= Lodewijk van den Berg =

Lodewijk van den Berg (Dutch pronunciation : [?lo?d???ik f?n d?m ?b?rx] ; born March 24 , 1932) is a Dutch American chemical engineer , specializing in crystal growth , who flew on a 1985 Space Shuttle Challenger mission as a Payload Specialist .

He was the first Dutch @-@ born astronaut , a fact that is often ignored in the Netherlands because he was a naturalized American and no longer a Dutch citizen at the time of flight . He is married and has two children . As of 2014 , he resides in Florida and works as a chief scientist at the Constellation Technology Corporation .

= = Education and early career = =

Van den Berg was born on March 24 , 1932 , in Sluiskil , Netherlands . Van den Berg was educated in the Netherlands where he attended the Delft University of Technology from 1949 to 1961 and earned his Engineer 's degree in chemical engineering . He then moved to the United States to continue studying at the University of Delaware , where he obtained a MSc degree in applied science , followed by a PhD degree in 1974 , also in applied science .

After he had completed his doctoral study , he was offered a job at EG & G Corporation Energy Measurements in Goleta , California , to work on crystal growth . EG & G was a defense contractor of the United States government and dealt with sensitive information and science . In 1975 , this required Van den Berg to become a naturalized U.S. citizen . Van den Berg gathered years of research and management experience in the preparation of crystalline materials ? in particular , the growth of single crystals of chemical compounds , and the investigation of associated defect chemistry and electronic properties . He became an international authority on vapor growth techniques with an emphasis on mercuric iodide crystals and its application in the nuclear industry as gamma ray detectors . During his work at EG & G , Van den Berg asked NASA for permission to conduct crystal growth experiments in space , which NASA approved .

= = Spaceflight = =

= = = Selection = = =

Van den Berg and his colleagues designed the EG & G Vapor Crystal Growth System experiment apparatus for a Space Shuttle flight . The experiment required an in @-@ flight operator and NASA decided that it would be easier to train a crystal growth scientist to become an astronaut , than it would be the other way around . NASA asked EG & G and Van den Berg to compile a list of eight people who would qualify to perform the science experiments in space and to become a Payload Specialist . Van den Berg and his chief , Dr. Harold A. Lamonds could only come up with seven names . Lamonds subsequently proposed adding Van den Berg to the list , joking with Van den Berg that due to his age , huge glasses and little strength , he would probably be dropped during the first selection round ; but at least they would have eight names . Van den Berg agreed to be added to the list , but didn 't really consider himself being selected to be a realistic scenario .

The first selection round , consisted of a selection based on science qualifications in the field in question , which Van den Berg easily passed . The final four candidates were tested on physical and mental qualifications which he also passed , while two of the others failed due to possible heart issues . He was now part of the final two , and NASA always trains two astronauts , a prime and a back @-@ up . In 1983 he started to train as an astronaut and six months before the launch he was told that he would be the prime astronaut , much to his own surprise . When he went into space he was 53 years old , making him one of the oldest rookie astronauts .

= = = STS @-@ 51B = = =

Van den Berg was assigned as Payload Specialist on STS @-@ 51B Challenger (April 29 ? May 6 , 1985) . STS @-@ 51B , the Spacelab @-@ 3 mission , was launched from the Kennedy Space Center , Florida , and returned to land at Edwards Air Force Base , California . It was the first operational Spacelab mission . The seven @-@ man crew aboard Challenger conducted investigations into crystal growth , drop dynamics leading to containerless material processing , atmospheric trace gas spectroscopy , solar and planetary atmospheric simulation , cosmic rays , and laboratory @-@ animal and human medical monitoring .

As a co @-@ investigator of the Vapor Crystal Growth System (VCGS) experiment , Van den Berg was responsible for the crystal growth aspects of the VCGS experiment . He had intimate knowledge of VCGS and Fluid Experiment System (FES) hardware , and had participated in all major design and science reviews of those systems .

By the end of the mission , Van den Berg had traveled over 2 @.@ 9 million miles in 110 Earth orbits , and logged over 168 hours in space .

= = Career after NASA = =

After returning to Earth , Van den Berg continued to work on crystal growth experiments at EG & G in California and he became the head for the section of materials science . At a later time he moved to Florida to become a chief scientist at the Constellation Technology Corporation . At age 72 , he continued to work up to 40 hours a week and grow crystals , a process he compares to gardening . The crystals he grows (Mercuric Iodide crystals) are used to make precision detectors for nuclear radiation . These detectors are used in medical applications , by the defense industry and the International Atomic Energy Agency .

He visits the Netherlands every two years , and was the subject of a short 2004 documentary by Netwerk called : The `forgotten astronaut` .

= = Asteroid = =

On September 28 , 2007 the main belt asteroid 11430 (9560 P @-@ L) was named after him and is now known as 11430 Lodewijkberg . The asteroid was discovered October 17 , 1960 by Cornelis Johannes van Houten and Ingrid van Houten @-@ Groeneveld at Leiden Observatory , where they were studying photographic plates taken by Tom Gehrels using the Palomar Observatory 's Samuel Oschin telescope .

= = Academic publications (incomplete) = =

" Fabrication of mercuric iodide radiation detectors " , Lodewijk van den Berg and Ron D. Vigil , Nuclear Instruments and Methods in Physics Research Section A : Accelerators , Spectrometers , Detectors and Associated Equipment , Volume 458 , Issues 1 @-@ 2 , 1 February 2001 , Pages 148 @-@ 151

" Improved yield of high resolution mercuric iodide gamma @-@ ray spectrometers " , Vernon Gerrish and Lodewijk van den Berg , Nuclear Instruments and Methods in Physics Research Section A : Accelerators , Spectrometers , Detectors and Associated Equipment , Volume 299 , Issues 1 @-@ 3 , 20 December 1990 , Pages 41 @-@ 44

" Vapor growth of HgI2 by periodic source or crystal temperature oscillation " , by M. Schieber ? , W.F. Schnepple , L. Van den Berg . Journal of Crystal Growth , Volume 33 , Issue 1 , April 1976 , Pages 125 ? 135