

Comparison Table of Space Networks and Satellites

As of the beginning of 2015

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The Table lists radio space network appearing in the ITU Space Network List Online, as of 16 January 2015. There were 1085 entries of NOTIFIED space network in the geostationary orbit. Data on satellites were taken from Issue 17 of the Classification of Geosynchronous Objects published by the European Space Operations Centre in Darmstadt, Germany on 28 March 2015. It reflects the situation at the beginning of 2015.

Radio space networks are supposed to transmit only if they are in the “notified” category. Technically, transmissions require the presence of a properly equipped satellite at the relevant orbital nominal position. Available data do not permit to find out which radio space network is served by a satellite located at the same orbital position and which is not. Only if there is no satellite at or near the orbital position, it is certain that the radio space network cannot operate. The Table shows clearly such cases. In some cases even the permitted period of absence of 3 years has been exceeded.

The Table lists all commercial satellites and most of satellites reserves for governmental services. Readers interested in commercial satellites only will find relevant lists and graphs in monthly sections of this website.

In the present Table, the left-hand part lists space networks in boxes for each nominal orbital position. Satellite at or close to the nominal position appear in the right-hand part of the page. The last but one column contains the latest position in 2014.

The last column refers to tables in the “Classification”:

Objects in drift orbits **D** and in libration orbits **L** around one or both libration points have obviously not included.

C1.nnn refers to Section 3, Table 1, Satellites under longitude and inclination control. It contains 303 entries, the main body of TV satellites accessible with fixed antennas.

C2.nn refers to Section 3, Table 2, Satellites under longitude control. It contains 87 entries, reception of transmissions depending on technical parameters of antennas.

2C1.nn and **2C2.nn** refer to Section 4, Tables 4.1 and 4.2 with the same distinction between C1 and C2 as above. They contain 9 and 55 objects respectively, mostly for governmental services.

Ind. refers to Section 6, Table 4, Objects of indeterminate status, mostly recently moved objects. A few of these were found to keep at station in March and April 2015. These objects appear in our Table.

Comparison Table of Space Networks and Satellites						
Version of 28 April 2015						
Space Networks			Satellites			
Nominal Longitude	Admin.	Space Network Name	COSPAR Int. Satellite Name		Longitude	Source
			Designation			
0.00 E	F/ESA USA	MSG USCID-A1	2012-035B	MSG 3 (Meteosat 10)	0.5 W	C1.303
1.00 E	RUS RUS RUS RUS	TOR-15M STATSIONAR-22 VOLNA-21 GALS-15				
2.00 E	HOL	NSS-20				
3.00 E	F F F F F F	TELECOM-3C SYRACUSE-3E VIDEOSAT-8-KU-C SYRACUSE-31E TELECOM-4C GEOSAT-3E TELECOM-2C	2010-037B 2014-030A	RASCOSM-QAF 1R EUTELSAT 3B	2.9 E 3.1 E	C1.1 C1.2
4.00 E	USA USA F F/EUT F/EUT	MILSTAR 13 USGAE-2 F-SAT-KU2-E-4E EUTELSAT 2-4E EUTELSAT 3-4E	2002-040B	MSG 1 (Meteosat 8), i=3.8	3.8 E	C2.1
4.80 E	S	SIRIUS-2	2007-057A	Sirius 4	4.8 E	C1.3
5.00 E	S S/NOT LUX S USA S S	SIRIUS-3B TELE-X LUX-G3-2 SIRIUS-P USMB-5 SIRIUS-5E SIRIUS-5E-2	2012-036A	SES-5	5.0 E	C1.4
5.50 E	CTI/RAS	RASCOSM-C				
6.00 E	G G G	SKYNET-4B SKYNET-4A SKYNET-5C	2007-007B	Skynet 5A	5.9 E	C1.5
7.00 E	F/EUT F/EUT F/EUT F/EUT F F/EUT F USA	EUTELSAT 2-7E EUTELSAT 3-7E EUTELSAT-KA-7E EUTELST/B1/7E F-SAT-KU2-E-7E EUTELSAT 1-3 F-SAT-KA -E-7E USMB-5	2004-008A 2013-022A	Eutelsat W3A Eutelsat 3D	7.0 E 7.0 E	C1.6 C1.7
8.00 E	RUS RUS RUS RUS	TOR-8M GALS-7 STATSIONAR-18 VOLNA-15	1997-008A	USA 130 (DSP F18), i=11.8	7.7 E	2C2.1
8.50 E	USA	USGON-2				
9.00 E	F F	F-SAT-KA -E-9E EDRS-1	2010-019A 2006-007B	KA-SAT Hot Bird 7A	9.0 E 9.0 E	C1.8 C1.9
10.00 E	F/EUT F/EUT BEL F/ESA F F F F	EUTELSAT2-10E EUTELSAT3-10E SATCOM-4/10 E MSG-S1 3GSAT-G17R F-SAT-C-E-10E F-SAT-KU-2-E-10E F-SAT-S-E-10E	2009-016A 2005-049B	Eutelsat W2A MSG 2 (METEOSAT 9)	10.0 E 9.5 E	C1.11 C1.10
11.50 E	G	INTELSAT N KA 11.5E				
11.80 E	I	SICRAL-3H	2009-020A	Sicral 1B	11.9 E	2C1.1
12.00 E	RUS RUS RUS RUS RUS	TOR-18M GALS-17 VOLNA-27 STATSIONAR-27 PROGNOZ-2	2009-010A	Raduga-1	11.4 E	C2.2
13.00 E	F/EUT F/EUT F/EUT F D D F-EUT F	EUTELSAT 2-13E EUTELSAT 3-13E EUTELSAT-B1-13E F-SAT-KU2-E-13E GENESIS-11 GENESIS-12 EUTELSAT-KA-13E F-SAT-KA-E-13E	2008-065A 2006-032A 2009-008B 2010-021B	Hot Bird 9 Hot Bird 8 Atlantic Bird 4A ComsatBw-2	13.0 E 13.0 E 13.0 E 13.2 E	C1.12 C1.13 C1.14 C1.15
14.00 E	RUS	TOR-12M	2000-019A	Sesat	14.5 E	C2.3
15.00 E	RUS RUS RUS	STATSIONAR-23 VOLNA 23 GALS-12				

Nominal Longitude	Admin.	Space Network Name	COSPAR Int. Designation	Satellite Name	Longitude	Source
16.00 E	F/EUT	EUTELSAT 2-16E	2011-057A	Eutelsat W3C	16.0 E	C1.16
	F/EUT	EUTELSAT 3-16E	1998-013A	Hot Bird 4	15.8 E	C2.4
	F	F-SAT-KU-E-16E				
	F/EUT	EUTELSAT-KA-16E				
16.20 E	F/EUT	EUTELSAT-B1-16E				
	I	SICRAL-3A				
	I	SICRAL-2A				
16.80 E	CHN	CTDRS-2-16.8E	2012-040A	Tian Lian 1-03	16.8 E	C1.17
17.00 E	RUS/IK	INTERSPUTNIK-17E	2011-074A	Amos 5	17.0 E	C1.18
	RUS/IK	INTERSPUTNIK-17E-CK				
19.00 E	LUX	LUX-KA-19E				
19.20 E	LUX	GDL-7	2008-057A	Astra 1M	19.2 E	C1.19
	LUX	LUX-G3-19.2E	2006-012A	Astra 1KR	19.2 E	C1.20
	LUX	GDL-6	2011-041A	Astra 1N	19.2 E	C1.21
			2007-016A	Astra 1L	19.2 E	C1.22
20.00 E	ARS/ARB	ARABSAT 2-C				
	ARS/ARB	ARABSAT 5C-20E	2011-049B	Arabsat 5C	20.0 E	C1.23
21.00 E	USA	AFRIBSS	2013-011A	USA 241(SBIRS GEO2)	20.6 E	2C2.2
			1998-063A	AfriStar 1	21.0 E	C2.5
			2014-089A	Astra 2G	21.1 E	Ind.10
21.50 E	F/EUT	EUTELSAT2-21.5E	2012-062B	Eutelsat 21B	21.6 E	C1.24
	F/EUT	EUTELSAT3-21.5E				
	G	ARTEMIS-21.5E-NAV	2001-029A	Artemis	21.4 E	C2.6
	F/EUT	EUTELSAT 1-5				
23.00 E	G	ARTEMIS-21.5E-DR				
	G	ARTEMIS-21.5E-LM	2001-005A	Sicral, i=5.9	21.9 E	2C2.3
	RUS	STATSIONAR-19				
	RUS	VOLNA-17				
23.50 E	RUS	GALS-8				
	D	DFS II-1				
	D	DFS-1				
	LUX	LUX-G3-24.2E	2010-021A	Astra-3B	23.4 E	C1.25
24.00 E	RUS	TOR-7M				
24.20 E	LUX	LUX-24.2E	2007-056B	Skynet 5B	24.3 E	C1.26
25.00 E	G	INMARSAT-3 IOR WEST	1998-006B	Inmarsat-3 F5	24.6 E	C2.8
	G	INMARSAT-4 25E	2005-044A	Inmarsat-4 F2	25.1 E	C2.9
	G	ESAT 1	2013-038A	Alphasat	24.9 E	C2.7
	G	INMARSAT-XL1				
25.50 E	F/EUT	EUTELSAT 1-8	2013-044A	Eshail 1, Eutelsat-25B	25.5 E	C1.27
	F/EUT	EUTELSAT 3-25.5E				
	F	F-SAT-KU3-E-25.5E				
26.00 E	ARS/ARB	ARABSAT 2-B	2010-025A	Badr 5	25.5 E	C1.28
	ARS/ARB	ARABSAT 5-B-26E	2006-051A	Badr 4	26.0 E	C1.29
	ARS/ARB	ARABSAT-KU-26E	2008-034B	Badr 6	26.0 E	C1.30
	ARS/ARB	ARABSAT-EXT-C2				
28.20 E	IRN	ZOHREH-2				
	ARS/ARB	ARABSAT 1-B				
	LUX	LUX-28.2E	1998-050A	Astra 2A	28.2 E	C1.31
	LUX	LUX-G3-28.2E	2012-051A	Astra 2F	28.2 E	C1.32
			2001-025A	Astra 2C	28.2 E	C1.33
			2000-081A	Astra 2D, i=1.9	28.0 E	C2.10
28.50 E			2013-056A	Astra 2E	28.4 E	C1.34
	D	DFS II-2	2001-011A	Eurobird 1	28.5 E	C1.35
	D	DFS-2				
29.00 E	USA	FLTSATCOM-C INDOC-1	1993-056A	USA 95 (UFO F-2) i=10	28.7 E	2C2.4
	E	SECOMSAT B29E	2005-005A	XTAR-EUR	29.0 E	C1.36
			2008-011A	AMC-14, i=17.4	29.4 E	C2.11
			2002-001A	USA 164 (Milstar-2 F3)	30.0 E	2C2.5
30.00 E	USA	USGAE-16R				
30.50 E	ARS/ARB	ARABSAT 5A-30.5E	2010-032B	Arabsat 5A	30.5 E	C1.37
	ARS/ARB	ARABSAT 2-A				
31.00 E	ARS/ARB	ARABSAT-KA-30.5E				
	LUX	LUX-G3-4	2003-043A	Eurobird 3, i=0.6	30.8 E	C2.12
	TUR	TURKSAT-31E-A	1995-055A	Astra 1E, i=3.8	31.2 E	C2.13
	G	UKMMSAT-B1-TTC-C	2012-043B	Hylas 2	31.0 E	C1.38
	G	UKJKSAT-1	2000-051A	Astra 2B, i=0.4	31.4 E	C2.14
	TUR	TURKSAT-1B	2014-012B	Astra 5B	31.5 E	C1.39
	TUR	TURKSAT-K1				
33.00 E	TUR	TURKSAT-2B				
	F/EUT	EUTELSAT 2-33E	2002-051A	Eutelsat W5	32.8 E	C1.41
	F/EUT	EUTELSAT 3-33E	1999-009B	Skynet 4E, i=9.1	32.3 E	C2.15
	USA	INTELSAT5 33E				
	USA	INTELSAT7 33E	1994-034A	Intelsat VII F-2, i=2.8	32.9 E	C2.16
	USA	INTELSAT8 33E				
	USA	INTELSAT9 33E	2011-016A	Intelsat New Dawn	32.8 E	C1.40
	F	F-SAT-KU3-E-33E				
	USA	USASAT-55I				
	F/EUT	EUTELSAT-KA-33E				
34.50 E	USA	USASAT-60N				
	USA	USMB-7				
			1993-076A	NATO IVB, i=11.4	33.8 E	C2.17

Nominal Longitude	Admin	Space Network Name	COSPAR Int Designation	Satellite Name	Longitude	Source
35.00 E	RUS RUS RUS RUS RUS	TOR-2M GALS-6 VOLNA-11 STATIONAR-D3 STATIONAR-2 PROGNOZ-3				
36.00 E	RUS F/EUT F/EUT F/EUT F	RST-1 EUTELSAT2-36E EUTELSAT3-36E EUTELSAT-KA-36E F-SAT-KU3-E-36E	2000-028A 2009-065A	Eutelsat W4 Eutelsat W7	36.1 E 35.9 E	C1.43 C4.42
37.00 E	I	SICRAL-4-37E				
38.00 E	PAK PAK PAK	PAKSAT-1 PAKSAT-1R PAKSAT-1R1	2014-006B 2011-042A	ATHENA-FIDUS Paksat 1R	37.8 E 38.0 E	C1.44 C1.45
39.00 E	GRC CYP CYP	HELLAS-SAT KYPROS-SAT-C KYPROS-SAT-L4	2003-020A	Hellas Sat 2	39.00 E	C1.46
39.50 E	G	DJCF 1A				
40.00 E	RUS RUS RUS RUS	VOLNA-4R LOUTCH-7 EXPRESS-4 EXPRESS-4B				
42.00 E	TUR TUR TUR TUR TUR	TURKSAT-1D TURKSAT-K2 TURKSAT-KX TURKSAT-1A TURKSAT-42E-A	2014-007A 2008-030B 2001-002A 2011-077A	Turksat 4A Turksat 3A Turksat 2A (Eurasiasat 1) Nigcomsat 1R	42.0 E 42.0 E 42.0 E 42.5 E	C1.47 C1.48 C1.49 C1.50
44.00 E	USA UAE USA UAE UAE	USGGR-4 EMARSAT-4E USCSID-A2 EMARSAT-1F EMARSAT-1F/M	2009-001A 2003-026A	USA 202 (NROL-26) Thuraya-2, i=4.1	44.1 E 44.0 E	C2.6 C2.18
44.50 E	ARS/ARB	ARABSAT 7F-44.5E				
45.00 E	D RUS RUS RUS RUS RUS D RUS	EUROPE*STAR/1 GALS-2 TOR-3 STATSIONAR-9A STATSIONAR-D4 VOLNA-3 EUROPESTAR-45E STATSIONAR-9A	2000-068A	Europe*Star F1	45.0 E	C1.51
46.00 E	G MLA	DJCF 1B MEASAT-46A	2013-006B	Azerspace	47.0 E	C1.52
47.00 E	F F F	SYRACUSE-3H SYRACUSE-31H SYRACUSE-4H	2005/041B 1996/026A 1994-054A	Syracuse 3A USA 118 (Mercury 2), i=9.5 USA 105 (Mercury 1), i=9.9	47.0 E 46.9 E 47.1 E	C1.53 2C2.7 2C2.8
47.50 E	D D	EUROPE*STAR-3 EUROPESTAR-47.5E	2009-047A 2001-019A 2012-016A	USA 207 (PAN) PAS 10 Yahsat 1B	47.7 E 47.5 E 47.6 E	2C1.2 C1.54 C1.55
48.00 E	IND IND IND IND IND	INSAT-2T(48) INSAT-2(48) INSAT-2M(48) INSAT-EK48R INSAT-EK48	2008-065B 1996-067A	Eutelsat W2M Hot Bird 2, i=4.8	48.1 E 48.3 E	C1.56 C2.19
49.00 E	RUS RUS RUS RUS RUS RUS USA	TOR-16M GALS-13 VOLNA-25 STATSIONAR-24 ROSCOM-4 YAMAL-49E USMB-8	2003-053A	Yamal 200 N2, Yamal 202	48.9 E	C1.57
50.00 E	TUR TUR TUR TUR	TURKSAT-K3 TURKSAT-C50E TURKSAT-50E-A TURKSAT-1C				
50.50 E	THA THA	THAICOM-N1 THAICOM-C1	1997-053A 1998-056B	Intelsat VIII F-3 (NSS 803)i=; 50.5 E Sirius 3, i=4.9	50.5 E 51.2 E	C2.20 C2.21
51.50 E	CHN	CHINASAT-51.5E				
52.50 E	UAE UAE UAE	EMARSAT-1G EMARSAT-5G YAHSAT	2012-034A 2011-016B	USA 237 (NROL-15), i=1.9 Yahsat 1A	52.5 E 52.5 E	2C2.9 C1.58
53.00 E	G G G RUS RUS RUS RUS	SKYNET-4C SKYNET-4L SKYNET-5D EXPRESS-5 EXPRESS-5B EXPRESS-5KA VOLNA-1	2012-075A 2003-060A 2014-058A	Skynet 5D Ekspress AM22 Luch	52.8 E 53.0 E 54.0 E	C1.59 C1.60 C1.61

Nominal Longitude	Admin.	Space Network Name	COSPAR Int. Designation	Satellite Name	Longitude	Source
55.00 E	RUS	KUPON 1	1996-021A	Astra 1F	54.7 E	C1.62
	IND	INSAT-2(55)				
	USA	MILSTAR-4				
	RUS	KUPON-IT	2012-070A	Yamal 402	54.9 E	C1.63
	RUS	KUPON-IS	2011-022A	GSAT-8	55.1 E	C1.64
	IND	INSAT-EK55R	2014-078A	GSAT-16	54.7 E	Ind. 6
	IND	INSAT-KU10(55)E				
	RUS	KUPON-1M				
IND	INSAT-2T(55)					
IND	INSAT-EK55					
56.00 E	RUS	RST-2	2014-010A	Ekspress-AT1	56.0 E	C1.65
57.00 E	USA	USGCSS PH3 INDOC-2	2000-065A	USA 153 (DSCS III B-11),i=4.6	56.6 E	2C2.10
	USA	USGCSS PH3B INDOC-2				
	HOL	NSS-8	2009-058A	NSS 12	57.0 E	C1.66
	HOL	NSS-36				
	HOL	INTELSAT7 57E				
	HOL	INTELSAT8 57E				
HOL	INTELSAT5A INDOC2					
57.50 E	D/EUM	METEOSAT IODC 57.5E	1997-049B	Meteosat 7, i=9.4	57.6 E	C2.22
58.00 E	RUS	TOR-13M				
58.50 E	KAZ	KAZSAT1	2014-023B	Kazsat-3	58.5 E	C1.67
	KAZ	KAZSAT1M				
58.75 E	CHN	COMPASS-58.75E	2012-008A	Beidou DW 11	58.8 E	C1.68
60.00 E	USA	USGCSS PH3 INDOC	2009-017A	USA 204 (WGS SV-2)	60.2 E	2C1.3
	USA	USGCSS PH3B INDOC				
	USA	INTELSAT6 60E				
	USA	INTELSAT8 60E				
	USA	INTELSAT9 30E	2002-007A	Intelsat 904	60.0 E	C1.69
	USA	USGOVSAT-10	1997-076A	Astra 1G, i=0.5	59.9 E	C2.23
60.75 E	F	CP 60.75E				
			2004-007A	MBSAT	61.0 E	C1.70
62.00 E	USA	INTELSAT6 62E	2013-073A	Inmarsat 5F1	62.6 E	C1.72
	USA	INTELSAT7 62E				
	USA	INTELSAT8 62E				
	USA	INTELSAT9 62E	2002-007A	Intelsat 902	62.0 E	C1.71
USA	USMB-9					
63.00 E	D	GENESIS-9	2009-054B	COMSATBw-1	62.9 E	C1.73
64.00 E	USA	INTELSAT9 64E	2002-041A	Intelsat 906	64.2 E	C1.74
	G	INMARSAT GSO-2N				
	USA	INTELSAT7 64E				
	G	INMARSAT-3IOR-1				
USA	INTELSAT8 64E					
64.50 E	G	INMARSAT-2 IOR-1	1996-020A	Inmarsat 3-F1, i=2.2	64.5 E	C2.24
65.00 E	G	INMARSAT GSO-2H				
	ISR	AMS-4-65E	2013-045A	Amos 4	65.0 E	C1.75
66.00 E	USA	INTELSAT9 66E	2010-065B	Intelsat IS 17	66.0 E	C1.76
	USA	INTELSAT7 66E	1997-007A	JC-Sat 4, i=5.9	65.8 E	C2.25
			1999-052A	Telstar 7	66.2 E	C2.26
			2004-004A	USA 176 (DSP f22), i=6.4	66.0 E	2C2.11
			2012-043A	Intelsat IS- 20	68.5 E	C1.77
68.50 E	USA	USASAT-14I	2003-041A	USA 171, i=7.7	67.5 E	2C2.12
	USA	USASAT-60C				
	USA	USASAT-14I-3				
69.00 E	RUS	TOR-14M				
	RUS	GALS-14				
70.00 E	USA	USGON-1				
	USA	USTRO-6				
	RUS	TOR-17M	2013-062A	Raduga-1M	70.0 E	C1.78
	TON	TONGASAT-h70				
	RUS	STATIONAR-20				
	RUS	VOLNA-19				
RUS	GALS-16					
70.50 E	F/EUT	EUTELSAT-E-70.5E	2012-069A	Eutelsat 70B	70.5 E	C1.79
	F/EUT	EUTELSAT-3-70.5E				
	F	F-SAT-KU3-E-70.5E				
72.00 E	USA	FLTSATCOM-C INDOC-2				
	USA	KASATCOM-3	1999-063A	USA 146 (UFO F10), i=5.6	72.2 E	2C2.13
	AUS	DEF-R-SAT-2A				
	USA	USASAT-14J	1990-002B	Leasat 5, i=11.1	72.0 E	C2.27
USA	USASAT-14J-2	2012-011A	Intelsat IS-22	72.1 E	C1.80	
72.10 E	AUS	ADFUHF-2				
74.00 E	IND	INSAT-2K(74)	2013-044B	GSAT-7	74.0 E	C1.81
	IND	INSAT-2M(74)	2007-037A	Insat 4CR	74.0 E	C1.82
	IND	INSAT-2T(74)	2002-002A	Insat 3C	74.0 E	C1.83
	IND	INSAT-EK74	2014-001A	GSAT- 14	74.0 E	C1.84
	IND	INSAT-2(74)	2002-043A	Kalpana 1 (Metsat-1), i=4.8	73.8 E	C2.28
	IND	INSAT-EK74R				
	IND	INSAT-2(74)				
	IND	INSAT-1B				
	IND	INSAT-1B				

Nominal Longitude	Admin.	Space Network Name	COSPAR Int. Designation	Satellite Name	Longitude	Source
75.00 E	USA	FLTSATCOM-C INDOC-3	2014-006A	ABS-2	74.9 E	C1.85
	RUS//IK	INTERSPUTNIK-75E-Q				
	RUS//IK	INTERBELAR-2				
	USA	USMB-10	2003-057A	USA 174 (UFO F11), i=4.1	75.7 E	2C2.14
	USA	USCID-A3				
	RUS	GOMS-M	2011-001A	Elektro-L No1, i=0.6	75.9 E	C2.29
76.50 E	CHN	APSTAR-4	2012-013A	Apstar 7	76.5 E	C1.86
	CHN	APSTAR-76E				
77.00 E	RUS	CSSRD-2				
	CHN	CTDRS-1-1-77E				
78.50 E	THA	THAICOM-AK2	2014-002A	Thaicom 6	78.5 E	C1.87
	THA	THAICOM-A2	2006-020B	Thaicom 5	78.5 E	C1.88
	THA	THAICOM-N2	1996-003A	Mugunghwa 2(Koreasat 2),i=0.6	78.0 E	C2.30
	THA	THAICOM-A2B				
	THA	THAICOM-G1K				
79.60 E	CHN	CHINASAT-34A				
80.00 E	RUS	PROGNOZ-4	2011-048A	Cosmos-2473	79.9 E	C1.89
	RUS	POTOK-2				
	RUS	EXPRESS 6	2005-010A	Ekspress AM-2, i=0.5	80.0 E	C2.31
	RUS	VOLNA-8R				
	CHN	CHINASAT-31	2012-059A	Beidou DW 16	80.1 E	C1.90
	CHN	COMPASS-80E	2008-019A	Tian Lian 1A, i=1.0	80.0 E	C2.32
	RUS	FOTON-2				
	RUS	EXPRESS 6B				
	CHN	CTDRS-1-80E				
	RUS	EXPRESS-6KA				
RUS	STATIONAR-1					
81.75 E	RUS	YAMAL/E3				
82.00 E	USA	USGGR-8	2013-038B	Insat 3D	82.1 E	C1.91
	AUS	DEF-R-SAT-1A				
	USA	USMB-11				
	USA	USCID-A4				
	J	N-SAT-82E	1999-006A	JC-SAT 6, i=0.4	81.9 E	C2.34
83.00 E	IND	INSAT-2(83)	2012-051B	GSAT-10	83.0 E	C1.92
	IND	INSAT-2K(83)	2005-049A	Insat 4A	83.0 E	C1.93
	IND	INSAT-2(83)	2011-034A	GSAT-12	83.0 E	C1.94
	IND	INSAT-2M(83)	2014-061A	IRNSS-R1C	82.9 E	C2.34
	IND	INSAT-EK83				
	IND	INSAT-EK83R				
84.00 E	CHN	CHINASAT-34B				
85.00 E	RUS	TOR-4M	2010-002A	Raduga-1M	85.0 E	C1.96
	USA	USTRO-9	2007-063B	Horizons 2	84.9 E	C1.95
	RUS	GALS-3				
	RUS	TOR-4				
	USA	INTELSAT6 85E	2009-067A	Intelsat IS-15	85.2 E	C1.97
	USA	INTELSAT KFO5 85E				
	USA	INTELSAT7 85E				
	USA	INTELSAT8 85E				
	RUS	STATIONAR-3				
	RUS	VOLNA-5				
USA	TDRS 85E	1995-035B	TDRS-7, i=14.4	84.6 E	C2.35	
85.40 E	RUS	SADKO-1				
	RUS	STATIONAR-D5				
86.50 E	CHN	FY-2B	2006-033A	Fengyun 2D, i=2.7	86.9 E	C2.36
	CHN	FY-2BS				
	RUS	KUPON-4M				
	KAZ	KAZSAT2M	2011-035B	Kazsat-2	86.5 E	C1.98
	KAZ	KAZSAT2				
87.50 E	CHN	CHINASAT-1	2012-067A	Zhongxing 12	87.5 E	C1.99
	CHN	DFH-3-OC M				
	CHN	DFH-3-OC				
88.00 E	SNG	ST-1A	2011-022B	ST-2	88.0 E	C1.100
	SNG	ST-1A-CK				
	AUS	ADF WEST-2				
	AUS	DDSP-2	2012-003A	USA 233(WGS SV-4)	88.4 E	2C1.4
89.00 E	USA	TDRS 89E	2000-034A	TDRS-8, i=5.9	89.2 E	C2.37
90.00 E	RUS	LOUTCH-3	2012-061B	Yamal-300K	90.1 E	C1.101
	RUS	STATIONAR-6	2012-082A	Yamal-401	89.9 E	Ind. 8
	USA	MILSTAR 5				
	USA	USTRO-7				
	RUS	EXPRESS-7B				
	RUS	VOLNA-8R				
	RUS	EXPRESS-7C				
	RUS	EXPRESS-7				
90.75 E	J	N-SAT-90.75E				
	J	DRTS-90.75E	2002-042B	Kodama(DRTS), i=3.4	90.7 E	C2.38

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91.50 E	MLA	MEASAT-AK 91.5	2006-056A	Measat 3	91.5 E	C1.102
	MLA	MEASAT-IC 91.5	2009-032A	Measat 3A	91.5 E	C1.103
	MLA	MEASAT-91.5	2014-054B	Measat 3B	91.5 E	C1.104
	MLA	MEASAT-1R				
92.00 E	USA	USMB-12	2011-011A	USA 227(UFO F11), i=4.8	92.2 E	2C2.15
	USA	USCID-A5				
92.20 E	CHN	SINOSAT-92.2E	2008-028A	Zhongxing 9	92.2 E	C1.105
	CHN	APSTAR-92E				
	CHN	CHINASAT 92.2E				
	CHN	CHNBSAT-92.2E				
93.00 E	AUS	DEF-R-SAT-3A				
	J	JMCS-93E				
	J	N-SAT-93E				
93.50 E	IND	INSAT-2K(93.5)	2003-013A	Insat 3A	93.5 E	C1.106
	IND	INSAT-2T(93.5)	2007-007A	Insat 4B	93.5 E	C1.107
	IND	INSAT-2M(93.5)	2011-019A	USA 230(SBIRS-GEO 1), i=4.8	94.0 E	2C2.16
	IND	INSAT-EK93.5				
	IND	INSAT-EK93.5R				
	IND	INSAT-2E93.5				
95.00 E	IND	INSAT-2(93.5)				
	HOL	INTELSAT KA 95E	2013-071A	SES-8	95.0 E	C1.108
	HOL	INTELSAT8 95E	2010-063A	USA 223(NROL-32), i=3.8	95.6 E	2C2.17
	HOL	INTELSAT7 95E				
	HOL	INTELSAT5A 95E				
	RUS	CSDRN	2014-023A	Luch 5V, i=4.4	95.1 E	C2.39
	HOL	NSS-KA41				
	HOL	NSS-9	2002-057A	NSS 6	95.0 E	C1.109
96.50 E	RUS	CSDRN-M				
	RUS	STATSIONAR-14				
	RUS	LOUTCH-9				
	RUS	EXPRESS-8	2008-003A	Ekspres AM-33	96.5 E	C1.110
	RUS	EXPRESS-8B				
98.00 E	RUS	VOLNA-5R				
	CHN	CHINASAT 22	2013-020A	Zhongxing 11	98.0 E	C1.111
	CHN	CHINASAT-3	2012-028A	Zhongxing 2A		C1.112
	CHN	DFH-3A-OC				
	CHN	CHINASAT-44				
98.20 E	CHN	CHINASAT-64				
	RUS	PROGNOZ-8				
98.20 E	CHN	CHNSAT-98E				
98.50 E	UAE	EMARSAT/4S	2008/001A	Thuraya 3, i=4.5	98.6 E	C2.40
99.00 E	RUS	STATSIONAR-T				
	RUS	STATSIONAR-T2				
100.00 E	USA	FLTSATCOM-A INDOC-4	1986-096A	USA 20 (FLTSATCOM F7),i=14.4	99.6 E	2C2.18
	USA	USNN-4	2014-090A	Fengyun 2E, i=2.3	99.8 E	Ind.11
100.50 E	CHN	ASIASAT-EK1	2009-042A	Asiasat 5	100.5 E	C1.113
	CHN	ASIASAT-EKX				
	CHN	ASIASAT-EKS				
	CHN	ASIASAT-E				
101.50 E	CHN	ASIASAT-EKZ				
	CHN	CHINASAT-45	2006-038A	Zhongxing-22A (FengHuo-1)i=4.2	101.5 E	C2.41
103.00 E	CHN	USA 37(Vortex 6), i=7.8	1989-035A		101.7 E	2C2.19
	RUS	LOUTCH-5				
	USA	USGON-3				
	CHN	STW-2	2003-052A	Zhongxing-20(ShenTong1,ST-1)	103.3 E	C2.42
	USA	USTRO-8				
	RUS	EXPRESS-9	2005-023A	Ekspres AM-3	103.0 E	C1.114
	CHN	DFH-4-OB				
	CHN	CHINASAT-65				
	CHN	DFH-3-OB				
	RUS	EXPRESS-9B				
104.00 E	RUS	STATSIONAR-21				
104.00 E	AUS	ADF WEST-5				
	AUS	DDSP-104E				
105.00 E	AUS	ASIABSS				
	CHN	FY-2A	2000-016A	Asiastar	104.5 E	C1.115
	CHN	CHINASAT-46				
105.50 E	CHN	FY-2AS	2008-066A	Fengyun 2E, i=2.3	104.6 E	C2.43
	CHN	ASIASAT-CK	2014-046A	Asiasat 8	105.3 E	C1.116
105.50 E	CHN	ASIASAT-CKS	2011-069A	Asiasat 7	105.5 E	C1.117
	CHN	ASIASAT-CKX				
	CHN	ASIASAT-1				
	CHN	ASIASAT-CK1				
	CHN	ASIASAT-CKZ				
106.50 E	USA	USMB-13				
108.00 E	INS	PALAPA-C2	2009-027A	Indostar II, Protostar II	108.3 E	C1.118
	INS	PALAPA-B1-EC	1999-042A	Telkom 1	108.0 E	C1.119
	INS	PALAPA-B1				

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108.20 E	G LUX	AM-SAT-A4 LUX-G5-25	2000-059A 2014-055A	GE-1A USA 257 (Clio)	108.2 E 108.2 E	C1.120 2C1.5
109.00 E	G	INMARSAT-3 POR WEST				
109.65 E	J	TAIKI-109.65				
109.85 E	J J	BS-3N BSAT-109.85	2007-036B 2010-056B	BSAT-3A BSAT-3B	109.8 E 109.9 E	C1.122 C1.121
110.00 E	USA J J J J J USA J	USGGR-11 N-SAT-110 N-SAT-110E BS-3N BSAT-110 JMCS-2 USCID-A6 JMCS-D2-X	2000-060A 2011-041B 2000-080A	N-SAT-110 BSAT-3C USA 155 (SDS 3 F2), i=6.9	110.1 E 110.0 E 110.1 E	C1.124 C1.123 2C2.20
110.50 E	CHN CHN CHN CHN CHN	CHINASAT-6 CHINASAT-2 DFH-3A-OB CHINASAT-33 COMPASS-1105E SINOSAT-5	2010-024A 2011-026A	Beidou DW 4 Zhongxing 10	110.6 E 110.5 E	C1.125 C1.126
111.50 E	IND	INSAT-KU10(111.5)E				
			2012-002A	Fengyun 2F	112.1 E	C1.127
113.00 E	INS KOR KOR INS KOR INS KOR	PALAPA-B2 KOREASAT-113E KOREASAT-2 PALAPA-C1-K INFOSAT-B PALAPA-C1 KOREASAT-113X	2009-046A 2006-034A	Palapa D Mugunghwa 5	113.0 E 113.0 E	C1.128 C1.129
115.50 E	CHN CHN CHN CHN	DFH-4-OD CHINASAT-115.5E DFH-5-OD CHINASAT-MSB4 DFH-3-OD	2007-031A	Zhongxing 6B	115.5 E	C1.130
116.00 E	CHN KOR KOR	ASIASAT-B KOREASAT-1 INFOSAT-C	1999-046 E 2010-070B	Mugunghwa 3, Koreasat-3 Koreasat 6	116.1 E 116.0 E	C1.131 C1.132
116.20 E	KOR	COMS-116.2E				
118.00 E	INS INS INS INS INS	PALAPA-B3 TT&C PALAPA-C3-K PALAPA-B3-EC PALAPA-B3 PALAPA-C3	2005-046A	Telkom 2	118.0 E	C1.133
119.50 E	THA	THAICOM-IP1	2005-028A	Thaicom 4 (IPStar 1)	119.5 E	C1.134
120.00 E	THA THA THA THA	THAICOM-A3 THAICOM-A3B THAICOM-G2K THAICOM-N3	2014-052 A	Asiasat 6	119.9 E	C1.135
121.00 E	CHN AUS	DFH-3-OE DEF-R-SAT-4B 121.0E				
122.00 E	CHN CHN CHN CHN CHN	ASIASAT-AK ASIASAT-AK1 ASIASAT-AKS ASIASAT-AKX ASIASAT-A	2003-014A	Asiasat 4	122.1 E	C1.136
122.20 E	CHN	ASIASAT-AKZ				
123.00 E	INS	GARUDA-2	2000-011A	Garuda 1, i=1.1	122.9 E	C2.45
123.50 E	CHN CHN	FY-2C FY-2CS				
124.00 E	J J J J	JCSAT-FO-124E JCSAT-3B SJC-1 N-SAT-124E	2012-023A	JCSAT 13	124.0 E	C1.137
125.00 E	CHN CHN CHN CHN CHN	STW-1 DFH-3-OH DFH-4-OH CHINASAT-49 CHINASAT-MSB5 CHINASAT-ROUTE8	2010-042A	Zhongxing 6A	125.1 E	C1.138
			1995-022A	USA 110 (Adv. Orion 1), i=12.6	126.9 E	2C2.21
127.50 E	J	JCSAT-T-127.5E				
128.00 E	J RUS J RUS RUS RUS RUS RUS RUS J	N-SAT-128 TOR-6M JCSAT-FO-128E VOLNA 9 TOR-6 JCSAT-3A STATSIONAR-D6 STATSIONAR-15 GALS-10 N-SAT-128E	2008-044A 2006-033A	JCSAT-12(JCSAT-RA) JCSAT 3A	127.9 E 128.0 E	C1.140 C1.139

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128.20 E	KOR	COMS-128.2 E	2010-022A	Chollian	127.9 E	C1.141
130.00 E	RUS	GALS-5				
	RUS	TOR-10M				
	RUS	PROGNOZ-5				
	CHN	CHINASAT-4				
	CHN	DFH-3A-OD				
	CHN	SINOSAT-3C				
	CHN	CHNASAT-130E	2011-047A	Zhongxing 1A	129.8 E	C1.142
	CHN	CHNASAT-2-130E	2010-064A	Zhongxing 20A	130.0 E	C1.143
131.00 E	CHN	APSTAR-1	2010-033A	USA 159 (DSP F21), i=8.5	131.0 E	2C2.22
132.00 E	J	D-STAR-1				
	J	N-STAR-A				
	J	N-STAR-A2				
	VTN	VINASAT-4A2	2012-023B	Vinasat-2	131.8 E	C1.144
	J	N-STAR-F				
	VTN	VINASAT-TTC	2008-018E	Vinasat	131.9 E	C1.145
	VTN	VINASAT-4A3				
	J	JCSAT-FO-132E	2006-010A	JCSAT 9	132.0 E	C1.146
	J	N-SAT-M-132E				
134.00 E	CHN	APSTAR-2	2005-012A	Apstar 6	134.0 E	C1.147
	CHN	CHINASAT-134E				
	TON	TONGASAT C/KU-2				
	TON	TONGASAT AP2				
	TON	TONGASAT 2/134E				
136.00 E	J	D-STAR-2				
	J	N-STAR-B	2002-035B	N-Star-3 (N-Star c), i=2.9	136.0 E	C2.46
	J	N-STAR-B2				
	J	N-STAR-E				
	J	JCSAT-FO-136E				
138.00 E	CHN	APSTAR-5-KU	2004-024A	Telstar 18 (Apstar 5)	138.0 E	C1.148
	CHN	CHINASAT-138E				
	TON	TONGASAT C/KU-3				
	TON	TONGASAT AP-3				
	TON	TONGASAT-2/138E				
140.00 E	RUS	LOUTCH-1	2005-006A	Himawari-6	140.0 E	C1.150
	RUS	STATIONAR-7	2014-010B	Ekspress-AT2	139.8 E	C1.149
	RUS	EXPRESS-10	2013-077A	Ekspress-AM5	140.0 E	C1.152
	CHN	CHINASAT-32	2010-001	Beidou DW3	140.0 E	C1.151
	CHN	COMPASS-140E				
	J	MTSAT-140E				
	J	MTSAT-B-140E				
	J	GMS-140E				
	RUS	EXPRESS-10B				
	RUS	EXPRESS-10KA				
	J	MTSAT-C-140E				
	RUS	VOLNA-6				
140.50 E	CHN	CHINASAT-35B	2014-060A	Himawari-8	140.7 E	C1.153
142.00 E	CHN	APSTAR-142E	1998-033A	Zhongwei 1	142.0 E	C1.154
	THA	THAICOM-G3K				
143.00 E	J	WINDS-A	2008-007A	Kizuna	142.0 E	C1.155
143.50 E	G	INMARSAT-4 143.5E	2005-009A	Inmarsat 4 F1, i=0.7	143.5 E	C2.47
	G	INMARSAT-3 POR-3				
143.72 E	J	N-SAT-143.72E				
144.00 E	J	JMCS-1				
	J	JMCS-1R				
	J	JMCS-C2-X				
	J	SUPERBIRD C2	2008-038A	Superbird C2	144.0 E	C1.156
	J	N-SAT-146				
	J	SUPERBIRD C				
144.50 E	CHN	CHINASAT-35C				
145.00 E	USA	USGON-6				
	J	MTSAT-B-145E	2006-004A	MTSAT-2	145.0 E	C1.157
	J	MTSAT-C-145E				
	RUS	EXPRESS-11	2000-013A	Ekspres 2A, i=7.6	145.2 E	C2.48
	RUS	LOUTCH-10				
	RUS	VOLNA-6R				
	RUS	STATIONAR-16				
146.00 E	INS	PALAPA-PAC-KU 146E	2006-059A	Kiku-8 (ETS VIII), i=3.9	145.7 E	C2.49
	INS	PALAPA-PAC-C- 146E				
	J	ETS-8				
148.00 E	MLA	MEASAT-148E				
	MLA	MEASAT-2R				
	MLA	MEASAT-2	1996-063B	Measat 2, i=6.0	148.1 E	C2.50
150.00 E	J	JCSAT-1	1997-075A	JCSAT 5, i=3.9	150.0 E	C2.51
	USA	USGCSS PH3B W PAC-3	2000-001A	USA 148 (DSCS III B-08), i=5.2	149.7 E	2C2.23
	J	JCSAT-FO-150E				
	J	N-SAT-M-150E				
	J	JCSAT-1R				

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150.50 E	INS	PALAPA C4				
152.00 E	AUS	AUSSAT B 152E MOB	2007-044A	Optus D2	152.0 E	C1.158
	AUS	AUSSAT B 152E MXL				
	USA	USGAE-9R	2001-009A	USA 157(Milstar 2F2), i=7.1	152.2 E	2C2.24
	AUS	AUSSAT B 152E				
154.00 E	J	JCSAT-2	2002-015A	JC-Sat 8	154.0 E	C1.159
	J	JCSAT-FO-154E				
	J	JCSAT-2R				
156.00 E	AUS	AUSSAT B 156E MOB	2009-044B	Optus D3	156.0 E	C1.160
	AUS	AUSSAT B 156E MXL	2003-028B	Optus C1(Defense C1)	156.0 E	C1.161
	AUS	AUSSAT B 156E				
	AUS	AUSSAT B 156E MC				
	AUS	AUSSAT B 156E NZ				
	AUS	AUSSAT C 156E GOV				
	AUS	AUSSAT D 156E FSS				
	AUS	ADF 156E GOV				
	AUS	AUSSAT C 156E FSS				
	AUS	AUSSAT C 156E GOVR				
	AUS	AUSSAT B 156E S				
157.00 E	USA	INTELSAT5A 157E	1997-046A	PAS 5, i=1.8	157.0 E	C2.53
	USA	INTELSAT7 157E				
	USA	INTELSAT8 157E				
	USA	INTELSAT9 157E				
158.00 E	J	SUPERBIRD-A2				
	J	JMCS-3A				
	J	SUPERBIRD-A				
	J	SUPERBIRD-A2-R				
			1999-053A	LMI 1	159.0 E	C1.162
160.00 E	AUS	AUSSAT B 160E MXL	2006-043B	Optus D1	160.0 E	C1.164
	AUS	AUSSAT B 160E S				
	AUS	AUSSAT B 160E MC				
	CHN	COMPASS-160E	2010-057A	Beidou DW 6	160.0 E	C1.163
	AUS	AUSSAT B 160E				
	AUS	AUSSAT B 160E NZ				
162.00 E	J	SUPERBIRD-B2	2000-012A	Superbird 4	162.0 E	C1.165
	J	SUPERBIRD-B2-KA				
	J	SUPERBIRD-B2-R				
	J	SUPERBIRD-B				
	J	JMCS-B4-X				
	J	N-SAT2-162E				
	J	JMCS-3B				
163.00 E	CHN	CHINASAT-163E				
	CHN	CHINASAT-ROUTE15				
164.00 E	AUS	AUSSAT B 164E MXL	2014-054A	Optus 10	164.0 E	C1.166
	AUS	AUSSAT B 164E	1994-055A	Optus B3, i=5.9	164.2 E	C2.54
	AUS	AUSSAT B 164E MOB				
166.00 E	USA	USASAT-14H	2012-030A	Intelsat IS-19	166.0 E	C1.167
	RUS	PROGNOZ-6				
	USA	USASAT-60B				
167.00 E	CHN	CTDRS-2-167E	2011-032A	Tian Lian 1B, i=0.8	167.0 E	C2.55
	RUS	VSSRD-2	2011-074B	Luch-5A	166.9 E	C1.168
	RUS	VSSRD-2M				
169.00 E	USA	USASAT-14G	1998-065A	PAS 8	169.0 E	C1.169
	USA	USASAT-60J				
171.00 E	CHN	CTDRS-2-171E				
172.00 E	USA	FLTSATCOM-C W PAC-1				
	USA	KASATCOM-5	2005-052A	AMC 23	172.0 E	C1.170
	USA	USASAT-14K	1998-016A	USA 138 (UFO F8), i=6.4	171.7 E	2C2.25
	USA	USASAT-60A				
	USA	FLTSATCOM W PAC				
175.00 E	USA	USGCSS PH3 W PAC				
	USA	USGCSS PH3B W PAC				
	USA	USGOVSAT-12	2007-046A	USA 195 (WGS SV-1)	175.0 E	2C1.6
176.80 E	CHN	CTDRS-2-176.8E				
177.00 E	USA	INTELSAT7 177E				
177.50 E	USA	MILSTAR 14				
	USA	USGAE-4				
178.00 E	USA	INTELSAT6 178E				
	USA	INTELSAT7 178E				
	USA	INTELSAT8 178E				
	USA	INTELSAT9 178E				
	G	INMARSAT-3 POR-2	1996-070A	Inmarsat 3-F3, i=1.6	178.1 E	C2.56
180.00 E	USA	USGCSS PH3 W PAC-2	1995-038A	USA 113 (DSCS IIIB-08), i=5.3	179.7 E	2C2.26
	USA	USGCSS PH3B W PAC-2				
	USA	INTELSAT5 PAC3	2011-056A	Intelsat IS-18	180.0 E	C1.171
	USA	INTELSAT7 180E				

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177.00 W	HOL	INTELSAT5 183E	2012-009A	MUOS 1	177.0 W	2C2.28
	HOL	INTELSAT IBS 183E	2002-015B	Astra 3A, i=1.6	176.4 W	C2.57
	HOL	INTELSAT5A 183E				
	USA	FLTSATCOM-C W PAC-2				
	HOL	INTELSAT8 183E				
	HOL	NSS-19	2009-008A	NSS 9	177.0 W	C1.172
	USA	IRIS-8A				
	HOL	INTELSAT7 183 E				
174.00 W	USA	TDRS 174W	2002-055A	TDRS 10	174.4 W	C2.58
171.00 W	USA	TDRS WEST	2013-004A	TDRS 11	171.2 W	C1.173
170.00 W	RUS	TOR-5M				
	RUS	GALS-4				
	RUS	TOR-5				
	RUS	STATIONAR-10A				
	RUS	STATIONAR-10				
	RUS	VOLNA-7				
168.00 W	RUS	POTOK-3				
	RUS	FOTON-3				
167.50 W	USA	TDRS 167.5W	1991-054B	TDRS 5, i=3.4	167.3 W	C2.59
165.00 W	USA	USGON-4	2000-002A	USA 149 (DSP F20), i=9.4	165.8 W	2C2.28
164.20 W	USA	TDRS 164.2W				
			2014-020A	USA 250 (NROL-67), i=4.1	162.8 W	2C2.29
160.00 W	RUS	ESDRN				
159.00 W	RUS	PROGNOZ-7				
			2013-050A	USA 246 (AEHF SV-3), i=4.1	155.0 W	2C2.30
150.00 W	USA	USGAE-10R	1995-060A	USA 115(Milstar DFS-2),i=11.5	150.0 W	2C2.31
145.00 W	USA	USGON-7				
	USA	FLTSATCOM-C W PAC-3				
144.00 W	USA	USLL-PAC	2014-027A	USA 252 (NROL-33), i=4.4	144.1 W	2C2.32
	USA	P92-6				
	USA	P-197-2				
	USA	USTRO-2				
	USA	USCID W2				
142.00W	G	INMARSAT-3 POR EAST				
	G	INMARSAT-2 POR EAST				
141.00 W	USA	P92-5				
	USA	P-197-3				
	USA	USLL-PAC 2				
	USA	USTRO-3				
	USA	USCID W1				
139.00 W	USA	USASAT-22I	2000-081B	GE8(Aurora 3)	139.0 W	C1.174
137.00 W	USA	USASAT-22J	2000-054B	GE7	137.0 W	C1.175
	USA	USASAT-22G				
135.00 W	USA	USGCSS PH3B E PAC				
	USA	USASAT-22K	2004-003A	AMC-10(GE10)	135.0 W	C1.177
	USA	GOES-WEST-1	2010-008A	GOES 15	135.3 W	C1.176
	USA	GOES-WEST-2				
	USA	USASAT-21A	2013-041A	USA 244 (WGS SV-6)	135.2 W	2C1.7
	USA	GOES WEST				
133.00 W	USA	USASAT-22A	2005-041A	Galaxy 15	133.0 W	C1.178
	USA	USASAT-35Y				
	USA	LM-RPS-133W				
	USA	USASAT-50B				
131.00 W	USA	USASAT-35A	2004-017A	AMC-11(GE11)	131.0 W	C1.179
	USA	USASAT-22H				
130.00 W	USA	USGCSS PH3 E PAC-2	2014-043C	USA 255 (Angels)	130.5 W	2C2.33
	USA	USGCSS PH3B E PAC-2	2003-008A	USA 167 (DSCS III A-3),i=3.0	130.0 W	2C2.34
129.00 W	USA	USASAT-24N	2003-013B	Galaxy XII	129.0 W	C1.180
	CAN	CAN-BSS7 TTC	2008-063A	Ciel 2	128.9 W	C1.181
128.00 W	USA	ASC-1				
127.00 W	USA	USASAT-35C	2003-044A	Galaxy 13/Horizons-1	127.0 W	C1.182
	J	N-SAT-127W				
	USA	USASAT-24O	2001-046A	USA 162 (SDS 3 F3), i=7.7	127.0 W	2C2.35
	USA	USASAT-50A	2006-024A	USA 187 (MITExOSC Sat), i=1.6	126.4 W	2C2.36
	USA	USNN-3				
125.00 W	USA	USASAT-22B	2005-030A	Galaxy 14	125.0 W	C1.183
	USA	USASAT-35D	2008-038B	AMC-21	124.9 W	C1.184
	G	AM-SAT 125W	2014-043A	USA 253 (GSSAP 1), i=0.1	124.8 W	2C2.37
	USA	USASAT-50C				
123.00 W	USA	USASAT-35E	2008-024A	Galaxy 18	123.0 W	C1.185
	USA	USASAT-60H				
	USA	USASAT-24P				
121.00 W	USA	USASAT-31G	2003-034A	EchoStar 9 (Telstar 13)	121.0 W	C1.186
	PNG	PACSTAR-L4				
	USA	USASAT-23G				
120.00 W	USA	MILSTAR-6				
119.00 W	USA	USABSS-10	2004-016A	DirecTV-7S	119.1 W	C1.187
	USA	USABSS-7	2014-043B	USA 254 (GSSAP 2), i=0.1	119.2 W	2C2.38

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118.70 W	CAN	ANIK E-D	2002-006A	EchoStar 7	118.8 W	C1.188
	CAN	CANSAT KA-5X	2010-010A	EchoStar XIV	118.9 W	C1.189
	CAN	CANSAT KA-5	2007-009A	Anik F3	118.7 W	C1.190
	CAN	CANSAT-18				
116.80 W	MEX	MORELOS 2				
	MEX	SATMEX 8	2013-012A	Satmex 8	116.8 W	C1.191
	MEX	MEXSAT 116.8 KU EXT				
116.15 W	USA	USASAT-28N	2013-058A	Sirius FM 6	116.1 W	C1.192
115.00 W	USA	USASAT-28G	2001-018A	XM Radio 1 (Roll)	115.2 W	C1.193
	G	IOMSAT-11A	2006-049A	XM Radio 4 (Blues)	115.2 W	C1.194
			2011-059A	ViaSat-1	115.1 W	C1.195
114.90 W	CAN	CANSAT-17				
	MEX	MEXSAT 114.9L-CEXT-X				
	MEX	MEXSAT 114.9KU EXT	2012-075B	Mexsat Bicentenario	114.8 W	C1.196
	MEX	MEXSAT-114.9C-KU	1998-070A	Satmex 5, i=1.3	114.9 W	C2.60
113.50 W	MEX	MORELOS 1				
113.00 W	MEX	SOLIDARIDAD 2MA				
	MEX	SOLIDARIDAD 2M				
	MEX	SATMEX 7	2006-020A	Satmex 6	113.0 W	C1.197
	MEX	MEXSAT 113 KU EXT				
	MEX	SOLIDARIDAD 2				
				1997-065A	USA 134 (DSCS III B-10)	112.0 W
			1993-074A	USA 97 (DSCS III B-10)	111.8 W	2C2.40
111.10 W	CAN	CANSAT KA-4	2006-054A	Wildblue 1	111.2 W	C1.199
	CAN	ANIK E-B	2009-035A	Terrestar 1, i=3.6	111.0 W	C2.61
	CAN	CANSAT-24				
	CAN	ANIK-F2	2004-027A	Anik F2	111.1 W	C1.198
110.20 W	USA	USABSS-6	2006-003A	Echostar 10	110.2 W	C1.200
			2002-023A	DirecTV-5	110.1 W	C1.201
110.00 W	USA	USABSS-5	2008-035A	Echostar 11	110.0 W	C1.202
			2002-062A	Nimiq 2	109.2 W	C1.203
			2012-035A	Echostar 17	107.1 W	C1.207
107.30 W	USA	LM-RPS-107.3W				
	CAN	ANIK E-A	2013-014A	Anik G-1	107.3 W	C1.205
	CAN	ANIK-F1	2000-076A	Anik F1	107.3 W	C1.204
	CAN	CANSAT-34	2005-036A	Anik F1R	107.3 W	C1.206
106.50 W	CAN	MSAT	1996-022A	MSAT, i=6.3	106.5 W	C2.62
105.00 W	USA	FLTSATCOM-C E PAC-1	1995-057A	USA 114 (UFO F6), i=8.1	105.2 W	2C2.41
	USA	USASAT-23H	2004-041A	AMC-15	105.0 W	C1.209
	USA	USASAT-31K	2006-054A	AMC-18	104.9 W	C1.210
	USA	USASAT-35G	2009-033A	GOES 14	104.4 W	C1.208
	G	GIBSAT A1				
	USA	ATS-5				
103.00 W	USA	USASAT-31L	2011-035A	SES-3	103.0 W	C1.211
	USA	USASAT-35H	1996-054A	GE 1	103.0 W	C1.212
	USA	USASAT-24F	2005-015A	Spaceway 1	102.9 W	C1.213
	CAN	CAN-BSS19	1998-019A	AMSC-1, i=8.8	103.3 W	C2.63
102.80 W	USA	USASAT-70W	2007-032A	DirecTV-10	102.8 W	C1.214
			2009-075A	DirecTV-12	102.7 W	C1.215
			2010-061A	SkyTerra 1	101.3 W	C1.216
101.20 W	USA	USABSS-1	2001-052A	DirecTV-4S	101.2 W	C1.217
			2006-043A	DirecTV 9S	101.1 W	C1.218
			2010-016A	SES-1	101.0 W	C1.219
			2005-019A	DirecTV-8	100.9 W	C1.220
101.00 W	USA	ACS-1				
	USA	USASAT-31M				
	USA	USASAT-35I				
	USA	USASAT-7D				
	USA	MCS-1				
	USA	MSV-1A				
	USA	USABSS-21				
100.80 W	USA	USABSS-2				
100.00 W	USA	FLTSATCOM-C E PAC-2	1995-003A	USA 108 (UFO F4), i=8.7	100.0 W	2C2.42
	USA	FLTSATCOM E PAC	2013-036A	MUOS 2	100.0 W	2C2.43
99.20 W	USA	USASAT-70W	2008-013A	DirecTV-11	99.2 W	C1.221
99.00 W	USA	USASAT-24J	2005-046B	Spaceway 2	99.1 W	C1.222
	USA	USASAT-31N	2006-023A	Galaxy 16	99.0 W	C1.223
	USA	USASAT-35J				
	USA	USASAT-60G				
98.00 W	G	INMARSAT-3 AOR WEST3				
	G	INMARSAT-4 98W	2008-039A	Inmarsat 4 F3, i=3.0	98.0 W	C2.64
97.00 W	USA	USASAT-24D	2008-045A	Galaxy 19	97.0 W	C1.224
	USA	USASAT-35K				
96.80 W	USA	USOBO-2	1991-080B	USA 75 (DSP F16), i=14.6	96.4 W	2C2.44
96.00 W	USA	USASAT-28L	2009-034A	Sirius FM 5	96.0 W	C1.225
			2000-038A	EchoStar 6, i=2.4	96.2 W	C2.65
			2002-030A	Galaxy 3C	95.1 W	C1.226
95.00 W	USA	USASAT-24L	2014-002A	Intelsat IS-30	95.1 W	C1.227
	USA	USASAT-35L				
	G	UKSAT-10				
	USA	USASAT-70O	2007-036A	Spaceway 3	94.8 W	C1.228
	USA	USASAT-60E				
	USA	USASAT-23F				
USA	COMSTAR-D2					

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93.00 W	USA	USASAT-24S	1997-026A	Telstar 5	93.1 W	C1.229
	USA	USASAT-35L				
	G	ICO-G	2008-016A	ICO G1, i=4.2	92.8 W	C2.66
92.00 W	B	SBTS B4	1998-006A	Brazilsat B-3A, i=2.3	92.0 W	C2.67
91.10 W	CAN	CAN-BSS TTAC	2012-026A	Nimiq 6	91.1 W	C1.230
91.00 W	USA	USASAT-24K	2007-016B	Galaxy 17	91.0 W	C1.231
	USA	USASAT-35N				
	USA	USASAT-9A				
	USA	USASAT-60E				
	CAN	CANSAT-30				
90.00 W	USA	MILSTAR-1	2003-012A	USA 169 (Milstar-2 F4)	89.9 W	2C2.48
	USA	USGAE-1				
89.00 W	USA	USASAT-24E	2005-022A	Intelsat Americas 8	89.0 W	C1.232
	USA	USASAT-31S				
	USA	USASAT-35O				
87.00 W	CAN	USASAT-24T	2013-075A	Tupac Katari (TKSAT 1)	87.2 W	C1.233
		USASAT-35P	2011-049A	SES-2	87.0 W	C1.234
86.50 W	CAN	CAN-BSS-9	1999-027A	Nimiq	86.5 W	C1.235
85.20 W	USA	USASAT-28K	2010-053A	Sirius XM-5	85.2 W	C1.236
85.10 W	USA	USASAT-28F	2005-008A	XM Radio 3 (Rhytm)	85.1 W	C1.237
85.00 W	USA	USASAT-35Q	2004-048A	AMC-16	85.0 W	C1.238
	USA	USASAT-31U				
	USA	USASAT-24U				
	USA	USASAT-9C				
84.00 W	B	B-SAT P	2000-046A	Brasilsat B4	84.0 W	C1.239
			2000-007A	Hispasat 1C	84.0 W	C1.240
83.00 W	USA	USASAT-24V	2003-021A	AMC-9 (GE-12)	83.0 W	C1.241
	USA	USASAT-35R				
82.00 W	CAN	CANSAT KA-3	2008-044A	Nimiq 4	82.0 W	C1.242
	CAN	CAN-BSS1 TTAC				
	CAN	CANSAT-31				
81.00 W	ARG	P-P-SAT-1	1997-002A	GE-2, i=2.6	82.9 W	C2.68
			1990-021A	Intelsat VI F-3, i=10.5	80.5 W	C2.69
79.00 W	USA	USASAT-24W	2010-006A	Intelsat IS-16	79.0 W	C1.243
	USA	USASAT-35C				
	USA	TDRS-C2				
	USA	TRDRS CENTRAL				
78.00 W	URG	VENESAT-1	2008-055A	Simon Bolivar	78.0 W	C1.244
77.00 W	USA	USASAT-24O	1995-073A	EchoStar 1	77.2 W	C1.245
			2011-054A	QuezSat-1	77.0 W	C1.246
			2002-039A	EchoStar 8	76.9 W	C1.247
			2012-062A	Star One C3	75.0 W	C1.248
75.00 W	B	SISCOMIS-4	2006-018A	GOES N	74.5 W	C1.249
	B	B-SAT-S				
	USA	GOES-EAST-1				
72.00 W	ARG	NAHUEL-C	2008-050A	Nimiq 5	72.7 W	C1.250
			2000-067A	GE 6	72.0 W	C1.251
			2014-062B	Arsat-1	71.8 W	Ind.4
70.00 W	B	SBTS C1	2008-018B	Star One C2	70.0 W	C1.252
	B	B-SAT-1C				
	B	SISCOMIS-3				
	B	SBTS-1				
68.00 W	USA	MILSTAR-8	1999-033A	Astra 1H, i=2.0	67.6 W	C2.70
	B	B-SAT-IJ	1994-070A	Astra 1D, i=6.0	67.6 W	C2.71
			2010-039A	USA 214 (AEHF SV-1)i=1.8	68.0 W	2C2.46
67.00 W	CLM/ASA	SIMON BOLIVAR 2	1999-060A	GE 4	67.0 W	C1.253
			1997-050A	GE 3	67.0 W	C1.254
65.00 W	B	B-SAT-R	2007056A	Star One C1	65.0 W	C1.255
		SISCOMIS-2				
		SBTS B2				
		B-SAT-1R				
63.00 W	B	B-SAT-1	2011-021A	Estrela do Sul 2	63.0 W	C1.256
	B	B-SAT-E	1995-016A	Brazilsat B2, i=5.7	63.2 W	C2.72
62.00 W	USA	TDRS 62W	1988-091A	TDRS-West, i=14.5	62.2 W	C2.71
			1997-059A	EchoStar 3	61.8 W	C1.257
			2003-033A	Rainbow 1	61.4 W	C1.258
61.50 W	USA	USABSS-8	2012-065A	Echostar XVI	61.5 W	C1.259
	USA	USABSS-17				
61.00 W	B	B-SAT-O	2013-006A	Amazonas 3	61.0 W	C1.260
	B	SBTS B3	2009-054A	Amazonas 2	61.0 W	C1.261
	USA	USMB-1				
60.00 W	B	B-SAT-IO	2009-054A	Amazonas 4A	60.9 W	C1.262
	USA	GOES 60W				
58.00 W	USA	USASAT-25G	2012-045A	Intelsat IS-21	58.0 W	C1.263
	USA	USASAT-26G				
	USA	USASAT-26G-3				

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55.50 W	USA	INTELSAT7 304.5E	1999-071A	Galaxy 11	55.6 W	C1.264
	USA	INTELSAT8 304.5E	1998-037A	Intelsat 805	55.5 W	C1.265
	USA	INTELSAT9 304.5E	2004-031A	Amazonas	55.4 W	C1.266
55.00 W	G	INMARSAT-2 AOR WEST				
54.00 W	G	INMARSAT GSO-2J	1997-027A	Inmarsat 3-F4	54.0 W	C2.74
	G	INMARSAT-3 AOR WEST2				
53.00 W	USA	INTELSAT7 307E	2012-057A	Intelsat IS-23	53.0 W	C1.267
	G	INMARSAT GSO-2L				
	USA	INTELSAT9 307E				
	USA	INTELSAT8 307E				
52.50 W	USA	INTELSAT IBS 307E				
52.50 W	USA	USGCSS PH3B W ATL	2013-024A	USA 243 (WGS SV-5),	52.5 W	2C1.8
	USA	INTELSAT10 310E	2000-072A	PAS 1R	50.0 W	C1.268
50.00 W	USA	INTELSAT9 310E				
	USA	INTELSAT7 310E				
49.40 W	USA	USASAT-55O				
	USA	USOBO-3	2014-004A	TDRS 12, i=6.8	49.3 W	C2.75
49.00 W	USA	TDRS 49W	1994-084A	USA 107 (DSP F17), i=13.4	49.1 W	2C2.47
48.00 W	B	B-SAT-1W	1998-014A	Intelsat 806 (NSS 806)	47.5 W	C1.269
47.00 W	G	GIBSAT-8B				
46.00 W	USA	TDRS 46W	1993-003B	TDRS 6, i=13.0	45.8 W	C2.76
45.00 W	USA	USASAT-13I	2010-034A	Echostar XV	45.1 W	C1.270
	USA	USASAT-25D	2009-064A	Intelsat IS-14	45.0 W	C1.271
	USA	USASAT-55G				
	USA	USASAT-60I				
43.00 W	USA	USASAT-25C	2007-044B	Intelsat IS-11	43.0 W	C1.272
	USA	USASAT-26C	2000-043A	PAS 9, i=1.7	43.1 W	C2.77
	USA	USASAT-35F				
	USA	USASAT-50D				
42.50 W	USA	USGCSS PH3 MID-ATL	2003-040A	USA 170 (DSCS III B-6),i=2.1	42.3 W	2C2.48
	USA	USGCSS PH3B MID-ATL				
41.00 W	USA	TDRS EAST-ISS	2002-011A	TDRS 9, i=3.4	40.9 W	C2.78
	USA	TDRS EAST				
40.50 W	HOL	INTELSAT5A 319.5E	2013-026A	SES-6	40.5 W	C1.273
	HOL	INTELSAT8 319.5E				
	HOL	NSS-18				
	HOL	NSS-35				
	HOL	NSS-57				
	HOL	INTELSAT K 319.5E				
	HOL	INTELSAT7 319.5E				
HOL	INTELSAT IBS 319.5E					
39.00 W	G	DJCF-2A	1994-009A	USA 99 (MILSTAR DFS-1) i=10.6	38.9 W	2C2.49
	USA	USGAE-17R				
38.00 W	USA	USGON-5				
37.50 W	USA	USASAT-26A	2009-009A	Telstar 11N	37.6 W	C1.274
	USA	USASAT-25A-1	2005-003A	AMC-12	37.4 W	C1.275
	USA	USASAT-25A				
34.50 W	USA	INTELSAT6-325.5E	2002-016A	Intelsat 903	34.5 W	C1.276
	USA	INTELSAT7-325.5E				
	USA	INTELSAT8-325.5E				
	USA	INTELSAT9-325.5E				
34.00 W	G	SKYNET-4D	2001-005B	SkyNet 4F, i=7.7	34.0 W	C2.79
	G	SKYNET-4M				
	G	SKYNET-5A				
33.50 W	G	UKDIGISAT-3	2010-055A	Hylas	33.5 W	C1.277
	G	UKDIGISAT-4A TT&C				
31.50 W	USA	INTELSAT8 328.5E	2008-034A	Protostar 1	31.5 W	C1.278
	USA	INTELSAT9 328.5E				
30.40 W	USA	USDKH2				
30.00 W	E	HISPASAT-2A KU	2006-007A	Spainsat	30.0 W	C1.279
	E	HISPASAT-2D KU				
	USA	USGGR-3				
	E	HISPASAT-2B 30KA	2002-044A	Hispasat 1D	30.0 W	C1.280
	E	HISPASAT-1D KU				
	E	HISPASAT-1	2010-070A	Hispasat 1E	30.0 W	C1.281
	E	HISPASAT-2C3 KU				
	E	HISPASAT-2B KU				
	E	HISPASAT-2AKA				
	USA	USMB-2				
USA	USCID-E4					
E	HISPASAT-2A X					
29.50 W	USA	INTELSAT6 330.5E	1993-066A	Intelsat VII F-1, i=2.4	29.5 W	C2.80
	USA	INTELSAT9 330.5E				
	USA	INTELSAT8 330.5E				
27.50 W	USA	INTELSAT6 332.5E	2003-007A	Intelsat 907	27.5 W	C1.282
	USA	INTELSAT7 332.5E				
	USA	INTELSAT8 332.5 E				
	USA	INTELSAT9 332.5 E				

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26.50 W	RUS RUS RUS RUS	TOR-1M GALS-1 STATIONAR-17 VOLNA-13				
26.00 W	G	DJCF-2B				
			1998-029A	USA 139 (Adv. Orion 2), i=9.2	25.7 W	2C2.50
25.00 W	RUS RUS RUS RUS	TOR-9M STATIONAR-8 GALS-9 VOLNA-1A				
24.50 W	USA USA USA USA	INTELSAT6 335.5E INTELSAT7 335.5E INTELSAT8 335.5E INTELSAT9 335.5E	2002-027A	Intelsat 903	24.5 W	C1.283
24.00 W	USA RUS	USCID E3 PROGNOZ-1				
23.00 W	USA	FLTSATCOM ATL	1996-042A	USA 127 (UFO F7), i=7.3	22.9 W	2C2.57
22.50 W	USA USA	FLTSATCOM-C E ATL-1 KASATCOM-2				
22.00 W	HOL	NSS-16	2012-007A	SES-4	22.0 W	C1.284
21.50 W	HOL HOL HOL HOL	INTELSAT K 338.5E INTELSAT5A 338.5E INTELSAT7 338.5E INTELSAT8 338.5E				
20.20 W	BEL	SATCOM-4/20.2W				
20.00 W	USA USA USA HOL USA	INTELSAT6 340E INTELSAT7 340E INTELSAT8 340E NSS-31 INTELSAT9 340E	2002-19A	NSS-7	20.0 W	C1.285
19.00 W	USA	USMB-3				
18.00 W	USA USA USA	INTELSAT7 342E INTELSAT8 342E INTELSAT9 342E	1998-052A 2001-024A	PAS 7, i=1.3 Intelsat 901	18.2 W 18.0 W	C2.81 C1.286
17.80 W	G	SKYNET-5E	2008-030A 2012-019A	Skynet 5C USA 235 (AEHF-2), i=2.6	17.8 W 16.5 W	C1.287 2C2.52
16.00 W	RUS RUS RUS	WSDRN WSDRN-M ZSSRD-2	2012-061A	Luch-5B, i=1.7	16.0 W	C2.82
15.50 W	USA G G	FLTSATCOM-C E ATL-2 INMARSAT-2-AOR EAST INMARSAT-3-AOR EAST	1989-077A 1996-053A	USA 46 (FLTSATCOM F8), i=12.4 Inmarsat 3-F2, i=0.8	15.6 W 15.5 W	2C2.53 C2.83
15.00 W	USA	USASAT-14L	1999-059A	Orion 2	15.0 W	C1.288
14.50 W	RUS RUS	GOMS-1M GOMS-14.5W				
14.00 W	RUS RUS RUS	EXPRESS-2 EXPRESS-2B VOLNA-2	2002-029A 2006-024C	Ekspress A1R, i=4.4 USA 189 (NRL..) i=6.7	14.0 W 13.8 W	C2.84 2C2.54
13.50 W	RUS RUS	POTOK-1 FOTON-1				
13.00 W	USA USA USA USA	P92-4 P-197-4 USTRO-4 USCID-E2				
12.50 W	USA F/EUT F	USLL-ATL2 EUTELESAT 3-12.5W F-SAT-KU2-E-12.5	2002-040A	Atlantic Bird 1	12.5 W	C1.289
12.00 W	USA USA USA USA	USGCSS PH3B ATL USGOVSAT-8 TDRS-12W TDRS-12WR	2009-068A	USA 211 (WGS SV-3), i=0.1	12.0 W	2C1.9
11.00 W	RUS RUS	EXPRESS-3 VOLNA-3R	2009-007A	Ekspress AM-44	11.0 W	C1.290
10.00 W	USA USA USA F/ESA USA USA	USLL-ATL P92-3 P-197-S USTRO-5 MSG-S2 USMB-4 USCID-E1	2012-033A	USA 236 (SDS 3 F7), i=2.9	10.1 W	2C255

Nominal Longitude	Admin.	Space Network Name	COSPAR Int. Designation	Satellite Name	Longitude	Source
9.50 W	RUS	KUPON 3				
8.00 W	F	VIDEOSAT-6-KA	2001-042A	Atlantic Bird 2	8.1 W	C1.291
	F	F-SAT-KU-E-8W	2002-038A	Hot Bird 6	7.5 W	C1.292
	F	SYRACUSE-3C				
	F	TELECOM-3A				
	F	SYRACUSE-31C				
	F	TELECOM-4A				
	F	TELECOM-2A				
7.00 W	EGY	NILESAT-301-7W	2010-037A	Nilesat 201	7.0 W	C1.294
	F	F-SAT-KU-E-7W	2011-051A	Atlantic Bird 7	7.3 W	C1.293
	FGY	NILESAT-103	2000-046B	Nilesat 102	7.0 W	C1.295
5.00 W	F	TELECOM-3B				
	F	SYRACUSE-3E	2006-033B	Syracuse 3B	5.2 W	C1.296
	F	VIDEOSAT-7-KA				
	F	TELECOM-4B				
	F	SYRACUSE-31E				
	F	F-SAT-KU-E-5W	2002-035A	Atlantic Bird 3	5.0 W	C1.297
	F	VIDEOSAT-7				
4.00 W	ISR	AMOS 3-A	2008-022A	AMOS-3	4.0 W	C1.299
	ISR	AMOS 2-B	2003-059A	AMOS-2	4.0 W	C1.298
	ISR	AMOS 1-B	2002-029A	Ekspress A1R (Express 4A), i=4.5	4.0 W	C2.84
3.00 W			1998-035A	Thor III, i=3.8	4.3 W	C2.85
	RUS	STATSIONAR-M2	1997-042A	Agila 2, i=3.2	3.0 W	C2.86
	RUS	TOR-11M				
	RUS/IK	INTERSPUTNIK-3W				
	RUS/IK	INTERSPUTNIK-3WQ				
1.00 W	RUS	GALS-11				
	RUS/IK	INTERSPUTNIK-3W-CK				
	G	SKYNET-4A	1990-079A	Skynet 4C, i=13.2	1.2 W	C2.87
	G	SKYNET-4J				
	USA	INTELSAT7 359E				
	USA	INTELSAT8 359E				
	USA	INTELSAT9 359E	2004-022A	Intelsat 10-02	1.0 W	C1.300
USA	INTELSAT10 359E					
G	SKYNET-5B					
			2009-058B	Thor 6	0.8 W	C1.301
			2008-006A	Thor 2R	0.8 W	C1.302