

Electronic Telegram No. 4981 Central Bureau for Astronomical Telegrams Mailing address:
Hoffman Lab 209; Harvard University;
20 Oxford St.; Cambridge, MA 02138; U.S.A.
e-mail: cbatiau@eps.harvard.edu (alternate cbat@iau.org) URL <http://www.cbat.eps.harvard.edu/index.html>
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(4337) ARECIBO

D. Gault, Hawkesbury Heights, NSW, Australia; and P. Nosworthy, Hazelbrook, NSW, report the discovery of an apparent satellite of the minor planet (4337) from GPS-time-stamped video observations of the occultation of the star UCAC4 323-126197 on 2021 May 19.74861 UT; the observers were separated by 0.7 km across the occultation path, and 18 km along the path.

Both observers recorded two occultation events corresponding to determining the size of the minor planet as 18.7 km (Gault) and 19.7 km (Nosworthy) from chord lengths, and the size of the presumed satellite 5.6 km (Gault) and 2.6 km (Nosworthy).

R. Nolthenius, San Ardo, CA, USA; and K. Bender, Bradley, CA, USA, report the confirmation of the presumed satellite from their GPS-time-stamped video observations of the occultation of the star UCAC4 322-116848 on 2021 June 9.45736; the observers were separated by 8.2 km across the occultation path and 8 km along the path. Both Nolthenius and Bender again recorded two occultation events, leading to determining the size of the minor planet as 23.9 km (Nolthenius) and 20.8 km (Bender), and the size of the presumed satellite as 11.7 km (Nolthenius) and 13.0 km (Bender) from the chord lengths.

The sizes of both the main body and the satellite were poorly determined by the first occultation because of the close cross-path separation of the observers. The sizes of both bodies were well determined from the second occultation because the cross-path separation was larger and the chords were favorably positioned with respect to both bodies. On the assumption that the bodies presented a circular profile, the diameters determined from the second occultation are 24.3 +/- 0.6 km for the main body and 13.0 +/- 1.5 km for the presumed satellite.

These diameters were used to derive the position of the satellite relative to the main body, for both occultations:

May 19.74861, 25.5 (+/- 1.0 mas in p.a. 105.2 degrees (+/- 1.0 deg);

June 9.45736, 32.8 (+/- 0.7) mas in p.a. 94.3 degrees (+/- 2.7 deg).

D. Herald (who with Gault and Nosworthy are part of the Trans-Tasman Occultation Alliance) aided in the analyses.

Nolthenius and Bender are members of the International Occultation Timing Association.

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Daniel W. E. Green