

Visually Observed Natural Re-entries of Earth Satellites
Compiled by Ted Molczan
2014 Aug 25

You have reached an early version of my table of re-entry sightings. It remains a work in progress, with frequent revisions. Since 2014 Apr 17, the latest version has been available at the following location:

http://www.satobs.org/reentry/Visually_Observed_Natural_Re-entries_latest_draft.pdf

It can also be accessed via the following web page, along with some individual case reports:

<http://www.satobs.org/decay.html#reentrysightings>

The remainder of this document consists of the complete, unedited earlier version that you linked to.

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Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
1958 Apr 14 01: 55	1957-002A	3	Russia	Sputnik 2	P+R	PS-2 payload attached to 8K71A stage	7790	Pennsylvania: Bryn Athyn Moonwatch; New York: Millbrook Moonwatch, Pittsford; Connecticut: New Haven Moonwatch, Merrow; Caribbean: St. Thomas, Antigua, Martinique, St. Lucia, Barbados, Trinidad, Guyana, 17 ships	L.G. Jacchia, "The Descent of Satellite 1957 Beta One", SAO Special Rpt No. 15; "Barbados, B.W.I.", PBB 5748, 8 Apr 1958; "West Indies", PBB 5760, 13 Apr 1958.
1960 Mar 08 01: 10	1959-011A	25	USA	Discoverer 8	P	Corona C	655	Eastern U.S.: Lake Erie to Key West, FL; Caribbean	"Eastern United States", PBB 6671, 7 Mar 1960; "Agencies in Disagreement On Mystery Lights", APRO Bulletin, Mar 1960: 2; "Strange Series of Fireballs Reported", UFO Inv, Vol. 1, No. 9, Mar 1960: 7
1960 Sep 16 00: 30	1960-010A	54	USA	Discoverer 14	P	Corona C	655	Puerto Rico: San Juan and vicinity; Venezuela.	"Ramey AFB, Puerto Rico", PBB 6972, 15 Sep 1960; "Puerto Rico: Hundreds of Witnesses", "Virgin Islands-Awesome Spectacle", FSR, Jan-Feb 1961, Vol. 7, No. 1: 27, 29.
1962 Feb 20 23: 05	1962-003B	241	USA	Friendship 7 r	R	Atlas D	3400	South Africa: seen from Kimberley; fragment found in Aliwal North.	"Aliwal North, South Africa", PBB 7811, 21 Feb 1962; "Strange Lights Over Kimberley", FSR, May-Jun 1962, Vol. 8, No. 3: 26.
1962 Jul 07 11: 10	1962-026A	315	USA	Corona 9037	P	Corona M	1150	Antarctica: Hallett Station (72°20' S, 170°00' E)	"Hallett Station, Antarctica", PBB 7986, 7 Jul 1962; "UFO Color Photo In Antarctica", APRO Bulletin, May 1962: 3; "New Zealand: Cape Hallett object", FSR, Sep-Oct 1962, Vol. 8, No. 5: 23; RAAF File A703 580 1-1 Part 3: 26-27.
1962 Aug 13 03: 36	1962-036B	364	Russia	Vostok 3 r	R	8K72KE	1440	Gulf of Mexico: Coast Guard Cutter Triton at 19°57' N, 90°38.5' W, SS Carl Schmedeman at 23°22' N, 88°17' W; Nicaragua: Managua	"Gulf of Mexico", PBB 8054, 12 Aug 1962; "Managua, Nicaragua", PBB 8056, 12-14 Aug 1962; "Info Only: Santiago, Chile", PBB 8061, 13 Aug 1962.
1962 Sep 05 09: 50	1960-005A	34	Russia	Sputnik 4	P	PO	1477	Iowa: KC-135A over 42°40' N, 96°23' W (near Sioux City); Minnesota: B52E over 43°20' N, 93°15' W (100 nm S of Minneapolis); Wisconsin: Abrams, Eagle River, Manitowoc (debris recovered), Maple, Merrill, Milwaukee Moonwatch Team, Three Lakes, Tomahawk, Wausa	C.A. Lundquist, R.C. Vanderburgh, et al., "Re-Entry and Recovery of Fragments of Satellite 1960 ε1", SAO Special Rpt No. 109, 21 Dec 1962; "Manitowoc, Wisconsin North Central U.S.", PBB 8098, 5 Sep 1962.
1963 Oct 30 15: 43	1963-040B	676	Russia	Cosmos 20 r	R	8A92E	1440	Latvia: Liepaja, Riga; Belarus: Minsk; Ukraine: Kiev Oblast, Zhitomir Oblast; Russia: Taganrog, Rostov-on-Don	http://aeninform.org/ufo-navigator/bolid-30-oktyabrya-1963-goda; www.jamesoberg.com/10-30-1963_kiev.pdf
1963 Dec 02 13: 07	1963-045B	690	Russia	Cosmos 22 r	R	11A57I	2350	Indian Ocean: S.S. Raneer at 11°30' N, 97°10' E	"11.3N 97.10E Indian Ocean", PBB 8638, 2 Dec 1963.
1964 Mar 27 01: 31	1963-050A	707	Russia	Cosmos 23	P	Omega-1	347	North Dakota, Minnesota, Wisconsin	Spiral Decay And Sensor Calibration Differential Correction Programs, Vol. I Program Development, USAF, 31 Dec 1965: 19.
1964 May 26 04: 04	1964-022A	796	USA	Corona J-8	P	Corona J	1500	Venezuela: observed from Maracaibo; debris found near La Fria.	U.S. National Reconnaissance Office
1964 Aug 01 19: 12	1964-039B	834	Russia	Cosmos 35 r	R	8A92E	1440	Western Australia: Warremboo Creek, Wittenoom, possibly Carnarvon	RAAF Files A703 580 1-1 Part 4: 182-191; E1327 5-4 Air Part 1: 121-122; Spiral Decay And Sensor Calibration Differential Correction Programs, Vol. I Program Development, USAF, 31 Dec 1965: 19.

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1964 Oct 20 03: 50	1964-028A	803	Russia	Cosmos 31	P	DS-MT	325	Ontario: Ottawa	Spiral Decay And Sensor Calibration Differential Correction Programs, Vol. I Program Development, USAF, 31 Dec 1965: 23.
1965 Mar 17 02: 17	1965-019B	1259	USA	KH 7-16 r	R	Agena D	~750	Maine: pilots; Nova Scotia: Doctor's Cove, Halifax, Woodlawn	"Halifax, Nova Scotia & Canada, Doctors Cove, Nova Scotia", PBB 9316, 16 Mar 1965
1965 Jul 06 21: 48	1965-049B	1423	Russia	Cosmos 69 r	R	11A57I	2350	Atlantic Ocean: T.T. Jawesta at 24°40' N, 31°15' W	"Cigar' Passes A Few Hundred Feet Above Norwegian Ship", FSR Sep-Oct 1966, Vol. 12, No.5: 32 (translated from Norwegian newspaper Moss Dagbled of Dec 27, 1965).
1965 Aug 24 16: 33	1965-068B	1517	USA	Gemini-Titan 5 r	R	LR91AJ5	2400	South Africa: Baker-Nunn camera at Olifantsfontein; Pretoria Moonwatch	L.H. Solomon, "Observations of the GT-5 Rocket-Body Reentry - Preliminary Analysis", SAO Special Rpt No. 191.
1965 Oct 29 18: 00	1965-079A	1615	USA	Corona JX-28	P	Corona J	1500	Switzerland: Zurich Moonwatch; Germany: Moonwatch at Berlin, Bochum, Eilenburg and Rodewisch; Denmark: Copenhagen Moonwatch (Tisvildeleje, Nejlinge), Rungsted; Sweden: Borlänge; Finland: central and eastern	W.P. Hirst, "The Decay of Satellite 1965-79A", SAO Special Rpt No. 214, 1966; "Sweden-Flying Train", FSR, Vol. 12, No. 4, Jul-Aug 1966: iv; (UPI), "Flying Objects Over Finland", The Long Island Press, USA, Nov 1, 1965.
1965 Dec 06 19: 55	1965-099C	1811	Russia	Luna 8 BOZ	H	8K78I BOZ	100?	Spain: Arroyomolinos de León, Montemolín. Pieces recovered.	Vicente-Juan Ballester Olmos, UFO Fotocat Blog (2009/04/13)
1966 Jan 11 12: 00	1965-006B	984	Russia	Cosmos 53 r	R	S1	840	N. Pacific: SS Morgantown Victory at 26°58' N, 154°46' E	"26.58N 154.46E (Pacific)", PBB 10172, 11 Jan 1966.
1966 Apr 30 01: 47	1964-005A	744	USA	Saturn SA-5	P+R	Saturn S-IV + Ballast	17100	Peru: visual observation from Arequipa Baker-Nunn site; Brazil: debris found.	SAO Optical Satellite-Tracking Program, Semiannual Progress Report No. 14: 2.
1966 Nov 30 11: 45	1966-107A	2601	Russia	Cosmos 133	P	Soyuz 7K-OK	6450	Japan	Pierre Neirinck, private correspondence.
1966 Dec 29 18: 53	1966-065A	2348	USA	Gemini 10 Agena	P	TDA 1A	~1500	Australia: MV Lake Boga at 14°08' S, 144°29' E (Coral Sea off Pison Island)	RAAF File A703 580 1-1 Part 7: 311-315, 321, 331-33.
1966 Dec 30 08: 06	1966-080A	2414	USA	Gemini 11 Agena	P	TDA 6	1829	South Pacific: CP Air FL421 near 6° S, 81°42' W	Scientific Study Of Unidentified Flying Objects, The University of Colorado, 1968: 280-282; "Info Only: St. Boniface, Manitoba", PBB 11245, 21 Mar 1967.
1967 Jan 26 03: 13	1967-005B	2658	Russia	Cosmos 139 r	R	8S692	3700	Quebec: Sherbrooke (airliner); New Jersey: Manahawkin; New York: Au Sable Forks, Jay, Plattsburgh; Pennsylvania: Morrisville, Yardley (aircraft)	"Over Yardley, Pa./Plattbury (sic) AFB, New York", PBB 11297, 24 Jan 1967; "Morrisville, Penn.", PBB 11303, 25 Jan 1967; "Manahawkin, New Jersey", PBB 11305, 26 Jan 67.
1967 Feb 16 04: 04	1967-012B	2672	Russia	Cosmos 141 r	R	11A57I	2350	Alaska; California: San Diego; Pacific: USN Shearwater at 31°28' S, 130°32' W, and other ships and planes	"Los Angeles, California", PBB 11380, 15 Feb 1967; (AP), "Fire in Sky From Soviet Space Junk", St. Joseph News-Press, Feb 16, 1967: 1A.
1967 Apr 16 11: 08	1967-033B	2751	Russia	Cosmos 155 r	R	11A57I	2350	Korea: Youngson, Kunsan, Osan, Seoul, Cheju-Do	"Info Only: Korea", PBB 11683, 16 Apr 1967.
1967 Jun 25 02: 05	1967-063A	2852	Russia	Cosmos 167	P	4V-1	6560?	Argentina, Paraguay	"Flap' Begins In Earnest - Fleets Over South America", APRO Jul-Aug 1967: 1.

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1967 Jul 18 00: 14	1967-069C	2880	Russia	Cosmos 169 r	R	8S692	3700	England: Deal; France: ferry off Dieppe, Paris; Belgium; Luxembourg; Germany: three USAF bases; Switzerland; Italy: northern Alpines, Bologna	"Info Only: Thousands See UFOs Flashing Over Europe - Journal Herald", Memo for the Record in PBB 11893, 19 Jul 1967; (REUTERS), "Europe bustling with UFO reports", The Phoenix, Jul 18, 1967; "The 'Fleets' Over Europe", APRO Jul-Aug 1967: 4.
1967 Aug 07 02: 10	1966-075B	2399	USA	Pioneer 7 r1	R	DSV-3E-3	785	Mexico: Guanajuato, Tampico, Mexico City, Veracruz	W. Blaney, "UFO Sighting in Mexico", MUFON UFO Journal Jan 1981: pg.3
1967 Sep 22 19: 10	1967-091C	2964	Russia	Cosmos 179 r	R	8S692	3700	Australia: Victoria: Donald, Watchem, Maffra; NSW: Adaminaby	RAAF File A703 580 1-1 Part 8: 102-103, 109-114, 144-148.
1967 Oct 25 02: 46	1967-061A	2848	Russia	Cosmos 166	P	DS-U3-S	360	Louisiana: Lake Charles; Texas: Brownsville, Edinburg	"Observers Notebook: Reentry of Cosmos 166", Sky and Telescope, Feb 1968: 128; AP, "Russian Spacecraft Burns in Texas Sky", The Millwaukee Journal, Oct 25, 1967.
1967 Oct 28 18: 00	1967-106C	3018	Russia	Cosmos 187 r	R	8S692	3700	India: Belda	"India: Huge Object Over Midnapore", FSR Vol. 14, No. 2, Mar-Apr 1968: 34.
1967 Nov 09 12: 55	1967-110B	3027	Russia	Cosmos 190 r	R	11A571	2350	Thailand: USAF aircraft, 150 guests of outdoor movie theatre at Udorn RTAFB, Lampang	"Info Only: UFO Investigation Report (Your ltr, 18 Nov 67)", PBB 12124, 9 Nov 1967.
1968 Jan 19 17: 29	1967-083B	2936	USA	Biosatellite 2 r	R	DSV-3E-3	785	Australia: SA: Banksia Park (Adelaide); NSW: Wagga Wagga, Ashfield (Sydney). Debris found near Mudgee.	RAAF File A703 580 1-1 Part 9: 152, 170.
1968 Mar 04 02: 48	1968-013C	3136	Russia	Zond 4 SOZ	H	SOZ	~100	Alabama: Florence; Tennessee: Hendersonville, Nashville, Oliver Springs; Kentucky: Elizabethtown, Lexington, London, Owensboro; Indiana: Gary, Shoals; Ohio: numerous ground and air; West Virginia: Bethany, Morgantown; Virginia: Lynchburg, Wytheville; Maryland: aircraft; Pennsylvania: numerous ground and air	"Northeastern U.S.", PBB 12253A, 3 Mar 1968; "Observers Notebook: Slow-moving fireballs", Sky and Telescope, May 1968: 331.
1968 Mar 24 04: 27	1962-067F	520	USA	Poppy 1 r	R	Agena D	~750	Atlantic: SS Brunsberg at 20°40' N, 55°15' W	"Atlantic (20.40N - 55.15W)", PBB 12287, 23 Mar 1968.
1968 Apr 19 01: 05	1968-030B	3194	Russia	Cosmos 213 r	R	11S510	2410	Atlantic: SS Louisiana Sulphur at 24°14' N, 83°32' W	"24.14N - 83.32W (Atlantic)", PBB 12324, 19 Apr 1968.
1968 May 11 06: 57	1968-035B	3211	Russia	Molniya 1-8 r	R	11S510	2410	Florida	"Returning Russian Rocket Stages Show Over Cape", UPI, 11 May 1968; "UFO Reports On Firey End of Russian Rocket", AP, 11 May 1968.
1968 Jul 16 07: 19	1968-052A	3296	USA	Corona J-47	P	Corona J	1500	Alberta: Huallen; NWT: Fort Resolute, Fort Smith, Yellowknife	NRC Non-Meteoritic Sighting N68/058, N68/059, N68/064, N68/102.

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1968 Nov 20 17: 57	1968-102B	3543	Russia	Cosmos 253 r	R	11A57I	2350	England; pieces picked up at Southend.	Study Of The Decay And Recovery Of Orbiting Artificial Space Objects - Semiannual Progress Report No. 10, May 1969: B-4; R. Futaully, "La Chute de la Fusée de Cosmos 253 (1968-102B)", L'Astronomie, Vol. 83, Sep 1969: 366; C. Bowen, "Sky Spectacular", FSR, Vol. 15, No. 1, Jan/Feb 1969: 31; RAE Table of Earth Satellites.
1968 Dec 27 14: 54	1968-109B	3596	USA	HEOS 1 r	R	DSV-3E-3	785	SAO Station atop Mt. Haleakala on the Island of Maui, Hawaii.	Study Of The Decay And Recovery Of Orbiting Artificial Space Objects - Semiannual Progress Report No. 10, May 1969: B-2.
1968 Dec 28 15: 09	1968-112A	3604	USA	Corona J-50	P	Corona J	1500	Australia: Tasmania, Victoria	RAAF File A703 580 1-1 Part 10: 3-28, 142.
1969 Jan 07 11: 08	1968-117B	3625	Russia	Cosmos 261 r	R	S1M	840	Japan: Chiba, Yamanashi, Saitama, Kanagawa, Niigata	Pierre Neirinck, private correspondence; "20 Fireballs in Night Sky Reported Seen Near Tokyo", Skylook, No. 16, Mar 1969: 9 (reprint from Asahi Evening News, Tokyo, Jan. 8, 1969).
1969 May 05 02: 58	1969-035D	3888	Russia	Molniya 1-11 BOZ	H	11S510 BOZ	100?	Colombia: Cartagena	"UFOs Reported Over Caribbean", APRO Bulletin May-Jun 1969: 6.
1969 Aug 27 03: 54	1969-072B	4075	Russia	Cosmos 294 r	R	11A57I	2350	California, Nevada, Arizona	"California", PBB 12716, 26 Aug 1969; "Report Light in Sky Was Soviet Rocket", Skylook, No. 23, Sep 1969: 22 (from St. Louis Post-Dispatch).
1970 Oct 24 08: 10	1970-088C	none	Russia	Zond 8 SOZ	H	SOZ	~100	British Columbia, possibly Manitoba	NRC Non-Meteoritic Sighting N70/074, N70/078.
1970 Dec 09 16: 35	1970-104B	4788	Russia	Cosmos 383 r	R	11A57I	2350	Western Australia: City Beach	RAAF File A703 580 1-1 Part 14: 141-145.
1971 Sep 07 04: 22	1971-073C	5450	Russia	Luna-18 KT SOZ	H	SOZ	~100	Montana: Wyola; Wyoming: Big Horn, Sheridan	"UFOs in Formation Over Wyoming", Skylook, No. 50, Jan 1972: 6.
1971 Oct 03 09: 14	1971-081B	5487	Russia	Cosmos 441 r	R	11A57I	2350	Japan	Vicente-Juan Ballester Olmos - UFO FOTOCAT BLOG
1972 Jan 01 03: 21	1971-090B	5564	Russia	Cosmos 453 r	R	S1M	840	Norway: Askoy, Moss, Lillehammer; Sweden	"Scandinavian Reports", APRO Bulletin, Jan-Feb 1972: 1; "New Year UFO Formation", FSR, Vol. 18, No. 1: 31; Norway Fotocat (http://www.ufo.no/files/norway.xls)
1972 Feb 09 01: 50	1971-117B	5737	Russia	Cosmos 469 DU	H	US-A DU	?	Argentina: Airliner crew over San Nicolas and Ramallo, ground-based: Mar del Plato, Bahia Blanca	"Argentinian UFOs", APRO Bulletin, Jan-Feb 1972: 7.
1972 Apr 02 12: 58	1972-023C	5921	Russia	Cosmos 482 BOZ	H	11S510 BOZ	100?	New Zealand: South Island. Debris found near Ashburton and Eiffelton.	RNZAF File AIR 244 / 10 / 1 Volume 1: 79-85.
1972 Jul 27 01: 25	1972-056B	6115	Russia	Cosmos 503 r	R	11A57I	2350	Brazil: Campos, Vitoria	"Soccer Crowd Observes UFO Formation", APRO Bulletin, Vol. 21, No. 1, Jul-Aug 1972: 8; "Campos Soccer Case", APRO Bulletin, Vol. 21, No. 2, Sep-Oct 1972: 4.

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1972 Sep 22 11: 00	1972-070B	6187	Russia	Cosmos 518 r	R	11A57I	2350	Japan: Okinawa	ID by P. Neirinck, private correspondence; "Object Near Okinawa", APRO Bulletin, Vol. 21, No. 2, Sep-Oct 1972: 5; B. Sparks, "Primary Analysis of 22 September 1973 Western Pacific AP", APRO Bulletin, Vol. 21, No. 4, Jan-Feb 1973: 11; "UFO Sighted off Okinawa", Skylook, Nov 1972: 6; "JAPAN: Pacific UFO off Okinawa", FSR, Vol. 18, No. 6, Nov-Dec 1972 p.31; "Okinawa UFO Photographed", FSR, Vol. 18, No. 6, Nov-Dec 1972 p.32; "UFO Photographed over Okinawa", FSR Case Histories Suppl., No. 12, Dec 1972: 6;
1973 Apr 28 16: 02	1973-024B	6441	Russia	Cosmos 555 r	R	11A57I	2350	Western Australia: Derby to Kalgoorlie	RAAF Files A703 580 1-1 Part 25: 4-64; A703 554 1-10 Part 3: 29-34.
1973 Aug 22 03: 50	1973-045B	6723	Russia	Molniya 2-6 r	R	11S510	2410	Kansas, Nebraska, Iowa, Missouri and Oklahoma	"Light in Sky was Russian Rocket", St. Joseph Gazette, Aug 23, 1973: 7A; "Soviet Satellite Disintegrates over Kansas", Skylook, No. 71, Oct 1973: 14.
1973 Sep 06 04: 19	1973-062B	6810	Russia	Cosmos 583 r	R	11A57I	2350	Colorado, New Mexico, Texas	"Fireball Identified as Rocket", NY Times, Sep 7, 1973.
1974 Jul 09 21: 50	1974-049B	7355	Russia	Cosmos 664 r	R	11S510	2410	South Africa: Port Elizabeth	C. Hind, "Comment", UFO Afrinews, No. 1, Jul 1988: 2.
1974 Oct 15 10: 45	1966-110B	2609	USA	ATS 1 r	R	Agena D	~750	Western Australia: Fitzroy Crossing; Northern Territory: Katherine	RAAF File E1327 5-4 Air Part 6-7: 38.
1975 Jan 15 08: 52	1974-106F	7602	Russia	Cosmos 701 KDU	H	KDU	375	Japan	Pierre Neirinck, private correspondence.
1976 Sep 07 06: 07	1976-090B	9406	Russia	Cosmos 854 r	R	11S510	2410	Washington, Utah	"UPI: Meteor streaks across state", "Meteor reports received", Ellensburg Daily Record, Sep 7, 1976.
1976 Sep 19 01: 24	1976-074C	9051	Russia	Molniya 1-35 BOZ	H	11S510 BOZ	100?	Morocco: Agadir, Essaouira, Kalaa-Sraghna, Casablanca, Rabat, Kenitra, Meknes, Fez Region	T. Molczan, "Moroccan UFO of Sep 1976 Correlates With Satellite Re-entry", SeeSat-L mailing list, Oct 5, 2012.
1977 Jan 02 05: 29	1976-117A	9587	China	FSW-0 2	P	FSW	1200?	Quebec: Gagnon, PT Menier, Sept Isles	NRC Non-Meteoritic Sighting N77/001.
1977 Oct 16 16: 51	1974-103A	7587	Russia	Cosmos 699	P	US-P	3000	Japan	Pierre Neirinck, private correspondence.
1978 Jan 24 11: 55	1977-090A	10361	Russia	Cosmos 954	P	US-A	~4000	Canada: Northwest Territories: Yellowknife; debris found, some of it radioactive	"Satellite looked 'like a jet on fire'; witness", Yellowknifer, January 26, 1978: 8.
1978 Mar 17 20: 28	1978-029C	10737	USA	KH 9-14 r	R	LR91AJ11	2650	South Africa: Durban Coast, Darnall on the Natal North Coast	J.C. Bennett, "Fireballs In 1977/78", MNASSA, Vol. 37: 118.
1978 May 26 12: 48	1978-052B	10916	Russia	Cosmos 1010 r	R	11S510	2410	Western Australia: Hyden	Bureau of Meteorology File PP956-1 45-38: 124.
1978 Dec 31 19: 12	1978-123B	11171	Russia	Cosmos 1068 r	R	11S510	2410	Europe; pieces picked up near Hanover.	RAE Table of Earth Satellites
1979 Feb 27 20: 24	1979-018B	11282	Russia	Soyuz 32 r	R	11S510	2410	Ship at 15.5 S, 52.2 E.	RAE Table of Earth Satellites

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1979 Mar 25 05: 34	1969-107A	4273	Russia	Cosmos 315	P	Tselina-OM	900?	California, Oregon	(AP), "5 states see firey satellite", The Spokesman-Review, Mar 26, 1979; (CP), "Fallen Cosmos 'clean'", Ottawa Citizen, Mar 26, 1979; D. Freitas, "Lights in The Night", The Daily Union Democrat, Mar 27, 1979; "Flying Object Still Unidentified", The Daily Union Democrat, Mar 28, 1979;
1979 Apr 18 22: 48	1979-033B	11334	Russia	Cosmos 1094 r	R	11S692	4800	Denmark and Holland.	RAE Table of Earth Satellites
1979 Jul 11 16: 33	1973-027A	6633	USA	Skylab 1	P	Skylab 1	74783	SW Australia: Esperance; pieces picked up.	RAE Table of Earth Satellites
1979 Aug 20 01: 45	1979-070B	11475	Russia	Molniya 1-44 r	R	11S510	2410	Ontario: Hanmer, Copper Cliff, Spanish River, Sudbury, aircraft all over northern Ontario; Quebec: Lac des Jardins	NRC Non-Meteoritic Sighting N79/72, N79/73, N79/74.
1979 Oct 05 07: 32	1979-087B	11562	Russia	Ekran 4 r	R	8S812	3500	Washington; Idaho: Moscow; British Columbia: Kamloops, Prince George, Vancouver; Alberta: Calgary, Lethbridge, Whitecourt; Saskatchewan: Regina	L. Taylor, "Calgary front and centre for rocket's firey entry", The Calgary Herald, Oct 5, 1979; (CP), "UFO identified as Russian rocket", The Star-Phoenix, Saskatoon, Sask., Oct 5, 1979: A2; P. Baechler, "UFO - The Martians aren't coming, but the Russians are, in a way", Lewiston Morning Tribune, Lewiston, ID/Clarkston, WA, Oct 6, 1979: 1A; NRC Non-Meteoritic Sighting N79/97, N79/98, N79/101, N79/102, N79/114, N80/17.
1980 Jun 11 11: 57	1980-046B	11828	Russia	Cosmos 1185 r	R	11S510	2410	Western Australia: Esperance, Kalgoorlie	Bureau of Meteorology File PP956-1 45-38: 10-13, 40-45.
1980 Aug 26 14: 46	1980-070B	11939	Russia	Cosmos 1207 r	R	11S510	2410	China: Shanghai; provinces of Jiangsu, Zhejiang, Anhui, Jiangxi and Fujian; Taiwan Straits	"Widely reported UFO identified as meteorite", FSR, Vol. 27, No. 5, Mar 1982: 18.
1980 Sep 12 12: 00	1980-034C	11969	Russia	Cosmos 1176 DU	H	US-A RLS	?	Japan	Pierre Neirinck, private correspondence.
1980 Sep 17 04: 15	1973-010B	6374	Russia	Cosmos 549 r	R	S3M	1435	Nebraska; Tennessee: Memphis; Florida: Orlando, Tampa, counties of Lafayette, Sumter, Lake and Orange	(AP), "Fireball said debris of Soviet rocket", The Phoenix, Sep 19, 1980; (AP), "Bright light Soviet rocket?", The Tuscaloosa News, Sep 19, 1980.
1980 Nov 05 03: 00	1980-089B	12055	Russia	Cosmos 1220 r	R	11S692	4800	Washington: Spokane; Idaho: Bonners Ferry, Walla Walla; Alberta: Millarville, Priddis; Saskatchewan: Foam Lake, Herbert, Lesley, Regina, Rush Lake, Swift Current, Tussmell, Willowbrook	(AP), "Russian rocket stirs UFO reports", The Telegraph, Nov 7, 1980; NRC Non-Meteoritic Sighting N80/170-174, N80/176-179, NUFORC
1980 Dec 13 17: 31	1980-092B	12067	Russia	Molniya 1-48 BOZ	H	11S510 BOZ	100?	Japan	RAE Table of Earth Satellites
1980 Dec 25 21: 07	1975-062B	8010	Russia	Cosmos 749 r	R	S3M	1435	Morocco: Tineghir; Portugal; Spain; France; England: Sussex	J. Mason, H. Miles, "Re-entry of 'Cosmos 749' Rocket on 1980 December 25", J. British Astronomical Assoc., 1981, 91, 6: 566; RAE Table of Earth Satellites; Pierre Neirinck, private correspondence

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1981 Jan 05 15: 58	1976-031B	8795	Russia	Cosmos 812 r	R	S3M	1435	Yukon: Whitehorse, Destruction Bay	M. Padgham, "Lights over Yukon pegged as plunging Soviet Rocket", Edmonton Journal, Jan 7, 1981: B4.
1981 Jun 26 14: 13	1981-061B	12565	Russia	Ekran 21 casing	R	Sredniy perekhodnik	700	Western Australia: Albany, Bunbury, Esperance	Bureau of Meteorology File PP956-1 45-38: 4-7
1982 Feb 24 04: 09	1982-011B	13064	Russia	Cosmos 1338 r	R	11S510	2410	Washington: Seattle; Idaho: Bear Lake and Franklin counties, Montpelier; Wyoming, North Dakota: pilots; South Dakota: pilots; Nevada: Jiggs, Las Vegas; Utah: Ogden, Salt Lake City	RAE Table of Earth Satellites; G. Tibbits (AP writer), "Rocket leaves no trace after fiery spectacle", Deseret News, Feb 26-27, 1982: B3; (AP), "NORAD Didn't Think Warning of Re-Entry Was Necessary", Spartanburg Journal (SC), Feb 25, 1982: B4; (AP), "Bright Oobject in Skies A Soviet Rocket", The Times-News, Hendersonville, NC, Feb 24, 1982: 16.
1983 Apr 30 06: 15	1983-039B	14040	Russia	Cosmos 1457 r	R	11S510	2410	British Columbia, Washington, Idaho.	Tri City Herald
1983 Dec 02 18: 47	1983-118B	14533	Russia	Gorizont 8 r	R	8S812	3500	Czech Republic, Poland, Belarus, Ukraine	B. Rzepecki, "UFO Reports from Poland, VI An Important Sighting Over Southern Poland on December 2, 1983", FSR, Vol. 33, No. 1, March Quarter, 1988: 7-8; "1983 - December 2", Chronology of UFO sightings over Kiev, p.3 (cites: D. Lavrov. Second Millennium: Chronicle of anomalies // gas. "Today", 23.12.2000) at http://sol-war.com.ua/files/Chronology_of_UFO_sightings_over_Kiev.pdf .
1984 Feb 04 05: 48	1983-123C	14572	Russia	Molniya 3-35 BOZ	H	11S510 BOZ	100?	Argentina: Greater Buenos Aries, La Plata, Cordoba, Rosario, Santa Fe	"UFO Fleet", Tiempo Argentina (Buenos Aires), Feb 5, 1984 and "Challenger Mission?", La Nacion (Buenos Aires), Feb 6, 1984 reprinted and analyzed in MUFON UFO Journal, No. 203, Mar 1985: 14-15.
1984 Apr 28 04: 30	1984-040B	14939	Russia	Cosmos 1549 r	R	11S510	2410	Canada; USA: Utah, Idaho, Oregon	Staff, "Fireball blazes across Utah skies", Deseret News, Apr 28, 1984: A-1; (AP), "Rocket breaks up over U.S.", The Windsor Star, Apr 28, 1984: A9; (UPI), "UFO was Soviet rocket body", Record-Journal, Apr 29, 1984: A-3.
1984 May 21 01: 55	1984-014E	14918	Russia	Soyuz T-10 orbital module	H	Bitovoy otsek	1260?	Texas, Tennessee, Kentucky, Indiana, Ohio, Michigan	(AP), "NORAD says bright streak was junk from falling Soviet satellite", Daily News, Middlesboro, Kentucky, May 23, 1984: 1. D. Wright, H. Beech, "Re-entry/UFOs", MUFON UFO Journal, No. 198, Oct 1984: 15-16; D. Wright, H. Beech, "Re-entry Re-examined", MUFON UFO Journal, No. 199, Nov 1984: 5-6.
1984 Jul 28 03: 00	1984-055B	15028	Russia	Cosmos 1569 r	R	11S510	2410	Arkansas; Mississippi; Tennessee; Kentucky: Louisville, Lexington, London, Dry Ridge; Illinois; Indiana: Evansville, Indianapolis; Ohio; Pennsylvania	(AP), "A Soviet rocket called source of lights in sky", Kentucky New Era, Jul 28, 1984: 2A; S. Gordon, "UFO Sighting by Pilot Over Pennsylvania", MUFON UFO Journal, No. 200, Dec 1984: 5.
1985 Jan 11 02: 45	1983-049B	14088	Russia	Cosmos 1465 r	R	S3M	1435	Bahamas	R. Attrill, "Lights in the Sky - a UFO above the Bahamas", at www.motygido.co.uk/bahamas_lights.htm
1985 Jan 25 06: 14	1985-008A	15492	Russia	Cosmos 1625	P	US-PM	3000	Shetland at 06:18 UTC.	RAE Table of Earth Satellites

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Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
1985 Jun 09 17: 02	1973-097A	6958	Russia	Molniya 1-26	P	Molniya-1	1650	South Africa	RAE Table of Earth Satellites
1985 Jun 21 04: 04	1984-002G	14929	Russia	Cosmos 1530 KDU	H	KDU	375	Ohio, Virginia, Georgia, Pennsylvania, Michigan.	(AP), "Soviet Satellite Debris Spark Vivid Sky Show", Schenectady Gazette, Jun 22, 1985; S. Gordon, "Penn State Sighting", MUFON UFO Journal, No. 212, Dec 1985: 8. RAE Table of Earth Satellites
1985 Jun 25 02: 09	1985-040C	15740	Russia	Molniya 3-39 BOZ	H	11S510 BOZ	100?	Florida: Tallahassee, Jacksonville, Orlando, Tampa and Gainesville; Georgia; North Carolina: Wilmington; South Carolina.	RAE Table of Earth Satellites J. Braunstein, "Re-Entering Space Junk Sighted Across Florida", AP, Jun 25, 1985.
1985 Sep 20 05: 36	1985-081B	16052	Russia	Soyuz T14r	R	11S510	2410	California: Sacramento, Stockton, 12 counties; Oregon	"Californians, Oregonians Sight Blazing Debris of Soviet Rocket Launch", Associated Press, Sep 20, 1985.
1985 Oct 08 10: 53	1985-085B	16089	Russia	Cosmos 1685 r	R	11S510	2410	Japan	Pierre Neirinck, private correspondence.
1985 Oct 30 07: 26	1985-101B	16212	Russia	Cosmos 1699 r	R	11S510	2410	South-central Alaska: Anchorage, Wasilla	R. Mauer, "Those lights were firey fall of Soviet rocket", Anchorage Daily News, Oct 31, 1985.
1986 Feb 24 04: 48	1986-017B	16610	Russia	Mir r	R	8S812	3500	Trans-Atlantic airliner, from 48 N, 44 W, 11300 m.	RAE Table of Earth Satellites
1986 Jun 02 02: 15	1986-040B	16738	Russia	Cosmos 1746 r	R	11S510	2410	Florida: Jacksonville to Key West	A. Rowland, "Fireball Neither UFO Nor Meteor Shower: Falling Soviet Rocket", Associated Press, AP News Archive, Jun. 2, 1986 1:36 AM ET; A. Rowland, "Sky Show Over Florida Was Part Of Soviet Rocket, NORAD Says", Associated Press, AP News Archive, Jun. 2, 1986 4:34 AM ET; (AP), "Russian Rocket Lights Up Night", Ocala Star-Banner, Jun 2, 1986: 1A.
1986 Nov 06 04: 16	1986-068C	16936	Russia	Molniya 1-68 BOZ	H	11S510 BOZ	100?	California: Antelope Valley, Barstow, Canyon Country, Needles, Oakland, Palm Springs, San Diego; Arizona: Phoenix; New Mexico: Albuquerque; Utah; Nevada: Carson City, Las Vegas; Texas: El Paso	"Falling Soviet Satellite Creates Fireball In West", Associated Press AP News Archive Nov. 6, 1986 2:42 AM ET; "Falling Soviet Satellite Creates Fireball", Associated Press AP News Archive Nov. 6, 1986 4:16 AM ET; "Soviet Rocket Booster Lights Up Western Skies in Fiery Re-Entry", Associated Press AP News Archive Nov. 6, 1986 8:00 PM ET; (UPI), "Fireball probably was Soviet rocket", The Bryan Times, Phoenix, AZ, Nov 6, 1986: 13;
1986 Nov 19 05: 00	1986-087B	17069	Russia	Cosmos 1792 r	R	11S510	2410	Washington: southeast; Idaho: Grangeville, Lewiston	"Aerial Display As Soviet Booster Rocket Re-Enters Atmosphere", Associated Press, AP News Archive Nov. 19, 1986 11:32 AM ET.
1987 Aug 21 12: 57	1987-067B	18307	China	China 20 r	R	CZ-2C Stage 2	4000	Perth to Marble Bar, Western Australia	RAE Table of Earth Satellites
1987 Aug 27 10: 56	1987-039D	18001	Russia	Cosmos 1843 deb	H	KDU part	?	China: Shanghai, Island of Shengsi, Fuzhou	G. Creighton, "UFO Chase in China", FSR, Vol. 32, No. 6, Nov 1987: 18-23.
1987 Sep 02 00: 35	1987-071B	18319	Russia	Cosmos 1873 r	R	11S772	9300	Barbados, Grenada, Guadeloupe, Martinique, St. Lucia; Br. Airways and LIAT pilots	US State Dept correspondence per http://www.noufors.com/Documents/moondust_42pages_nov73.pdf

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Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
1987 Oct 11 09: 46	1987-086B	18397	Russia	Cosmos 1890 r	R	11S692	4800	Pacific Ocean: pilots from equator to N. California; Northern California; Western Nevada; Southern Oregon	(AP), "'Light' Was a Burning Rocket", Sarasota Herald-Tribune, Oct 12, 1987; (AP), "Disintegrating Rocket Provides Lights Show", The Press-Courier, Oct 12, 1987: 7; "Soviet Rocket Lights Up Sky During Re-Entry", Daily News of Los Angeles, Oct 12, 1987: 3A.
1987 Oct 26 15: 21	1987-089B	18433	Russia	Cosmos 1893 r	R	11S510	2410	Siding Spring Observatory to Tamworth, New South Wales, Australia	RAE Table of Earth Satellites; http://www.auforn.com/1987.htm
1987 Nov 28 12: 43	1987-096B	18576	Russia	Cosmos 1897 r	R	8S812	3500	Japan	RAE Table of Earth Satellites
1987 Dec 13 02: 52	1987-100B	18632	Russia	Raduga 21 r	R	8S812	3500	Western Canada; Montana; Nebraska: Lincoln; Colorado: Greeley; Texas: Fort Worth; Kansas: Galena, southeast; Missouri: Lake of the Ozarks; Arkansas: Beaver Dam, Fayetteville, Pea Ridge, Siloam Springs; Illinois: southern; Kentucky: Marion, western; Tennessee: northern; Mississippi; Florida: Gulf coast	RAE Table of Earth Satellites; (AP), "Light Show - Dying Soviet Rocket Re-Enters Atmosphere, Leaving Fiery Trail in Wake", The Albany (Ga.) Herald, Dec 14, 1987: 14A; L. Walsh (with AP info and photo), "UFO-like glare of Soviet rocket gives many a flight to remember", The Pittsburgh Press, Dec 14, 1987: A8; (AP), "Light Streaks in Sky Caused by Breakup Of a Soviet Rocket", The New York Times, Dec 14, 1987; B. Gribble, "A Re-Entry With Company", MUFON UFO Journal, No. 254, Jun 1989: 14; Audio of report to NUFORC by witness J.E. in MUJ No. 254: Part 1: http://www.youtube.com/watch?v=a6lVJyJMKwQ ; Part 2: http://www.youtube.com/watch?v=a0mLxwTPq04 D. Wright, "Dear Editor", MUFON UFO Journal, No. 256, Aug 1989: 23.
1988 Mar 26 04: 50	1988-024B	18993	Russia	Progress 35 r	R	11S510	2410	Texas; Oklahoma; Louisiana; Arkansas: Round Rock	RAE Table of Earth Satellites; (AP), "Rocket's re-entry lights sky in 3 states", Rome News-Tribune, Mar 27, 1988: 8-A; C. Trujillo, "'Meteor' turns out to be refuse from Russian spacecraft", The Dallas Morning News, Mar 27, 1988.
1988 Aug 21 05: 02	1988-071B	19398	Russia	Gorizont 16 r	R	8S812	3500	New Mexico, Colorado, Nebraska, Michigan	RAE Table of Earth Satellites
1988 Aug 30 02: 24	1987-025G	17786	Russia	Cosmos 1826 KDU	H	KDU	375	Colorado: Colorado Springs	RAE Table of Earth Satellites; "Falling debris from Soviet satellite produces fireball in Colorado sky", The Gazette (Colorado Springs, CO), Aug 30, 1988.
1988 Oct 22 13: 43	1988-095B	19597	Russia	Raduga 22 r	R	8S812	3500	French Polynesia: Nuku Hiva	GEIPAN: http://www.cnes-geipan.fr/fileadmin/geipan-doc/NUKU_HIVA_987_1988_T-M_PV_T_S_A_1988307141-373-88-R.pdf ; http://ufo-scepticisme.forumactif.com/t1540p210-les-pan-d-du-geipan#41185
1988 Dec 20 22: 48	1988-110B	19706	Russia	Cosmos 1984 r	R	11S510	2410	Paris	RAE Table of Earth Satellites
1989 Jan 07 16: 04	1988-060B	19321	Russia	Cosmos 1958 r	R	S3M	1435	Republic of Sudan: Khartoum	RAE Table of Earth Satellites

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Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
1989 Jan 21 02: 09	1988-115B	19731	Russia	Molniya 1-74 r	R	11S510	2410	Texas: Abilene, Houston, Spring; Oklahoma: Altus, Enid, Pawnee, Muskogee; Louisiana; Arkansas; Kentucky; Tennessee; Indiana; Missouri: Fulton, St. Louis; Illinois; Kansas; Mississippi; Iowa	RAE Table of Earth Satellites; (AP), "Falling Soviet space junk lights Midwestern skies", The Record-Journal, Meriden, Ct., Jan 21, 1989: 27; (AP), "Falling Soviet space debris lights up the sky across U.S.", The Telegraph, Jan 22, 1989: B-5;
1989 Oct 24 10: 19	1989-078C	20257	Russia	Molniya 1-68 BOZ	H	11S510 BOZ	100?	Texas: Kaufman	RAE Table of Earth Satellites
1989 Nov 16 03: 07	1985-050A	15833	Russia	Cosmos 1662	P	Romb	550?	Southern Manitoba.	RAE Table of Earth Satellites
1989 Dec 17 12: 14	1989-098B	20368	Russia	Raduga 24 r	R	8S812	3500	Japan	RAE Table of Earth Satellites
1990 Mar 15 00: 47	1990-022B	20526	Russia	Cosmos 2060 r	R	11S692	4800	Texas	NUFORC
1990 Nov 05 18: 00	1990-094C	20925	Russia	Gorizont 21 r	R	8S812	3500	Br. Midland Airways BD991, appr. Belgian coast; Czechoslovakia, France, Poland.	ID by Pierre Neirinck, private correspondence; "Analysis of the 1990 UFO reports by British jet fighter pilots", UFONET.NL (http://www.ufonet.nl/nieuws/tornado/index2.html) RAE Table of Earth Satellites.
1990 Dec 09 06: 47	1990-109B	21001	Russia	Cosmos 2108 r	R	11S510	2410	Oklahoma, Texas, Arkansas, Kansas and Colorado	"Falling Soviet rocket lit West's sky, NORAD says", The Gazette, Colorado Springs, Dec 10, 1990; NUFORC
1990 Dec 23 13: 26	1990-099B	20942	Russia	Cosmos 2105 r	R	11S510	2410	Japan	RAE Table of Earth Satellites
1991 Jan 18 22: 19	1991-005B	21066	Russia	Cosmos 2122 r	R	11S692	4800	Poland, Slovakia, Hungary, Romania	RAE Table of Earth Satellites; J. Borovicka: Spurny, "Satellite decays photographed by a fireball network", Proc. SPIE Vol. 3116: 168-176.
1991 Feb 07 03: 50	1982-033A	13138	Russia	Salyut 7/Cosmos 1686	P	DOS 6 + Cosmos 1686	40000	Observed from and pieces picked up in Chile and Argentina.	RAE Table of Earth Satellites
1992 Oct 01 01: 17	1990-103C	20961	USA	Navstar 2A-01 r	R	Star 48B	111	Alabama, Georgia	Mike McCants made the ID from a report he received, private correspondence.
1993 Mar 31 00: 10	1993-018B	22586	Russia	Cosmos 2238 r	R	11S692	4800	Ireland, U.K.	U.K. MOD Case No. 933 (defe-24-2086.pdf)
1994 Sep 14 18: 51	1994-053B	23219	Russia	Cosmos 2290 r	R	11S772	9300	Botswana; South Africa: Johannesburg; Zimbabwe: Bulawayo, Harare, Hwange, Lake Kariba, Mutare, Zvishavane	C. Hind, "UFO Flap in Zimbabwe Case No. 95", UFO Afrinews, Feb 1995, No. 11: 4-18; C. Hind, "An additional observation of the object over Late Kariba...", UFO Afrinews, Jul 1995, No. 12: 37-38; C. Hind, "Zimbabwean Flap of September 1994", UFO Afrinews, Jul 1996, No. 14: 15; C. Hind, "Report from Africa - I. Meteorite Shower (?) Over Zimbabwe, September 14, 1994", FSR, Vol. 40, No. 2, Summer 1995: 21.

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Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
1994 Dec 31 17: 24	1994-087B	23449	Russia	Raduga 32 r	R	8S812	3500	Germany, Austria, Czech Republic, Slovakia, Hungary, Romania	J. Borovicka: Spurny, "Satellite decays photographed by a fireball network", Proc. SPIE Vol. 3116: 168-176.
1995 Jan 14 22: 29	1994-081B	23421	Russia	Molniya 1-88 r	R	11S510	2410	Uganda: Kampala	M.E. Yousif, "The UFO Sighting", www.exmfpropulsions.com/New_Physics/Sighting.htm ; N. Amooti, "Flying Object Explained", The New Vision, Jan 20, 1995: 9.
1996 Apr 14 07: 05	1996-021C	23844	Russia	Astra 1F r	R	8S812	3500	Arizona, Minnesota, Wisconsin, Michigan	NUFORC, SeeSat-L
1996 Aug 20 00: 47	1996-010D	23797	Russia	Raduga 33 r2	R	11S861	2440	New Brunswick: St. John - glowing near perigee, day prior to fall from orbit.	SeeSat-L
1996 Nov 17 00: 50	1996-064B	none	Russia	Mars 96	P	Mars 96	6800	Chile: Atacama desert	"Update On Russian Space Probe", USSPACECOM release 41-96, Nov 29, 1996; V.A. Udaloj, et al., "Space Dynamics Analysis of the Spacecraft Mars-96 Abnormal Flight", Proceedings of the 12th International Symposium on 'Space Flight Dynamics', ESOC, Darmstadt, Germany. 2-6 June 1997; J.E. Oberg, "The Probe That Fell to Earth", New Scientist, Mar 6, 1999.
1996 Dec 12 04: 27	1996-069B	24671	Russia	Cosmos 2335 r	R	11S692	4800	Alaska: Anchorage, pilots all over the state; Yukon: Fox Lake, Carmacks, Pelly Crossing, Mayo	D. Stanton, "Meteors Light Up Night Sky", Anchorage Daily News, Dec 12, 1996: B1; M. Jasek, "22+ Witnesses Observe a UFO Larger than a Football Stadium", UFOBC, Oct 1999, updated Feb 3, 2000. www.ufobc.ca/yukon/22index.htm ; T. Molczan, "Old Unknown Identified as a Re-entry", SeeSat-L mailing list, Apr 30, 2012. http://satobs.org/seesat/Apr-2012/0331.html
1997 Jan 22 09: 37	1996-024B	23852	USA	MSX r	R	Delta SSPS AJ10-118K	950	Oklahoma. Debris recovered in Texas.	SeeSat-L, NUFORC
1997 Aug 29 21: 40	1997-046B	24917	Russia	PAS 5 r	R	8S812	3500	Zimbabwe: Chete Gorge, Mana Pools, Mhangura	C. Hind, "Lights in the Sky - Cases F, G", UFO Afrinews, Feb 1998, No. 17: 28-31.
1997 Nov 13 10: 35	1997-070B	25046	Russia	Kupon casing	H	Sredniy perekhodnik	700	Fishermen in southern Japan	AP Wire, SeeSat-L
1997 Nov 15 05: 09	1997-070C	25047	Russia	Kupon r	R	8S812	3500	British Columbia, Oregon and Washington	SeeSat-L, NUFORC
1997 Nov 21 01: 25	1997-072B	25060	Russia	Resurs F-1M r	R	11S510	2410	Canary Islands	Despliegue Luminoso Sobre Canarias En Noviembre de 1997 Por Ricardo Campo Pérez y Vicente-Juan Ballester Olmos
1998 Jan 06 13: 43	1997-048C	24927	China	Iridium MFS 1 r	R	CZ-2C Stage 2	4000	Arctic Canada: 74.43 N, 94.4 W; and Grise Fiord, NU	SeeSat-L
1998 May 02 01: 06	1998-025B	25316	Russia	Cosmos 2350 r	R	8S812	3500	South African/Namibian border and the west coast of Africa	W. Koorts, SeeSat-L
1998 Oct 14 03: 21	1998-054B	25486	Russia	Molniya 1-91 r	R	11S510	2410	South Africa: Ceres, Sutherland	SeeSat-L
1999 Jan 01 03: 43	1996-069A	24670	Russia	Cosmos 2335	P	US-PU	3150	Venezuela, Aruba	SeeSat-L

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1999 Sep 02 04: 25	1999-010E	25761	Russia	1999-010E	H	11S861 SOZ	100	California, Nevada, Oregon, Washington	SeeSat-L, NUFORC
1999 Sep 07 09: 02	1999-047C	25898	Russia	Yamal-102 r	R	8S812	3500	Oklahoma, Texas, Louisiana, Arkansas, Mississippi, Florida	SeeSat-L, NUFORC
1999 Oct 23 00: 00	1981-002B	12134	Russia	Molniya 3-14 r2	R	Blok-L	1160	South Africa: Johannesburg/Pretoria area	SeeSat-L, Claire Flanagan of the Johannesburg Planetarium
1999 Nov 27 21: 30	1999-061B	25957	China	Shenzhou 1 r	R	CZ-2F Stage 2	4000?	Spain, Sardinia, Corsica and Italy.	SeeSat-L; Spanish Photographic Meteor Network (SPMN); Vicente-Juan Ballester Olmos, Matías Morey, "El cohete que puso en órbita al trasbordador chino Shenzhou reentra sobre el Mediterráneo"
2000 Jan 27 14: 50	1986-057A	16885	Russia	Molniya 1-67	P	Molniya-1	1650	Western Australia	SeeSat-L, AUFORN
2000 Apr 19 16: 55	2000-019B	26244	Russia	Sesat r	R	8S812	3500	India	SeeSat-L
2000 Jul 01 23: 23	2000-035B	26391	Russia	Sirius FM-1 r1	R	8S812	3500	Western Australia: Balga, Collie, Cunderdin, Morley	SeeSat-L, AUFORN
2000 Jul 02 05: 20	1990-112F	21025	Russia	1990-112F	H	11S861 SOZ	100	California, Nevada	SeeSat-L, NUFORC
2000 Oct 11 18: 00	2000-056B	26539	Russia	Cosmos 2372 r	R	11S772	9300	Lesotho: pilot 33,000 ft over Maseru.	SeeSat-L
2000 Oct 14 00: 30	2000-063D	26567	Russia	Cosmos 2374 casing	H	Sredniy perekhodnik	700	Texas Panhandle, Oklahoma, Kansas and Nebraska	SeeSat-L, NUFORC
2000 Oct 23 11: 45	2000-067B	26581	Russia	GE 6 r	R	8S812	3500	Australian Weather Station - Giles	SeeSat-L
2000 Nov 21 00: 09	2000-074A	26617	USA	Quickbird 1	p	BCP-2000	980	Uruguay	SeeSat-L
2001 Jan 12 16: 40	1993-032C	22659	USA	GPS IIA-11 r2	R	Star 48B	111	Saudi Arabia (debris found).	"PAM-D Debris Falls in Saudi Arabia", The Orbital Debris Quarterly News, Vol. 6, No. 2, Apr 2001: 1.
2001 Feb 08 19: 15	2000-071B	26606	USA	GPS IIR-6 r1	R	Delta SSPS AJ10-118K	950	Southern Australia: Robe (37°10' S, 139°45' E)	SeeSat-L
2001 Aug 12 03: 42	2001-030B	26868	Russia	Molniya 3K-11 r	R	11S510	2410	Halifax, Nova Scotia	SeeSat-L
2001 Sep 06 10: 50	1975-076B	8128	Russia	Cosmos 756 r	R	8A92ME	1440?	Along the U.S. northeast coast.	SeeSat-L, NUFORC
2001 Dec 01 22: 30	2001-053E	26991	Russia	Cosmos 2382 casing	H	Sredniy perekhodnik	700	Belgium	SeeSat-L
2001 Dec 02 04: 15	2001-053D	26990	Russia	Cosmos 2382 r	R	8S812	3500	New Mexico; Texas; Oklahoma; Kansas; Colorado; Nebraska; Iowa; Missouri; South Dakota	SeeSat-L, NUFORC
2002 Feb 01 05: 27	1997-051D	24947	USA	Iridium 27	P	Iridium	~600	Yukon: Whitehorse, Lake Laberge	SeeSat-L, UFO*BC, Whitehorse Star
2002 Nov 01 03: 41	2002-050B	27553	Russia	Soyuz TMA-1 r	R	11S510	2410	Turkey: crews of 6 airliners, ground-based observers	J. Oberg, H. Zimmer

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Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
2002 Nov 28 14: 13	2002-053B	27558	Russia	Astra 1K r	R	Blok DM3	2500	Oregon, Washington, Idaho, British Columbia	SeeSat-L, NUFORC
2003 Apr 26 05: 42	2003-015B	27776	Russia	Cosmos 2397 r	R	8S812	3500	South East Brazil	SeeSat-L
2003 Aug 31 02: 14	2003-039B	27874	Russia	Progress M-48 r	R	11S510	2410	Crete, West Turkey	SeeSat-L
2003 Nov 23 03: 31	2003-035C	28084	Russia	2003-035C	D	SpK film part	4	California: Joshua Tree	SeeSat-L, NUFORC
2004 Jan 20 11: 57	1993-068C	22879	USA	Navstar 34 r2	R	Star 48B	111	Argentina: debris found in San Roque.	SeeSat-L
2004 May 06 06: 17	1996-010A	23794	Russia	Raduga 33	P	Gran'	1954	Ontario, Ohio, Pennsylvania	SeeSat-L
2004 Jun 27 02: 54	1992-088E	22273	Russia	1992-088E	H	11S861 SOZ	100	Michigan, Ontario, Ohio, Pennsylvania, New Jersey	SeeSat-L, NUFORC
2005 Apr 01 10: 42	2005-010B	28630	Russia	Ekspress AM-2 r	R	8S812	3500	Australia: Esperance, Yulara, Alice Springs, Ti Tree	SeeSat-L, ABC Local Radio
2007 Jan 04 13: 30	2006-063B	29679	Russia	Corot r	R	14S54	2410?	New Mexico, Colorado, Arizona, Montana	SeeSat-L, NUFORC
2007 May 15 04: 33	2007-017B	31394	Russia	Progress M-60 r	R	11S510	2410	Brazil: São Paulo	SeeSat-L
2008 Mar 13 07: 27	1992-050D	22071	Russia	Molniya 1-84 r2	R	Blok-ML	999	British Columbia: Prince George	"Fireball over central B.C. was Russian space junk", Canwest News Service, Mar 13, 2008.
2008 Sep 25 20: 55	2008-046D	33381	Russia	Cosmos 2442 r	R	8S812	3500	France	SeeSat-L
2008 Sep 26 14: 47	2008-046E	33382	Russia	Cosmos 2442 casing	H	Sredniy perekhodnik	700	Australia: Adelaide	SeeSat-L, AUFORN
2008 Nov 21 17: 02	2008-058B	33440	Russia	Cosmos 2445 r	R	11S510	2410	South Australia: Elliston	SeeSat-L
2009 Feb 13 18: 18	2009-006B	33594	Russia	Progress M-66 r	R	11S510	2410	South Africa: Berg-en-Dal, Greyton, Melkbosstrand, Yzerfontein	W. Koorts, "Spectacular object seen streaking across the Cape Town sky", MNASSA Vol. 68, Nos. 3 & 4: 67-69.
2009 May 11 20: 14	2009-024B	34906	Russia	Progress M-02M r	R	11S510	2410	Russia, Ukraine	SeeSat-L
2010 Jun 19 15: 10	2010-029B	36604	Russia	Soyuz TMA-19 r	R	11S510	2410	Myanmar, Thailand	Aerospace Corp.
2010 Jun 22 01: 30	2009-042C	35698	Russia	2009-042C	H	Briz-M torus tank	950	Spain: Villajoyosa	SeeSat-L
2011 Mar 03 00: 50	2003-058C	28131	USA	GPS IIR-10 r2	R	Star 48B	111	Uruguay (debris found near Artigas)	Aerospace Corp., http://inexplicata.blogspot.ca/2011/03/uruguay-salto-ufo-was-space-junk.html
2011 Apr 24 04: 15	2001-014B	26737	Russia	2001-014B	H	Briz-M torus tank	950	Brazil: Acre	SeeSat-L
2011 Jul 06 23: 01	2011-025A	37675	Iran	Rasad 1	P	Rasad	15	Brazil: São Gabriel da Cachoeira - Amazonas	SeeSat-L
2011 Dec 24 16: 25	2011-078B	38037	Russia	Soyuz TMA-03M r	R	11S510	2410	France, Germany	SeeSat-L

Visually Observed Natural Re-entries of Earth Satellites (Draft)
Compiled by Ted Molczan
2013 May 20

Decay Date UTC	Int'l Desig.	SSN	Origin	Name	Type	Model	Mass kg	Sighting Location	Sources
2012 Feb 22 09: 09	1997-016C	24770	France	Thaicom 3 r	R	Ariane H10-3	1780	Brazil: filmed from near Ponta de Pedras, debris near Anapuras	SeeSat-L
2012 Mar 04 11: 42	2007-057B	32300	Russia	Sirius 4 r	H	Briz-M torus tank	950	Australia: Tasmania, Victoria	Aerospace Corp.
2013 Jan 28 02: 27	1983-075A	14207	Russia	Cosmos 1484	P	Resurs-OE No. 3	2500	Georgia; Maryland; North Carolina; New Jersey; New York; Pennsylvania; South Carolina; Virginia	www.amsmeteors.org/fireball_event/2013/206 , NUFORC
2013 Feb 13 21: 15	2013-007B	39083	Russia	Progress M-18M r	R	11S510	2410	Belgium, France	SeeSat-L
2013 Feb 27 09: 10	2012-021C	38259	China	Yaogan Weixing 14 r	R	CZ-4B Stage 3	4000	Louisiana, Texas. Debris found at Buna, TX.	http://www.amsmeteors.org/fireball_event/2013/501
2013 May 10 00: 57	2013-016D	39145	USA	Cygnus Mass Simulator	P	Cygnus Mass Simulator	3800	Argentina: Neuquén; Chile: Temuco	SeeSat-L

Note: Orange highlighted text denotes new ID by TJM since 2012 Oct 04.