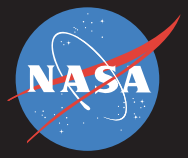


INTERNATIONAL

SPACE APPS

CHALLENGE

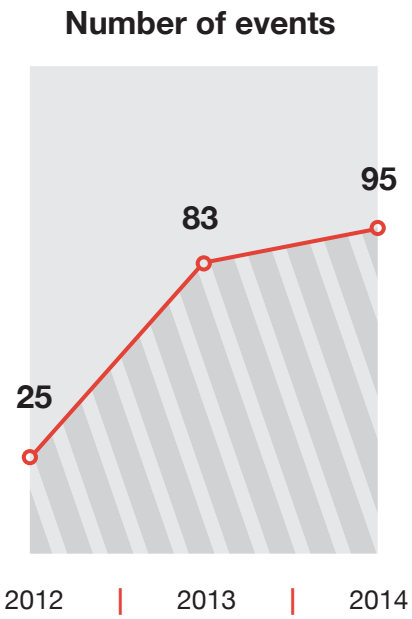
2014 MISSION REPORT

In April 2014, over 8000 people came together in 95 cities to work with NASA data at the International Space Apps Challenge.

THE HISTORY OF SPACE APPS

Space Apps was conceived as an initiative of NASA's Open Innovation Program with the goal of using NASA data to catalyze innovation, opening up the process to the creativity, capacity, and disruptive thought of the global community. The Open Innovation Program is charged with making NASA's voluminous stores of data transparent, accessible, and available to the public, and the International Space Apps Challenge is their call to action inviting people around the world to be part of building, making, and doing more with NASA data through an annual mass collaboration. Offering NASA's research and discoveries to the public is part of NASA's DNA, based on the National Aeronautics and Space Act of 1958. Space Apps offers new opportunities for NASA to convene citizens around NASA data at locally-hosted events around the world to collaboratively solve perplexing mission-related challenges.

> *"NASA is and has been one of the greatest conduits of human advancement of all time. I'm glad to see they take an interest in growing awareness of their causes through interactive and interesting means, such as this challenge. It really shows they care about us and want people involved. Not a lot of companies or agencies do that."* – Space Apps participant



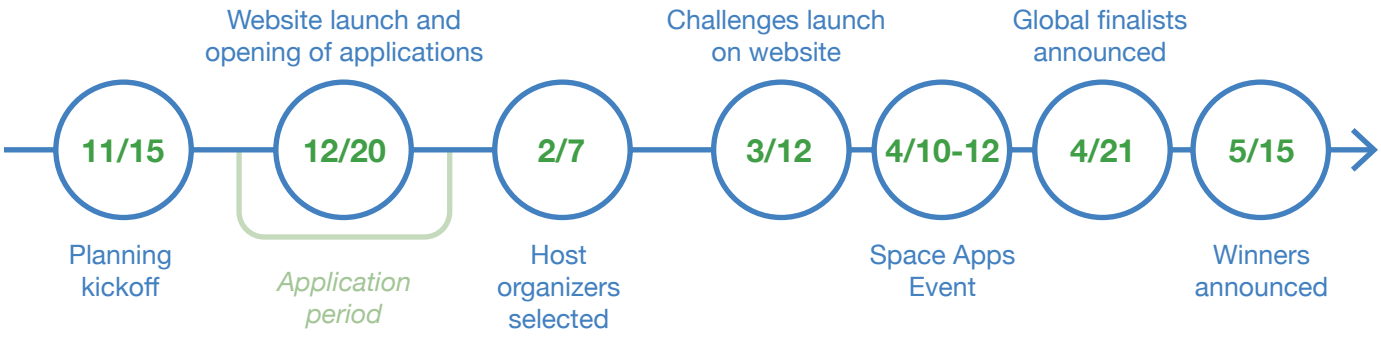
Space Apps began in 2012 and has grown in size each year, building a successful model for innovation that can be replicated by other government agencies. With each successive event NASA has continued to engage actively with the Space Apps community, domestically and around the world in gathering lessons learned and improving processes and structures from year to year. In 2014, 51 of the 95 cities joining Space Apps had participated previously. Many of those experienced local organizers shared their knowledge gleaned from prior events and supported and mentored new locations.

> *"Truly amazing effort that NASA is making to promote innovation."*- Maria Zaghi, Space Apps event lead, Guatemala City

THE SPACE APPS PROCESS

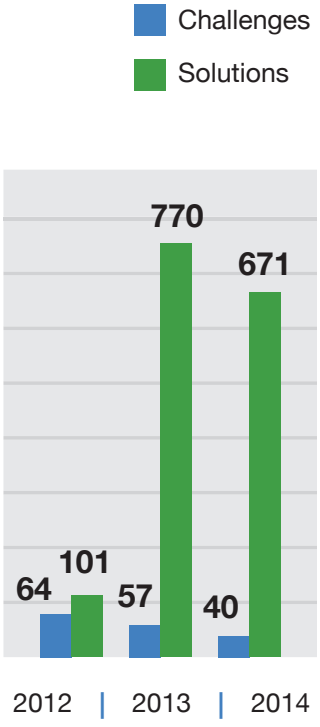
Global Coordination

NASA manages Space Apps at the global level, acting as a convener and motivator for organizers and participants worldwide. The Space Apps team within NASA's Open Innovation Program is responsible for the overall execution of the event internationally, from setting the tone of collaboration and local engagement to vetting applicant cities, providing a dedicated web platform, training, and advising local organizers, crafting challenges and fielding press inquiries.



Local Event Coordination

> *"Now that I've been part of the challenge, I've been able to meet the people behind the organization and see how passionate they are about space and feel a part of that. I feel more involved and I want to keep looking for information and stories about space, NASA and how I can get more involved."* – Space Apps participant



Each Space Apps location is hosted independently by local volunteers who create their own organizing teams, do their own marketing, secure their own space and funding, and coordinate all their own logistics. NASA convenes the global gathering, provides the digital infrastructure and subject matter expertise, offers a Host Planning Kit, selects local hosts based on application criteria, and coordinates logistics with the local hosts through a vibrant Community Manager. Hosts at each location are free to adapt the event model to serve their own local culture and needs. They can experiment and innovate the model, which enriches the experience as Space Apps matures year to year. New ideas and suggestions are captured by event organizers and integrated back into NASA's Host Planning Kit for the following year. During the planning period, the Space Apps team hosts periodic open conference calls for all organizers to share information, answer questions, and allow organizers to share experiences and suggestions.

Challenge Development

> *"This was the first hackathon that offered a project I could work on with my daughter. Organizing hackathons takes a tremendous amount of time away from my family, so it was a thrill to be able to work alongside her through the weekend as she designed a card based RPG for the Asteroid Prospector challenge."* - Eric Parker, Space Apps event lead, Augusta, Georgia

The challenges presented at Space Apps 2014 focused on a series of themes relevant to NASA's missions:

Human Space Flight | **Robotics** | **Technology in Space** | **Asteroids** | **Earth Watch**

The Space Apps team developed each challenge by working closely with subject matter experts within key NASA technical disciplines. The Space Apps team also collaborated with the White House Climate Data Initiative, as well as NOAA and the EPA, to highlight NASA's Earth science data, and create and promote challenges relating to coastal inundation hazards. In addition to the new 2014 Space Apps Challenges, high-potential 2013 projects were offered for teams to continue the good work from the preceding year.

Teams created 671 projects during the Space Apps weekend. The challenges in each category with the most solutions are:

- **Earth Watch/Where on Earth** *(50 projects)*: To use NASA's Earth Observing System data to create a game or app that displays satellite images of places around the world and invites users to guess what and where they are.
- **Robotics/ExoMars Rover is My Robot** *(47 projects)*: To create a functional open hardware robotic model of the ExoMars rover for educational purposes and program it with collision-avoidance strategies.
- **Asteroids/Asteroid Prospector** *(43 projects)*: To build learning on the purpose and value of an asteroid resource utilization/industry by creating a game that will allow users to travel across the solar system to different asteroids, assessing their suitability for mining by location, composition, size, and other factors.
- **Technology in Space/Space Wearables: Fashion Designer to Astronauts** *(29 projects)*: To design and build prototypes for wearable clothing and accessories that could that could be used by space travelers, or the engineers and technicians working with ground processing of spacecraft and rockets.
- **Human Space Flight/Growing Food for a Martian Table** *(27 projects)*: Design a deployable greenhouse that could interface with a human habitat on a mission to the Moon or to Mars, enabling production of food on the planet surface.

THE SPACE APPS PLATFORM

The Space Apps website, www.spaceappschallenge.org, served as a global watering hole for participants to learn about the latest updates on challenges, host locations, announcements, and news articles. The community received up-to-the-minute news through an integrated Twitter feed. Each host location could post updates to a dedicated event page to communicate with and provide local content for their registered attendees.

> *"NASA is giving [an] open opportunity to everyone regardless of background, expert or not expert, educated or less educated it doesn't matter. Brilliant approach to find solution[s] and talent!"* - Space Apps participant

THE SPACE APPS COMMUNITY

The Space Apps community is a diverse group of thousands of global citizens who use the seeds of NASA data to create a harvest of innovative solutions. The community is a diverse mix of women and men, developers, designers, students, scientists, artists, engineers, architects, and academics who represent different ages, backgrounds, and experiences. This cultural melting pot sets Space Apps apart as a collaborative innovation tool for NASA.

> *"Space Apps always makes me realize how much [NASA] value[s] hackers and the time we take out of our jobs/lives to work with NASA's data to make it more accessible. It also makes us ALL realize how MUCH data NASA has out there and all the incredible things we can do with it."* - James Costa, Space Apps event lead, Toronto

THE SPACE APPS EVENT

Event Weekend

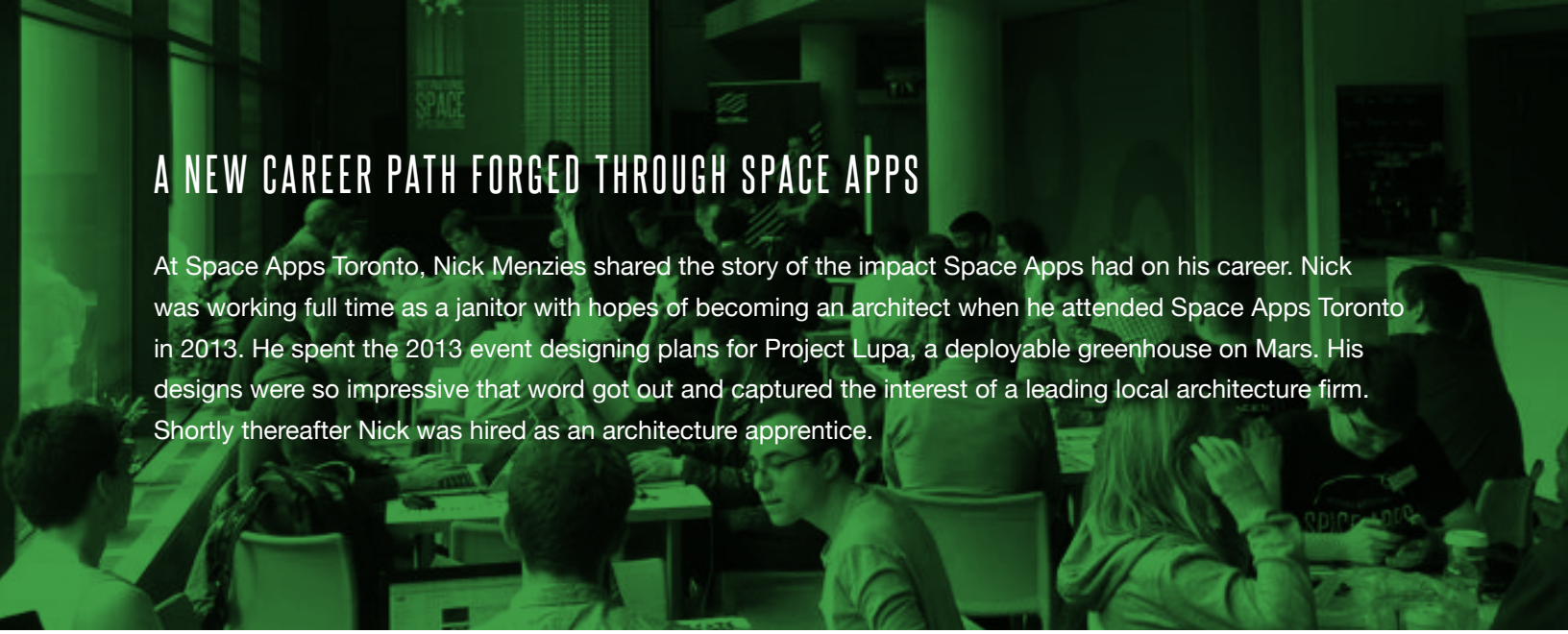
The Space Apps event is a weekend of intensive brainstorming, programming, building, and prototyping. The 2014 events began with a video recorded by astronauts Koichi Wakata, Rick Mastracchio, and Steven Swanson aboard the International Space Station and a welcome from NASA Chief Technology Officer for IT, Deborah Diaz. Many Space Apps sites worked around the clock through the weekend. Encompassing all regions of the world, and most of its time zones, Space Apps lasted 76 hours -- starting off in Doha, Qatar on Thursday night April 10th and ended Sunday evening April 13th in Seattle. Most events followed a similar schedule and structure, with each site making its own adjustments to suit local needs and culture.

> *"NASA seemed unattainable when I was a child. Now I think I can help its space studies. Creating a product in one day and working [on] space technologies in NASA's hackathon is amazing!"* – Space Apps participant

During the event weekend, NASA opened the Space Apps experience to the broader public with a YouTube broadcast of a Google Hangout with NASA Senior Executives. The public asked questions through social media channels, which where were addressed by NASA Chief Technology Officer for IT, Deborah Diaz; NASA Chief Scientist, Ellen Stofan; NASA Asteroid Grand Challenge Program Executive, Jason Kessler; and Astronauts Doug Wheelock of NASA and Paolo Nespoli of the European Space Agency, with moderation by Open Innovation Program Manager, Beth Beck. In addition to the Google Hangout, NASA subject matter experts participated in local events in South Africa, Australia, Canada, and several US cities from the east to west coast.

A FAMILY WEEKEND AT SPACE APPS

Many Space Apps locations actively engaged young people in their activities; however, the youngest participants may have been Artash and Arushi Nath, ages seven and four, from Space Apps Toronto. The two children attended Space Apps with their parents, both environmental scientists who strive to bring discussions on science, space and technology into their everyday conversation with their children. With their parents' guidance, Artash and Arushi built a self-propelled rover over the course of the weekend, complete with infrared sensors to gather data on humidity, temperature and magnetic field and transmit it to a ground station via radio. Curious Bot was voted among the top five most popular projects nominated for the People's Choice Award and Artash Nath is now training other kids on Arduino and robotics. See their website here: http://hotpoprobot.com.



A NEW CAREER PATH FORGED THROUGH SPACE APPS

At Space Apps Toronto, Nick Menzies shared the story of the impact Space Apps had on his career. Nick was working full time as a janitor with hopes of becoming an architect when he attended Space Apps Toronto in 2013. He spent the 2013 event designing plans for Project Lupa, a deployable greenhouse on Mars. His designs were so impressive that word got out and captured the interest of a leading local architecture firm. Shortly thereafter Nick was hired as an architecture apprentice.

Each event ended with local judging of all projects by a panel judges. Composition of the judging panel and judging criteria, as well as any prizes awarded, were determined locally by each event. In addition to selecting local winners, judges also chose two projects from each event to nominate for inclusion in the global judging pool. Simultaneously local participants voted to nominate one local project for the global People's Choice category.

Event Follow-Up

> *"It's always nice to hear astronauts and other NASA professionals speak passionately about their work; it's inspiring."* – Space Apps Participant

Of close to 200 projects nominated for global recognition in the categories of Best Use of Hardware, Best Use of Data, Most Inspiring, Galactic Impact and Best Mission Concept, NASA narrowed the pool to five top projects in each category that would proceed to a final round of judging. Simultaneously, the nearly 100 People's Choice nominees were narrowed to a pool of 25 top projects, and the public was invited to vote for a favorite using Twitter. On May 12th, one month after the Space Apps event, the five global winners and one People's Choice winner were announced.

> *"The whole event was a very empowering experience for our participants. We had hackers coming from rural Guatemala and from El Salvador and we really helped them change the perspective about hacking and innovation in a week. Like they all say…they had fun, learned, but really felt they were helping to better our quality of life by participating."* – Maria Zaghi, Space Apps event lead, Guatemala City

2014 INTERNATIONAL SPACE APPS CHALLENGE IN NUMBERS

10 Astronauts Participating

Countries with highest concentration of events

US: 21
Spain: 5
Canada, Mexico, UK: 4
Australia, Bolivia, France, India: 3

318 Collaborating Organizations

51 of 95
Participating cities have hosted a Space Apps event before

44
New locations included: **Doha, Qatar; Islamabad, Pakistan; Cochabamba, Bolivia; Calabar, Nigeria; Saint Petersburg, Russia and Valencia, Spain**

Tampere
Northernmost event

Auckland
Easternmost event

Santiago
Southernmost event

San Francisco
Westernmost event

La Paz, Bolivia
Highest altitude event

76 HOURS/DURATION OF EVENT

95 NUMBER OF CITIES

46 NUMBER OF COUNTRIES

8196 Participants

671 Projects

749 Virtual Participants

34 Teams collaborating across more than one location

54 Media Articles

Montreal, Tokyo, Skopje, Toronto, NYC, Lagos, Calabar
Locations with companion youth events

New
United S
30

Toronto
Canada
147

Guatemala City
Guatemala
148

Cochabamba
Bolivia
136

Recife
Brazil
122

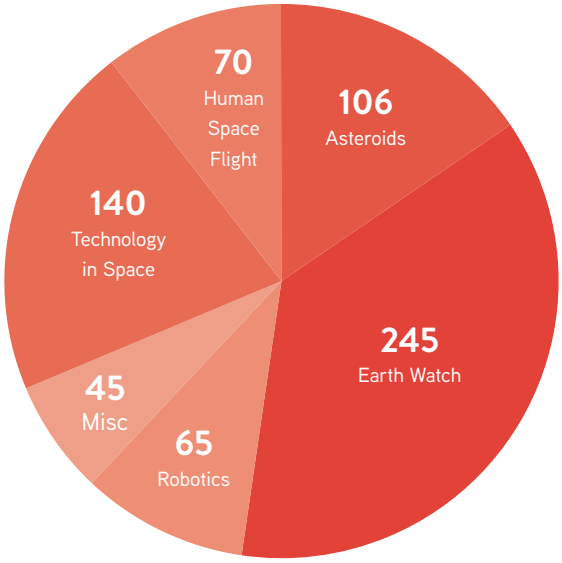
Sant
Ch
24

NASA

Space Apps is a NASA incubator innovation program / **spaceappschallenge.org**

31 Cities producing **GLOBAL FINALISTS**

NUMBER OF SOLUTIONS IN EACH CHALLENGE CATEGORY



York
States
09

Rome
Italy
202

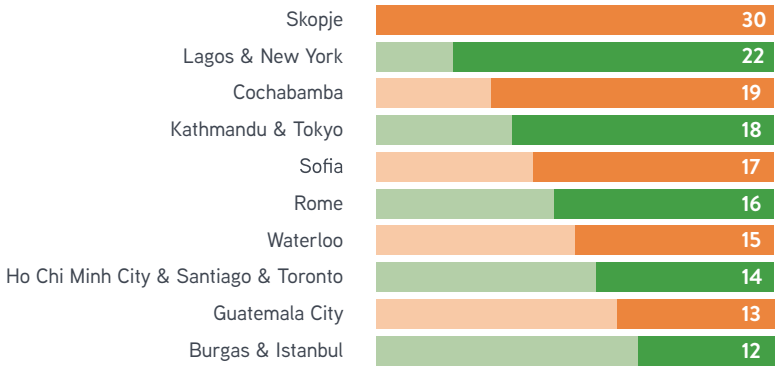
Skopje
Macedonia
158

Istanbul
Turkey
192

Kathmandu
Nepal
140

tiago
ile
44

CITIES THAT PRODUCED THE MOST SOLUTIONS



MOST POPULAR CHALLENGES IN EACH CATEGORY

Earth Watch / Where on Earth (50)

Robotics / ExoMars Rover is My Robot (47)

Asteroids / Asteroid Prospector (43)

Technology in Space / Space Wearables: Fashion Designer to Astronauts (29)

Human Space Flight / Growing Food for a Martian Table (27)

WEBSITE ANALYTICS

175 Countries

Where website visitors came from (20 Feb to 12 May, 2014)

Number of website visitors (20 Feb to 12 May, 2014)

140,451 Unique Visitors

220,000 Total Visits

TWITTER INTERACTION

29, 509, 387

#SpaceApps Tweets

124,581

Tweets voting for People's Choice

THE WINNING PROJECTS

Galactic Impact: SkySnapper / LONDON

An app that measures air quality by snapping using crow-sourced photos of the sky color to assess air pollution and map and monitor it over time.

The team SkySnapper team was formed when PA Consulting Group, a company that sent a team to Space Apps in 2013, invited employees to participate again in 2014. When those who responded were all software developers with experience in programming iPhone applications, the team knew a software-driven hack was where they could make the most impact, and they were intrigued by the My Sky challenge. The team felt right at home at the London event, amidst likeminded individuals in the "cool" environment of London's Science Museum. The team continues to work on SkySnapper following the event, currently focusing on improving aesthetics and functionality and creating a web platform to make it accessible beyond the iPhone. As development continues and the app gains in functionality and stability, the SkySnapper team will look to promoting it to ensure its use by a wider audience.

Project page: https://2014.spaceappschallenge.org/project/sky-snapper/

Project team: ***James Shepherd, George Buckingham, Ben Noble, David Stanton, Finlay Edridge***

Local Space Apps organizers: ***Clare Hyde, Irini Papadimitriou***

Most Inspiring: Yorbit / KANSAS CITY

Yorbit allows individuals to search, personalize and share stunning photographs captured by NASA satellites via social media or email.

Lawrence Friedl, director of NASA's Applied Sciences Program and owner of the Earth as Art challenge, was representing NASA at Space Apps Kansas City. The Yorbit team took advantage of his presence to pick his brain about the challenge and a project idea began to emerge: to somehow personalize NASA's beautiful satellite images of Earth. As one team member stated: "When you're able to find images by date and location, you're doing so with a memory attached to that date or location. Perhaps that's what the location looked like from space on the day your child was born. Or maybe that's what it looked like when you were on your honeymoon. We wanted people to take the personal attachment to a date or place and be able to make something unique and special from these beautiful images from NASA. We also wanted people to be able to share these images with loved ones and friends, either through their favorite social media network or email." The Yorbit team hopes that the app will be featured prominently through social media outlets as it continues to develop, and are currently reworking the app format to provide users with a more stabilized environment.

Project page: https://2014.spaceappschallenge.org/project/yorbit/

Project team: ***Dan Salva, Ben Suh, Doug Niccum, Scott Strickler, Katie Roebling, Jim Farnham, Mark O'Renick, Ryan Schneider, Alec Matlock***

Local Space Apps organizers: ***Ryan Schneider, Mike Wilson***

Best Use of Hardware: Android Base Station / LONDON

Using a 3D printed receiver, Android Base Station connects a smartphone to satellites and turns it into a Wi-Fi hotspot capable of tracking, and logging changes in, satellite orbits.

No one on the Android Base Station team actually knew what they were going to build upon arrival at Space Apps. A comment about the high price of satellite bandwidth led to the discussion of a price comparison service, and with this the team was galvanized into creating Android Base Station. They remain focused on the two main sources of satellite bandwidth in remote or impoverished areas. The team's questions now include determining what other satellite providers are available in remote areas, and how to make their services reliable enough to be used by operations like field hospitals. In order to reach that goal, the team remains concentrated on gathering information about their user base and finding the funding to make *Android Base Station a reality.*

Project page: https://2014.spaceappschallenge.org/project/androidbasestation/

Project Team: ***Glen Searle, Marcin Bujar, Alistair MacDonald, Anthony Thomas, Amish Ralhan, Jean Rene-Cora***

Local Space Apps Organizers: ***Clare Hyde, Irini Papadimitriou***

Best Mission Concept: Aurora Wearables / EXETER

A comfortable, internet-connected space suit designed for use by astronauts on the International Space Station.
The Aurora Wearables team is comprised of members of the Unlimited Space Agency (UNSA), a group whose mission is to engage young scientists and space explorers and to inspire young women in STEM. UNSA was founded by artists Clare Duffy, Jon Spooner, and Chris Thorpe, and specializes in the process of unifying science and art. The idea for Aurora Wearables came through collaboration between astronaut Tim Peake who joined the Exeter Space Apps event, software developers, and fashion design students from Exeter College. The result was a fashion conscious line of space clothing sewn with conductive thread to give power to integrated devices. Features include a pocket-sized 3D printer to deliver tools and gifts to astronauts directly and a "wearable hug" mechanism that squeezes the astronaut's shoulders in response to commands given by their family members on Earth. UNSA plans to develop the prototype suit for Tim to wear on the ISS.
Project page: https://2014.spaceappschallenge.org/project/aurora-wearables---fashion-meets-function/
Project team: ***Jon Spooner, David Rufus, Steven Frazier-Roberts, Rupert Johnstone, Judith Clark, Julie Saunders, Michelle Moinzadeh, Sadie Moisan, Bobby Plows, Layla McCammon, Rich Carne, Sophie Loman***
Local Space Apps organizers: ***Michael Saunby, Lesley Challenger***

Best Use of Data: SkyWatch / TORONTO

An app that visually represents data from observatories around the world in near-real-time, and includes the ability to subscribe to alerts, share information and find and plot telescope coordinates of celestial events.
The SkyWatch team formed quite organically around a table at the Space Apps Toronto event. The team members were inspired by the Alert-Alert challenge, but immediately faced the obstacle of needing to learn about how transient phenomena were observed, recorded, and then shared--a knowledge base that required an incredibly technical understanding of telemetry networks. Luckily, the team found a repository of real-time astronomical events in skyalert.org and engaged with one of the site's most active users, who happened to be NASA's own Scott Barthelmy. Through Scott, the team was able to answer questions they had about the VOEvents and the GRB Coordinates Network Scott had helped create. He also gave the team direct access to the network, which allowed them to pull in real data for their model. The team hopes that SkyWatch will one day be fully automated in tracking all reported celestial events that happen across space, and presenting that information in a very non-intimidating way for the public to enjoy and observe. As one team member put it, "we hope that by allowing for easier access to the stars, more people will continue to reach for it."
Project page: https://2014.spaceappschallenge.org/project/skywatch/
Project team: ***Ryan Ovas, James Slifierz, Roland Sing, Dexter Jagula, Stefan Sing***
Local Space Apps organizers: ***James Costa, Matthew Potter, Emma Woolley, Jonathan Moneta***

People's Choice: Next Vision (Space Helmet) / VALENCIA

A space helmet that integrates with cameras, a smart phone and a virtual reality globe to provide data to an astronaut with the point of a finger.
The Space Helmet team members, already friends from the Universidad Politécnica de Valencia Makers Club, saw an article saying NASA was looking for the best developers in Valencia. They immediately signed themselves up. Upon arriving at Space Apps and selecting the SpaceT challenge, three years of training in tackling ambitious university deadlines kicked in and a detailed schedule was developed outlining milestones in the development of the hardware and software. The team managed to complete their ambitious project with the help of borrowed equipment and regimented coffee breaks. The pair hopes that NASA will see their app as a solution in the growing field of space tourism. This summer, they are continuing development on the helmet with a team of four, and shifting focus towards practical uses on Earth such as keeping the helmet as lightweight and impact-resistant as possible for motorcyclists.
Project page: https://2014.spaceappschallenge.org/project/space-helmet/
Project team: ***Francisco Presencia, Juan Carlos Sebastia Garcia***
Local Space Apps organizer: ***Pepe Borras***

KEY THEMES AND AREAS FOR GROWTH

Collaboration

Creating a collaboration that allows for a spirit of true exploration and shared discovery is a challenging task, made more so when the participants span 46 countries and represent countless cultures, linguistic backgrounds, and world views. Outcomes are unpredictable and comfort with a certain level of chaos is required. Letting go of some control is the first step in creating innovative practice, and the outcomes have included not only robust applications and prototypes with real potential to make an impact on Earth and in space, but also strong connections built, data constructively used, and inspiration generated among youth and adults alike.

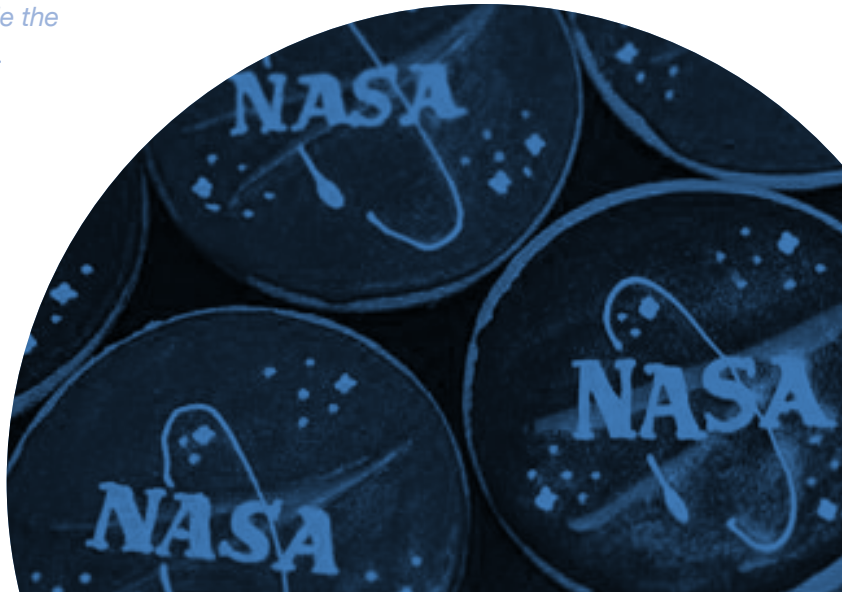
> *"[I]t has helped to make the idea of working with NASA, and being part of something greater, more tangible. The general public will always be able to associate with the famous four letter acronym, but always assume they are beyond arms length. This activity reinforces that NASA values international collaboration, and contributions from innovators from all walks of life."* – Stratos Patsikatheodorou, Space Apps event lead, Brisbane

> *Space Apps "has positively changed my perspective of NASA, in particular because I've seen how strong the international collaboration is."* – Space Apps participant

Community

In its third year, the Space Apps community has grown substantially in size and experience. We can already see Space Apps veteran organizers mentoring new locations and promoting the vision and mission of the event within their own communities. Those veteran organizers have become valuable leaders and they unfailingly provide constructive feedback to the Space Apps global team that serves to refine NASA's approach and improve the event with each successive year.

> *"NASA reaches out more than I had known before . . . I think it is great they collaborate and give people the opportunity to work with them and their data."* – Space Apps participant



A Pipeline for Innovation

A critical challenge facing hackathons and prototyping events, like the International Space Apps Challenge, is ensuring paths to sustainability for the most promising projects that emerge. Many Space Apps projects of past years have gone on to deployment, like the Sol Mars weather app, or have formed the basis for the creation of new ventures, like Gotham Labs in New York. Nonetheless, to increase the visibility of high potential projects, NASA is currently developing strategy around a pipeline for such projects that may include elements of mentorship and guidance, as well as interim events throughout the year to accelerate progress on solutions.

> *"I thought it was an old institution that didn't care much about innovation or young people but this contest proved otherwise."* – Space Apps participant

Learning

The hacking/making mentality that is the nucleus of Space Apps, as well as the required mode of operation for human survival in space, resonates strongly within NASA. Insights from the Space Apps experience influence NASA's thinking on human space exploration, allowing NASA scientists and engineers to gain unique perspectives from innovative citizen solvers representing diverse perspectives and personality types. Through collaboration with the Space Apps community, NASA enhances its own thinking and expertise with novel solutions and approaches from the outside.

BRINGING THE SMELLS OF HOME INTO SPACE

The Senti8 team was convened by Leslie Birch, a designer and first-time hackathon participant at Space Apps Philadelphia in 2013. Seeing that Philadelphia was not a 2014 location, Leslie determined to go to the nearest event in New York City. Prior to doing so, however, she reached out to participants in some of New York City's 2013 projects and invited them to join her in responding to the Space Wearables challenge at the 2014 event. The team convened in NYC, one participant traveling from Florida to join in, and had a chance to speak with Astronaut Doug Wheelock about his experiences in space. Wheelock mentioned that one of the things he missed most while in space was his sense of smell, and the smells of Earth. That inspired Senti8, a wristband that allows people to experience memories of places they have been through scent. The team of six women and two men created the wristband using a modified vaporizer, Arduino microcontroller, and 3D printed scent distributors. The project, which continues in development, won the Best Hardware award at the New York City event and was recently showcased at the World Science Fair.
See their website here: http://www.senti8.com.

FROM SPACE APPS PROJECT TO NON-PROFIT

Created at Space Apps in Kansas City, the NERO project enables the world's 20+ million DSLR camera owners to capture images of space and classify the locations of near Earth objects through a web-based artificial intelligence recognition engine. Following the Space Apps event, Kansas City host organization, Ingenology, received dozens of requests from individuals interested in furthering NERO's development, including to applications beyond near Earth objects. Due to the high level of interest in taking the project forward, the team is now organizing Project NERO into a formal non-profit organization and is already inviting DSLR camera owners and citizen scientists to join the Project NERO photo capture team. See their website here: http://projectnero.org.

HACKING AMIDST EARTHQUAKES

Space Apps site Managua, Nicaragua began to experience earthquakes just before their Space Apps event was scheduled to begin. With the city on red alert and all venues closed, the local event had to be cancelled. Participants in Managua rallied, however, and took advantage of Space Apps' virtual location to participate anyway from their homes, including the intrepid iSpotIt group—a team of middle school students who spent the weekend developing enhancements to their 2013 winning app allowing students to follow the path and live broadcasts of the ISS and share via social media when they spot it overhead. See their project here: http://ispotit.weebly.com.

SPECIAL THANKS

Deborah Diaz, NASA Office of the Chief Information Officer, Chief Technology Officer for IT, without whom Space Apps would not exist

NASA Challenge Category Sponsors

Jason Crusan, Advanced Exploration Systems Division Director, Human Exploration and Operations Mission Directorate
Lawrence Friedl, Director of Applied Sciences, Science Mission Directorate
Jenn Gustetic, Challenges and Prizes Program Executive, Office of Chief Technologist
Jason Kessler, Asteroid Grand Challenge Program Executive, Office of Chief Technologist
Rich Leshner, Director of Small Business Innovation Research/ Technology Transfer, Space Technology Mission Directorate

Google Hangout Speakers

Beth Beck, Open Innovation Program Manager (moderator)
Deborah Diaz, NASA Office of the Chief Information Officer, Chief Technology Officer for IT
Jason Kessler, Asteroid Grand Challenge Program Executive, Office of Chief Technologist
Paolo Nespoli, Astronaut, European Space Association
Ellen Stofan, NASA Chief Scientist
Doug Wheelock, Astronaut, NASA

NASA Global Judges

Jim Adams, Deputy Chief Technologist, Office of the Chief Technologist
Deborah Diaz, Chief Technology Officer for IT, Office of the Chief Information Officer
Lawrence Friedl, Director of Applied Sciences, Science Mission Directorate
Rebecca Spyke Keiser, Associate Deputy Administrator for Policy Integration, Office of the Administrator
Dot Rasco, Deputy Associate Administrator for the Space Technology Mission Directorate
Doug Wheelock, Astronaut
Greg Williams, Deputy Associate Administrator for Policy and Plans, Human Exploration and Operations Mission Directorate

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Valador/Second Muse
Elizabeth Sabet
Martin Kummel
Katey Metzroth
Ruha Reyhani
Kiana Khozein
Michael Brennan

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Bina Venkataraman, Office of Science and Technology Policy (for White HouseClimate.data.gov challenge cross pollination)
Donna Connell, Valador

Design and Infographic

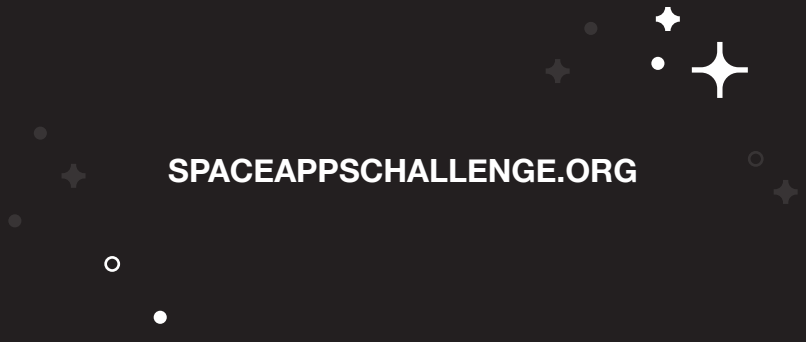
Jonathan Kurten, The Phuse

Photography

Adam Burt/Flickr, Ruha Reyhani, @AlebrijeS/Twitter, Elizabeth Sabet

And most importantly…

A round of applause for all Space Apps local organizers and participants! We can make plans, but you ARE Space Apps!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