**The Water Bears**
Alexsis Kennaday, Sophia Zhang, Cristina Martinez

**What are Tardigrades?**
Tardigrades, also known as “Water Bears,” are extremophiles with eight legs that can withstand temperatures from above absolute zero to temperatures above water’s boiling point. They can withstand pressure six times greater than that of ocean trenches, and they can ionize radiation. They are 0.5mm long when fully grow, and are found in mosses and lichen. Plant cells, small invertebrates, and algae are their food source.

**Why study them?**
These fascinating creatures can survive without food or water for more than 10 years, resulting in them containing 3% or less of water. Additionally, they undergo a tun state - roll into a ball - when they feel threatened.

**Mission Objective:** The study of tardigrade’s reactions to microgravity for the advancement of research in organism’s reaction to microgravity.

**Experiment:** Three USB powered microscope cameras are used to observe and record the tardigrades’ activities throughout the launch. The tardigrades are grouped in three separate microscope slides where each slide contains a different environment. One slide contains water and algae to resemble Earth’s environment. The second slide contains mainly carbon dioxide to resemble Mars’ atmosphere. Finally, the third slide contains a mixture of chemicals to resemble the geochemistry of the Mars ground in a section of Gale Crater, where the Rovers are currently surveying. It’s possible that the tardigrades will undergo their tun state throughout launch, or they might just resume their mundane activities.