

The following is a list of commercially produced full dome programs currently installed on the APS Planetarium Digistar system suitable for secondary science classes as of March 2024. Most programs, unless noted, run approximately 30 minutes. The list is organized by content area however, many shows are suitable across disciplines:

## Astronomy

- **Asteroid – Mission Extreme** takes audiences on a journey 65 million years in the making to discover how asteroids are both a danger and an opportunity for those of us on planet Earth. The danger of course lies in the possibility of a cataclysmic collision; the opportunity is the idea that asteroids could be the steppingstones to other worlds – veritable way stations in space – allowing us to penetrate the deepest realms of the universe. The challenges are enormous, by the idea could ultimately save humankind.
- **Big Astronomy (English and Spanish)** - It takes many people with diverse backgrounds, talents, and skills to run a world-class observatory. In Big Astronomy: People, Places, Discoveries, journey to three world-class observatories in Chile's rugged Andes Mountains and arid Atacama Desert—remote, extreme regions that happen to have the perfect conditions for astronomical research. Along the way, you'll meet an inspiring cast of astronomers, engineers, technicians, and support staff who keep these mega-machines running.
- **Two Small Pieces of Glass** – Traces the evolution of the telescope as it relates to the history of our evolving understanding of the Universe. Topics discussed include, types of telescopes and their characteristics, optics, the electromagnetic spectrum, Doppler shift, stellar characteristics and the relationship to distance versus time as we gaze farther into the galaxy and beyond.
- **Black Holes – The Other Side of Infinity** while focusing on black holes and their formation, also discusses stellar evolution, the early Universe, galactic collisions, and features a simulated through a supermassive black hole lurking at the center of the Milky Way.
- **Living Worlds** – Earth is a planet shaped by life. From the forests that help stabilize our climate, to the winds carrying life-sustaining water and oxygen to far-flung parts of the globe, the fingerprints of life are visible even from many light years away. Living Worlds invites you to journey through space and time to examine life as an essential quality of our home planet. Narrator Daveed Diggs takes you on an exploration of the co-evolution of life and our planet, revealing the ways in which life has transformed Earth's surface and atmosphere over billions of years. Along the way, you'll see how light and color can help us spot a living world, even from great distances. As we ponder what forms life might take in the Solar System and beyond, Living Worlds encourages us to consider how a deeper understanding of our own planet can aid in the search for life across the cosmos, and to reflect on ways we can partner with our living world to ensure our continued survival.
- **Losing the Dark** (short, 6.5 min) A short program about light pollution and its effects which go beyond the loss of our starry night skies to include the biological impact on humans and other life forms.
- **Bad Astronomy** (long 47 min) Astronomer, Dr. Phil Plait, renowned debunker of pseudoscience takes on a number of common misconceptions that continue to proliferate in our postmodern world. Astrology, the lunar landing hoax, UFO's and misinterpretations of ordinary phenomena are among the topics he tackles in this enlightening program.
- **Exploding Universe** follows the "life" of a single proton from its formation following the Big Bang through the formation of the Solar System to the present and beyond. Particle physics and the Hadron accelerator are featured throughout as well as evolution of the Universe.
- **Explore** The story centers around the motive of human travel to Mars, but the show presents and explains a much broader selection of science including history of astronomy, geocentric and heliocentric models, Kepler laws of planetary motion or orbital maneuvers.
- **MOONBASE: The Next Step** Tells the story of this human endeavor, visualizing the scientific and technological advances needed to safely travel 250,000 miles and survive the hostile and alien conditions. How do we establish a foothold on the Moon? Can we explore the vast landscape and extract the resources needed to live there on a permanent basis? Follow our story filled with awe, danger and trepidation and share the wonder of the lunar environment made for the 360 full dome format. Prepare for an immersive and breathtaking lunar experience...
- **Secrets of the Sun** Secrets of the Sun is an intimate look at the Sun's role in the life of our solar system. From nuclear forces churning at the heart of the Sun, to mass ejections of solar material into surrounding space, audiences experience the power of the Sun and its impact on the planets and ultimately life on Earth.

- **Experience the Aurora** Marvel as the Northern Lights shimmer and glisten overhead through time-lapse footage captured in the Arctic Circle. This immersive show is the next best thing to being under Alaska's winter night sky. Unearth the science behind auroras and learn about mankind's quest to find and understand this incredible phenomenon.
- **Ice Worlds** The delicate balance between ice, water and the existence of life has been a topic of scientific inquiry for generations. In travels to the Arctic and Antarctic regions of our planet, we'll examine the ecosystems that exist and thrive there and learn how their survival is connected with our own. Beyond Earth, we'll see how the existence of ice shapes the landscape and the natural systems on other planets and moons in our Solar System.

## Earth / Space

In addition to the above programs these shows work with earth-space science classes as well.

- **Dynamic Earth** shows how the Earth's climate is determined by the many forces playing out on the planet. The program emphasizes the impact human activities are having on our climate.
- **Super Volcanoes** – presents the formation of immense volcanic structures - super volcanoes in the context of the Earth's geologic history. That history is traced from the accretion of planets during Solar System formation, through the formation of the supercontinent, Pangea up to the continuing processes of plate tectonics today. Speculation is offered over the unnerving, eruptive possibility of the region underlying Yellowstone Park in the future.

## Biological Sciences

- **Astronaut** - The exploration of space is the greatest endeavor that humankind has ever undertaken. What does it take to be part of this incredible journey? What does it take to become an astronaut? Experience a rocket launch from inside the body of an astronaut. Explore the amazing worlds of inner and outer space, from floating around the International Space Station to maneuvering through microscopic regions of the human body.
- **Expedition Chesapeake, A Journey of Discovery** (45 minutes) is a story of epic proportions that journeys into the mysterious and beautiful watershed and explores the connections between the millions of people, plants and animals that call it home. This unique, immersive film will be a powerful educational tool for the next generation of environmental stewards and will inspire people to learn how they can restore the health of the watershed and the estuary where they live.
- **Expedition Reef** (closed-captions available) Learn the secrets of the "rainforests of the sea" as you embark on an oceanic safari of the world's most vibrant—and endangered—marine ecosystems. Narrated by Tony Award® winner Lea Salonga, the all-digital Expedition Reef immerses you in the undersea adventure. Along the way, discover how corals grow, feed, reproduce, and support over 25% of all marine life on Earth—while facing unprecedented threats from climate change, habitat destruction, and overfishing. \* This show is currently used for 4<sup>th</sup> grade but appeals to a general audience.
- **Flight of the Butterfly** The monarch butterfly is a true marvel of nature. Weighing less than a penny, it makes one of the longest migrations on Earth across a continent to a place it has never known. Follow the monarchs' perilous journey and join hundreds of millions of real butterflies in the remote mountain peaks of Mexico, with breathing cinematography from an award winning team including Oscar winner Peter Parks. Be captivated by the true and compelling story of an intrepid scientist's 40-year search to find the monarchs' secret hideaway. Kleenex recommended.
- **Habitat Earth** (closed-captions available) Living networks connect and support life from large and small – from colonies of tiny microbes and populations of massive whales to ever-expanding human societies. In California Academy of Sciences' latest original planetarium show, Habitat Earth, discover what it means to live in today's connected world.
- **Living Worlds** – Earth is a planet shaped by life. From the forests that help stabilize our climate, to the winds carrying life-sustaining water and oxygen to far-flung parts of the globe, the fingerprints of life are visible even from many light years away. Living Worlds invites you to journey through space and time to examine life as an essential quality of our home planet. Narrator Daveed Diggs takes you on an exploration of the co-evolution of life and our planet, revealing the ways in which life has transformed Earth's surface and atmosphere over billions of years. Along the way, you'll see how light and color can help us spot a living world, even from great distances. As we ponder what forms life might take in the Solar System and beyond, Living Worlds encourages us to consider how a deeper understanding of our own planet can aid in the search for life across the cosmos, and to reflect on ways we can partner with our living world to ensure our continued survival.
- **Natural Selection** – a biographical presentation of the work of Charles Darwin leading to our present day understanding of biological evolution through the process of natural selection. (41 minutes)

**Physics** In addition to programs listed in Astronomy, these programs can be of particular use to Physics classes.

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### **Engineering**

- **MOONBASE: The Next Step** Tells the story of this human endeavor, visualizing the scientific and technological advances needed to safely travel 250,000 miles and survive the hostile and alien conditions. How do we establish a foothold on the Moon? Can we explore the vast landscape and extract the resources needed to live there on a permanent basis? Follow our story filled with awe, danger and trepidation and share the wonder of the lunar environment made for the 360 full dome format. Prepare for an immersive and breathtaking lunar experience...