

Spectroscopic Observation of Meteors

*Shotaro Mino¹, *Yui Satou¹

1. Furukawa Reimei Junior High School / High School

This study is to make spectroscopic observations of meteors from the ground and infer the elements contained in their luminescence by shooting with a digital single-lens reflex camera having diffraction grating. We have spent five years shooting and analyzing 49 meteors. As a result, we discovered some characteristics of each meteor shower. We confirmed the Gemini meteor shower contains less sodium than other meteor showers. It means the parent meteor body also contains less sodium and the longer time has passed since its formation. We found luminescence that contained oxygen atom (557.73 nm) at the Perseus and the Orion meteor showers. It is called “oxygen forbidden line” and the light is emitted only under limited conditions. We think that we could confirm many oxygen forbidden lines because the ground speed of those meteor showers was higher than the ground speed of other meteor showers.

Keywords: meteor, spectroscopic observation, diffraction grating

