

# The ENVISAT Atmospheric Chemistry missions: monitoring status and evolution

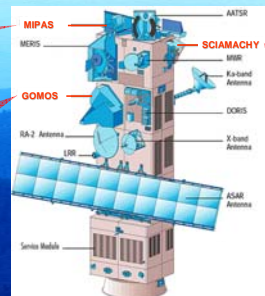
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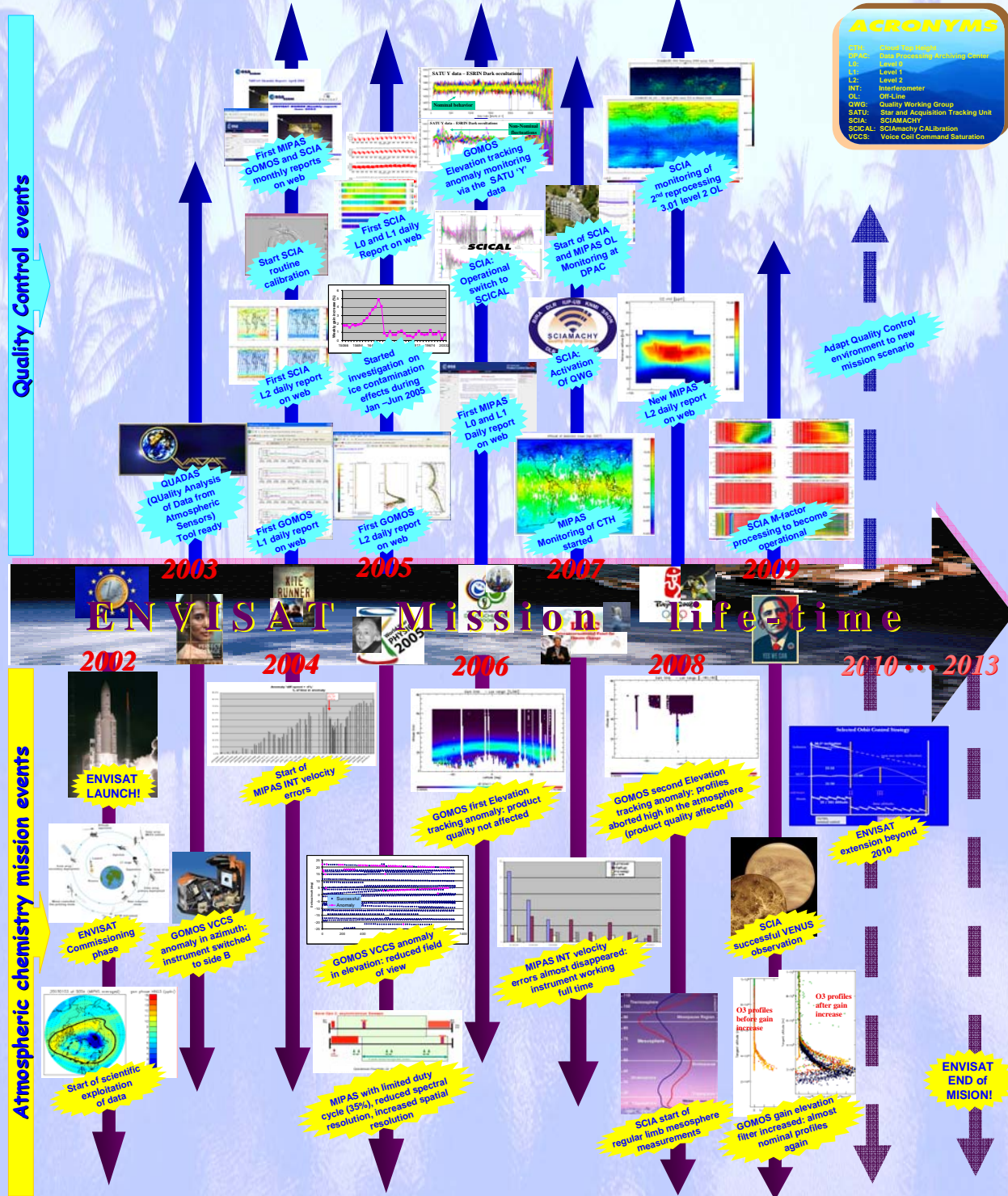
## The ENVISAT Atmospheric Chemistry Mission

**MIPAS** (Michelson Interferometer for Passive Atmospheric Sounding) is a Fourier transform spectrometer for the detection of limb emission spectra in the middle and upper atmosphere. It can scan in the anti-flight direction and in the perpendicular direction and it operates in the mid-IR (4.15 - 14.5  $\mu\text{m}$ ) where many of the main atmospheric trace gases have important emission features. Its main objectives are to retrieve profiles of several trace gases. The operational products include profiles of O<sub>3</sub>, H<sub>2</sub>O, CH<sub>4</sub>, N<sub>2</sub>O, HNO<sub>3</sub> and NO<sub>2</sub> as well as temperature and pressure. Scientific products include NO, N<sub>2</sub>O<sub>5</sub>, HNO<sub>4</sub>, ClONO<sub>2</sub>, ClO, CO, CFCs, NH<sub>3</sub>, C<sub>2</sub>H<sub>6</sub>, HDO, O<sub>3</sub> isotopomers and many others (more than 25 parameters).

**GOMOS** Global Ozone Monitoring by Occultation of Stars is a spectrometer that works in the spectral range UV-Visible (allowing the determination of O<sub>3</sub>, NO<sub>2</sub>, NO<sub>3</sub>, atmospheric density from Rayleigh extinction and aerosols) and Near-Infrared (allowing the measurement of O<sub>2</sub> and H<sub>2</sub>O). GOMOS uses the stellar occultation technique aimed at obtaining transmissions from which the retrieval of atmospheric constituent densities is performed. In addition, two fast photometers are used to correct star scintillation perturbations and to determine high vertical resolution temperature profiles.



**SCIAMACHY** Scanning Imaging Absorption Spectrometer for Atmospheric Cartography. Is a passive remote sensing spectrometer observing backscattered, reflected, transmitted or emitted radiation from the atmosphere and Earth's surface, in the wavelength range between 240 and 1700 nm, and in selected regions between 2000 nm and 2400 nm. The large wavelength range is also ideally suited for the detection of clouds and aerosols.



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