10 Cool Facts
about the SpaceIL Mission

The SpaceIL spacecraft will "hitch-hike" with a launcher

To exit the atmosphere, our spacecraft will get a lift to the Moon with a huge commercial launcher. After disconnecting itself from the launcher, the spacecraft will enter into orbit around Earth, and at the right moment, it will begin a direct journey to the Moon. From the moment the spacecraft begins orbiting the Moon, we will circle the Moon for a period ranging between 1 day and 2 weeks before choosing the best landing approach.

The spacecraft will have 8 Cameras

The spacecraft will be equipped with eight cameras, to provide 360 degrees view and send live images back to Earth.

There will be full control of the spacecraft from Earth

From our control station in Israel, we will be able to activate the spacecraft's propulsion system, which will start consuming its fuel load during its flight to the Moon. We will be able to control the spacecraft even after it lands on the Moon's surface, but the landing maneuvers themselves will have to be performed by the spacecraft's system with no assistance from Earth. Through some very complicated computer programs, we are teaching the spacecraft to think for itself.

The spacecraft's computer is similar to the one you have in your smartphone

The spacecraft will carry a computer onboard, almost as powerful as the computer in an average smartphone. That computer is more powerful than all the computers combined on Earth when the first NASA Apollo mission landed on the Moon in 1969.

The SpaceIL spacecraft's top speed will reach 7,000km/h

When entering its waiting orbit and before landing on the Moon's surface, the spacecraft will travel at a speed greater than 7,000km/h (2 km per second), 8 times faster than the average fighter jet!
To decelerate during landing, the spacecraft will rotate so that its engines face downwards (towards the surface of the Moon), which allows the engine to slow down the craft.

The SpaceIL spacecraft is the size of a small washing machine

Height: 96 cm
Wight: 72 cm
Weight: approximately 140 kg at lift-off
After burning its fuel, the spacecraft will go down to a weight of approximately 40 kg at landing (the landing itself will consume about half of the total fuel).

The final landing speed will be 5 meters per second

Beginning at the height of a few meters above the surface, the spacecraft will go into free-fall, reaching a final velocity of 5 meters per second. The gravity on the Moon's surface is about one sixth of Earth's gravity, so the fall will be much more gradual than on Earth.

In order to win the Google Lunar X-Prize competition, the spacecraft needs to perform 3 tasks:

1. Soft Landing -the spacecraft has to survive the landing maneuvers without crashing
2. Movement - the spacecraft has to travel at least 500 meters on, above, or below the surface of the Moon. SpaceIL intends to do this by "hopping!"
3. Documentation - the spacecraft has to be able to transmit high definition images and video back to Earth

A hop will be performed right after landing

Vehicle wheels might get clogged with the Moon's dust during the landing, which can impair its mobility. This is why the SpaceIL spacecraft will perform a hop after landing instead of moving on the surface. It will first rise again to about 100-150 meters above the surface, and land again at a distance of about 500 meters from its initial landing site.

The SpaceIL spacecraft is designed to set a new world record

This will be the smallest spacecraft ever built, and it will take Israel technology to the greatest distance from home so far.

Did you know...

That the average distance between Earth and the Moon is approximately 384,000 km?
If a car was driving this distance straight in a row, without any stops on the way, the trip would take about six months.

That the Moon is a quarter of the Earth's size?

That the Moon's surface has about one sixth of Earth's gravity?
The Moon is the main factor for the tide in the sea. Its gravity causes the sea level to rise and fall twice a day.

That Neil Armstrong's footsteps are still on the Moon's surface?
The first man to walk on the Moon, Neil Armstrong, left his footsteps on the surface of the Moon during mission "Apollo 11." They are still there and not expected to disappear any time soon because the Moon has no conditions of wind or rain to wipe them out.

That Apollo 11 astronauts brought back stones and dirt from the Moon?
Before Apollo 11 returned back to Earth, the astronauts took stones and dirt from the Moon with them, for research. To ease the weight of the spaceship on the way back, they decided to leave their boots on the Moon - and they are still there!

That the lunar surface is covered with dust?
In addition to craters and rocks, the surface of the Moon is covered with a thin layer of dust.

That Moon is a generic name for any natural satellite of a planet?
Our Moon's name is Luna (or Selene, in the Greek source)

That it takes 27 days and 7 hours for the Moon to complete one lap around Earth?
In the Hebrew calendar, the time period of a month is also measured according to the Moon cycle, but it takes 29 or 30 days.

That the term "The Dark Side of the Moon" is fiction?
The Moon always turns the same face to Earth, but because it is not constantly turning the same side to the sun, then there is not really a fully "Dark Side of the Moon".

Join the Israeli Journey to the Moon!

Follow us
www.spaceil.com