1 Record of the earth over 100 million years

The sedimentary rock formed over the extraordinary time of 100 million years and the eruptive rock where volcanic magma cooled and solidified give rise to geo-sites which display the activity of the earth at close range.

An overview of specific geology in Amakusa

Geologic formations are typically named after the area in which they are found. In Amakusa the names of the Goshoura and the Himenoura Groups from the Cretaceous or the Akasaki, Shiratake and other formations from the Paleogene were derived in this way. By associating the geologic features found in Amakusa to their place names, we can better understand the general geologic make-up of Amakusa. So, let's look at some specific geologic features in Amakusa.

1 Takamoku Island

There were volcanoes which erupted about 3 million years ago in the northern part of the Oyano islands. One of them is Takamoku Island consisting of andesite containing large amounts of hornblende. It is known as Amakusa-Fuji from the beauty of the form of its mountain.

2 Waterfall of Iwaiguchi-Kannon

Iwaiguchikannon-daki is a gentle steep waterfall pouring into the Kyoragi-dam reservoire. In this area, sandstone layers of the Shiratake Formation have the same inclination as the slope of the waterfall. It seems that the surface of the flow is visible like a launching platform, but on closer inspection, various sized pot holes caused by erosion can be seen.

3 Black shale of the Kyoragi Formation

Kyoragi, Kamiamakusa-city named after the Kyoragi Formation is an area called a 'type locality' for geologic formations. Characteristic of the Kyoragi Formation, black mudstone crops out near the Kyoragi-dam.

4 Outcrop of unconformity in Yokourajima

The Akasaki Formation of the Paleogene which was deposited on land overlaying the Himenoura Group deposited on the deep sea floor can be seen. The boundary layers had a time gap of 35 million years and show the change from dinosaur to mammal ages.

5 Kogakura-kannon

Four Bonji characters (sanskrit) written on a monolith lead us to the oldest place of religious practice in Amakusa dating to 1467. Here, it has been shown that the heart of the faith of the Kannon has been kept carefully. The monolith is a rock from magma which leads also to the Kuratake summit.

6 Ripple-land

The coast of Ariake town in Amakusa-kamishima faces the Ariake Sea and is mainly formed by black shale with sandstone from the Kyoragi Formation laid down in the Paleogene on the deep sea-bottom about 45 million years ago. Ripple-land is an artificial sand beach on the black mudstone of the Kyoragi Formation.

7 Kurosaki Coast

Stones quarried and processed from the northern part of Amakusa Shimoshima named Goryo stone or ash stone are distributed on the Kurosaki Coast. The stones originate from welded tuff of the Aso 4 pyroclastic flow deposit which was caused by the large-scale eruption of Aso Caldera about 90,000 years ago.

8 'Oppaiiwa'

A large rock called "Oppaiiwa" resembling the form of a female breast rests on the seashore in Nishikawachi, Reihoku town. A hard clod in the Sakasegawa Formation exposed to the seashore there is what produced such a form through weathering and erosion.

9 Granodiorite

Granodiorite is a kind of igneous rock formed about 19 million years ago which can be found in about 1/4 of the Tomioka peninsula. The Tomioka castle was built on a rise left behind by weathering and erosion of this rock. Although the peninsula is now covered with vegetation or topsoil, it is easily observable at the seashore.

10 Outcrop of the Takahama metamorphic rocks

The formation is distributed from Shiratsuruga-hama beach to Jusanbutsu park in Amakusa town. This formation is considered to be an extension of the Nagasaki metamorphic rocks which were distributed on the Nomozaki peninsula in Nagasaki Prefecture. This point suggests that the area is bound with Nagasaki geologically.

11 Tidal sediments in Komori, Gesujima

Tidal sediments are materials defined by the current of tidal activity. The sediments consisted of very thin layers of alternating sand and mud. At Komori in Gesujima, the rhythm of the tide in ancient times can be understood by observing these tidal sediments.

12 Marine sediment and basalt in Yushima

The marine deposits and basalt laid down 820,000 years ago distributed over Yushima contrast with the upper part of the Kuchinotsu Group distributed in the southern area of the Shimabara peninsula. Many shellfish fossils which inhabited an inner bay have been observed in the silt layer of the lower part of the marine deposit.

13 'Dagoishi'

A large rounded stone named "Dagoishi" by local residents of Shiraiwa village sits on the top of a rocky surfaced hill at 30m high. It is the reminant of thick sandstone from the Shiratake Formation that has been rounded down by erosion. Though it appears that it will tumble down at any moment, it remains a place for residents recreation.

14 Mt. Takabuto veiw place and an outcrop of unconformity

A global view of many islands strung together by the Amakusa Five Bridges from Matsushima town through the Oyano islands can be had from the Mt. Takabuto view place. The strata of both the Cretaceous and the Paleogene are observed with unconformity at a side road of National Route 266 leading to Mt. Takabuto.

15 Gongen limestone cave

A limestone cave situated on Mt. Gongen is the only limestone cave in Amakusa.

16 An outcrop of the Shimoura Stone

The Toishi Formation of the Paleogene, mainly composed of sandstone, is distributed in the Shimoura area and is named 'Shimoura Stone.' The sandstone seen by this outcrop was quarried and used for the construction of stone bridges distributed throughout the Amakusa islands that have become officially designated cultural assets.

17 'Benzaiten'

There is an isolated rise by the seashore which was deified as Benzaiten, the goddess of eloquence, music and wisdom. The stratum of the rise consists of sandstone and mudstone of the Kyoragi Formation.

18 Glauconite sandstone in Amatsuke

The Iccyoda Formation is characteristic glauconite sandstone containing many glauconite grains and is known to include many shellfish fossils. When the coal industry was prosperous, it was used as a key for the discovery of coal beds.

19 Abandoned quarry dug out of intrusive rock

There are some places in the surrounding mountains where andesite and porphylite which intruded into the Kyoragi Formation are widely distributed in Amakusa-kamishima. The rocks are very hard and were once extracted from now neglected and overgrown quarries to be used as building stones.

What is a geologic age?

Geological age is the time measured from the formation of the earth to the present. Human history is under 0.1% of the Earth's total geologic age.

20 Onnojyo park

Zonal bores were made in a wall of an outcrop in the Onnojyou park, where 110 stone statues of Buddha were installed. Although in folklore, this zone was thought to have been caused by a large snake passing through, it is in fact the fragile zone of Goryo tuff breccia formed under natural erosion.

21 Gongenyama basalt and the Sakasegawa Formation

Basalt is distributed on the top of Mt. Gongen which is located at the boundary between Ushibuka and Oniki towns. The basalt intruded into the Paleogene Sakasegawa Formation and flowed over the topographic surface at about 7 million years ago. The Sakasegawa Formation includes shellfish fossils at the middle level of Mt. Gongen.

Geologic time scale

Paleozoic	Mesozoic			Cenozoic					
				Paleogene			Neogene		Quaternary
	Triassic	Jurassic	Cretaceous	Paleocene	Eocene	Oligocene	Miocene	Pliocene	
(measured in millions) 251		145.5	65.5	55.8	33.9	23.03	5.33	2.588	