



PsyFighter | The Journey To Discovery

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GAME CONCEPT

Game Plot

The year is 2048, the predicted technological singularity¹ has left the human era threatened with extinction! In this new machine dominated existence, natural resources & energy are becoming a scarce commodities leaving the machines with a difficult dilemma as to what to consume next. Unconvinced by the ability of the machines to look past humans as a viable energy source, leading scientists secretly arrange for Adam & Eve to escape earth on their newly built spaceship, bound for the furthest corner of the universe. Designed on the dark side of the moon, the spaceship includes all the latest technology including engines which create a beam of light with which to travel along. Adam & Eve's journey will be a long and arduous one, passing through many galaxies & solar systems and even with the new engines, fuel is a major concern for such a long journey. As such the spaceship has been designed to recharge when passing through stars by absorbing as much energy as possible. However to accomplish such a daring flight plan the spaceship must also pass extremely close to a multitude of planets, moons & asteroids the magnitude of which cannot be computed in advance, not even by a machine! You have been tasked with navigating the spaceship safely to its destination on the other side of the universe through an ever evolving tunnel of light and obstructions. If you can progress successfully through the many end of level suns you will make it to the other side of the universe. On the other side of the universe you will be presented with a magical world with which to explore in your spaceship.

Game Play

The majority of the game play is an arcade style 3d scene where the user manoeuvres the spaceship within a tunnel of light without touching the sides. To throw a spanner into the works, planets will appear randomly in front of the spaceship forcing evasive manoeuvres. The speed can be adjusted, upwards of a minimum speed for the level, as well as the ship's trajectory. Planets / asteroids will "explode" on contact followed by a re-spawn of the ship. If a wall is touched the ship will also be re-spawned. As each level progresses a sun will grow at the end of the tunnel signifying the end of the level when it is reached. At the end of each level the user will see an animation of the camera panning to the spaceship's side as it jets off into the distance. When the final level is completed a new bonus level will be loaded, and will be available from the main menu, which will contain an explorable 3d solar system. For the prototype game the keyboard is used to control the spaceship, it is hoped however to add the ability to connect a PS3 remote for the finished game.

Target Audience

PsyFighter is aimed at users who enjoy racing, simulation & sci-fi games who have an eye directed towards the future. The context is hoped to provoke thoughts on where humanity could end up in the next 35 years or so. It is also hoped that it can be used as a visual installation for revellers at psychedelic dance events.

Selling Points

PsyFighter is a fast and fluid game of a semi topical nature.

¹ The Coming Technological Singularity. Vinge, Vernor. http://groen.li/sites/default/files/the_coming_technological_singularity.pdf

INSPIRATION & COMPETITION

Space Invaders & Space Pilot

The movement of the psychedelic planets towards the camera in PsyFighter has been strongly influenced by retro games such as Space Invaders² for the continual movement towards the camera and Space Pilot³ for the side-scrolling⁴ game play and way in which objects can be dodged.



Figure Two. Space Pilot

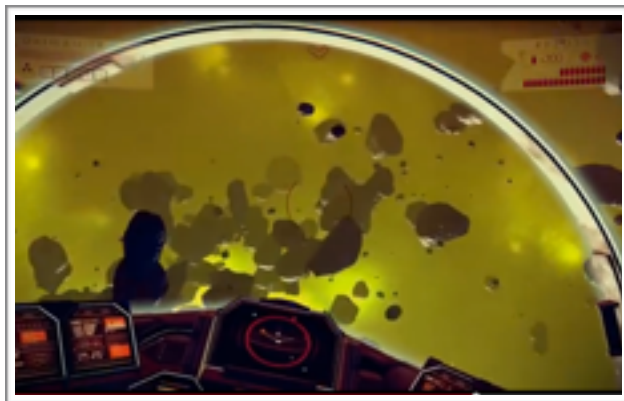


Figure Three. Flight scene from no Man's Sky

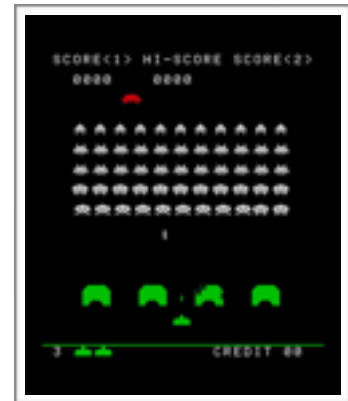


Figure One. Space Invaders

No Man's Sky

The main inspiration for

PsyFighter comes from a small independent games studio called Hello Games⁵. On December 8th 2013 Hello Games wrote a blog⁶ detailing progress on a new “science fiction game, set in an infinite, procedural universe”. The main detail's are presented in a video which begins by stating that all footage is captured in real time. What follows is nothing short of a breath taking demonstration of state of the art computer gaming. The flight / space simulation presented in the video is the primary inspiration for the final Solar System Simulation level.



Figure Four. Concept art from No Man's Sky.

² Space Invaders. http://en.wikipedia.org/wiki/Space_Invaders

³ Space Pilot. http://en.wikipedia.org/wiki/Space_Pilot

⁴ Side Scrolling. http://en.wikipedia.org/wiki/Side-scrolling_video_game

⁵ Hello Games. <http://www.hellogames.org>

⁶ No Man's Sky Blog. <http://www.hellogames.org/2013/12/no-mans-sky/>

INSPIRATION & COMPETITION

Stargate SG-1

Further inspiration for PsyFighter comes from the film & TV series Stargate SG-1 and their use of worm holes.

*“The story of Stargate SG-1 begins about a year after the events of the feature film, when the [United States government](#) learns that an ancient alien device called the [Stargate](#) can access a network of such devices on a multitude of planets. SG-1 is an elite [Air Force special operations](#) team, one of more than two dozen teams from Earth who explore the galaxy and defend against alien threats such as the [Goa'uld](#), [Replicators](#), and the [Ori](#). The series draws upon [Egyptian mythology](#), [Norse mythology](#), and [Arthurian legend](#).”*⁷



Figure Five. Spaceship in a worm hole from Stargate SG-1

Strike Suit Zero

The main competition for PsyFighter comes from games such as StrikeSuitZero⁸, a game which declares itself as *“Space combat reborn”*. The game is set in the future during an interstellar war. In a bid to save Earth from destruction, the user must take control of the Strike Suit – a revolutionary fighter craft with the ability to transform into a lethal suit of space armour. The game play ranges from massive fleet battles where your dog-fighting skills will directly affect the fate of the cosmos to a discovery of a colourful and vibrant universe.



Figure Six. Screen shot from Strike Suit Zero

⁷ Stargate SG-1. http://en.wikipedia.org/wiki/Stargate_SG-1

⁸ Strike Suit Zero. <http://strikesuitzero.com>

GAME TECHNOLOGY

Release Platform

Psy-Fighter is intended for release on OS X & PC although it would be interesting to see the capabilities of WebGL⁹.

OpenGL Functionality

Vertex Buffered Objects

Vertex Buffered Objects will be used in the final version to render the created objects.

Particle Systems

Multiple particle systems will be used in the finished product for simulating the engine, creating a star field and for modelling sun dynamics.

OpenGL Shading Language

The OpenGL Shading Language will be used to gain fine control over rendering results. GLSL will be used to create a glowing tunnel effect, similar to that seen in figure eight, to replace to textured image covering the tunnel in the prototype.

Display Lists

Display lists will be utilised for objects within the scene.

Interfaces

PsyFighter will contain two main interfaces, the start / end game interface and the in-game interface. The start screen will include start game, options and exit buttons for the user to decide while the end game screen will inform the user of their score & display high scores. The in game interface will show the players current score, health, level number, level completion amount and speed.

Assets

All the assets and textures for the game will be generated with a combination of Autodesk¹⁰ & Adobe¹¹ software. 3D Models will be generated using Maya 2014¹² while any textures required will be made using Adobe Photoshop¹³. Objects exported from Maya format to c++ arrays via the free tool at jeffprod.com¹⁴.

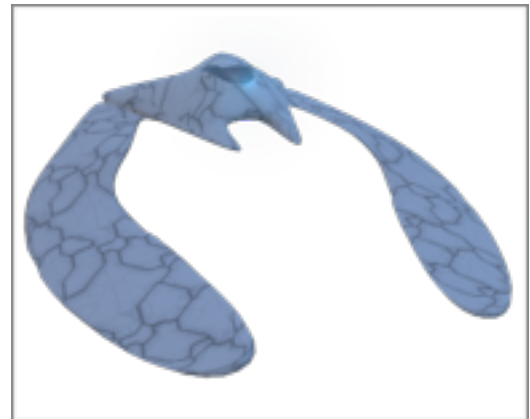


Figure Seven. Spaceship rendered from Maya.

⁹ WebGL. <http://en.wikipedia.org/wiki/WebGL>

¹⁰ Autodesk education. <http://www.autodesk.com/education>

¹¹ Adobe. <http://www.adobe.com/>

¹² Autodesk Maya 2014. <http://www.autodesk.com/products/autodesk-maya/overview>

¹³ Adobe Photoshop. <http://www.adobe.com/uk/products/photoshop.html>

¹⁴ OBJ to OpenGL by JeffProd.com <http://en.jeffprod.com/obj2opengl.php>

PROTOTYPE & DEVELOPMENT SCREEN SHOTS

Modelling with Maya

Figure 8 demonstrates models being made in Maya 2014.

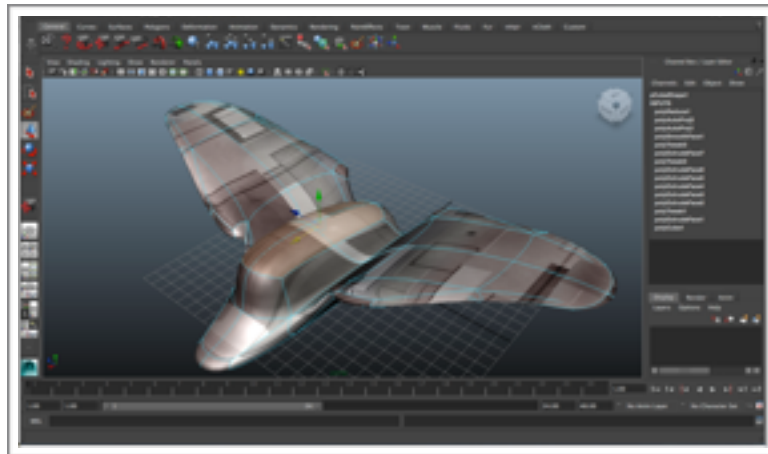


Figure Eight. 2nd Spaceship being build in Maya.

Game Screen shots

Figures 9, 10, 11 & 12 are screen shots of the prototype in development.



Figure Nine. Flying down the middle.

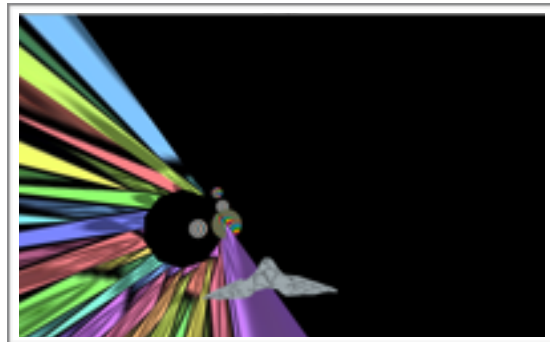


Figure Ten. An inside outside glitch.



Figure Eleven. An early prototype

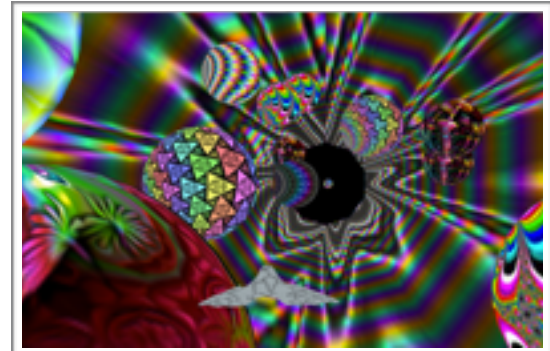
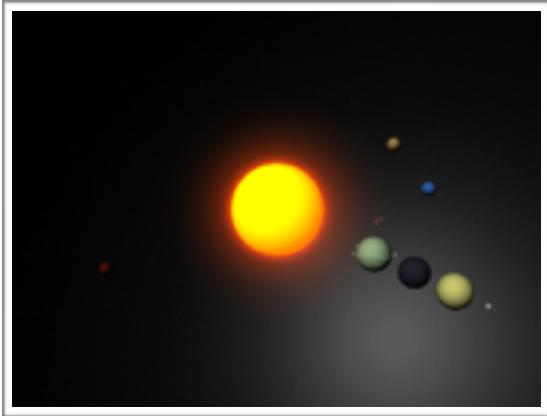


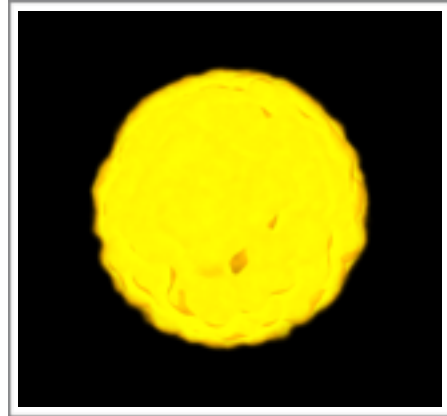
Figure Twelve. Too many balls.

PROTOTYPE & DEVELOPMENT SCREEN SHOTS

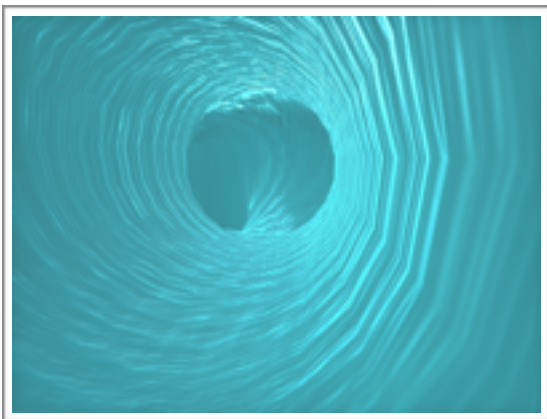
Concept Art



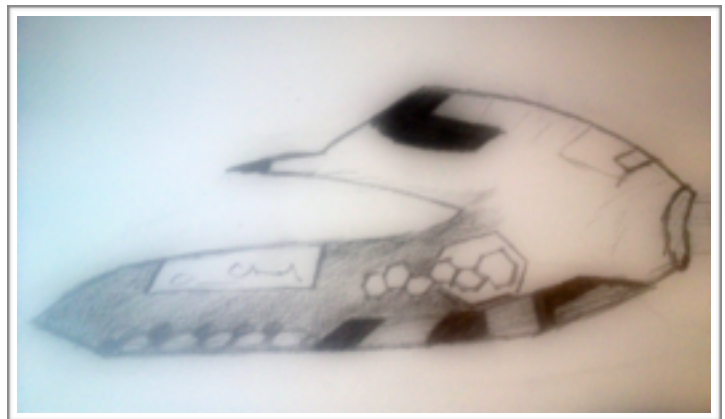
A Solar System rendered from Maya.



A Sun concept in Maya.



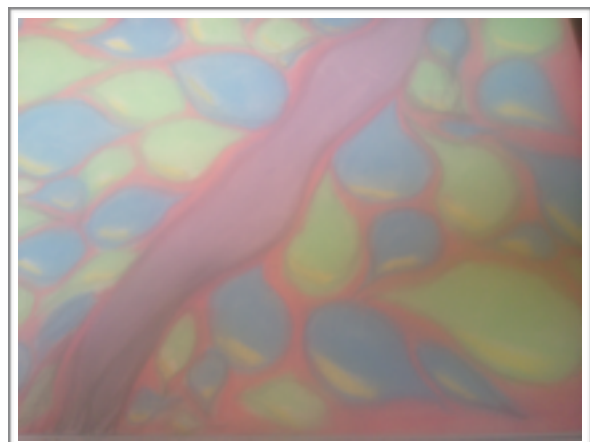
A Worm Hole visualised in Maya.



Hand drawn concept art.



Spaceship rendered from Maya.



Hand drawn psychedelic colours.
