

1 X-Space (release 7)

X-Space is an aerospace simulator based on X-Plane flight simulator. It is available as a plugin, and as a dedicated server (for calculating spaceflight), also as an Orbiter space simulator addon (to provide networking).

2 Features

(new features in **bold**)

- ▷ **Provides information about partial concentrations and densities of atmospheric gases**
- ▷ **Clouds visible from orbit (procedural clouds based on realtime weather)**
- ▷ **Different visual effects based on fuel used in the rocket engine**
- ▷ **Detailed engine performance simulation (variation in thrust with external pressure)**
- ▷ **Support for multiple stages/multi-part vessels**
- ▷ **Visual effects from heating (glow due to heat radiation)**
- ▷ **Earth gravitational field simulation (non-spherical gravity based on EGM96 model)**
- ▷ **Support for extra fuel tanks (or additional weights)**
- ▷ Orbital flight simulation (uses custom physics engine to override X-Plane physics at high altitudes)
- ▷ Detailed atmospheric model (including exosphere, high-altitude atmospheric drag)
- ▷ Atmospheric scattering visible from orbit (for X-Plane 9, X-Plane 10 without HDR)
- ▷ Support for any amount of custom engines (reaction control engines, additional rocket engines)
- ▷ Advanced networking support (multiplayer)
- ▷ Fuselage drag simulation (drag from capsules, hypersonic vessels)
- ▷ Heating simulation (covers a wide range of external pressures and velocities)
- ▷ Earth magnetic field simulation (fairly precise magnetic field data from WMM)
- ▷ Material simulation (simulates properties of various materials the spacecraft is constructed from)
- ▷ Extra camera views (relative to vessel reference point, vessel center of mass)
- ▷ Vertical launch pads
- ▷ Simulates planet rotation
- ▷ Publishes a large amount of variables (datarefs) accessible by other plugins

3 Installing

Please remove the old version of X-Space if it's present

Just copy contents of folders in this archive into corresponding folders in X-Plane 9 (or X-Plane 10) folder. The folders must be *merged* together (not replaced!).

To uninstall it just delete the following folders:

- ▷ \X-Plane 9\Resources\plugins\x-space
- ▷ \X-Plane 9\Aircraft\XSAG

4 Authorship

- ▷ **X-Space** © 2009-2012 by Black Phoenix
- ▷ **XGDC OS** © 2008-2012 by Black Phoenix
- ▷ **Simple OGL Image Library** by Jonathan Dummer
- ▷ **Scriptable Avionics Simulation Library** by A.A.Babichev
- ▷ **Lua 5.1.4** © 1994-2011 PUC-Rio
- ▷ **WMM model** implementation by Manoj C Nair and Adam Woods
- ▷ **NRLMSISE-00 model** implementation by Dominik Brodowski
- ▷ **RV-550 Ares-1** with **Orion** capsule model by Curt Boyll
- ▷ **SV-200 UHLSS** model by Jeff Scott

5 Version Information

- ▷ X-Space (release 7b)
- ▷ RV-550 Ares-1/Orion (XSAG SVN R326)
- ▷ SV-200 UHLSS (XSAG SVN R326)
- ▷ XGDC OS (XSAG SVN R326)
- ▷ WMM (WMM2010)

6 Version History

6.1 Changes from release 7a

- ▷ Fixed Mac OS version of the plugin

6.2 Changes from release 6a

- ▷ Added new rendering features
- ▷ Added non-spherical gravity
- ▷ Added configuration window
- ▷ Can use ACF files as stages now
- ▷ No longer supports weapons as drop-stages
- ▷ Rewritten from scratch internally

6.3 Changes from release 5a

- ▷ Fixed accelerometer readings when in inertial physics
- ▷ Fixed Earth rotation pushing aircraft around runway
- ▷ Added material editor (for making drag model)
- ▷ Added SV-201 vehicle (as a demonstration)
- ▷ Added on-orbit drag

6.4 Changes from release 4d

- ▷ Added multiplayer
- ▷ Fixed memory related crash when loading aircraft after loading rocket
- ▷ Fixed unresponsive controls when loading aircraft after loading rocket
- ▷ Fixed rocket start with "don't start with engines running" option
- ▷ Added datarefs to check for existence of any body

7 Reference

7.1 Extra key functions

- ▷ **SHIFT+]**: Locked-orientation spot around vehicle
- ▷ **SHIFT+[**: Spot camera around vehicle
- ▷ **CTRL+LEFT**: Previous object (cameras)
- ▷ **CTRL+RIGHT**: Next object (cameras)
- ▷ **SPACE**: Release vessel from launch pad