# *Establishing a New ToM( Time of Minima) for the Primary Eclipse of the Binary System WZ Oph*

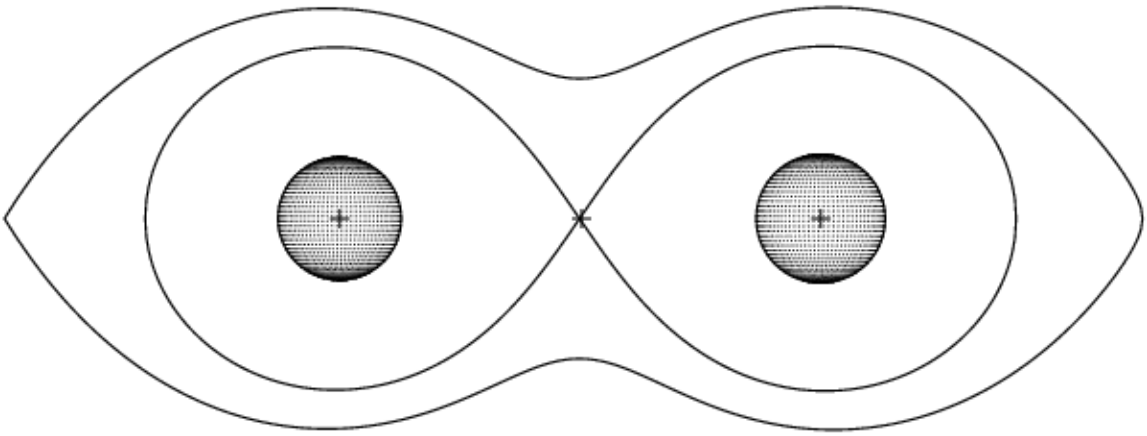
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**Abstract**

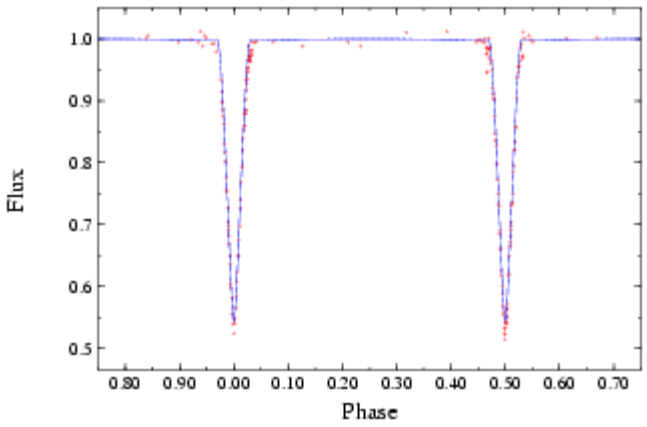
In my research of Neglected Binary Stars I discovered that there was very little current data on the binary star WZ Oph. The Binary Star Database, AAVSO, Mt. Suhora Astronomical Observatory and the BRND Regional Network of Observers ( Chez Astronomical Society) revealed the most recent observations of WZ Oph occurred in the mid 1990's. For this reason I concluded that it would be a challenging project for summer of 2018 to attempt to establish a new ToM( time of minima) for the primary eclipse of WZ Oph.

**WZ Oph**

WZ Oph is composed of two stars of class F8V having a mass of 1 to 1.4 x the mass of the sun and with surface temperatures of between 6000 and 7600K. They are of the detached binary class and have a period of 4.183511 days. Below are some light curves and visual representations of the WZ Oph system taken from Caleb site at Eastern University.



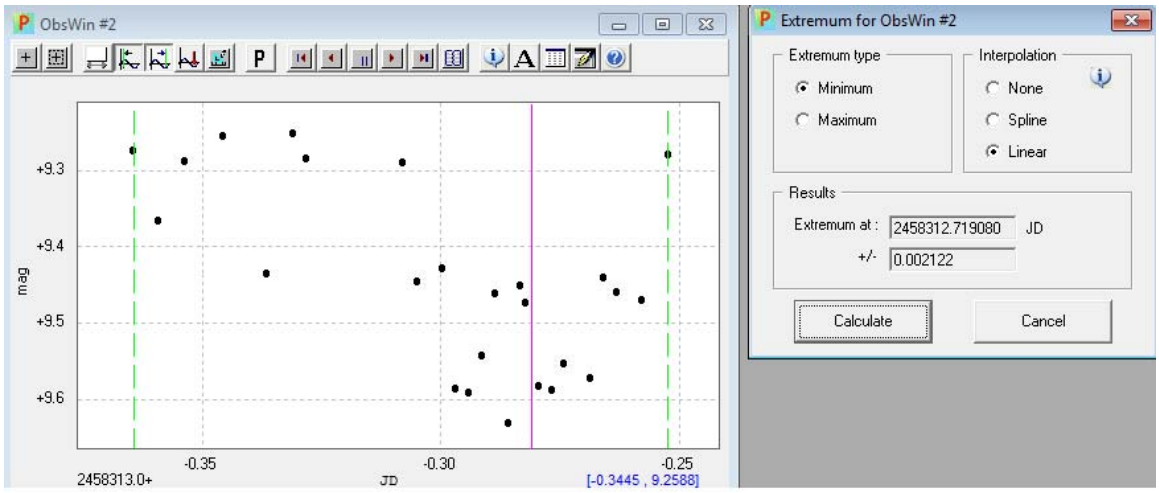
This represents the two stars that are Detached and are within their Lagrangian surface.



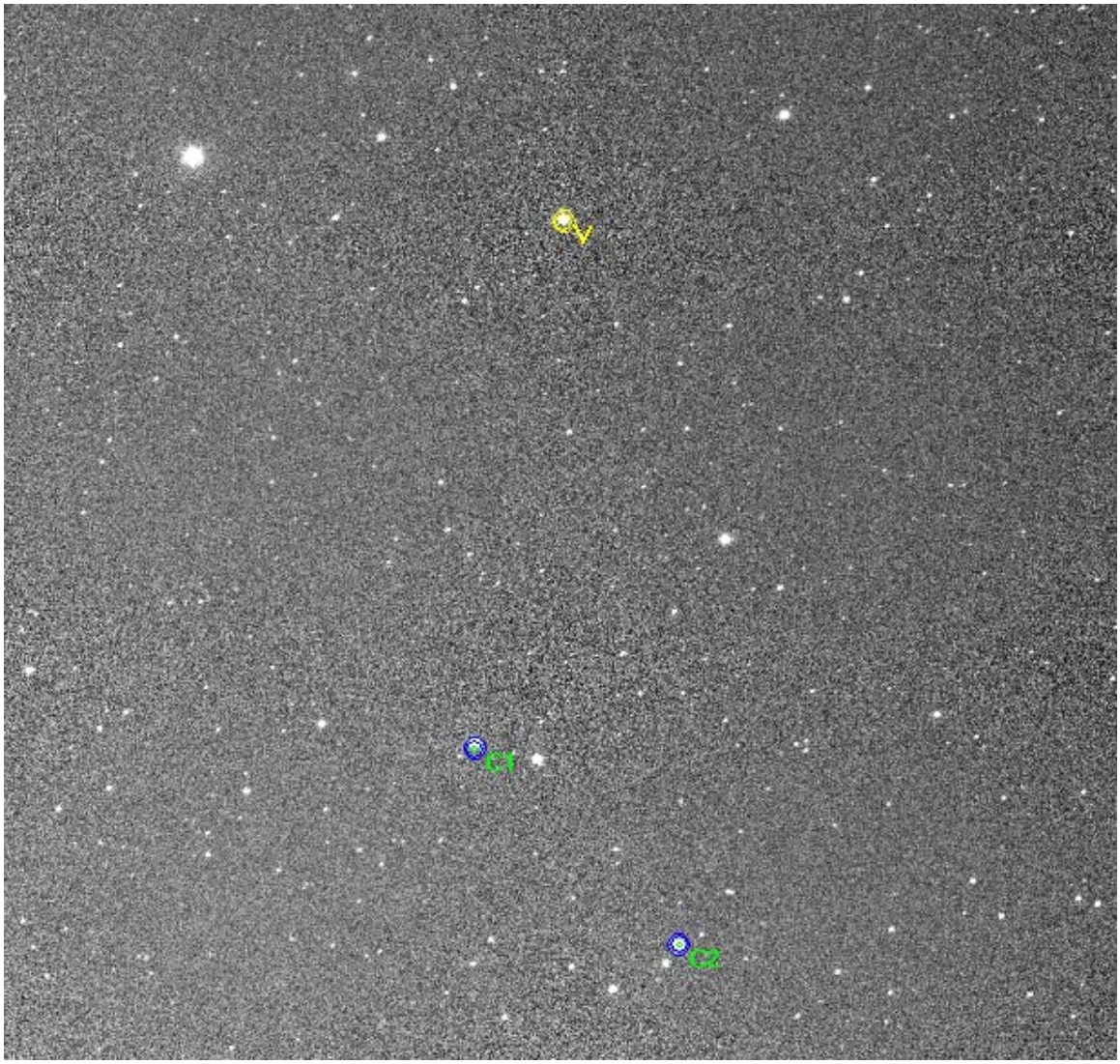

This light cure of the primary and secondary eclipse from a 1965 paper by Popper indicates that the size and brightness of the two stars in this system are very similar.

**Methods and Procedures**

On July 13, 2018 I took approximately 15 images of WZ Oph with my .190 m Mak Newtonian and a QSI 540 CCD with a Johnson V filter. They were taken at the time indicated by the Suhora Observatory site corresponding to the predicted time of the primary eclipse. The resulting data was put into Peranso software in order to obtain a light curve and ToM( time of minima) . Below is the resulting light curve and ToM as generated by Persano.



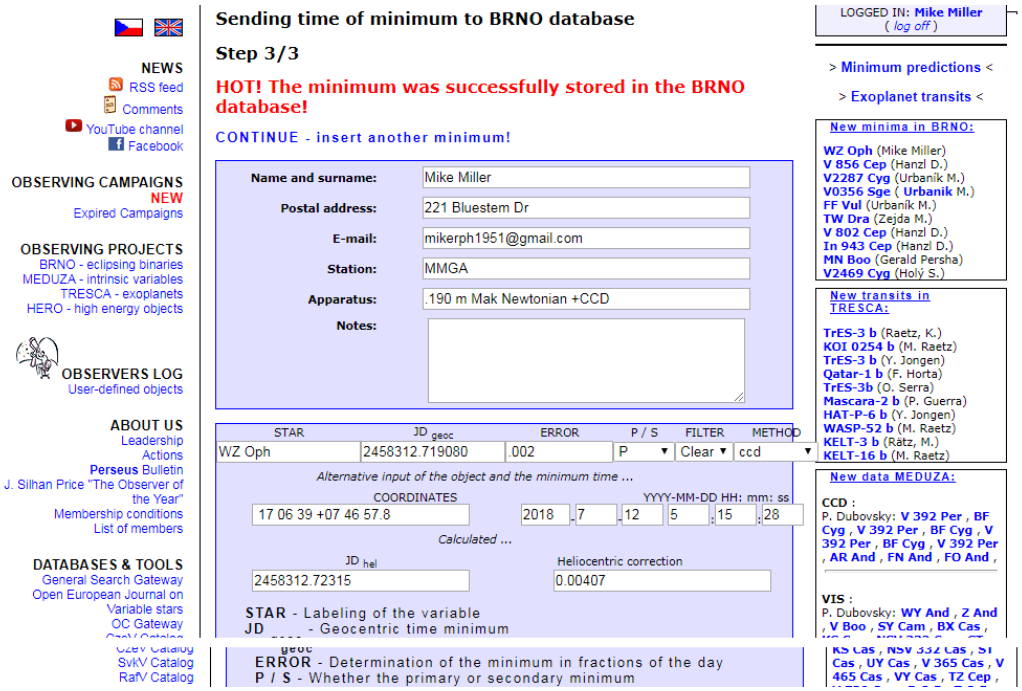

This Extremum Minimum from Peranso data was then uploaded to the BNRO section of the Czech Astronomical Society.




This is one of the images of the target WZ Oph(V in yellow). Instrumental Maganitude 15.007 according to AIP4Win. C1 Instrumental Magnitude of 15.136 and C2 Instrumental Magnitude of 15.153. Comp and Check star are very similar in brightness to the target WZ Oph. The photometry was done using the Single Image Photometry Tool in AIP4Win.

**Submission of data to BRNO Section of Czech Astronomical Society**

The data from AIP4Win and Peranso Software was submitted and accepted to the BRNO Section. Below is a screen shot of the submission of the data.




## Conclusion/Discussion

According to my results amateur astronomers with very modest equipment can play a role in the field of Eclipsing Binary Star Light Curve and ToM(Time of Minima) studies.

## References


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