

SOLICITATION TITLE: VIRTUAL REALITY VISUALIZATION OF BINARY STARS
SOLICITATION DEADLINE: JAN 31, 2020
SOLICITATION SPONSOR: DR. ANDREJ PRŠA
SOLICITATION FUNDING: EXTERNAL (NSF)

SOLICITATION SUMMARY:

Andrej Prša's research group is seeking a Villanova undergraduate student for the summer research opportunity to work on implementing a virtual reality (VR) visualization of the eclipsing binary models for Oculus Rift and other off-the-shelf VR headsets. The appointment is for 10 weeks, starting on June 1, 2019. The selected student will learn to compute models of eclipsing binaries using PHOEBE, implement mesh visualization using unity, and build attractive 3D animations of binary stars. The result of this work will allow binary stars (and other celestial bodies incorporated in PHOEBE) to be visualized in an immersive environment of virtual reality.

SOLICITATION REQUIREMENTS:

The research position is open to all Villanova undergraduates that are majoring in astronomy or a closely related field. Applicants need to provide:

- a current CV that highlights commitment to excellence in the applicant's current field of study;
- a 3-page proposal that discusses the scientific background and proposed work timeline;
- a 1-page narrative on expected outcomes and procedures; and
- a 1-page personal statement that conveys the suitability and interest of the applicant.

To apply for this position, interested students need to submit their applications by the deadline in the form of a single pdf document. Only electronic submissions are accepted; email your applications to aprsa@villanova.edu. Any applications received after the deadline will be returned without review.

SOLICITATION DOCUMENTS:

In order to prepare a strong proposal, the following sources might be useful:

- Approved broader impact for the NSF proposal, <http://aprsa.villanova.edu/files/pulsations.pdf>
- Modeling and Analysis of Eclipsing Binary Stars, 2018maeb.book.....P
- Unity user manual, <https://docs.unity3d.com/Manual/UnityManual.html>
- Oculus Rift developer tools, <https://developer.oculus.com/>

In addition to these, applicants are encouraged to use their own sources of information.

SOLICITATION OUTCOME ANNOUNCEMENT:

The review of solicitation material will begin on Feb 1, 2020 and a short-list will be assembled by Feb 14, 2020. The highest-ranking candidate will be informed and offered a position. In the event that the highest-ranking candidate accepts the position, the solicitation will be closed. Otherwise the position will be offered to the next highest ranking applicant until the position is filled.