Number	Satellite	Operationa time	Orbit Type		Orbit Parameters				Dimensions m		Mass kg		Launch date	Nation	Launch site/ Rocket	Organisation	Norad number	Instruments	Manufacturer	LINKS TO INFORMATION	IMAGE LINK
				Mission objective	Perigee km	Apogee km	Inclination deg	Period min	Spacecraft	Solar array	Dry	Launch									
1	HIRS-2/TOVS (NOAA-10-18)	July 1987– June 1991	Polar Orbit/ Sun-synchronous	h, its surface and cloud cover,	833 km	870	98.594	101.5	3.71 x 1.88	2.37 x 4.91	740	1420	17 September 1986	USA	Vandenberg, SLC-3W / Atlas-E Star-37S-ISS	NOAA (U.S.)	16369	catter Ultraviolet Radiometer (SBUV/2), Search and Rescue Satellite Aided Tracking (SARSAT), Earth Radiation Budget Experiment (ERBE), Space	GE Aerospace	ase/data_available/tovs_atovs/index.htm , https	https://images.app.goo.gl/ijYceUqMYod1JHex5
2	IMG (ADEOS I)	17 August 1996– June 1997/ FAIL	Polar Orbit/ Sun-synchronous	Earth environmental research	792	795	98.7	101	4 X 4 X 5	5000 Watts	1300	3500	17 August 1996	Japan	Tanegashima Yoshinobu / H-II	NASDA (Japan)	24277	diometer (AVNIR), Scatterometer (NSCAT), Polarization and Directionality of the Earth's Reflectance (POLDER), Limb Atmospheric Spectrometer	Mitsubishi Electric	portal/satellite-missions/a/adeos ,https://en.wik	https://images.app.goo.gl/ZzavLkXP2vGrzS4G8
3	IMG (ADEOS II)	December 2002– October 2003/Power FAIL	Polar Orbit/ Sun-synchronous	ter and energy cycle as a part of mass and fundamental productivi change as a result of continuing t	799	802	98.34	101.2	4 X 4 X 5	5000 Watts	1305	3680	14 December 2002	Japan	Tanegashima Yoshinobu 1 / H-IIA 202	NASDA (Japan)	27597	diometer (AMSR), Global Imager (GLI), Improved Limb Atmospheric Spectrometer-II (ILAS-II), Polarization and Directionality of the Earth's Refle	Mitsubishi Electric	rtal/satellite-missions/a/adeos-ii , https://en.wik	https://images.app.goo.gl/fXuopkFkmqNjYhSX9
4	SCIAMACHY (Envisat)	1 March 2002– May 2012	Polar Low Orbit/ Sun-synchronous	h environmental research, Observ	772	774	98.4	100.16	26 x 10 x 5	-6500 Watts	-	8211	1 March 2002	Europe	Kourpu ELA-3 / Ariane 5G V-145	ESA, IUP University of Bremen (Germany)	27386	g Imaging Absorption spectroMeter for Atmospheric CHartographY) compares light coming from the sun to light reflected by the Earth, which provid	Airbus Space and	kipedia.org/wiki/Envisat#Instruments , https://w	https://images.app.goo.gl/dGZfcgNSM1aZiAYw8
5	AIRS (Aqua)	4 May 2002– ongoing	Polar Low Orbit/ Sun-synchronous	tion, evaporation, and cycling	702	703	98.198	99	4.81 x 16.7 x 8.04	4444 Watts	2850	3117	4 May 2002	USA	Vandenberg, SLC-2W / Delta II 7920-10L	JPL (U.S.)	27424	ution Imaging Spectroradiometer (MODIS), Advanced Microwave Sounding Unit (AMSU-A), Atmospheric Infrared Sounder (AIRS), Humidity Sour	TRW	a.nasa.gov , https://en.wikipedia.org/wiki/Aqua	https://images.app.goo.gl/C57zmEJo5jesXyxZ9
6	IASI (MetOp) 3 Satellites	19 October 2006	Polar Orbit/ Sun-synchronous	operational meteorology	705	709	98.7	101	6.2 x 3.4 x 3.4	17.6 x 6.5 5.2	4093	4905	6 / 17 September 2012 / 7	Europe	Baikonur/ Baikonur /Guiana / Soyus ST Fregat	CNES/EUMETSAT (ESA)	06-044A / 2021-049A / 2018-08	-2, SARP-3, SARR , MHS, IASI – Infrared Atmospheric Sounding Interferometer, GRAS – Global Navigation Satellite System Receiver for Atmosph	Eumetsat	.wikipedia.org/wiki/MetOp https://earth.esa.in	https://images.app.goo.gl/aAbhA87otrR9JHtR9
7	GOSAT	23 January 2009– ongoing	Polar Low Orbit/ Sun-synchronous	Greenhouse Gas Monitoring	674	676	98.06	98.12	??	3800 Watts	-	1750	23 January 2009	Japan	Tanegashima Yoshinobu 1 / H-IIA 202 F15	JAXA (Japan)	33492	greenhouse gas observation sensor (TANSO-FTS), cloud/aerosol sensor (TANSO-CAI)	Mitsubishi Electric	en.wikipedia.org/wiki/Greenhouse_Gases_Obse	https://images.app.goo.gl/RvJaQEj5BdvpwRNi6
8	GOSAT 2	29 October 2018– ongoing	Polar Low Orbit/ Sun-synchronous	Greenhouse Gas Monitoring	612	618	97.84	98.1	??	5000 Watts	-	1800	29 October 2018	Japan	Tanegashima Yoshinobu 1 / H-IIA F40	JAXA (Japan)	43672	greenhouse gas observation sensor (TANSO-FTS), cloud/aerosol sensor (TANSO-CAI), TANSO-FTS-2 (TANSO-CAI 2	Mitsubishi Electric	ouse_Gases_Observing_Satellite-2 https://earth	https://images.app.goo.gl/2K3FtNaT3GUmmvo3A
9	OCO	24 February 2009	Polar Low Orbit/ Sun-synchronous	al space-based observations of (CO2)			Fail	Fail	Fail	Fail	Fail	Fail	24 February 2009	USA	Vandenberg, LC-576E / Taurus XL 3110 (T8)	JPL (U.S.)	-	pectrometers, integrated into a common structure and fed by a common telescope. The spectrometers will make simultaneous measurements of the car	Oribtal Sciences	Observatory#Technology https://directory.eopo	https://images.app.goo.gl/F3Gbmpaninj9cjFu7
10	OCO-2	2 July 2014– ongoing	Polar Low Orbit/ Sun-synchronous	al space-based observations of (C	701	703	98.2	98.82	2.12 x 0.94	815 Watts	409	454	2 July 2014	USA	Vandenberg, SLC-2W / Delta II 7320-10C	JPL (U.S.)	40059	the instrument, provides power, receives and processes commands from the ground, records, and downlinks the data collected by the instrument, and r	Oribtal Sciences	Orbiting_Carbon_Observatory_2 https://direct	https://images.app.goo.gl/DcDYJHusv69Mk7we8
11	GHGSat-D (or Claire)	21 June 2016– ongoing	Polar Low Orbit/ Sun-synchronous	reenhouse gas monitoring satellit	495	507.8	97.3	94.5	0.2 x 0.2 x 0.4	80 Watts	9	15	22 June 2016	Canada	Sr SLP / PSLV-XL (ISRO)	GHGSat (Canada)	?	a wide-angle Fabry-Perot (WAF-P) imaging spectrometer	pace Flight Laborat	yrocket.de/doc_sdat/ghgsat-d.htm , https://puls	https://images.app.goo.gl/SoQhjmdTSXqMvWuY99
12	GHGSat-C1 (or Iris)	9 March 2020 - Ongoing	Polar Low Orbit/ Sun-synchronous	reenhouse gas monitoring satellit	495	507.8	97.3	94.5	0.2 x 0.3 x 0.4	80 Watts	10	16	3 September 2020	Canada	Ko ELV / Vega (ESA)	GHGSat (Canada)	?	a wide-angle Fabry-Perot (WAF-P) imaging spectrometer	pace Flight Laborat	yrocket.de/doc_sdat/ghgsat-d.htm , https://puls	https://images.app.goo.gl/SoQhjmdTSXqMvWuY9
13	GHGSat-C2 (or Hugo)	1 January 2021 Ongoing	Polar Low Orbit/ Sun-synchronous	reenhouse gas monitoring satellit	495	507.8	97.3	94.5	0.2 x 0.3 x 0.4	80 Watts	10	16	21 January 2021	Canada	CC SLC-40 / Falcon-9 v1.2 (Block5) (Space x)	GHGSat (Canada)	?	a wide-angle Fabry-Perot (WAF-P) imaging spectrometer	pace Flight Laborat	yrocket.de/doc_sdat/ghgsat-d.htm , https://puls	https://images.app.goo.gl/SoQhjmdTSXqMvWuY9
14	TanSat (or CarbonSat)	21 December 2016– ongoing	Polar Low Orbit/ Sun-synchronous	dicated to the carbon dioxide (CO2)	700		98.2		1.5 x 1.8	1790 Watts	610	620	21 December 2016	China	Jiuquan Satellite Launch Center / March 2D	CAS (China)	41898	High-resolution Carbon Dioxide Spectrometer and Cloud and Aerosol Polarimetry Imager	icrosystems and I	TanSat - eoPortal Directory - Satellite Missions	tal.org/ftp/satellite-missions/t/TanSat-22032021/TanSat_Auto15.jpeg
15	GAS FTS aboard FY-3D	15 November 2017– ongoing[39]	Polar Low Orbit/ Sun-synchronous	operational meteorology	831.6	834.9	98.8	101.4	4.46 x 10	2500 Watts	2250	750	15 November 2017	China	Taiyaun Space Center	CMA (China)	43010	Greenhouse-gases Absorption Spectrometer	atellite Meteorolog	FY-3D (nsmc.org.cn)	s://fy4.nsmc.org.cn/nsmc/cn/satellite/pic/fy3/FY-3D_inst.jpg
16	GMI (GaoFen-5, (fr))	8 May 2018– ongoing[42]	Polar Low Orbit/ Sun-synchronous	nition Earth Observation System	705.5	709.2	98.12	98.8	-	-	-	-	8 May 2018	China	Jiuquan Space Center / CZ-4C	CAS (China)	43461	Advanced Hyperspectral Imager (AHSI) Visual and Infrared Multispectral Sensor (VIMS) Greenhouse-gases Monitoring Instrument (GMI) Atmospheric Infrared Ultraspectral (AIUS) Environment Monitoring Instrument (EMI) Directional Polarization Camera (DPC)	ratory of Remote S	ofen 5 (GF 5) - Gunter's Space Page (skyrocket.	https://space.skyrocket.de/img_sat/gf-5__2.jpg
17	OCO-3	4 May 2019– ongoing[48]	LEO / Mounted on ISS	from the presence of CO2 i	418	422	51.6	92.68	1.85 × 1.0 × 0.8	600 W	-	500	May 4, 2019	USA	Cape Canaveral. Falcon 9, SpaceX CRS-15	JPL (U.S.)	25544 (ISS)	https://ocov3.jpl.nasa.gov/payload/instrument/	JPL	https://doi.org/10.1016/j.rse.2021.112314 https://ocov3.jpl.nasa.gov/	://ocov3.jpl.nasa.gov/media/images/payload-small.original.jpg
18	MicroCarb	*expected 2022*	Sun-synchronous orbit	or and characterize CO2 surface	650	650	-	-	-	200 W	170	200	TBD	France	TBD	CNES (France)	-	https://microcarb.cnes.fr/en/MICROCARB/GP_instrument.htm	CNES	ps://microcarb.cnes.fr/en/MICROCARB/index.h	t/files/styles/large/public/drupal/201512/image/bpc_microcarb-satellite.png?itok=eV8ry5RW
19	GOSAT-3 (GOSAT-GW)	*expected 2023*	Polar Low Orbit/ Sun-synchronous	Greenhouse Gas Monitoring		666			-	-	-	1700	To be Defined	Japan	To be defined	JAXA (Japan)	-	Thermal And Near infrared Sensor for carbon Observations Advanced Microwave Scanning Radiometer - 3 Other instruments may be added	Mitsubishi	WMO OSCAR | Satellite: GOSAT-GW	Not yet available
20	GeoCARB	expected 2023																			
21	MethaneSat	expected 2022																https://www.methanesat.org/2020/02/21/methanesat-instrument-orbital-platform-clear-key-design-milestone			
22	Sentinel 5 Precursor Sattelite																				
					659.19375	715.96875															
	https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=4285&context=smallsat																				