

Very-high-energy gamma ray experiments: synergies with the optical energy band

Marina Manganaro, Department of Physics, University of Rijeka



Image Credit: Giovanni Ceribella



LSST Workshop, Selište Drežničko

MAGIC (Major Atmospheric Gamma-ray Cherenkov telescopes)



Energy range:
50GeV to >10TeV



Mirror dish: 17m diameter

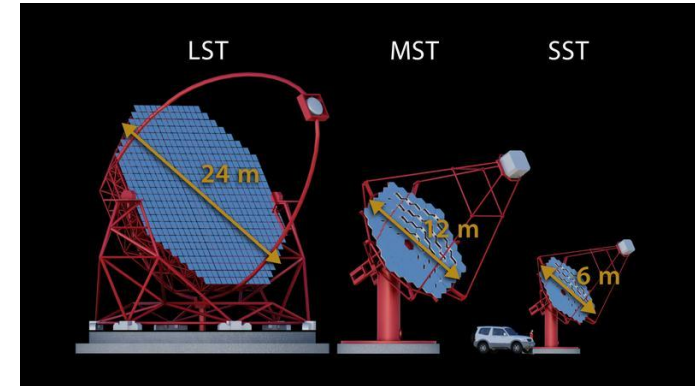


Camera: 1039 PMTs
FoV: 3.5 deg.

LST (Large size telescope) and CTA (Cherenkov telescope array)

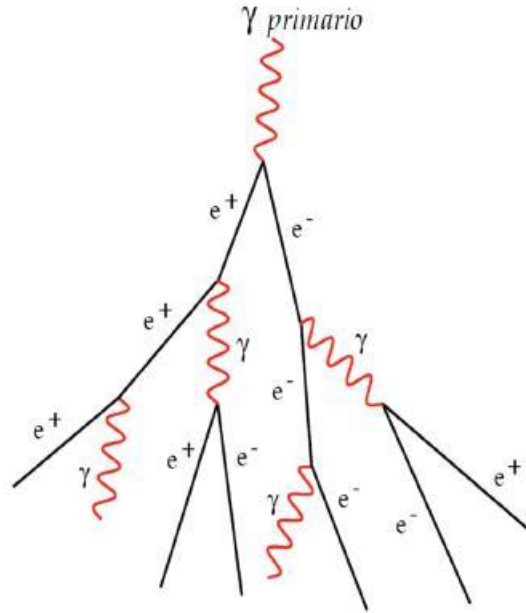


Mirror dish: 23 metres diameter
field of view: 4.5 degrees.



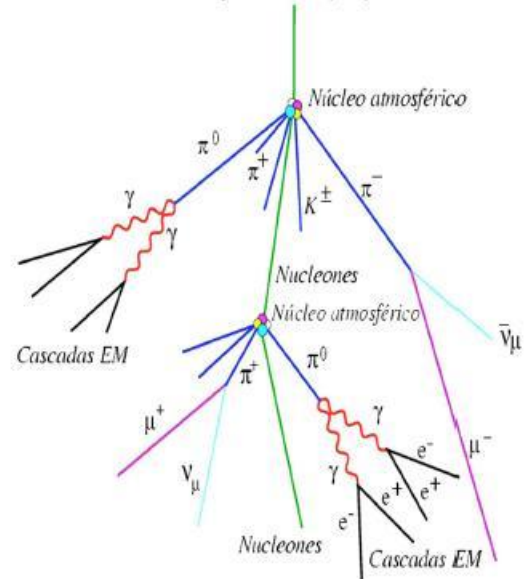
Shower development

Electromagnetic (EM)



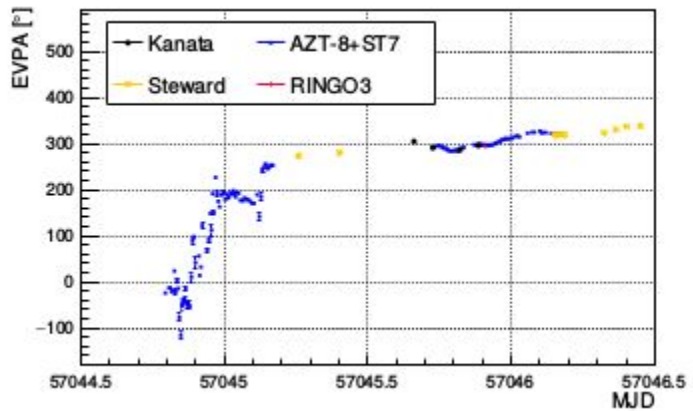
Hadronic

Rayo cósmico (p , alfa,...)



Multi-wavelength observations

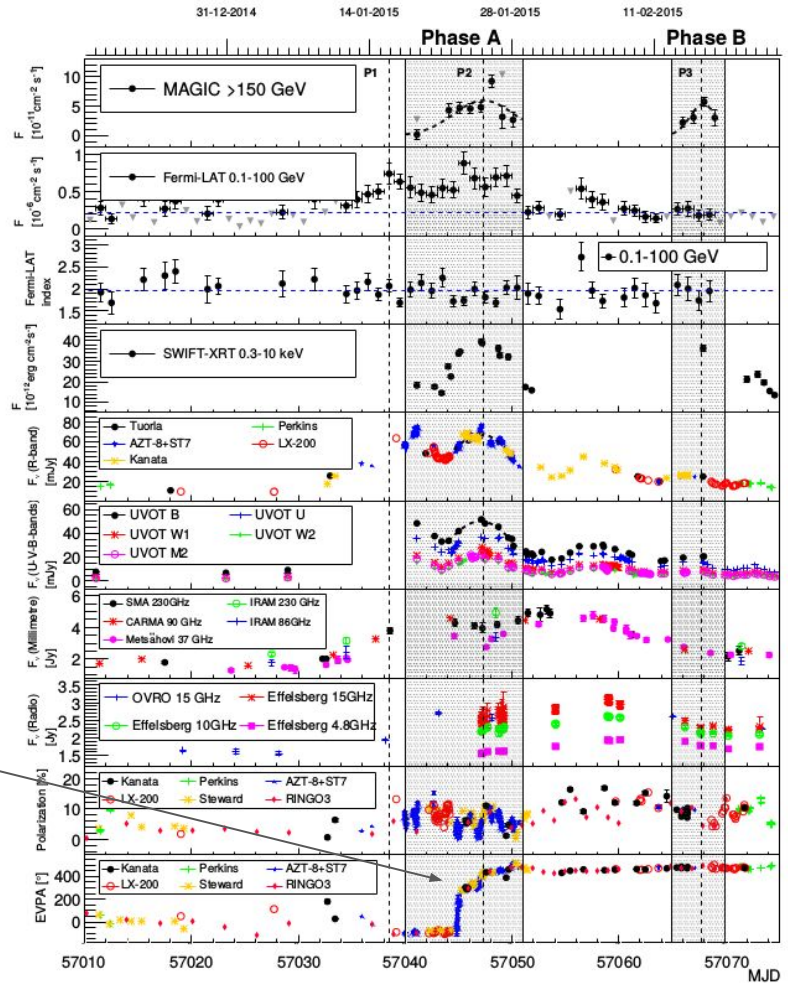
(Characterization of the blazar S5 0716+714 during an unprecedented outburst phase)



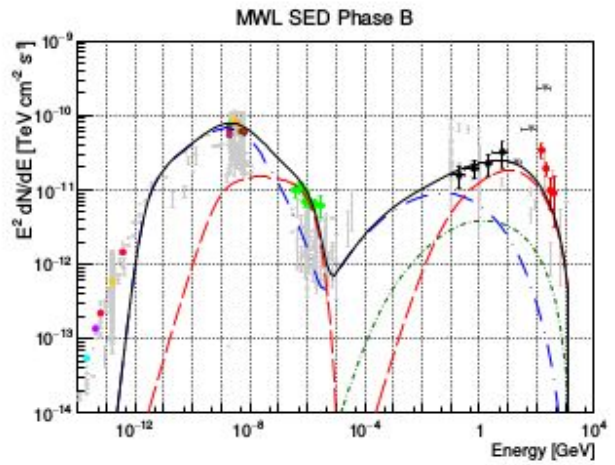
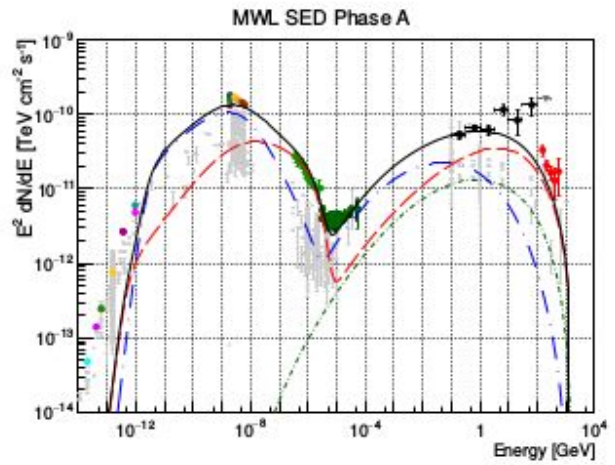
EVPA rotations...they should also be part of modeling



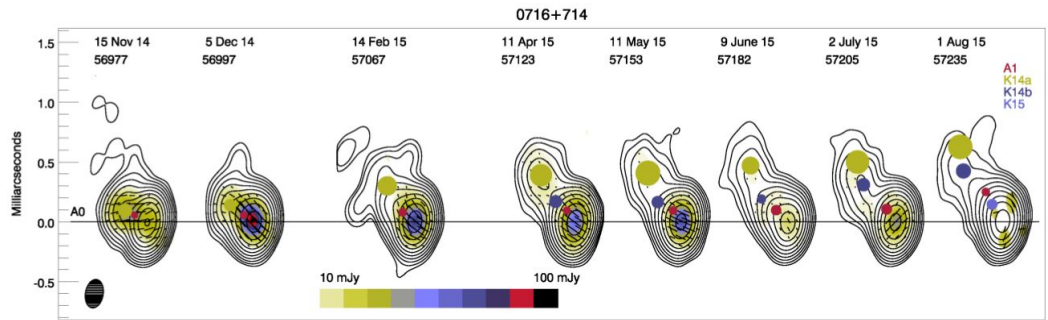
Ahnen et al., Astronomy & Astrophysics **619**, A45 (2018)



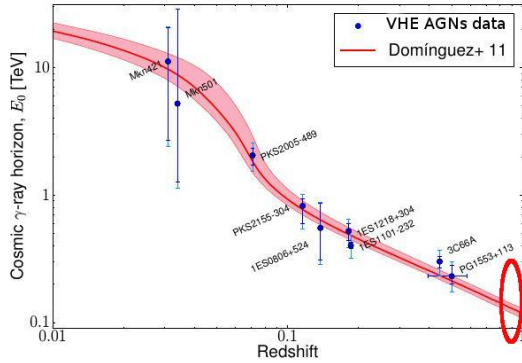
Multi-wavelength characterizations (Characterization of the blazar S5 0716+714 during an unprecedented outburst phase)



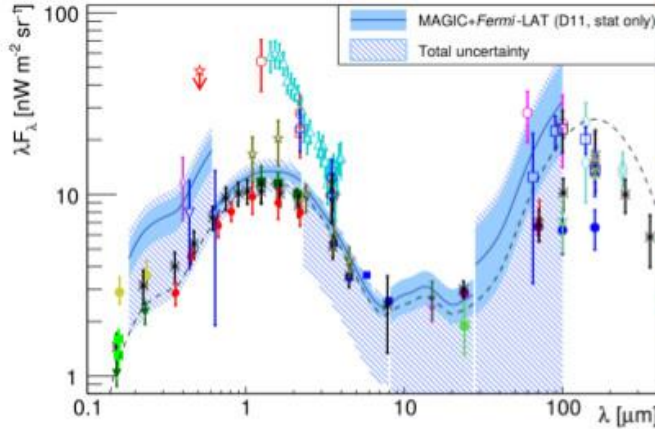
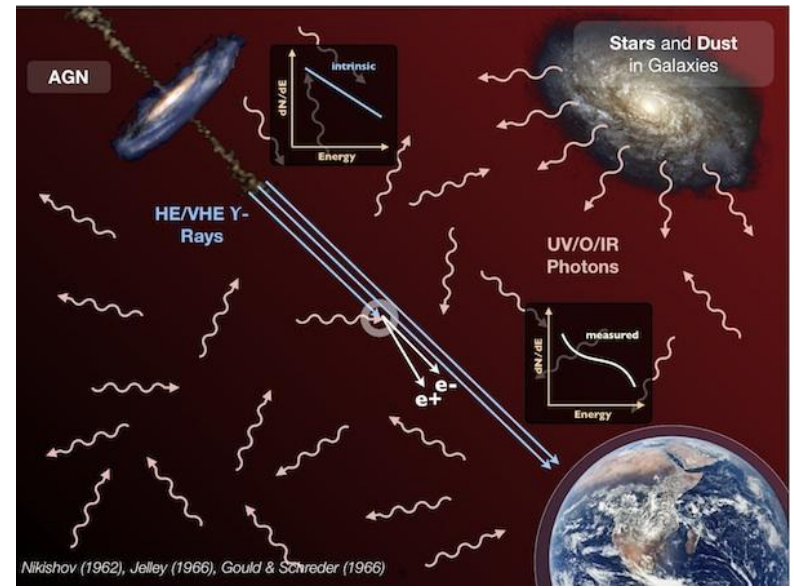
Two zone modeling



Extragalactic background light



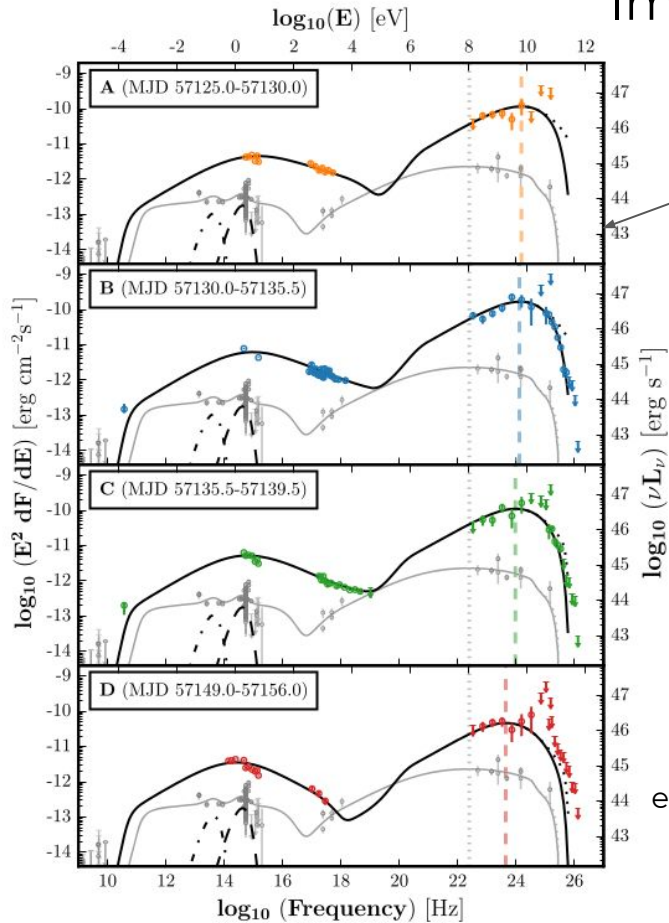
A. Domínguez et al., (2013) ApJ 770 77



V. A. Acciari et al., (2019) MNRAS 486, 4233

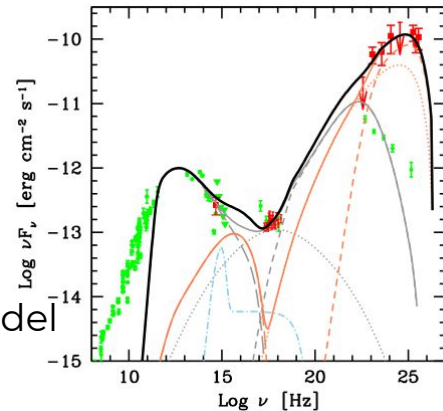


Importance of Redshift determination



MAGIC discovered the farthest sources in VHE gamma-ray
PKS14441 and QSO B0218 + 357

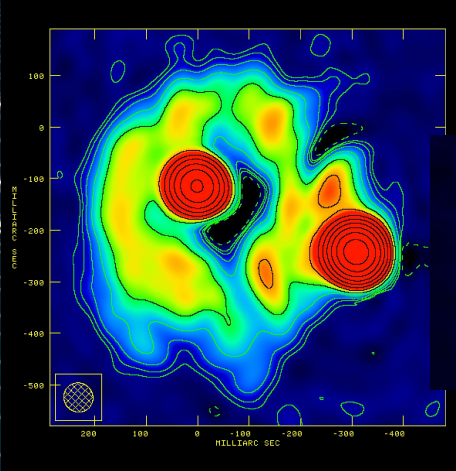
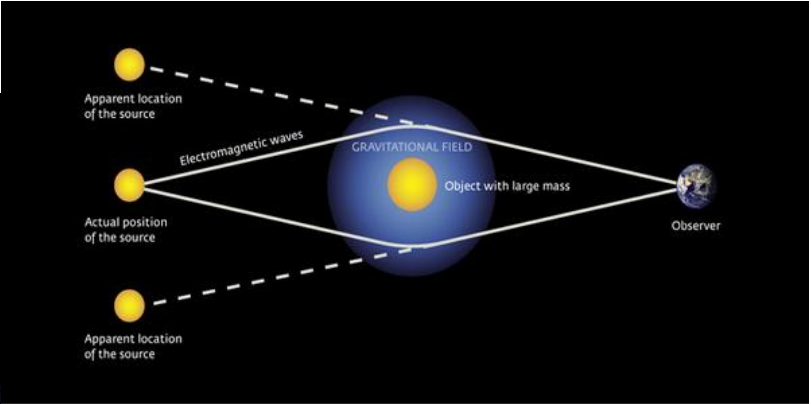
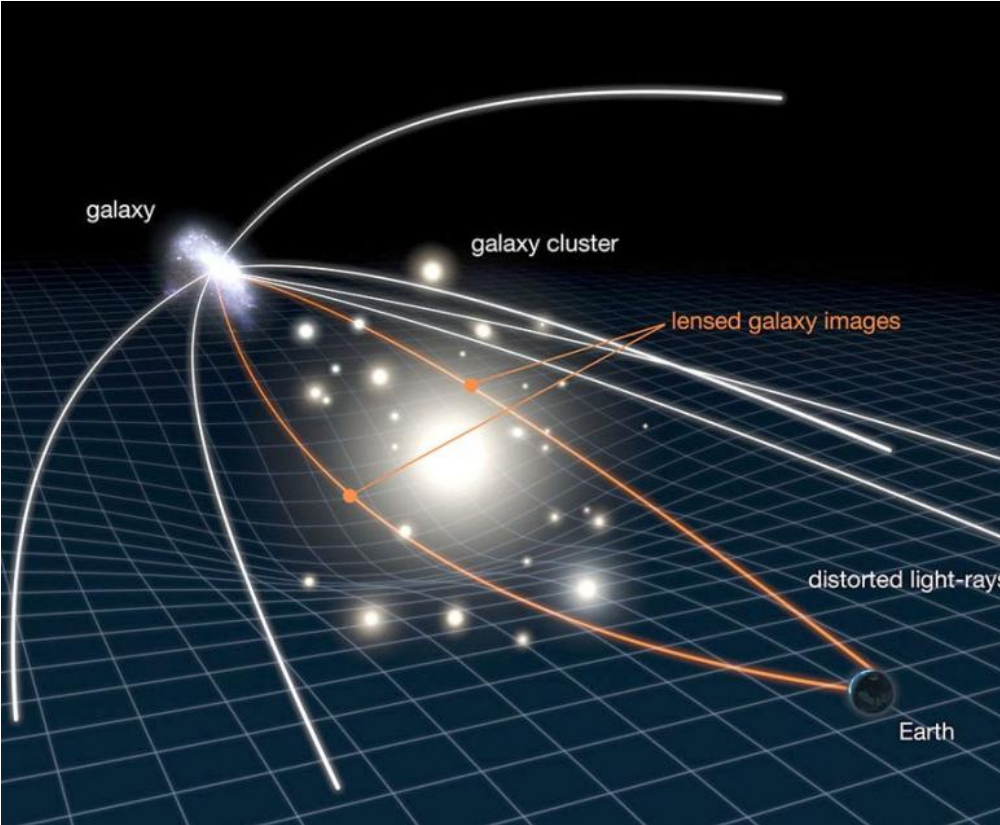
Two zone EC model



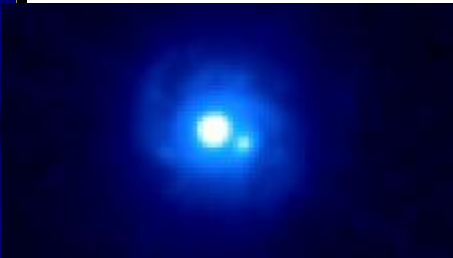
external Compton model

Ahnen et al., *Astronomy & Astrophysics*, **595**, A98, (2016)

Gravitational lensing(QSO B0218 + 357)



Merlin



Hubble

Rijeka group



Members of the group

Staff

Dijana Dominis Prester
Marina Manganaro
Saša Mićanović
Tomislav Terzić

PhD candidates

Jasmina Isaković
Lovro Pavletić
Mario Pecimotika
Jelena Strišковиć

Master's students

Ivana Batković
Nemanja Ivković
Dijana Pavlović

