

Toby Owen

I first saw Toby Owen late one night in 1980. With another graduate student, I had crept into the Jet Propulsion Laboratory to see, first-hand, Voyager 1 images arriving from Saturn. I saw a man sitting alone in a tiny windowless office writing notes on a piece of paper, utterly disconnected from the swirl of engineers, scientists and reporters filling the rest of the building. My friend said "That's Toby Owen - he's a big-shot". Toby was unaware of my presence. I was too shy to say "Hello".

A decade later, Toby became my colleague at the IfA and, with his office next to mine, we talked much more. I soon learned that he was not like the other astronomers or planetary scientists and, for that matter, not like anyone I knew. Unusually for the IfA, Toby was not an observer. I never saw him reduce data. He was not a theorist or a modeler, either. I never saw him calculate anything. All I knew was that Toby would sit at his desk, with a pen in hand, facing a piece of paper or a notebook, just like that first time at JPL. I often wondered "what does Toby do?". In conversation, though, it was obvious that Toby was at the top of his game. He knew every relevant thing that was published and he had strong scientific judgement and strong opinions, always diplomatically expressed. He seemed to be connected in one way or another to all of NASA's most exciting inter-planetary missions. Toby was also an unusually well-balanced, self-effacing, socially sophisticated and cosmopolitan person. Partly for this reason, he was visited at the IfA by a continuous stream of scientists from all over the world. He would himself disappear for months at a time on long trips to Europe. Functioning effectively as a scientific diplomat, Toby was behind several huge international endeavors, most notably the NASA-ESA Cassini-Huygens mission to the Saturn system.

Scientifically, Toby was especially interested in the origins of planetary atmospheres. He used isotopic measurements by his friends and colleagues to determine how and from where the volatiles of the terrestrial planets were obtained. He loved the noble gases for their refusal to participate in chemical reactions - they are unmatched tracers of primordial processes in the solar system. Toby's papers describe the escape of gases from Mars, evidence for an early dense Martian atmosphere, the strange compositional make-up of Titan, and the nature of ice on Pluto, among many other things. He was very interested in the role played by comets in volatile delivery and, with the late Akiva Bar-Nun in Tel-Aviv, made a strong case for the sponge-like role of amorphous cometary ice. His most astonishing paper, to me, was published in 1999. It describes the enrichment of metals in the atmosphere of Jupiter and invokes an influx of super-cold planetesimals from the outer solar system.

Over time, I realized that Toby didn't fit into the simple categories occupied by most astronomers and planetary scientists because he was a complete original. Toby was an expert at big-picture thinking and an unparalleled synthesizer of new knowledge. I last saw Toby in 2009. He was in his office, pen in hand.

David Jewitt, Los Angeles, 2017 March 12