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**Committee on the Peaceful
Uses of Outer Space****Information furnished in conformity with the Convention
on Registration of Objects Launched into Outer Space****Note verbale dated 8 January 2020 from the Permanent Mission of
the United States of America to the United Nations (Vienna)
addressed to the Secretary-General**

The Permanent Mission of the United States of America to the United Nations (Vienna), in accordance with article IV of the Convention on Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex), has the honour to transmit registration data on objects launched into outer space by the United States for the periods from November to December 2018 and January to May 2019 (see annexes I-VII).¹

The United States requests that the space objects contained in the annexes to this document be placed on the Register of Objects Launched into Outer Space maintained by the United Nations. In submitting this request, the United States notes that, consistent with its long-standing registration practice, the United States is not necessarily a launching State for each of the space objects it registers. The United States makes this request in the spirit of contributing to the practical effectiveness of the treaties and is providing information to the greatest extent practicable.

¹ The data on space objects referenced in the annexes for November 2018 and January to May 2019 were entered into the Register of Objects Launched into Outer Space on 16 January 2020. The data on space objects for December 2018 were entered into the Register on 16 June 2020.



Annex I

Registration data on space launches by the United States of America for November 2018*

The following report supplements the registration data on United States space launches as at 30 November 2018.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2018-088A	Cicero 10	11 November 2018	RLLC	94.78	85.04	519	497	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-088D	Irvine01	11 November 2018	RLLC	94.7	85.04	518	491	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-090B	Falcon 9 R/B	15 November 2018	AFETR	662.63	24.96	37 407	191	Spent boosters, spent manoeuvring stage, shrouds and other non-functional objects
2018-092A	Cygnus NG-10	17 November 2018	WLPIS	92.66	51.64	408	401	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096B	HSAT1	29 November 2018		94.3	97.5	506	485	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096AE	Flock 3R 1	29 November 2018	SRI	94.32	97.48	499	472	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096AF	Flock 3R 2	29 November 2018	SRI	94.32	97.48	499	472	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096AG	Flock 3R 14	29 November 2018	SRI	94.31	97.48	499	471	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096AH	Flock 3R 13	29 November 2018	SRI	94.31	97.48	499	471	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096F	Flock 3R 12	29 November 2018	SRI	94.37	97.48	499	476	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096G	Flock 3R 11	29 November 2018	SRI	94.37	97.48	499	476	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096H	Flock 3R 5	29 November 2018	SRI	94.36	97.48	499	476	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096J	Flock 3R 8	29 November 2018	SRI	94.36	97.48	499	476	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

* The registration data are reproduced in the form in which they were received.

<i>International designation</i>	<i>Name of the space object</i>	<i>Date of the launch</i>	<i>Location of the launch</i>	<i>Basic orbital characteristics</i>				<i>General function of the space object</i>
				<i>Nodal period (min)</i>	<i>Inclination (degrees)</i>	<i>Apogee (km)</i>	<i>Perigee (km)</i>	
2018-096Q	Flock 3R 4	29 November 2018	SRI	94.32	97.48	499	472	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096R	Flock 3R 3	29 November 2018	SRI	94.32	97.48	499	472	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096S	Flock 3R 16	29 November 2018	SRI	94.31	97.48	499	471	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096T	Flock 3R 15	29 November 2018	SRI	94.31	97.48	499	471	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096Y	Flock 3R 6	29 November 2018	SRI	94.36	97.48	499	476	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096Z	Flock 3R 7	29 November 2018	SRI	94.3	97.5	503	480	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report:								
None.								
The following objects not previously reported have been identified since the last report but were no longer in orbit as at 2359Z on 30 November 2018:								
None.								
The following objects achieved orbit since the last report but were no longer in orbit as at 2359Z on 30 November 2018:								
2018-092B	Antares R/B	17 November 2018	WLPIS	89.3	51.6	272	216	Spent boosters, spent manoeuvring stage, shrouds and other non-functional objects
The following objects identified in a previous report were no longer in orbit as at 2359Z on 30 November 2018:								
1998-066D, 2002-055B, 1998-010A, 1998-066E, 1998-021A, 1998-067KM, 1998-067KL, 1998-067LE, 1963-014R								
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Abbreviations: AFETR, United States Air Force Eastern Test Range; RLLC, Rocket Lab Launch Complex, New Zealand; SRI, Satish Dhawan Space Centre, India; WLPIS, Wallops Island, United States.

Annex II

Registration data on space launches by the United States of America for December 2018*

The following report supplements the registration data on United States space launches as at 31 December 2018.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2018-099A	MinXSS-2	3 December 2018	—	96.3	97.76	593	570	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099E	STPSat-5	3 December 2018	—	96.29	97.76	591	570	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099G	Polar Scout Kodiak	3 December 2018	—	96.25	97.76	591	567	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099H	Hawk-A	3 December 2018	—	96.26	97.76	591	568	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AN	Hawk-B	3 December 2018	—	96.21	97.76	588	566	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099K	Corvus-BC4	3 December 2018	—	96.35	97.76	593	575	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099M	Flock 3S 1	3 December 2018	—	96.34	97.76	594	573	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099N	AO-95	3 December 2018	—	96.34	97.76	595	572	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AG	Flock 3S 3	3 December 2018	—	96.31	97.76	593	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AK	Capella-1	3 December 2018	—	96.29	97.76	590	572	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AM	CSIM	3 December 2018	—	96.29	97.76	591	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AP	OrbWeaver 1	3 December 2018	—	96.28	97.76	591	570	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AQ	THEA	3 December 2018	—	96.28	97.76	592	569	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

* The registration data are reproduced in the form in which they were received.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
2018-099AR	SkySat C12	3 December 2018	–	96.28	97.76	591	570	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AT	Hawk-C	3 December 2018	–	96.23	97.76	589	567	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099AW	SkySat C13	3 December 2018	–	96.1	97.76	579	564	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BC	Polar Scout Yukon	3 December 2018	–	96.3	97.76	591	572	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BG	Global-2	3 December 2018	–	96.3	97.76	592	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BH	BRIO	3 December 2018	–	96.3	97.77	592	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BK	FalconSat-6	3 December 2018	–	96.32	97.76	593	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BL	SpaceBEE-7	3 December 2018	–	96.3	97.76	592	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BM	SpaceBEE -5	3 December 2018	–	96.3	97.76	591	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BN	SpaceBEE -6	3 December 2018	–	96.3	97.76	592	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BP	eXCITe	3 December 2018	–	96.3	97.76	592	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BR	Flock 3S 2	3 December 2018	–	96.3	97.76	592	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-101A	Dragon CRS-16	5 December 2018	–	92.56	51.64	405	395	Reusable space transportation systems
2018-104A	AeroCube 11 R3	16 December 2018	–	94.65	85.04	515	488	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-104B	Shields 1	16 December 2018	–	94.68	85.03	515	491	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-0104D	STF-1	16 December 2018	–	94.72	85.04	516	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-104G	CHOMPTT	16 December 2018	–	94.61	85.04	513	486	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-104M	Goergen	16 December 2018	–	94.68	85.04	514	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
2018-104N	AeroCube 11 Eagle Scout	16 December 2018	–	94.66	85.04	515	490	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-109A	Navstar 77 (USA 289)	23 December 2018	–	717.95	55	20 196	20 167	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111S	Flock 3K 3	27 December 2018	–	94.53	97.3	513	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111T	Flock 3K 4	27 December 2018	–	94.52	97.3	513	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111U	Flock 3K 1	27 December 2018	–	94.52	97.3	513	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111V	Flock 3K 2	27 December 2018	–	94.52	97.3	513	477	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111W	Flock 3K 6	27 December 2018	–	94.52	97.3	512	479	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111Z	Flock 3K 5	27 December 2018	–	94.51	97.3	512	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111AB	Flock 3K 8	27 December 2018	–	94.51	97.3	511	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111AC	Flock 3K 7	27 December 2018	–	94.5	97.3	511	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111AD	Flock 3K 12	27 December 2018	–	94.5	97.3	511	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111AE	Flock 3K 11	27 December 2018	–	94.5	97.3	511	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111AF	Flock 3K 10	27 December 2018	–	94.5	97.3	511	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-111AG	Flock 3K 9	27 December 2018	–	94.5	97.3	510	478	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099J	SPAWAR-CAL-O	3 December 2018	–	96.3	97.7	592	574	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099R	RANGE-A	3 December 2018	–	96.3	97.7	593	572	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099U	SPAWAR-CAL-R	3 December 2018	–	96.3	97.7	594	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099W	SPAWAR-CAL-OR	3 December 2018	–	96.3	97.7	593	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

<i>International designation</i>	<i>Name of the space object</i>	<i>Date of the launch</i>	<i>Location of the launch</i>	<i>Basic orbital characteristics</i>				<i>General function of the space object</i>
				<i>Nodal period (min)</i>	<i>Inclination (degrees)</i>	<i>Apogee (km)</i>	<i>Perigee (km)</i>	
2018-099AD	OrbWeaver 2	3 December 2018	–	96.3	97.7	591	570	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BQ	SeaHawk 1	3 December 2018	–	96.3	97.7	590	571	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report:								
2018-096E	Flock 3R 9	29 November 2018	–	94.36	97.48	501	474	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096M	Global-1	29 November 2018	–	94.33	97.48	501	471	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096U	Cicero 8	29 November 2018	–	94.28	97.48	501	467	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-096X	Flock 3R 10	29 November 2018	–	94.36	97.48	501	474	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report but were no longer in orbit as at 2359Z on 31 December 2018:								
None.								
The following objects achieved orbit since the last report but were no longer in orbit as at 2359Z on 31 December 2018:								
None.								
The following objects identified in a previous report were no longer in orbit as at 2359Z on 31 December 2018:								
1997-051G, 1997-056B, 1998-067LA								
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Annex III

Registration data on space launches by the United States of America for January 2019*

The following report supplements the registration data on United States space launches as at 31 January 2019.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2019-002A	Iridium 180	11 January 2019	AFWTR	100.4	86.4	779	777	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002B	Iridium 176	11 January 2019	AFWTR	97.81	86.61	656	652	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002C	Iridium 168	11 January 2019	AFWTR	100.4	86.4	779	776	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002D	Iridium 173	11 January 2019	AFWTR	100.4	86.4	779	776	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002E	Iridium 169	11 January 2019	AFWTR	100.1	87.41	767	760	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002F	Iridium 172	11 January 2019	AFWTR	100.4	86.4	779	776	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002G	Iridium 175	11 January 2019	AFWTR	97.81	86.61	656	651	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002H	Iridium 171	11 January 2019	AFWTR	100.4	86.4	779	776	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002J	Iridium 170	11 January 2019	AFWTR	97.81	86.61	656	652	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-002K	Iridium 167	11 January 2019	AFWTR	100.4	86.4	779	777	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-004A	USA 290	19 January 2019	AFWTR	92.3	73.5	400	376	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
1998-067PV	CATsat-2	20 November 1998; deployed on 31 January 2019	KM	92.63	51.64	407	400	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

* The registration data are reproduced in the form in which they were received.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
1998-067PX	UNITE	20 November 1998; deployed on 31 January 2019	KM	92.64	51.64	406	402	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
1998-067PY	TechEdSat-8	20 November 1998; deployed on 31 January 2019	KM	92.58	51.64	403	399	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
1998-067PZ	CATsat-1	20 November 1998; deployed on 31 January 2019	KM	92.63	51.64	407	400	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report:								
2018-104J	DaVinci	16 December 2018	RLLC	94.69	85.03	515	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099BQ	SeaHawk-1	3 December 2018	AFWTR	96.3	97.75	589	573	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099V	LACMA Enoch	3 December 2018	AFWTR	96.36	97.75	594	574	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099C	Elysium Lower Free Flyer	3 December 2018	AFWTR	96.32	97.76	591	573	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2018-099F	Upper Free Flyer	3 December 2018	AFWTR	96.29	97.76	590	572	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report but were no longer in orbit as at 2359Z on 31 January 2019:								
None.								
The following objects achieved orbit since the last report but were no longer in orbit as at 2359Z on 31 January 2019:								
None.								
The following objects identified in a previous report are no longer in orbit as at 2359Z on 31 January 2019:								
2016-031B, 2018-101A, 2002-005B								
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Abbreviations: AFWTR, United States Air Force Western Test Range; KM, International Space Station Kibo Module; RLLC, Rocket Lab Launch Complex, New Zealand.

Annex IV

Registration data on space launches by the United States of America for February 2019*

The following report supplements the registration data on United States space launches as at 28 February 2019.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2019-009C	Falcon 9 R/B	22 February 2019	AFETR	1 368.43	27.56	68 666	237	Spent boosters, spent manoeuvring stage, shrouds and other non-functional objects
2019-009D	S5	22 February 2019	AFETR	1 449.56	0.06	36 054	36 045	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report:								
None.								
The following objects not previously reported have been identified since the last report but were no longer in orbit as at 2359Z on 28 February 2019:								
None.								
The following objects achieved orbit since the last report but were no longer in orbit as at 2359Z on 28 February 2019:								
None.								
The following objects identified in a previous report were no longer in orbit as at 2359Z on 28 February 2019:								
2013-066X, 2018-092A								
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Abbreviations: AFETR, United States Air Force Eastern Test Range.

* The registration data are reproduced in the form in which they were received.

Annex V

Registration data on space launches by the United States of America for March 2019*

The following report supplements the registration data on United States space launches as at 31 March 2019.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2019-014A	WGS 10 (USA 291)	16 March 2019	AFETR	1 434.59	0.19	44 182	27 332	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-016A	R3D2	28 March 2019	RLLC	93.16	39.52	435	423	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report:								
None.								
The following objects not previously reported have been identified since the last report but were no longer in orbit as at 2359Z on 31 March 2019:								
None.								
The following objects achieved orbit since the last report but were no longer in orbit as at 2359Z on 31 March 2019:								
2019-011A	Crew Dragon Demo-1	2 March 2019	AFETR	92.49	51.64	400	393	Reusable space transportation systems
The following objects identified in a previous report were no longer in orbit as at 2359Z on 31 March 2019:								
1998-067LM, 1998-067LY, 1998-067NL, 1997-051B, 1998-019D, 2002-005A, 1998-019E, 2018-049B, 2002-005D, 1998-019A								
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Abbreviations: AFETR, United States Air Force Eastern Test Range; RLLC, Rocket Lab Launch Complex, New Zealand.

* The registration data are reproduced in the form in which they were received.

Annex VI

Registration data on space launches by the United States of America for April 2019*

The following report supplements the registration data on United States space launches as at 30 April 2019.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2019-018AA	Flock 4A 13	1 April 2019	SRI	94.6	97.46	507	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018AE	Flock 4A 12	1 April 2019	SRI	94.62	97.46	507	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018B	Flock 4A 1	1 April 2019	SRI	94.67	97.46	511	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018C	Flock 4A 2	1 April 2019	SRI	94.66	97.66	511	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018D	Flock 4A 3	1 April 2019	SRI	94.66	97.46	511	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018E	Flock 4A 4	1 April 2019	SRI	94.66	97.46	511	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018G	LEMUR-2 JohanLoran	1 April 2019	SRI	94.65	97.46	510	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018H	LEMUR-2 Beaudacious	1 April 2019	SRI	94.65	97.46	510	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018J	LEMUR-2 Elham	1 April 2019	SRI	94.65	97.46	510	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018K	LEMUR-2 Victor-Andrew	1 April 2019	SRI	94.65	97.46	510	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018L	Flock 4A 17	1 April 2019	SRI	94.64	97.46	510	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018M	Flock 4A 18	1 April 2019	SRI	94.64	97.46	510	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018N	Flock 4A 19	1 April 2019	SRI	94.64	97.46	510	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

* The registration data are reproduced in the form in which they were received.

<i>International designation</i>	<i>Name of the space object</i>	<i>Date of the launch</i>	<i>Location of the launch</i>	<i>Basic orbital characteristics</i>				<i>General function of the space object</i>
				<i>Nodal period (min)</i>	<i>Inclination (degrees)</i>	<i>Apogee (km)</i>	<i>Perigee (km)</i>	
2019-018P	Flock 4A 20	1 April 2019	SRI	94.64	97.46	510	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018Q	Flock 4A 8	1 April 2019	SRI	94.63	97.46	507	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018R	Flock 4A 7	1 April 2019	SRI	94.62	97.46	507	494	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018S	Flock 4A 6	1 April 2019	SRI	94.62	97.46	507	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018T	Flock 4A 5	1 April 2019	SRI	94.62	97.46	507	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018U	Flock 4A 11	1 April 2019	SRI	94.62	97.46	507	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018V	Flock 4A 10	1 April 2019	SRI	94.61	97.46	507	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018W	Flock 4A 9	1 April 2019	SRI	94.61	97.46	507	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018X	Flock 4A 16	1 April 2019	SRI	94.61	97.46	507	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018Y	Flock 4A 15	1 April 2019	SRI	94.61	97.46	507	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-018Z	Flock 4A 14	1 April 2019	SRI	94.6	97.46	507	492	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-021B	Falcon 9 R/B	11 April 2019	AFETR	1 930.61	22.94	89 647	316	Spent boosters, spent manoeuvring stage, shrouds and other non-functional objects
2019-022A	Cygnus NG-11	17 April 2019	WLPIS	92.74	51.64	410	408	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

The following objects not previously reported have been identified since the last report:

None.

The following objects not previously reported have been identified since the last report but were no longer in orbit as at 2359Z on 30 April 2019:

None.

The following objects achieved orbit since the last report but were no longer in orbit as at 2359Z on 30 April 2019:

2019-022B	Antares R/B	17 April 2019	WLPIS	82.27	51.6	144	134	Spent boosters, spent manoeuvring stage, shrouds and other non-functional objects
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The following objects identified in a previous report were no longer in orbit as at 2359Z on 30 April 2019:

1998-021C, 2018-092G, 1998-019C, 2018-090B

Basic orbital characteristics								
International designation	Name of the space object	Date of the launch	Location of the launch	Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	General function of the space object
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Abbreviations: AFETR, United States Air Force Eastern Test Range; SRI, Satish Dhawan Space Centre, India; WLPIS, Wallops Island, United States.

Annex VII

Registration data on space launches by the United States of America for May 2019*

The following report supplements the registration data on United States space launches as at 31 May 2019.

International designation	Name of the space object	Date of the launch	Location of the launch	Basic orbital characteristics				General function of the space object
				Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	
The following objects were launched since the last report and remain in orbit:								
2019-025A	Dragon CRS-17	4 May 2019	AFETR	92.74	51.64	410	408	Reusable space transportation systems
2019-026A	AFOTEC1	5 May 2019	RLLC	94.72	40.02	511	500	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-026B	SPARC-1	5 May 2019	RLLC	94.66	40.02	511	493	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-026E	Harbinger	5 May 2019	RLLC	94.71	40.02	511	499	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029C	Starlink-23	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029A	Starlink-31	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029D	Starlink-24	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029B	Starlink-22	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029E	Starlink-25	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029F	Starlink-26	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029G	Starlink-27	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029H	Starlink-28	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029J	Starlink-29	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029K	Starlink-30	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

* The registration data are reproduced in the form in which they were received.

<i>International designation</i>	<i>Name of the space object</i>	<i>Date of the launch</i>	<i>Location of the launch</i>	<i>Basic orbital characteristics</i>				<i>General function of the space object</i>
				<i>Nodal period (min)</i>	<i>Inclination (degrees)</i>	<i>Apogee (km)</i>	<i>Perigee (km)</i>	
2019-029L	Starlink-21	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029M	Starlink-46	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029N	Starlink-33	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029P	Starlink-34	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029Q	Starlink-61	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029R	Starlink-36	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029S	Starlink-37	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029T	Starlink-71	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029U	Starlink-39	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029V	Starlink-32	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029Y	Starlink-43	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029X	Starlink-42	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029W	Starlink-66	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029Z	Starlink-40	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AA	Starlink-52	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AB	Starlink-45	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AC	Starlink-44	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AD	Starlink-49	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

<i>International designation</i>	<i>Name of the space object</i>	<i>Date of the launch</i>	<i>Location of the launch</i>	<i>Basic orbital characteristics</i>				<i>General function of the space object</i>
				<i>Nodal period (min)</i>	<i>Inclination (degrees)</i>	<i>Apogee (km)</i>	<i>Perigee (km)</i>	
2019-029AE	Starlink-72	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AF	Starlink-35	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AG	Starlink-63	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AH	Starlink-54	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AJ	Starlink-69	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AK	Starlink-55	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AL	Starlink-57	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AM	Starlink-58	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AN	Starlink-59	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AP	Starlink-51	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AQ	Starlink-60	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AR	Starlink-62	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AS	Starlink-64	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AT	Starlink-65	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AU	Starlink-41	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AV	Starlink-67	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AW	Starlink-68	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AX	Starlink-38	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications

<i>International designation</i>	<i>Name of the space object</i>	<i>Date of the launch</i>	<i>Location of the launch</i>	<i>Basic orbital characteristics</i>				<i>General function of the space object</i>
				<i>Nodal period (min)</i>	<i>Inclination (degrees)</i>	<i>Apogee (km)</i>	<i>Perigee (km)</i>	
2019-029AY	Starlink-70	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029AZ	Starlink-80	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BA	Starlink-56	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BB	Starlink-73	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BC	Starlink-50	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BD	Starlink-75	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BE	Starlink-76	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BF	Starlink-79	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BG	Starlink-48	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BH	Starlink-78	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BJ	Starlink-77	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BK	Starlink-81	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BL	Starlink-74	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
2019-029BM	Starlink-53	24 May 2019	AFETR	95.6	53	551	549	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report:								
2018-092E	CHEFSat-2	17 Nov 2018	WLPIS	93.8	51.64	469	452	Spacecraft engaged in practical applications and uses of space technology such as weather or communications
The following objects not previously reported have been identified since the last report but are no longer in orbit as at 2359Z on 31 May 2019:								
None.								
The following objects achieved orbit since the last report but are no longer in orbit as at 2359Z on 31 May 2019:								
None.								

Basic orbital characteristics								
International designation	Name of the space object	Date of the launch	Location of the launch	Nodal period (min)	Inclination (degrees)	Apogee (km)	Perigee (km)	General function of the space object
The following objects identified on a previous report are no longer in orbit as at 2359Z on 31 May 2019:								
1970-055B, 1997-043C, 1998-010C, 1998-067LP, 1998-067LT, 1998-067LW								
The following objects were launched since the last report but did not achieve orbit:								
None.								
Revisions that should be made to previously reported data:								
None.								

Abbreviations: AFETR, United States Air Force Eastern Test Range; RLLC, Rocket Lab Launch Complex, New Zealand; WLPIS, Wallops Island, United States.