

## Brent Williams (1974–2017)



On the morning of Nov 8th, 2017, the CXC and MFSC teams were saddened by the news of the untimely passing of one of their most valuable members: Brent S. Williams. Brent's death came suddenly and unexpectedly, sending a ripple of heartache through the *Chandra* community.

Brent was an indispensable member of the Flight Operations Team (FOT), serving in a number of important positions along his path to becoming the Mission Planning Manager—a role that he not only thrived in, but one he seemed made for. His vast knowledge, diverse skill set, and affability made him an excellent planner. He was able to work extremely well under high-pressure situations, while also being a great leader, teacher, colleague, and friend.

Brent grew up in Fruitport, Michigan, with hundreds of tales to prove that he enjoyed all life there had to offer. Many of these stories involved his beloved wife, Joy, whom he married shortly after receiving his BSc in Chemistry at Hope College. Together, Brent and Joy moved to Boston in 1997, where Brent took a job as a cement chemist with Grace Construction Products. After a few years and a handful of patents, Brent made the life-changing decision to pivot from a career in chemistry to one in aerospace.

In 2000, Brent joined the *Chandra* team as a Command Controller, a job which involves being responsible for monitoring the health and safety of the spacecraft, commanding the spacecraft, maintaining the recorder, and first-line response to spacecraft anomalies. By 2002, he had shown a keen interest in science planning and accepted a position as a Mission Planner for the FOT, a role in which he excelled due to his creativity and problem-solving talents. During his time as a Mission Planner, he took on a myriad of additional tasks including flight dynamics, onboard clock correlation generation, and Deep Space Network resource

scheduling. He also assumed the mantle of FOT Training Manager, responsible for the new and recurring training of every FOT member. Brent accomplished all this while earning a Master's Degree in Engineering Management from Tufts University.

In 2008, having been recognized for his leadership skills, Brent was promoted to FOT Mission Planning Manager and spent the next ten years sculpting new approaches to planning that directly resulted in massive gains in efficiency, a significant reduction in planning error, and a quicker recovery to science following anomalous events. He chaired the Mission Planning Constraints Working Group, where he oversaw the development and modification of carefully crafted guidelines that positively impacted observing capabilities. He

presented this “During my first anomaly work in a poster session at the SpaceOps 2012 Conference in Stockholm, Sweden. While continuing to manage the Mission Planning team, Brent also became the FOT Operations Manager, acquiring a new set of responsibilities now tied to the immediate response of the spacecraft. He integrated his two teams seamlessly, creating a knowledge overlap that contributed to a better understanding of spacecraft planning and operations. For the next several years, he led both teams through multiple anomalies and large projects with passion, focus, and confidence.”

—John Scott, Lead Mission Planner

As a planner, after all the engineers had gone home, it was my job to stay and build the recovery loads that would see the spacecraft resume science. It would ultimately take me all night, but had it not been for Brent it would have taken longer and been far more stressful. He did not have to do so, but Brent stayed with me the entire night, guiding me through one of the most trying times of my career. By morning, products were built and we left with a smile. Brent was my rock that night and every day thereafter.”

Brent's contributions to the mission have had long-lasting benefits. He was instrumental in the design and testing involved with Science-Only Safing Actions (SOSA), a project which saw a significant shift in onboard commanding with crucial benefits, in particular maintaining the spacecraft thermal and momentum states within safe limits after high-radiation stoppages. During and after a thruster anomaly, Brent led the planning team through a difficult period in which planning constraints were significantly tightened. Most recently, Brent spent two years overseeing the design and development of a new software process that not only expedited the building of command loads (especially for fast TOOs), but greatly improved error handling. As was usual for Brent, he was involved in a great many

aspects of the mission and his impact will continue to the mission's end.

Beyond his talents as a manager and engineer, Brent was foremost a people person. His vast knowledge, experience, and background meant that he could talk about anything and everything to anyone, and combined with his humility, quick wit, and charm, Brent made every moment special and intriguing. He always found a way to make even the most demanding moments endurable.

Brent was a great leader, manager, chemist, and engineer. He was an amazing colleague and friend, with good humor and a flair for storytelling. Above all, he was a wonderful husband and father. His wife Joy and their sons Fisher and Ruben are infinitely proud of him, as are we all.

Brent burned hot and bright for too short a time, and while his passing was devastating, he leaves fond memories and a lasting impact in his wake. We will miss you, B-Dub. ■

Prepared by John Scott