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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 29 July 2021 from the Permanent Mission of Japan to the United Nations (Vienna) addressed to the Secretary-General

The Permanent Mission of Japan 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 information concerning new and previously registered objects launched into outer space (see annexes I and II).[1]

[1] The data on the space objects referenced in the annexes were entered into the Register of Objects Launched into Outer Space on 17 August 2021.

Annex I

Registration data on satellites launched by Japan*

ALE-2

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2019-084A
Name of space object	ALE-2
State of registry	Japan
Other launching States	New Zealand and United States of America
Date and territory or location of launch	6 December 2019 at 0818 hours 21 seconds UTC; Rocket Lab Launch Complex 1, New Zealand
Basic orbital parameters	
Nodal period	92.69 minutes
Inclination	97.1 degrees
Apogee	415 kilometres
Perigee	398 kilometres
General function of space object	To create an artificial meteor shower, ALE-2 contains a release mechanism that deploys 400 particles, one at a time, in a controlled fashion, that become artificial meteors when they re-enter the atmosphere The mission details were presented at the thirty-sixth meeting of the Inter-Agency Space Debris Coordination Committee Working Group 4

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	ALE Co., Ltd.
Website	http://star-ale.com/en/?ja
Launch vehicle	Electron Launch Vehicle Flight No. 10
Other information	Launched by Rocket Lab Inc. on 6 December 2019. ALE-2 aimed to make the world's first artificial meteors in 2020

* The information was submitted using the form prepared pursuant to General Assembly resolution 62/101 and has been reformatted by the Secretariat.

AQT-D

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067QW
Name of space object	AQT-D
State of registry	Japan
Date and territory or location of launch	20 November 2019 UTC; International Space Station (ISS)
Basic orbital parameters	
Nodal period	92.7 minutes
Inclination	51.6 degrees
Apogee radius	6,790.6 kilometres
Perigee radius	6,780.9 kilometres
General function of space object	AQT-D is a 3U-size CubeSat. It has a water-based propulsion system, a visible light camera and a store-and-forward device

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	University of Tokyo
Launch vehicle	H-II B No. 8
Other information	Launched by H-II Transfer Vehicle “Kounotori 8” (HTV8) (H-II B No. 8) on 25 September 2019 and transported to ISS The launching organizations are Mitsubishi Heavy Industries, Ltd. and the Japan Aerospace Exploration Agency (JAXA) The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

BSAT-4b

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-056A
Name of space object	BSAT-4b
State of registry	Japan
Other launching States	France
Date and territory or location of launch	15 August 2020 at 2204 hours 0 seconds UTC; Kourou, French Guiana

Basic orbital parameters	
Nodal period	1,436.14 minutes
Inclination	0.06 degrees
Apogee	35,801 kilometres
Perigee	35,774 kilometres
General function of space object	Satellite communications and domestic broadcasting services

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Geostationary position	110 degrees East
Space object owner or operator	Broadcasting Satellite System Corporation (B-SAT)
Website	www.b-sat.co.jp/4k8k/bsat-4/
Launch vehicle	Ariane 5
Other information	Launched by Arianespace on 15 August 2020

CE-SAT-IIB

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-077F
Name of space object	CE-SAT-IIB
State of registry	Japan
Other launching States	New Zealand and United States
Date and territory or location of launch	28 October 2020 UTC; New Zealand
Basic orbital parameters	
Nodal period	95 minutes
Inclination	97.5 degrees
Apogee	525 kilometres
Perigee	507 kilometres
General function of space object	Earth remote sensing using an ultra-high sensitivity camera that can capture images with a ground-sample-distance (GSD) resolution of 5 metres, a visible-band camera that can capture images with a GSD resolution of 5 metres and a wide-angle camera that can capture images with a GSD resolution of 40 to 120 metres

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Canon Electronics Inc.
Website	www.canon-elec.co.jp/files/media/2020/10/Eng_20201029_newsrelease.pdf
Launch vehicle	Electron rocket (fifteenth mission)
Other information	Launched by Rocket Lab Ltd. on 28 October 2020

G-satellite

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067RK
Name of space object	G-satellite
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	28 April 2020 at 0855 hours 14 seconds UTC; ISS
Basic orbital parameters	
Nodal period	92.85 minutes
Inclination	51.64 degrees
Apogee	417 kilometres
Perigee	411 kilometres
General function of space object	G-satellite is one of the initiatives to celebrate the Tokyo Olympic Games. It will capture images of the dolls housed inside the satellite and send images and messages to the ground

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	University of Tokyo
Launch vehicle	Falcon 9
Other information	The satellite was launched by Falcon 9 on 7 March 2020 UTC and transported to ISS. The launching organization is SpaceX The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

Hayabusa2

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2014-076A
Name of space object	Hayabusa2
State of registry	Japan
Registration document	ST/SG/SER.E/766
Date and territory or location of launch	3 December 2014 at 0422 hours 24 seconds UTC; Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	477,407 minutes
Inclination	25.0 degrees
Apogee	160,150,853 kilometres
Perigee	120,332,701 kilometres
General function of space object	Sample return from the C-type asteroid 1999 JU3 to study the origin and evolution of the solar system, as well as materials for life

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of supervision of the space object	
Change of function of the space object	Rendezvous mission to asteroid 1998 KY26 to explore the fast-rotating small asteroid, including a fly-by of asteroid 2001 CC21
Space object owner or operator	JAXA
Website	http://global.jaxa.jp/projects/sas/hayabusa2/
Celestial body space object is orbiting	Asteroid 1998 KY26
Launch vehicle	H-IIA Launch Vehicle Flight No. 26 (H-IIA-F26)
Other information	The basic orbital parameters are as at 6 December 2020 UTC The launching organizations are Mitsubishi Heavy Industries, Ltd. and JAXA The sample return capsule was separated from the spacecraft and returned to Earth on 5 December 2020 UTC

H-II Transfer Vehicle “Kounotori 9” (HTV9)

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-030A
Name of space object	H-II Transfer Vehicle “Kounotori 9” (HTV9)
State of registry	Japan
Date and territory or location of launch	20 May 2020 at 1731 hours UTC; JAXA Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	93.0 minutes
Inclination	51.9 degrees
Apogee	423.6 kilometres
Perigee	411.1 kilometres
General function of space object	HTV9 is an uncrewed resupply vehicle to transport various cargos, including research materials, equipment for replacement and daily commodities, to ISS
Date of decay/re-entry/deorbit	20 August 2020 UTC

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	JAXA
Website	https://global.jaxa.jp/projects/rockets/htv/
Launch vehicle	H-IIB Launch Vehicle Flight No. 9 (H-IIB-F9)
Other information	Launched by H-IIB-F9 on 20 May 2020 The launching organizations are Mitsubishi Heavy Industries, Ltd. and JAXA Basic orbital parameters described above are as at 25 May 2020 After delivering the cargo to ISS, HTV9 was unberthed from ISS and made a controlled re-entry into the atmosphere

Inter-orbit Communication System-Exposed Facility (ICS-EF) subsystem

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067RJ
Name of space object	Inter-orbit Communication System-Exposed Facility (ICS-EF) subsystem

State of registry	Japan
Other launching States	United States
Date and territory or location of launch	15 July 2009 UTC; Kennedy Space Center of the National Aeronautics and Space Administration (NASA), United States
Basic orbital parameters	
Nodal period	92.66 minutes
Inclination	51.64 degrees
Apogee	408.0 kilometres
Perigee	402.0 kilometres
General function of space object	This system was used for on-orbit communication between the exposed section of the ISS Japanese Experiment Module and the JAXA Data Relay Test Satellite

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	21 February 2020 at 1850 hours UTC
Space object owner or operator	JAXA
Launch vehicle	STS-127 (Endeavour)
Other information	Launched by the NASA Space Shuttle as part of the launch of the ISS component on 15 July 2009 ICS-EF was separated from ISS on 21 February 2020 ICS-EF has no battery, pressure vessel or other stored energy source and is planned to re-enter the atmosphere within the next 25 years

JCSAT-6

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1999-006A
Name of space object	JCSAT-6
State of registry	Japan
Registration document	ST/SG/SER.E/371
Other launching States	United States
Date and territory or location of launch	16 February 1999 at 0145 hours UTC; Cape Canaveral, Florida, United States

Basic orbital parameters	
Nodal period	1,440 minutes
Inclination	4.342 degrees
Apogee	35,816.7 kilometres
Perigee	35,772.3 kilometres
General function of space object	Domestic communications and domestic broadcasting

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Geostationary position	136 degrees East
Space object owner or operator	SKY Perfect JSAT Corporation
Launch vehicle	Atlas IIAS
Other information	The launch organization is Lockheed Martin Commercial Launch Services Inc.

JCSAT-8

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2002-015A
Name of space object	JCSAT-8
State of registry	Japan
Registration document	ST/SG/SER.E/425
Other launching States	France
Date and territory or location of launch	29 March 2002 at 0129 hours UTC; Guiana Space Centre, Kourou, French Guiana
Basic orbital parameters	
Nodal period	1,436 minutes
Inclination	0.012 degrees
Apogee	36,133 kilometres
Perigee	36,144 kilometres
General function of space object	Domestic and international telecommunications and domestic broadcasting
Date of decay/re-entry/deorbit	18 January 2021 at 0216 hours UTC

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	29 January 2021 at 0653 hours UTC

Date when space object is moved to a disposal orbit	18 January 2021 at 0216 hours UTC
Physical conditions when space object is moved to a disposal orbit	The satellite achieved a disposal altitude of 336 kilometres above geostationary orbit and all satellite systems were shut down
	Fuel depletion operations were carried out normally
	Battery charge termination operations were carried out normally
Geostationary position	143.72 degrees East
Space object owner or operator	SKY Perfect JSAT Corporation
Launch vehicle	Ariane 44L
Other information	Launched by Arianespace on 29 March 2002

JCSAT-17

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-013A
Name of space object	JCSAT-17
State of registry	Japan
Other launching States	France
Date and territory or location of launch	18 February 2020 at 2218 hours UTC; Guiana Space Centre, Kourou, French Guiana
Basic orbital parameters	
Nodal period	1,440 minutes
Inclination	6.946 degrees
Apogee	35,808.2 kilometres
Perigee	35,779.7 kilometres
General function of space object	Satellite telecommunications

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Geostationary position	136 degrees East
Space object owner or operator	SKY Perfect JSAT Corporation
Launch vehicle	Ariane 5 ECA
Other information	Launched by Arianespace on 18 February 2020

JCSAT-18

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2019-091A
Name of space object	JCSAT-18
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	17 December 2019 at 0010 hours UTC; Cape Canaveral, United States
Basic orbital parameters	
Nodal period	1,440 minutes
Inclination	0.004 degrees
Apogee	35,803.2 kilometres
Perigee	35,783.2 kilometres
General function of space object	Satellite telecommunications

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Geostationary position	150 degrees East
Space object owner or operator	SKY Perfect JSAT Corporation
Launch vehicle	Falcon 9
Other information	Launched by SpaceX on 17 December 2019

MTSAT-2

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2006-004A
Name of space object	MTSAT-2
National designator/registration number	2006-004A
State of registry	Japan
Registration document	ST/SG/SER.E/510
Date and territory or location of launch	18 February 2006 at 0627 hours UTC; Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	1,453 minutes
Inclination	0.1 degrees
Apogee radius	42,508 kilometres
Perigee radius	42,499 kilometres

General function of space object	Its missions are to provide satellite communications between aircraft and air traffic control facilities and to provide a global navigation satellite systems augmentation system, an aircraft surveillance function and a meteorological function
Date of decay/re-entry/deorbit	21 May 2020 at 0117 hours 54 seconds UTC

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	21 May 2020 at 0130 hours 0 seconds UTC
Date when space object is moved to a disposal orbit	17 May 2020 at 2200 hours 0 seconds UTC
Physical conditions when space object is moved to a disposal orbit	Change in orbit (more than 330 km above the geostationary orbit); disposed of residual propellant, deactivated battery charging lines and turned off power to reaction wheels and all transmitters
Space object owner or operator	Ministry of Land, Infrastructure, Transport and Tourism of Japan
Launch vehicle	H-2A Launch Vehicle Flight No. 9 (H-2A-F9)
Other information	Launched by H-IIA-F9 on 18 February 2006. The launching organizations are Mitsubishi Heavy Industries, Ltd. and JAXA

N-STAR c

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2002-035B
Name of space object	N-STAR c
State of registry	Japan
Registration document	ST/SG/SER.E/425
Date and territory or location of launch	5 July 2002 at 2321 hours UTC; Guiana Space Centre, Kourou, French Guiana
Basic orbital parameters	
Nodal period	1,436 minutes
Inclination	0.06 degrees
Apogee	36,132 kilometres
Perigee	36,144 kilometres

General function of space object	Domestic telecommunications
Date of decay/re-entry/deorbit	11 May 2020 at 1054 hours UTC

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	16 May 2020 at 0153 hours UTC
Date when space object is moved to a disposal orbit	11 May 2020 at 1054 hours UTC
Physical conditions when space object is moved to a disposal orbit	The satellite achieved a disposal altitude of 342 km above geostationary orbit and all satellite systems were shut down Fuel depletion operations were carried out normally Battery charge termination operations were carried out normally
Geostationary position	136 degrees East
Space object owner or operator	SKY Perfect JSAT Corporation
Launch vehicle	Ariane 5
Other information	The launching organization is Arianespace

P-01

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	-
Name of space object	P-01
National designator/registration number	2014-076A-E
State of registry	Japan
Date and territory or location of launch	3 December 2014 at 0422 hours 4 seconds UTC; JAXA Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	-
Inclination	-
Apogee	-
Perigee	-
General function of space object	P-01 is a small object designed to make contact with the surface of Ryugu, with the aim of collecting surface material

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	21 February 2019 UTC
Space object owner or operator	JAXA
Website	www.hayabusa2.jaxa.jp/en/
Celestial body space object is orbiting	On Ryugu
Launch vehicle	H-IIA Launch Vehicle Flight No. 26
Other information	P-01 was attached to asteroid explorer Hayabusa2, which was launched by an H-IIA rocket on 3 December 2014. It was transferred to the asteroid Ryugu by Hayabusa2 and deployed on 21 February 2019 UTC

P-03

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	-
Name of space object	P-03
National designator/registration number	2014-076A-J
State of registry	Japan
Date and territory or location of launch	3 December 2014 at 0422 hours 4 seconds UTC; JAXA Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	-
Inclination	-
Apogee	-
Perigee	-
General function of space object	P-03 is a small object designed to make contact with the surface of Ryugu, with the aim of collecting surface material

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	11 July 2019 UTC
Space object owner or operator	JAXA
Website	www.hayabusa2.jaxa.jp/en/

Celestial body space object is orbiting	On Ryugu
Launch vehicle	H-IIA Launch Vehicle Flight No. 26
Other information	P-03 was attached to asteroid explorer Hayabusa2, which was launched by an H-IIA rocket on 3 December 2014. It was transferred to the asteroid Ryugu by Hayabusa2 and deployed on 11 July 2019 UTC

QPS-SAR-1 Izanagi

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2019-089E
Name of space object	QPS-SAR-1 Izanagi
State of registry	Japan
Other launching States	India
Date and territory or location of launch	11 December 2019 at 0955 hours 0 seconds UTC; India
Basic orbital parameters	
Nodal period	96.1 minutes
Inclination	37 degrees
Apogee	583.8 kilometres
Perigee	575.2 kilometres
General function of space object	Earth observation

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Institute for Q-shu Pioneers of Space, Inc.
Website	https://i-qps.net/
Launch vehicle	PSLV C48
Other information	Launched by the Indian Space Research Organization on 11 December 2019

RAPIS-1

Information provided I n conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2019-003A
Name of space object	RAPid Innovative payload demonstration Satellite 1 (RAPIS-1)

State of registry	Japan
Registration document	ST/SG/SER.E/902
Date and territory or location of launch	18 January 2019 at 0050 hours 20 seconds UTC; Kagoshima Space Center, Japan
Basic orbital parameters	
Nodal period	95 minutes
Inclination	97.24 degrees
Apogee	507 kilometres
Perigee	507 kilometres
General function of space object	RAPIS-1 is a Japanese test satellite to demonstrate seven pieces of experimental equipment

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	23 June 2020 at 2250 hours 56 seconds UTC
Physical conditions when space object is moved to a disposal orbit	Satellite position: semi-major axis is 6,920.9 kilometres
	Attitude: three-axis stable
	Status: propellant is exhausted
Space object owner or operator	Owner: JAXA Operator: Axelspace Corporation
Website	www.kenkai.jaxa.jp/kakushin/kakushin01.html (in Japanese)
Launch vehicle	Epsilon Launch Vehicle Flight No. 4 (Epsilon-4)
Other information	Launched by Epsilon-4 on 18 January 2019. The launch organization is JAXA

RWASAT-1

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067QV
Name of space object	RWASAT-1
State of registry	Japan
Date and territory or location of launch	20 November 2019 at 0855 hours 13 seconds UTC; ISS

Basic orbital parameters	
Nodal period	92.71 minutes
Inclination	51.64 degrees
Apogee	415 kilometres
Perigee	400 kilometres
General function of space object	Earth observation and store-and-forward communication

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	University of Tokyo
Website	https://iss.jaxa.jp/en/kiboexp/news/191203_jssod12.html
Launch vehicle	H-IIB-F8 (JAXA)
Other information	The satellite was launched by H-IIB-F8 on 24 September 2019 UTC and transported to ISS. The launching organizations are Mitsubishi Heavy Industries, Ltd. and JAXA The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

SCI

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	-
Name of space object	SCI
State of registry	Japan
National designator/registration number	2014-076A-F
Date and territory or location of launch	3 December 2014 at 0422 hours 4 seconds UTC; JAXA Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	-
Inclination	-
Apogee	-
Perigee	-

General function of space object	SCI is a small object designed to create an artificial crater on Ryugu, with the aim of collecting pristine subsurface material. It created a crater of approximately 10 metres in diameter.
Date of decay/re-entry/deorbit	5 April 2019

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	JAXA
Website	www.hayabusa2.jaxa.jp/en/
Launch vehicle	H-IIA Launch Vehicle Flight No. 26
Other information	SCI was attached to asteroid explorer Hayabusa2, which was launched by an H-IIA rocket on 3 December 2014. It was transferred to the asteroid Ryugu by Hayabusa2 and deployed on 5 April 2019 UTC. The object was destroyed after impact

StriX-α

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-098A
Name of space object	StriX-α
State of registry	Japan
Other launching States	New Zealand and United States
Date and territory or location of launch	15 December 2020 at 1009 hours 26 seconds UTC; Mahia Peninsula, New Zealand
Basic orbital parameters	
Nodal period	94.70 minutes
Inclination	97.38 degrees
Apogee	513 kilometres
Perigee	495 kilometres
General function of space object	StriX-α is the first synthetic aperture radar (SAR) satellite made by Synspective Inc. to test the capability of the company's SAR imaging (remote sensing) technology, including the uplink and downlink functionality and antenna signal strength

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Synspective Inc.
Website	https://synspective.com/

Launch vehicle	Electron (seventeenth mission)
Other information	Launched by Rocket Lab Inc. on 15 December 2020

2020-009A

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-009A
National designator/registration number	2020-009A
State of registry	Japan
Date and territory or location of launch	9 February 2020 UTC; Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	95 minutes
Inclination	97.3 degrees
Apogee	513 kilometres
Perigee	499 kilometres
General function of space object	Satellite conducting missions assigned by the Government of Japan

Japanese Data Relay System (JDRS)

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-089A
Name of space object	Japanese Data Relay System (JDRS)
National designator/registration number	2020-089A
State of registry	Japan
Date and territory or location of launch	29 November 2020 UTC; Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	1,436 minutes
Inclination	0.0 degrees
Apogee	35,792 kilometres
Perigee	35,780 kilometres
General function of space object	Satellite conducting missions assigned by the Government of Japan

Exposed Pallet of HTV9

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067RZ
Name of space object	Exposed Pallet of HTV9
State of registry	Japan
Date and territory or location of launch	20 May 2020 at 1731 hours UTC; JAXA Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	92.98 minutes
Inclination	51.75 degrees
Apogee	427.96 kilometres
Perigee	412.98 kilometres
General function of space object	This payload is HTV9 equipment used to transport exposed cargo to ISS

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Change of status in operations	
Date when space object is no longer functional	11 March 2021 at 1330 hours UTC
Space object owner or operator	JAXA
Launch vehicle	H-IIB Launch Vehicle Flight No. 9
Other information	The exposed pallet was separated from ISS on 11 March 2021 at 1330 hours UTC Basic orbital parameters described are as at 11 March 2021 The exposed pallet has no battery and its orbit is estimated to decay within 25 years

QPS-SAR-2 Izanami

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2021-006CA
Name of space object	QPS-SAR-2 Izanami
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	24 January 2021 at 1500 hours 0 seconds UTC; United States

Basic orbital parameters	
Nodal period	95.22 minutes
Inclination	97.5 degrees
Apogee	536 kilometres
Perigee	522 kilometres
General function of space object	Earth observation

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Institute for Q-shu Pioneers of Space, Inc.
Website	https://i-qps.net/
Launch vehicle	Falcon 9
Other information	Launched by SpaceX on 24 January 2021

OPUSAT-II

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067SG
Name of space object	OPUSAT-II
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	14 March 2021 at 1120 hours 10 seconds UTC; ISS
Basic orbital parameters	
Nodal period	92.90 minutes
Inclination	51.64 degrees
Apogee	419 kilometres
Perigee	414 kilometres
General function of space object	Attitude control, communication and deployment

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Small Spacecraft System Research Center of Osaka Prefecture University, Japan
Website	www.sssrc.aero.osakafu-u.ac.jp/activity/opusat-ii-project/

Other information	The space object was launched on 20 February 2021 UTC by an Antares rocket and transported to ISS by a Cygnus cargo vehicle The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

MMSAT-1

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067SJ
Name of space object	MMSAT-1
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	22 March 2021 at 0830 hours 0 seconds UTC; ISS
Basic orbital parameters	
Nodal period	92.96 minutes
Inclination	51.6 degrees
Apogee	422 kilometres
Perigee	417 kilometres
General function of space object	To image the Earth’s surface utilizing a high-resolution telescope system To monitor the Earth’s surface and forest areas by means of a middle-resolution, super-spectral multi-colour camera in 600 different spectral bands To provide imagery of disaster areas To monitor weather by utilizing a camera with a fish-eye lens

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Space object owner: Myanmar Aerospace Engineering University Operator: Tohoku University, Japan
Other information	MMSAT-1 is Myanmar’s first 50 kg satellite, developed by Hokkaido University and Tohoku University, Japan, under a research and development contract from Myanmar Aerospace Engineering University The launching organization is Japanese launch service provider Space BD Inc.

	The MMSAT-1 satellite was launched by Northrop Grumman's Antares 230+ rocket on 20 February 2021 and transported to ISS by the Cygnus NG-15 cargo vehicle
	The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

GRUS-1B

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2021-022C
Name of space object	GRUS-1B
State of registry	Japan
Other launching States	Kazakhstan and Russian Federation
Date and territory or location of launch	22 March 2021 at 0607 hours 12.83 seconds UTC Baikonur Cosmodrome, Kazakhstan
Basic orbital parameters	
Nodal period	96.3 minutes
Inclination	97.7 degrees
Apogee	585 kilometres
Perigee	585 kilometres
General function of space object	GRUS-1B is a next-generation optical remote sensing microsatellite. Its mass is 112 kg and its ground resolution is 2.5 metres

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Axelspace Corporation
Website	www.axelspace.com/en/solution_/grus/
Launch vehicle	Soyuz-2.1a
Other information	The satellite was launched on a commercial Soyuz-2 launch mission operated by GK Launch Services on 22 March 2021

GRUS-1C

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2021-022B
Name of space object	GRUS-1C

State of registry	Japan
Other launching States	Kazakhstan and Russian Federation
Date and territory or location of launch	22 March 2021 at 0607 hours 12.83 seconds UTC; Baikonur Cosmodrome, Kazakhstan
Basic orbital parameters	
Nodal period	96.3 minutes
Inclination	97.7 degrees
Apogee	585 kilometres
Perigee	585 kilometres
General function of space object	GRUS-1C is a next-generation optical remote sensing microsatellite. Its mass is 112 kg and its ground resolution is 2.5 metres

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Axelspace Corporation
Website	www.axelspace.com/en/solution_/grus/
Launch vehicle	Soyuz-2.1a
Other information	The satellite was launched on a commercial Soyuz-2 launch mission operated by GK Launch Services on 22 March 2021

GRUS-1D

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2021-022E
Name of space object	GRUS-1D
State of registry	Japan
Other launching States	Kazakhstan and Russian Federation
Date and territory or location of launch	22 March 2021 at 0607 hours 12.83 seconds UTC; Baikonur Cosmodrome, Kazakhstan
Basic orbital parameters	
Nodal period	96.3 minutes
Inclination	97.7 degrees
Apogee	585 kilometres
Perigee	585 kilometres
General function of space object	GRUS-1D is a next-generation optical remote sensing microsatellite. Its mass is 112 kg and its ground resolution is 2.5 metres

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Owner: Fukui Prefecture, Japan Operator: Axelspace Corporation
Website	www.axelspace.com/en/solution_/grus/
Launch vehicle	Soyuz-2.1a
Other information	The satellite was launched on a commercial Soyuz-2 launch mission operated by GK Launch Services on 22 March 2021

GRUS-1E

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2021-022D
Name of space object	GRUS-1E
State of registry	Japan
Other launching States	Kazakhstan and Russian Federation
Date and territory or location of launch	22 March 2021 at 0607 hours 12.83 seconds UTC; Baikonur Cosmodrome, Kazakhstan
Basic orbital parameters	
Nodal period	96.3 minutes
Inclination	97.7 degrees
Apogee	585 kilometres
Perigee	585 kilometres
General function of space object	GRUS-1E is a next-generation optical remote sensing microsatellite. Its mass is 112 kg and its ground resolution is 2.5 metres

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Axelspace Corporation
Website	www.axelspace.com/en/solution_/grus/
Launch vehicle	Soyuz-2.1a
Other information	The satellite was launched on a commercial Soyuz-2 launch mission operated by GK Launch Services on 22 March 2021

ELSA-d

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2021-022N
Name of space object	ELSA-d
State of registry	Japan
Other launching States	Kazakhstan and Russian Federation
Date and territory or location of launch	22 March 2021 at 0607 hours 12.83 seconds UTC; Baikonur Cosmodrome, Tyuratam, Kazakhstan
Basic orbital parameters	
Nodal period	95.58 minutes
Inclination	97.56 degrees
Apogee	559 kilometres
Perigee	534 kilometres
General function of space object	The End-of-Life Services by Astroscale (ELSA) programme is a spacecraft retrieval service for satellite operators. ELSA-d (a demonstration mission) is the first mission to demonstrate the core technologies necessary for debris docking and removal ELSA-d consists of two spacecraft: a servicer satellite (mass of approximately 175 kg) and a client satellite (mass of approximately 17 kg), launched together in a stack. The servicer satellite has been developed to safely remove debris objects from orbit and is equipped with proximity rendezvous technologies and a magnetic docking mechanism. The client satellite is a piece of replica debris fitted with a ferromagnetic plate that enables the docking The servicer will repeatedly release and dock with the client in a series of technical demonstrations, proving the capability to find and dock with defunct satellites and other debris. Demonstrations include client search, inspection and rendezvous, and both non-tumbling and tumbling docking manoeuvres

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Astroscale Japan Inc.
Website	https://astroscale.com/elsa-d/
Launch vehicle	Soyuz-2.1a launch vehicle with a Fregat upper stage (used to launch the CAS500-1 satellite, along with small satellites and CubeSats)
Other information	ELSA-d consists of two spacecraft: a servicer satellite (mass of approximately 175 kg) and a client satellite (mass of approximately 17 kg), launched together in a stack. The client satellite will be registered as a new space object after it is released from a servicer The ELSA-d servicer satellite and the ELSA-d client satellite are separately licensed for their mission operations under the Outer Space Act 1986 of the United Kingdom of Great Britain and Northern Ireland and are controlled in the United Kingdom in accordance with the provisions of the Act The satellites were launched on a commercial Soyuz-2 launch mission operated by GK Launch Services on 22 March 2021

RSP-00

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067PP
Name of space object	RSP-00
State of registry	Japan
Registration document	ST/SG/SER.E/966
Date and territory or location of launch	6 October 2018 at 1700 hours 0 seconds UTC; ISS
Basic orbital parameters	
Nodal period	91 minutes
Inclination	51.6 degrees
Apogee	401.8 kilometres
Perigee	393.7 kilometres

General function of space object	Technology demonstration of a transmitter that realizes transmissions at a higher speed than a conventional transmitter by sending photos of the Earth taken by RSP-00 itself. A conventional transmitter is also installed and sends photos
Date of decay/re-entry/deorbit	14 March 2021 UTC

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Ryman Sat Project Japan
Other information	The space object was launched on 22 September 2018 UTC by H-IIB-F7 and transported to ISS by HTV-7 The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

RSP-01

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067SB
Name of space object	RSP-01
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	14 March 2021 at 1120 hours 0 seconds UTC; ISS
Basic orbital parameters	
Nodal period	92.87 minutes
Inclination	51.64 degrees
Apogee	417 kilometres
Perigee	414 kilometres
General function of space object	RSP-01 is 1U CubeSat mission that: (a) sends pictures of the satellite itself taken by an on-board camera; (b) sends high-definition pictures taken by an on-board camera; and (c) demonstrates autonomous operation by means of machine learning

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Ryman Sat Project Japan
Website	www.rsp01.rymansat.com/en
Other information	The space object was launched on 20 February 2021 UTC by an Antares rocket and transported to ISS by Cygnus NG-15 The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

Tsuru

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067SD
Name of space object	Tsuru
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	14 March 2021 at 1120 hours 0 seconds UTC; ISS
Basic orbital parameters	
Nodal period	91.1 minutes
Inclination	51.6 degrees
Apogee	416 kilometres
Perigee	415 kilometres
General function of space object	Short message transmission by means of a continuous wave beacon; store-and-forward communication of remote sensing data from ground terminals to ground station; Earth photography using a commercial, off-the-shelf camera module; demonstration of a commercial, off-the-shelf glue; demonstration of active attitude determination and control; demonstration of Perovskite solar cells; demonstration of a loop antenna design using the satellite's structure as an antenna; demonstration of on-board image processing and classification; and demonstration of a latch-up detection circuit

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Kyushu Institute of Technology, Japan
Website	https://birds4.birds-project.com/
Other information	Launched by an Antares rocket on 20 February 2021 and carried by the Cygnus NG-15 spacecraft to ISS
	The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

WARP-01

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067SA
Name of space object	WARP-01
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	14 March 2021 at 1150 hours 0 seconds UTC; ISS
Basic orbital parameters	
Nodal period	92.8 minutes
Inclination	51.6 degrees
Apogee	425.0 kilometres
Perigee	417.5 kilometres
General function of space object	To demonstrate new satellite bus components
	To carry wedding memorial plates into space
	To gather images of the Earth and space
	To survey the radiation environment in space
	To survey the radio environment in space

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Warpspace Inc. and University of Tsukuba, Japan
Website	https://warpspace.jp/
Launch vehicle	Antares 230+

Other information	WARP-01 was launched on 20 February 2021 UTC by an Antares 230+ rocket and carried to ISS by Cygnus (enhanced) Commercial Resupply Services NG-15 The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

STARS-EC

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	1998-067SE
Name of space object	STARS-EC
State of registry	Japan
Other launching States	United States
Date and territory or location of launch	14 March 2021 at 1500 hours 0 seconds UTC; ISS
Basic orbital parameters	
Nodal period	92.9 minutes
Inclination	51.6 degrees
Apogee	425.7 kilometres
Perigee	417.0 kilometres
General function of space object	3U CubeSat with an ultra-small orbital elevator The tether extends from 1U CubeSats positioned at both ends (each portion of the tether is 11 metre in length, for a total of 22 metres in length) The middle 1U CubeSat moves along the tether

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Shizuoka University
Launch vehicle	Antares
Other information	The space object was launched on 20 February 2021 UTC by an Antares rocket and transported to ISS by Cygnus NG-15. The date of launch is the date of deployment from ISS and the territory or location of launch is the location of deployment

Annex II

Registration data on rockets launched by Japan*

H-IIA Launch Vehicle Flight No. 41 Upper Stage

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-009B
Name of space object	H-IIA Launch Vehicle Flight No. 41 Upper Stage
National designator/registration number	2020-009B
State of registry	Japan
Date and territory or location of launch	9 February 2020 UTC; Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	95 minutes
Inclination	97.3 degrees
Apogee	513 kilometres
Perigee	499 kilometres
General function of space object	The spent upper stage of the H-IIA Launch Vehicle Flight No. 41

H-IIA Launch Vehicle Flight No. 42

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-047B
Name of space object	H-IIA Launch Vehicle Flight No. 42
State of registry	Japan
Date and territory or location of launch	19 July 2020 at 2158 hours 14 seconds UTC; Tanegashima Space Center
Basic orbital parameters	
Nodal period	Data not available (Mars transfer trajectory)
Inclination	30.3 degrees
Apogee	Data not available (Mars transfer trajectory)
Perigee	240 kilometres

* The information was submitted using the form prepared pursuant to General Assembly resolution 62/101 and has been reformatted by the Secretariat.

General function of space object	The H-IIA Launch Vehicle Flight No. 42 was used to put the United Arab Emirates Hope Mars probe into a Mars transfer trajectory

Additional voluntary information for use in the Register of Objects Launched into Outer Space

Space object owner or operator	Mitsubishi Heavy Industries, Ltd.
Launch vehicle	H-IIA Launch Vehicle Flight No. 42
Celestial body space object is orbiting	The Sun

H-IIA Launch Vehicle Flight No. 43 Upper Stage

Information provided in conformity with the Convention on Registration of Objects Launched into Outer Space

Committee on Space Research international designator	2020-089B
Name of space object	H-IIA Launch Vehicle Flight No. 43 Upper Stage
National designator/registration number	2020-089B
State of registry	Japan
Date and territory or location of launch	29 November 2020 UTC; Tanegashima Space Center, Kagoshima, Japan
Basic orbital parameters	
Nodal period	621 minutes
Inclination	28.5 degrees
Apogee	35,262 kilometres
Perigee	200 kilometres
General function of space object	The spent upper stage of the H-IIA Launch Vehicle Flight No. 43