

NASA Prepares To Launch First Probe To The Kuiper Belt

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One hundred years ago, Dutch-American astronomer Gerard P. Kuiper was born in Harencarpel, The Netherlands. Just over one month from now, NASA plans to launch its first mission, New Horizons, to study explore the fascinating region of the solar system that Kuiper foresaw.

Kuiper became one of the greatest 20th century astronomers and is widely considered the father of planetary science. Among his most notable accomplishments was a widely publicized 1950 prediction that a giant debris belt from the formation of the solar system resides beyond the orbit of Neptune.

That prediction was borne out in the 1990s when astronomers discovered the first bodies orbiting with Pluto beyond Neptune. More than 1,000 "Kuiper Belt" objects are now known; astronomers expect over 100,000 such objects to be eventually discovered. Kuiper became a U.S. citizen in 1937.

"It's fitting that New Horizons will take flight near the centennial of Dr. Kuiper's birth," says Dr. Alan Stern, principal investigator of the New Horizons mission and executive director of the Space Science and Engineering Division at Southwest Research Institute.

"The Kuiper Belt is the largest structure in our planetary system and the home of the Pluto system, as well as myriad other miniature worlds that orbit in a deep freeze far beyond Neptune, the most distant of the giant planets. Its discovery has revolutionized our understanding of the

architecture of our home solar system and forced us to confront the jarring, but exciting new fact that miniature planets like Pluto are more numerous than the conventional ones like Mercury, Venus, Earth, Mars and the giant planets."

Among Kuiper's students were such notable 20th century planetary scientists as Carl Sagan, William Hartmann, Toby Owen, Tom Gehrels and New Horizons Science Team Co-Investigator Dr. Dale Cruikshank of the NASA Ames Research Center in California.

During his career, Kuiper studied all the known planets, asteroids, and the stars and nebulae of the Milky Way. His many accomplishments included pioneering studies of Cepheid variables and eclipsing binary stars, the discovery of Titan's atmosphere, studies of the origin of the Moon and the development of infrared detectors. Kuiper died December 23, 1973, at age 68.

"Kuiper studied the planets at a time, 50 years ago, when they were scarcely of interest to other astronomers," says Dr. Bill McKinnon, New Horizons co-investigator and professor of Planetary Sciences at Washington University in St. Louis, Mo.

"But with new telescopes and instrumentation, he showed that there were great things to discover, which is as true today as then -- witness the recent discovery of two new moons of Pluto. His planetary expertise later proved invaluable to NASA as well, especially during the early days of the race to our moon."

New Horizons Co-Investigator Dr. Richard Binzel of the Massachusetts Institute of Technology adds, "Kuiper was one of the first scientists to focus almost exclusively on exploring the properties of planets. His work laid the foundation for the spacecraft missions of the late 20th and early 21st centuries."

"As we recall the life and the scientific achievements of Dr. Kuiper on this day, 100 years after his birth," concludes Stern, "we also look forward to the exciting day, a decade hence, when New Horizons will reach Pluto and initiate the historic exploration of this scientifically rich, almost unimaginably distant region of our solar system called the Kuiper Belt, some three billion miles away."

The exploration of the Kuiper Belt in general, and the Pluto system in particular, was ranked as the highest priority new start for a NASA planetary mission in this decade by the National Research Council. NASA is funding the New Horizons mission, the first mission in NASA's New Frontiers program.

Pending final approval, the spacecraft will launch from Kennedy Space Center in January 2006. Stern leads the New Horizons science and mission teams. The Johns Hopkins University Applied Physics Laboratory manages the mission and will operate the spacecraft for the NASA Science Mission Directorate.

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