

When the Canfield Breaks

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The Canfield Joint is a mechanical linkage first developed by Stephen Canfield in the mid-90s as his PhD thesis in Mechanical Engineering. While the original intent was to mimic the properties of a human wrist, the Canfield Joint has found alternate applications at NASA. In particular, researchers at NASA Glenn Research Center plan to use the Canfield Joint to point a teletenna sending signals to Earth from Mars.

Over the summer, I visited the GRC and spent the majority of my time studying the Canfield Joint and its properties. The motivating question for my work was "What happens when the Canfield Joint 'breaks'?". In this talk, I will describe how I approached and answered the above question. In addition, I will discuss some auxiliary results and hint at some future research.