## Correction effect to the radiant dispersion in case of low and high velocity meteor showers

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Meteor showers have been recognized from their concentration of the radiation point distribution plot in the celestial sphere map. It is pointed out that there is difference in the dispersion of the radiation point distribution every meteor shower, while in the case of meteor showers having low velocity the dispersion becomes too large to be recognized as meteor showers. In such cases, there is a possibility for us to overlook meteor showers when we do not search for the similarity among the orbital elements.

Sato and Watanabe[1] indicated that the correction of the Earth's motion is effective for recognizing meteor showers in the plot of the radiant points. In this study, we deal with low velocity meteor showers: Pheonicids observed in 2008 and 2014 and June Bootids observed in 2010 together with high velocity meteor showers; Sigma Hydrids observed between 2007 and 2015 in order to argues its validity of the correction in the celestial map of the radiant points.

The validity of the correction to the low velocity meteor showers is confirmed as shown in figures. The correction clearly makes the dispersion smaller than uncorrected plot. On the other hand, in case of high velocity meteor showers the dispersion seems to be larger, while the two groups of the concentrated radiant points is recognized in the plot. This correction should be valid for separating the complex meteor showers.



Figure 1. Distribution of radiant points of 2014 Phoenicids meteors observed in the optical methods before the correction of the Earth's motion. The dispersion is shown in the circle.



Figure 2. Same as figure 1 but after the correction.

## References

[1] Sato, M., & Watanabe, J. 2014, Meteoroids 2013, Proceedings of the Astronomical Conference held at the A. M. University, Poznan, Poland, Aug. 26-30, 2013, A. M. University Press, pp 329-333