International Space Vehicle: Pegasus

Created By Mr Martian

1 Credit

All credit goes to me for the space ships, and the bases. I however, did NOT make the meshes or textures for the binary asteroids, Hubris and Catastrophe. The original meshes and textures were made by Piper, and can be found in his 90 Antiope ad-on found at this address: http://orbithangar.com/searchid.php?ID=3621

The mesh for the comet: Yano-Moore was made also by Piper, and can be found in his Pluto and moons ad-on. There is a link to that wonderful ad-on further down. The texture for Yano-Moore was made by Donatelo200 and can be found in his amazing Upsilon Andromeda System ad-on, a link to that is here: http://orbithangar.com/searchid.php?ID=4773

The Pluto-Charon system was not made by me either. It too was made by Piper and can be found here: http://orbithangar.com/searchid.php?ID=4595 however, the level 8 texture for Pluto was made by me. I used Piper's Pluto map as a base texture, and then worked on it in Photoshop.

The Ares lander was not made by me. This ad on was made by Francisdrake and can be found here: http://orbithangar.com/searchid.php?ID=2717 the virtual cockpit for Ares was made by Vchamp and can be found here: http://orbithangar.com/searchid.php?ID=3816

Thank you so much to these ad-on authors for making this ad-on possible.

DO NOT UNDER ANY CIRCUMSTANCES REDISTRIBUTE THE FILES IN THIS AD-ON. FOR THE AD-ONS INCLUDED THAT WERE MADE BY OTHER AURTHORS, CHECK THE DOCUMENTS INCLUDED.

2 The System
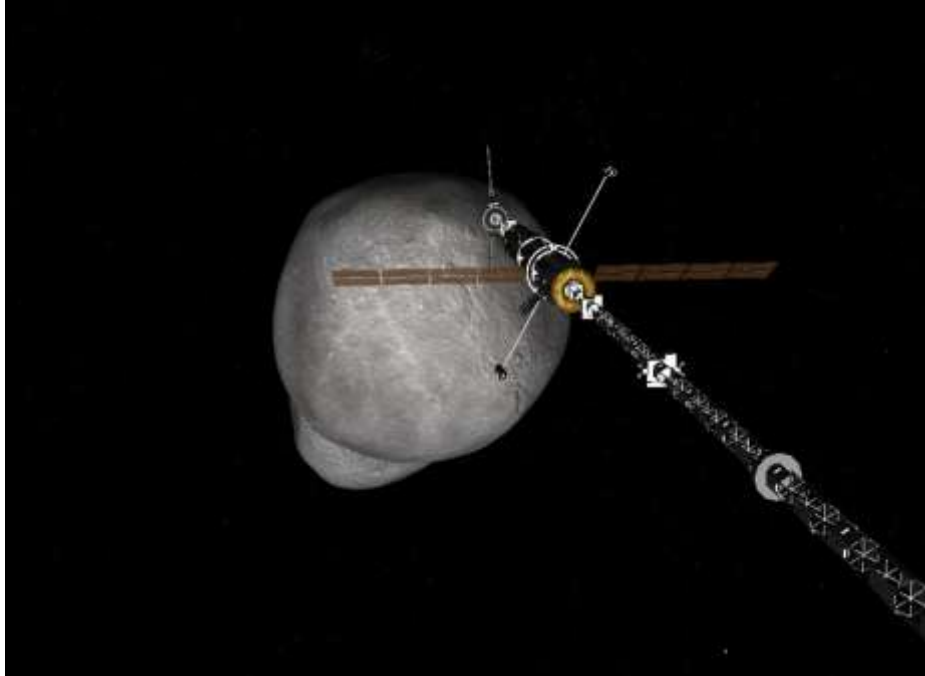
This ad-on is based on a BBC TV special called Space Odyssey: Voyage to the Planets. The two part series is set in our own solar system, but there are some fictional elements added.

The Binary asteroids, Hubris and Catastrophe (in the image below) are located in the main-asteroid-belt. Although these two asteroids do not exist, there are probably hundreds like them. Together, Hubris and Catastrophe weigh 220 billion tonnes.

The comet Yano-Moore is also a fictional comet, but just like Hubris and Catastrophe, it is based on reality.
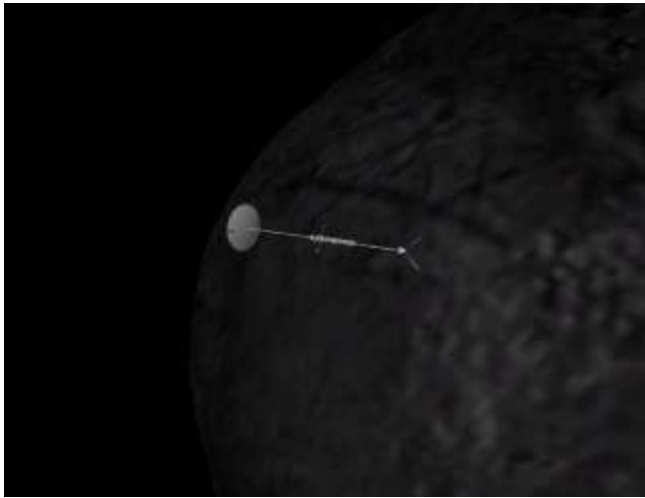

The Pluto-Charon System:

Pluto is not a fictional body, but in *Voyage to the Planets* it is depicted quite inaccurately. This is probably due to the lack of data available on Pluto when the Series was made. The feature of Pluto that is inaccurate is its colour. We now know that Pluto is a reddish, pink colour, but to stay 100% faithful to the TV special, I decided to use a Modified version of Piper's Pluto map.

3 Pegasus
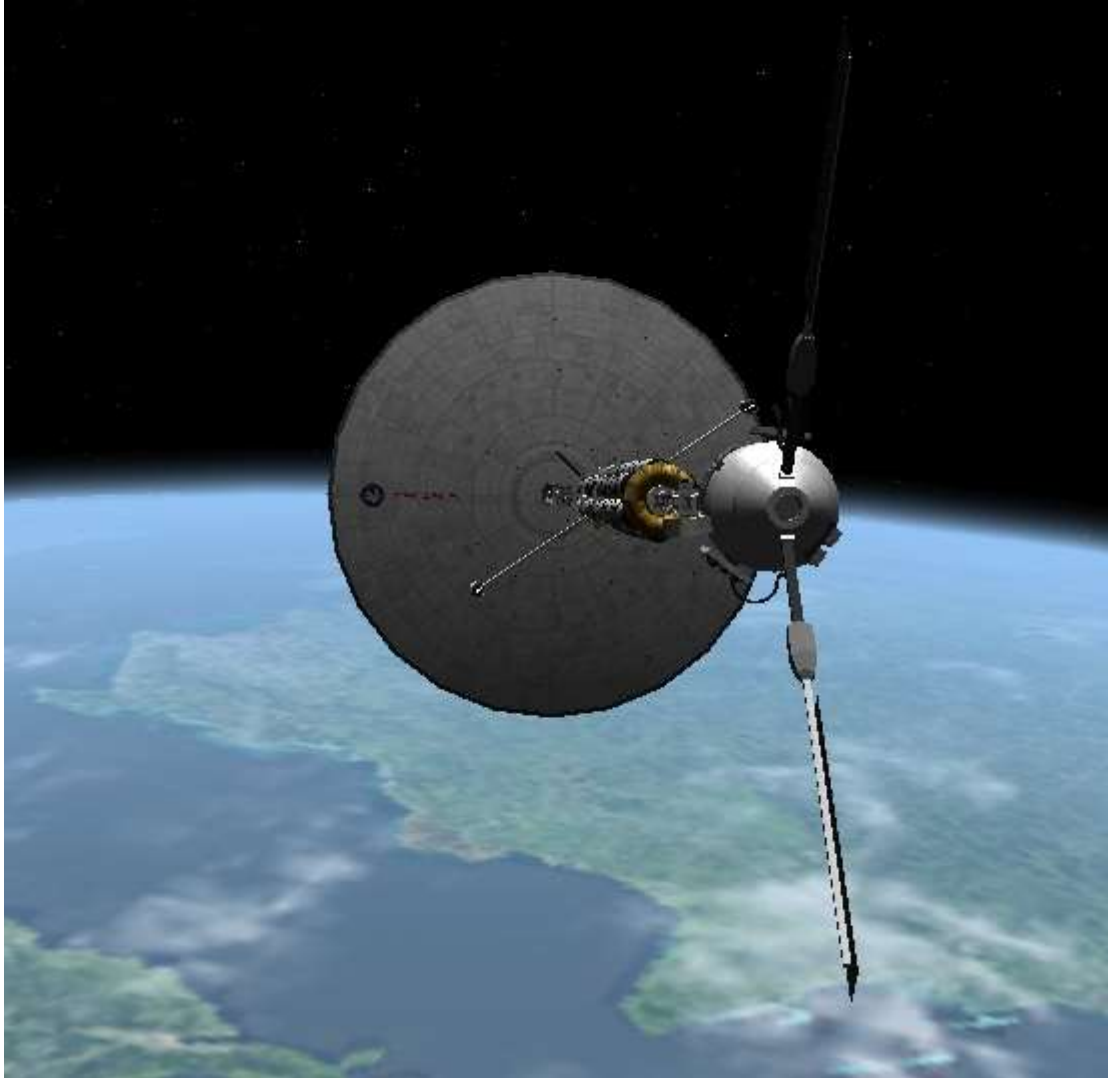
Pegasus is almost one mile long and weighs 400 tonnes. Pegasus is fitted with many devices and systems, all of which are explained below.

3.1 Flying Pegasus-the manual

1 the virtual cockpit.

Pegasus has two main cockpits. A command cockpit, used to pilot the ship, and an observation deck which has no controls, but is used to get a wide view of the craft's surroundings.

The Virtual cockpit contains two MFD display screens, which are shown below. Pegasus is not fit with a HUD, but you can still view that in the default cockpit mode by pressing f8.
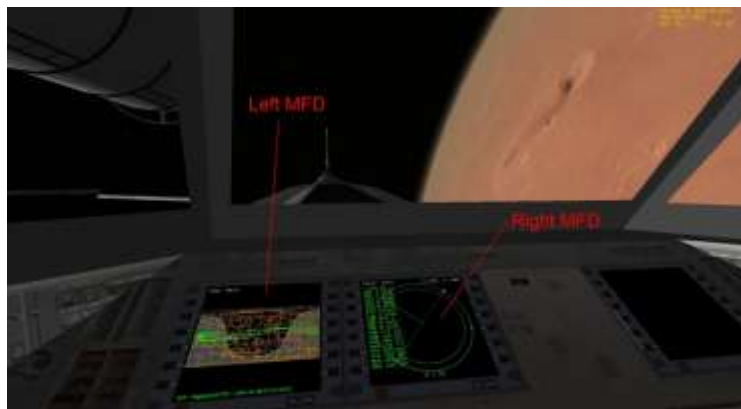

Due to my lack of knowledge of c++ coding, these MFDs are very simple. Unfortunately, if you want to change what is being displayed on either of the MFDs, you must return to the default cockpit view (by pressing f8) and change them that way. The default cockpit is shown below.

2 the observation deck

Pegasus is fitted with an observation deck, which is useful for seeing a 360° view of the vehicle's surroundings. Pegasus cannot be controlled via this observation deck, but I included it for some scenarios. There are three MFDs displayed on various consoles in the observation deck, but again, due to my lack of knowledge of c++, these can only be changed in the default cockpit view. To toggle between the two cockpits, press Ctrl + up arrow and Ctrl + down arrow.
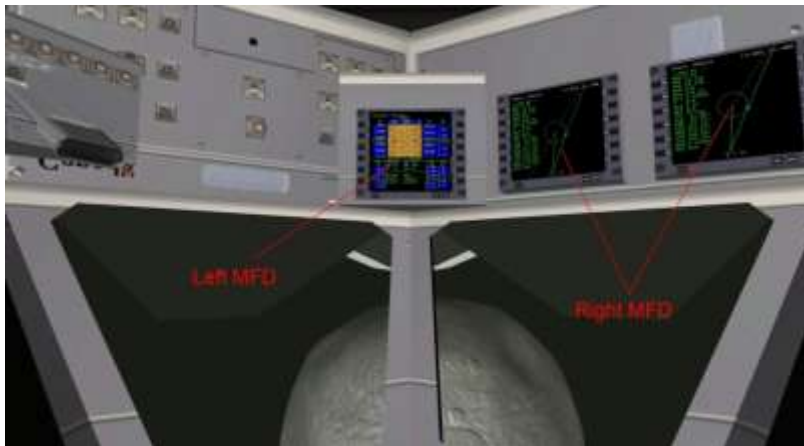
3 engines and other features

Just like any spacecraft, Pegasus is fitted with engines. The engines on Pegasus are nuclear, and powerful enough to send it to the outer reaches of our solar system in just six years. To apply the engines, just hold Ctrl + numpad+, until throttle is at desired thrust.
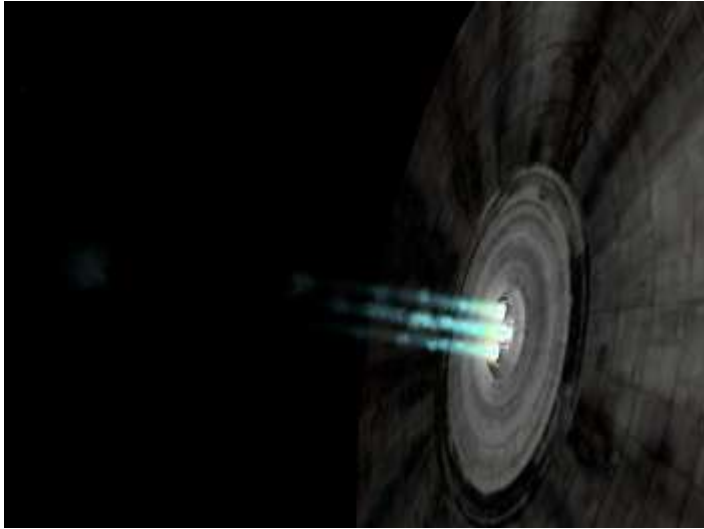

Pegasus is also equipped with RCS thrusters, which are used to orient the vehicle in space. Like any other ship in Orbiter, you can use the RCS thrusters with the numpad.
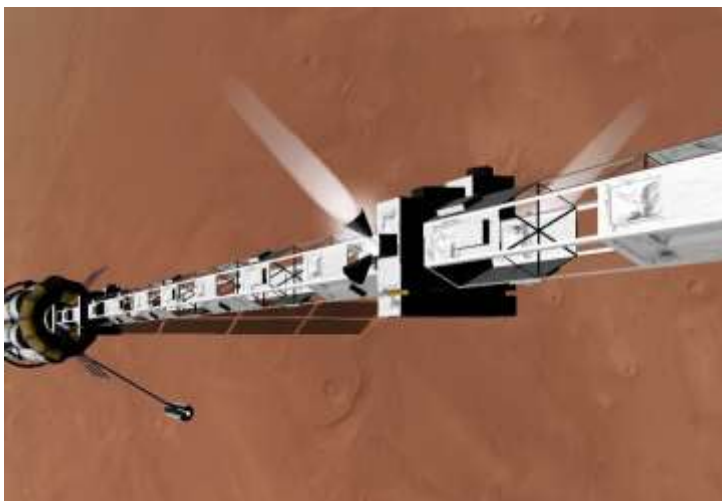
Unlike designs such as the delta glider or the Shuttle-A, Pegasus is not fitted with retro engines. If you want to slow the spacecraft down, you must turn the vehicle so that it is facing retrograde, and fire the main engines.

Pegasus is also fitted with a gravity wheel or centrifuge. This consists of two rotating modules that provide Pegasus' five crew with some gravity (0.5 G) to help them keep fit. After all, they do not want to spend a year travelling somewhere and then find that they are too unfit to do any EVA. To start and stop the centrifuge, press G
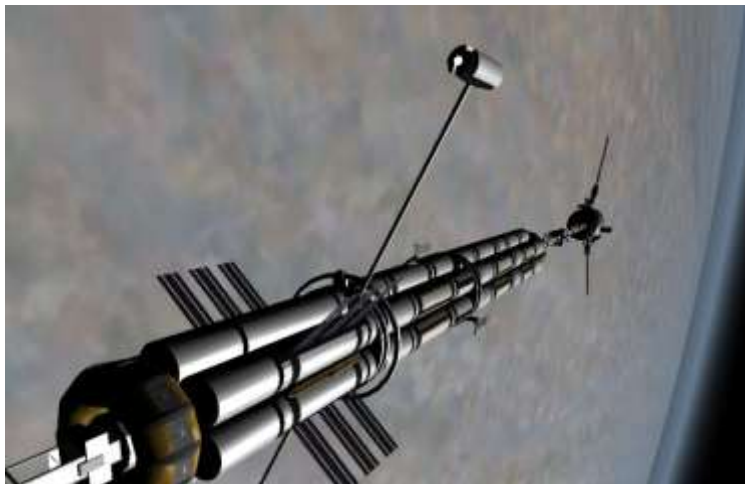
Another feature of Pegasus is its six large lander bays. Five of these bays contain landers, designed with specific tasks and suited for different missions. The other bay contains two space probes: one lander probe for Europa, and a probe for Titan. These bays are numbered and each can be opened by pressing the number which is on the corresponding bay (for example, if you want to open bay-door 3, simply press the 3 key)
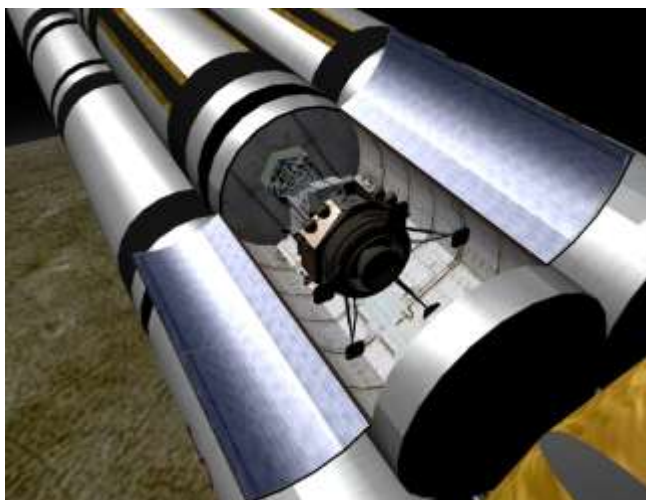
Pegasus has to travel through some of the most dangerous parts of the solar system; the most deadly of these are the Sun, and the radiation belts of Jupiter. Pegasus' thick hull is not enough to protect its crew from these highly toxic environments, so the vehicle is equipped with magnetic-field generators. These can be set to different levels of intensity. To activate the magnetic field generators, press and hold numpad '0', and to decrease the generators, press and hold numpad '.'.

4 detachable elements

Pegasus is fitted with large solar panels, however, these solar panels become useless as the mission progresses and Pegasus travels further from the sun. Because of this, the solar panels can be jettisoned. This being said, they cannot be jettisoned by pressing the usual 'J' key (see further down) instead, you must press the 'A' key, and the use Shift + numpad 4 and numpad 6 to cycle through attached objects. When the desired object is selected, press shift + numpad 0 to release it. Instructions are shown below.
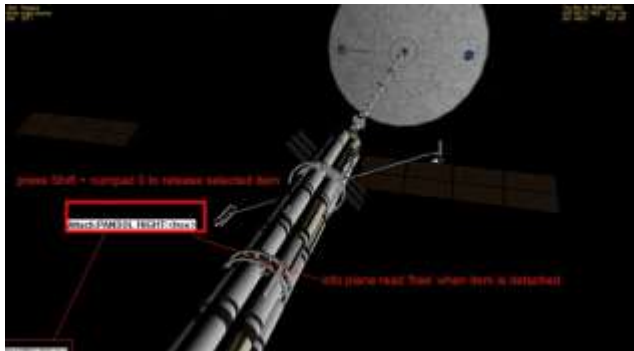
5 robotic arms

Pegasus has two robotic arms. These arms are used for multiple tasks, such as refuelling, or EVA. To operate the robotic arms, press f3 and select either A1 or A2. Once you have selected the desired robotic arm, press spacebar to access the arm operation plane (see below), and press Shift + numpad 2 or 8 to operate the selected joint. To toggle between joints press Shift + numpad 4 or 6.

5.1 grappling objects with the robotic arm

The robotic arm has an attachment point at the tip of the end joint. This point can be used to grapple objects such as the refuelling tank. To attach an object, simply move the arm so that the tip is where the attachment point on the object is, then press A to access the attachment info plane and toggle through the two attachment points by pressing Shift + numpad 4 or 6 until you find the 'Attach' option, do NOT use the 'rms' option, because that is the point used to keep the arm attached to Pegasus. To grapple or release the object press Shift + numpad 0.
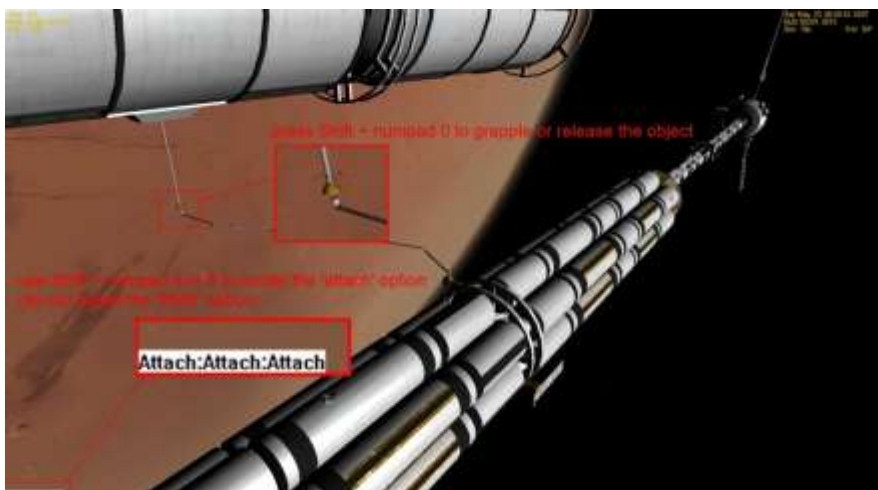
3.2 The Landers

Orpheus

Orpheus is the Venus lander. It is designed to withstand the harsh Venusian environment for a maximum of two hours.

Orpheus has one main engine and RCS engines; it is not fitted with retro rocket engines. To apply the main thrust, simply press and hold Ctrl + numpad + until throttle is at desired thrust.

On re-entry, wait until the lander has passed peak heating, to deploy the parachute by pressing 'G'. Select the landing gear by pressing F3, then lower the gear by pressing 'G'.

Ares

Ares, the Mars lander, is first of all NOT MY CREATION. The original spacecraft was made by Francisdrake and can be found here:
http://orbithangar.com/searchid.php?ID=2717

And the virtual cockpit was made by Vchamp, it can be found here:
http://orbithangar.com/searchid.php?ID=3816

Ares Thank you both so much for these wonderful ad-ons. I have rated both these contributions to Orbiter as 5/5 on Orbit Hangar. Thanks again Vchamp and Francisdrake.

Ares has a heat shield, a parachute, and landing gear. All of these components can be jettisoned and/or activated in the virtual cockpit. Unlike the other landers (which I made) Ares' landing gear are permanently connected to Ares until they are jettisoned. This means that Ares and its attachments come as one ship, so they do not need to be defined individually in scenarios. I could not achieve this with the other landers due to my lack of knowledge of c++.

To operate Ares, you must pilot the craft from inside the VC (see below)

On re-entry, once the heat shield has passed the point of peak heating, press the 'deploy parachute' button, then soon after, press the 'jettison heat shield' button. When Ares is close to the ground, press 'gear down' to lower the landing gear, then, when Ares is about to land, press 'jettison parachute' button and fire the main engines for a slow final descent. Before take-off, press the 'jettison gear' button to detach the landing gear, the fire the main engines to take-off.

Hermes

Hermes, the Io lander, is fitted with detachable landing gear which can be detached by pressing 'A' and then pressing Shift + numpad0. Hermes is also fitted with spotlights, which can be tuned on by holding numpad –

Hermes has one main engine and RCS engines; it is not fitted with retro rocket engines. To apply the main thrust, simply press and hold Ctrl + numpad + until throttle is at desired thrust.

Clyde

Clyde is the Pluto lander. It has enough power to land on Pluto only. Clyde is fitted with detachable landing gear, which can be detached before take-off by pressing A to access the attachment info plane, then pressing Shift + numpad 0 to detach (or re-attach) the gear.

Press and hold Ctrl + numpad+ to engage the main engines, and use the numpad to operate the RCS engines.

Messier

Messier is the comet lander. It is unique for two reasons; first, it is the only lander that does not have detachable landing gear, and second, it is the only lander equipped with retro engines. This is due to its landing procedure. Because of the comet's negligible gravity, if the lander applied main thrust towards the comet, there would not be enough time for the lander to turn around to land, so Messier has to propel itself directly down to the comet.

3.2 UMmu and UCGO

This ad on is not fully UCGO compatible (the next release will be) but most vessels are fully UMmu compatible. The ISV Pegasus can hold up to five crew members. These crew members can be transferred to landers or can EVA. Operating the UMMU features is not explained here, because there are instructions in the orbiter simulation.
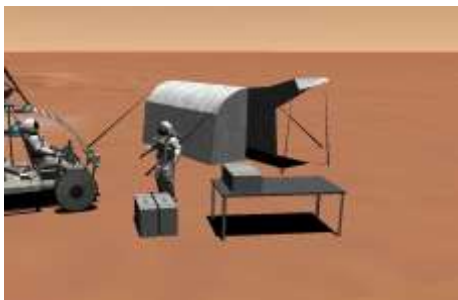
Cars and Cargos

Mars Rover
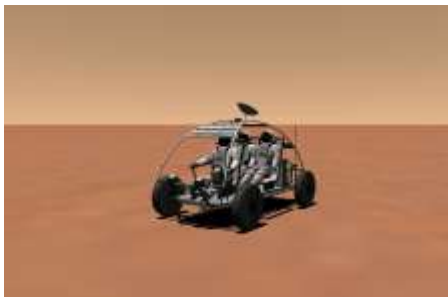
This ad-on includes one Mars Rover cargo. This cargo can be unpacked by MMUs and can hold up to three astronauts. The rover can be operated by pressing the up arrow to speed up, and pressing the down arrow to slow down. Steer the rover by pressing numpad 4 and 6.

Mars Tent

The Mars tent can be unpacked by MMUs.