SOLAR ECLIPSE 2017 & LUNAR OBSERVATION EVENTS: EDUCATION AND PUBLIC OUTREACH AT THE El PASO COMMUNITY COLLEGE - TRANSMOUNTAIN CAMPUS THROUGH SERVICE LEARNING. J. G. Olgin[1,2] and O. P. De la O[1], [1]El Paso Community College – Physics Department (9570 Gateway N. Blvd, El Paso, TX 79924), [2]University of Texas at El Paso – Geological Sciences (500 University, El Paso, TX 79968).

Introduction: The later half of 2017 brought an increased focus on astronomical observations, and with it opportunities to engage the public with learning activities and events. The August 2017 solar eclipse was a chance to conduct science and education/public outreach (E/PO) with the students, faculty and staff of the El Paso Community College (EPCC) along with the international community of the El Paso, TX and Juarez, Chihuahua, Mexico region. The event held at the EPCC - Transmountain campus was a collaboration with other satellite campuses; setting up viewing stations for the eclipse as well as a live stream from NASA's coverage from locations around the U.S. where totality would be experienced.

Likewise EPCC's Lunar Observation Night event in November 2017, a collaboration with the Sun City Astronomers, EPCC's Astronomy Club, and EPCC faculty and staff provided a full night of lunar observations and mini-lectures of our moon and how it compares to other moons in our solar system.

In all, the success of each event centered around the incorporation of EPCC's Service Learning Program (SLP) participants; enhancing E/PO in executing citizen science activities through NASA community-based projects, such as the GLOBE Eclipse 2017 app. For the lunar event, viewing stations in tandem with outdoor lectures with the public organized by faculty and SLP participants allowed the international community to partake fully in the event. Hands-on activities, as well as data collection and analysis from the GLOBE app will be utilized in future class activities, curriculum development, and the event as a whole will serve as a template for future E/PO events.

Event Background and Goals: The incorporation of service learning in the geosciences is well documented [1-3], including its impact in astronomy education [4]. For each event, SLP's role proved to be beneficial to the overall success of each event; broadening EPCC's reach to students and the community.

Solar Eclipse 2017. This event provided the opportunity to teach the audience about solar eclipses through observation, NASA's live feed from sites of totality, and inviting the audience to participate in recording temperature variations during the eclipse using the NASA GLOBE Eclipse app (fig 1).

Lunar Observing Night. November 3, 2017 provided clear skies for a full moon observation with a suite of telescopes, coupled with outdoor lectures on the moon and planets, as well as indoor presentations on our recent discoveries and future missions to our moon, Titan, Enceladus, Io, and Europa (fig 1).

Event Results. SLP integration into these events helped achieve the public outreach goals of STEM recruitment, awareness, and community learning by providing the necessary groundwork for successful program execution. Participation of media in coverage and promotion of the events helped elevate participation with EPCC and the international community. The increased interested was reflected in the elevated student participation in astronomy field trips to local observatories.

Future Implementation: EPCC plans to continue these events with continual incorporation of activities provided from NASA and other related agencies to help make such events more robust, promote planetary science, and encourage those in the community to pursue STEM related careers.

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Fig 1: Top row photos of solar eclipse event. Credit KVIA Bottom row photos from lunar event. Credit: El Paso Herald Post

References: [1] B. F. Branco, et al. (2017) *AGU*, Abstract ED53C-0176. [2] S. Oconnell et al. (2016) *AGU*, Abstract ED13D-0948. [3] S. Truebe and A. L. Strong. (2016) *AGU*, Abstrct ED13D-0950. [4] M. Orleski. (2013) *Phys Teach*, 51, 535 – 538.