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SPACE JUGGLING AND A NEW LOOK AT TRAJECTORIES IN ROTATING HABITATS

**Abstract**

Space Juggling is a technique for juggling in weightlessness, discovered through deep and lifelong embodiment practices, and informed by scientific and mathematical investigations. It is a fully developed circus art form designed for weightlessness and offers a glimpse of the future of kinesthetic arts.

A conservative view reveals Space Juggling as a fun and challenging activity which extends the worldwide cultural “juggling” ethos into new gravitational environments. A more nuanced perspective reveals fundamental patterns which will be encountered by inhabitants of all rotating space habitats.

This practice opens new opportunities to explore movement liberated from the verticality of Earth’s gravity well, as well as new angles on perception, cognition, and object manipulation. The artistic works are presented in a rotating reference frame exposing an expanded logic of motion, helping viewers to experience a non-gravitational world with the juggler. Viewing the recordings from these early experiments opens empathetic pathways, making visible the aesthetic and physical insights disclosed through what is, for now, an extraordinary perspective.

This introduction to Space Juggling will span the creative movement capabilities of the human body, the mathematical underpinnings of object trajectories in rotating environments, the unique insights which can only be manifest through direct experience with the magic of the body and the mystery of the mind, and show how the perspective of the artist can provide an insight into the future of human space habitation.

Space Juggling was discovered by physicist and circus performer, Dr. R. Adam Dipert. The work was awarded first place in the Individuals division of the International Jugglers’ Association Championship in 2021, has received the approval of space enthusiasts ranging from the creators of Star Trek to astronauts on the ISS, and gives us a lens through which we can set a standard and goals for future artistic space movement projects.