April 26, 2017: **SPACE 2.0 DAY 1**

7:30-8:15  Registration and Networking Breakfast

8:15-8:30  Opening Remarks by Chairperson

8:30-9:00  **Keynote Address**

*Dr. Walter Scott, Founder, Chief Technical Officer and Executive Vice President,*
DIGITALGLOBE

**Session I: Investment and Partnering for Near-Term Commercial Space**

*NewSpace is evolving into differentiated niches and business models, and funding sources are diversifying as well. Funding of fresh-out-the-gate startups has not stopped. Yet the big aerospace primes have still been slow to fully engage the NewSpace scene—at least visibly. This session will showcase leading investors in the emergent space scene, and highlight the different challenges and strategies appropriate to earlier vs. later rounds. In addition, we will explore why global brands in the consumer segment are affiliating themselves with space—is it a few unique instances, or is this just the beginning of a wave?*

9:00-10:00  **Panel Discussion: Angel, Incubators, and Early Stage Venture Capital**

- Where are we on the Hype Curve? How many other startups are there out there with the same lightbulb? Is the NewSpace field already getting crowded?
- How are angels, incubators, and VCs collaborating on mentoring promising startups?
- Is there a place for equity crowdfunding in the space scene?
- Is the surge in Precision Ag, AI, and IoT deals, and the interest in “hardware startups” helping or hurting NewSpace ventures?

**Panelists:**

*Ellen Chang, Managing Partner,* LIGHTSPEED INNOVATIONS
*Jeremy Conrad, Founding Partner,* LEMNOS LABS
*Jeff Matthews, Director of Venture Strategy and Research,* SPACE FRONTIER FOUNDATION
*Jeanette Quinlan, USA Managing Director,* STARBURST ACCELERATOR

10:00-10:30  Networking Break
Panel Discussion: Later Stage Funding—Venture B&C Rounds, Equity, Debt, and Corporate Venture/M&A

- Transitioning disruptive tech, biz models, and prototypes into working pilots, early customers, and revenues—positioning to address real markets—but what if the market itself is emergent?
- Exit options lacking the IPO route—strategies become pivotal.
- Projected popping of the Unicorn bubble and its potential impacts on NewSpace.
- Emerging micro-bubble of the Earth imaging plays—consolidation ahead?

Moderator:
John P. Janka, Partner, LATHAM & WATKINS, LLP

Panelists:
Shahin Farshchi, Partner, LUX CAPITAL
Randy Glein, Managing Director, DRAPER FISHER JURVETSON (DFJ)
Dr. Ray O. Johnson, Executive in Residence, BESSEMER VENTURE PARTNERS
Simone Syed, Founder and Managing Partner, VELORUM CAPITAL
Nic Volpi, Partner, PERMIRA ADVISERS, LLC

Panel Discussion: Fortune 500s Interest in Space—Just a Branding Move or Something More?
No question—space is hot. So no surprise big consumer brands would want to affiliate with the brash NewSpace crowd. But do they have goals beyond just leveraging a little attention and “space bling”? Some NewSpace insiders like Jim Cantrell and Dylan Taylor argue that in a decade or two nearly every major corporation will have some kind of “exposure” to space. What would that mean exactly? This panel will pull together some corporates that have given a leg up to NewSpace, and some NewSpace players that have offered some spacey sex appeal back to Earth bound brands. Could the next wave of partnerships have deeper or longer-range value propositions?

Panelists:
Jason Dunn, Co-Founder and Chief Technology Officer, MADE IN SPACE
ADDITIONAL PANELISTS TO BE ANNOUNCED

Session II: Business Models and Partnering Strategies in Near-Term NewSpace Segments
Not all the action is in direct investment. Many startups are collaborating and contracting for each other’s services and solutions. Some business models are even dependent on a chain of other startup business models. No doubt there are innumerable behind-the-scenes conversations between the startups and the aerospace primes, exploring how to work together. In this session, the conversation shifts to discussions around the business model(s) specific to a niche in the “orbital innovation ecosystem,” linking launch, imaging constellations, ground communications, and narrowband fleets—with dozens of these projects running on A or B round funding, and hundreds of CubeSats into Low Earth Orbit within the next few years. Some will fail, some will succeed, but there is no doubt a revolution in satellite systems is underway.
Presentation: **Launch Schedule and Payload Formats—Guiding the Design of New Constellations**
Are there too many launchers or too many “birds”? ULA and SpaceX have announced dedicated SmallSat payloads. This presentation will lay out the latest timelines and projections for launch capabilities, factoring in the next wave after SpaceX and Blue Origin, such as Rocket Lab, Firefly, Masten, XCOR, Vector Space Systems, and others. Will evolution from SmallSats to MicroSats and NanoSats open up space for a whole other raft of small launch providers?

**Jim Cantrell, Chief Executive Officer, VECTOR SPACE SYSTEMS**

Panel Discussion: **Remote Sensing Constellations and Big Data—Are We Approaching A Bubble?**
There are possibly over three dozen CubeSat sensing constellations in development, each consisting of a few to hundreds of individual SmallSats, most geared to Low Earth Orbit and not meant to last much longer than a few years before being replaced. Even with differentiation of sensing products—hyperspectral, multispectral, fast revisit rates, etc.—how many such data streams are really needed? Is there a big enough user market for all this earth imaging? What are the economics? Currently, dedicated machine learning analytics operations are said to be splitting their revenue with their image source. Will there be enough money to go around?

**Panelists:**
- **Erik Grant, Technical Director, RAYTHEON**
- **Russ Matijevich, Vice President, HAWKEYE 360**
- **Fabrizio Pirondini, Chief Executive Officer, DEIMOS IMAGING and General Manager of Earth Observation, URTHECAST**

Panel Discussion: **Uplink and Downlink—Outsource or Insourse Ground Systems?**
Ground comms are one of the major cost centers alongside launch and manufacturing. New constellations face a key fork in the road: whether to use an existing ground service or build their own? A handful of startups are targeting this segment, and some of the big traditional providers are trying to figure out how to restructure their pricing and service models.

**Panelists:**
- **Ralph Ewig, Chief Executive Officer, AUDACY**
- **Sean McDaniel, Founder and Chief Executive Officer, ATLAS SPACE OPERATIONS**
- **Christopher Richins, Co-Founder and Chief Executive Officer, RBC SIGNALS**
- **Ric VanderMeulen, Vice President, Space and Satellite Broadband, VIASAT**

Panel Discussion: **Servicing the Future IoT Demand**
Ship tracking, navigation, autonomous driving, data outputs for maintenance alerts, smart cities... the list of applications is near-infinite. IoT is the word of the day—allegedly trillions of small sensing devices will be connected in the coming decade. A number of startups see orbital connectivity as a value-add for IoT “backhaul” or aggregation of signals. But how will the economics work? How many dedicated IoT constellations are needed?

Panelists:
Mike Kokorich, President, ASTRO DIGITAL
Flavia Tata Nardini, Chief Executive Officer, FLEET SPACE TECHNOLOGIES
Matthias Spott, Founder and Chief Executive Officer, EIGHTYLEO
Cate van Oppen, Manager of Strategic Partnerships, KYMETA CORPORATION

4:45-5:30 Panel Discussion: The Role of Government Agencies—Fostering and Leveraging Commercial Remote Sensing and Satellite Telecommunications Capabilities
What is the role of government in fostering and leveraging the commercial space sector? A recent PCAST report described “the role of the Federal government in the economy as largely to create the right environment for the private sector to succeed, including funding pre-competitive innovation and acting as a trusted convener.” This panel will discuss how the military, intelligence, and civil space agencies are playing that role in the satellite telecommunications and remote sensing sectors. The panel will focus on innovative government research and development strategies to foster commercial capabilities as well as innovative acquisition strategies to leverage them back. Panelists will also discuss how their agencies view the supply-side and demand-side challenges facing the commercial space sector and how those challenges drive their investment strategies. Finally, the co-creation and collaboration methods that forward leaning government agencies are pursuing to build investment strategy – how the government plans to spend its money and time – will be highlighted.

Moderator:
Richard T. French, Staff Technologist, Space Technology Mission Directorate (STMD), NASA HEADQUARTERS

Panelists:
John Charles, Senior GEOINT Authority for Commercial Imagery, NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
Matthew Glaser, Engineering Directorate, Space and Missile System’s Center (SMC), UNITED STATES AIR FORCE
Christina Moats-Xavier, Deputy Program Director, Earth System Science Pathfinder Program, NASA
Dr. Lisa Porter, Executive Vice President, Director of CosmiQ Works & Lab41, IN-Q-TEL

5:30 Space 2.0 Day 1 Adjourns

April 27, 2016: SPACE 2.0 DAY 2
8:00-8:55 Networking Breakfast
Opening Remarks by Chairperson

9:00-9:30  
**Keynote Address**

**Barry A. Matsumori**, Senior Vice President of Business Development and Advanced Concepts, VIRGIN GALACTIC

*Session III: Mid-Term NewSpace—Business Models and Partnering Strategies for Emergent Segments*

Clearly the vast majority of dollars being thrown at the new space movement relate to market drivers on Earth—insatiable demand for bandwidth, creative new uses of Earth imagery, and connectivity for the emerging Internet of Things and related locational services such as autonomous driving. But as this new orbital architecture matures, a new market for solutions and services is set to unfold all taking place in orbit, servicing the array of objects in space—intended and unintended. Some of the projects targeting this emergent application area have already been funded.

9:30-10:15  
**Panel Discussion: Saving Money with In-Orbit Assembly and Manufacturing**

This is an area of extreme vision and bleeding edge tech innovation. Pushing large amounts of mass against the pull of gravity is to be avoided as much as possible. Even if the price per pound is dropping—it’s still too much. Many desirable structures are also too large, complex, and delicate to fit in or survive launch vessels. Why not build as much as possible of the needed orbital infrastructure in space? Adapting the latest 3D printing methods is one approach. Other activities could involve turning space constraints into advantages: near-zero temperatures, perfect vacuum, and microgravity are expensive or impossible to achieve on Earth but needed or useful for many manufacturing processes.

**Moderator:**

**Ioana Cozmuta, Ph.D.**, Industry Innovation and Microgravity Lead, Space Portal, NASA AMES RESEARCH CENTER

**Panelists:**

**Dr. Rob Hoyt**, Chief Executive Officer and Chief Scientist, FIRMAMENTUM

**Senior Representative**, SSL/MDA

*PANELISTS TO BE ANNOUNCED*

10:15-10:45  
**Networking Break**

10:45-11:30  
**Panel Discussion: Necessary Costs of In-Orbit Servicing—Debris Removal, Satellite Maintenance, and Sat-to-Sat Communications**

The current space junk headache is about to turn into a nightmare with thousands of new CubeSats entering orbit in the next 5 years. Meanwhile fresh ideas about how to repair satellites in orbit, breakthrough optical communications, not to mention the prospect of a purely orbital satellite based communication and data storage network, are all finding advocates and in some cases, early funding.

**Panelists:**

**Dr. Ron Clark**, Chief Technology Officer, D-ORBIT INC.
Session IV: Sci-Fi No Longer—Convergent and Disruptive Innovation Enabling Deep Space Architectures
Few investors are professionally interested in anything beyond a decadal time horizon. Yet there is a vast popular support for visionary space missions and architectures, and real government money from USA, EU, Russia, China, and India. To the extent any of these dreams can be manifested in more than one-off missions, they will require their own supply chain—especially in the case of long-term habitation in deep space, whether Moon, Cislunar, or Mars. Many of those providers exist already within the NewSpace scene; a handful are overtly targeting this more remote ROI scenario. Furthermore, a raft of technologies that are only just now hitting the right “TRL” (Technology Readiness Level) may be key enablers and accelerators of these grandiose ambitions of colonization and deep space science. This panel wraps up the Summit with a free-wheeling discussion.

11:30-12:15  Panel Discussion: Sci-Fi No Longer—Convergent and Disruptive Innovation Enabling Deep Space Architectures
Vehicle autonomy and robotics, AI, 3D printing, synthetic biology, and their contribution to make grander space visions a workable, financeable reality.

Panelists:
John Cumbers, Founder, SYNBIOBETA
Bernard Kutter, Manager Advanced Programs, UNITED LAUNCH ALLIANCE
Vera Mulyani, Founder and Chief Executive Officer, MARS CITY DESIGN

12:15  Space 2.0 Adjourns