

## Phenomenon of fire columns accompanied with the Ansei(1854) and the Showa(1946) Nankai Earthquakes

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### 1. Descriptions of fire columns accompanied with the 1854 Ansei Nankai Earthquake

We found out several descriptions on fire columns accompanied with the Ansei Nankai earthquakes of December 24, 1854. The fire columns were observed mainly at villages facing Kii straits. Most of them appeared at the time just after the occurrence of the main shock and before the attacking of the tsunami. The fire column appeared off Hiro village, Hirokawa town, Wakayama prefecture had the size of 3 meters high. The column observed at Tenri city, inland of the Kii peninsula, looked like a black cloud with red colored edge. They appeared with the sound like a firing of a cannon. An old document record written at Kochi city, Shikoku, mentioned that a fire column appeared in the northern mountainous area of Kochi city, and the same column also had appeared at the time of the 1707 Hoei Earthquake.

### 2. Fire columns accompanied with the 1946 Showa Nankai earthquake

The records of such fire columns appears also in the report of the 1946 Showa Nankai earthquake on the coastal area of Kii Peninsula, and Shikoku Island mainly facing the Kii straits.

An eyewitness account mentioned that the surface of the sea took the form of a saucer, which implies that this phenomenon is caused by the upwelling of inflammable gas from the sea bed. An eyewitness account mentioned that the phenomenon of a fire column was observed about one hour before the occurrence of the main shock.