

National Aeronautics and  
Space Administration



# EXPLORE

## 2021 SmallSat Conference

**Florence Tan**

Deputy Chief Technologist

Science Mission Directorate

Chair, Small Spacecraft Coordination Group (SSCG)

NASA Headquarters, Washington DC

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# SSCG Current Activities

2021 SmallSat Forum (virtual)  
Released Access2Space Report<sup>1</sup>  
SmallSat Science and Industry  
Webinars (S3VI and GSFC)

Invited talks at SmallSat Symposium,  
IEEE Aerospace Conference, Small  
Satellite Conference, AGU, etc.

SmallSat Reliability Institute Website  
Launch<sup>2</sup>

Inter-agency collaboration with NOAA,  
DoD

New Ground Station – Morehead  
Setting up – MIT Haystack (license  
received)

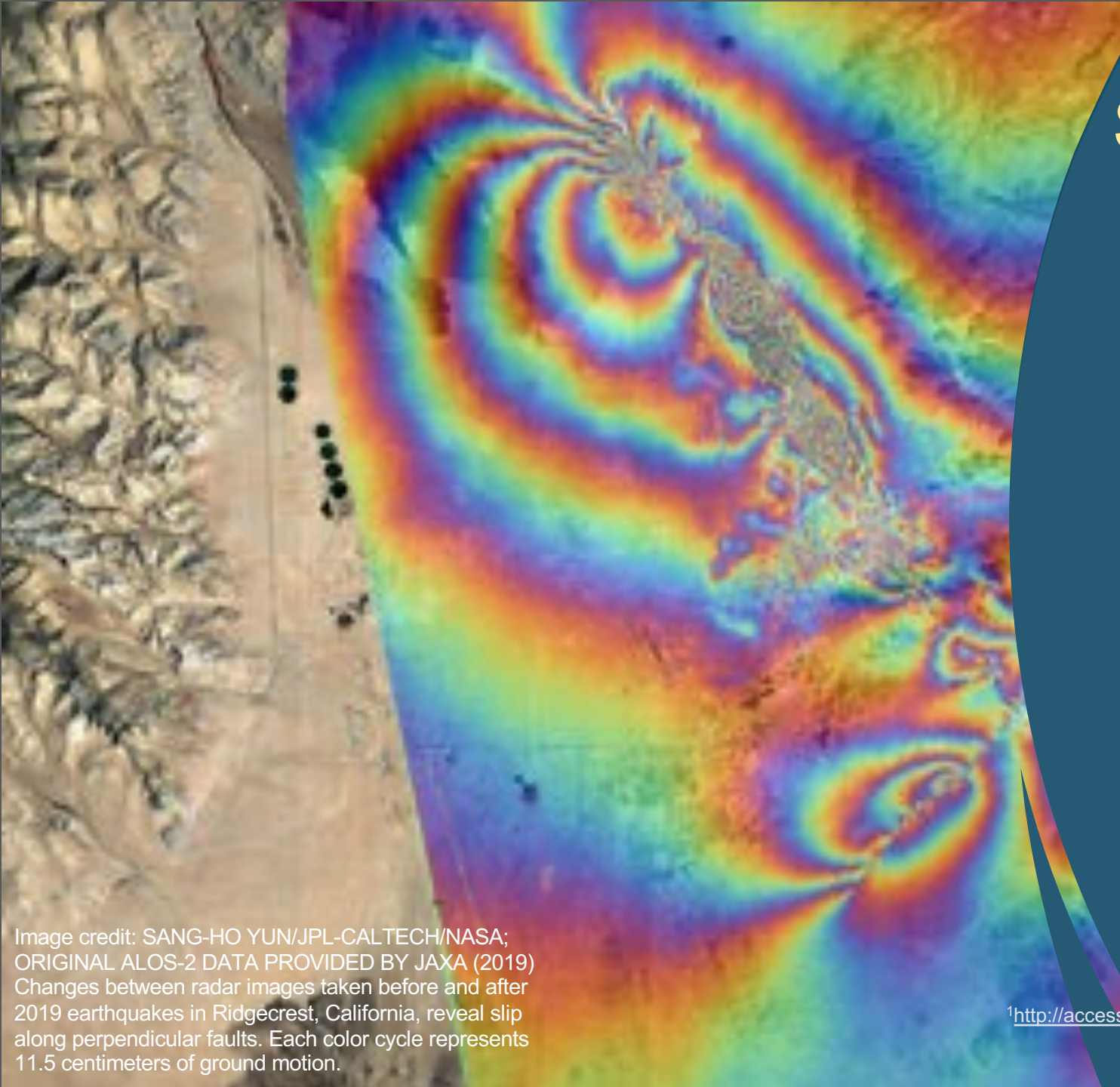
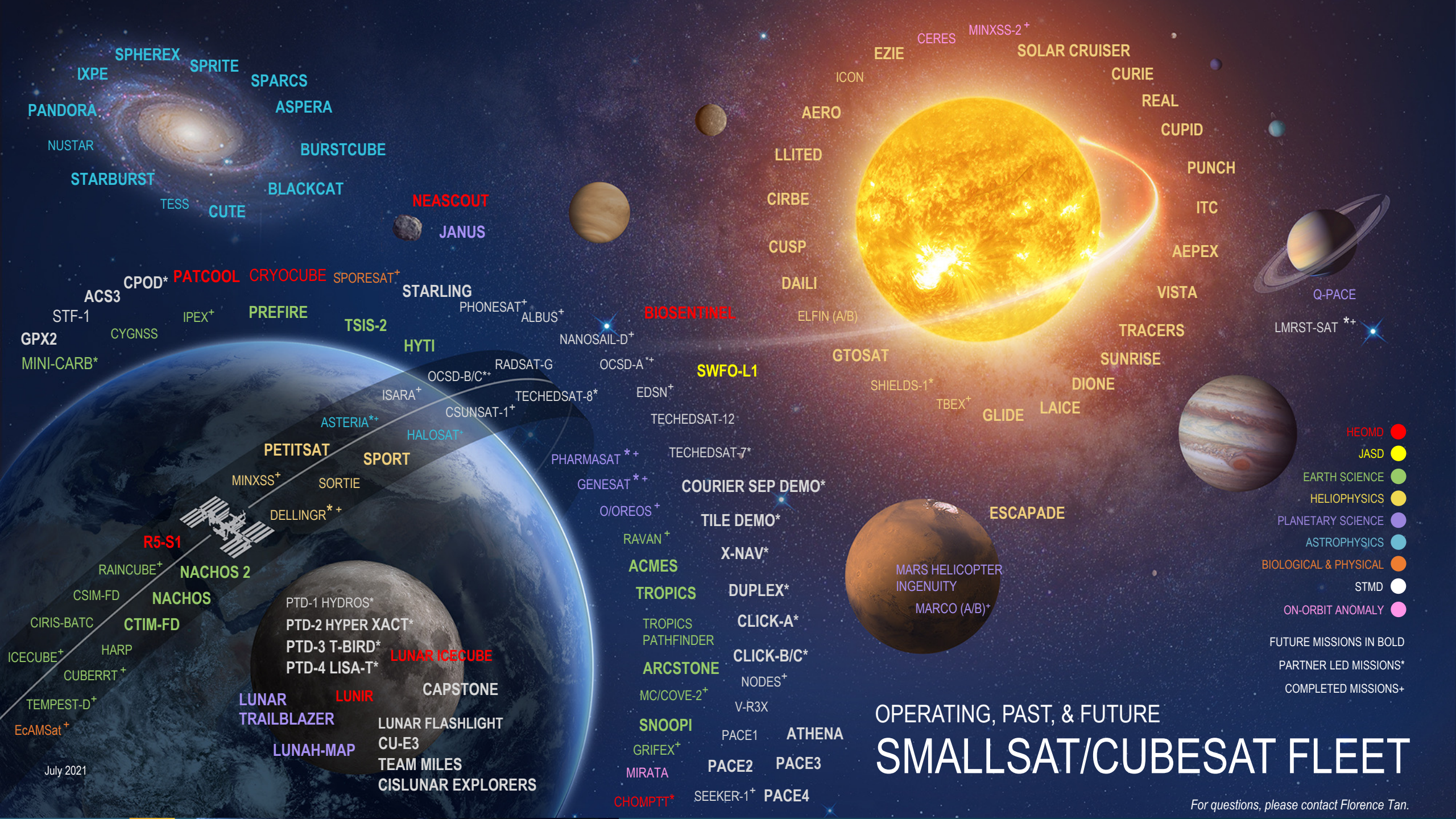


Image credit: SANG-HO YUN/JPL-CALTECH/NASA;  
ORIGINAL ALOS-2 DATA PROVIDED BY JAXA (2019)  
Changes between radar images taken before and after  
2019 earthquakes in Ridgecrest, California, reveal slip  
along perpendicular faults. Each color cycle represents  
11.5 centimeters of ground motion.

<sup>1</sup>[http://access2space.jhuapl.edu/Agenda/A2S\\_Workshop\\_Results\\_Final%20Report\\_20200910.pdf](http://access2space.jhuapl.edu/Agenda/A2S_Workshop_Results_Final%20Report_20200910.pdf)

<sup>2</sup><https://s3vi.ndc.nasa.gov/ssri-kb/>





IXPE SPHEREX SPRITE SPARCS  
PANDORA ASPERA  
NUSTAR BURSTCUBE  
STARBURST TESS CUTE  
BLACKCAT

NEASCOUT  
JANUS

MINXSS-2+ CERES  
EZIE AERO  
ICON LLITED  
CIRBE  
CUSTP  
DAILI  
ELFIN (A/B)  
SOLAR CRUISER  
CURIE  
REAL  
CUPID  
PUNCH  
ITC  
AEPEX  
VISTA  
TRACERS  
SUNRISE  
DIONE  
GLIDE LAICE  
Q-PACE  
LMRST-SAT\*\*

ACS3 CPOD\* PATCOOL CRYOCUBE SPORESAT+  
STARLING  
STF-1 IPEX+ PREFIRE  
GPX2 CYGNSS IPEX+ TSIS-2  
MINI-CARB\* HYTI  
OCSD-B/C\*\* RADSAT-G OCSD-A\*\*  
ISARA+ TECHEDSAT-8\* EDSN+  
CSUNSAT-1+ SWFO-L1  
ASTERIA\*\* HALOSAT+  
PETITSAT  
SPORT  
MINXSS+ SORTIE  
DELLINGR\*\*

BIOSENTINEL  
NANOSAIL-D+  
TECHEDSAT-12  
TECHEDSAT-7\*  
PHARMASAT\*\*  
GENESAT\*\*  
O/OREOS+RAVAN+ACMES  
TROPICS  
TROPICS PATHFINDER  
ARCSTONE  
MC/COVE-2+SNOOPI  
GRIFEX+  
MIRATA  
CHOMPTT\*

GTOSAT  
SHIELDS-1\* TBEX+  
ESCAPADE  
MARS HELICOPTER INGENUITY  
MARCO (A/B)+

R5-S1  
RAINCUBE+ NACHOS 2  
CSIM-FD NACHOS  
CIRIS-BATC CTIM-FD  
ICECUBE+ HARP  
CUBERRT+  
TEMPEST-D+  
EcAMSat+  
PTD-1 HYDROS\*  
PTD-2 HYPER XACT\*  
PTD-3 T-BIRD\* LUNAR ICECUBE  
PTD-4 LISA-T\*  
LUNAR TRAILBLAZER  
LUNAH-MAP  
LUNAR FLASHLIGHT  
CU-E3  
TEAM MILES  
CISLUNAR EXPLORERS  
CAPSTONE

COURIER SEP DEMO\*  
TILE DEMO\*  
X-NAV\*  
DUPLEX\*  
CLICK-A\*  
CLICK-B/C\*  
NODES+  
V-R3X  
PACE1 ATHENA  
PACE2 PACE3  
SEEKER-1+ PACE4

- HEOMD ●
- JASD ●
- EARTH SCIENCE ●
- HELIOPHYSICS ●
- PLANETARY SCIENCE ●
- ASTROPHYSICS ●
- BIOLOGICAL & PHYSICAL ●
- STMD ●
- ON-ORBIT ANOMALY ●
- FUTURE MISSIONS IN BOLD
- PARTNER LED MISSIONS\*
- COMPLETED MISSIONS+



# NASA SmallSat Status since August 2020

## Missions (formulation or development)

ASPERA (APD)  
 BLACKCAT (APD)  
 BURSTCUBE (APD)  
 CUTE (APD)  
 IXPE (APD)  
 PANDORA (APD)  
 SPARCS (APD)  
 SPRITE (APD)  
 STARBURST (APD)  
 ACMES (ESD)  
 ARCSTONE (ESD)  
 CTIM-FD (ESD)  
 HYTI (ESD)  
 NACHOS (ESD)  
 PREFIRE (ESD)  
 SNOOPI (ESD)  
 TROPICS (ESD)  
 TSIS-2 (ESD)  
 AEPEX (HPD)  
 AERO/VISTA (HPD)  
 CIRBE(HPD)  
 CUPID(HPD)  
 CURIE(HPD)  
 CUSP(HPD)  
 DAILI(HPD)  
 DIONE(HPD)  
 EZIE (HPD)

GLIDE(HPD)  
 GTOSAT(HPD)  
 LAICE(HPD)  
 LLITED(HPD)  
 PETITSAT(HPD)  
 PUNCH(HPD)  
 REAL(HPD)  
 SOLAR CRUISER(HPD)  
 TRACERS(HPD)  
 SPORT(HPD)  
 SE (HPD)  
 ITC (HPD)  
 ESCAPADE (HPD)  
 SWFO-L1 (JASD)  
 JANUS (PSD)  
 LUNAR TRAILBLAZER (PSD)  
 ACS3 (STMD)  
 CISLUNAR EXPLORERS(STMD)  
 CLICK A(STMD)  
 CLICK B/C(STMD)  
 CAPSTONE (STMD / HEOMD)  
 COURIER SEP DEMO (STMD)  
 CPOD (STMD)  
 CU-E3(STMD)  
 DUPLEX (STMD)  
 LUNAR FLASHLIGHT (STMD)  
 PACE-2(STMD)

## Launched/Deployed

PACE 3 (STMD)  
 PACE 4 (STMD)  
 PTD-2 HYPERXACT(STMD)  
 PTD-3 TBIRD (STMD)  
 PTD-4 LISA-T (STMD)  
 STARLING (STMD)  
 TEAM MILES (STMD)  
 X-NAV (STMD)  
 BIOSENTINEL (HEOMD)  
 LUNAR ICECUBE (HEOMD)  
 LUNIR (HEOMD)  
 NEASCOUT (HEOMD)

## Flight Awards

ASPERA (APD)  
 PANDORA (APD)  
 STARBURST (APD)  
 ACMES (ESD)  
 ARCSTONE (ESD)  
 GLIDE(HPD)  
 SOLAR CRUISER(HPD)  
 PACE 3 (STMD)  
 PACE 4 (STMD)

## Operating

CIRIS-BATC (ESD)  
 CSIM-FD (ESD)  
 CYGNSS (ESD)  
 CHOMPTT (STMD)  
 ELFIN(HPD)  
 ICON (HPD)  
 NUSTAR (ASD)  
 ICON (HPD)  
 PTD-1 (STMD)  
 RADSAT-G (STMD)  
 SHIELDS (HPD)  
 TECHEDSAT-8 (STMD)  
 TESS(APD)

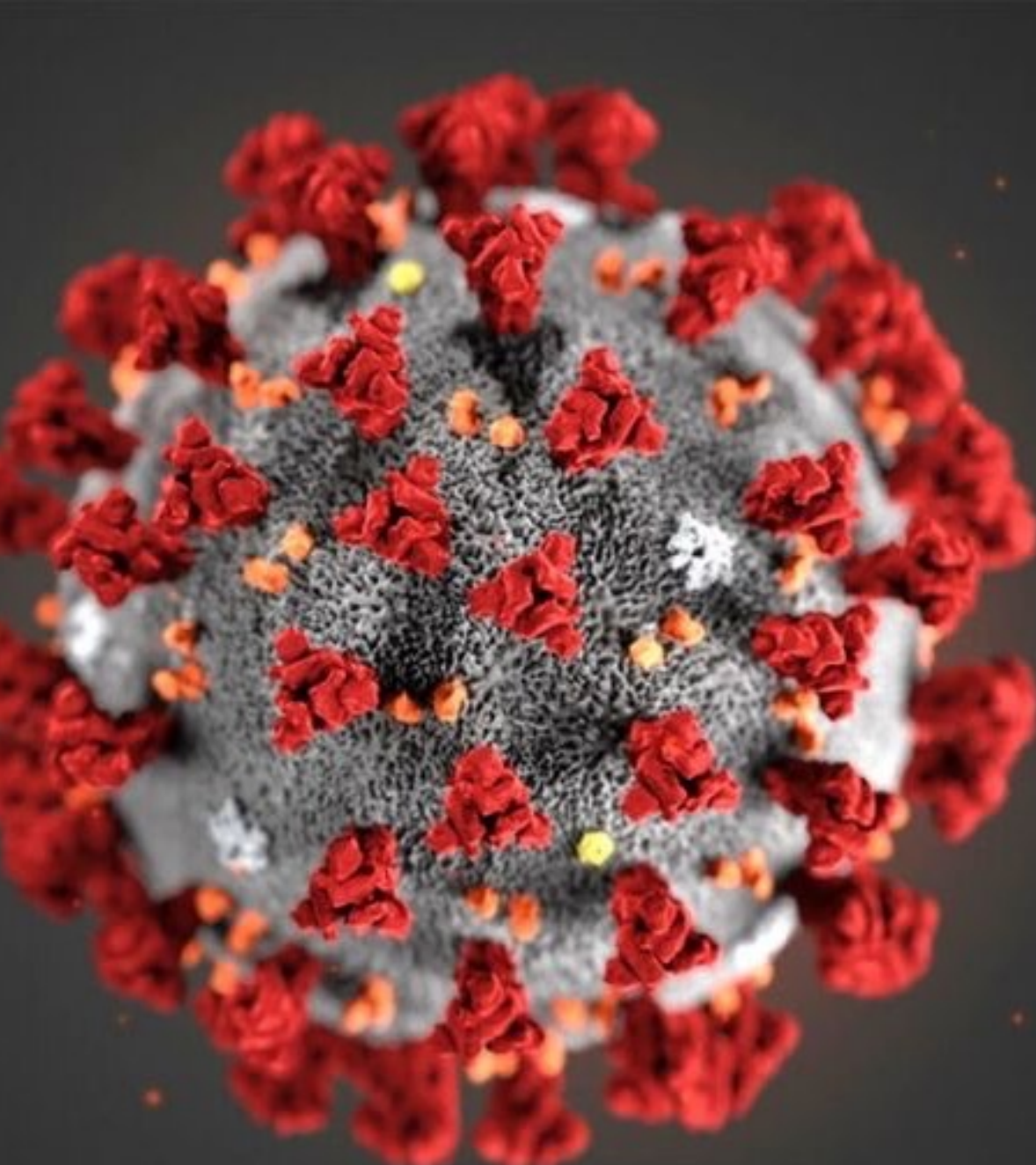
## Studies Selected

DORADO (APD)  
 HELIOSWARM, ARCS (HPD)  
 MIDEX)  
 5 HFOS20S studies

## Deorbited

CUBERRT (ESD)  
 DELINGR (HPD)  
 HaloSat (APD)  
 RAINCUBE (ESD)  
 TBEX (HPD)  
 TEMPEST-D(ESD)

Orange:  
 Yellow:  
 Blue:  
 Green:



# Challenges/Opportunities

COVID pandemic continues to affect supply chain, interactions, and affects mission schedules

A shift to constellation missions and ESPA class missions

Conjunction operational constraints and risks especially in LEO due to the rise of the Mega-constellations

CyberSecurity requirements

Communications challenges for Missions in LEO and beyond especially w constellations

Increased commercial services and products – opportunities for “Buy vs Fly”

Interoperability and operating as constellations

Access-to-Space options linked to “popular” destinations