**1st Gravity Review**

The motion picture Gravity released in 2013, starring Sandra Bullock and George Clooney in its main roles, is in my opinion a great movie, mostly regarding the incredible production value and thought, hard work and time that went into creating it. Even away from the spectacle the movie´s characters are interesting and believable, it brings thrill and also highlights important questions regarding our planet, the space around it and also something of human nature itself.

When talking about the technical marvels, it is impossible to not mention the balanced accuracy of physics in the movie, this also concerns the ambiguous name of the movie. Upon closer inspection you notice that it fits very well into the story as most of the events in the plot are directly or indirectly caused by the Earth´s gravity.

This movie highlights a plethora of interesting questions, which are also important to the plot. The most obvious and important plot wise, also setting the whole story in motion is the question of space debris and the Kessler Syndrome. Space debris is essentially every artificially constructed unused object in the Earth´s orbit or its parts. Kessler syndrome is a theoretical scenario, explaining that when enough space debris may be created it might cause a chain reaction of collisions which generate more debris causing more collisions. Which is exactly what happened in the movie. This is predicted to be a problem in the future, mostly threatening the satellite system, which almost everyone uses every day.

All of this realism in the film led most of the scientific community to evaluate this movie as greatly accurate. Even former NASA astronauts were impressed by the realistic depiction of the constant free fall, the movement in space, and the imagery of the space stations. Though still the movie staff and the director have stated that it is a work of fiction, not a documentary meaning that a few creative liberties were taken, but in my opinion as an introductory story to physics of gravity this movie holds its own very well.

In conclusion, this movie is a great entertainment for anyone who likes thrillers with exotic settings and realistic story mechanics. It also highlights the constant risk the active astronauts, inhabiting the free-falling International Space Station orbiting the Earth at the speed of 7.66 km/s, take every second of their work. Concerning rating I give this movie a spectacular 9/10 stars.

Ernest from I.B

**2nd Gravity Review**

Gravity is a sci-fi movie made in 2013 directed by Alfonso Cuarón. The plot revolves around two American astronauts, Dr. Ryan Stone and Lieutenant Matt Kowalski, who become stranded in space after destruction of their spacecraft and try to return to Earth.

In the movie the crew is trying to repair the Hubble telescope, but in reality, Hubble space telescope had been left to decay in 2009. After explosion of another satellite the crew is ordered to return to Earth. Only Stone and Kowalski survive the space debris.

They try to reach ISS, the only continually used space station in existence, orbiting about 410 kilometres above Earth, but the crew had already evacuated in the only usable spacecraft. They get entangled in spacecrafts parachute cords and Kowalski floats away.

Stone gets into the spacecraft to get to Chinese space station, but it has no fuel. A short hallucination tells her to use soft landing rockets to get to the Chinese space station. She takes their landing capsule, before the space station falls into atmosphere, saving her life.

The movie is relatively short, that is one of the things that are good about this movie, along with realism, as the movie is concentrated mostly on realistic physics. The movie is not for everyone, as it may seem dull, especially parts in space as there is no sound in vacuum.

Comments to questions:

Question 5.: Is Hubble telescope still working?

Answer: In the movie the crew is trying to repair the Hubble telescope (on flight STS-157, last real repair flight was STS-125),but in reality Hubble space telescope had been left to decay in 2009 although it is still working and sending us marvellous pictures of the distant parts of universe.

Question 6.: What is ISS?

Answer: The only continually used space station in existence.

Question 7.: How high is it moving?

Answer: Orbiting about 410 kilometres above Earth

Question 15.: Do space stations fall out of orbit?

Answer: In the movie, yes (before the space station falls into atmosphere), but in reality only the ones that are unused.

Question 13.: Can we hear the sound of the space?

Answer: No as there is no sound in vacuum

Jakub from I.B

**3rd Gravity Review**

Gravity is a movie about space. Even though it takes place in space, it´s not a science fiction movie. There’s no sound, there’s no light. There are only two actors. Plot of the movie is about how they got lost.

The two main characters experience Kessler syndrome which is a situation where the density of objects in the Low Earth Orbit grows so high that collisions between two objects could cause a massive cascade and those collisions generate more space debris, which increases the change of another collisions.

On Earth, sound travels to my ears by vibrating air molecules. In deep space, there are large empty areas so there are no molecules to vibrate. There is no sound in space, we cannot hear it. And the movie is in several parts without any sound at all.

We can also learn that if our body was unprotected in space, the first thing I would notice is the lack of air. If I was not near a source heat, my body would completely freeze.

International Space Station (ISS) is a space station in a low Earth orbit. ISS travels in orbit around Earth at a speed of roughly 17,150 miles per hour (that's about 5 miles per second).

I think would be better watching Gravity with 3D projections. Unfortunately, I didn´t have the chance to watch it in the cinema, but I honestly think it was a great movie, I learnt some new things.

Vaneska from I.B