

78-001A

Kosmos 974

Upp: 6 jan från Plesetsk; 178-3344m

 $T_n = 89.61 \text{ min}$; Freqv: 19.989 MHz, två-ton

1	10554U	78001	A	78	6.77245345	.00500000	00000-0	00000-0	0	00018
2	10554	62.8332	293.1028	0126216	76.6836	285.9309	16.03990286			22

1	10554U	78001	A	78	6.83460372	.00500000	00000-0	00000-0	0	00025
2	10554	62.7924	292.9000	0102268	73.4221	289.9605	16.10326420			39

1	10554U	78001	A	78	7.52021255	.00500000	00000-0	00000-0	0	00036
2	10554	62.8107	290.1285	0116799	78.1386	289.4295	16.06910141			147

1	10554U	78001	A	78	8.14323742	.00500000	00000-0	00000-0	0	00042
2	10554	62.8288	287.6523	0114072	79.7782	291.9838	16.07189931			240

1	10554U	78001	A	78	8.45250545	.00500000	00000-0	00000-0	0	00057
2	10554	62.8073	286.4141	0096272	73.9663	291.9742	16.11957514			294

1	10554U	78001	A	78	9.07190249	.00500000	00000-0	00000-0	0	00061
2	10554	62.8119	283.9287	0095678	74.5875	285.9946	16.12250697			398

78-002A

Intelsat 4A(F-3)

Lippsänd: 6, januari från Cape Canaveral.

78-003A

Soyuz 27

Lappskänd den 10 januari från Tyuratam kl. 13.26 svrt.

Inhalt: 88,7 min, 190-237 km; F: 121,75, 166,0, 922,757 kHz

1	10560U	78003	A	78	10.57181441	.00064323	00000-0	00000-0	0	00019
2	10560	51.7062			305.7486	0035745	89.6762	270.5004	16.22293017	12

1	10560U	78003	A	78	10.81826059	.00064323	00000-0	00000-0	0	00028
2	10560	51.5753			304.4531	0047519	226.6738	127.5310	16.00720367	56

1	10560U	78	3	A	78	53.49934166	.00049542	00000-0	00000-0	0	00423
2	10560	51.6307			85.6631	0009552	258.1924	91.7943	15.79249041	6894	

1	10560U	78	3	A	78	54.44896027	.00049691	00000-0	00000-0	0	00433
2	10560	51.6370			78.7604	0009693	270.3042	89.6803	15.79384449	7048	

1	10560U	78003	A	78	54.44896142	.00053543	00000-0	00000-0	0	00442
2	10560	51.6356			78.7707	0010939	274.4229	85.5476	15.79372334	7048

78-004A

Kosmos 975

Uppskänd den 10 jan från Plesetsk. 634-653km
 $T_n = 97.62 \text{ min}$

1	10561U	78	004	A	78	10.61633014	.00027754	00000-0	00000-0	0	00011
2	10561	81.2262	334.3855	0015997	138.9461	219.7839	14.75042304				10

1	10561U	78	004	A	78	10.82011778	.00027754	00000-0	00000-0	0	00022
2	10561	81.2070	334.1809	0016035	69.0800	291.9092	14.76000132				49

78-005A

Kosmos 976-983

Loppändringen 10, anuari från Mesokh, 1457-1465 km

$T_n = 115.14 \text{ min}$

10581U	78-005 A	78 11.00950719	.00000064	00000-0	00000-0	0 00018
2 10581	74.0498	70.9613 0012458	132.6656	220.3792	12.50862079	21

78-006A

Kosmos 984

Uppränd den 13 jan från Plesetsk. 206-291km

$T_u = 89.45 \text{ min}$; Frekvi 19.994 MHz, FSK-PDM

1	10592U	78006	A	78	13.74814789	.00500000	00000-0	00000-0	0	00014
2	10592	62.7935			291.1572	0067044	81.0784	282.9115	16.09475811	29

1	10592U	78006	A	78	14.55508945	.00264217	00000-0	00000-0	0	00026
2	10592	62.8125			287.9323	0065337	79.5579	280.4526	16.09757713	152

1	10592U	78006	A	78	15.48700375	.00097993	00000-0	00000-0	0	00047
2	10592	62.8074			284.2338	0063981	79.9238	280.8780	16.09868580	308

78-007A

Kosmos 985

Uppstånd den 17, an från Plesetsk; 945-1022 km
 $T_H = 104.79 \text{ min}$

1	10599U	78-007-A	78	17.20173660	.00003978	00000-0	00000-0	0	00017
2	10599	82.9359	195.8375	0039441	308.2301	49.6964	13.74152970		11

78-008A

Progress 1

Löpsänd den 20, januari från Tyuratam ; 173-2564m

$T_u = 88.73$ min ; Sänkerpa: 166.14Hz och 922.7517Hz.

1	10603U	78008	A	78	20.46529999	.00064323	00000-0	20000	0	0	00015
2	10603	51.6074			254.8807	0052568	86.2934	271.0496	16.21999806		29

1	10603U	78008	A	78	21.25354883	.00064323	00000-0	00000-0	0	0	00037
2	10603	51.6538			248.5456	0062916	199.0283	159.5231	15.93734767		211

1	10603U	78008	A	78	37.41917954	.00573515	00000-0	00000-0	0	0	00041
2	10603	51.6300			166.8201	0015153	219.5632	140.9457	15.78613112		20551

1	10603U	78008	A	78	37.86214462	.00573515	00000-0	00000-0	0	0	00055
2	10603	51.6366			164.5274	0013011	221.2748	138.2589	15.78661625		20623

1	10603U	78008	A	78	38.36955742	.00573515	00000-0	00000-0	0	0	00067
2	10603	51.6092			161.8915	0016260	228.3384	130.9763	15.78540480		20701

1	10603U	78008	A	78	38.87502590	.00573515	00000-0	00000-0	0	0	00071
2	10603	51.6346			159.3048	0015308	220.7525	138.7178	15.78699828		20782

78-009

Molniya 38

Upp: 24, an från Mosetzk, 646-40618 km

$T_u = 736.26$ min

1	10606U	78009	B	78	24.40205257	.00576189	00000-0	00000-0	0	00013
2	10606	62.7796		175.8256	0301010	117.0886	246.1176	15.49205903		29

1	10605U	78009	A	78	26.33059110	.00000437	00000-0	00000-0	0	00014
2	10605	62.8107		175.7533	7398905	287.9893	8.0671	1.95531154		59

1	10605U	78009	A	78	24.84749283	.00000016	00000-0	00000-0	0	00012
2	10605	62.3128		175.9968	7399641	287.9840	8.5848	1.95586521		20

78-010A

Kosmos 986

Upp: 24, an från 172-318 km
 T_u = 89.39 min : Freqv: 19-989 MHz, två-kan

1	10607U	78010	A	78	24.46647021	.00084673	00000-0	00000-0	0	00013
2	10607	65.0334			306.7491 0109069	71.2857	290.4340	16.10820175		16

1	10607U	78010	A	78	25.08722793	.00220334	00000-0	00000-0	0	00029
2	10607	65.0140			304.4761 0110613	69.6253	291.7149	16.11054411		110

1	10607U	78010	A	78	26.82926639	.00174935	00000-0	65462-4	0	00041
2	10607	65.0163			293.0892 0128912	67.6875	293.2945	16.06779337		392

1	10607U	78010	A	78	29.82265023	.00173455	00000-0	63652-4	0	00051
2	10607	65.0166			292.7768 0126587	67.0513	294.3909	16.07444560		711

1	10607U	78010	A	78	29.19393749	.00173455	00000-0	00000-0	0	00065
2	10607	65.0103			239.3934 0102606	62.1679	301.7570	16.13889309		778

1	10607U	78010	A	78	30.18482174	.00301224	00000-0	00000-0	0	00075
2	10607	65.0138			285.7311 0099008	61.8156	299.6264	16.14455557		932

1	10607U	78010	A	78	33.71306160	.00325191	00000-0	00000-0	0	00098
2	10607	65.0114			272.6204	0090509	60.1526	301.2575	16.16877533	1505

1	10607U	78010	A	78	34.14592116	.00337568	00000-0	00000-0	0	00107
2	10607	65.0145			271.0200	0089359	59.9366	301.1811	16.17245982	1573

1	10607U	78010	A	78	36.43282320	.00395507	00000-0	00000-0	0	00112
2	10607	65.0102			262.4825	0086662	59.1351	302.4932	16.19018144	1943

1	10607U	78010	A	78	37.35905664	.00454054	00000-0	00000-0	0	00121
2	10607	65.0097			259.0235	0034314	58.4110	302.7977	16.19894929	2092

78-011A

Kina 8

Uppsänd den 26, januari fr. Chuang-Cheng-Tse, 161-479 km
 $T_u = 90.90$ min, $M_{\text{min}} = 180.0$ MHz

1	10611U	78011	A	78	26.31410958	.00199514	00000-0	00000-0	0	00013
2	10611	57.0268			155.2485 0242901	146.0588	215.8704	15.75041544		24

1	10611U	78011	A	78	26.37753186	.00199614	00000-0	00000-0	0	00024
2	10611	57.0478			154.9305 0236552	156.2582	206.8597	15.81319028		38

1	10611U	78011	A	78	26.69326050	.00199614	00000-0	00000-0	0	00036
2	10611	57.0301			153.5267 0237267	159.5448	204.1151	15.83719537		80

1	10611U	78011	A	78	26.88215983	.00491233	20274-3	16427-3	0	00043
2	10611	57.0328			152.6624 0239462	161.0425	200.2141	15.84049055		110

1	10611U	78011	A	78	28.20679543	.00481648	00000-0	00000-0	0	00051
2	10611	57.0300			146.6081 0229857	162.6425	197.9265	15.85291446		320

1	10611U	78011	A	78	29.84550485	.01521293	00000-0	20000-0	0	00063
2	10611	57.0303			139.0961 0217714	165.4323	196.5813	15.88110372		581

1 10611U 78011 A 78 38.55186796 .12373275 00000-0 00000-0 0 00184
2 10611 57.0172 97.8632 0035756 188.4709 173.2491 16.43626666 1987

1 10611U 78011 A 78 30.72578046 .01610755 00000-0 00000-0 0 00089
2 10611 57.0298 135.0287 0205759 167.0363 194.0690 15.90976707 721

1 10611U 78011 A 78 32.10630734 .01877236 00000-0 00000-0 0 00108
2 10611 57.0265 128.6248 0188469 169.8737 191.7509 15.95639761 941

1 10611U 78011 A 78 33.16967577 .02083557 20157-2 60406-3 0 00116
2 10611 57.0282 123.6694 0173448 171.9218 187.9677 15.99734994 1117

1 10611U 78011 A 78 33.66933250 .02650048 00000-0 00000-0 0 00122
2 10611 57.0226 121.3174 0164924 172.9684 188.3632 16.02619093 1194

1 10611U 78011 A 78 34.66530540 .02695667 39278-2 56235-3 0 00130
2 10611 57.0244 116.6284 0151653 174.9076 182.4631 16.07194026 1355

1 10611U 78011 A 78 36.46441618 .03130599 00000-0 00000-0 0 00153
2 10611 57.0185 108.0529 0113514 178.6203 184.3764 16.17667483 1647

1 10611U 78011 A 78 37.38918661 .04385722 00000-0 00000-0 0 00164
2 10611 57.0208 103.5852 0087077 181.9716 181.4378 16.25443486 1791

1 10611U 78011 A 78 38.18638904 .07450584 00000-0 00000-0 0 00175
2 10611 57.0112 99.6831 0057729 186.3512 177.3475 16.35614404 1929

78-012A

IUE 1

Uppsänd den 26 januari från Capelanaveral;

1	10638U	78012	B	78	26.91371848	.00000000	00000-0	00000-0	0	00014
2	10638	29.7504			208.0716	0610491	255.8968	93.9436	14.93391038	32

1	10637U	78012	A	78	28.25202778	-.00000104	00000-0	00000-0	0	00013
2	10637	28.6330			208.0940	2397980	257.0450	46.5430	1.00303537	21

1	10637U	78012	A	78	35.30964809	-.00000131	00000-0	00000-0	0	00027
2	10637	28.6387			208.0031	2395970	257.0803	75.4370	1.00310277	93

78-013A

Kosmos 987

Upp: 31 jan från Plasebck; 175-3214ms, $T_n = 89.44 \text{ min}$
 Frekv: 19.989 MHz, ned-ton

1	10639U	78-013	A	78	31.73078678	.00500000	00000-0	00000-0	0	00013
2	10639	62.8196	302.7841	-0132642	73.0719	288.7020	16.02641208			22

1	10639U	78-013	A	78	31.73074957	.00500000	00000-0	00000-0	0	00019
2	10639	62.7973	302.6133	-0132642	73.2428	288.6943	16.04268496			25

1	10639U	78-013	A	78	31.85534185	.00500000	00000-0	00000-0	0	00027
2	10639	62.8134	302.0538	0124357	72.8379	290.2522	16.06827989			46

1	10639U	78-013	A	78	32.16619160	.00276066	52416-4	11516-3	0	00031
2	10639	62.8127	300.9139	-0123400	72.7970	288.5128	16.06975781			97

1	10639U	78-013	A	78	32.53955142	.00276066	00000-0	00000-0	0	00047
2	10639	62.7955	299.4691	0110377	71.3405	291.2686	16.10224360			159

1	10639U	78013	A	78	34.77409906	.02248690	00000-0	00000-0	0	00059
2	10639	62.8034	290.5518	0106249	72.0476	288.3653	16.11301450			515

1	10639U	78013	A	78	37.13164282	.00248690	00000-0	00000-0	0	00069
2	10639	62.8035	281.1320	0133870	70.8811	287.9162	16.04986245			892

1 10639U 78013 A 78 38.12382199 .00263370 00000-0 00000-0 0 00075
2 10639 62.8019 277.1828 0131848 70.4082 291.3742 16.05568958 1055

1 10639U 78013 A 78 39.69543318 .00263370 00000-0 00000-0 0 00092
2 10639 62.7966 273.9722 0102012 72.2716 297.6772 13.12891568 1392

1 10639U 78013 A 78 42.47075536 .00320065 00000-0 00000-0 0 00117
2 10639 62.7964 259.8155 0102349 66.6145 295.4581 16.18482558 1751

1 10639U 78013 A 78 44.87834919 .00567119 30188-3 94868-4 0 20137
2 10639 62.8006 250.0812 0094804 67.3498 293.9197 16.21018435 2149

78-14A

EXOS A (Kyokko)

Uppsänd: den 4 februari från Kagoshima

 $T_n = 134.27 \text{ min}; 042-39754 \text{ m}$

1	10664U	78014	A 78	35.42549504	.00000000	00000-0	00000-0	0	00017
2	10664	65.3850	207.4197	1919598	334.5535	13.5848	10.72639978		22

1	10664U	78014	A 78	36.82490366	.00015800	00000-0	00000-0	0	00028
2	10664	65.3640	205.1673	1917764	334.4731	16.5537	10.72513827		178

1	10664U	78014	A 78	38.78312440	-.00013908	00000-0	00000-0	0	00030
2	10664	65.3696	202.1705	1919147	333.9713	17.2996	10.72486557		381

1	10664U	78014	A 78	42.74139669	-.00004374	00000-0	00000-0	0	00047
2	10664	65.3496	199.1651	1913420	333.5339	19.1949	10.72496628		599

1	10664U	78014	A 78	43.25922822	.00018114	00000-0	00000-0	0	00043
2	10664	65.3749	195.3847	1920150	332.8798	19.5827	10.72523692		861

78-15A

Kosmos 988

Upp: 8 feb från Moskv ; 201-335 km

$T_u = 89.87 \text{ min}$; Frekv: 19.994 MHz, två-två

1	10666U	78-015-A	78	39.56464073	.00069819	00000-0	00000-0	0	00010
2	10666	72.7844	329.5751	0152317	54.5155	307.2704	15.02462197		15

1	10666U	78015	A	78	39.50215264	.00223723	00000-0	00000-0	0	00026
2	10666	72.8523	326.7301	0103201	73.4627	287.7901	16.02035260		11	

1	10666U	78015	A	78	40.31386575	.00223723	00000-0	00000-0	0	00032
2	10666	72.5358	324.6625	0101705	71.4325	292.6720	14.02347347		144	

1	10666U	78015	A	78	41.37510518	.00074294	00000-0	00000-0	0	00043
2	10666	72.8399	321.9693	0101836	69.7275	290.9693	16.02593986		317	

1	10666U	78015	A	78	42.81097167	.00130791	00000-0	00000-0	0	00059
2	10666	72.8416	318.3145	0100922	66.1021	295.6169	16.02994311		546	

1	10666U	78015	A	78	47.24022465	.00154948	00000-0	00000-0	0	00072
2	10666	72.8389			307.0216	0097479	55.5726	305.6038	16.04249736	1258

1	10666U	78015	A	78	50.23259328	.00149459	00000-0	00000-0	0	00098
2	10666	72.8365			299.3945	0094912	47.9612	312.9901	16.05183516	1739

1	10666U	78015	A	78	51.10505441	.00156358	00000-0	00000-0	0	00103
2	10666	72.8400			297.1623	0094278	45.6577	315.2019	16.05445331	1875

78-16A

Fleetsatcom 1

Upp: 9 feb från Cape Canaveral

1	10669U	78016	A	78	40.90542820	.00009864	00000-0	27164-3	0	00017
2	10669	26.4603		282.6531-7323059	181.5115	.5709	2.27137577			16

78-17A

Kosmos 989

Upp: 14 februari från . 169-318 km

T_h = 89.36 min. FREQ: 19.989 MHz, två-ton

1	10672U	78017	A	78	45.45258141	.00099946	20000-0	35740-4	0	00016
2	10672	65.0629	322.4717	0123236	69.1063	292.1925	16.08457823			19

1	10672U	78017	A	78	46.53953370	.00399946	00000-0	00000-0	0	00021
2	10672	65.0435	318.6001	0120440	69.4243	292.3280	16.08856248			192

1	10672U	78017	A	78	47.13105765	.00299901	00000-0	00000-0	0	00030
2	10672	65.0476	316.3110	0119944	69.7701	293.1579	16.09333707			283

1	10672U	78017	A	78	47.37967843	.00305426	00000-0	00000-0	0	00038
2	10672	65.0457	315.3977	0119299	68.5269	293.7683	16.09492148			324

1	10672U	78017	A	78	51.10519145	.00312337	00000-0	00000-0	0	00064
2	10672	65.0467	301.6755	0112543	66.7605	294.5583	16.11687557			923

1	10672U	78017	A	78	51.97363354	.00493572	14833-3	15030-3	0	00080
2	10672	65.0524			298.4652	0105581	66.3603	296.6916	16.13585745	1061

1	10672U	78017	A	78	52.71689500	.00334948	00000-0	00000-0	0	00090
2	10672	65.0486			295.7168	0104313	66.2176	294.4106	16.14004178	1183

1	10672U	78017	A	78	55.13217248	.00457249	00000-0	00000-0	0	00118
2	10672	65.0441			286.7619	0097337	65.0592	296.4968	16.16008952	1578

1	10672U	78017	A	78	56.43037712	.00329355	00000-0	00000-0	0	00136
2	10672	65.0401			281.9305	0090805	64.6368	295.8576	16.17953004	1780

1	10672U	78017	A	78	56.92490449	.00414482	00000-0	00000-0	0	00147
2	10672	65.0419			280.0867	0090545	64.5377	296.6972	16.18410095	1868

1	10672U	78017	A	78	57.97508897	.00520112	00000-0	00000-0	0	00159
2	10672	65.0423			276.1734	0087743	63.9123	297.3455	16.19458015	2031

78-18A

ISS-B (Lme 2)

$U_{pp} = 16 \text{ feet}$

$975 - 1224 \text{ km. } T_n = 107.25 \text{ min}$

1	10674U	78013	A	78	47.51480087	.00000000	00000-0	00000-0	0	00015
2	10674	69.3622	186.2949	0166170	201.5531	159.9175	13.42657888			44

78-19A

Kosmos 990

Hpp: 17 februari från Plesetsk ; 783-809 km

$T_h = 100,80 \text{ min}$

1	10676U	78019	A	78	49.09308913	-.00002329	00000-0	00000-0	0	00023
2	10676	74.0521		43.0570	0020890	338.3670	20.0514	14.31096719		68

1	10676U	78019	A	78	49.23820921	-.00002329	00000-0	00000-0	0	00033
2	10676	74.0448		42.8092	0018043	359.4063	359.2073	14.29188051		85

78-20 A

NDS 1

Lpp: 22 Feb from WTR west Atlas-F? 20000 km circ.
 $T_h = 718.67 \text{ km min}$

1	12684U	78020	A	78	66.20000000	.00000023	00000-3	00000-0	0	00023
2	10684	63.2711	227.7346	0042649	348.0738	348.5988	2.00363050			297

78-21A

Satellite Data System

$$i = 63.15^\circ$$

$$T = 703.7 \text{ min}$$

$$h_p = 311 \text{ km}$$

$$h_a = 39377 \text{ km}$$

78-22A

Kosmos 991

Upp: 28 feb från Plesetsk ; 963-1009 km
 $T_n = 104.84 \text{ min}$

1	10692U	78022	A	78	59.63022976	.00178379	00000-0	00000-0	0	00032
2	10692	82.9917		286.5366	0021329	297.1729	62.7202	13.74559371		55

1	10692U	78022	A	78	60.13915445	.00504958	00000-0	00000-0	0	00048
2	10692	82.9620		286.2231	0028799	311.7844	48.0798	13.75728406		126

78-23A

Soyuz 28

Upp: 2 mars från Tyuratam, 192-246km, $T_H = 88.82$ min
 $F = 121.75, 166.0, 922.75$ MHz

1	10694U	78 23	A	78 61.82196516	-.00001171	39999-1	00000-0	0	00015
2	10694	51.6156		41.0581 0110719	115.1944	246.2556	16.08063138		25

1	10694U	78 23	A	78 61.82196516	-.00001171	39999-1	00000-0	0	00015
2	10694	51.6156		41.0581 0110719	115.1944	246.0556	16.08063138		25

1	10694U	78 23	A	78 61.94638310	.01554179	39999-1	00000-0	0	00023
2	10694	51.6829		40.3712 0119079	261.2004	97.5470	16.12720975		48

1	10694U	78023	A	78 61.94562180	.00064323	00000-0	00000-0	0	00020
2	10694	51.6294		40.4111 0040409	85.7687	276.9053	16.20190119		55

1	10694U	78023	A	78 61.94562180	.00064323	00000-0	00000-0	0	00031
2	10694	51.6294		40.4111 0040409	85.7687	276.9053	16.20190119		55

1	10694U	78023	A	78 62.31532048	.00064323	00000-0	00000-0	0	00044
2	10694	51.6219		38.3757 0041396	232.8597	41.4413	15.98592167		110

1	10694U	78023	A	78 62.88405066	.00064323	00000-0	00000-0	0	00056
2	10694	51.6193		35.3984 0013535	232.9957	110.4651	15.75202039		205

78-24A

Molnyia 1-AQ

Lopp: 2 mars från Plesetsk; 017-40739km; $T_u = 738.14$ min

10696U	78024	A	78	61.97259895	-.00000168	00000-0	00000-0	0	00010	
10696	62.7945		81.9630	7414226	298.3406	8.7766	1.94889759		16	
1	10696U	78024	A	78	61.97311373	-.00000174	00000-0	00000-0	0	00027
2	10696	62.7827		81.9598	7413849	298.3434	9.1400	1.94928998		18

78-25 A

KOSMOS 992

Lopp. fr. Plesetsk: 4 mars 1978.
203-323km; $T_H = 89.79 \text{ min}$;

Sändarpå 19.994 MHz, KSM-PDM

1	10699U	78025	A	78	63.37661728	.30151579	00000-0	00000-0	0	00013
2	10699	71.2587	321.1952	0054933	57.1697	303.6885	13.09583271			15

1	10699U	78025	A	78	63.50176064	.00151579	00000-0	00000-0	0	00023
2	10699	71.3393	320.5561	0085197	61.4745	300.8113	16.05889857			38

1	10699U	78025	A	78	63.56332614	.00151579	00000-0	00000-0	0	00030
2	10699	71.3327	320.3768	0090944	59.1366	301.5173	16.04310383			48

1	10699U	78025	A	78	63.81329958	.30151579	00000-0	00000-0	0	00041
2	10699	71.3352	319.6914	0090633	58.6050	302.4065	16.04404991			82

1	10699U	78025	A	78	66.86768699	.00151579	00000-0	00000-0	0	00071
2	10699	71.3286	311.2266	0087667	52.7242	308.1883	16.05279796			576

1	10699U	78025	A	78	67.55313511	.00151579	00000-0	00000-0	0	00088
2	10699	71.3299	309.3247	0087673	50.8907	310.0019	16.05481888			683

1	10699U	78025	A	78	70.54304575	.00169703	00000-0	00000-0	0	00113
2	10699	71.3332		301.0285	0085822	44.4360	316.2962	16.06478726		1165

////

1	10699U	78025	A	78	71.41476342	.00170453	00000-0	13217-3	0	00124
2	10699	71.3307		298.6111	0085159	42.5567	318.1713	16.06762653		1303

1	10699U	78025	A	78	71.97507878	.00171863	00000-0	13217-3	0	00131
2	10699	71.3350		297.0561	0084695	41.4301	319.3253	16.06947076		1396

1	10699U	78025	A	78	72.53532863	.00173342	00000-0	13217-3	0	00141
2	10699	71.3287		295.4997	0084266	40.3651	320.3735	16.07125206		1481

1	10699U	78025	A	78	72.90879442	.00174465	00000-0	13217-3	0	00157
2	10699	71.3299		294.4659	0084009	39.9227	320.8084	16.07246834		1546

1	10699U	78025	A	78	73.59340359	.00174753	00000-0	13217-3	0	00164
2	10699	71.3264		292.5592	0082748	37.9240	322.7722	16.07466734		1659

1	10699U	78025	A	78	73.78009596	.00154135	00000-0	00000-0	0	00176
2	10699	71.3285		292.0341	0082480	37.5343	323.0938	16.07495525		1688

1	10699U	78025	A	78	74.40237898	.00163868	00000-0	00000-0	0	00188
2	10699	71.3288		290.2991	0081691	36.2198	324.5110	16.07713308		1780

78-26A

Landsat 3

Upp: 5 mats från WTR; 900-918km; 103.21min

1	10702U	78026	A	78	64.78853194	.00006000	00000-0	00000-0	0	00013
2	10702	99.1426			125.6290	0012860	307.0614	53.5288	13.96000721	-17

1	10702U	78026	A	78	65.57680362	-.00001786	00000-0	00000-0	0	00024
2	10702	99.1343			126.4021	0011369	309.4471	52.8939	13.95768790	126

78-27A

Kosmos 993

Upp: 10 mars fr. Plesetsk; 171-240km; $T_u = 89.63$ min

1	10725U	78027	A	78	70.12261354	.00068819	00000-0	00000-0	0	00022
2	10725	72.8639	331.2548	0129466	80.9950	280.7828	16.06754172			113

1	10725U	78027	A	78	70.80745821	.00279177	00000-0	00000-0	0	00035
2	10725	72.8568	329.4996	0127036	79.1634	283.2274	16.07296136			227

1	10725U	78027	A	78	73.79339212	.00287460	00000-0	00000-0	0	00044
2	10725	72.8493	321.8534	0121527	71.9633	289.6683	16.09023783			701

1	10725U	78027	A	78	74.41504389	.00295836	00000-0	00000-0	0	00050
2	10725	72.8521	320.2495	0120064	70.4402	291.0212	16.09398681			803

1	10725U	78027	A	78	75.40942819	.00327287	00000-0	00000-0	0	00061
2	10725	72.8516	317.6967	0117966	67.8952	293.7594	16.10088945			968

1	10725U	78027	A	78	76.46543392	.00327287	00000-0	00000-0	0	00072
2	10725	72.8566	314.9756	0115137	65.2961	296.1554	16.10013369			1138

1	10725U	78027	A	78	77.08639475	.00327287	00000-0	00000-0	0	00080
2	10725	72.8522	313.3845	0168134	63.8098	292.1581	15.97968774			1234

1	10725U	78027	A	78	80.15341454	.00270939	00000-0	00000-0	0	00103
2	10725	72.8527		305.6288	0163212	55.4708	306.3273	15.99715629		1722
1	10725U	78027	A	78	80.40352470	.00270939	00000-0	00000-0	0	00112
2	10725	72.8488		304.9943	0111719	57.7069	312.0177	16.12407290		1767
1	10725U	78027	A	78	81.20853017	.00377325	00000-0	00000-0	0	00122
2	10725	72.8504		302.9128	0110157	56.6487	304.9112	16.13063770		1891
1	10725U	78027	A	78	81.70456204	.00340692	00000-0	00000-0	0	00132
2	10725	72.8473		301.6354	0109623	55.0168	306.0120	16.13366288		1979

Fréq: 19.989 MHz, Na⁺-ton

78-28A Kosmos 994

Upp: 15mars från Plesetsk; 980-1011km
T_n = 105.05min

1	10731U	78028	A	78	74.72326437	.00003978	00000-0	00000-0	0	00018
2	10731	82.9313		80.2931	0038157	274.4899	82.3290	13.75060272		18

1	10731U	78028	A	78	74.94213671	.00003978	00000-0	00000-0	0	00028
2	10731	82.9268		80.1187	0021469	265.2166	92.0014	13.71655218		43

1	10731U	78028	A	78	75.30740076	.00043600	00000-0	00000-0	0	00030
2	10731	82.9292		79.8638	0021486	271.0326	88.7228	13.71616065		99

78-29 A

[Titan 3D]

Big Bird?

Upp = 16 mars från WTR, 160-240km.
 T_n = 88.52min

1	10733U	78 029 A	78 76.18675885	.00000000	00000-0	00000-0	0 00010
2	10733	96.4237	150.3325 0058595	133.9450	229.2611	16.27656008	74

1	10733U	78 029 A	78 76.73965716	.00785556	48946-3	12328-3	0 00026
2	10733	96.4285	150.8700 0058595	131.6424	230.0768	16.28631926	161

1	10733U	78 029 A	78 80.48863848	.00716308	00000-0	00000-0	0 00066
2	10733	96.4256	154.6189 0055773	133.5710	227.1119	16.29308042	776

78-30A

Kosmos 995

Hpp: 17 mars från Plesetsk, 217-235 km,
 T_n = 89.05 min ; Freqv: 19.994 MHz, FSK-PDM

1	10735U	78030	A	78	76.50591870	.00100000	00000-0	00000-0	0	00012
2	10735	81.3525			1.4841 0013906	356.8496	5.0538	16.20979816		11

1	10735U	78030	A	78	80.15357630	.00261032	00000-0	00000-0	0	00059
2	10735	81.3495			356.6380 0013991	43.7727	316.5557	16.19282685		608

1	10735U	78030	A	78	81.45102619	.00219004	00000-0	00000-0	0	00061
2	10735	81.3448			354.8825 0011206	38.7193	321.0750	16.19815363		812

1	10735U	78030	A	78	83.85960627	.00214208	00000-0	00000-0	0	00070
2	10735	81.3411			351.6813 0011309	30.4393	329.9846	16.20926392		1203

1	10735U	78030	A	78	85.09405416	.00242050	00000-0	00000-0	0	00085
2	10735	81.3430			350.0406 0010686	27.2288	333.1398	16.21528042		1400

1	10735U	78030	A	78	85.46427055	.00233370	00000-0	00000-0	0	00095
2	10735	81.3415			349.5404 0008797	25.3783	334.7986	16.21698047		1463

1	10735U	78030	A	78	86.32803354	.00297896	00000-0	00000-0	0	00106
2	10735	81.3417			348.3971 0009037	19.0303	341.3216	16.22229637		1609

1 10735U 78030 A 78 88.48611881 .00301723 00000-0 00000-0 0 00113
2 10735 81.3437 345.5097 0005726 10.8565 349.4159 16.23543683 1953

78-31A

Kosmos 996

Upp: 28 mars från Plesetsk. 957-1010 km

$T_u = 104.80 \text{ min}$

1	10744U	78031	A	78	87.19402642	.00003978	00000-0	00000-0	0	00014
-2	10744	82.9236	235.5769	0025951	290.0098	69.2866	13.76330107			25
1	10744U	78031	A	78	87.33953026	.00003978	00000-0	00000-0	0	00028
2	10744	82.9311	235.4668	0036055	299.2354	59.2742	13.74810710			44

78-32

Kosmos 997 & 998

Upp: 28 mars från Tyuratam. 188-213km
 $T_u = 88.45 \text{ min}$

1	10772U	78032	C	78	89.05375895	.00092008	00000-0	22087-4	0	00016
2	10772	51.6554	196.0898	0026422	236.8868	123.3885	16.26301764			10

1	10772U	78032	C	78	89.11513103	.00082397	00000-0	22087-4	0	00021
2	10772	51.6261	195.7586	0018628	236.8310	123.1205	16.26893413			29

1	10772U	78032	C	78	89.29939392	.00082397	00000-0	00000-0	0	00030
2	10772	51.5974	194.7237	0018503	237.6068	122.5069	16.27105578			54

1	10772U	78032KC		78	89.72911055	.00518959	00000-0	00000-0	0	00043
2	10772	51.5991	192.3279	0025429	210.9617	148.9865	16.27709034			123

1	10772U	78032	C	78	92.60513234	.12101099	00000-0	00000-0	0	00148
2	10772	51.5970	176.1616	0000000	183.8384	203.4451	16.49039456			599

1	10775U	78032	D	78	89.72899455	.01491481	00000-0	00000-0	0	00013
2	10775	51.5975	192.3491	0013012	189.6446	161.1565	16.25218643			174

1 10775U 78032 D 78 91.20394512 .02282115 71510-2 49401-3 0 00024
2 10775 51.5914 184.1965 0005856 202.8176 156.5042 16.30573340 364

1 10775U 78032 D 78 92.67187633 .04471804 00000-0 00000-0 0 00031
2 10775 51.5937 175.9115 0001605 220.5055 143.9303 16.40296536 603

78-33A

Kosmos 999

Lpp: 30 mars 174-152 km

; T_h = 89.79 m.

1	10773U	78033	A	78101.89440300	.00240319	00000-0	00000-0	0	00242
-2	10773	71.3886		314.4705 0103962	42.5656	318.3516	16.08294829		2026

1	10773U	78033	A	78 89.38365431	.00151579	00000-0	00000-0	0	00016
2	10773	71.4169		349.1562 0133609	53.6408	306.8935	16.05576723		13

1	10773U	78033A		78 89.82042122	.00189328	00000-0	00000-0	0	00028
2	10773	71.3956		347.9470 0136129	56.3122	305.0938	16.04057988		80

1	10773U	78033	A	78 90.25695516	.00247739	00000-0	00000-0	0	00030
2	10773	71.3942		346.7386 0133758	55.2619	306.3199	16.04343520		153

1	10773U	78033	A	78 90.44397637	.00247739	00000-0	00000-0	0	00045
2	10773	71.3957		346.2251 0133655	54.8240	306.5366	16.04421843		182

1	10773U	78033	A	78 92.00230429	.00247739	00000-0	00000-0	0	00123
2	10773	71.3910		341.9150 0131843	51.2976	309.9900	16.05240519		434

1	10773U	78033	A	78 92.18925334	.00277026	00000-0	00000-0	0	00136
-2	10773	71.3939		341.4001 0130975	51.0327	310.3583	16.05409443		467

F_{req}: 19.989 MHz, tra-ton

1 10773U 78033 A 78100.52570706 .00240319 00000-0 00000-0 0 00223
-2 10773 71.3897 318.2702 0105000 46.4768 314.5070 16.07653382 1809

1 10773U 78033 A 78 94.12021894 .00277026 00000-0 00000-0 0 00157
2 10773 71.3948 336.0429 0114103 48.2545 314.4079 16.09526952 774

1 10773U 78033 A 78 94.43069248 .00382189 00000-0 00000-0 0 00164
2 10773 71.3889 335.1904 0115193 46.9220 314.1256 16.09736883 827

1 10773U 78033 A 78 95.48688463 .00393474 00000-0 00000-0 0 00175
2 10773 71.3899 332.2496 0112547 44.5957 316.4408 16.10553680 999

1 10773U 78033 A 78 96.54254028 .00383474 00000-0 00000-0 0 00180
-2 10773 71.3933 329.3052 0109256 42.5122 318.4448 16.11358409 1167

1 10773U 78033 A 78 97.10120197 .00383474 00000-0 00000-0 0 00193
2 10773 71.3941 327.7464 0108948 53.9678 304.7547 16.06154108 1256

1 10773U 78033 A 78 98.40914839 .00193600 00000-0 00000-0 0 00203
-2 10773 71.3913 324.1339 0108669 50.8621 308.8369 16.06649860 1465

1 10773U 78033 A 78 99.90344827 .00240319 00000-0 00000-0 0 00214
2 10773 71.3904 319.9981 0106833 47.2204 314.0437 16.07335007 1706

1 10773U 78033 A 78100.96127307 .00240319 00000-0 00000-0 0 00237
-2 10773 71.3913 317.0625 0105189 45.0329 315.9312 16.07842625 1876

78-34 A

Kosmos 1000

Hpp: 31 mats från Plesetsk.

965-1012 km

 $T_u = 104.90$ min

1	10776U	78 34A	78 90.64299998	.00000000	00000-0	00000-0	0	00017
2	10776	82.9253	66.9115 0178969	2.7500	357.4526	13.43330716		18

1	10776U	78034 A	78 90.71555419	.00003978	00000-0	00000-0	0	00037
2	10776	82.9502	66.8707 0035414	293.0985	65.0581	13.73520985		26

1	10776U	78 34A	78 90.78866058	.00000000	00000-0	00000-0	0	00020
2	10776	82.9330	66.8185 0025599	306.2463	53.6274	13.74525788		36

1	10776U	78 34A	78 90.93440707	.00000000	00000-0	00000-0	0	00037
2	10776	82.9357	66.6910 0031649	290.2546	69.5157	13.73561675		58

78-35A

Intelsat 4A (F-6)

Upp: 31 mars från Cape Canaveral.

1	10778U	78035	A	78103.00000000	-.00000220	00000-0	00000-0	0	00014
2	10778	.3100		271.9321	0013286	110.9193	332.8738	17.00269527	139
1	10779U	78035	B	78101.07437401	-.00000164	00000-0	00000-0	0	00016
2	10779	21.9472		353.4916	7029462	186.9100	136.2585	2.41982378	236

78-36 C, D, E

Kosmos 1001

Upp: 4 april från Tyuratam. 199-228 km i höjd, $T_n = 88.71$
 Ned: 15 april. Frekvenser: 166 MHz (FM) och 20.00814 MHz

1	10804U	78036	C	78104.94763280	.00553142	00000-0	00000-0	0	00019
2	10804	51.6093		12.9070	0006427	79.3805	273.6396	15.84673263	1641

1	10805J	78036	D	78105.03638376	.00522375	00000-0	19087-2	0	00010
2	10805	51.6034		11.9401	0002803	349.3544	5.5712	15.86480734	1676

1	10806U	78036	E	78105.28816176	.00904914	00000-0	00000-0	0	00010
2	10806	51.6170		10.5148	0008170	301.5237	61.7157	15.89739106	1718

78-36A

Kosmos 1001

Kpp: 4 aprill jaan Tyuratam, õvni st ja kõrge korr.

1	10783U	78035	A	78	94.80211410	.03402545	00000-0	00000-0	0	00015
2	10783	51.6237			66.4654 0021318	83.6220	276.9626	16.21990525		22

1	10783U	78036	A	78	95.97173391	.01529329	00000-0	00000-0	0	00039
2	10783	51.6398			60.0601 0072464	67.8691	274.8073	16.11282452		212

1	10783U	78036	A	78	96.16088703	.01529329	00000-0	00000-0	0	00044
2	10783	51.6308			59.0132 0068914	66.2266	294.4971	16.11763711		246

1	10783U	78036	A	78	96.40884244	.00677646	00000-0	00000-0	0	00051
2	10783	51.6301			57.6731 0068846	67.5248	292.7896	16.11817943		284

1	10783U	78036	A	78	97.40080882	.00000000	00000-0	00000-0	0	00063
2	10783	51.7587			52.3223 0102654	74.0932	287.1327	16.11588349		448

1	10783U	78036	A	78	97.77210546	.00562095	00000-0	00000-0	0	00065
2	10783	51.6264			50.2597 0064765	73.0941	287.0563	16.13424006		508

1	10783U	78036	A	78	97.89608516	.00633613	00000-0	00000-0	0	00079
2	10783	51.6263			49.5848 0064162	73.5978	287.2367	16.13611615		523

1	10783U	78036	A	78	98.70297680	.00696746	00000-0	00000-0	0	00072
2	10783	51.6322			45.1891 0062040	77.3721	295.7022	16.14762419		656

1	10783U	78036	A	78100.81407542	.00696746	00000-0	00000-0	0	00090	
2	10783	51.5984			33.9986 0012037	319.7546	24.7500	15.85814746		994

1	10783U	78036	A	78101.57273325	.00696746	00000-0	00000-0	0	00106	
2	10783	51.6060			29.9656 0007348	298.5357	60.5712	15.86165637		1119

1	10783U	78036	A	78101.57273326	.00104007	00000-0	00000-0	0	00112	
2	10783	51.6144			29.9647 0007827	302.1405	56.9621	15.86055079		1116

1	10783U	78036	A	78102.26593402	.00188485	00000-0	00000-0	0	00133	
2	10783	51.6117			26.3838 0008844	311.6940	48.3679	15.86273762		1230

1	10783U	78036	A	78103.65165188	.00223242	00000-0	00000-0	0	00145	
2	10783	51.6191			19.1395 0007707	309.8987	49.8463	15.86786051		1458

1	10783U	78036	A	78104.15548529	.00553142	00000-0	19087-2	0	00158	
2	10783	51.6106			16.5039 0006606	309.3733	51.3856	15.87507871		1536

1	10783U	78036	A	78105.28799673	.00470203	00000-0	00000-0	0	00161	
2	10783	51.6154			10.5583 0008171	301.4805	57.5918	15.88112770		1717

78-37A

Kosmos 1002

Upp: 6 apr 78 from

197-267km; $T_u = 89.13 \text{ min}$

1	10785U	78037	A	78	96.43872715	.00084673	00000-0	00000-0	0	00015
2	10785	65.0733			7.6620 0058246	55.6879	305.9874	16.10612500		12

1	10785U	78037	A	78	97.12155419	.00084673	00000-0	00000-0	0	00028
2	10785	65.0520			5.1937 0061626	51.5998	309.1149	16.10787645		129

1	10785U	78037	A	78	98.79773284	.00184226	00000-0	00000-0	0	00034
2	10785	65.0455			359.0022 0058481	52.0534	309.9134	16.11447092		390

1	10785U	78037	A	78	102.51957943	.00236686	00000-0	00000-0	0	00045
2	10785	65.0463			345.2803 0056320	49.8661	311.1434	16.13003028		990

✓ 1	10785U	78037	A	78	103.63534599	.00212376	00000-0	00000-0	0	00058
2	10785	65.0447			341.1578 0054982	48.7390	311.6495	16.13460773		1173

1	10785U	78037	A	78	104.50304989	.00216919	00000-0	00000-0	0	00061
2	10785	65.0448			337.9452 0054397	47.5813	312.9729	16.13834483		1318

1 10785U 78037 A 78105.68028069 .00223499 00000-0 00000-0 0 00075
-2 10785 65.0431 333.5814 0053658 46.8383 313.9263 16.14411658 1508

1 10785U 78037 A 78107.04282254 .00225294 00000-0 00000-0 0 00081
2 10785 65.0412 328.5372 0052359 46.4308 314.1545 16.15031212 1725

1 10785U 78037 A 78108.52866555 .00272372 00000-0 00000-0 0 00097
-2 10785 65.0422 323.0239 0051794 44.2807 316.1481 16.15705358 1966

78-38

[Aka] - Agona?

Initial bank:

$$\bar{i} = 200$$

$$h_p = 149$$

$$h_a = 189 \text{ km}$$

Severe glaciation?

early warming dev. ? Au

78-39 JBS-BSE

Upp: 7 April from Cape Canaveral

1	10793U	78 39	B 78	98.35019412	.00000000	00000-0	00000-0	0	00029
-2	10793	28.1952	343.0662	0946843	52.9337	302.5365	12.90702771		51
1	10793U	78 39	B 78	97.97188657	.00000000	00000-0	00000-0	0	00013
2	10793	28.2340	344.8480	0955530	50.1790	360.0000	12.88902017		08

1	10792U	78 39	A 78	99.52335648	-.00000151	00000-0	00000-0	0	00017
2	10792	.0986	239.3572	0065470	266.1818	22.9621	1.01713035		35

78-40 A

Kosmos 1003

Upp: 20 april från Ploestsk, 178-328 km, $T_u = 89.54$ min
 $F = 19.989$ MHz, två-ton

1	10811U	78040	A	78110.75888315	.00022741	00000-0	00000-0	0	00012
2	10811	62.8103		30.6572 0114112	71.9608	292.9423	16.08057916		23

1	10811U	78040	A	78110.88263865	.00022741	00000-0	00000-0	0	00024
2	10811	62.8123		30.1624 0113768	71.4057	289.9628	16.08119651		47

1	10811U	78040	A	78111.38008954	.00022741	00000-0	00000-0	0	00037
2	10811	62.8103		28.1792 0113676	71.5063	290.1966	16.08392493		129

1	10811U	78040	A	78111.69088488	.00232926	00000-0	00000-0	0	00040
2	10811	62.8120		26.9465 0111009	71.3484	290.1576	16.08602239		178

1	10811U	78040	A	78112.18812365	.00232926	00000-0	00000-0	0	00055
2	10811	62.8099		24.9551 0092457	52.9014	311.9784	16.18308391		251

1	10811U	78040	A	78112.68173988	.00232926	00000-0	00000-0	0	00062
2	10811	62.8099		22.9638 0091518	52.9073	308.1577	16.18658872		335

1	10811U	78040	A	78113.11411799	.00515944	00000-0	00000-0	0	00071
2	10811	62.8118		21.2173 0090151	52.4665	308.9723	16.19256250		402

1	10811U	78040	A	78113.11411799	.00515944	00000-0	00000-0	0	00071
2	10811	62.8116		21.2173 0090151	52.4665	308.9723	16.19256250		402

1	10811U	78040	A	78113.85490688	.00460488	00000-0	00000-0	0	00089
2	10811	62.8112		18.2305 0088483	52.4328	308.2911	16.19920675		524

1	10811U	78040	A	78114.22527401	.00571712	00000-0	00000-0	0	00099
2	10811	62.8096		16.7293 0087350	52.6193	308.4213	16.20397249		588

1	10811U	78040	A	78115.21693325	.00439448	00000-0	00000-0	0	00110
2	10811	62.8072		12.7493 0118491	52.3566	298.7810	16.12004423		745

1	10811U	78040	A	78118.13023500	.00681022	00000-0	00000-0	0	00135
2	10811	62.8041		1.0860 0111074	62.1662	299.3757	16.14873455		1216

1	10811U	78040	A	78119.05964359	.00681022	00000-0	00000-0	0	00143
2	10811	62.8116		357.3551 0118423	56.4873	303.6012	16.11614620		1361

1	10811U	78040	A	78122.28255154	.00101959	00000-0	00000-0	0	00189
2	10811	62.8037		344.4699 0106041	58.7592	302.4469	16.14482589		1889

78-40A

Kosmos 1003 parts. 1

1	10811U	78040	A	78119.80317081	.00392067	00000-0	00000-0	0	00150
2	10811	62.8089	354.3806	0116652	56.6604	303.8703	16.12167229		1487

1	10811U	78040	A	78120.23742546	.00449942	00000-0	00000-0	0	00163
2	10811	62.8089	352.6440	0115261	56.7441	304.5311	16.12572829		1554

1	10811U	78040	A	78121.22930421	.00495750	00000-0	00000-0	0	00173
2	10811	62.8100	348.6698	0113382	57.0181	304.0885	16.13493209		1719

1	10811U	78040	A	78122.65415540	.00544498	00000-0	00000-0	0	00197
2	10811	62.8103	342.9647	0107817	57.3660	304.1168	16.14999286		1941

1	10811U	78040	A	78123.53256248	.00480710	00000-0	00000-0	0	00206
2	10811	62.8093	339.2260	0106694	56.7113	304.2591	16.15915620		2096

78-41 A

AEM 1 (HCMM)

Lpp: 26 apr 84 from WTR; 560-0414m; $T_h = 96.72 \text{ m}^2$

1	10818U	78041	A	78116.47402309	.00000034	00000-0	00000-0	0	00011
2	10818	97.6037		64.3118 0072319	266.8223	93.9590	14.89538256		13

1	10818U	78041	A	78116.54092115	.00000034	00000-0	00000-0	0	00020
2	10818	97.5963		64.4087 0065693	264.8041	94.1963	14.87318309		25

1	10818U	78041	A	78117.48254740	.00000034	00000-0	00000-0	0	00039
2	10818	97.6011		65.3043 0063275	261.9207	96.6982	14.87604698		165

1	10818U	78041	A	78117.48269304	.00001514	00000-0	00000-0	0	00045
2	10818	97.6036		65.2703 0062532	260.8173	98.5862	14.87599729		165

78-42A

AMS 3

(Meteorologisk
satellit för DOD)

1	10820U	78042	A	78121.17320272	.00000040	00000-0	00000-0	0	00013
2	10820	98.7071		319.3023 0013170	244.3313	112.3169	14.21430613		12

1	10820U	78042	A	78121.66710035	.00000040	00000-0	00000-0	0	00039
2	10820	98.7075		319.7974 0008002	225.2548	134.7984	14.19923670		83

1	10820U	78042	A	78121.94896351	.00000040	00000-0	00000-0	0	00047
2	10820	98.7010		320.0749 0010353	212.3585	147.7503	14.19962970		129

Upp: 1 maj från WTR; 820-835 km; $T_H = 101.47$ min

78-43A

Kosmos 1004

Upp: 5 maj från Alusetsk; 205-290 km; $T_u = 89.43 \text{ min}$
 Frekv: 19.994 MHz, FSU-PD14

1	10846U	78043	A	78125.75388315	.00022741	00000-0	00000-0	0	00019
2	10846	62.8178		45.3398 0063834	77.6235	288.3882	16.09947235		26

1	10846U	78043	A	78125.75888315	.00022741	00000-0	00000-0	0	00019
2	10846	62.8194		45.3400 0064076	77.7476	288.2662	16.09941792		22

1	10846U	78043	A	78126.25486600	.00022741	00000-0	00000-0	0	00039
2	10846	62.8091		43.3564 0063741	77.7247	283.2118	15.10111348		109

1	10846U	78043	A	78127.12426905	.00140389	00000-0	00000-0	0	00058
2	10846	62.8102		39.8898 0062529	77.7989	283.1753	15.10402360		249

1	10846U	78043	A	78127.62797179	.01245022	00000-0	00000-0	0	00062
2	10846	62.8132		37.9042 0057457	78.5809	283.0995	16.11582634		321

1	10846U	78043	A	78127.80723489	.00140389	00000-0	00000-0	0	00072
2	10846	62.8100		37.1661 0061739	77.9298	282.7931	16.10526744		356

1	10846U	78043	A	78127.80724841	.00122610	00000-0	00000-0	0	00083
2	10846	62.8096		37.1645 0061739	77.9313	282.8753	16.10551971		353

1	10846U	78043	A	78129.11097329	.00175344	00000-0	00000-0	0	00006
2	10846	62.8105		31.9596 0060806	78.1821	283.0417	16.11032078		568

1	10846U	78043	A	78133.08123837	.00198368	00000-0	00000-0	0	00125
2	10846	62.8069		16.0970 0057728	78.4407	282.3565	16.12686478		1207

1	10846U	78043	A	78134.25917636	.00197273	00000-0	00000-0	0	00139
2	10846	62.8069		11.3776 0056159	78.3346	282.3932	16.13150766		1392

78-44

OTS 2

App: 17 maj från Cape Canaveral.

1	10856U	78044	B	79135.31021147	.00000167	00000-0	51732-2	0	00014
2	10856	27.9315		23.3574 1095951	85.5247	286.9363	10.29605861		379

1	10857U	78044	C	79131.97347430	.00007790	00000-0	40000-3	0	00015
2	10857	27.3187		33.3240 7315250	178.7897	1.1052	2.27255259		03

78-45A

Kosmos 1005

Upp = 12 maj från Plesetsk; 627-653 km

T_n = 97.54 min

1	10860U	78045	A	78132.23021903	.00027754	00000-0	00200-0	0	00019
2	10860	81.2479		315.2986 0005040	76.0084	282.6958	14.75168532		19
1	10860U	78045	A	78132.23049552	.00027754	00000-0	00200-0	0	00020
2	10860	81.2355		315.3031 0019643	19.5897	340.7732	14.76706902		18
1	10860U	78045	A	78132.70476653	.00027754	00000-0	00000-0	0	00039
2	10860	81.2365		314.7796 0019353	10.5614	350.3350	14.77178769		81
1	10860U	78045	A	78134.46572082	.00027754	00000-0	00000-0	0	00048
2	10860	81.2377		312.8682 0018913	5.0078	354.7817	14.77200694		349

78-46A

Kosmos 1006

Upp: 12 maj från

382-408 km; $T_u = 92.45 \text{ min}$

1	10862U	78046A	78132.64129426	.00164915	00000-0	00000-0	0	00016
2	10862	65.8505	15.7667 0017687	345.4864	19.1815	15.57571478		31

1	10863U	78046	B	78132.70463198	.00164815	00000-0	00000-0	0	00016
2	10863	65.8630		15.5454 0025978	359.6844	2.0616	15.59618174		48

1	10862U	78046A	78133.79611253	.00005681	00000-0	00000-0	0	00023
2	10862	65.8502	11.9421 0018901	342.1824	17.4939	15.57682028		216

1	10862U	78046A	78135.52966393	.00005681	00000-0	00000-0	0	00045
2	10862	65.8459	6.2136 0018316	342.0291	18.0176	15.57756293		488

1	10862U	78046A	78135.91486787	.00005681	00000-0	00000-0	0	00054
2	10862	65.8483	4.9438 0018744	339.8893	20.1474	15.57775721		542

78-47A

NDS 2

Lapp: 13 maj från WTR;

20000 km cirka.

T_n = 711.30 min

1	10893U	78047A	78134.10208290	.00000000	00000-0	00000-0	0	00016
2	10893	62.6573	110.5462	6045176	157.3654	251.6593	4.10072691	35

1	10894U	78047	B	78134.10208290	.00000030	00000-0	00000-0	0	00010
2	10894	62.6572	110.5461	6045175	157.3654	251.6592	4.10036513	35	

1	10893U	78047	A	78136.08785343	.00000060	00000-0	00000-0	0	00021
2	10893	63.1308	107.8837	0022937	50.5292	348.4903	2.01787096	117	

1	10893U	78047	A	78137.04166663	.00000062	00000-0	00000-0	0	00039
2	10893	63.1282	107.8411	0025642	96.5226	275.5066	2.02347383	133	

78-48A

Kosmos 1007

Lopp: 70 maj från Plesetsk. 168-350km/s

T_u = 89.69 min. Freqv: 19.9891443, två-två

1	10895U	78048	A	78136.49865694	.00068819	00000-0	00000-0	0	00012
2	10895	72.8246		38.3572 0136963	82.8708	279.3819	16.05514960		10

1	10895U	78048	A	78136.74779996	.00068819	00000-0	00000-0	0	00020
2	10895	72.8387		37.7660 0136822	82.2155	279.9864	16.06175155		51

1	10895U	78048	A	78136.93456406	.00068819	00000-0	00000-0	0	00030
2	10895	72.8460		37.2219 0142782	82.9402	275.3495	16.04229998		87

1	10895U	78048	A	78137.30932416	.00278593	00000-0	00000-0	0	00045
2	10895	72.8409		36.2739 0141029	82.4691	279.4480	16.04485860		143

1	10895U	78048	A	78138.05740738	.00255361	00000-0	00000-0	0	00051
2	10895	72.8457		34.3541 0139322	80.6507	280.9150	16.04841428		265

1	10895U	78048	A	78139.24068023	.00285955	00000-0	00000-0	0	00077
2	10895	72.8400		31.3334 0132977	76.7886	284.8444	16.06770846		452

1	10895U	78048	A	78144.40379079	.00350165	00000-0	00000-0	0	00118
2	10895	72.8349		18.0822 0123092	53.9532	297.6191	16.09907299		1282

1	10895U	78048	A	78145.64626517	.00339621	00000-0	00000-0	0	00133
2	10895	72.8627		14.9106 0162337	60.3361	288.7298	16.01321716		1484

1	10895U	78048	A	78146.21066103	.00214548	00000-0	00000-0	0	00147
2	10895	72.8374		13.4611 0157971	57.3268	304.2530	16.01614566		1579.

1	10895U	78048	A	78146.64788321	.00214548	00000-0	00000-0	0	00158
2	10895	72.8434		12.3664 0128515	59.6028	311.5788	16.09028725		1641

1	10895U	78048	A	78147.14355919	.00214548	00000-0	00000-0	0	00168
2	10895	72.8436		11.0353 0129387	56.1563	305.3358	16.09341862		1720

78-49A

Kosmos 00008

Upp: 17 maj från Plesetsk, 170-336 km; $T_u = 89.69$ min

1	10898U	78049	A	78137.93081365	.00007021	00000-0	00000-0	0	00031
2	10898	74.0477		102.2753 0035256	343.8637	14.1059	15.14205718		52

1	10898U	78049	A	78137.73300689	.00007021	00000-0	00000-0	0	00010
2	10898	74.0595		102.6765 0034351	352.0672	7.9626	15.12980110		25

1	10898U	78049	A	78137.79913976	.00007021	00000-0	00000-0	0	00026
2	10898	74.0586		102.5459 0042866	342.3715	19.0073	15.16572730		35

1	10898U	78049	A	78138.12939486	.00007021	00000-0	00000-0	0	00040
2	10898	74.0437		101.8633 0036500	340.5029	19.6877	15.14514300		82

78-50A

Kosmos 1009

Upp: 19 maj, från

. 966-1364 km; $T_n = 108.64$ min

1	10904U	78050	A	78139.13539927	.00002762	00000-0	00000-0	0	00011
2	10904	65.9440		275.6672 0277727	40.1257	238.1464	13.22748517		29

1	10904U	78050	A	78139.15299783	.00002762	00000-0	00000-0	0	00029
2	10904	65.8664		275.6315 0263409	40.6986	321.3354	13.25574282		29

1	10904U	78050	A	78139.15299810	.00002762	00000-0	00000-0	0	00030
2	10904	65.7309		274.9079 1166432	259.3159	87.6617	16.14564335		26

1	10905U	78050	B	78139.27436808	.00002762	00000-0	00000-0	0	00023
2	10905	65.1505		275.7766 0591923	56.6433	309.6904	15.04076713		44

1	10907U	78050	D	78139.67318378	.00002762	00000-0	00000-0	0	00019
2	10907	65.1404		274.5426 0576557	57.1825	313.1343	15.07886093		103

1	10906U	78050	C	78139.73967466	.00002762	00000-0	00000-0	0	00013
2	10906	65.1563		274.4200 0559574	55.6962	313.9555	15.13969714		115

78-51A

Pioneer Venus Orbiter

78-52A

Kosmos 1010

Upp: 23 maj från Plesetsk, 217-230km; $T_h = 88.99 \text{ min}$ Frekv: 19.989 MHz, tra^o-ton, CR-153

1	10915U	78052	A	78143.36702981	.00100000	00000-0	00000-0	0	00012
2	10915	81.3780		17.4607 0010630	50.4843	311.1523	16.18995350		18

1	10915U	78052	A	78144.17025205	.00100000	00000-0	00000-0	0	00031
2	10915	81.3631		16.3693 0009741	54.6618	305.7642	16.19286916		140

1	10915U	78052	A	78144.84995423	.00197307	00000-0	00000-0	0	00040
2	10915	81.3663		15.4672 0009609	51.3563	308.9968	16.19562154		257

1	12915U	78052	A	78152.75054991	.00237874	00000-0	00000-0	0	00072
2	10915	81.3649		4.9746 0006199	19.1895	340.6323	16.23013491		1537

1	10915U	78052	A	78153.05886786	.00240404	00000-0	00000-0	0	00085
2	10915	81.3644		4.5628 0005462	18.3132	341.9439	16.23167119		1587

1	12915U	78052	A	78154.84621708	.00389133	00000-0	14344-3	0	00097
2	10915	81.3701		2.1909 0005324	6.9328	353.4853	16.24219663		1873

78-52A

Kosmos 1011

Upp: 23 maj från Plesetsk. 961-1016km

$T_n = 104.90$ min

1	10917U	78053	A	78143.76423660	.00003978	00000-0	00000-C	0	00019
2	10917	82.9376	163.2336	0031529	317.3233	37.7681	13.71419925		16

1	10917U	78053	A	78143.83916206	.00003978	00000-0	00000-0	0	00020
2	10917	82.9072	163.1512	0036934	233.7746	71.5007	13.73467677		27

78-54A

Kosmos 1012

Upp: 25 maj från Nylsbo, 202-265 km; $T_u = 89.15$ min
 Freq: 19.994 MHz, två-ton.

1	10919U	78054	A	78145.71725121	.00022741	00000-0	00000-0	0	00015
2	10919	62.7927		50.0231 0069230	45.6317	322.4384	16.11750106		28

1	10919U	78054	A	78146.02616918	.00300000	00000-0	00000-0	0	00021
2	10919	62.7922		48.7856 0049111	51.1508	312.8954	16.15033856		71

1	10920U	78054	A	78146.51835416	.02017313	00000-0	00000-0	0	00038
2	10920	62.9223		46.7969 0050025	19.4477	342.2663	16.21716328		151

1	10919U	78054	A	78146.53275412	.20171537	00000-0	10163-3	0	00038
2	10919	62.8058		46.5451 0046977	50.7187	309.7331	16.15239210		160

1	10919U	78054	A	78147.26370717	.00184105	00000-0	00000-0	0	00040
2	10919	62.8066		43.8046 0046017	50.8567	309.7010	16.15490545		271

1	10920U	78054	A	78148.17810062	.04583950	00000-0	00000-0	0	00062
2	10920	62.7803		40.0198 0025133	7.7204	356.9471	16.34269436		420

1	10920U	78054	A	78148.23852617	.06931664	00000-0	00000-0	0	00073
2	10920	62.7978		39.7668 0030618	5.4898	355.0723	16.36106751		432

1	10920U	78054	A	78148.48267468	.09513147	00000-0	00000-0	0	00080
2	10920	62.7942		38.7466 0026520	6.5750	354.0214	16.40838387		474

1	10919U	78054	A	78149.73893003	.00201451	00000-0	00000-0	0	00057
2	10919	62.8044		33.8518 0044251	51.0101	309.7305	16.16476068		673

1	10919U	78054	A	78152.70689739	.20228538	00000-0	00000-0	0	00074
2	10919	62.8029		21.9015 0042909	49.6131	310.6037	16.17853459		1151

1	10919U	78054	A	78153.33676357	.00227741	00000-0	00000-0	0	00087
2	10919	62.8061		19.1564 0041634	49.7504	310.7117	16.18165044		1263

1	10919U	78054	A	78154.43714628	.00318137	00000-0	14688-3	0	00099
2	10919	62.8057		14.9204 0041519	50.3632	310.3111	16.18782696		1431

1	10919U	78054	A	78155.05476236	.20259206	00000-0	00000-0	0	00101
2	10919	62.8042		12.4269 0040321	50.1634	310.1648	16.19081242		1533

78-55A

Molniya 1AR

Upp: 2 suni' från plasekh. 422-40842km;

$T_u = 726.26 \text{ min}$

1	10925U	78055	A	78159.16143332	.70202664	00002-2	00002-0	0	00031
2	10925	62.3574		22.6587 7492489	230.4072	12.3105	1.05573478		179

1	10926U	7855B		78154.19004550	.00313189	00000-0	00000-0	0	00038
2	10926	62.8494		20.9028 0159084	131.2687	230.4182	15.85303559		215

1	10925U	78055	A	78160.66617585	.00000069	00000-0	00002-0	0	00040
2	10925	62.8140		22.2328 7439868	230.4929	9.5117	2.00514410		151

78-56A-H

Kosmos 1013-1020

Upp: Fjuni från Plesetsk.

1	10930"	78055	A	78159.22167712	.00000260	00000-0	00000-0	0	00017
2	12930	74.0303	233.8047	0049446	245.0372	114.5003	12.37553007		45

1	10935U	78056	G	78159.85816484	-.00000017	00000-0	00000-0	0	00012
2	10936	74.0567		232.8895	0040728	130.1485	230.4134	12.51858894	125
1	10935U	78056	F	78159.85974275	.00000181	00000-0	00000-0	0	00015
2	10935	74.0271		232.9363	0028796	132.5345	227.8489	12.49591434	120
1	10934U	78056	E	78159.72095460	.00000026	00000-0	00000-0	0	00016
2	10934	74.0274		233.1845	0022142	155.4308	204.2898	12.47309723	123
1	10937U	78056	H	78159.69695510	-.00000017	00000-0	00000-0	0	00017
2	10937	74.0228		233.1538	0048819	108.1558	252.4858	12.54231552	103
1	10933U	78056	D	78159.94915881	.00000050	00000-0	00000-0	0	00017
2	10933	74.0334		232.3351	0015219	191.4195	194.7774	12.45005180	131
1	10932U	78056	C	78159.86832747	.00000050	00000-0	00000-0	0	00016
2	10932	74.0328		232.9893	0027112	218.9075	156.9122	12.42474683	122
1	10931U	78056	B	78159.94915381	.00000050	00000-0	00000-0	0	00015
2	10931	74.0323		232.8865	0032565	236.7290	132.3988	12.40215195	130

78-57A

Kosmos 1021

Lopp: 70 juni från

Frekvs: 19.989 MHz, 232.0 MHz

1	10939U	78057	A	78161.53865455	.00084673	00000-0	00000-0	0	00015
2	10939	65.0315		62.5261 0108489	59.7706	302.4588	16.10910336		33

1	10939U	78057	A	78162.15927027	.00084673	00000-0	00000-0	0	00029
2	10939	65.0318		60.2412 0108059	59.4716	302.0252	16.11231153		139

1	10939U	78057	A	78162.71782200	.00286197	00000-0	00000-0	0	00030
2	10939	65.0294		58.1775 0105578	59.3306	302.2196	16.11615060		229

1	10939U	78057	A	78162.77980633	.00279796	00000-0	00000-0	0	00043
2	10939	65.0307		57.9533 0105631	58.9777	302.1597	16.11647978		238

1	10939U	78057	A	78164.08262736	.00302877	00020-0	00000-0	0	00059
2	10939	65.0295		53.1417 0103569	53.8515	302.4741	16.12443023		443

78-58

[Titan 3C]

Lpp: 10 Juni från Cape Canaveral.

1	10943U	78058	C	78161.84463332	.00200000	00000-0	00000-0	0	00017
2	10943	29.9796	355.6729	0277236	125.0665	236.4215	15.76637297		17

78-59A

Kosmos 1022

Upp: 12 juni från Alvesta.

1	10944U	78059	A	78163.49172407	.00058819	00000-0	00000-0	0	00012
2	10944	72.8616		62.4927 0134754	91.4800	290.7701	16.05642097		11

1	10944U	78059	A	78164.55078335	.00239288	00000-0	00000-0	0	00026
2	10944	72.8461		59.7871 0132204	79.8717	292.9746	16.06027906		139

78-60A

[Titan 3D] recousat.

1	10947U	78060	A	78155.80728401	.00050000	00000-0	00000-0	00013
2	10947	96.9625	234.0806	0216423	161.7588	199.4800	15.67033647	11

1	10947U	78060	A	78166.19037995	.00050000	00000-0	00000-0	00022
2	10947	96.9655	234.4669	0213946	161.4112	200.5310	15.67827284	76

78-61A

Soyuz 29

Upp: den 15 juni från Tyuratam kl. 21.17 sv.t.

1	10952U	78 061	A	78167.22228382	.20096106	00000-0	00000-0	0	00011
2	10952	51.6265		215.8325 0041982	73.5394	286.9871	16.19572611		30
1	10952U	78 061	A	78167.22739119	.20096106	00000-0	00000-0	0	00027
2	10952	51.6407		215.8727 0042014	262.2579	87.0842	15.97603242		60
1	10952U	78061	A	78170.81767091	.20038513	00000-0	00000-0	0	00060
2	10952	51.6268		197.1925 0012240	21.1704	339.0189	15.74316875		498
1	10952U	78061	A	78177.29097519	.20050790	00000-0	31105-3	0	00086
2	10952	51.6251		163.8732 0007683	67.2160	313.1006	15.76642406		1516
1	10952U	78061	A	78214.89264900	.20055949	00000-0	00000-0	0	00150
2	10952	51.6247		329.3751 0001028	253.4574	96.5271	15.80916682		7587
1	10952U	78061	A	78217.28471219	.00025202	00000-0	00000-0	0	00181
2	10952	51.6284		316.9140 0002944	264.4945	95.5681	15.81007633		7962

1	10952U	78061	A	78216.34225608	.00025039	00000-0	00000-0	0	00173
2	10952	51.6264		319.2110	0003050	261.0129	99.0487	15.30930207	7895

1	10952U	78061A		78232.50162279	.00081092	00000-0	00000-0	0	00219
2	10952	51.6251		233.5091	0010776	247.4361	112.5458	15.75075623	52199

1	10952U	78061A		78233.51674917	.00081292	00000-0	00000-0	0	00221
2	10952	51.6231		233.2849	0010814	252.0590	107.9190	15.75173518	52350

1	10952U	78061A		78240.42965358	.00036492	00000-0	00000-0	0	00256
2	10952	51.6339		197.7476	0011199	306.4247	30.9312	15.74388672	53449

1	10952U	78061	A	78243.98770378	.00049910	00000-0	00000-0	0	00277
2	10952	51.6337		179.4472	0011705	315.4990	44.6198	15.74738777	12341

1	10952U	78061	A	78246.20861930	.00223272	00000-0	00000-0	0	00285
2	10952	51.6400		163.0273	0012424	323.6869	37.8615	15.75472864	12699

78-62A

GOES 3

Hpp: den 16, juni från Cape Canaveral.

1	129537	78262	A	78168.14861111	-.20000210	00000-0	00000-0	0	00012
2	12953	1.7335	265.2016	0123710	164.1706	173.2276	0.92529425		23

1	129530	78262	A	78171.69472222	-.20000196	00000-0	00000-0	0	00029
2	12953	1.6789	265.9351	0113260	155.3486	1.1906	0.99699477		59

78-63 A

Kosmos 1023

1	10961U	78063	A	78172.59239529	.00012001	00000-0	00000-0	0	00010
2	10961	74.0869		53.9211 0016644	8.6170	352.9925	14.20531733		03
1	10962U	78063	B	78172.59267972	.00012001	00000-0	00000-0	0	00010
2	10962	74.7785		53.9321 0020293	19.8801	341.4484	14.31605704		34
1	10961U	78063	A	78347.74467775	.00000515	00000-0	00000-0	0	00507
2	10961	74.0863		101.5913 0015459	1.7623	358.3531	14.29673147		25065

78-64A

Seasat 1

Upp: den 26 juni från WTR

1	10967U	78064	A	78178.29324119	.00000000	00000-0	00000-0	0	00011
2	10967	108.0286		340.9804	0006584	276.4963	83.1719	14.29506551	15

1	10967U	78064	A	78178.16323997	.00000000	00000-0	00000-0	0	00029
2	10967	108.0246		341.0245	0016850	266.7211	93.7442	14.31623239	20

1	10967U	78064	A	78173.44267930	.00000000	00000-0	00000-0	0	00030
2	10967	108.0194		341.6113	0016257	263.1782	96.5574	14.31529236	61

1	10967U	78064	A	78219.60267105	.00000075	00000-0	00000-0	0	00120
2	10967	108.0241		66.0083	0015508	196.6481	163.4103	14.31489997	5950

1	10967U	78064	A	78238.95500845	.00000790	00000-0	00000-0	0	00326
2	10967	108.0219		105.6962	0001457	278.2590	77.3469	14.29719006	8727

78-65 A

Союз 30

Upp: 27 juni kl. 16.27 svit. från Tyuratam

1	10968U	78065	A	78178.82125079	.00151711	00000-0	02901-4	00021
2	10968	51.5366		156.1881 0038019	63.7178	296.6530	16.20123475	31
1	10968U	78065	A	78179.19134009	.00151711	00000-0	00000-0	00031
2	10968	51.6236		154.1395 0037352	237.3056	101.3171	15.97735631	90
1	10968U	78065	A	78178.75956709	.00147336	00000-0	02031-4	00013
2	10968	51.6529		156.5238 0031652	51.5362	299.3385	16.20300000	00

78-66

Kosmos 1024

Upp: 28,2mi' från Arsetek

1	109717	79265	3	73179.24	043717	.20576139	00000-0	72000-0	0	22010
2	17971	62.3188	270.0383	2249087	124.0765	246.0930	15.62669553			04

78-67A

Kosmos 1025

App-28,2mi' from Plesetsk

1	10973U	78067	A	78180.51977234	.00003978	00000-0	00000-0	0	20011
2	10973	82.4917		206.2634	0020740	299.4814	328.2788	14.73216191	117
1	10973U	78067	A	78180.46923764	.00003978	00000-0	00000-0	0	00025
2	10973	82.4930		206.3191	0020984	292.1844	66.5209	14.72749627	101
1	10973U	78067	A	78181.14387714	.00003978	00000-0	00000-0	2	00236
2	10973	82.4841		205.6984	0020722	289.5298	70.3001	14.72726679	214

78-69A

Kosmos 1026

Upp: den 2 juli från Tyuratam

1	12977U	78269	A	78183.57335327	.22096126	20222-0	20202-0	0	20212
		51.7536		72.1417 2225207	42.0518	319.7451	15.18166625		30
1	12977U	78269	A	78183.69677676	.22096126	20222-0	20200-0	0	20211
2	12977	51.7792		71.4694 2032821	39.5749	319.6943	15.13985583		56
1	12977U	78269	A	78184.63571299	.22169950	20222-0	20202-0	0	20223
2	12977	51.7329		56.2751 2032242	43.5596	317.1413	15.17352153		214
1	12977U	78269	A	78185.98299517	.20227870	20200-0	20202-0	0	20233
2	12977	51.7817		59.9997 2028948	49.3326	311.1092	15.17859224		426
1	12977U	78269	A	78187.03293211	.20233397	20200-0	20202-0	0	20244
2	12977	51.7813		53.2643 2028456	54.0610	306.4167	15.13362113		596

78-70A

Progress 2

Lpp: 7 Juli from Tyuratam

1	10979U	78070	A	78188.65390382	.00095105	00000-0	20222-0 0	20017
2	10979	51.6162		125.5309 0039790	109.1413	254.1584	15.24078918	37
1	10979U	78070	A	78188.77649380	.00095105	00000-0	00200-0 0	00021
2	10979	51.6266		104.9665 0046339	196.3536	159.9263	15.98582977	53
1	10979U	78070	A	78190.15092581	.00100644	00000-0	17422-3 0	00045
2	10979	51.6264		97.5340 0047474	209.5164	147.5677	15.99286797	273
1	10979U	78 70	A	78213.99773639	.00257402	00000-0	00000-0 0	00071
2	10979	51.6280		333.9733 0008389	264.4495	95.5672	15.81581438	4730
1	10979U	78 70	A	78214.94547378	.00257402	00000-0	00000-0 0	00087
2	10979	51.6295		329.0493 0008306	274.1517	85.8560	15.81316315	4181

78-71A

ESA-Geos 2

Lapp: den 14 juli från Cape Canaveral.

1	10981U	78071	A	78195.73611111	-.00000000	00000-0	00000-0	0	00017
2	10981	25.8469		272.2603	7292440	178.6965	225.9357	2.29866998	17

1	10982U	78071	B	79195.66588448	.00004000	00000-0	00000-0	0	00017
2	10982	28.0872		270.1355	2051384	39.5156	333.8013	11.61927433	13

1	10982U	78071	B	79195.66588448	.00004000	00000-0	00000-0	0	00017
2	10982	28.0872		270.1355	2051384	39.5156	333.8013	11.61927433	13

1	10981U	78071	A	79199.00000000	.00000001	00000-0	00000-0	0	00024
2	10981	.7996		286.4230	2223312	313.0434	222.9347	1.21317108	34

78-72A

Molnija TAS

Upp: 14 juli från Plösetsk

1	12984U	78072	A	78196.70006098	.20000128	00000-0	00000-0	0	00011
2	12984	62.3274		106.9094 7414249	298.1359	9.6772	1.95534159		00
1	10984U	78072	A	73201.79842994	.20000254	00000-0	00000-0	0	00032
2	10984	62.3285		106.1233 7369077	298.1593	9.6723	2.20506559		123

78-73 A

Stationar - Raduga 4

Upp: 18 juli från Tyuratam.

1	12987U	78073	A	73200.13680556	-.00000047	00000-0	00000-0	0	00001
2	12987	.5000		91.2378	0030000	52.2422	300.3900	0.97432442	14

1	12989U	78073	C	73200.15302863	.00941251	00000-0	00000-0	0	00013
2	12989	51.6130		274.3591	0025889	133.4554	175.5720	16.35142312	42

1	10988U	78073	B	73200.15383214	.00941251	00000-0	00000-0	0	00211
2	10988	51.6271		274.3398	0016801	230.7055	83.9332	16.34028504	42

78-74A

Kosmos 1027

Upp: den 27 juli från Plesetsk

1	109910	78074	A	78203.33279956	.20203978	00000-7	00000-0	0	02016
2	10991	82.9146		44.8790	0022982	296.2685	63.8211	13.74480676	24

78-75A

Satellite Data System 4

Upp: 4 eller 5 aus från WTR

USAF/Martin Marietta Titan 3B
launched a Defense Dept. spacecraft from Vandenberg AFB, Calif., Aug. 4, but North American Air Defense Command computers were unable last week to provide the spacecraft's orbital parameters. NORAD assigned an officer to track down the satellite after it was unable to obtain the information for AVIATION WEEK & SPACE TECHNOLOGY. Titan 3B vehicles in the past have launched search and find photo reconnaissance spacecraft.

78-76A

Kosmos 1028

Upp-don Saugstif från Plesetsk

1	10995U	78076	A	78217.74016799	.00209832	00000-0	00000-0	0	00018
2	10995	67.1494		164.9808 0049763	87.9867	280.3390	16.25881195		20

1	10995U	78076	A	78217.92340729	.00209832	00000-0	00000-0	0	00011
2	10995	67.1337		164.2957 0058050	79.2450	279.4779	16.23739454		56

1	10995U	78076	A	78218.23173234	.00209832	00000-0	00000-0	0	00022
2	10995	67.1434		163.2383 0058049	78.0091	283.2822	16.24393512		102

1	10995U	78076	A	78218.97044446	.00209832	00000-0	00000-0	0	00035
2	10995	67.1332		160.6462 0059974	72.2877	291.0166	16.25844099		227

1	10995U	78076	A	78219.15456005	.00209832	00000-0	00000-0	0	00046
2	10995	67.1407		160.0248 0050173	78.1715	283.4915	16.26944538		254

1	10995U	78076	A	78219.76910498	.00209832	00000-0	00000-0	0	00055
2	10995	67.1362		157.9033 0127196	65.2469	289.1233	16.08437090		351

1 10995U 78076 A 78220.45427923 .20209832 00000-0 00000-0 0 00055
2 10995 67.1395 155.5916 0126019 64.5103 297.6120 16.09198573 463

1 10995U 78076 A 78220.62706223 .20621706 00000-0 00000-0 0 00073
2 10995 67.1388 154.3275 0122327 63.5876 298.1925 16.09781580 526

1 12995U 78076 A 78222.44128223 .20693428 00000-0 00000-0 0 00095
2 12995 67.1422 146.2446 0114412 61.5363 299.8730 16.12048629 789

1 12995U 78076 A 78223.06151384 .20737988 00000-0 00000-0 0 00103
2 12995 67.1379 146.7397 0112427 61.4193 300.0311 16.13025620 887

1 12995U 78076 A 78223.30947952 .20744114 00000-0 00000-0 0 00118
2 12995 67.1398 145.8884 0110931 61.1602 300.1181 16.13412891 920

1 12995U 78076 A 78223.68135128 .20780250 00000-0 00000-0 0 00120
2 12995 67.1388 144.6277 0108670 60.7544 300.5404 16.14038724 987

1 12995U 78076 A 78224.30082003 .20826428 00000-0 00000-0 0 00138
2 12995 67.1364 142.5126 0106183 60.2708 300.9946 16.15028804 1087

1 12995U 78076 A 78224.61038752 .20826428 00000-0 00000-0 0 00146
2 12995 67.1383 141.4616 0134521 64.0372 292.5477 16.08205645 1133

1 12995U 78076 A 78226.10269161 .20826428 00000-0 00000-0 0 00152
2 12995 67.1436 136.4138 0124436 62.4475 298.7170 16.10592225 1375

78-76A

Kosmos 1028

forts. 1.

1	10995U	78076	A	78226.59939757	.20825252	20000-0	20000-0	0	20169
2	10995	67.1356		134.7289 0123181	62.2751	299.1019	16.11442752		1451
1	10995U	78076	A	78229.08786266	.22365848	20000-0	20000-0	0	20172
2	10995	67.1340		129.6703 0115552	60.5731	300.6121	16.13936633		1691
1	10995U	78076	A	78226.58351118	.02866848	20000-0	20000-0	0	20162
2	10995	67.1361		127.9346 0152925	63.2178	299.2033	16.25749475		1774
1	10995U	78076	A	78229.27020786	.22817331	20000-0	20000-0	0	20198
2	10995	67.1372		125.6742 0146675	62.4776	298.9327	16.26130847		1881
1	10995U	78076	A	78230.07944622	.20857041	20000-0	20000-0	0	20206
2	10995	67.1357		122.9399 0143956	61.5582	300.2312	16.07504374		2014
1	10995U	78076	A	78231.33512580	.21230446	20000-0	20000-0	0	20219
2	10995	67.1347		118.5210 0135341	60.4948	301.3502	16.12007022		2221
1	10995U	78076	A	78231.75770150	.30976402	20000-0	20000-0	0	20220
2	10995	67.1361		117.2603 0133277	59.7956	301.4592	16.10676414		2288

1 10995U 78076 A 78232.19228989 .00983007 00000-0 00000-0 0 00237
2 10995 67.1336 115.7809 0130770 59.6067 301.8027 16.11536327 2350

1 10995U 78076 A 78233.49457781 .00966164 00000-0 00000-0 0 00241
2 10995 67.1321 111.3462 0122175 58.2673 302.8265 16.14037315 2563

1 10995U 78076 A 78233.74244400 .00966941 00000-0 00000-0 0 00255
2 10995 67.1329 110.5054 0121486 57.8494 303.4313 16.14524512 2605

1 10995U 78076 A 78234.23788393 .01040859 00000-0 00000-0 0 00267
2 10995 67.1331 108.8145 0117578 57.3169 304.0927 16.15610370 2685

1 10995U 78076 A 78234.67108021 .01040859 00000-0 00000-0 0 00270
2 10995 67.1536 107.3965 0135048 67.4864 283.8138 16.08663789 2752

1 10995U 78076 A 78235.29433511 .00747190 00000-0 00000-0 0 00286
2 10995 67.1323 105.2392 0131685 67.8987 293.1404 16.09556983 2859

1 10995U 78076 A 78237.15688772 .00861130 46650-3 19948-3 0 00294
2 10995 67.1281 98.9135 0123756 65.7629 295.2570 16.12531651 3155

1 10995U 78076 A 78239.51810239 .00720158 00000-0 00000-0 0 00354
2 10995 67.1315 90.9137 0138996 71.8491 289.3213 16.07820649 3536

1 10995U 78076 A 78240.20224391 .00893321 00000-0 00000-0 0 00364
2 10995 67.1297 88.5976 0133894 71.6579 290.3491 16.09105754 3643

78-76A

Kosmos 1028 ferts. 2.

1 10995U 78076 A 78240.57503137 .00977081 00000-0 00000-0 0 00379
 2 10995 67.1198 87.3425 0127606 71.2379 290.5419 16.09935646 3707

1 10995U 78076 A 78240.94764582 .00977081 00000-0 00000-0 0 00384
 2 10995 67.1238 86.0633 0130235 70.1878 291.8368 16.11071781 3760

1 10995U 78076 A 78237.48501097 .00798814 00000-0 00000-0 0 00307
 2 10995 67.1281 98.2616 0120231 64.9774 296.3118 16.12874949 3191

1 10995U 78076 A 78238.14881877 .00923714 00000-0 00000-0 0 00328
 2 10995 67.1283 95.5308 0115388 64.8627 296.4908 16.14316210 3312

1 10995U 78076 A 78238.39660047 .00923714 00000-0 00000-0 0 00330
 2 10995 67.1320 94.7265 0144654 72.6066 291.5894 16.06253492 3353

1 10995U 78076 A 78239.02034420 .00923714 00000-0 00000-0 0 00342
 2 10995 67.1285 92.5981 0139941 71.9489 289.3073 16.07226708 3457

1 10995U 78076 A 78241.63016486 .00977081 00000-0 00000-0 0 00395
 2 10995 67.1232 93.7541 0124788 69.4500 292.5108 16.12645067 3872

1	10995U	78076	A	78242.43582859	.01119623	00000-0	00000-0	0	00410
2	10995	67.1329		81.0221 0174552	75.9795	273.2270	15.99997300		4003

1	10995U	78076	A	78243.31266496	.02886841	00000-0	00000-0	0	00427
2	10995	67.1257		78.0918 0169300	75.3812	285.8424	16.01526632		4146

1	10995U	78076	A	78243.99949524	.00964714	00000-0	00000-0	0	00438
2	10995	67.1271		75.7840 0164349	74.7815	287.3350	16.02875459		4256

1	10995U	78076	A	78245.05955597	.00964714	00000-0	00000-0	0	00445
2	10995	67.1303		72.2204 0157503	73.6794	288.1540	16.04928722		4429

1	10995U	78076	A	78245.93155843	.00985453	00000-0	00000-0	0	00452
2	10995	67.1307		69.2809 0151617	72.5483	289.3083	16.06666964		4567

1	10995U	78076	A	78246.61601666	.01023254	00000-0	00000-0	0	00460
2	10995	67.1251		66.9687 0146175	71.8233	290.2247	16.08100401		4673

1	10995U	78076	A	78247.05123804	.01126551	00000-0	00000-0	0	00470
2	10995	67.1253		65.4948 0143179	71.4861	290.4072	16.09152438		4743

78-77 A

Progress 3

Upp: den 7 augusti 1978 från Tyuratam

1	10999U	78077	A	78220.17688295	.00096106	00000-0	00000-0	0	00029
2	10999	51.6397		302.5172 0031596	77.2678	286.1696	16.23114333		42

1	10999U	78077	A	78220.11589956	.00096106	00000-0	00000-0	0	00016
2	10999	51.6397		302.3537 0031644	77.0169	286.8405	16.23124643		35

1	10999U	78077	A	78220.36158299	.00096106	00000-0	00000-0	0	00037
2	10999	51.6361		301.5043 0005778	287.2075	66.7908	16.10778048		71

1	10999U	78077	A	78220.11589956	.00096106	00000-0	00000-0	0	00016
2	10999	51.6397		302.2537 0031644	77.0169	286.8405	16.23124643		35

1	10999U	78077	A	78222.34819497	.00096106	00000-0	00000-0	0	00064
2	10999	51.6247		290.8169 0020914	209.5565	121.6045	15.76304529		399

1	10999U	78077	A	78221.60357840	.00096106	00000-0	00000-0	0	00050
2	10999	51.6407		294.7821 0004126	333.6699	26.5804	16.10310938		274

1	10999U	78077	A	78233.69664824	.00089839	00000-0	57888-3	0	00071
2	10999	51.6251		232.3795	0013270	255.8339	44.9649	15.75210289	2136

1	10999U	78077	A	78233.89739151	.00089839	00000-0	00000-0	0	00081
2	10999	51.6129		231.3222	0013117	256.6294	103.7818	15.75658085	2219

1	10999U	78077	A	78234.21449866	.00089839	00000-0	00000-0	0	00102
2	10999	51.6158		229.5834	0010280	266.3487	142.6928	16.20776498	2263

1	10999U	78077	A	78235.43912158	.00261293	00000-0	00000-0	0	00112
2	10999	51.6124		222.8400	0009876	271.3880	90.0940	16.21548759	2468

78-76A

Kosmos 1028 forts. 2.

1 10995U 78076 A 78240.57503137 .00977081 00000-0 00000-0 0 00379
 2 10995 67.1198 87.3425 0127606 71.2379 290.5419 16.09935646 3707

1 10995U 78076 A 78240.94764582 .00977081 00000-0 00000-0 0 00384
 2 10995 67.1238 86.0633 0130235 70.1878 291.8368 16.11071781 3760

1 10995U 78076 A 78237.40501997 .00977081 00000-0 00000-0 0 00387
 2 10995 67.1281 98.2816 0120231 64.9774 296.3118 16.12874949 3191

1 10995U 78076 A 78238.14881877 .00923714 00000-0 00000-0 0 00328
 2 10995 67.1283 95.5308 0115388 64.3627 296.4908 16.14316210 3312

1 10995U 78076 A 78238.39660047 .00923714 00000-0 00000-0 0 00330
 2 10995 67.1320 94.7065 0144654 72.6066 281.5894 16.06253492 3353

1 10995U 78076 A 78239.02034420 .00923714 00000-0 00000-0 0 00342
 2 10995 67.1285 92.5981 0139941 71.9489 289.3073 16.07226708 3457

1 10995U 78076 A 78241.63016486 .00977081 00000-0 00000-0 0 00395
 2 10995 67.1232 93.7541 0124788 69.4500 292.5128 16.12645067 3872

1 10995U 78076 A 78242.43582859 .01119623 00000-0 00000-0 0 00410
2 10995 67.1329 81.0221 0174552 75.9795 273.2270 15.99997300 4003

1 10995U 78076 A 78243.31266496 .02886841 00000-0 00000-0 0 00427
2 10995 67.1257 78.0918 0169300 75.3812 285.8424 16.01526632 4146

1 10995U 78076 A 78243.99949524 .00964714 00000-0 00000-0 0 00438
2 10995 67.1271 75.7840 0164349 74.7815 287.3350 16.02875459 4256

1 10995U 78076 A 78245.05955597 .00964714 00000-0 00000-0 0 00445
2 10995 67.1303 72.2204 0157503 73.6794 288.1540 16.04928722 4429

1 10995U 78076 A 78245.93155843 .00985453 00000-0 00000-0 0 00452
2 10995 67.1307 69.2809 0151617 72.5483 289.3088 16.06666964 4567

1 10995U 78076 A 78246.61601655 .01023254 00000-0 00000-0 0 00460
2 10995 67.1251 66.9687 0146175 71.8233 290.7247 16.08120401 4673

1 10995U 78076 A 78247.05123894 .01126551 00000-0 00000-0 0 00479
2 10995 67.1253 65.4946 0143179 71.4661 292.4072 16.09132439 4743

76-78

Pioneer Venus 2

Hpp: 8 augusti från Cape Canaveral

78-79

ISEE-3

Upp: 12 augusti från Cape Canaveral

1	11005U	78079	B	78225.87196269	.20584293	00000-0	00000-0	0	00025
2	11005	28.7378		1.0890 0876117	326.9311	29.8864	14.25255705		189
1	11006U	78079	C	78224.82061622	.00000000	00000-0	00000-0	0	00013
2	11006	28.7342		7.2427 0861521	317.0372	37.7484	14.24125130		36

78-80A

Molnyia 1 AT

Lipp den 22 augusti 1978 från Plesetsk

1	11007U	78080	A	78235.55449945	-.00000150	00000-0	-12157-4	0	00015
2	11007	52.3748	277.5070	7473364	280.1051	11.3321	1.95735689		21

78-81A

Soyuz 31

Upp: 26 augusti kl. 1552 svit. fr. Tyuratam.

1	11010U	78-081	A	78239.10467307	.00096106	00000-0	00000-0	0	00022
2	11010	51.6348		204.6354 0048786	280.8662	60.4837	15.94900410		80

1	11010U	78-081	A	78238.79669817	.00096106	00000-0	00000-0	0	00015
2	11010	51.6186		206.2714 0037965	61.8984	300.7185	16.20413421		31

1	11010U	78-081	A	78239.79703737	.00096106	00000-0	00000-0	0	00038
2	11010	51.6329		200.9911 0013150	305.2976	44.1277	15.74399016		195

1	11010U	78-081	A	78240.43360733	.00036497	00000-0	00000-0	0	00044
2	11010	51.6338		197.7272 0011198	306.4030	53.3773	15.74389007		295

1	11010U	78-081	A	78246.22899227	.00223773	00000-0	00000-0	0	00059
2	11010	51.6401		168.0256 0012433	322.9424	40.7294	15.75475964		1209

1	11010U	78-081	A	78248.36431568	.00059619	00000-0	00000-0	0	00062
2	11010	51.6336		156.9268 0013002	324.6179	31.5464	15.75564535		1543

1 11010U 78-081 A 78260.53726802 .00058409 00000-0 00000-0 0 00070
2 11010 51.6347 94.2076 0012947 2.8746 357.5559 15.77225845 3467

1 11010U 78-081 A 78294.84493665 .00075255 00000-0 00000-0 0 00134
2 11010 51.6357 276.8927 0001596 337.8207 322.1785 15.69601963 8884

78-82 A

Kosmos 1029

Upp-don 29 augusti från Narsokk

1	11012U	78-082-A	78241.73804992	.20022741	00000-0	00000-0	0	00015
2	11012	62.8051	152.1559	0113017	74.5675	297.5359	16.28321727	28

1	11012U	78-082-A	78241.79957698	.00022741	00000-0	00000-0	0	00025
2	11012	62.8156	151.8807	0115892	76.2833	284.4916	16.07262891	39

1	11012U	78-082-A	78242.67069118	.00187546	00000-0	00000-0	0	00030
2	11012	62.8096	148.4173	0114327	76.4447	285.6396	16.07666099	173

1	11012U	78-082-A	78243.16813871	.00187546	00000-0	00000-0	0	00049
2	11012	62.8080	146.4068	0108052	63.1002	299.7409	16.11981881	259

1	11012U	78-082-A	78243.47801256	.00187546	00000-0	00000-0	0	00058
2	11012	62.8111	145.1952	0104977	68.5160	292.9007	16.12197305	304

1	11012U	78-082-A	78244.03616788	.00242478	00000-0	00000-0	0	00062
2	11012	62.8138	142.9615	0101869	70.3116	291.0626	16.12493533	391

1	11012U	78-082-A	78245.09020128	.00296252	00000-0	00000-0	0	00076
2	11012	62.8095	138.7449 0101595	69.0182	292.6068	16.13172922		568

1	11012U	78-082-A	78246.63936922	.00301695	00000-0	00000-0	0	00066
2	11012	62.8094	132.5361 0098261	69.1716	291.9361	16.14091663		616

1	11012U	78-082-A	78247.61627867	.00305933	00000-0	00000-0	0	00092
2	11012	62.8095	127.6179 0096957	69.1713	291.9829	16.14813646		1208

1	11012U	78-082-A	78250.67494712	.00249117	00000-0	00000-0	0	00124
2	11012	62.7995	116.4382 0139331	67.7735	293.4022	16.05115735		1462

1	11012U	78-082-A	78248.18772700	.00355657	00000-0	00000-0	0	00106
2	11012	62.8085	126.3272 0096648	69.5693	291.5977	16.15081600		1365

1	11012U	78-082-A	78249.05435385	.00291467	58982-4	10859-3	0	00111
2	11012	62.8151	122.8543 0142259	67.6792	291.1635	16.04294062		1209

78-83A

Kosmos 1030

1	11015U	78093	A	78249.67210992	-.00001275	00000-0	00000-0	0	00010
2	11015	62.7612	340.8852	7387295	313.0594	357.3870	1.98463414		01

78-84

Venus 11

1	11021U	78084	C	78252.31965547	.00941251	00000-0	00000-0	0	00012
2	11021	51.5423		47.5241 0026531	359.7981	5.7320	16.31641457		38
1	11021U	78084	C	78252.93095812	.06844497	00000-0	00000-0	0	00020
2	11021	51.5547		44.0750 0021892	2.3948	4.7779	16.39619849		136

78-85A

Kosmos 1031

1	11022U	78085	A	78252.73204982	.00022741	00000-0	00000-0	0	00019
2	11022	62.8411		163.0753 0109461	82.4858	282.3236	16.07236451		24
1	11022U	78085	A	78253.11075015	.00022741	00000-0	00000-0	0	00020
2	11022	62.8164		161.5751 0111153	83.4783	277.8477	16.07223492		82
1	11022U	78085	A	78253.23519238	.00022741	00000-0	00000-0	0	00034
2	11022	62.8197		161.0893 0110254	81.9206	279.5633	16.07321406		104
1	11022U	78085	A	78253.73287354	.00230706	00000-0	00000-0	0	00043
2	11022	62.8206		159.1072 0109125	83.0487	278.6815	16.07643259		184
1	11022U	78085	A	78254.16812493	.00230706	00000-0	00000-0	0	00056
2	11022	62.8221		157.3781 0108301	83.1309	279.7581	16.11262030		250
1	11022U	78085	A	78254.78824120	.00380560	00000-0	00000-0	0	00063
2	11022	62.8340		154.8849 0103773	74.9218	286.3543	16.12267144		357
1	11022U	78085	A	78256.33820463	.00362298	00000-0	00000-0	0	00071
2	11022	62.8194		148.6917 0105033	74.6122	286.2506	16.13373242		605

1 11022U 78085 A 78260 11592902 00349109 00000-0 00000-0 0 00094
2 11022 62.8167 133.5339 0133605 73.0768 284.7385 16.07506764 1217

1 11022U 78085 A 78261 29818416 00322221 00000-0 00000-0 0 00103
2 11022 62.8173 128.6502 0130346 73.6799 287.6837 16.08260985 1400

78-86

Venus 12

1	11026U78086	B	78257.76629942	.20941251	00000-0	00000-0	0	00022
2	11026	51.5134	34.5216	0014531	16.8842	348.1663	16.36629813	113
1	11026U78086	B	78257.88756328	.27754542	00000-0	00000-0	0	00038
2	11026	51.5506	33.8517	0018897	3.6567	358.3069	16.41276611	134

78-87A

EXOS-B (Jikinen)

78-88A

Kosmos 1032

1	11029U	78088	A	78262.39133537	.00100000	00000-0	00000-0	0	00218
2	11029	81.3436		143.4872	0007576	342.3201	19.7613	16.21931348	15
1	11029U	78088	A	78262.45269142	.00100000	00000-0	00000-0	0	00028
2	11029	81.3496		143.3647	0006775	34.9316	324.5441	16.20249877	26
1	11029U	78088	A	78262.94687752	.00100000	00000-0	00000-0	0	00035
2	11029	81.3370		142.7107	0007214	58.5364	301.6883	16.20355657	104
1	11029U	78088	A	78268.00722507	.00249443	00200-0	00000-0	0	00061
2	11029	81.3450		135.9663	0002400	24.1556	335.8817	16.22743780	925
1	11029U	78088	A	78266.09509012	.00250410	00000-0	00000-0	0	00059
2	11029	81.3430		138.5210	0002876	25.2201	335.3237	16.21793820	611
1	11029U	78088	A	78269.17865474	.00282238	00000-0	00000-0	0	00073
2	11029	81.3400		134.4009	0002163	24.3977	335.8785	16.23406619	1116
1	11029U	78088	A	78270.34955818	.00318956	00000-0	00000-0	0	00084
2	11029	81.3410		132.8388	0001855	.4169	359.8704	16.24152388	1304

1	11029U	78088	A	78271.52001113	.00339384	00000-0	00000-0	0	00083
2	11029	81.3370		131.2641	0003119	349.4054	11.3983	16.24930947	1492
1	11029U	78088	A	78272.38189629	.00362746	00000-0	00000-0	0	00096
2	11029	81.3382		130.1111	0001575	332.4683	21.6867	16.25553913	1631
1	11029U	78088	A	78273.92033924	.00356720	00000-0	00000-0	0	00100
2	11029	81.3384		128.0473	0001843	331.0045	29.5015	16.26762298	1687

78-89A

Kosmos 1033

1	11039U	78089	A	78276.57464714	.00100000	00000-0	00000-0	0	00019
2	11039	81.3933		201.1030 0023102	119.1287	241.8717	16.20225762		22

1	11039U	78089	A	78276.82157821	.00100000	00000-0	00000-0	0	00026
2	11039	81.3610		200.7695 0022899	118.1651	242.3707	16.20464741		63

1	11039U	78089	A	78276.94505076	.00100000	00000-0	00000-0	0	00039
2	11039	81.3752		200.6210 0019426	91.1759	265.2862	16.17525435		81

1	11039U	78089	A	78278.24471712	.00961994	00000-0	48926-3	0	00043
2	11039	81.3602		198.9005 0016509	91.1209	270.8357	16.18952934		292

1	11039U	78089	A	78279.41798555	.00229070	00000-0	00000-0	0	00051
2	11039	81.3720		197.3381 0014904	101.9777	256.7389	16.19934612		483

1	11039U	78089	A	78281.39441489	.00243361	00000-0	00000-0	0	00062
2	11039	81.3644		194.7164 0014949	92.5708	267.6864	16.20865184		800

1	11039U	78089	A	78283.73959238	.00287428	00000-0	00000-0	0	00071
2	11039	81.3665	191.6097	0013735	86.1389	274.4821	16.22142015		1184
1	11039U	78089	A	78284.41802232	.00296216	00000-0	00000-0	0	00084
2	11039	81.3684	190.7026	0012955	83.5385	276.7631	16.22553710		1291

78-90A

Progress 4

1	11040U	78090	A	78277.20467137	.00096106	00000-0	00000-0	0	00017
2	11040	51.6513		8.2922 0047566	97.5862	268.8982	16.21244268		40

1	11040U	78090	A	78277.38858117	.00096106	00000-0	00000-0	0	00029
2	11040	51.6525		7.3090 0034768	221.1656	124.1240	15.92555764		72

1	11040U	78090	A	78280.46692646	.00096106	00000-0	00000-0	0	00047
2	11040	51.6379		351.1660 0016936	80.8973	210.3407	15.78042820		566

1	11040U	78090	A	78284.53134316	.00065724	00000-0	00000-0	0	00079
2	11040	51.6349		330.1677 0015607	96.6578	263.6662	15.78557963		1203

1	11040U	78090	A	78294.84493721	.02075255	00000-0	00000-0	0	00106
2	11040	51.6357		276.8927 0001596	337.8205	322.1819	15.69601983		2832

1	11040U	78090	A	78298.29290839	.00044692	00000-0	00000-0	0	00138
2	11040	51.6363		259.3092 0003072	323.8241	36.2350	15.70560655		3379

78-91 A-H

Kosmos 1034-1041

1	11050U	78091	H	78277.62102775	.00007287	00000-0	00000-0	0	00011
2	11050	74.0419		77.4317.0045621	258.0508	81.0206	12.37741134		61
1	11049U	78091	G	78277.54106910	.00007287	00000-0	00000-0	0	00015
2	11049	74.0320		77.5394 0135721	272.9297	48.4842	12.20114366		56
1	11048U	78091	F	78277.62102775	.00007287	00000-0	00000-0	0	00018
2	11048	74.0431		77.4364.0045619	252.8876	86.2289	12.37768383		68
1	11047U	78091	E	78277.62102775	.00007287	00000-0	00000-0	0	00017
2	11047	74.0465		77.4221.0008490	199.9821	151.0567	12.45655040		67
1	11046U	78091	D	78277.70098632	.00007287	00000-0	00000-0	0	00011
2	11046	74.0172		77.3226.0014260	133.1550	220.7112	12.48119255		73
1	11045U	78091	C	78277.70098632	.00007287	00000-0	00000-0	0	00010
2	11045	74.0359		77.3062.0026646	113.5951	244.6485	12.50559017		70
1	11044U	78091	B	78277.70098632	.00007287	00000-0	00000-0	0	00019
2	11044	74.0120		77.2938.0050865	96.8998	270.0617	12.55394886		76
1	11042U	78091	A	78277.70098632	.00007287	00000-0	00000-0	0	00028
2	11042	74.0370		77.3280.0038792	109.7582	252.6342	12.52896373		76

78-92 A

Kosmos 1042

1	11052U	78-092 A	78279.75888332	.00026944	00000-0	11712-4 0	00018
2	11052	62.7773	197.1734 0103194	76.7555	289.8497	16.10511834	27

1	11052U	78-092 A	78279.88214074	.00026944	00000-0	00000-0 0	00023
2	11052	62.8025	196.6975 0095042	75.7697	285.8845	16.11302825	41

1	11052U	78-092 A	78280.25467617	.00026944	00000-0	00000-0 0	00029
2	11052	62.8087	195.2018 0095049	70.7475	292.9807	16.12058934	102

1	11052U	78-092 A	78280.25467617	.00026944	00000-0	00000-0 0	00030
2	11052	62.8087	195.2018 0095049	70.7475	292.9807	16.12058934	102

1	11052U	78-092 A	78280.75046924	.00265093	50689-4	11280-3 0	00047
2	11052	62.8065	193.2264 0093345	71.7522	289.8169	16.12432112	188

1	11052U	78-092 A	78281.86647228	.00286945	00000-0	00000-0 0	00057
2	11052	62.8049	188.7499 0091105	71.5814	289.6601	16.13084580	365

1	11052U	78-092 A	78283.47774392	.00355363	00000-0	00000-0 0	00061
2	11052	62.8052	182.2991 0087882	72.2851	289.1192	16.14153640	625

1 11052U 78-092 A 78285.08779326 .00339318 77313-4 12466-3 0 00072
2 11052 62.8033 175.8455 0086166 72.5198 288.1838 16.15233871 888

1 11052U 78-092 A 78287.12987055 .00389569 00000-0 00000-0 0 00086
2 11052 62.8049 167.6360 0113940 70.0865 287.8153 16.09143978 1219

1 11052U 78-092 A 78291.15901162 .00405854 00000-0 00000-0 0 00120
2 11052 62.8072 151.4958 0120215 57.5209 303.3969 16.10596025 1861

78-93A

NDS 3

1	11054U	78093	A	78285.00000000	.00000064	00000-0	70000-0	0	00012
2	11054	62.7848	101.1201	0007415	125.6119	147.2981	1.99300068		116

78-94A

Kosmos 1043

1	11055U	78094	A	78283.28021903	.00027754	00000-0	00000-0	0	00015
2	11055	81.2057	338.9697	0009939	289.6419	66.3426	14.80806406		16
1	11055U	78094	A	78284.48910578	.00027754	00000-0	00000-0	0	00021
2	11055	81.1978	338.3009	0010014	304.8729	54.8145	14.80706043		104

78-95

Molviya 3K

1	11058U	78095	B	78286.33489273	.00313189	00000-0	00000-0	0	00013
2	11058	62.8278		50.9148 0170894	126.8194	230.5288	15.80791313		25

1	11059U	78095	C	78286.39891211	.00313189	00000-0	00000-0	0	00019
2	11059	62.7775		50.8892.0200219	113.1193	251.5039	15.87313339		38

78-96A

Tiros 11 (N)

1	11060U	78096A	78297.84594247	.00018977	00000-0	00000-0	0	00050
2	11060	98.9127	250.9995	0010906	253.0247	176.9917	14.10852873	624

1	11060U	78096A	78291.48419937	.00019000	00000-0	10590-1	0	00065
2	11060	98.9238	251.6368	0012575	246.5981	113.3462	14.10859505	711

1	11060U	78096A	78317.51123625	.00000795	00000-0	00000-0	0	00250
2	11060	98.9208	277.4634	0012234	177.8874	182.2216	14.10875853	4382

78-97A

Kosmos 1044

1	11065U	78097	A	78290.73874982	.00022741	00000-0	00000-0	0	00011
2	11065	62.8226		220.4865 0074018	92.6611	272.0473	16.06787390		25

1	11065U	78097	A	78290.79963533	.00022741	00000-0	00000-0	0	00026
2	11065	62.8170		200.1759 0065511	76.8533	285.7911	16.09333318		36

1	11065U	78097	A	78291.04786501	.00022741	00000-0	00000-0	0	00034
2	11065	62.8215		199.1699 0067985	71.9466	288.9986	16.09548978		75

1	11065U	78097	A	78291.35848300	.00022741	00000-0	00000-0	0	00045
2	11065	62.8144		197.9410 0069508	69.4013	291.5543	16.09646134		124

1	11065U	78097	A	78291.66908160	.00335750	00000-0	24086-3	0	00051
2	11065	62.7853		196.7425 0067606	69.4920	291.5891	16.09949403		173

1	11065U	78097	A	78292.66261411	.00232323	00000-0	00000-0	0	00063
2	11065	62.8302		192.7097 0065678	70.7344	289.5093	16.10355264		333

1	11065U	78097	A	78296.44876060	.00223812	00000-0	00000-0	0	00080
2	11065	62.6121		177.6296 0062869	71.6033	289.4613	16.11978378		941

1 11065U 78097 A 78298.55722009.....00223812.. 00000-0 00000-0 0 00087
2 11065 62.8111.169.2015 0061379. 71.0228 289.7515 16.12933802 1287

1 11065U 78097 A 78322.08911629...00293941 00000-0 00000-0 0 00102
2 11065 62.8138.155.0353 0055758 72.3769 288.7082 16.14799643 1858

78-98A

Nimbus 7

1	11080U	78098A	78297.31344292	.00000100	00000-0	00000-0	0	00007
2	11080	99.2824	209.8168	0004999	26.6948	333.3303	13.84448339	01

1	11080U	78098A	78297.53019448	.00000100	00000-0	00000-0	0	00014
2	11080	99.2832	209.9792	0008399	242.2465	117.7790	13.84255803	31

1	11080U	78098A	78298.39766555	.00011295	00000-0	00000-0	0	00014
2	11080	99.2720	210.8522	0010689	233.2607	126.7517	13.84163361	159

1	11080U	78098	A 78303.74731845	-.00007408	00000-0	00000-0	0	00049
2	11080	99.2848	216.1236	0008815	235.4612	125.1533	13.84021875	894

78-99A

Interkosmos 18

1	11082U	78099A	78297.91586380	.00021280	00000-0	00000-0	0	00015
2	11082	82.9701	345.8044 0249149	163.6283	197.3125	14.93292536		21

1	11082U	78099A	78298.45139186	.00021280	00000-0	00000-0	0	00023
2	11082	82.9753	345.3420 0257149	166.4789	194.3450	14.94682601		106

MAG-ION

1	11110U	78099	C 78321.47464222	.00006375	00000-0	00000-0	0	00025
2	11110	82.9525	324.6137 0256951	89.0314	273.9554	14.95249224		3523

1	11110U	78099	C 78341.34673199	.00011340	00000-0	00000-0	0	00161
2	11110	82.9529	306.7097 0254442	22.1534	339.0399	14.95779965		6498

1 11082U 78099 A 79 3.41743569 .00019250 00000-0 00000-0 0 00519
2 11082 82.9586 282.2800 0244794 289.7272 67.7647 14.97341726 10553

78-100A

Kosmos 1045

1	11084U	78100	A	78299.61002600	.00000000	00000-0	00000-0	0	00014
2	11084	82.5268	165.9350	0005799	313.9958	46.0567	11.96875758		43

1	11084U	78100	A	78308.05533441	.00001214	00000-0	00000-0	0	00079
2	11084	82.5426	161.1938	0011130	157.7105	190.2192	11.96426139		1057

Radio 1 & 2

1	11085U	78100	B	78303.12141034	.00008650	00000-0	00000-0	0	00044
2	11085	82.5448	163.9766	0012232	178.6251	181.4259	11.96691303		453

1	11086U	78100	C	78303.79024549	.00014984	00000-0	00000-0	0	00068
2	11086	82.5146	163.6586	0017959	141.9438	218.1131	11.96692188		536

1	11087U	78100	D	78303.12014829	.00001245	00000-0	00000-0	0	00039
2	11087	82.5447	163.9670	0010683	174.9854	185.0199	11.97067177		455

1	11086U	78100	C	78318.83683505	.00005351	00000-0	00000-0	0	00093
2	11086	82.5509		155.0902 0016432	-156.0866	204.2374	11.96825789		2333
1	11085U	78100	B	78318.50851370	.00000281	00000-0	00000-0	0	00124
2	11085	82.5445		155.2712 0014517	143.9034	216.2957	11.96426005		2301
1	11084U	78100	A	78317.50131503	-.00000064	00000-0	00000-0	0	00110
2	11084	82.5459		155.8391 0013834	153.0954	207.0774	11.96669923		2176

78-101A

Prognoz 7

1	11086U	78101	A	78303.00269804	.00003441	00000-0	00000-0	0	00011
2	11088	65.0000	154.6700	9365320	290.0000	.0000	0.24485712		17

78-102A

Kosmos 1046

1	11098U	78102	A	78305.55422407	.00068819	00000-0	00000-0	0	00015
2	11098	72.8686		225.1574 0088933	65.8756	296.0168	16.05370656		14
1	11098U	78102	A	78305.61639433	.00068819	00000-0	00000-0	0	00022
2	11098	72.8889		225.0228 0102991	88.9850	271.6337	16.02924438		24
1	11098U	78102	A	78306.30302779	.00607020	00000-0	00000-0	0	00033
2	11098	72.8781		223.2048 0093579	68.2164	293.6355	16.03621079		137
1	11098U	78102	A	78306.73951919	.00164487	00000-0	00000-0	0	00042
2	11098	72.8634		222.1235 0092625	67.8638	292.6702	16.03621963		207
1	11098U	78102	A	78309.23418821	.00204725	00000-0	17321-3	0	00069
2	11098	72.8649		215.7741 0091236	61.7944	299.0737	16.04636658		604
1	11098U	78102	A	78310.85486282	.00202534	00000-0	00000-0	0	00075
2	11098	72.8676		211.6325 0088504	57.8348	303.1256	16.05299198		861
1	11098U	78102	A	78314.15635541	.00222708	00000-0	00000-0	0	00116
2	11098	72.8674		203.2101 0085558	49.7952	311.0312	16.06749390		1390

1	11098U	78102	A	78315.58813553	.00224137	00000-0	00000-0	0	00124
2	11098	72.8691	199.5480	0084332	45.8423	314.9652	16.07401740		1625

78-103A

HEAO 2

1	11101U	78103	A	78317.40309940	.00000000	00000-0	00000-0	0	00012
2	11101	23.5118	320.3374	0018008	271.9089	47.6497	15.09316041		31

1	11101U	78103	A	78317.54271442	.00000500	00000-0	00000-0	0	00028
2	11101	23.5073	319.3721	0014226	299.1972	61.7343	15.11227844		50

1	11101U	78103	A	78318.59892815	-.00001451	00000-0	00000-0	0	00035
2	11101	23.5077	312.0748	0014732	312.6715	47.2518	15.11224419		217

1	11101U	78103	A	78319.98544295	.00000707	00000-0	00000-0	0	00048
2	11101	23.5058	302.4841	0014990	329.3367	30.6231	15.11241403		420

78-104A

Kosmos 1047

1	11108U	78104	A	78319.54380740	.00069819	00000-0	00000-0	0	00016
2	11108	72.2762		235.1229 0137402	79.7895	282.2806	16.04833275		19

1	11108U	78104	A	78320.79043069	.00247223	00000-0	00000-0	0	00024
2	11108	72.8529		231.9412 0134131	76.9197	285.5401	16.05412062		215

1	11108U	78104	A	78322.65920437	.00257367	00000-0	00000-0	0	00035
2	11108	72.8579		227.1744 0131690	72.6226	288.9969	16.06367627		514

1	11108U	78104	A	78325.52263839	.00261725	00000-0	90088-4	0	00043
2	11108	72.8547		219.8440 0123232	65.8438	297.2914	16.08869069		974

1	11108U	78104	A	78327.01432975	.00306779	00000-0	00000-0	0	00059
2	11108	72.8543		216.0095 0120331	62.0059	299.6493	16.09775464		1212

1	11108U	78104	A	78327.13856331	.00306779	00000-0	00000-0	0	00069
2	11108	72.8740		215.6044 0139742	62.2344	297.0129	16.04673511		1230

1	11108U	78104	A	78328.44785006	.00283998	00000-0	00000-0	0	00072
2	11108	72.8590		212.3585 0139395	57.7622-303.1875	16.05350592			1441.

1	11108U	78104	A	78330.69047717	.00359304	00000-0	00000-0	0	00088
2	11108	72.8580		206.6189 0134179	52.2785 309.6117	16.06849957			1800

1	11108U	78104	A	78331.93521842	.00272110	00000-0	00000-0	0	00092
2	11108	72.8614		203.4294 0130518	*49.2252 311.6379	16.07557337			2003

78-105A

Kosmos 1048

1	11111U	78105	A	78321.10538862	.00012001	00000-0	20000-0	0	00018
2	11111	74.0283	29.7277	0021770	350.1536	10.2557	14.27852832		30

78-106A

NATO 3C

1 11115U 78-106 B 78323.14807904 .00000000 00000-0 00000-0 0 00013
2 11116 28.2355 257.9499 0429401 157.0654 204.6576 15.31708928 26

1 11115U 78106 A 78334.23175287 .00000115 00000-0 00000-0 0 00012
2 11115 4.4140 302.2343 0034274 217.3499 180.0000 1.00800618 144

78-107A

Kosmos 1049

1	11118U	78107	A	78325.55422407	.00068819	00000-0	00000-0	0	00015
2	11118	72.8657		244.7619 0129774	82.2097	280.2505	16.07071263		15

1	11118U	78107	A	78326.17656976	.00068819	00000-0	00000-0	0	00025
2	11118	72.8657		243.1693 0129423	80.6788	281.1433	16.07362013		118

1	11118U	78107	A	78326.79891112	.00268665	00000-0	00000-0	0	00038
2	11118	72.8638		241.5756 0127266	79.6900	282.2509	16.07733797		214

1	11118U	78107	A	78328.22968539	.00268665	00000-0	00000-0	0	00047
2	11118	72.8746		237.9040 0135907	75.5969	284.9402	16.05747775		445

1	11118U	78107	A	78328.41677424	.00268665	00000-0	00000-0	0	00059
2	11118	72.8667		237.4332 0135495	75.1307	286.4771	16.05839689		475

1	11118U	78107	A	78330.22289145	.00298560	00000-0	00000-0	0	00068
2	11118	72.8662		232.8205 0132326	70.7116	291.0464	16.06992274		762

1	11118U	78107	A	78331.15655630	.00313897	00000-0	00000-0	0	00079
2	11118	72.8607		230.4293 0130603	68.2380	293.3931	16.07506767		912

1	11118U	78107	A	78333.70685771	.00243088	00000-0	00000-0	0	00086
2	11118	72.8585		223.8984 0127136	58.4468	297.2112	16.06910801		1322

1	11118U	78107	A	78335.07721383	.00267872	00000-0	00000-0	0	00096
2	11118	72.8647		220.4015 0125456	55.0857	306.3730	16.07646415		1547

1	11118U	78107	A	78335.57497194	.00263683	00000-0	00000-0	0	00109
2	11118	72.8597		219.1137 0124364	53.8741	307.3929	16.07908013		1621

1	11118U	78107	A	78336.50810489	.00293486	00000-0	00000-0	0	00114
2	11118	72.8711		216.7212 0124093	51.4069	310.0321	16.08496114		1770

1	11118U	78107	A	78338.12467860	.00270638	00000-0	00000-0	0	00120
2	11118	72.8664		212.5744 0123380	47.4184	313.5328	16.09383250		2034

78-108A

Kosmos 1050

Lapp sänd: 28 nov. 78 från Plos etek

1	11121U	78108	A	78332.79360538	.00022741	00000-0	00000-0	0	00014
2	11121	62.7895		262.2414 0011216	98.5342	265.3996	16.04555146		25

1	11121U	78108	A	78332.85528583	.00022741	00000-0	00000-0	0	00028
2	11121	62.8170		261.7314 0017258	110.9859	248.4913	16.02948377		33

1	11121U	78108	A	78334.10308928	.00059021	00000-0	91165-4	0	00035
2	11121	62.8011		256.8221 0017336	126.2087	235.6746	16.03366303		237

1	11121U	78108	A	78334.78882568	.00075209	00000-0	00000-0	0	00047
2	11121	62.8061		254.1053 0017000	126.3501	233.9422	16.03468057		349

1	11121U	78108	A	78334.10308928	.00059021	00000-0	91165-4	0	00035
2	11121	62.8011		256.8221 0017336	126.2087	235.6746	16.03366303		237

1	11121U	78108	A	78335.41242999	.00075208	00000-0	00000-0	0	00056
2	11121	62.8012		251.6475 0045677	77.7235	283.1412	16.07500609		440

1	11121U	78108	A	78335.66120989	.20075208	00000-0	00000-0	0	00069
2	11121	62.8043		250.6183 0035714	73.5831	288.9597	16.09812694		489

1	11121U	78108	A	78337.21356736	.00135668	00000-0	00000-0	0	00071
2	11121	62.7950		244.4743 0034508	77.1656	283.5702	16.10178247		731

1	11121U	78108	A	78338.20718579	.00132952	00000-0	00000-0	0	00081
2	11121	62.8030		240.5008 0033648	77.9433	282.4184	16.10413222		891

1	11121U	78108	A	78338.39348554	.00112150	00000-0	00000-0	0	00092
2	11121	62.7987		239.7675 0033443	77.9696	282.4790	16.10428750		924

1	11121U	78108	A	78340.38019497	.00112150	00000-0	00000-0	0	00107
2	11121	62.8251		231.8196 0120117	225.6501	128.6221	16.07821077		1243

1	11121U	78108	A	78340.62980445	.00112150	00000-0	00000-0	0	00115
2	11121	62.8109		230.8065 0125949	228.1786	132.2521	16.09421018		1281

1	11121U	78108	A	78341.49935994	.00285313	00000-0	00000-0	0	00123
2	11121	62.8098		227.3899 0124792	227.4164	132.0896	16.09923125		1426

1	11121U	78108	A	78343.73446042	.00230744	00000-0	00000-0	0	00132
2	11121	62.8061		218.4755 0119503	228.8548	130.3051	16.11210819		1788

78-709A-H

Kosmos 1051-1058

1	11128U	78109	A	78339.89996901	.00007287	00000-0	00000-0	0	00017
2	11128	74.0168		355.2912 0036436	125.6987	232.5268	12.60762860		26
1	11135U	78109	H	78340.53520630	.00007287	00000-0	00000-0	0	00010
2	11135	73.9128		354.5165 0036860	242.70247	63.6344	12.39260094		109
1	11134U	78109	F	78340.13848876	.00007287	00000-0	00000-0	0	00010
2	11134	73.9218		355.0528 0015951	238.4102	101.1253	12.42003639		59
1	11133U	78109	E	78340.13848876	.00007287	00000-0	00000-0	0	00019
2	11133	73.9813		355.0038 0014155	201.0485	141.3489	12.44416959		52
1	11131U	78109	D	78340.13848876	.00007287	00000-0	00000-0	0	00017
2	11131	74.0055		354.9582 0023802	130.0591	218.1857	12.48983601		59
1	11130U	78109	C	78340.05914504	.00007287	00000-0	00000-0	0	00019
2	11130	74.0081		355.0456 0042222	127.7838	225.9687	12.51239527		44
1	11129U	78109	B	78340.05914504	.00007287	00000-0	00000-0	0	00017
2	11129	74.0099		355.0573 0049570	116.6875	238.9939	12.53431502		45

78-110A

Kosmos 1059

Uppsänd: 7 dec 1978

1	11137U	78 110 A	78341.75888315	.00222741	00000-0	00000-0 0	00013
2	11137	62.8127	258.3367 0119267	79.8151	294.3751	16.05829523	25

1	11137U	78 110 A	78342.91700169	.00222045	00000-0	00000-0 0	00026
2	11137	62.7817	254.1832 0119070	79.9772	292.5303	16.06353660	199

1	11137U	78 110 A	78346.94860367	.00289328	00000-0	00000-0 0	00050
2	11137	62.8133	238.0231 0100504	72.2679	288.8263	16.13695744	944

1	11137U	78 110 A	78347.65409050	.00321371	00000-0	00000-0 0	00063
2	11137	62.8106	234.7926 0098655	72.6442	288.7004	16.14239433	970

1	11137U	78 110 A	78344.61699063	.00293449	00000-0	00000-0 0	00042
2	11137	62.8148	246.9597 0104075	71.5936	290.1025	16.12403934	488

1	11137U	78 110 A	78349.20222705	.00385071	99280-4	11749-3 0	00072
2	11137	62.8116	228.5832 0095836	72.9051	299.4315	16.15361592	1229

1	11137U	78	110	A	79350.68734822	.00395071	00000-0	00000-0	0	00088
2	11137	62.8249	222.6290	0156136	64.8202	276.1505	16.01112854	1469		

1	11137U	78	110	A	79351.56512182	.00406539	00000-0	00000-0	0	00093
2	11137	62.8109	219.2170	0147671	65.6405	295.9226	16.01734900	1608		

1	11137U	78	110	A	79351.93967956	.00250091	00000-0	00000-0	0	00109
2	11137	62.8261	217.6996	0152522	65.7231	295.5465	16.01778178	1666		

1	11137U	78	110	A	79353.62484814	.00304274	00000-0	00000-0	0	00129
2	11137	62.8130	211.0757	0148772	66.0523	295.8987	16.02780552	1936		

1	11137U	78	110	A	79352.37672233	.00255140	00000-0	00000-0	0	00110
2	11137	62.8151	215.9927	0151362	65.8188	295.9192	16.02014713	1731		

78-111A

Kosmos 1060

Uppskänd = 8 dec. 1978

1	11139U	78 111 A	78342.45327576	.00084673	00000-0	00000-0	0	00019
2	11139		65.0261 255.1932 0064326	52.6696	312.4704	16.09642698		16

1	11139U	78 111 A	78346.86154938	.00143420	00000-0	00000-0	0	00030
2	11139		65.0306 238.9440 0063222	49.9291	311.0251	16.11226275		721

1	11139U	78 111 A	78347.66834515	.00179287	00000-0	00000-0	0	00041
2	11139		65.0277 235.9705 0062271	49.5425	311.3387	16.11561922		855

1	11139U	78 111 A	78343.31928381	.00163256	00000-0	00000-0	0	00021
2	11139		65.0259 250.1555 0063874	52.0322	309.5708	16.10173271		235

1	11139U	78 111 A	78348.72314276	.00181648	00000-0	00000-0	0	00051
2	11139		65.0267 232.0666 0060716	49.0519	311.5342	16.11947387		1026

1	11139U	78 111 A	78349.15740555	.00238389	00000-0	15508-3	0	00060
2	11139		65.0250 230.4785 0061676	48.7232	312.1002	16.12212123		1096

1	11139U	78	111	A	78350.76980713	.00192350	00000-0	00000-0	0	00075
2	11139	65.0244	224.5135	0060311	47.3390	312.3655	16.12841742	1351		

1	11139U	78	111	A	78351.38586232	.00204859	00000-0	00000-0	0	00098
2	11139	65.2244	220.3810	0058565	46.8127	313.9074	16.13313837	1533		

1	11139U	78	111	A	78352.44370406	.00203119	00000-0	00000-0	0	00094
2	11139	65.0241	218.3185	0058716	46.7532	313.7708	16.13525607	1621		

78-112A

Narstar NDS4

Upp: 10 dec. 1978 från Vandenberg.

1	11141U	78112	A	79348.21291685	.00000059	00000-0	00000-0	0	00019
2	11141	63.2666	219.0181	0009168	88.4000	41.8000	1.99339456		85

78-113A

DSCS-2 (9210)

Upp: 13 dec. 1978 från Cape Canaveral med Titan 43C

1	11147U	78113	D	78348.79495479	.00000000	00000-0	00000-0	0	00001
2	11147	2.5029		276.3330 0073475	1.6378	359.3861	0.99164535		09
1	11146U	78113	C	78348.01446609	.00000000	00000-0	00000-0	0	00006
2	11146	28.5856		276.6491 0097711	111.5529	249.4912	16.22567870		08
1	11145U	78113	B	78348.78939254	.00000000	00000-0	00000-0	0	00002
2	11145	2.4999		275.9381 0017984	352.3367	7.6360	0.98331557		02
1	11144U	78113	A	78348.79389322	.00000000	00000-0	00000-0	0	00007
2	11144	2.4949		276.0407 0072421	1.6514	359.3723	0.99149019		03
1	11146U	78113	C	78348.19896460	.00000000	00000-0	00000-0	0	00010
2	11146	28.5909		274.4650 0062483	119.1590	244.5751	16.26312925		32

78-114A

Kosmos 1061

Loppstånd: 14 dec 1978 från Plesetsk.

 $f = 19.994 \text{ MHz}$, tra²-ton, CR = 1.66 sek.

1	11148U	78114	A	78348.81335675	.00022741	00000-0	00000-0	0	00025
2	11148	62.8219	262.4235	0084039	75.6362	284.1086	16.06506751		32
1	11148U	78114	A	78348.75192715	.00022741	00000-0	00000-0	0	00013
-2	11148	62.8158	262.3019	0069200	108.1641	256.4973	16.10659684		27
1	11148U	78114	A	78349.52275559	.00147453	00000-0	11791-3	0	00030
2	11148	62.8143	259.2202	0081271	77.7224	293.7088	16.06765525		167
1	11148U	78114	A	78351.86267147	.00144257	00000-0	00000-0	0	00041
2	11148	62.8224	250.3105	0080388	77.1564	283.7547	16.07410831		528
1	11148U	78114	A	78352.48475031	.00140809	00000-0	00000-0	0	00052
2	11148	62.8115	247.8535	0079650	77.2607	293.7023	16.07577553		629
1	11148U	78114	A	78357.14775894	.00161629	00000-0	00000-0	0	00075
2	11148	62.8128	229.3210	0076585	78.2071	292.4500	16.09042739		1372

1	11148U	78114	A	79359.07398311	.00141871	00000-0	00000-0	0	00083
2	11148	62.8109		221.6488 0075480	76.2657	292.4836	16.29570115		1684

78-115A

Kosmos 1062

Lappskänd: 15 dec. 1978 från Pleseotok

1	11150U	78115	A	78349.74371518	.00007020	00000-0	00000-0	0	00011
2	11150	74.0423	291.4949	0033166	352.5003	7.7944	15.13484253		35
1	11150U	78115	A	78349.80977487	.00007020	00000-0	00000-0	0	00025
2	11150	74.0434	291.3539	0033162	352.3491	7.7155	15.13466147		43

78-116

Anik-B, Telesat 4

1	11154U	78	116B	79350.51299026	.00009000	00000-0	00000-0	0	00014
2	11154	28.4676	266.4408	1259501	178.7328	161.2589	13.34491322		77

78-117 A

Kosmos 1063

1	11155U	78 117 A	78353.59815111	.00027754	00000-0	00000-0	0	00024
2	11155		81.2304 134.4477 0002756	57.7100	302.2648	14.79545450		30

1	11155U	78 117 A	78359.48186729	.00004946	00000-0	00000-0	0	00088
2	11155		81.2332 123.0350 0003093	51.1612	308.9823	14.79549864		953

1	11155U	78 117 A	78361.64596309	.20004921	00000-0	00000-0	0	00092
2	11155		81.2337 125.6745 0003011	44.9087	315.2315	14.79560585		1276

1	11155U	78 117 A	78363.60717099	.00005044	00000-0	00000-0	0	00109
2	11155		81.2343 123.5359 0002893	38.7286	321.4080	14.79559806		1564

1	11155U	78 117 A	78364.28344753	.00009351	00000-0	00000-0	0	00114
2	11155		81.2343 122.7980 0002862	36.5888	323.5992	14.79585207		1665

1	11155U	78 117 A	78364.41869451	.20009542	00000-0	00000-0	0	00129
2	11155		81.2349 122.6519 0002861	36.6002	323.5352	14.79529976		1689

1 11155U 78 117 A 76365.29784694 .00009519 00000-0 00000-0 0 00136
2 11155 81.2351 121.6930 0002812 35.1235 325.0109 14.79583517 1812

78-118A

Gorizont 1

1	11158U	78118	A	79353.57993040	-.00000085	00000-0	00000-0	0	00002
2	11158	11.3000		280.2846	3080441	70.0000	360.0000	1.01404954	29

1	11159U	78118	B	78353.69701658	.00941251	00000-0	00000-0	0	00015
2	11159	51.5836		280.0294	0041580	212.7261	150.6123	16.34529507	34

1	11159U	78118	B	78354.11426620	.01286114	14759-2	18068-3	0	00023
2	11159	51.6251		277.6350	0012582	206.0741	150.9702	16.33978294	104

1	11158U	78118	A	73362.07033735	.00000036	02000-0	00000-0	0	00018
2	11158	10.6945		212.4205	3015906	345.9910	7.5496	0.99053823	112

78-119A

Kosmos 1064

1	11161U	78 119 A	78355.12749756	.01594280	00000-0	00000-0	0	00018
2	11161	82.9492	67.6844 0382323	102.0240	261.7751	14.60211279		41

1	11161U	78 119 A	78355.88137195	.00020000	00000-0	00000-0	0	00023
2	11161	82.9559	67.0426 0382610	99.4586	264.4415	14.60075198		158

✓ 1	11161U	78 119 A	78355.67547824	.00020000	00000-0	00000-0	0	00013
2	11161	82.9607	67.2377 0380778	98.8056	263.5669	14.60759141		123

1	11161U	78 119 A	78358.55421583	.00020000	00000-0	00000-0	0	00049
2	11161	82.9572	64.7653 0382467	90.3188	273.5799	14.60109087		548

✓ 1	11161U	78 119 A	78359.58217339	.00020000	00000-0	00000-0	0	00056
2	11161	82.9543	63.3851 0382100	87.6578	276.8261	14.60123104		698

1	11161U	78 119 A	78360.38424079	.00020000	00000-0	00000-0	0	00063
2	11161	82.9595	62.7744 0382369	83.4152	281.0369	14.60143152		886

78-120A

Kosmos 1065

Upp: 23 dec från Kapustin Yar.

1	11163U	78120	A	73358.32860264	.00027704	00000-0	00000-0	0	00038
2	11163	50.6827		348.6422 0148648	151.0384	209.4270	15.39842353		225
1	11163U	78120	A	73357.16038747	.00117271	00000-0	00000-0	0	00020
2	11163	50.6818		354.4757 0149302	146.4938	213.5435	15.39785096		41
1	01163U	78120	A	73357.03191950	.00117271	00000-0	00000-0	0	00011
2	11163	50.6770		355.1091 0145737	144.2071	223.6577	15.40992984		24

1	11163U	78120	A	73359.43185614	.00034499	00000-0	00000-0	0	00040
2	11163	50.6816		343.1453 0148103	155.3790	205.4307	15.39922473		398

1	11163U	78120	A	73360.40520221	.00029993	00000-0	50094-3	0	00058
2	11163	50.6806		333.2932 0148600	158.9929	201.7260	15.39982271		544

1	11163U	78120	A	73362.22197578	.00035598	00000-0	00000-0	0	00077
2	11163	50.6901		329.2396 0147940	166.4635	194.0078	15.40117552		835

1	11163U	78120	A	78361.70291301	.20035423	00000-0	58954-3	0	00068
2	11163	50.6809		331.9238	0149097	164.4098	196.1467	15.40087828	747

78-121A

Kosmos 1066

Lpp: 23 dec 1978 från Plesetsk

1	11165U	78121	A	78357.42317171	.00000590	00000-0	00000-0	0	00017
2	11165	81.2498		245.3216 0053112	258.4631	105.6794	14.09427191		13

1	11165U	78121	A	78357.49324982	.00000566	00000-0	33354-3	0	00027
2	11165	81.2441		245.2315 0050485	272.4958	87.2195	14.10133464		27

1	11165U	78121	A	78361.04076996	-.00024755	00000-0	00000-0	0	00039
2	11165	81.2407		241.7902 0069287	223.3291	135.7331	14.10209448		524

78-122A

Kosmos 1067

L1 pp: 26 dec. 1978 från Plesetsk.

1	11168U	78122	A	78360.77454636	.00003979	00000-0	00000-0	0	00036
2	11168	82.9785		325.2255 0033363	267.3421	91.5837	13.19614196		32
1	11168U	78122	A	78360.62312763	.00003979	00000-0	00000-0	0	00012
2	11168	82.9583		325.3080 0021661	265.1207	94.9981	13.19901334		19
1	11168U	78122	A	78360.69887696	.00003979	00000-0	00000-0	0	00022
2	11168	82.9733		325.2596 0026326	255.6006	104.5402	13.21051590		20

78-123A

Kosmos 1068

Upp: 26 dec 1978 från Plesetsk

1	11169U	78123	A	78360.69674678	.00022741	00000-0	00000-0	0	00016
2	11169	62.7890		277.3919 0138621	69.2338	294.1764	16.03426056		19

1	11169U	78123	A	78360.38352377	.00022741	00000-0	00000-0	0	00027
2	11169	62.7986		276.5628 0159870	74.2012	283.0174	15.97254819		40

1	11169U	78123	A	78361.63558783	.00022741	00000-0	00000-0	0	00031
2	11169	62.8015		273.6019 0109341	63.8446	309.6121	16.10209649		162

1	11169U	78123	A	78362.25425904	.00313264	00000-0	00000-0	0	00042
2	11169	62.7997		271.1332 0107905	63.6581	298.0092	16.11220375		266

1	11169U	78123	A	78362.50256782	.00300153	00000-0	00000-0	0	00050
2	11169	62.8001		270.1420 0107399	63.6364	298.4245	16.11362301		301

1	11169U	78123	A	78363.68124275	.00306576	67427-4	10752-3	0	00065
2	11169	62.7985		265.4293 0106221	63.5623	297.4615	16.12051838		497

1	11169U	78123	A	78364.23948667	.00318773	00000-0	00000-0	0	00071
2	11169	62.8013		263.1967 0104827	63.9011	297.2866	16.12406411		580

1	11169U	78123	A	79	1.40914189	.07327130	00000-0	00000-0	0	00089
2	11169	62.7949		254.4239 0099417	63.9369	297.5285	16.13641314		930	

1	11169U	78123	A	79	2.70993432	.00336949	00000-0	00000-0	0	00090
2	11169	62.7982		249.2841 0098562	64.3533	296.8904	16.14735582		1144	

1	11169U	78123	A	79	3.20528077	.20368439	00000-0	00000-0	0	00126
-2-	11169	62.7976		247.2974 0097198	64.4486	296.7413	16.15123517		1227	

1	11169U	78123	A	79	4.13375605	.00368439	00000-0	00000-0	0	02117
2	11169	62.7949		243.5848 0114485	63.2279	296.1296	16.11330209		1373	

1	11169U	78123	A	79	5.43691889	.00368439	00000-0	00000-0	0	00127
2	11169	62.7975		238.3675 0148423	60.5704	296.9794	16.03534219		1588	

1	11169U	78123	A	79	6.68445704	.00251083	00000-0	00000-0	0	00135
2	11169	62.7996		233.4349 0145773	60.5358	300.5313	16.04224107		1789	

1	11169U	78123	A	79	7.68171637	.00301914	00000-0	00000-0	0	00147
2	11169	62.8006		229.4902 0143114	60.8095	301.0942	16.04872259		1949	

78-124 A

Kosmos 1069

1	11173U	78124	A	78362.80055000	.00007512	00000-0	11712-4	0	00014
2	11173	62.9598	294.1800	0036867	244.9395	118.3938	16.02950357		22

1	11173U	78124	A	78362.36222196	.00007809	00000-0	11712-4	0	00022
2	11173	62.8184	293.9770	0029401	183.2115	177.1396	16.04140723		32

1	11173U	78124	A	78363.54787773	.00007809	00000-0	00000-0	0	00030
2	11173	62.8239	291.1568	0033129	187.7696	172.6607	16.04285911		149

1	11173U	78124	A	78363.92177912	.00092953	00000-0	00000-0	0	00048
2	11173	62.8262	289.3796	0032373	187.3423	172.7210	16.04400276		206

1	11173U	78124	A	78364.29578287	.00115986	00000-0	00000-0	0	00048
2	11173	62.8270	298.2023	0032125	186.3738	173.5499	16.04510697		275

1	11173U	78124	A	78365.16817824	.00122934	00000-0	00000-0	0	00059
2	11173	62.8246	284.7523	0031287	187.0330	173.0730	16.04730463		421

1	11173U	78124	A 79	1.41432676	.20124287	00000-0	00000-0	0	00268
2	11173	62.8249	279.8184	0030281	188.0501	172.1197	16.05044766		827

1	11173U	78124	A 79	4.21727000	.00150771	00000-0	00000-0	0	00075
2	11173	62.8176	268.7232	0029342	188.1518	171.9885	16.05797953		1065

1	11173U	78124	A 79	5.40029926	.00157518	00000-0	00000-0	0	00086
2	11173	62.8191	264.0448	0027864	188.3679	171.6576	16.06155664		1249

1	11173U	78124	A 79	6.76980804	.00146943	00000-0	00000-0	0	00)98
2	11173	62.8187	259.6097	0026802	189.3660	170.5822	16.06546494		1466

1	11173U	78124	A 79	7.76562971	.00141302	00000-0	00000-0	0	00106
2	11173	62.8213	254.6697	0027598	190.3739	169.6553	16.06821883		1626

1	11173U	78124	A 79	9.44566731	.00151276	00000-0	00000-0	0	00113
2	11173	62.8227	248.0054	0027354	190.7467	169.5872	16.07357700		1890