

Analyzing the early 19th century's Geomagnetic Declination in Japan from Tadataka Inoh's Santoh Hohi-ki. the 2nd report

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The analysis of geomagnetic declination of Japan in the early 19th century was made by Dr.Ryokichi Ohtani in 1917. Based on 'Santoh-Hohi-ki, the gigantic survey data book of almost whole of Japan's magnetic direction from 1800 to 1815, comprised of 67 volumes (Japan's important cultural property) which was written by Tadataka Inoh a famous Japanese cartographer in the Edo era.

Dr.Ohtani analyzed the average geomagnetic declination in Edo(Tokyo) during the period of 1802 to 1803 as 0deg.19min.E, and concluded that the early 19th century's geomagnetic declination in the central

Honshuu Is. was more or less than 0 deg.EW.

I restarted the analysis of the early 19th century's geomagnetic declination in Japan after 84 years from Dr.Ohtani's by following way.

Calculation of the remainder of the magnetic direction and the real azimuth applying the calculation formular between 2 points shown in the homepage of National Geographical Survey Institute. I have found that the average declination in Edo(Tokyo) in 1802 was 0 deg.26 min.E in 1803, 0 deg.14min.E, Osaka in 1805 was 0 deg.47min.W, As a result, almost all of the geomagnetic declinations in Hokkaido Is. in 1800 veer east and we can confirm a remarkable change between western and eastern parts of Hokkaido. The magnetic declinations at Matsumae, southwest of Woshima Peninsula show 0 deg.30min.W. Going Further to the east along the sea coast, we see the magnetic declinations veer east. At Hiro-o, east to Erimo cape, it shows 3deg.30min.E. At Akkeshi in eastern Hokkaido it shows 2deg.30min.E. Through my analysis, I found the isogonal line of 0deg.EW in North Eastern Honshuu Is. during 1801 to 1802 starting from Tsugaru Peninsula and moving the western foot of Ou-u mountains range to Yonezawa Yamagata Pref, and down south to Teradomari Niigata Pref. in 1803. The geomagnetic declinations in the Tokai srea in 1805, veered west from the Chita Peninsula down along the western sea coast. Therefore it is my estimation that in the 1801 to 1805 period, the geomagnetic declinations veered west, moving further west from the central mountain range in mid-Honshuu Is. The geomagnetic declinations in 1805 to 1806 within the western Kinki Area and Chuugoku Area range, at Ishinohoden, Takasago, and Sakoshi, Akoh is approximately 1deg.00min. At two points near Okayama, the geomagnetic declination 0 deg.EW, but it changed back to 1 deg.W on the west side at Fukuyama Hiroshima Pref. and northern west side Mihogaseki Shimane Pref, veering west.