

Launch/Deployment	Satellite	Object	Size	Radio	Downlink	Satellite Service	Power	TNC	Protocol	Data Rate/Modulation	Antenna	Status	Updated
NLS-1/Eurokot 30 June 2003	AAU1 CubeSat	27846	1U	Wood & Douglas SX450	437.475 MHz	Amateur	500 mW	MX909	AX.25, Mobitex	9600 baud GMSK	dipole	Dead	April 2013
	DTUsat-1	27842	1U	RFMD RF2905	437.475 MHz	Amateur	400 mW		AX.25	2400 baud FSK	canted turnstile	DOA	April 2013
	CanX-1	27847	1U	Melexis	437.880 MHz	Amateur	500 mW		Custom	1200 baud MSK	crossed dipoles	DOA	April 2013
	Cute-1 (CO-55)	27844	1U	Alinco DJ-C4 (data) Maki Denki (beacon)	437.470 MHz 436.8375 MHz	Amateur	350 mW 100 mW	MX614 PIC16LC73A	AX.25 CW	1200 baud AFSK 50 WPM	monopole monopole	Alive	April 2013
	QuakeSat-1	27845	3U	Tekk KS-960	436.675 MHz	Amateur	2 W	BayPac BP-96A	AX.25 <sup>1</sup>	9600 baud FSK	turnstile	Dead	April 2013
SSETI Express 27 Oct 2005	XI-IV (CO-57)	27848	1U	Nishi RF Lab (data) Nishi RF Lab (beacon)	437.490 MHz 436.8475 MHz	Amateur Amateur	1 W 80 mW	PIC16C622 PIC16C716	AX.25 CW	1200 baud AFSK 50 WPM	dipole dipole	Alive	April 2013
	XI-V (CO-58)	28895	1U	Nishi RF Lab (data) Nishi RF Lab (beacon)	437.345 MHz 437.465 MHz	Amateur Amateur	1 W 80 mW	PIC16C622 PIC16C716	AX.25 CW	1200 baud AFSK 50 WPM	dipole dipole	Alive	April 2013
	NCube-2	28897 <sup>2</sup>	1U		437.505 MHz	Amateur			AX.25	1200 baud AFSK	monopole	DOA	April 2013
UWE-1	28892	1U	PR430	437.505 MHz	Amateur	1 W	H8S/2674R <sup>3</sup>	AX.25	1200/9600 baud AFSK	end-fed dipole	Dead	April 2013	
M-V-8 22 Feb 2006	Cute-1.7+APD (CO-56)	28941	2U	Alinco DJ-C5 Telemetry (beacon)	437.505 MHz 437.385 MHz	Amateur Amateur	300 mW 100 mW	CMX589A H8S/2328 <sup>3</sup>	AX.25/SRLL CW	1200 AFSK/9600 GMSK 50 WPM	dipole dipole	Deorbited	April 2013
Minotaur-1 11 Dec 2006	GeneSat-1	29655	3U+	Microhard MHX-2400 Stensat (beacon) <sup>5</sup>	2.4 GHz 437.067 MHz	Experimental Amateur	1 W 500 mW	Integrated <sup>4</sup> PIC12C617	Proprietary AX.25	1200 baud AFSK	patch monopole	Deorbited	April 2013
Dnepr 2 17 Apr 2007	CSTB1	31122	1U	Yaesu VX-2R	400.0375 MHz	Experimental	300 mW	PIC	Proprietary	1200 baud AFSK	dipole	Dead	April 2013
	AeroCube-2	31133	1U	FreeWave FGRM	915 MHz	Experimental	2 W	Integrated <sup>4</sup>	Proprietary	38.4 kbaud	patch	Dead	April 2013
	CP4	31132	1U	TI CC1000/RF2117	437.325 MHz	Amateur	1 W	PIC18LF6720	AX.25	1200 baud FSK	dipole	Dead	April 2013
	Libertad-1	31128	1U	Stensat <sup>5</sup>	437.405 MHz	Amateur	400 mW		AX.25	1200 baud AFSK	monopole	Dead	April 2013
	CAPE1	31130	1U	TI CC1020 <sup>7</sup>	435.245 MHz	Amateur	1 W	PIC16LF452	AX.25	9600 baud FSK	dipole	Dead	April 2013
	CP3	31129	1U	TI CC1000/RF2117	436.845 MHz	Experimental	1 W	PIC18LF6720	AX.25	1200 baud FSK	dipole	Dead	April 2013
MAST <sup>8</sup>	31126	3U	Microhard MHX-2400	2.4 GHz	Experimental	1 W	Integrated <sup>4</sup>	Proprietary	15 kbps	monopole	Dead	April 2013	
NLS-4/PSLV-C9 28 Apr 2008	DelFi-C3 (DO-64)	32789	3U	Custom (transponder) Custom (beacon)	145.9-435.55 MHz 145.870 MHz	Amateur Amateur	200 mW 400 mW	N/A PIC18LF4680	Linear AX.25	40 kHz wide 1200 baud BPSK	turnstile turnstile	Alive	April 2013
	Seeds-2 (CO-66)	32791	1U	Musashino Electric (data) Musashino Electric (beacon)	437.485 MHz 437.485 MHz	Amateur Amateur	450 mW 90 mW		AX.25 CW	1200 baud AFSK	monopole monopole	Alive	April 2013
	CanX-2	32790	3U	Custom S-Band	2.2 GHz	Space Research	500 mW	Integrated	NSP	16-256kbps BPSK	patch	Active	April 2013
	AAUSAT-II	32788	1U	Holger Eckhardt (DF2FQ)	437.425 MHz	Amateur	610 mW	PIC18LF6680	AX.25	1200 baud MSK	dipole	Alive	April 2013
	Compass-1	32787	1U	Holger Eckhardt (data) BC549 (beacon)	437.405 MHz 437.275 MHz	Amateur Amateur	300 mW 200 mW	C8051F123, FX614 PIC12F629	AX.25 CW	1200 baud AFSK/MSK 15 WPM	dipole dipole	Alive	April 2013
Minotaur 1 19 May 2009	AeroCube-3	35005	1U	FreeWave FGRM	915 MHz	Experimental	2 W	Integrated	Proprietary	77 kbaud GFSK	patch	Deorbited	April 2013
	CP6	35003	1U	CC1000/RF2117	437.365 MHz	Amateur	1 W	PIC18LF6720	AX.25	1200 baud FSK	dipole	Deorbited	April 2013
	HawkSat-1	35004	1U	Microhard MHX-425	437.345 MHz	Amateur	1 W	Integrated	Proprietary	10 kbps	monopole	DOA	April 2013
	PharmaSat	35002	3U+	Microhard MHX-2400 Stensat (beacon) <sup>5</sup>	2.4 GHz 437.465 MHz	Experimental Amateur	1 W 500 mW	Integrated Integrated	Proprietary AX.25	1200 baud AFSK	patch monopole	Deorbited	April 2013
ISILaunch 01/ PSLV-C14 23 Sep 2009	BEESAT-1	35933	1U	STE BK-77B	436.000 MHz	Amateur <sup>9</sup>	500 mW	CMX909B	Mobitex	4800/9600 baud GMSK	monopole	Alive	April 2013
	UWE-2	35934	1U	Custom	437.385 MHz	Amateur			AX.25	1200 baud AFSK	dipole	Dead	April 2013
	ITUpSAT-1	35935	1U	Microhard MHX-425 BeeLine/CC1050	437.325 MHz 437.325 MHz	Amateur Amateur	1 W 350 mW	Integrated	Proprietary CW	19200 baud	dipole monopole	Alive	April 2013
	SwissCube	35932	1U	Butler oscillator/RF5110G RF2516 (beacon)	437.505 MHz 437.505 MHz	Amateur Amateur	1 W 100 mW	MSP430F1611 Integrated	AX.25 CW	1200 baud FSK 10 WPM	monopole monopole	Active	April 2013
H-IIA F17 20 May 2010	Hayato	36573	1U	Custom	13.275 GHz	Earth exploration	100 mW	Integrated	Integrated	10 kbps/1 Mbps BPSK	patch	Deorbited	April 2013
	Waseda-SAT2	36574	1U	TXE430-301A TXE430-301A (beacon)	437.485 MHz 437.485 MHz	Amateur Amateur	150 mW 100 mW	H8/3052F <sup>3</sup> H8/3052F <sup>3</sup>	AX.25 CW	9600 baud FSK	monopole dipole	DOA Deorbited	April 2013
	Nagai-Star	36575	1U	Data Beacon Radio	437.305 MHz 437.305 MHz	Amateur Amateur	150 mW 100 mW		AX.25 CW	1200 baud FSK 50 WPM	dipole dipole	Deorbited	April 2013
NLS-6/ PSLV-C15 12 July 2010	TIsat-1	36799	1U	Alinco DJ-C6 CC1010 (beacon)	437.305 MHz 437.305 MHz	Amateur Amateur	500 mW 400 mW	MSP430F169 MSP430F169	AX.25 CW	1200 baud AFSK 15-110 WPM	monopole monopole	Active	April 2013
	StudSat	36796	1U	CC1020 MAX1472 (beacon)	437.505 MHz 437.860 MHz	Amateur Amateur	500 mW 10 mW	UC3A0512 <sup>3</sup> UC3A0512 <sup>3</sup>	Custom AX.25 CW	4800 baud FSK 22 WPM	monopole monopole	Dead	April 2013
STP-S26 19 Nov 2010	RAX-1	37223	3U	Lithium-1	437.505 MHz	Amateur	750 mW	Integrated	AX.25	9600 baud GMSK	turnstile	Dead	April 2013
	O/OREOS	37224	3U+	Microhard MHX-2400 Stensat (beacon) <sup>5</sup>	2.4 GHz 437.305 MHz	Experimental Amateur	1 W 500 mW	Integrated Integrated	Proprietary AX.25	Variable 1200 baud AFSK	patch monopole	Alive	April 2013
	NanoSail-D2	37361	3U+	Microhard MHX-2400 Stensat (beacon) <sup>5</sup>	2.4 GHz 437.270 MHz	Experimental Amateur	1 W 500 mW	Integrated Integrated	Proprietary AX.25	Variable 1200 baud AFSK	patch monopole	Deorbited	April 2013
Falcon 9-002 8 Dec 2010	Perseus (4)	37251+	1.5U			Government					dipole	Deorbited	April 2013
	QbX (2)	37249+	3U	TTC	450 MHz	Government	1 W			9600 baud GMSK	quadrafilar helix	Deorbited	April 2013
	SMDC-ONE	37246	3U	Pericle	UHF	Government					turnstile	Deorbited	April 2013
Mayflower	37252	3U	Microhard MHX-425 Stensat (beacon) <sup>5</sup>	437.000 MHz 437.600 MHz	Amateur Amateur	1 W 1 W	Integrated Integrated	Proprietary AX.25	Variable 1200 baud AFSK	dipole	Deorbited	April 2013	
PSLV-C18 12 Oct 2011	Jugnu	37839	3U	CC1070/RF5110G MAX1472 (beacon)	437.505 MHz 437.505 MHz	Amateur Amateur	1 W 10 mW		AX.25 CW	2400 baud FSK 20 WPM	monopole monopole	Alive	April 2013
ELaNa-3/ NPP 28 Oct 2011	AubieSat-1	37854	1U	Melexis TH72011	437.475 MHz	Amateur	800 mW	ATmega1281 <sup>3</sup>	CW	20 WPM	dipole	Alive	April 2013
	DICE (2)	37851+	1.5U	L3 Cadet	465 MHz	Meteorological	1 W	Integrated	Proprietary	2.6 Mbps OQPSK	dipole	Dead	Aug 2013
	HRBE	37855	1U	CC1000	437.505 MHz	Amateur	850 mW		AX.25	1200 baud FSK	monopole	Active	Aug 2013
	M-Cubed	37855	1U	Lithium-1	437.485 MHz	Amateur	1 W	Integrated	AX.25	1200 baud FSK	monopole	Alive	April 2013
RAX-2	37853	3U	Lithium-1	437.345 MHz	Amateur	1 W	Integrated	AX.25	9600 baud GMSK	turnstile	Dead	Aug 2013	
Vega VV01 13 Feb 2012	XatcoBee	38082	1U	GomSpace U482C	437.365 MHz	Amateur	500 mW	Integrated	AX.25/CW	1200 baud MSK/20 WPM	turnstile	Active	Aug 2013
	ROBUSTA		1U	MC12181/MAX2608	437.325 MHz	Amateur	800 mW	PIC18F4580 <sup>4</sup>	AX.25	1200 baud AFSK	dipole	Dead	April 2013
	e-sat <sup>6r</sup>	38079	1U	BHX2-437-5	437.445 MHz	Amateur	500 mW	PIC16	AX.25	1200 baud AFSK	dipole	Dead	April 2013
	Goliath	38085	1U	Alinco DJ-C7 Microhard MHX-2420	437.485 MHz 2.4 GHz	Amateur	500 mW 1 W	FX614/MSP430 Integrated	AX.25/CW Proprietary	1200 baud AFSK/20 WPM Variable	monopole patch	Dead	April 2013
	PW-Sat	38083	1U	ISIS TRXUV	145.900 MHz	Amateur	200 mW	Integrated	AX.25/CW	1200 baud BPSK/12 WPM	dipole	Dead	April 2013
	Masat-1	38081	1U	SI4432	437.345 MHz	Amateur	100/400 mW	dsPIC33F <sup>3</sup>	Custom/CW	GFSK/120 CPM	monopole	Active	Aug 2013
UniCubeSat-GG		1U	AstroDev Custom	437.305 MHz	Amateur	500 mW	Integrated	AX.25/CW	9600 baud GFSK	dipole	Dead	April 2013	
ELaNa-6/NROL-36 13 Sep 2012	SMDC-ONE (2)	38766+	3U	Pericle	UHF	Government					turnstile	Alive	April 2013
	AeroCube-4 (3)	38767+	1U	FreeWave MM2 CC1101	915 MHz 915 MHz	Experimental Experimental	2 W 1.3 W	Integrated Integrated	Proprietary Proprietary	38.4 kbaud 500 kbps FSK	patch patch	Active	April 2013
	Aeneas	38760	3U	MHX-425 Stensat (beacon) <sup>5</sup>	437.000 MHz 437.600 MHz	Experimental Amateur	1 W 1 W	Integrated Integrated	Proprietary AX.25	Variable 1200 baud FSK	monopole monopole	Alive	April 2013
	CSSWE	38761	3U	Lithium-1	437.345 MHz	Experimental	1 W	Integrated	AX.25	9600 baud GFSK	monopole	Active	April 2013
	CP5	38763	1U	CC1000/RF2117	437.405 MHz	Amateur	500 mW	PIC18LF6720	AX.25	1200 baud FSK	dipole	Dead	April 2013
	CXBN	38762	2U	Lithium-1	437.525 MHz	Amateur	1 W	Integrated	AX.25	9600 baud GFSK	turnstile	Active	April 2013
	CINEMA	38764	3U	Emhiser	2200 MHz	Space Research	1 W	FPGA	Proprietary	1 Mbps FSK	patch	Active	April 2013
	Re	38765	3U	Helium-100	915 MHz	Government	1 W	Integrated	AX.25	57.6 kbps FSK	dipole	DOA	Aug 2013
HTV-3/ISS 4 Oct 2012	FITSat-1	38853	1U	High-speed Custom Custom (data) Custom (beacon)	5.84 GHz 437.445 MHz 437.250 MHz	Amateur Amateur Amateur	2 W 10 mW	PIC16F886 PIC16F1519 PIC16F1519	AX.25 CW CW	115.2 kbps FSK 1200 baud AFSK	patch monopole monopole	Deorbited	Aug 2013
	TechEdSat <sup>10</sup>	38854	1U	Stensat (beacon) <sup>5</sup>	437.465 MHz	Amateur	1 W	Integrated	AX.25	1200 baud AFSK	monopole	Deorbited	Aug 2013
	F-1	38855	1U	VX-3R VX-3R	145.980 MHz 437.485 MHz	Amateur Amateur	1 W 200 mW	PIC18F PIC16F	AX.25 FM PWM CW	1200 baud AFSK 20 WPM	dipole dipole	Deorbited	Aug 2013
	WE-WISH	38856	1U	(data) (beacon)	437.505 MHz 437.505 MHz	Amateur Amateur	100 mW		SSTV CW	30 kbps SSTV	monopole monopole	Deorbited	Aug 2013
	RAIKO	38852	2U	Custom	13 GHz	Experimental	1 W	Integrated	Proprietary	2.4 kbps FSK variable	patch	Deorbited	Aug 2013
PSLV-C20 25 Feb 2013	STRAND-1	39090	3U	Custom SSC/SSTL	437.575 MHz	Amateur	1.6 W	PIC24	HDLC	9600 baud FSK	monopole	Active	Aug 2013
	AAUSAT3	39087	1U	ADF7021/AWT6388	437.425 MHz	Amateur	900 mW	AT90CAN128	CCSDS/CW	2400 bps/30 WPM	turnstile	Active	Aug 2013
Bion-M1/Soyuz/ ISILaunch-02 19 April 2013	OSSI-1	39131	1U	ADF7021 ADF7021 (beacon)	437.525 MHz 145.980 MHz	Amateur Amateur	2 W 80 mW		AX.25 CW	9600 baud FSK 12 WPM	dipole monopole	DOA	Aug 2013
	SOMP	39135	1U	SI4420	437.485 MHz 437.485 MHz	Amateur Amateur	500 mW 500 mW		Custom CW/AX.25	23 kbps BPSK 12 WPM/1200 baud FSK	turnstile turnstile	Dead	Aug 2013
	BEESAT-2	39136	1U	STE BK-77B	435.950 MHz	Amateur	500 mW	CMX909B	Mobitex	4800 bps GMSK	monopole	Alive	April 2013



Launch/Deployment	Satellite	Object	Size	Radio	Downlink	Satellite Service	Power	TNC	Protocol	Data Rate/Modulation	Antenna	Status	Updated	
Long March-2D/ Gaofen 1/ ISILaunch-04 26 April 2013	TurkSat-3USat	39152	3U	Custom Transponder BeeLine/Astrodev?	435.225 MHz 437.225 MHz	Amateur Amateur	1 W 1 W	N/A Integrated	N/A CW/AX.25	50 kHz 9600 baud FSK	monopole monopole	Dead	Aug 2013	
	CubeBug-1	39153	2U	Lithium-1	437.445 MHz	Amateur	1 W	Integrated	AX.25	1200 baud AFSK	turnstile	Alive	Aug 2013	
	NEE-01 Pegasus	39151	1U	Custom	910 MHz	Amateur	1.9 W		SSTV/Audio			Dead	Aug 2013	
Vega VV02/ISIL-06 7 May 2013	ESTCube-1	39161	1U	Data Beacon	437.505 MHz 437.250 MHz	Amateur Amateur	500 mW 100 mW		AX.25 CW	9600 baud FSK 18 WPM	monopole monopole	Alive	Aug 2013	
HTV-4/ISS 19 Nov 2013	ArduSat-1	39413	1U	NanoCom U482C	437.000 MHz	Experimental	1 W	NanoMind A712D <sup>1</sup>	CSP	9600 baud FM-MSK/20 WPM CW	turnstile	Alive/Deorbited	Mar 2015	
	ArduSat-X	39414	1U	NanoCom U482C	437.000 MHz	Experimental	1 W	NanoMind A712D <sup>1</sup>	CSP	9600 baud FM-MSK/20 WPM CW	turnstile	Deorbited	Mar 2015	
	Pico Dragon	39412	1U	(data) (beacon)	437.365 MHz 437.250 MHz	Amateur Amateur	800 mW 100 mW		AX.25 CW	1200 baud AFSK	monopole monopole	Alive/Deorbited	Mar 2015	
	TechEdSat-3P	39415	3U	Stensat (beacon) Iridium Q9602	437.465 MHz 1616 MHz	Experimental Experimental	1 W 1 W	Integrated Integrated	AX.25 Proprietary	1200 baud AFSK	monopole patch	Deorbited	Mar 2015	
ORS-3/ELaNa-4 20 Nov 2013	COPPER	39395	1U	AstroDev He-100	437.290 MHz	Experimental	1 W	Integrated	AX.25	9600 baud FSK	dipole	DOA	Jan 2014	
	TJ3Sat	39385	1U	Stensat	437.320 MHz	Experimental	1 W	Integrated	AX.25, CW	1200 baud AFSK			Dec 2013	
	Vermont Lunar Cube	39407	1U	Helium-100	437.305 MHz	Experimental	1.5 W	Integrated	AX.25	9600 baud FSK	Crossed Dipoles	Alive	Jan 2014	
	SwampSat	39402	1U		437.385 MHz	Experimental	1 W		AX.25	9600 baud FSK			Jan 2014	
	CAPE-2 (LO-75)	39382	1U	CC1101	437.325 MHz	Experimental	1 W	Integrated	TI	9600 baud FSK		Alive	July 2014	
	Ho'oponopono-2	39403	3U	RadioMetric Parrot repeater Microhard MHX-2420 AstroDev Ne-1 (beacon)	145.825 MHz 2.4 GHz 437.220 MHz	Experimental Experimental	1 W	Integrated	Parrot repeater Proprietary	57.6 kbps		patch monopole	DOA	Jan 2014
	PhoneSat-v2.4	39381	1U	StenSat	437.425 MHz	Experimental	1 W	Integrated	AX.25	1200 baud AFSK	monopole	Alive	Jan 2014	
	Traillblazer	39400	1U	AstroDev He-100	437.425 MHz	Experimental	1 W	Integrated	AX.25	9600 baud FSK	turnstile	DOA	Jan 2014	
	DragonSat-1	39383	1U	AstroDev He-100	145.870 MHz	Experimental	500 mW	Integrated	AX.25	9600 baud FSK	monopole	DOA	Jan 2014	
	KySat-2	39384	1U	AstroDev Li-1	437.405 MHz	Experimental	1.5 W	Integrated	AX.25	9600 baud FSK	turnstile	Alive	Jan 2014	
	ChargerSat-1	39405	1U	CC1100	437.405 MHz	Experimental	1 W			9600 baud FSK	dipole	DOA	Dec 2013	
	NPS-SCAT	39389	1U	Microhard MHX-2400 CC1000 (beacon) <sup>2</sup>	2.4 GHz 437.525 MHz	Experimental Experimental	1 W 1 W	Integrated Integrated	Proprietary AX.25		1200 baud FSK	patch dipole	Alive	Jan 2014
	Black Knight 1	39398	1U	MHX-425	437.345 MHz	Experimental	1 W	Integrated	Proprietary					
	ORSES	39386	3U			Government								
	ORSTECH (2)	39387+	3U			Government								
	Prometheus (8)	39406+	1.5U			Government								
	SENSE (2)	39388+	3U	Innoflight SCR-100	2.2 GHz	Government						patch	Alive	Dec 2013
FireFly	39404	3U	L-3 Cadet	425 MHz	Government	1 W	Integrated	Proprietary		QPSK	dipole	Alive	Jan 2014	
Horus	39397	3U	AstroDev	915 MHz	Government						patch	DOA	Dec 2013	
ISILaunch-03/Dnepr 21 Nov 2013	FUNcube-1	39444	1U	AMSAT	145.936 MHz	Amateur	300 mW	N/A		1200 baud BPSK	dipole	Active	Jan 2014	
	ZACube-1	39417	1U	CPUT UTRX	437.355 MHz	Amateur	1 W	Integrated	AX.25	1200 baud AFSK/9600 baud FSK	dipole	Alive	Jun 2016	
	HiNeube	39445	1U		437.305 MHz	Amateur			AX.25	9600 baud GMSK		DOA	Jan 2014	
	First-MOVE	39438	1U	ISIS TRXUV	145.970 MHz	Amateur	230 mW	Integrated	AX.25	1200 baud BPSK	dipole	Alive	Jan 2014	
	UWE-3	39446	1U		437.385 MHz	Amateur			AX.25	9600 baud FSK		Alive	Jan 2014	
	Velox-PII	39438	1U	ISIS?	145.980 MHz	Amateur	230 mW	Integrated	AX.25	1200 baud BPSK		Alive	Jan 2014	
	NEE-02 KRYSAOR	39441	1U		980 MHz									
	CubeBug-2	39440	2U	AstroDev Li-1	437.445 MHz	Amateur	1 W	Integrated	AX.25	1200/9600 baud AFSK/GFSK	turnstile	Alive	Jan 2014	
	KHUSAT (2)	39424+	3U	Emhiser	2.2 GHz	Space Research	1 W	FPGA	Proprietary	1 Mbps FSK	patch	Alive	Jan 2014	
	TRITON-1	39427	3U	ISIS TRXUV	145.815 MHz	Amateur	230 mW	Integrated	AX.25	9600 baud BPSK	dipole	Alive	Jan 2014	
	Delfi-n3xt	39428	3U	ISIS TRXUV ISIS Custom	145.900 MHz 2.405 GHz	Amateur Amateur	230 mW 125 mW	Integrated	AX.25	9600 baud BPSK 20-500 kbps MSK	dipole patch	Alive	Feb 2014	
	OPTOS	39420	3U		402 MHz	Earth-exploration								
	Dove-3	39429	3U+	D3-400-T D3-8200-T	401.3 MHz 8.1 GHz	Experimental Experimental	1.6 W 3 W			IP over DVB-S2	monopole patch	Active	Jan 2014	
	PUCP-SAT-1 <sup>3</sup>	39442	1U	Telemetry Beacon	145.840 MHz 437.200 MHz	Amateur Amateur	1.5 W 10 mW			AX.25 CW	1200 baud AFSK 12 WPM	dipole dipole		Jan 2014 Jan 2014
	ICUBE-1 <sup>3</sup>		1U	ISIS TRXUV	145.947 MHz	Amateur	230 mW	Integrated	AX.25	1200 baud BPSK				
HumSAT-D <sup>3</sup>	39433	1U	NanoCom U482C	437.325 MHz	Amateur	500 mW			CSP/CW	1200 baud MSK	turnstile	Active	Jan 2014	
GomX-1	39430	2U	D3-8200-T NanoCom U482C	8.1 GHz 437.250 MHz	Experimental Amateur	3 W			IP over DVB-S2 CSP		turnstile	Alive	Mar 2015	
NROL-39/ELaNa-2 5 Dec 2013	IPEX	39471	1U		437.270 MHz	Experimental	1 W		AX.25	9600 baud FSK	dipole	Dead	Dec 2015	
	MCubed-2	39469	1U	AstroDev Li-1	437.485 MHz	Experimental	1 W		AX.25	9600 baud GMSK	monopole	Active	Jan 2014	
	CUNYSAT-1	39470	1U		437.505 MHz	Experimental	1.2 W							
	FIREBIRD (2)	39463+	1.5U		437.405 MHz	Amateur	1 W				dipole	Active/DOA	Jan 2014	
	Alice	39467	3U			Government								
	AeroCube-5 (2)	39465+	1.5U	Freewave FGRM CC1101	915 MHz 915 MHz	Experimental Experimental	1.3 W	Integrated	Proprietary	500 kbps FSK	patch			
	SMDC-ONE (2)	39472+	3U			Government								
	TacSat-6	39473	3U			Government								
SNAP	39468	3U			Government									
Orb-1/ISS 28 Feb 2014	Flock-1 (28)	39513+	3U+	D3-400-T D3-8200-T	401.3 MHz 8.1 GHz	Earth exploration Earth exploration	1.6 W 3 W			IP over DVB-S2	monopole patch	Active	Feb 2014	
	UAPSAT	39568	1U		437.385 MHz	Amateur			AX.25		turnstile			
	ArduSat-2	39571	2U	AstroDev Li-1 AstroDev Beryllium	400 MHz 2.4 GHz	Experimental Experimental	2 W 2.3 W				turnstile patch	DOA	Apr 2014	
	SkyCube	39567	1U	AstroDev C2	915 MHz	Government			AX.25	57.6 kbps	dipole	Dead	Apr 2014	
	LitSat-1	39570	1U		145.850 MHz	Amateur			AX.25					
H-IIA/GPM 27 Feb 2014	INVADER (CO-77)	39578	1U	Custom Beacon	437.200 MHz 437.325 MHz	Amateur Amateur	800 mW 100 mW		AX.25 CW	1200 baud AFSK	dipole dipole	Active	Apr 2014	
	KSAT-2	39573	1U	S-band Ku-band										
	OPUSAT	39575	1U	Custom	437.150 MHz	Amateur			CW/AX.25	1200 baud AFSK/9600 baud GMSK		Alive	Apr 2014	
CRS-3/ ELaNa-5 18 Apr 2014	SporoSat	39681	3U	StenSat	437.100 MHz		1 W	Integrated	AX.25	1200 baud AFSK	monopole	Deorbited	Aug 2014	
	TSAT	39682	2U	GlobalStar STX2	1.6 GHz	Experimental <sup>4</sup>	200 mW	PIC18F2620	Proprietary	36bytes/sec	Patch	Deorbited	Aug 2014	
	PhoneSat-v2.5	39684	1U		437.425 MHz				AX.25	1200 baud AFSK	monopole	Deorbited	Aug 2014	
	ALL-STAR	39683	3U	Custom SDR	2401.7 MHz	Experimental						Deorbited	Aug 2014	
	KickSat	39685	3U		437.505 MHz		1 W		AX.25	1200 baud AFSK		Deorbited	Aug 2014	
ISILaunch-07/Dnepr 19 June 2014	AntelSat <sup>5</sup>	40034	2U	Custom (beacon) Custom (downlink) Custom (downlink)	437.280 MHz 437.575 MHz 2403 MHz	Amateur Amateur Amateur	200 mW 1 W 1 W		CW AX.25 AX.25	1200 baud FSK/AFSK 500 kbps GFSK	N/A monopole patch	Alive	Aug 2014	
	AeroCube-6 <sup>(2)</sup>	40045+	0.5U	AdvRadio CC1101	915 MHz	Experimental	1.3 W	Integrated	Proprietary	500 kbps FSK	patch		Aug 2014	
	LEMUR-1 <sup>6</sup>	40044	3U	AstroDev Lithium	402 MHz	Experimental	2 W	Integrated						
	TigriSat <sup>6</sup>	40043	3U											
	Flock-1 (11)	40027+	3U+	D3-400-T D3-8200-T	401.3 MHz 8.1 GHz	Earth exploration Earth exploration	1.6 W 3 W			IP over DVB-S2	monopole patch/helix	Active	Aug 2014	
	Perseus (2)	40039+	6U	AstroDev Lithium Custom transmitter	401 MHz 26.8 GHz	Experimental Experimental	1 W 500 mW	Integrated Integrated	AX.25 DVB-S2	40 Mbps	Monopole Horn	Alive	Aug 2014	
	QB50P1	40025	2U	ISIS TRXUV FUNcube-3	145.815 MHz 145.950 MHz	Amateur Amateur	200 mW 400 mW	Integrated	CW/AX.25	15 WPM/1200 baud BPSK Linear transponder	dipole dipole	Alive	Aug 2014	
	QB50P2	40032	2U	ISIS TRXUV AMSAT-Francophone	145.880 MHz 145.940 MHz	Amateur Amateur	200 mW	Integrated	CW/AX.25 FX25	15 WPM/1200 baud BPSK 9600 bps FSK	dipole dipole	Alive	Aug 2014	
	DTUSat-2	40030	1U	Custom	2.401 GHz	Amateur	220 mW		CW/FSK					
	PolyITAN-1	40042	1U		437.675 MHz	Amateur	600 mW		CW/AX.25	9600 baud FSK	dipole	Alive	Aug 2014	
	Duchifat-1	40021	1U	ISIS TRXUV	145.980 MHz 145.825 MHz	Amateur Amateur	200 mW	Integrated	CW/AX.25 AX.25	15 WPM/1200 baud BPSK 1200 baud AFSK	dipole dipole	Alive	Aug 2014 Aug 2014	
NanoSatC-Br 1	40024	1U	ISIS TRXUV	145.865 MHz	Amateur	200 mW	Integrated	CW/AX.25	15 WPM/1200 baud BPSK	dipole	Alive	Aug 2014		
PACE	40022	2U		437.485 MHz	Amateur	1 W		CW/AX.25	15 WPM/1200 baud FSK	dipole		Aug 2014		
POPSAT-HIP-1	40028	3U		437.405 MHz	Amateur			CCSDS				Aug 2014		
PSLV-C23 30 June 2014	VELOX-1	40057	3U	ISIS TRXUV	145.980 MHz	Amateur	200 mW	Integrated	AX.25	1200 baud BPSK		Alive	Aug 2014	
Soyuz-2 8 July 2014	UKube-1	40074	3U	ISIS TRXUV FUNcube-2 CS-CPUT-STX-01	145.840 MHz 145.915 MHz 2.401 GHz	Amateur Amateur Amateur	200 mW 300 mW 1 W	Integrated	AX.25	1200 baud BPSK 1200 baud BPSK 2 Mbps QPSK	dipole dipole patch	Alive	Aug 2014	
ISS 18 Aug 2014	Chasqui-1 <sup>7</sup>	40117	1U		437.025 MHz				AX.25	1200 baud AFSK	monopole	DOA	Mar 2015	
SMAP/ELaNa-10 31 Jan 2015	ExoCube	40380	3U	Assem AX5042	437.270 MHz	Amateur	1 W	AT91 <sup>8</sup>	AX.25	9600 baud FSK	monopole	Alive	Mar 2015	
	GRIFEX	40379	3U	AstroDev Lithium	437.485 MHz	Amateur	300 mW	Integrated	AX.25	9600/19200 baud GFSK	monopole	Active	Mar 2015	
	FIREBIRD-2 (2)	40377+	1.5U		437.405 MHz	Amateur			AX.25	19200 baud GMSK	dipole	Alive	Mar 2015	

<sup>1</sup> This is the main spacecraft processor.  
<sup>2</sup> This beacon was built by Cal Poly based on CP2/3/6 heritage.  
<sup>3</sup> These satellites were deployed from UniSat-5. Apparently Dove 4 (not listed) is still stuck inside UniSat-5 and did not deploy.

Launch/Deployment	Satellite	Object	Size	Radio	Downlink	Satellite Service	Power	TNC	Protocol	Data Rate/Modulation	Antenna	Status	Updated
CRS-5/ISS <sup>1</sup> 5 Feb 2015	AESP-14	40389	1U		437.600 MHz	Amateur	500 mW		AX.25	9600 baud GFSK	dipole	DOA	Mar 2015
CRS-5/ISS <sup>1</sup> 3 March 2015	Flock-1d' (2)		3U+	D3-400-T D3-8200-T	401.3 MHz 8.1 GHz	Earth exploration Earth exploration	1.6 W 3 W		IP over DVB-S2	40 Mbps	monopole patch/helix	Active	Mar 2015
Orb-2/ISS 6 March 2015	Flock-1b (22) <sup>2</sup>	40451+	3U+	D3-400-T D3-8200-T	401.3 MHz 8.1 GHz	Earth exploration Earth exploration	1.6 W 3 W		IP over DVB-S2	40 Mbps	monopole patch/helix	Active	Mar 2015
	MicroMAS	40457	3U	L-3 Cadet	465 MHz	Meteorological	1 W	Integrated	Proprietary	3 Mbps	dipole	Alive	Mar 2015
	LambdaSat	40458	1U	StenSat Iridium	437.462 MHz	Amateur	1 W		AX.25 Proprietary	1200 baud AFSK	dipole patch	Active	Mar 2015
	TechEdSat-4 GEARRSAT		3U	Iridium GlobalStar STX2		Experimental Experimental		Integrated Integrated	Proprietary Proprietary		patch patch		Mar 2015
ELaNa-11/AFSPC-5/ ULTRASat 20 May 2015	LightSail-A	40661	3U		437.435 MHz	Amateur	1.5 W	Integrated	AX.25	9600 baud FSK	dipole	Deorbited	Apr 2016
	OptiCube (3) <sup>3</sup>	40653+	3U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Apr 2016
	AeroCube-8 (2)	40659+	1.5U	AdvRadio CC1101	915 MHz	Experimental	1.2 W			500 kbps FSK	patch	Active	Apr 2016
	GEARRS-2	40657	3U	GlobalStar STX2	1616 MHz	Experimental	400 mW	Integrated	Proprietary	9600 baud CDMA	patch		Apr 2016
	USS Langley	40652	3U		437.475 MHz	Amateur				9600 baud FSK		DOA	Apr 2016
	BRICSat-P	40655	1.5U	Astrodev He-100 ADF7012	437.975 MHz 437.350 MHz	Amateur Amateur	300 mW 500 mW	Integrated ATMega8	AX.25 AX.25	1200 baud AFSK 2.5 kHz PSK-31	monopole monopole	Dead	Apr 2016
	P-SAT	40654	1.5U	Byonics MTT4B ADF7012	145.825 MHz 435.350 MHz	Amateur Amateur	300 mW 500 mW	Integrated ATMega8	AX.25 AX.25	1200 baud AFSK 2.5 kHz PSK-31	monopole monopole	Alive	Apr 2016
PSLV-C28 10 July 2015	DeOrbitSail	40719	3U		145.975 MHz	Amateur			AX.25	1200 baud BPSK	monopole	Alive	Apr 2016
CRS-6/ISS 13 July 2015	Arkyd-3-Reflight	40742	3U	Microhard MHX-2420	2.4 GHz	Experimental	1 W	Integrated	Proprietary FHSS	19.2 kbps	microstrip		Apr 2016
	Flock-1e (14)		3U+	D3-400-T D3-8200-T	401.3 MHz 8.2 GHz	Earth exploration Earth exploration	1.6 W 3 W		IP over DVB-S2	100 Mbps	monopole patch/helix	Active	Apr 2016
	Centennial-1	40743	1U	Astrodev He-100	437.615 MHz	Experimental	3 W	Integrated	AX.25	1200 baud GFSK	Monopole		Apr 2016
HTV-5/ISS <sup>4</sup> 17 Sept 2015	SERPENS	40897	3U		437.365 MHz	Amateur			CSP	1200 baud MSK		Deorbited	Apr 2016
	S-CUBE	40898	3U										Apr 2016
Long March 6 19 Sept 2015	NUDT-PhoneSat	40900	3U										Apr 2016
Long March 11 25 Sept 2015	STU-2A	40928	3U	NanoCom AX100	435.645 MHz				CSP	4800/9600 baud GMSK			Apr 2016
	STU-2B	40927	2U	NanoCom AX100	437.645 MHz				CSP	4800/9600 baud GMSK			Apr 2016
	STU-2C	40926	2U	NanoCom AX100	435.645 MHz				CSP	4800/9600 baud GMSK			Apr 2016
PSLV-C30 28 Sept 2015	Lemur-2 (4)	40932+	3U	AstroDev Li-1	401 MHz 2.02 GHz	Space operation Earth exploration	1 W 2 W	Integrated	AX.25	9600 baud MSK 1 Mbps QPSK	turnstile patch	Alive	Apr 2016
HTV-5/ISS <sup>4</sup> 5 Oct 2015	AAUSAT5	40948	1U	ADF7021/AWT6388	437.425 MHz	Amateur	1 W		CSP	4800 bps GMSK/30 WPM CW	dipole	Deorbited	Apr 2016
	GOMX-3	40949	3U	NanoCom AX100 Syrlinks EWC27	437.250 MHz 8.1 GHz	Amateur Earth Exploration	1 W 2 W	Integrated Integrated	CSP	1200-9600 baud GMSK 3 Mbps OQPSK	turnstile patch	Alive	Apr 2016
	Flock-2b (12) <sup>5</sup>	40950+	3U+	D3-400-T D3-8200-T	401.3 MHz 8.2 GHz	Earth exploration Earth exploration	1.6 W 3 W	CC1110	Proprietary IP over DVB-S2	4800 baud GMSK 80 Mbps	monopole patch/helix	Active	Apr 2016
NROL-55/GRACE/ ELaNa-12 8 Oct 2015	AeroCube-5c	40965	1.5U	Freewave FGRM AdvRadio	915 MHz 915 MHz	Experimental Experimental	1.3 W	Integrated	Proprietary	500 kbps FSK	patch patch	Alive	Apr 2016
	AeroCube-7A/ OCSD	40966	1.5U	Freewave FGRM SDRadio Laser	915 MHz 915 MHz 1064 nm	Experimental Experimental N/A	1.3 W 6 W	Integrated	Proprietary	500 kbps FSK 40 Mbps	patch patch	Alive	Apr 2016
	Fox-1A	40967	1U	FM Transponder	145.980 MHz	Amateur	800 mW	N/A	N/A	FM	dipole	Active	Apr 2016
	BisonSat	40968	1U	Astrodev He-100	437.375 MHz	Amateur	1 W	MSP430	AX.25	9600 baud	dipole	Alive	Apr 2016
	ARC1	40969	1U	CC1101	437.565 MHz	Amateur	1 W	Integrated	AX.25	9600 baud FSK	monopole	DOA	Apr 2016
	SNAP-3 (3)	40970+	3U										
	LMRST-Sat	40971	3U	AstroDev He-100 Ranging transponder	462.0 MHz 8.45 GHz	Meteorological satellite Space Research	1 W 1 mW	Integrated	AX.25 N/A	9600 baud FSK N/A	dipole patch	DOA	Apr 2016
	PropCube (2) SINOD-D (2)	40973+ 40974+	1U 2U									dipole DOA	Alive DOA
PSLV-C29 16 Dec 2015	Velox-II	41171	6U		145.930 MHz					1200 baud BPSK			May 2016
	Galassia	41170	2U	NanoCom U482 Custom <sup>6</sup>	436.400 MHz 145 MHz ± 0.9 MHz		1 W 50 mW	Integrated N/A	CSP N/A	1200 baud FSK CW	turnstile dipole	Active	Aug 2016
	Athenoxat-1	41168	3U		437.485 MHz	Amateur				2400 baud MSK			May 2016
CRS-4/ISS/AGS4 29 Jan 2016	Bevo-2 <sup>7</sup>	41314	3U	AstroDev He-100	437.325 MHz	Amateur	2.5 W	Integrated	AX.25	38.4 kbps FSK	dipole	Alive	May 2016
Soyuz/Sentinel-1B/ VS-14 22 Apr 2016	OUFIT-1	41458	1U	ADF7021 ADF7021	145.950 MHz 145.980 MHz	Amateur Amateur	1 W 100 mW	MSP430 MSP430	AX.25 CW	9600 baud FSK/D-STAR 11 WPM	monopole monopole	Active	May 2016
	est@r-II	41459	1U	Radiometrix	437.485 MHz	Amateur	500 mW	PIC16	AX.25	1200 baud AFSK/CW	dipole	Alive	May 2016
	AAUSAT4	41460	1U	ADF7021/AWT6388	437.425 MHz	Amateur	900 mW	AT90CAN128	CSP/CW	2400 baud FSK/30 WPM	dipole	Active	May 2016
Soyuz 28 Apr 2016	SamSat-218D	41466	3U		145.870 MHz	Amateur				CW		DOA	May 2016
Cygnus OA-4/ISS ELaNa-9 16 May 2016	MinXSS	41474	3U	AstroDev Li-1	437.350 MHz	Amateur	2 W	Integrated	AX.25	9600 baud FSK	monopole	Active	Jun 2016
	Cadre	41475	3U	AstroDev Li-1 Indigo	437.485 MHz 3.404 GHz	Amateur Amateur	2 W 1 W	Integrated ProASIC3	AX.25	9600 baud FSK 1 Mbps OQPSK	dipole patch		Jun 2016
	STMSat-1	41476	1U		437.800 MHz	Amateur			SSTV		dipole		Jun 2016
	NODES (2)	41477+	1.5U	AstroDev Li-1 StenSat MHX2420	437.1 MHz 437.1 MHz 2.4 GHz	Amateur Amateur Amateur	1 W 1 W 1 W	Integrated Integrated Integrated	AX.25 AX.25 Proprietary	9600 baud FSK 1200 baud AFSK	monopole monopole patch	Active	Jun 2016
	Flock-1e (8)	41479+	3U+		401.3 MHz 8.2 GHz	Earth Exploration Earth Exploration	1 W 2 W	CC1110	Proprietary IP over DVB-S2	4800 baud GMSK 100+ Mbps	monopole helix	Active	Jun 2016
	Lemur-2 (4)	41485+	3U	AstroDev Li-1 SAT-SDR-2	401 MHz 2.02 GHz	Experimental Experimental	2 W 2 W			9600 baud GMSK 1 Mbaud QPSK	dipole patch		Jun 2016
Cygnus OA-6/ISS <sup>8</sup> 30 May 2016	Flock-1e (16)	41563+	3U+		401.3 MHz 8.2 GHz	Earth Exploration Earth Exploration	1 W 2 W	CC1110	Proprietary IP over DVB-S2	4800 baud GMSK 100+ Mbps	monopole helix	Active	Jun 2016
Cygnus OA-6 <sup>8</sup> 22 June 2016	Lemur-2 (4)	41485+	3U	AstroDev Li-1 SAT-SDR-2	401 MHz 2.02 GHz	Experimental Experimental	2 W 2 W			9600 baud GMSK 1 Mbaud QPSK	dipole patch		Jul 2016
PSLV-C34/ CartoSat-2 22 June 2016	SathyabamaSat	41600	2U		145.980 MHz	Amateur	200 mW			2400 baud BPSK		Alive	Aug 2016
	SWAYAM	41607	1U	Custom	437.025 MHz	Amateur	1 W		COEP	1200 baud AFSK/CW	dipole	Alive	Aug 2016
	Flock-2p (12)	41606+	3U+		401.3 MHz 8.2 GHz	Earth Exploration Earth Exploration	1 W 2 W	CC1110	Proprietary IP over DVB-S2	4800 baud GMSK 100+ Mbps	monopole helix	Active	Aug 2016

<sup>1</sup> These three satellites were brought up to the ISS on SpaceX CRS-5, launched on 10 Jan 2015. AESP was deployed by itself on 5 Feb 2015 by the J-SSOD, and the two Doves were deployed out of a single NRCSD on 3 March 2015.

<sup>2</sup> A total of 28 Dove satellites were expected to be released, but the NRCSD failed partway through the deployment. 6 Dove satellites were returned to earth on SpaceX CRS-5.

<sup>3</sup> Some primary and backup CubeSats were not ready for this launch, so these three optical calibration CubeSats were just mass models with different coatings on the outside.

<sup>4</sup> All satellites on these two deployments were brought to the station by the HTV-5, launched on 19 August 2015. SERPENS and S-CUBE were deployed by the J-SSOD deployer in mid September, the other satellites were deployed from the NRCSD in the beginning of October.

<sup>5</sup> Two Flock-2b satellites were stuck in a NRCSD deployer and brought back down to earth.

<sup>6</sup> This was a three-frequency TEC experiment.

<sup>7</sup> Bevo-2 was deployed from an ISIPod inside AggieSat-4, which was deployed from the ISS by the Space Station Integrated Kinetic Launcher for Orbital Payload Systems (SSIKLOPS).

<sup>8</sup> The Cygnus OA-6 launch on 23 March 2016 contained 16 Dove CubeSats, deployed via NRCSDs from the Kibo airlock on 30 May 2016. After the Cygnus was filled with trash and undocked from the ISS, it deployed 4 Lemur-2 CubeSats on 22 June 2016 before burning up. A 5th Lemur-2 CubeSat did not deploy successfully and also burned up.