

PRESS RELEASE

SENER presents its astronomy projects at SPIE 2018

Madrid (Spain), June 6, 2018 - The engineering and technological company <u>SENER</u> participates in the world congress of telescopes and instrumentation for astronomy <u>SPIE Astronomical Telescopes and</u> <u>Instrumentation 2018</u>, which will take place in Austin (Texas) from June 10 to 15.

SENER attends the event once again as an expert in <u>astronomy and optics</u>, a sector for which it develops systems for ground telescopes and specializes in mirror cell positioning mechanisms and opto-mechanical systems. Specifically, SENER has been present in the field of ground-based astronomy and large scientific infrastructures since 2000 and has a wide portfolio of projects that guarantee the quality of its solutions, for customers such as the astrophysics institute in Canary Islands (IAC) and the European Southern Observatory (ESO).

In this year's edition of SPIE, SENER professionals will offer two conferences with the participation of engineers Albert Tomàs and Joan Manel Casalta. The first, on day 10 at 10h50 am, will describe the primary focus correction system with lenses up to 1m in diameter for the update and use of the new William Herschel Telescope's (WHT) WEAVE spectrograph. It will be followed by a second conference, on the 12th at 2h40 pm, which will deal with SENER's work on the secondary and tertiary (M2 and M3) mirror cells of the ELT (Extremely Large Telescope). This project may also be seen at the company's stand, with a 1:12 scale model.

Other projects that will be on show at the SENER stand include the Top Ring Translation Unit also for the WHT (William Herschel Telescope); the JPCam camera alignment system for the Javalambre telescope; the development in phase B of the ELT's fifth mirror tip-tilt system; subsystems for instruments for ground-based telescopes such as OSIRIS for the Gran Telelescopio de Canarias (GTC) in the Canary Islands; electronics for the DTU (detector translation unit) and CSU (configurable slit unit) EMIR subsystems, a multi-object infrared spectrograph, also for the GTC, which works under cryogenic conditions; the main unit of the GRAAL (English acronym for ground layer adaptive optics system assisted by lasers), an adaptive optics module for the VLT (Very Large Telescope); and the ACD (Amplitude Calibration Device) robotic arm for the ALMA radio telescope, responsible for placing calibrated loads opposite its antenna receivers. Also, the mirror positioning systems of the EST (European Solar Telescope), GTC and VISTA telescopes.

Astronomy activity is carried out within the Aerospace Business Unit where SENER has <u>more than</u> <u>50 years experience</u> of activity in the space sector. To date, it has delivered more than 275 satellite and spacecraft systems and equipment to agencies in the US (NASA), Europe (ESA), Japan (JAXA) and Russia (Roscosmos), with 100% reliability. SENER is the leading Spanish company in ESA science programs due to its expert engineering contribution and has participated in more than half of these missions.

About SENER

SENER is a private engineering and technology business group founded in 1956. Its aim is to offer its clients the most advanced technological solutions and to achieve international recognition based on its independence and commitment to innovation and quality. SENER has almost 2,500 professionals across its centres in Algeria, Argentina, Brazil, South Korea, Chile, China, Colombia, the United Arab Emirates, Spain, the United States, Morocco, Mexico, Poland, Portugal, the United Kingdom and South Africa. The group's operating revenue exceeded 910 million Euros (2016 data).

Further information:



SENER brings together its own Engineering and Construction activities with industrial holdings in companies working in the field of Energy & Environment. In the field of Engineering and Construction, SENER has become a leading company worldwide in the fields of Aerospace; Infrastructure and Transport; Renewables, Power, Oil & Gas; and Marine.

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