

International Space Apps Challenge - Brisbane, Australia

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Local Organising Lead

Stratos Patsikatheodorou is the local organising lead for the Brisbane site of the International Space Apps Challenge.

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If you have any questions or queries with any of the content in this document, please leave a comment using the "Comments" tab, and I will respond.

Tentative Schedule

Saturday 20th April

- 0800 - Registrations Open
- 0900 - Welcoming (Australian sites connection)
- 0930 - Introduction of experts and forming teams
- 1030 - Teams break out and start working
- 1230 - Lunch
- 1300 - Link up with Australian sites for progress report
- 1630 - Progress report
- 1830 - Dinner
- 2200 - Close up for the night (Happy Hackers Hacking into the night)

Sunday 21st April

- 0800 - Hacking Day 2
- 0900 - Progress report
- 1230 - Lunch
- 1300 - Progress report (requirements for submission, formats, things to include)
- 1445 - Deadline for submission
- 1500 - Presentations of submissions
- 1600 - Judges deliberate
- 1630 - Winners announced and prizes awarded
- 1700 - Wrapup and final thoughts

Social Media

Feel free to share around the following social media links, and use them throughout the event. We will also be posting to our social media accounts, and commenting on the progress the teams are making in Australia

Twitter

Space Apps Challenge Australia - @auspaceapps
Adelaide - #spaceapps_ADL
Brisbane - #spaceapps_BNE
Canberra - #spaceapps_CBR
Melbourne - #spaceapps_MEL
Sydney - #spaceapps_SYD

Twitter - Challenges

OpenROV - #openrov
Why We Explore - #whyweexplore
My Virtual Mentor - #virtualmentor

“No Delays” Air Traffic Management - #nodelays
NASA’s Impact on the Economy - #NASAeconomy
Hitch a Ride to Mars - #ridetomars
Deployable Greenhouse - #deploygreen
Renewable Energy Explorer - #energyexplorer

Facebook

<https://www.facebook.com/spaceappschallengeaus>

Ustream

Brisbane - <http://www.ustream.tv/channel/spaceapps-bne>

FAQs

What to bring?

We will cater for some meals over the two day event, however, as the event is free to participate, there is a limited budget. Please feel free to bring your own snacks and water to help you through the challenge.

Computers will be accessible at the event, however, it is expected that the particular programs you may require may not be available. It is strongly suggested that you bring along a personal laptop. Don’t forget your power cable too!

While we will have most of Level 5 booked for the Space Apps Challenge, The Cube is open to the public on the weekend of the event. It can be expected that the public will be roaming around, so please be sure to take care and keep an eye on your personal belongings. We will try to monitor this as much as possible, but just be aware if you have to leave a room with your things inside.

List of items:

- Laptop + software programs you would normally use/might need for the challenge
- Power cables
- Power boards (optional, there should be many power outlets around the venue)
- Snacks (some snacks will be provided, but if you feel like you might need some more energy to keep you going, feel free to bring your own)
- Water (water and drinks will be provided, but always a good idea to bring your own water bottle)
- Jumper/Hoodie (the building can feel quite cold when working for long hours inside)

How do I access Wi-Fi at the event?

Details to come shortly.

I have special dietary requirements, who do I tell?

Please let Stratos know about any dietary requirements you may have. We will be providing meals and snacks over the course of the event.

Alternatively, the following food retail outlets will be open over the two days:

- Boost Juice - 0730 - 1600 (Sat) and 1000 - 1500 (Sun)
- Burger Urge - 1000 - 2000 (Sat and Sun)
- Origin Kebabs - 1000 - 1500 (Sat)
- Merlos Coffee - Open Sun only

Do I need to stay for the entire event?

No, the schedule provided is a guide for the use of the venue. You are free to stay for the entire time, or only part of the event. This will also depend upon the challenges and how your team decides to spread the work.

I don't know anyone at the event, can I work by myself, how do I join a team?

This event is focused around collaboration, and everyone who is involved and participating are there for the same reasons you are; to develop solutions which solve problems for life here on Earth and in space.

We would encourage you to think beforehand about the challenges you would like to work on, and try to team up with others. Use the [Facebook event page](#) to connect with other. On the Saturday, we will help you team up with others at the event. If no one else is interested in your challenge, and you really want to do it, we can help you find a team either in Australia, or link up with other participants around the world.

A challenge I want to work on isn't on the list of challenges for the Brisbane event. Can I choose from the other NASA challenges?

There are quite a number of challenges available for participants to engage with. We've listed a few which we think might help to provide some direction, or insight into the types of challenges that you can participate in. If there is one that isn't on the list, but you would really like to try and solve, please contact Stratos and let him know which challenge you would like to tackle, and if you already have a team ready to go.

Subject Matter Experts

Some experts from the local Queensland community have kindly provided their time to help any teams having difficulties with particular aspects of their solution. We may also have some additional experts attend on the day, but we'll make sure you all know who they are.

Joel Chia - [Hackerspace Brisbane](#) member

- Bachelor of Arts (Communication Design)
- Graphic Designer
- Software Developer (Web, C#, Java)

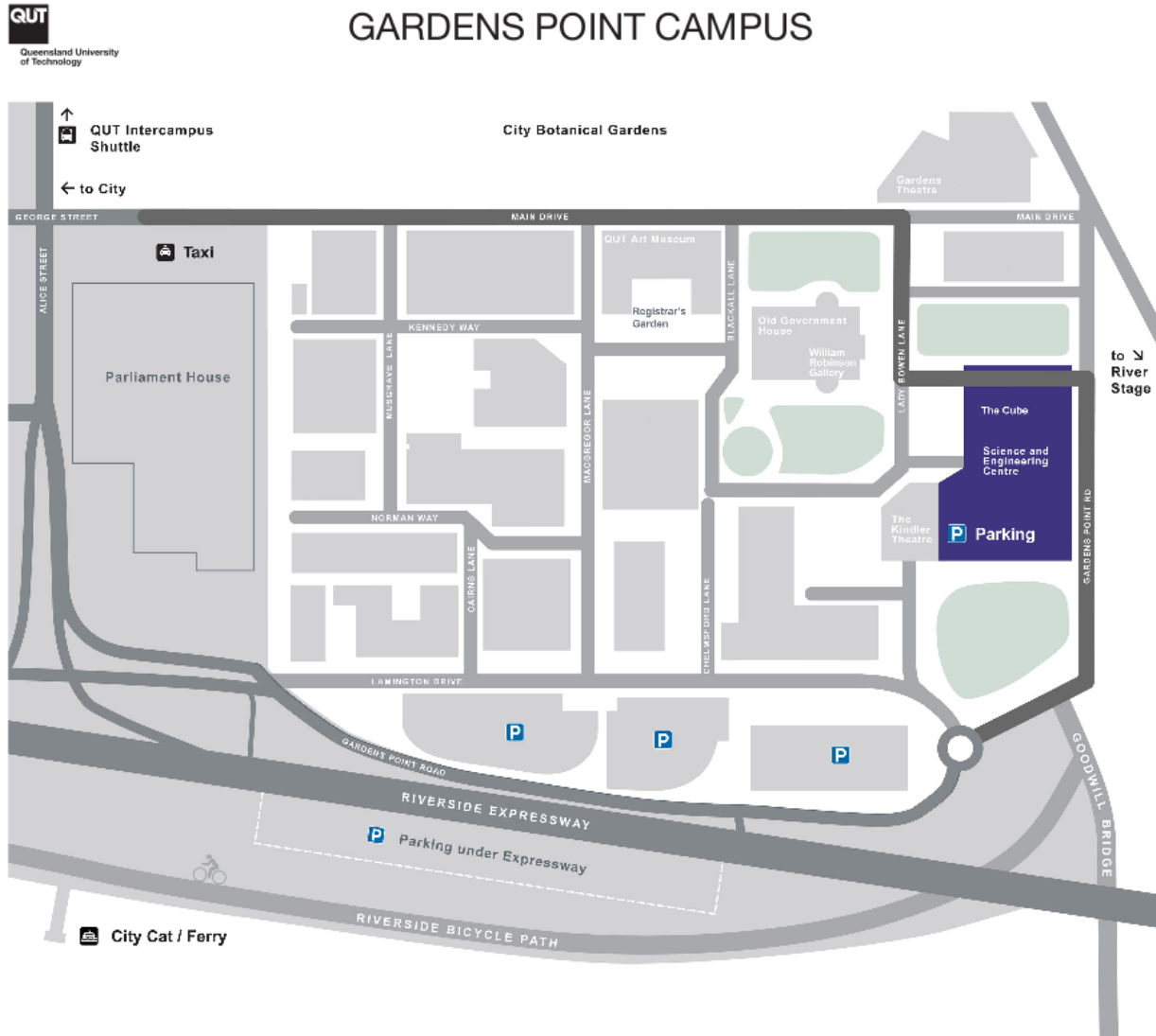
Aaron Birkby - [Silicon Lakes](#)

- Bachelor of Science (Physics and Mathematics)
- Programming
- Application Development (Windows, iOS, Android)
- Arduino robotics
- PCB circuits
- Websites
- Commercialisation
- Business Plans

Map

The International Space Apps Challenge will be held on Level 5 of The Cube. Follow the signs around on the day.

There is no parking provided, however, the venue is quite accessible by public transport.



Challenges for Brisbane

OpenROV - OpenROV is a Do It Yourself telerobotics community centered around underwater exploration and education. The “remotely operated vehicle” itself a low-cost telerobotic submarine that can be built with mostly off-the-shelf part. The OpenROV community is also laying the foundation for globally-connected citizen scientists to share their data and findings. The challenge is to design and test an interface that allows control of an OpenROV from a distance of more than 50 miles (80km) away.

Who should consider this challenge? Computer scientists, coders, engineers, scientists people with knowledge of robotics.

Why We Explore - You hear a lot about the how and what of NASA operations, but very rarely do you hear about the “why”. Tell the “why” of space exploration through the creation of compelling narratives and visualizations of the stories and data from NASA's history.

Who should consider this challenge? Educators, high school students, scientists, engineers and technologists.

My Virtual Mentor - Expand the NASA GIRLS (Giving Initiative and Relevance to Learning Science) program's online presence to mobile and/or tablet platforms. NASA GIRLS is a virtual mentoring program using commercially available video chat programs to pair mentors at NASA with middle school girls across the United States.

Who should consider this challenge? Designers, app developers, educators, high school students, people with general science background and insight into the operations inside the classroom.

“No Delays” Air Traffic Management - NASA's Airspace Systems Program is to increase the capacity and efficiency of air traffic operations while reducing the total cost. Current air traffic operations include about 50,000 operations per day, However, the general public do not have a clear understanding of the problems, bottlenecks, and inefficiencies of the current system. Make the public more aware of the problems by creating a gaming and technology development platform to evolve the best ideas for future air traffic management.

Who should consider this challenge? Aerospace engineers, app developers, game designers, and people with knowledge of aviation safety and operations.

NASA's Impact on the Economy - Help tell the story of NASA's economic impact through an app, visualization, or other interactive media. This information can later be utilised as a tool to help convince and provide examples to governmental and/or commercial stakeholders on why they should fund space-based operations and applications.

Who should consider this challenge? Educators, high school students, scientists, engineers, app developers, coders and technologists.

Hitch a Ride to Mars - Create a CubeSat (10 cm cube) design and develop a mission that operates in the Mars environment and furthers our knowledge of Mars. NASA is considering launching a CubeSat-based payload (a cube-based experiment module, an independent CubeSat, or constellation of CubeSats) on future a Mars exploration mission, using excess capacity on the mission's primary spacecraft.

Who should consider this challenge? Aerospace engineers, physical scientists, computer scientists, and people with knowledge of space operations and spacecraft missions.

Deployable Greenhouse - For prolonged manned missions to the Moon or Mars, non-perishable food supplies may be supplemented by regenerative life support systems, such as greenhouses, that produce food on the planet surface. The presence of growing plants can also have a positive psychological impact on explorers far from home. Develop a conceptual design of a deployable greenhouse that could be used for pre-deployment on a space mission to the Moon or Mars.

Who should consider this challenge? Aerospace engineers, scientists, earth scientists, horticulturalists, and people with knowledge of space operations and spacecraft missions.

Renewable Energy Explorer - Many people may be curious about the renewable energy possibilities in their area. This data is available from various government websites but is either not user friendly, or highly technical. For people to make good decisions about renewable energy, they need convenient access to information about the resource potential in their area. Create a simple web application or visualization, or smartphone app that spatially and temporally integrates wind, solar, and geothermal energy data and allows users to see where, on average, wind and/or solar, and/or geothermal potential are greatest.

Who should consider this challenge? App developers, web developers, designers, renewable energy scientists, and people with knowledge of renewable energy technologies.

SciStarter Citizen Science - Create an app that helps citizens understand and analyze microbial human communities in their environment and compare with the international space station. This app will be used at major league sports events as well as aboard ISS, offering citizens opportunities to understand and analyze microbial communities and the way they affect human life.

Who should consider this challenge? App developers, web developers, designers, biologists, and people with knowledge of scientific investigations

Submission of Solutions

- 5 min presentation (3 slides)
- 5 min questions

- **Prizes**
- **GitHub**
- ***Judging Criteria** - Awarded to the top three teams who have demonstrated the best solution to a software-based challenge from Australia. Extra merit should be provided where teams have used a collaborative approach utilising other Space Apps sites.*
- - **1st Prize** - 1 year Silver Plan (value of \$600)
 - 20 Private repositories
 - Unlimited Teams
 - Unlimited Public repositories
 - **2nd Prize** - 1 year Bronze Plan (value of \$300)
 - 10 Private Repositories
 - Unlimited Teams
 - Unlimited Public repositories
 - **3rd Prize** - half year Bronze Plan (value of \$150)
 - 10 Private Repositories
 - Unlimited Teams
 - Unlimited Public repositories
- **RiAus Memberships**
- ***Judging Criteria** - Awarded to one participant from each Australian site, for the 'most valuable player', at the discretion of local leads.*
- - **4 x one-year individual memberships to RiAus, which includes:**
 - Priority booking for ticketed events
 - Discounted or free tickets to paid events
 - Invitation to special member-only events
 - Regular newsletter
 - Free digital subscription to COSMOS Magazine
 - Reciprocal membership benefits at the Royal Institution of Great Britain (RiGB)

- **Part scholarship to the Southern Hemisphere Summer Space Program**
- **Judging Criteria** - Awarded to one participant from each Australian site who meets the criteria below.
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- **50% scholarship for one Australian Space Apps participant to attend the 2014 Southern Hemisphere Summer Space Program in Adelaide.**
 - The prize is a 50% scholarship for one Australian Space Apps participant to attend the 2014 Southern Hemisphere Summer Space Program in Adelaide.
 - If there is only one SHSSP application from a Space Apps participant, that application will be assessed according to the guidelines for all other SHSSP applicants. If the Space Apps applicant meets all the required criteria for being offered a place on the SHSSP, they will be offered the 50% scholarship.
 - If there is more than one application from Australian Space Apps participants, these applications will be assessed by a panel consisting of SHSSP staff and Space Apps leads and organisers, and the most outstanding candidate will be selected to receive the scholarship (if they meet all the required criteria for being offered a place on the SHSSP). To be considered all applicants must complete the SHSSP on-line enrolment process at <http://www.isunet.edu/overview-of-shs-sp-program/950-shs-sp-2012-on-line-enrolment>. Unsuccessful Space Apps applicants may withdraw their applications at any time.
- **Full scholarship to the 2013 Aerospace Futures Conference**
- **Judging Criteria** - Awarded to one participant nationally; additional criteria TBC
- **Apps4Broadband Competition** - This is not affiliated with the Space Apps Challenge but might be of interest to the participants
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- Apps4Broadband is a new competition to create innovative applications and services that are enabled by next-generation broadband. Drawing upon the worldwide success and experience of application competitions and marketplaces in the mobile and web domains, Apps4Broadband will explore and accelerate the discovery, promotion and adoption of new apps for the next-gen broadband-connected home of the future.
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- Apps4Broadband is designed to:
 1. Seed the development and demonstration of new types of services and applications
 2. Create a better understanding of the apps development environment and opportunities for broadband connected homes

3. Leverage Australia's strengths in mobile apps development and national broadband network

4. Encourage collaboration to realise new business opportunities

- **Prizes:** A total pool of AUD\$50,000 in prizes from invited industry sponsors will be awarded to the winning applications. Prize-winners will also be provided with mentoring opportunities with global companies, marketing opportunities and support and advice on testing.

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- **Categories:** Entrants can submit broadband apps in a number of categories including:

- 1. Best app

- 2. Smart appliances, security and energy

- 3. Media and entertainment

- 4. Health, education and social services

- **Entrants:** The competition is open to individuals and organisations based in Australia or with a partner organisation based in Australia. Apps4Broadband will be promoted widely to software development companies, individual software developers as well as companies such as large retailers and health service providers who are looking at new ways to deliver services in broadband connected homes.

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- **Timeframe:** The competition runs for a two month period from 16th April 2013 to 15th June 2013. The winning entries will be announced at a media event in July 2012, which will include representatives from ACBI partner organisations.

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- **Judging:** A judging panel consisting of representatives from sponsors and other industry experts will assess each entry on its merits; implementation and potential future impact.

- For more details on the ACBI **Broadband4Apps** competition and hack days please visit www.acbi.net.au/Broadband4Apps

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Terms and Conditions

Please view the [Terms and Conditions](#) online for participation in the International Space Apps Challenge.