

Vast area of water discovered on Mars

A European Mars orbiter has found water ice in the heart of the Valles Marineris canyon system – an area about the size of the Netherlands

EXOMARS TRACE
GAS ORBITER

Fine Resolution Epithermal
Neutron Detector (FREND)

Can detect **hydrogen**, one
of two elements that
make up water,
to depth of
1 metre

MARS
(diameter: 6,791.4km)

Below
detail

Valles Marineris

Abundance of
hydrogen detected

Valles Marineris is
3,000km long and ten times
longer and five times deeper
than **Grand Canyon** in United States

Area:
630,000km²

Candor Chasma

Melas Chasma

Vertical
height of
terrain
amplified
by factor
of four

Water believed to persist
permanently as ice below
dry soil – like Earth's
permafrost

1m