

*Stellar population properties of
nuclei in early-type galaxies:
the case of NGC 1428 (FCC277)*

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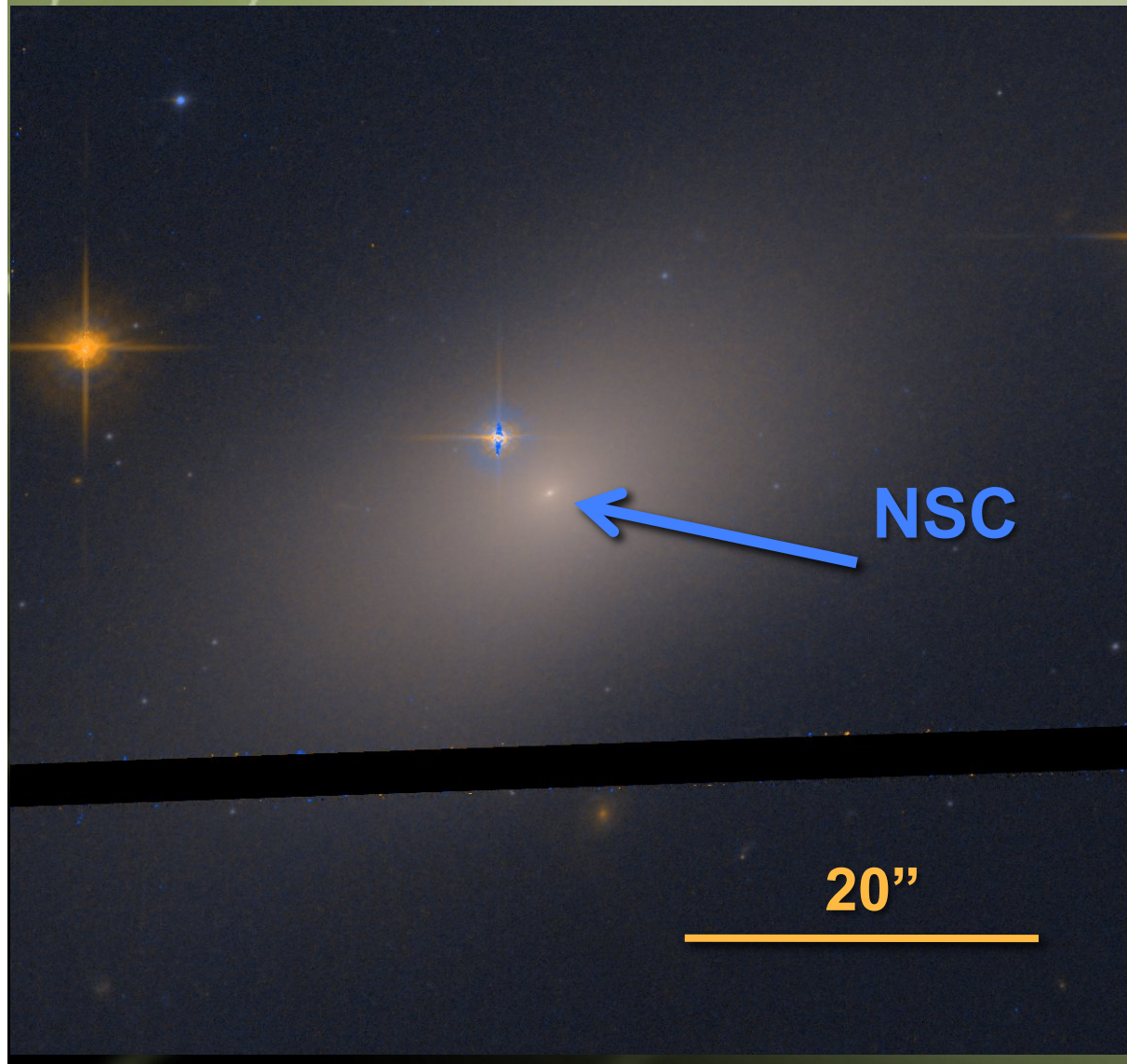
in collaboration with

*L. Infante, A. Jordán, H. Kuntschner, L. Ferrarese,
P. Côté, E. Peng, D.R. Silva*

Overview of the project

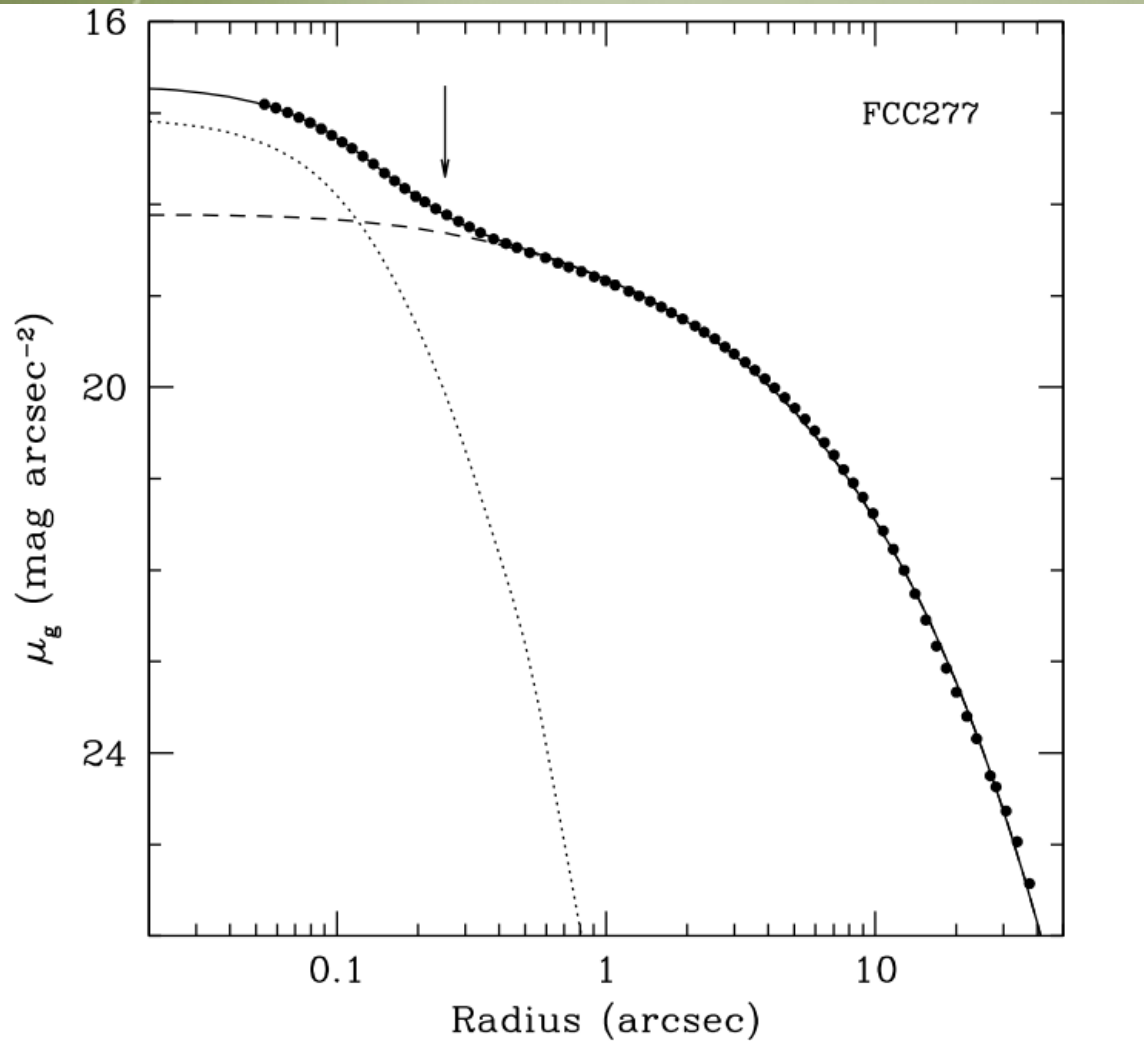
- ⊕ ~75 % of all types of galaxies host a NSC
(e.g. Côté et al. 2006, and ref. therein)
- ⊕ Their morphology and luminosity classified
- ⊕ Lack of kinematics and chemical data about nuclei in early-type galaxies

NGC 1428 (FCC 277)



- ⊕ Nucleated E5
in Fornax cluster
- ⊕ part of ACS/FCS
(Jordán et al.
2007)

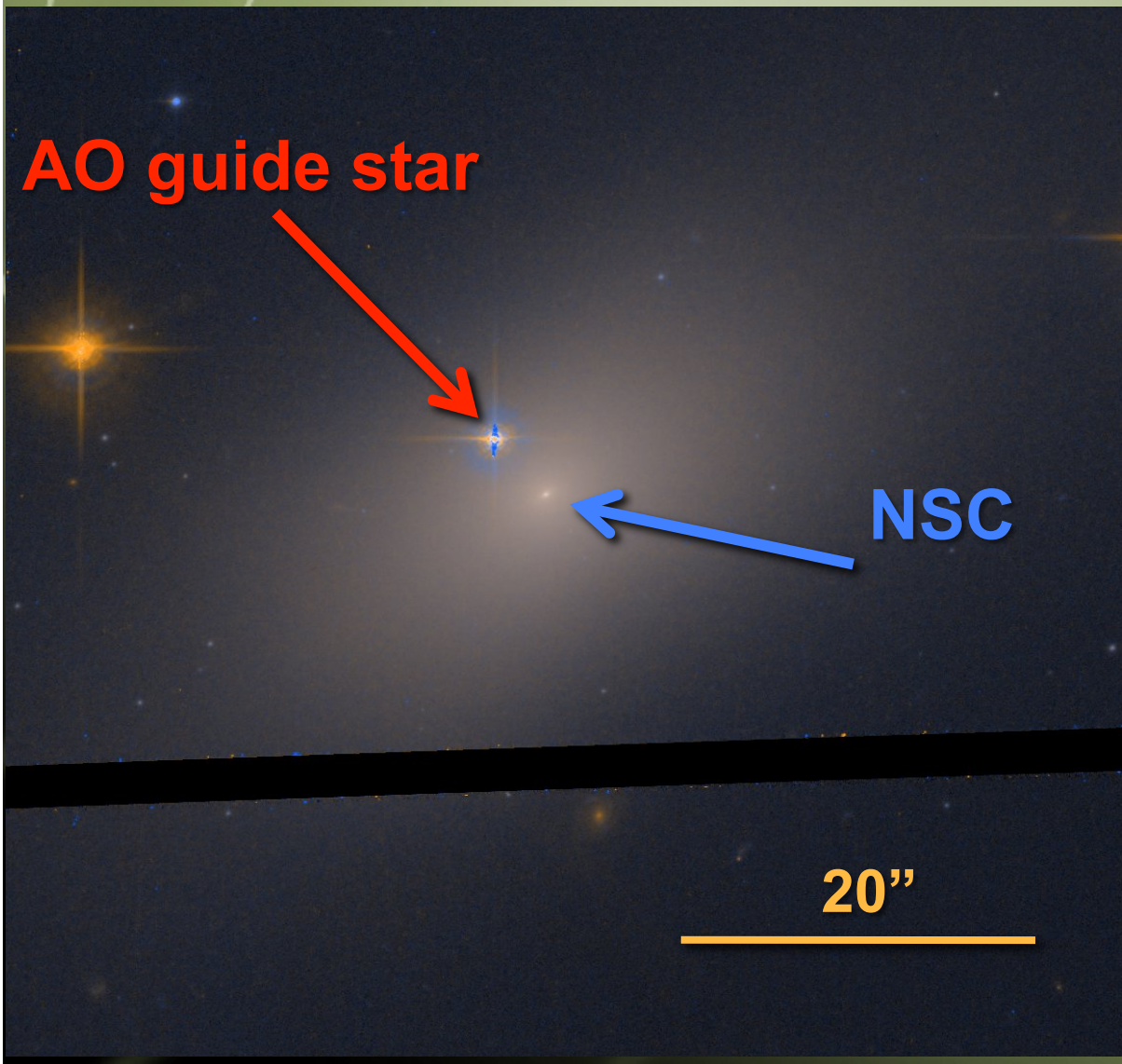
What makes the nucleus of NGC 1428 different?



NSC $r < 0.25''$

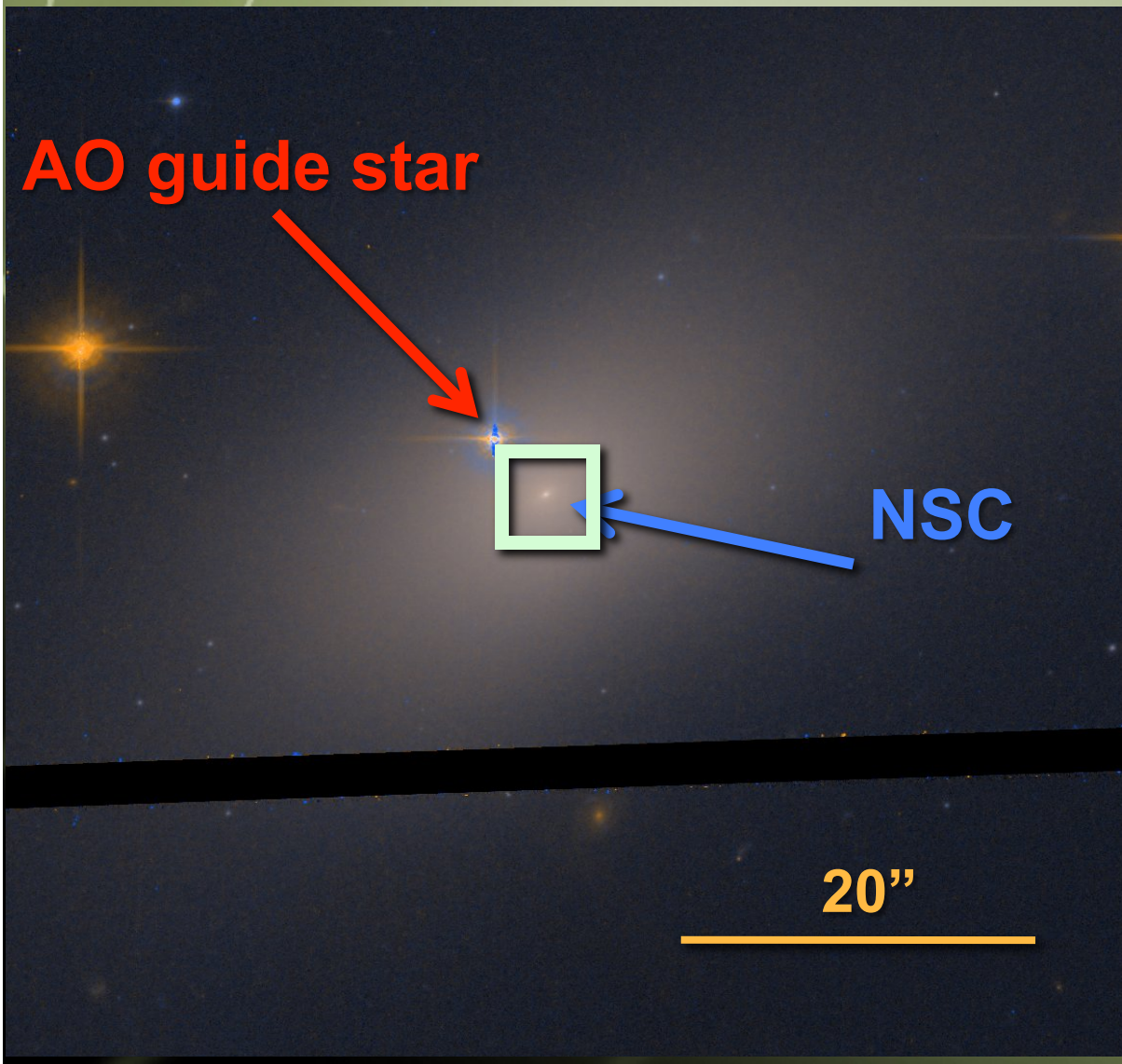
Côté et al. 2007

NGC 1428 (FCC 277)



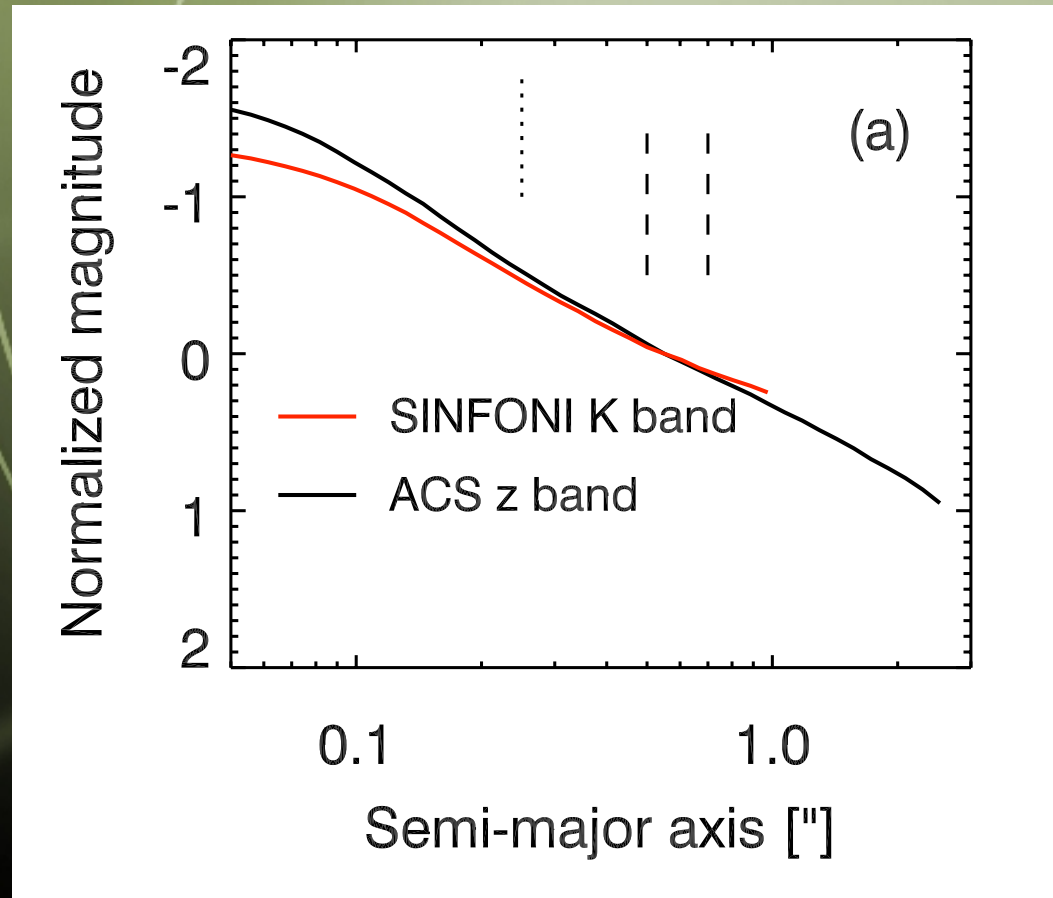
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NGC 1428 (FCC 277)



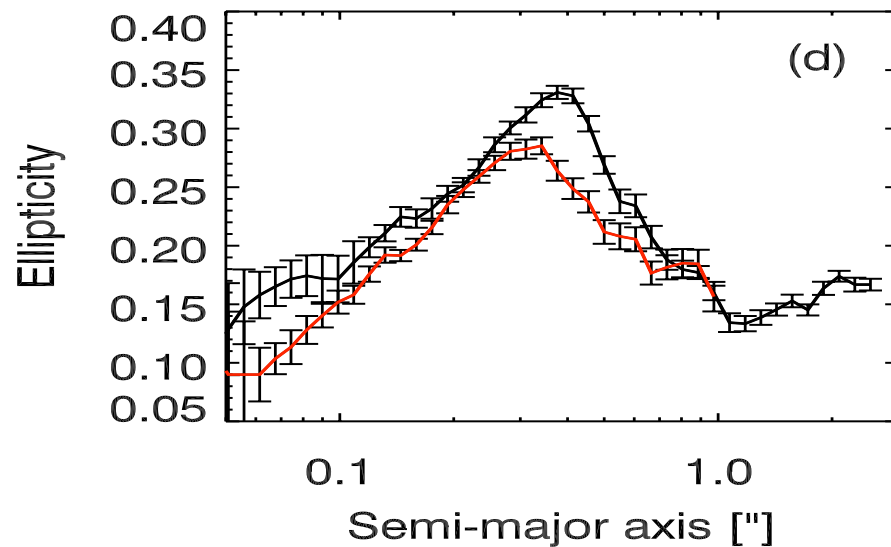
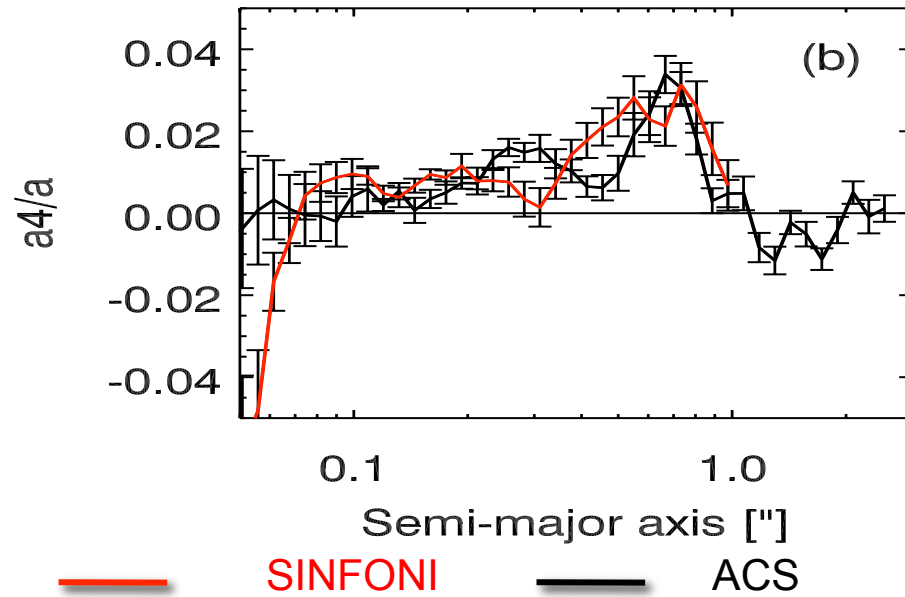
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NGC 1428 – VLT Observations



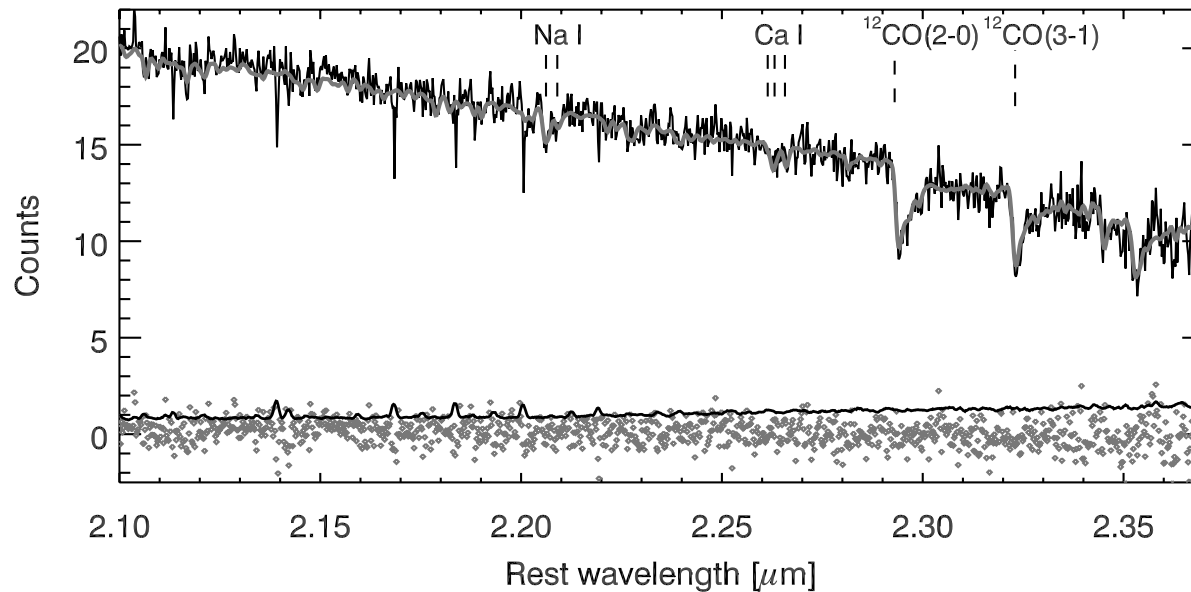
- ⊕ VLT/SINFONI
- ⊕ NGS AO
- ⊕ 3" x 3" FoV
- ⊕ 0.17" (FWHM) spatial resolution

NGC 1429 VLT Observations



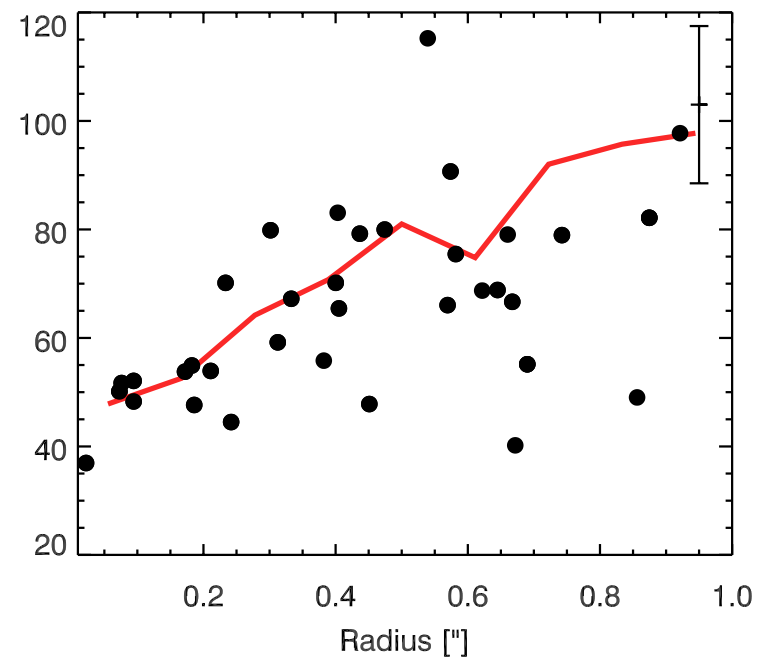
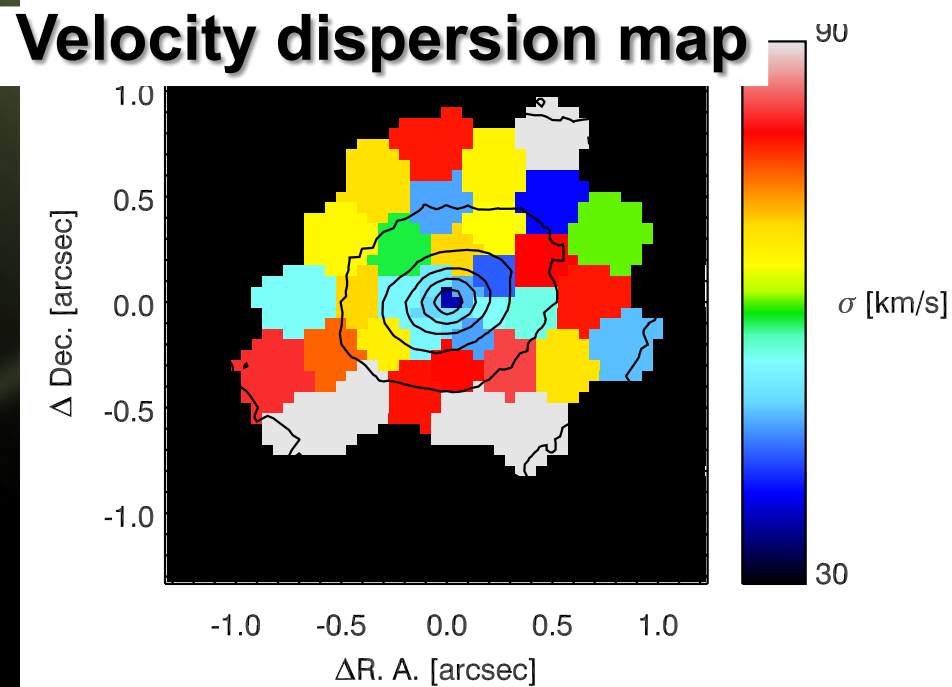
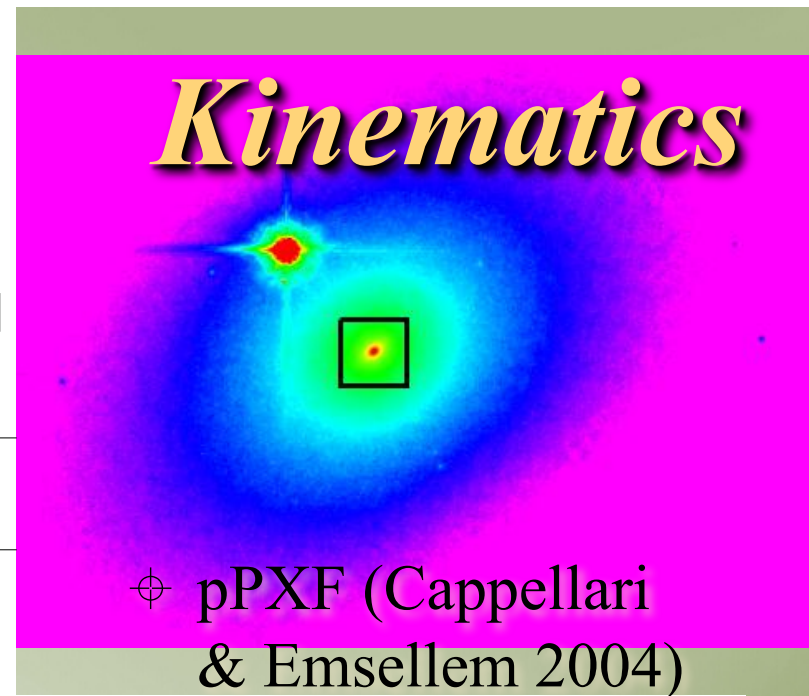
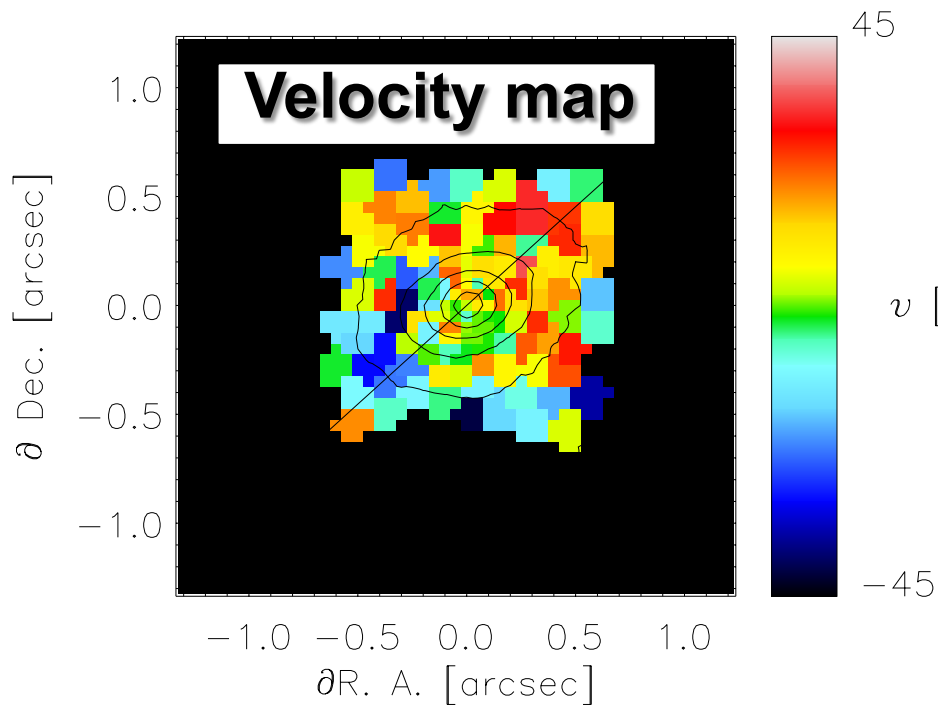
- ⊕ VLT/SINFONI
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K-band spectra

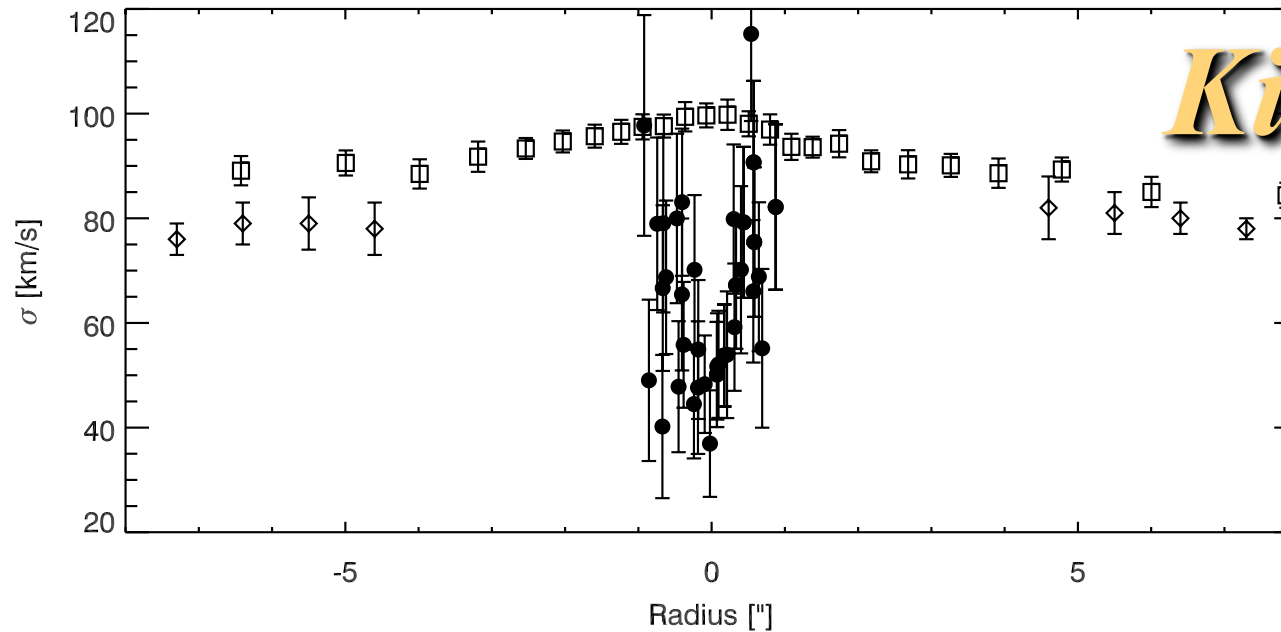


⊕ Light is dominated by old stars

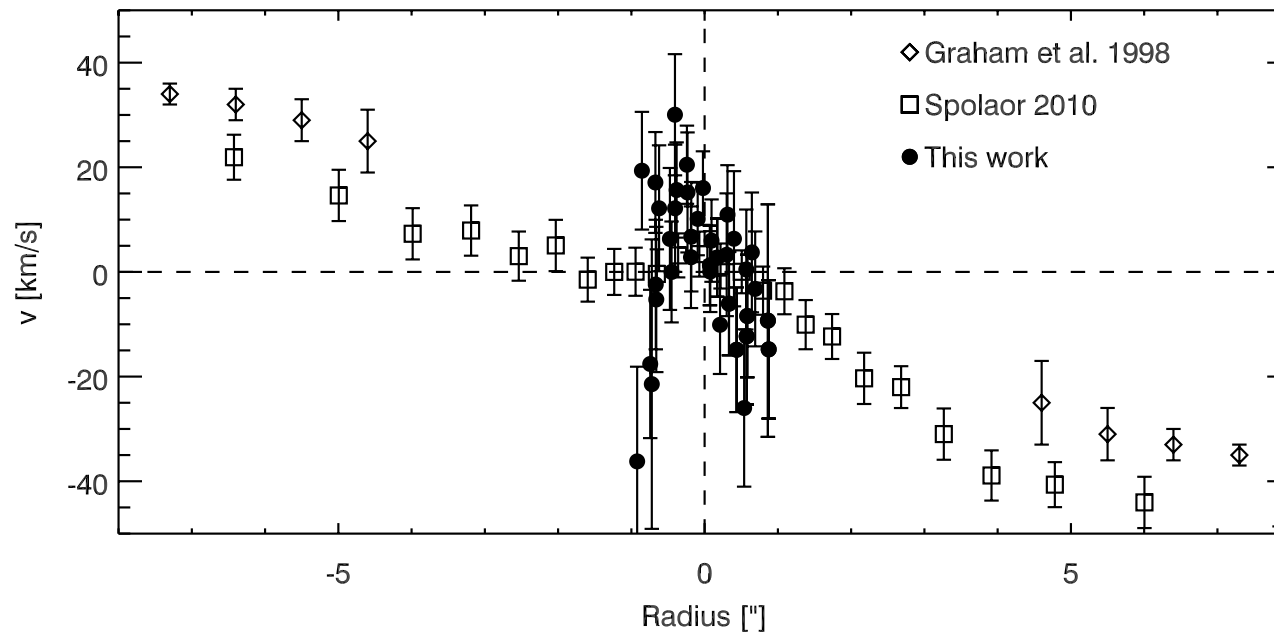
⊕ S/N ~ 15



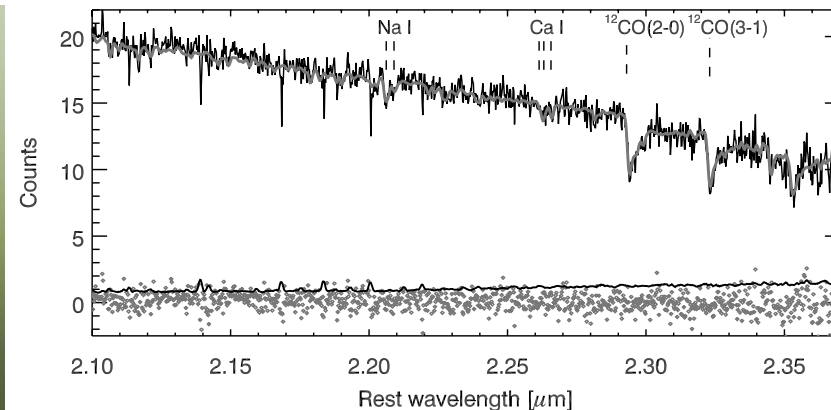
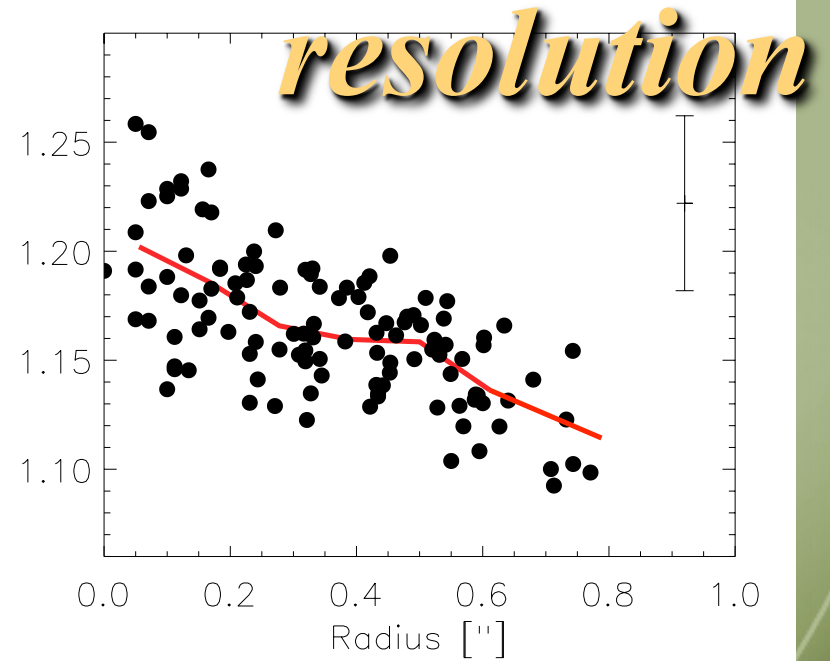
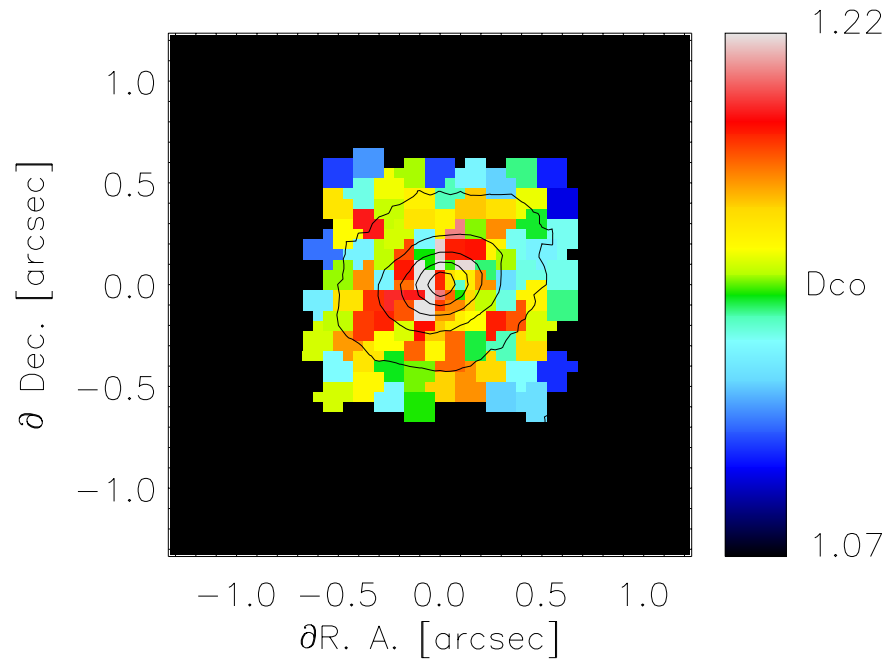
Kinematics

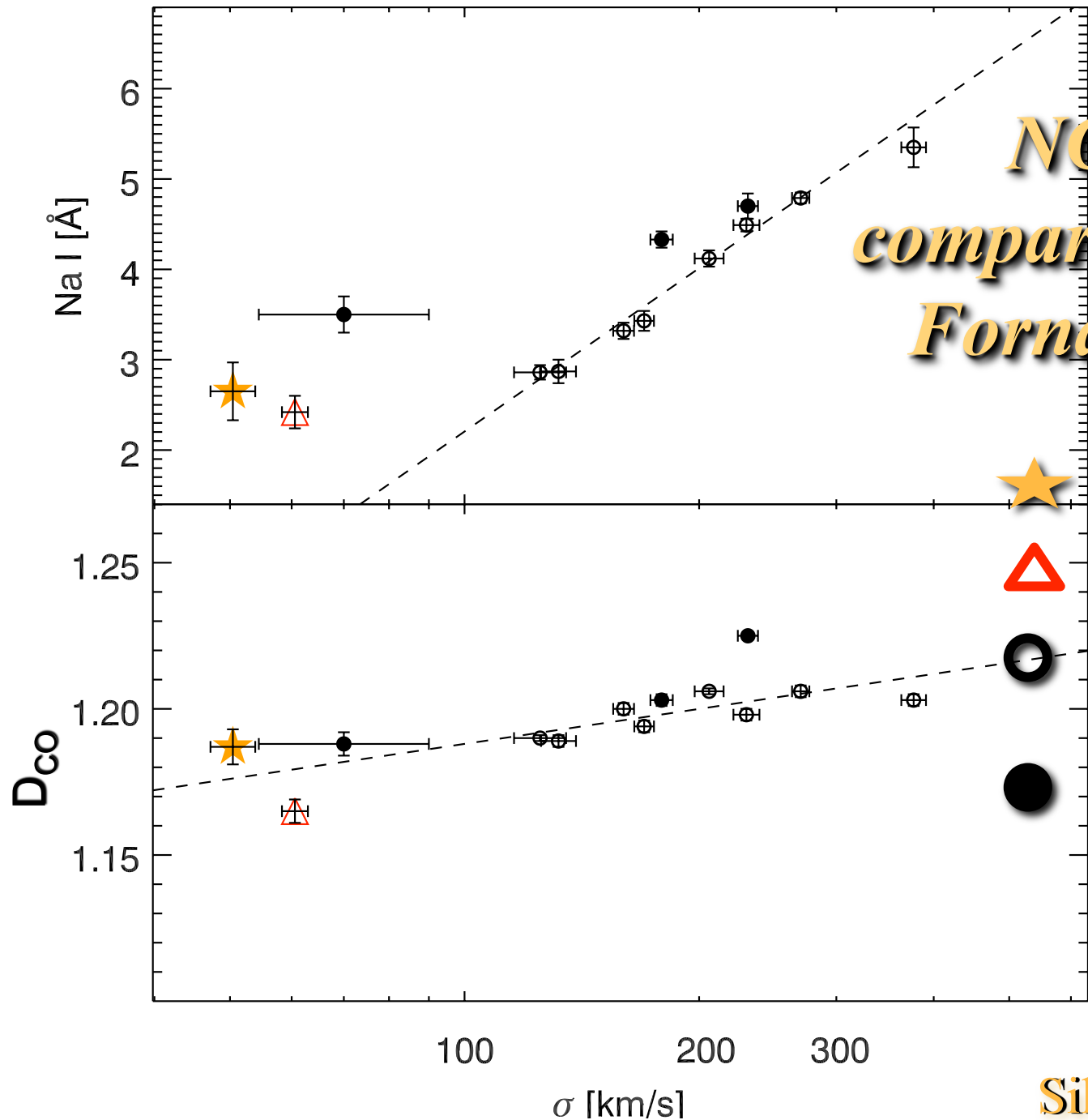


⊕ Comparison with ground based (natural seeing) long-slit data



Line strengths with HST-like resolution





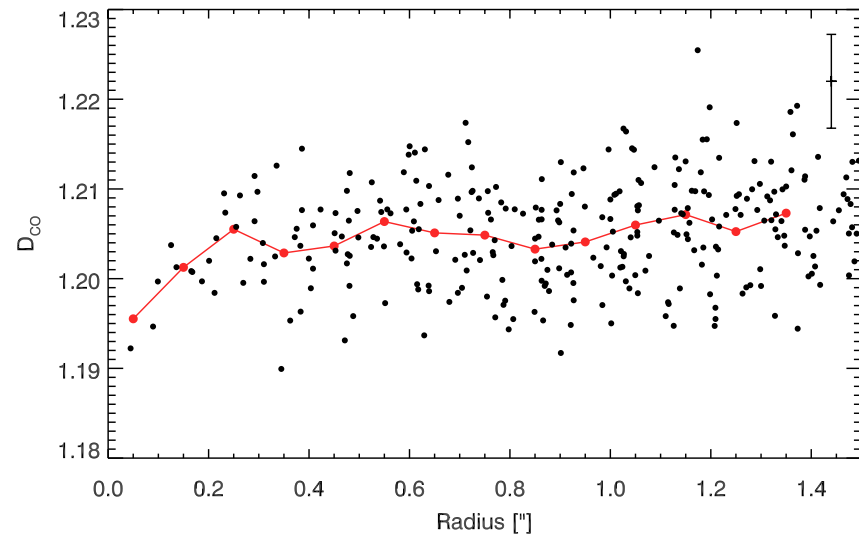
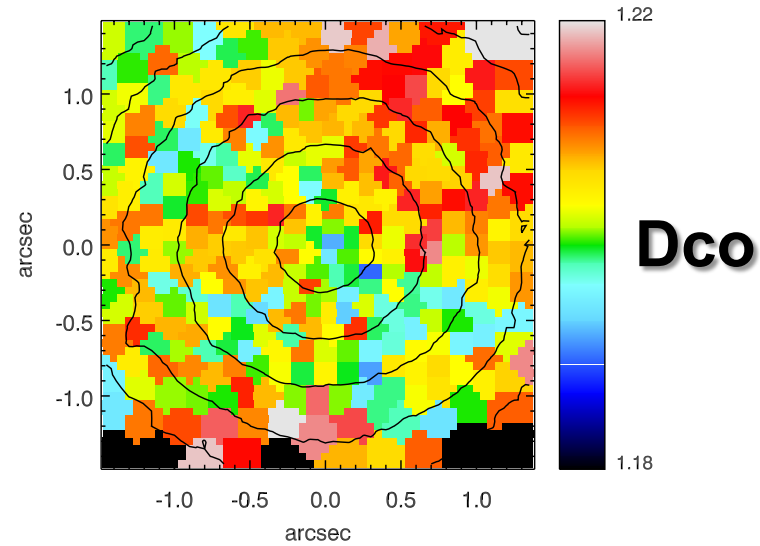
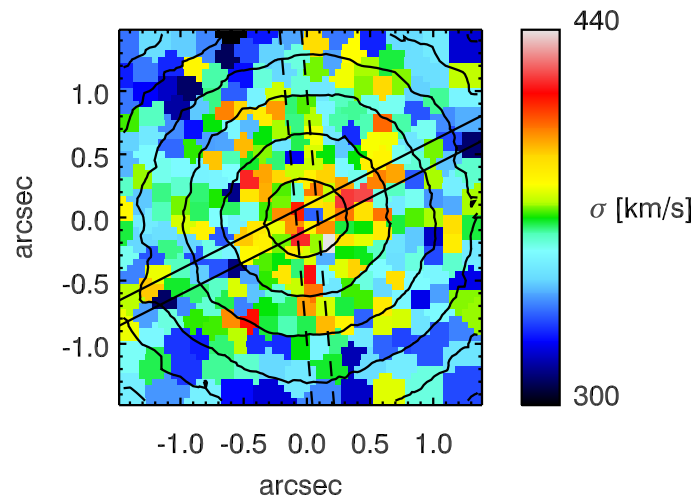
NGC 1428 as compared to other Fornax galaxies

-  NSC in NGC1428
-  NGC1428
-  Old Fornax galaxies
-  Young Fornax galaxies

Silva et al. 2008

NGC 1399 – cD in Fornax

Velocity dispersion map



Lyubenova et al. 2008

Concluding remarks

- ⊕ We are able to resolve the nucleus of NGC1428 (FCC277) – differences in kinematics and line strengths
- ⊕ Do we see several nested structures at $r < 1''$?
- ⊕ Can we determine ages and metallicities from near-IR spectra?
- ⊕ Near-IR diagnostic tools highly needed: AO in Natural Guide and/or Laser Guide Star