

## Alumni Spotlight: Avi Loeb

### An alumnus out of this world

"I've been emotionally connected to Jerusalem since the time I attended the Hebrew University of Jerusalem (HU)," stated renowned astrophysicist Professor Abraham (Avi) Loeb, incumbent of the Frank B. Baird Chair in Science at Harvard University and chairman of the Department of Astronomy.

Israeli-born, Avi was raised on his family's farm in the village of Beit Hanan in central Israel. He became absorbed by philosophy from an early age, spending hours outside reading works by existential philosophers. When the time for military service arrived so did the possibility of a new direction. "When I entered the Israel Defense Forces (IDF), I wanted to do something intellectual. Since I was good in physics, I was recruited to join the Talpilot program at Hebrew University, where I studied physics and mathematics in addition to my military training." The highly selective Talpilot program only accepts approximately 24 students each year, and focuses on defense-related research.

After fulfilling his IDF service and earning a bachelor's degree, Avi enrolled in a joint M.S. and Ph.D. program in plasma physics at HU. His days combined on-campus courses with defense research. "I excelled at my military training, so I was allowed to explore a project at the Soreq Nuclear Research Center," Avi explained. "The project was eventually funded by the Strategic Defense Initiative (SDI) in the U.S. and I was the theorist who co-lead the work with an experimentalist. The project grew, and we became a department of about 25 people. I remember briefings with U.S. Air Force General James Abrahamson." A physics superstar, Avi, received his Ph.D. at age 24.

His work on behalf of the SDI often brought Avi to Washington D.C. On a side trip to Princeton, New Jersey, he became acquainted with Princeton

University, Princeton's Institute for Advanced Study offered Avi a prestigious five-year fellowship, with a unique twist: he would have to switch his specialty from plasma physics to astrophysics. Avi recalls, "I was told that it would be very interesting for my career to study at Princeton, where Einstein used to be."



Avi Loeb  
Photo: Shawn G. Henry (January 4, 2019)

"I had a wonderful experience at Hebrew University, and it played an important role in my career," he shared. "Having a non-conventional path and eventually ending up in astrophysics has shaped the way I coach my leadership positions. I try to promote diversity as well as innovation. I like to bring together people from different backgrounds that are not necessarily traditional."

Avi has published four books and more than 700 papers on challenging, intriguing topics such as the first stars, the future of the universe, and the search



Avi Loeb with other members of the Talpilot program.

for extraterrestrial life. "I direct the only center in the world that focuses on black holes," remarked Avi, a Founding Director of Harvard's Black Hole Initiative. "Stephen Hawking came to the inauguration. The special thing about this center is that in addition to physicists, we have mathematicians, astronomers, and philosophers at the table. This completes the circle for me." He also chairs the Advisory Committee for the Breakthrough Starshot Initiative.

International media outlets, including *Forbes*, *The Smithsonian*, *Scientific American*, and *NBC News* have featured Avi's work. In 2012, *Time Magazine* named him one of the 25 most influential people in space.

He directs the Institute for Theory and Computation at the Harvard-Smithsonian Center for Astrophysics, and is the Science Theory Director for all initiatives of the Breakthrough Prize Foundation. He also chairs the Board on Physics and Astronomy of the National Academies.

Despite his demanding schedule, Avi remains close to the HU community, participating in the Jerusalem

Winter School in physics and giving colloquiums and lectures. "I have a long-term relationship with Hebrew University and have very fond memories of my alma mater," he said. "And of course, HU students come to Harvard for postdoctoral fellowships or to collaborate with me."

A leading figure in the world of astrophysics, Avi still appreciates what the university offered him as a student. "Looking back, I remember how strongly motivated I was," he says. "I was willing to do anything to learn more and justify the privilege I was given to study and do research at the same time. The professors and deans were amazing."

Admitting that he still likes the humanities, particularly philosophy, which "addresses the most important problems in life," Avi added, "Life is a learning experience. Every day I learn new things and never feel that I'm accomplished." Honors such as the Kennedy Prize (1987) and the Guggenheim Fellowship (2002) might suggest otherwise of a Hebrew University graduate who continues to make his mark on space and beyond.