THE PHILIPPINE PLATE

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Subject: OCAN1 Oceanography

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**Location:** Coordinates-26° N 132° E; Southeast Asia; In the western Pacific Ocean; The Philippine Plate lies beneath the Philippine Sea.

**Classification:** The Philippine Plate is a tectonic plate comprising of oceanic lithosphere.

**Features found there:** The Philippine Plate is squeezed in between the Eurasian Plate and the Pacific Plate. What makes it complex is that the Philippine Plate consists of several micro-plates squeezed in between two convergent plate margins.
Refer to Figure A

**2 Subduction Zones**
1. Manila Trench - Northwestern Subduction Zone
2. Philippine Trench - Southeastern Subduction Zone

- The blue lines with black triangles are active subduction zones with teeth on the over-riding plate.
- The blue lines with white triangles are passive subduction zones with teeth on the over-riding plate.
- The major Philippine fault zone is shown as a red line with arrows showing the movement direction.
- The volcanoes Pinatubo and Mayon are the yellow squares. The volcanoes of the Philippines are considered as one of the most deadliest in the world because they sit above subduction zones. The Transform Fault that connects the eastern and western subduction zones may be associated with the Mayon Volcano. The Transform Fault is off-set by the north-south directed Philippine Fault.
Manila Trench

Philippine Trench

Transform Faults

Subduction Zones

Red: Transform Faults
Blue (Some with teeth): Subduction Zones
**Describe origins:**

- Crust of the Philippine Sea Plate origin has a basement of ophiolitic and/or arc origin. Ophiolites are remnants of an early Mesozoic intro-oceanic arc rather than Pacific ocean floor. They are overlain by and imbricated with arc volcanic and sedimentary rocks of Late Cretaceous-Eocene age; arc plutonic rocks intrude the ophiolites.

- The plutonic rocks that intrude the ophiolites are parts of the eastern Philippines and the ridges of the north Philippine Sea.

- 45 Ma—Change in Pacific Plate motion and plate reorganization.

- Products of volcanic arc at the edge of the Philippine Sea Plate: limestones, basaltic pillow lavas, and turbites.
What makes this location oceanographically interesting?

• Philippines is an archipelago with 7,107 islands—a chain or cluster of islands that are formed tectonically.

• The popular volcanoes Taal [Fig.1 & 2], Pinatubo [Fig.3 & 4], and Mayon [Fig.5].

Fig. 1: A cinder cone in an acidic lake in Taal Volcano.

Fig. 2: Satellite image of Taal Volcano.
CONCLUSION:

For those who are unaware of what lies beneath the tropical islands of the Philippines are better off not knowing. The Philippine islands shows breathtaking beauty, yet with scientific research, some, including myself, have been provided with facts that can be lead to believe that the Philippine Plate is a dangerous location.
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The End.