

URANUS

5min 54s

“Flight to the Center of the Milky Way” *(excerpt)*

Visualization by AVL: Donna J Cox, Robert Patterson and Stuart Levy / NCSA at UIUC

Science advisors:

Mark Morris / University of California, Los Angeles

Doug Roberts / Northwestern University

Milky Way Reference Image of M83: David Malin, AAO

Galactic Center Reference Imagery:

Mark Morris and Farhad Yusef-Zadeh

Doug Roberts and W.M. Goss

N. Kassim, T.N LaRossa, T. Joseph Lazio and S.D. Hyman

Observational data: Hipparcos Star Catalog

“The Orion Nebula” *(excerpt)*

NASA’s Goddard Space Flight Center / Scientific Visualization Studio

Video and images courtesy of NASA/ESA/STScI/AURA/the Hubble Heritage Team

“Bright Pillars in the Carina Nebula” *(excerpt)*

NASA’s Goddard Space Flight Center / Scientific Visualization Studio

NASA: G. Bacon, L. Frattare, Z. Levay, and F. Summers (Viz3D Team, STScI)

Project support:

Frank Summers (STScI)

Mark Malanoski (GST)

Greg Bacon (STScI/AURA)

Lisa Frattare (STScI)

Zoltan Levay (STScI/AURA)

“A Flight Into the Bubble Nebula” *(excerpt)*

NASA’s Goddard Space Flight Center / Scientific Visualization Studio

NASA/ESA and F. Summers, G. Bacon, Z. Levay, and L. Frattare (Viz 3D Team, STScI)

Acknowledgment: A.Fugii, USNO/STScI, Digitized Sky Survey (DSS), (STScI/AURA), Palomar/Caltech, and UKSTU/AAO, T. Rector/University of Alaska Anchorage,

H. Schweiker/WIYN and NOAO/AURA/NSF, NASA, ESA, and the Hubble Heritage Team (STScI/AURA)

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"Space Background" *iStock.com*

"Flying Through Multi Colored Nebula" *iStock.com*

"Molecular Cloud Simulation" *(excerpt)*

Visualization by AVL: Donna J Cox, Robert Patterson, Stuart Levy, Alex Betts, Matthew Hall, AJ Christensen and Jeff Carpenter / NCSA at UIUC

Scientific simulation:

Alexei Kritsuk and Michael Norman / University of California, San Diego

"Abstract Cosmic Planet Nebula Starfield" *iStock.com*

"Satellite Ariel or Uranus I Orbiting Around Uranus Planet" *iStock.com*

NEPTUNE

7min 47s

Excerpt from **"Paradises Lost"** made for a performance of Stephen Taylor's opera, based on an Ursula K. Le Guin short story of the same name

Visualization by AVL: Robert Patterson, Stuart Levy and Jeff Carpenter / NCSA at UIUC

"Colliding Galaxies" A Fulldome simulation *(excerpt)*

Visualization: Frank Summers, (STScI)

Simulation:

Chris Mihos / Case Western Reserve University

Lars Hernquist / Harvard University

"Artist's Impression of the Quasar 3C 279" *(excerpt)*

M. Kornmesser (ESO)

"Neptune and its Moons" *(excerpt)*

NASA/ ESA/Hubble Heritage Team (STScI/OPO) and G. Bacon (STScI)

"Artist's Impression of a Distant Quasar" *(excerpt)*

M. Kornmesser (ESO)

“Zooming on Fomalhaut b” *(excerpt)*

M. Kornmesser (ESA/Hubble) and L. L. Christensen (ESO)

“Flame Nebula” image

NASA’s Deep Space Station (DSS)

Whirlpool Galaxy image courtesy of NASA/CXC/Wesleyan Univ./R.Kilgard, et al. and NASA/STScI

NASA’s Goddard Space Flight Center / Scientific Visualization Lab

“Hubble Spots a Celestial Bauble” *(excerpt)*

NASA/ESA/Hubble Heritage Team (STScI/AURA): G. Bacon, T. Borders, L. Frattare, Z. Levay, and F. Summers

“Hubblecast 51: Star-forming region S 106” *(excerpt)*

Visual design and editing: M. Kornmesser (ESA/Hubble)

Web and technical support: Lars Holm Nielsen and Raquel Yumi Shida

Written by: Oli Usher and Bárbara Ferreira

Narration: Joe Liske (Dr J)

Images: NASA, ESA

Animations: Greg Bacon (STScI), M. Kornmesser (ESA/Hubble)

Music: Zero Project

Directed by: Oli Usher

Executive Producer: Lars Lindberg Christensen

“The Blue Supergiant Star LS1 (Artist’s Impression)” *(excerpt)*

M. Kornmesser (ESA/Hubble)

“M81” excerpt

Created for Gerry Guthrie

Visualization by AVL: Donna J Cox, Robert Patterson, Stuart Levy and Jeff Carpenter / NCSA at UIUC

MERCURY

4min 23s

“Galaxy Evolution and Merger” *(excerpt)*

Visualization by AVL: Donna J Cox, Robert Patterson, Matthew Hall and Stuart Levy / NCSA at UIUC

Scientific simulation:

Brian O'Shea / Michigan State University

Michael Norman / University of California at San Diego

“The Formation of First Stars and Galaxies” *(excerpt from)* **“Solar Superstorms”**

Visualization by AVL: Donna J Cox, Robert Patterson, Stuart Levy, Kalina Borkiewicz, AJ Christensen, Jeff Carpenter, Matthew Turk and Sam Skillman / NCSA at UIUC

A FullDome production In collaboration with:

NCSA at UIUC

Spitz Creative Media

Thomas Lucas Productions

In association with: Fiske Planetarium

National Science Foundation

Excerpt from **“Paradises Lost”** made for a performance of Stephen Taylor’s opera, based on an Ursula K. Le Guin short story of the same name

Visualization by AVL: Robert Patterson, Stuart Levy and Jeff Carpenter / NCSA at UIUC

“Hypercolor Mosaic / Complete Map of Mercury” *(excerpt)*

NASA’s Goddard Space Flight Center / Scientific Visualization Studio

Images, visualization and animation courtesy of NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

“Mosaic of Caloris Basin in Mercury” *(color enhanced image)*

Image courtesy of NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

“Enhanced Color Mercury Map”

Image courtesy of NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

“Cosmic Designs and the Planets: Mercury” *(excerpt)*

NASA’s Goddard Space Flight Center / Scientific Visualization Studio

“Cosmic Web” *(excerpt)*

NASA’s Goddard Space Flight Center / Scientific Visualization Studio

Project Support: Frank Summers (STScI)

Animators:

Lars Hernquist / Harvard University

Martin White / Harvard University

“The Non-Linear Evolution of the Universe: From 20 Million to 14 Billion Years Old” *(excerpt)*

Visualization by AVL: Donna J Cox, Stuart Levy, Matthew Hall and Robert Patterson / NCSA at UIUC

Producers: Micheal McClare / HTSI

Donna Cox / AVL, NCSA at UIUC

Scientists:

Dr. Renyue Cen / Princeton University

Dr. Jeremiah P. Ostriker / Princeton University