

# NASA Langley Research Center Colloquium Series

## Complete List of Speakers

last modified: <2021-05-05 (09:16)>

### 2021

January 19, 2021. From Swine Lagoons to Space and Back Again by Bill Cumbie

March 2, 2021. Colloquium: Making everything computational—including the fundamental theory of physics by Stephen Wolfram  
(Sigma: Have we found the machine code for the universe?)

April 6, 2021. Why are Honey Bees Dying? by Dennis vanEngelsdorp

May 4, 2021: Reproducibility in Scientific Research by Monya Baker

### 2020

January 7, 2020. Array Computing and the Evolution of Machine Learning by Travis Oliphant  
(Sigma: Ensuring Open Source Thrives in a Global Economy)

February 4, 2020. Climate and Security in the Age of Great Global Disruption by Sherri Goodman

March 3, 2020. Adventures in Self-Driving Car Safety by Prof. Phil Koopman

April – November 2020. No Colloquium held (COVID-19)

December 8, 2020. Take-off and Landing: It is Important by Frank Quinto. (50th anniversary of the 14×22 wind tunnel)

### 2019

Lectures were not held in January, February, or March as a direct or indirect result of the lapse in appropriations.

April 9, 2019. The Role of UAS in Atmospheric Science by Phillip B. Chilson

May 7, 2019. The Expert Witness – Bringing Science into the Legal System by William Woodruff

June 4, 2019. The Signal and the Noise: Why So Many Predictions Fail—but Some Don't by Nate Silver

July 9, 2019. The Lunar Landing Research Facility: A Simulator of “Gantry” Proportions by Lisa Jones

August 6, 2019. Green Engineering: Making NASA (and the world) more Environmentally Sustainable by Sean McGinnis

September 10, 2019. How to Communicate Vaccine Science to the Public by Dr. Paul Offit [Sigma: The Vaccine Wars]

October 1, 2019. Failure is Not an Option by Fred Haise

November 5, 2019. Immune system – the seventh sense by Jonathan Kipnis

December 3, 2019. Development of the Aircraft Carrier by Boom Powell

## **2018**

January 9, 2018. Biochar – Environmental Superstar by Doris Hamill

February 6, 2018. Frontiers of Space Radiation by John Norbury

March 6, 2018. Code Girls: The Women Who Decrypted World War II by Liza Mundy

April 3, 2018. The Global Orchestra – play your part for the planet by combining creativity and technology by Charlie Chan & Justin Baird

May 1, 2018. Cislunar Space, the Gateway to Future Exploration by Patrick Troutman

June 5, 2018. The Road to Advanced Autonomous Air Transportation by John Langford

July 10, 2018. Perseverance: Overcoming Challenges when Developing New Technologies by Lonnie Johnson

August 7, 2018. Interplanetary Spaceflight Implications of Fifty-Seven Years of Human Space Exploration by Jim Logan

September 11, 2018. Hypersonic Flight: Challenges, Successes, and Opportunities by Mark Lewis

October 9, 2018. The Stratospheric Aerosol and Gas Experiment: A NASA Langley Legacy by Robert Damadeo and Charles Hill

November 6, 2018. Designing for Longevity by Alexander Rose

December 2018. No Colloquium held this month

## **2017**

February 7, 2017. Apollo 1, Andrew Chaikin

March 7, 2017. Hidden Figures, Margot Lee Shetterly

April 4, 2017. Rescuing the American Chestnut Tree, William Powell

May 2, 2017. The Art of Electronics: A Tour of Adafruit Industries by Limor “Ladyada” Fried

May 4, 2017. Missions for Makers by Dale Dougherty (A special colloquium supporting the Langley Centennial)

June 2017: No Colloquium held this month (Langley Centennial activities)

July 2017. No Colloquium held this month (Langley Centennial activities)

August 8, 2017. When Will We Find E.T. and What Happens If We Do? by Seth Shostak

September 12, 2017. Fracking for Shale Gas/Oil 2008-2017: What Do We Know Now That We Did Not Know Then? by Tony Ingraffea

October 3, 2017. Discovering the Universe with the James Webb Space Telescope by John Mather, winner of the 2006 Nobel Prize in physics

November 7, 2017. Stone, Bone, and Clay: Virginia Indians' History of 18,000 Years by Karenne Wood

December 2017. No Colloquium held this month

## **2016**

January 12, 2016. Design and Engineering of Complex Systems by Anna-Maria Rivas McGowan

February 2, 2016. Bayesian Search for Air France 447: The Math that Found a Needle in a Haystack by J. Van Gurley

March 1, 2016. The Art and Science of Science Communication by Steven Novella

April 5, 2016. A Blast from the Past – Misinformation in your nightly weather report and the history of the Polar Vortex by Lynn Harvey.

May 3, 2016. The success of the G650 and its influence on future Gulfstream aircraft by Angel Barboza

June 7, 2016. A Bunch of Plumbers by Peggy Newcomb.

July 12, 2016. Innovation and Inspiration – The HondaJet by Michimasa Fujino

July 19, 2016. A panel of historians discussed the 40th Anniversary of Viking: History of Mission Viking

September 13, 2016. Climate Modeling: Its history and prediction of future climate change by Warren M. Washington (45th Anniversary Colloquium)

October 4, 2016. A League of Extraordinary Machines by Jack W. Davidson

November 1, 2016. First Electronic Digital Computer by Seymour B. Horowitz

December 6, 2016. When the Moon Eats the Sun: The Total Solar Eclipse of August 2017 by Phil Plait. The Sigma talk was Death From The Skies!

## **2015**

January 13, 2015. Taking the Long View: How ISAAC Prepares LaRC for the Future by Brian K. Stewart

February 3, 2015. F-22 Raptor – Baseline Capabilities and Current Operations by Kevin M. Heath, Maj. USAF

March 24, 2015. A Celebration of the Centennial of the NACA, featuring Roger Launius, John Anderson, and Tom Crouch

April 7, 2015. Adaptation to Sea Level Rise: Protecting Against, or Preparing for, Inundation of the Coastal Zone? by Hans-Peter Plag

May 5, 2015. Rubber on the Runway – The Aircraft Dynamic Loads Facility by Thomas Yager and Robert Doggett

June 2, 2015. No Colloquium held this month

July 14, 2015. The Coming Era of Distributed Electric Propulsion by Mark Moore

August 4, 2015. Bipolar Science: 20+ Years of Airborne Ice Measurements with NASA and Operation IceBridge by John Sonntag

September 1, 2015. No Colloquium held this month

October 6, 2015. Advancing the Prevention and Treatment of Alzheimer's Disease by 2025 by Kathleen A. Welsh-Bohmer

November 3, 2015. In the Eye of the Storm: Hurricane Katrina — The NASA Experience by David Throckmorton

December 1, 2015. The Evolution of Winglets to the Max by Robert Gregg, III

## **2014**

January 7, 2014. No Colloquium held this month

February 4, 2014. Crashing a Boeing 727 in the Mexican Desert by R. John Hansman (MIT)

March 11, 2014. The Higgs Boson and Why it Matters, Josh Erlich (William & Mary).

April 1, 2014. To the Frontiers of Flight: The Role of Innovation in Developing Tomorrow's Products, Mark Anderson (Boeing).

May 13, 2014. Leonardo and the Intersection of Art and Science, Bulent Atalay.

June 3, 2014. Putting the I in ISS: Fostering space cooperation with the Russians, Jim Van Laak.

July 8, 2014. Sonic Boom: A Review of Six Decades of Research, Dom Maglieri

August 5, 2014. The Recent Pause in Global Warming: A Temporary Blip or Something More Permanent?, Norman Loeb

September 9, 2014. How to Make a Tornado: Ideas Emerging from Decades of Theory, Simulation, and Field Observations, Paul Markowski

October 7, 2014. Recent Wake Vortex Research at NASA Langley, Fred Proctor

November 4, 2014. Ocean Worlds of the Outer Solar System, Kevin Peter Hand

December 2, 2014. Coming of Age: NASA's Role in Lightweight Composite Structures for Flight Vehicles by Darrell Tenney

## **2013**

January 8, 2013. Too Big to Know by David Weinberger

February 5, 2013. Proton Radiotherapy Systems and Clinical Practice by Cornel Butuceanu

March 5, 2013. The Science Behind the Taming of the Deepwater Horizon Oil Spill by Paul Hsieh

April 2, 2013. To Mars in Weeks by Thermonuclear Micro-Bomb Propulsion by Friedwardt Winterberg

May 7, 2013. The Past as Prologue: Learning from the Climate Changes in Past Centuries by Michael E. Mann

June 4, 2013. Modeling Flight: The Role of Dynamically Scaled Free-Flying Models in NASA's Research Programs by Joe Chambers

July 9, 2013. Wings, Meatballs, Worms, and Swooshes: The Unknown Story of the NASA Seal and Insignia by Joe Chambers

August 6, 2013. Autonomous, Adaptive, and Safe? by Prof. John McDermid

September 10, 2013. Asteroid Initiative: Overview and Future Directions by Dan Mazanek

October 1, 2013. Cancelled because of government shutdown.

November 5, 2013. Open Plan Offices? Yes, No, and It Depends by Tonya Smith-Jackson

December 3, 2013. Doing More with Less: Human Flight on the Power of a Cordless Drill by Cameron Robertson

## **2012**

January 10, 2012. Improving the View of Air Quality from Space by Dr. James Crawford, Principal Investigator/Scientist, NASA Langley Research Center

February 7, 2012. Modern Microphones and New Directions in Sensors by Dr. James E. West, Johns Hopkins University

March 6, 2012. Expanding the Envelope: Challenges and Opportunities in Aerospace Research by Dr. Mark Lewis, University of Maryland

April 3, 2012. Where The Cloud Meets the Ocean by Bill Vass, CEO of Liquid Robotics

May 2, 2012. The U-2 Incident: A Son's Perspective by Gary Powers, Jr.

June 5, 2012. Cave of the Winds: The Remarkable History of the Langley Full-Scale Wind Tunnel by Joe Chambers

July 10, 2012. Langley's Contribution to Human Spaceflight: Orion Pad Abort-1 Flight Test by Kevin Rivers, John Davidson, Phillip L. Brown, and Robert Parker

August 7, 2012. International Space Station by Mark L. Uhran

September 11, 2012. Aeronautical Entrepreneurship with UAVs by Steven M. Sliwa

October 2, 2012. Truth, Lies, and O-rings: Inside the Space Shuttle Challenger Disaster by Allan J. McDonald

November 6, 2012. CCAM: A Game Changing Advanced Manufacturing Research Model by David R. Lohr

December 4, 2012. Designs of Expandable Structures by Chuck Hoberman

## **2011**

January 11, 2011. Chilean Miners' Rescue, NASA Plays a Part by Clinton H. Cragg

February 1, 2011. (Cancelled by the speaker) Astronaut: Mission Specialist by Leland D. Melvin

March 1, 2011. From Flapping Birds to Space Telescopes: The Mathematics of Origami by Dr. Robert Lang

April 5, 2011. The Pox and the Covenant: The Curious History of Science and Religion in Colonial America by Tony Williams

May 3, 2011. Design of the Edison2 Very Light Car by Ron Mathis

June 7, 2011. Tigers, Spiders and Raptors: One Test Pilot's Story by Alfred "Paul" Metz

July 12, 2011. Drifting on Alien Worlds: Exploring the Skies and Weather of Other Worlds by Mr. Michael Carroll

August 2, 2011. Collaborative Innovation: Novel Approaches to University-Industry-Government Partnerships in Creating a Smarter Planet by Dr. Bernard S. Meyerson

September 13, 2011. Exploration Design Reference Missions by Patrick Troutman

October 4, 2011. Keeping an Eye on the Shuttle During Reentry – the HYTHIRM Project by Thomas J. Horvath, Principal Investigator, Aerothermodynamics Branch, NASA Langley Research Center

November 1, 2011. Fly Forever: Pursuing the Dream of Indefinite Endurance Flight by Craig L. Nickol

December 6, 2011. At 40, NASA Colloquium Continues to Stimulate, Teach Narrated by Keith Henry, NASA Langley Newschief, retired.

## **2010**

January 12, 2010. Environmentally Responsible Aircraft (ERA) Project by Dr. Faye Collier

February 10, 2010. EMP, and the Potential for a Nationwide or Global “Katrina,” of our Electronic Infrastructure by Dr. William R. Forstchen

March 2, 2010. An Insider’s View of NTSB Accident Investigation by Robert L. Sumwalt, III

April 6, 2010. Going Coastal by Dr. John D. Rummel

May 4, 2010. Green, Quiet, Electric V/ESTOL Aircraft: The Second Century of Flight by Dr. Brien A. Seeley

June 8, 2010. Kepler Space Mission: Progress in the Detection of Earth-size Planets in the Habitable Zone of Solar-like Stars by William J. Borucki

July 6, 2010. NACA and the Transformation of Hampton: From Log Canoes to Outer Space by Michael Cobb

August 3, 2010. What if your contact lens could show you images ... by Professor Babak A. Parviz, University of Washington

September 14, 2010. The Augustine Report, Rationale and Retrospective by Edward F. Crawley

October 5, 2010. Does NASA Matter? by A. Thomas Young

November 2, 2010. Sustainable Design of Langley Research Center’s New Town and Future Infrastructure by George Finelli, NASA Langley Research Center

December 7, 2010. The Revolution in Planetary Science: New Worlds, New Discoveries by Dr. James L. Green, Director, NASA Planetary Science, NASA Headquarters, Washington DC

## **2009**

January 13, 2009. Energy For the Greenhouse World by Dr. Aristides A.N. Patrinos

February 10, 2009. The Dark Universe Challenge by Dr. Salman Habib

March 3, 2009. Biologically-Inspired Materials: From Electroactive Polymers To Biomolecular Networks by Dr. Don Leo

April 7, 2009. Methane on Mars – Geology, Biology, Neither, or Both? by Dr. Michael J. Mumma, Goddard Center for Astrobiology, NASA-GSFC

May 5, 2009. Transforming Organizations: How To Start an Innovation Movement by Michael L. Maness Vice President, Design and Innovation, Gannett Co., Inc.

June 2, 2009. Whither or Wither? – Innovation in Air Transportation by Dr. Bruce Holmes

July 7, 2009. How We Remember Apollo by Dr. Roger D. Launius

August 4, 2009. Back to the Future – CSI Three Centuries Later by Dr. Michael J. Kelley

September 1, 2009. CLARREO: Cornerstone of the Climate Observing System by Stephen P. Sandford

October 6, 2009. Hurricane of Independence: The Untold Story of the Deadly Storm at the Deciding Moment of the American Revolution by Tony Williams

November 3, 2009. Unsteady hydrodynamics in bio-inspired propulsion by Dr. John Dabiri

December 1, 2009. Crazy Robots and the Students Who Build Them by NASA Knights Robotics Team

## **2008**

January 8, 2008. Importance and Challenges of Protecting the Crew from Radiation on Missions to Moon and Mars by Dr. John W. Wilson, NASA Langley (retired)

February 5, 2008. Advanced Aircraft Carrier Technology: A Shipbuilder's Perspective by David P. Rice, Engineering Research Manager for Aircraft Carrier Technology, Northrop Grumman Newport News

March 4, 2008. Why the World's Information Technology Leader Can't Count Votes by Professor Bryan Pfaffenberger, University of Virginia

April 1, 2008. An Energy Revolution for the Greenhouse Century by Dr. Martin Hoffert, Professor Emeritus of Physics, New York University

May 6, 2008. An Update on Strategic Initiatives in Modeling and Simulation in Hampton Roads, the Commonwealth of Virginia and Nationally by Dr. Michael McGinnis, Executive Director of the Virginia Modeling Analysis and Simulation Center



June 3, 2008. Impacts of Climate Change on Coastal Virginia and Chesapeake Bay: Physical, Chemical and Ecological Processes by Dr. James Bauer, College of William & Mary (This lecture is cosponsored by the Green Series.)

July 8, 2008. The Life and Works of Galileo: A Guided Tour by Dr. Kerry V. Magruder, University of Oklahoma

August 12, 2008. Mercury In a New Light: The First MESSENGER Flyby by Dr. Ralph L. McNutt, Jr., Johns Hopkins University Applied Physics Laboratory

September 9, 2008. Sputnik, Eisenhower, and the founding of NASA by Dr. Roger Launius, former NASA Chief Historian and currently Senior Curator, Division of Space History, Smithsonian National Air & Space Museum

NASA at 50: A Celebration of Science, Technology and the Spirit of Human Exploration Four Tuesdays in October (October 7, 14, 21 and 28)

- October 7, 2008. NASA Human Spaceflight: Past, Present, and Future by Ken Reightler
- October 14, 2008. Exploration of the Moon and Planets: A New Perspective on Earth by Dr. James W. Head III
- October 21, 2008. Science and Survival in the Anthropocene: Why NASA and Earth Science Are Vital for Human Wellbeing by Dr. Jeffrey D. Sachs
- October 28, 2008. 50 Years of NASA Aeronautical Research by Roy V. Harris

November: No Colloquium held this month

December 9, 2008. Phoenix Lander's Odyssey to Mars – A 10 Year Journey by Dr. Prasun N. Desai

## **2007**

January 4, 2007. Statistical Approaches in the NIST World Trade Center Analysis by James J. Filliben

February 1, 2007. Return to the Moon: Exploration, Enterprise, and Energy in the Human Settlement of Space by Harrison (Jack) Schmitt

March 6, 2007. Motion Capture and Technology Leadership by Nels H. Madsen (lectures returned to Tuesdays this month)

April 10, 2007. Humans and the Global Carbon Cycle: A Faustian Bargain? by Berrien Moore III

May 8, 2007. Why We Explore by Steven Dick

June 5, 2007. The CALIPSO Mission – One Year After Launch by Dr. Dave Winker

July 10, 2007. The Tuskegee Airmen – The Long Flight from WWII to the Congressional Gold Medal by Ezra M. Hill, USAF (Ret)

August 7, 2007. F22 Raptor's First Year in Service from an Aircraft Maintenance Squadron Perspective by Lt. Col. Dane West, 1st Aircraft Maintenance Squadron Commander, Langley Air Force Base

September 11, 2007. Climate Change Impacts on Natural Resources in Virginia by Dr. Roger Mann, Virginia Institute of Marine Science

October 2, 2007. The Search for the Cause of the Mysterious Tiny Crystals in the Charters of Freedom by Dr. Joel S. Levine, NASA Langley Research Center

November 6, 2007. Finding our Origins with the James Webb Space Telescope by Dr. John Mather, Nobel Prize Winner

December 4, 2007. The USS Monitor Materials: Organic and Metal by Susanne Grieve and Eric Nordgren, The Mariners' Museum

## **2006**

January 5, 2006. X-Prize Flights: SpaceShipOne by Douglas Shane

February 2, 2006. Russia – Candidate Roles in the Exploration Vision by James Oberg

March 2, 2006. NASA Capabilities for Human Exploration Beyond the Moon by Patrick A. Troutman

April 6, 2006. Hurricanes and Global Warming: The Science, Technologies, and Politics by Judith Curry

May 4, 2006. Mars Direct: Humans to the Red Planet within a Decade by Robert Zubrin

June 1, 2006. Aeronautics Research in Decline: Why the Trend Must be Reversed by Roy V. Harris, Jr.

July 6, 2006. Uranus and Neptune: Understanding the Ice Giants by Dr. Heidi B. Hammel

August 3, 2006. Advances in Nanotechnology by Professor Mool C. Gupta

September 7, 2006. Traditional Native Scientists by Scott Frazier

October 5, 2006. MISSEs- Experiments to Mitigate Risks in Future Space Exploration Missions by Bill Kinnard

October 24, 2006. Special 35th Anniversary Lecture: Space Exploration: Filling Up the Canvas by Michael Griffin

November 2, 2006. No Colloquium held this month

December 7, 2006. Hypersonics: Flying Higher and Faster in the Air and Beyond by Mark J. Lewis

## **2005**

January 11, 2005. Technical Challenges for Space Exploration Missions by John C. Mankins

February 1, 2005. Spectacular Visualization of Planet Earth by Arthur Frederick (Fritz) Hasler

March 1, 2005. The Man Who Hated Loose Ends: Einstein's Legacy by Hans Christian von Baeyer

April 7, 2005. Investigation into the Crash of American Airlines Flight 587 by John W. DeLisi (at the request of Senior Staff, lectures were moved to Thursdays)

May 5, 2005. Toward a Sustainable Mars Infrastructure (for Human Exploration) by Robert L. Ash

June 2, 2005. Solar Sails: Propellantless In-Space Propulsion by Billy Derbes

July 7, 2005. Understanding the Mechanics of Tsunamis by Ronald E. Johnson

August 4, 2005. Mars Rovers by Prasun Desai

September 1, 2005. The Engineer of 2020 Project by Gary S. May

October 6, 2005. Cassini at Saturn: An Evolving Planetary System by Robert E. Johnson

November 3, 2005. Nature, Fireworks and Multifunctional Aerospace Materials by Professor Kathryn V. Logan

December 1, 2005. First Man: The Life of Neil A. Armstrong by Jim Hansen

## **2004**

January 13, 2004. From Flower Stems to Feather Shafts: Twisting in the Wind Without Getting Bent Out of Shape by Steven Vogel

February 3, 2004. "Big Mac" System X Supercomputer by Srindi Varadarajan

March 2, 2004. Color and Light in Nature: Visual Adventures in Optical Phenomena by David K. Lynch

April 6, 2004. Human Exploration of the Moon: Preparing to Go to Mars by James Head

May 4, 2004. Discovering the Secrets of the Wright Brothers by Ken Hyde and Kevin Kochersberger

June 1, 2004. Scramjet Powered Vehicles: Force or Fiction by Charles R. McClinton

July 13, 2004. The Design of Electronic Textile Applications by Mark T. Jones

August 18, 2004. Reasons to be Optimistic About Aeronautics by Rich Wlezien

September 14, 2004. Improved Composite Materials for Exploration Systems by Ranji K. Vaidyanathan

October 5, 2004. A Century of Innovation That Transformed Our Lives by Bob Somerville

November 2, 2004. America's Future in Space and PBS NOVA series "Origins" by Neil deGrasse Tyson

December 7, 2004. Hydrogen and Fuel Cells: Hope or Hype? by Robert Rose

## **2003**

January 14, 2003. Space Exploration: Sputnik to the International Space Station by Andrew Chaikin

February 5, 2003. America and The First Century of Flight: Echoes and Resonances by Richard P. Hallion

March 4, 2003. Crafting the Dream of Wings on the Wind: 100 years from Aviation to Spaceflight by Tom D. Crouch, James R. Hansen, and James Schultz

April 1, 2003. Catching up with NASA: Fuel Cells on Earth by Brian Walsh

May 6, 2003. Segway Human Transporter by Bart Thompson

June 10, 2003. Biomimetics Research to Develop Biologically Inspired Materials by Ilhan A. Aksay

July 1, 2003. The ARES Mission to Mars: The First Flight of an Airplane on Another Planet by Joel S. Levine and Robert D. Braun

August 5, 2003. Avionics in the Operation of Modern Civil and Military Aircraft by Cary R. Spitzer

September 9, 2003. The Golden Ratio: The Story of Phi, The World's Most Astonishing Number by Mario Livio

October 7, 2003. The Wright Brothers' Aerodynamics, and the Future of Flight by John D. Anderson, Jr.

October 23, 2003. Langley Support to the Columbia Accident Investigation by Mark Saunders, Charles Miller, Mark Shuart, and Charles Poupard (Special 1.5 Hour Colloquium Lecture)

November 4, 2003. Six Degrees: The Science of a Connected Age by Duncan Watts

December 2, 2003. Aircraft Noise-Prospects for a Quieter Future by David H. Reed

## **2002**

January 8, 2002. How Well Did the "Flyer" Fly? – An Analysis of the Wright Brothers Flights, December 17, 1903 by Colin Britcher

February 5, 2002. Computational Combustion: from Molecular Processes to Combustor Design by Stephen B. Pope

March 5, 2002. Mars Odyssey by David Spenser

April 2, 2002. The Quest for Sustainability: Sustainable Development and Remote Sensing by Thomas E. Lovejoy

May 7, 2002. Take this gene and call me in the morning: The Human Genome Project and the Promise of Gene Therapy by Francis L. Macrina

June 4, 2002. Shock Waves on Aircraft Structure and Aviation Security by Gary Settles

July 9, 2002. Unmanned Aerial Vehicles: It takes a Team by Michael J. Logan

August 13, 2002. Evaluating the Effectiveness of Incident Reporting Systems by Chris Johnson

September 10, 2002. Small Aircraft Transportation System: The Vision for Wings on America by Bruce J. Holmes

October 1, 2002. Emergency Preparedness: Emergency Response Before and After September 11th, 2001 by Scott M. Solomon

November 5, 2002. The Aerodynamics of Bird Flight by Geoffrey Spedding

December 17, 2002. From Kitty Hawk to the Stars by Gentry Lee

## **2001**

January 9, 2001. MicroEngines by Alan Epstein

February 6, 2001. Photosynthesis in the Deep Sea without Sunlight? The Denouement! by Cindy Lee Van Dover

March 13, 2001. Recipes for Living Off The Land in Mars by KR Sridhar

April 3, 2001. The 35 Million Year Old Chesapeake Bay Impact Crater by David S. Powars

May 1, 2001. Challenges and Opportunities in Aeronautical Design, Engineering, and Manufacturing by Earll Murman

June 5, 2001. Cooperative Control of Autonomous and Semi-Autonomous Vehicles by Raffaello D'Andrea

July 10, 2001. Molecular Electronics and Directed Self-Assembly: Ultra-Small Computers that Build Themselves by Theresa S. Mayer

July 20, 2001. Viking: 25th Anniversary of Landing on Mars by Panel Discussion

August 7, 2001. Advanced Fuels and Propellants – Exciting Ways of Improving Future Transportation And Exploration by Bryan Palaszewski

September 11, 2001. Postponed Computational Combustion: from Molecular Processes to Combustor Design by Stephen B. Pope

Monday, October 15, 2001. Mars: A Strange and Complex Planet by Joel S. Levine (Colloquium Series – 30th Anniversary Lecture)

November 6, 2001. The Limits of Automation: How Far Should we Trust Software? by Nancy Leveson

December 4, 2001. Cancelled (Speaker's illness) The Seven Warning Signs of Voodoo Science by Robert L. Park

## **2000**

January 11, 2000. Langley Research Center: Contributing to the Quality of Life for Americans by Jeremiah F. Creedon

February 1, 2000. Breaking The Sound Barrier: The Aerodynamic Breakthroughs That Made It Possible by John D. Anderson, Jr.

March 7, 2000. Slippin' and a-Slidin' – A Researchers' Dilemma by Thomas J. Yager

March 17, 2000. Support of Shuttle Launches and Landings by Heidemarie Stefanyshyn-Piper

April 4, 2000. Protecting Our Planet – Securing Our Future: Linkages Among Global Environmental Issues and Human Needs by Robert T. Watson

May 2, 2000. Magnet Science and Technology: From Quantum Wells to Floating Frogs by Jack Crow

June 6, 2000. The Future of Scientific Computers by Horst Simon

July 11, 2000. Composite Materials for Aerospace Applications: Past, Present, and Future by Charles E. Harris

August 1, 2000. Mars Program Assessment–Findings and Recommendations by Tom Young

September 12, 2000. Recent Progress in Understanding Hurricanes by Kerry A. Emanuel

Special Lecture: September 25, 2000. The International Space Station by Gus Loria

October 3, 2000. The Lifting Bodies by Bill Dana

November 7, 2000. Nanotechnology and Space by Ralph Merkle

December 5, 2000. Galileo's Journey to Jupiter: The Twisted Path and the Successes by Ronald Greeley

## **1999**

January 19, 1999. The Coming Revolution in Flight by Cary R. Spitzer

February 2, 1999. Unmanned Air Vehicles into the 21st Century: Is the Past Prologue? by Michael S. Francis

March 2, 1999. Acoustics and the Violin – Past, Present, and Future by Carleen Hutchins

April 6, 1999. Safe Solar System Exploration: NASA's Planetary Protection Program by John D. Rummel

May 4, 1999. Pacific Saga: The Disappearance and Rescue of Eddie Rickenbacker in World War II by W. David Lewis

June 1, 1999. A New Mars – the View from Mars Global Surveyor by Joseph G. Beerer

July 13, 1999. Space Exploration Progress and Future Opportunities by Robert C. Seamans, Jr.

August 3, 1999. Aviation Safety from an Airline's Perspective by Ed Soliday

September 14, 1999. Applications of Free-Electron Lasers for Materials Science and Materials Processing by H. Fred Dylla

October 5, 1999. Clouds, Rain, and the Global Climate: What are we learning from the Tropical Rainfall Measuring Mission (TRMM)? by Christian Kummerow

November 2, 1999. The Role of Failure in Successful Design by Henry Petroski

December 7, 1999. Measuring Cosmic Evolution with the Hubble Space Telescope by Henry C. Ferguson

## **1998**

January 13, 1998. Access to Space Beyond the Year 2000 by Delma C. Freeman, Jr.

February 3, 1998. How Aerospace Gets to Your Home by Joseph S. Heyman

March 3, 1998. NASA Research on the Russian Space Station by Greg Stover

April 7, 1998. Designing the Mind-Centered Flight Deck by Paul Schutte and Alan Pope

May 5, 1998. Innumeracy, Newspapers, and Democracy by John Allen Paulos

June 2, 1998. The Human Adventure Continues by William L. Smith

July 7, 1998. The Final Shuttle-Mir Docking Mission by Astronaut Franklin Chang-Diaz

August 11, 1998. Confronting the Year 2000 Computing Crisis by Joel C. Willemssen

September 1, 1998. Technical Developments in Inflatable Space Structures by Costa Cassapakis

October 6, 1998. Hyper-X: Flying at 7 to 10 Times the Speed of Sound by Vincent L. Rausch

November 3, 1998. Status Report on Project Phoenix – A Privately Funded Search for Extraterrestrial Intelligence by Jill Tarter

December 1, 1998. Russian Flight Test Exchange: Flying the Mig-29 and SU-27 by Rogers E. Smith

## **1997**

January 7, 1997. Highways in the Sky: Reinventing Personal Air Transportation by Bruce J. Holmes

February 11, 1997. The Origins, Evolution and Future of Satellite Navigation by Bradford W. Parkinson

March 4, 1997. Exploring the Solar System with Hubble Space Telescope by Heidi B. Hammel

April 8, 1997. Fire and Global Change: A Hot New Environmental Issue by Joel S. Levine

May 6, 1997. A New Era of Planetary Exploration by Robert D. Braun

June 3, 1997. The Evolution of Aerodynamic Design with Wind Tunnels, Computational Fluid Dynamics, and Computational Optimization by Paul Rubbert

July 15, 1997. Development, Flight, and Landing of the Mars Pathfinder Spacecraft by Anthony J. Spear

August 5, 1997. The High Speed Civil Transport by Wallace C. Sawyer

September 10, 1997. Technological Needs of Airlines in the 21st Century by Karel Ledebuer

October 14, 1997. Evolving at Warp Speed: Supercomputing – 2001 and Beyond by Gary P. Smaby

November 4, 1997. How Design and Operational Factors Influence the Nature and Shape of Resulting Airplane Configurations by John C. Houbolt

December 9, 1997. Blended Wing-Body Designs by Bob Liebeck

December 17, 1997. Why Wilbur and Orville? by Tom D. Crouch

## **1996**

January 30, 1996. Earthbound “Flying” Simulators for Weightless Rendezvous and Lunar Landings by Lee H. Person, Jr. (Rescheduled from 1995-11-14)

February 23, 1996. Microelectronics and the New Millennium by Carl Kukkonen

March 5, 1996. Apollo 13: A Personal History by Hans Mark

March 18, 1996. The Clementine Mission by Col. Pedro Rustan



April 9, 1996. In Search of Cybernetics by Steven C. Crow

April 18, 1996. The New and Improved Hubble Space Telescope by Kathryn Thornton

May 7, 1996. A Journey Through a Giant Planet: The Jupiter Galileo Probe Mission by Marcie Smith

June 4, 1996. Frontiers of the Responsibly Imaginable in Aeronautics by Dennis Bushnell

July 16, 1996. The Viking Mission to Mars: 20 Years Later by Ed Cortright

August 14, 1996. Flight Research: Discovering the Real, the Imagined, the Overlooked, and the Unexpected by Ken Szalai

September 3, 1996. Research, Development, and Innovation: How Much Is Too Much? by Christoph von Braun (25<sup>th</sup> Anniversary Lecture)

October 1, 1996. Cassini to Saturn and its Satellite, Titan by Earle Huckins

November 12, 1996. Meteorites from Mars and Antarctica: Life on Mars? by Marilyn Lindstrom

December 3, 1996. New World Vistas for the USAF by Richard Bradley

## **1995**

January 3, 1995. What the Hubble Space Telescope is Telling Us by Dr. Steven P. Maran

February 28, 1995. Navigating the Information Highway Using Human Language Technology by Dr. Victor W. Zue

March 7, 1995. Technology of the 21st Century Automobile by Robert N. Culver

April 4, 1995. The High Speed Civil Transport from an Industry Perspective by Robert E. Spitzer

May 16, 1995. Impact of a Fragmented Comet on Jupiter by Drs. Carolyn and Eugene Shoemaker

June 6, 1995. The Accomplishments of Samuel Pierpont Langley by Donald L. Lansing

July 11, 1995. NASA LaRC Spaceflight: From Sputnik to Apollo by Dr. James Hansen

August 1, 1995. Marine Aquaculture – Seafood Farming for the Future by Michael Oesterling

August 15, 1995. The Future of Aeronautics by James (Mickey) Blackwell

September 19, 1995. High Performance Racing Boats by Reggie Fountain

October 10, 1995. The Human Genome Project: The Science Behind Jurassic Park by Paula Gregory

November 7, 1995. Lecture postponed until January 1996 because of government shut-down

December 5, 1995. Life Aboard Mir by Norman Thagard

December 12, 1995. The Boeing 777 – “Working Together” Works by Jim McWha

## **1994**

January 31, 1994. Space Station Reconfiguration, Dr. Ralph Muraca, Chief, Systems Engineering Div, NASA Langley Research Center, Hampton, VA.

February 14, 1994. Global Energy, Security, and Environmental Realities, Henry E. Thomas, Director of Special Programs, A.T. Kearney, Inc.

March 15, 1994. Crime and the Information Society by Marc Rotenberg

April 12, 1994. A Pioneer’s Perspective on Helicopters by Sergei Sikorski

May 19, 1994. Pilot-Induced Oscillations – A Continuing Saga by Duane McRuer

June 14, 1994. Air Power Changes from WWII to the Present by George Doersch

July 20, 1994. The Lunar Orbit Rendezvous, Lunar Module, and Apollo Mission by Dr. John C. Houbolt

August 8, 1994. Building the Information Superhighway: From Dream to Reality by Dr. Jose’-Marie Griffiths

September 7, 1994. STS-60: A New Era of U.S./Russian Cooperation in Space by Kenneth S. Reightler, Jr.

October 4, 1994. Recent Innovations in Materials Science: The Interrelationship of Materials Science with other Scientific Disciplines by Prof. Robert Pond

November 28, 1994. STS-64 (LITE) Mission by Col. Mark Lee

November 30, 1994. Space Science as a Driver for the U.S. Space Program by Dr. France A. Cordova

December 13, 1994. CEBAF: An Accelerator Laboratory for Nuclear Physics by Dr. Beverly Hartline [ oldest talk for which a web page exists; from this date forward the speaker’s affiliation is listed on the web page for the talk]

## **1993**

January 19, 1993. High-Speed Civil Transport, Louis J. Williams, Director of High-Speed Research, NASA Headquarters.

February 3, 1993. Searching for Our Colonial Roots, Dr. Henry M. Miller, Director of Research, Historic St. Mary’s City.

March 8, 1993. Serendipity: Luck in Science Discovery, Dr. John Chrisman, Retired Director of Research and Graduate Studies at Loyola University, New Orleans, LA.

April 1993. Joint Effort with ICASE: Inaugural Theodorsen Lecture Entitled “Some Aspects of the Aeroacoustics and High-Speed Jets,” Professor M. J. Lighthill, Southampton University, United Kingdom.

May 11, 1993. Mission to Planet Earth, Dr. James G. Lawless, Deputy Director for Global Research, Office of Mission to Planet Earth, NASA Headquarters.

June 14, 1993. The Role of Unmanned Aircraft, Dr. James Anderson, Professor of Atmospheric Chemistry, Harvard University, Cambridge, MA.

July 19, 1993. Advances in Laminar Flow, Dr. Fayette S. Collier, Jr., Laminar Flow Control Project Office, Flight Applications Division, NASA Langley Research Center, Hampton, VA.

August 9, 1993. Fuzzy Logic and Its Applications, Professor Lotfi Zadeh, Electrical Engineering Dept., University of California at Berkeley, Berkeley, CA.

September 20, 1993. The Russian Space Program— Past Accomplishments vs an Uncertain Future, Dr. Roald Z. Sagdeev, Professor Physics and the Director of the East/West Science Center, University of Maryland, College Park, MD.

October 12, 1993. Health Care: Science, Economics, Ethics, and People, Dr. Frank A. Nichols, Thoracic and Vascular Surgeon, North Mississippi Medical Center.

November 8, 1993. Some Interesting Demonstrations of Physical Phenomena, Dr. Richard B. Minnix and Dr. D. Rae Carpenter, Department of Physics and Astronomy, Virginia Military Institute, Lexington, VA.

December 13, 1993. What’s New in Lasers, Mr. Jeffrey Hecht, Contributing Editor of Laser Focus World and Boston Correspondent for New Scientist Magazine.

## **1992**

January 13, 1992. The International Space Year-1992, Craig Covault, Senior Space Technology Editor, Aviation Week & Space Technology Magazine, Washington, DC.

February 10, 1992. BURAN, Russia’s Space Shuttle – Boon or Boondoggle??. James E. Oberg, Aerospace Technologist and Soviet Space Expert, Dickinson, TX.

March 9, 1992. How Shall We Go To Mars?, Dr. Gerald Walberg, Deputy Director, Mars Mission Research Center, Professor of Mechanical and Aerospace Engineering, North Carolina State University.

April 6, 1992. Delta Clipper – From the Sea to the Stars, Charles “Pete” Conrad, Jr., Lunar Astronaut for Gemini, Apollo, Skylab.

May 4, 1992. Understanding Life in the Laboratory: An Introduction to Molecular Biology and the Social Framework in which Research is Conducted and the Knowledge Assessed by Scientists and

the Public, Dr. Sidney Altman, 1989 Nobel Laureate in Chemistry, Professor of Biology at Yale University.

June 8, 1992. Langley in the 50's, Max Faget, Chairman of the Board, Space Industries International.

July 16, 1992. A Flight Through 75 Years of Langley History, Dr. James Hansen, Langley Historian, Associate Professor of History, Auburn University, AL.

August 17, 1992. United Flight 232: Coping with One in a Billion Odds, Captain Alfred C. Haynes, United Airlines, Retired.

September 15, 1992. Industry as the Customer for Federal Service, Daniel F. Burton, Jr., Executive Vice President of the Council of Competitiveness, Washington, DC.

October 13, 1992. Where is the U.S. Heading in Space: Two Views, Dr. John M. Logsdon III, Director for both the Center for International Science and Technology Policy and the Space Policy Institute, George Washington University, and Dr. Hans M. Mark, Chancellor, University of Texas System, and Former NASA Deputy Administrator.

November 9, 1992. Turning the Tide; Saving the Chesapeake Bay, Michael Kensler, Hampton Roads Associate for the Chesapeake Bay Foundation.

December 14, 1992. America's Wilderness in the 21st Century, Chris Madson, Editor of Wyoming Wildlife.

## **1991**

January 14, 1991. Garbage!!!, Mr. Harry E. Gregori, Jr., Director, Office of Policy and Planning, Commonwealth of Virginia, Richmond, VA.

February 11, 1991. The Ozone Hole and Global Ozone Depletion, Dr. M. Patrick McCormick, NASA Langley, Hampton, VA.

March 11, 1991. An 18th Century Physics Class, Dr. Hans von Baeyer and Dr. John McKnight, Department of Physics, College of William and Mary, Williamsburg, VA.

April 8, 1991. Kepone and Other Contamination Issues in the Chesapeake Bay, Dr. Robert J. Huggett, Assistant Director, Virginia Institute of Marine Science, Gloucester Point, VA.

May 13, 1991. Contracting Out: Has NASA Gone Too Far, James R. Thompson, Jr., Deputy Administrator, NASA Headquarters, Washington, DC.

May 30, 1991. Astronaut Debriefing on STS-37 Mission: Gamma Ray Observatory Deployment and CETA EVA, Col. Steven Nagel, USAF, Lt. Col. Ken Cameron, USMC, Dr. Linda Godwin, Specialist, RMS, Lt. Col. Jerry Ross, USAF, Dr. Jay Apt, Specialist, Astronaut Office, Johnson Space Center, Houston, TX.

June 10, 1991. Control of Sound and Vibration with "Intelligent" Structural Systems, Dr. Chris R. Fuller, Professor, Mechanical Eng'g, Virginia Polytechnic Institute and State University, Blacksburg, VA.

July 16, 1991. Mars: Bringing a Dead World to Life, Dr. Robert H. Haynes, Distinguished Research Professor, Biology Department, York University, Toronto, Ontario, Canada.

August 12, 1991. Evolution of Modern Jet Transports, Richard W. Taylor, Ret. Vice President – Government Technology Liaison, Boeing Commercial Airplane Group, Seattle, WA.

September 9, 1991. The Automobile Today and Tomorrow–A Swedish Perspective, Robert C. Austin, Manager of Public Relations, Volvo Cars of North America, Rockleigh, NJ.

October 10, 1991. The Variable-Density Wind Tunnel: NASA's Most Consequential Historic Landmark, Dr. Harry A. Butowski, Historian, National Park Service, Washington, DC.

November 12, 1991. The Underwater Connection, Mr. Jerry K. Morrison, Assistant Resident Engineer/ Project Administrator, VA Department of Transportation, Suffolk, VA.

December 9, 1991. The Microspace Revolution, David W Thompson, President and CEO, Orbital Sciences Corporation, Fairfax, VA.

## **1990**

January 8, 1990. Have Goggles, Will Travel, Ms. Martha Esch, Redondo Beach, CA.

February 12, 1990. The Voyager Encounter of Neptune, Dr. Steven W. Squyres, Department of Astronomy, Cornell University, Ithaca, NY.

March 12, 1990. Langley and the Wright Brothers- The Race for the First Flight, Prof. John D. Anderson, Jr., Department of Aerospace Eng'g, University of Maryland, College Park, MD.

April 9, 1990. The World's Biodiversity: Crisis and Opportunity, Dr. Edward O. Wilson, Baird Professor of Science and Curator of Entomology, Harvard University.

May 14, 1990. The Magic of Chemistry, Dr. Richard L. Kiefer and Dr. Robert A. Orwoll, Professors of Chemistry, The College of William and Mary, Williamsburg, VA.

June 11, 1990. Digital Avionics – A Cornerstone of Aviation, Cary R. Spitzer, NASA Langley, Hampton, VA.

July 16, 1990. Mission Highlights STS-32: Retrieval of LDEF, Dr. Bonnie J. Dunbar, NASA Astronaut, NASA Johnson Space Center, Houston, TX.

August 13, 1990. CEBAF: A Laboratory for Nuclear Physics, Dr. J. Dirk Walecka, Scientific Director, Continuous Electron Beam Accelerator Facility, Newport News, VA.

September 10, 1990. Preliminary Results from the LDEF Experiments and Special Investigations, William H. Kinard, NASA Langley, Hampton, VA.

October 23, 1990. Designer Genes in Agriculture, Dr. Pablo Scolnik, Research Supervisor, Plant Science Group, DePont Experimental Station, Wilmington, Delaware.

October 24, 1990. Aeronautical Research as Seen from Europe, Dr. Philippe Poisson-Quinton, Director for Int'l Cooperations, Office National d'Etudes et de Recherches Aerospatiales, France.

November 13, 1990. Tomatoes from Space, Dr. Jim Alston, Director of Research, Park Seed Company, Greenwood, SC.

December 10, 1990. Recollections of Langley in the Forties, William H. Phillips, Distinguished Research Assoc., NASA Langley, Hampton, VA.

## **1989**

January 23, 1989. Chemical Parables: How Nylon Stockings Won World War II, Dr. Dudley R. Herschbach, Dept. of Chemistry, Harvard University, Boston, MA.

February 13, 1989. Protein Breakdown and Health and Disease, Dr. Judith S. Bond, Dept. of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA.

March 13, 1989. Trends in Supercomputer Technology, Mr. John A. Rollwagen, Chairman and Chief Executive Officer, Cray Research, Inc., Minneapolis, MN.

April 10, 1989. The Harvest of Space: Opening the High Frontier, Mr. Gregg E. Maryniak, Chief Executive Officer, Space Studies Institute, Princeton, NJ.

May 8, 1989. NDE in Aerospace: Requirements for Science, Sensors, and Sense, Dr. Joseph S. Heyman, NASA Langley, Hampton, VA.

June 12, 1989. The 1988 Atlantic Hurricane Season, Dr. Robert C. Sheets, Director, National Hurricane Ctr, Coral Gables, FL.

July 18, 1989. Manned Space Programs—The Apollo, The Soviet, and the Future, Dr. Edwin “Buzz” Aldrin, President, Starcraft Enterp., Laguna Beach, CA.

August 14, 1989. Micro-Scale Mechanics for Sensors and Actuators, Dr. Richard M. White, University of California, Berkeley, CA.

September 18, 1989. Shuttle Emergency Systems, Col. Steven R. Nagel, NASA Johnson Space Center, Houston, TX.

October 10, 1989. Trading Places: How We Allowed Japan to Take the Lead, Mr. Clyde V. Prestowitz, Carnegie Endowment for International Peace, 11 DuPont Circle, Washington, DC.

November 13, 1989. FAA Aging Fleet Program, Mr. Thomas E. McSweeney, Deputy Director, Aircraft Certification Service, Federal Aviation Administration, Washington, DC.

December 11, 1989. Fractal Forgeries: From M-Sets to Mountains and Music, Dr. Richard F. Voss, IBM Thomas J. Watson Research Center, Yorktown Heights, NY.

## **1988**

January 11, 1988. Superconductivity—Opportunities and Challenges, Dr. Jack E. Crow, Temple University, Philadelphia, PA.

February 9, 1988. Technology of the Changing Workforce, Dr. Vernon M. Briggs, Cornell University, Ithaca, NY.

March 14, 1988. Space Transportation Recovery, Rear Adm Richard H. Truly, Assoc. Admin for Space Flight, NASA Headquarters, Washington, DC.

April 11, 1988. Perfectly Engineered Viruses, Dr. Iain Hay, Uniformed Services University, Bethesda, MD.

June 13, 1988. Examining NASA's Goals and Roles: The Sally Ride Committee at Work, Nancy Sliwa, NASA Langley, Hampton, VA.

July 11, 1988. Tactical Jet VSTOL...Its Future in STOL, Dr. John W. Fozard, National Air & Space Museum, Washington, DC.

August 8, 1988. Technology for Stars and Stripes and Applications to Ship Design, Dr. Nils Salvensen, Science Applications International Corp., Annapolis, MD.

September 19, 1988. A Vision of the Future, Mr. Robert T. McCall, McCall Studios, Paradise Valley, AZ.

October 17, 1988. Near Net Shape Manufacturing of Tough Structural Composites by 3-D Fiber Architecture, Dr. Frank K. Ko, Dept. of Materials Eng'g, Drexel University, Philadelphia, PA.

November 14, 1988. From Myth to Reality: The Triumph of Daedalus, Dr. John S. Langford, III, Institute for Defense Analysis, Alexandria, VA.

December 12, 1988. Qualitative Physics: Automating Human Reasoning About the Physical World, Dr. Kenneth D. Forbus, Dept. of Computer Sciences, University of Illinois, Urbana, IL.

## **1987**

January 27, 1987. Aerodynamics in Alpine and Nordic Skiing Competition, Dr. Michael S. Holder, Calspan Corporation, Buffalo, NY.

February 9, 1987. Creating a Flying Replica of Quetzalcoatlus Northropi Pterodactyl, Mr. Henry R. Jex, Jex Enterprises, Santa Monica, CA.

February 11, 1987. Stars and Stripes '87: Computational Flow Simulations for Hydrodynamic Design, Mr. Charles W. Boppe, Engineering Design & Analy Consultants, Smithtown, NY.

March 23, 1987. Space Goals for 21st Century America, Dr. Thomas O. Paine, Former NASA Administrator, Chairman, Nat'l Commission on Space, Los Angeles, CA.

April 13, 1987. Global Climate Change and Biological Extinction, Dr. Dewey M. McLean, Department of Geological Sci, VPI & SU, Blacksburg, VA.

May 11, 1987. The Chesapeake Bay: Its Past, Present, and Future, Dr. Gerald H. Johnson, Department of Geology, College of William and Mary, Williamsburg, VA.

June 8, 1987. Air Force Project Forecast II – A Roadmap for Future Science and Technology Department, Lt. Col. Michael C. Mushala, Air Force Systems Command, Washington, DC.

July 1987. No Colloquium held this month (Langley's 70th Anniversary Celebration)

August 10, 1987. A 25 Year Perspective on Planetary Exploration–Past and Future, Dr. Geoffrey A. Briggs, NASA Headquarters, Washington, DC.

September 21, 1987. Bring Home the America's Cup, Peter F. Isler, Navigator of the Stars and Stripes, Dennis Conner Sports.

October 19, 1987. Snapshots from Planetary Exploration, Mr. Cary R. Spitzer, NASA Langley, Hampton, VA.

November 9, 1987. The Spirit of St. Louis – Design, Construction, and Flight Testing, Mr. William F. Chana, Pres., William F. Chana Assoc., Inc., San Diego, CA.

December 14, 1987. The Great Supernova of 1987, Dr. Stephen P. Maran, Goddard Space Flight Center, Greenbelt, MD.

## **1986**

January 13, 1986. Reflections of a Paleoaerodynamicist, Dr. John H. McMasters, Boeing Commercial Airplane Co., Seattle, WA.

February 24, 1986. To Fly on the Wings of the Sun, Mr. David W. Hall, David Hall Consulting, Smyrna, GA.

March 24, 1986. The Return of Halley's Comet, Dr. Robert D. Chapman, Senior Policy Analyst, Office of Science and Technology, The Executive Office of the President, Washington, DC.

April 14, 1986. Some Reflections on NACA/NASA Past, Present, and Future, Dr. Christopher C. Kraft, Rockwell International, Houston, TX.

May 12, 1986. Industrial Applications of Computerized Tomography- A Nondestructive Look Inside Materials, Dr. Michael J. Boyle, ARACOR, Sunnyvale, CA.

June 9, 1986. Strategic Defense Initiative: Update of Technologies and Progress, Lt. Gen. James Abrahamson, Director, SDIO, The Pentagon, Washington, DC.

June 19, 1986. Touching the Future, Barbara Radding Morgan, Teacher-in- Space Designee, NASA Headquarters, Washington, DC.

July 14, 1986. Electrophoresis Operations In Space, Mr. David W. Richman, McDonnell Douglas Co., St. Louis, MO.



August 11, 1986. Frequency and Time Sources— Past, Present, and Future, Dr. Arthur Ballato, US Army Electronics, Technology and Devices Lab, Fort Monmouth, NJ.

September 8, 1986. Sacred Cows and Gored Oxen: Federal Support of R & D, Dr. Michael L. Telson, Staff, US House Budget Committee, Washington, DC.

October 27, 1986. Space Station Outreach Evaluation Task Force, Mr. W. Ray Hook, Manager, Space Station Office, NASA Langley, Hampton, VA.

November 10, 1986. The Will to Live, Brig Gen W. W. Spruance, Ret., Chairman, Board of Trustees, Embry-Riddle Aeron. Univ, Bunnell, FL.

December 8, 1986. Lunar and Planetary Exploring Machines, Mr. Oran W. Nicks, Director, Space Research Center, Texas A & M University, College Station, TX.

## 1985

January 21, 1985. Applications of Ultrasonics, Prof. Gordon Kino, Stanford University, Stanford, CA.

February 11, 1985. Human-Powered Flight: The M. I. T. Monarch, Mr. John S. Langford, MIT, Cambridge, MA.

March 11, 1985. The Physics of Pianos and Violins, Prof. Gabriel Weinreich, University of Michigan, Ann Arbor, MI.

April 8, 1985. Speed Sailing—An Attempt at a New World Record, Christopher R. White, Chris White Designs, Mathews, VA.

May 23, 1985. Visions for the Future, Dr. Arthur C. Clarke, University of Moratuwa, Sri Lanka.

June 10, 1985. The Hubble Space Telescope: Astronomical Goals, Dr. Hervey Stockman, Jr., Space Telescope Science Inst., Baltimore, MD.

July 22, 1985. Space Shuttle Flight 51-B/ Spacelab III—A Mission of Science, Col. Frederick D. Gregory, NASA Astronaut, Johnson Space Center, TX.

August 19, 1985. The Life and Times of Fred Weick—Aeronautical Pioneer, Dr. James R. Hansen, University of Maine, Orono, ME.

September 9, 1985. The Advanced Supersonic Transport—Status, Mr. Richard H. Petersen, Director, NASA Langley, Hampton, VA.

October 15, 1985. Space Transportation Without Rockets: Beanstalks, Tethers, Launch Loops, and Indian Rope Tricks, Dr. Charles A. Sheffield, Earth Satellite Corp., Chevy Chase, MD.

November 12, 1985. Handling Qualities and Pilot Evaluation, Mr. Robert P. Harper, Jr., Arzin/Calspan, Buffalo, NY, and Mr. George E. Cooper, G. E. Cooper Assoc., Saratoga, CA.

December 9, 1985. Orbit-On-Demand Vehicles: Quick Shuttles, Dr. James A. Martin, NASA Langley, Hampton, VA.

## 1984

January 16, 1984. Micromachined Smart Silicon Sensors, Prof. James B. Angell, Stanford University, Stanford, CA.

February 13, 1984. Space Station Design—A Historical Perspective, Mr. W. Ray Hook, NASA Langley Research Center, Hampton, VA.

March 12, 1984. The Earth's Early Atmosphere: A New View, Dr. Joel S. Levine, NASA Langley Research Center, Hampton, VA.

April 9, 1984. Magnetic Fluids: Phenomena, Analysis and Applications, Dr. Roland E. Rosensweig, Exxon Research & Eng'g, Annandale, NJ.

May 8, 1984. Education—The Role of Family and Community, Dr. Robert Coles, Harvard University, Cambridge, MA.

June 4, 1984. Crew Report on STS 41-C and the Deployment of LDEF, Capt. Robert L. Crippen and Mr. Terry J. Hart, NASA, Houston, TX.

June 11, 1984. Bird Navigation, Dr. Kenneth P. Able, State Univ of New York, Albany, NY.

July 9, 1984. Recent Developments in the Soviet Space Program, Marcia S. Smith, Congressional Research Service, Library of Congress, Washington, DC.

August 28, 1984. Automobile Aerodynamics, Mr. Kent B. Kelly, General Motors Technical Ctr., Warren, MI.

September 10, 1984. The Continuous Electron Beam Accelerator Facility in Newport News, Prof. Hans C. von Baeyer, College of William and Mary, Williamsburg, VA.

October 9, 1984. Home, Schools, Society: Partners in America's Future, Dr. Richard Berendzen, American University, Washington, DC.

December 3, 1984. A 1990 Integrated Digital/ Electric Aircraft, Mr. Gordon E. Tagge, Boeing Commercial Airplane Co., Seattle, WA.

December 10, 1984. Educating America, Hon. Andrew Young, Mayor, Atlanta, GA.

## **1983**

January 17, 1983. Acid Rain: Causes, Consequences, and Possible Management, Dr. Ellis B. Cowling, Chairman, Nat'l Atmospheric Deposition Program, North Carolina State Univ, Raleigh, NC.

February 14, 1983. The Winds of Change, Donald D. Baals, Distinguished Research Assoc., NASA Langley Research Center, Hampton, VA.

March 14, 1983. Man Machine Anomalies, Dr. Robert G. Jahn, Dean, School of Eng'g and Applied Science, Princeton University, Princeton, NJ.

April 4, 1983. The Impact of Science on Society, James Burke, BBC-TV Host, Writer, Producer, London, England.

May 16, 1983. Accomplishments of Science to the Year 2000, Jules Bergman, ABC-TV Science Editor, Writer, Reporter, New York, NY.

June 13, 1983. To Be Creative, Prof. David N. Perkins, Harvard University, Cambridge, MA.

July 11, 1983. The Geology of the Lower Chesapeake Region, Dr. Gerald H. Johnson, The College of William and Mary, Williamsburg, VA.

August 8, 1983. Creating the Advanced Passenger Train, Dr. Alan H. Wickens, The Railway Technical Center, Derby, England.

September 12, 1983. Our Heritage in Applied Research, Dr. Hans Marc, NASA Headquarters, Washington, DC.

October 13, 1983. Our Destiny in the Cosmos, Dr. Isaac Asimov, New York, NY.

November 14, 1983. The Revolt Against Max Munk: A Historical Perspective, Dr. James R. Hansen, Historian for Langley Research Center, Hampton, VA.

December 12, 1983. Current Issues in Cancer Research, Dr. Mary Ann Lane, Dana-Farber Cancer Institute, Boston, MA.

## **1982**

January 11, 1982. Technology Developments in Personal Computing, Mr. Carl Helmers, President, North American Technology, Inc., Peterborough, NH.

February 22, 1982. If you Innovate, You Have Got to Motivate, John D. (Jack) Jackson, Senior Instructor, American Airlines Flight Academy, Dallas/Fort Worth, TX.

March 22, 1982. Man's Past, Present, and Future, Dr. Robert Jastrow, Founder and Former Director, NASA Goddard Institute for Space Studies, New York, NY.

April 12, 1982. Are Scientists Doing Their Homework?, Dr. Eugene Garfield, President and Founder, Institute for Scientific Information, Philadelphia, PA.

May 14, 1982. Human-Powered Transportation: Commuter Cycles in the Future, Prof. David Gordon Wilson, MIT, Cambridge, MA.

June 14, 1982. The Learfan Composite Airplane, Richard R. Tracy, Vice President, Learfan Ltd., Reno, NV.

July 13, 1982. Orbital Transfer Vehicles and Evolutionary Approach, Ivan Bekey, Director, Advanced Programs, NASA Headquarters, Washington, DC.

August 9, 1982. Echo Location Systems in Nature, Dr. Edward L. Titlebaum, University of Rochester, Rochester, NY.

September 13, 1982. Diet, Behavior, and Self-Image, Lendon H. Smith, MD, Pediatrician, Lecturer, Author, Portland, OR.

October 25, 1982. The Search for Monopoles, Dr. W. Peter Trower, Professor of Physics, VPI & SU, Blacksburg, VA.

November 8, 1982. Extraterrestrial Intelligence: Where is Everybody?, Dr. John A. Ball, Radio Astronomer, Harvard Smithsonian Center for Astrophysics, Cambridge, MA.

December 13, 1982. Aircraft Accident Investigation, Vice Admiral (Ret.), Donald D. Engen, Member, NTSB, Washington, DC.

## **1981**

January 12, 1981. Cinematic Simulations and Special Effects, Dr. Kenneth L. Jones, Tech Director for Special Effects, New World Productions, Venice, CA.

February 2, 1981. The Voyager I Encounter with Saturn, Dr. Geoffrey A. Briggs, Deputy Director, Solar System Exploration Division, NASA, Washington, DC.

February 9, 1981. Computer Graphics and Facility Design, Dr. Joel N. Orr, President, Orr Associates, Inc., Danbury, CT.

March 16, 1981. Recombinative DNA, Dr. James D. Watson, Director, Cold Spring Harbor Lab, Cold Spring Harbor, NY.

April 14, 1981. From Fossils to Footprints, Dr. Mary D. Leakey, Archaeologist, Leakey Foundation, Pasadena, CA.

May 4, 1981. Space Technology Applied to Geodesy, Dr. Edward A. Flinn, III, Chief Scientist, Geodynamics Branch, NASA, Washington, DC.

June 15, 1981. The Earliest Life, Prof. Lynn Margulis, Department of Biology, Boston University, Boston, MA.

July 20, 1981. Space Shuttle Orbital-Flight Test Program, Mr. L. Michael Weeks, Deputy Associate Administrator, Office of Space Transportation Systems, NASA, Washington, DC.

August 10, 1981. Severe Storms, Mr. Jean T. Lee, Research Meteorologist, National Severe Storms Lab, Norman, OK.

September 14, 1981. Some Water Problems and How the Industry is Trying to Solve Them, Mr. Kenneth E. Shull, Vice President – Research/ Environmental Affairs, Philadelphia Suburban Water Company, Bryn Mawr, PA.

October 20, 1981. A Morning with Eric Sevareid, Eric Sevareid, News Correspondent, Analyst, Columbia Broadcasting System, New York, NY.

November 9, 1981. Development of an Underwater Archaeology Program for Virginia, Dr. John Broadwater, Senior Underwater Archaeologist, Virginia Historic Landmarks Commission, Research Center for Archaeologist, Yorktown, VA.

December 14, 1981. Mount St. Helens – Surprise, Surprise, Dr. Mortimer H. Hait, U.S. Geological Survey, Denver, CO.

## **1980**

January 24, 1980. A Star in Trouble and Other Condensed Remains of Supernovae, Dr. Stephen P. Maran, Senior Staff Scientist, Laboratory for Astronomy and Solar Physics, NASA Goddard Space Flt. Ctr., Greenbelt, MD.

February 12, 1980. The High Frontier, Dr. Gerard K. O'Neill, Professor of Physics, Princeton University, Princeton, NJ.

April 8, 1980. Einstein Remembered, Dr. Banesh Hoffman, Mathematician, Queens College, Flushing, NY.

April 28, 1980. New Discoveries in Old Virginia, Ivor Noel Hume, Archaeologist, Author, Lecturer Williamsburg, VA.

May 12, 1980. Prevailing in the Absence of Technology, Vice Admiral James Stockdale, USN Ret., Commandant, The Citadel, Charleston, SC.

May 22, 1980. A Science Lecture of the 18th Century, Dr. John L. McKnight, Professor of Physics, and Dr. Hans C. von Baeyer, Professor of Physics, Director of VARC, College of William & Mary, Williamsburg, VA.

July 17, 1980. The Amazing Moons of Jupiter, Dr. Thomas A. Mutch, Associate Administrator for Space Science, National Aeronautics and Space Administration, Washington, DC.

August 11, 1980. Collision Avoidance in Space, Mr. Donald J. Kessler, Astrophysicist, Space Environment Office, NASA Johnson Space Ctr, Houston, TX.

August 15, 1980. Viking Project – Mars Mission Update, Mr. Joseph M. Boyce, Planetary Geology Discipline Scientist, NASA, Washington, DC, Dr. Conway W. Wnyder, Viking Project Scientist, and Mr. Kermit S. Watkins, Viking Project Manager, Jet Propulsion Laboratory, Pasadena, CA.

September 8, 1980. Biomass – Renewable Energy, New Jobs, and Economic Gains for Virginians, Dr. George W. Brooks, Director for Research and Development, Engineering Incorporated, Hampton, VA.

October 16, 1980. A Saga of Black History – The Future of the Family, Mr. Alex Haley, Author of Roots, Los Angeles, CA.

November 10, 1980. The Fourth Kingdom – Man, Mr. William J. Sauber, Long Range Project Manager, Dow Chemical Corporation, Midland, MI.

## **1979**

January 29, 1979. Space and the Oceans, Captain Jacques Yves Cousteau, Explorer, Marine Biologist, Oceanographer, The Cousteau Society, New York, NY.

February 12, 1979. Planning Advanced Energy Technologies (Fusion, MHD, and Satellite Power Systems Examples), Dr. Robert A. Summers, Executive Director for R & D, Coordination Council, Department of Energy, Washington, DC.

March 12, 1979. The Influence of Life on the Evolution of the Atmosphere, Dr. James C. G. Walker, Head, Ionospheric Research, National Astronomy and Ionosphere Center, Arecibo, PR.

April 9, 1979. The Future of International Space, Mr. Robert B. Hotz, Editor and Publisher, Aviation Week & Space Technology, Washington, DC.

May 14, 1979. The Trans Alaska Oil Pipeline, Mr. Edward L. Patton, Former Chairman and Chief Executive Officer, Alyeska Pipeline Service Co., Bellevue, WA.

June 11, 1979. Scientific Investigations of The Shroud of Turin, Dr. Adam J. Otterbein, President, Holy Shroud Guild of America, Holy Family Retreat, Hampton, VA, and Dr. John P. Jackson, Professor, Department of Physics, United States Air Force Academy, Colorado Springs, CO.

July 23, 1979. Watts in the Sea: Energy from the Ocean, Mr. John R. Justus, Science Policy Analyst for Earth Science and Ocean Affairs, Library of Congress, Washington, DC.

August 13, 1979. High-Speed Aerodynamic Research – Rocket-Propelled Models, Mr. Joseph A. Shortal, Retired Chief, Pilotless Aircraft Research Division, NASA Langley Research Ctr., Hampton, VA.

September 27, 1979. Some Problems of Freedom, Dr. William F. Buckley, Jr., Author, Editor, Lecturer, “The National Review”, New York, NY.

October 15, 1979. Ethics in Science and Technology, Dr. Vivian Weil, Research Fellow, Center for the Study of Ethics in the Professions, Illinois Institute of Technology, Chicago, IL.

November 19, 1979. Nuclear Energy Debate: A Case Against, Mr. Stuart Diamond, Journalist, Pulitzer Prize Nominee, “Newsday”, Long Island, NY; A Case For, Dr. Carl Walske, Physicist, President, Atomic Industrial Forum, Washington, DC; Moderator, Mr. Thomas N. Downing, Former U.S. Congressman, Hampton, VA.

December 17, 1979. Alone Against the Atlantic – The Voyage of Yankee Girl, Mr. Gerry Spiess, Engineer, Sailor, White Bear Lake, MN.

## **1978**

January 16, 1978. The Future of the American Family, Mr. James A. Michener, St. Michaels, MD.

February 2, 1978. Alaska Pipeline, (program cancelled due to weather problems), Mr. Edward L. Patton, Ch. and Chief Exec. Officer, Alyeska Pipeline Service Co., Anchorage, AL.

February 27, 1978. Commercial Air Transportation Development in the Next Three Decades, Mr. H. W. Withington, Boeing Commercial Airplane Co.

March 13, 1978. Herb Use and Abuse, Dr. Walter H. Lewis, Professor of Botany, Washington University, St. Louis, MI.

April 20, 1978. Applications of “Catastrophe Theory”, Prof. E. Christopher Zeeman, University of Warwick, Coventry, England.

May 1, 1978. The U.S. Economy & Current Economic Policies, Dr. Milton Friedman, Senior Research Fellow, Hoover Institution, Stanford U., Stanford, CA.

May 30, 1978. Major Policy Issues Facing NASA, Dr. Robert A. Frosch, Administrator, NASA, Washington, DC.

June 12, 1978. The Wright Brothers, Charles H. Gibbs-Smith, Lindbergh Prof. of Aerospace History, National Air & Space Museum, Washington, DC.

July 31, 1978. Engine Options for Supersonic Cruise Aircraft, Dr. Peter H. Calder, Project Director Olympus 593, Rolls-Royce Limited, Aero Division, Bristol, England.

August 7, 1978. New Energy Technology, Dr. Eric H. Willis, Deputy Assistant Secretary for Energy Technology, Department of Energy, Washington, DC.

September 18, 1978. Biology of Human Aging, Dr. Leonard Hayflick, Senior Research Cell Biologist, Children's Hospital Medical Ctr., Bruce Lyon Memorial Research Laboratory, Oakland, CA.

October 5, 1978. The Space Shuttle, Dr. Donald K. (Deke) Slayton, Manager of Orbital Flight Test for the Space Shuttle Project Office, Lyndon B. Johnson Space Ctr., Houston, TX.

October 16, 1978. Hydrodynamics and Performance of Sailing Vessels, Dr. Jerome H. Milgrim, Department of Ocean Eng'g, Massachusetts Inst. of Technology, Cambridge, MA.

November 13, 1978. Humans in the Universe, Dr. R. Buckminster Fuller, Architect, Carbondale, IL.

December 11, 1978. Nondestructive Evaluation – Its Growing Importance for the 1980's, Mr. Harold Berger, Chief of the Office of Nondestructive Evaluation, National Bureau of Standards, Department of Commerce, Washington, DC.

1977

January 10, 1977. East-Coast Viking Presentation, Participants: Dr. Gerald A. Soffen, (Langley Research Center), Dr. Michael H. Carr, (U.S. Geological Survey), Dr. Harold P. Klein, (Ames Research Center).

February 7, 1977. A Saga of Black History, Dr. Alex Haley, Program cancelled due to illness of Dr. Haley.

March 14, 1977. Computer Simulation of Medical Phenomena, Dr. Harvey Greenfield, College of Medicine, University of Utah, Salt Lake City, UT.

April 15, 1977. Earthquakes, Dr. Charles Thiel, National Science Foundation, Washington, DC.

May 2, 1977. The Moon as Threshold, Dr. Isaac Asimov, Science and Science Fiction Writer, New York, NY.

June 13, 1977. Recollections from a Career in Aeronautics, Dr. Robert T. Jones, Senior Scientist, NASA Ames Research Center.



July 11, 1977. A Look at Deep Ocean Mining, Dr. James J. Victory, Deepsea Ventures, Inc., Gloucester Point, VA.

August 15, 1977. The Economic Outlook for The United States, Dr. Leland E. Traywick, Director, Bureau of Business Research, College of William and Mary, Williamsburg, VA.

September 12, 1977. The Heresy that Became, Dr. Walter Sullivan, Science Editor, New York Times, New York, NY.

October 14, 1977. Terrorism and Law Enforcement, Sir Robert Mark, Former Director, New Scotland Yard, London, England.

November 14, 1977. Recent Developments in Solar Energy, Dr. Edgar M. Cortright, Vice Pres., Technical Dir., Owens Illinois, Inc.

December 19, 1977. A Personal View of the Early Years of the Computer Revolution, Dr. James H. Wilkinson, Deputy Chief Scientific Officer, Div. of Numerical Analysis and Computing, National Physical Laboratory, Teddington, England.

## 1976

January 12, 1976. A Bicentennial Look at America – Crisis of Confidence, Dr. Arthur M. Schlesinger, Jr., Albert Schweitzer Professor of Humanities, City University of New York, New York, NY.

February 9, 1976. With a View to Their Practical Solution – Sixty Years with the NACA and NASA, Dr. Eugene M. Emme, NASA Historian, Washington, DC.

March 8, 1976. Science in the Revolutionary Era, Dr. Brooke Hindle, Director, Nat. Museum of History and Technology, Smithsonian Institution, Washington, DC.

April 12, 1976. New Frontiers in Consumer Affairs, Ms. Virginia H. Knauer, Assistant to the President for Consumer Affairs, Washington, DC.

May 10, 1976. Studying Animals and Their Habitat Using Satellite Technology, Dr. John J. Craighead, Montana Cooperative Wildlife Research Unit, Missoula, MN.

June 28, 1976. The Origins of Life, Dr. Leslie E. Orgel, The Salk Institute for Biological Studies, San Diego, CA.

July 12, 1976. The Soviet Space Program in 1976 – How Did it Get Here? Where is it Going?, Dr. Charles S. Sheldon II, Chief, Science Policy Research Division, Library of Congress, Washington, DC.

August 5, 1976. Why Man Explores (Film of panel discussion sponsored by Langley Research Center and held at Pasadena, CA, on July 2, 1976), Norman Cousins, Editor, Saturday Review Magazine, Ray Bradbury, Science Fiction Writer, Jacques Cousteau, Undersea Explorer, James Michener, Novelist and Travel Writer, and Philip Morrison, Professor of Physics, MIT.

August 9, 1976. Creative Cosmology – Universe of the Mind, Dr. Frederic B. Jueneman, Director/Research INCA, “Innovative Notebook” Columnist, Industrial Research Magazine, San Jose, CA.

September 2, 1976. Vikings at Mars – The Early Results, Dr. Wm. H. Michael, Jr., Team Leader of the Viking Mars Mission Radio Science Team, Spec. Asst. to Center Director, Langley Research Center.

September 29, 1976. Alternate Energy Sources, Dr. Dixy Lee Ray, Former Head, AEC, Fox Island, WA.

October 26, 1976. The Mood of the Nation, Dr. George H. Gallup, Founder of the Gallup Poll, Princeton, NJ.

December 13, 1976. ESP: Science, Sorcery, or Skulduggery, Dr. Persi Diaconis, Stanford University, Stanford, CA.

## 1975

January 13, 1975. The Dynamics of Long Term Energy Availability: The 40 Year Brownout, Dr. Dennis Meadows, Thayer School of Eng'g, Dartmouth College, Hanover, NH.

February 10, 1975. Speech Sounds by and for Machines, Dr. C. H. Coker, Bell Laboratories, Murryhill, NJ.

March 11, 1975. Exploring the Planets with Spacecraft: Accomplishments to Date, Mr. Donald G. Rea, Jet Propulsion Laboratory, Pasadena, CA.

April 14, 1975. Stalking the Ghost of Homas Malthus, Mr. Gerard Piel, President, Scientific American, New York, NY.

May 12, 1975. The Apparent Flow of Time and the Expansion of the Universe, Professor Thomas Gold, Department of Astronomy, Cornell University, Ithaca, NY.

May 19, 1975. The Scientific Potential of the UFO Problems, Professor P. A. Sturrock, Space Science and Astrophys., Stanford University.

July 14, 1975. Primate Intelligence and Language, Dr. Duane M. Rumbaugh, Department of Psychology, Georgia State University, Atlanta, GA.

August 11, 1975. Laser Revolution in Spectroscopy, Prof. Arthur L. Schawlow, Department of Physics, Stanford University, Stanford, CA.

September 8, 1975. The Energy Crisis and the American Future, Stewart L. Udall, Former Secretary of Interior.

October 31, 1975. Space Colonization and Energy Supply to the Earth, Prof. G. K. O'Neill, Physics Department, Princeton University, Princeton, NJ.

November 10, 1975. New Frontiers for Man and the Natural Environment, Dr. William E. Cooper, Department of Zoology, Michigan State University, E. Lansing, MI.

December 8, 1975. Genetic Engineering – How Great is the Danger?, Dr. Bernard D. Davis, Bacterial Physiology Unit, Harvard Medical School, Boston, MA.

## **1974**

January 14, 1974. Powered Artificial Limbs, Mr. Woodrow Seamone, Missile Control Systems, The Johns Hopkins University, Applied Physics Laboratory, Silver Spring, MD.

February 11, 1974. Aircraft Noise – An Academic View, Prof. Jack L. Kerrebrock, Dir., Gas Turbine Lab. and Dir., Space Propulsion Lab., Mass. Inst. of Technology, Cambridge, MA.

March 11, 1974. Atmospheric Modeling, Dr. Warren M. Washington, National Center for Atmospheric Research, Boulder, CO.

April 1, 1974. In Defense of Technology, Dr. Peter Beckmann, University of Colorado, Boulder, CO.

May 13, 1974. Urban Planning and Transportation in Light of the Energy Crisis, Dr. Elliot Montroll, University of Rochester, Physics Department, Rochester, NY.

June 10, 1974. Solid Surfaces – Recent Progress and Future Promise, Prof. Harry C. Gatos, Mass. Inst. of Technology, Cambridge, MA.

July 8, 1974. The Great World Transformation Today, Dr. John Platt, Mental Health Research Inst., University of Michigan.

August 12, 1974. Paleomagnetism and Its Contribution to the Recent Revolution in Earth Sciences, Prof. Robert B. Hargraves, Dept. of Geological and Geophysical Sciences, Princeton University.

September 17, 1974. Control of Environmental Systems, Dr. William Cooper, Department of Zoology, Michigan State University.

October 4, 1974. No Colloquium held this month

November 11, 1974. Nature's Sonar (Echo Location in Bats), Dr. Alvin Novick, Yale University, Dept. of Biology, New Haven, CT.

December 9, 1974. An Aerodynamicist's Bag of Tricks – That Help Him Make Better Airplanes, Mr. A. M. O. Smith, Douglas Aircraft Company, Long Beach, CA.

## **1973**

January 15, 1973. A Rapid Review of Eastern American Prehistory, Dr. James B. Griffin, Director, Museum of Anthropology, University of Michigan, Ann Arbor, MI.

March 12, 1973. ESP: A Not so Uncommon Sense, Prof. Gertrude Schmeidler, Department of Psychology, City College of New York, New York, NY.

April 9, 1973. The Development of Airplane Structures, Dr. Nicholas J. Hoff, Visiting Professor, School of Eng'g Science and Mechanics, Georgia Institute of Technology, 225 North Avenue, NW, Atlanta, GA.

May 14, 1973. The Coastal Seas – National Marine Resources, Dr. William J. Hargis, Jr., Director, Virginia Inst. of Marine Science, Gloucester Point, VA.

June 11, 1973. Breakthrough in Housing Technology, William J. Werner, Manager Housing Systems, Div. of Bldg. Technology and Site Operations, Dept. of Housing & Urban Develop., Washington, DC.

July 16, 1973. Problems of Air Transportation Associated with Major U.S. Cities, Mr. Charles Leedham, Commissioner, Dept. of Marine and Aviation, New York, NY.

August 13, 1973. The Supercritical Wing, Dr. Richard T. Whitcomb, Head, Transonic Aerodyn. Br., High-Speed Aircraft Division, NASA Langley Research Center, Hampton, VA.

September 10, 1973. The Chemical Basis of Extraterrestrial Life, Prof. Cyril Ponnampereuma, Dir., Lab. of Chemical Evolution, Dept. of Chemistry, University of Maryland.

October 15, 1973. Parapsychology and Physics, Dr. Edgar M. Mitchell, Dir., Inst. of Noetic Sciences, Palo Alto, CA.

November 15, 1973. Energy-Present Status and Implications, Dr. Marjorie P. Meinel, University of Arizona, Tucson, AZ / Solar Energy – Solution and Technical Considerations, Dr. Aden B. Meinel, University of Arizona, Tucson, AZ. / Energy – A Reorientation In Demand, Mr. Roger S. Carlsmith, ORNL-NSF Environmental Prog., Oak Ridge, TN.

December 10, 1973. New View of Man and the Universe in Light of the Space Age, Dr. Immanuel Velikovsky, Princeton University, Princeton, NJ.

## **1972**

January 10, 1972. Shock Waves, Prof. Hans Liepmann, California Inst. of Technology, Pasadena, CA.

February 14, 1972. Complex Molecules in Outer Space, Dr. David Buhle, Nat. Radio Astronomy Observatory, Greenbank, WVA.

March 13, 1972. High Energy Sources in Space, Prof. Wolfgang Priester, Director, Astronomical Inst. University of Bonn, Bonn, West Germany.

April 10, 1972. Energy, Life, and Climate, Dr. David M. Gates, Prof. of Botony and Director, Biological Station, University of Michigan, Ann Arbor, MI.

May 8, 1972. Extraterrestrial Intelligence, Dr. Frank Drake, Director, Nat. Atmospheric and Inospheric Center, Cornell University, Ithaca, NY .

June 12, 1972. Einstein's Biggest Mistake and How Not to Make It, Mr. Frederik Pohl, Author/Editor Red Bank, NJ.

July 17, 1972. The Relationship Between Human and Machine Thinking, Dr. I. J. Good, Univ. Professor of Statistics, Virginia Polytechnic Inst, Blacksburg, VA.

August 14, 1972. Science and Control of Social Behavior, Dr. Israel Goldiamond, Prof. of Psychology, Depts. of Psychiatry and Psychology, University of Chicago, Chicago, IL.

September 18, 1972. Concorde – A Technical Updating, E. H. Burgess, British Aircraft Corporation, Great Britain.

October 16, 1972. Mariner 9 Review: Mars from Mariner 9. Implications for Viking, Dr. Carl Sagan, Center for Radiophysics and Space Research, Cornell University, Ithaca, NY, and Preliminary Geologic, Harold Masursky, Results from Mariner 9, U.S. Geological Survey, Center for Astrogeology, Flagstaff, AZ.

November 13, 1972. Research Applications for National Needs, Mr. Sidney Sternberg, National Science Foundation, Washington, DC.

December 4, 1972. Biofeedback for Mind-Body Self-Regulation, Dr. Elmer Green, Head, Psychophysiology Lab., The Menninger Foundation, Topeka, KS.

## **1971**

October 18, 1971. The U.S. Space Program Through the 70's, Dr. Wernher von Braun, Deputy Associate Administrator, NASA, Washington, DC.

November 8, 1971. The Year 2000, Mr. Barry Bruce-Briggs, Hudson Institute, Croton-on-Hudson, NY.

December 13, 1971. Artificial Intelligence, Prof. Marvin Minsky, Director, Artificial Intelligence Laboratory MIT, Cambridge, MA.