

100 years of Einstein's Relativity: US Theoretical Physicist to talk on General Relativity and its Application to the Movie Interstellar

November 25 marks the centennial of the presentation of the complete General Theory of Relativity by Albert Einstein in 1915. To celebrate this special date in the development of mankind, the Academia Sinica Institute of Physics Shui-Chin Lee Physics Lectureship has invited the *Feynman Professor (Emeritus)* of Theoretical Physics at *California Institute of Technology* (Caltech), Kip Thorne to give a public lecture entitled "A Century of Relativity: from the Big Bang to Black Holes and Interstellar" on October 28. The Institute also held a mini-workshop on classical and quantum gravity. As part of the workshop, on October 29, Prof. Thorne gave a talk entitled "Geometrodynamics: The Nonlinear Dynamics of Curved Spacetime".

Professor Kip Thorne is an American theoretical physicist, known for his contributions in gravitational physics and astrophysics with emphasis on relativistic stars, black holes and especially gravitational waves. In his public lecture on October 28, Prof. Thorne introduced the fundamentals of general relativity and its developments over the last 100 years, and also explained how the physics of general relativity was applied to the script writing and production of the Hollywood movie "Interstellar" directed by Christopher Nolan. Professor Thorne participated in the production of the movie at the very beginning and led the development of the plot with his advanced knowledge of astrophysics. When the movie came out in 2014, it was widely discussed and praised as one of "the most scientifically accurate" movies made to date. Professor Thorne himself said in an interview that "Neither wormholes nor black holes have been depicted in any Hollywood movie in the way that they would actually appear." He even wrote a book entitled *The Science of Interstellar* (W. W. Norton & Company, Nov, 2014) to explain the details of the scientific theories that are applied in the movie.

Professor Kip Thorne is the *Feynman Professor (Emeritus)* of Theoretical Physics at Caltech, and is one of the world's leading experts on the astrophysical implications of Einstein's General Theory of Relativity. He received his B.S. degree from Caltech in 1962 and a Ph.D. degree from Princeton University in 1965. He wrote his doctoral thesis, "Geometrodynamics of Cylindrical Systems", under the supervision of relativist John Wheeler who popularized the terms "black hole" and "wormhole." He became professor of theoretical physics in 1970, William R. Kenan Jr. Professor in 1981, and the Feynman Professor of Theoretical Physics in 1991. In June 2009 he resigned from the Feynman Professorship to pursue a career in writing and movie making. *Interstellar*, working with Christopher Nolan, was his first film project. Throughout the years, Prof. Thorne has served as a mentor and thesis advisor for many leading theorists who now work on observational, experimental, or astrophysical aspects of general relativity. Approximately 50 physicists have received Ph.D.s at Caltech under Thorne's personal mentorship.

While in Taiwan, Prof. Thorne will also deliver a public lecture at Cheng Keung Hall, Kung Fu Campus, National Cheng Kung University, Tainan, on October 30.

The Shui-Chin Lee Physics Lectureship is sponsored by the Institute of Physics, Academia Sinica, and the Shui-Chin Lee Foundation for Basic Science. The lectureship aims to foster frontier research in physics and popularize physics research in Taiwan.

Related websites:

<http://www.phys.sinica.edu.tw/~asiopsclpl/index.php> (About the lectures)

<http://www.its.caltech.edu/~kip/> (Prof. Throne's website)