

SUNNYVALE STS MISSIONS

"Lacrosse"

STS-27 & STS-62B

Add-on for Orbiter2010-P1 (build 100830)
v. 120102

INSTALLATION

Extract all files to the root of your Orbiter program directory. Be sure "use folder names" is selected if using Winzip. This should NOT overwrite anything in the standard Orbiter package.

REQUIREMENTS

Can be used with no other add-ons.

RECOMMENDED (optional)

Shuttle Fleet 4.8

<http://www.orbithangar.com/searchid.php?ID=5531>

Kev's SLC-6

<http://www.orbithangar.com/searchid.php?ID=1331>

Note: Shuttle Fleet 4.8 requires Universal UMMU 2.0

<http://orbiter.dansteph.com/index.php?disp=d>

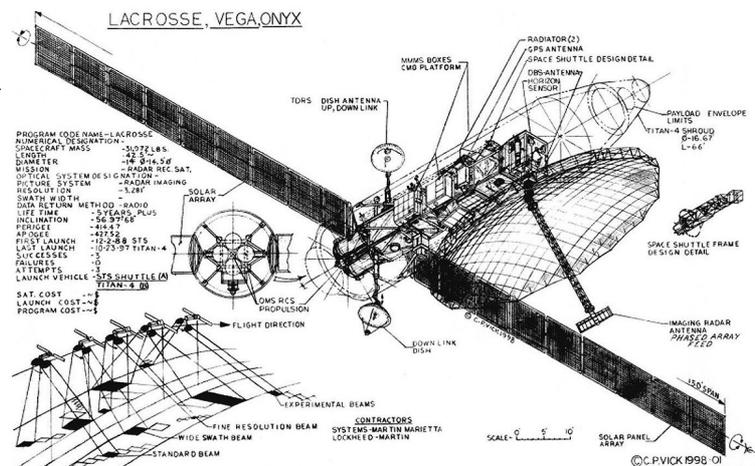
WHAT'S IN THIS ADD-ON?

The "Lacrosse" radar surveillance satellite, a selection of launch scenarios from Cape Canaveral or Vandenberg, compatible with default shuttle Atlantis or Shuttle Fleet 4.8

LACROSSE OVERVIEW

Lacrosse was originally scheduled to be launched on STS-62B, from Vandenberg SLC-6, 29 Sep 1986, to a 68° polar orbit.

This launch was cancelled and Lacrosse was subsequently launched on STS-27 from Cape Canaveral on 02 Dec 1988.



It is rumoured that an antenna failure aboard Lacrosse required an EVA to repair it on orbit (this add-on includes simulated failure, requiring the EVA :-).

LACROSSE SPECIFICATIONS

Empty Mass 13500kg
Fuel Mass 1000kg
Fuel ISP 2800Ns/kg
RCS 50N
Main Engine 500N

CONTROLS

V = Deploy HGAs
B = Deploy Solar Panels
N = Deploy Radar Antenna and start scan

SCENARIOS

STS-27 (Historical)

Launch: 02 Dec 1988, 14:30:34 UTC, Cape Canaveral
Shuttle: Atlantis
Launch to azimuth 36deg for inclination of 57°
Deploy Lacrosse from 437km x 447km orbit
Make EVA to -Y(bottom) HGA gimbal to repair failure.
Use Lacrosse propulsion to boost orbit to 687km

STS-62B (Hypothetical)

Launch: 29 Sep 1986, Vandenberg
Shuttle: Discovery
Launch to minimum allowable azimuth 158°
Make yaw adjustment at end of burn for inclination 68°
Deploy Lacrosse from 437km x 447km orbit
Make EVA to -Y(bottom) HGA gimbal to repair failure
Use Lacrosse propulsion to boost orbit to 687km

SHUTTLE FLEET 4.8 NOTES

There is a full complement of UMMU crew aboard.

The ascent autopilot is on and set for the appropriate launch heading.

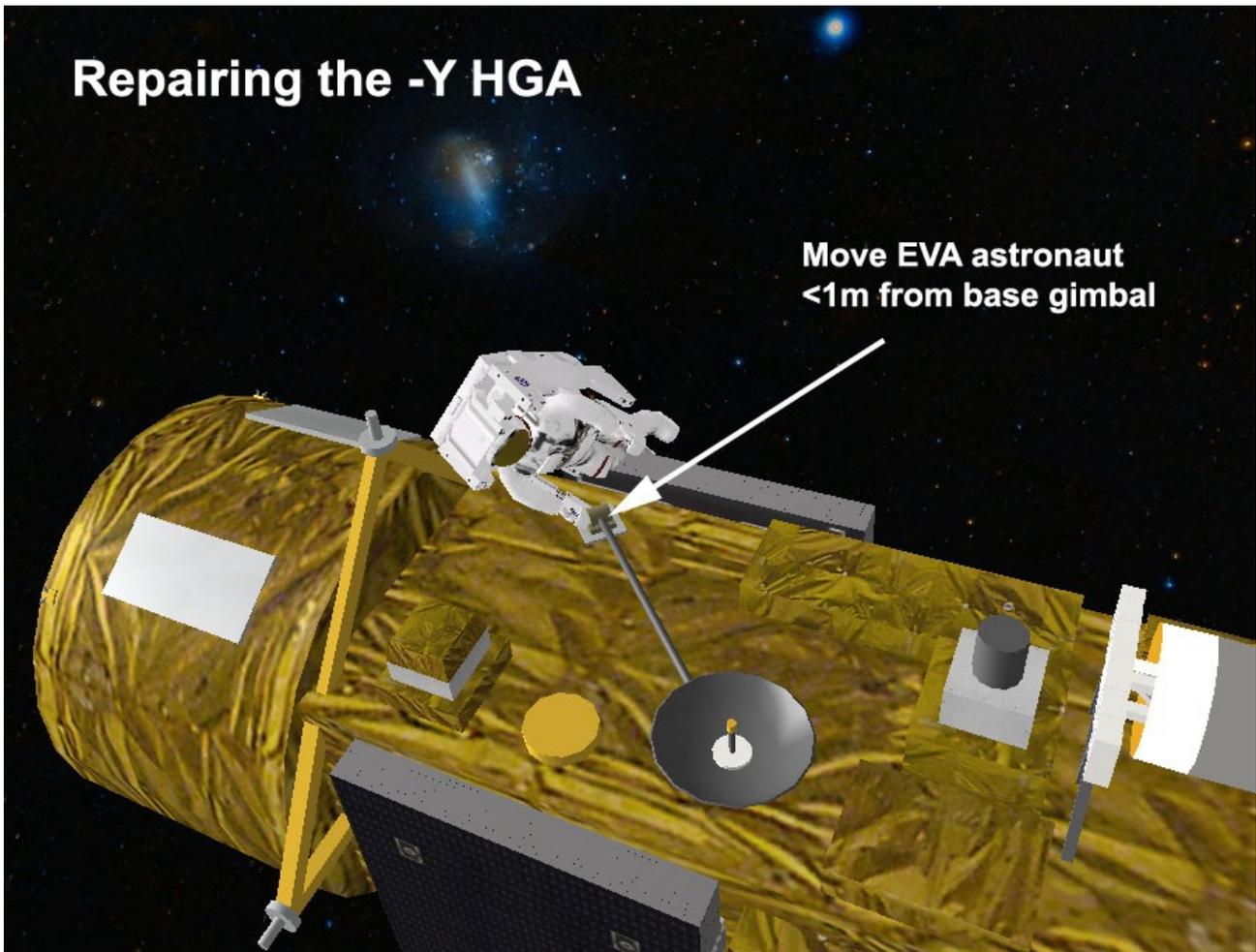
SPECIAL FEATURE

System Failure!!

The HGA, propulsion and other functions of Lacrosse have failed on deployment - you can repair them by moving an EVA astronaut close to the base gimbal(pivot) of the -Y(bottom) HGA antenna.
The EVA astronaut must be <1m from the gimbal (see image below)

If you don't want the simulated failure, remove the line "FAIL 1" from the Lacrosse vessel entry in the scenario file.

Repairing the -Y HGA



Move EVA astronaut
<1m from base gimbal

MORE INFO

<http://science.ksc.nasa.gov/shuttle/missions/sts-27/mission-sts-27.html>

<http://en.wikipedia.org/wiki/STS-27>

Happy orbiting!
BrianJ