

# Vega launcher for Orbiter 2006

by Xosema (xosemagaes@yahoo.es)

## INSTALL

To install, simply unzip the package into your Orbiter directory. I recommend to install previously the Kourou-CSG base by Papyref and Mustard (<http://orbiter.mustard-fr.com/>). It also uses Spacecraft3 and Multistage2 dll's (included, but can be downloaded from <http://users.swing.be/vinka/>).

## HISTORY

After making the Ariane 1/2/3 family I have no particular project in mind. Some people noted that to make a Vega addon would be nice since the develop of the existing Vega launcher addon seems really stopped, and this would be a chance to improve my not very good skills with Blender. By the way I made a fictional satellite to be launched with Vega, the HispasetiSat, as tribute to all the people of the Hispaseti group (<http://www.hispaseti.org/>).

The Vega launcher is an european launcher that will make (hopefully) its first flight in 2007. Vega is intended to launch small satellites (300–2000 kg) preferably in polar orbits. It has three solid propulsion stages and an upper liquid propulsion stage (the AVUM stage); it will be launched from the same site from Ariane 1 was launched.

HispasetiSat is a fictional satellite with a mass of 700 kg intended for planetary exploration (but in the scenarios the autopilot only puts it in Earth orbit). It has deployable solar panels and things-like-instruments that I don't know for what they are :-)

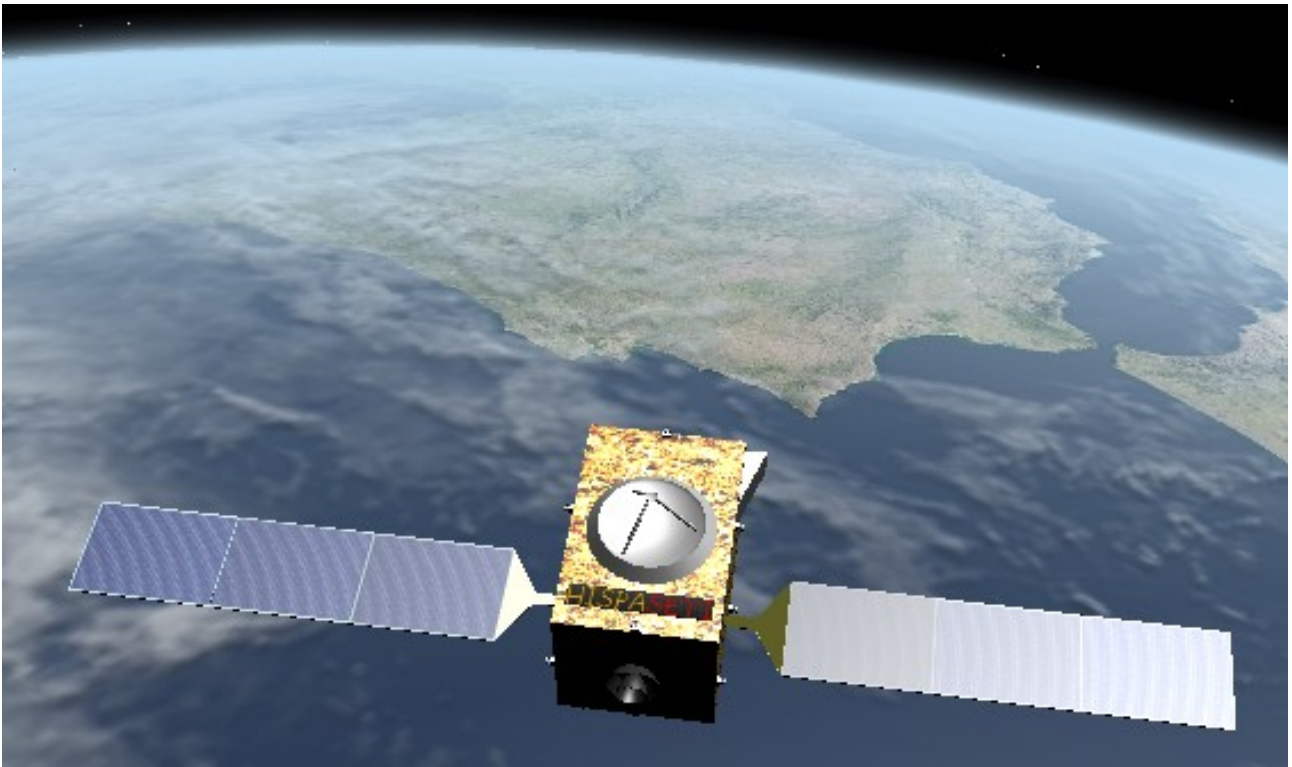
## HOW TO OPERATE

The package includes two scenarios: "HispasetiSat to eliptic orbit" and "HispasetiSat to polar orbit". In both you can press **p** key for start the autopilot and put the HispasetiSat in orbit (of course is not recommended to use time acceleration during the launch and insertion). Press **j** key to jettison any stage of the launcher (althought sure is not a good idea in the first moments of the launch nor before reach orbit) and to separate the HispasetiSat (or whatever payload) from the fourth and last stage (the AVUM stage). To eject the fairing you must press **f**. And for deploy the solar panels of the HispasetiSat you must use **shift + keypad\_0**.

In the first scenario, the HispasetiSat reaches a eliptic (aprox. 430 x 5600 kms.) orbit with an inclination of about 44° in almost 9 minutes. At the end of the insertion, HispasetiSat remains attached to the AVUM stage, which retains all its fuel intact for further manouvres. To eject the HispasetiSat in order to operate it, use the **j** key.

In the second scenario, the HispasetiSat reaches a polar orbit of about 600 x 500 kms and 87° of inclination in some 10 minutes. As in the previous scenario, the HispasetiSat remains attached to the AVUM stage at the end of the orbit insertion, and the AVUM retains almost all of its fuel. Again, use **j** key to eject the HispasetiSat.





## CREDITS AND TOOLS

This addon uses Spacecraft3 and Multistage2 by Vinka (included).

Both the launcher and the satellite were modeled with Blender (<http://www.blender.org>) and exported to Orbiter .msh format with the Blorbiter export script (<http://sourceforge.net/projects/blorbiter>) by Samtheeagle.

## TECHNICAL AND BORING DATA

Polygon count:

- Vega launcher has a total of 16160 triangles.
- HispasetiSat has 8726 triangles.

The package consists of this files in this directories (not included the Multistage2 nor the Spacecraft3 files; size of the textures annotated with its names):

\Config\Vega\

Vega.cfg

Vega.ini

Vega\_guidance\_eliptic.txt

Vega\_guidance\_polar.txt

\Config\Spacecraft\

hispasetisat01.cfg

hispasetisat01.ini

\Doc

Vega\_readme.pdf [This file!]

\Meshes\

hispasetisat01.msh

\Meshes\Vega\

vega\_1.msh

vega\_2.msh

vega\_3.msh

vega\_4.msh

vega\_fairing\_1.msh

vega\_fairing\_2.msh

\Scenarios\Vega

Vega - HispasetiSat to elliptic orbit.scn

Vega - HispasetiSat to polar orbit.scn

\Textures\

logohispaseti.dds [128x128]

\Textures\Vega\

vega\_1.DDS [512x512]

vega\_2.DDS [512x512]

vega\_fairing.DDS [512x512]

[Also, I used two other textures for the HispasetiSat included in the basic Orbiter package, dfly3x.dds and solar3.dds]