



NASA technology showcase

Galveston, TX, January 9-11, 2023

Science Organizing Committee

Carolyn Mercer, NASA Science Mission Directorate Chief Technologist (SOC Chair)

Doris Daou, NASA Astrophysics Division Program Scientist (SOC Deputy Chair)

Simon Steel, SETI Institute Deputy Director of the Carl Sagan Center for Research

Florence Tan, NASA Science Mission Directorate Deputy Chief Technologist

Len Dudzinski, NASA Planetary Science Division Chief Technologist

Alvin Robles, Booz Allen Hamilton Associate

Harry Partridge, NASA Ames Chief Technologist

Peter Hughes, NASA Goddard Chief Technologist

Charles Norton, NASA JPL Deputy Chief Technologist

Tibor Balint, Outer Planets Assessment Group Technology Lead (OPAG)

Jose Hurtado, Lunar Exploration Advisory Group Technology Lead (LEAG)

Justin Atchison, Small Bodies Assessment Group Technology Lead (SBAG)

Jeff Balcerski, Venus Exploration Assessment Group Technology Lead (VExAG)

Stephen Parman, Mercury Exploration Assessment Group Technology Lead (MExAG)

Munir Humayun, Extraterrestrial Materials Analysis Group Technology Lead (ExMAG)

Scott Hubbard, Mars Exploration Program Assessment Group Technology Lead (MEPAG)

GRAIL AT MERCURY: Coherent Laser Tracking For Geophysics
Mercury Lander Mission Concept Study
Mercury Scout

ASTROLAB: A South Pole-Aitken Basin Sample Return Mission

Endurance A

LUNAPIX & MAPX

Lunar Surface Geodesy

METRIC

PORIS

ROCKSTAR

SelenITA

The Lunar Geophysical Network Mission

51 Science Mission Abstracts

Abzu

An Incoherent Scatter Radar Mission to Mars (ISRMM)

Collecting In Situ Observations of Meteorological and Aeolin Processes on Mars

Gangotri

Key Technology Needs Identified from KISS Report

Mars High Resolution Imager

Mars Icebreaker

Mars Life Explorer

Mars Polar LAnder and ClimatE Record Network

Mars Stationary Orbiter

Mars Weather/Comm Infrastructure

MACAWS

Smallsat Spectrometers

TH2OR Electromagnetic Sounding For Subsurface Brines On Mars

Enceladus multiple flyby (EMF)

Enceladus Orbilander

Interstellar Object Interceptor Missions: Opportunities and Challenges

Jupiter System Observatory at Sun-Jupiter Lagrangian Point One

New Frontiers Titan Orbiter

Optical Sensor for ISRU Minerals (OSIM)

Prometheus: A New Frontiers mission concept to Jupiter's moon Io

Rideshare4OuterPlanets

Saturn Probe

Shadow Chaser

Small Next-Generation Atmospheric Probe (SNAP) For Ice Giant Missions

Titan Orbiter

Triton Ocean World Surveyor

Uranus Orbiter and Probe (UOP)

VIPRE: A Tool For Visualization Of The Impact Of Probe Entry Conditions

Centaur orbiter and lander (CORAL)

Ceres Sample Return

Comet surface sample return (CSSR)

Halley 2061 Missions

Tech Gaps for Rapid Response Missions

CORSAIR

Cupid's Boomerang

SAEVe: Seismic and Atmospheric Exploration of Venus

V-BOSS: Venus Bridge Orbiter and Surface System

Venus in Situ Cloud Explorer

Venus In Situ Explorer (VISE)

VISTA

Aerojet Rocketdyne
Analytical Mechanics Associates, Inc.
Ascending Node Technologies, LLC
Astrobotic Technology, Inc.
Astrolab
Ball Aerospace
Busek Co. Inc.
CU Aerospace
Emergent Space Technologies
FreeFall Aerospace, Inc
Frontier Aerospace
Honeybee Robotics
Impossible Sensing LLC
JHU Applied Physics Laboratory
K2 Space Corporation
Kayhan Space Corp
KinetX
Lockheed Martin Space
MDA
MIT Lincoln Laboratory
Motiv Space Systems
Nanohmics Inc.
Northrop Grumman

Northrop Grumman
NovaWurks
Orbit Fab
Qualcomm Technologies, Inc.
Samara Aerospace
Southwest Research Institute (SwRI)
Space Exploration Engineering, LLC (SEE)
Spaceline Technologies Inc.
SRI International

NASA Ames, Glenn, Goddard, Johnson, Langley, Marshall, JPL

Cornell University
Iowa State University
UC Berkeley
Ultra Safe Nuclear Corporation
University at Buffalo - The State University of New York
University of Arizona Lunar and Planetary Laboratory
University of Iowa
University of Miami
University of Twente
University of Utah
Zeno Power

100 Technologies

Science Instruments
Sample acquisition
Sample handling
Nav and Comm
Avionics and Computers
Robotics
Propulsion
Power and Energy Storage
Structures and Materials
Mission analysis tools
Design tools

Monday

5:00 – 6:30 Opening

Welcome and introductions

Innovation for Planetary Science
*Lori Glaze, Director, NASA Planetary
 Science Division*

Panel on Innovative Technology on
 Competed Science Missions
Scott Hubbard (Moderator)
Zibi Turtle, Dragonfly
Julie Rogez-Castillo, Dawn
Mike Sekerak, DAVINCI

7:00 – 9:00

Happy hour and opening reception

Tuesday

9:00 – 9:10 Welcome/Logistics

9:15 – 12:15 **Networking** with concurrent
 Lightning Talks

12:15 – 12:30 Group Photo

12:30 – 1:30 Lunch with Panel Discussion
 Technology for Planetary Science
*Florence Tan and Charles Norton
 (Moderators)*
Curt Niebur, PSD
Ralph Lorenz, Dragonfly
Elena Adams, DART
Andrew E. Johnson, TRN

1:30 – 6:00 **Networking** with concurrent
 Lightning Talks

Dinner on your own
 Downtown Galveston options
 available at the registration desk

Wednesday

9:00 – 9:45 Technology Readiness
 Assessments using NASA's Best Practices
 Guide

Patricia Beauchamp, JPL
Margaret Frerking,

9:45 – 11:00 NASA's Lunar Programs
 Overview of CLPS, PRISM, and DALI lunar
 programs
Brad Bailey, ESSIO
 Summary of the Survive the Night
 Workshop
Jay Jenkins, ESSIO

11:00 – 12:00 Evolution of the Commercial
 Lunar Payload Systems program
Amy Fagan, LEAG (Moderator)
Bethany Ehlmann, Caltech
Brad Bailey, ESSIO
*Kerri Donaldson-Hanna, University of
 Central Florida*
Hunter Williams, Honeybee Robotics

12:30 – 1:30 Lunch

2:00 – 6:00 Hall Breakdown/Move-out