

## **Spectroscopy of Geminid meteor shower**

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The Geminids is the most active annual meteor shower whose parent body is a near-Earth active asteroid (3200) Phaethon. Since there still remains considerable controversy about how to generate the Phaethon–Geminid complex, JAXA's flyby mission DESTINY+ is scheduled to be launch in 2022. The sodium depletion in Geminid meteoroids has been identified which suggested smaller grains deplete sodium during their close encounter with the Sun. In order to investigate variations of the amount of sodium in Geminids' spectra, approximately 100 low-resolution spectroscopic observations were carried out using 4K high-resolution high-sensitive color camera SONY  $\alpha$ 7s during 2016 - 2018 in Japan. In this paper, we will discuss 100 Geminids' sodium abundances in a Mg-Na-Fe ternary graph.