IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Show Us Space: Demonstration of Hands On Education and Outreach (8)

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INTRODUCING THE PAN-AFRICAN CITIZEN SCIENCE E-LAB PROJECTS

Abstract

The Pan-African Citizen Science e-Lab (PACS e-Lab) is an online platform that engages Africans, in hands-on activities in space science and astronomy. We run several main projects, including exoplanet observations, asteroid hunting, deep space image processing, double-star research, and celestial body scheduling and observation using robotic telescopes. Our projects are suitable for individuals of all ages, academic backgrounds, and professional levels. The only requirements are a Windows operating system, internet access, and a passion for space.

Our users include: • Educational Institutions: STEM departments across various universities and secondary schools in Africa. • Space Agencies: Departments of education and outreach within various national space agencies and observatories across Africa. • Astronomy Organizations: National astronomical societies across Africa.

Since our founding in December 2020, we have engaged over 1,000 individuals across 50 countries in Africa and made numerous contributions to astronomy, including: • The discovery of over 50 asteroids • The publication of over 12 scientific papers • The generation of several photometric light curves of exoplanets.

Our activities continue to expand, making PACS e-Lab the fastest-growing platform of its kind in Africa.

During the conference, I will: • Demonstrate how we use the Astrometrica program for asteroid searches, prepare Minor Planet Center reports, and submit findings to the Minor Planet Center at Harvard through IASC. • Demonstrate how we use the MicroObservatory for exoplanet observations through the DIY website, perform photometry using the EXOTIC pipeline, and submit reports to the AAVSO. • Demonstrate how we use the 0.4m Las Cumbres Observatory for observing double stars, utilizing AstroImageJ and AfterGlow Access for astrometry. (This section will not include research writing for journal submissions.) • Showcase how we retrieve fresh and archival datasets from the Hubble Space Telescope (HST), James Webb Space Telescope (JWST), and LCO, and process them using software like Photoshop, FITS Liberator, Siril, and GIMP to produce visually stunning images.

Requirements To carry out these activities, I will need: • A Windows 10 operating system • A live webcam Our Unique Approach Many people grow up asking fundamental questions about the universe. However, in Africa, these curiosities often go unfulfilled due to a lack of accessible resources for learning about astronomy. This challenge inspired the establishment of PACS e-Lab, an online platform designed to bridge this gap. Our efforts are helping democratize astronomy in Africa, ensuring that aspiring astronomers have the tools and opportunities to explore space.