

Talk 149th, 9/24/2025

149th meeting of The Lyncean Group of San Diego

Date: Wednesday, 24 September 2025

Location: Southwestern Yacht Club, 2702 Qualtrough Street, San Diego, CA 92106

Speaker: Dr. Daniel Green, Associate Professor, Physics
University of California, San Diego (UCSD)



Source: UCSD

Topic: Signals of a Quantum Universe

Abstract: One of the central ideas in the modern cosmology is that structure in the universe (stars, galaxies, everything) originated from the quantum fluctuations of empty space. I will explain this idea, how it connects the smallest and largest scales in all of science, and how we might test it by making maps of the Universe.

Speaker bio: Dr. Green received a B.Sc. in Physics and Mathematics (with honors) in 2004 from the University of British Columbia, Vancouver, BC, Canada. He received a Ph.D. in Physics from Stanford University in 2009, with his thesis, “*High Energy Problems in Cosmology.*”

From 2009 – 2012, he was engaged as a Postdoctoral Member in Particle Physics at the Institute for Advanced Study in Princeton, NJ. During the following two years, he continued as a Postdoctoral Researcher at the Stanford ITP and Kavli Institute for Particle-Astrophysics and Cosmology in Stanford, CA.

At the University of Toronto, in Toronto, ON, Canada, Dr. Green was engaged from 2014 – 2015 as an Assistant Professor at the Canadian Institute for Theoretical Astrophysics. Thereafter, he served from 2016 – 2017 as a Visiting Assistant Professor at the University of California Berkeley, in Berkeley, CA.

Since 2017, Dr. Green has been at the University of California San Diego (UCSD), in La Jolla, CA, first as an Assistant Professor (2017 – 2021) and currently as an Associate Professor (2021 – present). His UCSD website is here:

<https://drgreen.physics.ucsd.edu>

You'll find his many publications on the cosmic microwave background (CMB), inflation, large scale structure, particle physics and quantum field theory listed here:

<https://drgreen.physics.ucsd.edu/publications/>

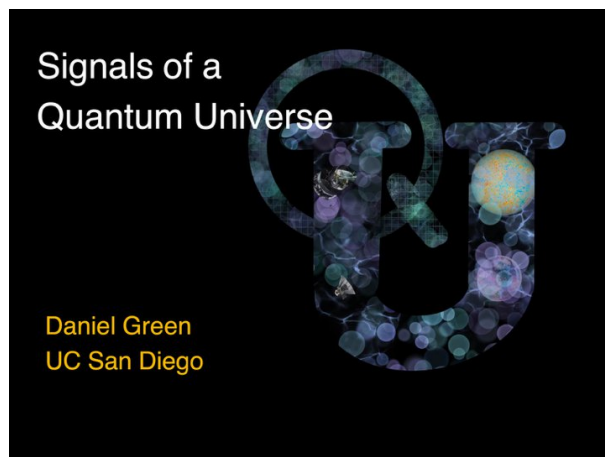
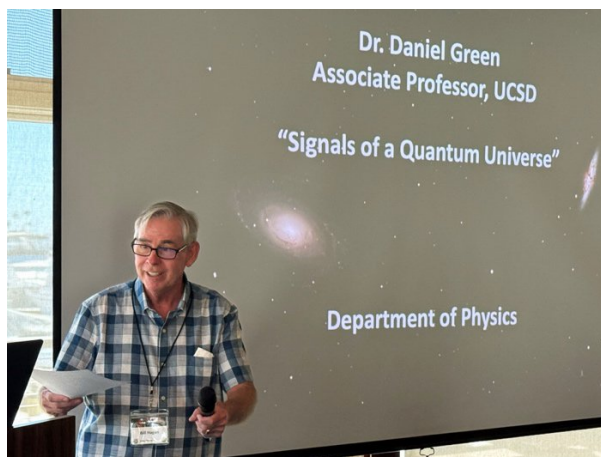
Several of his earlier presentations are available online here:

<https://www.dropbox.com/scl/fi/cde66mxi3dcrzzlquj4kg/CosmologyfromHome.pdf?rlkey=jliiui4bqat0m6n33j04ewabo&e=1&dl=0>

Other speaker references:

- YouTube video: "Physics is NOT In Crisis! Physicist Dan Green Into The Impossible Podcast (296)," (42:03 min), podcast by Dr. Brian Keating interviewing Dr. Dan Green, 5 February 2023:
<https://www.youtube.com/watch?v=ZhthGWoIMIU>
- Cynthia Dillon, "American Astronomical Society Sends Signal of Excellence to UC San Diego Physicist," American Astronomical Society, 14 January 2021:
<https://physicalsciences.ucsd.edu/media-events/articles/2021/american-astronomical-society-sends-signal-of-excellence-to-uc-san-diego-physicist.html>

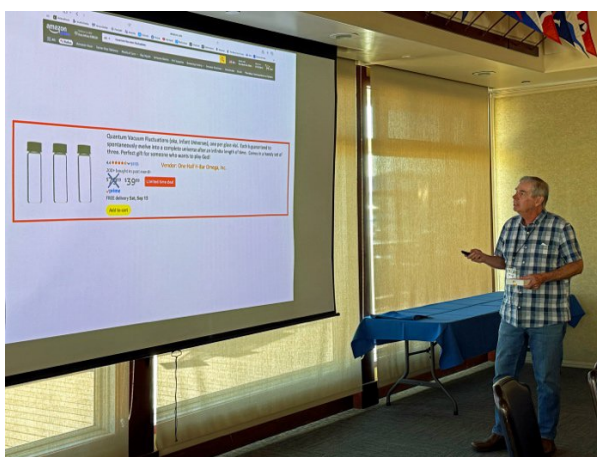




After lunch, Bill Hagan kicked off the meeting and introduced Dr. Green



Starting with a scalar field before the Big Bang, Dr. Green explained how primordial quantum vacuum fluctuations led to inflation and the formation of structures in the universe that are observable and testable today. Dr. Green's presentation is available [here](#).



Bill prefaced the speaker appreciation presentation with, "Please suspend your healthy scientific skepticism for the next few slides."





Dan Green & Bill Hagan

The Lyncean Group meeting slides are posted [here](#).