

William H. Pickering

America's Deep Space Pioneer

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The library at JPL has an institution "JPL Stories" at which famous or semi-famous people who have done something interesting or historic at JPL come and tell their story. Chairs and video equipment are set up in the main room of the relatively small library. The area comfortably seats about 50 among the shelves and reference computers. The Story has been going on for many years. I've seen William Pickering himself, and Ed Stone, Bruce Murray, Bill Smythe, Don Yeomans, Henry Richter W6VZA, some JPL guy who was on "Survivors," and many others, more than I can recall.

On 2008 April 23 the JPL Story was given by Douglas Mudgway, a retired JPL engineer who has taken an interest in writing the history of some things that have happened at JPL and who, in this instance, had become the biographer of William H. Pickering, the father of interplanetary exploration and of JPL as an institution. The Pickering biography is an official NASA document, hard bound with an attractive cover featuring pictures of the planets, JPL missions, and the official oil portrait of Pickering himself. At the end of the talk, he offered copies of the book free to anyone who wanted them. I carried away one of the last ones.

When I came to JPL, Lew Allen was the director. He had just succeeded Bruce Murray who had succeeded Pickering on his retirement in the mid 70s, so I never worked for Pickering myself but I knew who he was from having followed JPL and its missions as a youth. He lived in Flintridge up until his death in 2003. Mudgway called his passing "untimely," but Pickering was, though in excellent health for his age, still 93 years old.

William Pickering was born in Havelock, New Zealand in 1910 and attended one of the same schools as Ernest Rutherford, the early atomic physicist. (Author Mudgway was also originally from New Zealand.) Pickering's roots were modest but solid. He was bright, a natural leader, and did well in school. Amateur radio, as it existed in the 1920s, was formative to him in his high school and college years. He excelled in electrical engineering at Wellington College and considered either a career in New Zealand's burgeoning power industry, or further education at an institution in the United States with a good engineering reputation, the California Institute of Technology. He had an uncle who married a woman from the Los Angeles area and so, upon acceptance to Caltech, travelled with family to the Los Angeles area. There he studied with Robert Millikan and others.

Pickering married Muriel Bowler, a young woman with whom he often hiked in the nearby hills.

Pickering's work at Caltech was in cosmic ray detection. Under sometimes risky conditions he travelled to India, Mexico, Australia, and Canada to take balloon borne measurements of the cosmic rays at altitude at various latitudes. Travel arrangements for these student experiments was not like it is today. William and his colleagues and professors took their families on some of these trips. The outbreak of World War Two near the end of this work (during the field work in Mexico) kept Pickering in the United States after graduation. He thought he would continue at the Institute as a professor and did for some time, but Caltech ran an Army research organization nearby, the Jet Propulsion Laboratory, where they needed people of Pickering's electronics expertise to work on rocket guidance systems. He agreed to do this as long as it was interesting and, in the end, wound up leading the free world's efforts to explore first space, then the entire solar system at JPL for several decades.

Arguably, William Pickering's most famous achievement was to be one of the three, along with Werhner von Braun and James Van Allen to produce America's first orbiting satellite, Explorer I. This event also produced, arguably, his most famous picture.



When Explorer I finally went up, the 50th anniversary of which we just celebrated last year, Pickering, Van Allen and von Braun were stationed in Washington where they gave a news conference at two in the morning following the first-orbit reception confirmation from the amateur radio operators at the Temple City Sheriff's Station in California. Of interest to me are the anecdotes of that first reception. Due to jet streams along the rocket's initial trajectory, the satellite was put into a higher, and therefore slower, than expected orbit.

Signal was acquired in California, once around, some eight minutes later than expected. "The longest eight minutes of my life," said Pickering, and miserable ones too. Also, amateur radio operators at the sheriff's station locked on the signals before the pros at the JPL facility did, leading to the quip for years thereafter when somebody couldn't find the signal they were looking for, "The hams have it!" (This was the JPL Story that Henry Richter told.)

It was no small feat for JPL to have been involved in Explorer, a project the JPLers wanted to call "Deal." Von Braun and General Medaris of the Redstone Arsenal wanted to do both the rocket and the payload. Van Allen was ready with a particle detector payload that had a set of

bolt holes for Jupiter and for Vanguard. Pickering was angling to get JPL into the space business. Sputnik was already up and the fuse was short so deals were cut. The stories vary with the different tellers. This book tells the Pickering / Mudgway version of Explorer I story.

Following this exciting, world changing episode, Pickering strove to lead JPL into further reaches of space, first with the Rangers to impact the moon with running television cameras and later with Mariners to Venus and Mars, Surveyors to soft land on the moon, and missions to Mercury, Jupiter, and in the mid-70s, the Viking Mars landers. The Voyager “grand tour” of Jupiter, Saturn, Titan, Uranus, and Neptune was in final preparation at the time of Pickering’s retirement, and Jupiter and Saturn orbiters were being planned.

Reading these chapters which tell part of the history leading up to my own time at JPL, I’m struck that none of this planetary exploration was given or even wanted by those in charge at the time. Their most distant focus was the moon and most of the military and commercial interest in space was in earth orbit. The marriage with the new NASA was rough, and still is for many of the same reasons now as then. JPL wants NASA to “just give us the money and leave us alone,” claiming that we know best what we’re doing. NASA wants to meddle in the projects for which they are paying. Pickering was going around giving dozens of speeches a year, being on the cover of Time Magazine, being Grand Marshall of the Rose Parade, flying around in the JPL helicopter, traveling the world with his pitches (some things are very different, others are nearly the same today) and generally selling the country on the conquest of space beyond near-earth while the realities of NASA nipped at his heels. The JPL ways of doing things grated on the bureaucrats. Rules were ignored, senior personnel manipulations were resisted. Pickering came very close to resigning at one point in the mid 60s. There is still a quip around the lab, “just one failure from being closed.” There were shots, such as Ranger 7 which were all or nothing bets for Pickering and JPL. These struggles and their echoes from that not to distant past, echo around the Lab to this day.

None of this meant that following every major success at JPL that Pickering wasn’t on a red-eye to Washington to entertain the President with pictures, incomprehensible to the President, of places far away and exotic.

Pickering retired from JPL at the Caltech mandatory retirement age of 65. There was much celebration of all types. He thought of going back to teaching at Caltech but was somewhat out of date in his knowledge of electronics by then. Instead he formed his own modest consulting company and led several diverse industrial efforts for several years at a time until his death. During the nearly three decades of retirement, Pickering, quite a rock star within the planetary exploration community and the British Empire (being a Kiwi), received numerous awards, medals, and honorary degrees and was knighted (K.B.E.) Some time after Muriel’s death, he remarried to a local piano teacher, Inez Champan, from his social class.

I remember the local announcement of Pickering's death in 2003. Pneumonia. This was surprising but not shocking. He left behind his daughter, Beth Mezitt, his second wife, and an immeasurable legacy.

To me the most fascinating and riveting parts of the book are, of course, those that deal with the rise of JPL to unquestioned international leadership in the exploration of the solar system. Pickering was directly responsible for this direction and its successful implementation. I was also interested in the man, where he came from, and how this man or any person could find his way into such a position of prominence. He did not start out life dreaming of nothing but planetary exploration, nor did he end up there, but his vision and constancy of this pursuit mid-life has made an indelible mark on the progress of humanity toward the stars. Some of his origins were similar to mine but in the end he was a different person in a different time. I have long since stopped reading biography in order to try to emulate anyone. Everyone has a unique origin and history. Everyone follows their own path to the best of their ability. The degree of vision and drive, and fortune, varies from person to person. We all do what we do and end up where we end up.

And, we no longer fly helicopters at JPL. Super Shuttle to LAX is about as good as it gets, even for the director (and no close in parking at all!). It's a different America now too, but, as always, there are problems, and greatness among them.