

From Las Piedras to NASA ^[1]

Submitted by [Jacqueline Flores Otero](#) ^[2] on 1 February 2011 - 12:00am



^[3]

Dr. Félix Miranda

When the different NASA spacecraft such as Voyager, Mars Reconnaissance Orbiter (MRO), Lunar Reconnaissance Orbiter (LRO), and MESSENGER (Mercury Surface, Space Environment, Geochemistry and Ranging), among others, currently exploring the universe send messages to Earth, they do so through the transmission of microwaves, a type of electromagnetic wave, shorter in wavelength than that of radio, that can travel far distances and penetrate through the atmosphere. While longer **microwaves** are used to cook our food, shorter microwaves are used for satellite communication to Earth, for radar systems such as the Doppler weather radar, for GPS navigation, and even for wireless internet signals.

As you can appreciate, the technologies related to the production and sensing of microwaves are very important for modern day life. So it is no small accomplishment for **Puerto Rico** that one of the preeminent authorities on microwaves is [Dr. Felix A. Miranda](#) ^[4], the current **Chief of the Antenna and Optical Systems Branch** in the Instrumentation and Controls Division at the [NASA Glenn Research Center](#) ^[5] in Cleveland, Ohio.

Born in Humacao and raised in the town of **Las Piedras, Puerto Rico**, **Dr. Miranda** recalls an experience during his elementary school years that fueled his desire to contemplate and understand the world around him. Under the guidance of **Mrs. María InÈs VÈlez**, who taught him the parts of a microscope and allowed him to explore insects and other tiny objects, he learned to appreciate the physical world around him. In high school, he developed a passion for the study of the universe, matter, and its motion through space and therefore upon graduation,

he decided to pursue a bachelorís degree in physics at the University of Puerto Rico-Río Piedras [6].

Following the advice of **Dr. Juan JosÈ Saenz**, his physics professor, **Dr. Miranda** decided to pursue a career in this field and move to the United States, where he obtained his M.S. and Ph.D. at Rensselaer Polytechnic Institute (Troy, New York) [7] and Case Western Reserve University (Cleveland, Ohio) [8], respectively. Although moving away from the safety net that his family, friends and Puerto Rican community provided was difficult, he focused his thoughts and energy on taking advantage of all the tools that would shape his success. The support and guidance of mentors in his life were instrumental in helping him embrace his career trajectory.

His talent and perceptiveness brought him to **NASA**, where **Dr. Miranda** currently continues to learn and contribute to our world as an electronic engineer specializing in the development of high-resolution antennas for aerospace communications and microwave circuits for space and ground-based communications. As Chief of the Antenna and Optical Systems Branch, he finds great satisfaction in the freedom that NASA provides him and his team, to explore state-of-the-art technologies that are not just focused on satellite and space communications, but are also applicable to other important areas such as biomedicine, wireless communications, and renewable energy sources. In addition, he is actively involved in educating students at different educational levels about Science, Technology, Engineering and Mathematics (STEM) [9].

Dr. Miranda has over 155 technical publications, several book chapters and U.S. patents he has co-invented. Among numerous recognitions, in 2007, **Dr. Miranda** not only received the R&D100 award [10] from the R&D Magazine for the development of the Antenna Near-Field Probe Station Scanner, but he was also recognized by the University of Puerto Rico-Río Piedras [6] as one of the most distinguished alumnus of its **Faculty of Natural Sciences**.

As a result of his high work ethic, dedication and contributions, he has gained the respect and admiration of scientists, professionals, and students alike. We could say **Dr. Miranda** has done it all, but his quest for knowledge is never-ending. As **Dr. Miranda** himself has said: ìThe only thing that you really own in life is what you know. There is no greater return on investment from any bank around the world that can top the dividends paid by the bank of your knowledge.î More than in awards or publications, Dr. Felix Mirandaís accomplishments can be determined in his willingness to continue to search for knowledge, learn as many lessons as possible, and to use these experiences and understanding to serve others.

To learn more about Dr. Mirandaís work, please visit <http://aos.grc.nasa.gov/main/personnel/dr-felix-miranda/> [11].

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