Contribution ID: **315** Type: **Poster**

Sun cubE onE (SEE): a CubeSat Mission for High-Energy Solar Observations

The SunsCube One (SEE) mission, currently in the early design stages, is being built by a team led by the University of Roma Tor Vergata. This mission is one of several small satellites planned by the Italian Space Agency (ASI) under ALCOR program. SEE proposes a 12U CubeSat to investigate gamma-ray, X-ray, and ultraviolet (UV) solar emissions. SEE aims to improve our understanding of space weather and Sun-Earth interaction from Low Earth Orbit (LEO). SEE's scientific payload is specifically designed for two key investigations. First, X and Gamma SEE's scientific payload is designed to investigate the energy spectrum of solar flares from the soft X-rays to the high-energy gamma rays. Importantly, the instrument will achieve this with a high time sampling rate, allowing for a detailed analysis of the rapid fluctuations that occur during a flare event. Second, the mission will monitor solar activity by capturing full-disk images of the Sun in the specific wavelength of the Magnesium II (Mg II) doublet at 280 nm, utilizing a dedicated full-disk imager. This is valuable because UV radiation heavily influences both Earth's upper atmosphere, impacting space weather, and the lifespan of orbiting debris. SEE will leverage data from existing space and ground-based observatories, including those focusing on solar features (Solar Orbiter, IRIS, SDO, Aditya-L1, TSST), high-energy particles (GOES, CSES), and Earth's magnetic field (geomagnetic data). This multi-instrument, multi-wavelength, and multi-messenger approach will provide a comprehensive picture of solar activity and its impact on Earth.

Primary authors: GIOVANNELLI, Luca (University of Rome Tor Vergata); BERRILLI, Francesco (Università degli Studi di Roma "Tor Vergata"); MARCELLI, Laura (INFN, Rome Tor Vergata); CASOLINO, Marco (INFN, Rome Tor Vergata); CURTI, Fabio (Sapienza University of Rome, School of Aerospace Engineering); DE GUZMAN, Mark Anthony (Sapienza University of Rome, School of Aerospace Engineering); DI TANA, Valerio (ARGOTEC S.r.l.); PATTANARO, Lorenzo (ARGOTEC S.r.l.); MARMONTI, Matteo (Optec S.p.A.); TERRACINA, Annalisa (NEXT Ingegneria dei Sistemi S.p.A.); ROSSI, Alessandro (NEXT Ingegneria dei Sistemi S.p.A.); BERRETTI, Michele (Università degli Studi di Trento, Università degli Studi di Roma "Tor Vergata"); CASARA, Letizia (University of Rome Tor Vergata, Physics Department); DEL MORO, Dario (Università di Roma Tor Vergata); CALCHETTI, Daniele (Max-Planck-Institute for Solar System Research); CANTORESI, Matteo (Dipartimento di Fisica - Università di Roma Tor Vergata); CHIERICHINI, Simone (University of Rome Tor Vergata, Physics Department); GIRI NAIR, Archana (University of Rome Tor Vergata, Physics Department); KONOW, Fallon (University of Rome Tor Vergata, Physics Department); LUCAFERRI, Lorenza (University of Rome Tor Vergata, Physics Department); NIGRO, Giuseppina (University of Rome Tor Vergata, Physics Department); PENZA, Valentina (Università "Tor Vergata" - Roma); PUCACCO, Giuseppe (University of Rome Tor Vergata, Physics Department); REDA, Raffaele (University of Rome Tor Vergata); SCARDIGLI, Stefano (University of Rome Tor Vergata, Physics Department); Prof. TOMBESI, Francesco (Tor Vergata University of Rome & INAF); FRANCISCO, Grégoire (University of Rome Tor Vergata); MAZZOTTA, Pasquale (University of Rome Tor Vergata, Physics Department); MUGATWALA, Ronish; REALI, Enzo (University of Rome Tor Vergata, Physics Department); ALBERTINI, Marisa (Optec S.p.A.); BENIGNO, Nicolò (ARGOTEC S.r.l.); IOVANNA, Francesco (ARGOTEC S.r.l.); MARCANIO, Attilio (NEXT Ingegneria dei Sistemi S.p.A.); SARNARI, Flaminia (NEXT Ingegneria dei Sistemi S.p.A.); TURI, Antonio (ARGOTEC S.r.l.); NATALUCCI, Silvia (Agenzia Spaziale Italiana); URBAN, Daniele (Agenzia Spaziale Italiana); ILLIANO, Simone (Agenzia Spaziale Italiana); PLAINAKI, Christina (Italian Space Agency); CARPENTIERO, Rita (Agenzia Spaziale Italiana)

Session Classification: Coffee break and poster session 2

Track Classification: Space weather and the solar-heliospheric connections