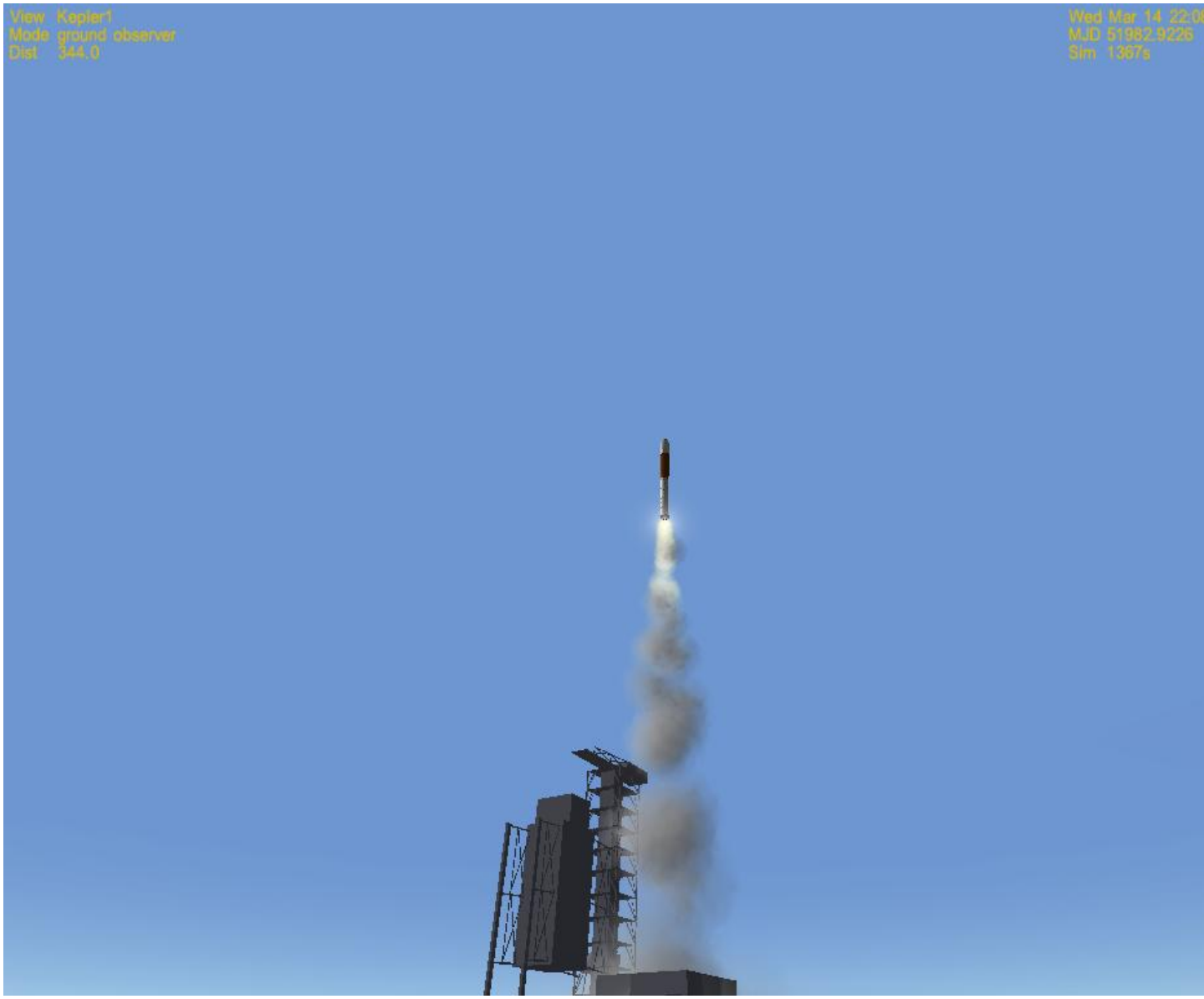
Kepler 1 Launch vehicle

By Niels



Introduction

The Kepler One Rocket is intended to lift Payloads in a weight range from 3000 Kilogramms to 30.000 Kilogramms into orbit. The lower stage of the Kepler one is a Ariane 5 EAP wich is slightly stronger because it doesn't burn Ammonium Perchlorate and Alluminum but Ammonium perchlorate and Magnesium. It is also slightly larger than the EAP that's why it burns longer. The second stage is a J2-X Engine it has the same specs as listed on the NASA website. The third and final stage is a fictional russian stage (called Buran) that is slightly weaker than the Soyuz-Fregat stage and has less fuel. The Kepler one has a long and a short Fairing (payload size is still limited). It is possible that the Kepler one will be modifided for manned space flight.

Installation

To install Kepler One simpily extract all files into your orbiter directory. This addon uses Multistage 2 Spacecraft 3 and the Stage dll, all these addons are included in this package. The Kepler One was designed for Orbiter 2010 P1.

Configuring the Rocket

Go to your config folder then find the Kepler one folder. Then depending on wich fairing you wish to use open the ini file. Scroll down until you find this line:

```
[PAYLOAD_1]
OFF=(0,0.1,34.6)
speed=(0,0,1.0)
rot_speed=(0,0,0)
MeshName="maqkepler"
Module="spacecraft\spacecraft3"
name="maqsat"
Diameter=4
Height=8
Mass=3200
```

In the area MeshName= type the Meshname of your Payload (example: Meshname=”Payload 1”
In the area Module you must look in your Orbiter Modules folder and find out if your Payload has a dll if yes type the folder in wich the dll is located (example Module=”Payloadexample\Payload1”) If your Payload does not have a dll just leave the spacecraft\spacecraft3 as it is. With the name line you can change the name of your Payload. And don’t forget to adjust the mass.
The Buran stage is an optional stage to fly without buran go to your config folder and then to the Kepler_1 folder then open the Ini file Kepler_1_without_buran. Then simpily add your Payload as described above. By default Kepler_1_without_buran uses the Short fairing to change that scroll down the line

```
[Fairing]
N=1
MeshName="Kepler_tower"
Diameter=5.40
Height=10.0
angle=-90.
MASS=1500
off=(0.1,-0.1,33.)
```

and simpily change the meshname from “Kepler_tower” to “Kepler_fairing”.
And change the mass to 2000.
The Autopilot, “guidance_kepler_one”, has been designed for a Payload weight of 3300 Kilogramms and a Fairing weight of 1500 Kilogramms. The Autopilot will not put you in orbit. It will simpily give you an Apogee of about 140km and a orbital speed of about 7km/s once you arrive at Apogee simpily go into the prograde position and start your engine until you have reached orbit. New autopilots will come in the next version of this addon.

On The Launchpad

If you are going to use the Autopilot press “p” at T=-6s and then at T=0 put your own the throttle at 100% or the engines will shut of and you will fall back to the ground and I havent found out why any suggestions? At T=541 the autopilot will turn of the engine you must also put your throttle back to 0%. For a manual launch just do the thing you normally do. If you don’t want to hurt your eyes then don’t go on external view when the fairing is jettisoned ime still working on that.

Table

Round about masses

	LEO	GTO	GEO	LTO	LLO
Kepler 1	30000	14000	-	-	-
Kepler 1 + buran	27000	13000	-	-	-

I will update this table as soon as possible

Coming soon

-new autopilots

-new table

-textures with better resolution

-better fairing

-The Kepler one heavy

-Payloads