galaxies in the observable universe.

Light, the fastest thing in the universe, can circle the Earth 7.5 times in one second, traveling 40,000 times faster than the space shuttle. The speed of light on the scale of *Voyage* is 1 inch per second (2.5 cm/sec), about the speed of a fast ant. Leaving the model Sun an ant would arrive at the model Earth in eight minutes, Pluto in 6 hours, and a model Proxima Centauri in California after 4.5 years. Put another way—exploring just the space between the Sun and nearest star to the Sun at the fantastic speed of light, would be like exploring the continental United States as a colony of ants.

The Sun and inner solar system, in front of the National Air and Space Museum.

This is the story of our existence—a race of explorers, 6 billion tiny souls strong. It is a story that ignites wonder about the universe, and a sense of pride in our ability to reveal its nature through both human imagination and ingenuity. It is a story that humbles us, and brings a sense of humility to our lives.

The Voyage Exhibition in Washington, DC



The Exhibition

The *Voyage* exhibition is a one to 10-billion scale model of the Solar System stretching 2,000 feet (600 meters), and containing ten 8.5-foot high aluminum stanchions locating the Sun and nine planets, and three smaller stanchions that provide entry points to the exhibition, and address asteroids and comets. *Voyage* reflects a seamless fusion of sculpture and science education, conveying an aesthetic beauty worthy of placement on the National Mall in Washington, DC, as required by the approving bodies—the U.S. Commission of Fine Arts, and the National Capital Planning Commission.

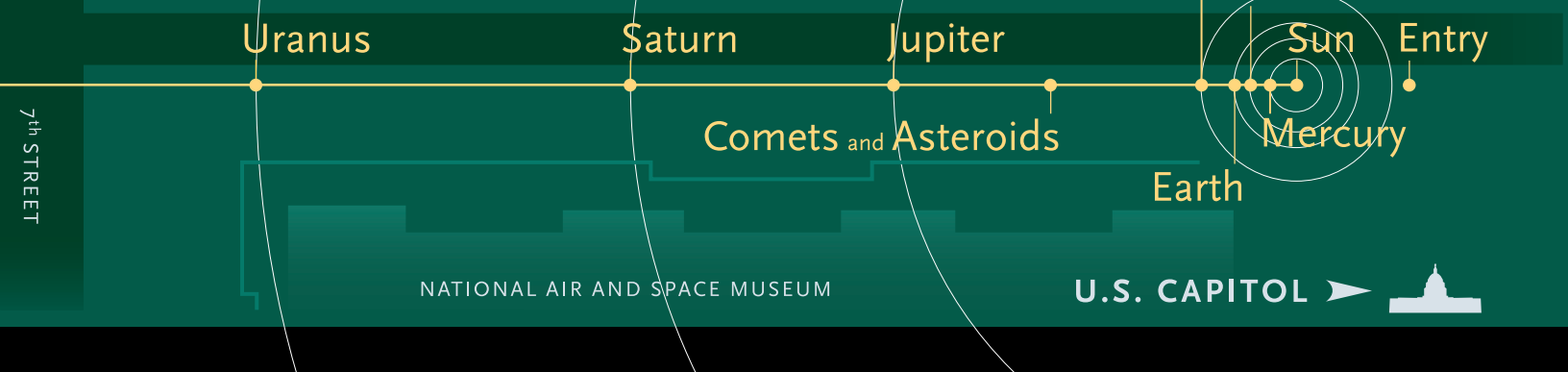
Represented as a striking gold-anodized metal sphere, the Sun—our star—can be seen by visitors in the exhibition's outer Solar System. All planets and moons with a diameter greater than 1,000 km [24 worlds] are depicted to scale as 3-dimensional crystalline spheres laser-sculpted inside solid glass. The ring systems of the outer planets are also accurately depicted, including their orientation in space. Full color imagery, much of which was commissioned for the exhibition, is found on porcelain enamel storyboards at each stanchion. Thought-provoking text transports the visitor by reshaping their Earthly experiences into those reflective of other worlds.

The imagery and text provide a compelling up-close view of the planets and moons, in stark contrast to the 3-D models that speak to the powerful reality of tiny worlds in a vast space. *Voyage* transforms visitors into cosmic explorers and turns a leisurely 20-minute walk into a fascinating journey through the Solar System.

Saturn with its ring system and moons Tethys, Dione, and Rhea, laser-sculpted inside solid crystal.

A view of the Saturn unit's display panel.

Development and installation of the exhibition in Washington, DC, was a joint project of Challenger Center for Space Science Education, the Smithsonian Institution, and NASA. Replication and installation of the *Voyage* exhibition at sites nationally and internationally is a program of the National Center for Earth and Space Science Education (NCESSE; www.ncesse.usra.edu), Universities Space Research Association. *Voyage* was designed by Vincent Ciulla Design (www.ciulladesign.com).



Benefits to the Community

The *Voyage* exhibition and the associated educational resources and programs provide an array of community benefits.

For a—

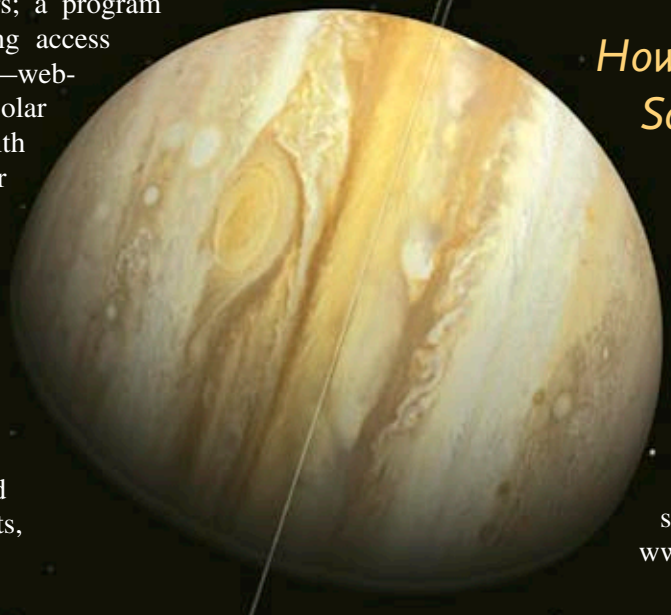
- **Museum, Cultural Center, or Science Center:** *Voyage* extends the educational experience to outdoor spaces, and after-hours, and provides a pathway to the gate.
- **State or National Park:** builds a connection between our environment on Earth and the Sun, Moon, and starry night above.
- **College or University Campus:** creates an opportunity for community outreach with grade K-12 class tours on campus led by undergraduate and graduate students serving as both guides and role models.
- **City-scape or Government Campus:** provides an experiential thread down a main walkway or a sculptural element to a city park.

A tour of the Voyage exhibition in Washington, DC, by NCESSE staff astrophysicist Dr. Timothy Livengood.

- **Corporate Underwriter or Civic Organization:** creates an opportunity to build a programmatic bridge across an entire community.
- **A School District:** dramatically extends the space science curriculum with a unique exhibition experience, and an extensive array of curriculum support materials.

Become a Voyage Community

When you purchase a *Voyage* exhibition, your community becomes a *Voyage Community*, and is provided master copies of all grade K-13 lessons, and the tour and activity guides for use with the exhibition; an introductory professional development workshop for educators; a program for families and the public; ongoing access to *Teachable Moments in the News*—web-delivered breaking new stories in Solar System exploration, packaged with downloadable lessons and educator training; and ongoing access to our staff educators and planetary scientists. You can also purchase extended programming, including annual classroom programs for up to 8,000 grade K-20 students, events for large public and family audiences, and additional professional development for teachers, all delivered by a national team of scientists, engineers, and educators that travel to your community. All *Voyage* program costs are calculated on a strictly full cost recovery basis.



How do you bring the Solar System to your neighborhood?

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RESEARCH ASSOCIATION

We believe that to continue the legacy of scientific exploration, every generation must be inspired to learn what we know about our world and the Universe, and how we have come to know it.

We also believe that it takes a community to educate a child... and that it takes a network of communities to reach a generation.

Jupiter over Io. Computer-generated image created from Voyager and Galileo data. ARC Science Simulations, © 2000.