

NRF-SAASTA together with its stakeholders host a workshop focusing on earth and beyond



Image: Rocket Launcher (Woosh Rocket Demo)

Western Cape Natural Sciences (grade 4 to 9) educators went on an exploratory (*ad*)venture of the universe during the online educator workshop that took place over three-day period from 10 to 12 October 2023.

The quest began when the science education division of the South African Agency for Science and Technology (SAASTA) forged a dream to reach beyond visible skies together with the South African Astronomical Observatory (SAAO) as well as the Western Cape Department of Education. In mapping out the journey, the Cape Town Science Centre (CTSC) was recruited host and broadcasters of the online exploration, while the South African Radio Astronomy Observatory (SARAO) and the South African National Space Agency (SANSA) were brought on board to co-facilitate the workshops that helped educators to navigate their way in and around the universe.

The mission's primary objective was to create excitement, and to shed light about attributes of Earth and what lies beyond. More importantly, the aim was to empower and capacitate educators to teach and facilitate joyful learning in their respective classrooms. The first launch into space started with the probing of Earth and what makes the planet so interesting and unique. Then, the differentiation between various space objects such as stars, planets, meteors, etc was explored. It took no time to reach the topic of how humans have been observing the universe, starting from noble native legends that have been told throughout the ages to the modern development of tools such as antennas, satellites and telescopes.

Not even mid-way in the adventure, the basic scientific concepts of gravity, frequencies, and properties of light among other things were linked to explain the various astronomical activities that *are* taking place in the universe. The sight of how astronomy and space science has improved the livelihood of humans by fostering innovation, creativity and technological developments stunned many educators. The shock that space science plays a role in communication and navigation was one of the pleasant encounters as they journeyed through time and space.

The space exploration left no stone unturned where educators dived into the realm of the unknown such as “are there other lifeforms in the universe?” and “do aliens exist?” Using most latest findings and practical examples the misconceptions were cleared and the science behind astronomy and space science was demystified. In debunking myths, the facilitators encouraged the educators to use relevant scientifically sound examples to explain concepts to the learners.

The interesting collaborative facilitation of the workshop exposed educators to the richness of the South African astronomy and space science by taking educators on a virtual tour of the various facilities by showing pictures of South African Large Telescope (SALT), MeerKAT radio telescopes, and other equipment used to observe space. The facilitators also subtly highlighted the fun activities, which can be incorporated in and out of the classroom such as stargazing, creating models and building telescopes.

The last day of the workshop delved into deep-space matters such as nebulae, galaxies and the intriguing life stages of stars. Mr Simphiwe Madlanga from SARAo who facilitated the last session of the workshop *also* brought educators to back to Earth exploration by introducing concepts of life sciences and geography to explain the cyclical nature of the earth processes. Starting above the clouds in the various layers of the atmosphere, to the effects of the weather on various rocks, sinking down to the sediments that settle on the ocean beds, to the rumbling seismic activity of plate tectonics, and to explosive formation of the igneous rocks. The workshop wrapped up with a brief insightful discussion about minerals, mining, and metallurgy and taking the educators back to their daily use of chemical compounds such as chalk for learning and teaching.

The workshop was an engaging voyage bringing meaningful discussions and engagements about Earth and beyond matters. Attended by an approximate 200 educators on each of the three days, the workshop proved to be informative, interesting and supportive to the learning and teaching outcomes. Making the dream of the collaborative organisations to come to reality.