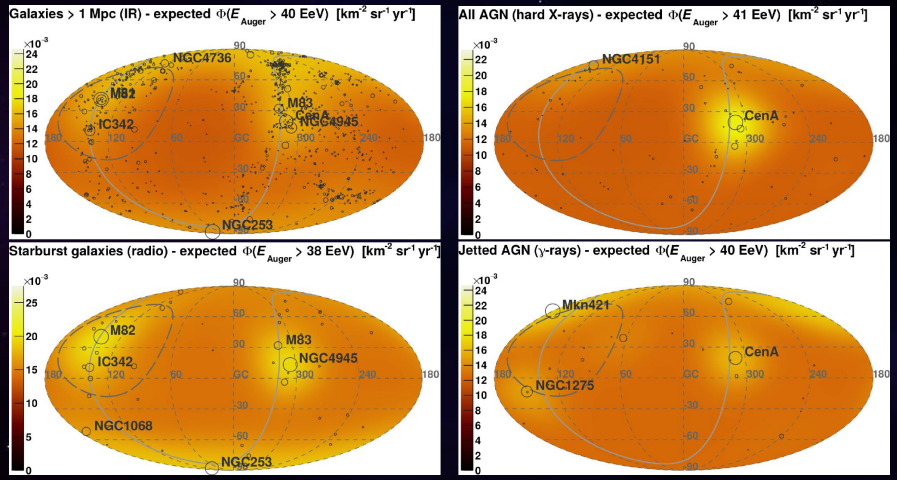
Correlation between arrival directions and starbursts' positions E>38 EeV (4.2σ) (Jetted AGNs 3.3σ)

Correlation 4.1σ with Cen A region (Cen A, NGC 4945, M83, Circinus) - Auger Hotspot region

Telescope Array Hotspot - M82 region

From the theoretical point of view:

- Superwinds (**YES**: Anchordoqui et al 1999; Anchordoqui 2018; Anchordoqui & Torres 2020; **NO**: Romero et al 2018; Müller et al 2020; Aguilar-Ruiz et al 2021; Peretti et al 2022)
- Stellar sources inside SBGs, but then correlation with all galaxies?
- Bell & Matthews (2022): Luminosity requirements not satisfied. TA hotspot M82 reflecting Cen A UHECRs.



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GCOS: Full-sky coverage (both hotspots with same observatory; correlation with all known SBGs/AGNs/etc); mass composition of single events (select light particles; more than one source population in Cen A region? mass-comp./arrival direction information); correlation analysis a bit more independent of electromagnetic weights???