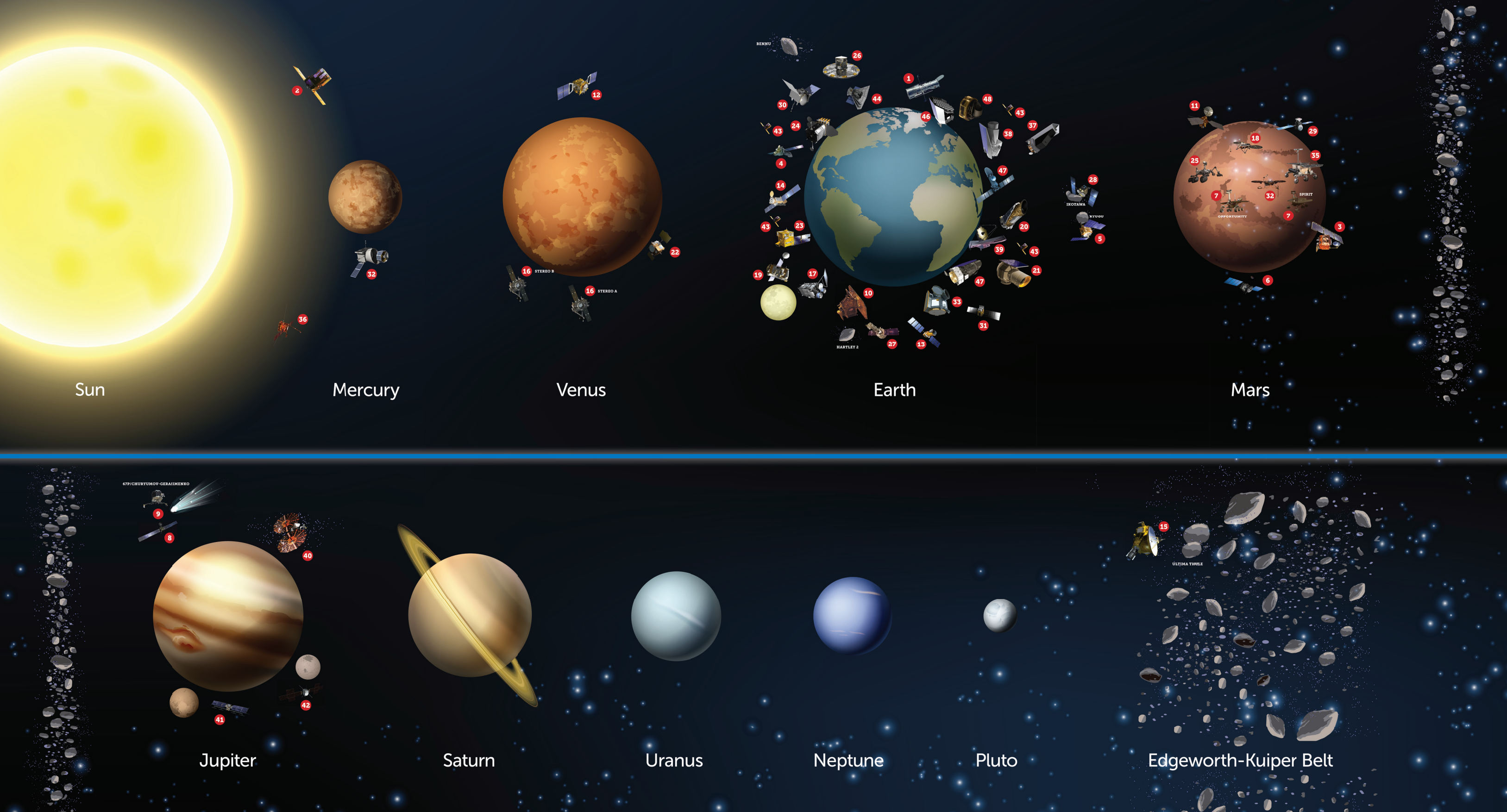
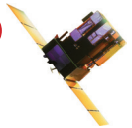
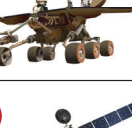
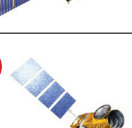


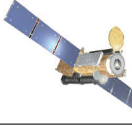
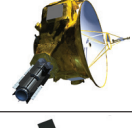
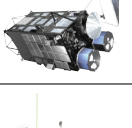
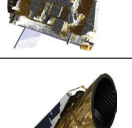
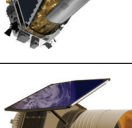
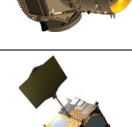
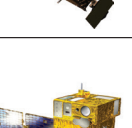
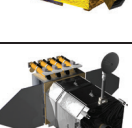
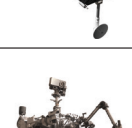
Teledyne Exploring the Universe

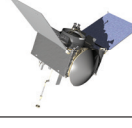
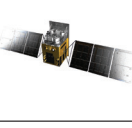
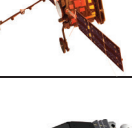
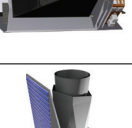
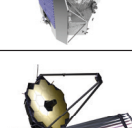
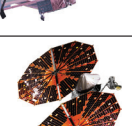
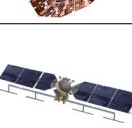
Teledyne enables the study of the universe, from the discovery of exoplanets to making it possible to advance our knowledge of the cosmos.

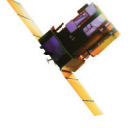
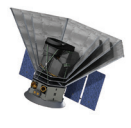
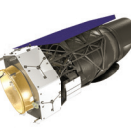


Mission Index

1		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	HUBBLE SPACE TELESCOPE (HST) ESA/NASA Revolutionised modern astronomy 1990 e2v, Reynolds, TIS CCD43-82, H1R, SIDECAR ASIC, Cables/Connectors
2		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	SOHO NASA Facing the sun 1995 e2v CCD47-20
3		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	MARS SURVEYOR '98 PROGRAM ESA Mars Climate Orbiter and Polar Lander 1998 e2v TH7895M
4		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	XMM-NEWTON ESA Study celestial X-ray sources 1999 e2v CCD02-06, CCD15-30, CCD22
5		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	HAYABUSA (MUSES-C) JAXA Asteroid explorer 2003 e2v, Reynolds CCD47-20, Cables/Connectors
6		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	MARS EXPRESS ESA Investigating the Red Planet 2003 e2v TH7808, CCD47-20
7		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	MARS EXPLORATION ROVERS: SPIRIT & OPPORTUNITY NASA In search of clues for water on Mars 2003 DALSA 1k x 1k CCD
8		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	ROSETTA ORBITER ESA Deep space comet rendezvous 2004 e2v, Reynolds CCD42-80, TH7896M
9		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	PHILAE ESA Landed on comet 67P/Churyumov–Gerasimenko 2004 e2v, TIS TH7888, NICMOS, Cables/Connectors
10		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	DEEP IMPACT & EPOXI NASA Visited comets Tempel 1 and Hartley 2 2005 TIS H1R
11		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	MARS RECONNAISSANCE ORBITER (MRO) NASA Studies Mars surface and atmosphere from orbit 2005 e2v, TIS, Judson CCD89, 6604A, thermoelectrically cooled package, †
12		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	VENUS EXPRESS ESA Studying the Venusian atmosphere 2005 e2v CCD47-20
13		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	CONVECTION, ROTATION & PLANETARY TRANSITS (CoRoT) ESA Search for habitable, Earth-like planets around other stars 2006 e2v CCD42-80

14		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	HINODE (SOLAR-B) JAXA / NASA Studying the impact of the Sun on the Earth 2006 e2v CCD42-20, CCD42-40
15		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	NEW HORIZONS NASA Mission to Pluto and the Kuiper Belt 2006 e2v, TIS, Reynolds CCD47-20, CCD96, H1R, Cables/Connectors
16		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	STEREO A+B NASA Revolutionary view of the Sun-Earth System 2006 e2v CCD42-40
17		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	KAGUYA SELENE JAXA Lunar origin, evolution and future exploration 2007 e2v CCD47-20
18		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	PHOENIX MARS LANDER NASA Mars Scout Program 2007 Optech Lidar within the Meteorological Station (MET)
19		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	CHANDRAYAAN-1 NASA Lunar Orbit, Lunar Impact 2008 TIS 6604A
20		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	KEPLER NASA Explore the structure and diversity of planetary systems 2009 e2v CCD90
21		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	WISE / NEOWISE NASA Wide-field Infrared Survey Explorer 2009 TIS H1RG
22		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	AKATSUKI (PLANET-C) JAXA Venus climate orbiter 2010 e2v CCD42-20, CCD42-40
23		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	PICARD CNES Solar research — absolute total and spectral solar irradiance 2010 e2v CCD42-80
24		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	SOLAR DYNAMICS OBSERVATORY (SDO) NASA Understand the causes of solar variability and its impacts on Earth 2010 e2v CCD203-82
25		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	MARS CURIOSITY ROVER NASA Part of NASA's Mars Science Laboratory mission 2011 e2v, DALSA, Reynolds, Energy Systems, Microelectronics, Relays, Impulse, CCD224-20, †, MMRTG, †, †, †, Cables/Connectors
26		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	GAIA ESA Mapping 1 billion stars 2013 e2v CCD91-72
27		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	INTERFACE REGION IMAGING SPECTROGRAPH (IRIS) NASA Explorer Mission to observe how solar material moves, gathers energy, and heats up 2013 e2v CCD267

28		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	HAYABUSA-2 JAXA Asteroid exploration mission 2014 e2v, Reynolds CCD47-20, CCD47-20, Cables/Connectors
29		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	EXOMARS ORBITER ESA / ROSCOSMOS Investigate trace gases in the Martian atmosphere 2016 e2v, Reynolds CCD30-11, Cables/Connectors
30		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	OSIRIS-REx NASA Asteroid sample return mission 2016 TIS, DALSA, Optech, TES H1RG, CCDs, OLA, †
31		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	HXMT (INSIGHT) NASA Scan the Galactic Plane to find new transient sources 2017 e2v CCD236
32		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	BEPI COLOMBO ESA / JAXA Exploring Mercury 2018 Reynolds Cables/Connectors
33		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	CHEOPS ESA Studying planets around other stars 2018 e2v CCD47-20
34		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	MARS InSight ESA Interior Exploration using Seismic Investigations, Geodesy and Heat Transport 2018 DALSA †, †
35		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	ROSALIND FRANKLIN ESA/ROSCOSMOS Exploring the Mars surface 2020 e2v, Reynolds CCD230-22, Sapphire, †, Cables/Connectors
36		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	SOLAR ORBITER ESA The sun up close 2020 e2v, Reynolds Cables/Connectors, †
37		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	NEOCam NASA Survey of near Earth asteroids 2020s TIS H2RG, SIDECAR ASIC
38		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	EUCLID ESA Mapping the Dark Universe 2021 e2v, TIS, TES CCD273-84, H2RG, SIDECAR ASIC, †
39		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	JAMES WEBB SPACE TELESCOPE (JWST) NASA/ESA/CSA Examine every phase of cosmic history 2021 TIS, TES H2RG, SIDECAR ASIC, †
40		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	LUCY NASA The first mission to Jupiter's Trojans 2021 TIS, TES, e2v H2RG, †, CCD47-20
41		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	EUROPA CLIPPER NASA Reconnaissance of Jupiter's moon Europa 2022 tbc Reynolds, TIS, TES CHROMA-A, H1RG, Cables/Connectors, †

42		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	JUICE ESA Studying Jupiter's icy moons 2022 e2v, Reynolds, TIS, TES CIS115, H1RG, SIDECAR ASIC, †, Cables/Connectors
43		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	PUNCH NASA Focus on the Sun's corona, and how it generates the solar wind 2022 e2v CCD230-82
44		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	SPHEREx NASA Low resolution spectroscopy of 300 million galaxies 2023 TIS H2RG, SIDECAR ASIC
45		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	WORLD SPACE OBSERVATORY – ULTRAVIOLET WSO-UV ROSCOSMOS FUV, NUV spectroscopy & imaging 2025 e2v CCD272-64, Electronics Unit
46		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	PLATO ESA Hunting planets beyond our Solar System 2026 e2v CCD Bruyères
47		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	WIDE FIELD INFRARED SURVEY TELESCOPE (WFIRST) NASA Measure 1 billion galaxies to study dark matter and dark energy 2026 tbc e2v, TIS, TES CCD301, H4RG-10, †
48		MISSION SPACE AGENCY DESCRIPTION LAUNCH YEAR COMPANY PRODUCTS	ARIEL ESA Observe atmospheres of 1000 exoplanets 2028 TIS, TES H1RG, SIDECAR ASIC, †

Company Index

E2V	TELEDYNE e2v	Visible CCD & CMOS Imaging Sensors
DALSA	TELEDYNE DALSA	Visible CCD & CMOS Imaging Sensors
TIS	TELEDYNE IMAGING SENSORS	Infrared FPAs, SIDECAR ASICs
REYNOLDS	TELEDYNE REYNOLDS	Cables/Connectors
OPTECH	TELEDYNE OPTECH	LIDAR
TES	TELEDYNE ENERGY SYSTEMS	Thermal Power Systems
ME	TELEDYNE MICROELECTRONICS	Electronic Devices & Systems
RELAYS	TELEDYNE RELAYS	Relays
IMPULSE	TELEDYNE IMPULSE	Interconnects
JUDSON	TELEDYNE JUDSON	Infrared Diodes & FPAs
† Part number not available, may represent more than one product on the mission		



FOR MORE INFORMATION GO TO
www.teledyne.com

Missions not shown for clarity containing Teledyne content: Cassini, Huygens Probe, Dawn, SUIT, Juno, MESSENGER, Maven, Radiation Bel Storm Probes, Parker Solar Probe, AGILE, Explorer 1, Voyager 1 & 2, Pioneer 10 & 11, Galileo (Jupiter Probe), Chandra, NEAR, MUSES-CN, CIVA.

Actual orbits not shown, spacecraft layout is for graphical purposes to depict the quantity of missions, their approximate locations in the solar system and the objects they study. Map and images not to scale. For representation purposes only.

© Teledyne Technologies Incorporated | 2019 09 23 | © Spacecraft images courtesy of NASA, ESA, JAXA
Concept and Data by Mark Bown, Teledyne e2v | Design by Chris McCorkindale, Teledyne Imaging