

Session Title

Astrophysics in Minecraft

Presenter Name

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Elevator Pitch

Over the past decade, Minecraft quickly grew to be one of the most popular video games in the world, and it can be utilized for much more than building houses and villages or fighting monsters. In Astrophysics in Minecraft camp, we will explore Minecraft worlds that simulate real astrophysical phenomena. Has the science behind the movie Interstellar intrigue you? Or have you ever wondered what terraforming Mars would be like? Or what if the Earth had no moon? Two moons? What criteria need to be met for a planet to be habitable? What other celestial bodies can be simulated in Minecraft?

Materials

Computers Provided (Minecraft Java Edition and mods preloaded)

Overview

During the session, we will go through a brief presentation about what the Astrophysics in Minecraft summer camp entails, which includes a few educational slides on black holes, white holes, and wormholes. We will also physical demonstration of gravity and the space-time field before the participants log into our Minecraft server and explore some of the worlds where we'll collect data and make observations during summer camp. A handful of these worlds include: Mars, the Moon, Kepler-186f, Gliese-436b, Trappist-1e, a Brown Dwarf, Earth with No Moon, Earth with an Earth-sized Moon, and a Black Hole.