

Southern Wide-Field Gamma-ray Observatory

Ulisses Barres de Almeida

Centro Brasileiro de Pesquisas Físicas | CBPF

Adrian C. Rovero

Instituto de Astronomía y Física del Espacio | IAFE



For the SWGO Collaboration

Observational Panorama

Ocherenkov Atmospheric Telescopes

- → Less than 1 : 5 duty-cycle
- → Pointing (few degrees)
- → Energy threshold down to 10s GeV
- \rightarrow Good energy and angular resolution







Particle Detector Arrays

- → 100% duty-cycle
- → Wide-field (~ steradian)
- → Energy range > 100s GeV
- → Long exposure and accurate background determination

A wide-field observatory in the South



mage Gredit: SARAC

Science Case: https://arxiv.org/abs/ 1902.08429

An observatory for gamma-ray transients



6

The Collaboration

Southern Wide-Field Gamma-ray Observatory

+ higher altitude (4400+ m asl) and larger area

+ more efficient detector unities + muon tagging capability

→ improved sensitivity and lower E threshold



Countries in SWGO

Institutes

Argentina*, Brazil, Czech Republic, Germany*, Italy, Mexico, Peru, Portugal, South Korea, United Kingdom, United States*

Supporting scientists

Australia, Chile, France, Japan, Slovenia, Spain *also supporting

*also supportin scientists

Member institutes signed the Sol.

Any interested

individual can

become a

supporting

scientist.

7

Detector units



EPJ-C, H. Schoorlemmer, J.A. Hinton, R. Lopez-Coto, (2019)



Performance goals



Potentially more sensitive than CTA over several years integration time provided good background suppression is achieved.

Candidate Sites



Thank you!



First Collaboration Meeting

at the Padova Astronomical Observatory, Italy, on October 30th–31st 2019

www.swgo.org

ulisses@cbpf.br