Jakob van Zyl, an engineer who held crucial positions at NASA's Jet Propulsion Laboratory and was involved in numerous space exploration missions over decades, has died. He was 63.

Van Zyl, who retired in 2019 after a 33-year career, suffered a heart attack on Monday and died Wednesday at a hospital in Pasadena, California, said Veronica McGregor, a spokeswoman for JPL.

Van Zyl's roles included director for astronomy and physics, director for solar system exploration and associate director on a project to formulate a vision for JPL's future.

"JPL and NASA are richer for his many technical and managerial contributions, and for his unwavering dedication and engaging personality," JPL Director Michael Watkins said in a statement.

Van Zyl was involved in missions that sent the Juno spacecraft to Jupiter, Dawn to the asteroid belt, Cassini to Saturn, and the InSight Mars lander and its tying accompanying CubeSat spacecraft. He was also involved in the Mars 2020 Perseverance rover mission currently en route to the red planet, as well as development of future missions.

His early work in Earth sciences led to roles designing and developing missions using synthetic aperture radar.

A native of Namibia, van Zyl received a degree in electronics engineering from Stellenbosch University in South Africa and earned his master's and doctorate in electrical engineering from the California Institute of Technology, which manages JPL.

JPL said van Zyl was passionate about encouraging young people in Namibia and South Africa to pursue science.