We are offering a **4 years PhD grant** to work on the exploitation of recent/on going remote sensing observations by the instruments NOMAD and ACS on board the latest European mission to Mars, the ESA+Roscosmos ExoMars Trace Gas Orbiter (exploration.esa.int/web/mars/-/46475-trace-gas-orbiter).

This contract and research will be formalized within the current project *NOMADACS*, funded by the Spanish Space Plan under grant PGC2018-101836-B-100 (MCIU/AEI/FEDER, EU), and led by Dr Miguel Á. López-Valverde, at the Instituto de Astrofísica de Andalucía (IAA/CSIC), in Granada, Spain.
The research will be carried out at the IAA/CSIC, within the GAPT team (gapt.iaa.es , *Grupo de Atmósferas Planetarias Terrestres*, lead by Prof. Manuel López Puertas).
The Instituto de Astrofísica de Andalucía (iaa.csic.es) is a leading research center in Astronomy of the Spanish National Research Council (CSIC), and owns the distinction "Center of Excellence in Research" of the Spanish Severo Ochoa Program.

The investigation involves the retrieval of atmospheric abundances of the trace species H2O and HDO, together with aerosols abundance and properties. The study will focuss on the limb observations (solar occultation) carried out by these two TGO instruments, using a state-of-the-art retrieval suite recently adapted to Mars conditions. Comparisons with and validation of the latest generation of Martian Global Climate Models are also part of the research plan. The GAPT team has access to all the data from the two instruments and these provide a unique opportunity to derive these targets with an unprecedented precision. These variables are key to understand the water cycle and the D/H fractionation value in current-day Mars. The D/H abundance ratio is an essential quantity to assess the atmospheric escape through time and the long-term evolution of the planet.

The contract will start in early 2020, once the national Call is launched (expected in the 4th quarter of 2019).

The Ph.D. candidate must have a Master's or a 4/5-year Degree (“Licenciatura”) in Physics, or alternatively be registered or admitted in a doctoral program at a university department on a related subject, at the time of signing the contract. Grade qualifications, good command of English, a background in astronomy / planetary sciences, and experience in scientific programming in Python and Fortran will be valued.

For more information, contact the project PI :

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