

A 3035m deep ice core at Dome Fuji, Antarctica and the global environmental change during the past 720,000 years

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The Japanese Antarctic Research Expedition succeeded in a deep ice core down to 3,035.22 m in depth at Dome Fuji station (77°19'S, 39°42'S, 3,810 m a.s.l.) in January 26, 2007. Except for the lowermost one meter which was affected by basal melting, the core turned out to be an excellent climate archive. The oxygen isotope profile of Dome Fuji ice core suggests that the deeper part of ice goes back to 720,000 years, which corresponds to MIS (Marine Isotope Stage) 17. We think that the age of bottom of ice core, which is younger than we estimated, is based on discontinuous melting of ice sheet near bedrock. Analysis carried out so far confirms that the Dome Fuji ice core have the reliable environmental and climatic record at least back to 720,000 years. Ice core studies are conducted by the organization as Dome Fuji Ice Core Consortium (ICC). There are chemistry research, physics research, gas research, new domain research and dating research consortiums in ICC.

The Dome Fuji $\delta^{18}\text{O}$ record shows pervasive millennial-scale climate variability during the past seven glacial periods, as was reported for the EPICA Dome C δD record. The fluctuations of the millennium scale are also left in records of dust and nssCa-ion as well as a record of the $\delta^{18}\text{O}$.