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Light Curves of *Lucy* Targets: Leucus and Polymele

Marc W. Buie¹ , Amanda M. Zangari¹, Simone Marchi¹, Harold F. Levison¹, and Stefano Mottola²

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buie@boulder.swri.edu

¹ Southwest Research Institute 1050 Walnut Street, Suite 300 Boulder, CO 80302, USA

² DLR—German Aerospace Center, Berlin, Germany

Marc W. Buie  <https://orcid.org/0000-0003-0854-745X>

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minor planets, asteroids: individual (Leucus, Polymele)

Abstract

We present new observations from 2016 of two Jupiter Trojan asteroids that are targets for the *Lucy* Discovery mission. The extremely long rotation period of

(11351) Leucus is confirmed and refined to a secure value of 445.732 ± 0.021 hr with photometric parameters of $H_r = 11.046 \pm 0.003$ and $G_r = 0.58 \pm 0.02$ in the SDSS r' filter. This leads to a geometric albedo of $p_V = 4.7\%$. The amplitude of the light curve was measured to be 0.61 mag, unchanged from the value of one-fourth of a revolution earlier, suggesting a low obliquity. The first light-curve observations for (15094) Polymele are also presented. This object is revealed to have a much shorter rotation period of 5.8607 ± 0.0005 hr with a very low amplitude of 0.09 mag. Its photometric parameters are $H_r = 11.691 \pm 0.002$ and $G_r = 0.22 \pm 0.02$. These values lead to a refined geometric albedo of $p_V = 7.3\%$. This object is either nearly spherical or was being viewed nearly pole-on in 2016. Further observations are required to fully determine the spin pole orientation and convex-hull shapes.

Lucy Discovery missionのターゲットの2つの木星トロヤ群小惑星の観測。

(1) (11351) Leucus :

極めて長い自転周期が 445.732 ± 0.021 hr。

$H_r = 11.046 \pm 0.003$ 、 $G_r = 0.58 \pm 0.02$ (SDSSrフィルターで)

geometric albedo $P_V = 4.7\%$

ライトカーブの振幅は0.61等。これは以前測定された値から変化していないので、自転軸の傾きは小さいだろう。

(2) (15094) Polymele :

自転周期は 5.8607 ± 0.0005 hr、振幅0.09mag。→ ほぼ球形か、2016年の観測時はほぼポール・オンだったか。

$H_r = 11.691 \pm 0.002$ 、 $G_r = 0.22 \pm 0.02$

geometric albedo $P_V = 7.3\%$