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## **DARWIN AND THE ADVENTURE**

AN INTERNATIONAL SCIENTIFIC WORKSHOP AND FEASIBILITY STUDY EXPLORING  
SCIENCE, LEARNING AND PUBLIC ENGAGEMENT IN A NEW AGE OF SAIL

20-24 SEPTEMBER, 2009  
PARATY, BRAZIL

### **PRESS RELEASE:**

#### **A astronaut's-eye view of Darwin's voyage along the coast of Brazil**

The International Space Station (ISS) and a tall ship will connect off the coast of Brazil this week in a unique project to celebrate Charles Darwin's travels around South America. Two half-day voyages aboard the Tocorimé, a 120-foot Brazilian wooden tall ship, will coincide with passes of the ISS. In collaboration with NASA, live hook-ups to the ISS will enable the scientists aboard Tocorimé and local school children in Paraty to talk with an ISS astronaut as he flies overhead at 17,500mph.

Astronaut Michael Barratt will photograph the Tocorimé's position from the ISS as she sails along the coast carrying out oceanographic measurements and feasibility studies to explore the potential for doing modern science on sailing ships.

Supported by the British Council and organised by scientists from South America and the UK, the Tocorimé operators, the organisers of The HMS Beagle Trust and NASA, the week-long event brings together a scientific workshop in Paraty, Brazil, scientific cruises, and educational outreach. Calls with the scientists and the ISS will enable local students to ask questions of these modern explorers, at sea and in space. At the same time, a workshop in Paraty will bring together a new international team to discuss key results in Census of Marine Life and Barcode of Life in South America and identify key questions for marine research in the waters around South America.

"When Charles Darwin visited Brazil on HMS Beagle in 1832 he was just 22 years old. His fresh mind changed the world. The workshop in Paraty seeks to inspire a new generation of young scientists by viewing the planet from space and changing how we see life on Earth," said Dr David Billett, of the National Oceanography Centre, University of Southampton and the leader of the scientific research aboard the Tocorimé.

The South American event is a precursor to the planned recreation of Darwin's 1831-36 voyage aboard HMS Beagle, which he called "the most important event" in his life and which led to his later discovery of a mechanism for evolution. The HMS Beagle Trust is raising funds for a modernized, seagoing rebuild of HMS Beagle to be built in Milford Haven, Pembrokeshire at a cost of £5 million. She will carry modern scientific equipment aboard and will be crewed by science students, researchers and communicators. Those sailing aboard the 90-foot ship will collaborate with astronauts aboard the ISS to investigate the biology of plankton blooms, coral reefs and other ocean surface and terrestrial ecosystems

as the new Beagle circles the world.

Barratt, currently on the ISS, initiated the NASA agreement to develop the program which will see astronauts aboard the ISS working with the crew on the new Beagle during their time in orbit. In 2008 NASA and the HMS Beagle Trust signed a Space Act Agreement for cooperation which will encompass three areas: joint science, educational outreach and public affairs.

"Space stations, square riggers and marine biology: science does not get more exciting than this. I think the ISS circling the world while a scientific square rigger with Beagle's pedigree rounds Cape Horn, making new discoveries at sea and on land, streaming footage back to labs and classrooms will be a great way to welcome young minds into the excitement and adventure of science," Barratt said.

Media are invited to join the exploration, either in Brazil or via telephone interview. More information is available at The Beagle Project Blog (<http://thebeagleproject.blogspot.com/>) and below. The students' connection with the ISS will be broadcast live online here, on Tuesday, September 22nd at 15.20 local time (14.20 EDT, 19.20 BST): <http://www.discoveryreflector.ca/ariss.htm> (note there will be a two-minute delay). The Beagle Project Blog will also assemble additional links to images, audio, video, and tweets as they are uploaded by participants before, during and after the event.

## **ENDS**

### **PRESS CONTACT:**

For more information or to arrange an interview:  
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### **NOTES:**

### **OVERVIEW**

In September, 2009, two hundred years after Darwin's birth, 20 marine research scientists from around South America, the UK and the USA, representatives from The HMS Beagle Project and NASA, and 60 local schoolchildren will gather in [Paraty](#) [pronounced *Par-a-CHEE*] (right) on the Costa Verde (Green Coast) in the state of Rio de Janeiro, Brazil (source: [Wikipedia](#)) to:

- **Celebrate:** During Charles Darwin's bicentenary year, the programme will promote the modern scientific legacy of his historic voyage aboard HMS Beagle.
- **Discuss:** The British Council Darwin Now Network will convene for a one-day scientific workshop will be held to discuss the potential for modern science in a new age of sail. In particular, the discussions are meant to underpin a second more intensive scientific expedition using a new tall ship modeled on HMS Beagle for operation around the world in the path of the 1831-1836 voyage, including further research around Tahiti, New Zealand, Australia, Mauritius and South Africa.
- **Sail:** Participants will undertake two half-day voyages to establish the feasibility of modern scientific techniques aboard a traditionally rigged tall ship, the *Tocorimé* (Spirit of Adventure).
- **Connect:** Ship-to-space scientific and educational connections will be made with astronauts aboard the International Space Station (ISS) as a demonstration project

for the planned collaboration between the station and the new Beagle NASA and The HMS Beagle Project

- **Learn:** Approximately 60 local schoolchildren will participate in educational activities around the programme, including the opportunity to speak directly to astronauts aboard the ISS.
- **Promote:** Media involvement will be invited to promote Darwin's legacy, marine science and conservation, the history and future of science under sail, and the unique whole-earth scientific collaborations possible with the International Space Station.

## INTRODUCTION

The year 2009 marks the bicentenary of Charles Darwin's birth. Without a doubt the greatest influence on Darwin and the development of his theory of evolution came during his travels in and around South America, carried by HMS Beagle and supported by HMS Adventure. Darwin experienced the wonders of the tropical rain forest in Brazil, fossils in Argentina, the uplifting of land in Chile and the remarkable variation of fauna on the Galapagos Islands. This proposal aims to revisit Darwin's travels around South America, undertaking new science as part of an international effort to understand and develop a system of DNA-based identification of taxa (DNA barcoding). It will correlate this science at sea on the Brazilian tall ship Tocorimé with a view of the world that Darwin could only dream of - from the International Space Station. The project will bring together scientists from South America and the UK, the Tocorimé operators, the organisers of The HMS Beagle Trust and NASA to identify key opportunities using sailing vessels for oceanographic research with a focus on marine biology and the Barcode of Life in South America. The participants will embark on two short voyages on the Tocorimé from Paraty into coastal waters to coincide with passes of the International Space Station with scientific sampling and real time educational connection in collaboration with NASA.

## PARTNERS

Usage note: These partners should only be listed together on materials relating to this event, i.e. 'Darwin and the Adventure' the workshop and feasibility study, 20-24 September in Paraty. In no way should any one partner's participation be interpreted as an endorsement of one of the partners by another. In particular, no fundraising endorsements should be indicated or implied.

[British Council \(Darwin Now\)](#)

In celebration of Darwin's remarkable legacy in the 21st century, the British Council's [Darwin Now](#) project brings together an exciting series of global events and initiatives. "Darwin and the Adventure" is supported by a British Council Darwin Now Network grant, one of the [British Council Darwin Now-associated funding opportunities](#) to academics at all levels, allowing them to organise a number of specified and strategically targeted workshops, symposiums and research network activities which focus on Darwin and Evolutionary Science. Dr David Billett, Co-Chair Ocean Biogeochemistry and Ecosystems, National Oceanography Centre, University of Southampton, SO14 3ZH (dsmb@noc.soton.ac.uk) is the principal investigator on the British Council Darwin Now network grant. Co-investigators are Dr Karen James, HMS Beagle Trust/Natural History Museum London, UK; Dr Simon Boxall, National Oceanography Centre, Southampton, UK; Mr David Lort-Phillips, HMS Beagle Trust, UK; Mr Markus Lehmann, Tocorimé, Brazil; Prof. Victor Gallardo, University of Concepcion; Dr Helena Lavrado, Federal University of Rio de Janeiro; Dr Gerardo

Sotomayor, University of Valparaiso, Chile; Dr Felipe Cruz, Charles Darwin Foundation, Galapagos; Ms Susan Runco, NASA, USA.

### [The HMS Beagle Trust](#)

The HMS Beagle Project is raising funds to launch a modern rebuild of HMS Beagle, the iconic ship that carried Charles Darwin around the world on his historic voyage of discovery, to inspire and motivate global audiences through unique public engagement and learning programmes and original scientific research, particularly in relation to Darwin's work and the fields of evolutionary biology, biodiversity and climate change. 'Darwin and the Adventure' will be a microcosm of what The HMS Beagle Project hopes to accomplish with the voyage of the new Beagle. The programme will enable the exploration of the feasibility and potential of the full range of scientific and educational programmes planned for the new Beagle.

### [The National Oceanography Centre, Southampton](#) (NOCS)

The National Oceanography Centre, Southampton (formerly Southampton Oceanography Centre), is a collaborative Centre owned by the UK's Natural Environment Research Council (NERC) and the University of Southampton. NOCS is based at a purpose-built waterside campus in Southampton, and is home to some 520 research scientists, lecturing support and seagoing staff as well over 700 undergraduate and postgraduate students. NOCS is the national focus for oceanography in the UK with a remit to achieve scientific excellence in its own right as one of the world's top five oceanographic research institutions. NOCS delivers a diverse mission, which ranges from managing the national research vessel fleet and other major facilities, to programmes of strategic research for NERC, and academic research and education in ocean and earth sciences in support of the University's mission. NOCS activities also encompass major ocean technology development, long-term observations, managing international science programmes, promoting enterprise and knowledge transfer, providing advice to Government, business and charities, and the engagement between science and society. Moreover, the Centre is also specifically charged with working with the wider science community to provide strategic leadership, coordination and facilitation for the whole of the UK marine and related earth sciences.

### [Tocorimé Pamatojari - The Brazilian Wooden Tall Ship](#)

Tocorimé (translated as Spirit of Adventure) is a 120-foot Brazilian Wooden Tall Ship built by hand in the Amazon. Since her maiden voyage along the Brazilian Coastline celebrating Brazil 500, she has performed many educational and social inclusion programs. Her participation in the 'Darwin and the Adventure' program is intended to establish a prototype of activities and form a collaborative network to re-trace Charles Darwin's South American voyage. The "Tocorimé - Following Darwin Expedition" will sail from the archipelago of Fernando de Noronha, Brazil to the Ecuadorian archipelago Galapagos, visiting up to 15 South America ports of call with an educational program promoting Charles Darwin's lasting legacy with scientific and biodiversity preservation objectives. In ports of call (10-14 days) an onboard exhibition with lectures, debates, multi-media exhibitions will integrate with local schools and be open to the general public. Under sail the Tocorimé crew will combine science, ecological preservation & a youth development program to exemplify the adventures of Charles Darwin. All activities and content will be made available via the world wide web. Collaboration with and promotion of The HMS Beagle Project will

insure program continuation worldwide. What Darwin experienced then - will be relived now! Retracing a portion of the Beagle voyage with the Tocorimé will promote the realisation of the construction of the new Beagle. In this sense Tocorime's capabilities & objectives are entirely complimentary and non-competitive with The HMS Beagle Project's (indeed Tocorimé is the 'Sprit of Adventure' and as such can be seen as analagous to HMS Adventure, the original Beagle's sailing partner in South America).

### [The National Aeronautics and Space Administration](#)

In October, 2008, NASA and the HMS Beagle Trust signed a Space Act Agreement for cooperation which will encompass three areas: joint science, educational outreach and public affairs. Scientists, teachers and students sailing aboard the 90-foot ship will collaborate with astronauts aboard the International Space Station (ISS) to investigate the biology of plankton blooms, coral reefs and other ocean surface and terrestrial ecosystems as the new Beagle circles the world recreating Darwin's 1831-36 voyage aboard HMS Beagle. The trans-atmospheric collaboration was initiated and secured by astronaut and spaceflight physician [Michael R Barratt](#) (currently on a long duration flight aboard the International Space Station) after he read about the HMS Beagle Project in Science magazine. "Space stations, square riggers and marine biology: science does not get more exciting than this and we need to get the enquiring young minds of today excited by science. Almost everything we take for granted today, a scientist was involved somewhere in its development and I think the ISS circling the world while a scientific square rigger with Beagle's pedigree rounds Cape Horn, making new discoveries at sea and on land, streaming footage back to labs and classrooms will be a great way to welcome young minds into the excitement and adventure of science," Michael Barratt said. (Press release, October, 2008: [PDF](#)) Barratt has already been photographing significant locations along the route of the 1831-1836 voyage of HMS Beagle in anticipation of the collaboration.

### [The Municipal District of Paraty](#) (Toursim & Culture & Education Departments) - [The Paraty Convention Bureau](#)

Considered one of the most historically harmonic and ideal architectural areas of Brazil, enriched with an important role in Brazilian contemporary history and with its historic center, mountaneous tropical Atlantic rain forest and enveloping and tranquil maritime regions, Paraty today is host for International events and celebrations. Education - Diversity is a factor for individual and collective growth and its importance extends to Social & Professional development. Our goals are: to obtain quality education as part of citizenship, to establish and maintain a compromise with the community to guarantee democratic values, to democratize the educational process, and to include public participation in permanent access to education, focusing on Social Educational Inclusion in the Municipality.

Paraty Convention & Visitors Bureau (PCVB), is a non profit association, of entrepreneurs and professionals in the tourism sector and serves as a public relationships liaison between public and private entities, focusing on the development and support of conventions, fairs, and other regional, national and international events while maintaining the historical, cultural and ecological foundations of Paraty.

## **PARTICIPANTS BIOS**

British Council Darwin Now Network participants have been invited to upload their biographies here: <http://docs.google.com/Doc?docid=0AY8WNKYMfCZJZGdmdzljNXXFMTkkaDR6Z2NjcA&hl=en>

## AIMS

The overall scientific aims of the programme in Paraty are:

1. to celebrate the life and work of Charles Darwin
2. to set his work in the context of the international activities of the [Census of Marine Life](#) and the [Consortium for the Barcode of Life](#)
3. to explore what modern science is possible from tall ships
4. to run two half-day voyages out into inshore waters on the Brazilian tall ship *Tocorime*, to correspond with photography taken by astronauts aboard the International Space Station (ISS) as it passes directly over the region at the same time

The educational aims of the programme are:

1. to deliver a compelling presentation to ~60 school children from three local Paraty schools (Escola Estadual Almirante Álvaro Alberto, Escola Municipal de Ensino Fundamental Ministro Sergio Motta and [Educandário Torres de Pádua](#)) promoting the Darwin legacy, maritime history (onboard *Tocorimé*) & evolutionary science
2. to create a live audio connection between ~60 local school children and the astronauts aboard the International Space Station during which selected students will ask questions - and receive live answers from - the astronauts.
3. to provide supporting educational documentation utilizing material from the British Council and the Instituto Sangari
4. to hold a follow-up Pedagogical discussion involving teachers and the general public to stimulate continued Darwin legacy activities in schools and in Paraty

## EVENTS TIMELINE

All times local (UTC minus 3 hours)

18 September (Friday)	16.00 Local schools educational event with The HMS Beagle Project and NOCS
19 September (Saturday)	-
20 September (Sunday)	08.00-12.00 Sailing excursion aboard <i>Tocorimé</i> 17.00-19.00 Evening reception for British Council Darwin Now Network participants - Conference Centre
21 September (Monday)	09.00-18.00 British Council Darwin Now Network workshop [ <i>Tocorime</i> half-day voyage, crew only] 12.00 Media representatives begin to arrive (interviews) 18.00-19.00 Evening media reception (interviews) 19.00 Dinner 20.00 Cocktail Reception for Media
22 September (Tuesday)	06.00-11.00 <i>Tocorimé</i> short voyage, all participants. With additional vessel for media.

	11.00-18.00 Schools-ISS link: astronaut to answer school children's questions from space station (media interviews)
23 September (Wednesday)	08.00-12.00 Sailing excursion (timed w/ ISS pass) British Council Darwin Now Network participants depart
24 September (Thursday)	08.00-12.00 Tocorimé excursion, media and coinciding with ISS overhead pass, HMS Beagle Project, NOCS. 12.00- additional media interviews and educational links

## PARTNERS' LOGOS

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## RELATED DOCUMENTS

- International Space Act Agreement: NASA and The HMS Beagle Project ([pdf](#))
- October 2008 Press release about the Space Act Agreement ([pdf](#))
- The new Beagle: a flagship for science in a new age of sail ([link](#))