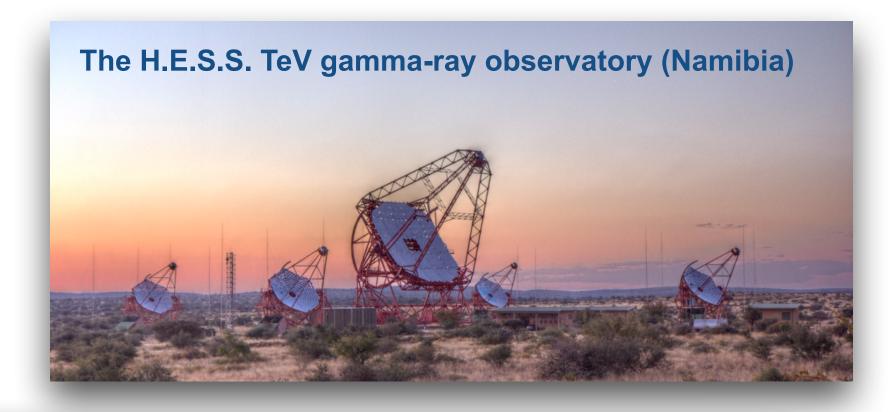
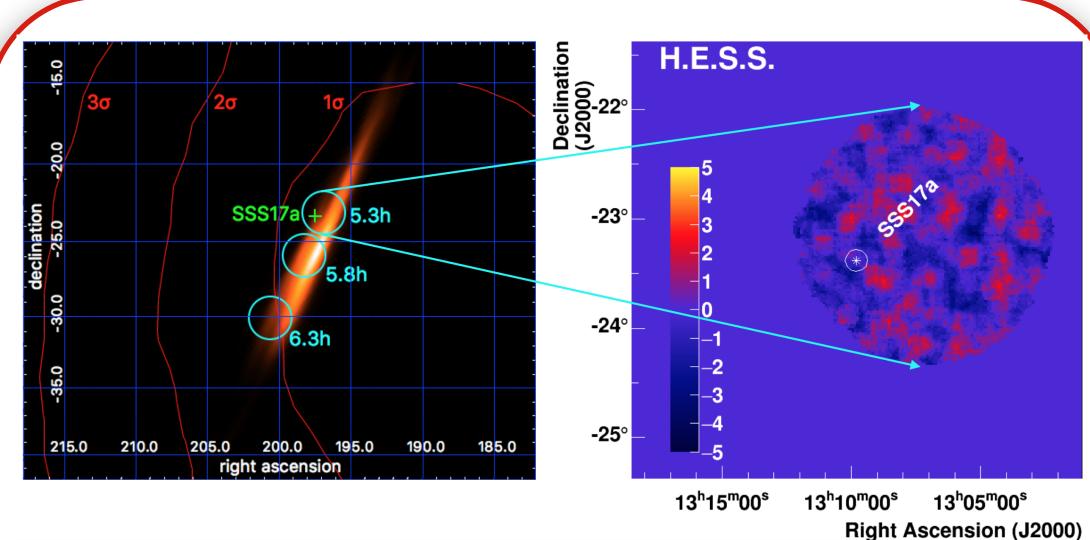
## High-energy gamma-ray follow-up of GW170817 with H.E.S.S.

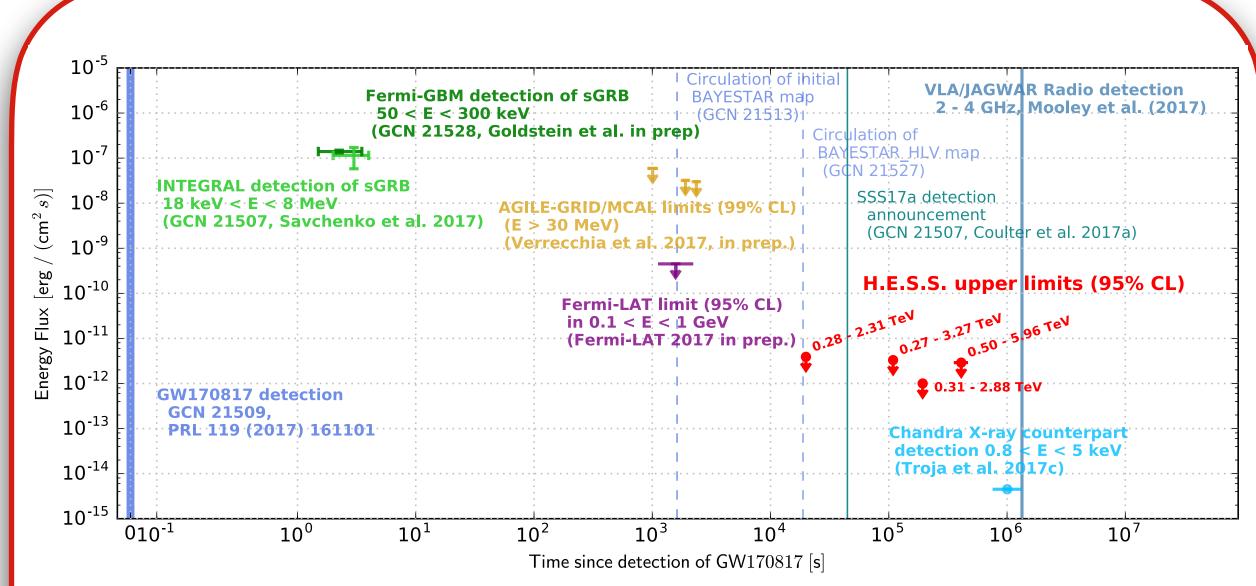
- First ground-based observatory to observe SSS17a, the optical counterpart to the binary neutron star merger GW170817 and short gamma-ray burst GRB170817
- optimized pointing pattern using 3D-correlation of GW uncertainty maps with GLADE galaxy catalog
- Observations covering 0.22 to 5.2 days and an energy range between 270 GeV and 8.55 TeV
- $\Phi_{\gamma}$ < 1.5 x 10<sup>-12</sup> erg cm<sup>-2</sup> s<sup>-1</sup> (L<sub>\gamma</sub>< 3.2 x 10<sup>-41</sup> erg s<sup>-1</sup>)





Left: H.E.S.S. pointing direction during the first night of the observational campaign on GW170817 / SSS17a. The circles denote a FoV with a radius of 1.5deg and the times are the start times of each observation with respect to GW170817. The first observation started 2017 August 17, at 17:59 UTC.

Right: Map of significances of the high-energy gamma-ray emission in the region around SSS17a obtained during the first night of observations. The white circle illustrates the H.E.S.S. point-spread function of about 0.1deg.



Timeline of the MWL observations following the detection of GW170817 with a focus on the high-energy, non-thermal domain. The upper limits on the TeV gamma-ray flux derived from the H.E.S.S. observations are shown as red arrows.



