

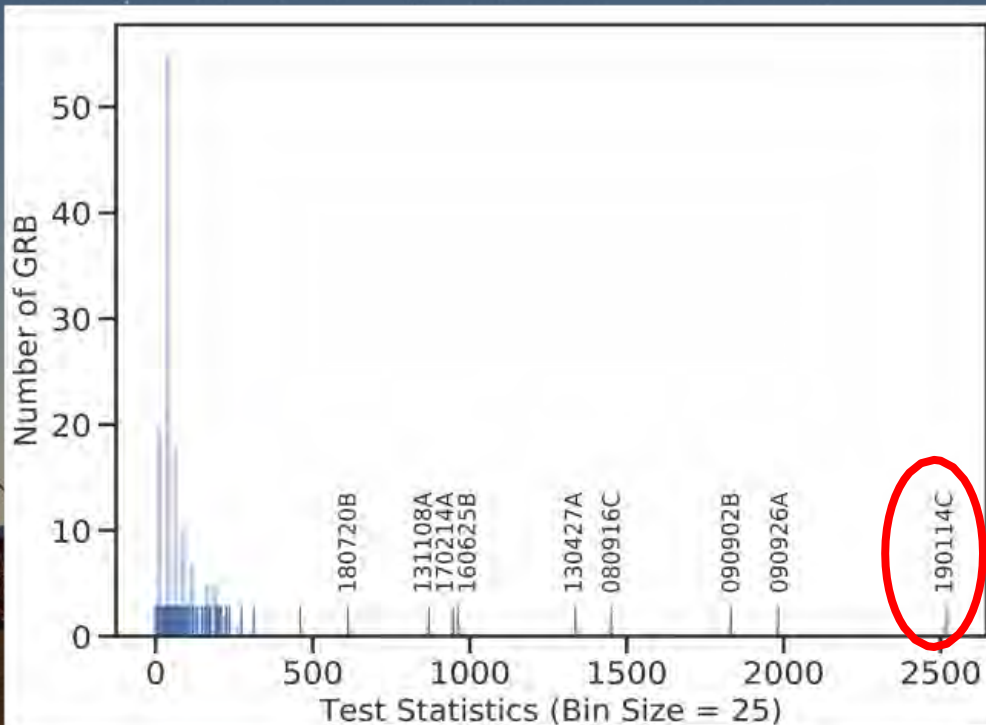
CTA Preventivi 2020

- Situazione MAGIC
 - Produzione scientifica
- Situazione CTA
 - Sito Nord in costruzione
 - Large Size Telescope #1
 - Inaugurazione ottobre 2018
 - Prototype SCT (Arizona)
 - Inaugurazione gennaio 2019
- Anagrafica 2020
- Richieste finanziarie 2020



MAGIC

- Situazione MAGIC
 - Produzione scientifica
 - GRB190114C => in pubblicazione su Nature (3 articoli)
 - New MoU to be signed, further 5 years of operations



First time detection of a GRB at sub-TeV energies; MAGIC detects the GRB 190114C

ATel #12390; *Razmik Mirzoyan on behalf of the MAGIC Collaboration*
on 15 Jan 2019; 01:03 UT

Credential Certification: Razmik Mirzoyan (Razmik.Mirzoyan@mpp.mpg.de)

Subjects: Gamma Ray, >GeV, TeV, VHE, Request for Observations, Gamma-Ray Burst

Referred to by ATel #: 12395, 12475



The MAGIC telescopes performed a rapid follow-up observation of GRB 190114C (Gropp et al., GCN 23688; Tyurina et al., GCN 23690, de Ugarte Postigo et al., GCN 23692, Lipunov et al. GCN 23693, Selsing et al. GCN 23695). This observation was triggered by the Swift-BAT alert; we started observing at about 50s after Swift T0: 20:57:03.19. The MAGIC real-time analysis shows a significance >20 sigma in the first 20 min of observations (starting at T0+50s) for energies >300GeV. The relatively high detection threshold is due to the large zenith angle of observations (>60 degrees) and the presence of partial Moon. Given the brightness of the event, MAGIC will continue the observation of GRB 190114C until it is observable tonight and also in the next days. We strongly encourage follow-up observations by other instruments. The MAGIC contact persons for these observations are R. Mirzoyan (Razmik.Mirzoyan@mpp.mpg.de) and K. Noda (nodak@icrr.u-tokyo.ac.jp). MAGIC is a system of two 17m-diameter Imaging Atmospheric Cherenkov Telescopes located at the Observatorio Roque de los Muchachos on the Canary island La Palma, Spain, and designed to perform gamma-ray astronomy in the energy range from 50 GeV to greater than 50 TeV.

CTA Consortium



Aug2018

31 countries
93 parties
200 institutes
1400 scientists

Co-Spokesperson: [Rene Ong](#)

Science Data Management Center: DESY Zeuthen (Germany)

Headquarters: Bologna (Italy)

Leadership:
Spokesperson: [Werner Hofma](#)

Chair, CTA Consortium Board: [Jürgen Knödseder](#)

Consortium Science Coordinator: [Stefan Funk](#)

Consortium Deputy Science Coordinator:

[Emma de Oña Wilhelmi](#)

Chair, SAPO: [Jean-Pierre Ermenwein](#)

Vice-Chair, SAPO: [Vitor de Souza](#)

North Site: La Palma (Spain, IAC)

South Site: Paranal (Chile, ESO)



CTA Telescopes

- Telescope prototype designs

SMALL SIZE TEL.

MEDIUM SIZE TELESCOPE

LARGE SIZE TELESCOPE

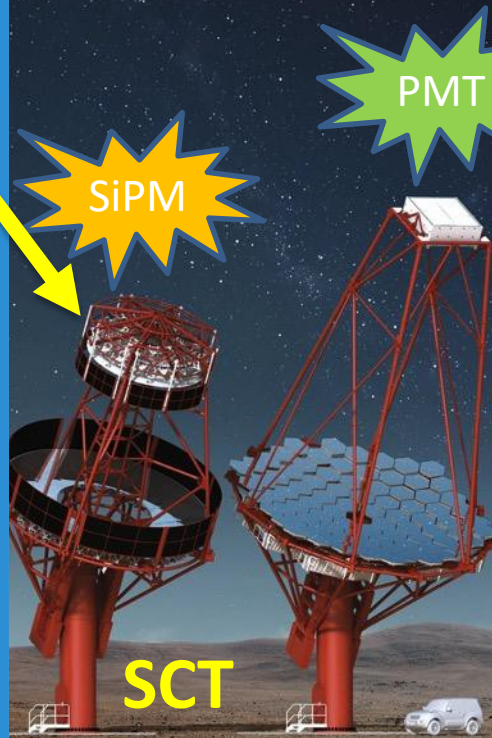
SST

3 prototype designs

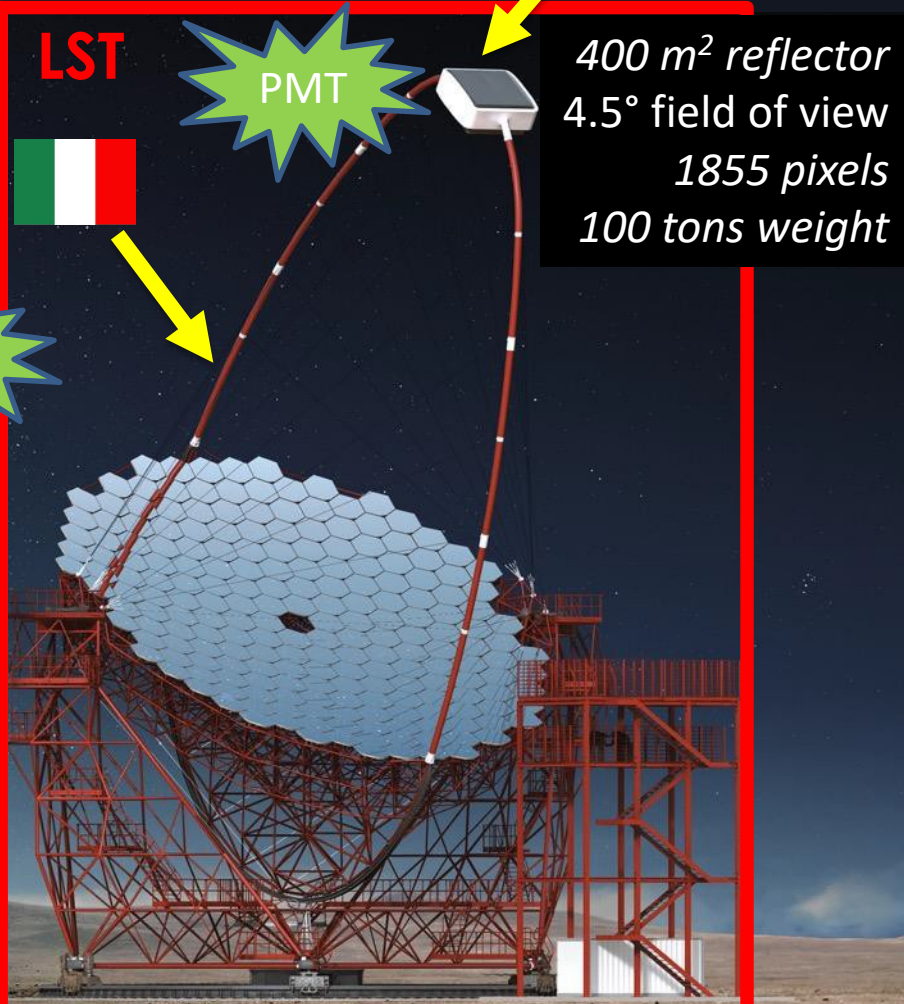


MST

2 prototype designs



LST



CTA North @ Observatory Roque de los Muchachos, La Palma, Spain



The Schwarzschild-Couder Telescope (SCT)

- **Medium size telescope for CTA**

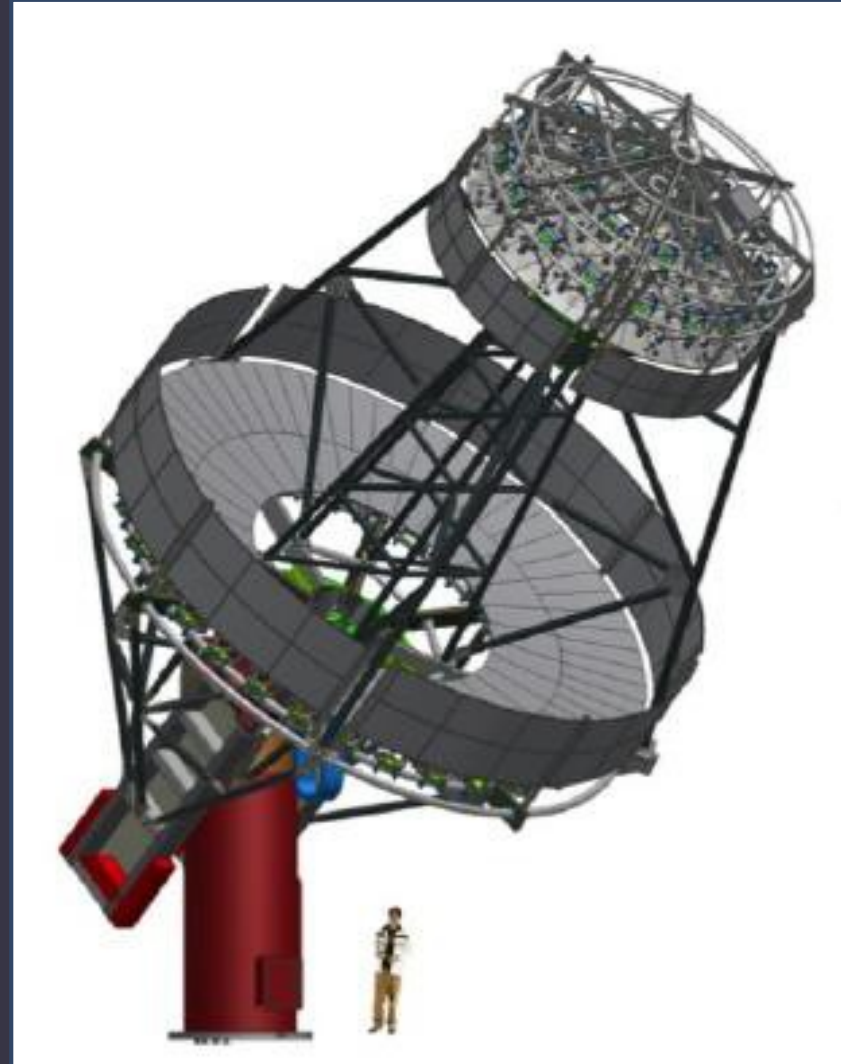
- **Dual mirror optics**

- 9.7 m primary, 5.4 m secondary
- 5.6 m focal length, $f/0.58$
- 50 m² mirror dish area
- PSF better than 4.5' across 8° FOV

- **SiPM-based camera**

- 177 modules
- 11328 SiPM pixels
- NUV-HD SiPMs by FBK / LFoundry

- **Start building a prototype SCT (pSCT) at Fred Lawrence Whipple Observatory (FLWO) in Tucson, AZ, USA**



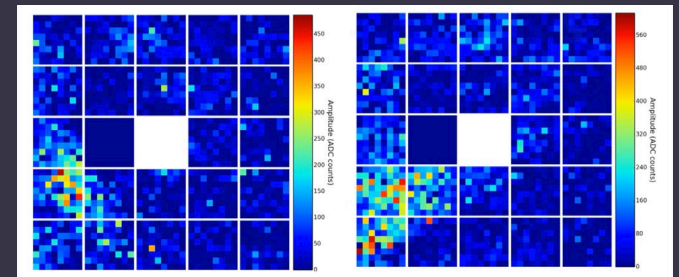
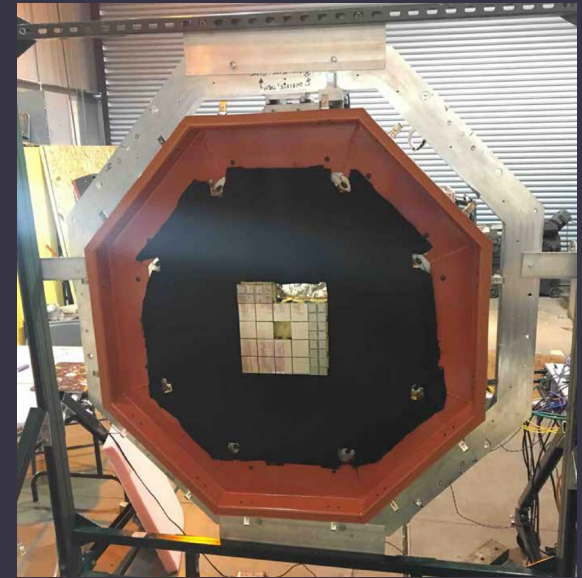
pSCT Inauguration - January 17th, 2019



pSCT camera equipped with 24 modules (central module removed for optics alignment)

Jan 23th, 2019 first shower events

Now working on the electronics upgrade, 500 k€ bid



- Responsibility of the camera electronics
 - Perugia: SiPM procurement via Lfoundry
 - SiPM tecnologia «NUVHD3 TSV lowCT» 6x6 mm²
 - 25 wafer, 17'000 SiPM
 - Bari: preamplifier ASIC (SMART) and SiPM electronics
 - Pisa: readout modules (200 moduli, 177 + spares)
 - Based on the ASIC chips designed for CTA
 - T5TEA – trigger chip
 - TARGET-C – waveform digitizer chip
 - Finanziato da CSN2 per 540k€
 - Gara multi-step a «dialogo competitivo»
 - 2019: gara per 90k€ + primo batch 150 k€
 - 2020: secondo batch 150 k€
 - 2021: terzo batch 150 k€

Anagrafica 2020

Fisici			Tecnologi		
R. Paoletti**	PA*	80	M. Bitossi	Tecnol.	50
R. Carosi	I Ric	80	R. Cecchi*	Tecn.	20
P. G. Prada Moroni	PA	40	L. Stiacchini*	Tecn.	20
D. Grasso	Pr Ric	20	A. Marchini	Tecn.	50
G. Bonnoli	AdR	100			
P. Da Vela	AdR	100			
A. Rugliancich	AdR*	70			
L. Bellizzi	Dott.	100			
S. Truzzi	Dott.*	70			
S. Silvestri	Laur.	100			
=> Sigla CSN5					
FTE		760	FTE		140

** respnaz dal 2020

Richieste finanziarie 2020

MAGIC	Turni presa dati	10
	Turni tecnici	20
	Meetings	15
CTA	Missioni x Attività LST	15
	Missioni x Attività SCT	20
	Collaboration meetings e conferenze	15
	Produzione elettronica readout x pSCT (90+150 nel 2019, 150k nel 2021)	
	Produzione elettronica readout x pSCT	150
	Meccanica per camera pSCT	10
Totale		345