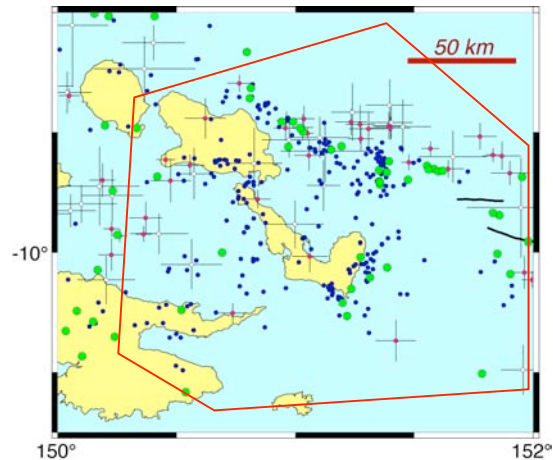


Earthquake Survey of Southeast Papua New Guinea

Fact Sheet

What is this project? Every year, thousands of very small earthquakes occur in PNG. They are too small to feel, but their pattern gives important clues about locations where larger earthquakes might sometimes occur. This fault pattern also helps us better understand the geology of the region. The earthquake survey is part of a larger international *CDPapua* program to understand the geology and faults in the eastern Papua Peninsula and Milne Bay Province. Other groups within this program are analyzing rocks, measuring very slow motion between islands, mapping geologic features and sampling volcanic gasses. This region is one of the planet's few active rifts, geological features where part of the crust pulls away from another. Studying small earthquakes is one way we can learn how this happens.



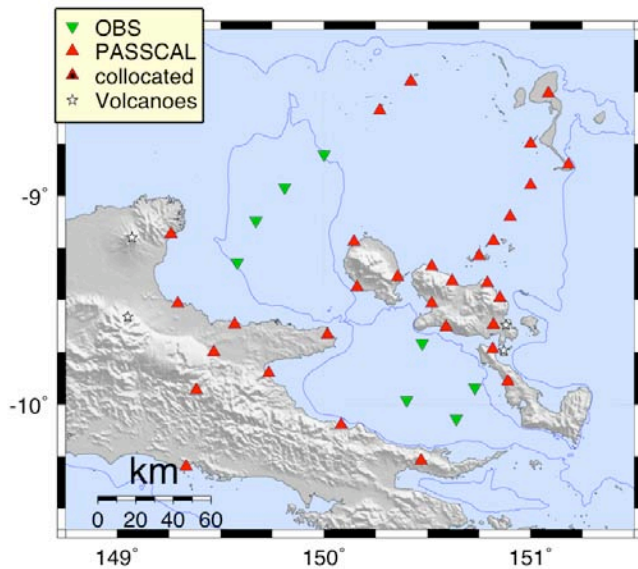
Small earthquakes recorded by a 1999-2000 project. Only 1 or 2 were felt by people. We only installed instruments inside the red line.

Who are we? The earthquake part of the project involves a group from the U.S., and a team from UPNG. The U.S. group is from Columbia University, led by Prof. Geoff Abers. He has worked in PNG occasionally for the last 25 years, and most recently conducted a similar survey across the center of Milne Bay Province in 1999-2000. The PNG group comes from UPNG's Earth Sciences Division, with help from the Geological Survey Division of the Mineral Resources Authority. Other foreign participants in the larger program are from other U.S. universities, New Zealand and Australia.

What will we do? We plan to install about 30 seismographs at locations throughout the area. Each instrument will stay for about 15 months, recording very small earthquakes throughout the region, and will be removed afterward. These instruments have small piece of equipment that we stick in the ground, some electronics in a box on the surface, and some solar panels. Not much happens, they just sit and record very tiny motions in the ground much like a tape recorder and microphone records sounds in the air.



A typical instrument installation, from Goodenough Island, 1999.



We will arrange permission with local schools, villages, and other landowners for these instruments. We are a pure research program, so participation is totally voluntary, and will remove equipment without asking any questions should a landowner request it.

Red triangles on this MAP show where we are thinking of installing equipment on land. Actual locations will be determined after a planning visit.

Who visits? How often? what is left behind?
Our professional field team will consist of 2-4 participants, including scientists from UPNG and the US, and technicians. Installation involves digging a small hole (about ½ m

across) with a cement bottom, setting up a small equipment box, and connecting the electronics, battery and solar panel. It takes a few hours to install the equipment. We will bury all cables, clean up all debris, and do anything else that we are requested to do. Once installed, 2 people will visit for a couple of hours to check on the site, every 2-5 months. We will remove everything when done, although are happy to leave behind the batteries if landowners want them.

Is it dangerous? Is it fragile? There is nothing dangerous about this equipment, it is very safe. It uses less electricity than a small radio, and does not emit or transmit anything – everything is recorded by electronics inside. It does measure very tiny ground motions, so we prefer sites where people do not walk very close. Almost all equipment is safely locked in a box or buried, but a few connectors may show – it is sometimes possible for children to break them if they try very hard. But, it is very safe. We assume responsibility for all equipment, it is our problem if something goes wrong.

When will this take place? Our current plan is to start deploying instruments in March, 2010. They will operate for about 15 months, until about July, 2011.

Is there a ship? Some of our stations are specially designed to go under water, and will be deployed by research ship. It will be in the region at the same time.

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