

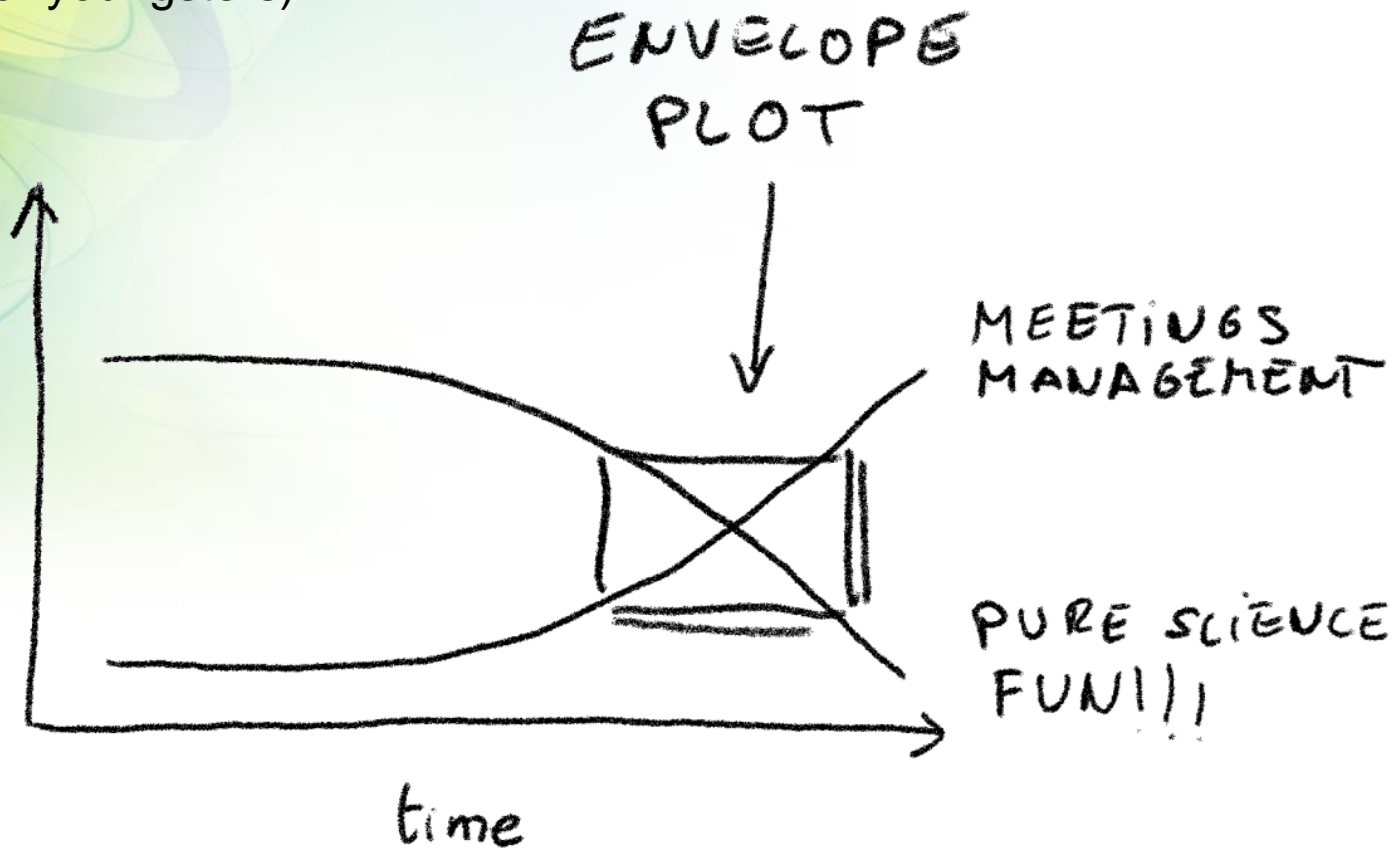


20 Years of the IAC astroparticle group

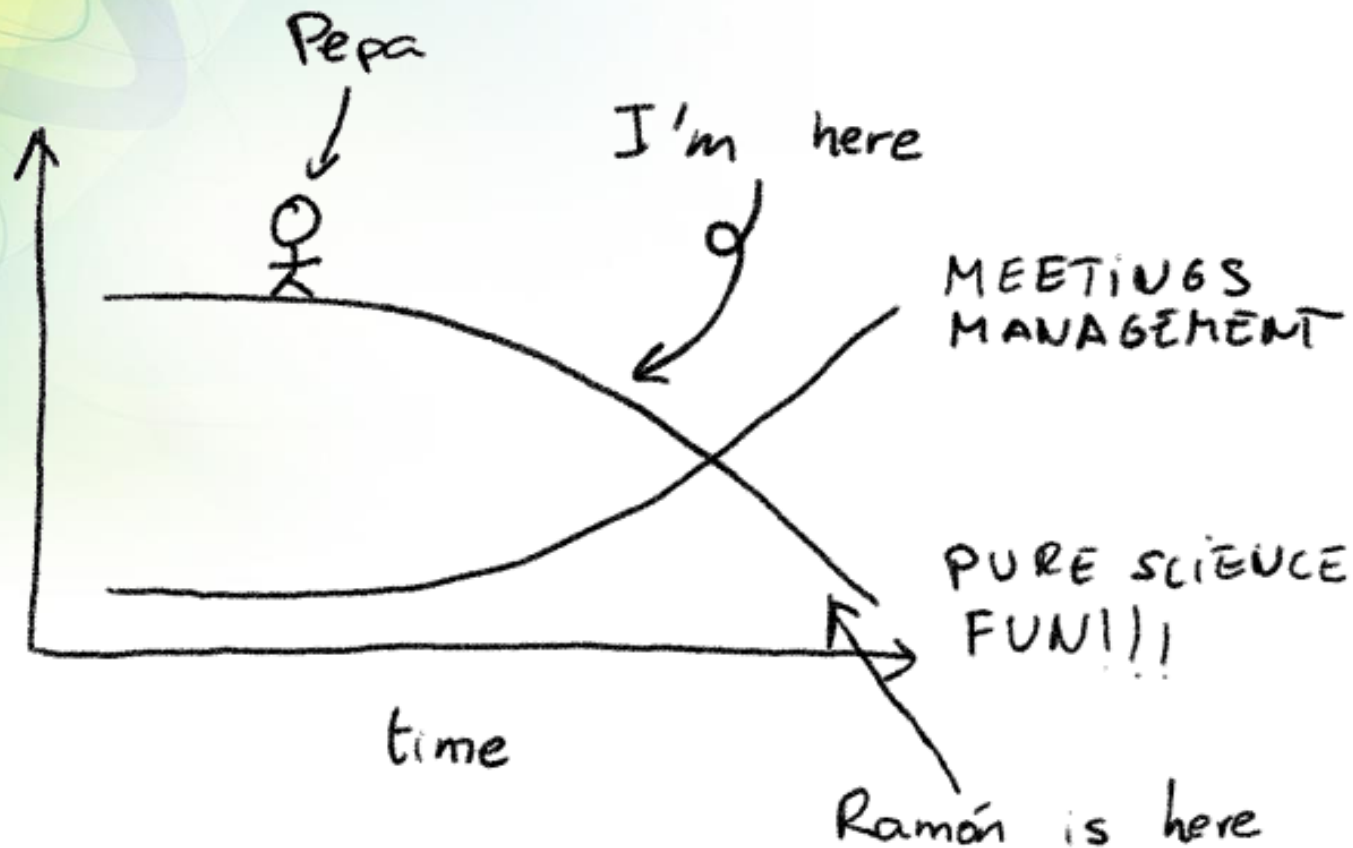
C. Delgado
J. Becerra
(on behalf of R. Garcia)

Why Ramon is not here...

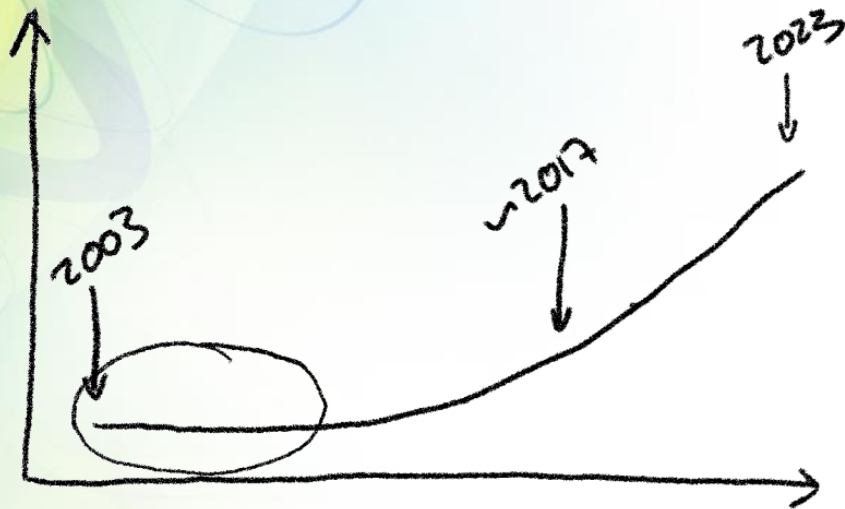
(a lesson for youngsters)



Why Ramon is not here...



What I am going to tell you (all inaccuracies are on me)



↑
time
My history / story:

no pictures → you will have to use your imagination

The background features a soft, abstract design with flowing, wavy lines in shades of light green and pale blue. These lines are layered and semi-transparent, creating a sense of movement and depth. The overall color palette is clean and fresh, with a gradient that transitions from a slightly darker green on the left to a very light, almost white, area on the right.

The beginnings

Casting
~ 2002

MIT



S. Ting



F. Sanchez

← IAC

IAC



R. Garcia



J. Berdugo

CIEMAT



IAC ~ 2002



AMS
CONSTRUCTION
COSMIC RAYS

COLLABORATION



IAC ~ 2002



RICH
ISOTOPES



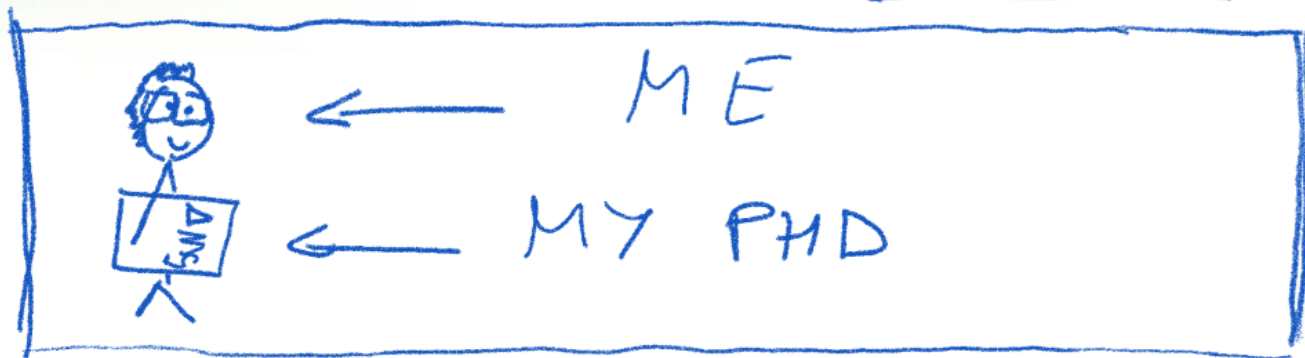
7
Li
CR

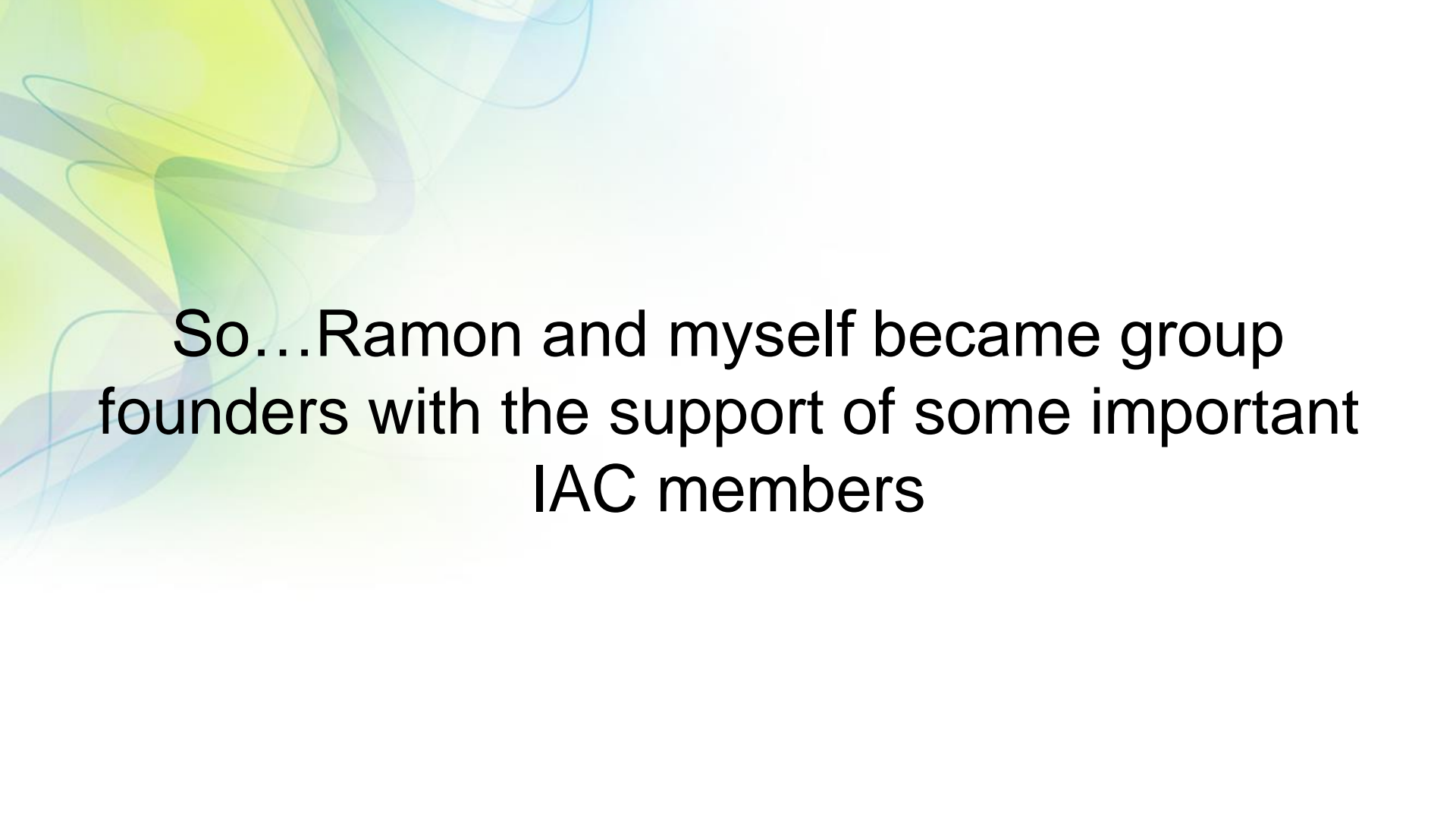
MADRID

2003



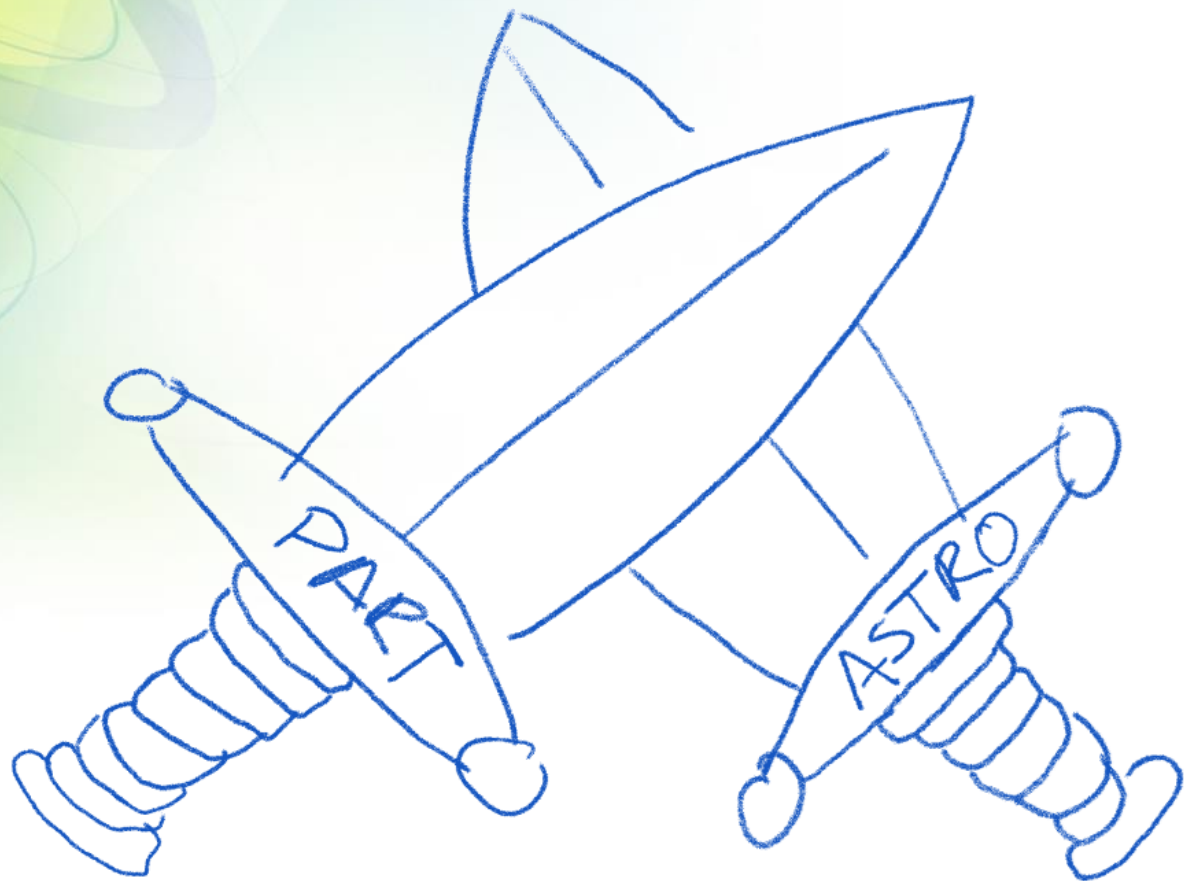
TENERIFE





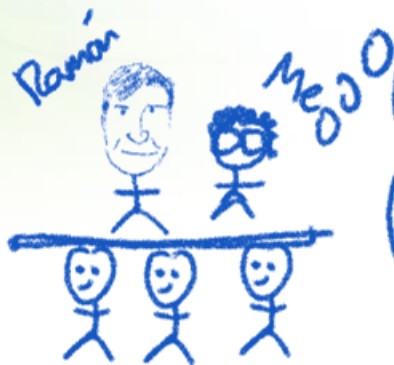
So...Ramon and myself became group
founders with the support of some important
IAC members

CULTURAL CLASH!!!



The group in 2003

TEWNERIFE



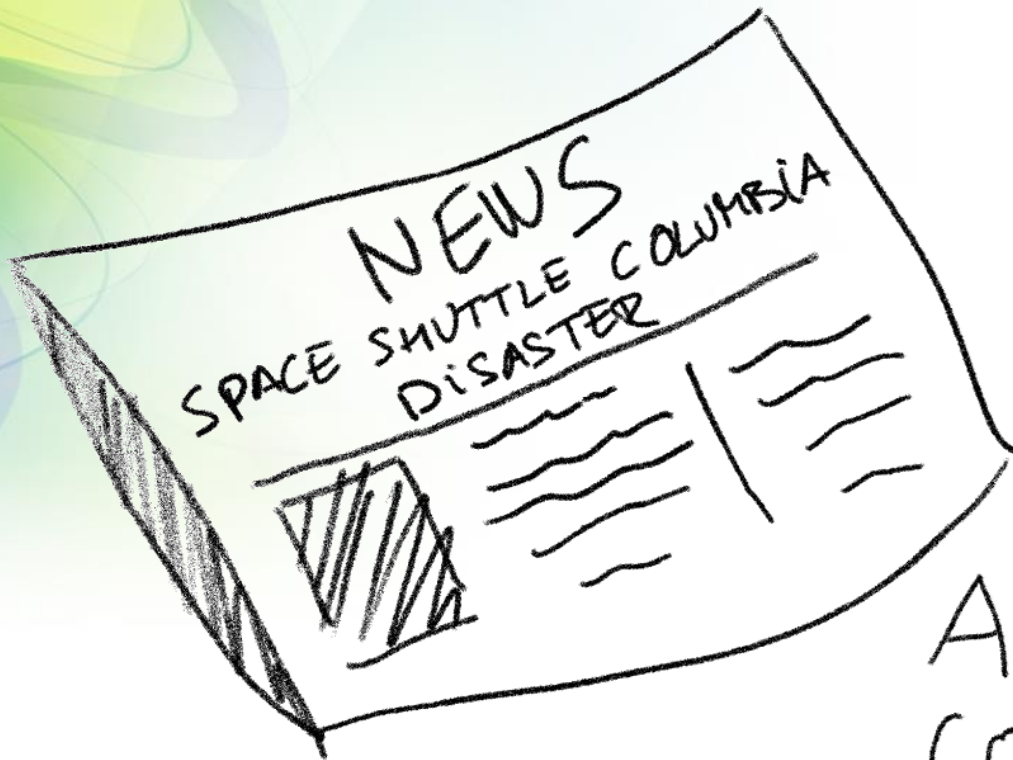
SHOULD
JOIN
MAGIC

LA PALMA



MAGIC!!!

The group in 2003



AMS
COMPROMISED

So, in 2004

ΔT IFAE



D. TORRES



M. MARTINEZ



J. RICO

EGRET ANALYSIS
SNR EMISSION
CR
CRAZY IDEAS

So, in 2004

AT ORM

WOW, 1ST TIME
I SEE THE SKY

Ramon



ooooo
Me

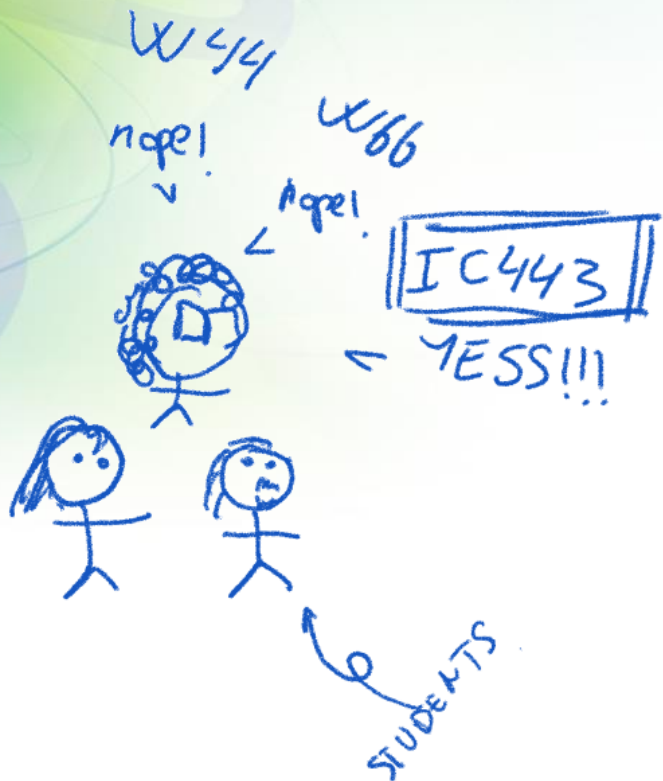
HOW DOES IT WORK?
CAN WE COLLABORATE?

LET'S DO
SUR

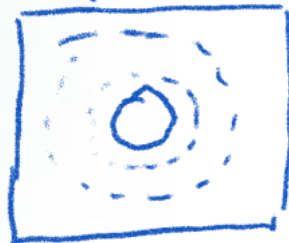


J. CORTINA

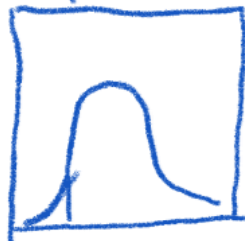
EARLIER WORKS



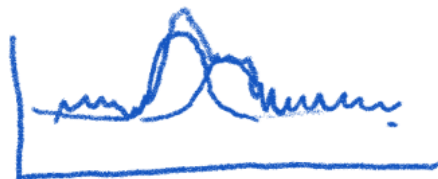
SKY MAP



PDF



CELESTINA



SECONDARY
PULSE
EXTRACTION



CULTURAL PEACE!!!



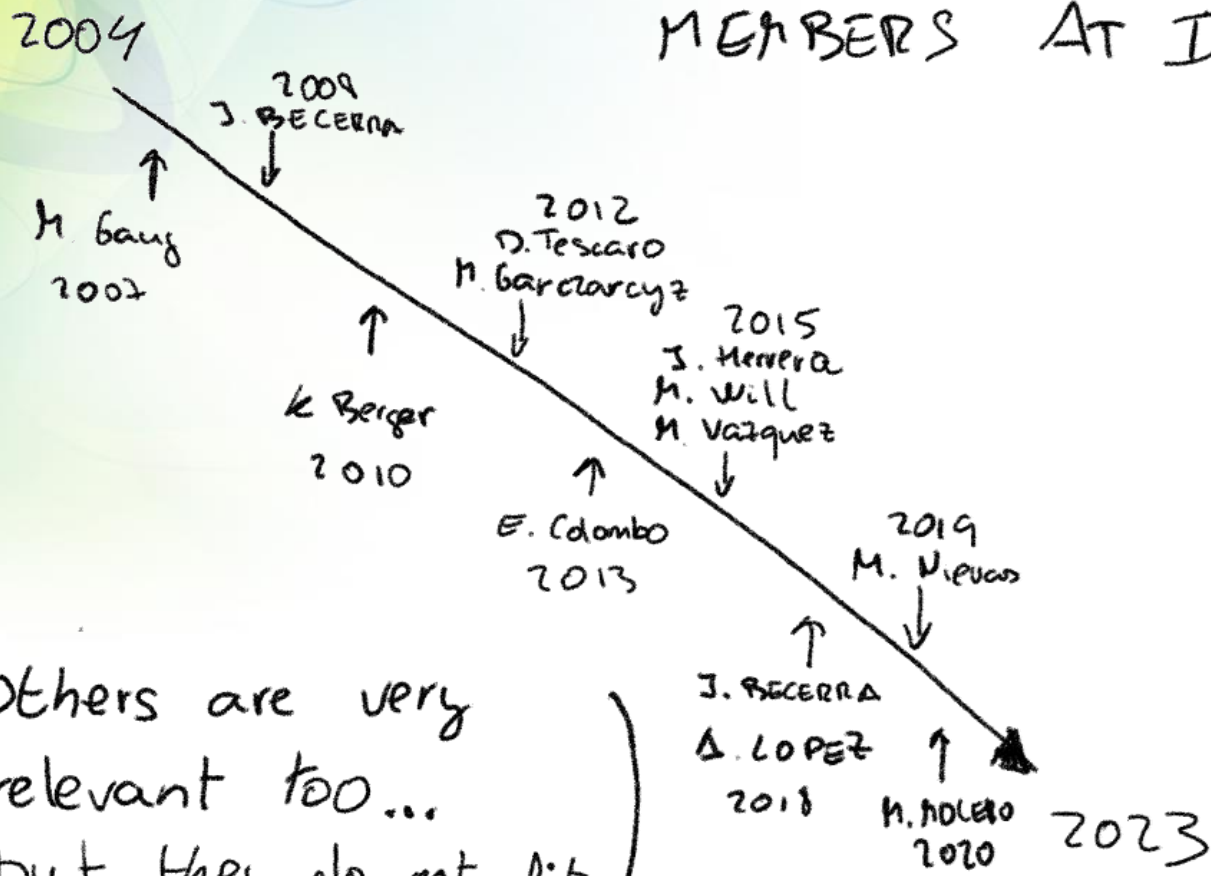


And that was the seed for the group...



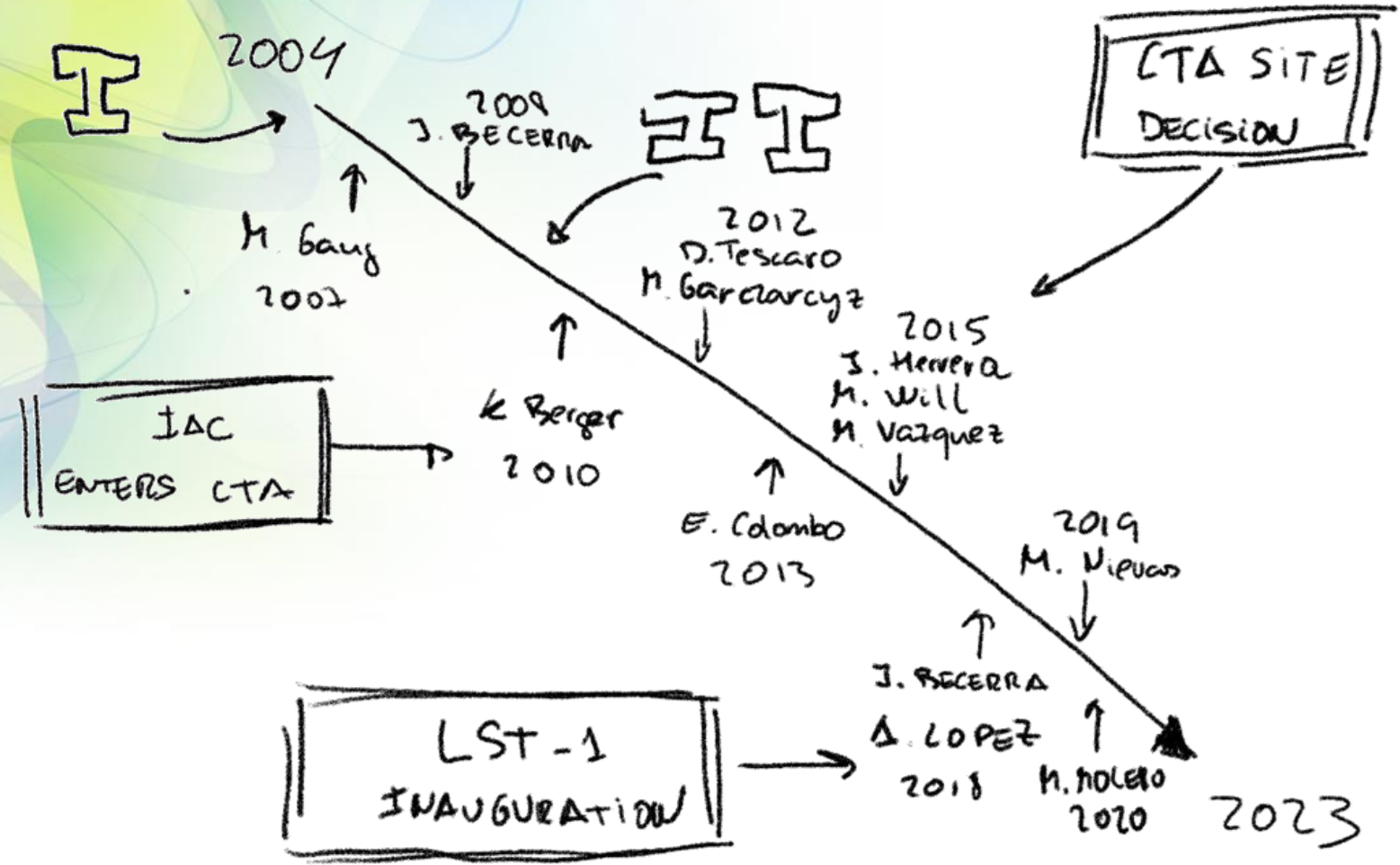
The rest is history (no story) ...

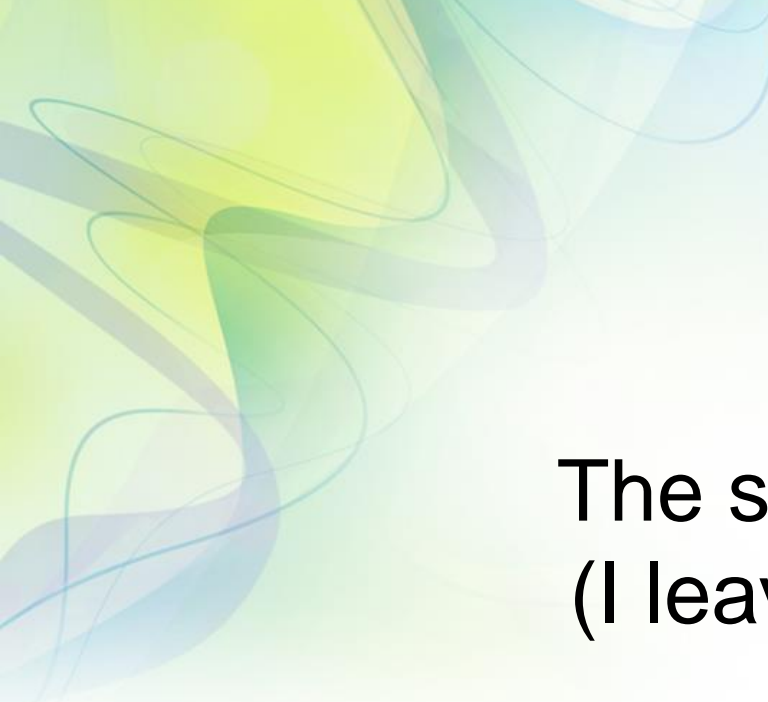
"FAMOUS" MAGIC MEMBERS AT IAC



(Others are very relevant too... but they do not fit)

HIGHLIGHTS III





The serious business
(I leave this to Pepa)

...and again Carlos is running from me

Pepa coming for PhD!!!!
Do not look back!

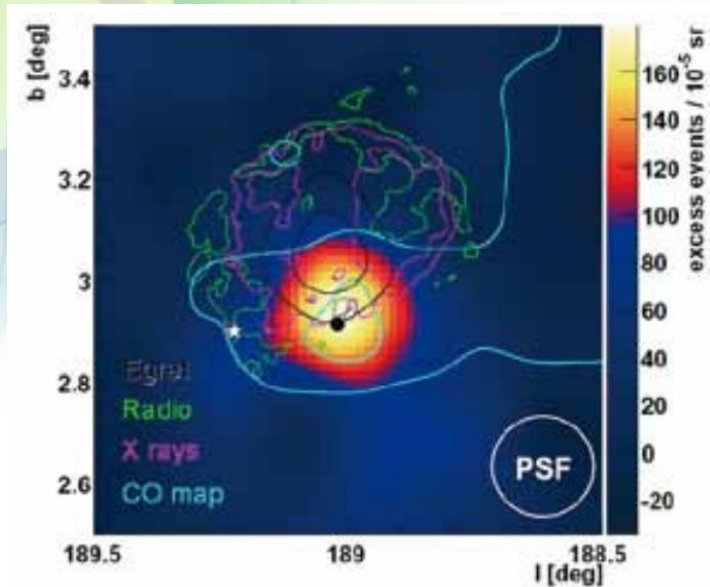


CIEMAT



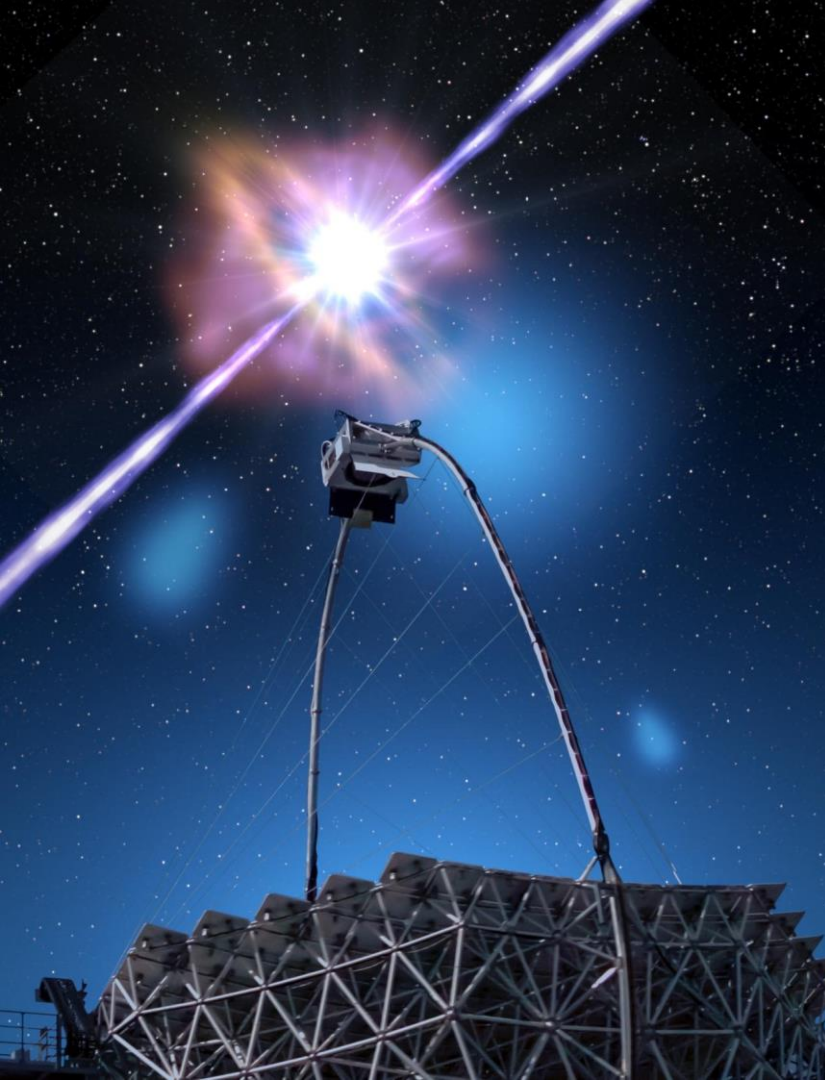
Astroparticle physics @ IAC

IC443



The group started with galactic studies of supernova remnants, Mayte Costado thesis

Carlos and Markus Gaug were also quite involved in technical works, both from software to hardware: Inhomogeneities in Camera and DT Flatfielding Campaign, Secondary Pulse Extraction...



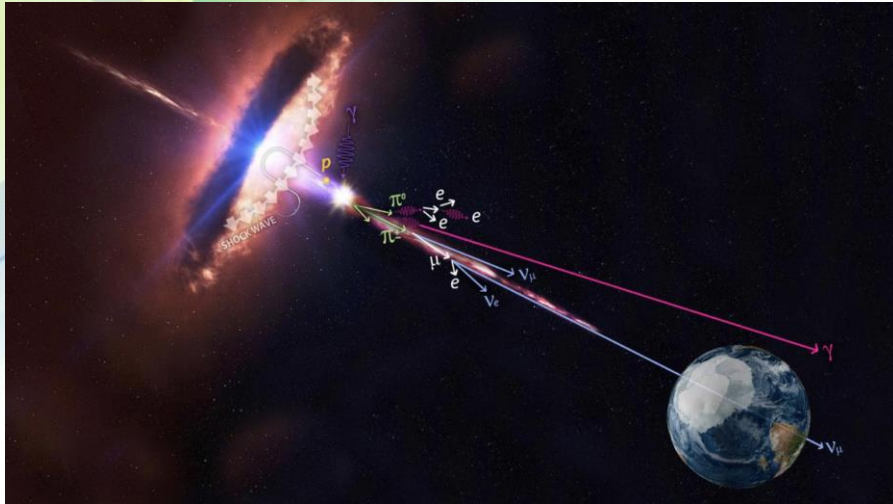
GRB searches

Markus Gaug and Pepa involved in the GRB searches...no detections but quite some night calls as GRB advocates and analysis of “boring” flux upper limits since 2007 😊

At some point I lost hope for my PhD thesis and we continued as GRB collaborators but focusing the PhD work on Active Galactic Nuclei (AGNs)

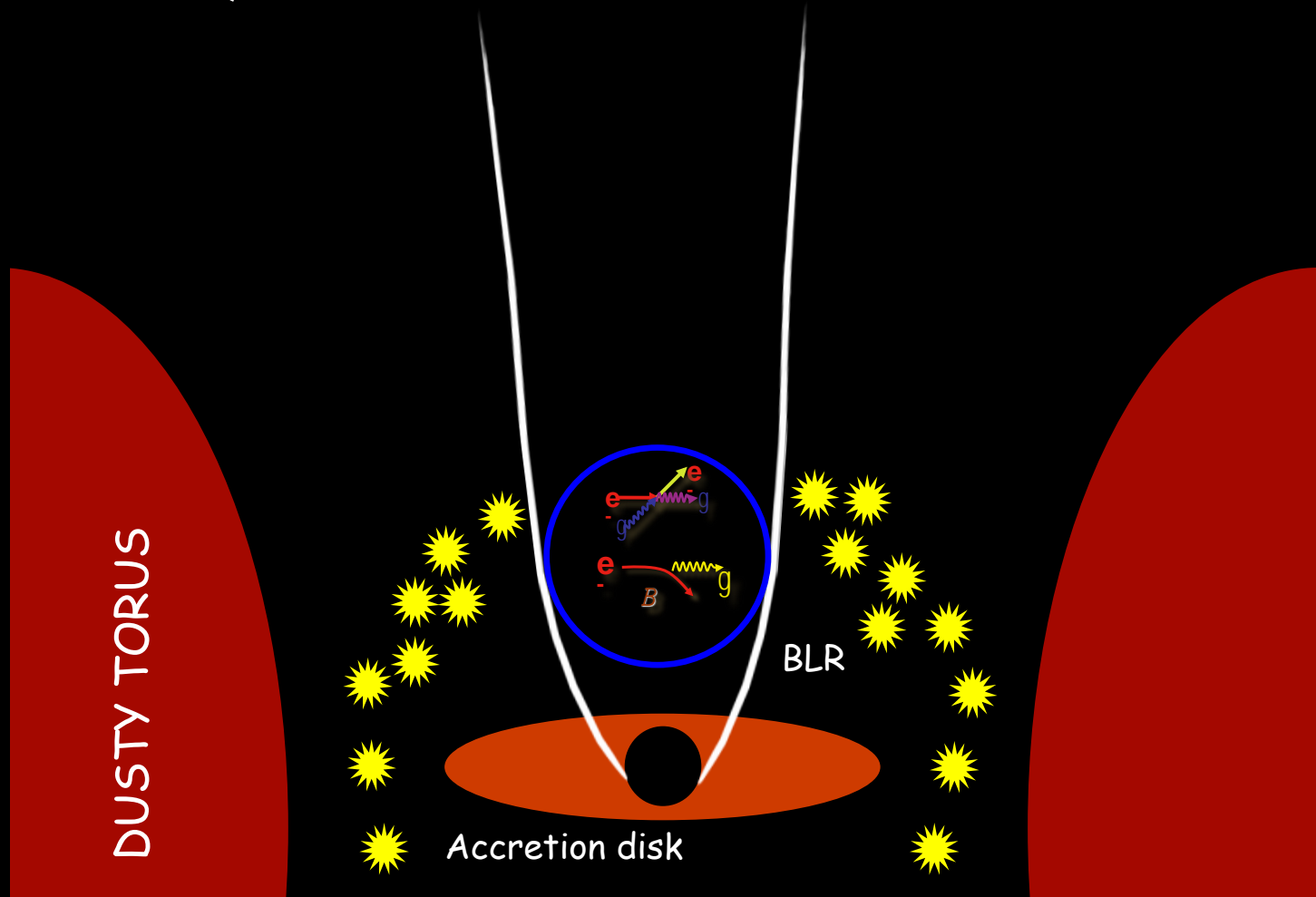
But still MAGIC effort continued making the first GRB detection on 2019!!

Active Galactic Nuclei (AGNs)

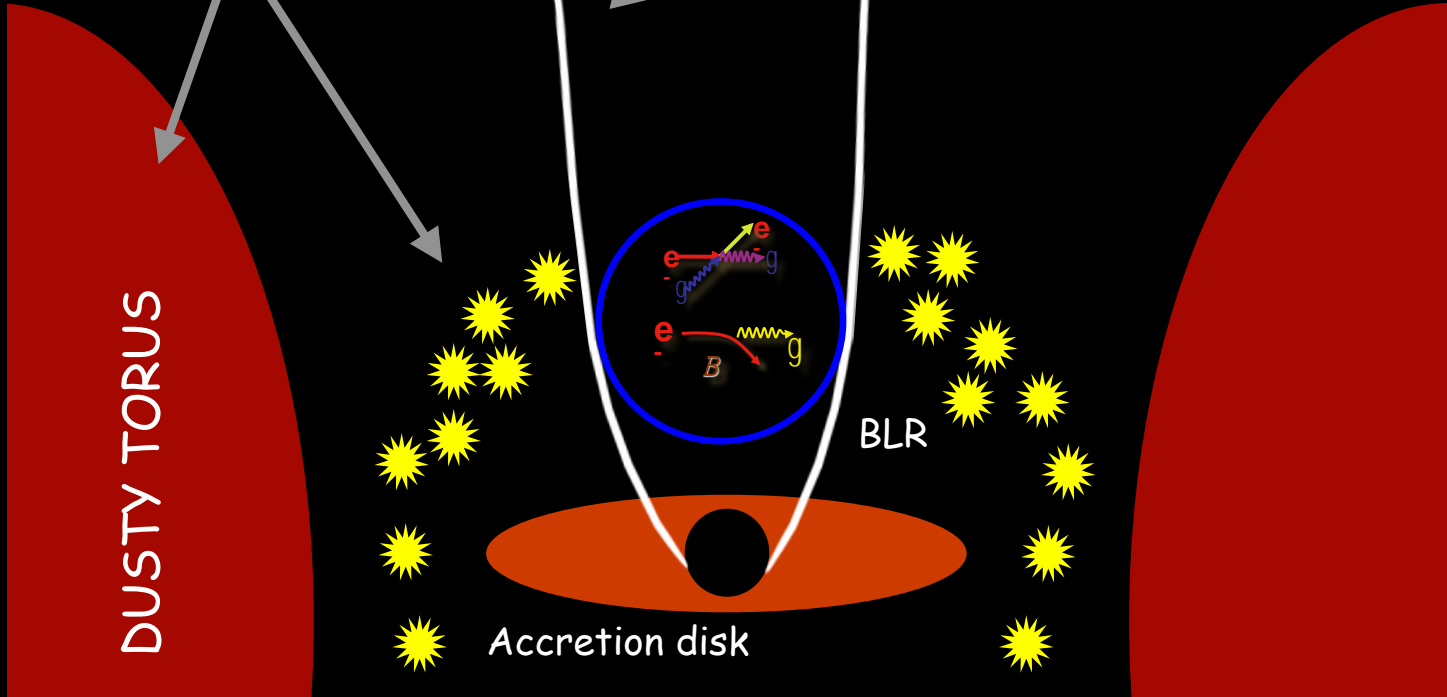
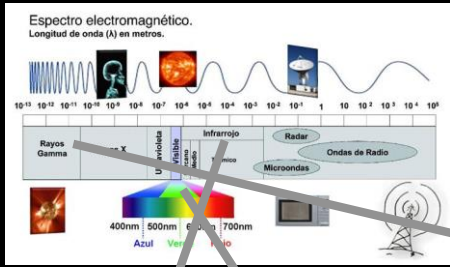


- During the first phase of my PhD, I got involved in a number blazar analysis but I was really worry that I could only detect the Crab Nebula...I was loosing hope again in this new field
- Luckily MAGIC-II was completed and stereoscopic observations changed completely our view of the extreme extragalactic sky
- The group is nowadays invovled on a large number of AGN projects, I will just mention one of my favorite topics but we are working on many others...

FSRQs: the “canonical” scenario!

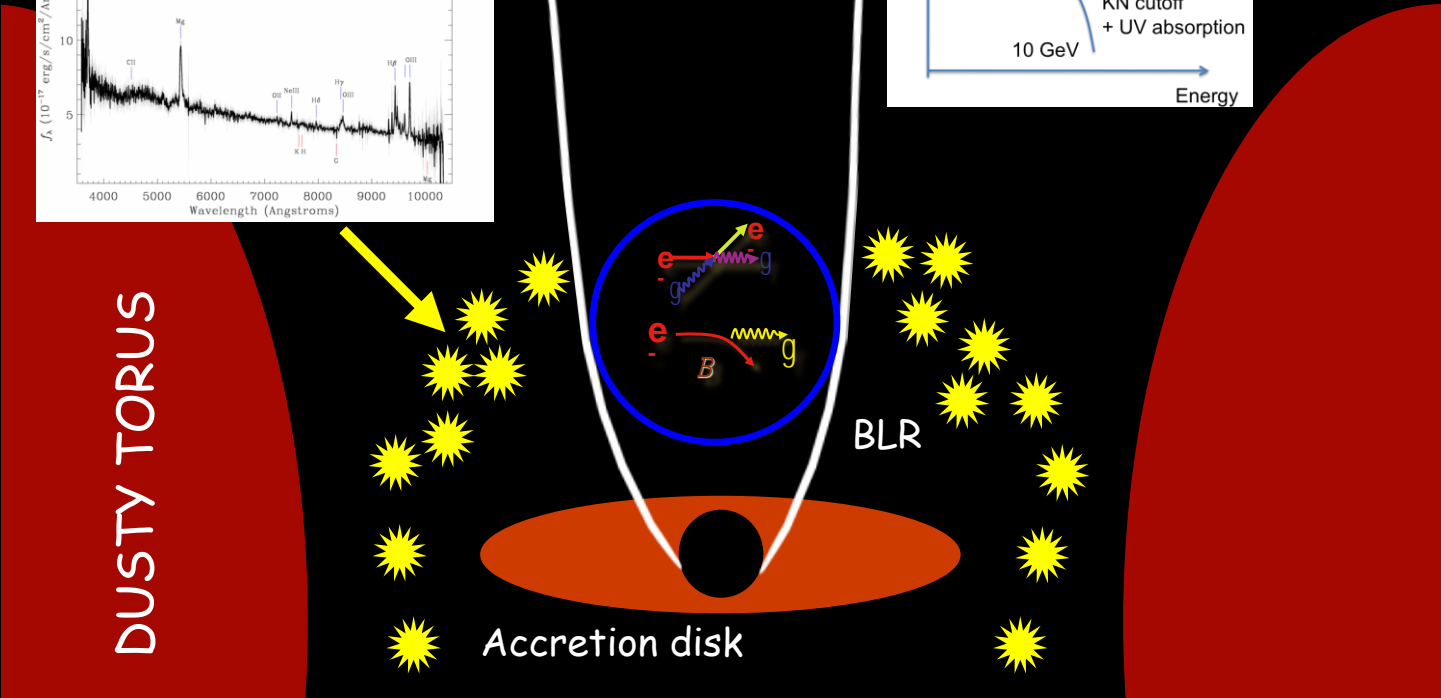
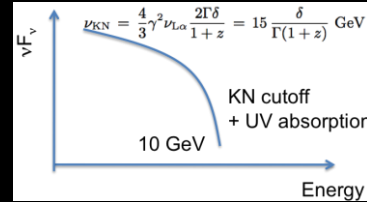
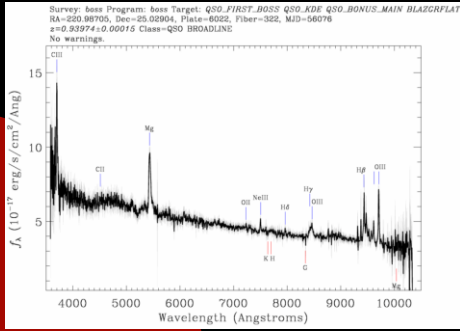


FSRQs: the “canonical” scenario!



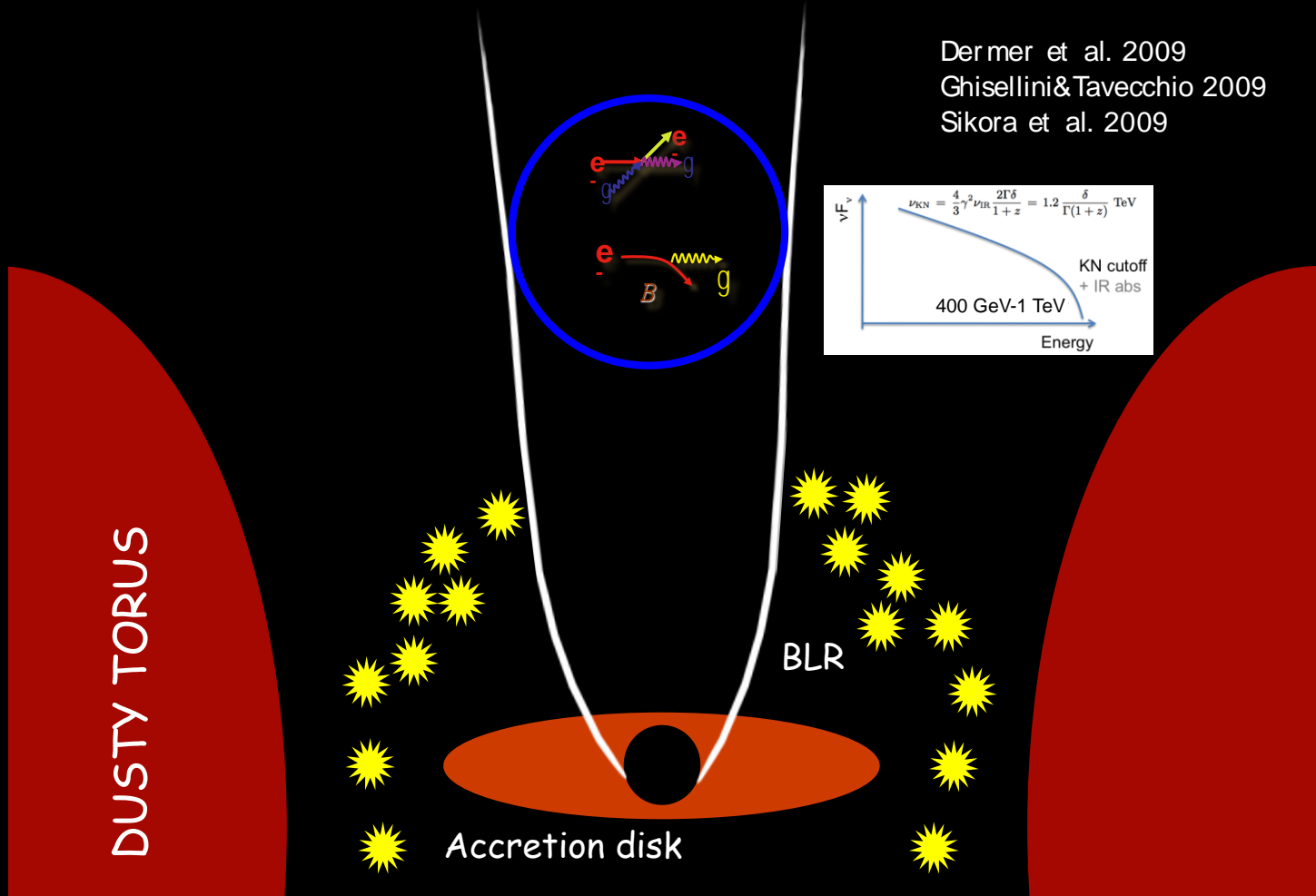
FSRQs: the “canonical” scenario!

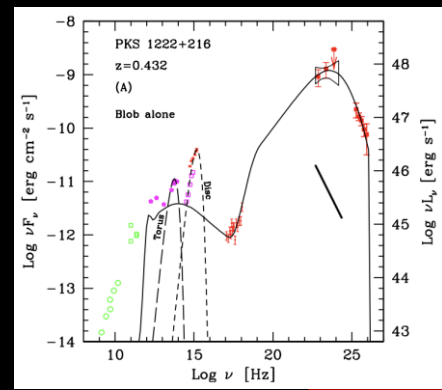
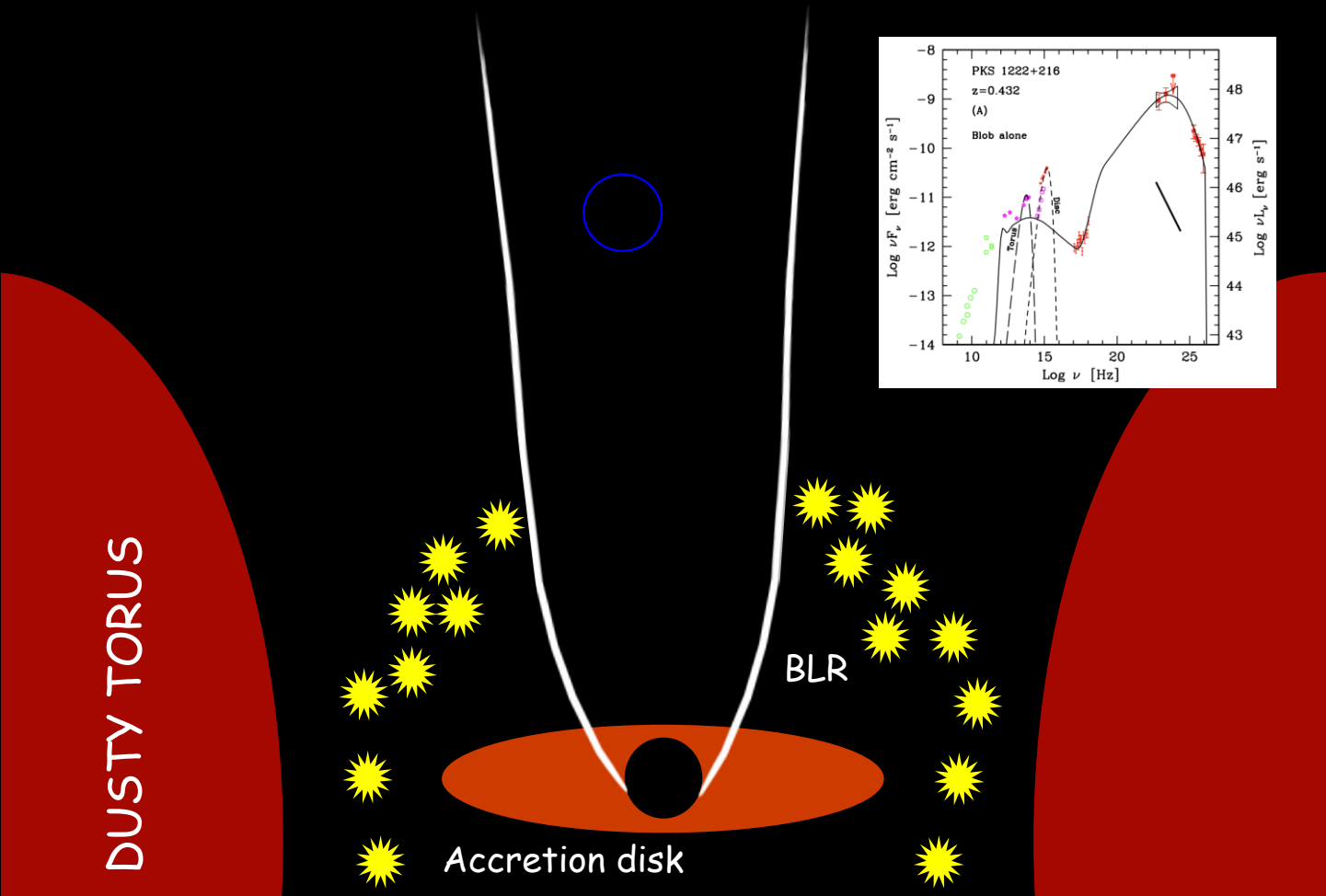
Dermer et al. 2009
 Ghisellini & Tavecchio 2009
 Sikora et al. 2009



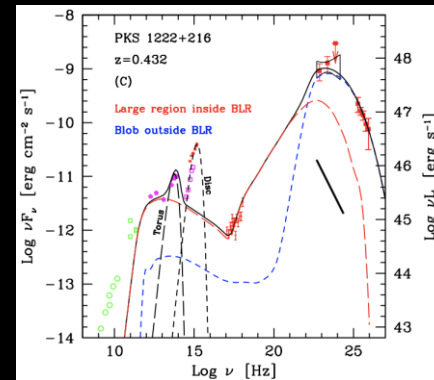
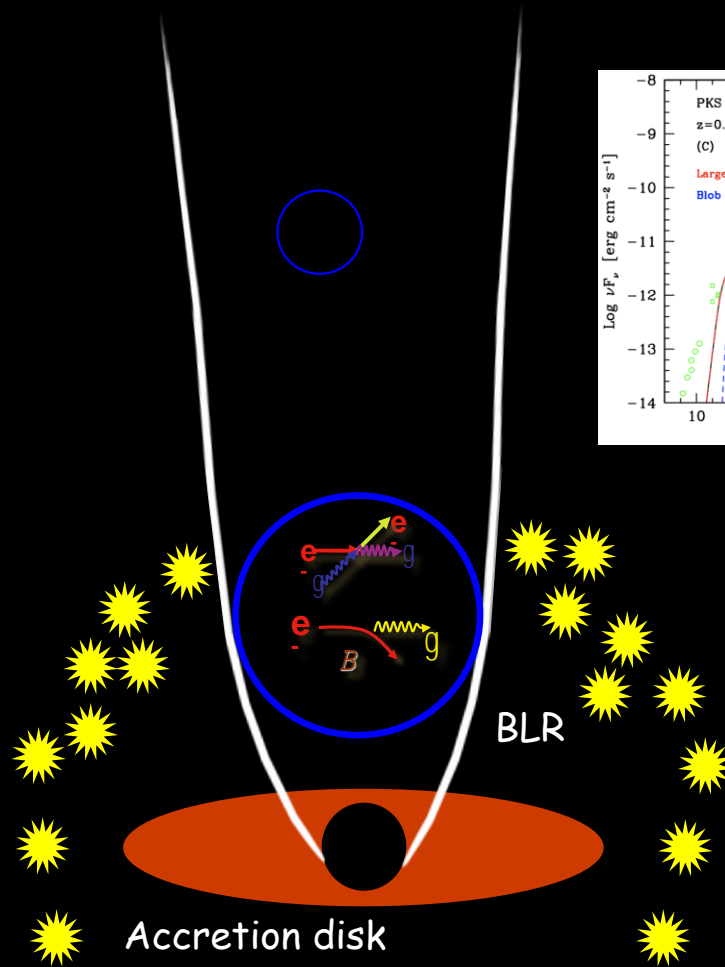
FSRQs: the “far dissipation” scenario

Dermer et al. 2009
Ghisellini & Tavecchio 2009
Sikora et al. 2009

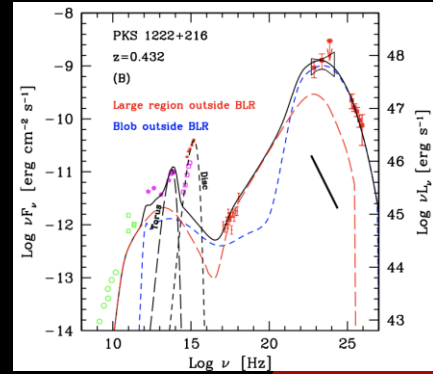
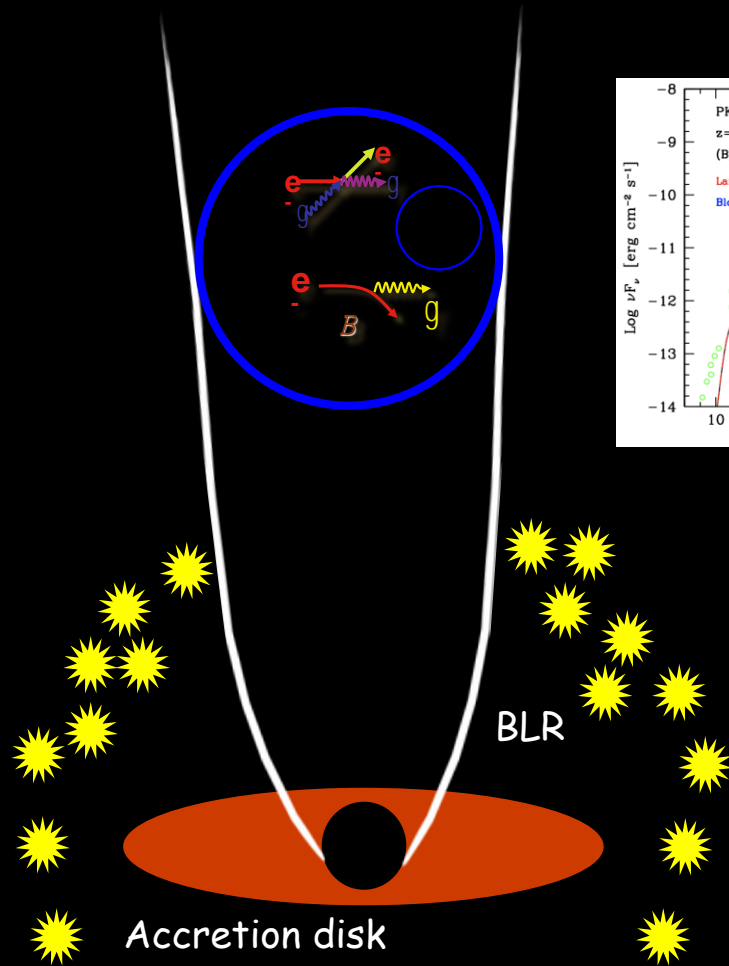




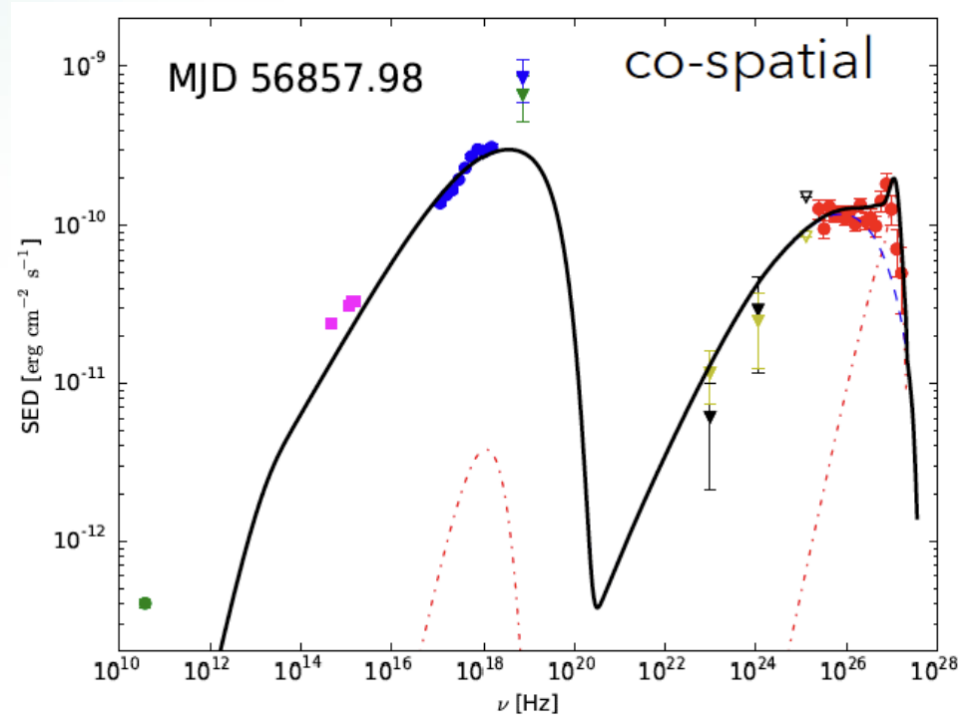
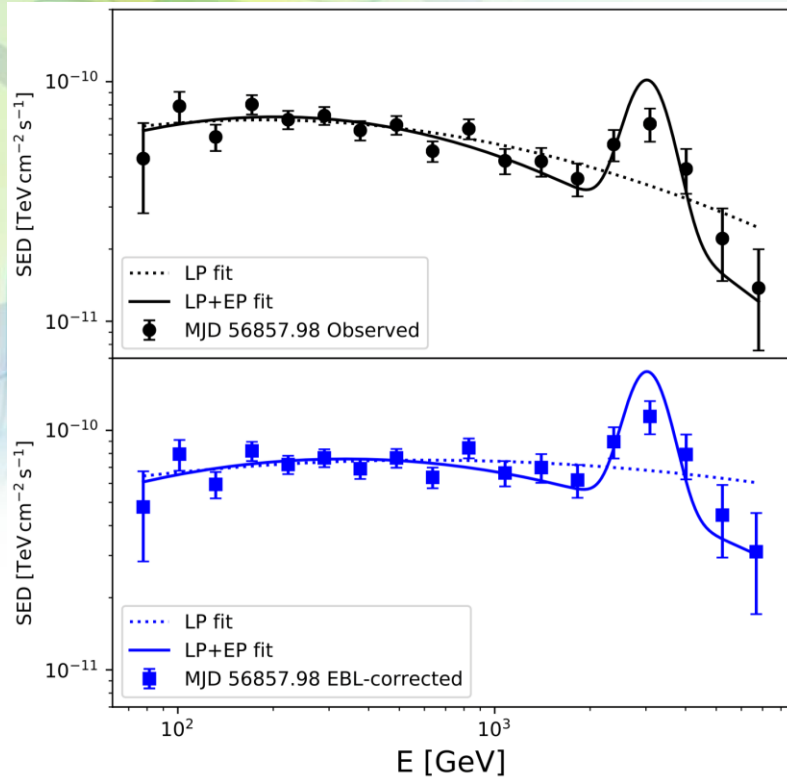
DUSTY TORUS



DUSTY TORUS

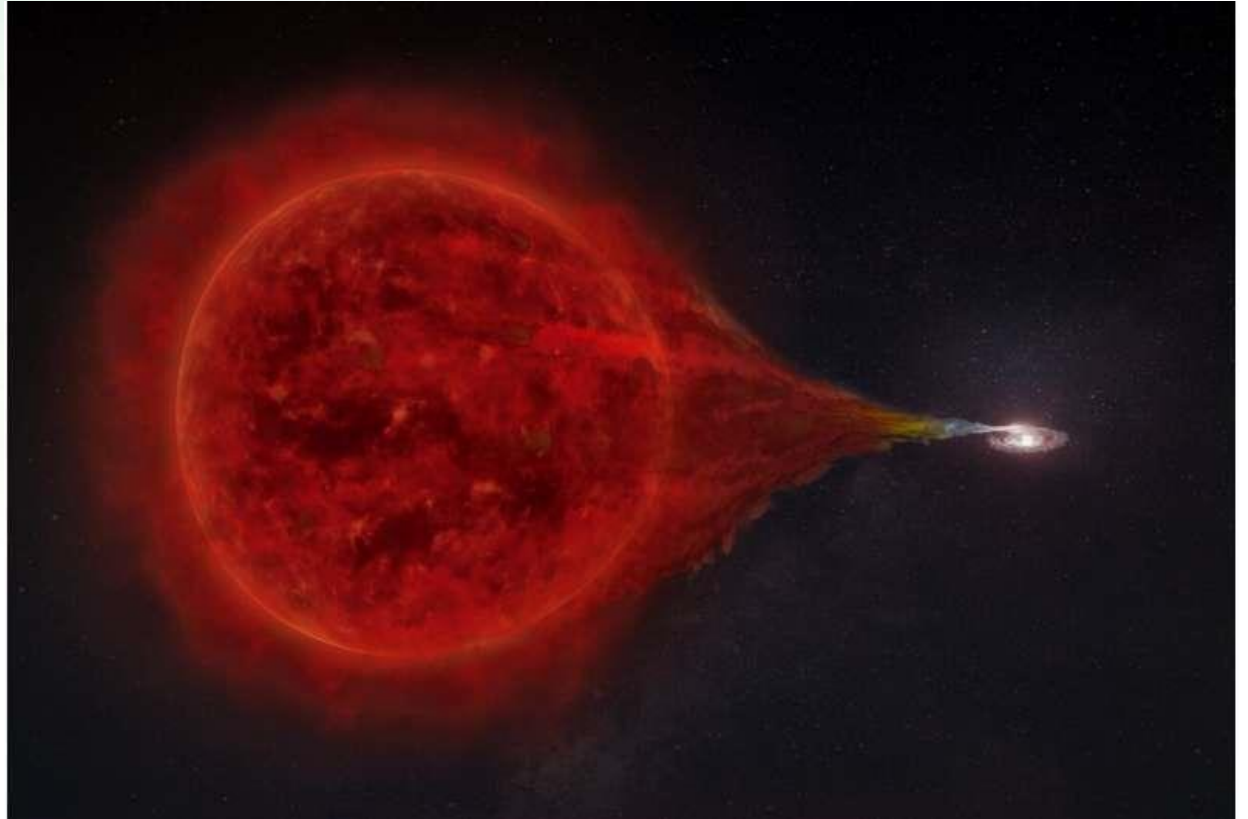


Structured jets



Science topics @ IAC exponentially increased

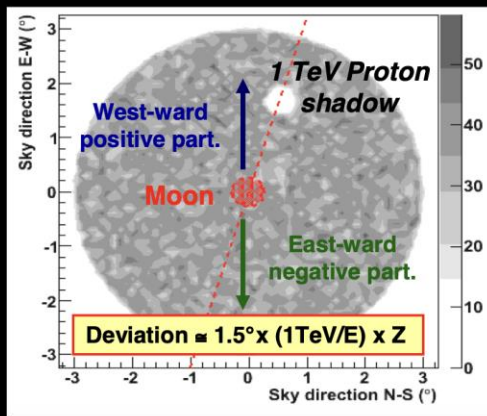
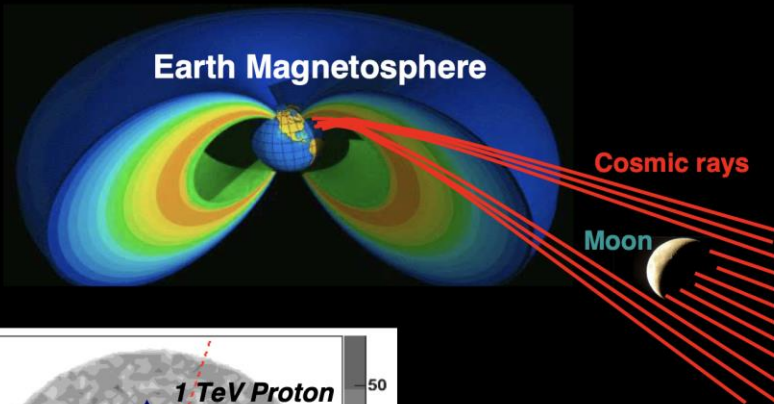
- Galactic transients
- Binary systems
- Microquasars



Science topics @ IAC exponentially increased

- Galactic transients
- Binary systems
- Microquasars
- Moon Shadow
- Dark Matter Searches

Earth-Moon spectrometer

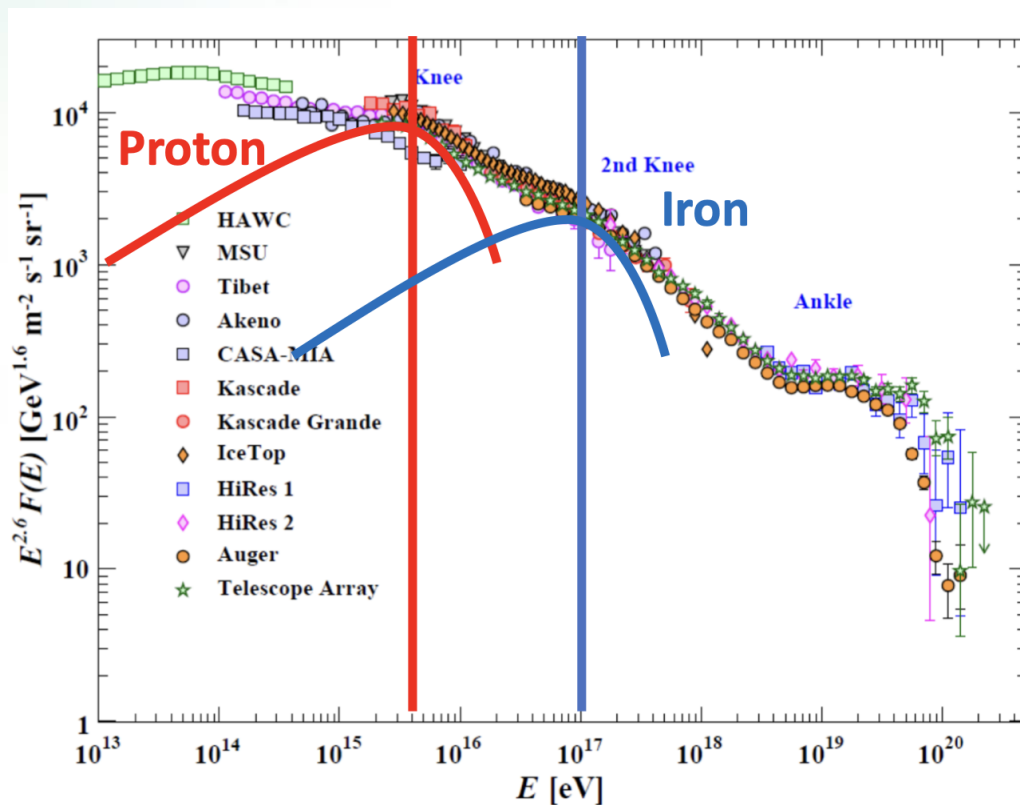


The Moon shadow position depends on:

- CR charge
- CR kinetic energy

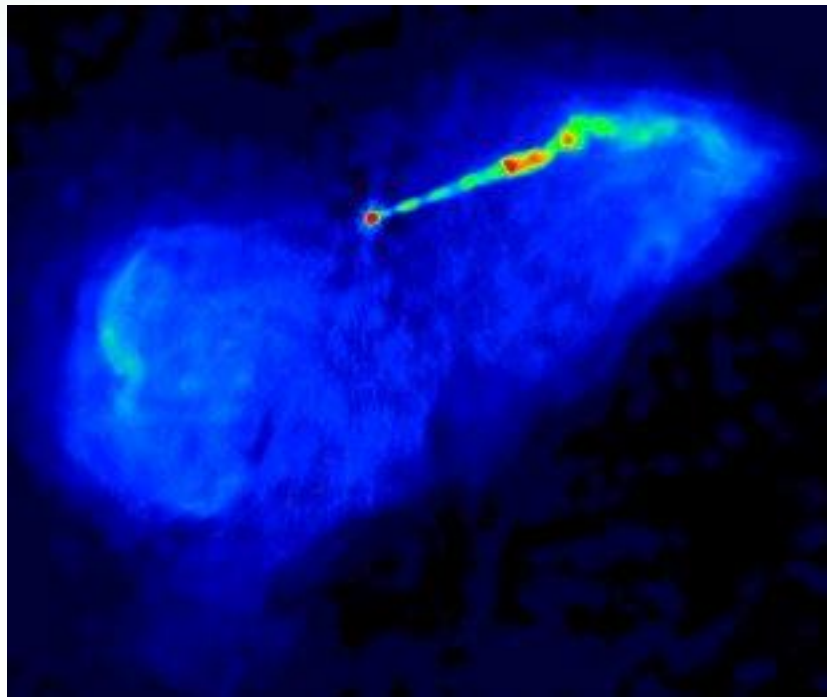
Science topics @ IAC exponentially increased

- Galactic transients
- Binary systems
- Microquasars
- Moon Shadow
- Dark Matter Searches
- Heavy Elements Searches



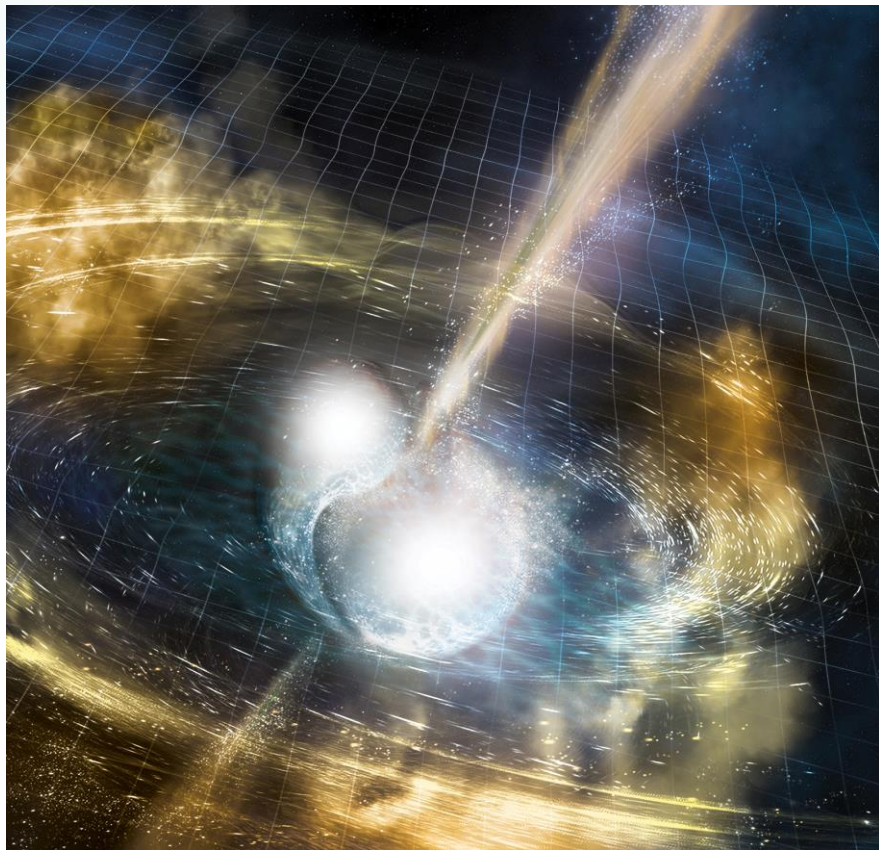
Science topics @ IAC exponentially increased

- Galactic transients
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 - Heavy Elements Searches
 - Radio galaxies
- ...and a variety of AGN physics



Science topics @ IAC exponentially increased

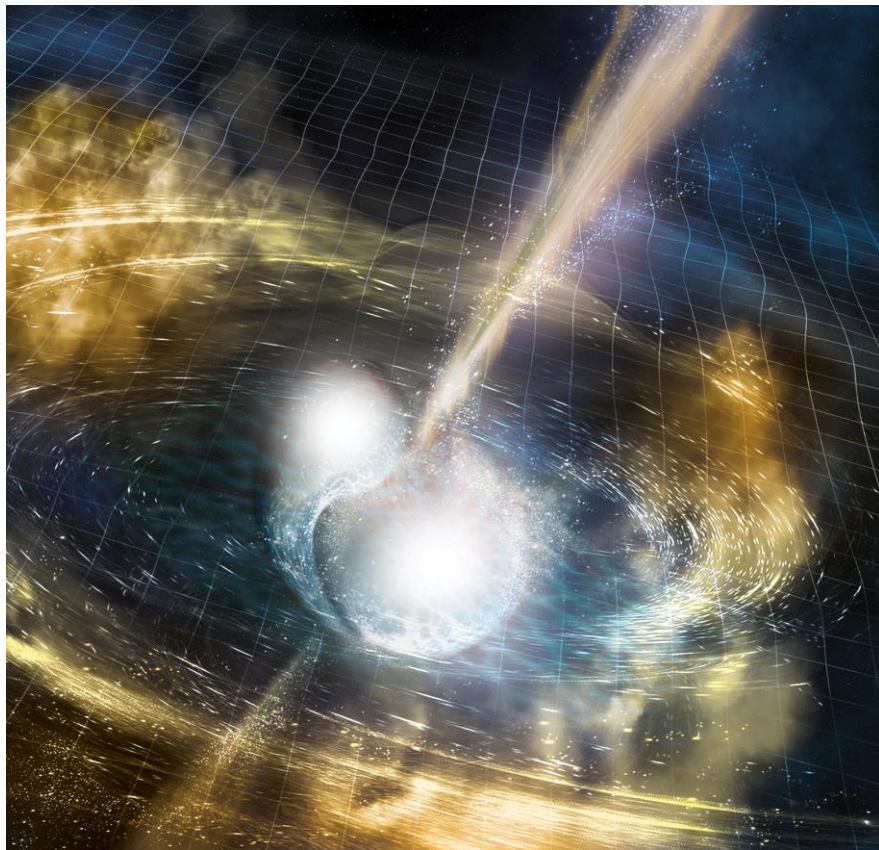
- Galactic transients
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- Radio galaxies
- ...and a variety of AGN physics
- **GW counterpart searches**



Science topics @ IAC exponentially increased

- Galactic transients
- Binary systems
- Microquasars
- Moon Shadow
- Dark Matter Searches
- Heavy Elements Searches
- Radio galaxies
- ...and a variety of AGN physics
- GW counterpart searches

- **Behing the scenes...coordination roles!**



LST-1 inauguration



LST-1 inauguration



LST 2, 3 & 4 construction



Camera #10 — LST-4 Construction Sites



Camera #4 — LST-3 Construction Site



LST 4 construction



Camera #10 — LST-4 Construction Sites

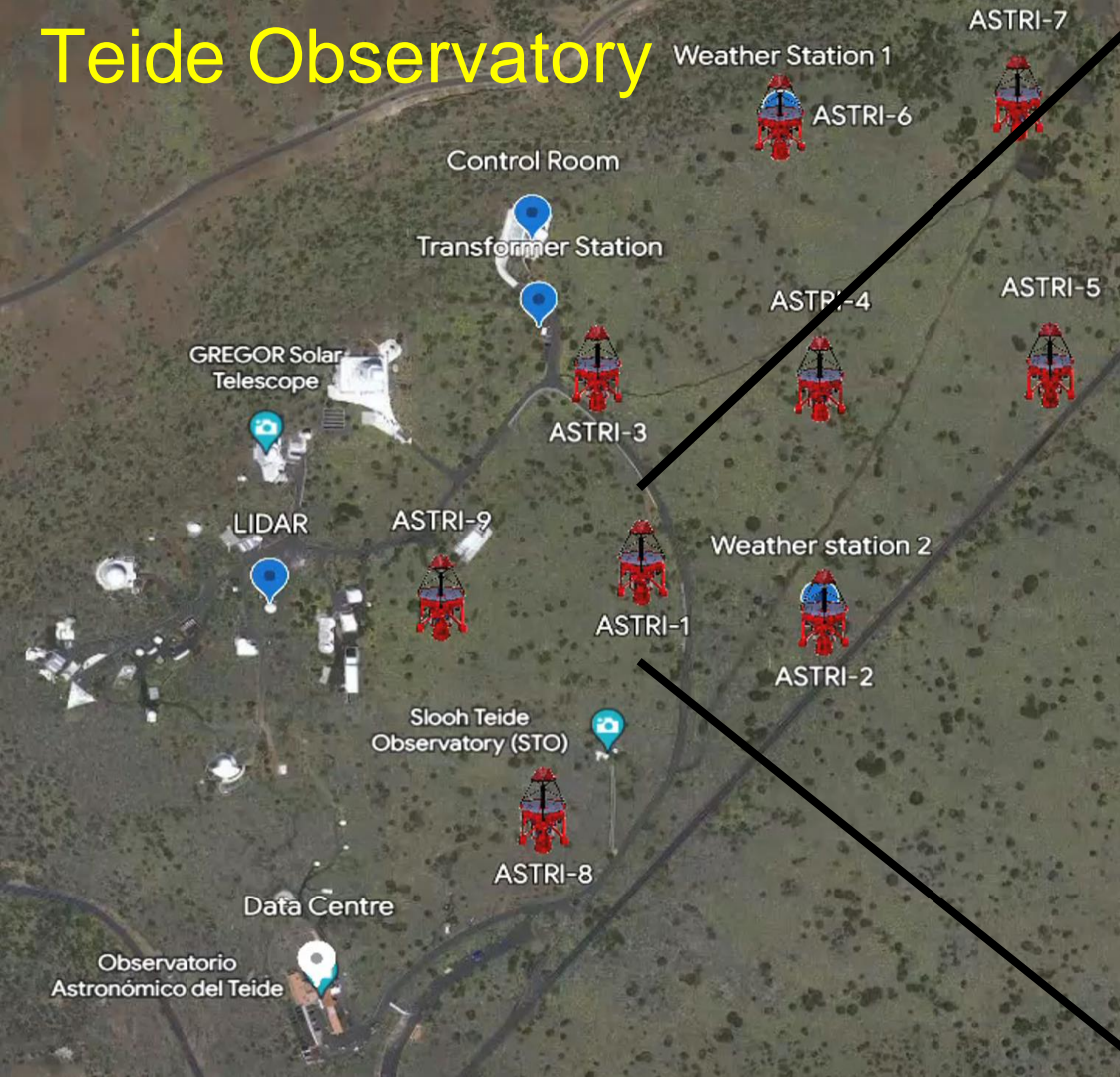


Rail construction! 😊

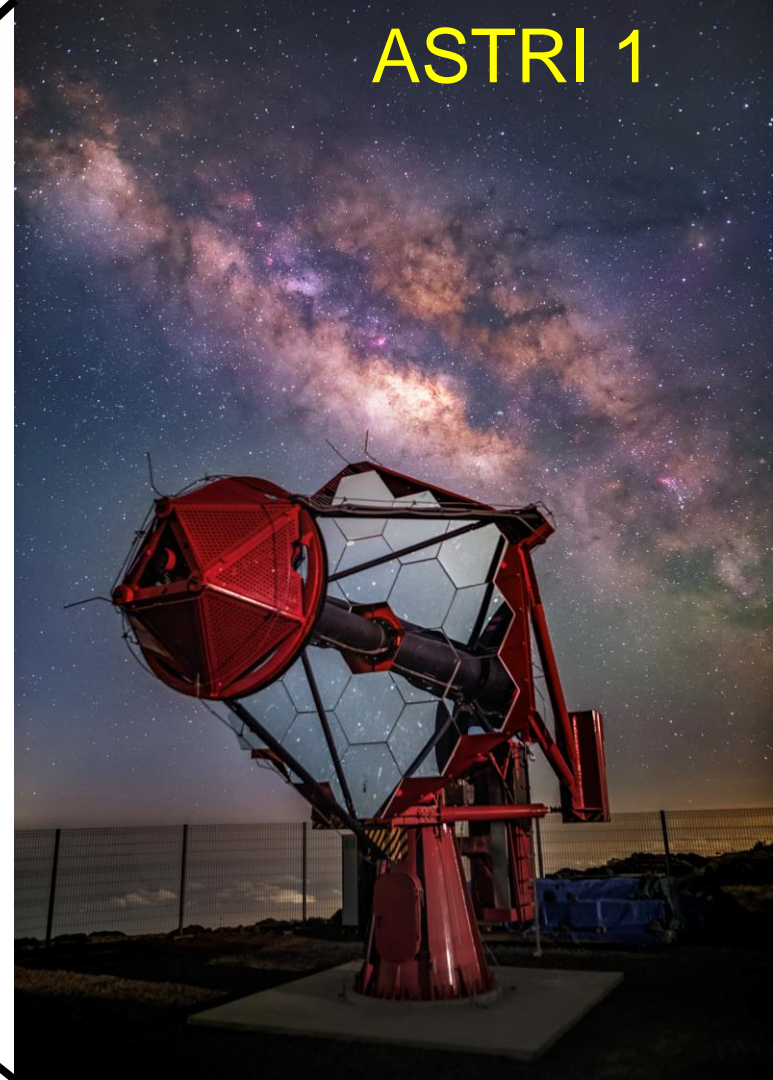
LST 2, 3 & 4 cameras @ IAC



Teide Observatory



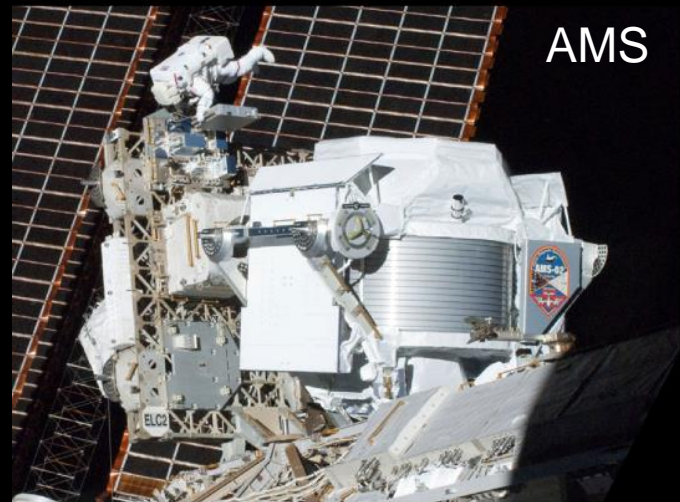
ASTRI 1



Fermi-LAT



AMS



GTC

Telescopio GTC © 2011 INM



CTA Northern site