



cherenkov
telescope
array

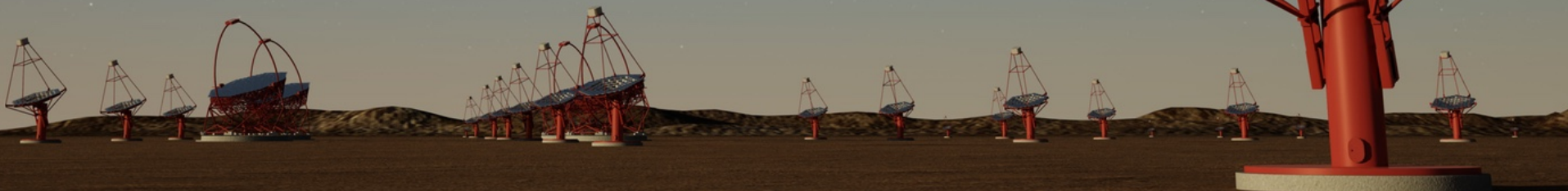
https://www.cta-observatory.org/consortium_authors/authors_2020_12.html

The CTA Observatory

The CTA Consortium, represented by
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We gratefully acknowledge financial support from the agencies and organizations listed here http://www.cta-observatory.org/consortium_acknowledgments



31 countries, 1,420+ members and still growing ...

CTA Sites



Two Arrays: Two Eyes on the Sky



Array Coordinates

Latitude: 24° 41' 0.34" South
Longitude: 70° 18' 58.84" West



CTA South
Chile, Paranal

~5 km²

area covered by the array of telescopes



CTA North
Spain, La Palma

~0.5 km²

area covered by the array of telescopes

Array Coordinates

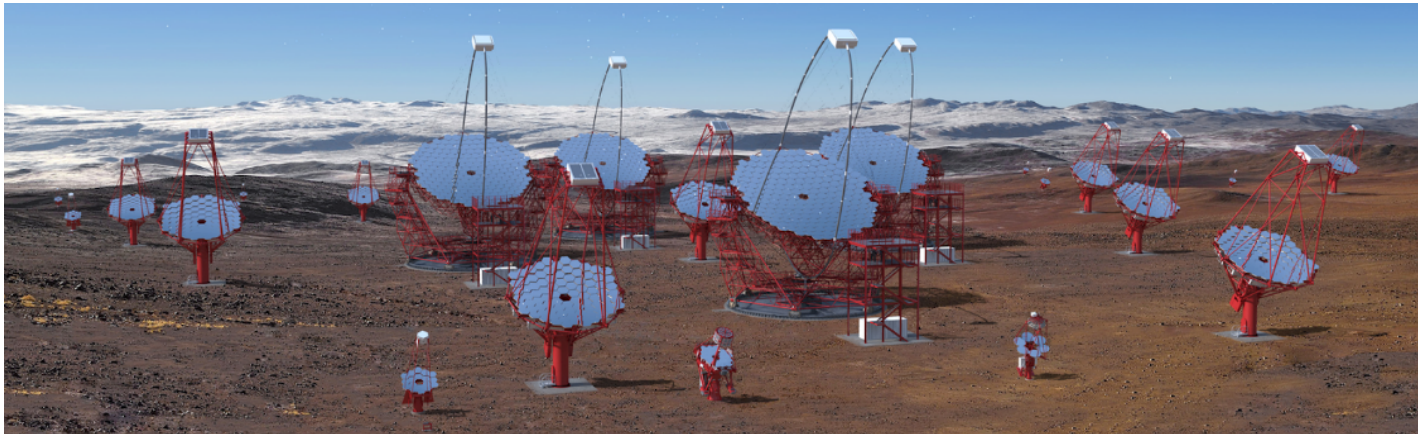
Longitude: 17° 53' 31.218" West
Latitude: 28° 45' 43.7904" North



The Cherenkov Telescope Array



South: 99 telescopes spread out over $\sim 5 \text{ km}^2$ (70 SSTs, 25 MSTs, 4 LSTs)



North: 19 telescopes spread out over $\sim 1 \text{ km}^2$ (15 MSTs, 4 LSTs)



Observatory Operation



CTA Headquarters



- Located at the INFN campus in Bologna, Italy
- Administration of the CTA observatory

Science Data Management Centre

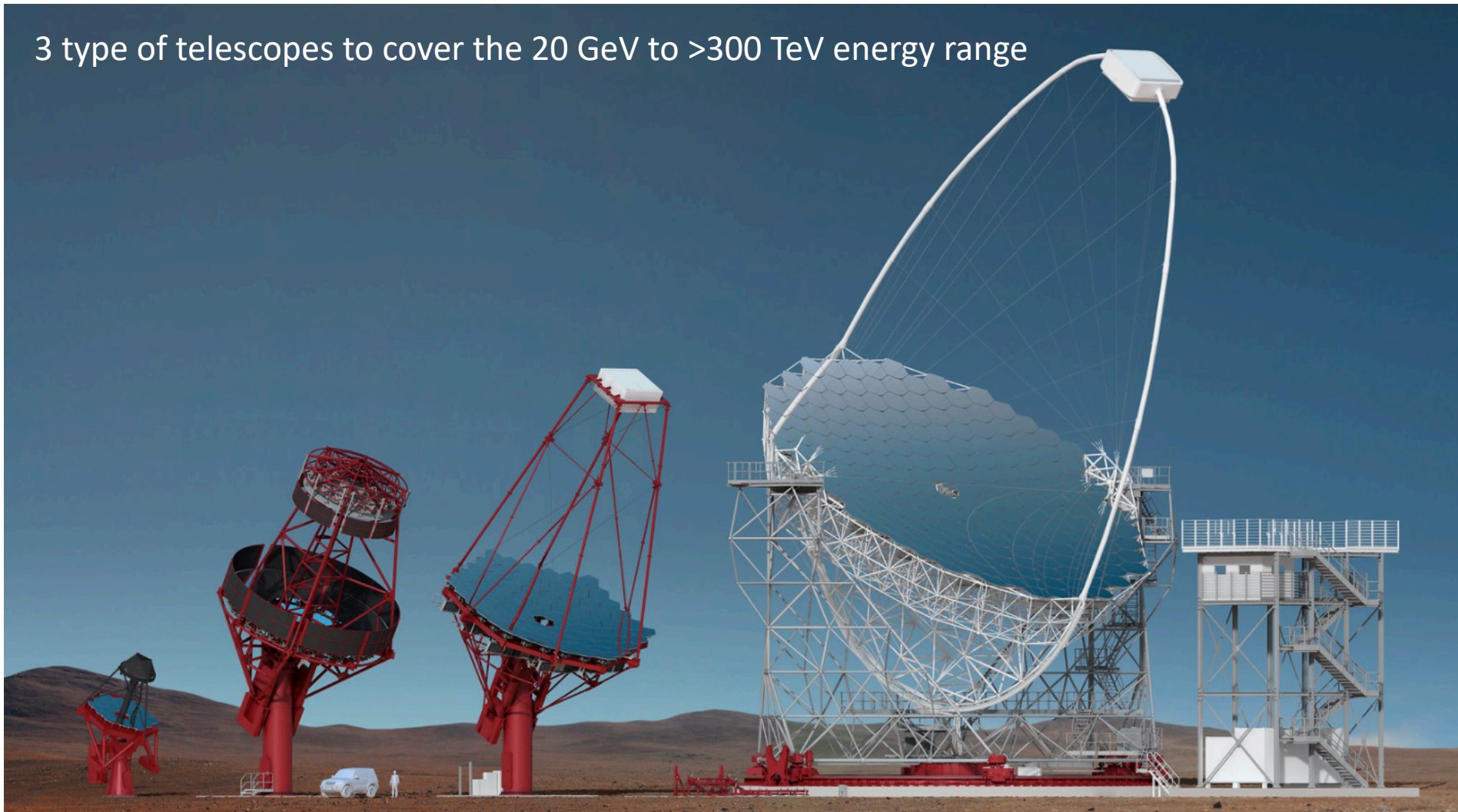


- To be located in Desy-Zeuthen
- Coordination of science coordination and products

Telescopes



3 type of telescopes to cover the 20 GeV to >300 TeV energy range



CTA observation modes



Very deep field

CTA observation modes



Monitoring
4 telescopes



Monitoring
4 telescope



Deep field
 $\sim 1/2$ of telescopes



Monitoring
4 Telescopes



Deep field
 $\sim 1/3$ of telescopes



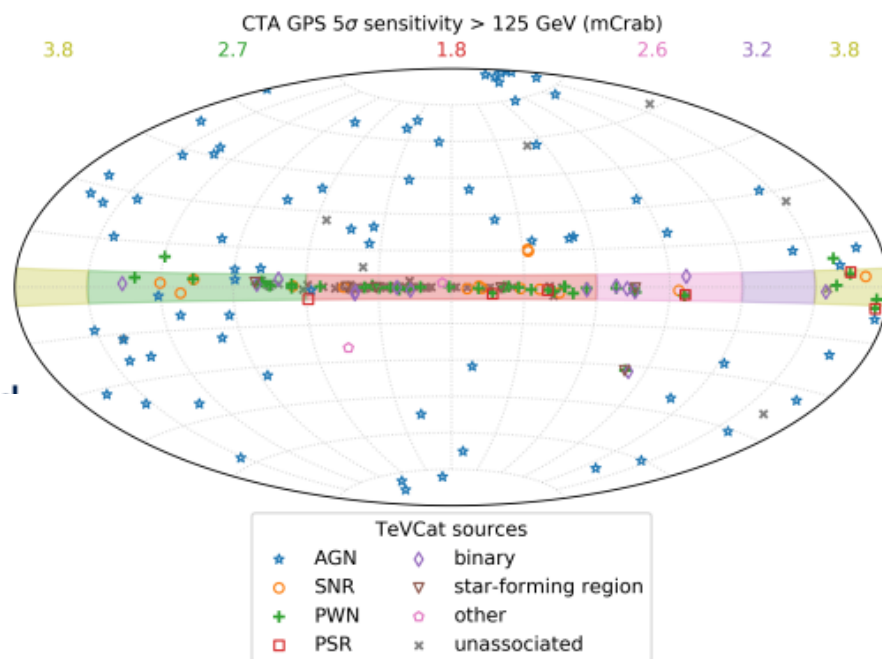
Monitoring
1 telescope

CTA observation modes



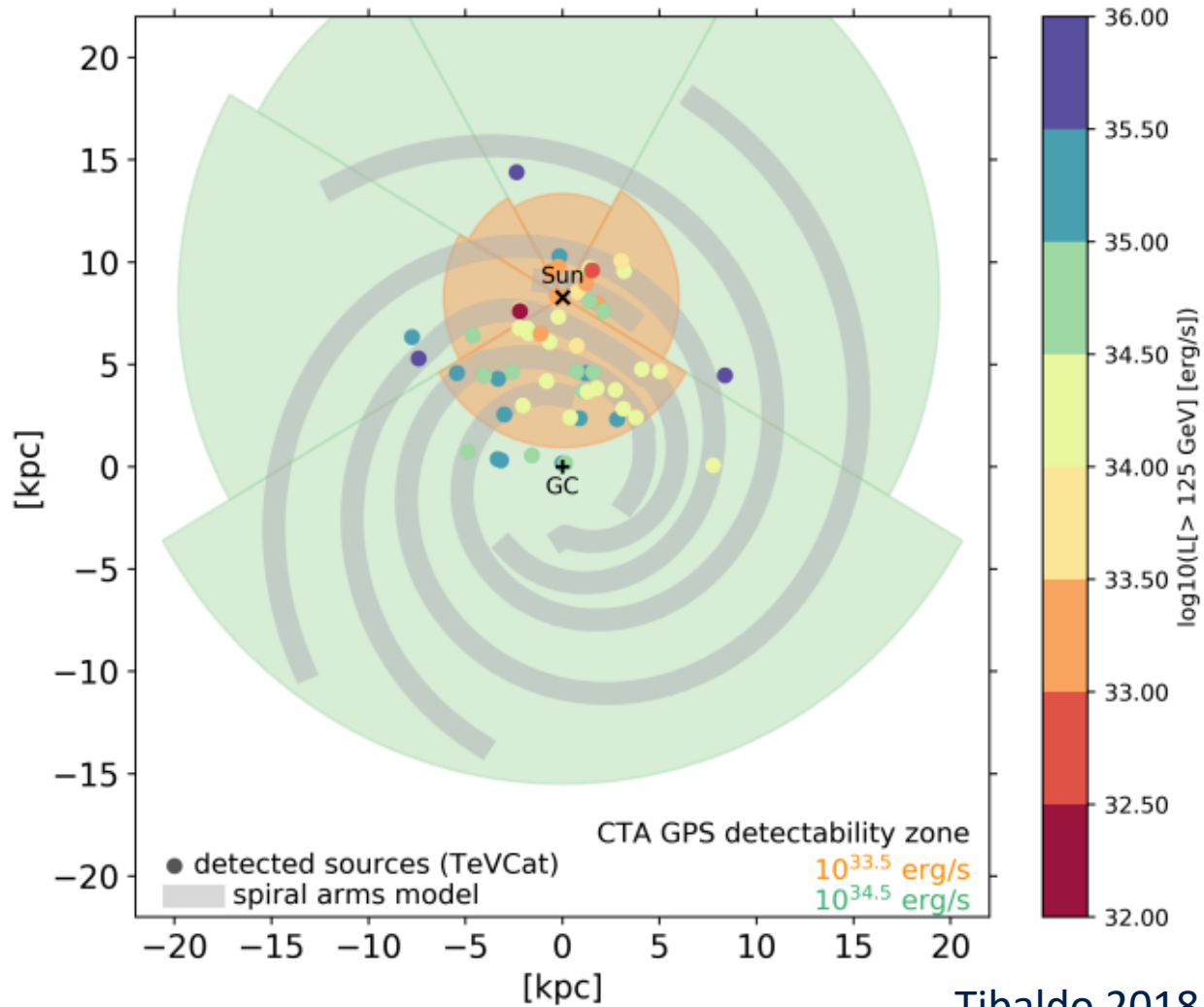
Survey mode:
Full sky at current
sensitivity in ~ 1 year

THE CTA GALACTIC PLANE SURVEY



- Deeper observations in regions of stellar activity
- ~1600 h (N+S)
- (Probably) rapid start over the first years to provide

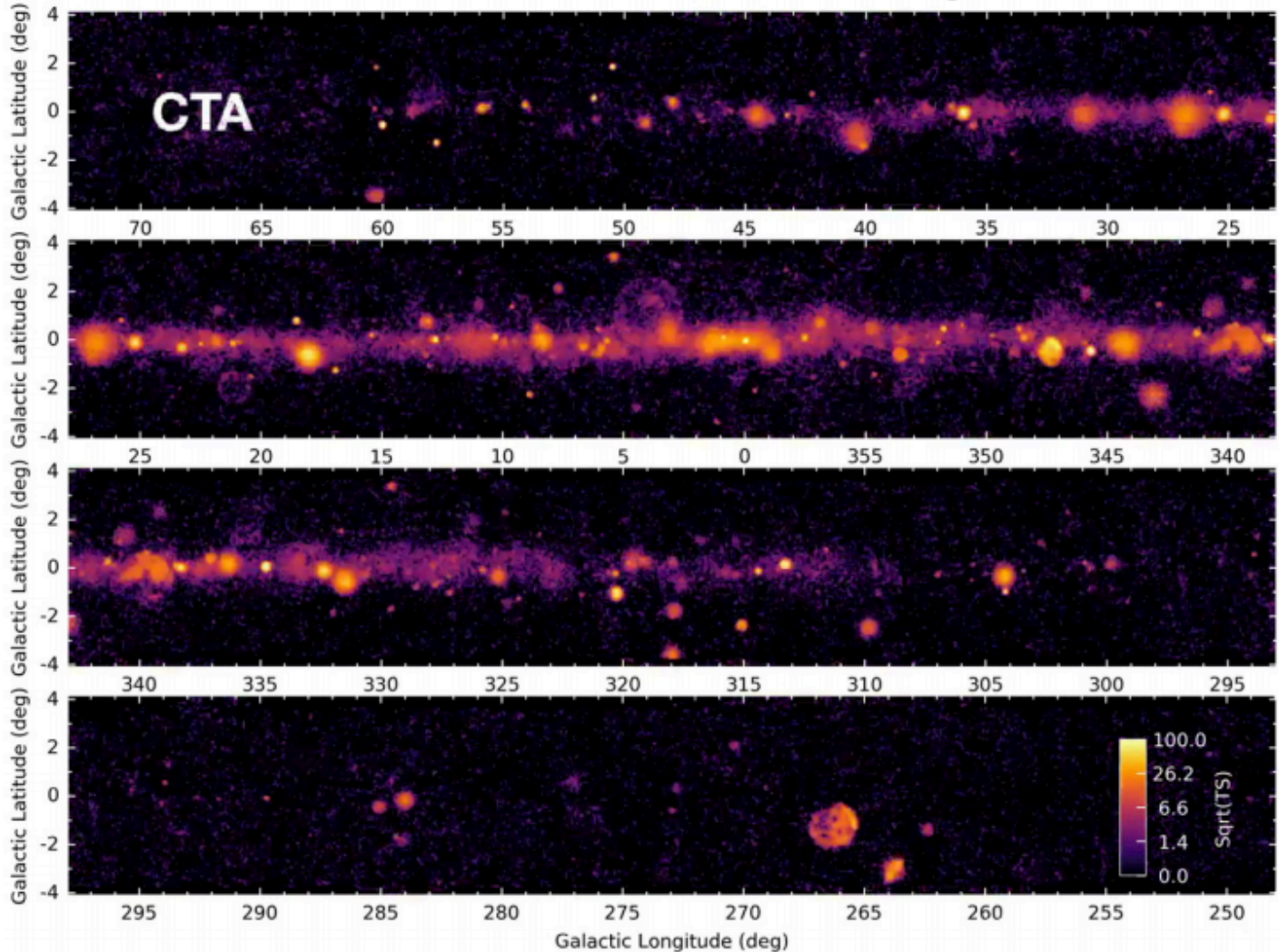
GALACTIC DISCOVERY REACH



The GPS



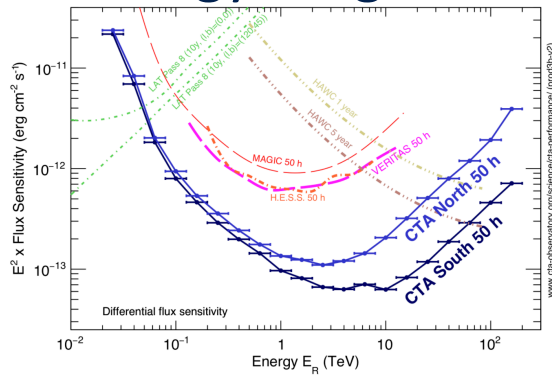
Cutout of CTA GPS from first Data Challenge



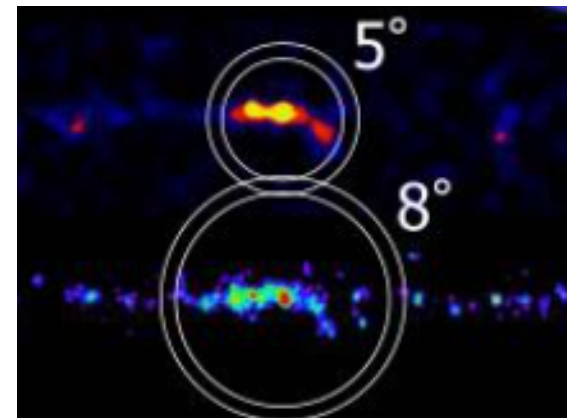
Plot credits: Christoph Deil, Roberta Zanin

Three keys characteristics to detect halos

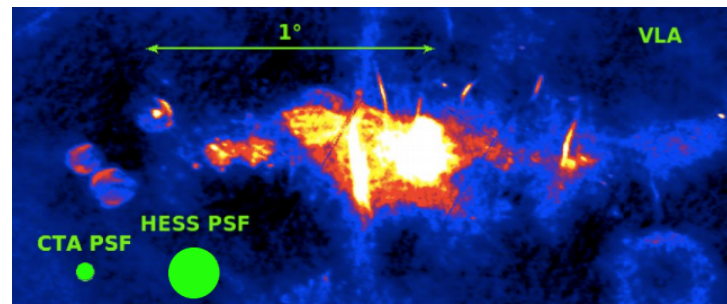
Energy range & resolution



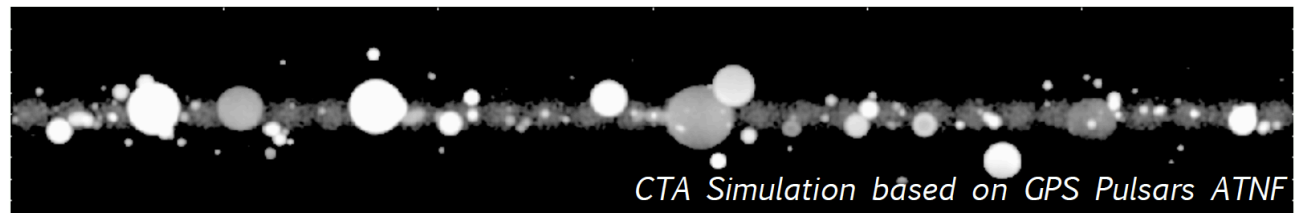
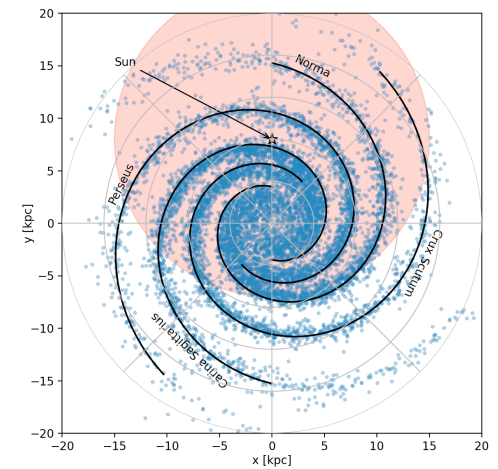
FoV



Angular resolution



But watch out for source confusion!





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and we are particularly grateful to Igor Oya from CTA SAPO for a flash review!