



Atlas V

Atlas V is an active expendable launch system in the Atlas rocket family. Atlas V was formerly operated by Lockheed Martin, and is now operated by the Lockheed Martin-Boeing joint venture United Launch Alliance. It uses the Common Core Booster (CCB) as first stage, powered by a russian RD-180 engine, burning kerosene and liquid oxygen. Centaur is the second stage of the rocket, powered by a single or two RL-10 engines. Atlas V is one of the most successful launchers in the world, with a really high success rate, it is suited for launching humans into space.

Features

- Detailed models & textures, representing the Atlas V as close as possible
- 400 and 500 versions, each version having 3 different sized Payload Fairings
- AJ-62 SRB
- Common Core Booster
- Centaur with RL-10 A-4-2 engine
- Performance matching the real life rocket (The payload it can get to orbit has been scaled down to 64% of its real capacity, due to the smaller size of the Kerbal Universe)

Installation

To install this mod, simply drag the content of the *GameData* folder into your *KSP/GameData* folder. You'll need to install Old School Fairings ([Download](#)). Normally, the rockets are the same size in KSP as they are in real life. If you want to change that, make sure you have Module Manager by sarbian installed ([Download](#)). Then, go to the *Configs* folder and drag the *LaunchersPack_rescaled.cfg* file into your *GameData* folder. Now each rocket is rescaled to fit with other replica mods, like raidernick's US Probes pack.

Performance

Following is a table, showing how much each offered version can launch to LKO or GTO. Note: LKO means a circular orbit around Kerbin at about 80km altitude with an inclination of around 0°,

GTO meaning an elliptical orbit reaching the GTO altitude at apoapsis (~2869km) but with a periapsis of around 90km.

	Real perf.	Real perf.	KSP perf.	KSP perf.
Version	LEO	GTO	LKO	GTO
401	9.8t	4.75t	6.27t	
411	12.03t	5.95t	7.7t	2.34t
421	13.6t	6.89t	9.5t	2.8t
431	15.26t	7.7t	10.0t	3.5t
501	8.21t	3.78t	5.6t	
521	13.5t	6.48t	8.0t	2.3t
531	15.53t	7.45t	8.9t	2.8t
541	17.41t	8.29t	10.1t	3.2t
551	18.85t	8.9t	11t	3.5t

*LEO meaning a circular orbit at around 200km with an inclination of 28.5°

*LKO meaning a circular orbit at around 80km with an inclination of 0°

A note on the Fairings...

Due to problems with how KSP calculates the Drag for the fairings, I am using a plugin, which disables Aero forces for the fairings. I know, this is kind of “cheaty”, but I haven’t figured out how to change the way KSP calculates the drag of parts until now, so we’ll use this solution for the next time.

Now, because the fairings need to decouple and turn away from the vehicle in a proper way, I added the “Fairing Separation Engine”. It is basically a small solid rocket booster, which gets attached to each fairing-half, one in the bottom quarter and one on the top part of the fairings. The red nozzles need to point inwards in order to allow a proper separation. If you want to use another fairing than the one included with the .craft file, attach it to the launch vehicle. Then, attach both fairing sep. engines as

described above. Now, you need to right click the engine and change its thrust and amount of solid fuel to the following:

Fairing version	Thrust Limiter	SolidFuel
400 – Fairing	20	0.2
500 - Fairing	100	1.0

Known bugs and problems

- *I cannot properly steer the rocket when I have boosters attached!*
 - I haven't found out why this keeps happening, but I'm guessing it happens because CCB is an engine and fuel tank in one. If you feel like the rocket turns too slowly, or even turns in the opposite direction you want it to turn, right-click CCB and disable its gimbal (Note: Make sure the gimbal is neutral before deactivating!). Usually, this bug disappears at 45s after lift-off, so after 45s you activate the gimbal again and see if it works now. If it is still not working after that time, it will work again after you have decoupled the boosters (at around T+1:0).
- *The rocket doesn't want to lift-off!*
 - This shouldn't happen if you have launch clamps attached. If not, attach those and try again.
- *The rocket falls apart when I activate physical warp!*
 - Don't use Physical Warp while CCB is still attached to the vessel. It gets very instable when Physical Warp gets activated, though there's no problem in using it after staging.

If you encounter any problems, please let me know by reporting that in the release thread!

Credits

KWRocketry – *sounds* | Kartoffelkuchen – *models, textures, configs*

Thomas P. – *AeroHider Plugin*

A special thanks to Dragon01 for helping me getting things right!