

column name	description
carrier_num	Carrier unique identification number. This convention appears in CR/116, with numbers < 1000 mapping directly to the corresponding links in CR116. For carrier numbers >= 1000, this document uses the convention that carrier_num = "XLNN", where X is the category (typically a different number for different source), L is the location (0: Miami, 1: DC, 2: Las Vegas) and NN is the carrier ID starting from "01"
admin_country	Administration where the specified link's Earth station location falls under.
geo_network_name	Name of the Geostationary Network that the link corresponds to.
source	Source document from which the link parameters were obtained.
gso_lon_deg	Orbital position of the GSO satellite (degree East). Not specified in CR/116 so values matching the latitude and 0.01% rainfall rate are assumed for these links.
satellite_eirp_dBW	Transmit EIRP per carrier in the direction of the receive Earth Station (dBW).
freq_GHz	Downlink Carrier Center Frequency (GHz).
ibw_kHz	Downlink occupied bandwidth per carrier (kHz).
es_rx_gain_dBi	Receive Earth Station peak antenna gain (dBi).
es_rx_diameter_m	Receive Earth Station antenna diameter (m).
es_Tsys_K	Noise Temperature of the receive Earth Station (K).
es_lat_deg	Latitude of the receive Earth Station (degree North).
es_lon_deg	Longitude of the receive Earth Station (degree East). Not specified in CR/116 so values matching the latitude and 0.01% rainfall rate are assumed for these links.
rr_mmh	Annual rainfall rate exceeded for 0.01% of an average year. If this is not provided by the source, it is calculated using ITU-R P.837 with the latitude and longitude of the receive Earth Station.
calc_gso_elevation_deg	Calculated elevation angle at the GSO receive Earth Station.
obj_cni_threshold_dB	Short-term C/(N+I) ratio (i.e. unavailability threshold) (dB).
obj_avail_perc	Percentage of time for which short-term C/(N+I) should be exceeded (%).
calc_baseline_unavail_perc	Baseline downlink unavailability calculated with the associated rainfall rate, ITU-R Recommendation P.618 and S.1323 Procedure D.
calc_cn_clearsky_dB	Calculated downlink Carrier-to-Noise ratio under clear-sky condition (C/N, dB).
ci_internal_dB	Downlink C/I from internal interference sources (e.g. intermod, x-pol, multi-beam frequency re-use, etc.). If no value is given, a value of 40 dB is assumed.
calc_cni_clearsky_dB	Calculated downlink Carrier-to-(Noise + Internal Interference Sources) (C/(N+I), dB).
calc_cni_clearsky_margin_dB	Calculated link margin for rain i.e. C/(N+I) - unavailability threshold.
pass_rain_only	True if computed baseline availability exceeds the objective availability or False if not.
ACM (Yes/No)	Yes if a link uses Adaptive Coding and Modulation or No if not.
UT or GW	GW if es_rx_diameter_m is greater than or equal to 3.5 m, otherwise UT.
calc_rain_margin_dB	Calculated with ITU-R P.618 using es_lon_deg, es_lat_deg, rr_mmh, calc_gso_elevation_deg, freq_GHz, at p = 1% for UTs and 0.1% for GWs.
calc_cni_rain_margin_dB	Calculated difference calc_cni_clearsky_margin_dB - calc_rain_margin_dB

carrier_num	dmin_countr	network_na	source	gso_lon_deg	lite_eirp_d	freq_GHz	ibw_kHz	s_rx_gain_dB	rx_diameter	es_Tsys_K	es_lat_deg	es_lon_deg	rr_mmh	gso_elevation	cni_threshold	obj_avail_per	seline_unava	cn_clearsky	i_internal_d	cni_clearsky	clearsky_ma	ss_rain_onl	ACM (Yes/No)	UT or GW	rain_margin	i_rain_margin_dB
6	United States	IDR-1	CR/116 (Ku)	-103	9.7	11.2	51.2	60.2264806	10.82	208.862831	30	-103	35.168	55.0257019	9	99.96	0.00094626	23.4982273	19.5860731	18.1054731	9.10547313	TRUE	No	GW	1.57196593	7.5335072
7	United States	IDR-2	CR/116 (Ku)	-103	11.2	11.2	51.2	56.6280562	7.15	181.98	30	-103	35.168	55.0257019	9	99.96	0.00185362	21.9981779	17.7342762	16.3523982	7.35239818	TRUE	No	GW	1.57196593	5.78043226
8	United States	IDR-3	CR/116 (Ku)	-103	12.2	11.2	51.2	53.5386899	5.01	281.98	30	-103	35.168	55.0257019	9	99.96	0.00392362	18.0068651	20.4850305	16.0612342	7.06123422	TRUE	No	GW	1.57196593	5.48926829
9	United States	IDR-4	CR/116 (Ku)	-103	14.2	11.2	51.2	49.9384952	3.31	308.85	30	-103	35.168	55.0257019	9	99.96	0.00687174	16.0113775	24.5445951	15.4416529	6.44165292	TRUE	No	UT	0.32663504	6.11501788
17	United States	SatMex 5	CR/116 (Ku)	-105	21.9	11.95	185	41.2885579	1.2	141.8	31.7	-105	23	53.0873931	7.6	99.94	0.05125415	12.2739452	22.7675058	11.9026402	4.30264024	TRUE	No	UT	0.26963431	4.03300593
19	United States	Telstar 4	CR/116 (Ku)	-119	48.4	11.95	22500	38.1667328	0.8	131.7	42	-119	7.6	41.4941814	8.3	99.7	0	14.9419366	40	14.9284065	6.62840654	TRUE	No	UT	0.03443848	6.59396805
20	United States	SatMex 5	CR/116 (Ku)	-100	23.5	11.95	185	60.404933	10	141.8	29	-100	23	56.1689073	9.4	99.99	0	33.03138	26.8066891	25.8776471	16.4776471	TRUE	No	GW	1.48877414	14.988873
21	United States	SatMex 5	CR/116 (Ku)	-105	50	11.95	34000	60.404933	10	141.8	31.7	-105	23	53.0873931	16.9	99.99	0	36.8472484	40	35.1333024	18.2333024	TRUE	No	GW	1.2991262	16.9341762
22	France	Telecom 2, V	CR/116 (Ku)	-1	53	12.75	36000	35.8308036	0.6	175	44	-1	60	39.2752612	8	99.6	0.13007974	13.3284227	22.613379	12.8444031	4.84440311	TRUE	No	UT	0.72775401	4.1166491
34	France	DTH DVB	CR/116 (Ku)	2.2137	50	11.7	32987.4	35.4843171	0.6	153	40.4	2.2137	27.2915416	43.2771327	4.6	99.7	0.00756583	11.7608386	23.6289274	11.487173	6.88717297	TRUE	No	UT	0.28079887	6.6063741
40	Spain		CR/116 (Ku)	-8	21.01	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99	0.05339861	10.7205754	18.5730936	10.0611804	4.76118038	TRUE	No	UT	0.3625428	4.39863758
41	Spain		CR/116 (Ku)	-8	45.52	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99.7	0	35.2305754	18.5730936	18.4803274	13.1803274	TRUE	No	UT	0.3625428	12.8177846
42	Spain		CR/116 (Ku)	-8	47.73	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99.9	0	37.4405754	18.5730936	18.5170878	13.2170878	TRUE	No	UT	0.3625428	12.854545
43	Spain		CR/116 (Ku)	-8	51.08	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99.97	0	40.7905754	18.5730936	18.5471078	13.2471078	TRUE	No	UT	0.3625428	12.884565
72	Spain		CR/116 (Ku)	-8	21.38	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99	0.03673974	11.0905754	18.5730936	10.377113	5.07711297	TRUE	No	UT	0.3625428	4.71457017
73	Spain		CR/116 (Ku)	-8	39.63	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99.7	0	29.3405754	18.5730936	18.2235961	12.9235961	TRUE	No	UT	0.3625428	12.5610533
74	Spain		CR/116 (Ku)	-8	41.58	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99.9	0	31.2905754	18.5730936	18.3468	13.0468	TRUE	No	UT	0.3625428	12.6842571
75	Spain		CR/116 (Ku)	-8	45	12.5	64	36.0588002	0.6	125	43	-8	38	40.3833524	5.3	99.97	0	34.7105754	18.5730936	18.4686686	13.1686686	TRUE	No	UT	0.3625428	12.8061258
91	Spain		CR/116 (Ku)	-8	47.64	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99	0.06994217	11.0190482	24.1009182	10.8105367	4.71053671	TRUE	No	UT	0.3625428	4.34799391
92	Spain		CR/116 (Ku)	-8	49.28	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99.7	0.02291544	12.6590482	24.1009182	12.3581193	6.25811926	TRUE	No	UT	0.3625428	5.89557645
93	Spain		CR/116 (Ku)	-8	50.36	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99.9	0.01389116	13.7390482	24.1009182	13.3568006	7.25680062	TRUE	No	UT	0.3625428	6.89425782
94	Spain		CR/116 (Ku)	-8	54.46	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99.97	0.00370433	17.8390482	24.1009182	16.9171417	10.8171417	TRUE	No	UT	0.3625428	10.4545989
110	Spain		CR/116 (Ku)	-8	47.75	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99	0.06200611	11.1290482	24.1009182	10.9153175	4.8153175	TRUE	No	UT	0.3625428	4.45277469
111	Spain		CR/116 (Ku)	-8	49.39	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99.7	0.02180372	12.7690482	24.1009182	12.4606676	6.36066762	TRUE	No	UT	0.3625428	5.99812481
112	Spain		CR/116 (Ku)	-8	51.47	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99.9	0.00788357	14.8490482	24.1009182	14.3615273	8.26152729	TRUE	No	UT	0.3625428	7.89898449
113	Spain		CR/116 (Ku)	-8	54.62	12.5	27500	36.0588002	0.6	125	43	-8	38	40.3833524	6.1	99.97	0.00363834	17.9990482	24.1009182	17.0460809	10.9460809	TRUE	No	UT	0.3625428	10.5835381
202	United States	A5b	CR/116 (Ku)	-120	21.6	11.2	82	40.7255603	1.2	134.83	45.6	-120	15.792	37.5080733	5.8	99.96	0.00111699	15.4744369	19.8850152	14.1320448	8.33204483	TRUE	No	UT	0.13797258	8.19407224
203	United States	A5c	CR/116 (Ku)	-81	22.9	11.2	82	40.7255603	1.2	134.83	25.46	-81	77.09396	60.2329547	5.8	99.96	0.01819611	17.1167369	21.378338	15.7342317	9.93423175	TRUE	No	UT	0.71467932	9.21955243
204	United States	B14a	CR/116 (Ku)	-103	20	11.2	82	40.7255603	1.2	134.83	30.03	-103	35.31992	54.9914399	5.8	99.6	0.0085661	14.1521621	17.5930357	12.5300844	6.73008437	TRUE	No	UT	0.32658584	6.40349853
205	United States	B14b	CR/116 (Ku)	-120	20	11.2	82	40.7255603	1.2	134.83	45.6	-120	15.792	37.5080733	5.8	99.6	0.00228843	13.8744369	17.5930357	12.3370302	6.53703017	TRUE	No	UT	0.13797258	6.39905759
206	United States	B14c	CR/116 (Ku)	-81	21	11.2	82	40.7255603	1.2	134.83	25.46	-81	77.09396	60.2329547	5.8	99.6	0.03625995	15.2167369	19.0373195	13.7094844	7.9094844	TRUE	No	UT	0.71467932	7.19480508
207	United States	A8a	CR/116 (Ku)	-103	21.6	11.2	82	40.7255603	1.2	134.83	30.03	-103	35.31992	54.9914399	5.8	99.96	0.00479212	15.7521621	19.8850152	14.334175	8.53417497	TRUE	No	UT	0.32658584	8.20758913
208	United States	A8b	CR/116 (Ku)	-120	23	11.2	82	40.7255603	1.2	134.83	45.6	-120	15.792	37.5080733	5.8	99.96	0.00031254	16.8744369	21.5503159	15.6010192	9.80101924	TRUE	No	UT	0.13797258	9.66304666
209	United States	A8c	CR/116 (Ku)	-81	24.7	11.2	82	40.7255603	1.2	134.83	25.46	-81	77.09396	60.2329547	5.8	99.96	0.00797009	18.9167369	23.2806092	17.561877	11.761877	TRUE	No	UT	0.71467932	11.0471977
210	United States	A11a	CR/116 (Ku)	-103	27.4	11.2	82	40.7255603	1.2	134.83	30.03	-103	35.31992	54.9914399	5.8	99.96	0.00074362	21.5521621	25.4656359	20.0719433	14.2719433	TRUE	No	UT	0.32658584	13.9453575
211	United States	A11b	CR/116 (Ku)	-120	27.4	11.2	82	40.7255603	1.2	134.83	45.6	-120	15.792	37.5080733	5.8	99.96	0	21.2744369	25.4656359	19.8726239	14.0726239	TRUE	No	UT	0.13797258	13.9346513
212	United States	A11c	CR/116 (Ku)	-81	28.8	11.2	82	40.7255603	1.2	134.83	25.46	-81	77.09396	60.2329547	5.8	99.96	0.00355075	23.0167369	26.4162141	21.3817145	15.5817145	TRUE	No	UT	0.71467932	14.8670352
214	United States	DTH-2	CR/116 (Ku)	-99	46.4	11	29500	37.4472283	0.8	155.57	27.1	-99	49.0112	58.3469444	7	99	0.2100501	11.2912841	23.6539061	11.0462576	4.04625755	TRUE	No	UT	0.4650872	3.58117035
215	United States	C4a	CR/116 (Ku)	-103	13.2	11.2	56	47.1461602	2.4	162.87	30.03	-103	35.31992	54.9914399	9	99.6	0.03592229	14.6084746	19.5405948	13.3987587	4.39875872	TRUE	No	UT	0.32658584	4.07217288
216	United States	C4b	CR/116 (Ku)	-120	14.4	11.2	56	47.1461602	2.4	162.87	45.6	-120	15.792	37.5080733	9	99.6	0.00361259	15.5307495	19.8308221	14.1586995	5.15869946	TRUE	No	UT	0.13797258	5.02072688
217	United States	C4c	CR/116 (Ku)	-81	15.2	11.2	56	47.1461602	2.4	162.87	25.46	-81	77.09396	60.2329547	9	99.6	0.07751339	16.6730494	20.6179985	15.201898	6.20189802	TRUE	No	UT	0.71467932	5.4872187
218	United States	A4a	CR/116 (Ku)	-103	12.5	11.2	82	47.1461602	2.4	162.87	30.03	-103	35.31992	54.9914399	5.8	99.96	0.02034387	12.2522164	17.0633262	11.012769	5.212769	TRUE	No	UT	0.32658584	4.88618316
219	United States	A4b	CR/116 (Ku)	-120	14.1	11.2	82	47.1461602	2.4	162.87	45.6	-120	15.792	37.5080733	5.8	99.96	0.00192759	13.5744912	19.9301204	12.6703612	6.87036117	TRUE	No	UT	0.13797258	6.73238858

220	United States	A4c	CR/116 (Ku)	-81	17.8	11.2	82	47.1461602	2.4	162.87	25.46	-81	77.09396	60.2329547	5.8	99.96	0.01237616	17.6167912	17.9221454	14.7564852	8.95648518	TRUE	No	UT	0.71467932	8.24180586
221	United States	C6a	CR/116 (Ku)	-103	16.6	11.2	56	47.1461602	2.4	162.87	30.03	-103	35.31992	54.9914399	9	99.6	0.00585519	18.0084746	21.7699998	16.483821	7.48382102	TRUE	No	UT	0.32658584	7.15723518
222	United States	C6b	CR/116 (Ku)	-120	16.6	11.2	56	47.1461602	2.4	162.87	45.6	-120	15.792	37.5080733	9	99.6	0.001429	17.7307495	21.7699998	16.2864852	7.28648518	TRUE	No	UT	0.13797258	7.14851259
223	United States	C6c	CR/116 (Ku)	-81	17.7	11.2	56	47.1461602	2.4	162.87	25.46	-81	77.09396	60.2329547	9	99.6	0.02093734	19.1730494	22.7399998	17.5898758	8.58987579	TRUE	No	UT	0.71467932	7.87519647
224	United States	B11a	CR/116 (Ku)	-103	12.7	11.2	82	47.1461602	2.4	162.87	30.03	-103	35.31992	54.9914399	5.8	99.6	0.01836797	12.4522164	19.8398593	11.7242468	5.92424679	TRUE	No	UT	0.32658584	5.59766095
225	United States	B11b	CR/116 (Ku)	-120	13.8	11.2	82	47.1461602	2.4	162.87	45.6	-120	15.792	37.5080733	5.8	99.6	0.00285473	13.2744912	16.8732779	11.7010183	5.90101831	TRUE	No	UT	0.13797258	5.76304572
226	United States	B11c	CR/116 (Ku)	-81	14.6	11.2	82	47.1461602	2.4	162.87	25.46	-81	77.09396	60.2329547	5.8	99.6	0.04933466	14.4167912	17.6307276	12.7227021	6.92270207	TRUE	No	UT	0.71467932	6.20802276
227	United States	A3a	CR/116 (Ku)	-103	6.8	11.2	82	57.6037351	8	227.82	30.03	-103	35.31992	54.9914399	5.8	99.96	0.00362668	15.5522838	25.530171	15.136342	9.336342	TRUE	No	GW	1.57131585	7.76502615
228	United States	A3b	CR/116 (Ku)	-120	7.1	11.2	82	57.6037351	8	227.82	45.6	-120	15.792	37.5080733	5.8	99.96	0.00032594	15.5745586	23.7152185	14.9546146	9.15461461	TRUE	No	GW	0.67947355	8.47514106
229	United States	A3c	CR/116 (Ku)	-81	10.2	11.2	82	57.6037351	8	227.82	25.46	-81	77.09396	60.2329547	5.8	99.96	0.00579952	19.0168586	23.7152185	17.7491432	11.9491432	TRUE	No	GW	3.36010584	8.58903733
230	United States	B7a	CR/116 (Ku)	-103	4.6	11.2	82	57.6037351	8	227.82	30.03	-103	35.31992	54.9914399	5.8	99.6	0.00678066	13.3522838	24.985708	13.0639179	7.26391792	TRUE	No	GW	1.57131585	5.69260207
231	United States	B7b	CR/116 (Ku)	-120	4.7	11.2	82	57.6037351	8	227.82	45.6	-120	15.792	37.5080733	5.8	99.6	0.00169931	13.1745586	25.1888961	12.9096845	7.10968446	TRUE	No	GW	0.67947355	6.43021091
232	United States	B7c	CR/116 (Ku)	-81	5.2	11.2	82	57.6037351	8	227.82	25.46	-81	77.09396	60.2329547	5.8	99.6	0.03295655	14.0168586	25.530171	13.7206758	7.92067581	TRUE	No	GW	3.36010584	4.56056998
233	United States	C3a	CR/116 (Ku)	-103	7.9	11.2	56	57.6037351	8	227.82	30.03	-103	35.31992	54.9914399	9	99.6	0.00390644	18.308542	23.4216674	17.1421425	8.14214254	TRUE	No	GW	1.57131585	6.57082669
234	United States	C3b	CR/116 (Ku)	-120	7	11.2	56	57.6037351	8	227.82	45.6	-120	15.792	37.5080733	9	99.6	0.00135172	17.1308169	22.3594396	15.9913453	6.99134531	TRUE	No	GW	0.67947355	6.31187176
235	United States	C3c	CR/116 (Ku)	-81	8.2	11.2	56	57.6037351	8	227.82	25.46	-81	77.09396	60.2329547	9	99.6	0.02032729	18.6731168	19.8308221	16.2032068	7.20320679	TRUE	No	GW	3.36010584	3.84310095
236	United States	STR-1	CR/116 (Ku)	-119	20.6	11.2	873.8	59.8419354	10	177.83	40.9	-119	12.9382	42.7192223	6.7	99.96	0	22.2046231	26.2978731	20.7755679	14.0755679	TRUE	No	GW	0.38527134	13.6902966
237	United States	STR-2	CR/116 (Ku)	-116	8.2	11.2	164	57.6037351	8	227.82	34.1	-116	15.8928	50.3623913	5.7	99	0.00019331	13.8773666	40	13.8667743	8.16677426	TRUE	No	GW	0.49596409	7.67081018
238	United States	INTELSAT DT	CR/116 (Ku)	-103	47.2	11.2	5730	40.5262958	1.12	229.26	30	-103	35.168	55.0257019	7.6	99.6	0.0014592	20.4045246	24.9999996	19.1105317	11.5105317	TRUE	No	UT	0.32663504	11.1838967
239	United States	INTELSAT DT	CR/116 (Ku)	-103	49.5	11.2	8590	34.3491891	0.55	230.47	30	-103	35.168	55.0257019	4.8	99.6	0.0035314	14.7461714	22.9999997	14.1411129	9.34111291	TRUE	No	UT	0.32663504	9.01447787
240	United States	INTELSAT VS	CR/116 (Ku)	-102	16.5	11.2	77	44.1509138	1.7	120.87	30	-102	38	55.0257019	5	99.6	0.00690163	14.8258792	23.8066893	14.3087599	9.30875987	TRUE	No	UT	0.38426513	8.92449474
241	United States	INTELSAT VS	CR/116 (Ku)	-102	20	11.2	77	40.6035042	1.13	119.55	30	-102	38	55.0257019	5	99.6	0.00694922	14.8261591	23.8066893	14.3090083	9.30900831	TRUE	No	UT	0.38426513	8.92474318
242	United States	INTELSAT VS	CR/116 (Ku)	-102	16.6	11.2	77	44.1509138	1.7	120.87	30	-102	38	55.0257019	5	99.6	0.00685094	14.9258792	20.4850305	13.8604835	8.86048351	TRUE	No	UT	0.38426513	8.47621839
243	United States	INTELSAT VS	CR/116 (Ku)	-102	20.1	11.2	77	40.6035042	1.13	119.55	30	-102	38	55.0257019	5	99.6	0.00689852	14.9261591	20.4850305	13.8607025	8.86070249	TRUE	No	UT	0.38426513	8.47643736
244	United States	INTELSAT IDR	CR/116 (Ku)	-103	9.2	11.2	51.2	60.2264806	10.82	208.86	30	-103	35.168	55.0257019	9	99.96	0.00104669	22.9982862	24.5445951	20.6926806	11.6926806	TRUE	No	GW	1.57196593	10.1207147
245	United States	INTELSAT IDR	CR/116 (Ku)	-103	10.8	11.2	51.2	56.6280562	7.15	181.98	30	-103	35.168	55.0257019	9	99.96	0.0017674	21.5981779	29.9999987	21.012083	12.012083	TRUE	No	GW	1.57196593	10.440117
246	United States	INTELSAT IDR	CR/116 (Ku)	-103	15.4	11.2	51.2	53.5386899	5.01	282.54	30	-103	35.168	55.0257019	9	99.96	0.00154529	21.1982488	24.5445951	19.5464878	10.5464878	TRUE	No	GW	1.57196593	8.97452187
247	United States	INTELSAT IDR	CR/116 (Ku)	-103	17.7	11.12	51.2	49.8762305	3.31	309.79	30	-103	35.168	55.0257019	9	99.96	0.00242905	19.4981796	34.9999959	19.3775217	10.3775217	TRUE	No	UT	0.31968384	10.0578378
248	United States	INTELSAT VS	CR/116 (Ku)	-103	7.1	11.2	77	60.2264806	10.82	208.86	30	-103	35.168	55.0257019	5	99.6	0.00102039	19.1260785	18.6680437	15.8807256	10.8807256	TRUE	No	GW	1.57196593	9.30875963
249	United States	INTELSAT VS	CR/116 (Ku)	-103	8.2	11.2	77	56.6280562	7.15	181.98	30	-103	35.168	55.0257019	5	99.6	0.00198131	17.2259703	19.5860731	15.2373365	10.2373365	TRUE	No	GW	1.57196593	8.66537059
250	United States	INTELSAT VS	CR/116 (Ku)	-103	11.4	11.2	77	53.5386899	5.01	282.54	30	-103	35.168	55.0257019	5	99.6	0.00311701	15.4260411	19.5860731	14.0156078	9.01560785	TRUE	No	GW	1.57196593	7.44364192
251	United States	INTELSAT VS	CR/116 (Ku)	-102	14.9	11.2	77	49.9384952	3.31	309.79	30	-102	38	55.0257019	5	99.6	0.00373764	14.925972	22.2099024	14.1818344	9.18183435	TRUE	No	UT	0.38426513	8.79756922
252	United States	INTELSAT VS	CR/116 (Ku)	-102	6.7	11.2	77	60.2264806	10.82	208.86	30	-102	38	55.0257019	5	99.6	0.00179077	18.7260785	16.3102156	14.3419844	9.34198438	TRUE	No	GW	1.82370459	7.5182798
253	United States	INTELSAT VS	CR/116 (Ku)	-102	8	11.2	77	56.6280562	7.15	181.98	30	-102	38	55.0257019	5	99.6	0.00338951	17.0259703	17.262398	14.1322755	9.13227549	TRUE	No	GW	1.82370459	7.3085709
254	United States	INTELSAT VS	CR/116 (Ku)	-102	11.5	11.2	77	53.5386899	5.01	282.54	30	-102	38	55.0257019	5	99.6	0.00361472	15.5260411	17.7342762	13.4809938	8.48099381	TRUE	No	GW	1.82370459	6.65728923
255	United States	INTELSAT VS	CR/116 (Ku)	-102	15	11.2	77	49.9384952	3.31	309.79	30	-102	38	55.0257019	5	99.6	0.00373288	15.025972	19.1292223	13.5997185	8.59971846	TRUE	No	UT	0.38426513	8.21545333
335	United States	IDR-1	CR/116 (Ku)	-103	9.7	11.2	51.2	60.2264806	10.82	208.862831	30	-103	35.168	55.0257019	9	99.96	0.00094626	23.4982273	19.5860731	18.1054731	9.10547313	TRUE	No	GW	1.57196593	7.5335072
336	United States	IDR-2	CR/116 (Ku)	-103	11.2	11.2	51.2	56.6280562	7.15	181.98	30	-103	35.168	55.0257019	9	99.96	0.00185362	21.9981779	17.7342762	16.3523982	7.35239818	TRUE	No	GW	1.57196593	5.78043226
337	United States	IDR-3	CR/116 (Ku)	-103	12.2	11.2	51.2	53.5386899	5.01	281.98	30	-103	35.168	55.0257019	9	99.96	0.00392362	18.0068651	20.4850305	16.0612342	7.06123422	TRUE	No	GW	1.57196593	5.48926829
401	United States	A5a	CR/116 (Ku)	-103	19	11.2	82	40.7255603	1.2	134.825227	30.03	-103	35.31992	54.9914399	5.8	99.96	0.01827887	13.1523158	16.1855383	11.3990306	5.59903062	TRUE	No	UT	0.32658584	5.27244478
406	United Arab	GSO KU-1	CR/116 (Ku)	56	49.4	12.5	27000	39.0841537	0.85	129	25	56	23.017	60.7629219	11	99.5	0.07499987	16.0439612	29.9999987	15.8727269	4.87272688	TRUE	No	UT	0.31650077	4.55622611
407	United Arab	GSO KU-1	CR/116 (Ku)	56	49.4	12.5	16200	39.0841537	0.85	115	25	56	23.017	60.7629219	10.4	99.5	0.00958698	18.7613674	29.9999987	18.4465314	8.04653143	TRUE	No	UT	0.31650077	7.73003066
425	France	SCPC	CR/116 (Ku)	2.2137	46.689808	11	32930.1032	34.5484536	0.6	153.012284	35.62	2.2137	22	48.6437393	4.5552743	99.7	0.01884408	8.1438449	21.4999998	7.94781141	3.39253712	TRUE	No	UT	0.12362359	3.26891352
4																										

435	United States	Telstar 5	CR/116 (Ku)	-119	39	11.95	34000	60.404933	10	141.8	39.44	-119	13.23376	44.3501827	18	99.98	0.00133504	25.7145202	40	25.5555688	7.55556878	TRUE	No	GW	0.51131321	7.04425557
436	United States	Telstar 6	CR/116 (Ku)	-114	48.8	12.5	19724	37.9970004	0.75	120	32.42	-114	20.27368	52.2684636	8.7	99.7	0.00802954	15.9268286	28.232759	15.6786728	6.97867282	TRUE	No	UT	0.23951819	6.73915463
439	United States	Orion 3	CR/116 (Ku)	-118	20	12.5	83.7	39.5806254	0.9	145	35.7	-118	14.0902	48.5534419	5.2	99.5	0.00170985	11.5567451	16.217698	10.2795292	5.07952924	TRUE	No	UT	0.07069344	5.0088358
441	United States	Pan1_8m-2	CR/116 (Ku)	-118	11.4385802	11.82	47.7866667	45.1153745	1.8	150	36.017	-118	15.353656	48.1957957	7	99.87669	0.00372959	11.2974042	22.2931081	10.9651317	3.9651317	TRUE	No	UT	0.06431463	3.90081708
442	United States	Pan1_8m-3	CR/116 (Ku)	-118	27.0795759	11.82	1029.33333	45.1153745	1.8	150	36.017	-118	15.353656	48.1957957	9	99.78521	0.00351044	13.6059069	22.2931081	13.0548219	4.05482186	TRUE	No	UT	0.06431463	3.99050724
443	United States	Pan1_8m-4	CR/116 (Ku)	-119	27.0750356	11.82	1152.85333	45.1153745	1.8	150	40.75	-119	13.482	42.8865253	7	99.85097	0.0019983	13.0234587	21.6158853	12.4609701	5.46097014	TRUE	No	UT	0.08473502	5.37623512
444	United States	Pan1_8m-5	CR/116 (Ku)	-119	27.1436341	11.82	1152.85333	45.1153745	1.8	150	40.783	-119	13.336272	42.8497135	7	99.97328	0.00210972	13.0914347	21.6158853	12.5206313	5.52063128	TRUE	No	UT	0.08747333	5.43315795
454	United States	Pan1_8m-15	CR/116 (Ku)	-121	13.2909266	11.82	47.7866667	45.1153745	1.8	150	43.317	-121	14.627808	40.0317899	7	99.97177	0.00329498	13.0146485	22.2931081	12.5299432	5.52994324	TRUE	No	UT	0.10640851	5.42353472
455	United States	Pan1_8m-16	CR/116 (Ku)	-110	12.5909281	11.82	47.7866667	45.1153745	1.8	150	42.667	-110	14.61504	40.7529557	7	99.98428	0.00345143	12.3273299	22.2931081	11.9102808	4.91028078	TRUE	No	UT	0.09333744	4.81694333
459	United States	Pan1_8m-20	CR/116 (Ku)	-119	26.5436297	11.2	1029.33333	44.6473855	1.8	150	39.3	-119	12.9156	44.5068724	9	99.8176	0.00519814	13.0112597	22.2931081	12.5269122	3.52691218	TRUE	No	UT	0.07770335	3.44920884
460	United States	Pan1_8m-21	CR/116 (Ku)	-117	26.5778616	11.2	1029.33333	44.6473855	1.8	150	36.2	-117	15.016	47.9894456	9	99.60469	0.00455917	13.1010157	22.2931081	12.6071081	3.6071081	TRUE	No	UT	0.07101214	3.53609597
461	United States	Pan1_8m-22	CR/116 (Ku)	-119	26.6123869	11.2	1029.33333	44.6473855	1.8	150	43.5	-119	14.544	39.8289629	9	99.62601	0.00570763	13.0000248	22.2931081	12.5168616	3.5168616	TRUE	No	UT	0.0857492	3.4311124
462	United States	Pan1_8m-23	CR/116 (Ku)	-118	26.498897	11.2	1029.33333	44.6473855	1.8	150	35.2	-118	13.8746	49.1180613	9	99.72431	0.00596152	13.0392686	22.2931081	12.5519568	3.55195681	TRUE	No	UT	0.07792197	3.47403484
468	United States	Pan1_8m-29	CR/116 (Ku)	-119	45.8	11.2	26666.3619	44.6473855	1.8	150	40.75	-119	13.482	42.8865253	12.7	99.93795	0.0021117	18.106526	26.9999993	17.5795147	4.87951466	TRUE	No	UT	0.07064129	4.80887337
472	United States	Pan10-1	CR/116 (Ku)	-116	22.3237378	11.82	772	60.3099244	10	150	43	-116	14.51	40.3833524	12.7	99.99	0	25.1651025	23.1065103	21.0046578	8.30465778	TRUE	No	GW	0.62314542	7.68151236
473	United States	Pan10-2	CR/116 (Ku)	-118	22.3237701	11.82	772	60.3099244	10	150	36.017	-118	15.353656	48.1957957	12.7	99.99	0	25.2940384	23.1065103	21.0536748	8.35367481	TRUE	No	GW	0.33817429	8.01550052
474	United States	Pan10-3	CR/116 (Ku)	-119	24.5737242	11.82	772	60.3099244	10	150	40.75	-119	13.482	42.8865253	12.7	99.97874	0	27.4582648	22.3020085	21.1457292	8.44572916	TRUE	No	GW	0.43512636	8.0106028
475	United States	Pan10-4	CR/116 (Ku)	-119	24.5750033	11.82	772	60.3099244	10	150	40.783	-119	13.336272	42.8497135	12.7	99.97874	0	27.4589213	22.3020085	21.1458826	8.44588261	TRUE	No	GW	0.44796342	7.99791919
481	United States	Pan10-10	CR/116 (Ku)	-97	21.8237311	11.82	772	60.3099244	10	150	24.083	-97	68.207376	61.8206219	12.7	99.9864	0.01495807	24.9734446	23.1065103	20.9301214	8.23012143	FALSE	No	GW	3.66002617	4.57009526
482	United States	Pan10-11	CR/116 (Ku)	-121	25.0237333	11.82	772	60.3099244	10	150	43.317	-121	14.627808	40.0317899	12.7	99.96901	0	27.8588995	23.1065103	21.8524094	9.15240944	TRUE	No	GW	0.53584493	8.61656451
483	United States	Pan10-12	CR/116 (Ku)	-110	24.3237481	11.82	772	60.3099244	10	150	42.667	-110	14.61504	40.7529557	12.7	99.98379	0	27.1715942	23.1065103	21.669539	8.96953901	TRUE	No	GW	0.47533973	8.49419928
488	United States	Pan10-17	CR/116 (Ku)	-119	17.9679944	11.2	558.4648	59.8419354	10	150	39.3	-119	12.9156	44.5068724	13.3	99.98512	0	22.2857766	27.7164298	21.1921016	7.89210164	TRUE	No	GW	0.40199566	7.49010598
489	United States	Pan10-18	CR/116 (Ku)	-117	17.9706968	11.2	558.8265	59.8419354	10	150	36.2	-117	15.016	47.9894456	13.3	99.87599	0	22.3411912	27.7164298	21.2351184	7.9351184	TRUE	No	GW	0.37022929	7.56488911
490	United States	Pan10-19	CR/116 (Ku)	-119	17.9734685	11.2	559.1882	59.8419354	10	150	43.5	-119	14.544	39.8289629	13.3	99.87805	0	22.2056368	27.7164298	21.1296751	7.82967512	TRUE	No	GW	0.4398849	7.38979022
491	United States	Pan10-20	CR/116 (Ku)	-118	17.9762503	11.2	559.5499	59.8419354	10	150	35.2	-118	13.8746	49.1180613	13.3	99.53977	0	22.358344	27.7164298	21.2484087	7.94840874	TRUE	No	GW	0.4055633	7.54284544
492	United States	Pan10-21	CR/116 (Ku)	-116	34.6999637	11.2	26666.3325	59.8419354	10	150	43	-116	14.51	40.3833524	13.3	99.98934	0.00058171	22.1578685	29.9999987	21.4970086	8.19700861	TRUE	No	GW	0.52785817	7.66915044
493	United States	Pan10-22	CR/116 (Ku)	-116	34.698088	11.2	26666.3325	59.8419354	10	150	43	-116	14.51	40.3833524	13.3	99.95506	0.00058288	22.1559928	29.9999987	21.4953977	8.19539769	TRUE	No	GW	0.52785817	7.66753952
494	United States	Pan10-23	CR/116 (Ku)	-118	34.7002898	11.2	26666.3325	59.8419354	10	150	36.017	-118	15.353656	48.1957957	13.3	99.97215	0	22.2870981	29.9999987	21.6077619	8.30776191	TRUE	No	GW	0.28731344	8.02044847
495	United States	Pan10-24	CR/116 (Ku)	-118	34.6968707	11.2	26666.3325	59.8419354	10	150	36.017	-118	15.353656	48.1957957	13.3	99.93372	0	22.2836791	29.9999987	21.6048378	8.30483777	TRUE	No	GW	0.28731344	8.01752433
496	United States	Pan10-25	CR/116 (Ku)	-121	37.3998842	11.2	26666.3325	59.8419354	10	150	43.317	-121	14.627808	40.0317899	13.3	99.99	0	24.8515904	29.9999987	23.6934754	10.3934754	TRUE	No	GW	0.45430702	9.93916835
497	United States	Pan10-26	CR/116 (Ku)	-110	36.6976289	11.2	26666.3325	59.8419354	10	150	42.667	-110	14.61504	40.7529557	13.3	99.99	0	24.162015	29.9999987	23.1557722	9.85577219	TRUE	No	GW	0.40316952	9.45260267
503	United States	Pan10-32	CR/116 (Ku)	-120	40.4979114	11.2	26666.3325	59.8419354	10	150	47.667	-120	14.243472	35.2357133	13.3	99.99	0	27.8619118	26.9999993	24.3993084	11.0993084	TRUE	No	GW	0.4478059	10.6515025
504	United States	Pan10-33	CR/116 (Ku)	-119	35.7024783	11.2	26665.9708	59.8419354	10	150	40.75	-119	13.482	42.8865253	13.3	99.99	0	23.2036179	26.9999993	21.6892548	8.3892548	TRUE	No	GW	0.36846139	8.02079341
505	United States	Pan10-34	CR/116 (Ku)	-119	35.698843	11.2	26666.3325	59.8419354	10	150	40.783	-119	13.336272	42.8497135	13.3	99.99	0	23.1993011	26.9999993	21.6862084	8.38620838	TRUE	No	GW	0.37919947	8.00700891
508	United States	Pan7-1	CR/116 (Ku)	-116	22.3249953	11.82	772	56.9118852	7	150	43	-116	14.51	40.3833524	12.7	99.97685	0.00118323	21.7683208	23.1065103	19.3757763	6.67577627	TRUE	No	GW	0.62314542	6.05263085
509	United States	Pan7-2	CR/116 (Ku)	-116	22.3237273	11.82	772	56.9118852	7	150	43	-116	14.51	40.3833524	12.7	99.99	0.00118398	21.7670528	23.1065103	19.3750453	6.67504529	TRUE	No	GW	0.62314542	6.05189987
510	United States	Pan7-3	CR/116 (Ku)	-118	22.9396199	11.82	772	56.9118852	7	150	36.017	-118	15.353656	48.1957957	12.7	99.97725	0	22.5118489	23.1065103	19.7887095	7.08870953	TRUE	No	GW	0.33817429	6.75053524
511	United States	Pan7-4	CR/116 (Ku)	-119	24.5737302	11.82	772	56.9118852	7	150	40.75	-119	13.482	42.8865253	12.7	99.94733	0	24.0602316	22.3020085	20.082445	7.38244501	TRUE	No	GW	0.43512636	6.94731865
512	United States	Pan7-5	CR/116 (Ku)	-119	21.7749566	11.82	772	56.9118852	7	150	40.75	-119	13.482	42.8865253	12.7	99.56717	0.00047926	21.261458	22.3020085	18.7403436	6.04034363	TRUE	No	GW	0.43512636	5.60521727
513	United States	Pan7-6	CR/116 (Ku)	-119	20.7749864	11.82	772	56.9118852	7	150	40.783	-119	13.336272	42.8497135	12.7	99.98764	0.00125348	20.2608653	22.3020085	18.1523099	5.45230987	TRUE	No	GW	0.44796342	5.00434645
520	United States	Pan7-13	CR/116 (Ku)	-121	25.0237299	11.82	772	56.9118852	7	150	43.317	-121	14.627808	40.0317899	12.7	99.98425	0	24.4608568	23.1065103	20.7208021	8.02080207	TRUE	No	GW	0.53584493	7.48495714
521	United States	Pan7-14	CR/116 (Ku)	-110	24.3237686	11.82	772																			

528	United States	Pan7-21	CR/116 (Ku)	-119	21.3237297	11.2	772	56.4438962	7	150	43.5	-119	14.544	39.8289629	13.3	99.97045	0.00120457	20.7572657	23.1065103	18.7646396	5.4646396	TRUE	No	GW	0.4398849	5.0247547
529	United States	Pan7-22	CR/116 (Ku)	-118	21.323704	11.2	772	56.4438962	7	150	35.2	-118	13.8746	49.1180613	13.3	99.92399	0.00103059	20.9099737	23.1065103	18.8605293	5.5605293	TRUE	No	GW	0.4055633	5.154966
530	United States	Pan7-23	CR/116 (Ku)	-116	34.7002941	11.2	26666.3325	56.4438962	7	150	43	-116	14.51	40.3833524	13.3	99.99	0.00359182	18.7601597	29.9999987	18.4454082	5.14540818	TRUE	No	GW	0.52785817	4.61755001
531	United States	Pan7-24	CR/116 (Ku)	-116	34.7003007	11.2	26666.3325	56.4438962	7	150	43	-116	14.51	40.3833524	13.3	99.94045	0.00359181	18.7601662	29.9999987	18.4454143	5.14541429	TRUE	No	GW	0.52785817	4.61755613
532	United States	Pan7-25	CR/116 (Ku)	-118	34.6998404	11.2	26666.3325	56.4438962	7	150	36.017	-118	15.353656	48.1957957	13.3	99.95607	0.00132416	18.8886096	29.9999987	18.5647535	5.26475354	TRUE	No	GW	0.28731344	4.9774401
533	United States	Pan7-26	CR/116 (Ku)	-118	37.5996936	11.2	26666.3325	56.4438962	7	150	36.017	-118	15.353656	48.1957957	13.3	99.92578	0	21.7884627	29.9999987	21.1778807	7.87788072	TRUE	No	GW	0.28731344	7.59056728
534	United States	Pan7-27	CR/116 (Ku)	-121	37.3997956	11.2	26666.3325	56.4438962	7	150	43.317	-121	14.627808	40.0317899	13.3	99.99	0.00057989	21.4534626	29.9999987	20.8853732	7.58537323	TRUE	No	GW	0.45430702	7.1310662
535	United States	Pan7-28	CR/116 (Ku)	-110	36.7012024	11.2	26666.3325	56.4438962	7	150	42.667	-110	14.61504	40.7529557	13.3	99.98576	0.00064779	20.7675494	29.9999987	20.2779622	6.97796218	TRUE	No	GW	0.40316952	6.57479267
541	United States	Pan1.2-2	CR/116 (Ku)	-116	28.9490786	11.82	1152.85333	41.1935494	1.2	150	43	-116	14.51	40.3833524	7	99.93576	0.00957668	10.9325006	22.2931081	10.6260838	3.6260838	TRUE	No	UT	0.12551078	3.50057301
543	United States	Pan1.2-4	CR/116 (Ku)	-118	28.3674343	11.82	1152.85333	41.1935494	1.2	150	36.017	-118	15.353656	48.1957957	7	99.70022	0.00607569	10.4797599	22.2931081	10.2027314	3.20273137	TRUE	No	UT	0.06431463	3.13841674
544	United States	Pan1.2-5	CR/116 (Ku)	-119	29.9508491	11.82	1152.85333	41.1935494	1.2	150	40.75	-119	13.482	42.8865253	7	99.98363	0.00359768	11.977447	21.6158853	11.5293785	4.52937846	TRUE	No	UT	0.08473502	4.44464344
545	United States	Pan1.2-6	CR/116 (Ku)	-119	29.5580065	11.82	1152.85333	41.1935494	1.2	150	40.783	-119	13.336272	42.8497135	7	99.97394	0.00399668	11.5839819	21.6158853	11.1729457	4.17294571	TRUE	No	UT	0.08747333	4.08547239
549	United States	Pan1.2-10	CR/116 (Ku)	-95	29.2211318	11.82	1152.85333	41.1935494	1.2	150	49.238	-95	28.525104	33.5167435	7	99.52303	0.10253685	11.0778593	21.6158853	10.7101809	3.71018093	TRUE	No	UT	0.37014631	3.34003462
555	United States	Pan1.2-16	CR/116 (Ku)	-121	31.3086986	11.82	1152.85333	41.1935494	1.2	150	43.317	-121	14.627808	40.0317899	7	99.97989	0.00309128	13.2859221	22.2931081	12.7717556	5.77175558	TRUE	No	UT	0.10640851	5.66534707
556	United States	Pan1.2-17	CR/116 (Ku)	-110	31.3379567	11.82	1152.85333	41.1935494	1.2	150	42.667	-110	14.61504	40.7529557	7	99.99	0.00194305	13.3278601	22.2931081	12.808991	5.80899101	TRUE	No	UT	0.09333744	5.71565357
560	United States	Pan1.2-21	CR/116 (Ku)	-119	30.8604193	11.2	1152.85333	40.7255603	1.2	150	39.3	-119	12.9156	44.5068724	7	99.99	0.00189408	12.9140439	22.2931081	12.4398536	5.4398536	TRUE	No	UT	0.07770335	5.36215025
561	United States	Pan1.2-22	CR/116 (Ku)	-117	30.7932577	11.2	1152.85333	40.7255603	1.2	150	36.2	-117	15.016	47.9894456	7	99.98616	0.0017747	12.9024063	22.2931081	12.4294183	5.42941833	TRUE	No	UT	0.07101214	5.35840619
562	United States	Pan1.2-23	CR/116 (Ku)	-119	30.8963035	11.2	1152.85333	40.7255603	1.2	150	43.5	-119	14.544	39.8289629	7	99.98716	0.00228855	12.869936	22.2931081	12.4002874	5.40028735	TRUE	No	UT	0.0857492	5.31453815
563	United States	Pan1.2-24	CR/116 (Ku)	-118	30.7117719	11.2	1152.85333	40.7255603	1.2	150	35.2	-118	13.8746	49.1180613	7	99.99	0.00240852	12.8381381	22.2931081	12.3717381	5.37173806	TRUE	No	UT	0.07792197	5.29381609
565	United States	Pan0.6-2	CR/116 (Ku)	-118	15.2533391	11.82	71.68	41.1935494	1.2	150	36.017	-118	15.353656	48.1957957	3.7	99.96694	0.00165082	9.4294253	22.2931081	9.21043715	5.51043715	TRUE	No	UT	0.06431463	5.44612252
566	United States	Pan0.6m-2	CR/116 (Ku)	-119	14.6533393	11.82	71.68	41.1935494	1.2	150	40.75	-119	13.482	42.8865253	3.7	99.98363	0.00347307	8.74369786	21.6158853	8.52512752	4.82512752	TRUE	No	UT	0.08473502	4.7403925
577	United States	Pan3-1	CR/116 (Ku)	-116	23.9228345	11.82	1029.33333	49.8523495	3	150	43	-116	14.51	40.3833524	9	99.99	0.0037015	15.057237	22.2931081	14.3054962	5.30549617	TRUE	No	UT	0.12551078	5.17998538
578	United States	Pan3-2	CR/116 (Ku)	-116	26.8489078	11.82	772	49.8523495	3	150	43	-116	14.51	40.3833524	12.7	99.92265	0.00351693	19.2326976	23.1065103	17.7409866	5.04098657	TRUE	No	UT	0.12551078	4.91547579
579	United States	Pan3-3	CR/116 (Ku)	-118	23.9226034	11.82	1029.33333	49.8523495	3	150	36.017	-118	15.353656	48.1957957	9	99.92	0.00140253	15.1859093	22.2931081	14.4134606	5.41346056	TRUE	No	UT	0.06431463	5.34914594
580	United States	Pan3-4	CR/116 (Ku)	-118	26.3509752	11.82	772	49.8523495	3	150	36.017	-118	15.353656	48.1957957	12.7	99.82199	0.00158415	18.8636685	23.1065103	17.4760408	4.77604081	TRUE	No	UT	0.06431463	4.71172618
581	United States	Pan3-5	CR/116 (Ku)	-119	26.2226988	11.82	1029.33333	49.8523495	3	150	40.75	-119	13.482	42.8865253	9	99.99	0.00041555	17.4002771	21.6158853	16.0051841	7.00518411	TRUE	No	UT	0.08473502	6.92044909
582	United States	Pan3-6	CR/116 (Ku)	-119	26.224388	11.82	1029.33333	49.8523495	3	150	40.783	-119	13.336272	42.8497135	9	99.99	0.00050877	17.4013438	21.6158853	16.0059577	7.00595772	TRUE	No	UT	0.08747333	6.91848439
586	United States	Pan3-10	CR/116 (Ku)	-95	7.86563197	11.82	47.7866667	49.8523495	3	150	49.238	-95	28.525104	33.5167435	7	99.62334	0.04088841	12.2058329	21.6158853	11.7348376	4.73483763	TRUE	No	UT	0.37014631	4.36469132
592	United States	Pan3-16	CR/116 (Ku)	-121	26.5446845	11.82	772	49.8523495	3	150	43.317	-121	14.627808	40.0317899	12.7	99.94917	0.00342048	18.9222758	22.2931081	17.2782464	4.5782464	TRUE	No	UT	0.10640851	4.47183788
593	United States	Pan3-17	CR/116 (Ku)	-110	25.4807573	11.82	772	49.8523495	3	150	42.667	-110	14.61504	40.7529557	12.7	99.94	0.00387228	17.8710285	22.2931081	16.5316915	3.83169154	TRUE	No	UT	0.09333744	3.7383541
597	United States	Pan3-21	CR/116 (Ku)	-119	23.7946609	11.82	1029.33333	49.8523495	3	150	39.3	-119	12.9156	44.5068724	9	99.945	0.00306871	14.9992658	23.1065103	14.3748618	5.37486182	TRUE	No	UT	0.09335512	5.2815067
598	United States	Pan3-22	CR/116 (Ku)	-117	24.1161934	11.82	1029.33333	49.8523495	3	150	36.2	-117	15.016	47.9894456	9	99.94936	0.00189513	15.3763225	23.1065103	14.6994853	5.69948526	TRUE	No	UT	0.08501367	5.61447159
599	United States	Pan3-23	CR/116 (Ku)	-119	23.9155809	11.82	1029.33333	49.8523495	3	150	43.5	-119	14.544	39.8289629	9	99.94565	0.00319403	15.0401938	23.1065103	14.4102864	5.41028644	TRUE	No	UT	0.10271452	5.30757192
600	United States	Pan3-24	CR/116 (Ku)	-118	24.2528165	11.82	1029.33333	49.8523495	3	150	35.2	-118	13.8746	49.1180613	9	99.935	0.00227502	15.5301632	23.1065103	14.8307859	5.83078585	TRUE	No	UT	0.09350894	5.73727691
601	United States	Pan3-25	CR/116 (Ku)	-110	44	11.2	26666.3619	49.3843605	3	150	42.667	-110	14.61504	40.7529557	12.7	99.91862	5.1223E-05	21.0068065	29.9999987	20.4910753	7.7910753	TRUE	No	UT	0.07795158	7.71312372
610	United States	GE-1 Ku	CR/116 (Ku)	-110	39.5	11.94	3088	47.7018863	2.4	150	41.8	-110	14.5184	41.7166733	2.5	99.9	0	23.6481989	26.9845468	21.9932723	19.4932723	TRUE	No	UT	0.10350804	19.3897642
611	United States	GE-1 Ku	CR/116 (Ku)	-118	38.6	11.94	3088	47.7018863	2.4	150	35	-118	14.071	49.3440823	2.5	99.9	0	22.8713351	26.9845468	21.4478678	18.9478678	TRUE	No	UT	0.09152011	18.8563477
614	United States	GE-3Mass	CR/116 (Ku)	-115	25.8	11.74	1544	47.5551617	2.4	150	42.8	-115	14.9506	40.6053	7	99.5	0.00355619	12.939186	26.9845468	12.7713711	5.77137111	TRUE	No	UT	0.11987234	5.65149878
615	United States	GE-3	CR/116 (Ku)	-120	29.9	11.74	4000	47.5551617	2.4	150	47.6	-120	14.1952	35.3091803	7	99.5	0.00333442	12.8086442	26.0185378	12.6060506	5.60605057	TRUE	No	UT	0.10610235	5.49994822
616	United States	GE-3	CR/116 (Ku)	-116	33.6	11.8	1466	45.1006652	1.8	150	33.5	-116	13.359	51.0423569	7	99.5	0	18.633043	26.9845468	18.0405636	11.0405636	TRUE	No	UT	0.12896016	10.9116035
618	United States	GE-3 Ku	CR/116 (Ku)	-120	41.4	11.94	100	60.9255151	11	150	40.7	-120	13.549	42.9423064	10	99.5	0	53.6895099	19.2081875	19.2066402	9.2066402	TRUE	No	GW	0.39782768	8.80881253
619	United States	GE-3 Ku	CR/116 (Ku)	-81																						

622	United States	GE-3 Ku	CR/116 (Ku)	-119	40.5	11.94	100	51.4616959	3.7	150	39.1	-119	12.6482	44.7308042	10	99.5	0	43.3554513	19.2081875	19.1915064	9.19150644	TRUE	No	GW	0.48625249	8.70525396
623	United States	GE-3 Ku	CR/116 (Ku)	-120	41.4	11.94	100	51.4616959	3.7	150	40.7	-120	13.549	42.9423064	10	99.5	0	44.2256907	19.2081875	19.1945306	9.19453064	TRUE	No	GW	0.39782768	8.79670296
624	United States	GE-3 Ku	CR/116 (Ku)	-119	43.2	11.94	100	60.9255151	11	150	39.1	-119	12.6482	44.7308042	12	99.5	0	55.5192705	26.9845468	26.9784653	14.9784653	TRUE	No	GW	0.48625249	14.4922128
625	United States	GE-3 Ku	CR/116 (Ku)	-81	42.1	11.94	100	60.9255151	11	150	25.7	-81	77.6112	59.9566155	5	99.9	0	54.6328885	26.0185378	26.0125667	21.0125667	TRUE	No	GW	3.96616008	17.0464067
626	United States	GE-3 Ku	CR/116 (Ku)	-81	42.1	11.94	100	51.4616959	3.7	150	25.7	-81	77.6112	59.9566155	5	99.9	0	45.1690693	26.9845468	26.919075	21.919075	TRUE	No	GW	3.96616008	17.9529149
627	United States	GE-3 Ku	CR/116 (Ku)	-119	43.2	11.94	100	51.4616959	3.7	150	39.1	-119	12.6482	44.7308042	10	99.9	0	46.0554513	26.9845468	26.9310881	16.9310881	TRUE	No	GW	0.48625249	16.4448356
628	United States	GE-3 Ku	CR/116 (Ku)	-119	44.4	11.94	100	60.9255151	11	150	40.75	-119	13.482	42.8865253	10	99.9	0	56.6885673	26.9845468	26.9799	16.9799	TRUE	No	GW	0.44848143	16.5314186
629	United States	GE-3 Ku	CR/116 (Ku)	-120	44.4	11.94	100	51.4616959	3.7	150	40.7	-120	13.549	42.9423064	12	99.5	0	47.2256907	19.5851357	19.5776651	7.57766514	TRUE	No	GW	0.39782768	7.17983747
631	United States	GE-4 Ku	CR/116 (Ku)	-120	34.8	11.94	2222	40.0976614	1	150	40.7	-120	13.549	42.9423064	2.5	99.9	0	12.7942157	26.9845468	12.6318084	10.1318084	TRUE	No	UT	0.07682249	10.0549859
632	United States	GE-5 01 Ku	CR/116 (Ku)	-116	26.4	11.73	548	41.1271601	1.2	150	33.5	-116	13.359	51.0423569	2.5	99.9	0.00097291	11.7847519	26.0185378	11.623932	9.12393198	TRUE	No	UT	0.1264053	8.99752668
633	United States	GE-5 01 Ku	CR/116 (Ku)	-119	26.4	11.73	548	41.1271601	1.2	150	43.6	-119	14.4272	39.7181675	2.5	99.9	0.0002104	11.6016014	26.9845468	11.4776427	8.97764271	TRUE	No	UT	0.098188	8.87945472
644	United States	A5a	CR/116 (Ku)	-103	19	11.2	82	40.7255603	1.2	134.825227	30.03	-103	35.31992	54.9914399	5.8	99.96	0.01827887	13.1523158	16.1855383	11.3990306	5.59903062	TRUE	No	UT	0.32658584	5.27244478
650	United States	IDR103	CR/116 (Ku)	-103	20.4	11.2	51.2	40.7255603	1.2	245.341582	29.96	-103	34.9472	55.0713877	9	99.96	0.02672044	13.9988094	23.0725943	13.4920284	4.49202836	TRUE	No	UT	0.32680201	4.16522635
653	United States	VSATIBS-3	CR/116 (Ku)	-103	17.1	11.2	83.7	40.7255603	1.2	245.341582	29.96	-103	34.9472	55.0713877	4.273	99.6	0.06109047	8.56425447	15.3125252	7.73126019	3.45826019	TRUE	No	UT	0.32680201	3.13145818
656	United States	8PSK-3	CR/116 (Ku)	-103	35.5	11.2	1170	40.7255603	1.2	245.341582	29.96	-103	34.9472	55.0713877	10.5181414	99.96	0.02655508	15.5096504	25.0932318	15.0561737	4.53803227	TRUE	No	UT	0.32680201	4.21123026
662	United States	IDR106	CR/116 (Ku)	-103	13.5	11.2	51.2	47.1461602	2.4	162.866271	29.96	-103	34.9472	55.0713877	9	99.96	0.02262147	15.2988094	20.1052877	14.0582117	5.05821169	TRUE	No	UT	0.32680201	4.73140967
663	United States	VSATIBS-4	CR/116 (Ku)	-99	8.3	11.2	83.7	47.1461602	2.4	162.866271	28	-99	49.374	57.3142877	4.27	99.6	0.3024454	7.99297259	24.4591372	7.89607478	3.62607478	TRUE	No	UT	0.49868215	3.12739263
665	United States	VSATIBS-6	CR/116 (Ku)	-103	9.1	11.2	83.7	47.1461602	2.4	162.866271	29.96	-103	34.9472	55.0713877	4.27	99.6	0.07040731	8.76425447	23.4932427	8.62048158	4.35048158	TRUE	No	UT	0.32680201	4.02367957
668	United States	8PSK-6	CR/116 (Ku)	-103	28.6	11.2	1170	47.1461602	2.4	162.866271	29.96	-103	34.9472	55.0713877	10.5181414	99.96	0.02247652	16.8096504	21.8915104	15.6358667	5.11772533	TRUE	No	UT	0.32680201	4.79092332
669	United States	IDRX7	CR/116 (Ku)	-99	5.5	11.2	51.2	57.6037351	8	227.818319	28	-99	49.374	57.3142877	9.00730039	99.96	0.02083633	16.3275276	24.4882972	15.7102533	6.70295295	TRUE	No	GW	2.3583444	4.34460855
671	United States	IDRX9	CR/116 (Ku)	-103	5.3	11.2	51.2	57.6037351	8	227.818319	29.96	-103	34.9472	55.0713877	9.00730039	99.96	0.00822593	16.0988094	24.8387659	15.5539778	6.5466774	TRUE	No	GW	1.57327969	4.97339771
672	United States	IDR107	CR/116 (Ku)	-99	4.2	11.2	51.2	57.6037351	8	227.818319	28	-99	49.374	57.3142877	9	99.96	0.04180626	15.0275276	25.2350442	14.6320614	5.63206141	FALSE	No	GW	2.3583444	3.27371701
674	United States	IDR109	CR/116 (Ku)	-103	5.7	11.2	51.2	57.6037351	8	227.818319	29.96	-103	34.9472	55.0713877	9	99.96	0.0070364	16.4988094	24.3657264	15.8414398	6.84143984	TRUE	No	GW	1.57327969	5.26816015
675	United States	VSATIBS-7	CR/116 (Ku)	-99	1.6	11.2	83.7	57.6037351	8	227.818319	28	-99	49.374	57.3142877	4.273	99.6	0.04007068	10.2929726	23.8568234	10.1058992	5.83289921	TRUE	No	GW	2.3583444	3.47455481
677	United States	VSATIBS-9	CR/116 (Ku)	-103	1.7	11.2	83.7	57.6037351	8	227.818319	29.96	-103	34.9472	55.0713877	4.273	99.6	0.01475351	10.3642545	23.9264978	10.1771133	5.90411331	TRUE	No	GW	1.57327969	4.33083362
678	United States	8PSK-7	CR/116 (Ku)	-99	19.7	11.2	1170	57.6037351	8	227.818319	28	-99	49.374	57.3142877	10.5181414	99.96	0.03382455	16.9383686	25.2306113	16.3382867	5.82014529	TRUE	No	GW	2.3583444	3.46180089
680	United States	8PSK-9	CR/116 (Ku)	-103	21.3	11.2	1170	57.6037351	8	227.818319	29.96	-103	34.9472	55.0713877	10.5181414	99.96	0.0063432	18.5096504	23.3086557	17.2671946	6.7490532	TRUE	No	GW	1.57327969	5.17577351
681	United States	IDRX10	CR/116 (Ku)	-99	3.8	11.2	51.2	59.8419354	10	178.405677	28	-99	49.374	57.3142877	9.00730039	99.96	0.01343525	17.9275276	25.281455	17.1943377	8.18703731	TRUE	No	GW	2.3583444	5.82869291
683	United States	IDRX12	CR/116 (Ku)	-103	3.8	11.2	51.2	59.8419354	10	178.405677	29.96	-103	34.9472	55.0713877	9.00730039	99.96	0.00535154	17.8988094	25.3472963	17.1801742	8.17287382	TRUE	No	GW	1.57327969	6.59959413
684	United States	IDR110	CR/116 (Ku)	-99	2.9	11.2	51.2	59.8419354	10	178.405677	28	-99	49.374	57.3142877	9	99.96	0.01966229	17.0275276	25.3839987	16.4356813	7.43568134	TRUE	No	GW	2.3583444	5.07733694
686	United States	IDR112	CR/116 (Ku)	-103	4.4	11.2	51.2	59.8419354	10	178.405677	29.96	-103	34.9472	55.0713877	9	99.96	0.00423295	18.4988094	25.0522318	17.6311722	8.63117215	TRUE	No	GW	1.57327969	7.05789246
687	United States	VSATIBS-10	CR/116 (Ku)	-99	-0.3	11.2	83.7	59.8419354	10	178.405677	28	-99	49.374	57.3142877	4.273	99.6	0.02369065	11.6929726	22.9431179	11.3789408	7.10594082	TRUE	No	GW	2.3583444	4.74759642
689	United States	VSATIBS-12	CR/116 (Ku)	-103	-0.3	11.2	83.7	59.8419354	10	178.405677	29.96	-103	34.9472	55.0713877	4.273	99.6	0.0087368	11.6642545	22.9546991	11.3530217	7.08002173	TRUE	No	GW	1.57327969	5.50674204
690	United States	8PSK-10	CR/116 (Ku)	-99	17.8	11.2	1170	59.8419354	10	178.405677	28	-99	49.374	57.3142877	10.5181414	99.96	0.02097127	18.3383686	26.0538658	17.6594082	7.14126686	TRUE	No	GW	2.3583444	4.78292246
692	United States	8PSK-12	CR/116 (Ku)	-103	19.5	11.2	1170	59.8419354	10	178.405677	29.96	-103	34.9472	55.0713877	10.5181414	99.96	0.00431641	20.0096504	25.2306113	18.8684095	8.35026815	TRUE	No	GW	1.57327969	6.77698845
297	France	Videosat-Ka,	CR/116 (Ka)	-1	63.5	20	41000	39.7411998	0.6	180	44	-1	60	39.2752612	8	99.85	0.05701725	23.1412646	19.9250186	18.2316754	10.2316754	TRUE	No	UT	2.02223502	8.20944035
299	France	Vid'sat-Ka 64	CR/116 (Ka)	-1	36	20	77	39.7411998	0.6	180	44	-1	60	39.2752612	6	99.85	0.03314061	22.9041959	17.613379	16.4881816	10.4881816	TRUE	No	UT	2.02223502	8.46594654
301	United States	KA-01	CR/116 (Ka)	-102	27.5	20	2670	57.9424251	4.5	250	30	-102	38	55.0257019	4.6	99.5	0.08496046	16.0247309	23.9999997	15.3824188	10.7824188	TRUE	No	GW	6.89920276	3.88321604
302	United States	KA-02	CR/116 (Ka)	-102	33.8	20	2670	55.7595357	3.5	250	30	-102	38	55.0257019	4.6	99.5	0.02363653	20.1418415	19.8116765	16.9633223	12.3633223	TRUE	No	GW	6.89920276	5.4641195
303	United States	KA-03	CR/116 (Ka)	-102	53	20	100000	49.9836249	1.8	250	30	-102	38	55.0257019	4	99.5	0.03666086	17.8310433	21.8962643	16.3941106	12.3941106	TRUE	No	UT	1.64713066	10.74698
304	United States	KA-04	CR/116 (Ka)	-102	55	20	100000	45.7617997	1.2	250	30	-102	38	55.0257019	4	99.5	0.0819892	15.6092181	21.8962643	14.6921155	10.6921155	TRUE	No	UT	1.64713066	9.04498487
305	United States	KA-05	CR/116 (Ka)	-102	55	20	50000	42.2399746	0.8	250	30	-102	38	55.0257019	4	99.5	0.09744273	15.0976929	21.8962643	14.2734358	10.2734358	TRUE	No	UT	1.64713066	8.62630516
316	United States	KA-01	CR/116 (Ka)	-119	58.2	20	151920	40.5690535	0.66	250	40	-119	14.01	43.7239403	3.8	99.5	0.00780653	1								

318	United States	KA-03	CR/116 (Ka)	-119	53	20	151920	45.7617997	1.2	250	40	-119	14.01	43.7239403	3.8	99.5	0.00782306	11.6237615	21.8962643	11.2339131	7.43391306	TRUE	No	UT	0.3715683	7.06234476
319	United States	KA-04	CR/116 (Ka)	-119	49.5	20	151920	49.9836249	1.8	250	40	-119	14.01	43.7239403	3.8	99.5	0.00635955	12.3455867	21.8962643	11.8888363	8.08883633	TRUE	No	UT	0.3715683	7.71726803
320	United States	KA-05	CR/116 (Ka)	-119	46.7	20	151920	52.836975	2.5	250	40	-119	14.01	43.7239403	3.8	99.5	0.0062741	12.3989368	21.8962643	11.936831	8.13683097	TRUE	No	UT	0.3715683	7.76526267
321	United States	KA-06	CR/116 (Ka)	-119	46.3	18	276230	54.8443859	3.5	250	40	-119	14.01	43.7239403	3.8	99.5	0.00387531	12.3249386	21.8962643	11.8702451	8.07024508	TRUE	No	GW	1.33916521	6.73107987
322	United States	KA-07	CR/116 (Ka)	-119	45.6	18	276230	55.5586969	3.8	250	40	-119	14.01	43.7239403	3.8	99.5	0.00386806	12.3392496	21.8962643	11.8831315	8.08313146	TRUE	No	GW	1.33916521	6.74396624
323	United States	KA-08	CR/116 (Ka)	-119	44.7	18	276230	56.4280108	4.2	250	40	-119	14.01	43.7239403	3.8	99.5	0.0038826	12.3085635	21.8962643	11.855495	8.05549497	TRUE	No	GW	1.33916521	6.71632975
324	United States	KA-09	CR/116 (Ka)	-119	43.9	18	276230	57.2181816	4.6	250	40	-119	14.01	43.7239403	3.8	99.5	0.00388702	12.2987343	21.8962643	11.8466385	8.04663853	TRUE	No	GW	1.33916521	6.70747332
325	United States	KA-10	CR/116 (Ka)	-119	43.2	18	276230	57.9424251	5	250	40	-119	14.01	43.7239403	3.8	99.5	0.0038749	12.3229778	21.8962643	11.8684791	8.06847915	TRUE	No	GW	1.33916521	6.72931394
327	United States	Seattle	CR/116 (Ka)	-120	55.0136376	20.2	123181.219	40.655481	0.66	183.387692	47.6	-122.33	14.1952	35.2617658	6.3016687	99.68	0.56043668	10.5504071	19.9017798	10.0733442	3.77167553	FALSE	No	UT	0.55727513	3.21440041
329	United States	Los Angeles	CR/116 (Ka)	-116	55.0136376	20.2	123181.219	40.655481	0.66	173.840749	33.88	-118.24	15.36288	50.5377989	6.3016687	99.79	0.36460972	11.0400526	19.9017798	10.5094017	4.20773299	FALSE	No	UT	0.56569566	3.64203733
330	United States	Chicago	CR/116 (Ka)	-110	56.3820172	20.2	123181.219	40.655481	0.66	195.415074	41.82	-87.63	14.52736	36.5872101	6.3016687	99.5	0.970966	11.6677078	19.9017798	11.0600749	4.75840617	FALSE	No	UT	0.78892987	3.9694763
332	United States	Miami	CR/116 (Ka)	-81	56.3820172	20.2	123181.219	45.8482272	1.2	196.577505	25.78	-80.19	77.38208	59.8508864	6.3016687	99.48	0.48987793	17.1895871	19.9017798	15.3270147	9.02534603	TRUE	No	UT	3.07616144	5.94918459
345	United States	VSAT T5	CR/116 (Ka)	-119	59	19.95	100000	41.0583937	0.7	275	39.5	-119	13.42	44.2830457	6	99.3	0.00721901	14.3535975	40	14.3417793	8.34177926	TRUE	No	UT	0.41104757	7.93073169
346	United States	VSAT T9	CR/116 (Ka)	-119	59	19.95	100000	43.2412831	0.9	275	39.5	-119	13.42	44.2830457	6	99.7	0.00392357	16.5364869	40	16.5169679	10.5169679	TRUE	No	UT	0.41104757	10.1059204
347	United States	VSAT T1	CR/116 (Ka)	-119	59	19.95	100000	44.9842866	1.1	275	39.5	-119	13.42	44.2830457	6	99.8	0.00321882	18.2794904	40	18.2503647	12.2503647	TRUE	No	UT	0.41104757	11.8393171
736	France	Multicarrier	CR/116 (Ka)	2	38.1634154	20	375.012766	39.7411998	0.6	205.012284	50.9	2	22	31.7059091	4.5	99	0.01288108	17.4846715	15.7010839	13.4916522	8.99165222	TRUE	No	UT	0.81269332	8.1789589
737	France	Multicarrier	CR/116 (Ka)	2	38.1308683	20	375.012766	39.7411998	0.6	205.012284	50.9	2	22	31.7059091	4.5	99.5	0.01247686	17.4521244	17.1041369	14.2643462	9.76434622	TRUE	No	UT	0.81269332	8.9516529
745	France	Broadcast	CR/116 (Ka)	2	52.189808	18	32930.1032	38.82605	0.6	223.012284	50.9	2	22	31.7059091	4.5552743	99.7	0.0497795	11.7101047	21.7720667	11.3017743	6.74650004	TRUE	No	UT	0.64857142	6.09792862
753	United States	KA-band	CR/116 (Ka)	-119	57	19.325	1845	40.7819258	0.7	180	39.7	-119	13.9532	44.0593243	5	99.9	0	31.530534	26.9845468	25.6777486	20.6777486	TRUE	No	UT	0.37333556	20.3044131
754	United States	KA-band	CR/116 (Ka)	-119	39.1	19.325	1843	50.6005649	2	180	40	-119	14.01	43.7239403	5	99.9	0	23.4483077	26.9845468	21.8557292	16.8557292	TRUE	No	UT	0.3428944	16.5128348
755	United States	KA-band	CR/116 (Ka)	-119	54.9	19.325	27700	40.7819258	0.7	200	40	-119	14.01	43.7239403	5	99.9	0.00275013	17.2025493	26.9845468	16.7683456	11.7683456	TRUE	No	UT	0.3428944	11.4254512
756	United States	KA-band	CR/116 (Ka)	-116	51.3	19.325	20000	40.1382321	0.65	150	33.5	-116	13.359	51.0423569	5	99.9	0.00802695	15.7368998	26.9845468	15.4226937	10.4226937	TRUE	No	UT	0.50169828	9.9209954
757	United States	KA-band	CR/116 (Ka)	-119	49.3	19.325	20000	41.9417647	0.8	180	40	-119	14.01	43.7239403	8	99.5	0.01634653	14.6344609	26.9845468	14.3887457	6.38874571	TRUE	No	UT	0.3428944	6.04585131
828	United States	US-Ka-500-G	CR/116 (Ka)	-116	52.2	18.5	98350	58.1804096	5	298	33	-116	14.812	51.6096547	8.8	99.99	0.00170486	25.1675049	16.9872666	16.3725668	7.57256682	TRUE	No	GW	2.23733494	5.33523188
834	United States	USCSID1	CR/116 (Ka)	-119	69.5	19.6	3200000	70.7232962	20	255	39	-119	12.649	44.8428094	10	100	0	39.9578613	40	36.9685796	26.9685796	TRUE	No	GW	1.51784715	25.4507324
836	United States	USCSID3	CR/116 (Ka)	-119	69.5	19.6	3200000	70.7232962	20	255	39	-119	12.649	44.8428094	10	100	0	39.9578613	40	36.9685796	26.9685796	TRUE	No	GW	1.51784715	25.4507324
838	United States	USCSID5	CR/116 (Ka)	-119	69.5	19.6	3200000	70.7232962	20	255	39	-119	12.649	44.8428094	10	100	0	39.9578613	40	36.9685796	26.9685796	TRUE	No	GW	1.51784715	25.4507324
840	United States	USCSID7	CR/116 (Ka)	-119	69.5	19.6	3200000	70.7232962	20	255	39	-119	12.649	44.8428094	10	100	0	39.9578613	40	36.9685796	26.9685796	TRUE	No	GW	1.51784715	25.4507324
1002	United States	Link 2	ITU Filing (O	-115.14	-19.5	19	0.001	59.7	5.79919422	200	36.17	-115.14	17.0480032	48.0232678	0	0	0	36.3617516	40	34.8002345	34.8002345	Yes	Yes	GW	2.09201406	32.7082204
1003	United States	Link 3	ITU Filing (O	-115.14	-24	19	0.001	36.7	0.44500783	200	36.17	-115.14	17.0480032	48.0232678	0	0	0.05431716	8.86175164	40	8.85841129	8.85841129	Yes	Yes	UT	0.47210542	8.38630586
2001	United States	INTELSAT IX	S.1328 (Ku)	-80.19	9	10.993	70	56.4	6.85496161	173.8	25.76	-80.19	88.97	59.8875485	5	99.5	0.00650666	18.6337737	30	18.3277394	13.3277394	TRUE	No	GW	3.50489378	9.82284563
2002	United States	INTELSAT IX	S.1328 (Ku)	-80.19	8.6	10.993	70	56.4	6.85496161	173.8	25.76	-80.19	88.97	59.8875485	5	99.5	0.00696362	18.2337737	30	17.9538184	12.9538184	TRUE	No	GW	3.50489378	9.44892462
2003	United States	INTELSAT VII	S.1328 (Ku)	-80.19	15.1	10.9925	46.5	55.2	5.97069354	173.8	25.76	-80.19	88.97	59.8875485	5	99.5	0.00176665	25.3106197	20	18.8793144	13.8793144	TRUE	No	GW	3.50447929	10.3748351
2101	United States	INTELSAT IX	S.1328 (Ku)	-77.04	9	10.993	70	56.4	6.85496161	173.8	38.91	-77.04	47.82	44.9436364	5	99.5	0.00338063	18.4244328	30	18.1323269	13.1323269	TRUE	No	GW	2.03107007	11.1012568
2102	United States	INTELSAT IX	S.1328 (Ku)	-77.04	8.6	10.993	70	56.4	6.85496161	173.8	38.91	-77.04	47.82	44.9436364	5	99.5	0.00352985	18.0244328	30	17.7572551	12.7572551	TRUE	No	GW	2.03107007	10.7261851
2103	United States	INTELSAT VII	S.1328 (Ku)	-77.04	15.1	10.9925	46.5	55.2	5.97069354	173.8	38.91	-77.04	47.82	44.9436364	5	99.5	0.00047743	25.1012788	20	18.8308074	13.8308074	TRUE	No	GW	2.0308256	11.7999818
2201	United States	INTELSAT IX	S.1328 (Ku)	-115.14	9	10.993	70	56.4	6.85496161	173.8	36.17	-115.14	15.72	48.0232678	5	99.5	0	18.4733209	30	18.1780181	13.1780181	TRUE	No	GW	0.47731541	12.7007027
2202	United States	INTELSAT IX	S.1328 (Ku)	-115.14	8.6	10.993	70	56.4	6.85496161	173.8	36.17	-115.14	15.72	48.0232678	5	99.5	0	18.0733209	30	17.8032108	12.8032108	TRUE	No	GW	0.47731541	12.3258954
2203	United States	INTELSAT VII	S.1328 (Ku)	-115.14	15.1	10.9925	46.5	55.2	5.97069354	173.8	36.17	-115.14	15.72	48.0232678	5	99.5	0	25.1501669	20	18.8422965	13.8422965	TRUE	No	GW	0.47724635	13.3650502
3002	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	250000	45.7	1.24763597	314	25.76	-80.19	88.97	58.3157267	9	99.5	0.38918178	19.0196472	24	17.8216083	8.82160831	TRUE	No	UT	2.99362973	5.82797859
3003	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	125000	45.7	1.24763597	314	25.76	-80.19	88.97	58.3157267	7.5	99.7	0.12687112	22.0299472	24	19.8939112	12.3939112	TRUE	No	UT	2.99362973	9.40028146
3005	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	125000	41	0.72625291	314	25.76	-80.19	88.97	58.3157267	7.5	99.7	0.40224189	17.3299472	24	16.4831995	8.98319955	FALSE	No	UT	2.99362973	5.98956982
3006	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.425	54000	54.5	3.28634957	160	25.76	-80.19	88.97	51.9935107	6.9	99.95	0.54021053	16.4326162	40	16.4135575	9.51355749	FALSE	No	UT	2.79024574	6.72331176
3007	United States	USASAT-31M	S.1328																							

3008	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.675	54000	54.5	3.2423556	160	25.76	-80.19	88.97	51.9935107	6.9	99.95	0.60166198	16.3155539	40	16.297001	9.39700099	FALSE	No	UT	2.87519979	6.5218012
3010	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.425	36000	39.9	0.66330574	150	25.76	-80.19	88.97	50.6096029	5.2	99.7	0.14256591	20.3538852	20	17.1630391	11.9630391	TRUE	No	UT	2.80438937	9.15864973
3011	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.33	36000	39.9	0.6667435	150	25.76	-80.19	88.97	50.6096029	5.2	99.7	0.13659597	20.3987859	20	17.1845173	11.9845173	TRUE	No	UT	2.77232813	9.21218919
3012	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.675	36000	39.9	0.65442615	150	25.76	-80.19	88.97	50.6096029	5.2	99.7	0.16211952	20.2368229	20	17.1064975	11.9064975	TRUE	No	UT	2.88949294	9.01700452
3013	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.425	36000	39.9	0.66330574	150	25.76	-80.19	88.97	50.6096029	5.2	99.7	0.11011938	21.5538852	20	17.6975136	12.4975136	TRUE	No	UT	2.80438937	9.69312425
3014	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.33	36000	39.9	0.6667435	150	25.76	-80.19	88.97	50.6096029	5.2	99.7	0.1064501	21.5987859	20	17.7159338	12.5159338	TRUE	No	UT	2.77232813	9.74360562
3015	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.675	36000	39.9	0.65442615	150	25.76	-80.19	88.97	50.6096029	5.2	99.7	0.11678357	21.4368229	20	17.6489606	12.4489606	TRUE	No	UT	2.88949294	9.55946767
3016	United States	USASAT-31L	S.1328 (Ka)	-103	58.4	19.95	24000	39.9	0.61260192	150	25.76	-80.19	88.97	50.6096029	9	99.9	0.402456	21.5240897	40	21.4628368	12.4628368	FALSE	No	UT	3.33953773	9.12329906
3102	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	250000	45.7	1.24763597	314	38.91	-77.04	47.82	43.2479165	9	99.5	0.1437283	18.8007791	24	17.6545046	8.65450463	TRUE	No	UT	1.81364693	6.8408577
3103	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	125000	45.7	1.24763597	314	38.91	-77.04	47.82	43.2479165	7.5	99.7	0.03620977	21.8110791	24	19.7587682	12.2587682	TRUE	No	UT	1.81364693	10.4451212
3104	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	250000	41	0.72625291	314	38.91	-77.04	47.82	43.2479165	7.5	99.5	0.50508611	14.1007791	24	13.6775933	6.17759326	FALSE	No	UT	1.81364693	4.36394632
3105	United States	USASAT-76A	S.1328 (Ka)	-89	63	19.1	125000	41	0.72625291	314	38.91	-77.04	47.82	43.2479165	7.5	99.7	0.15359509	17.1110791	24	16.3023068	8.80230683	TRUE	No	UT	1.81364693	6.9886599
3106	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.425	54000	54.5	3.28634957	160	38.91	-77.04	47.82	38.5265933	6.9	99.95	0.23552212	16.2144864	40	16.1963594	9.29635941	FALSE	No	UT	1.75532174	7.54103767
3107	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.33	54000	54.5	3.30338194	160	38.91	-77.04	47.82	38.5265933	6.9	99.95	0.22031225	16.2593871	40	16.2410721	9.34107205	FALSE	No	UT	1.73574173	7.60533032
3108	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.675	54000	54.5	3.2423556	160	38.91	-77.04	47.82	38.5265933	6.9	99.95	0.25966871	16.0974241	40	16.0797782	9.17977823	FALSE	No	UT	1.80726922	7.37250901
3109	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	19.95	54000	54.5	3.03513739	160	38.91	-77.04	47.82	38.5265933	6.9	99.95	0.55944343	15.5237784	40	15.508312	8.60831197	FALSE	No	UT	2.08151615	6.52679582
3110	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.425	36000	39.9	0.66330574	150	38.91	-77.04	47.82	37.5042212	5.2	99.7	0.05141198	20.1370828	20	17.0577006	11.8577006	TRUE	No	UT	1.7760841	10.0816165
3111	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.33	36000	39.9	0.6667435	150	38.91	-77.04	47.82	37.5042212	5.2	99.7	0.04648309	20.1819835	20	17.0797386	11.8797386	TRUE	No	UT	1.75631959	10.123419
3112	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.675	36000	39.9	0.65442615	150	38.91	-77.04	47.82	37.5042212	5.2	99.7	0.05746305	20.0200206	20	16.9996988	11.7996988	TRUE	No	UT	1.82851863	9.97118016
3113	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.425	36000	39.9	0.66330574	150	38.91	-77.04	47.82	37.5042212	5.2	99.7	0.03341392	21.3370828	20	17.6069867	12.4069867	TRUE	No	UT	1.7760841	10.6309026
3114	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.33	36000	39.9	0.6667435	150	38.91	-77.04	47.82	37.5042212	5.2	99.7	0.03244375	21.3819835	20	17.6259514	12.4259514	TRUE	No	UT	1.75631959	10.6696318
3115	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.675	36000	39.9	0.65442615	150	38.91	-77.04	47.82	37.5042212	5.2	99.7	0.03657319	21.2200206	20	17.5570094	12.3570094	TRUE	No	UT	1.82851863	10.5284908
3116	United States	USASAT-31L	S.1328 (Ka)	-103	58.4	19.95	24000	39.9	0.61260192	150	38.91	-77.04	47.82	37.5042212	9	99.9	0.16770468	21.3072874	40	21.2489972	12.2489972	FALSE	No	UT	2.10528122	10.143716
3201	United States	USCSID	S.1328 (Ka)	-115.14	69.5	19.6	3200000	70	18.4020067	255	36.17	-115.14	15.72	48.0232678	17.5	99.99	0.00023157	39.2851006	23	22.8990246	5.39902457	TRUE	No	GW	2.06016373	3.33886085
3202	United States	USASAT-76A	S.1328 (Ka)	-119	63	19.1	250000	45.7	1.24763597	314	36.17	-115.14	15.72	47.823291	9	99.5	0.00504984	18.8746707	24	17.7111425	8.71114252	TRUE	No	UT	0.43803149	8.27311103
3203	United States	USASAT-76A	S.1328 (Ka)	-119	63	19.1	125000	45.7	1.24763597	314	36.17	-115.14	15.72	47.823291	7.5	99.7	0.00181209	21.8849706	24	19.8046846	12.3046846	TRUE	No	UT	0.43803149	11.8666531
3204	United States	USASAT-76A	S.1328 (Ka)	-119	63	19.1	250000	41	0.72625291	314	36.17	-115.14	15.72	47.823291	7.5	99.5	0.01857666	14.1746707	24	13.7445712	6.24457118	TRUE	No	UT	0.43803149	5.80653969
3205	United States	USASAT-76A	S.1328 (Ka)	-119	63	19.1	125000	41	0.72625291	314	36.17	-115.14	15.72	47.823291	7.5	99.7	0.00531494	17.1849706	24	16.3635542	8.86355417	TRUE	No	UT	0.43803149	8.42552268
3206	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.425	54000	54.5	3.28634957	160	36.17	-115.14	15.72	45.4241233	6.9	99.95	0.00714922	16.3327589	40	16.3141325	9.41413252	TRUE	No	UT	0.4168943	8.99723822
3207	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.33	54000	54.5	3.30338194	160	36.17	-115.14	15.72	45.4241233	6.9	99.95	0.00690901	16.3776595	40	16.35884	9.45884	TRUE	No	UT	0.41178184	9.04705816
3208	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	18.675	54000	54.5	3.2423556	160	36.17	-115.14	15.72	45.4241233	6.9	99.95	0.00793448	16.2156966	40	16.1975646	9.29756457	TRUE	No	UT	0.43048884	8.86707573
3209	United States	USASAT-31M	S.1328 (Ka)	-101	41.8	19.95	54000	54.5	3.03513739	160	36.17	-115.14	15.72	45.4241233	6.9	99.95	0.01852759	15.6420508	40	15.6261583	8.72615825	TRUE	No	UT	0.50304179	8.22311647
3210	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.425	36000	39.9	0.66330574	150	36.17	-115.14	15.72	46.0904262	5.2	99.7	0.00196053	20.2846792	20	17.1297075	11.9297075	TRUE	No	UT	0.41259916	11.5171083
3211	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.33	36000	39.9	0.6667435	150	36.17	-115.14	15.72	46.0904262	5.2	99.7	0.00190674	20.3295798	20	17.1513643	11.9513643	TRUE	No	UT	0.4075377	11.5438266
3212	United States	USASAT-31L	S.1328 (Ka)	-103	58.3	18.675	36000	39.9	0.65442615	150	36.17	-115.14	15.72	46.0904262	5.2	99.7	0.00243063	20.1676169	20	17.0726999	11.8726999	TRUE	No	UT	0.42605817	11.4466417
3213	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.425	36000	39.9	0.66330574	150	36.17	-115.14	15.72	46.0904262	5.2	99.7	0.00156071	21.4846792	20	17.6689021	12.4689021	TRUE	No	UT	0.41259916	12.056303
3214	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.33	36000	39.9	0.6667435	150	36.17	-115.14	15.72	46.0904262	5.2	99.7	0.00150386	21.5295798	20	17.6874956	12.4874956	TRUE	No	UT	0.4075377	12.0799579
3215	United States	USASAT-31L	S.1328 (Ka)	-103	59.5	18.675	36000	39.9	0.65442615	150	36.17	-115.14	15.72	46.0904262	5.2	99.7	0.00170729	21.3676169	20	17.6198957	12.4198957	TRUE	No	UT	0.42605817	11.9938375
3216	United States	USASAT-31L	S.1328 (Ka)	-103	58.4	19.95	24000	39.9	0.61260192	150	36.17	-115.14	15.72	46.0904262	9	99.9	0.00499271	21.4548837	40	21.3945924	12.3945924	TRUE	No	UT	0.49788983	11.8967026
4001	United States	SES-1	Schedule-S (\$	-101	51.8	11.95	36000	56	6.02217469	1023.3	25.76	-80.19	88.97	51.9935107	0		0.00053827	25.3954907	40	25.2476077	25.2476077	Yes	GW		4.41381566	20.833792
4002	United States	Intelsat 29e	Schedule-S (\$	-50	48.8	11.6	36000	55.6	5.92465772	1995.3	25.76	-80.19	88.97	44.9774549	0		0.00199403	19.2465206	40	19.2101612	19.2101612	Yes	GW		4.27188984	14.9382714
4003	United States	Intelsat 33e	Schedule-S (\$	-60	57.6	11.775	36000	55.7300585	5.92465772	1995.3	25.76	-80.19	88.97	52.4073387	0		0	28.1594782	40	27.884124	27.884124	Yes	GW		4.24821604	23.635908
4004	United States	Intelsat 29e	Schedule-S (\$	-50	48.8	10.7	36000	36.2464757	0.75	115	25.76	-80.19	88.97	44.9774549	0		0.00992817	12.9875842	40	12.9789522	12.9789522	Yes	UT			

4101	United States	SES-1	Schedule-S	(\$ -101	51.8	11.95	36000	56	6.02217469	1023.3	38.91	-77.04	47.82	38.5265933	0	0	25.1773609	40	25.036606	25.036606		Yes	GW	2.69580642	22.3407996
4102	United States	Intelsat 29e	Schedule-S	(\$ -50	48.8	11.6	36000	55.6	5.92465772	1995.3	38.91	-77.04	47.82	36.928714	0	0.00064831	19.1063166	40	19.0711075	19.0711075		Yes	GW	2.55421709	16.5168904
4103	United States	Intelsat 33e	Schedule-S	(\$ -60	57.6	11.775	36000	55.7300585	5.92465772	1995.3	38.91	-77.04	47.82	41.5731881	0	0	27.9893431	40	27.7242511	27.7242511		Yes	GW	2.50870245	25.2155487
4104	United States	Intelsat 29e	Schedule-S	(\$ -50	48.8	10.7	36000	36.2464757	0.75	115	38.91	-77.04	47.82	36.928714	0	0.00411792	12.8473801	40	12.8390221	12.8390221		Yes	UT	0.46735982	12.3716623
4105	United States	Intelsat 33e	Schedule-S	(\$ -60	55	10.7	36000	36.2464757	0.75	115	38.91	-77.04	47.82	41.5731881	0	0.00097575	19.1304067	40	19.0950026	19.0950026		Yes	UT	0.43861397	18.6563886
4201	United States	SES-1	Schedule-S	(\$ -101	51.8	11.95	36000	56	6.02217469	1023.3	36.17	-115.14	15.72	45.4241233	0	0	25.2956334	40	25.1510566	25.1510566		Yes	GW	0.63992592	24.5111306
5001	United States	VIASAT-IOM	Schedule-S	-115.1	45.2	19.95	20000	62.8	7.3	250	32.215881	-110.96186	35.4027193	52.231911	0	0.00152307	29.8207174	40	29.4227866	29.4227866		Yes	GW	5.2346823	24.1881043
5003	United States	Galaxy 30	Schedule-S	-125	64	19.95	140000	62	9.4	250	48.146861	-119.69211	14.4043634	34.4693891	0	0	39.0728991	40	36.5014575	36.5014575		Yes	GW	2.41611059	34.085347
5005	United States	DIRECTV 15	Schedule-S	-102.75	59.5	19.95	36000	65.4	13.2	250	35.309583	-119.07614	16.3755631	45.4577262	0	0	44.0653069	40	38.5630915	38.5630915		Yes	GW	2.69551479	35.8675768
5007	United States	SES-17	Schedule-S	-67	63.3	18.4	225000	59.2	6.3	250	27.6904722	-99.449722	48.4829565	41.8833611	0	0.00281367	34.3493708	40	33.3037121	33.3037121		Yes	GW	7.79570833	25.5080038
5009	United States	JUPITER 97W	Schedule-S	-97.1	71	20.075	250000	62	6.3	250	35.0923056	-106.653	23.5751687	47.9806819	0	0	43.7345556	40	38.4673443	38.4673443		Yes	GW	3.88403968	34.5833046
5102	United States	VIASAT-IOM	Schedule-S	-115.1	67	19.95	416000	40.4	0.745	250	25.76	-80.19	88.97	41.059141	0	0.17250209	15.8635071	40	15.8467847	15.8467847		Yes	UT	3.54797779	12.2988069
5104	United States	Galaxy 30	Schedule-S	-125	64	19.95	500000	44.1	0.98	250	25.76	-80.19	88.97	32.3730527	0	0.24195817	15.6040339	40	15.5882796	15.5882796		Yes	UT	3.95920679	11.6290728
5108	United States	SES-17	Schedule-S	-67	61.4	18	72000	42.7	0.9	250	25.76	-80.19	88.97	56.4736154	0	0.02351856	21.3079981	40	21.2496985	21.2496985		Yes	UT	2.62168559	18.6280129
5110	United States	JUPITER 97W	Schedule-S	-97.1	71	18.675	500000	43.7	0.9	250	25.76	-80.19	88.97	54.4617431	0	0.02312188	23.1456122	40	23.0569164	23.0569164		Yes	UT	2.85696763	20.1999488
5202	United States	VIASAT-IOM	Schedule-S	-115.1	67	19.95	416000	40.4	0.745	250	38.91	-77.04	47.82	30.2768743	0	0.07376424	15.6613932	40	15.6454298	15.6454298		Yes	UT	2.33223719	13.3131926
5208	United States	SES-17	Schedule-S	-67	61.4	18	72000	42.7	0.9	250	38.91	-77.04	47.82	43.7411744	0	0.00689641	21.1202234	40	21.064375	21.064375		Yes	UT	1.58646747	19.4779075
5210	United States	JUPITER 97W	Schedule-S	-97.1	71	18.675	500000	43.7	0.9	250	38.91	-77.04	47.82	40.3436182	0	0.00696456	22.9258641	40	22.8415023	22.8415023		Yes	UT	1.77308664	21.0684157
5302	United States	VIASAT-IOM	Schedule-S	-115.1	67	19.95	416000	40.4	0.745	250	36.17	-115.14	15.72	48.0232462	0	0.00177709	15.9779319	40	15.9607639	15.9607639		Yes	UT	0.48395391	15.47681
5304	United States	Galaxy 30	Schedule-S	-125	64	19.95	500000	44.1	0.98	250	36.17	-115.14	15.72	46.7372506	0	0.00187021	15.8590911	40	15.8423857	15.8423857		Yes	UT	0.49306379	15.3493219
5310	United States	JUPITER 97W	Schedule-S	-97.1	71	18.675	500000	43.7	0.9	250	36.17	-115.14	15.72	43.8775989	0	0	22.9863575	40	22.900824	22.900824		Yes	UT	0.44141969	22.4594043