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O29 - Astronomy for the Visually Impaired: ”Unseen Moonlight, Touchable Stars”

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Astronomy is traditionally perceived as a highly visual science, often creating significant barriers for individuals with visual impairments. Aligning with the United Nations' Sustainable Development Goal of "Leave No One Behind," the National Astronomical Research Institute of Thailand (NARIT) initiated the "Astronomy for the Visually Impaired" project. This presentation explores the innovative multi-sensory pedagogical methodologies and complex logistical milestones achieved over the project's recent years. To bridge the learning gap, NARIT developed specialized tactile media, including 3D-printed models of constellations, lunar craters, and the Milky Way. Students engaged in physical modeling of the Solar System and comets using diverse textures and scents to grasp abstract concepts. Field excursions to Doi Inthanon allowed participants to firsthand experience high-altitude atmospheric pressure changes—demonstrated through inflating sealed bags—and distinct temperature drops. A profound highlight was providing real-time telescope observations, where low-vision students identified planetary light points while blind participants engaged with the instruments' mechanics in a unique cold-weather environment. Logistically, transporting cohorts of over 50 participants—most flying for the first time—from Bangkok to Chiang Mai was a major triumph. Through a strategic partnership with Bangkok Airways, the project navigated complex aviation safety protocols, deploying extra ground and cabin staff to ensure a safe and empowering journey. Ultimately, this initiative proves that with the right adaptations, the wonders of the universe are accessible to everyone, fostering true inclusivity in STEM education.

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