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Travel

BRIGHT
HORIZONS™ 23

CANARY ISLANDS NOV. 30 – DEC. 12, 2014



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Travel with Bright Horizons 23 to the Canary Islands, a place of geologic splendor, evolutionary isolation, and great cultural charm. With dark starry skies above and tremendous biodiversity below, the Canaries invite us to relax and wonder. Our journey takes us to the island of Madeira with its UNESCO-reserve forests, and we'll sample Lisbon's big-city fun, too.

Nestled aboard Cunard's Queen Mary 2, we'll dig into paleontology, absorb developments in particle physics, and explore science news.

Come along with us and explore the Canary Islands' UNESCO World Biosphere Reserves with new friends. Sample local foods and wine with your special someone. Exercise your curiosity. Discuss, learn, and reflect amidst the unique and memorable venues of these Atlantic isles.



Cruise prices vary from \$1,959 for an Interior State-room to \$8,498 for a Queens Suite, per person (pp) based on double occupancy. For those attending our SEMINARS, there is a \$1,575 fee. Add'l pp fees: port charges, gov't taxes, and fees are \$339.75; gratuities are \$11.50 per day. The Program, cruise pricing, and options are subject to change. For more information email us at Concierge@InsightCruises.com.



Black Holes

Speaker: Jenny Greene, Ph.D.

Black Holes: Galactic Gobblers

Lurking at the heart of every massive galaxy is a giant black hole. Learn what we know of these behemoths, thought to be nearly infinitely small and infinitely dense. Here the current laws of physics break down, but modern observatories can provide some hints of what lies inside.

Black Hole Origins

Which came first: giant black holes, or the massive galaxies that surround them? Black holes can form in multiple ways, and they influence the evolution of the galaxies they inhabit. Learn what we do and don't know about the birth of black holes, and how we stand to revolutionize our knowledge in the coming years.

Black Hole Evolution

Black holes feasting on matter are some of the most luminous objects in the universe. We know that many black holes grew

up when most of the stars formed in the universe, yet the details of this process are mysterious. Learn how observations of gravity waves could help us understand black hole evolution.

Women in Astronomy & Physics

Women are underrepresented in many science fields, but especially astronomy and physics. We'll discuss the real numbers behind this problem, and the various factors that play into it, including sub-conscious bias in hiring and test-taking practices. We'll also examine ways to change this pattern in the future.



The Intelligent Brain

Speaker: Richard J. Haier, Ph.D.

Mysteries of Intelligence and the Brain

Yes, intelligence is something real and it can be defined and studied scientifically. We'll consider savants and geniuses, how to define intelligence, and discuss how intelligence tests work. We'll review the key research and discuss why a person's intelligence is both liberating and constraining. We'll also consider why smart people do dumb things.

The Origins of Intelligence

We know there is a strong genetic component of intelligence from studies of twins and investigations that combine genetic analyses and neuro-imaging. Surprisingly, research results showing the influence of specific environmental factors, including early childhood education, are rather weak. Learn why brain development, as revealed by neuro-imaging, may be a key.



What Makes a Brain Smart?

Neuro-imaging research has identified brain features and specific areas distributed throughout the brain that are related to intelligence test scores. We'll review, in non-technical terms, how neuro-imaging works and we'll see some amazing dynamic views of intelligence at work in the brain during problem-solving, including some findings "hot off the press."

How Smart Do You Want To Be?

As we learn about the neural mechanisms of intelligence, prospects for enhancing intelligence become more likely. We'll discuss the ethical quandaries this raises. If there were an IQ pill, would you take it? What about enhancing intelligence in children? If we could enhance intelligence, do we have a moral obligation to do so?



Dinosaurs

Speaker: Darren Naish, Ph.D.

Predatory Dinosaurs and the Origins of "Birdiness"

Theropods, which included giants like Allosaurus and Tyrannosaurus, also had numerous lineages of smaller bird-like dinosaurs, and many theropods were feathered. Take a tour through theropod diversity, and examine the many controversial ideas of how they lived, how they hunted, and what they looked like when they were alive.

Sauropod Dinosaurs and the "Necks For Sex" Debate

Sauropod dinosaurs had immensely long necks, sometimes more than four times longer than their bodies. Some have suggested this evolved as a sexual signal, its length driven by sexual selection pressure. I'll discuss my work testing this hypothesis, and why the neck might actually have evolved for feeding and foraging.

Pterosaurs: Flying Reptiles of the Mesozoic

Ancient reptiles called pterosaurs flew on membranous wings supported by enormous fourth fingers. They had furry bodies, air-filled bones and many species possessed crested skulls. Little is known about pterosaur behavior and social life, but we can make some educated guesses. Learn about the diversity, anatomy and biology of this amazing group.

The Remarkable Azhdarchoid Pterosaurs

Among the most unusual of pterosaurs are the azhdarchoids—animals with huge wingspans that stood over 4 meters tall. They have been imagined as mud-probers, vulture-like scavengers, skim-feeders and

heron-like waders. We'll discuss the newest data that has changed our view of these fascinating animals.



Eclectic Astronomy

Speaker: Donald Kurtz, Ph.D.

Planets and Pulsations: The New Keplerian Revolution

The Kepler space telescope has discovered more than 3,500 candidate exoplanets, and is closing in on finding another Earth—a rocky planet in the "Goldilocks zone" where life might exist. Kepler has also allowed us to see stars as never before. Learn how this mission is revolutionizing our knowledge of the galactic zoo we inhabit.

It's About Time!

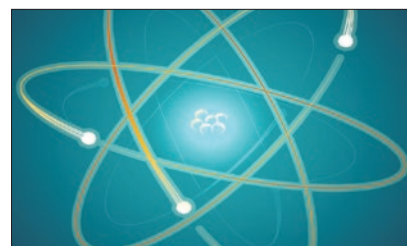
Days, weeks, months, years and more: Hear about Roman emperors, Zulu wars, Rider Haggard, Thomas Hardy, the English time riots, and how the days of the week got their names in an amusing and informative tour of the Western calendar.

The Stars are Ours!

"What good is astronomy?" Through colorful historical anecdotes and science, we'll answer that question. Hear stories of wealth and poverty, castles and dungeons, kings and princes, sailors and maidens, sea battles and Shakespeare, as we look back at the improbable, unpredictable path that gave us the Power of the Stars.

The Sun-Earth Connection

Learn how magnetic activity on the Sun affects Earth, from our planet's magnetosphere to the aurora lights. We'll see why the Sun is not the source of global warming, and we'll discuss weather on other stars. I'll also introduce you to a group of peculiar magnetic stars that I discovered.



Particle Physics

Speaker: Don Lincoln, Ph.D.

The Higgs Boson

Hear the saga of the Higgs boson particle, from its initial prediction in 1964 through its discovery to the 2013 Nobel Prize. As a member of one of the teams that discovered it, I will give an insider's perspective, including answering the very important question, "What's next?"

Accelerators and Particle Detectors

The Higgs boson, the top quark, dark matter—none of these particles are part of our everyday experiences. So how do scientists study these elusive particles? Learn about the complex technology we use to glimpse them, from 14,000-ton experiments with over a hundred million elements to particle observatories under the Antarctic ice.

History of Particle Physics

The search for the ultimate building blocks of matter has a long history. Hear the story, from the 1987 discovery of the electron to finding protons, neutrons and eventually particles that have no role in ordinary matter. Learn how we arrived at our current picture of quarks, leptons and a handful of force-carrying particles.

The Dark Side of the Universe

We understand the nature of the ordinary matter that makes up you and me, but ordinary matter is only 5% of the universe. Learn about the data that led us to conclude that a bizarre dark world must exist, and hear about current experimental efforts aimed at finding it.

SCIENTIFIC AMERICAN

Travel HIGHLIGHTS

ROQUE DE LOS MUCHACHOS OBSERVATORY

Friday, December 5th, 1pm – 5:30pm

Join an optional field trip to one of the most renowned groups of telescopes in the world, La Palma's Roque de los Muchachos Observatory in the Canaries.

