Peter Olson is a professor of geophysical fluid dynamics in the Department of Earth and Planetary Sciences at Johns Hopkins University.

Peter was born in 1950 in Lincoln, Nebraska, lived for several years in Athens, Greece, and graduated from high school in Springfield, VA. He received his BA degree (1972) from the University of Colorado, Boulder and his MA degree and PhD degree (1977) from the University of California, Berkeley. He is married to Claudia Floyd and has two sons, David and Nicholas.

Peter's career in geophysics began in seismic exploration, including field work in the western US for Petty Geophysical Co. and AMACO Production Co.. He joined the Johns Hopkins faculty in 1977. His academic research focuses on the dynamics of Earth's interior and the interiors of other planets, including processes related to mantle convection and magnetic field generation. He has co-authored a major book, two treatise volumes, and more than 165 research papers on these and other topics. He is a member of the US National Academy of Sciences, a member of the American Academy of Arts and Sciences, a Fellow of the American Geophysical Union, an honorary Fellow of the European Union of Geoscientists, former Gauss honorary professor, and former President of the Tectonophysics Section of the American Geophysical Union. Peter received the Petrus Peregrinus Medal from the European Geosciences Union (2011) and the Inge Lehmann Medal from the American Geophysical Union (2015). He has served on the editorial boards of eight scientific journals and presses, more than a dozen national scientific panels, served twice as Department chair, mentored more than two dozen Hopkins graduate students, and has taught geophysics and other subjects in the Earth sciences to more than 1600 Johns Hopkins undergraduate students.

Notable Accomplishments:

Development and application of laboratory fluid mechanics experiments to the dynamics of Earth's interior and the interiors of other terrestrial planets, including mantle convection, subduction of oceanic lithosphere, mantle plumes, magma ocean dynamics, dike propagation, core formation processes, convection and precession-driven flow in the outer core, solidification of the inner core, and melting of ice sheets.

Theories for mantle convection, mantle plume interaction with the lithosphere, and the origin of heterogeneity within the mantle, at the base of the mantle, and in the outer core.

Investigations of the mechanisms by which the geomagnetic field is generated by dynamo action in the Earth's core, with an emphasis on the causes and consequences of geomagnetic polarity reversals.