Physoon, a high altitude ballooning payload, was designed and built by students to investigate cosmic and terrestrial sources of high-energy radiation. Of particular interest are events called terrestrial gamma-ray flashes (TGFs) and gamma-ray glow, both of which occur in thunderstorms.

Physoon has flown above thunderstorms, through thunderstorms, in the totality of The Great American Solar Eclipse, and during sunny daytime conditions as a control. These flights can help advance the understanding of the different physical processes that lead to increased radiation from thunderstorms.

In addition to drop tests and rain tests, we performed a 24 hour duration test to verify the operation of the instrument. The instrument was left running on the ground in a low radiation environment.