

Black hole explorer

Prepare to journey to the darkest place in the Universe!

Mission Briefing Room

Welcome to the mission briefing room. Your job is to fly a spaceship to a black hole. When you are close enough to the black hole, you will launch scientific probes into the black hole to answer some of the darkest mysteries about the darkest of objects:

What happens to space near a black hole?

What happens to time near a black hole?

What happens to you near a black hole?

But a mission such as this takes a lot of planning and a lot of money! You and your team will first be given millions of dollars to build a spaceship. You will need to decide how much you can spend on parts for your spaceship, such as the number of engines it will have, how well protected it is against heat and radiation, and the number of probes it can carry. Spend wisely!

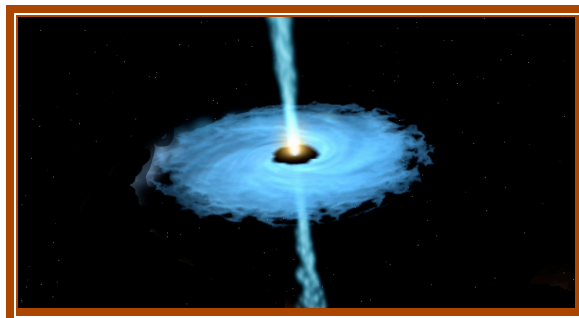
Once you have built your spaceship, your mission will begin. You will orbit closer and closer to the black hole, until you are close enough to launch the probes. But beware. Space around a black hole is swarming with hazards! On the next page, our astronomers will brief you on what you may encounter during your mission.

When your mission is complete, you can return home with your scientific results. Because your mission is the first to a black hole, your findings will be headline news. If you do well, you stand a good chance of winning a Nobel Prize, the greatest honor in the world for scientific discovery. Good luck to you all!

Science Briefing Room

Welcome to the Black Hole Science Briefing Room. Here is a photograph taken of your black hole by a recent robot probe. Doesn't look very black does it? We can't see the black hole itself (after all, it is a black hole!) but we can see the effect that a black hole has on its surroundings. If there are clouds of gas nearby, the gas will be spun, stretched and squeezed into a flat pancake. As the gas falls towards the black hole, it heats up and starts to glow. The further it falls, the hotter it gets. The temperature of this gas is something your mission will study.

Black holes like this one aren't very big compared to other objects in space such as planets and stars – think of a big black ball about the size of a city! But this is no rubber ball, this is a hole in space, and a black hole is completely, utterly black. That is because once inside nothing, not even light, can come out again. Going into a black hole is the ultimate one-way trip!



Sometimes the gas near the black hole is whipped up into such a tornado that before it has a chance to fall into the black hole, it is shot back out like the beam of a lighthouse. This jet of energy should be avoided if possible!

But the most amazing thing about black holes is that they bend and distort space and time itself! Studying the effect that a black hole has on time and space is the most important part of your mission. But remember, the black hole will bend and distort your space ship as well! And what will happen to your clocks as you close in on the black hole? Only time will tell!

You are now ready to start work on your spaceship. Don't forget to name it!