

Once again, the Carnegie Astronomy Lecture Series presents the latest findings at one of the world's preeminent centers of astronomical research. Founded in 1904, the Carnegie Observatories has led virtually every major modern discovery about the origins, size, shape, and structure of the Universe.



The Observatories' headquarters are in Pasadena, California; its large telescopes are at Las Campanas, high in the clear skies of Chile's Atacama Desert.



Soon Las Campanas will also house the Giant Magellan Telescope, the most powerful telescope ever built, to be inaugurated in 2021.

As part of the Carnegie Institution for Science, the Observatories represents the forefront of collaborative research and discovery on an international scale.

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2016 LECTURE SERIES

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THIS SPRING, THE LECTURE SERIES
RETURNS TO
THE HUNTINGTON LIBRARY!

1151 Oxford Road, San Marino
All Lectures are in Rothenberg Auditorium.

THE LECTURES ARE FREE.
BECAUSE SEATING IS LIMITED, HOWEVER,
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DOORS OPEN AT 6:45 PM. Each Lecture
will be preceded by a brief musical
performance by students from The
Colburn School.

LECTURES START AT 7:30 PM.
*Light refreshments will be available.
The Huntington Cafe will also be open from
5:30-7:15 PM, serving a prix fixe buffet and
selected à la carte items.*

More information: 626.304.0250 or
www.obs.carnegiescience.edu

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COVER IMAGE: The Las Campanas Observatory; 2.5 meter; Irénée du Pont telescope illuminated by the spectacular glow of the southern Milky Way (Photo credit: Yuri Beletsky).

MONDAY, APRIL 4, 2016

**LAS CAMPANAS OBSERVATORY:
A SOUTHERN WINDOW ON
THE UNIVERSE**



DR. MARK PHILLIPS
Director, Las Campanas
Observatory
Associate Director for
Magellan
Carnegie Institution for
Science

For 45 years, the Las Campanas Observatory of the Carnegie Institution for Science has provided a superlative window in the Southern Hemisphere for exploring the wonders of our Universe. Located in the Andes foothills of northern Chile, the Las Campanas telescopes have yielded many breakthrough discoveries: giant voids and immense structures in the distribution of galaxies, the first detection of a proto-planetary disk around a neighboring star, the first naked-eye supernova since the invention of the telescope, and much more. Dr. Phillips will recount the spectacular growth of astronomical research in this unique land, while also looking ahead to the bright future of scientific discovery that awaits Las Campanas.



**THE ANNUAL ASTRONOMY
LECTURE SERIES IS ORGANIZED
BY DR. JOHN MULCHAEY**
Crawford H. Greenewalt Chair
and Director, The Carnegie
Observatories.

MONDAY, APRIL 18, 2016

**A SHORT HISTORY OF PLANET
FORMATION**



DR. ANAT SHAHAR
Staff Scientist
Geophysical Laboratory
Carnegie Institution for
Science

Our solar system formed 4.5 billion years ago in an extremely chaotic environment and has evolved significantly over that time. What we see today is an organized inner solar system with four very different terrestrial planets. Join Dr. Shahar for an exploration of these planets as we try to understand their diversity. By analyzing rocks we can hold in our hands today and conducting experiments in the laboratory, we can probe which processes and conditions the terrestrial planets experienced billions of years ago.



For more than 20 years, Dr. Mulchaey has made major contributions to understanding the processes associated with galaxy formation and evolution, as well as leading programs for postdoctoral training and the development of new generations of great astronomers.

MONDAY, MAY 2, 2016

EXOPLANETS



DR. KEVIN SCHLAUFMAN
Assistant Professor of
Physics and Astronomy,
Johns Hopkins University
Carnegie-Princeton
Fellow, Carnegie
Observatories &
Princeton University

This is an extraordinary time in human history. While it has been only twenty years since astronomers first discovered planets outside of our solar system, we are already aware of several planets that could have liquid water on their surfaces. In just ten years, we will have the technological ability to search for signs of life, like oxygen and methane, in the atmospheres of a few select exoplanets. Dr. Schlaufman will tell the story of exoplanets to date, and outline the progress we will soon see in the search for life elsewhere in our Galaxy.



MONDAY, MAY 16, 2016

**THE SECRET LIVES OF
GALAXIES**



DR. KATHERINE ALATALO
Hubble Fellow
Carnegie Observatories

The Hubble sequence of galaxies resembles a simple classification chart, yet underneath the neatly aligned shapes and colors lie complex and violent histories. Through radio, infrared, UV and optical astronomy, today we can deduce these histories – and the future. Nearby examples of every stage in the Hubble sequence provide living galactic fossils that reveal their 10 billion years of evolution. Dr. Alatalo will tour the Hubble sequence, exploring three avenues to galactic transitions: the quiet, slow fade; the violent merger; and the quietly violent evolution of a galaxy, likely due to a supermassive black hole in its center. By exploring how each piece of the puzzle fits with every other piece, we can understand the evolution of the Universe and fundamental questions of how we got here.

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