National Aeronautics and Space Administration

EXPLORE

2021 SmallSat Conference

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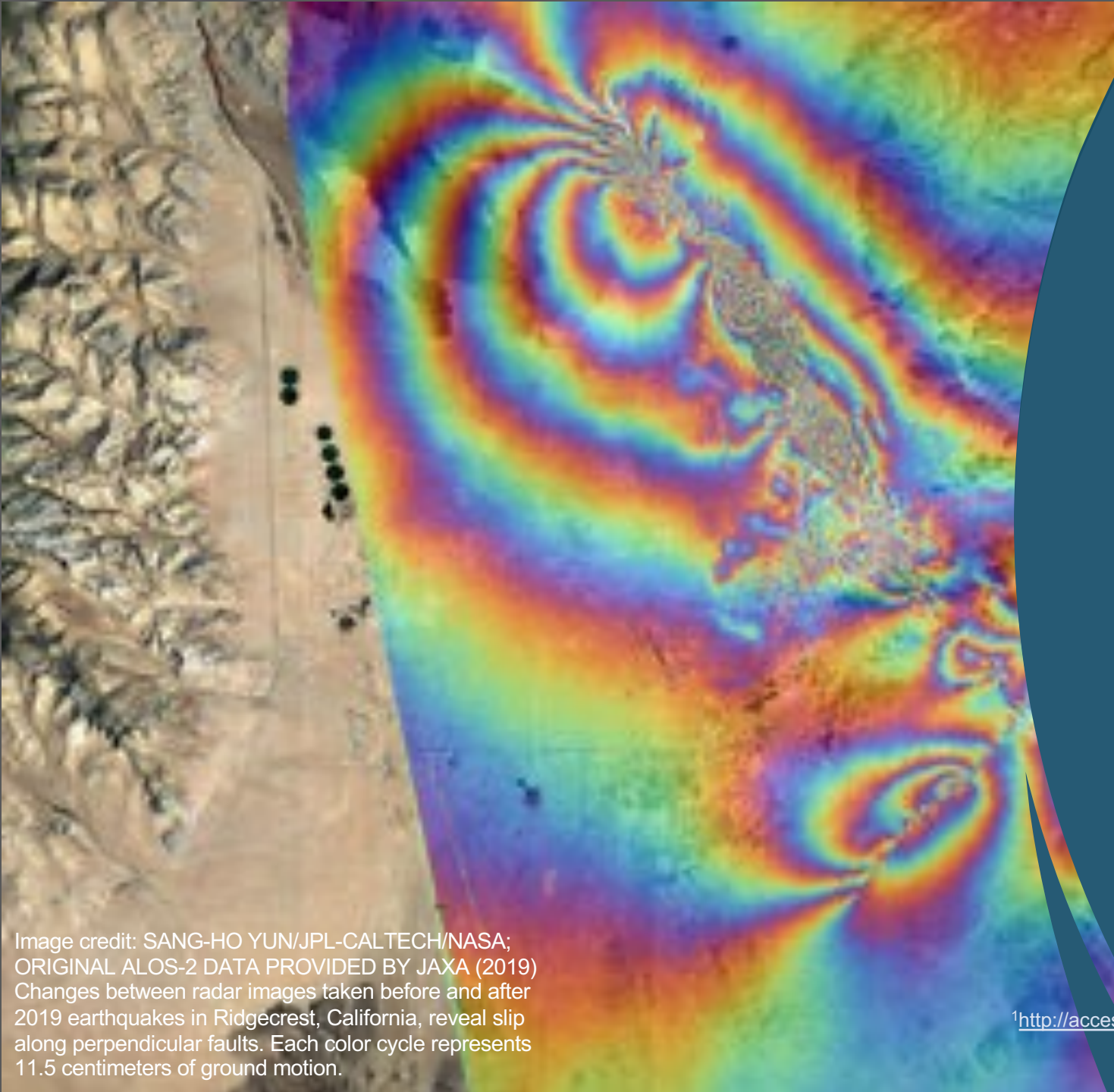
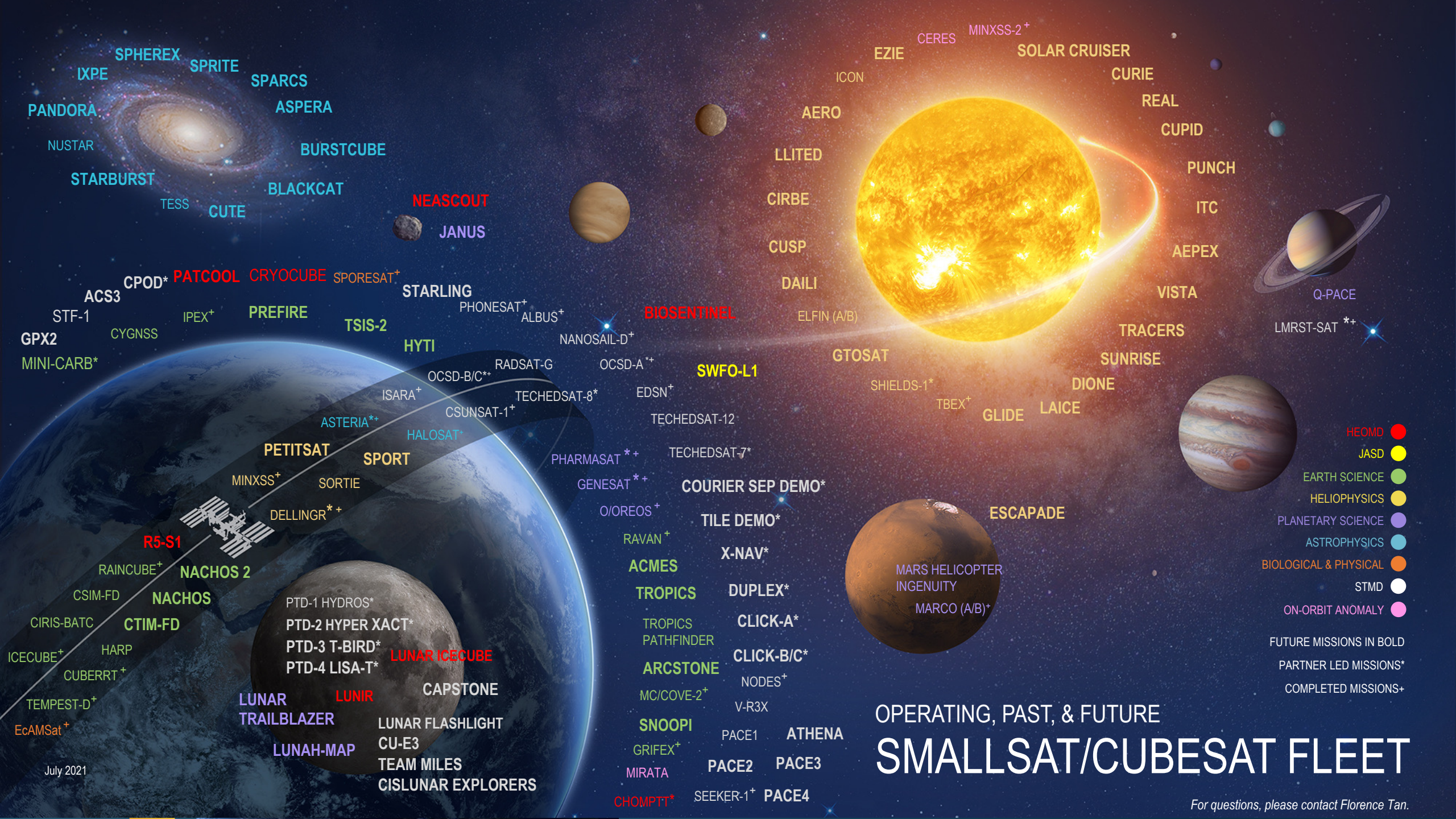


Image credit: SANG-HO YUN/JPL-CALTECH/NASA; ORIGINAL ALOS-2 DATA PROVIDED BY JAXA (2019)
Changes between radar images taken before and after 2019 earthquakes in Ridgecrest, California, reveal slip along perpendicular faults. Each color cycle represents 11.5 centimeters of ground motion.

SSCG Current Activities

- 2021 SmallSat Forum (virtual)
- Released Access2Space Report[1]
- 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[2]
- Inter-agency collaboration with NOAA, DoD
- New Ground Station – Morehead
- Setting up – MIT Haystack (license received)

[1] http://access2space.jhuapl.edu/Agenda/A2S_Workshop_Results_Final%20Report_20200910.pdf
[2] https://s3vi.ndc.nasa.gov/ssri-kb/



OPERATING, PAST, & FUTURE

SMALLSAT/CUBESAT FLEET

For questions, please contact Florence Tan.

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)
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)

Launched/Deployed

HARP (ESD)
CIRIS-BATC (ESD)
SORTIE (HPD)
Q-PACE (PSD)
Tropics Pathfinder (ESD)
PACE 1 (STMD)
PTD11 HYDROS (STMD)
TECHEDSAT-7 (STMD)
TECHEDSAT-12 (STMD)
TILE DEMO (STMD)
V-R3x (STMD)

Studies Selected

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

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)

Deorbited

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

Orange:
Yellow:
Blue:
Green:

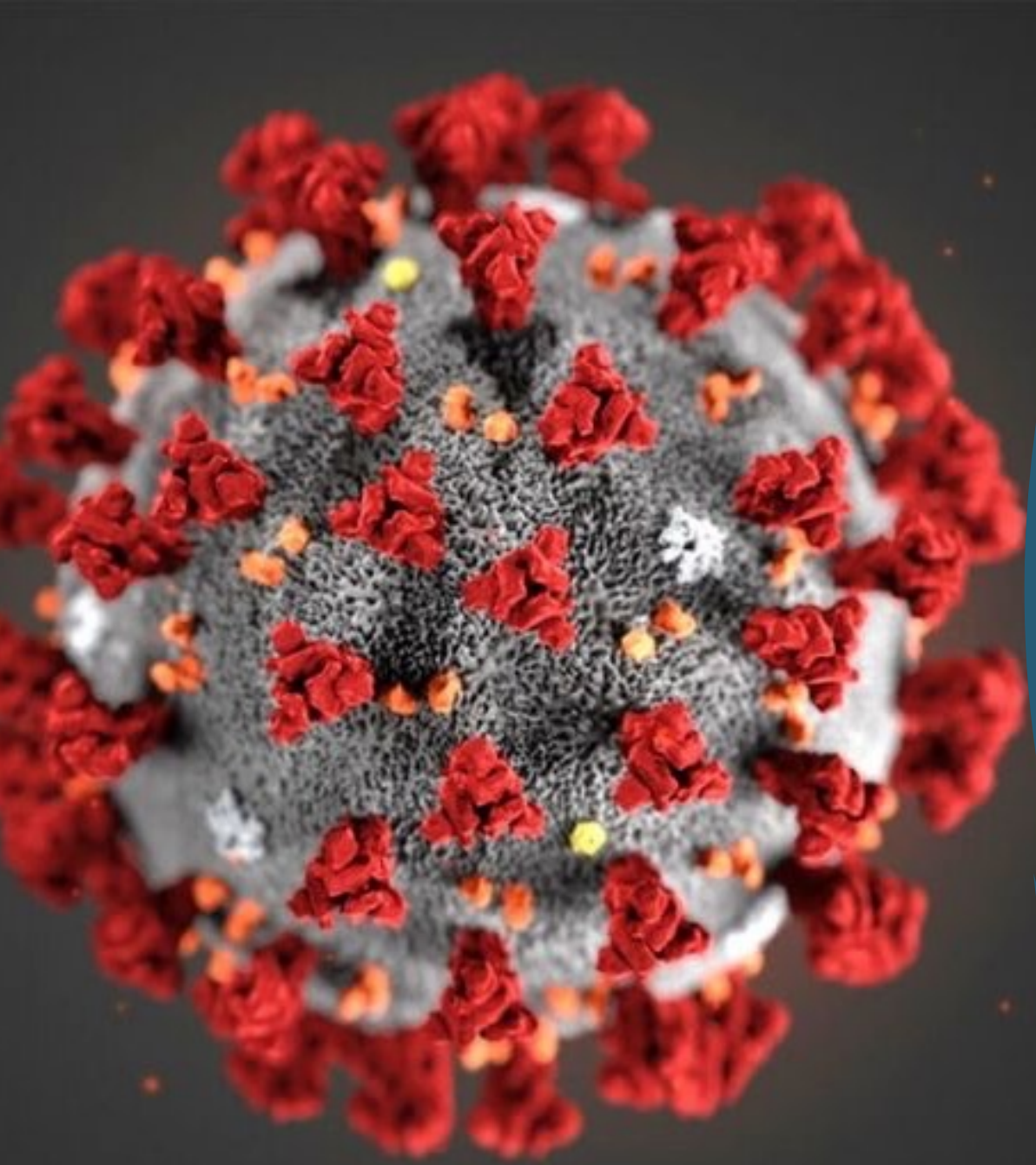


Image Credit: 2019 Novel Coronavirus Illustration, Centers for Disease Control (January 2020)

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