

# A tilted eclipser around ASASSN-21sa

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Received May 1, 2024

#### **ABSTRACT**

Aims. A deep eclipse lasting 100 days was seen towards ASASSN-21sa. We think it's another eclipsing disk system. Methods. We fit a ring system with 5 rings, and find an acceptable fit. We search for other eclipses in photometric data sets, but find no other eclipse.

Results. It is a diak in diameter of 0.03 au, consistent with others detected EPIC 2202, VH Tau, van der Kamp disk

**Key words.** giant planet formation – moon formation

#### 1. Introduction

- 2 Disks and rings of material have been detected orbiting several
- 3 stars (REF).
- 4 2. Photometric surveys
- 5 3. Disk model

### 4. Comparison with other transiting disk systems

Acknowledgements. This work has made use of data taken from ASAS-SN (??), processed and obtained through https://asas-sn.osu.edu/. This re-

search has used the SIMBAD database, operated at CDS, Strasbourg, France (?). This work has also made use of data from the European Space Agency (ESA) mission Gaia (https://www.cosmos.esa.int/gaia), processed by the Gaia Data Processing and Analysis Consortium (DPAC, https://www. cosmos.esa.int/web/gaia/dpac/consortium). Funding for the DPAC has been provided by national institutions, in particular the institutions participating in the Gaia Multilateral Agreement. Data taken from tic v8.2 was accessed using the VizieR catalogue access tool, CDS, Strasbourg, France.The original description of the VizieR service was published in 2000, A&AS 143, 18 23 (?). This publication makes use of VOSA, developed under the Spanish Virtual Observatory (https://svo.cab.inta-csic.es) project funded by 19 MCIN/AEI/10.13039/501100011033/ through grant PID2020-112949GB-I00. VOSA has been partially updated by using funding from the European Union's Horizon 2020 Research and Innovation Programme, under Grant Agreement nž 776403 (EXOPLANETS-A) To achieve the scientific results presented in this article we made use of the *Python* programming language<sup>1</sup>, especially the *SciPy* 

(Virtanen et al. 2020), NumPy (Oliphant 2006), Matplotlib (Hunter 2007), emcee

(Foreman-Mackey et al. 2013), and astropy (Astropy Collaboration et al. 2013,

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2018) packages.

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<sup>&</sup>lt;sup>1</sup> Python Software Foundation, https://www.python.org/