

POLAR QUEST 1928 2018

EXTREME ADVENTURE

Complete circumnavigation, aboard a sailing boat, of the Svalbard Archipelago, in the Arctic Ocean, above the Polar Arctic circle (from 74° to 81° North latitude).

EXTREME SCIENCE

An international team of arctic researchers, today's explorers of the unknown, looking for answers to some of the great enigmas of science, from climate change to measuring the impact of human pollution at extreme latitudes, from the study of paleoclimate to the origin of high energy cosmic rays.

EXTREME EXPLORATION

A quest for the wreck of the Italia airship on the 90th anniversary of the crash which made the history of polar exploration.

A MESSAGE FOR THE PLANET

A voyage to the last untouched wildernesses on earth, to convey the importance of the Arctic for our sustainable future.



Photo: Michael Amme



AIRSHIP ITALIA AND NANUQ

25.05.1928

After completing two successful scientific expeditions in the Arctic regions, Airship Italia crashed on the pack about 120 km northeast of Nordaustlandet, Svalbard (81°14 N 28°14 E), on its return journey from the first airborne circling of the North Pole.

Nine survivors and one fatality were left on the floating ice, and six more crew were trapped in the still drifting airship envelope. The envelope and the crew members aboard it have never been found. After nine decades, our team will pioneer the search for the wreck of this historic aircraft in the North-West coast of the Spitsbergen archipelago, taking advantage of the lack of ice in the area of the wreck for the first time in centuries.



ROALD AMUNDSEN

2018 THE PASSIVE IGLOO

Nanuq is a 60 foot sailboat specifically designed and built for sailing in extreme regions such as the Arctic. She is completely self reliant and capable to withstand temperatures below -40°C. Nanuq will be the home of Polar Quest 2018, to:

- Attempt a complete circumnavigation of the Svalbard archipelago and reach for the first time the Airship Italia Geohack location;
- Measure for the first time the cosmic ray flux above the polar circle, with the EEE-Nanuq cosmic explorer, a special detector to catch cosmic rays coming from the distant regions of our universe, particularly concentrated at the North Pole, as they are attracted by its high magnetic field;
- Collect samples from the sea, ice, snow and the atmosphere (the key parameters influencing global climate) in polar areas above 78 degrees latitude. Understanding how they interact and how much they are affected by human action is the only way to find a long-lasting solution for our planet's sustainability.



UMBERTO NOBILE



SCIENCES ON BOARD



POLAR QUEEEST

A cosmic ray explorer (Centro Fermi, INFN and CERN)

Built by school students from Italy and Norway at CERN, Polar QuEEEST is a special detector to catch cosmic rays coming from the distant regions of our universe, particularly concentrated at the Poles, as they are “trapped” by its high magnetic field. Three of these special “telescopes” will be built to measure the absolute cosmic ray flux at different latitudes, with one of them on board Nanuq and the two others installed in the schools of the students from Italy and Norway who will build them.

They will join a network of cosmic ray detectors installed in 50 high school institutes in Italy put in coincidence using GPS, with the goal to detect cosmic muons produced by primary cosmic rays of the highest energy (EEE project eee.centrofermi.it).

NANUQ-MANTANET

To assess polar microplastics (ISMAR- CNR)

Plastic makes up the largest quantity of the non-biodegradable material contaminating the world's oceans and is a huge environmental concern because its longevity means that it can be distributed over huge distances from its origin, and accumulate in remote areas such as the Poles. Once in the ocean, mechanical and biological processes cause plastics to break down into microplastics, which are difficult to remove from the ocean and are a threat to the diverse marine food webs and ecosystems supported by polar waters.

MantaNet is the first study to assess the presence and distribution of microplastics in the Arctic waters above 78° of latitude. Water samples will be collected using a manta net in the top 16 cm of surface water and sub-surface samples from the vessel's on-board seawater pump, situated 6m below the surface. This will allow for future microplastic monitoring and to a risk assessment of the potential impacts of decreasing sea ice, increasing shipping and commercial activity.

SCIENCE AND EXPLORATION

POLAR DRONES

Commercial drones, configured as a hardware-software system, will be tested as scientific tools for field research to collect samples from the sea, ice, snow and the atmosphere, the key parameters influencing global climate, in polar areas above 78 degrees latitude.

SEARCH FOR AIRSHIP ITALIA

Pioneering attempt at relocating the sunken wreck of Umberto Nobile's Airship Italia, on the 90th anniversary of its crash 120 km northeast of Nordaustlandet, Svalbard (81°14'N 28°14'E), taking advantage of the melting ice in the region using ultralight resolution side-scan sonars.

WATER SENSORS FOR PEOPLE

Water-related diseases are the first cause of child mortality worldwide. The WeTest application aims at making water testing easier for citizens, by bringing a water-quality sensor to your smartphone!

EXPEDITION TIMELINE

MID JULY 18

Departure of
Nanuq from Iceland



EARLY AUGUST 18

Arrival Svalbard,
Ny Alesund



MID AUGUST

Nobile expedition



EARLY SEPTEMBER

Arrival Tromsø

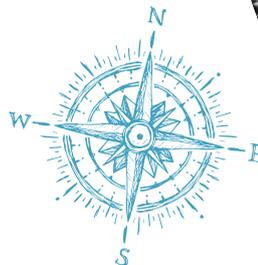


Photo: Mike Struik

SCIENTIFIC PARTNERS



MUSEO
STORICO DELLA FISICA
&
CENTRO
STUDI E RICERCHE
ENRICO FERMI



INFN
Istituto Nazionale
di Fisica Nucleare



CONTACT

polarquest2018@gmail.com
www.polarquest2018.org

THANKS TO



www.entraide.ch

