

Astronomy

ALIEN QUEST

26 min; color; j,h,c,a

1/2" VHS **FC1824,VH**

Destination Cosmos Series - Uses narration, computer generated graphics, and images from the Voyager spacecraft and the Hubble telescope to discuss the possibility of life on other planets in our solar system and galaxy. Discusses the possibility of finding life on Jupiter's moon Europa in the liquid water beneath the surface of ice covering the oceans. Theorizes what those life forms might look like and discusses the potential of finding life on other solar systems. (INVINCF;LAEM;c1998)

Astronomy; Planets; Solar system

ALONE IN SPACE

25 min; color; j,h,c,a

1/2" VHS **FC1766,VH**

Wonders of the Universe Series - Ponders the possibility of the existence of life on other planets. Considers the engineering needed to make Mars habitable in the future. Uses computer graphics to look closely at the planets and simulate possible scenarios. Questions why life developed on Earth and not on Venus, Earth's virtual twin in size and density, or on Mars. Explains Earth's beginnings and the processes that occurred over millions of years which eventually led to the creation of life forms. (AMBROSV;c1995)

Earth; Planets

THE ASCENT OF MAN: A PERSONAL VIEW BY J. BRONOWSKI SERIES

Dr. Jacob Bronowski charts humanity's progress from the vantage point of the scientist/philosopher.

THE ASCENT OF MAN: A PERSONAL VIEW BY J. BRONOWSKI, NO. 6: THE STARRY MESSENGER

55 min; color; h,c,a

1/2" VHS **CA1326,VH**

Opens on Easter Island with speculation about the sculptured heads. Continues on to Europe to review the work of Copernicus, Galileo, and Kepler. Explains that the telescope serves as the first instance of "practical science." (TIMELIF;p1975)

Astronomy; Science-History; Scientists; World history

ASTRONOMY

23 min; color; h,c

1/2" VHS **FC1762,VH**

The Science Show series - Discusses our knowledge of the solar system and studies how planets are born and die. Explains how life on our planet evolved due to favorable conditions for chemical reactions. Looks at the phenomenon of "black holes" and questions the existence of extra-terrestrial life on other planets. Illustrates some powerful tools used to explore the galaxies, including radio and large optical telescopes, explaining how they work. (COSCIEN;FFHS;c1995)

Astronomy; Solar system

BIG BANG, BIG MYSTERY

25 min; color; j,h,c,a

1/2" VHS **FC1774,VH**

Wonders of the Universe Series - Explores cosmology's currently-held theory of the creation of the universe: the hypothesis that everything started in a cataclysmic eruption, the "Big Bang." Frame by frame, winds back the nano-seconds before the Big Bang to provide an explanation for how the galaxies, stars, and planets we know about today have evolved over the past 15 billion years. (DISCOMI;AMBROSV;c1995)

Astronomy

BIRTH OF THE STARS AND THE GREAT COSMIC CYCLE

58 min; color; i,j,h,c,a

1/2" VHS **FC1694,VH**

Origin and Evolution of the Universe Series - Introduces star formation and other aspects of stellar evolution. Uses new technology such as infrared cameras to present current ideas and information about star formation. Illustrates star formation from birth to death through observations of the youngest known stars as well as familiar stars near Earth. (ROYALIN;FFHS;c1990)

Stars

CAUSES OF THE SEASONS (REVISED VERSION)

13 min; color; i,j

1/2" VHS **FC1449,VH**

Illustrates, through animation, the tilt of the earth's axis, the rotation of the earth on its axis, and the revolution of the earth around the sun, which causes changes in the seasons. Clarifies concepts of day and night, the angle at which the sun's rays strike the earth's surface, and the opposite seasons in northern and southern hemispheres. Shows live action scenes of each season. (CORT;c1972)

Seasons

COMETS, METEORS AND ASTEROIDS (SECOND EDITION)

12 min; color; i,j,h

1/2" VHS **FC1598,VH**

Space Science Series (Cort) - Introduces the minor members of the solar system, formed from the same nebula as the sun and the planets. Charts the course of Halley's Comet and examines the wealth of information found in ancient meteorites recovered from Antarctica. (CORT;c1986)

Solar system

COPERNICUS AND HIS WORLD

24 min; color; h,c,a

1/2" VHS **FC1715,VH**

Outlines the state of thought about the universe at the time Copernicus was a student. Describes the facilities available to him at the University of Cracow where he was a student, and contrasts his work as a scholar with his role as a canon of the Cathedral at Frombark, Poland. Considers his arguments placing the sun at the center of the solar system, and why he might have originally decided that the Ptolemaic conception of the solar system was flawed. (TALKSBE;MEDG;c1991)

Astronomers; Science-History; Solar system

COSMIC CATASTROPHES

25 min; color; j,h,c,a

1/2" VHS **FC1769,VH**

Wonders of the Universe Series - Animates the impacts and explosions that have shaped our planet, the solar system, the galaxy, and the universe. Allows viewers to swoop over craters on Earth and Mars, fly a collision course on an asteroid, witness the moon born of the earth, and see how a protoplanet tipped over the planet Uranus. Travels forward to see the death of the sun and backward to watch the formation of novae and supernovae. Speculates on a possible demise of the universe: "the Big Crunch." (DISCOMI;AMBROSV;c1995)

Astronomy

Astronomy

COSMIC COLLISIONS

25 min; color; j,h,c,a

1/2" VHS **FC1819,VH**

Destination Cosmos Series - Uses narration, computer generated graphics, and photographs from the spacecraft Galileo to examine the phenomena of asteroids, meteorites, and comets. Discusses the Asteroid Belt between Mars and Jupiter, and the methods used by scientists to study these asteroids. Examines the dangers posed to Earth by collisions with asteroids, and suggests potential solutions to these threats. Discusses comets seen from Earth and their probable origins in the Oort Cloud beyond our solar system. Examines the spacecraft Stardust, designed to collect comet dust for scientific analysis, and discusses research plans for the future. (LAEM;c1998)

Astronomy; Solar system

COSMIC NEIGHBORHOOD

25 min; color; j,h,c,a

1/2" VHS **FC1820,VH**

Destination Cosmos Series - Uses narration, computer-generated graphics, and space photography to illustrate the relationship between Earth and its moon, and to introduce possible plans to build a space station on the moon. Discusses how Earth's rotation and its relationship to the moon and the sun creates seasons and affects Earth's climate. Examines the information scientists currently have on Venus and Mercury, and the remaining questions to be answered. Utilizes information and images from spacecraft Galileo, Mariner 10, Magellan, and the Russian spacecraft, NERA. (LAEM;c1998)

Astronomy; Earth; Moon; Planets; Solar system

THE COUNTDOWN TO THE INVISIBLE UNIVERSE

58 min; color; h,c,a

1/2" VHS **FC1580,VH**

Nova Series - Demonstrates how the Infrared Astronomical Satellite (IRAS) scans the universe, discovering never-before-seen comets, stars, galaxies, and other wonders. Points out that this new technology can change the way we "see" the Universe. *Closed Captioned.* (WGBHTV;CORT;r1987)

Astronomy

DEATH OF A STAR

58 min; color; h,c,a

1/2" VHS **FC1583,VH**

Nova Series - Tracks the discovery, on February 23, 1987, of a supernova in the Large Magellanic Cloud, a satellite galaxy to the Milky Way and our closest galactic neighbor. Points out that this event, the closest in nearly 400 years, has produced a tremendous wave of research in areas ranging from observational astronomy to theoretical physics, with unparalleled opportunities to test different models of stellar evolution. *Closed Captioned.* (WGBHTV;CORT;c1987)

Astronomy; Stars

DESTINATION COSMOS SERIES

ALIEN QUEST [FC1824]

COSMIC COLLISIONS [FC1819]

COSMIC NEIGHBORHOOD [FC1820]

DISTANT WORLDS [FC1822]

REACHING OUT [FC1823]

SECRETS OF THE STARS [FC1821]

DISTANT WORLDS

25 min; color; j,h,c,a

1/2" VHS **FC1822,VH**

Destination Cosmos Series - Uses narration, computer generated graphics, and images from the Hubble Space Telescope to present scientists' research concerning Jupiter, Saturn, Neptune, and Uranus. Explains how the Hubble Space Telescope works and discusses the questions that remain unanswered about these planets. Describes how planets are formed and how our solar system will change dramatically in five billion years. (INVINCF;LAEM;c1998)

Astronomy; Planets; Solar system

EARTH TO MARS—THE NEXT FRONTIER

25 min; color; i,j,h,c,a

1/2" VHS **FC1710,VH**

An Everyman's Guide to the Planets series - From space, Earth appears ringed in blue as a result of water vapor in the atmosphere. The atmosphere extends about 248 miles above the earth, and includes oxygen, nitrogen, carbon dioxide, helium and krypton. Explores the water cycle, the evolution of life, and our satellite, the moon. Only half the size of Earth, Mars appears red because of an abundance of hydrogen oxide. (PACMEDA;LAEM;c1991)

Atmosphere; Earth; Planets; Solar system

ENTERPRISE III SERIES

For descriptions see individual titles:

SATELLITES LOST AND FOUND [BC0298]

AN EVERYMAN'S GUIDE TO THE PLANETS SERIES

This series hosted by Joseph Campanella, helps us to better understand our solar system by examining the characteristics of all the planets. Shows beautiful views of the planets and new insights into inter-planetary study.

EARTH TO MARS—THE NEXT FRONTIER [FC1710]

FROZEN WORLDS AT THE OUTER LIMITS

[FC1711]

THE GAS GIANTS—STARS THAT FAILED [FC1709]

THE INNER PLANETS [FC1708]

THE FIRE OF CREATION

54 min; color; h,c,a

1/2" VHS **NC2427,VH**

Examines the cycles and systems of nature and how humans can live in harmony with them. Specifically examines fire as an element of creative destruction; the sun as a cosmic source of energy; and the soil as a system of biodiversity, with examples from Balinese agricultural systems to the folkways of Australian aborigines and organic farming in the U.S. Interviews cosmologist Brian Swimme, historian of fire Stephen Pyne, author and scientist Tim Flannery, social scientist Elaine Ingham, and anthropologist Stephen Lansing. (BULFROG;c2002)

Astronomy; Ecology; Fire

FOR ALL MANKIND

80 min; color; j,h,c,a

1/2" VHS **AC0077,VH**

America's first manned flights to the moon are shown through rare footage shot and narrated by the Apollo astronauts. *Closed Captioned.* (APOLLOA;FAMPROP;NGS;r1992)

Moon; Science—History; Space flight

Astronomy

FROZEN WORLDS AT THE OUTER LIMITS

25 min; color; i,j,h,c,a

1/2" VHS **FC1711,VH**

An Everyman's Guide to the Planets series - Discovered by William Herschel in 1781, Uranus is the most unusual planet in our solar system. Tilted over 90 degrees on its side, it has at least ten moons. Four times the size of Earth, Uranus generates an "electro-glow" through its atmosphere of ammonia and methane. Neptune, like Saturn, has rings. It is 30 times Earth's distance from the sun; at 200 degrees, it generates more heat on its own than it receives from the sun. Pluto was postulated by Percival Lowell and finally located by Clyde Tombaugh in 1930. Much smaller than Lowell had anticipated, Pluto has recently been found to have an atmosphere. (PACMEDA;LAEM;c1991)

Planets; Solar system

GALACTIC SPLENDORS

25 min; color; j,h,c,a

1/2" VHS **FC1775,VH**

Wonders of the Universe Series - With access to the world's best astro-photographs—in particular the 1,500 optical plates of David Malin at the Anglo-Australian Observatory—takes a spectacular photographic tour of our galaxy, the Milky Way. Drift into wondrous nebulae, clouds of dust and gas, and take side trips to stars. From the outer reaches of our spiral galaxy, with hot blue stars and developing nebulae, fly to the galactic center, a junkyard of old stars, dark mysterious dust, and perhaps an incredible black hole. (DISCOMI;AMBROSV;c1995)

Astronomy

GALILEO'S SONS

74 min; color; h,c,a

1/2" VHS **CC6506,VH**

Profiles a group of Jesuit astronomers whose work is supported by the Vatican, showing their dedicated service to education and science as well as to the Catholic Church. Points out the valuable relationship the Church has had with science over the past few centuries, and contrasts it with commonly-held notions of religion's often negative view of science, particularly in Galileo's trial for heresy. Interviews students and secular scientists as well as the priests to provide insight about the complex relationship between religion and science. Narrated by Maggie Huculak. (BULFROG;c2004)

Astronomers; Christianity; Science—History

THE GAS GIANTS—STARS THAT FAILED

25 min; color; i,j,h,c,a

1/2" VHS **FC1709,VH**

An Everyman's Guide to the Planets series - Between the "inner" and "outer" planets there is an asteroid belt of ice and chunks of rock. With the exception of Pluto, the outer planets are largely comprised of gas, though their moons are solid. Hurricanes on these planets move at speeds of 800 miles per hour. Jupiter is larger than all the other planets put together, 1300 times the size of Earth, with a diameter of 89,000 miles. The outer layer of Saturn consists mostly of hydrogen; it may have a diamond core. Its rings, first observed by Galileo, are 250,000 miles wide but less than 100 yards thick. Titan, its largest moon (second largest in the solar system), has an atmosphere of nitrogen. (PACMEDA;LAEM;c1991)

Planets; Solar system

THE GRAND DESIGN

58 min; color; i,j,h,c,a

1/2" VHS **FC1693,VH**

Origin and Evolution of the Universe Series - Presents several basic concepts for understanding the universe as a whole in a Royal Institution (London) Christmas Lecture by Professor Malcolm Longair. Through discussion of relative size, the distribution of galaxies, and other aspects of the universe, provides a detailed look at different understandings of the shape and design of the universe. Uses recent pictures from space-based and ground-based telescopes to illustrate techniques for examining the universe. Offers an explanation for the difference between the universe as it appears to us in visible light and as it appears in other wavelengths of the spectrum, as well as the relationship between the wavelength of the radiation that comes from an object and the temperature of that object. (ROYALIN;FFHS;c1991)

Astronomy

HALLEY'S COMET: ONCE IN A LIFETIME

58 min; color; h,c,a

1/2" VHS **FC1529,VH**

Nova Series - Charts the worldwide preparations for the late 1985 appearance of Halley's Comet, which passes near the earth every 75 years. Follows amateur comet hunters as well as astronomers and spacecraft armed with specialized equipment as they prepare to investigate one of the solar system's most famous celestial bodies. (WGBHTV;CORT;c1986)

Astronomy

HOME STAR

25 min; color; j,h,c,a

1/2" VHS **FC1770,VH**

Wonders of the Universe Series - Explains the birth, life, and death of our nearest star, the sun. Uses solar topography and computer graphics to explore the inner workings of this nuclear furnace. Depicts the fusion of hydrogen atoms into helium and the million-year journey of a photon from the core of the sun to the surface, followed by its 8.5 minute zip from the sun to Earth. Also explores the sunscape: prominences, spicules, sun quakes and flares, as well as solar wind and the auroras. Speculates how the sun will one day become a red giant, then contract and die. (DISCOMI;AMBROSV;c1995)

Sun

HOW WE KNOW THE EARTH MOVES (REVISED VERSION)

11 min; color; i,j

1/2" VHS **FC1452,VH**

Uses models and animation to demonstrate that the earth rotates on its axis and revolves about the sun. Points out the observations of the ancient Greeks about the movement of the stars and describes Foucault's use of a pendulum to prove the rotation of the earth. Explains the revolution of the earth around the sun by the phenomenon of star shift and includes a simple experiment that enables the viewer to experience this effect. (BFA;c1977)

Astronomy; Earth

THE INNER PLANETS

25 min; color; i,j,h,c,a

1/2" VHS **FC1708,VH**

An Everyman's Guide to the Planets series - A survey of the inner planets of our solar system begins with Mercury, where the temperature ranges from around 900 to around -300 degrees F. Pock-marked like our moon and gradually shrinking, Mercury has an orbit of about 88 days. For many years it was believed that tropical clouds covered Venus's surface, but current data shows this cover is really an atmosphere of "smog," with an upper layer of sulfuric acid. (PACMEDA;LAEM;c1991)

Planets; Solar system

THE INVISIBLE COSMOS

17 min; color; j,h,c,a

1/2" VHS **FC1767,VH**

Wonders of the Universe Series - Discusses radiation in space, invisible to the naked eye, and introduces the various sensors used to detect it. Compares optical astronomy with other methods, including radio, infrared, ultraviolet, and gamma ray astronomy, which are able to show images that are outside the range of optical telescopes. Demonstrates how infrared detectors reveal stars and nebulae which are otherwise obscured by cosmic dust. Introduces COBE, the cosmic background explorer, which can look back to within half a million years of the beginning of the universe, and has recorded some remarkable data supporting the theory of how galaxies are formed from dust and gas, as proposed in the Big Bang theory. (AMBROSV;c1995)

Astronomy; Radiation

LIGHT FANTASTIC

24 min; color; j,h,c,a

1/2" VHS **FC1768,VH**

Wonders of the Universe Series - Presents an introduction to the various tools used to study the universe. Discusses different types of telescopes and how they work. Explains infrared radiation and radio images, using computer graphics to illustrate how much they can reveal. Traces the history of telescope-building and includes information about Edwin Hubble, for whom the Hubble Space Telescope was named. (AMBROSV;c1995)

Astronomy

MACNEIL/LEHRER NEWSHOUR SERIES

For descriptions see individual title:

NEWS HOUR WITH JIM LEHRER: APRIL 10, 1997 [CC5323]

MECHANICAL UNIVERSE SERIES

Makes use of intricate sets and demonstration experiments, on-location shooting of such places as Newton's home and Galileo's haunts, and sophisticated computer-animation sequences. Based on the physics course developed by Dr. David Goodstein and introduced at the California Institute of Technology.

MECHANICAL UNIVERSE, NO. 9: MOVING IN CIRCLES

30 min; color; c

1/2" VHS **FC1485,VH**

Looks at Plato's theory that stars are heavenly beings that orbit the earth with uniform perfection, uniform speed, and perfect circles. (ANBERG;FI;p1985)

Astronomy; Science-History

MECHANICAL UNIVERSE, NO. 11: GRAVITY, ELECTRICITY, MAGNETISM

30 min; color; c

1/2" VHS **FC1487,VH**

Explains the gravitational force between two masses, the electric force between two charges, and the magnetic force between two poles. Shows how all three phenomena take essentially the same mathematical form. (ANBERG;FI;p1985)

Electricity; Gravitation; Magnetism

MISSION TO PLANET EARTH

60 min; color; j,h,c,a

1/2" VHS **AC0082,VH**

Space Age Series - Details how the same technology used to explore distant planets is also being utilized to examine Earth. Shows that the observation of space has, in turn, transformed views of Earth and may help in the management of the Earth's future. *Closed Captioned.* (WQEDTV;FI;c1992)

Artificial satellites; Astronomy; Earth

MOONFLIGHT

25 min; color; j,h,c,a

1/2" VHS **FC1765,VH**

Wonders of the Universe Series - Uses computer graphics to lead a tour of the planets and their moons. Includes images from the Hubble Space Telescope and the Voyager satellite. Looks at the rings of Uranus, Neptune, and Saturn. Describes the characteristics of a moon and uses images from Voyager to illustrate. Describes our moon as inert and barren, while some others, for example, are volcanically active. (AMBROSV;c1995)

Astronomy; Moon; Planets

NEPTUNE'S COLD FURY

58 min; color; h,c,a

1/2" VHS **AC0076,VH**

Nova Series - Chronicles Voyager II's visit to Neptune and its largest moon, Triton. Reveals surprising facts about Neptune's rings, moons, and geologic activity, such as enormous storm systems that range the planet at high velocities, and about Triton, whose surface is covered with geysers that produce 200-mile high plumes of frozen gases. Reviews the navigational and engineering complexity of Voyager II's flyby, a milestone in the history of space exploration. Uses a variety of audio and visual materials produced by NASA, including computer enhancements of film transmitted by the spacecraft. Hosted and narrated by Patrick Stewart. *Closed Captioned.* (WGBHTV;CORT;c1991)

Astronomy; Planets

NEWS HOUR WITH JIM LEHRER: APRIL 10, 1997

57 min; color; c,a

1/2" VHS **CC5323,VH**

Macneil/Lehrer Newshour Series - After summarizing current news events, presents four main stories.

(1)Treasury Secretary Robert Rubin discusses his trip to Vietnam to sign an agreement for the Vietnamese government to pay \$150 million to the U.S. for debts incurred before the war and describes the development of a free market economy in Vietnam. (2)Martin Lee, a leader of the Democratic Party in Hong Kong, receives an award from the National Endowment for Democracy and addresses what the U.S. should do to help Hong Kong maintain democracy after the July 1997 takeover by China. (3)Discusses new technologies that permit the wireless transmission of television signals, an improvement on the current cable system. Satellite dishes have a high cost and don't provide local channels, though they can carry many national channels. Rupert Murdoch's News Corporation and Echostar may merge to provide both local and national channels. Discusses copyright laws with regard to transmitting stations. In a different approach, Pacific Bell has begun transmission of 150 channels, both local and national, from microwave towers to homes with special antennas and receivers. (4)Galileo Project scientist Torrence Johnson and geologist Michael H. Carr discuss the possibility for life on Europa, a moon of Jupiter which may contain "warm ice" or liquid water under its surface. (PBSV;c1997)

Artificial satellites; Hong Kong; Planets; Television; Vietnam

NOVA SERIES

For descriptions see individual titles:

THE COUNTDOWN TO THE INVISIBLE UNIVERSE [FC1580]

DEATH OF A STAR [FC1583]

HALLEY'S COMET: ONCE IN A LIFETIME [FC1529]

NEPTUNE'S COLD FURY [AC0076]

THE PLANET THAT GOD KNOCKED ON ITS SIDE [FC1581]

ROCKY ROAD TO JUPITER [FC1582]

RUSSIAN RIGHT STUFF: THE DARK SIDE OF THE MOON [AC0074]

RUSSIAN RIGHT STUFF: THE INVISIBLE SPACEMAN [AC0075]

TO BOLDLY GO.... [AC0073]

TO THE MOON [AC0084]

Astronomy

ONCE IN A LIFETIME

25 min; color; j,h,c,a

1/2" VHS **FC1772,VH**

Wonders of the Universe Series - Features Halley's Comet, history's most famous, which sweeps through the inner solar system once every 76 years, as regular as clockwork. For a few weeks it's even visible from Earth; then, as quietly as it arrived, the comet disappears again into the oblivion of deep space for another three-quarters of a century. Investigates the mysteries of Halley's Comet, a cosmic event that has fascinated and frightened people for three thousand years. Also recreates the dramatic plunge of Comet Shoemaker Levy into the giant planet Jupiter. (DISCOMI;AMBROSV;c1995)

Astronomy

ORIGIN AND EVOLUTION OF THE UNIVERSE SERIES

The Royal Institution Christmas Lectures, explores the origin and evolution of the universe using the latest in scientific techniques to explain and suggest possible answers to some of the deepest problems in modern astrophysics.

BIRTH OF THE STARS AND THE GREAT

COSMIC CYCLE [FC1694]

THE GRAND DESIGN [FC1693]

THE ORIGIN OF GALAXIES [FC1696]

THE ORIGIN OF QUASARS [FC1695]

THE ORIGIN OF THE UNIVERSE [FC1697]

THE ORIGIN OF GALAXIES

58 min; color; i,j,h,c,a

1/2" VHS **FC1696,VH**

Origin and Evolution of the Universe Series - Explores possible explanations for the origin of galaxies and of the universe itself. Uses the theory of an expanding universe to explain the formation of galaxies since the "Big Bang." Includes information about the new technology and techniques being used to study both astronomy and microphysics. (ROYALIN;FFHS;c1991)

Astronomy; Physics

THE ORIGIN OF QUASARS

58 min; color; i,j,h,c,a

1/2" VHS **FC1695,VH**

Origin and Evolution of the Universe Series - Focuses on the origins of remarkable phenomena such as quasars and black holes. Discusses past discoveries and current research on the origins of different inter-galactic nuclei. Indicates how radio emissions from quasars provide information about their mass, size, and other qualities, as well as clues to their origins. Suggests an explanation for the extraordinary luminosity of quasars and considers the function and effects of black holes on our universe. (ROYALIN;FFHS;c1990)

Astronomy

THE ORIGIN OF THE UNIVERSE

58 min; color; i,j,h,c,a

1/2" VHS **FC1697,VH**

Origin and Evolution of the Universe Series - Discusses current research on the four major problems of cosmology: (1) why the universe is isotropic, that is, the same in all directions; (2) why the universe is so close to the critical density for it to keep expanding forever instead of collapsing under the pull of its own gravity; (3) why there are not equal amounts of matter and antimatter; and (4) the origin of the fluctuations in the density of matter that have caused galaxies to be formed. Demonstrates how the "big bang" theory explains why the universe is expanding, the presence of microwave background radiation in space, and the abundance of light elements. Indicates that new research on very high energy physics is serving as a laboratory for understanding cosmology. (ROYALIN;FFHS;c1990)

Astronomy

PBL SERIES

For descriptions see individual titles:

THE VIOLENT UNIVERSE [FB1238]

PLANET EARTH SERIES

Examines the fundamentals of geophysics, revealing scientific insights and discoveries as internationally known scientists share their theories about the formation of the earth, its oceans and climate, and the universe beyond. Uses computer graphics, special effects, and footage shot on all seven continents, in the oceans, and in outer space. Focuses on geologic time, oceanography, climatology, mineral and energy resources, the sun, comparative planetology, and the earth's future.

PLANET EARTH, NO. 4: TALES FROM OTHER WORLDS

60 min; color; c

1/2" VHS **FC1506,VH**

Explains why Earth is unique among the planets. Uses special effects and footage shot on location in space to explore the great failed star of Jupiter, the raging volcano of Io, and for the first time, looks at the full surface of Venus. Searches for a yet undiscovered Death Star which may tell us not only what may have killed the dinosaurs, but also millions of other species. (ANBERG;FI;p1986)

Earth; Solar system

PLANET EARTH, NO. 6: THE SOLAR SEA

60 min; color; c

1/2" VHS **FC1508,VH**

Discusses the many and varied effects of the sun. Uses infra-red and X-ray satellite eyes to look into the interior of the sun and peel away layers never before imagined. Looks at how the sun gives life, creates weather, warms the oceans, land, and even the ice. (ANBERG;FI;p1986)

Sun

THE PLANET THAT GOD KNOCKED ON ITS SIDE

58 min; color; h,c,a

1/2" VHS **FC1581,VH**

Nova Series - Examines findings of astronomers that resulted from data and images transmitted in January 1986 by Voyager 2. Explores the maneuvering complications encountered by the spacecraft as a result of Uranus' unusual axis orientation. Speculates on events in the early history of the planet that may have shaped it and its strange collection of moons. *Closed Captioned.* (WGBHTV;CORT;r1987)

Planets

PLANETS (SECOND EDITION)

24 min; color; i,j,h

1/2" VHS **FC1599,VH**

Space Science Series (Cort) - Uses telescopic photographs, computer simulation, and motion pictures from NASA space probes of Mercury, Venus, Mars, Jupiter, Uranus, and Saturn to explain the development and characteristics of the planets in our solar system. Provides evidence about how our solar system was formed 4.5 billion years ago from a great swirling cloud of dust and gases. (CORT;r1986)

Planets

QUEST FOR PLANET MARS

57 min; color; j,h,c,a

1/2" VHS **AC0078,VH**

Space Age Series - Delves into the fascination of Mars and examines why reaching the Red Planet remains an irresistible lure to explorers. Despite considerable risk, enormous cost, and technological barriers, scientists contend that humans will land on Mars in the 21st century. *Closed Captioned.* (WQEDTV;FI;c1992)

Planets

Astronomy

REACHING OUT

25 min; color; j,h,c,a

1/2" VHS **FC1823,VH**

Destination Cosmos Series - Uses narration, computer generated graphics, and space photography to examine the possibilities of building a long-term base on the planet Mars. Discusses the process of "terra-forming" and its potential application on Mars. Examines the history of space exploration and robot spaceship technology currently being developed for research and potential colonization of our solar system. (INVINCF;LAEM;c1998)

Astronomy; Planets; Solar system; Technology

THE RING OF TRUTH SERIES

Award-winning scientist Philip Morrison leads viewers on an odyssey through the inner workings of science, sharing his thoughts on the underlying truth behind everyday experiences.

RING OF TRUTH, PROGRAM 6: DOUBT

60 min; color; h,c

1/2" VHS **FC1608,VH**

Presents the fascinating world of unanswered questions that drives and excites the scientific mind of Philip Morrison and his colleagues. Follows the breakthroughs of Cecilia Payne and her work in spectral photography as a means of finding the origins of the universe. Joins an astronomer at Kitt Peak National Observatory for a night of experimentation and discovery. (PBSAI;PBSV;p1987)

Astronomy; Science—Methodology

RISE OF SCIENCE SERIES

COPERNICUS AND HIS WORLD [FC1715]

ROCKY ROAD TO JUPITER

58 min; color; h,c,a

1/2" VHS **FC1582,VH**

Nova Series - Presents questions in relation to the future of the U.S. space program, surveying, in particular, the status of Project Galileo, an orbiter that had been scheduled to probe the outer planets prior to the Challenger tragedy. Presents an overview of the U.S. planetary space program's pre-Challenger successes and investigates the role the shuttle played in molding U.S. space policy. *Closed Captioned.* (WGBHTV;CORT;r1987)

Space flight

RUSSIAN RIGHT STUFF: THE DARK SIDE OF THE MOON

58 min; color; h,c,a

1/2" VHS **AC0074,VH**

Nova Series - Details the Russian race to the moon and the Soviet space program in general. Uses both interviews with Soviet cosmonauts and footage of the time to document the space program's achievements and failures. Shows, for the first time, the M-1 moon rocket that was to carry the USSR to the moon in late 1968 to early 1969. Shows several minutes of rare footage from the first man in space to the station program (Salyut) just finishing. *Closed Captioned.* (WGBHTV;CORT;c1991)

Soviet Union (1917-1991); Space flight

RUSSIAN RIGHT STUFF: THE INVISIBLE SPACEMAN

58 min; color; h,c,a

1/2" VHS **AC0075,VH**

Nova Series - Covers the history of the Soviet space program from before Sputnik I to the abortive attempts at reaching the moon. Profiles the driving force behind this program, the visionary Sergei Korolev, who was so important to the program and the future of the USSR that he was never referred to by name, but only as "the Comrade Chief Designer." Uses both footage and interviews with Russian and politicians to document this one man's influence on the Soviet space program. *Closed Captioned.* (WGBHTV;CORT;c1991)

Scientists; Soviet Union (1917-1991); Space flight

THE SACRED BALANCE SERIES

THE FIRE OF CREATION [NC2427]

SATELLITES LOST AND FOUND

28 min; color; h,c,a

1/2" VHS **BC0298,VH**

Enterprise III Series - Chronicles Lloyd's of London's attempt to recover two lost and insured satellites through a salvage mission operated by NASA—success would greatly improve the uncertain future of space technology but failure would mean an even greater financial loss for Lloyd's. Explains the risk-taking process as it relates to new space technologies and speculative investments. Demonstrates how government and private industry worked together to get the first space rescue mission off the ground. Contains live-action footage of the rescue operation. (WGBHTV;MTI;c1981)

Artificial satellites; Business; Space flight

THE SCIENCE SHOW SERIES

ASTRONOMY [FC1762]

THE THEORIES OF PHYSICS [FC1817]

SECRETS OF THE STARS

25 min; color; j,h,c,a

1/2" VHS **FC1821,VH**

Destination Cosmos Series - Uses narration, computer generated graphics, and images from the Hubble Space Telescope to present an examination of how our sun works compared with other stars in the Milky Way galaxy. Discusses how stars die and what will happen to the planets in our solar system when the sun becomes a white dwarf approximately five billion years from now. Examines red dwarfs, super novae, and black holes, and explains different methods that scientists use to study stars. (INVINCF;LAEM;c1998)

Astronomy; Planets; Solar system; Stars; Sun

SHADOWS AND SIGNS

25 min; color; j,h,c,a

1/2" VHS **FC1776,VH**

Wonders of the Universe Series - A look at the heavens through the eyes of the ancients and the not so ancient. With the romance of a total eclipse as its starting point, uses computer graphics to reconstruct the fabulous observatories of antiquity. From Stonehenge to Carnac, from Babylon to the Mayan temples of Central America, we explore the skies of yesterday. Suggests that the ancients may have actually been able to predict celestial events and describes how modern astronomers explain moon phases, planetary motions, and solar eclipses. (DISCOMI;AMBROSV;c1995)

Astronomy; Science—History

Astronomy

SOLAR ACTIVITY

20 min; color; j,h,a

1/2" VHS **FC1690,VH**

Explains the nature of the sun's surface and atmosphere through simple experiments and examines such activity as sun spots, solar flares, and prominences. Shows how the study of sunlight can tell us much about the physical composition of the sun. Demonstrates how a spectroscope allows us to study the range of sunlight's wavelengths, which are seen as colors. (EDUCMI;AIMS;c1990)

Sun

THE SOLAR SYSTEM (NEW EDITION)

28 min; color; j,h,c,a

1/2" VHS **NC2010,VH**

Surveys current knowledge of the sun, the nine planets and their moons, asteroids, comets, and meteors. Features animated drawings, special photographs of the sun obtained by Skylab astronauts, Mariner 10 photographs of Mercury, film of the surface of the Earth's moon by Apollo astronauts and information recorded by instruments they left behind, photographs of Mars taken by the Viking lander and orbiter, and Pioneer 11 and Voyager One photographs of Jupiter and Saturn. (ARMADA;IFB;c1982)

Solar system

SOLAR SYSTEM SUPERLATIVES

25 min; color; j,h,c,a

1/2" VHS **FC1773,VH**

Wonders of the Universe Series - The biggest, the smallest, the hottest, the coldest, the highest, the deepest: a tour of the record-breaking wonders of the solar system. Marvels at the spectacular through unique animated graphics that allow the viewer to fly down the greatest gorges, buzz the highest volcanoes, and gawk at Jupiter's Great Red Spot, a tempest several times larger than Earth. Also explores a planet where each year lasts 76 Earth years and another where each day is longer than one year on Earth. (DISCOMI;AMBROSV;c1995)

Astronomy; Solar system

SPACE AGE SERIES

Reveals the way space science and exploration reflect and shape our culture, our economic fabric, our political and military environment, and the state of global relations. Use worldwide location filming, historical and dramatic recreations, special effects, and pre-creations of future space missions. *For descriptions see individual titles:*

MISSION TO PLANET EARTH [AC0082]

QUEST FOR PLANET MARS [AC0078]

TO THE MOON AND BEYOND [AC0081]

THE UNEXPECTED UNIVERSE [AC0080]

WHAT'S A HEAVEN FOR? [AC0083]

SPACE SCIENCE SERIES (CORT)

For descriptions see individual titles:

COMETS, METEORS AND ASTEROIDS

(SECOND EDITION) [FC1598]

PLANETS (SECOND EDITION) [FC1599]

STARLIFE

20 min; color; h,c,a

1/2" VHS **FC1510,VH**

Follows the life cycles of different types of stars from birth in the depths of black nebulae to extinction. Uses animation to explain in simplified terms such special stellar phenomena as pulsars, bursters, binary systems, and black holes. Pays particular attention to the sun and touches briefly on the subtopics of planets, universe, relativity, light, and atomic fusion. (NFBC;CHUH;c1983)

Astronomy; Stars

STATE OF WEIGHTLESSNESS

56 min; color; c,a

1/2" VHS **FC1780,VH**

Interviews several Russian cosmonauts about their experiences in the Soviet space program. Presents archival footage showing what went on inside the spacecraft as well as recorded diary excerpts and conversations with Earth, to elucidate what the men saw and felt. Looks at the vast expanses they witnessed outside the spacecraft, emphasizing the infinity of the skies. Talks about the emotions they were forced to control, including nostalgia, homesickness, and fear. Describes the intense experiments they endured which tested both their physical and psychological states, and from which some men did not recover. Explains that landing was a difficult time, and speaks with Vera, a widow of one of the crew members of a mission that crashed upon landing. *In Russian, with English subtitles.* (GRETKZB;ICAR;c1994)

Soviet Union (1917-1991); Space flight

STORY OF PALOMAR

39 min; color; c

1/2" VHS **FC0181,VH**

Records the building and operation of the 200-inch Hale telescope at the Palomar Observatory, in California. Includes astronomical photographs and diagrams. (CAIT;EBEC;c1949)

Astronomy

THE THEORIES OF PHYSICS

24 min; color; h,c,a

1/2" VHS **FC1817,VH**

The Science Show series - Uses narration and computer animation to explain three important concepts in modern physics: Einstein's theory of relativity, the quantum theory, and the big bang theory. Describes how each of these theories was developed, and examines their implications for the advancement of scientific understanding of the universe. (COSCIEN;FFHS;c1993)

Astronomy; Physics; Relativity (Physics);

Science-Methodology

TO BOLDLY GO....

58 min; color; h,c,a

1/2" VHS **AC0073,VH**

Nova Series - Examines the Voyager program's 12-year mission to explore the solar system's outer planets. Gives an overview of Voyager I and Voyager II transmissions as they flew by Jupiter, Saturn and Uranus. Interpretations of satellite photographs by scientists provide information on the planets, their moons, and the technological capacities of the two spacecrafts as well. *Closed Captioned.* (WGBHTV;CORT;c1990)

Astronomy; Planets

TO THE EDGE OF TIME

25 min; color; j,h,c,a

1/2" VHS **FC1771,VH**

Wonders of the Universe Series - Looks at our place in the cosmic scheme. Well over 2,000 years ago the circumference of Earth was worked out by an extremely observant Egyptian. Today we're still trying to measure the universe. How do we accurately measure the distance to a planet, a star, another galaxy? What was the Big Bang and will the continuous expansion of the universe eventually halt, go into reverse, and end in a Big Crunch? Will the process start all over again in never-ending cycle? Mathematics and a little philosophy may provide us with some of the answers. (DISCOMI;AMBROSV;c1995)

Astronomy

TO THE MOON

120 min; color; h,c,a
 1/2" VHS **AC0084,VH**
 Nova Series - Follows the trials and tribulations of the United States in its race to reach the moon before the Russians. Fueled by Cold War hostility, the space race resulted from a demand for political prestige rather than an interest in scientific exploration. Despite several early successes by the Russians and the need to overcome constant internal disagreement over technologies for propulsion and modes of navigation, the U.S. managed to win, when Apollo 11, manned by Neil Armstrong, Buzz Aldrin, and Mike Collins, landed on the moon on July 20, 1969, leaving the American flag and human footprints on the surface. Points out that subsequent endeavors became more scientifically focused, training astronauts in geology as well as training scientists and engineers in space travel. Communicates the social implications of the space race, as an effort born out of bitter conflict eventually revealed humankind's profound interconnectedness. (WGBHTV;c1999)
 Space flight

TO THE MOON AND BEYOND

57 min; color; j,h,c,a
 1/2" VHS **AC0081,VH**
 Space Age Series - Observes that, five years after Neil Armstrong and Buzz Aldrin walked on the moon, the Apollo program ended and interest in space exploration declined. Suggests that today there is renewed interest in the moon and near space. Looks at the enormous commercial and scientific potential to be tapped by the return to space. *Closed Captioned.* (WQEDTV;FI;c1992)
 Moon; Solar system; Space flight

THE UNEXPECTED UNIVERSE

57 min; color; j,h,c,a
 1/2" VHS **AC0080,VH**
 Space Age Series - Posits that, since the 1950s, the exploration of space *from* space has opened up the universe to human observation. Details how equipment designed for gathering information from space has affected our understanding of the origins, as well as the eventual fate, of the solar system and the universe. *Closed Captioned.* (WQEDTV;FI;c1992)
 Artificial satellites; Astronomy; Solar system

THE VIOLENT UNIVERSE

148 min; b&w; h,c,a
 1/2" VHS **FB1238,VH**
 Pbl Series - Visits thirty distinguished astronomers in their observatories throughout the world discussing astronomical theories, research, and discoveries. Pictures pulsars, infra-red galaxies, red giants, white dwarfs, cosmic rays and redshift, and includes the first motion picture view of a quasar (an object moving away from the solar system at a great speed). Presents two opposing theories as to the origin of the universe—the "Big Bang" theory that the universe started suddenly and may end that way, and the "Steady State" idea that the universe is infinite, old, and capable of lasting forever. (WNET/13; INUISS;p1969)
 Astronomy

WHAT'S A HEAVEN FOR?

60 min; color; j,h,c,a
 1/2" VHS **AC0083,VH**
 Space Age Series - Revisits significant events in the history of space exploration from Sputnik and Russian cosmonaut Gagarin to Apollo and Challenger. Describes how these explorations and their resulting discoveries influenced history. *Closed Captioned.* (WQEDTV;FI;c1992)
 Astronomy; Science—History; Space flight

WONDERS OF THE UNIVERSE SERIES

ALONE IN SPACE [FC1766]
 BIG BANG, BIG MYSTERY [FC1774]
 COSMIC CATASTROPHES [FC1769]
 GALACTIC SPLENDORS [FC1775]
 HOME STAR [FC1770]
 THE INVISIBLE COSMOS [FC1767]
 LIGHT FANTASTIC [FC1768]
 MOONFLIGHT [FC1765]
 ONCE IN A LIFETIME [FC1772]
 SHADOWS AND SIGNS [FC1776]
 SOLAR SYSTEM SUPERLATIVES [FC1773]
 TO THE EDGE OF TIME [FC1771]