





Service learning and dust storm data collection through the GLOBE Observer app

In collaboration with







(EPCC) Service Learning Program



The Service Learning Program at El Paso Community College encourages civic responsibility among students through community service.





Works and Collaborations



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 through collaborations with

community organizations and agencies, such as the Gene Roddenberry Planetarium and the Sun City Astronomers

respectively. In tandem with these efforts, EPCC's education/public outreach (E/PO) initiatives such as its service learning program and Teiano Passport has further promoted STEM careers to the

general public and advanced and retained enrolled students pursuing STEM degrees to help finish their degree and post

oraduate coals. The efficacy of these initiatives are described in

Service Learning Program Effectiveness

The service learning program (SLP) has improved student relation and pursuance in STOM careers [1 - 3]. The above table records participation over a seven year period; where students in EPCC's SLP have gone on to complete their degree and

entimue on into various \$71M fields. Since service learning in astronomy has ccess in increased student comprehension and interest in autonomy related

success in increased student comprehension and interves in automony related optics 14, we decided to focus on astronomy planetary science activities to fur inhance student engagement in this area.

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SOLAR ECLIPSE 2017 & LUNAR OBSERVATION EVENTS: EDUCATION AND PUBLIC OUTREACH AT THE EI PASO COMMUNITY COLLEGE -TRANSMOUNTAIN CAMPUS THROUGH SERVICE LEARNING



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Abstract

this presentation

Solar Eclipse 2017

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 ocations around the U.S. where totality would be experienced.

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NASA GLOBE

Eclipse app Un version de este presentaccion es disponsible en español a este link wei/uCm0Low2im/E1hu/VB/FsJ1JBQ/



Future Plans



Lunar Viewing and Lectures

our moon. Titan, Enceladus, Io, and Europa

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



References 115.8 X Brance, et al. (2017) MDL Material KDREC-0176 (2015) General et al. (2016) MDL Material KD1/KD/WHI (2015) Tradie and A.L. Brung, (2016) MDL Material AD140-0496 (2016) (2016) Phys Fault, 11, 125 - 128













Lunar and Planetary Science Conference (LPSC) 2018 Poster link:

Works and Collaborations

AGU 100 Advancing earth and space science

ED32A-06 - EXPLORING STEAM THROUGH SERVICE LEARNING AND CITIZEN SCIENCE ACTIVITIES: ENHANCING EDUCATION/PUBLIC OUTREACH IN THE INTERNATIONAL COMMUNITY AT EL PASO COMMUNITY COLLEGE AND THE UNIVERSITY OF TEXAS AT EL PASO

Wednesday, 11 December 2019

11:10 - 11:20

Moscone South - 215, L2

Swirl Topics

Ethics, Diversity and Inclusion Field Guide - Track Science & Society - SWIRL





GLOBE At EPCC

Global Learning & Observations to Benefit the Environment (GLOBE) Program

El Paso Community College (EPCC) – <u>Official GLOBE Partner</u> <u>since April 2019</u>











Supported by:



Implemented by





Cloud observations November 2019



GLOBE Program – Weather Station Network (Spring 2020)

Weather Station Locations



Dust Storm Ground Observations



Dust observations made easy



Learn more at observer.globe.gov/dust

Excerpt from Amos et al (2020)

Data Processing What happens to the data?

1. Send

2. Photo Approval

3. Data goes live





Kristen Weaver, NASA



Excerpt from Amos et al (2020)

App users reporting dust worldwide



Excerpt from Amos et al (2020)

Collaborations and Community Engagement

- Dust Observations
 - GLOBE Observer
 - Additional collaborations:
- Sponsor weather workshops



- Engage student participation in STEM/STEAM
- Promote citizen science within the international community
- Advance service learning opportunities
- Curriculum advancement (i.e. physics, geology, chemistry)

GLOBE Protocols



Clouds



Barometric Pressure



Surface Temperature



Relative humidity found in our atmosphere, as observed by satellites of the <u>GOES project</u>. The gray and white regions are clouds. *Image: NOAA* Air Temperature





Thank You Questions/Comments



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