

## ExoMars Trace Gas Orbiter – Status and future activities

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### Abstract

The ExoMars programme is a joint activity by the European Space Agency (ESA) and ROSCOSMOS, Russia. It consists of the ExoMars 2016 mission, launched 14 March 2016, with the Trace Gas Orbiter, TGO, and the Entry Descent and Landing Demonstrator, EDM, named Schiaparelli, and the ExoMars 2020 mission, to be launched in July 2020, carrying a Rover and a surface science platform.

TGO arrived at Mars on 19 October 2016 and has since April 2018 been operating nominally, gathering a huge amount of scientific data on Mars atmosphere and surface. The TGO is in a near circular, non-solar synchronous, 400km altitude orbit, with a 2 hour period.

The TGO scientific payload consists of four instruments. These are: ACS and NOMAD, both being 3-channel spectrometers for atmospheric measurements in solar occultation mode and in nadir mode, CASSIS, a multichannel camera with stereo imaging capability, and FRENDA, an epithermal neutron detector for search of subsurface hydrogen. The TGO is a large spacecraft, with a mass of 3700 kg and 17.5 m solar panels tip-to-tip.

The nominal operations focusses on Solar occultation measurements using the two suites of spectrometers, and near Nadir imaging by the CaSSIS camera. Nadir observations with the spectrometers are also performed.

The TGO regularly performs data relay to and from the NASA Curiosity and InSight landers, and will be used as a relay orbiter for the ExoMars Rover and Surface platform once they arrive at Mars in March 2021. The TGO orbital inclination is slightly changed in June 2019, in order to be able to follow the Entry, Descent and Landing of the Rover/Surface Platform combination.

This presentation will cover a brief overview of the Trace Gas Orbiter mission, the present status, and a description the planned future activities.