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(ITU) للاتصالات الدولي الاتحاد في والمحفوظات المكتبة قسم أجراه الضوئي بالمسح تصوير نتاج (PDF) الإلكترونية النسخة هذه والمحفوظات المكتبة قسم في المتوفرة الوثائق ضمن أصلية ورقية وثيقة من نقلًا.

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Настоящий электронный вариант (PDF) был подготовлен в библиотечно-архивной службе Международного союза электросвязи путем сканирования исходного документа в бумажной форме из библиотечно-архивной службы МСЭ.



Code name Spacecraft description	International number	Country Organization Site of launching	Date	Perigee Apogee	Period Inclination	Frequencies Transmitter power	Observations
Cosmos-888	1977-1-A	USSR (BAI)	6 Jan.	178 km 346 km	89.5 min 65.0°		Recovered on 19 January 1977
2nd Meteor-2 mass: 2800 kg	1977-2-A	USSR (PLE)	7 Jan.	892.9 km 932.1 km	103 min 81.3°		Meteorological satellite
Cosmos-889	1977-3-A	USSR (PLE)	20 Jan.	210 km 353 km	89.8 min 71.4°		Reconnaissance satellite. Recovered on 1 February 1977
Cosmos-890	1977-4-A	USSR (PLE)	20 Jan.	1000 km 1032 km	105 min 83.0°		Navigation satellite
NATO-3 B cylindrical spin-stabilized satellite; diameter: 2.20 m; height: 3.10 m; mass at launch: 701 kg; mass in orbit: 340 kg; solar cells; 3 horn antennae	1977-5-A	International NATO (ETR)	28 Jan.	35 463 km 35 962 km geostationary orbit	1432.3 min 2.8°	8 GHz band (up-link) 7 GHz band (down-link)	Communication satellite
Cosmos-891	1977-6-A	USSR (PLE)	2 Feb.	466 km 518 km	94.4 min 65.8°		Satellite intercept program
No name	1977-7-A	United States USAF (ETR)	6 Feb.	556 km 2310 km	114.5 min 65.8°		
Soyuz-24 3-part spacecraft: 2 spherical habitable modules (orbital compartment and command module) connected in tandem to a cylindrical service module; diameter: 2.70 m; height: 7.10 m; mass: 6680 kg; 2 solar arrays	1977-8-A	USSR (BAI)	7 Feb.	218 km 281 km	89.2 min 51.6°		Two-man spacecraft: V. V. Gorbatko, flight commander; Y. N. Glaskov, flight engineer. Docked with <i>Salyut-5</i> on 8 February and crew transferred. Crew re-transferred to <i>Soyuz-24</i> and landed 36 km north-east of Arkalyk (USSR) on 25 February after an unusually short mission
Cosmos-892	1977-9-A	USSR (PLE)	9 Feb.	170 km 454 km	90.4 min 72.9°		Reconnaissance satellite. Recovered on 22 February 1977

Code name Spacecraft description	International number	Country Organization Site of launching	Date	Perigee Apogee	Period Inclination	Frequencies Transmitter power	Observations
17th Molnya-2 mass: 1250 kg	1977-10-A	USSR (PLE)	11 Feb.	493 km 40 757 km	735 min 62.5°	5.7-6.0 GHz (reception) 3.4-3.9 GHz (transmission)	Carries apparatus for transmitting television programs and multichannel radiocommunications, apparatus of the command measuring complex, orientation system, orbit correction system, and power supplies
Cosmos-893	1977-11-A	USSR (PLE)	15 Feb.	341 km 1703 km	105.25 min 74.0°		
Tansei-3 (MST-3) mass: 133.8 kg	1977-12-A	Japan Tokyo University ISAS (KSC)	19 Feb.	824 km 3932 km	134.1 min 65.8°	136.725; 400.500 MHz (tracking and telemetry)	Japanese test satellite
Cosmos-894	1977-13-A	USSR (PLE)	21 Feb.	988 km 1026 km	105.1 min 83.0°		Navigation satellite
ETS-2 (Kiku-2) cylindrical spin-stabilized satellite; diameter: 1.41 m; height: 1.58 m; mass: 130 kg; 3 mechanical de-spun antennae	1977-14-A	Japan NSDA (TSC)	23 Feb.	34 034 km 35 756 km synchronous orbit at 130° E	1391 min 23.7°	136.1121 MHz 2 W 1705 MHz 4 W	Engineering test satellite. Objectives: to develop techniques for placing a satellite in synchronous orbit and for measuring and maintaining this orbit and the attitude of the satellite; propagation experiment for millimetre and submillimetre waves
Cosmos-895	1977-15-A	USSR (PLE)	27 Feb.	613 km 648 km	97.2 min 81.2°		Reconnaissance satellite
Cosmos-896	1977-16-A	USSR (PLE)	3 March	194 km 216 km	88.5 min 72.9°		High-resolution reconnaissance satellite. Later manoeuvred into a 329×180 km orbit. Recovered on 16 March 1977
Cosmos-897	1977-17-A	USSR (PLE)	10 March	182 km 371 km	89.7 min 72.9°		High-resolution reconnaissance satellite. Later manoeuvred into a 316×188 km orbit and then to 412×182 km. Recovered on 23 March 1977
Palapa-2 cylindrical spin-stabilized satellite; diameter: 1.90 m; overall height: 3.70 m; mass at launch: 575 kg; parabolic dish antenna	1977-18-A	Indonesia (ETR)	10 March	35 915 km 36 250 km geostationary orbit at 77° E	1451.2 min 0.1°	4198.6; 4199.1 MHz (telemetry) 3702-4178 MHz (communications down link)	Domestic communications satellite of similar design to <i>Anik</i> (Canada) and <i>Westar</i> (United States); 12 transponders with a capacity of 4000 voice circuits or 12 simultaneous colour television channels

Samos . . .	1977-19-A	United States USAF (WTR)	13 March	122 km 358 km	89.2 min 96.3°		Reconnaissance satellite. Recovered on 26 May 1977
Cosmos-898	1977-20-A	USSR (PLE)	17 March	222 km 258 km	89.0 min 81.4°	19.995 MHz	Low-resolution reconnaissance satellite. Ice survey. Recovered on 30 March 1977
36th Molnya-1 hermetically-sealed cylinder with conical ends; mass: 1000 kg; 6 solar panels	1977-21-A	USSR (PLE)	24 March	484 km 40 816 km	736 min 62.8°	800 MHz band 40 W (transmission) 1000 MHz band (reception) 3400-4100 MHz (retransmission of television)	Carries apparatus for transmitting television programs and multichannel radiocommunications, apparatus of the command measuring complex, orientation system, orbit correction system and power supplies
Cosmos-899	1977-22-A	USSR (PLE)	25 March	505 km 552 km	95.2 min 74.1°		Electronic monitoring satellite
Cosmos-900	1977-23-A	USSR (PLE)	30 March	460 km 523 km	94.4 min 83°		Carries equipment supplied by Czechoslovakia, German Democratic Republic and USSR for the study of the ionosphere and magnetosphere
27th Meteor-1 3-axis stabilized cylindrical satellite; mass: 2200 kg; sun-oriented solar panels	1977-24-A	USSR (PLE)	5 April	869 km 909 km	102.5 min 81.2°		Carries meteorological apparatus, electro supply system, radio system for precise measurements of orbital elements and radiotelemetry system
Cosmos-901	1977-25-A	USSR (PLE)	5 April	279 km 845 km	95.5 min 71.0°		Electronic monitoring satellite
Cosmos-902	1977-26-A	USSR (PLE)	7 April	179 km 307 km	89 min 81.4°		High-resolution photographic reconnaissance satellite. Recovered on 20 April 1977
Cosmos-903	1977-27-A	USSR (PLE)	11 April	630 km 40 170 km	726 min 62.83°		<i>Molnya</i> -type orbit. Possible early warning system
Cosmos-904	1977-28-A	USSR (PLE)	20 April	210 km 350 km	89.8 min 71.4°	19.995 MHz	Reconnaissance satellite. Recovered on 4 May 1977

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ESA-GEOS cylindrical satellite; diameter: 1.62 m; height: 1.10 m; mass at launch: 573 kg	1977-29-A	Europe ESA (ETR)	20 April	2103 km 38 276 km working orbit	718.25 min 26.37°	137.200 MHz 6 W 2299.500 MHz 3 W (on-off telemetry)	Geostationary Earth Orbiting Satellite. Objectives: to study the magnetosphere, particularly the waves, fields and particle distribution over a wide range of energies in the geostationary orbit. After a launch mishap the satellite failed to reach geostationary orbit. The mission was salvaged by placing the satellite in an elliptical orbit with an eastern apogee at 37° E. All seven experiments have been able to return scientific data
Cosmos-905	1977-30-A	USSR (PLE)	26 April	179 km 366 km	89.7 min 67.1°		High-resolution long-duration reconnaissance satellite. Similar to <i>Cosmos-758</i> , <i>Cosmos-805</i> and <i>Cosmos-844</i> . Recovered on 26 May 1977
Cosmos-906	1977-31-A	USSR (AKY)	27 April	466 km 523 km	94.3 min 50.7°		Research satellite in <i>Intercosmos</i> -type orbit
7th Molnya-3 mass: 1500 kg	1977-32-A	USSR (PLE)	28 April	467 km 40 807 km	736 min 62.8°	1 cm band	Carries apparatus for transmitting television programs and multichannel radiocommunications
Cosmos-907	1977-33-A	USSR (PLE)	5 May	187 km 388 km	89.9 min 62.8°		High-resolution photographic reconnaissance satellite. Recovered on 16 May 1977
DSCS-II 7 cylindrical satellite; diameter: 2.70 m; overall height: 4 m; mass: 544 kg; solar cells	1977-34-A	United States USAF (ETR)	12 May	35 780 km 35 794 km synchronous orbit	1436.1 min 2.3°	X band	Defense Satellite Communication System. Satellites carry communication payloads providing 1300 duplex voice channels or 100 Mbit/s data. Four antennae, two for wide earth coverage and two with narrow beams for ground controlled direction beaming of high-volume communications
DSCS-II 8 cylindrical satellite; diameter: 2.70 m; overall height: 4 m; mass: 544 kg; solar cells	1977-34-B	United States USAF (ETR)	12 May	35 794 km 36 227 km synchronous orbit	1447.5 min 2.3°	X band	Defense Satellite Communication System (see <i>DSCS-II 7</i>)
Cosmos-908	1977-35-A	USSR (BAI)	17 May	180 km 307 km	89.1 min 51.8°		High-resolution photographic reconnaissance satellite. Recovered on 31 May 1977
Cosmos-909	1977-36-A	USSR (PLE)	19 May	991 km 2112 km	117 min 65.9°		Space intercept test. Target vehicle for <i>Cosmos-910</i> and <i>Cosmos-918</i>
Cosmos-910	1977-37-A	USSR (BAI)	23 May	149 km 506 km	91 min 65.1°		Satellite intercept program; intended to intercept <i>Cosmos-909</i> but failed to do so. Recovered on 23 May 1977

No name	1977-38-A	United States USAF (ETR)	23 May				Ballistic Missile Early Warning System (BMEWS). Experimental payload similar to 1975-55-A and 1972-101-A
Cosmos-911	1977-39-A	USSR (PLE)	25 May	984 km 1018 km	104.9 min 82.9°		Navigation satellite
Cosmos-912	1977-40-A	USSR (PLE)	26 May	219 km 257 km	89 min 81.4°		Earth resources satellite. Data processed at the Priroda Research and Production Centre. Recovered on 8 June 1977
Intelsat-IV A F4 cylindrical spin-stabilized satellite; diameter: 2.38 m; height: 6.98 m; mass at launch: 1515 kg; mass in orbit: 825 kg; solar cells	1977-41-A	International INTELSAT (ETR)	26 May	35 346 km 35 755 km in geostationary orbit at 340.5° E	1425 min 0.28°	3947.5; 3952.5 MHz (telemetry) 3700-4200 MHz 20 W (communications)	INTELSAT commercial telecommunication satellite; 6250 two-way telephone circuits and two television channels
Cosmos-913	1977-42-A	USSR (PLE)	31 May	475 km 523 km	94.5 min 74.0°		
Cosmos-914	1977-43-A	USSR (BAI)	31 May	210 km 327 km	89.6 min 65.0°		Low-resolution photographic reconnaissance satellite. Recovered on 13 June 1977
No name	1977-44-A	United States USAF (WTR)	5 June	801 km 868 km	101.5 min 99.2°		Meteorological satellite
Cosmos-915	1977-45-A	USSR (PLE)	8 June	182 km 306 km	89.1 min 62.8°		Reconnaissance satellite. Recovered on 21 June 1977
Cosmos-916	1977-46-A	USSR (PLE)	10 June	250 km 307 km	89.9 min 62.8°		Low-resolution reconnaissance satellite. Recovered on 21 June 1977
Cosmos-917	1977-47-A	USSR (PLE)	16 June	625 km 40 150 km	725 min 62.9°		Early warning satellite

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GOES-2 cylindrical spin-stabilized satellite; diameter: 1.90 m; height: 2.30 m; mass at launch: 623 kg; mass in orbit: 294 kg; solar cells	1977-48-A	United States NOAA (ETR)	16 June	geostationary orbit at 75° W		1694 MHz 20 W (tracking and telemetry) 1681.6; 1687.1; 1694.5 MHz 20 W (spacecraft to earth data) 468.85 MHz 10 W (spacecraft to data collection platforms)	Geostationary Operational Environmental Satellite. The satellite carries: 1) visible/infrared spin-scan radiometer to provide high quality, day/night cloud cover data and to take radiance temperatures of the earth/atmosphere system; 2) a meteorological data collection and transmission system to relay processed data from central weather facilities to small APT-equipped regional stations and to collect and retransmit data from remote earth-based platforms; 3) a space environment monitor system to measure proton, electron and solar X-ray fluxes and magnetic fields
Signe-3 cylindrical satellite; mass: 103 kg; 4 solar panels	1977-49-A	France (AKY)	17 June	459 km 519 km	94.4 min 50.66°	136.050; 136.630 MHz	Carries two experiments: a gamma-ray telescope and a solar ultraviolet-ray experiment
Cosmos-918	1977-50-A	USSR (BAI)	17 June	131 km 265 km	88.4 min 65.1°		Satellite intercept program. Intercepted <i>Cosmos-909</i> . Recovered on 18 June 1977
Cosmos-919	1977-51-A	USSR (PLE)	18 June	278 km 847 km	95.6 min 71.0°		
Cosmos-920	1977-52-A	USSR (BAI)	22 June	180 km 364 km	89.7 min 65.0°		High-resolution reconnaissance satellite. Recovered on 5 July 1977
NTS-2 solar panels	1977-53-A	United States USN (WTR)	23 June	19 543 km 20 185 km	705.1 min 63.2°		Navigation Technology Satellite
37th Molnya-1 hermetically-sealed cylinder with conical ends; mass: 1000 kg; 6 solar panels	1977-54-A	USSR (PLE)	24 June	480 km 39 016 km	700 min 62.9°	800 MHz band 40 W (transmission) 1000 MHz band (reception) 3400-4100 MHz (retransmission of television)	Carries apparatus for transmitting television programs and multichannel radiocommunications, apparatus of the command measuring complex, orientation system, orbit correction system, and power supplies

Cosmos-921	1977-55-A	USSR (PLE)	24 June	644 km 711 km	98.0 min 76.0°		
Big Bird	1977-56-A	United States (WTR)	27 June	157 km 243 km	88.5 min 97.0°		Recovered on 23 December 1977
28th Meteor-1 3-axis stabilized cylindrical satellite; mass: 2200 kg; sun-oriented solar panels	1977-57-A	USSR (PLE)	29 June	602 km 685 km	97.5 min 98.0°		Meteorological satellite
Cosmos-922	1977-58-A	USSR	30 June	212 km 323 km	89.5 min 62.8°		Reconnaissance satellite. Recovered on 13 July 1977
Cosmos-923	1977-59-A	USSR (PLE)	1 July	804 km 842 km	101.4 min 74.0°		
Cosmos-924	1977-60-A	USSR (PLE)	5 July	514 km 560 km	95.3 min 74.0°		
Cosmos-925	1977-61-A	USSR (PLE)	7 July	622 km 645 km	97.2 min 81.2°		
Cosmos-926	1977-62-A	USSR (PLE)	8 July	997 km 1025 km	105.1 min 82.9°		Navigation satellite
Cosmos-927	1977-63-A	USSR (PLE)	12 July	178 km 403 km	90.0 min 72.9°		High-resolution reconnaissance satellite. Recovered on 25 July 1977
Cosmos-928	1977-64-A	USSR (PLE)	13 July	977 km 1022 km	104.8 min 83°		Navigation satellite
GMS-1 cylindrical spin-stabilized satellite; diameter: 2.16 m; mass: 281 kg; de-spun helicoid antenna; solar cells 225 W	1977-65-A	Japan (ETR)	14 July	geostationary orbit at 140° E		136.89 MHz 7.4 W 468.875; 468.883; 468.924 MHz 5.5 W 1684; 1687.1; 1688.2; 1690.2 MHz VHF/UHF S-band	Geostationary Meteorological Satellite. Forms part of the World Weather Watch Satellite program along with GOES, SMS (United States) and Meteosat (ESA) and the still-to-be-launched GOMS (USSR). Carries a visible infrared spin-scan radiometer (VISSR) and a space environment monitor to detect solar protons and electrons and alpha particles

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Cosmos-929	1977-66-A	USSR (BAI)	17 July	221 km 298 km	89.4 min 51.6°	19.995 MHz	Soyuz test flight
Cosmos-930	1977-67-A	USSR (PLE)	19 July	482 km 528 km	94.6 min 74.0°		Electronic monitoring satellite
Cosmos-931	1977-68-A	USSR (PLE)	20 July	600 km 40 180 km	726 min 62.8°		Early-warning satellite
Cosmos-932	1977-69-A	USSR (BAI)	20 July	180 km 342 km	89.5 min 65.0°		High-resolution photographic reconnaissance satellite. Recovered on 2 August 1977
Cosmos-933	1977-70-A	USSR (PLE)	22 July	385 km 418 km	92.5 min 65.8°		Interceptor satellite
Raduga-3 (Statsionar-2) 3-axis stabilized satellite; mass: 5000 kg; solar cells	1977-71-A	USSR (BAI)	24 July	36 600 km — synchronous orbit	1447 min 0.4°	5.7-6.2 GHz (reception) 3.4-3.9 GHz (transmission)	Carries apparatus for transmitting television programs and multichannel radio communication, apparatus of the command measuring complex, orientation system, orbit correction system and power supplies
Cosmos-934	1977-72-A	USSR (PLE)	27 July	238 km 264 km	89.4 min 62.8°		Low-resolution photographic reconnaissance satellite. Recovered on 9 August 1977
Cosmos-935	1977-73-A	USSR (PLE)	29 July	225 km 276 km	89.3 min 81.3°		Photographic reconnaissance satellite. Recovered on 11 August 1977
Cosmos-936 Vostok-type spacecraft	1977-74-A	USSR (PLE)	3 Aug.	224 km 419 km	90.7 min 62.8°		Carried biological experiments from USSR, Czechoslovakia, France and United States to study effects of space environment on living matter; artificial gravity (centrifuge) experiment and measurement of radiation. Recovered on 23 August 1977
HEAO-1 length: 6 m; mass: 2566 kg	1977-75-A	United States NASA (ETR)	12 Aug.	441 km 452 km	93.5 min 22.8°	2247.0; 2253.0 MHz 1.0 W	High-Energy Astronomy Laboratory. Objectives: to study X-rays, gamma rays and cosmic rays emitted by stellar sources throughout the universe
Voyager-2 10-sided structure; diameter: 3.66 m; height: 0.47 m; breadth: 1.78 m; mass: 825 kg; high-gain parabolic reflector; 3 radioisotope thermoelectric generators	1977-76-A	United States NASA (ETR)	20 Aug.	solar system escape trajectory		2296.48 MHz 9.4 or 28.3 W 8420.43 MHz 12 or 21.3 W (tracking and telemetry)	Fly-by mission to conduct comparative studies of Jupiter and Saturn, including their satellites and Saturn's rings and to study the interplanetary medium between Earth and Saturn. This mission may also be targeted to swing by Saturn for a Uranus fly-by

Cosmos-937	1977-77-A	USSR (BAI)	24 Aug.	438 km 457 km	93.3 min 65°		Ocean surveillance satellite; was later moved to an orbit of 248/578 km, 65.0°, 92.8 min
Cosmos-938	1977-78-A	USSR (PLE)	24 Aug.	189 km 365 km	89.7 min 62.8°		High-resolution reconnaissance satellite; was later moved to an orbit of 154/305 km, 62.8°, 89.1 min. Recovered on 6 September 1977
Cosmos-939 to Cosmos-946 mass: 40 kg each	1977-79-A to 1977-79-H	USSR (PLE)	25 Aug.	1448 km 1518 km	115.2 min 74°		Government communications satellites
Sirio cylindrical satellite; diameter: 1.40 m; height: 2 m; mass at launch: 398 kg; mass in orbit: 210 kg	1977-80-A	Italy CNR (ETR)	25 Aug.	34 210 km 36 327 km geostationary orbit at 15° W	1409.7 min 0.2°	SHF band 17.0-17.8 GHz (reception) 11.3-11.8 MHz 4.26 W (transmission) 136.140; 136.620 MHz 6 W (tracking and telemetry)	<i>Satellite Italiano di Ricerca Industriale Orientata</i> . Experimental telecommunication satellite; carries experiments to investigate high frequency propagation. Measurements of absolute and relative attenuations and phase distortions in both the up and down links
Cosmos-947	1977-81-A	USSR (PLE)	27 Aug.	211 km 346 km	89.7 min 72.8°	19.995 MHz	Low-resolution reconnaissance satellite. Recovered on 9 September 1977
38th Molnya-1 hermetically-sealed cylinder with conical ends; mass: 1000 kg; 6 solar panels	1977-82-A	USSR (PLE)	30 Aug.	480 km 40 800 km	736 min 62.8°	800 MHz band (transmission) 1000 MHz band (reception) 3400-4100 MHz (retransmission of television)	Carries apparatus for transmitting television programs and multichannel radiocommunications, apparatus of the command measuring complex, orientation system, orbit correction system and power supplies
Cosmos-948	1977-83-A	USSR (PLE)	2 Sept.	217 km 265 km	89.0 min 81.4°		Ice survey reconnaissance satellite. Recovered on 15 September 1977
Voyager-1 10-sided structure; diameter: 3.66 m; height: 0.47 m; breadth: 1.78 m; mass: 825 kg; high-gain parabolic reflector; 3 radioisotope thermoelectric generators	1977-84-A	United States NASA (ETR)	5 Sept.	solar system escape trajectory		2295 MHz 9.4 or 28.3 W (telemetry) 8415 MHz 12 or 21.3 W (tracking and telemetry) 2113 MHz (telecommand)	Fly-by mission to conduct comparative studies of Jupiter and Saturn, including their satellites and Saturn's rings, and to study the interplanetary medium between Earth and Saturn

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Cosmos-949	1977-85-A	USSR (PLE)	6 Sept.	184 km 348 km	89.5 min 62.8°		High-resolution photographic reconnaissance satellite. Recovered on 6 October 1977
Cosmos-950	1977-86-A	USSR (PLE)	13 Sept.	213 km 305 km	89.4 min 62.8°	19.995 MHz	Low-resolution reconnaissance satellite. Recovered on 27 September 1977
Cosmos-951	1977-87-A	USSR (PLE)	13 Sept.	989 km 1029 km	105.0 min 83.0°		Navigation satellite
Cosmos-952	1977-88-A	USSR (BAI)	16 Sept.	258 km 278 km	89.7 min 65.0°		Ocean surveillance satellite
Cosmos-953	1977-89-A	USSR (PLE)	16 Sept.	188 km 354 km	89.6 min 62.8°		High-resolution reconnaissance satellite. Recovered on 29 September 1977
Cosmos-954	1977-90-A	USSR (PLE)	18 Sept.	259 km 277 km	89.6 min 65°		Ocean surveillance satellite
Cosmos-955	1977-91-A	USSR (PLE)	20 Sept.	631 km 664 km	97.5 min 81.2°		
Ekran-2 (Statsionar) 3-axis stabilized satellite; mass: 5 tonnes; solar cells	1977-92-A	USSR (BAI)	20 Sept.	35 560 km geostationary orbit at 99° E	1425 min 0.4°	5.7-6.2 GHz (reception) 3.4-3.9 GHz (transmission)	Carries apparatus for transmitting television programs and multichannel radiocommunications, apparatus of the command measuring complex, orientation system, orbit correction system, and power supply system
Prognoz-6 pressurized central body; mass: 910 kg; 4 solar panels	1977-93-A	USSR (BAI)	22 Sept.	498 km 197 900 km	5688 min 65.0°	928.4 MHz	Objectives: electromagnetic and corpuscular radiation research. Besides Soviet equipment the satellite carries equipment provided by Czechoslovakia and France for the study of corpuscular radiation
Samos . . .	1977-94-A	United States USAF (WTR)	23 Sept.	121 km 332 km	89 min 96.5°		Recovered on 8 December 1977
Cosmos-956	1977-95-A	USSR (PLE)	23 Sept.	358 km 865 km	96.9 min 75.8°		Unusual inclination. Only <i>Cosmos-921</i> (1977-55-A) has had a similar inclination

Intercosmos-17	1977-96-A	International (PLE)	24 Sept.	468 km 519 km	94.4 min 83.0°		First of a new design and heavier than previous <i>Intercosmos</i> satellites. Involves researchers from the Hungarian People's Republic, Roumania, Czechoslovakia, USSR
Salyut-6 3-compartment spacecraft; maximum diameter: 4.15 m; height: 14.25 m; mass: 18.9 tonnes; 3 solar panels which remain always oriented towards the sun	1977-97-A	USSR (BAI)	29 Sept.	219 km 275 km	89.1 min 51.6°		Orbital space station. A rendezvous and link-up with <i>Soyuz-25</i> (1977-99-A) was attempted but failed
Cosmos-957	1977-98-A	USSR (BAI)	30 Sept.	181 km 381 km	89.8 min 65.0°		High-resolution reconnaissance satellite. Recovered on 13 October 1977
Soyuz-25 3-part spacecraft; 2 spherical habitable modules (orbital compartment and command module) connected in tandem to a cylindrical service module; diameter: 2.70 m; height: 7.10 m; mass: 6680 kg; 2 solar arrays	1977-99-A	USSR (BAI)	9 Oct.	280 km 318 km	90.2 min 51.6°		Two-man spacecraft: V. Kovalenko, flight commander; Valeri Ryumin, flight engineer. After failure to link up with <i>Salyut-6</i> (1977-97-A) the satellite was returned to earth and recovered in Kazakhstan 49 hours after launch
Cosmos-958	1977-100-A	USSR (PLE)	11 Oct.	265 km 369 km	90.5 min 62.8°		Low-resolution reconnaissance satellite. Recovered on 24 October 1977
Cosmos-959	1977-101-A	USSR (PLE)	21 Oct.	153 km 891 km	94.8 min 66.0°		Satellite intercept program. Target satellite. Decayed on 30 November 1977
ISEE-1 16-sided prism; width across flats: 1.73 m; height: 1.61 m; mass: 340.2 kg	1977-102-A	United States NASA (ETR)	22 Oct.	281 km 138 120 km	57 h 26.4 min 28.7°	2215.5 MHz 2.5 W 2274.8 MHz 2.5 W (tracking and telemetry)	International Sun-Earth Explorers. Objectives: 1) to investigate solar/terrestrial relationships at the outermost boundaries of the Earth's magnetosphere; 2) to examine in detail the structure of the solar wind near the Earth and the shock wave interface; 3) to continue the investigation of cosmic rays and solar flares in the interplanetary region near 1 AU (continuation of IMP investigations). <i>ISEE-1</i> and 2 carry experiments for participation in the international magnetospheric study. The spacecraft maintain a small separation distance and make simultaneous co-ordinated measurements to permit separation of spatial from temporal irregularities in the near-Earth solar wind, the bow shock and inside the magnetosphere
ISEE-2 cylindrical satellite; diameter: 1.27 m; height: 1.14 m; mass: 165.78 kg	1977-102-B	Europe ESA (ETR)	22 Oct.	280 km 138 317 km	57 h 33.1 min 28.7°	2260.8 MHz 3 W (tracking and telemetry)	

Code name Spacecraft description	International number	Country Organization Site of launching	Date	Perigee Apogee	Period Inclination	Frequencies Transmitter power	Observations
Cosmos-960	1977-103-A	USSR (PLE)	25 Oct.	505 km 549 km	95.1 min 74°		Electronic monitoring satellite
Cosmos-961	1977-104-A	USSR (BAI)	26 Oct.	125 km 302 km	88.5 min 66°		Satellite intercept program. Intercepted <i>Cosmos-959</i> at an altitude of 169 km. Recovered on same day as launched
8th Molnya-3 mass: 1500 kg	1977-105-A	USSR (PLE)	28 Oct.	478 km 40 764 km	735 min 62.8°	1 cm band	Carries apparatus for transmitting television programs and multichannel radiocommunications
Transat magnetically stabilized satellite	1977-106-A	United States USN (WTR)	28 Oct.	1064 km 1109 km	107 min 89.9°		Navigation satellite. Modified <i>Transit</i> satellite
Cosmos-962	1977-107-A	USSR (PLE)	28 Oct.	983 km 1022 km	104.9 min 83°		Navigation satellite
Meteosat cylindrical spin-stabilized satellite; diameter: 2.10 m; height: 3.20 m; mass at launch: 697 kg; mass in orbit: 300 kg; solar cells	1977-108-A	International ESA (ETR)	23 Nov.	34 913 km 35 692 km in geostationary orbit at 0° longitude	1411.5 min 0.7°	468.875; 468.925; 1675.281; 1675.929; 1686.833; 1691.000; 1694.500 MHz (telemetry) 137.080 MHz 6 W (tracking and telemetry)	Meteorological satellite. Objectives: 1) Earth surface and cloud cover scanning every half hour simultaneously in the visible and infrared regions of the spectrum; 2) dissemination to users of pictures and meteorological data derived from the radiometer images; 3) collection of environmental data obtained locally by automatic or semi-automatic stations or by a satellite in a low polar orbit
Cosmos-963	1977-109-A	USSR (PLE)	24 Nov.	1190 km 1220 km	109.3 min 82.9°		Navigation satellite
Cosmos-964	1977-110-A	USSR (PLE)	4 Dec.	180 km 391 km	89.9 min 72.9°		High resolution reconnaissance satellite. Recovered on 17 December 1977
Cosmos-965	1977-111-A	USSR (PLE)	8 Dec.	469 km 520 km	94.4 min 74°		Electronic monitoring satellite
No name	1977-112-A	United States USAF (WTR)	8 Dec.	1102.4 km 1119.4 km	107.5 min 63.4°		

Soyuz-26 3-part spacecraft; 2 spherical habitable modules (orbital compartment and command module) connected in tandem to a cylindrical service module; diameter: 2.70 m; height: 7.10 m; mass: 6680 kg; 2 solar arrays	1977-113-A	USSR (BAI)	10 Dec.	267 km 329 km	90.2 min 51.6°		Two-man spacecraft: Yuri Romanenko, flight commander; Georgi Grechko, flight engineer. Docked with <i>Salyut-6</i> on 11 December 25 h 43 min after launch
No name	1977-114-A	United States USAF (ETR)	11 Dec.	146 km 189 km	87.86 min 29.95°		
Cosmos-966	1977-115-A	USSR (BAI)	12 Dec.	210 km 316 km	89.5 min 65°	19.995 MHz	Reconnaissance satellite. Recovered on 24 December 1977
Cosmos-967	1977-116-A	USSR (PLE)	13 Dec.	973 km 1013 km	105 min 66°		Satellite intercept program. Target satellite
3rd Meteor-2 mass: 2800 kg	1977-117-A	USSR (PLE)	14 Dec.	872 km 906 km	102.5 min 81.2°		Meteorological satellite
CS (Sakura) spin-stabilized satellite; diameter: 2.18 m; height: 3.51 m; mass at launch: 671 kg; mass in orbit: 340 kg; de-spun antenna; solar cells 500 W	1977-118-A	Japan NSDA (ETR)	15 Dec.	in geostationary orbit at 135° E		6 K-band (12.2 to 31.0 GHz) and 2 C-band (3.7 to 6.5 GHz) transponders 2286.5 MHz 1 W (telemetry and tracking)	Communications satellite for experimental purposes. Objective: to provide telephone and colour television transmission between the Japanese islands in the 20-30 GHz band. It is the first satellite to operate in this band
Cosmos-968	1977-119-A	USSR (PLE)	16 Dec.	783 km 822 km	101 min 74°		
Cosmos-969	1977-120-A	USSR (PLE)	20 Dec.	188 km 340 km	89.5 min 62.8°		Reconnaissance satellite
Cosmos-970	1977-121-A	USSR (BAI)	21 Dec.	954 km 1160 km	106.0 min 65.8°		Satellite intercept program: interceptor satellite. Approached target vehicle (<i>Cosmos-967</i>) but not very closely after which <i>Cosmos-970</i> was exploded. The target vehicle was not destroyed

Code name Spacecraft description	International number	Country Organization Site of launching	Date	Perigee Apogee	Period Inclination	Frequencies Transmitter power	Observations
Cosmos-971	1977-122-A	USSR (PLE)	23 Dec.	993 km 1021 km	105 min 83°		Navigation satellite
Cosmos-972	1977-123-A	USSR (PLE)	27 Dec.	722 km 1189 km	104 min 75.8°		Electronic monitoring satellite
Cosmos-973	1977-124-A	USSR (PLE)	27 Dec.	210 km 348 km	89.8 min 71.4°	19.995 MHz	Reconnaissance satellite

AKY = Aktubinsk-Kapustin Yar (USSR)
 BAI = Baikonur (USSR)
 CNR = Consiglio Nazionale delle Ricerche (Italy)
 ESA = European Space Agency
 ETR = Eastern Test Range (United States)
 INTELSAT = International Telecommunications Satellite Organization

ISAS = Institute of Space and Aeronautical Sciences, Tokyo University (Japan)
 KSC = Kagoshima Space Centre (Japan)
 NASA = National Aeronautics and Space Administration (United States)
 NATO = North Atlantic Treaty Organization
 NOAA = National Oceanic and Atmospheric Administration (United States)

NSDA = National Space Development Agency (Japan)
 PLE = Plesetsk (USSR)
 TSC = Tanegashima Space Centre (Japan)
 USAF = United States Air Force
 USN = United States Navy
 WTR = Western Test Range (United States)

Any complementary information or remarks concerning the contents or presentation of this table will be welcome. They should be addressed to: The Editor-in-Chief, Telecommunication Journal, International Telecommunication Union, Place des Nations, CH-1211 Genève 20 (Switzerland).

The following satellites have decayed since the preparation of the "Table of artificial satellites launched between 1957 and 1976" published in February 1977

satellite	international number	decay	satellite	international number	decay
Cosmos-159	1967-46-A	11 November 1977	Cosmos-818	1976-44-A	7 March 1977
PAC-A	1969-68-B	28 April 1977	Salyut-5	1976-57-A	8 August 1977
18th Molnya-1	1971-64-A	19 July 1977	Cosmos-838	1976-63-A	23 August 1977
19th Molnya-1	1971-115-A	13 April 1977	Cosmos-850	1976-84-A	16 May 1977
2nd Molnya-2	1972-37-A	22 March 1977	Cosmos-853	1976-88-A	31 December 1976
21st Molnya-1	1972-81-A	1 November 1977	Cosmos-863	1976-106-A	5 November 1976
23rd Molnya-1	1973-7-A	23 October 1977	Cosmos-865	1976-109-A	13 November 1976
Intercosmos-10	1973-82-A	1 July 1977	Cosmos-866	1976-110-A	23 November 1976
ANS-1	1974-70-A	14 June 1977	China-7	1976-117-A	2 January 1977
Salyut-4	1974-104-A	2 February 1977	Cosmos-879	1976-119-A	22 December 1976
Cosmos-750	1975-67-A	29 September 1977	Cosmos-884	1976-123-A	29 December 1976



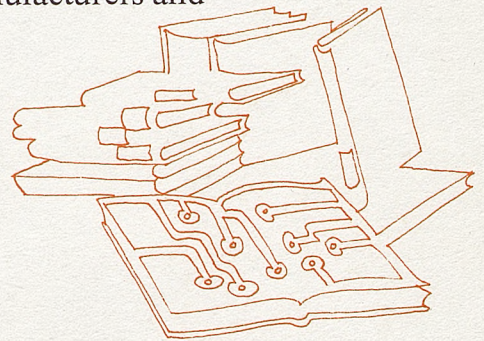
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