

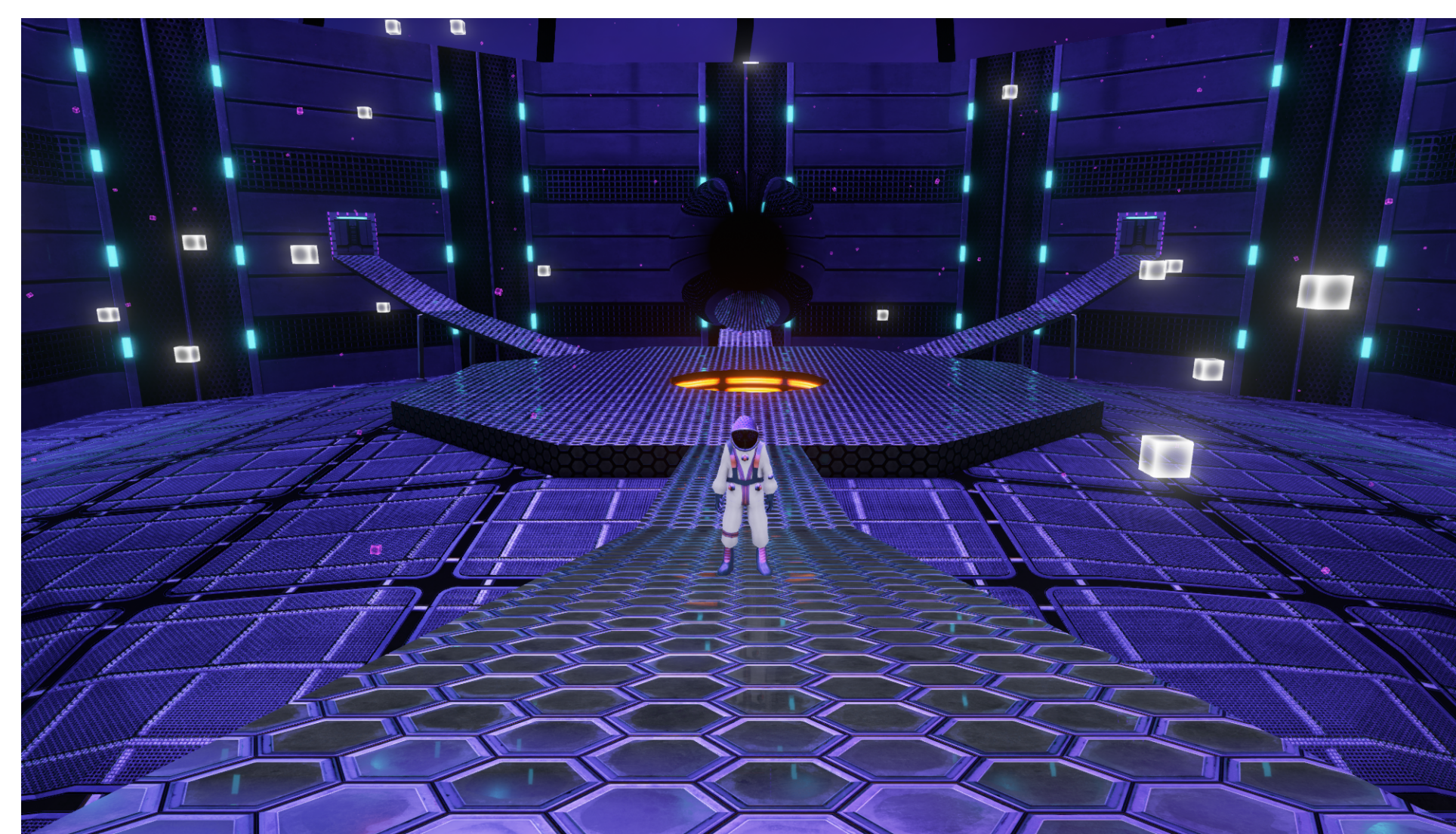


quantum

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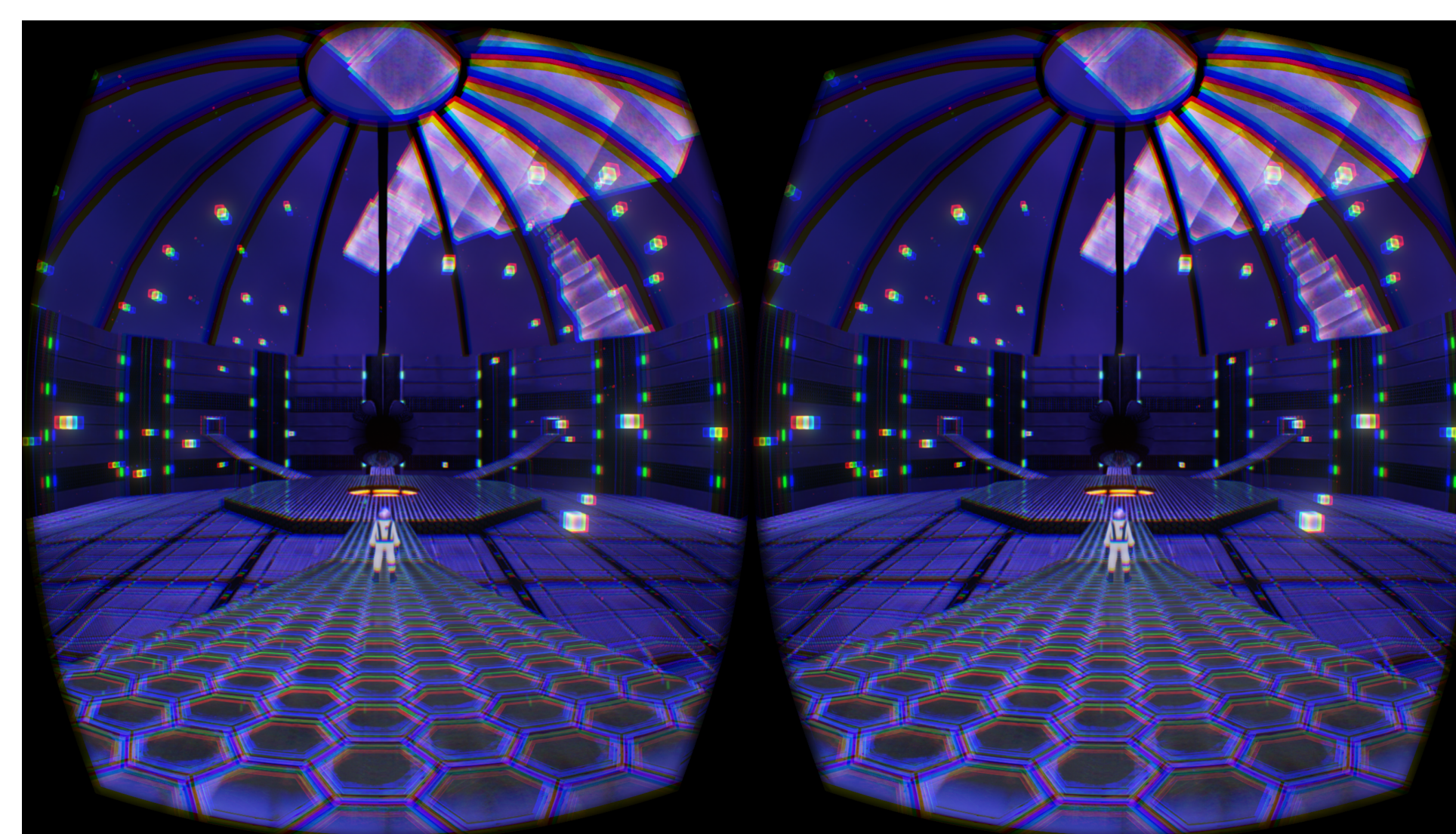
Gameplay

Experience a Revolutionary Space Adventure



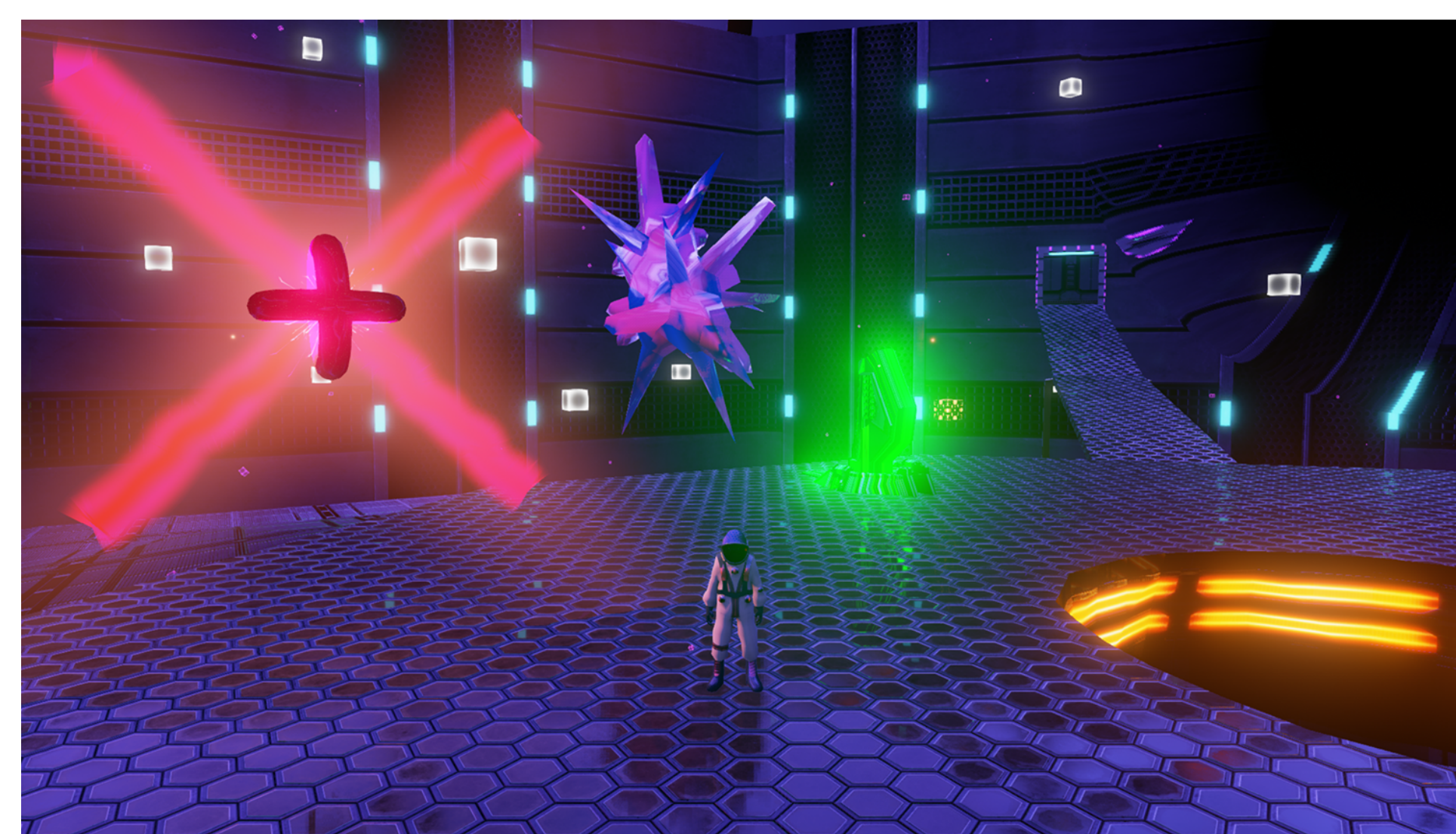
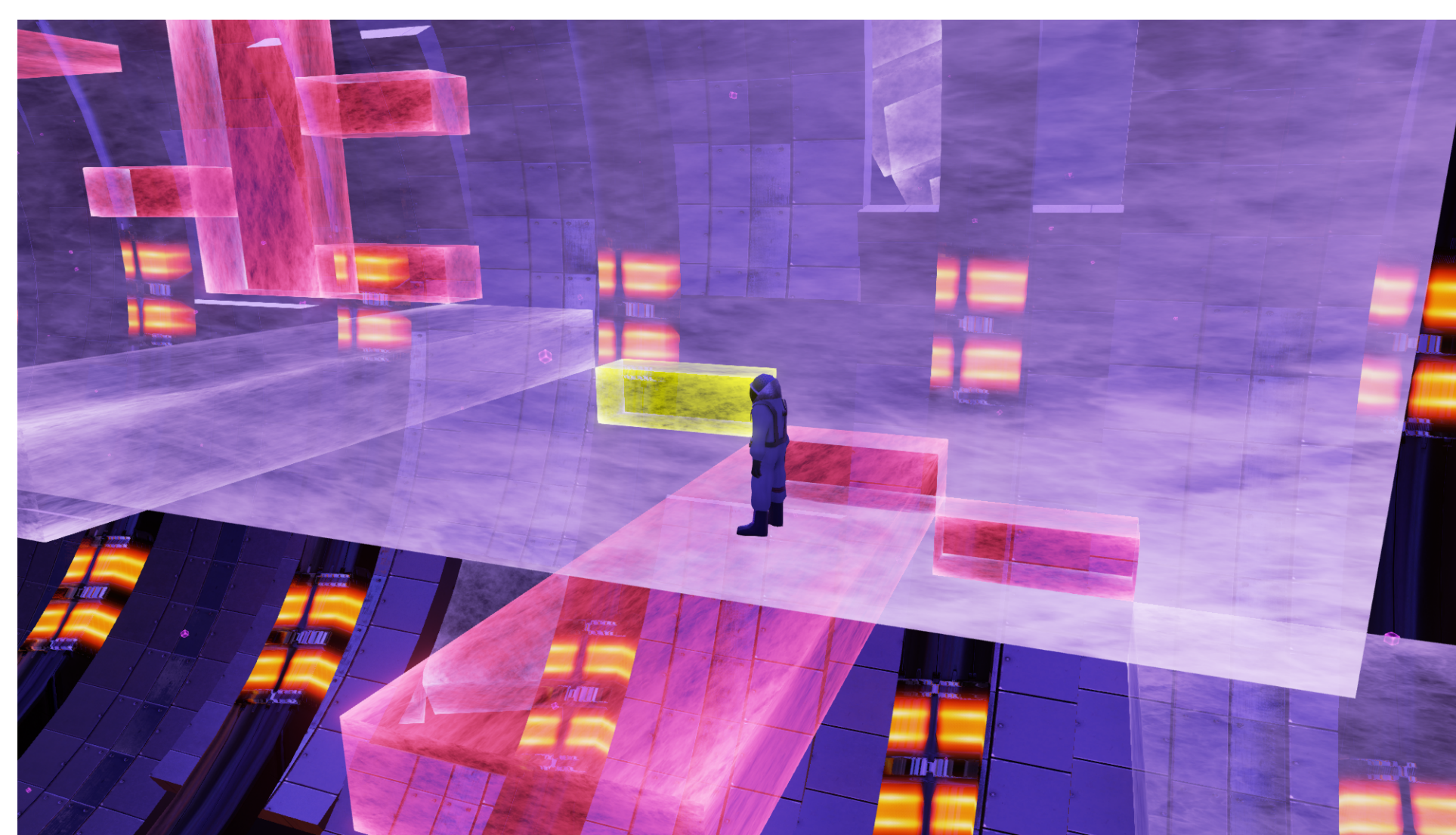
You are sent on a mission to investigate a distress signal near the edge of known space. As your warp drive disengages, you peer out into the great unknown. Your sensors spike and you're slammed against the bulkhead as you come to a grave revelation: a great, enveloping, cosmic dark has taken control of your ship; you are being sucked inwards by a black hole. Your shrieking gauges blur and dim as you lose consciousness... Will you make your escape or will this black hole become your tomb?

Lose Yourself in Another Reality



Utilizing the power of the Oculus Rift, you will lose yourself in another reality. Consumed by your surroundings and freed from the limits of a two-dimensional screen, this breakthrough technology allows you to experience gaming like never before. Simply wear the headset and with a turn of the head, you can look around and explore the world of Quantum as though you were really there.

Challenge Your Mind with Intuitive Puzzles



With the cutting edge technology of the Xbox One Controller, you will run, jump, and manipulate space as you avoid the perils of the unknown. A mysterious power allows you to select and control objects in the void. Will its dark dangers prevent your salvation or will you overcome the challenges of the abyss?

Jump

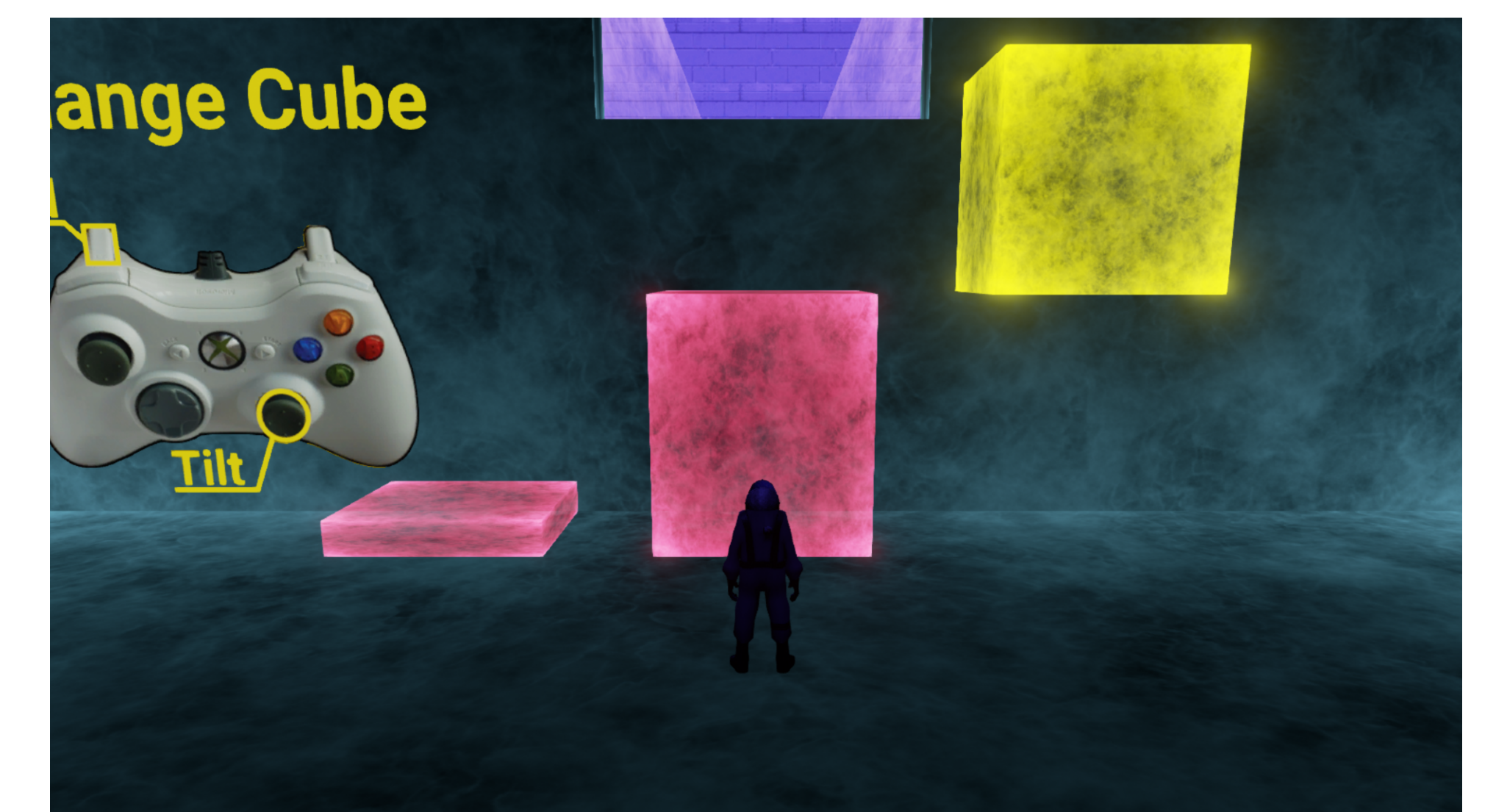
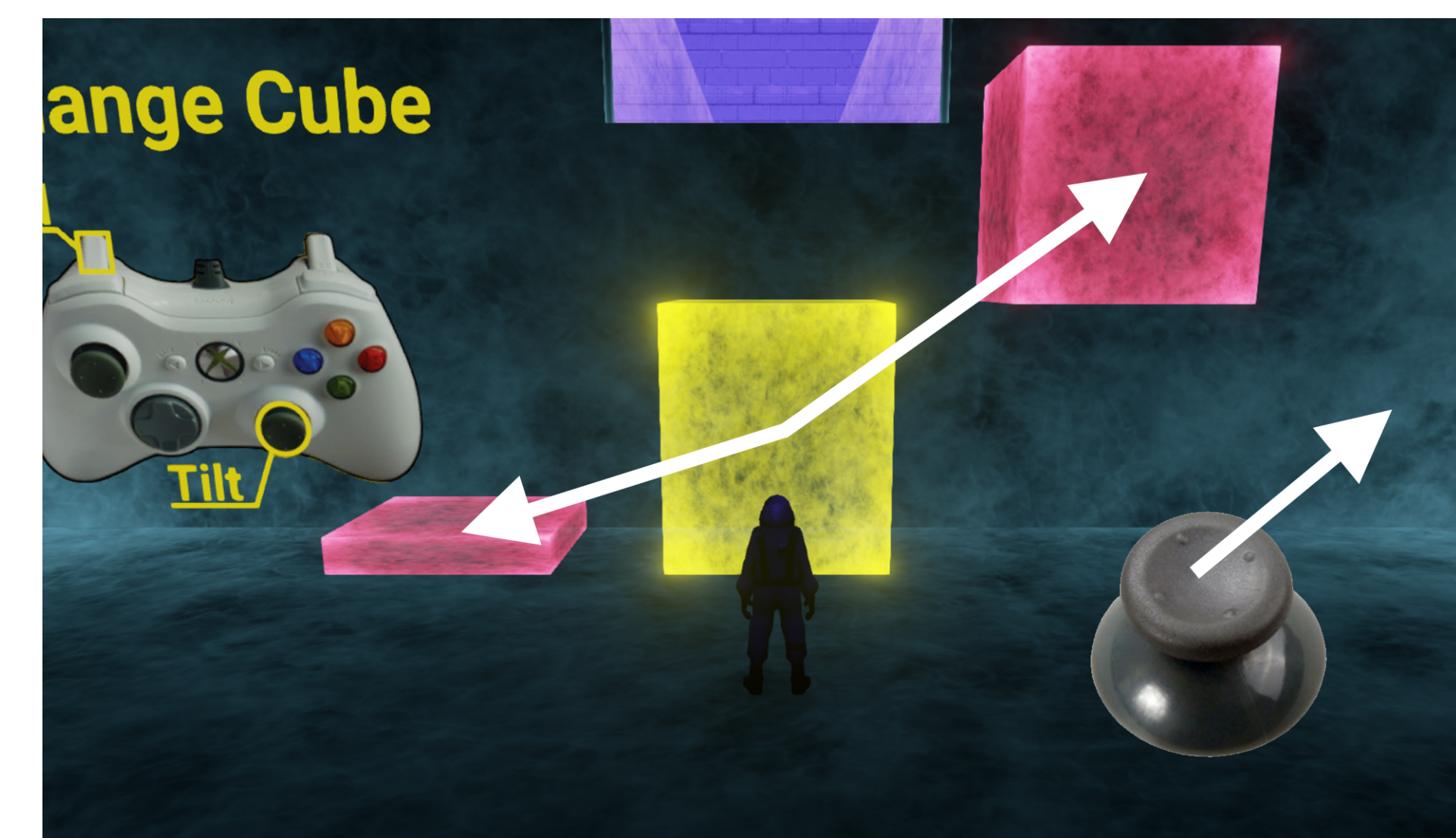
Use Cube

Change Cube



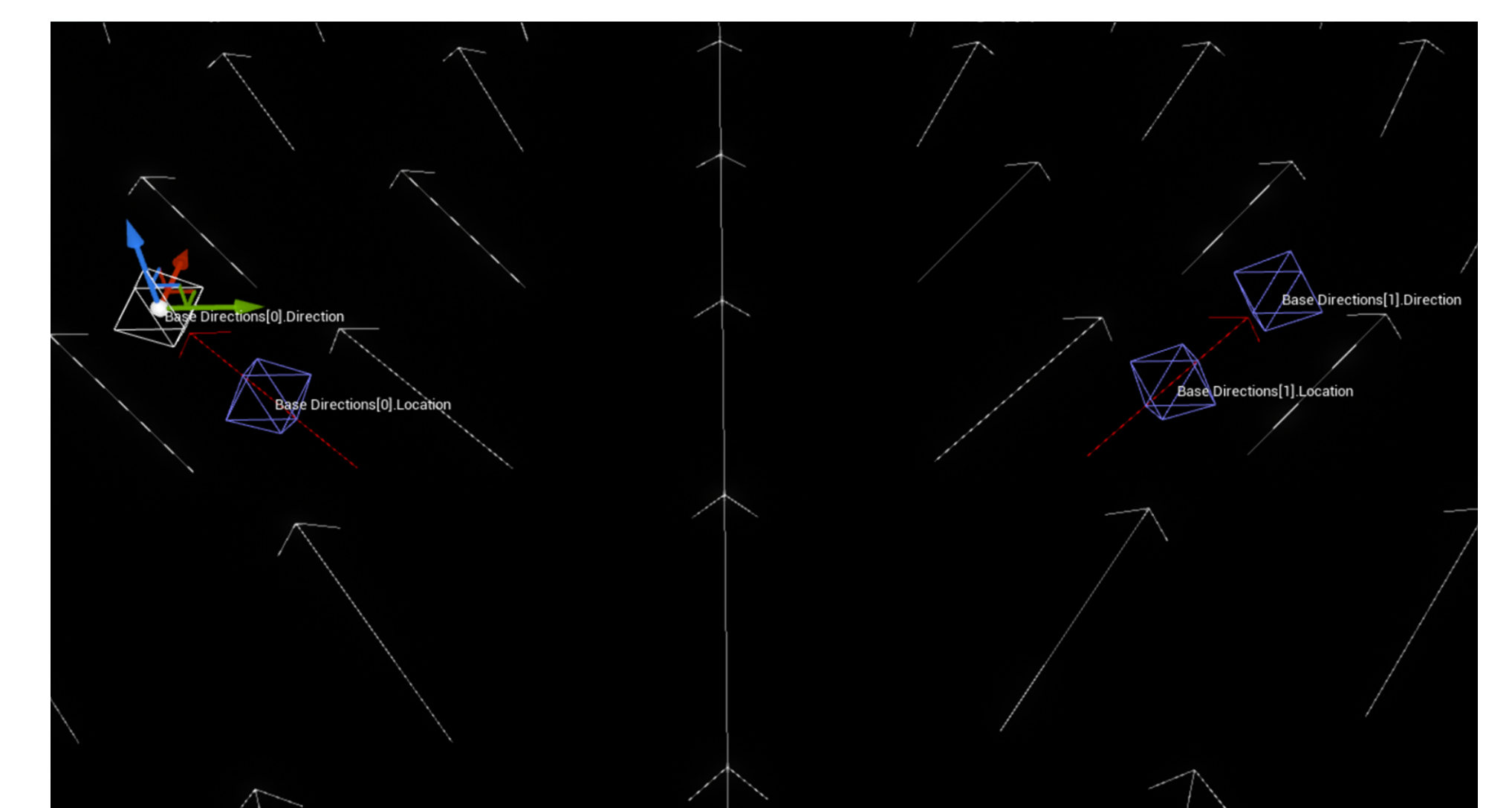
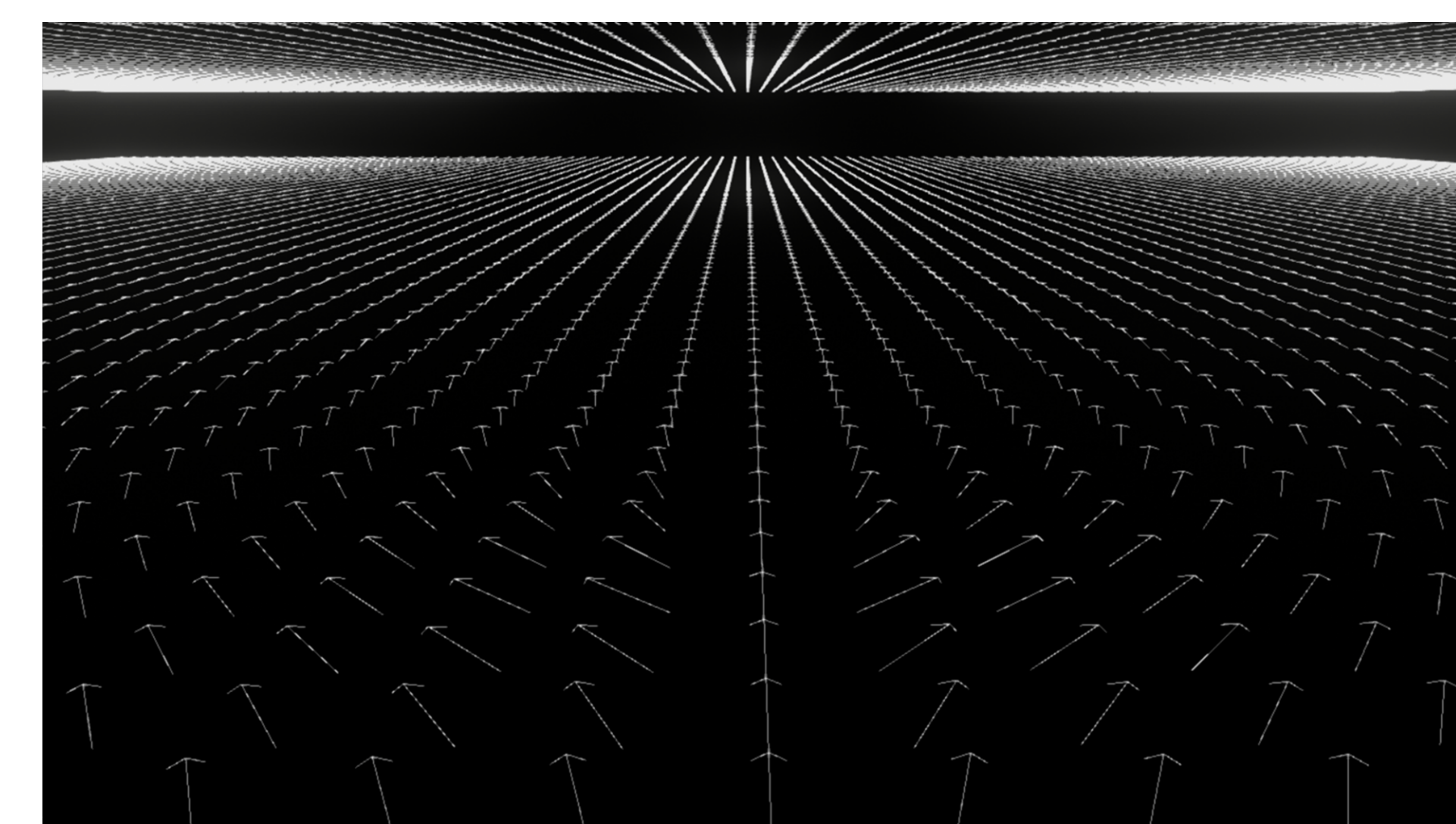
Development

Advanced Targeting System



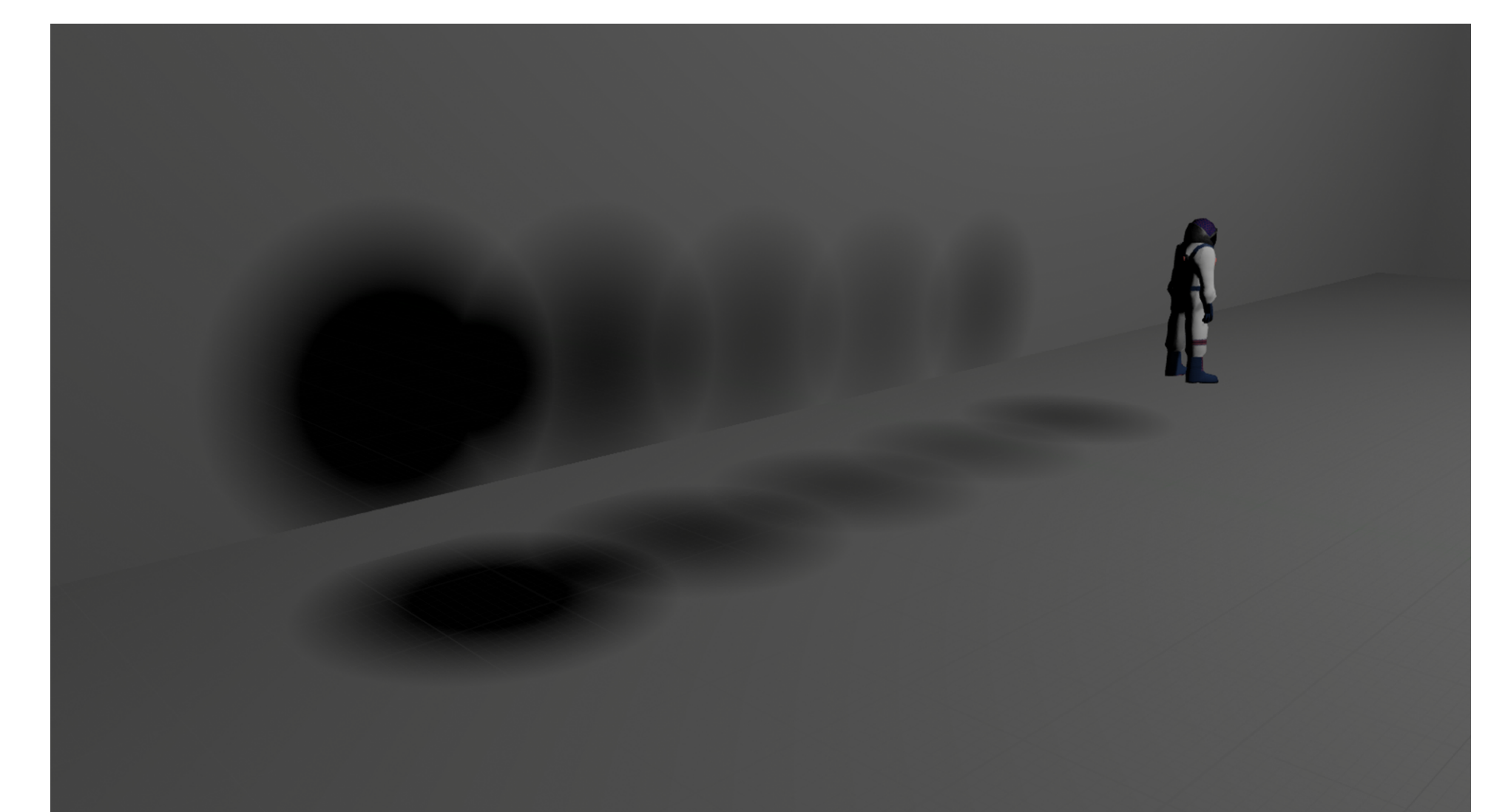
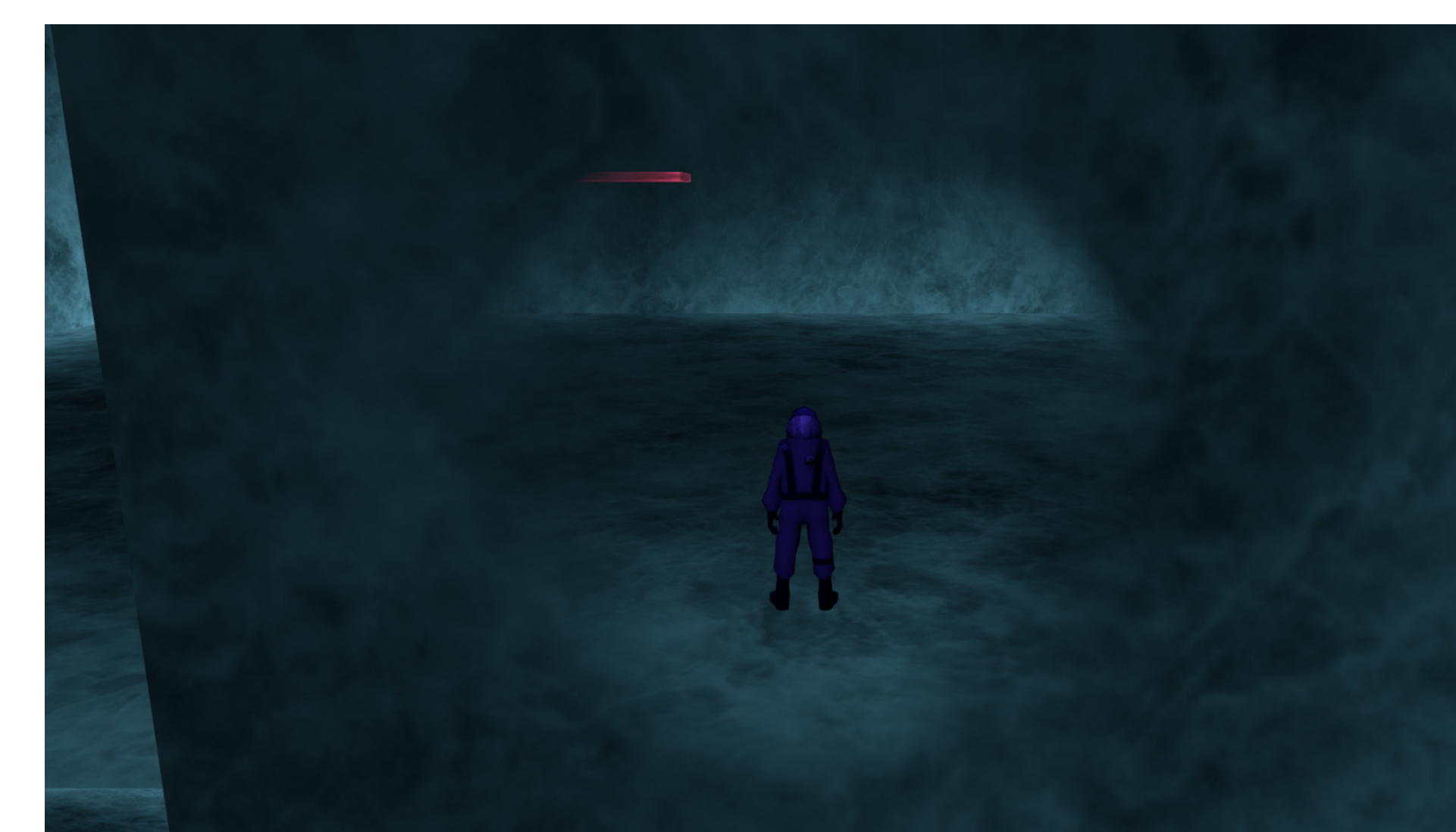
Quantum implements a custom targeting algorithm which allows the players to intuitively select objects. Two game entities enable targeting: load volumes and targetables. Each set of targetables is associated with a load volume. When the player enters a load volume, they may select its associated targetables until they leave the volume. While within a load volume, the associated targetables are projected onto the screen using the camera's projection matrix. The origin is then adjusted depending on the currently selected object: if nothing is selected, the center of the screen is made the origin; if a targetable is selected, it is made the origin. The distance squared from the origin and the direction from the origin are then calculated for each targetable, these are known as the distance squared influence and the target vector, respectively. When the control stick is tilted, the tilt direction is dotted with the target vector to obtain a directional influence. The directional influence and the distance squared influence are then multiplied by constants and subtracted from each other. The targetable with the lowest value is targeted. By modifying the constants either distance or direction may be favored.

Vector Field Creation Tools



Quantum handles camera control for the player by setting the camera's forward vector based on its location within a vector field. The vector field is created by artists using an extraordinary vector field tool developed for Quantum. The tool creates vector fields by interpolating between base vectors which are painted into the scene by artists. An artist may select the number of base vectors in a vector field as well as the location, direction, and influence coefficient for each base vector. To obtain the vector at a specific location, the inverse-squared distance from each base vector to the current location is calculated and used as the base influence. The direction, influence coefficient, and base influence are then multiplied and the result is added to a total vector. After the contribution of each base vector has been added to the total, it is normalized to obtain the final direction.

Location Based Opacity



To ensure that the player is always visible, Quantum dynamically alters the opacity of geometry; this is called location based opacity. Quantum's strategy for location based opacity uses 5 spheres located between the player and the camera to determine when a rendered object is obstructing the view. As the player moves around the world the location of each sphere is updated and the data is sent to the GPU prior to rendering. The GPU calculates the radius of each sphere and increases the opacity of any pixels which are intersecting a sphere. In Quantum, location based opacity is applied on a per-surface basis. This prevents the algorithm from removing pixels which should remain in the scene like walls parallel to the player. While a cone may remove geometry more accurately, the pixel-collision test is much easier for spheres than it is for cones.