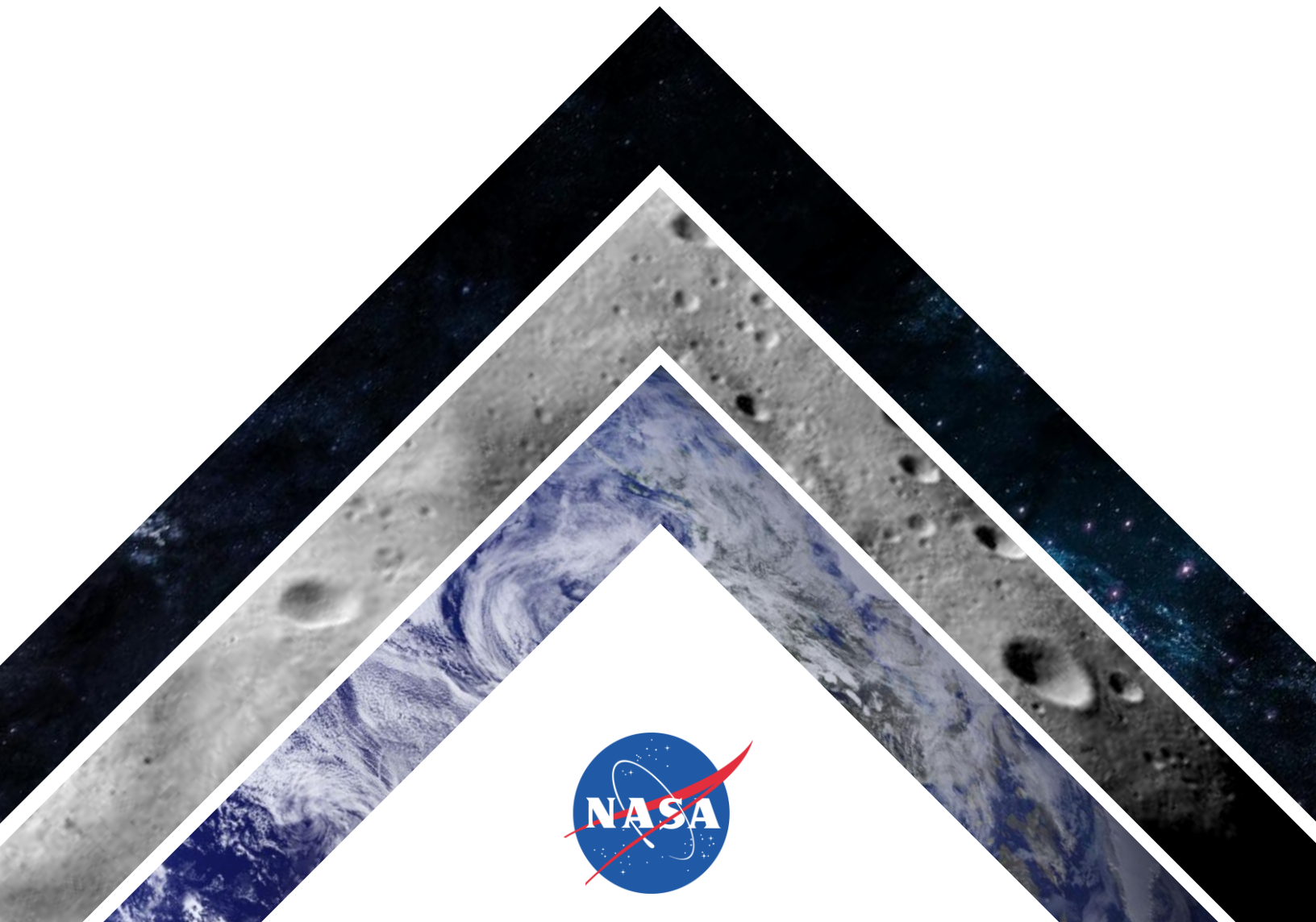

THE NASA ASTEROID
GRAND CHALLENGE

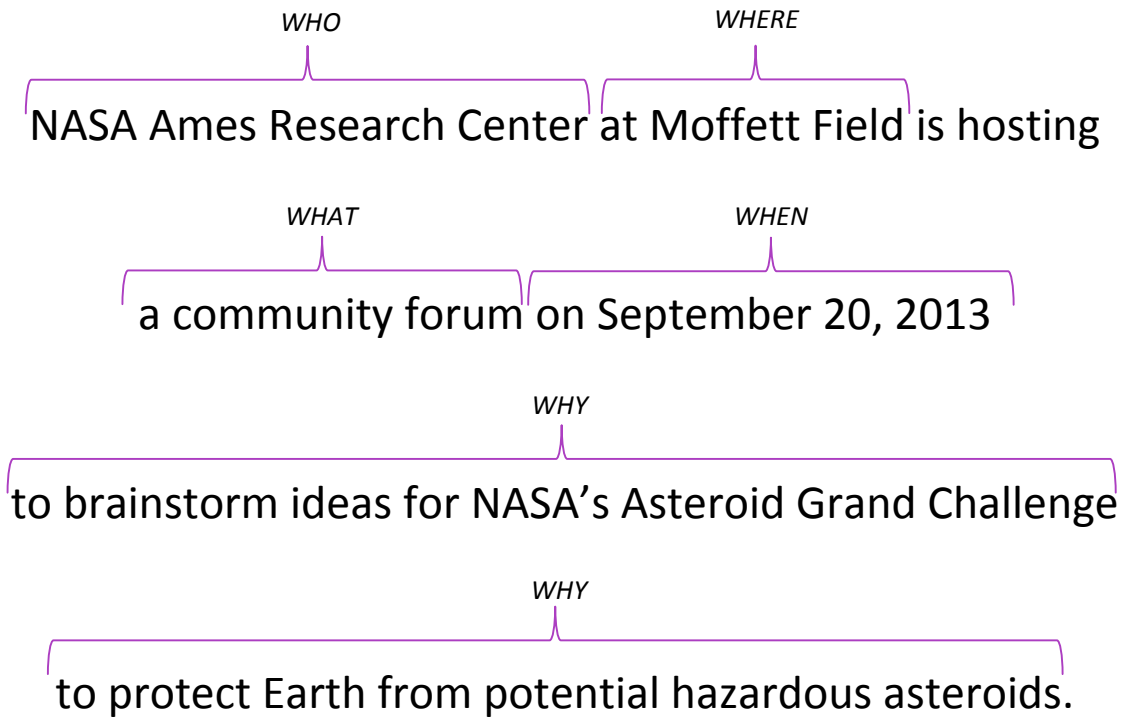
FORUM

AT AMES RESEARCH CENTER

SEPTEMBER 20, 2013



OVERVIEW



asteroidforum.eventbrite.com



DETAILS

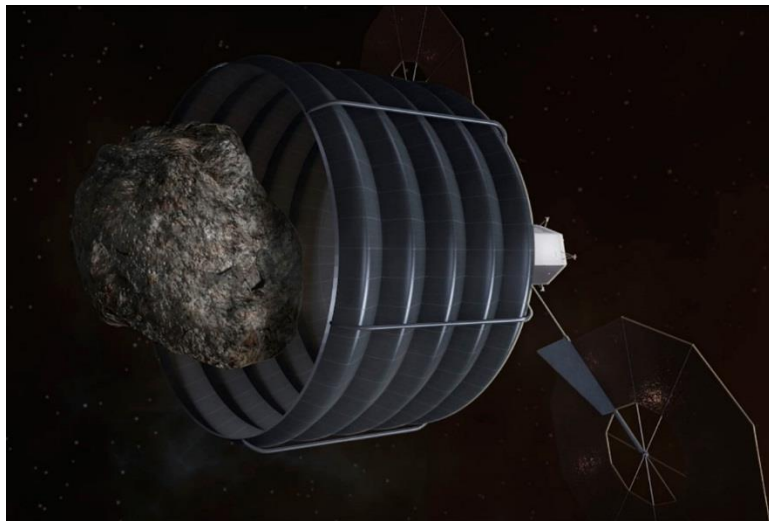
PROGRAMS

Since 1998, NASA's Near Earth Object Observation (NEOO) Program has led the global effort to find potentially hazardous asteroids, and has successfully found 95 percent of the potentially devastating 1 km wide near-Earth asteroids. More needs to be done; asteroid impacts and explosions from objects much smaller than 1 km, have the capability of rendering massive devastation. It will take a global effort with innovative solutions to accelerate the search for all of these potentially hazardous asteroids. Earlier this summer, NASA announced the Asteroid Grand Challenge to: *Find All Asteroid Threats to Human Populations and Know What to Do About Them*. Recognizing the power of traditional and innovative collaboration – including the use of public private partnerships, citizen science, crowdsourcing, and incentive prizes, in addition to international and other cooperative partnerships – NASA will lead a dialogue addressing how to best use these methods to aid in solving this global problem, together.



TOGETHER, WE CAN
PREVENT THIS FROM
HAPPENING

The Grand Challenge is complementary to the agency's Asteroid Redirect Mission. This mission aims to identify, capture, redirect, and sample a small asteroid in an unprecedented technological achievement. The mission is composed of three elements: the detection and characterization of candidate asteroids; the solar electric propulsion (SEP)-driven robotic rendezvous, capture, and redirection of a near-Earth asteroid to the Earth-Moon system; and the crewed mission to explore and sample the captured asteroid using the Space Launch System (SLS) rocket and Orion crew capsule. NASA is currently evaluating technical and programmatic aspects of a couple of internal candidate mission design concepts. Performing all three elements integrates the best of NASA's science, technology, and human exploration capabilities and draws on the innovation of America's brightest scientists and engineers. It uses current and developing capabilities to detect both large asteroids that pose a hazard to Earth and small asteroids appropriate as candidates for capture and redirection. It accelerates our ongoing technology development activities in high-powered SEP technology, including solar arrays, and takes advantage of our hard work on the SLS and Orion, helping to keep us on target to reach the President's goal of sending humans to Mars in the 2030s.



*NASA IS ALREADY WORKING
ON WAYS TO REARRANGE
THE SOLAR SYSTEM*

PEOPLE

Jason Kessler, NASA's Asteroid Grand Challenge Program Executive, began his professional career at NASA back in 1994. After graduating with a degree in Chemistry, Jason earned a position in NASA's Legislative office and spent the following six years in various positions at NASA, culminating with the position of Deputy Chief of Staff to the NASA Administrator. Jason's entrepreneurial spirit eventually led him back to school, earning his MBA. Several businesses later, Jason returned to NASA to join the SERVIR program office combining his private and public sector experience into one venture bringing decision-support information for climate change adaptation to those in the developing world. Jason has a passion for teaching yoga and meditation and in New York City he taught World Trade Center victims suffering from post-traumatic stress disorder (PTSD). He is working on his private pilot license, loves spicy food, and has a deep appreciation for music recorded and played back through tube electronics. He is committed to developing his leadership skills, so he can continually make bigger offers for improving the world.



HOST



NASA Ames Research Center, located at Moffett Field, California, was founded Dec. 20, 1939 as an aircraft research laboratory by the National Advisory Committee for Aeronautics (NACA) and in 1958 it became part of the National Aeronautics and Space

Administration (NASA). Ames Research Center, one of 10 NASA field installations, is located in the heart of California's Silicon Valley at the core of the research cluster of high-tech companies, universities and laboratories that define the region's character. With 2,400 research personnel and a \$900 million annual budget, Ames' economic impact is significant. Ames plays a critical role in virtually all NASA missions in support of America's space and aeronautics programs. As a leader in information technology research with a focus on supercomputing, networking and intelligent systems, Ames conducts the critical R&D and develops the enabling technologies that make NASA missions possible. Ames also is a leader in nanotechnology, fundamental space biology, biotechnology, aerospace and thermal protection systems, and human factors research. Ames research in astrobiology focuses on the effects of gravity on living things, and the nature and distribution of stars, planets and life in the universe. In addition, Ames works collaboratively with the FAA, conducting research in air traffic management to make safer, cheaper and more efficient air travel a reality. Ames engages in information and education outreach, forms collaborative partnerships, and fosters commercial application of NASA technologies. Ames is developing NASA Research Park, an integrated, dynamic research and education community created to cultivate diverse partnerships with academia, industry and non-profit organizations in support of NASA's mission.

INVITEES

NASA's Asteroid Grand Challenge calls upon the entire public to help defend the planet Earth. From scientists and engineers to artists and entrepreneurs, everyone can have a role in this global challenge. For our initial community brainstorming session, we have invited a broad selection of organizations from across the Bay Area. From governmental organizations in NASA and the military to tech companies and entrepreneurs, we are inviting people who know how to take big risks and get things done. We are also inviting a broad set of academic partners who imagine the future every day and take to the labs to create it. The museums and educators we are inviting know how to engage the public while encouraging new and innovative solutions, and artists know how to connect us with the human ideals, values, and emotions at the core of planetary defense. Private foundations will connect to broad networks of funding, advisors, great thinkers, and accomplished individuals that form the foundation of new initiatives. Together, our diverse experiences, skills, and backgrounds will allow us to generate solutions that can truly make a difference in the future of our species and our planet.

AGENDA

The agenda below is tentative and subject to change.

FRIDAY, SEPTEMBER 20, 2013

0830a—Check in at Building 152, NASA Research Park

0900a—Welcome

Jason Kessler, NASA Headquarters

Program Executive for the NASA Asteroid Grand Challenge

0930a—Ignite talks

Selected experts

1000a—Intro slides

Optional attendee/organization description slides

1015a—Break

1030a—Unconference sessions

3 sessions

25 minutes each + 5 minutes break/regroup time

1200a—Lunch

Barcelona Cafe, off-campus, or bring your own

0130p—Unconference sessions

3 sessions

25 minutes each + 5 minutes break/regroup time

0300p—Networking break

0330p—Wrap-up

“I like, I wish” feedback session

Review

0400p—Conclude

FORMAT

Since Ames is NASA's Silicon Valley center, this is not going to be the typical series of long, technical lectures. To engage the full depth of knowledge and creativity of our diverse attendees, we are going to create the forum on-the-fly with your input. Sessions will be fast-paced with the right balance of content and chaos to stimulate and engage your brain. Unlike most NASA missions, failure is completely accepted in this environment. The focus is on community brainstorming and ideation, not just hard technical solutions. Together, we can create something that none of us would have created individually.

To introduce NASA, its missions, and the Asteroid Initiative, we will have a panel of our experts introduce extremely brief presentations in an Ignite-style format. These presentations will cover some current challenges, infrastructure, and programs to define the problem space for later unconference sessions. In an Ignite format, the number of slides is strictly enforced, and slides advance automatically after a preset amount of time. This keeps presentations short, sweet, and to-the-point. These constraints always create a few surprises for both presenters and the audience!

Our main sessions will be planned in an unconference format. After our Ignite-style talks, we will convene on a grid with times down the vertical axis and rooms on the horizontal. Anyone can schedule a session of their choice simply by posting a sticky note with the title and any other details in the appropriate grid space. Sessions can be as formal or informal as you like. Want to show a prepared presentation with your graduate research? Fantastic! Want to have a roundtable on how to attract funding for asteroid startups? That's great too! When you see a session you like, just note the time and room to attend. There are no qualifications necessary to present or review panel to pass; this is your session as much as it is ours, and we cannot wait to see what original and fun ideas you come up with!

WHAT TO BRING

Please bring a government-issued ID (must be a driver's license if arriving by personal vehicle).

Participants have the option of submitting **one** slide that introduces their organization. We recommend a format with exactly one photo and five words that you think best describe your organization. We also suggest including simple contact information (Twitter handle, QR code to website, email, etc.). If you want to modify this format, though, please feel free to be as creative as you like as long as it fits on one slide. Please submit only one slide per organization. This slide is completely optional but recommended to help everyone learn more about each other and stimulate discussion. Please submit via email to j.w.conley@nasa.gov by Wednesday, September 18, 2013.

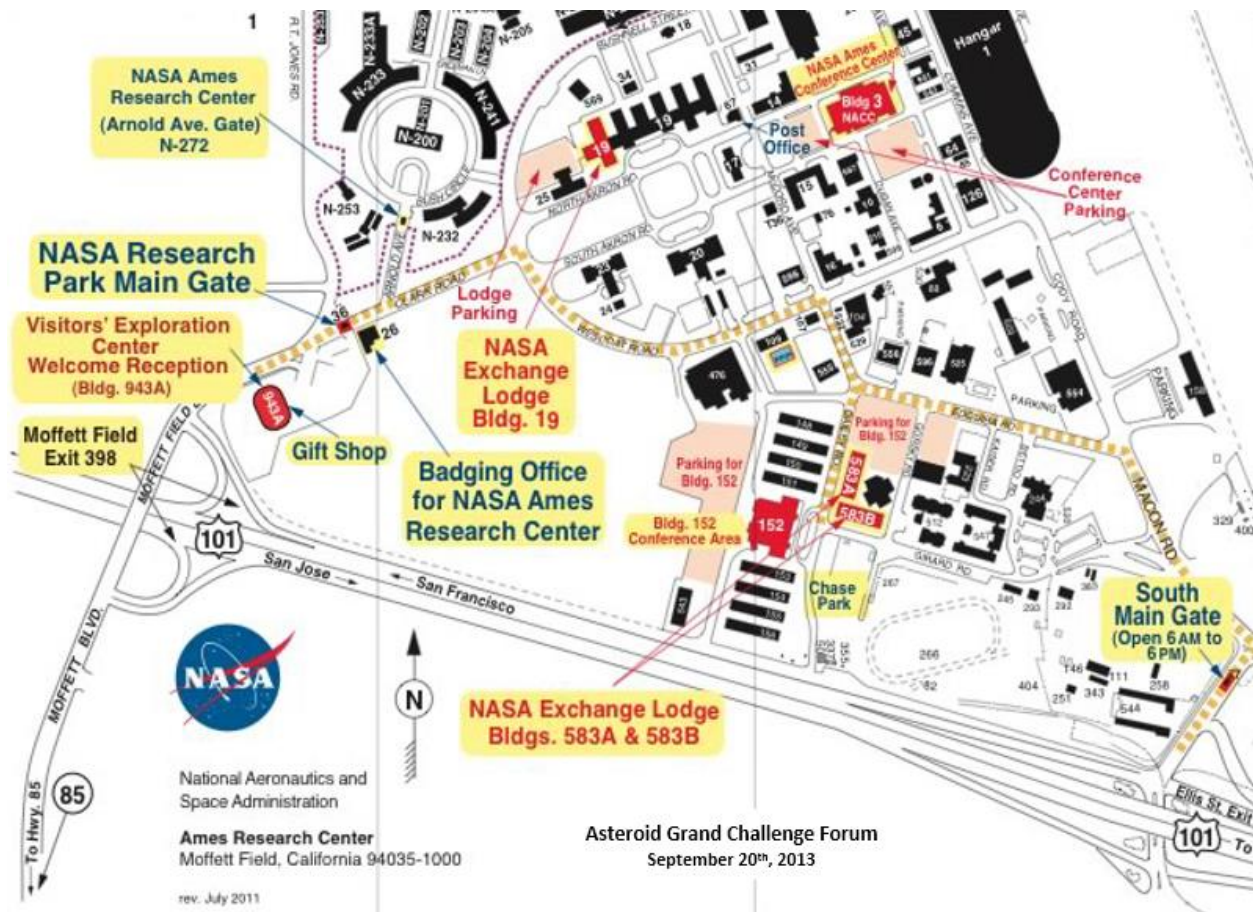
Though not strictly required, an internet-connected device will help you take the full advantage of the day. Guest wireless access will be available. If you would like to share a presentation or any other material, please bring all the appropriate equipment (cables, adapters, power cords, etc.) that you need.

Participants are invited to bring their lunch if desired; limited seating is available at picnic tables outside. Participants are also invited to bring along snacks, water, or caffeinated drinks to fuel their creativity. If you can bring enough to share with other participants, you will make the entire event that much better! It's a great way to introduce yourself to people at the very least.

Sticky notes, whiteboards, and large paper pads will be provided, but if you require other materials for note-taking, idea capture, or to host your session, please bring any additional materials necessary.

VENUE

The NASA Asteroid Grand Challenge will be held at Building 152 in the NASA Research Park at Moffett Field.



FROM SAN FRANCISCO

Driving Option

- Take 101-S towards San Jose
- Take exit 397 for Ellis toward NASA Pkwy
- Turn left onto Ellis St.
- Go straight until you reach the gate
- Upon arrival to NASA Ames, inform the security guards your destination is Building 152 for the NASA Asteroid Grand Challenge Forum
 - Be sure to have your driver's license ready to show the guard
- Turn left onto Cody Rd (First stop sign)
- Turn left onto Girard Rd
- Building 152 will be straight ahead at the end of the road

Public Transportation Option (Approx. 1.5 – 2 hours)

- Take Caltrain from San Francisco to Mountain View Caltrain Stop (Corner of Castro/Moffett Blvd and Evelyn Avenue)
 - Try to catch the bullet train if it is available – Bullet train takes 40-60 minutes to reach Mountain View)
 - Take the 51 bus towards Moffett Field – NASA Ames (Or catch a cab from the Mountain View Caltrain station to Mountain View, estimated cost \$10)
- Upon arrival to NASA Ames, inform the security guards your destination is Building 152 for the NASA Asteroid Grad Challenge Forum
 - Once at NASA Ames Research Park - Get off at North Akron & McCord Avenue
 - Walk to McCord Avenue, make a right on McCord Avenue, walk to Dailey Road and make a right.
 - Building 152 will be on the right hand side

FROM SAN JOSE

Driving Option

- Take 101-N towards San Francisco
- Take exit 397 for Ellis toward NASA Pkwy
- Turn right onto Ellis St.
- Go straight until you reach the gate
- Upon arrival to NASA Ames, inform the security guards your destination is Building 152 for the NASA Asteroid Grand Challenge
 - Be sure to have your driver's license ready to show the guard
- Turn left onto Cody Rd (First stop sign)
- Turn left onto Girard Rd
- Building 152 will be straight ahead at the end of the road

Public Transportation Option (Approx. 1 – 1.5 hours)

- Take light rail from San Jose towards LRT Winchester – Mountain View
- Get off at the Bayshore NASA Station, Mountain View Stop
- Walk to Moffett Field (toward security gate)
- Upon arrival to NASA Ames, inform the security guards your destination is Building 152 for the NASA Asteroid Grand Challenge
- Walk to Cody Rd and make a left· Walk to Girard Rd and make a left
- Building 152 will be straight ahead at the end of the road

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