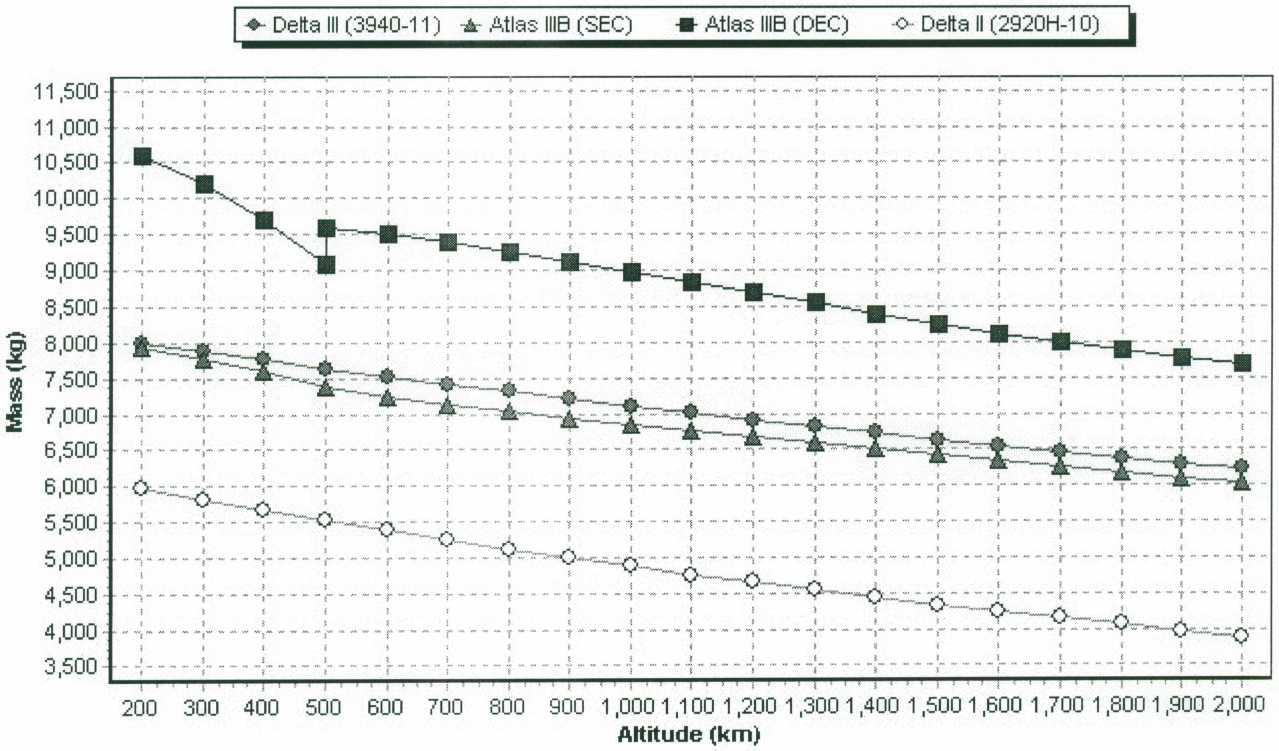
Performance Plot Results:

Important Note: **The data contained in these curves are based on ground rules and assumptions located below the plot. Please read this information carefully. This information is intended for NASA customers only.**

NASA ELV Performance Estimation Curve(s)
LEO Circular with inclination 28.x
All vehicles except Delta II assume 28.5 degrees inclination, Delta II assumes 28.7 degrees inclination.
Please note ground rules and assumptions below.



Assumptions:

Delta III (3940-11)
- All performance normalized to 3810 kg (8400 lb) payload capability to GTO.
- Launch from SLC-17 at CCAFS (Cape Canaveral Air Force Station).
- 1666-4 payload adapter.
- 185 km (100 nmi) park orbit perigee.

Last Updated: 9/17/01 1:14:12 PM

Atlas IIIB (SEC)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-36B at CCAFS (Cape Canaveral Air Force Station).
- Type B2 payload adapter.
- 4-meter Large Payload Fairing (LPF).
- Performance values assume harness, logo, reradiating antenna, mission satisfaction kit, payload fairing acoustic blankets, 3 payload fairing doors.
- Payload mass greater than 9000 kg (19,841 lbs) may require mission unique accommodations.
- 148 km (80 nmi) minimum park orbit perigee altitude.

Last Updated: 7/3/01 4:03:10 PM

Atlas IIIB (DEC)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-36B at CCAFS (Cape Canaveral Air Force Station).
- Type B2 payload adapter.

- 4-meter Large Payload Fairing (LPF).
- Performance values assume harness, logo, reradiating antenna, mission satisfaction kit, payload fairing acoustic blankets, 3 payload fairing doors.
- Payload mass greater than 9000 kg (19,841 lbs) may require mission unique accommodations.
- 148 km (80 nmi) minimum park orbit perigee altitude.

Last Updated: 7/3/01 4:03:10 PM

Delta II (2920H-10)

- 99.7% Probability of Command Shutdown (PCS).
- 185 km (100 nmi) park orbit altitude.
- 6915 Payload Attach Fitting (PAF).

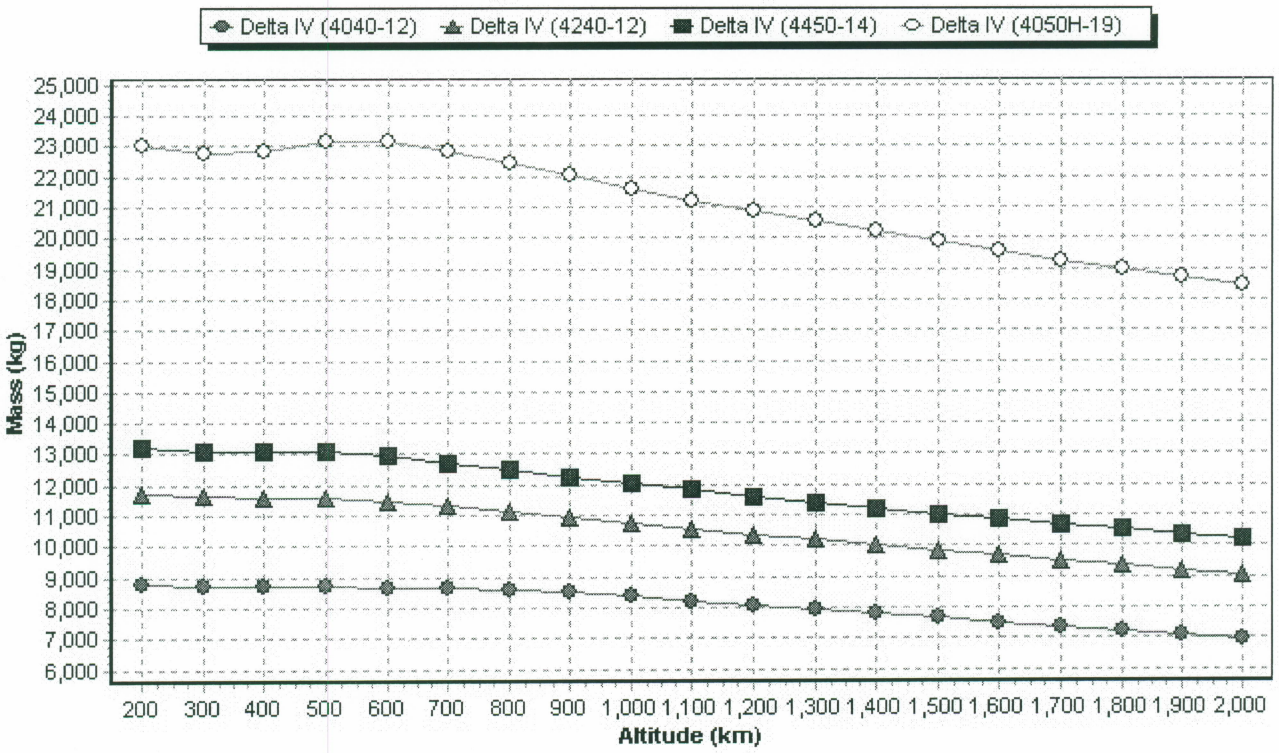
Last Updated: 7/3/01 2:37:07 PM

Save Plot Print Plot New Graph

Performance Plot Results:

Important Note: **The data contained in these curves are based on ground rules and assumptions located below the plot. Please read this information carefully. This information is intended for NASA customers only.**

NASA ELV Performance Estimation Curve(s)
LEO Circular with inclination 28.x
All vehicles except Delta II assume 28.5 degrees inclination, Delta II assumes 28.7 degrees inclination.
Please note ground rules and assumptions below.



Assumptions:

Delta IV (4040-12)
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-4 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) park orbit perigee.

Last Updated: 7/3/01 4:29:31 PM

Delta IV (4240-12)
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-4 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) park orbit perigee.

Last Updated: 7/3/01 4:30:49 PM

Delta IV (4450-14)
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-5 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) park orbit perigee.

Last Updated: 7/3/01 4:31:05 PM

Delta IV (4050H-19)

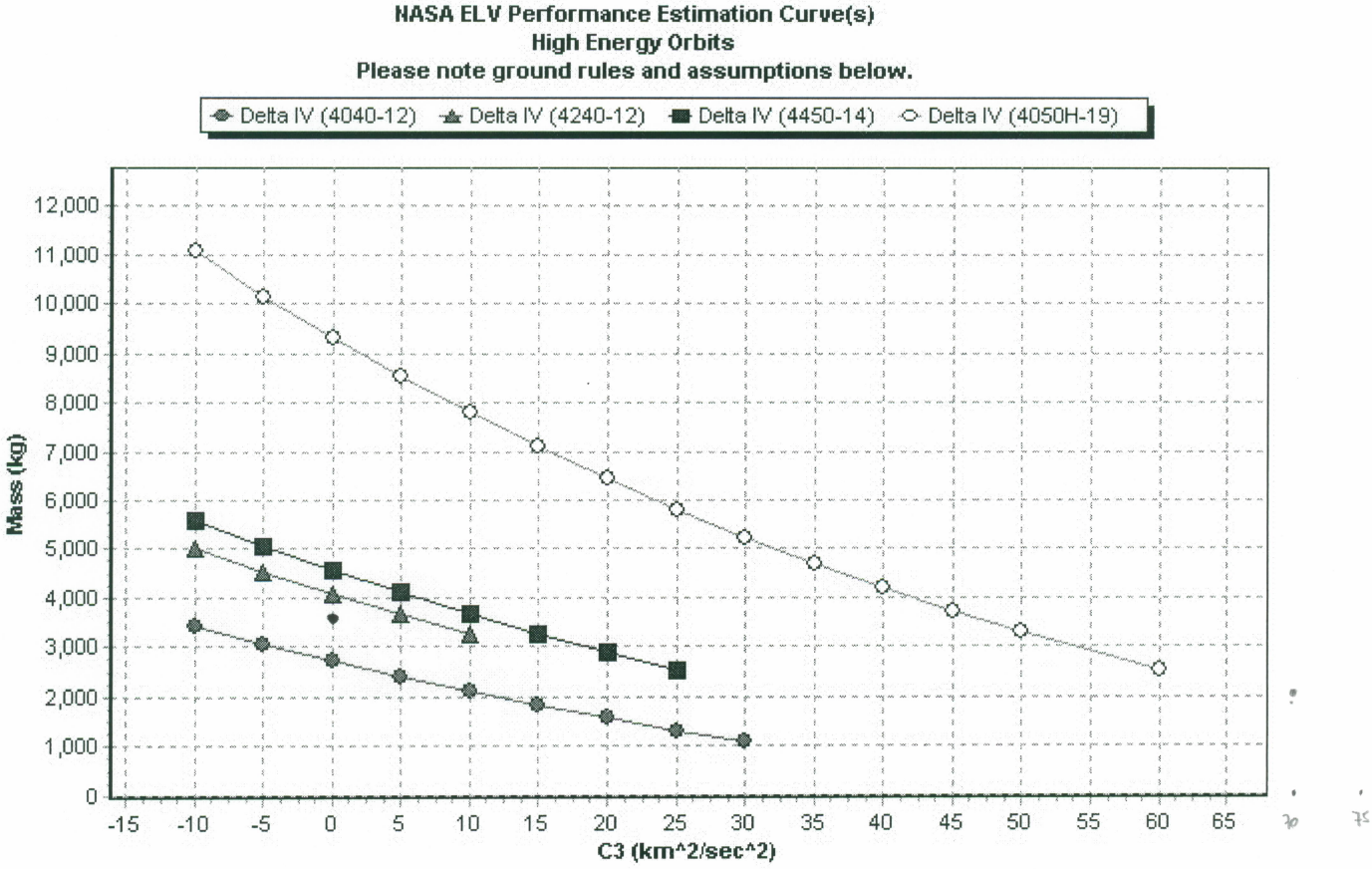
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-5 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) park orbit perigee.

Last Updated: 7/3/01 4:31:20 PM

Save Plot Print Plot New Graph

Performance Plot Results:

Important Note: **The data contained in these curves are based on ground rules and assumptions located below the plot. Please read this information carefully. This information is intended for NASA customers only.**



Assumptions:

Delta IV (4040-12)
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-4 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) circular park orbit at 28.9 deg. inclination.
- 185 km (100 nmi) escape orbit perigee.
- Performance shown is applicable for declinations between 28.9 deg. and –28.9 deg.

Last Updated: 7/3/01 4:30:12 PM

Delta IV (4240-12)
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-4 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) circular park orbit at 28.9 deg. inclination.
- 185 km (100 nmi) escape orbit perigee.
- Performance shown is applicable for declinations between 28.9 deg. and –28.9 deg.

Last Updated: 7/3/01 4:30:49 PM

Delta IV (4450-14)
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-5 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).

- 185 km (100 nmi) circular park orbit at 28.9 deg. inclination.
- 185 km (100 nmi) escape orbit perigee.
- Performance shown is applicable for declinations between 28.9 deg. and –28.9 deg.

Last Updated: 7/3/01 4:31:05 PM

Delta IV (4050H-19)

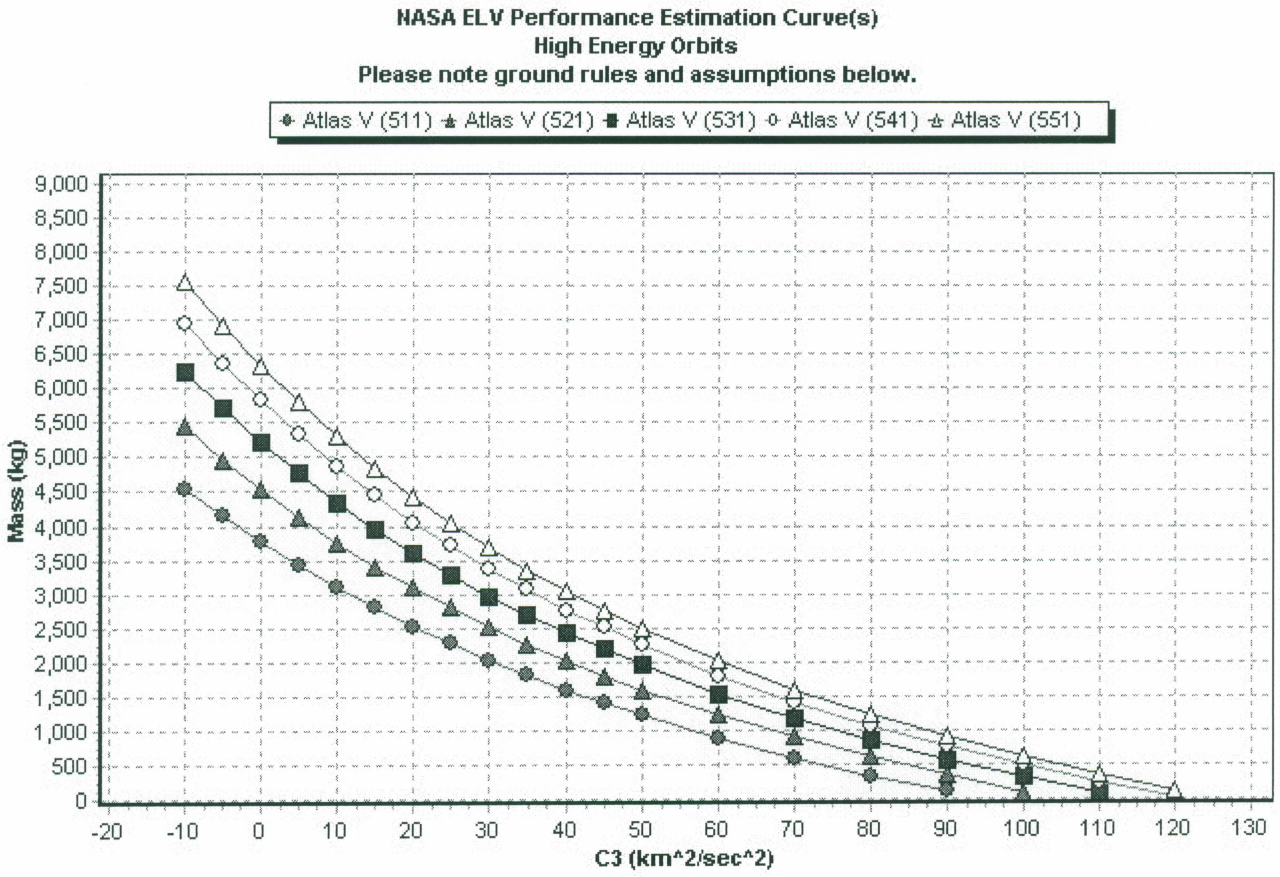
- 3-sigma probability of Stage 2 commanded shutdown, plus additional reserves as determined by the LSP.
- 1194-5 payload adapter.
- Launch from SLC-37 at CCAFS (Cape Canaveral Air Force Station).
- 185 km (100 nmi) circular park orbit at 28.9 deg. inclination.
- 185 km (100 nmi) escape orbit perigee.
- Performance shown is applicable for declinations between 28.9 deg. and –28.9 deg.

Last Updated: 7/3/01 4:31:20 PM

Save Plot Print Plot New Graph

Performance Plot Results:

Important Note: **The data contained in these curves are based on ground rules and assumptions located below the plot. Please read this information carefully. This information is intended for NASA customers only.**



Assumptions:

Atlas V (511)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-41 at CCAFS (Cape Canaveral Air Force Station).
- Performance values assume harness, logo, reradiating antenna, 3 payload fairing doors.
- Payload mass greater than 9000 kg may require mission unique accommodations.
- Type B2 payload adapter plus type C2 spacer.
- 5-meter Short Payload Fairing.
- 185 km (100 nmi) minimum park orbit perigee altitude.
- 185 km (100 nmi) minimum escape orbit perigee altitude.
- Performance shown is applicable for declinations between 28.5 deg. and –28.5 deg.

Last Updated: 7/3/01 4:33:53 PM

Atlas V (521)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-41 at CCAFS (Cape Canaveral Air Force Station).
- Performance values assume harness, logo, reradiating antenna, 3 payload fairing doors.
- Payload mass greater than 9000 kg may require mission unique accommodations.
- Type B2 payload adapter plus type C2 spacer.
- 5-meter Short Payload Fairing.
- 185 km (100 nmi) minimum park orbit perigee altitude.
- 185 km (100 nmi) minimum escape orbit perigee altitude.
- Performance shown is applicable for declinations between 28.5 deg. and –28.5 deg.

Last Updated: 7/3/01 4:34:09 PM

Atlas V (531)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-41 at CCAFS (Cape Canaveral Air Force Station).
- Performance values assume harness, logo, reradiating antenna, 3 payload fairing doors.
- Payload mass greater than 9000 kg may require mission unique accommodations.
- Type B2 payload adapter plus type C2 spacer.
- 5-meter Short Payload Fairing.
- 185 km (100 nmi) minimum park orbit perigee altitude.
- 185 km (100 nmi) minimum escape orbit perigee altitude.
- Performance shown is applicable for declinations between 28.5 deg. and –28.5 deg.

Last Updated: 7/3/01 4:34:24 PM

Atlas V (541)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-41 at CCAFS (Cape Canaveral Air Force Station).
- Performance values assume harness, logo, reradiating antenna, 3 payload fairing doors.
- Payload mass greater than 9000 kg may require mission unique accommodations.
- Type B2 payload adapter plus type C2 spacer.
- 5-meter Short Payload Fairing.
- 185 km (100 nmi) minimum park orbit perigee altitude.
- 185 km (100 nmi) minimum escape orbit perigee altitude.
- Performance shown is applicable for declinations between 28.5 deg. and –28.5 deg.

Last Updated: 7/3/01 4:34:39 PM

Atlas V (551)
- 3-sigma mission required margin, plus additional reserves as determined by the LSP.
- Launch from SLC-41 at CCAFS (Cape Canaveral Air Force Station).
- Performance values assume harness, logo, reradiating antenna, 3 payload fairing doors.
- Payload mass greater than 9000 kg may require mission unique accommodations.
- Type B2 payload adapter plus type C2 spacer.
- 5-meter Short Payload Fairing.
- 185 km (100 nmi) minimum park orbit perigee altitude.
- 185 km (100 nmi) minimum escape orbit perigee altitude.
- Performance shown is applicable for declinations between 28.5 deg. and –28.5 deg.

Last Updated: 7/3/01 4:34:56 PM

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