THE GREAT PLANET ADVENTURES

Kids Version

VERSION (SUBTITLES) REVISED: FEB 16, 2015

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SCENE	TIME	SCRIPT
PART 1		INTRO
	00:04	Today we're going to explore all of the planets in our solar system and some other places as well. We'll travel into the future to a time when astronauts live throughout the solar system. On each world, we'll see what the weather is like, what we would wear, where we would live, and what we would do to have fun.
	00:24	Leaving Earth will make us a lot stronger. Feel how the Earth is holding you down right now. Your muscles have to push really hard just to stand up. Where we're going, the gravity pull is much less and astronauts can jump really, really high.
	00:41	We'll start at the International Space Station orbiting the Earth with astronauts on board right now. It's the best place to begin our Great Planet Adventures.
TITLES		OPENING TITLES
THE CARN PLANE, ADVENTURES	00:54	The Great Planet Adventures
PART 2		INTERNATIONAL SPACE STATION
	01:04	This is the International Space Station. Six astronauts live in this big house orbiting the Earth. Their favorite pastime is watching the Earth below. Here we use giant solar panels to make electricity directly from sunlight. But, we still bring food and supplies from Earth.
	01:23	Why don't we start our adventure on Mercury. It's the closest planet to the Sun so we'll have lots of energy.

PART 3		Rebound Peak, Tolkien Crater, Mercury
	01:36	The sun is a giant nuclear furnace. It powers the solar system and spews streams of dangerous particles into space. On Mercury we must hide inside a crater near the North Pole, shielded from the sun's dangerous rays.
And the second second	01:58	Welcome to Tolkien Crater near the North Pole of Mercury. On top of this rebound peak, we've built a solar energy farm to power our colony and a solar observatory for monitoring active regions on the Sun.
	02:12	In a gravity field less than half of Earth's, we use zip lines to move from place to place and even down to the ice mining stations on the crater floor. Supplies and ice travel along these zip lines in closed containers. We strap our space suits under zip boards and ride behind the cargo. Zip boards shield us from solar radiation as we move into sunlight, whenever the sun peeks above the crater rim.
	02:53	Looking down, we can see our habitat and greenhouses. These zip lines connect our habitat to our solar energy farm above and to the ice miners far below. Ziplining in Tolkien Crater is our favorite low-gravity off-world thrill.
PART 4		Troposphere above Ma'at Mons, Venus
10000	03:19	Ziplining on Mercury is lots of fun, but we're still really close to the hot Sun. How about moving outward to the next planet Venus? It's about the same size as Earth. The thick clouds of Venus, however, absorb heat, making the surface hot enough to melt lead. We'll have to float in the cooler cloud banks just to survive.
	03:45	On Venus, we live in a giant ocean liner, floating like a dirigible in the planet's atmosphere. The gases that sustain life are lighter than those in the lower atmosphere. For this reason, our ship can ride far above the planet's scorched surface. The gravity tug in our habitat is almost as strong as Earth's. A tall center shaft carries experiments and sensors toward the planet's surface.
	04:14	Like Earth scientists exploring the ocean floor, we use a high- pressure submersible to visit the surface of Venus. The valleys and volcanoes here look strangely familiar, but heat and pressure make this a very alien and dangerous world.

	04:38	Once we dip below the thick cloud layers, we can see the erupting volcano Ma'at Mons. It reminds us of a seamount on Earth, except in this off-world adventure we have substituted a cold ocean floor for a raging inferno.
PART 5		Shackleton Crater, Lunar South Pole
	05:06	Wowthat's one scary volcano. I think I'm ready for a calmer place. How about the Moon's South Pole? With no air, it's very quiet there.
	05:18	Welcome to the perpetual twilight of Shackleton Crater. The Sun peeks above the crater rim and circles the horizon each month.
	05:27	Our monster truck is much more like a modern Earth truck than the Apollo rover. The steep torturous terrain of Shackleton Crater requires a much tougher vehicle. Those crater walls drop over 4 kilometers to the cold crater floor.
	05:47	Eighty people live in our lunar colony, built with tubes and inflatable rings transported from Earth.
	05:53	Robotic ice miners like this descend all the way to the crater floor. We melt the ice they collect for water to drink and separate it into oxygen and hydrogen for rocket fuel.
	06:07	Our greatest gravity thrill is driving a monster truck along these steep crater walls – slipping and sliding in the lunar dust, while trying not to tumble into the crater. No steep mountain road on Earth can compare with this breathtaking low-g experience.
PART 6		North Rim of Ophir Chasma, Mars

0000	06:41	The red planet Mars is a favorite with kids and astronauts. Compared to Earth, it's a cold desert with volcanic mountains and deep canyons. Let's explore a canyon that would stretch across the whole United States. It's called the Valles Marineris and our outpost is nearby.
	07:01	Our habitat has living quarters, plus a greenhouse for our fresh food and a command center where we work.
	07:10	Our outpost lies near Ophir Chasma, on the north rim of the Valles Marineris, the largest canyon in the solar system. Today we will rappel into this great canyon.
	07:21	Although we're near the equator of Mars, it's always cold compared with Earth. So we travel to the canyon rim in a warm pressurized rover. The sky is beautiful here, but we can't breathe the planet's thin carbon dioxide atmosphere.
	07:39	Scientists back at our outpost, monitor our video and the conditions inside our pressurized rover.
	07:47	It's possible that water once flowed in the Valles Marineris, much like the Colorado River flows through the Grand Canyon on the Earth today. Rappelling into Earth's Grand Canyon cannot compare to this off-world adventure, where we weigh much less and our canyon is over 4 times deeper.
PART 7		Casanova Crater, 433 Eros
0000 1000	08:34	How about visiting an asteroid? Most asteroids are in a belt between Mars and Jupiter. However, this asteroid, called Eros, comes close to Earth. Let's check it out Here we'll be very very light and can jump very very high.

	08:57	Because we're in orbit, falling around Eros, we're weightless. From
	00:37	Eros, we can extract iron, nickel, and titanium for construction, water and oxygen for our survival, and hydrogen and oxygen to use as rocket fuel.
	09:17	There's almost no gravity pull on this tiny asteroid. Our challenge is crawling or should I say clawing, grasping, and clinging to this giant rock. With just a jump or a push, we can launch ourselves off this flying mountain. That's why we wear a tether, like a bungee jumper, so we can't get far without being pulled back to Eros. When the day's mining is done, this is our favorite low gravity thrill – to jump off an asteroid and then fall back.
PART 8		Tyre Impact Basin, Europa, moon of Jupiter
	10:01	Jupiter is beautiful, but we can't land here. Know why? It's simple there's not any land. This is a gas giant and we'd just sink deeper and deeper into the clouds. But Jupiter has lots of moons we can land on. How about Europa – one of Jupiter's largest moons with an ocean below its icy surface. This is a place where we might even find life.
	10:29	Welcome to Clark Colony. Our habitat is a maze of igloos in the low- lying Tyre Impact Basin – on the side of Europa facing away from Jupiter's deadly radiation. Here we're drilling through kilometers of ice to reach Europa's subsurface ocean. We hope to collect a water sample that we can test for the presence of alien life.
	10:58	For us, exploring means spelunking in these spectacular ice caves, carved by fracture lines in Europa's crust. Ice tunnels in Earth's Arctic cannot compare to the glistening beauty of these majestic caverns of ice.
PART 9		Lake Ligeia, Titan, moon of Saturn
	11:15	Aren't Saturn's shimmering rings beautiful? Did you know that they're not solid? – just a whole lot of tiny particles going around Saturn in a thin disk. They're mostly dirty chunks of ice, each with its own orbit around the giant planet.
3000	11:35	Saturn has one really big moon, called Titan. Titan has air almost like Earth's and oceans too, but they're made of liquid natural gas. It's too cold out here for liquid water.

1	11:51	On Titan, the chemistry and temperature are very different from Earth. But the terrain surrounding our base on Lake Ligeia, reminds us of coastlines back on Earth. This lake of liquid methane is larger than Lake Superior and lies near Titan's north pole. The low gravity and thick atmosphere make Titan a glider's dream.
PART 10		Verona Rupes, Miranda and the Upper Atmosphere of Uranus
	12:17	Uranus is a much calmer giant planet than Jupiter or Saturn. We can even fly a plane through its clouds and scoop up gases that we can use for fuel. We're a long way from the Sun and the temperature is even colder than the other worlds we have visited. We need all the fuel we can get.
0	12:40	Energy is critical for us to survive this far from the Sun. We depend on a ram-scoop to collect Helium 3 in Uranus's upper atmosphere. Helium 3 is the ideal fuel for our nuclear fusion reactors.
	13:00	Using thrusters mounted around the ship, we continually alter the orbit of our ram-scoop to collect more gas and to push upward against the planet's gravity pull.
	13:17	In our small space planes, we've invented a sport we call skimming. The planet's atmosphere is perfect for our aerial acrobatics.
	13:33	Transports dock at the ram-scoop and then carry the Helium 3 we collect to our outpost on Miranda, closest of the major moons of Uranus.
	13:56	On this low-gravity moon, cliff diving is fantastic. The drop is long and incredibly slow. Without any wind, we can count on a perfect vertical fall along the cliff face every time. This is the ultimate low-g off-world thrill!
PART 11		Mahilani Plume, Triton, moon of Neptune

	14:21	Neptune is the last planet in the solar system. On its moon Triton, huge erupting geysers spew out hot water. Let's try to dodge a
		geyser's plume.
	14:33	Our Geyser Observatory lies near the Mahilani Plume in Triton's southern region of perpetual twilight. These geysers contain nitrogen gas, water ice and other compounds needed for life.
	14:50	Jet packing around and through one of Triton's geysers is fantastic. Unlike much of the solar system, Triton is always changing as geysers create new features for us to explore. Jet-packing on a low-gravity moon around the solar system's last planet is about as exciting and off-world as you can get.
PART 12		Snow Fall on Pluto
Pers © Comes	15:15	Pluto's a favorite place to visit. It's always winter here. Ice skating, snow skiing, you name it: all winter sports are great on Pluto.
	15:27	Welcome to Pluto. You've arrived on Pluto just in time to watch the atmosphere snow out as Pluto moves farther from the Sun. With all of this snow, we've created a winter sports paradise. Snowmobilers can get some serious air off these jumps in Pluto's low gravity!
	15:52	Whether your sport is snowmobiling or rocket powered skiing, the long jumps and gentle glides back to the ground are incredible. The key is firing your jetpack at the right time and we've had lots of practice. Out here we like the cold, and enjoy the most extreme of all winter sports!
PART 13		CONCLUSION
330	16:24	What a great adventure we've had. We've flown through the hot clouds of Venus in a special submarine. Later we learned how to skim through the cold clouds of Uranus. We ziplined in a crater on Mercury and then rapelled into the great canyon of Mars. We bungie jumped off an asteroid and then explored a frozen ice cave. We know that when we leave Earth, we'll do all of these things – setting new records for how high we can jump, how far we can fall and how much fun we can have, just playing on the different worlds. Someday, somehow, we will go into space and have adventures just like these.

CREDITS		ENDING CREDITS
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Funding Support		Houston Museum of Natural Science NASA Future Space Grant 09-2009CP4SMP-0047 Awarded to the Louisiana Art and Science Museum
	18:00	