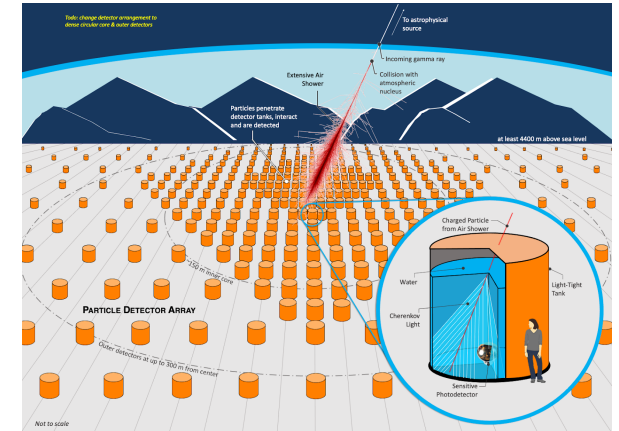


SWGO Status



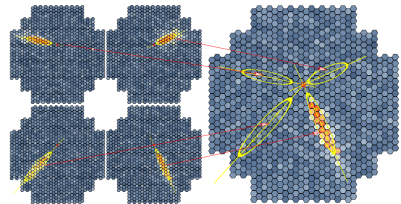
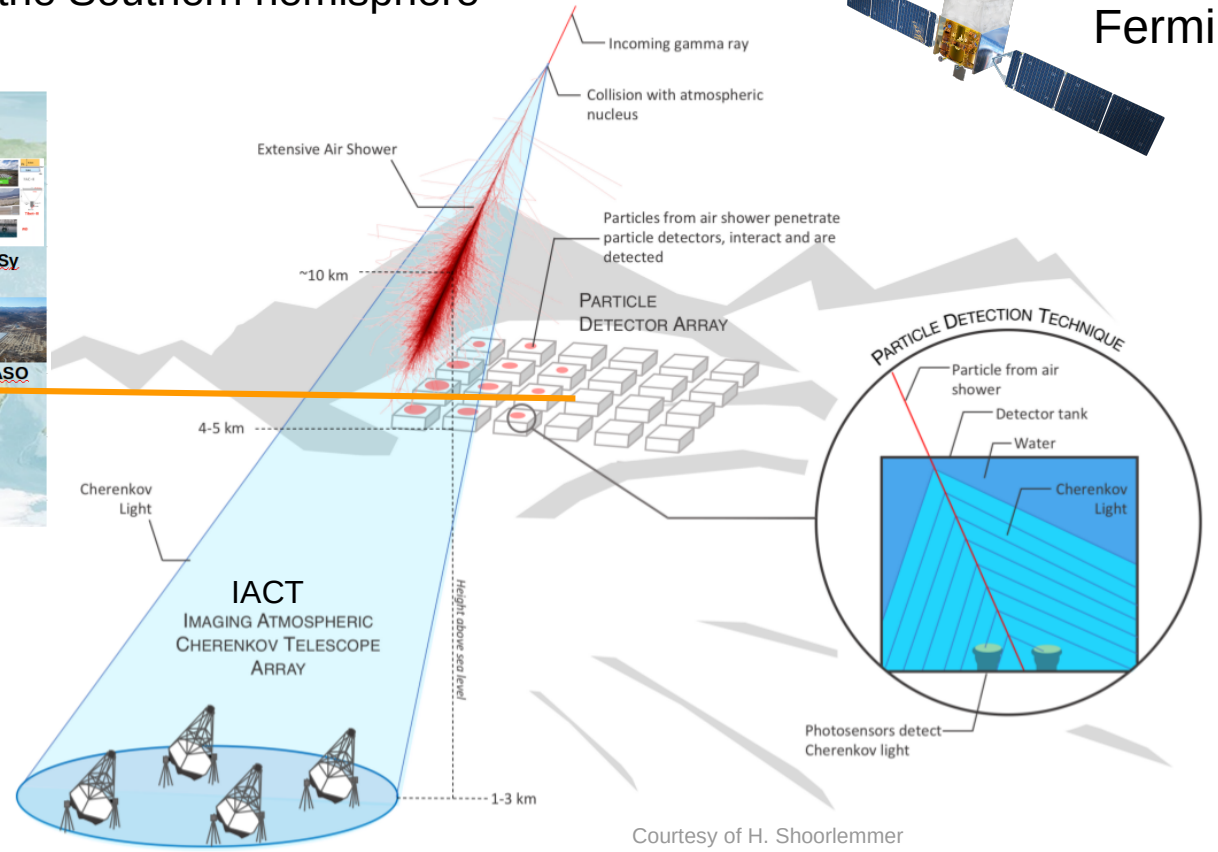
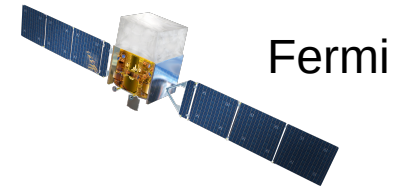
Jakub Vícha



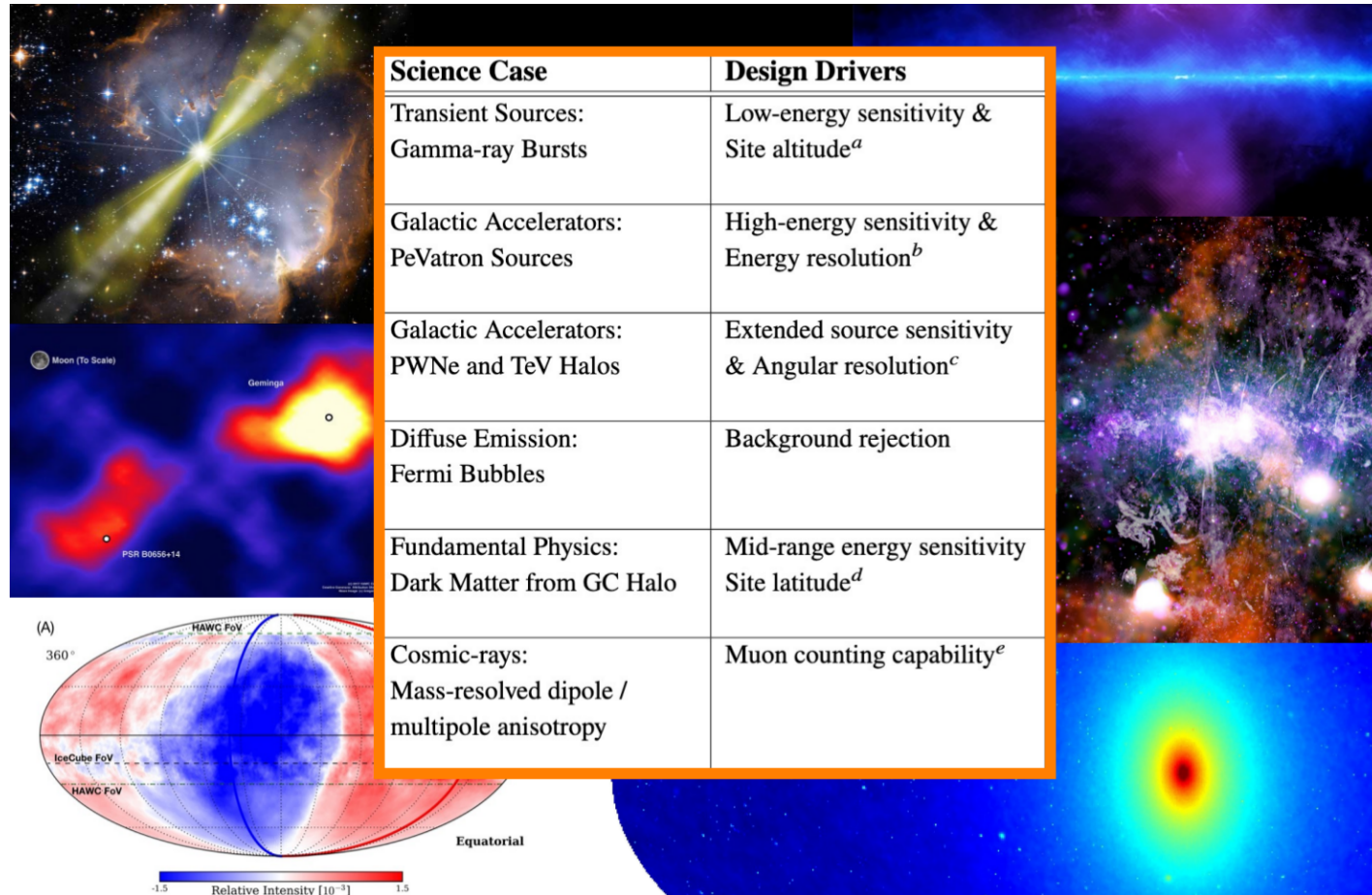
FZU - Institute of Physics of the Czech Academy of Sciences

SWGGO: Wide-field Observatory in the South

- Currently no wide-field observatory in the Southern hemisphere

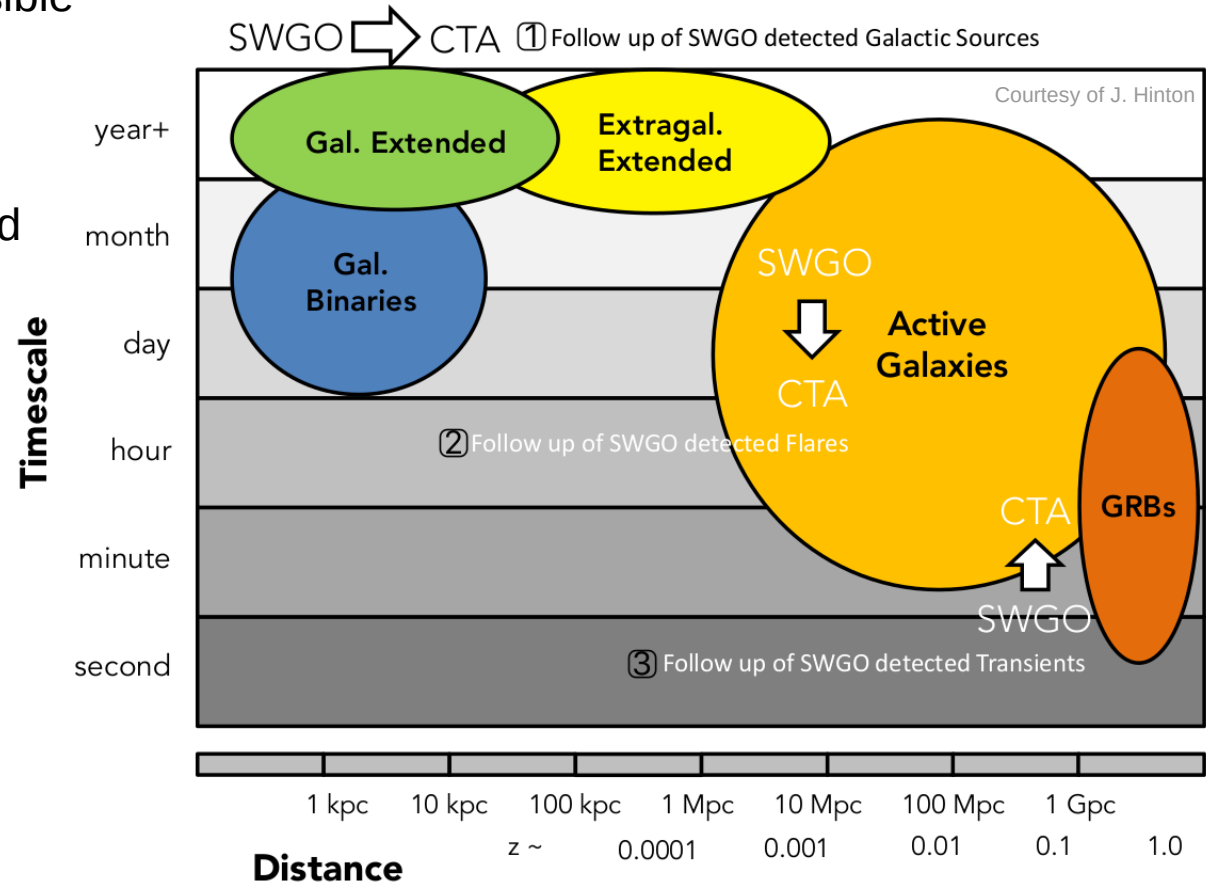
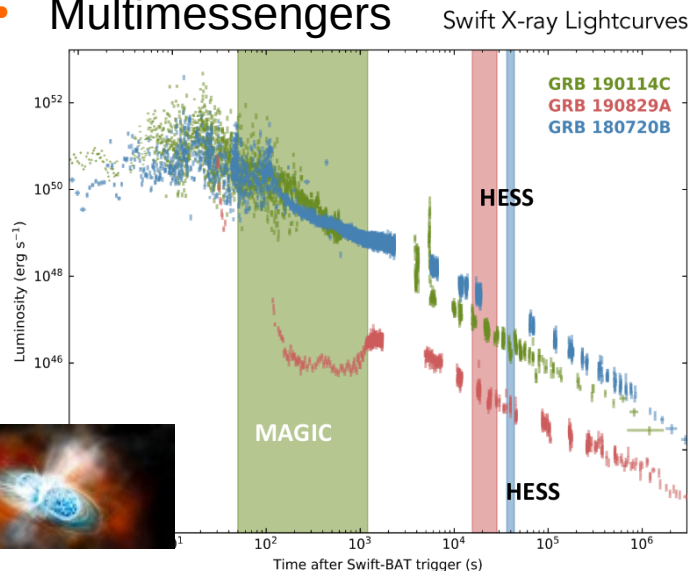


Benchmark science with SWGO



Low-energy motivation

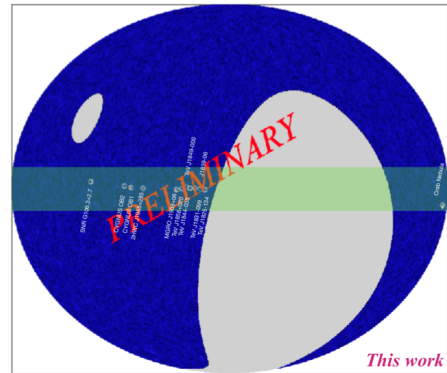
- Most of GRBs currently escaping possible detection (Swift-BAT FoV ~ 1.4 sr)
- 2019: 3 GRBs of energy > 100 GeV
- SWGO could trigger (within $\sim 10^3$ s) **Cherenkov telescopes** for transient and large-scale phenomena
- Multimessengers



High-energy motivation

- PeVatrons

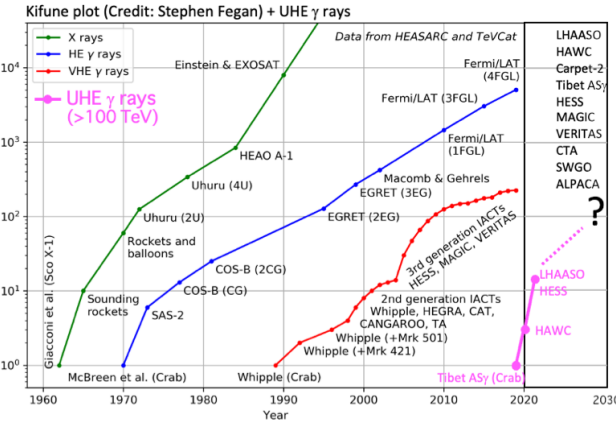
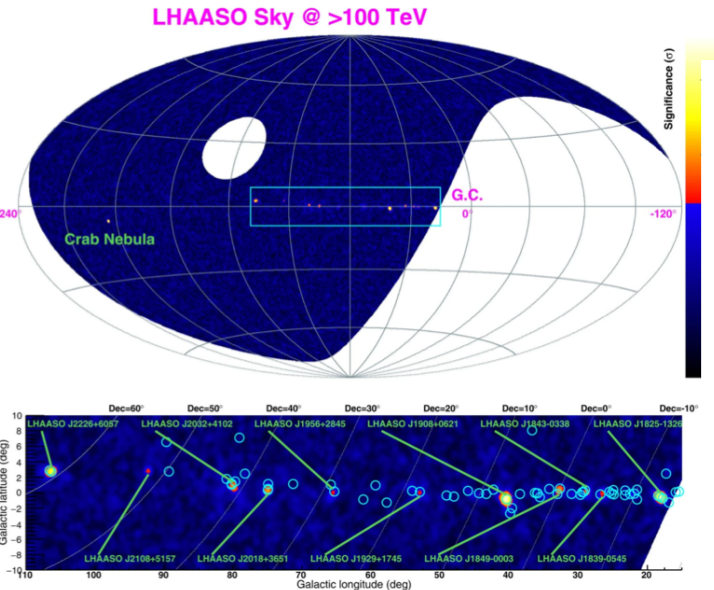
- many more expected on the southern sky
- size of wide-field observatory should be at least at the LHAASO scale: $\sim \text{km}^2$



Tibet-ASy

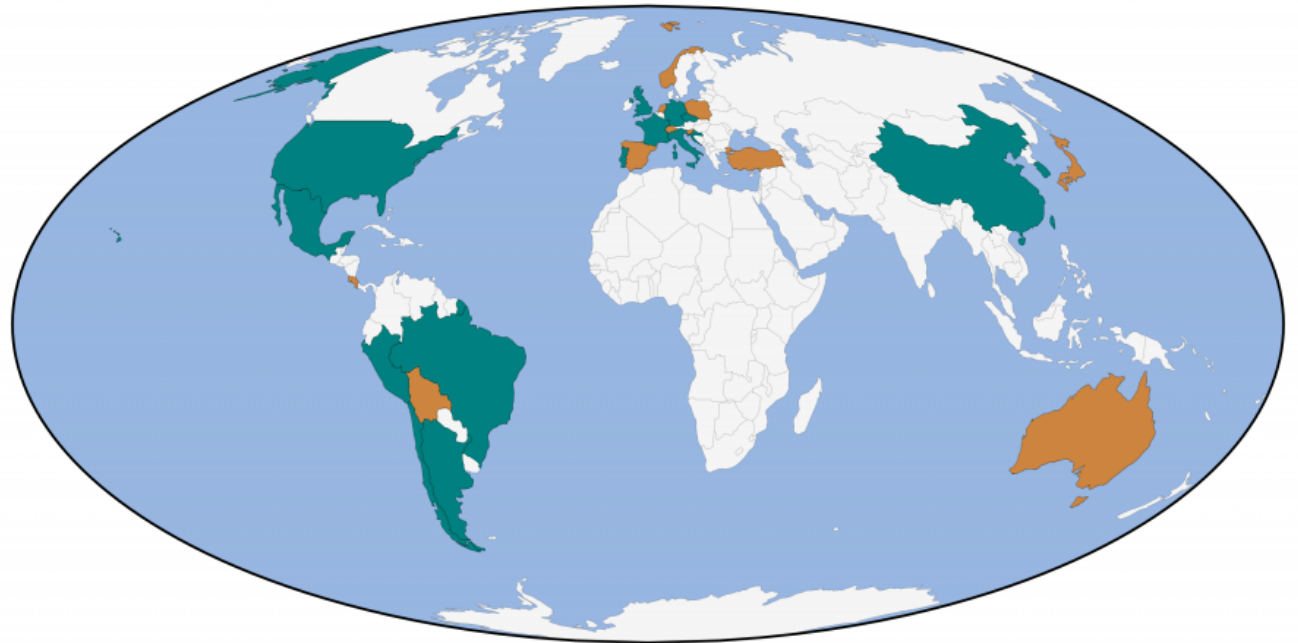
Associated Source	RA[deg]	Dec[Deg]
Crab	83.65	22.02
TeV J1825-134	276.52	-13.4
TeV J1831-099	277.58	-9.84
TeV J1840-055	279.91	-6.03
TeV J1837-065		
TeV J1844-035	280.92	-3.58
TeV J1849-000	282.84	0.03
TeV J1857+026	284.70	2.66
MGRO J1908+06	287.01	6.20
2HWC J1955+285	298.87	28.63
Cygnus OB1	305.02	36.77
Cygnus OB2	308.01	41.19
SNR G106.3+2.7	336.77	60.88

This work



The SWGO Collaboration is growing

- Established in July 2019, now R&D phase
- More than 200 scientists of more than 90 institutions
- 15 countries - new: China, Croatia, France



100s GeV - 100s TeV (PeV)
South America
> 4.4 km a.s.l.

End of the R&D phase

Milestone	2019				2020				2021				2022				2023				2024				2025
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1			
R&D Phase Plan		M1																							
Science Benchmarks			M2																						
Reference Configuration				→	M3																				
Site Shortlist Complete					→																				
Candidate Configurations							→					M4													
Perf. of Candidates Evaluated								→				M5													
Preferred Site Identified									→																
Design Finalised										→															
CDR Ready																							M9		

Coll. meeting in Mexico, Apr 2024

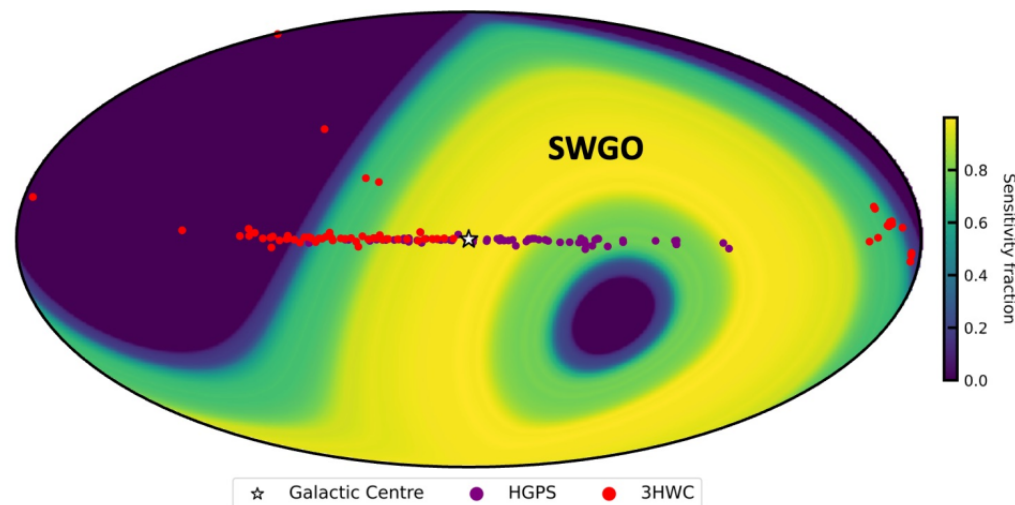
SC meeting in Rio, Jul 2024

Start of Preparation phase in 2025

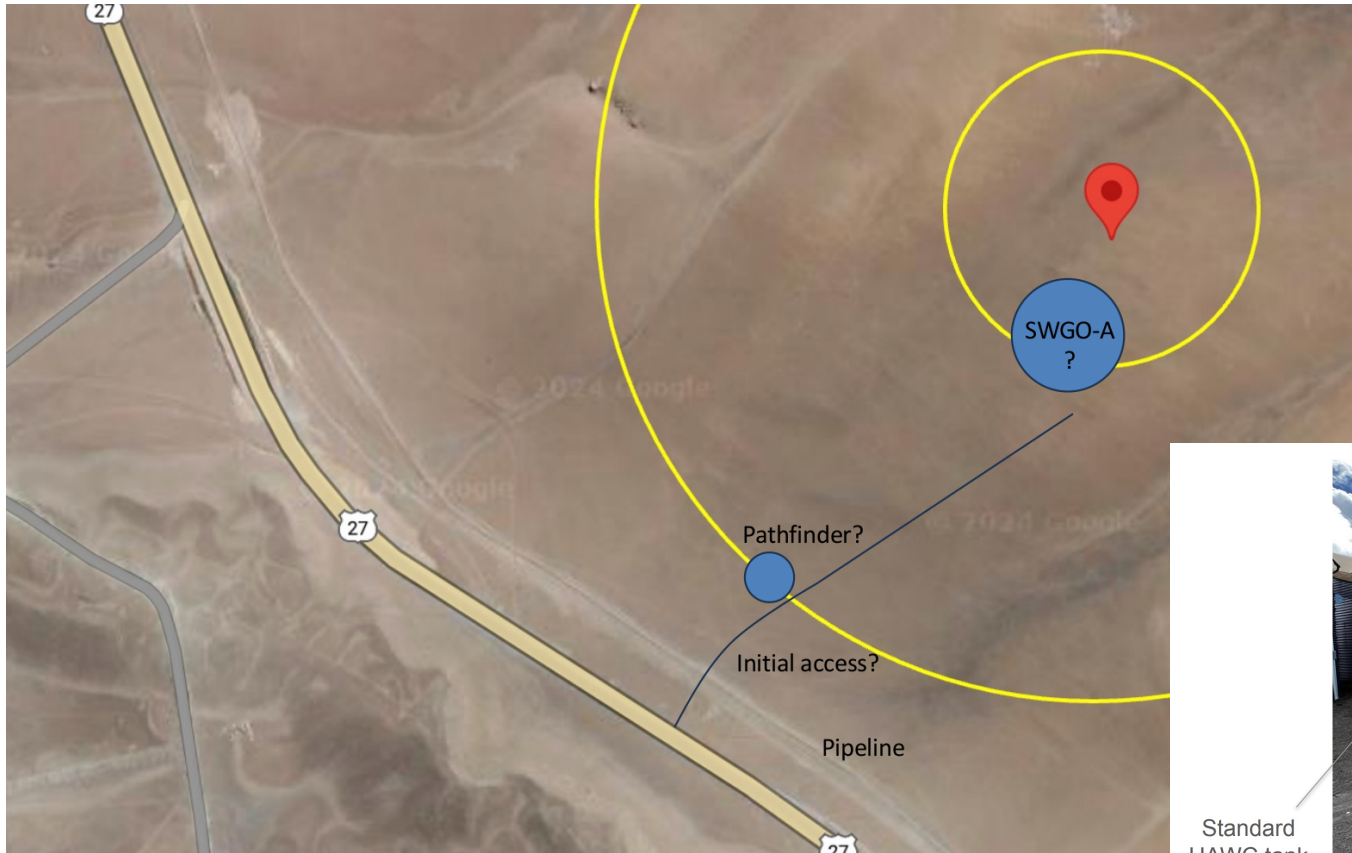
Site selection: science, risks, cost ...



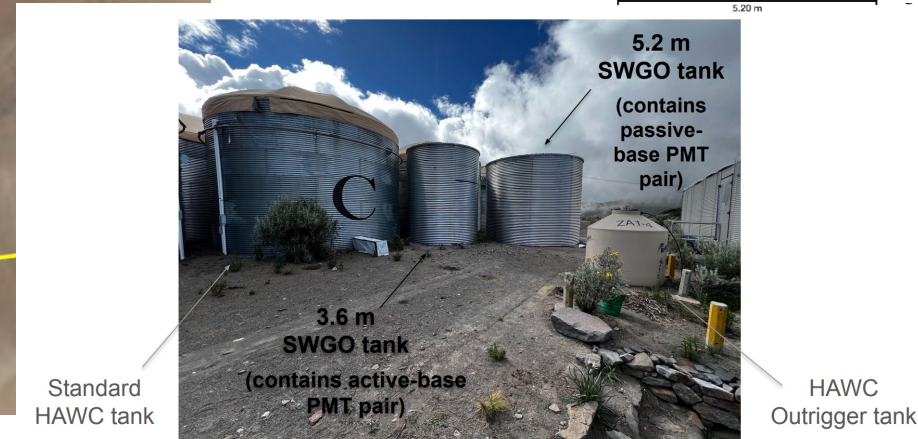
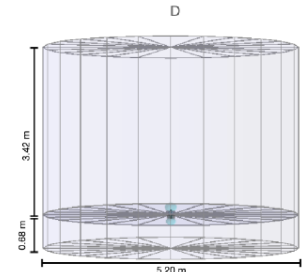
See Dušan's talk



SWGGO-A U.S. proposal - Nov 2024

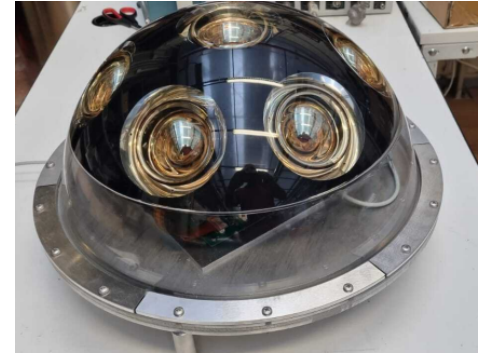


- 360 D tanks
- PMTs from Antares & HAWC ?
- 18 M\$ (~60 M\$ total)



Br+It+Pt+Cz proposals - 2025/26

- Meeting in Lisbon, Feb 2025
- Plastic tanks from Brasil - proposal spring 2025
- Multi-PMTs from Italy - proposal spring 2025
- SST-1M from CZ ?
- Hybrid concept studies (GAČR 23-05827S)
 - see Vladimir's talk
- Our activities with UHE simulations for Mercedes tanks
 - [The European Physical Journal C 82 \(2022\) 899](#)
 - [arXiv:2304.02988](#)



- ~55 stations (Germany + CZ + South Korea)
- Pathfinder Array in 2025
 - AEROSITE(s) relocation during April meeting in San Pedro?
 - temperature chain for prototypes
- SACC (Dušan)

