



13/07/2020 @ World
XIV Spanish Astronomical Society Meeting

RC1: Galaxias y Cosmología

Mónica Vázquez Acosta - IAC

Galaxies & Cosmology

78 contributions
F: 40%, M: 60%

Radio

High Energy

AGN

Mónica Vázquez

Local Universe

Anna Ferré-Mateu

High- z Universe

Cosmology

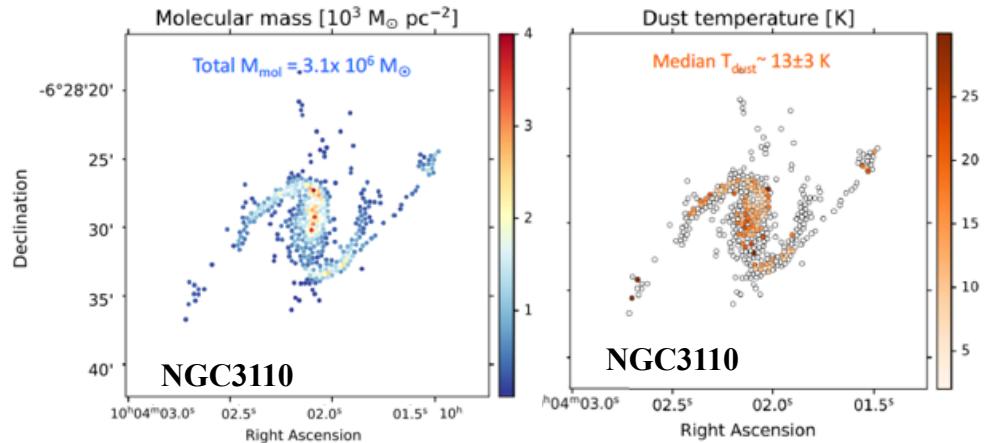
Instrumentation

Fernando Buitrago

Radio Astronomy with ALMA

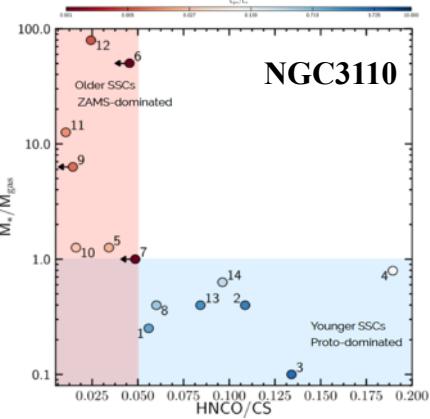
Luminous Infrared Galaxies: E. Bellocchi (CSIC-INTA)

Molecular gas mass & dust temperature at sub-kpc scales



Formation & evolution of Super Star Clusters

F. Rico-Villas (CSIC-INTA)

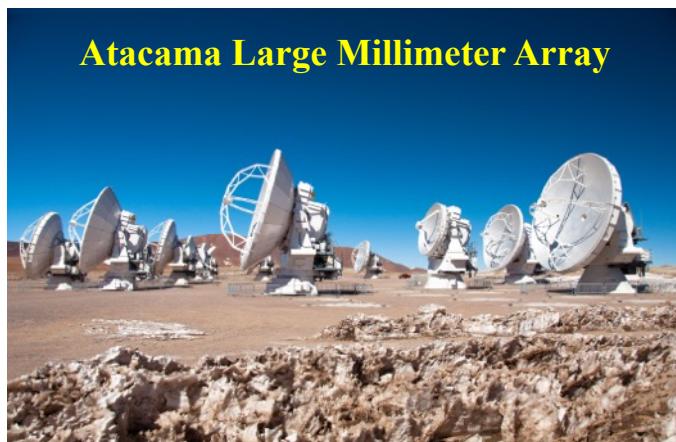


HC_3N^* emission traces recent & brief massive star formation

NGC3110: most evolved SSCs closer to center of the galaxy

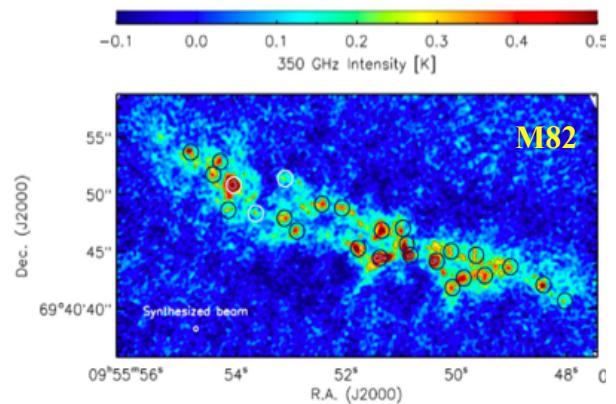
SSC: small & young stellar clusters of large mass in starburst galaxies

Atacama Large Millimeter Array

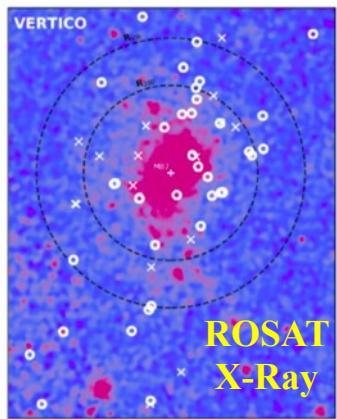


Super Star Cluster Study
M.J. Jiménez (OAN-ING)

M82: most SSCs are still forming



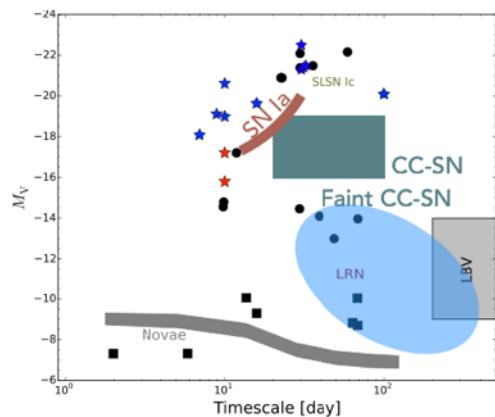
VERTICO Program with ALMA M.J. Jiménez (OAN-ING)



Trace CO in spiral galaxies of Virgo Cluster
Influence of environment in galaxy evolution

Transients in luminosity gap between Novae and Supernovae N. Elias-Rosa

Detailed studies of transients

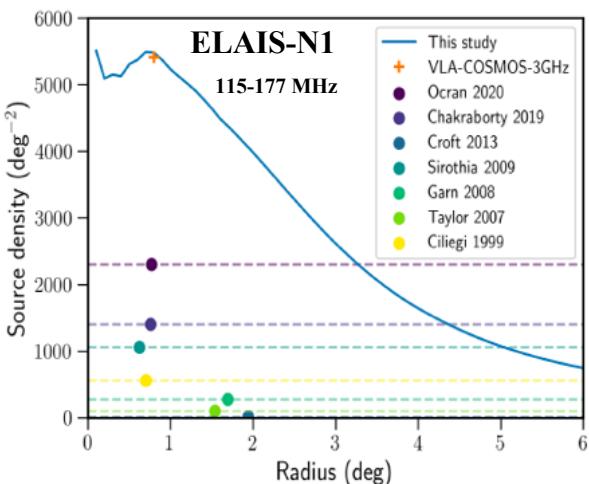


Goal to understand:

- progenitor nature
- physical mechanisms triggering outbursts

LOFAR 2m Sky Survey - LoTSS J. Sabater (U. Edinburgh)

Deepest low frequency northern sky survey



> 5000 sources per deg² in central 5 deg²

Giant Radio Galaxy studies L. Hernández García (U. de Valparaíso)

AGN with extended radio emission > 0.7 Mpc
Identify AGNs with:

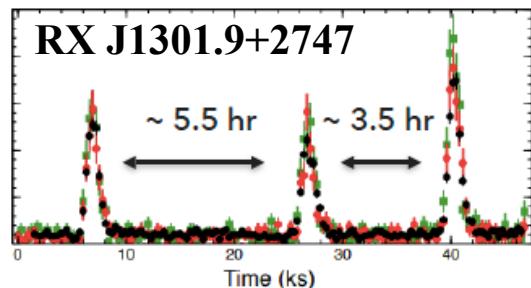
- restarted activity (peaked GHz emission)
- hard X-ray emission

High Energy & Gravitational Waves

X-ray Quasi-Periodic Eruptions M. Giustini (CSIC-INTA)

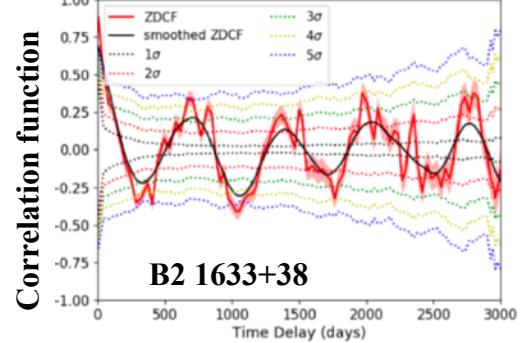
Novel extragalactic phenomenon associated with accreting supermassive black holes

Discovery: Galactic Nucleus GSN 069 (Nature)



Second observation!
RX J1301.9+2747
XMM-Newton

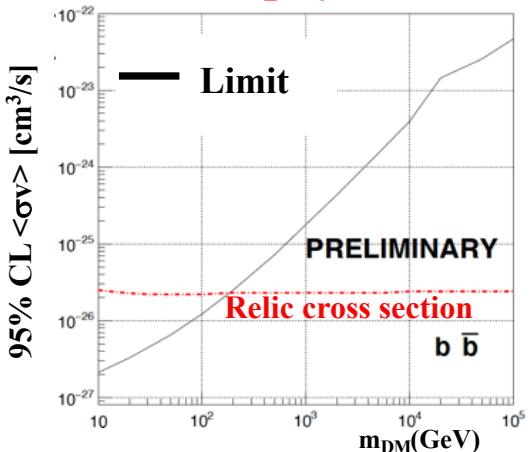
Optical variability of Gamma-ray Blazars J. Otero (IAC, ULL)



Optical flux periodicity
B2 1633+38 (FSRQ):
 ~ 1.9 years
- 3C 66A (BL Lac):
 ~ 3 years

Dark Matter Annihilation Search T. Miener (UCM)

Dwarf spheroidals: large DM content & small astrophysical background



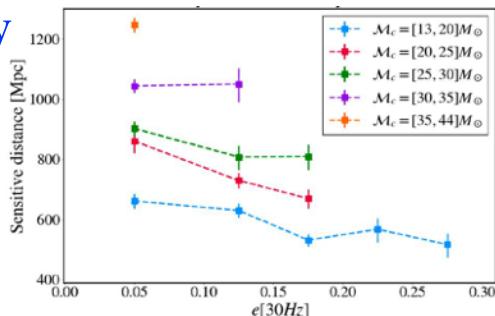
Gamma-ray data
Fermi-LAT
H.E.S.S. MAGIC
VERITAS HAWC

20 dSph

GW: binary BHs eccentricity A. Ramos-Buades (UIB)

Sensitivity ~unaffected by presence of sizable eccentricity

2 LIGO search models tested

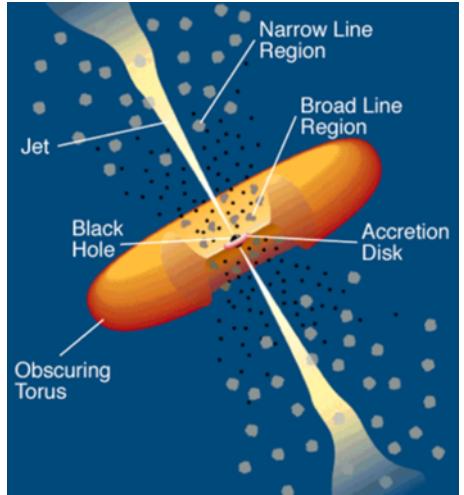
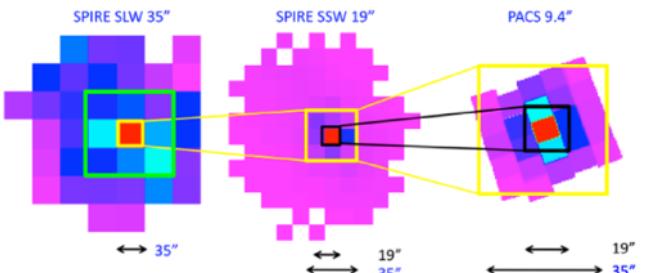


Active Galactic Nuclei

AGN: Large Scale (parsec) mechanical heating
E. Bellocchi (CSIC-INTA)

^{12}CO spatial study at diff. scales to **trace thermal structure**

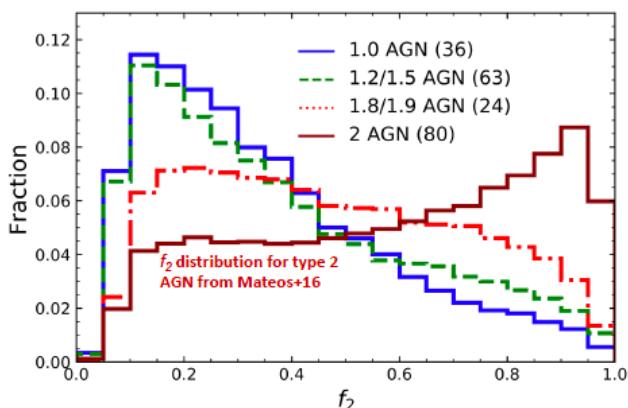
NGC 4945: mechanical heating
(shocks or turbulence) **dominates**
heating of the ISM in the nucleus



AGN Torus studies

L. Barquín-González (IFCA)

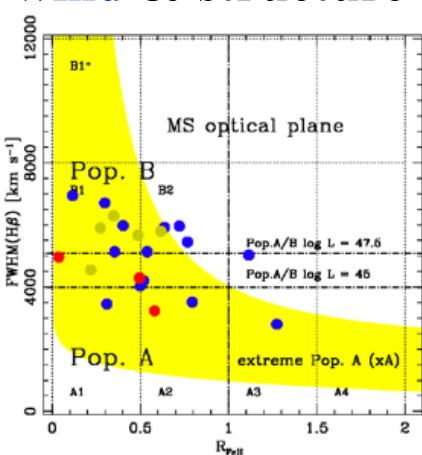
f_2 : fraction of sky obscured ("dusty torus")



- Type 1/1.2/1.5 similar
- Type 1.8/1.9 different to Type 2

AGN with jets: optical & UV
A. Deconto Machado (IAA-CSIC)

**Effect of the relativistic jets on:
wind & structure of emitting region**



**36 quasars in
Main Sequence**

**FWHM(H β) vs
R(FeII)=
I(FeII $\lambda 4570$)/I(H β)**

Active Galactic Nuclei

AGN: Low-Ionisation Nuclear Emission-line Regions

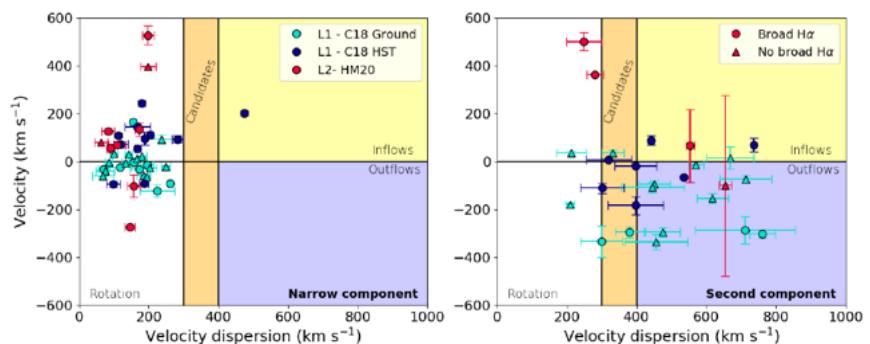
L. Hermosa Muñoz (IAA-CSIC)

S. Cazzoli (IAA-CSIC)

1. Nearby LINERs Spectroscopy

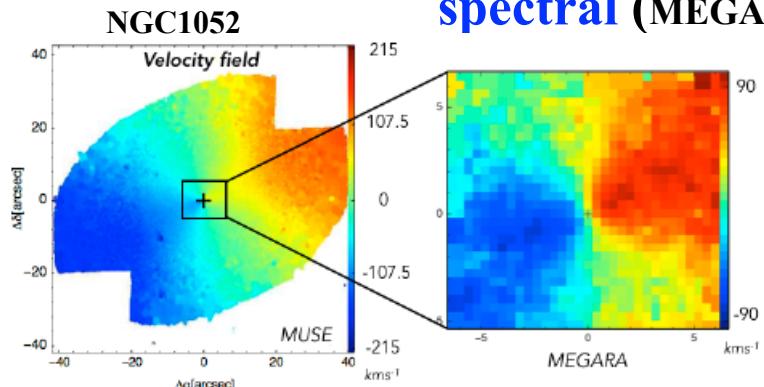
BLR: 7/9 Type-2 & 12/12 Type-1

Outflows: 2 Type-2 & 9 Type-1



2. Outflow Morphology : disk-halo & core-halo

3. Detailed outflow study of NGC1052 with high resolution: spatial (MUSE@VLT) & spectral (MEGARA@GTC)



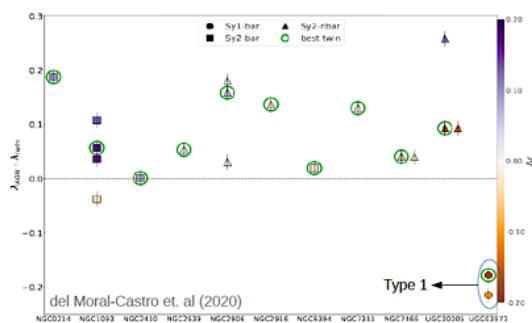
large (kpc-scale)
rotating disc

Are active Galaxies more rotationally supported?: I. Moral-Castro (IAC)

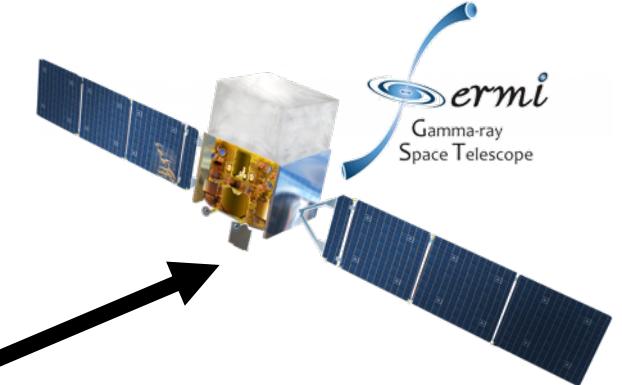
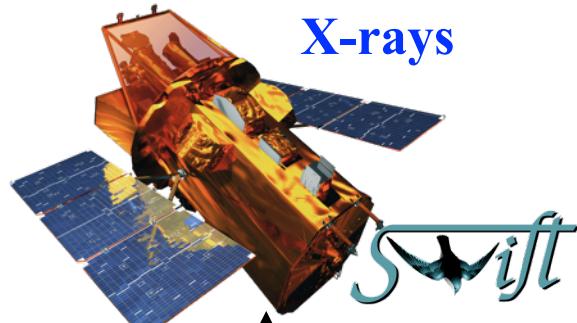
Isolated twin galaxies with different nuclear activity

Spin parameter λ_R in galaxy disk region

- ~ 80% of active galaxies show higher value of λ_R than twins (**yes!**)



New era of Multi-wavelength & Multi-Messenger Astronomy!



Optical

