

# Predictions of stellar occultations of 9 irregular satellites of giant planets

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## ABSTRACT

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## 1. Introduction

## 2. Rationale

## 3. Offset methods

## 4. Occultation tests

## 5. Discussion

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## References

- Assafin, M., Camargo, J. I. B., Vieira Martins, R., et al. 2010, *Astronomy and Astrophysics*, 515, A32  
Assafin, M., Camargo, J. I. B., Vieira Martins, R., et al. 2012, *Astronomy and Astrophysics*, 541, A142  
Assafin, M., Vieira Martins, R., Camargo, J. I. B., et al. 2011, in *Gaia follow-up network for the solar system objects : Gaia FUN-SSO workshop proceedings*, held at IMCCE -Paris Observatory, France, November 29 - December 1, 2010. ISBN 2-910015-63-7, ed. P. Tanga & W. Thuillot, 85–88  
Braga-Ribas, F. et al. 2014, *Nature*, 72  
Clark, R. N. et al. 2005, *Nature*, 435, 66  
de Bruijne, J. H. J. 2012, *Ap&SS*, 341, 31  
Desmars, J. et al. 2013, *Astronomy and Astrophysics*, 553  
Emelyanov, N. V. & Arlot, J.-E. 2008, *Astronomy and Astrophysics*, 487, 759–765  
Grav, T. & Bauer, J. 2007, *Icarus*, 191, 267  
Grav, T., Holman, M. J., Gladman, B. J., & Aksnes, K. 2003, *Icarus*, 166, 33

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- Jacobson, R. et al. 2012, *The Astronomical Journal*, 144, 8 pgs  
Jones, H. & Valdes, F. 2000, in "Handling ESO WFI Data With IRAF", ESO Document number 2p2-MAN-ESO-22200-00002  
Lindgren, L. 1977, *Astronomy and Astrophysics*, 57, 55  
Porco, C. et al. 2003, *Science*, 299, 1541  
Sheppard, S. S. & Jewitt, D. C. 2003, *Nature*, 423, 261  
Smith, B. A. et al. 1989, *Science*, 246, 1422  
Thomas, P. 2010, *Icarus*, 208, 395  
Thomas, P., Veverka, J., & Helfenstein, P. 1991, *Journal of Geophysical Research: Space Physics*, 96, 19253  
Valdes, F. G. 1998, in "The IRAF Mosaic Data Reduction Package" in *Astronomical Data Analysis Software and Systems VII*, A.S.P. Conference Ser., Vol 145, eds R. Albrecht, R. N. Hook and H. A. Bushouse, 53  
Zacharias, N., Finch, C. T., Girard, T. M., et al. 2013, *AJ*, 145, 44