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In the dataset, there are several different cases where the booster did not land successfully. Sometimes a landing was attempted but failed due to an accident; for example, True Ocean means the mission outcome was successfully landed to a specific region of the ocean while False Ocean means the mission outcome was unsuccessfully landed to a specific region of the ocean. True RTLS means the mission outcome was successfully landed to a ground pad False RTLS means the mission outcome was unsuccessfully landed to a ground pad. True ASDS means the mission outcome was successfully landed on a drone ship False ASDS means the mission outcome was unsuccessfully landed on a drone ship.

Outcome

True Ocean means the mission outcome was successfully landed to a specific region of the ocean while False Ocean means the mission outcome was unsuccessfully landed to a specific region of the ocean. True RTLS means the mission outcome was successfully landed to a ground pad False RTLS means the mission outcome was unsuccessfully landed to a ground pad. True ASDS means the mission outcome was successfully landed to a drone ship False ASDS means the mission outcome was unsuccessfully landed to a drone ship. None ASDS and None None these represent a failure to land

Class

This variable represents the outcome of each launch. If the value is zero, the first stage did not land successfully; one means the first stage landed Successfully

LaunchSite

The data contains several Space X launch facilities: Cape Canaveral Space Launch Complex 40 VAFB SLC 4E , Vandenberg Air Force Base Space Launch Complex 4E (SLC-4E), Kennedy Space Center Launch Complex 39A KSC LC 39A .The location of each Launch Is placed in the column LaunchSite

Longitude and Latitude

launch sites' location

Orbit

Each launch aims to an dedicated orbit, and here are some common orbit types:

LEO: Low-Earth orbit (often known as LEO) encompasses Earth-centered orbits with an altitude of 2,000 km (1,200 mi) or less. For the purposes of the Commercial Use Policy, low-Earth orbit is considered the area in Earth orbit near enough to Earth for convenient transportation, communication, observation and resupply. This is the area where the International Space Station currently orbits and where many proposed future platforms will be located.

VLEO: Very Low Earth Orbits (VLEO) can be defined as the orbits with a mean altitude below 450 km. Operating in these orbits can provide a number of benefits to Earth observation spacecraft as the spacecraft operates closer to the observation[2].

GTO A geosynchronous orbit is a high Earth orbit that allows satellites to match Earth's rotation. Located at 22,236 miles (35,786 kilometers) above Earth's equator, this position is a valuable spot for monitoring weather, communications and surveillance. Because the satellite orbits at the same speed that the Earth is turning, the satellite seems to stay in place over a single longitude, though it may drift north to south,” NASA wrote on its Earth Observatory website [3] .

SSO (or SO): It is a Sun-synchronous orbit also called a heliosynchronous orbit is a nearly polar orbit around a planet, in which the satellite passes over any given point of the planet's surface at the same local mean solar time [4] .

ES-L1 :At the Lagrange points the gravitational forces of the two large bodies cancel out in such a way that a small object placed in orbit there is in equilibrium relative to the center of mass of the large bodies. L1 is one such point between the sun and the earth [5] .

HEO A highly elliptical orbit, is an elliptic orbit with high eccentricity, usually referring to one around Earth [6].

ISS A modular space station (habitable artificial satellite) in low Earth orbit. It is a multinational collaborative project between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada) [7]

MEO Geocentric orbits ranging in altitude from 2,000 km (1,200 mi) to just below geosynchronous orbit at 35,786 kilometers (22,236 mi). Also known as an intermediate circular orbit. These are "most commonly at 20,200 kilometers (12,600 mi), or 20,650 kilometers (12,830 mi), with an orbital period of 12 hours [8]

HEO Geocentric orbits above the altitude of geosynchronous orbit (35,786 km or 22,236 mi) [9]

GEO It is a circular geosynchronous orbit 35,786 kilometres (22,236 miles) above Earth's equator and following the direction of Earth's rotation [10]

PO It is one type of satellites in which a satellite passes above or nearly above both poles of the body being orbited (usually a planet such as the Earth [11]

Grid Fins

Grid fins are used on the Falcon 9 rocket for increased precision and accuracy in control of the landing location for reusable launch vehicles. It therefore helps the rocket to land on the landing pad or Autonomous spaceport drone ship more precisely with good accuracy.

Legs

legs are meant to make a soft landing on distant worlds, including the Moon and Mars.

LaunchPad

The area on which a rocket stands for launching, typically consisting of a platform with a supporting structure. LandingPad column will retain None values to represent when landing pads were not used

PayloadMass

mass_kg

Flights

number of flights with that core

Reused

wheter the core is reused

Block

the block of the core which is a number used to separete version of cores

ReusedCount

the number of times this specific core has been reused

Serial

the serial of the core