ACCELERATING
SPACE COMMERCE EXPLORATION
AND
NEW DISCOVERY

BUILDING OUR OFF-WORLD FUTURE!
For centuries... space has captivated our curiosity! To move humanity forward for over 60 years, Maxar has helped visionaries we design, build, and operate innovative space infrastructure and systems!

AND MARS! Robots... new capabilities improve safety of space & life on earth!

Sustained missions to the moon will expand humanity's reach! And high power solar propulsion! Innovative approach to spacecraft is revolutionizing how we identify, understand, predict change next generation connectivity!

Maxar's Earth observation technology is revolutionizing how we identify, understand, predict change next generation connectivity.
Welcome!
Let's build an off world future!

We love a challenge!

Get out of your comfort zone!

Pursue sustainability on earth...

Focus on travel & transportation

And beyond!

Maybe your future on this planet... isn't on this planet!

Kari Byron, Emcee
Danielle Wood, MIT MediaLab

Launch Event

Marilyn Hewson, Lockheed Martin Executive Chairman
Secretary Barbara Barrett, U.S.A.F.

It's an exciting, breakthrough time!

They are our future!

Invest in students

Governments working together

Invest in innovation

But watch out for space-debris!

U.S. Space Force is building rules-of-the-road for space

Like Orion!

Gain the value that's out there!

The sketch effect

Visual Communication Solutions

AIAA ASCEND - November 2020
Why Move To The Moon?

What Will People Do There?

We’ve Lived On The International Space Station For 20 Years!

What’s Next For Low Earth Orbit?

We’re Finding New Ways To Do Things Better On Earth!

3-D Printing

Manufacturing

But How Do We Do Laundry?

Space Isn’t Only For Military Anymore

Private Citizens

Journalists

Women!

Space Condos?

Shopping Malls?

Solving Problems

Lunar Dust

Garbage

Creating Human Tissue Medicines

Microgravity Research

Ability To Sustain Ourselves With Resources From Mars.

And We Need To Be On Mars!

Go To The Moon & Stay!

Artemis

Space-Fence

Traffic Rules

What Will Be On The Moon In 20-30 Years?

So Many Astronauts Are Women!

Happy Birthday!
**Systems Used in the Brewery**

- **Compressed Air for Washing Kegs**
- **CO₂ Tank**
- **Steam Boiler**
- **Heat Exchanger**
- **Chiller**
- **UV Light**

**Beer is 90% Water**

We use reverse osmosis to make it just right!

**And Software to Help**

**Grain Collection**

- **Grain Cracker Auger**
- **Milling**

**Drop into Mash**

**Grain Cracker Mash**

**2-3 Hours**

**14-Days Fermenting**

Chilling Wort + Whirlpooling

Hops added to reduce sweetness 1-2 hours

**Now into Boil Kettle**

**800,000 BTU Boiler**

This adds the flavor 2-3 hours

**Duff**

**ADD CARBONATION AND PAY TAXES**

Even in space!

**Add Carbonation**

**A**

**Beers with Engineers!**

With Jason Taylor, Owner and Brewmaster Nevada Brew Works

**14-Days Fermenting**

**Launched by AIAA**

**Ascend**

AIAA ASCEND - NOVEMBER 2020
Meeting Global Challenges in Partnership for the Benefit of Humanity

Global Community is Key to Building an Off World Future

Pandemic Challenges = International Collaboration

190 Missions! 78 Launch Vehicle Missions

Space Exploration

Crew-1 Mission

Lunar Missions

Small Satellites New Radars New Technology?

AI Robotics

The Global Community is Key to Building an Off World Future!

Our People Are Our Priority!

We Learned to Work Remote... but actually miss our Offices!

We Learned a Big Lesson... Human Interaction Is Important!

Impact of Pandemic?

Space Climate Observatory

Space Station

Robotics

Laser Communication

Big "$ \text{SMART} \text{DATA}$

Digitalization

Cyber Security

In the Transformation of Society!

600 Partnerships

$208 \text{MILLION} \text{BUDGET FOR 2020}$

CNES

Exploration

DLR

Research Center

Space Agency

ISRO

Industry Academia

PANDEMIC CHALLENGES = INTERNATIONAL COLLABORATION

H3 Rocket Launch

ARE WE THERE YET?

SIGNED ARTEMIS ACCORDS

LUNAR POLAR EXPLORATION

JAXA

SPACETIME

NEW TECHNOLOGY?

AI

Robotics

Government

Schools

Industries

ANKE KAYSER-PIZZALLA
Chairwoman, DLR

JEAN-YVES LE GALL
President, CNES

KAILASAVADIVOO SIYAN
Chairman, ISRO

HIROSHI YAMAKAWA
President, JAXA

LARRY JAMES
NASA JPL

PARTNERSHIPS IN THE FUTURE?
General Raymond
U.S. Space Force

We cannot afford to be tied to the past.
Innovation has led to discovery.

We invented Space Force.
Competition with Russia & China.

National Security & Space Policy

Peace & Prosperity is our goal...
...and it starts with security!

Students... study harder! We need you.
Space debris? It's already a security issue and we need you to deter our enemies.

First... we must stay ahead of threats.
What enables space R&D to go faster?
I call it a “shrink-ray.”

Gen. Thompson
U.S.A.F.

Michael Roberts
Space RCO

We're investing in the new space economy.
Things happen at the speed of light.

This year, partnerships are our focus.
We must move & act with speed.

SPEC
SPEC Reloaded!

Space Pitch Days
Commercial Sector

Innovation
Partnerships
the sketch effect
WHAT NEEDS TO HAPPEN FOR THE FUTURE OF THE SPACE PROGRAM?

- Give everyone access to space!
- Democratic space
- We've seen a new formula for success: \( E=mc^2 \)
- It's the most exciting time in space!
- Inspiring a new generation
- Even more than the 1960's
- Bring in new sectors
- Observation as a global good!

RE-ENTRY BURN

- Adapting to conditions
- Build on virtual events to reach people globally
- Exploring is for everyone
- To be truly innovative
- Leads to creativity
- Diversity of workforce
- Space is a domain to protect
- Focus on national security
- How to grow the space economy today!
- Constancy of purpose
- Keeping the plot
- Sustainable programs

LAUNCHED BY AIAA
Theme: Building Our Off-World Future!

ASCEND by the Numbers

ASCEND November Program

Over 200 Sessions!
Over 3,000 Total Registrants
Organizations: 1,293
Colleges & Universities: 242
33 Countries on 6 Continents!

37% AIAA Members
63% Nonmembers

Memorieship Breakdown

2021 ASCEND
15 - 17 November 2021

LAUNCHED 16 - 18 November 2020

ASCEND X Series
MAY - OCTOBER 2020
11 Events
Summits - 3

Types of sessions
- Lightning Talks
- Roundtables
- Keynotes
- Fireside Chats
- Panel Discussions
- Discussion Groups
- Technical Presentations
- Q&A

Workshops/Co-Labs - 2
Webinars - 6

Over 6,000 Unique Registrants!

ASCEND
ACCELERATING SPACE COMMERCE EXPLORATION
AND NEW DISCOVERY!