

# Status of the CTA Project

Masahiro Teshima

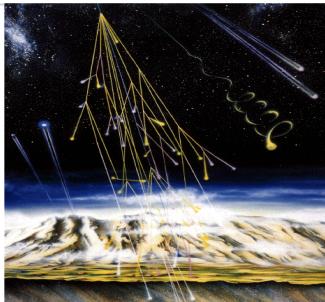
ICRR, the University of Tokyo



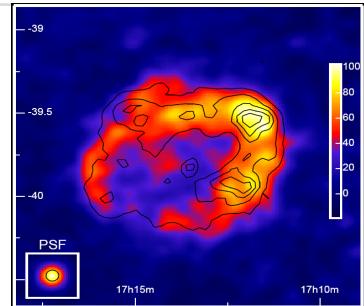


cherenkov  
telescope  
array

# Cherenkov Telescope Array



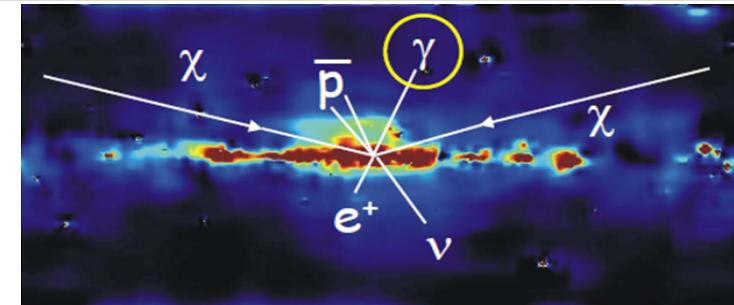
宇宙線の起源



宇宙の巨大加速器

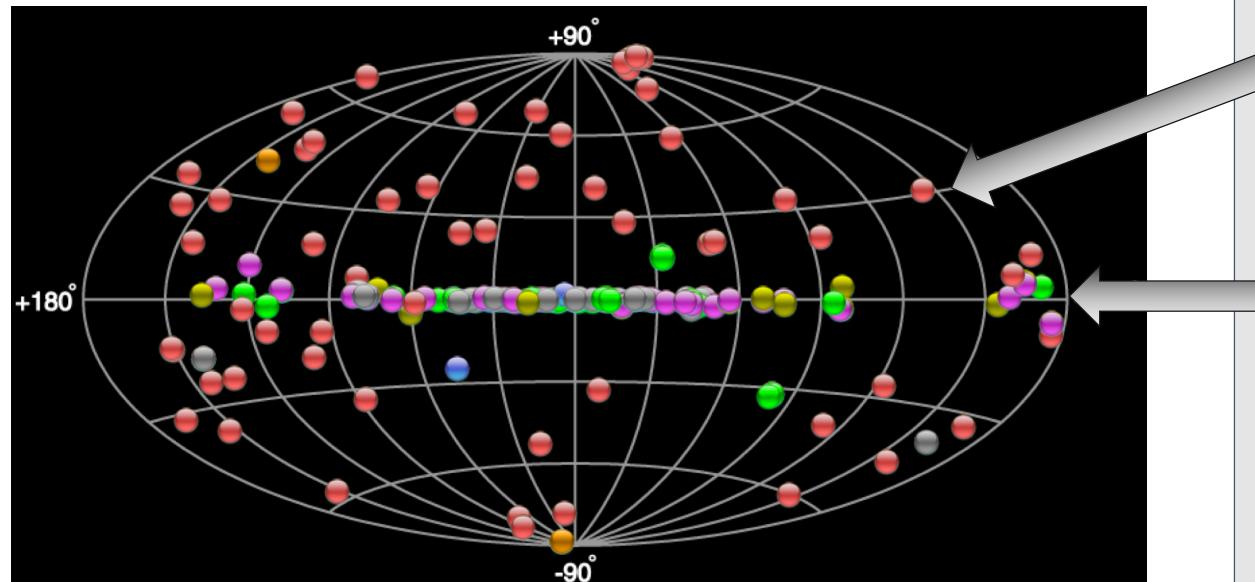


ブラックホールと  
高エネルギー現象

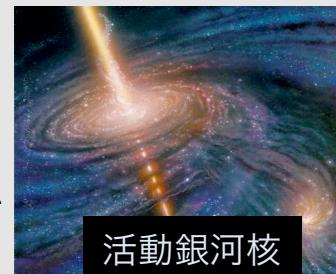


暗黒物質の探索

- 宇宙線の起源（宇宙の巨大加速器を探す）
- ブラックホールに伴う宇宙の高エネルギー現象の研究
- 暗黒物質対消滅からのガンマ線の探索



系外天体



活動銀河核

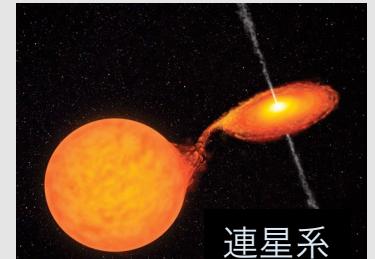


ガンマ線バースト

銀河系内天体



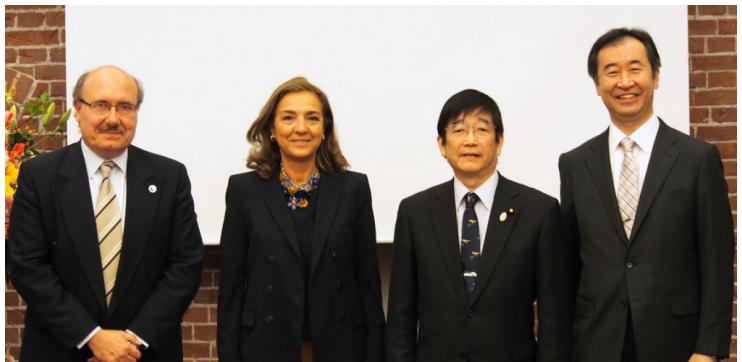
超新星残骸



連星系



11. Oct. 2015 LST-1 First Stone Ceremony at ORM



14. Apr. 2016 CTA-LST1-4 Signing Ceremony, Prof. Rebolo, Secretary of State C. Bella, Vice Minister Tomioka, Prof. Kajita



16-20.May.2016 CTA Consortium General Meeting in Kashiwa



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# SITES La Palma Spain, Paranal Chile





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# Decision on CTA HQ & SMC

## CTA Headquarters (HQ)



CTA HQ to be in Bologna, Italy, to be hosted by INAF-Bologna in a new building

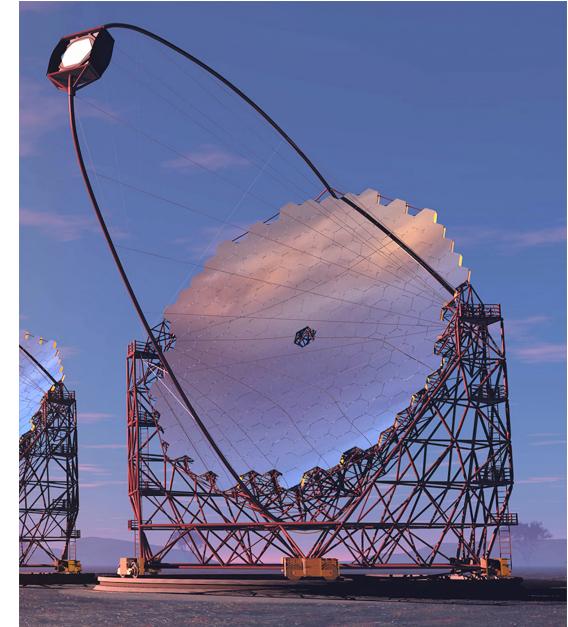
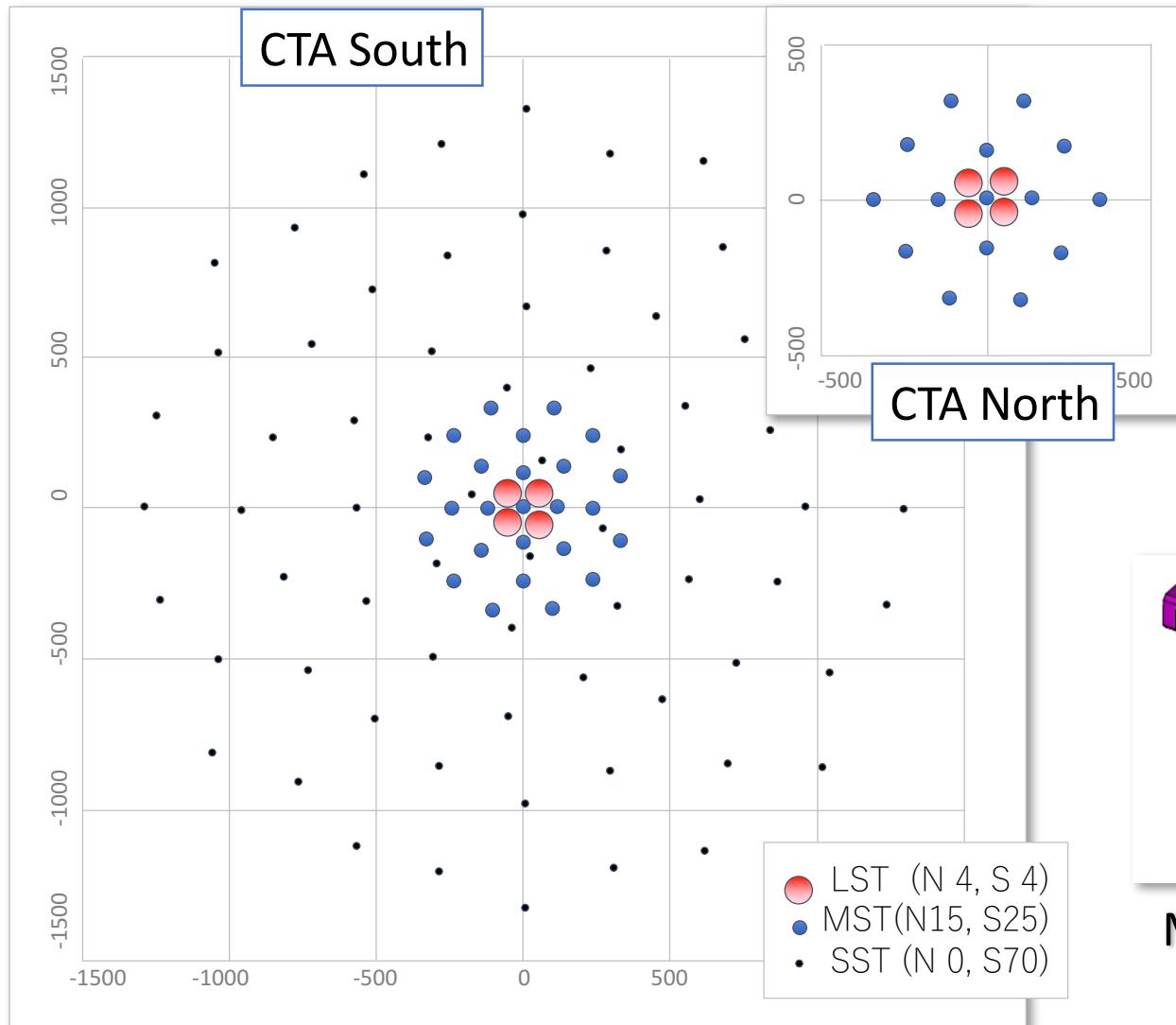
## CTA Science Management Center (SMC)



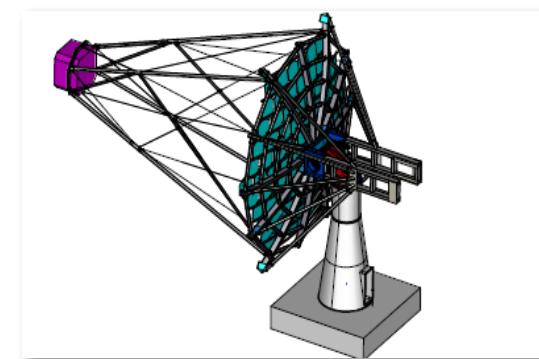
CTA SMC to be in Zeuthen, Germany, to be hosted by DESY in a new building

# CTA Array Configuration

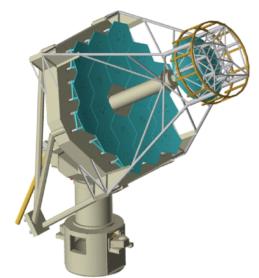
CTA is all sky observatory consisting of two stations in South and North



LST 23m (8MEuro)



MST 12m (2.5MEuro)



SST 4.3m  
(0.5MEuro)

# Threshold Implementation Plan in Business plan

Funding situation at threshold should allow to be constructed

| Site  | Telescopes | Threshold Arrays | Baseline Arrays |
|-------|------------|------------------|-----------------|
| North | LST        | 4                | 4               |
|       | MST        | 5                | 15              |
| South | LST        | 0                | 4               |
|       | MST        | 15               | 25              |
|       | SST        | 50               | 70              |

South: additional LSTs highly desirable, but not required for threshold

North: additional MSTs highly desirable, but not required for threshold

Telescope cost: South ~90 M, North ~60 M

# LST Project : International Effort

BR, CH, DE, ES, FR, IN, IT, HR, JP, SE

FPI/Elec (JP/IT/ES)

Camera body (ES/DE)

CSS (FR/IT)

Flywheel, UPS (DE/ES/JP)

Comp. (JP)



MIR (JP)

Interface PL (DE/BR/JP)

Actuator (JP/CH)

CMOS-Cam (DE/JP)

StarGuider (SE)

CalibBox (IN/IT)

Structure (DE)

Access Tower (DE/ES)

Drive (DE/FR/ES)

Bogie (DE/ES)

Rail (DE/ES)

Found. (DE/ES)

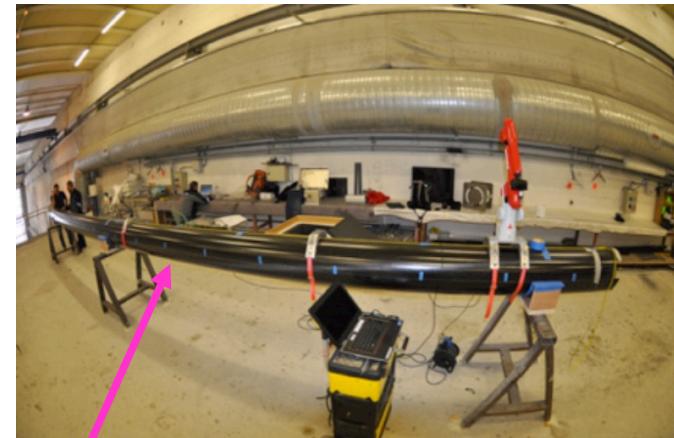


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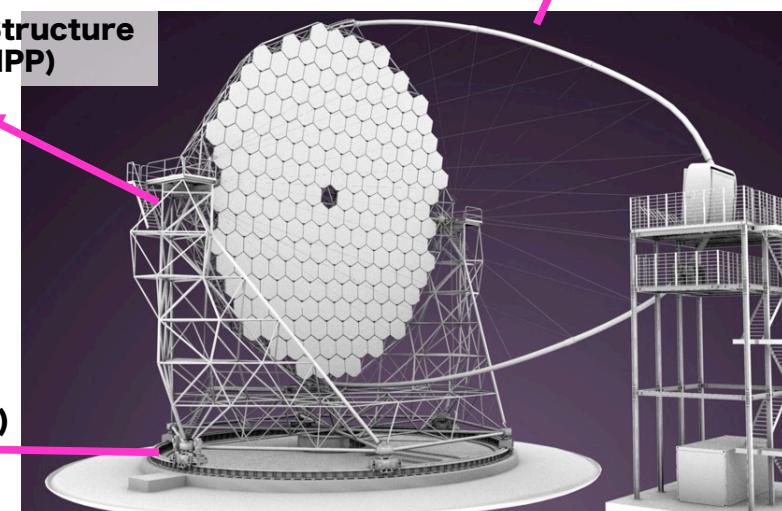
# Status of the LST1 construction is ongoing at La Palma, Oct 2016



**Camera Supporting Structure  
(France, Italy)**



**Telescope Structure  
(Germany MPP)**



**Bogie and Rail  
system  
(Spain, Germany)**

**Computers and Network  
(Japan)**



**UPS (Japan)**



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# Status in March 2017

## Waiting the permission for the construction



# the 1st Mirror shipment to La Palma

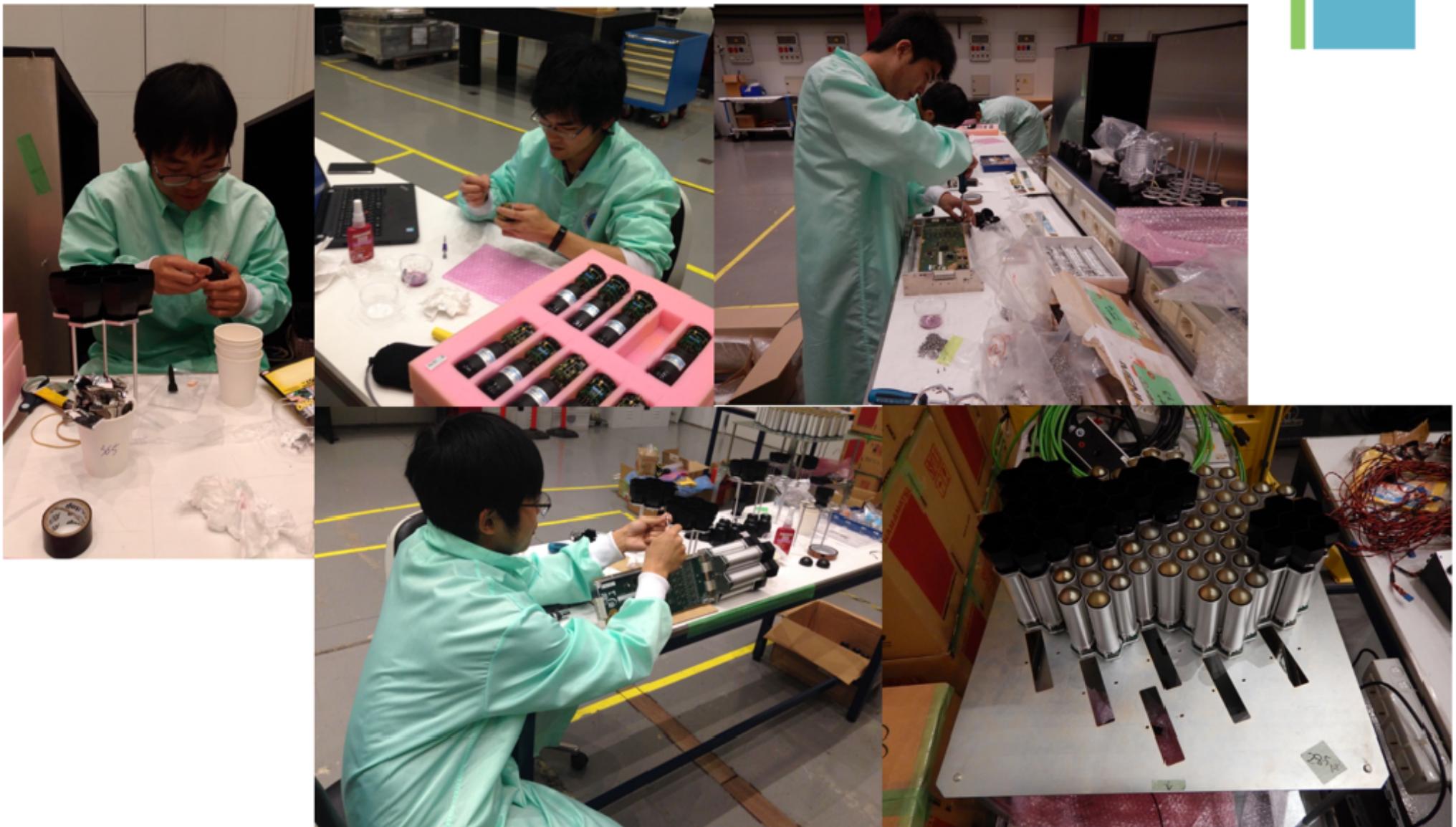
- 1st shipment : 93 mirrors and 7 samples in two 40ft containers
  - 13th Jan.: left ICRR
  - 24th Jan.: left Japan
  - 7th March: will reach La Palma





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# PMT-Cluster Assembly work at IAC (Tenerife)





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# First Light of LST-1 on 14. Nov. 2017

## Photo-montage



© Antonios Dettlaff



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# We are building CTA-LSTs in North

- The business plan.
- CTA construction will be 2018-2023, Then full observation may start 2023.
  
- CTA LST-1 will be inaugurated on 14<sup>th</sup> of November 2017.
- The construction of CTA LST2-4 will be done 2017-2019.
- CTA LST 5-8 may come in South after 2019.

