# Insight Human Flight



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Please note that this file is incomplete and is being updated daily

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# 1. Introduction

# What is the Insight Human Flight Program?

It is our plan to send humans to space, and to stay there. We will be using our Alpha capsule, currently in development by our partner <u>Mars Xplore</u>. This program will also include the Delta 7 rocket, as it will be our gateway to space. We will also have help from commercial partners for landing and habitation. (wip IoI)

# 2. Goals

The overall goal is to place a permanent human presence in LEO, Luna, and beyond. This program will hopefully help Insight to advance its technology and launch capabilities.

# 2.1 Commercial partners

The only way we can (and should) pave the road to space is together. That is why Insight has selected Mars Xplore to produce our Alpha capsule and have candidates for our landing systems (5.1.1), such as <u>EXplore</u> and CASXA.

# 3. The Alpha Capsule

# 3.1 The Capsule

The Alpha Capsule is the center of this program, as it will ferry our precious humans to space. It will have room for 8, and will include everything the astronauts need to live. It is currently under development by Mars Xplore, and will include a cargo variant. The abort system will be a pusher system that utilizes the SuperTheta engine, a full flow staged kerolox engine. The cargo section of the capsule will include 4 extending solar panels at the base and top. The capsule will use the Theta thrusters for orbit adjustments.

### 3.2 Theta Thrusters

The Theta thrusters are used for orbital maneuvering. It has 2 modes: Monopropellant and kerolox. The big sister of the Theta thrusters is the SuperTheta (3.3).

# 3.3 SuperTheta engine

The SuperTheta engine is a kerolox liquid fueled engine that is used for the Alpha capsule's abort system.

# 3.4 Safety

# 3.4.1 Human Safety

Human Safety is above all, the most important aspect of this and any human flight program. Losing payload may be costly, but human life is priceless. That's why we equipped our spacecraft with the safest and most advanced systems we could. This includes our SuperTheta abort system and our unmatched engine out capability.

# 3.4.2 Abort Options

The capsule has the ability to pull itself away from the rocket during any time of the flight in the event of critical failure. In the event of SuperTheta failure, the 2nd stage has the ability to ignite and pull itself away from the vehicle. In the event of parachute malfunction during reentry, the SuperTheta engines will have the ability to slow down the capsule to safe speeds.