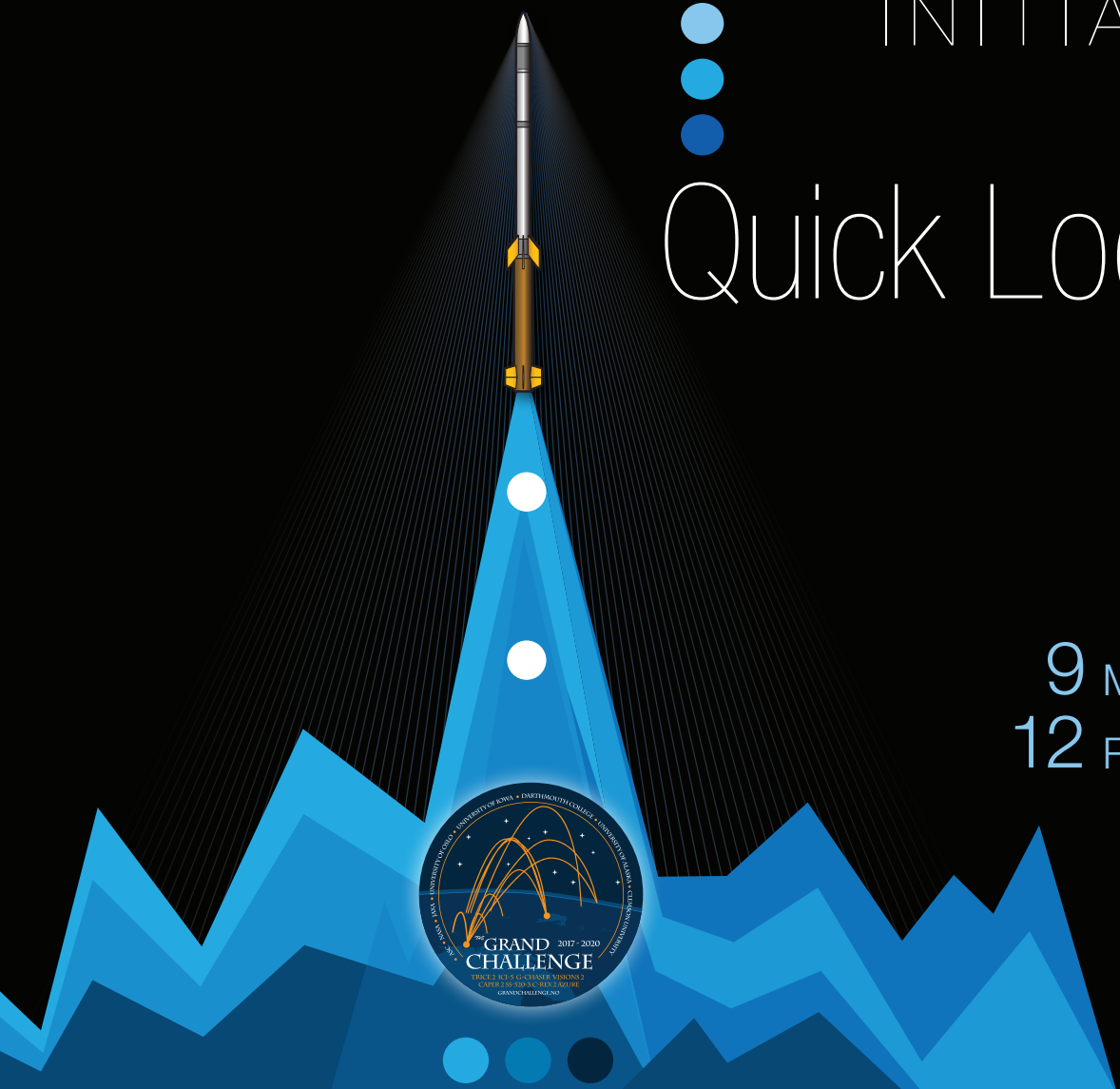
2018/2019

GRAND CHALLENGE INITIATIVE

Quick Look



9 MISSIONS
12 ROCKETS

NASA GSFC/WFF • Andoya Space Center • University of Oslo • JAXA • ISAS • Dartmouth College • University of Iowa • University of Alaska Fairbanks • Clemson University • University of Colorado

THE GRAND CHALLENGE INITIATIVE - CUSP

2018

December

TRICE-2

MISSION: Twin Rockets to Investigate Cusp Electrodynamics-2

LAUNCH VEHICLES: Black Brant XII • 2 Rockets

LAUNCH SITE: Andøya, Norway

PRINCIPAL INVESTIGATOR: Craig Kletzing, University of Iowa, USA

December

VISIONS-2

MISSION: VISualizing Ion Outflow via Neutral atom Sensing–2

LAUNCH VEHICLES: Black Brant X • 2 Rockets

LAUNCH SITE: Ny-Ålesund, Svalbard

PRINCIPAL INVESTIGATOR: Doug Rowland, NASA Goddard Space Flight Center, USA

2019

January

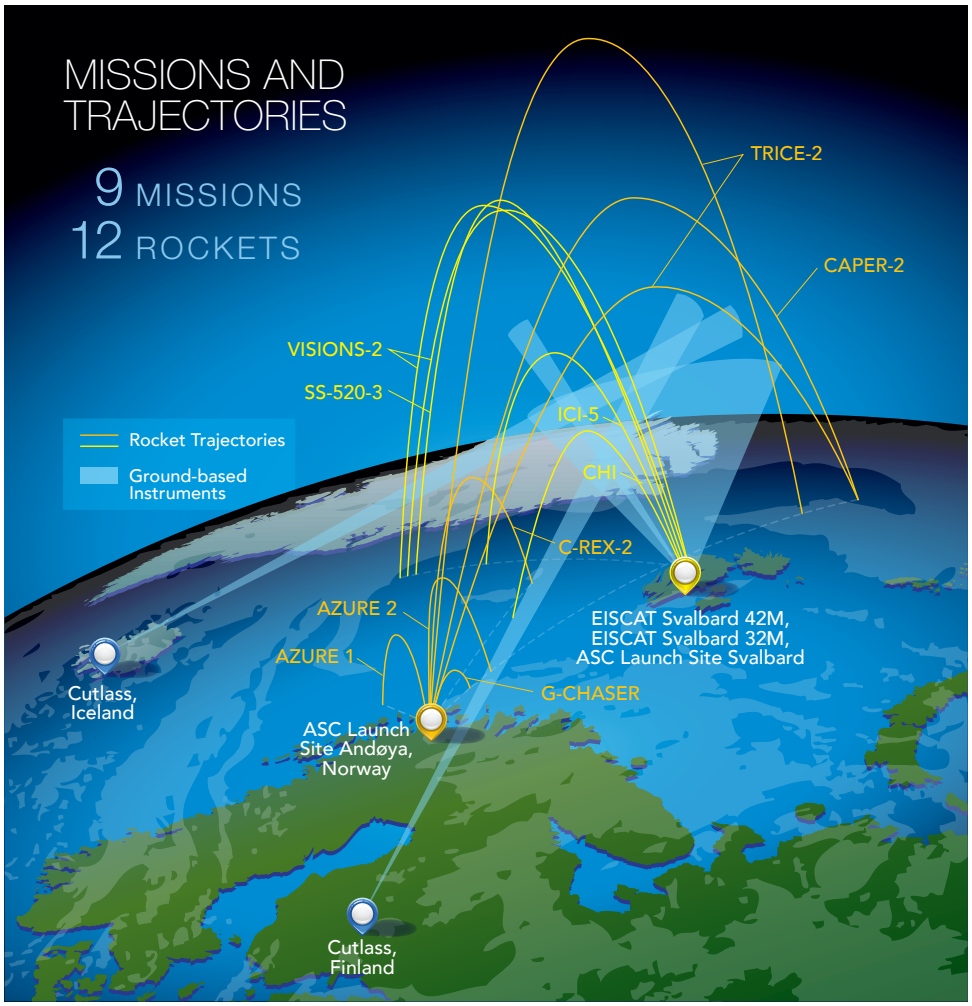
SS-520-3

MISSION: Ion Outflow in the Cusp

LAUNCH VEHICLE: SS-520-3

LAUNCH SITE: Ny-Ålesund, Svalbard

PRINCIPAL INVESTIGATOR: Yoshifumi Saito, Japan Aerospace Exploration Agency



January

CAPER-2

MISSION: Cusp Alfvén and Plasma Electrodynamics Rocket-2

LAUNCH VEHICLE: Black Brant XII

LAUNCH SITE: Andøya, Norway

PRINCIPAL INVESTIGATOR: James LaBelle, Dartmouth College, USA

January

G-CHASER

MISSION: University Student Experiments

LAUNCH VEHICLE: Terrier-Improved Malemute

LAUNCH SITE: Andøya, Norway

PRINCIPAL INVESTIGATOR: Chris Koehler, Colorado Space Grant Consortium

April

AZURE

MISSION: Auroral Zone Upwelling Rocket Experiment

LAUNCH VEHICLES: Black Brant XI • 2 Rockets

LAUNCH SITE: Andøya, Norway

PRINCIPAL INVESTIGATOR: Miguel Larsen, Clemson University, USA

November/December

CHI

MISSION: Cusp Heating Investigation

LAUNCH VEHICLE: Black Brant IX

LAUNCH SITE: Ny-Ålesund, Svalbard

PRINCIPAL INVESTIGATOR: Miguel Larsen, Clemson University, USA

November/December

C-REX 2

MISSION: Cusp-Region EXperiment

LAUNCH VEHICLE: Black Brant XII

LAUNCH SITE: Andøya, Norway

PRINCIPAL INVESTIGATOR: Mark Conde, University of Alaska Fairbanks, USA

December

ICI-5

MISSION: 3D *in situ* Observations of Ionospheric Irregularities in the Cusp

LAUNCH VEHICLE: VS-30 - Improved Orion

LAUNCH SITE: Ny-Ålesund, Svalbard

PRINCIPAL INVESTIGATOR: Jøran Moen, University of Oslo, Norway

SOUNDING ROCKET FAST FACTS

Known as sounding rockets for the nautical term "to sound," meaning to measure, these rockets reach a region between 30 and 800 miles above Earth's surface.

The lower end of this region is otherwise inaccessible, as it's above the maximum altitude for scientific balloons and below the minimum for satellites.

The flight is a simple parabolic trajectory and flight time is less than 20 minutes—providing just 5 to 10 solid minutes of scientific observations from space.

For more information, please visit: *http://www.grandchallenge.no*

NP-2018-4-194-WFF