## **GLOBAL SCRIPT – Astro Odyssey**

### Lobby – Scene 1

(SPACE STATION)- This section introduces the space station setting seamlessly and allows the Teacher Robot to guide the players into making their lecture selection. (or leave the experience entirely).

#### **\*\*TEACHER ROBOT:\*\***

"Welcome, cosmic explorer. I am your personal robot tutor, and today I will be guiding you through the mysteries of the cosmos, the vast expanse that stretches far beyond our comprehension. Now, I know the topic might seem a bit, well, astronomical, but I assure you, it's a fascinating journey we're about to embark on. We're going to explore some celestial wonders that have captured the imaginations of many.

Today's journey offers three distinct paths – the Solar System, Mars, and Black Holes. Each holds its own marvels. Your voyage into knowledge begins with the click of your choice. However, if you wish to conclude your journey, simply press the finish button to return to planet Earth."

\*The robot gestures menu showing the lectures.\*

### Solar System – Scene 2

#### Solar System Lecture/Video - https://www.youtube.com/watch?v=libKVRa01L8&t=13s

"Our solar system is one of over 500 known solar systems in the entire Milky Way galaxy. The solar system came into being about 4.5 billion years ago, when a cloud of interstellar gas and dust collapsed, resulting in a solar nebula, a swirling disk of material that collided to form the solar system. The solar system is located in the Milky Way's Orion star cluster. Only 15% of stars in the galaxy host planetary systems. And one of those stars is our own sun.

Revolving around the sun are eight planets. The planets are divided into two categories based on their composition. Terrestrial and Jovian. Terrestrial planets, including Mercury, Venus, earth, and Mars, are primarily made of rocky material. Their surfaces are solid. They don't have ring systems. They have very few or no moons. And they are relatively small. The smallest and closest to the sun is Mercury, which has the shortest orbit in the solar system at about three earth months. Venus is the hottest planet, with temperatures of up to 867 degrees fahrenheit due to an atmosphere of carbon dioxide and extensive lava flows.

Next to this world of fire is a world of water. Earth. The water systems on this planet help create the only known environment in the universe capable of sustaining life. The last of the terrestrial planets, Mars, might have also supported life about 3.7 billion years ago. When the planet had a watery surface and moist atmosphere.

Beyond the four terrestrial planets of the inner solar system, lie the jovian planets of the outer solar system. The Jovian planets include gas giants Jupiter and Saturn. And ice giants Uranus and Neptune. The gas giants are predominantly made of helium and hydrogen. And the ice giants also contain rock, ice, and a liquid mixture of water, methane, and ammonia. All four Jovian planets have multiple moons, support ring systems, have no solid surface, and are immense. The largest, Jovian, is also the largest planet in the solar system, Jupiter.

Nearby is Saturn, the solar system's second largest planet. Its signature rings are wide enough to fit between Earth and the moon. But are barely a kilometre thick. Past Saturn are the ice giants Uranus and Neptune. The slightly bigger of these ice giants, Uranus, is famous for rotating on its side. Next Uranus is Neptune, the outermost planet in the solar system and also one of the coldest. Orbiting the terrestrial planets is the asteroid belt, a flat disk of rocky objects full of remnants from the solar system's formation. From microscopic dust particles to the largest known object, the dwarf planet Ceres.

Another disk of space debris lies much further out and orbits the jovian planets. The icy Kuiper belt. Apart from asteroids, the Kuiper belt is also home to dwarf planets such as Pluto and is the birthplace of many comets. Beyond the Kuiper belt is the ort cloud, a vast spherical collection of icy debris. It is considered the edge of the solar system, since that is where the gravitational and physical influences of the sun end.

Our solar system's particular configuration of planets and other celestial objects, all revolving around a life-giving star, make it a special place to call home.

# \*End of Lecture\* - this part plays after the end of the lecture as a transition between the lesson and the interaction event. (Same voice)

#### **\*\*TEACHER ROBOT (cont'd):\*\***

"Now, your role as a cosmic explorer takes centre stage. Let's take a look at the sun and planets up close and analyse some interesting data. Delve into the scientific wonders of the Solar System. Once you're done exploring, feel free to press the finish button to return to the lecture selection lobby."

\*The Teacher Robot nods, allowing the player to take control and analyse various aspects of each planet and the Sun.\*

## Mars – Scene 3

#### Mars Lecture/Video - https://www.youtube.com/watch?v=D8pnmwOXhoY&t=90s

To the ancient Romans, the planet Mars was symbolic of blood and war. But to many people today, the red planet may hold the key for a bright new future for humanity.

The story of Mars began about 4.5 billion years ago, when gas and dust swirled together to form the fourth planet from the sun. Mars is the second smallest planet in the solar system, with a diameter just shy of the width of Africa. In fact, its entire surface area is similar to that of all of Earth's continents combined. Much like its terrestrial cousin, Mars is dense and has a rocky composition. At the centre of the planet is a core made of iron, nickel and sulphur, which may have created a protective magnetic field during Mars 'earlier years.

Enveloping the core is a rocky mantle made of silicate minerals and a crust rich in iron. These iron minerals react with the trace amounts of oxygen in Mars' atmosphere and rusts, giving the planet its signature reddish hue. While its blood like appearance inspired the ancient Romans to name Mars after their God of war, the planet's rusty colour could be considered symbolic of the planet's prime days long past.

Today, Mars is dry, desolate, and cold, with temperatures dropping as low as negative 225 degrees Fahrenheit. But billions of years ago, the planet was much warmer, more geologically active, and had a watery surface. Lake beds and river valleys snake along the face of Mars, indicating that liquid water was, for a time, present.

Volcanoes such as Olympus Mons, the largest volcano in the solar system at three times the height of Mount Everest, once erupted lava. But by about 50 million years ago, soon after Earth's dinosaurs died out, Mars's volcanoes also went extinct. Water on the red planet still exists today, but mostly in the form of polar ice caps. Because of factors such as the presence of water, some scientists believe life may have existed on the red planet and may exist again. Since the 1960s, space programs from around the world have launched missions to Mars in attempts to understand the planet's past, present, and potential for sustaining life.

Life on another planet may well be out of reach for the near future. But if any planet can give us hope, Mars may hold the key to the survival of humanity.

#### **End of Lecture**

#### **\*\*TEACHER ROBOT (concluding Mars lecture):**\*\*

"Our exploration of Mars has unveiled its mysteries, and now, as a cosmic explorer, you have two captivating paths to choose from."

#### \*Menu pops up, presenting two distinct choices.\*

#### **\*\*TEACHER ROBOT (cont'd):\*\***

"Option one: delve into the scientific marvels of Mars by learning about the Mars Curiosity Rover.

Option two: take a visionary journey and witness potential scenarios of human colonization on the Martian surface.

Once you're done exploring, feel free to press the finish button to return to the lecture selection lobby."

\*Player chooses presses buttons. Conceptual visuals of Martian colonies and the Mars Curiosity Rover materialize and give info to player. \*

## Black holes – Scene 4

#### Black Hole Lecture/Video - https://www.youtube.com/watch?v=kOEDG3j1bjs&t=3s

"Black holes are among the most fascinating objects in our universe, and also the most mysterious. A black hole is a region in space where the force of gravity is so strong, not even light, the fastest known entity in our universe, can escape. The boundary of a black hole is called the event horizon, a point of no return, beyond which we truly cannot see. When something crosses the event horizon, it collapses into the black hole's singularity, an infinitely small, infinitely dense point where space, time, and the laws of physics no longer apply. Scientists have theorized several different types of black holes, with stellar and supermassive black holes being the most common. Stellar black holes form when massive stars die and collapse. They're roughly 10 to 20 times the mass of our sun and scattered throughout the universe. There could be millions of these stellar black holes in the Milky Way alone. Supermassive black holes are giants by comparison, measuring millions even billions of times more massive than our sun. Scientists can only guess how they form, but we do know they exist at the centre of just about every large galaxy, including our own. Sagittarius A, the supermassive black hole at the centre of the Milky Way, has a mass of roughly 4 million Suns and has a diameter about the distance between the Earth and our sun.

Because black holes are invisible, the only way for scientists to detect and study them is to observe their effect on nearby matter. This includes accretion disks, a disk of particles that form when gasses and dust

fall toward a black hole, and quasars, jets of particles that blast out supermassive black holes. Black holes remained largely unknown until the 20th century. In 1916, using Einstein's general theory of relativity, a German physicist named Carl Schwarzschild calculated that any mass could become a black hole if it were compressed tightly enough. But it wasn't until 1971 when theory became reality. Astronomers studying the constellation Cygnus discovered the first black hole. An untold number of black holes are scattered throughout the universe, constantly warping space and time, altering entire galaxies, and endlessly inspiring both scientists and our collective imagination."

End of video/lecture

# **\*\***TEACHER ROBOT (cont'd):**\*\*** this part plays after the end of the lecture as a transition between the lesson and the interaction event. (Same voice)

"Blackholes are truly mysterious, yet mesmerising. But I wonder, what would happen if you were to be drawn into the powerful gravitational pull of a black hole? It is an intriguing question indeed. Once you're done exploring, feel free to press the finish button to return to the lecture selection lobby."

\*Button shows up and player clicks on it. Player gets sucked into black hole and sees explanation of phenomenon\*

## Earth (Final) - Scene 5

#### \*\*EXT. EARTH - NIGHT\*\*

\*The VR experience gently transitions, bringing the player and Teacher Robot back to Earth. They find themselves in a serene outdoor setting, under a clear night sky filled with stars. The Teacher Robot looks around, feeling a mixture of relief and excitement.\*

#### **\*\*TEACHER ROBOT:\*\***

#### (looking around)

"Ah, back on our beautiful blue planet. Quite the journey, wasn't it? I trust you've gained a new perspective on the wonders beyond."

#### \*The Teacher Robot takes a moment to reflect, gazing at the vastness of the night sky.\*

**\*\*TEACHER ROBOT (cont'd):\*\*** 

#### (softly)

"You know, when we explore the cosmos, it's easy to feel small, insignificant even. Yet, that very insignificance is what makes our existence so precious. We are but a tiny speck in the grand tapestry of the universe."

\*The Teacher Robot turns towards the stars, a sense of wonder in its voice.\*

#### **\*\*TEACHER ROBOT (cont'd):\*\***

#### (looking at the stars)

"Look at those stars, scattered across the cosmic canvas. Each one tells a story, burning bright with the echoes of the past. It's a beautiful reminder of the countless marvels our universe has given us."

#### **\*\*TEACHER ROBOT (cont'd):\*\***

"There's a certain magic in quiet moments like these. Just gazing up, pondering the mysteries of the cosmos. We may be small, but our curiosity and wonder make us limitless."

\*The night sky twinkles above as the Teacher Robot gazes at the stars. The scene slowly fades to black, leaving the player with the lingering sense of awe and wonder inspired by the vastness of the cosmos.\*

#### \*\*FADE TO BLACK\*\*

\*Transition to lobby scene and experience is reset"

#### THE END