

ELEVEN ORBITAL FAA-LICENSED LAUNCHES IN FISCAL YEAR (FY) 2008

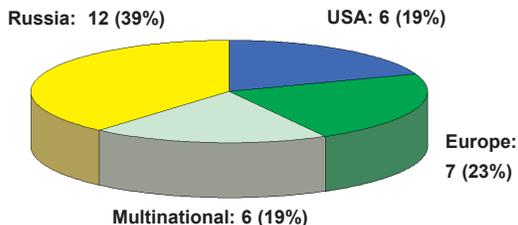
In FY 2008, the Federal Aviation Administration's (FAA) Office of Commercial Space Transportation licensed eleven orbital launches valued at approximately \$640 million, including:

- Two Delta II vehicles from Vandenberg Air Force Base
- One Atlas V from Cape Canaveral
- One Pegasus XL from the Reagan Test Site
- Two Falcon 1 vehicles from the Reagan Test Site
- Five Zenit 3SL launches conducted by the multinational service provider Sea Launch

There were seven more FAA-licensed orbital launches in FY 2008 than in FY 2007. No FAA-licensed suborbital launches occurred in FY 2008.

A total of five FAA-permitted launches occurred. All of which were conducted by Armadillo Aerospace.

Worldwide Distribution of Orbital Commercial Launches in FY 2008



FAA-LICENSED VEHICLES LAUNCHED IN FY 2008

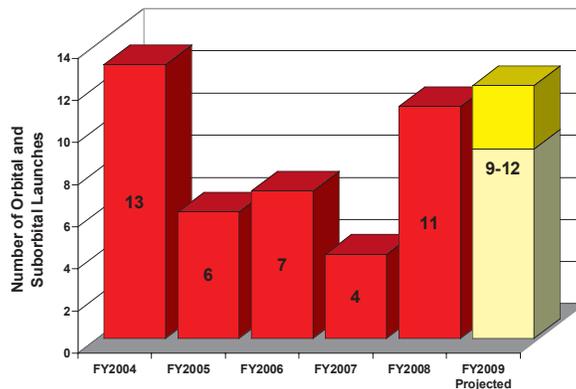
	Sea Launch	United States			
Vehicle	Zenit 3SL	Falcon 1	Atlas 5	Delta 2	Pegasus XL
FY 2008 Total Launches	5	2	4	7	1
FY2008 Licensed Launches	5	2	1	2	1
FY 2008 Reliability	5/5 (100%)	1/2 (50%)	4/4 (100%)	7/7 (100%)	1/1 (100%)
10-Year Reliability	28/30 (93%)	1/4 (25%)	12/12 (100%)	66/66 (100%)	14/14 (100%)
Maximum LEO Capacity - kg (lb)	15,246 (33,541)	420 (926)	12,500 (27,558)	6,100 (13,440)	443 (977)
Maximum GEO Capacity - kg (lb)	6,080 (13,376)	-	7,640 (16,843)	2,170 (4,790)	-

INCREASING ORBITAL COMMERCIAL LAUNCH TREND WORLDWIDE

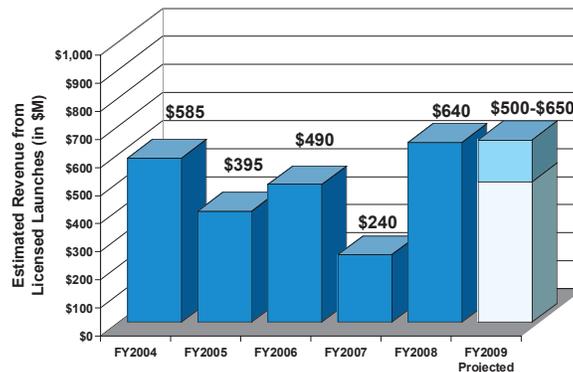
Fiscal year 2008 marks a new five year high of 19 commercial launches to geosynchronous orbit (GSO) worldwide. During the five-year period from FY 2004 to FY 2008, there were an average of 14 commercial launches to geosynchronous orbit (GSO) worldwide per fiscal year, with a low of 12 in FY 2005 and FY 2007 and a high of 19 in FY 2008. In the same period, there were an average of six commercial launches to non-geosynchronous orbit (NGSO) worldwide per fiscal year, with a low of one (failed) NGSO launch in FY 2005, and a new high of 12 commercial NGSO launches in FY 2008.

Overall, FY 2008 marked a new high in total worldwide commercial orbital launches—31, up from a five-year low of 13 in FY 2005. During the five-year period, there have been an average of 21 commercial orbital launches worldwide per fiscal year. Fiscal year 2008 saw the successful introduction of the SpaceX Falcon 1 launch vehicle and the multinational Zenit 3SLB launch vehicle known as Land Launch.

FAA-Licensed Commercial Orbital and Suborbital Launch Trend



U.S. Commercial Orbital and Suborbital Launch Revenue Trend





WORLDWIDE ORBITAL AND SUBORBITAL COMMERCIAL LAUNCH EVENTS IN FY 2008

Date	Vehicle	Site	Payload(s)	Operator	Manufacturer	Use	Commercial Price	L	M
United States									
12/8/2007	✓ Delta II	VAFB		Cosmo-Skymed 2	Italian Space Agency (ASI)	Alenia Spazio	Remote Sensing	\$50M	S S
4/14/2008	✓ Atlas V	CCAFS	* ICO G1	ICO Global Communications	Space Systems/Loral	Communications	\$85M	S S	
4/16/2008	✓ Pegasus XL	Reagan TS	C/NOFS	U.S. Air Force	Spectrum Astro, Inc.	Scientific	\$16M	S S	
8/2/2008	✓ Falcon 1	Reagan TS	Trailblazer	U.S. DoD - ORS	Space Dev	Development	\$7M	F F	
			PRESat	NASA Ames Research Center	NASA Ames Research Center	Scientific		F	
			NanoSail-D	NASA Marshall Spaceflight Center	NASA Marshall Spaceflight Ctr.	Development		F	
9/6/2008	✓ Delta II	VAFB	* GeoEye 1	GeoEye	General Dynamics	Remote Sensing	\$50M	S S	
9/28/2008	✓ Falcon 1	Reagan TS	Mass Simulator	Space Exploration Technologies	Space Exploration Technologies	Development	\$7M	S S	
Europe									
10/5/2007	Ariane 5 GS	Kourou	* Intelsat 11 * Optus D2	Intelsat Singtel/Optus	Orbital Sciences Corp. Orbital Sciences Corp.	Development Communications	\$140M	S S	
11/14/2007	Ariane 5 ECA	Kourou	* Star One C1 Skynet 5B	Star One Paradigm Secure Communications Ltd.	Alcatel Espace EADS	Communications Communications	\$140M	S S	
12/21/2007	Ariane 5 GS	Kourou	* RASCOM 1 * Horizons 2	RascomStar-QAF Intelsat	Alcatel Espace Orbital Sciences Corp.	Communications Communications	\$140M	S S	
4/18/2008	Ariane 5 ECA	Kourou	* Star One C2 Vinasat	Star One Vietnamese Ministry of Post and Telecom	Alcatel Espace Lockheed Martin Corp.	Communications Communications	\$140M	S S	
6/12/2008	Ariane 5 ECA	Kourou	* Turksat 3A Skynet 5C	Turkish Telecom Paradigm Secure Communications Ltd.	Alcatel Alenia Space EADS	Communications Communications	\$140M	S S	
7/7/2008	Ariane 5 ECA	Kourou	* Protostar 1 BADR-6	Protostar Ltd. Arab Satellite Communications Organization	Space Systems/Loral EADS Astrium	Communications Communications	\$140M	S S	
8/14/2008	Ariane 5 ECA	Kourou	* AMC 21 * Superbird 7	SES Americom Space Communications Corp.	Alcatel Alenia Space Mitsubishi Electric Corp.	Communications Communications	\$140M	S S	
Multi-National									
1/15/2008	✓ Zenit 3SL	Odyssey Platform	* Thuraya 3	Thuraya Satellite Communications Company	Boeing Satellite Systems	Communications	\$85M	S S	
3/19/2008	✓ Zenit 3SL	Odyssey Platform	* DirecTV 11	DirecTV, Inc.	Boeing Satellite Systems	Communications	\$85M	S S	
4/28/2008	Zenit 3SLB	Baikonur	* Amos 3	SpaceCom Limited	Israel Aerospace Industries	Communications	\$50M	S S	
5/21/2008	✓ Zenit 3SL	Odyssey Platform	* Galaxy 18	Intelsat	Space Systems/Loral	Communications	\$85M	S S	
7/15/2008	✓ Zenit 3SL	Odyssey Platform	* Echostar XI	Echostar Communications Corporation	Space Systems/Loral	Communications	\$85M	S S	
9/24/2008	✓ Zenit 3SL	Odyssey Platform	* Galaxy 19	Intelsat	Space Systems/Loral	Communications	\$85M	S S	
Russia									
10/21/2007	Soyuz	Baikonur	* Globalstar Repl. 5 * Globalstar Repl. 6 * Globalstar Repl. 7 * Globalstar Repl. 8	Globalstar, Inc. Globalstar, Inc. Globalstar, Inc. Globalstar, Inc.	Space Systems/Loral Space Systems/Loral Space Systems/Loral Space Systems/Loral	Communications Communications Communications Communications	\$40M	S S	
11/1/2007	Kosmos 3M	Plesetsk	SAR Lupe 3	German Defense Ministry	OHB System	Communications	\$12M	S S	
11/18/2007	Proton M	Baikonur	* Sirius 4	SES Sirius	Lockheed Martin Corp.	Communications	\$85M	S S	
12/14/2007	Soyuz	Baikonur	* RADARSAT 2	MacDonald, Dettwiler, and Assoc. (MDA)	MDA	Remote Sensing	\$40M	S S	
2/11/2008	Proton M	Baikonur	* Thor 5	Telenor A.S.	Orbital Sciences Corp.	Communications	\$85M	S S	
3/14/2008	Proton M	Baikonur	* AMC 14	SES Americom	Lockheed Martin Corp.	Communications	\$85M	F F	
3/27/2008	Kosmos 3M	Plesetsk	SAR Lupe 4	German Defense Ministry	OHB System	Remote Sensing	\$12M	S S	
6/19/2008	Kosmos 3M	Kapustin Yar	* Orbcomm Repl. 1 * Orbcomm Repl. 2 * Orbcomm Repl. 3 * Orbcomm Repl. 4 * Orbcomm Repl. 5 * Orbcomm CDS 3 * UGATUSAT	Orbital Comm. Corp. (ORBCOMM) Orbital Comm. Corp. (ORBCOMM) UGATU	OHB System OHB System OHB System OHB System OHB System OHB System UGATU	Communications Communications Communications Communications Communications Communications Scientific	\$12M	S S	
7/22/2008	Kosmos 3M	Plesetsk	SAR Lupe 5	German Defense Ministry	OHB System	Remote Sensing	\$12M	S S	
8/19/2008	Proton M	Baikonur	* Inmarsat-4 F3	Inmarsat	EADS Astrium	Communications	\$85M	S S	
8/29/2008	Dnepr 1	Baikonur	* RapidEye 1 * RapidEye 2 * RapidEye 3 * RapidEye 4 * RapidEye 5	RapidEye AG RapidEye AG RapidEye AG RapidEye AG RapidEye AG	MacDonald, Dettwiler and Assoc. MacDonald, Dettwiler and Assoc. MacDonald, Dettwiler and Assoc. MacDonald, Dettwiler and Assoc. MacDonald, Dettwiler and Assoc.	Remote Sensing Remote Sensing Remote Sensing Remote Sensing Remote Sensing	\$17.5M	S S	
9/20/2008	Proton M	Baikonur	* Nimiq 4	Telesat Canada	EADS Astrium	Communications	\$85M	S S	

Commercial prices are estimates only.

* Denotes a commercial payload, defined as a spacecraft which serves a commercial function or is operated by a commercial entity.

✓ Denotes a commercial launch licensed by the Federal Aviation Administration's (FAA) Office of Commercial Space Transportation.

L Denotes launch outcome (S-Success, F-Failure, and P-Partial). M denotes mission outcome (S-Success, F-Failure, and P-Partial).

FAA-PERMITTED LAUNCHES IN FY 2008

MOD-1	Flight Date	Operator	Vehicle	Launch Site
	10/20/2007	Armadillo Aerospace	MOD-1	Oklahoma Spaceport, OK
	10/27/2007	Armadillo Aerospace	MOD-1	Holloman AFB, NM
	10/27/2007	Armadillo Aerospace	MOD-1	Holloman AFB, NM
	10/28/2007	Armadillo Aerospace	MOD-1	Holloman AFB, NM
	10/28/2007	Armadillo Aerospace	MOD-1	Holloman AFB, NM