

PPS005-P04

Room: Convention Hall

Time: May 26 17:15-18:45

Photometric Observations of 107P/(4015) Wilson-Harrington

Seitaro Urakawa^{1*}, Shin-ichiro Okumura¹, Kota Nishiyama¹, Tsuyoshi Sakamoto¹,
Noritsugu Takahashi¹, Makoto Yoshikawa²

¹Japan Spaceguard Association, ²Japan Aerospace Exploration Agency

We present the photometric observations of 107P/(4015)Wilson-Harrington using the 1m telescope of the Bisei Spaceguard Center. Hayabusa explored the S-type asteroid Itokawa and Hayabusa-2 is planned to explore the C-type asteroid 1999JU3. The subsequent mission is "Hayabusa Mk2". The target candidate of Hayabusa Mk2 is 107P/(4015)Wilson-Harrington, which is thought to be more primitive body than Itokawa and 1999JU3. The faint tail of this object was observed in 1949, after that the object have not shown the comet activities. Thus, 107P/(4015) Wilson-Harrington is a comet-asteroid transition object. Moreover, 107P/(4015)Wilson-Harrington is a NEO(near-earth object) and is suitable to send the spacecraft compared with the other comet-asteroid transition objects. The ground based observations of this object is important for the following reasons; the information collection of the mission plan, the clarification of the evolution process from comet to asteroid, and the elucidation of origin and feature of NEOs. We have conducted the observations of 107P/(4015)Wilson-Harrington at the Bisei Spaceguard Center since October 2009. The period analysis of the photometric data shows the object has the rotational period of 7.14 hour or 8.39 hour, though the period analysis is also consist with the known the value of 6.1 hour. It is expected that more accurate rotational period is estimated by the observations that continues till February 2010. In addition to it, we plan to make the shape model by using the photometric data. Moreover, the multiband photometry was conducted for the investigation of the color uniformity of 107P/(4015)Wilson-Harrington. We discuss the feature of 107P/(4015)Wilson-Harrington comprehensively.

Keywords: asteroid, comet, primitive body missions, photometry, light curve