

The search for life in the universe begins deep on Earth's ocean floors — and extends out to the stars!

Running time: 30:00
Grade level: 4-12 and general public audiences

Two of the most profound questions humans can ask are “Where do we come from?” and “Are we alone?” It is only natural that we look across the gulfs of space to search for other inhabited worlds.

Oceans In Space is a journey of exploration that seeks out places where conditions are favorable for life to exist. This original and thought-provoking presentation highlights the search for extrasolar planets and an understanding of the conditions necessary to form and sustain life. Inspired in part by the goals of NASA's Origins Program — an effort to answer the enduring questions that spur space exploration — this program introduces audiences to the diversity of life on our home planet even as humans embark on the search for life in the universe.

The story begins on Earth — on the shoreline of a tropical lagoon. The show travels back in time more than five billion years, to trace the origin and evolution of the solar system from a cloud of gas and dust. It then describes the formation of our planet's oceans, and speculates about the places where life could have begun nearly four billion years ago. It presents the three requirements for the nourishment of life on Earth — and most likely anywhere else in the universe: warmth, water, and organic material.



Today life on Earth flourishes in environments ranging from benign to downright alien, and the show examines the variety of life forms that populate our planet: from the creatures of the land to organisms that exist in the extreme conditions around volcanic vents on the ocean floors.

The possibility that life might exist in similar extreme environments elsewhere in the solar system prompts an exploration of two other worlds where the requirements for life might be met: Mars and the icy Jovian moon Europa.

The search for other life-bearing planets moves to starbirth nurseries in the Orion Nebula, and explains one technique today's scientists use to look for extrasolar planets. A science fiction-style ending portrays spaceship crews exploring the shores of an alien ocean far from Earth, in a scene taken from humanity's distant future.

Narrated by Avery Brooks
Written by Carolyn Collins Petersen
Produced by Mark C. Petersen
Original artwork by Michael W. Carroll and Tim W. Kuzniar

Oceans in Space is an original work commissioned in 1997 by the Springfield Library and Museums Association for the Seymour Planetarium of Springfield, Massachusetts.





Science Education Content

Oceans in Space provides an educational focus on the search for extrasolar planets and life in the universe via a set of multidisciplinary themes woven throughout the program that help relate the information presented in the show to the lives of students, families, and the general public.

Show content is relevant in these subject areas:

Earth and Space sciences:

- the origin and evolution of the solar system
- characteristics of Earth
- characteristics of Mars; evolution of Mars surface
- comparative planetology between Earth, Mars, and Europa
- Earth's oceans, their formation and effect on life, climate, and geological processes
- Martian meteorite analyses
- characteristics of Europa
- the formation of other stars and planetary systems
- the detection of planetary systems around other stars

Life sciences:

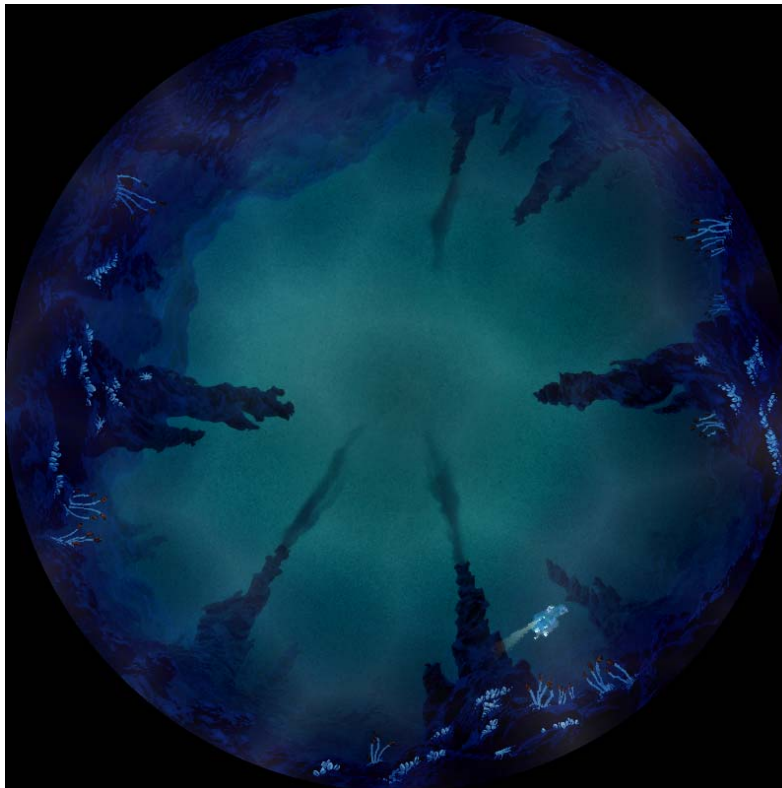
- the evolution of primordial life
- organisms and their environments on Earth
- the search for similar environments elsewhere
- requirements to sustain life (water, warmth, organic material)

Science as a human endeavor:

- exploring the undersea environment with specialized probes
- exploring Mars with telescopes and spacecraft
- exploring Europa with spacecraft
- exploring space with Hubble Space Telescope
- future missions to other planets to search for life

This show adheres to principles put forth in the National Academy of Sciences' Education Standards published in 1996. For more details, visit the NAS Standards Web site at: <http://books.nap.edu/html/nses/html/index.html>.

The submersible research vessel *Jason* studies life forms clustered around undersea volcanic vents ...

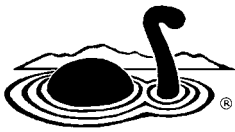


... just one of the ~54,000 dome master frames in this show.



LOCH NESS PRODUCTIONS P. O. BOX 924 NEDERLAND, COLORADO 80466 USA
Phone: +1 303 642 7250 Fax: +1 303 642 7249 Toll-free: 1-888-4-NESSIE
Email: info@lochnessproductions.com Web site: www.lochnessproductions.com

Revised 10 February 2010



FULLDOME SHOW PRICING

We make Loch Ness Productions shows available in the sizes required by the various projector systems they will run on. For pricing purposes, there are four general size categories, **SMALL, MEDIUM, LARGE,** and **X-LARGE.** Contact us for recommendations to help determine which size is right for you.

Each show includes a performance license, which basically provides you with the permission you need to present the show to the public. The license period is 50 years — for all practical purposes, unlimited time. You can read the details on our Web site, so you'll know in advance what the license terms are.

Show Title (Product Code ###)	Product Code	MOVIE SIZE	For systems projecting circles that are:	Price
HUBBLE Vision 2 (HV2) Larry Cat In Space (LCS) MAGELLAN: Report From Venus (MRV)	###-FS	SMALL	smaller than 1300 pixels	\$1595
	###-FM	MEDIUM	1300 to 2000 pixels (or prewarped)	\$2195
	###-FL	LARGE	larger than 2000 pixels	\$3095
	###-FX	X-LARGE	sliced* for multiple projectors	\$4095
Season of Light (SOL)	###-FS	SMALL	smaller than 1300 pixels	\$1895
	###-FM	MEDIUM	1300 to 2000 pixels (or prewarped)	\$2495
	###-FL	LARGE	larger than 2000 pixels	\$3395
	###-FX	X-LARGE	sliced* for multiple projectors	\$4395
Light Years From Andromeda (LYA) MarsQuest (MQ) Oceans In Space (OIS) Seasonal STARGAZING (SSG) Sky Quest (SQ) The Cowboy Astronomer (TCA) The Voyager Encounters (TVE)	###-FS	SMALL	smaller than 1300 pixels	\$1995
	###-FM	MEDIUM	1300 to 2000 pixels (or prewarped)	\$2595
	###-FL	LARGE	larger than 2000 pixels	\$3495
	###-FX	X-LARGE	sliced* for multiple projectors	\$4495

***About slicing:** Multi-projector edge-blended systems require pre-slicing of a show's images into the individual channels needed for each projector. We can slice for most standard configurations. But some theaters may have non-standard configurations, or require the use of proprietary software to slice. In those cases, we'll need to contract with your system provider for some custom encoding. Contact us about costs.

Multiple Copies of Movies...

Ordinarily, the shows we distribute are licensed for installation on a single playback system and/or site. But maybe you need multiple copies of your movies because your institution operates two or more fulldome systems. Or let's say you already have large and sliced video movie files, and then get an additional portable fulldome system and need smaller movies to run on it. For these situations, you'll need to contact us about extending the license from the first show to cover additional installations. Then, buy the appropriate number and size of Additional Movie Files you need, at the discounted prices we offer in the table to the right.

ADDITIONAL MOVIE FILES			
Product Code	MOVIE SIZE	For systems projecting circles:	Price
VMA-S	SMALL	smaller than 1300 pixels	\$1000
VMA-M	MEDIUM	1300 to 2000 pixels (or prewarped)	\$1600
VMA-L	LARGE	larger than 2000 pixels	\$2500
VMA-X	X-LARGE	sliced for multiple projectors	\$3500

Projector/Movie Upgrades...

Let's say you already have our fulldome movies at a small size, but then choose to upgrade to a higher resolution projector system and need to get new, larger movies. You retire your lower-resolution system and no longer run the movies installed on it. For this situation, you'll need to contact us about transferring the license you received with your first show to cover your new installation. Then, simply buy the appropriate size video you need, at the discounted prices we offer in the Video Movie Upgrades table.

VIDEO MOVIE UPGRADES			
Product Code	MOVIE SIZE	For systems projecting circles:	Price
VMU-S	SMALL	smaller than 1300 pixels	\$500
VMU-M	MEDIUM	1300 to 2000 pixels (or prewarped)	\$800
VMU-L	LARGE	larger than 2000 pixels	\$1250
VMU-X	X-LARGE	sliced for multiple projectors	\$1750

The details...

Our fulldome shows are made in fisheye circle form, and ship as ready-to-play *movies*, with audio and video files encoded/sliced/prewarped in formats and resolutions compatible with today's projector systems. **We do not ship dome masters.** We record the files onto data DVDs, USB Flash or external drives.

What we send...

In addition to the show, we also provide the show's fulldome "trailer"; still images that can be used for advertising and promotion; the license agreement, and a reference book in PDF form, containing the show script, production notes, resources, acknowledgements, and additional information.

Installation...

While it may be possible to play videos directly from our distribution media, we expect you'll copy the files onto your fulldome system for optimum performance. We provide pre-written play scripts for some systems; others will simply edit button scripts or enter the necessary system commands to load and play the movies.