Game Design Document for:

Galaxy Explorer
# Table of Contents

**Logline** .................................................................................................................. 3

**Short Synopsis** ........................................................................................................... 3

**Potential Market and Genre** .......................................................................................... 4

**Game Influences** .......................................................................................................... 4

- Story / environment influences ................................................................................. 4
- Game Mechanics influences ....................................................................................... 4

**Gameplay** ..................................................................................................................... 4

**Platforms** ....................................................................................................................... 5

**Reference Material** ....................................................................................................... 6

- Concept Art .................................................................................................................. 6
- General Locations .......................................................................................................... 6
  - *Earth* ....................................................................................................................... 6
  - *Ancient Ruin worlds* ............................................................................................... 7
  - *Allied/Opposing worlds* ......................................................................................... 8

**Characters** .................................................................................................................... 8

- Template #1 .................................................................................................................. 9
- Template #2 .................................................................................................................. 9
- Template #3 .................................................................................................................. 9

**Non-Player Characters** ................................................................................................. 9

- *Allies* .......................................................................................................................... 9
- *Opposition* .................................................................................................................. 10

**Equipment and "Legendary" Items** ............................................................................ 11

**Modes of Transportation** ............................................................................................... 12

**Prototype** ..................................................................................................................... 13

**Flowchart for overall game** .......................................................................................... 13

**Flowchart of Level 1:** ..................................................................................................... 14

**Lite version:** ................................................................................................................... 15
**Logline**
On Earth in the distant future, a reluctant explorer discovers a key to the ancient foci that allow citizens to travel across galactic distances instantaneously, and begins a journey that leads to intrigue and a threat to civilization.

**Short Synopsis**
This game will exist to provide a sense of wonder at exploring the universe. Where possible it will be based on what we have learned about the universe, but will have some added features that haven’t been considered, or at least not definitively proven wrong yet.

In Galaxy Explorer, the player becomes an investigator in the far future, as part of a society that can travel anywhere instantly, as long as there is a way to 'focus' on a destination, due to unique qualities at that destination. Until recently, no one knew what made the destination locations special. Now they know that an ancient race left markers for reasons unknown at those locations, and the explorers’ goal is to find out why.

Though the explorers tend to journey alone or in small groups, they are supported by a ground control team (think futuristic version of NASA) that can help analyze what they find in real time, and provide assistance (initially in the form of a tutorial, later as way to do scientific and cultural analysis). The goal is the give the player a sense of wonder at each new location (by stunning visuals and audio). Later, a sense of suspense and perhaps dread shall be added when the player learns how the markers could affect them and their home.
Potential Market and Genre

While there have been many space exploration games, they tend to be civilization/squad based on one end, and individual/RPG-based on the other end. The intent of this game is to combine the two. The primary target for this game is virtual reality (VR) platforms, such as the Oculus Rift and Gear VR, and also Google Cardboard, which have only recently become commercially available and for which there is much less competition so far. So the market potential is high. Within the VR market, the target audience is for ages 14 and up, and for anyone that enjoys exploring and role-playing. The may also be a PC version if one can be produced that does not compromise the features that work well with VR.

Game Influences

Story / environment influences

The titles listed below are hyperlinks to more information about the games and TV shows.

- Doctor Who – high tech investigations
- Mass Effect – mission control based investigations
- Star Trek Online – transporters, high tech investigations
- StarCraft – stories with epic consequences
- Galactic Civilization – Earth versus alien conquerors, and finding/using ancient tech
- XCOM – more Earth versus alien conquerors
- Stargate – relatively instant travel to strange places
- Star Wars The Old Republic – high tech investigations

Game Mechanics influences

- Land’s End: Local travel and interaction with environment
- Darknet: long distance travel and interaction with environment
- Dead Secret: Local travel and interaction elements.
- EVE Gunjack: interaction elements.
- Star Chart: Moving between planets

Gameplay

Choices should matter. Since this is not envisioned as an MMO (though cooperative play may be included), this is a bit easier to do. The danger of making RPG-like games where choices matter is that you end up with a lot of story branches that nobody may see. This is a risk worth taking to give the player the feeling that the world they live in is the world they chose.
The balance to the previous point is that the more choices there are, the more work needs to go into the story. So it is critical that the choices that the player gets to truly make should matter. There not be thousands of them, but the ones that do should up should be memorable and worth the player’s time to ponder and get right. That means that the quest system has to be geared toward getting the player the information they need to make the right choice when they get to it, and each true branch point should be automatically saved right before it is made so that they can take the other path(s), and find hidden options that they may not even have considered might be there.

Although portions of the game are sandbox / exploration, the cornerstone of the game, and that which everything else supports, are the key decisions that the user needs to make to advance the story. As such, when the user gets to a key branch point, the interface would indicate that this is a Big Moment, and the screens of the events that led to this decision would show on the left side (imagine a flashback experience), with an option for the user to select a flashback (which may be a previous Big Moment) to see how it relates to the current situation and allow them to research to better understand the consequences of the present decision. Another set of images would show up on the right side indicating potential consequences of the choice they are about to make. The more information they have gathered, the less blurry the potential future images would be. They would also be more blurry if there is another Big Moment that would occur be between ‘now’ and that potential future. A a very simple level, it would look like this:

<table>
<thead>
<tr>
<th>Past Key Event 1</th>
<th>Choice 1</th>
<th>Future Key Outcome 1 (from Choice 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Key Event 2</td>
<td>Choice 2</td>
<td>Blurry Key Outcome 2 (missing research)</td>
</tr>
<tr>
<td>Past Key Event 3</td>
<td></td>
<td>Future Key Outcome 3 (Choice 2)</td>
</tr>
<tr>
<td>Past Key Event 4</td>
<td></td>
<td>Blurry Key Outcome 4 (Choice 2+future)</td>
</tr>
</tbody>
</table>

Ideally the game should take between 15-30 hours, with each level taking about 1-2 hours.

Victory is achieved when the character resolves the final Big Moment. Whether it is victory or not depends on how the main character, and through them the player, made the choices in the game and perceives the consequences.

**Platforms**

Since the platform is primarily virtual reality, the gameplay will be strictly first person, whether the player is playing their own avatar, which would have a HUD overlay the environment, or a starship, in which their ‘eyes’ would be the ship’s sensors, with a multi-monitor effect (picture a bunch of connected television screens all the way around you, including above and below, each with its own feed, where a screen could be selected to expand to fill the entire viewing area).

Due the nature of the lower-end VR hardware (specifically Google Cardboard), much of the interaction with the environment will be controlled by the direction the player is looking, and
supported by the single hardware button that each VR platform supports in one form or another. Position within the game won’t be controlled by player movement since the lower-end platforms don’t have position information beyond head direction. Higher end platforms such as Oculus Rift and Google VR (as well as PC) could support a controller as input, and input would need to be very simple and consistent, with semi-subtle visual cues for which key to press and where it is on the controller (experts would of course disable that feature to increase immersion in the game).

Reference Material

Concept Art
Unless stated otherwise, artwork below is from various free sources on the internet.

General Locations

*Earth*
Earth in the future has united to stand against threats that were discovered during early tests of the system used to teleport to hyper-harmonic sources known as foci. It was discovered that humans weren’t the first to discover this technology, though they do seem to be better at making use of it for reasons currently unknown to either them or the other species in the universe. Earth itself has many areas of extremely concentrated high-tech structures, such as mission control

Mission control is a vast facility, easily larger than the largest city on present day Earth. No known place has technology more advanced. That said, Earth of the future places great value on aesthetics, so much of the technology is presented as its own form of art. And on Earth, the art does not intend to hide its true purpose.
In contrast, there are also areas of lush vegetation and animal-life on future Earth. To say that those areas were left in their natural state is misleading though, as they are highly monitored and protected. And there are still areas that are largely uninhabitable after the wars started by alien races. Those wars are over for now, as Earth and its allies are in a stalemate with the opposing forces.

**Ancient Ruin worlds**
There are many worlds that were clearly populated by other species that have now vanished. One even appears to be from a vanished human society, though there should be no way that is possible. Evidence of battle can clearly be identified as the work of known opposing forces, but some destruction appears to be from forms of energy never considered before, and in some cases there is no explanation for why the worlds were lost at all. It is from those ruins, and through the brave explorers that studied them, that the people of Earth have leveraged their already significant advances to keep opposing forces at bay.
Allied/Opposing worlds
Little will be known to the player character about allied and opposing worlds. They will fall into three camps. The first is former citizens of Earth who either left to find riches, or escape the earlier wars, or found their own colonies based on their own beliefs. The second are the races descended from previously powerful races that lost galactic wars before Earth came onto the scene and scattered to rebuild elsewhere, and the third the races that won those wars, which fortunately for Earth are quite far away, and can’t use the foci to the degree that humans can.

Characters
The player would create one avatar, and in cooperative play each player would create an avatar. Each character would be characterized by templates that would be selected at creation (e.g., multiple scientist types, multiple engineer types, multiple soldier types, etc.) that would define the primary way that they would interact with NPCs (at least initially) and the universe. As they advance, they would be able to add new templates to create interesting hybrid templates with unique abilities. Part of their job will also be to locate unique resources that can be converted into better equipment to face the challenges that they are beginning to encounter.
Template #1
The soldiers of the future are supported with the highest available technology, including instant communications with mission control through an external brainwave reading device that is included in an enhanced version of the teleportation devices that are similar in appearance to the watches of today. The device is also tied into their weapons and portable null fields used to divert energy attacks and transform physical attacks. Unfortunately, in the future as technology improves so do the ways around it, so soldiers can still be damaged if they aren’t quicker than their enemies. On what should have been a routine assignment, the player character is sent to investigate one of the space stations what was built around one of the known foci on the fringe of the galaxy. Upon arrival, it is obvious that things are not as they are supposed to be. [Image of “Armored Sci-Fi Girl” licensed from Dan P in Unity Asset Store).

Template #2
The transportation engineers have the ability to fix almost anything given the small, self-modifying tools that they carry. Though simple to use, it takes a great deal of study to take full advantage of them. Their specialty is the watch-like device that is used to instantly transport people to places that can be focused on. While performing routine analysis, the player character notices that a device is indicating that the owner transported to someplace where no known focus should be...

Template #3
The doctors of the future can cure virtually any disease, even those that have never been seen before. There are exceptions, but they are very rare. During what should have been a routine examination, the player character found a patient who was exhibiting signs of a disease but his portable medical equipment indicated that there was nothing wrong with the patient, even as they appeared to be on the verge of death. But before dying, they disappeared. A trace of latent transportation energy indicated that the patient went somewhere it should not be able to go.

Non-Player Characters
Allies
All the investigators periodically check in with mission control, named after the people responsible for some of the earliest explorations away from Earth so many centuries ago. Though associated with exploration, it also has many other functions, including sending teams to take of any problems in the known universe, be it illness, hostile aliens and breakaway human groups, and planetary, solar system, and galactic issues.
Character #1
The chief archaeologist with mission control has been studying some of the locations farthest away from Earth. Their studies have suggested hints of a race whose technology exceeds even that of mission control. Their association with the player character leads them to invite the player character along (for reasons appropriate to their background, or perhaps just a personal relationship) to see an exciting discovery, little knowing that it will change their society forever.

Character #2
A mystic sits before the oracle, a device created before recorded history. It tells him that the time has come to reactivate the silent beacons. Time to call the children home. No records even remain of who they were, and why they were cut off. Will they be allies or enemies? The mystic begins the chant of convergence...

Opposition
Character
Though the opposition is not afraid to get its hands (or whatever passes for hands) dirty, it tends to deploy highly-advanced and autonomous robots to do much of its work. The latest AI algorithms prevent them to questioning the authority of their creators. Usually. Fortunately for Earth, the opposition had not explored the branches of science that they did, and so Earth has a slight advantage until they adapt to it [Image of “Greeble Kit” licensed from Brain Machine in the Unity Asset Store].
Equipment and "Legendary" Items
Mission control equipment is already extremely advanced compared to present day. Yet there is a power that has been hidden for eons. This power is awakening. As the player characters go on their journey, that will find sources of the power, and by carefully tapping it, they will gain powers beyond even the advanced society they live in.

The image below is an example focus (model is from “Space Station” licensed from Many-Worlds in the Unity Asset Store). Foci have been found embedded in planets, even within their cores (which is why certain protocols are in place for focus traveling), all the way to orbiting planets in geosynchronous orbits, such as the one which a space station was built around (see level 1 prototype below).
Modes of Transportation

The chart on the next page shows the modes of travel used to get between local, intra-planetary, inter-planetary, intra-galactic, and inter-galactic locations. While local travel is generally just advanced versions of what we use today, travel across greater distances requires technology we don’t have yet, like spacecraft and jets that are fast enough, not to mention the ability to teleport instantly to select locations within and outside our galaxy.
Prototype

Flowchart for overall game
This flowchart shows the game breakdown by level. The beginning and ending levels will be more structured / cinematic, and the ones in the middle will be more open / sandbox.
Flowchart of Level 1:
This flowchart shows the high-level paths presented to Sarah, based on a soldier/scientist hybrid template. She carries dual blasters designed to automatically adjust to stun/incapacitate most known sentient lifeforms and destroy known combatant machines. She arrives at a space station after receiving a distress call. Level 0 would be the tutorial (not include yet) which would provide the Earth backstory and the selection and training of the avatar template(s).
Lite version:
I created a lite version of the game as part of the capstone project for another Coursera specialization, “Game Design and Development”, from Michigan State University. The lite version has virtually no story elements in it, and was a way of learning what would be involved in using Unity to produce a virtual reality game based on licensing art assets from the Unity Asset Store. Its setting is aboard a space station, and would be near the beginning (probably the second level) of the full game. You can see how far I got with it at: http://www.shiny-mirror-studios.com/galaxyexplorerlite.html.