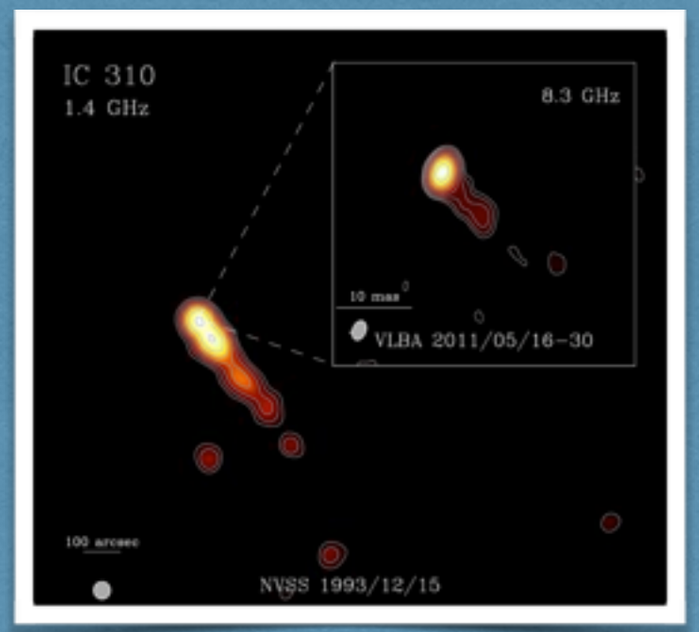
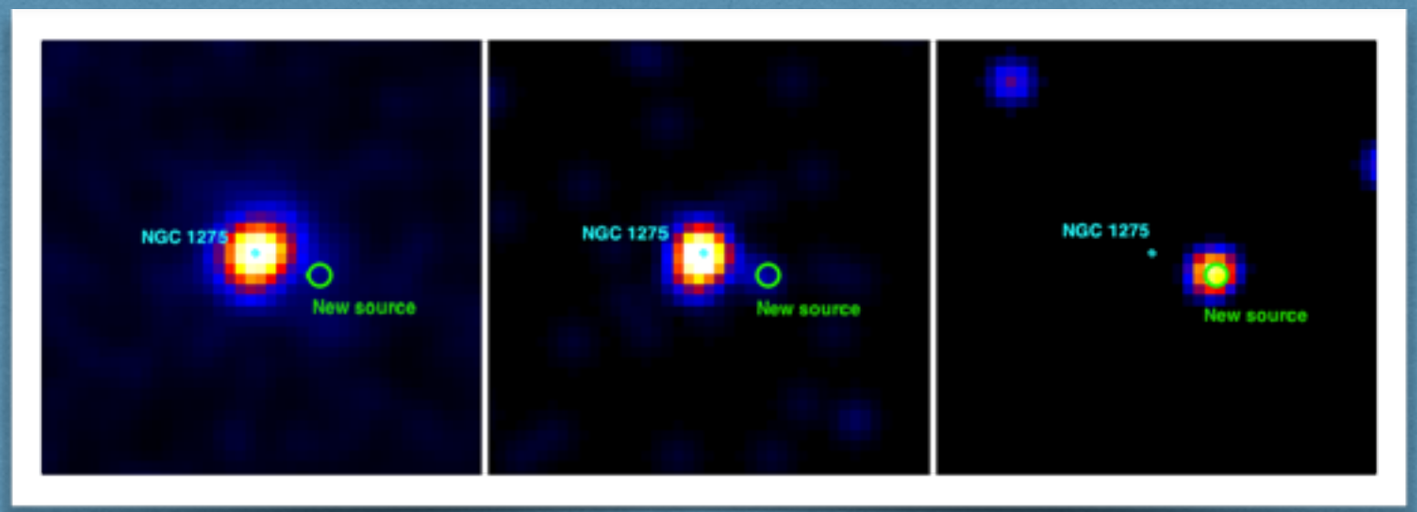
IC 310

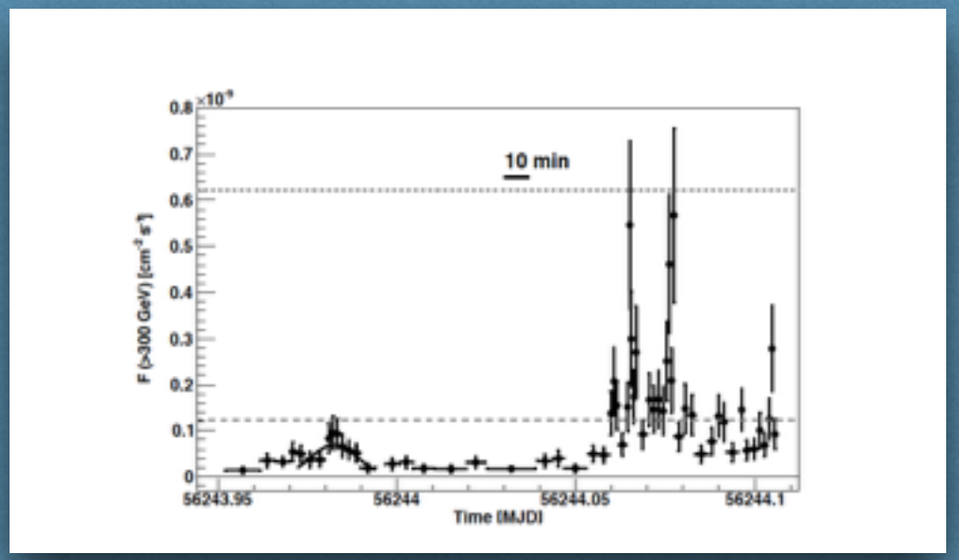
Radio Galaxy in the Perseus cluster
0.6° away from NGC1275
z=0.0189



1-10 GeV **10-100 GeV** **100-300 GeV**



variability with doubling time
scales faster than 4.8m



X-ray

Data analysis of 2 Chandra observations and 1 XMM observation

For each data set:

- **Nuclear spectral extraction and production of ARF and RMF response files**
- **Pile-up check**
- **Spectral analysts with XSPEC: best-fit model, parameter uncertainties, 68%, 90%, 99% counter plot, flux and luminosity**
- **Light curve of the Chandra observation with longer exposure time**
- **Comparison of the Chandra and XMM spectral results: Variability?**

Very High Energy: emission in theTeV

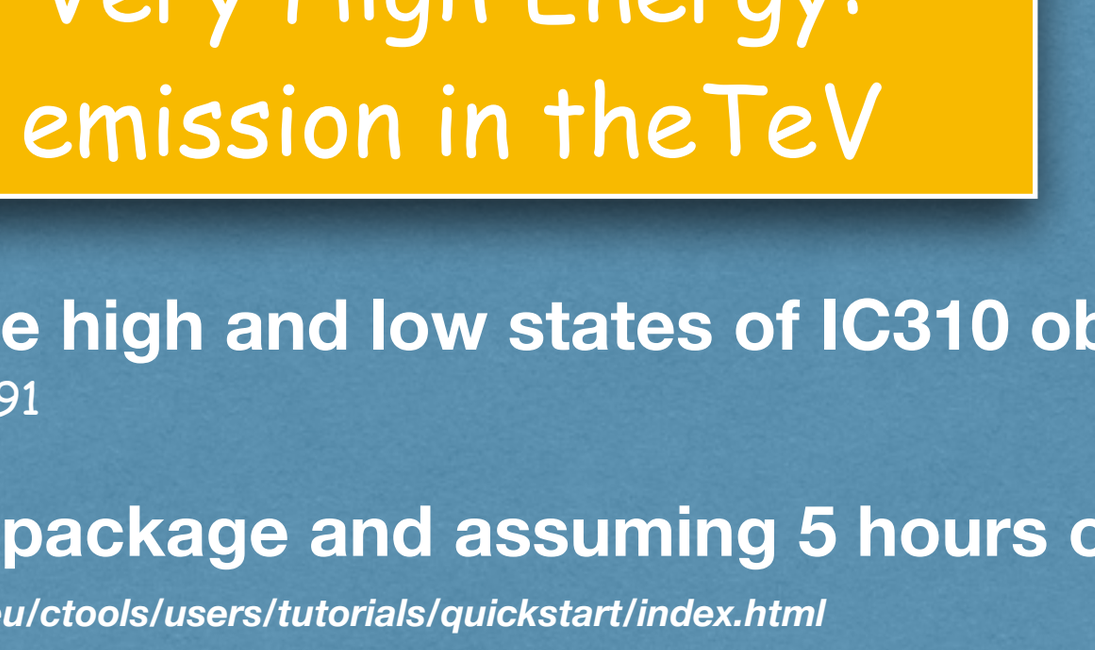
CTA Simulation of the high and low states of IC310 observed by MAGIC

Aleksic et al. 2014, A&A, 563, A91

-> using the CTOOL package and assuming 5 hours of pointing (t_{obs}=5h)

CTA threads —> http://cta.irap.omp.eu/ctools/users/tutorials/quickstart/index.html

- **Production of the event files**
- **Likelihood analysis: spectra production**



MAGIC observations

Optional

1. Insert the estimated Chandra and XMM fluxes in the IC 310 SED

2. Swift data (December 2012) conversion c/s -> flux erg/s/cm2 using PIMMS and adopting a simple modelling (powerlaw)

PIMMS —> https://heasarc.gsfc.nasa.gov/cgi-bin/Tools/w3pimms/w3pimms.pl

Bibliography

Aleksic et al. 2014, A&A, 563, A91

Neronov , et al, 2010, A&A 519, L6

Aleksic et al. , 2014, Science, 346, 1080