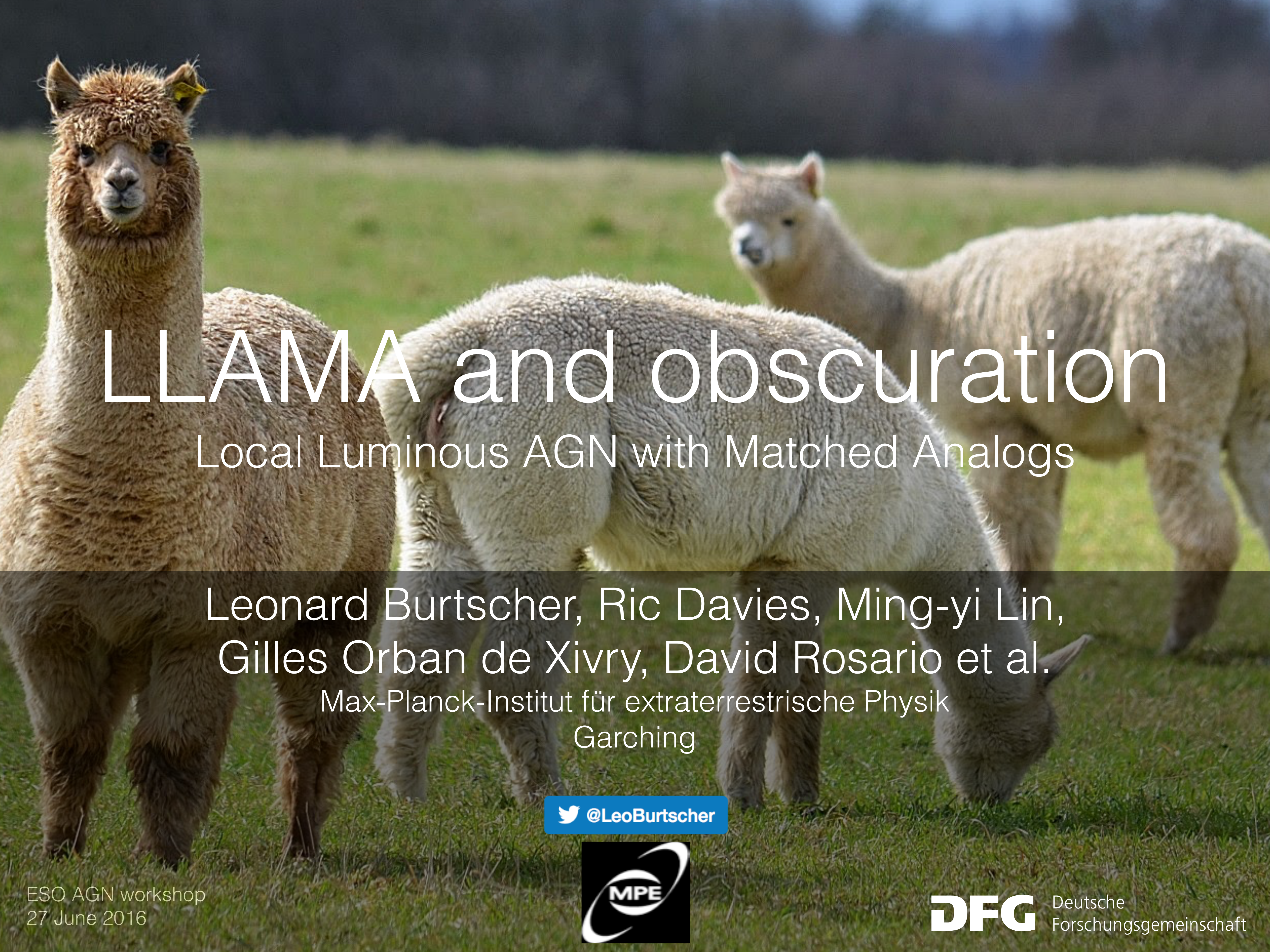

LLAMA and obscuration

Local Luminous AGN with Matched Analogs

Leonard Burtscher, Ric Davies, Ming-yi Lin,
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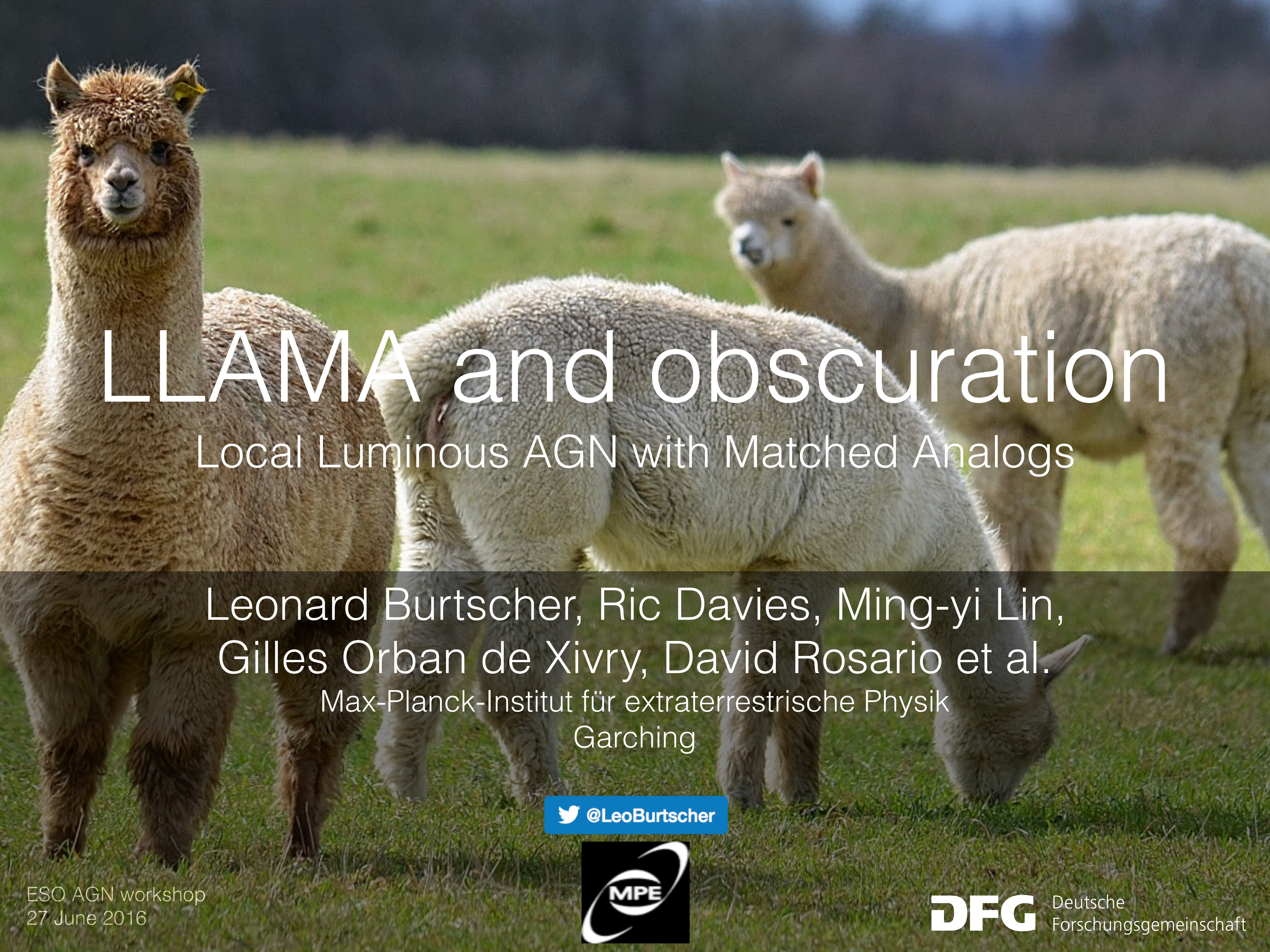
Garching

@LeoBurtscher

ESO AGN workshop
27 June 2016

Deutsche Forschungsgemeinschaft



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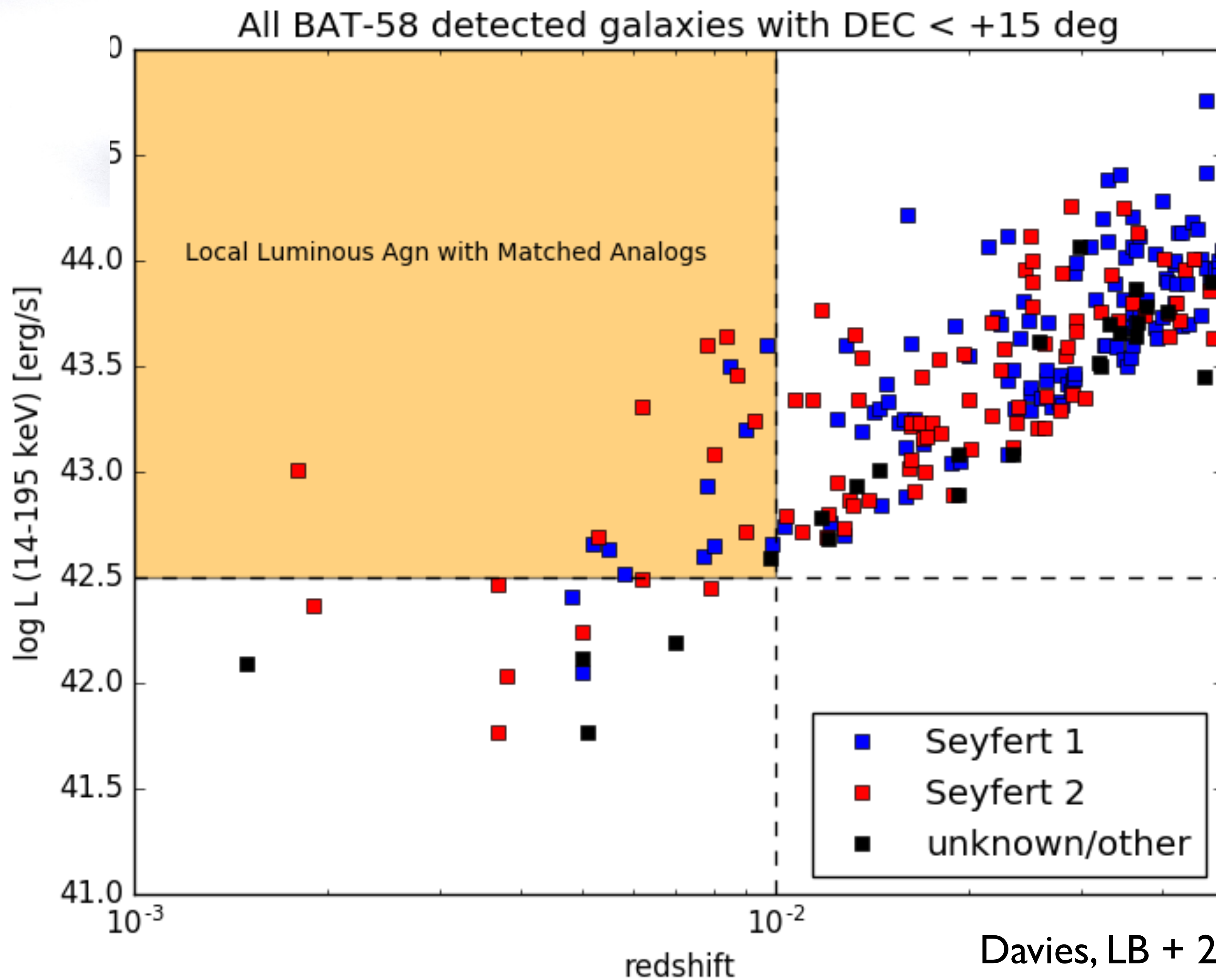

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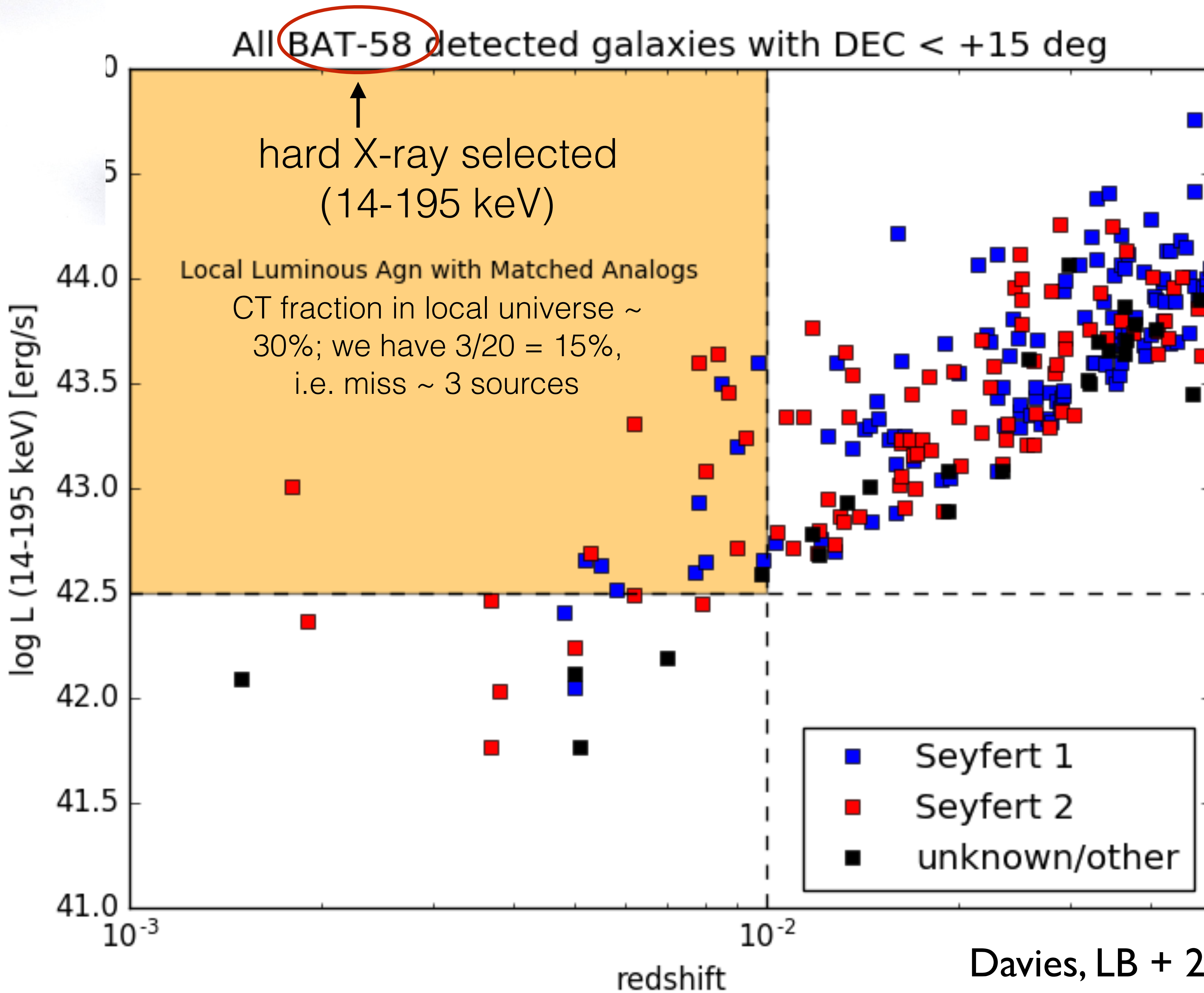

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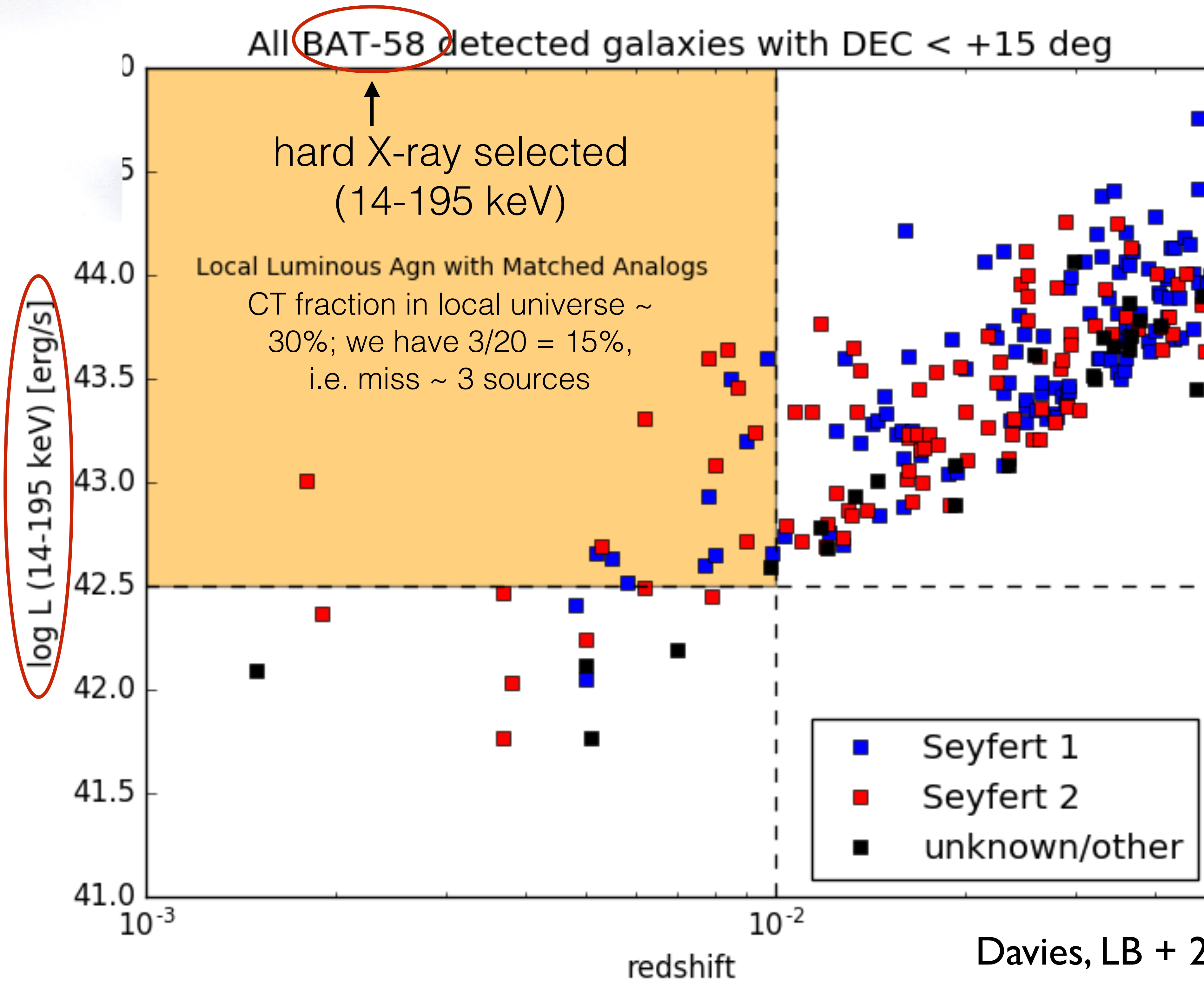

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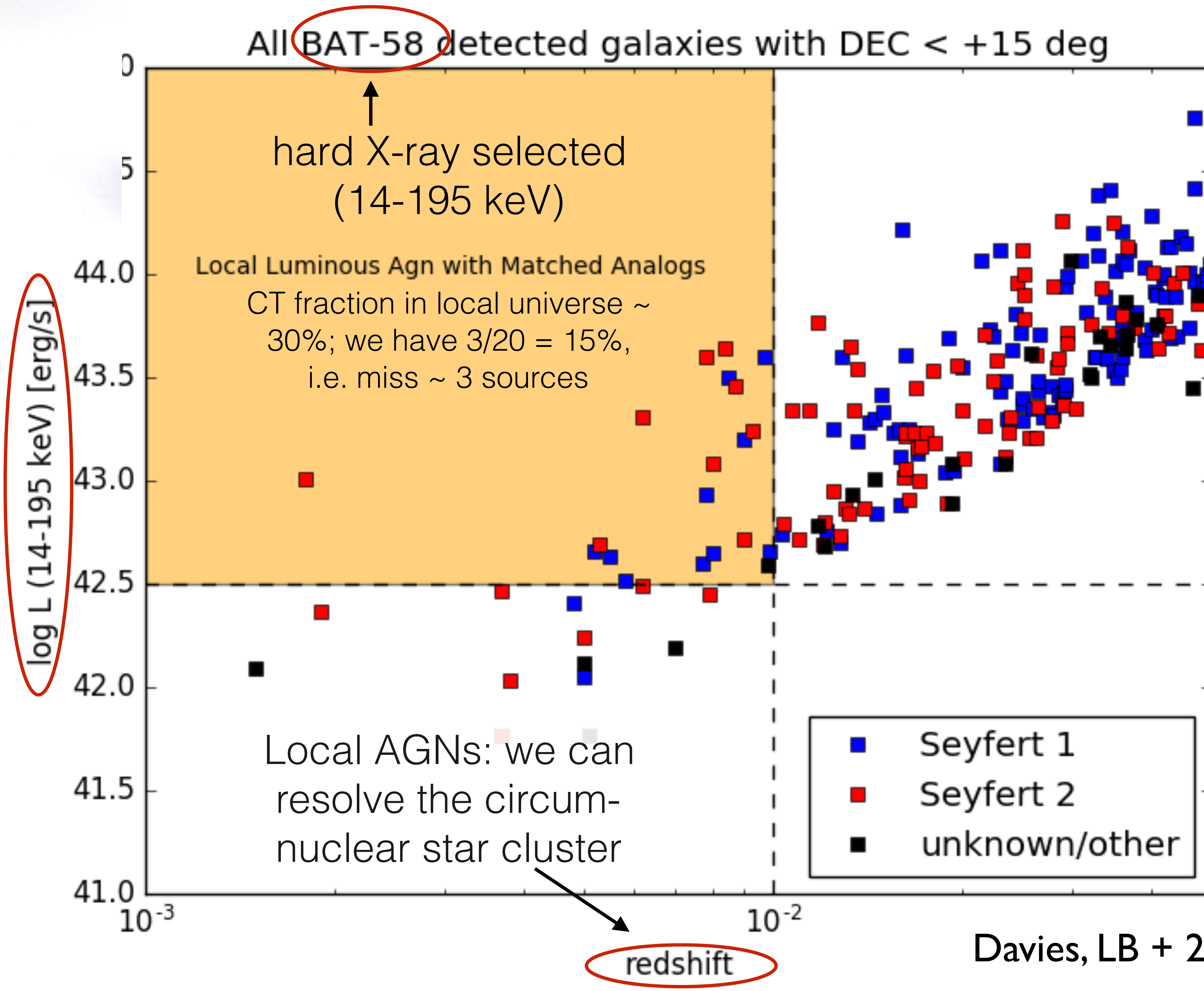

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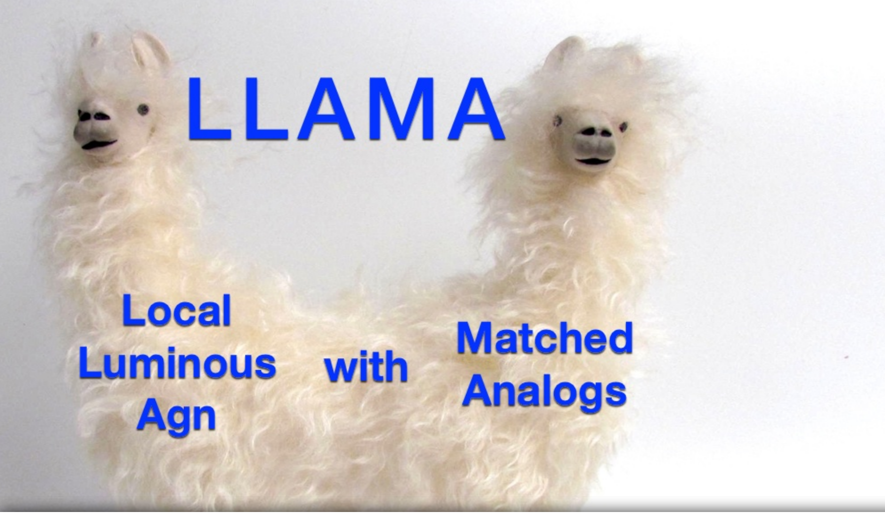

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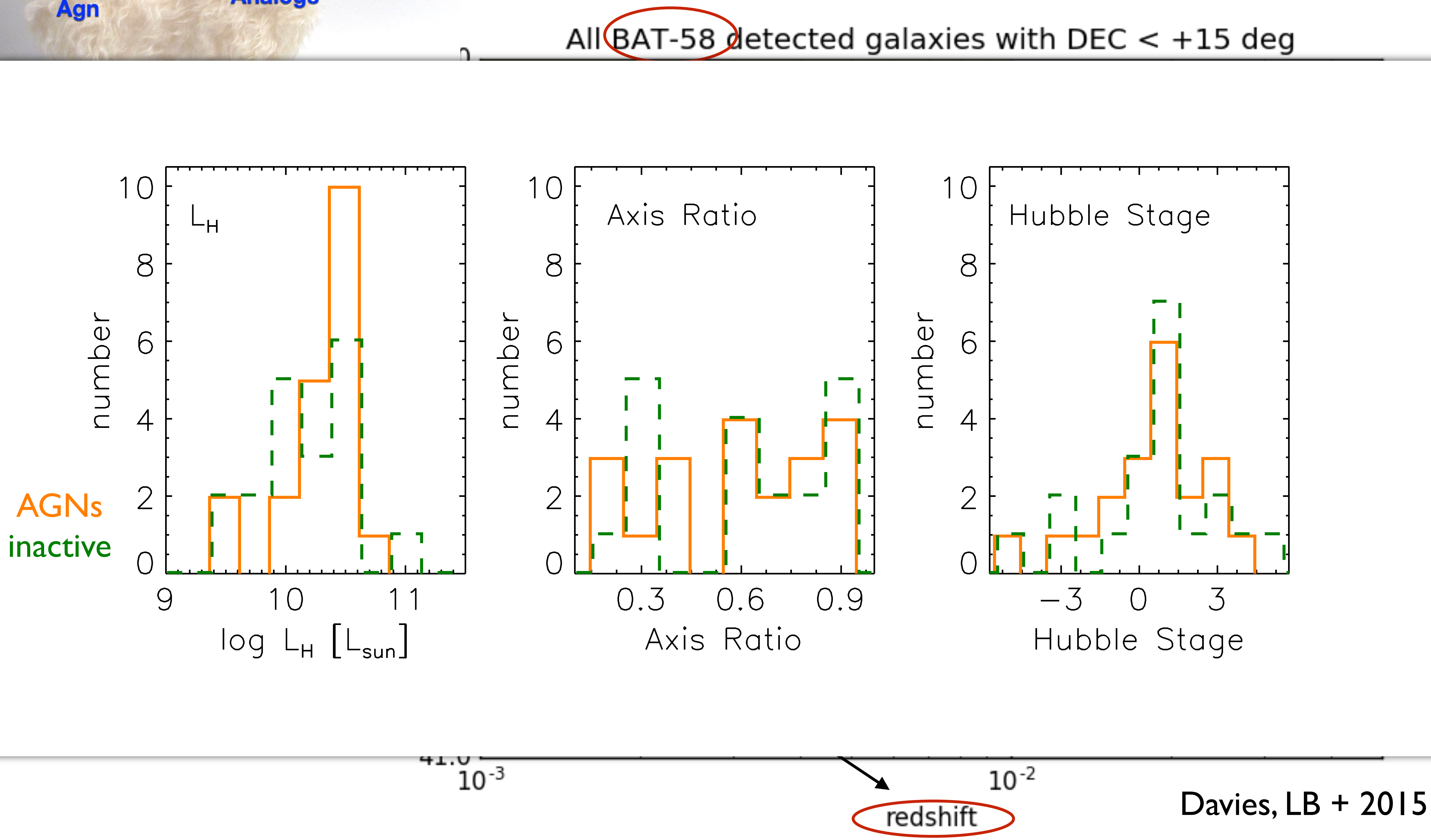

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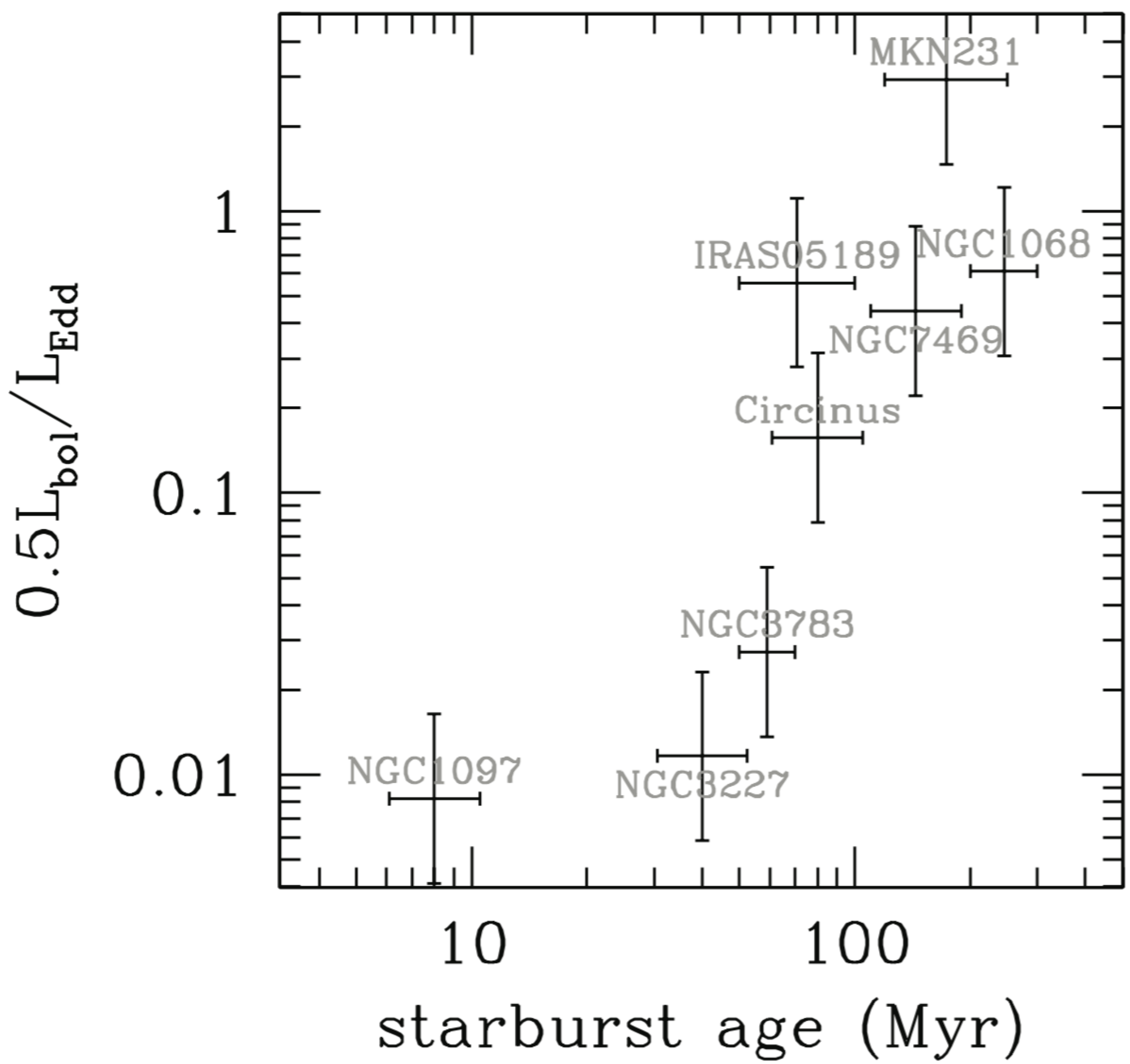
The torus: more than obscuration

A starburst-AGN connection?



Davies+ 2007

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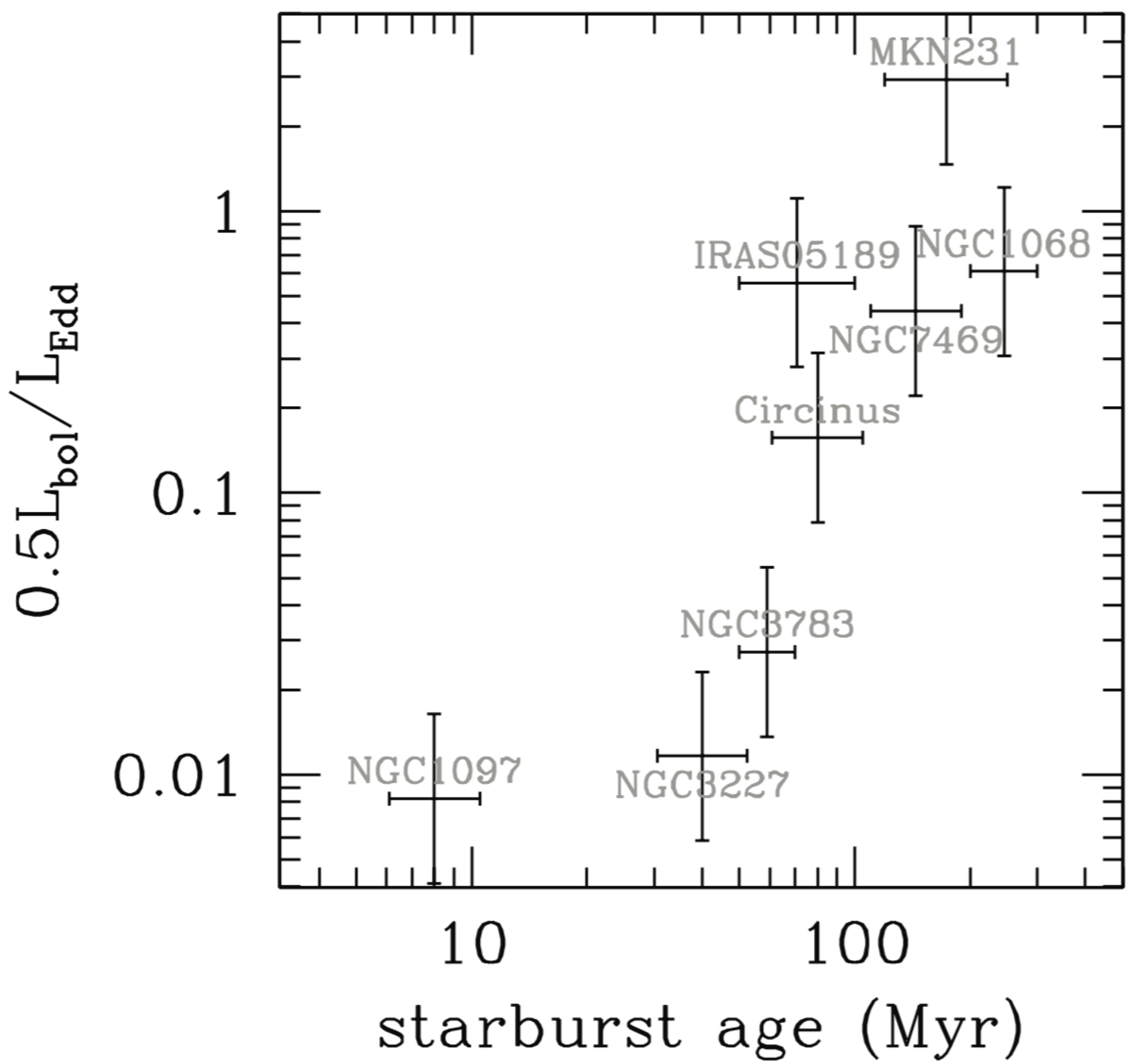


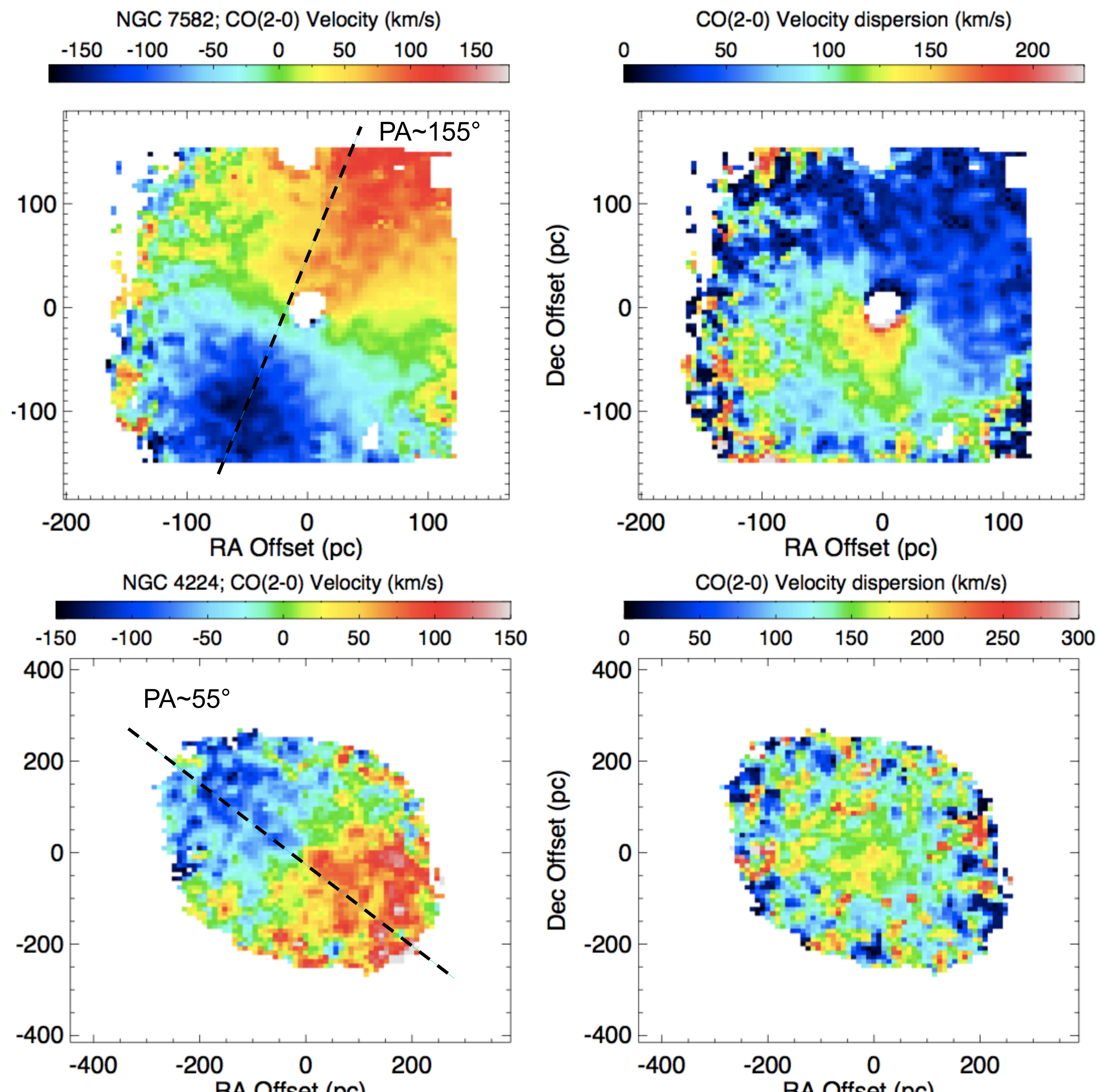
powerful AGN activity only in post-starburst nuclei?

Davies+ 2007

The next steps

A complete, hard X-ray selected local sample

- SINFONI IFU cubes to analyze gas inflow / outflow



Lin+ (in prep)

see poster B9 by Ming-Yi Lin

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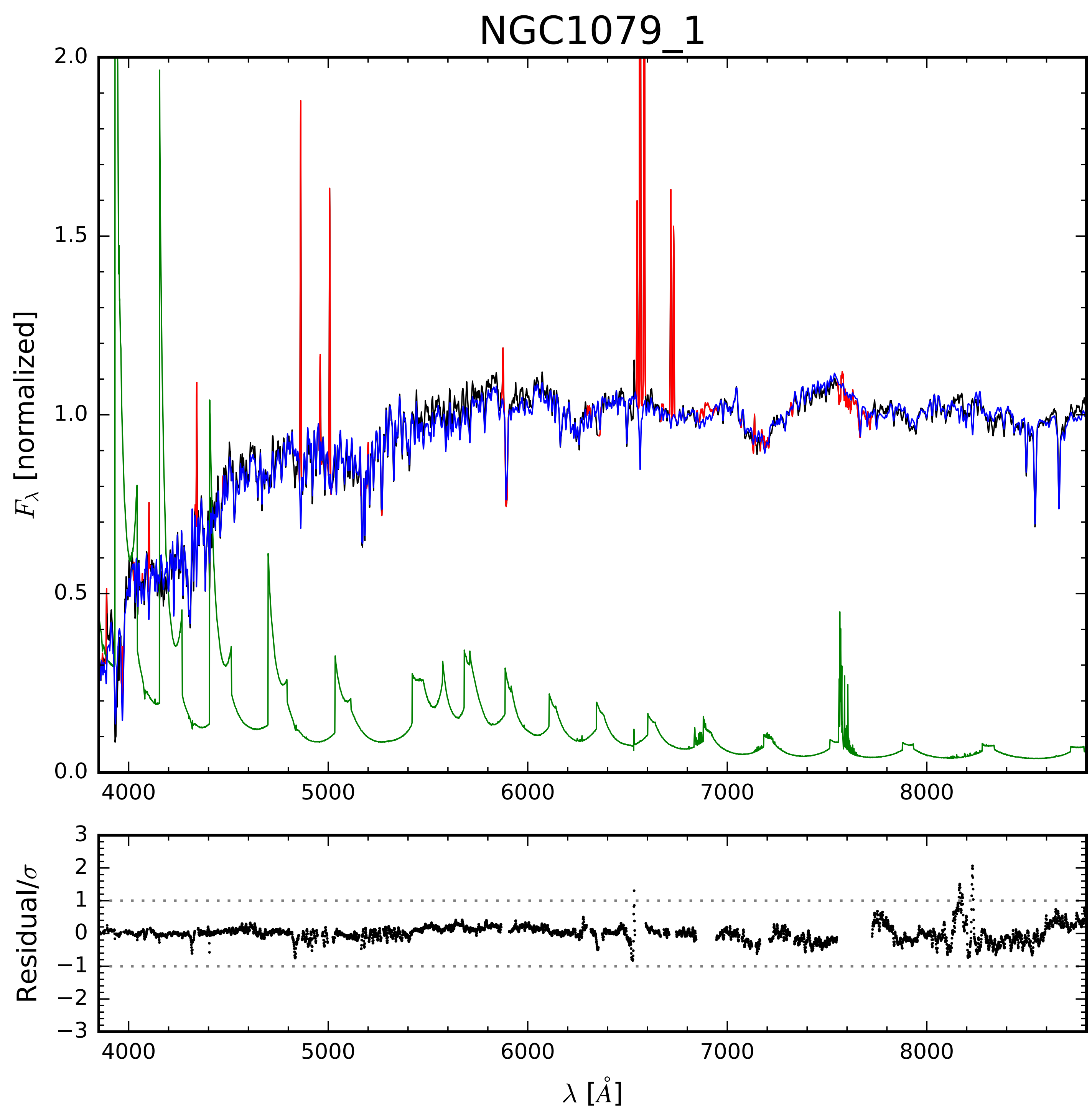

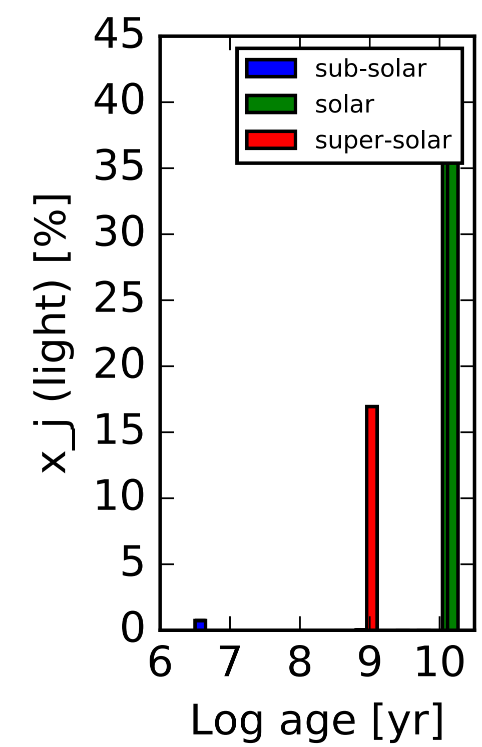

Burtscher+ (in prep)

The next steps

A complete, hard X-ray selected local sample

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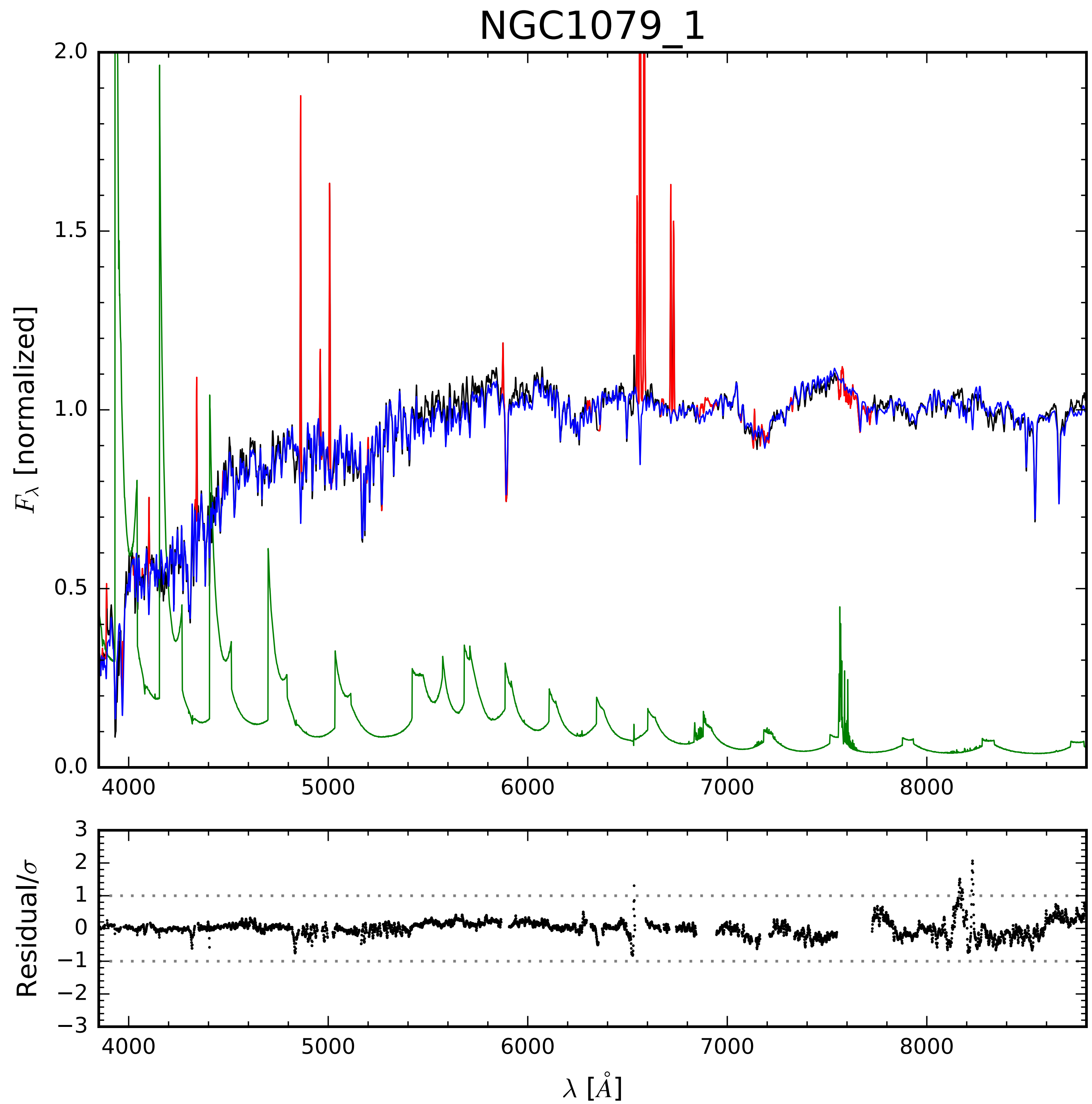
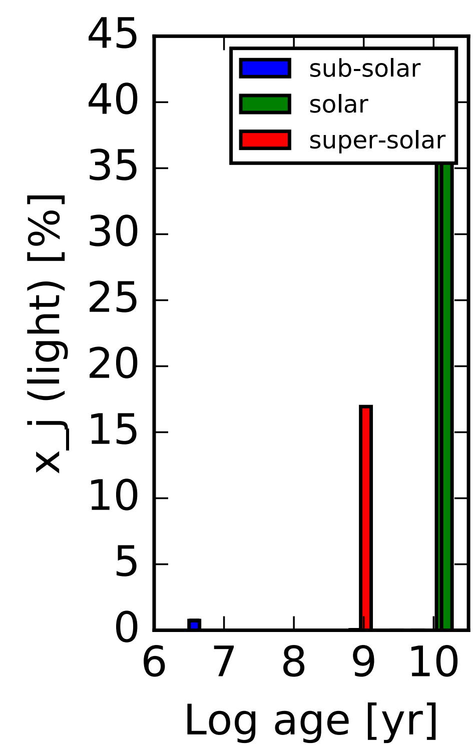
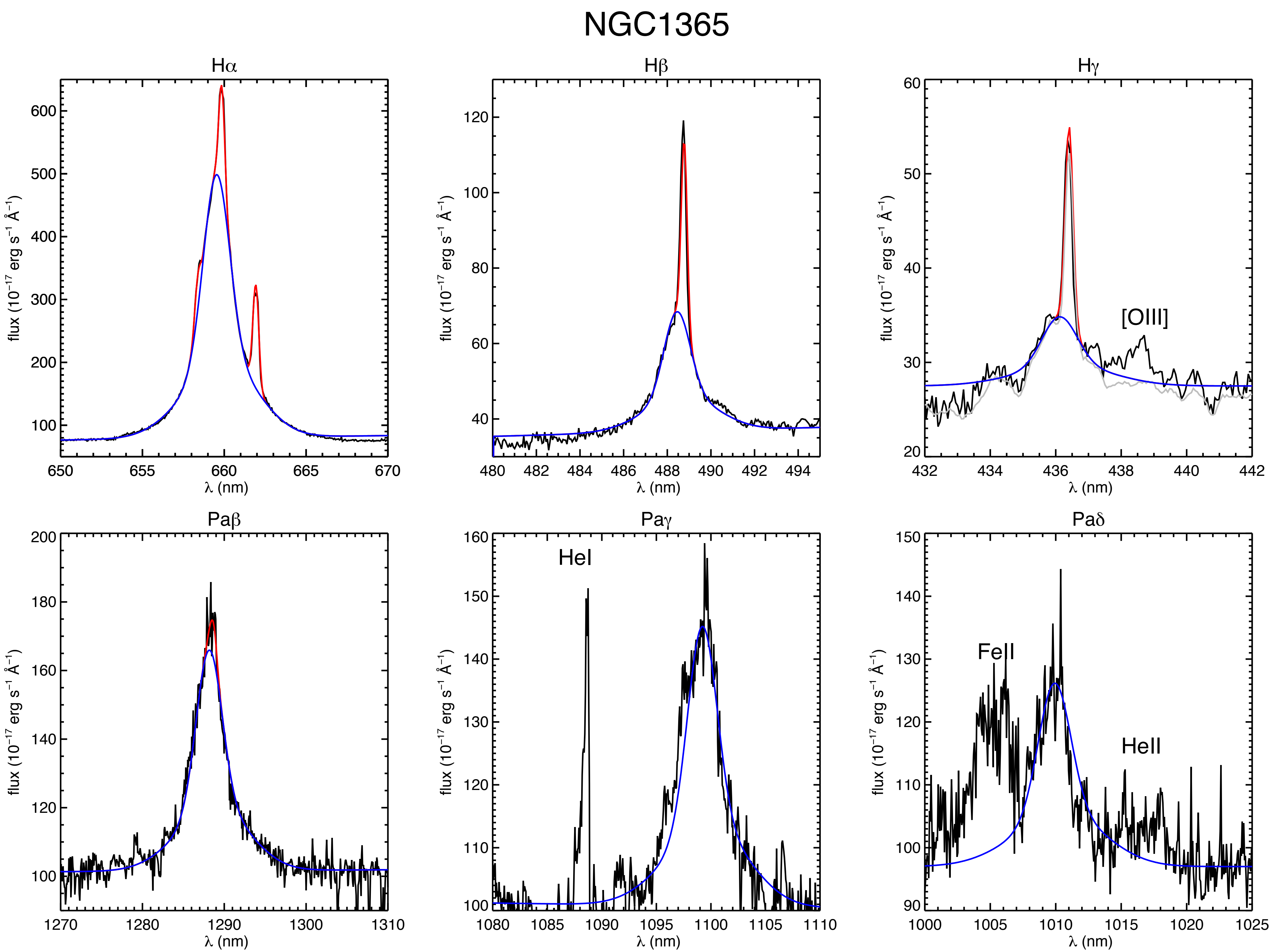
- X-SHOOTER spectra to robustly analyze the star formation histories
- APEX data to probe molecular inventory (+ trying to get ALMA + HST…)





Burtscher+ (in prep)

First results: BLR properties and obscuration



Schnorr-Müller+ 2016 (re-submitted)

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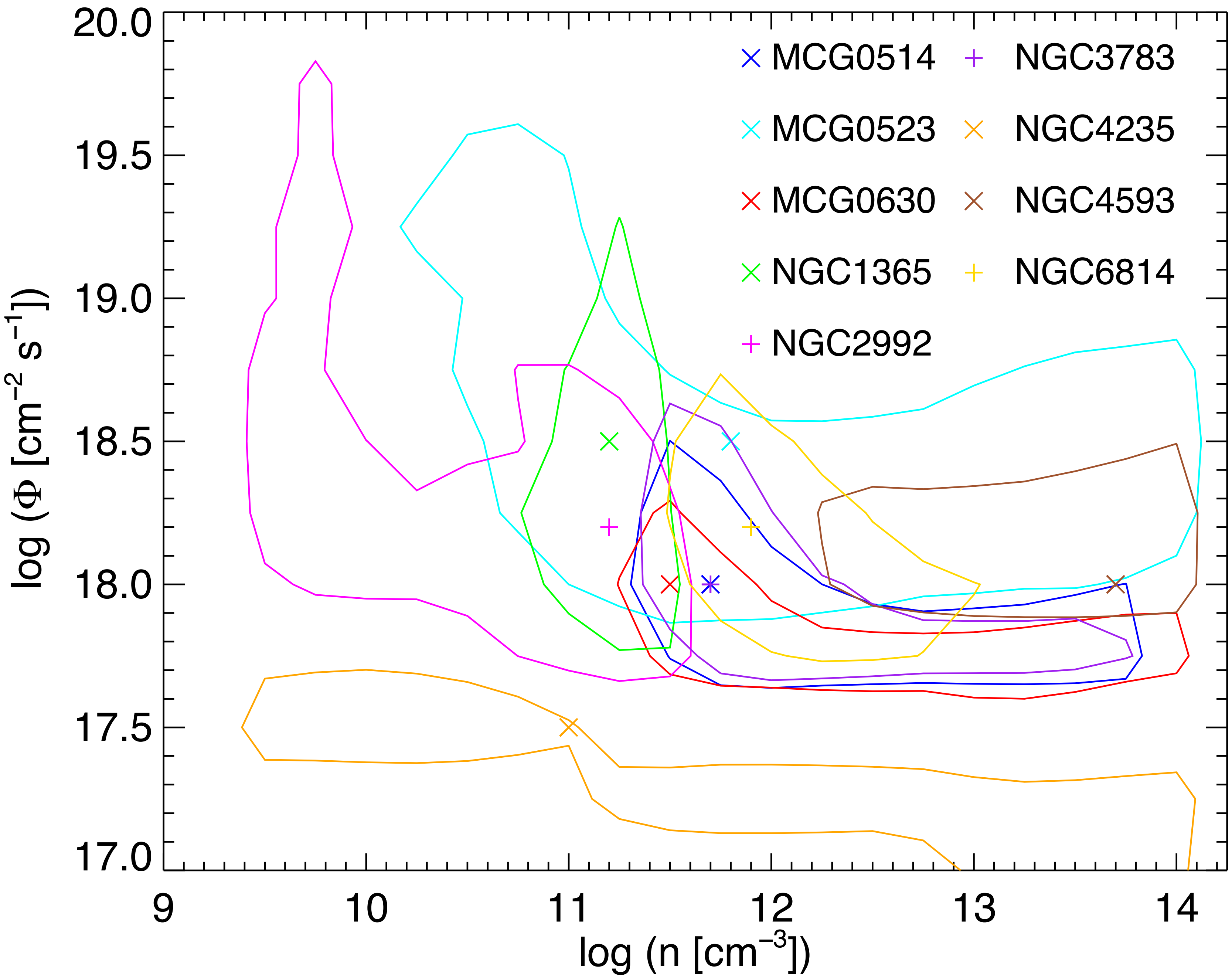

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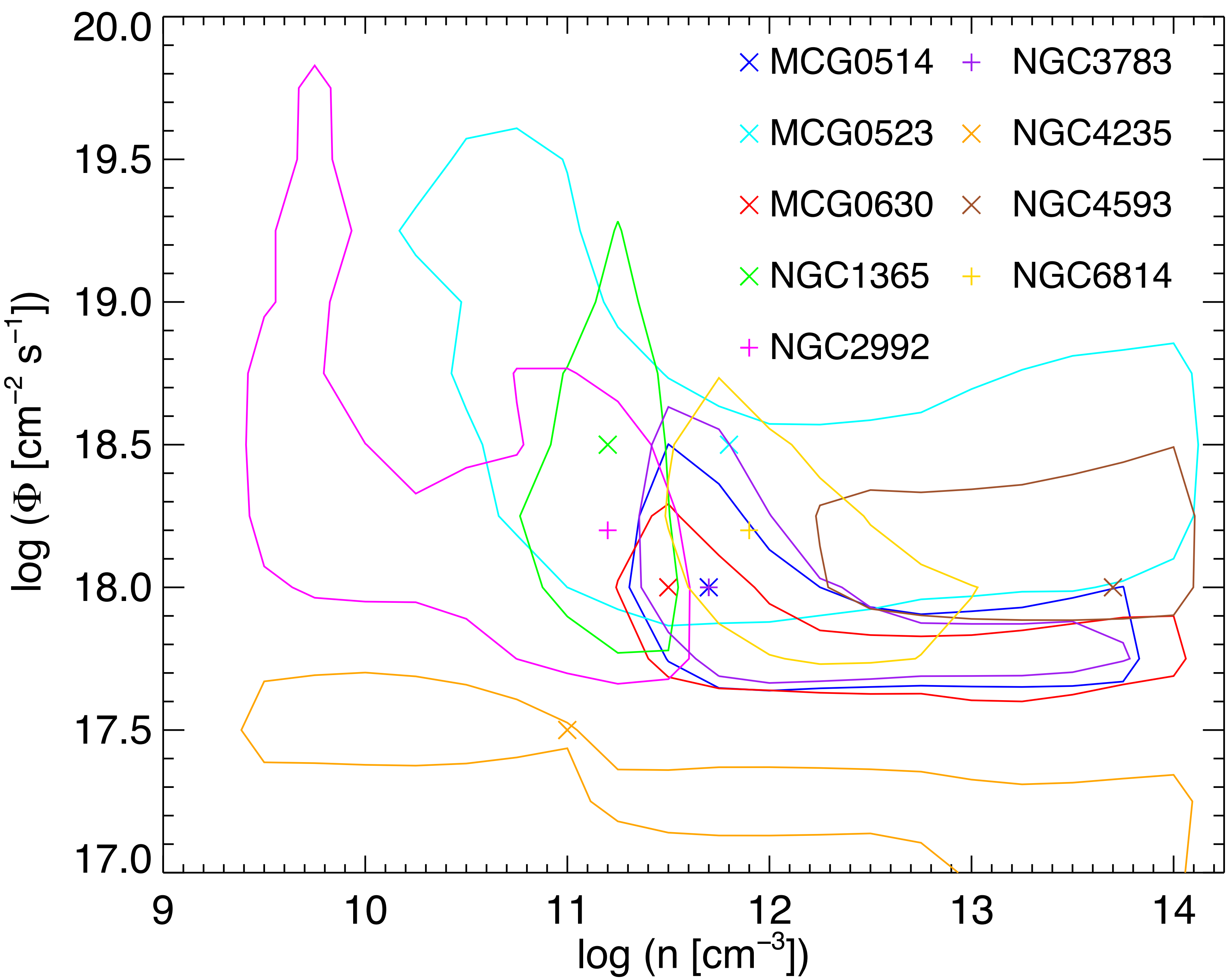
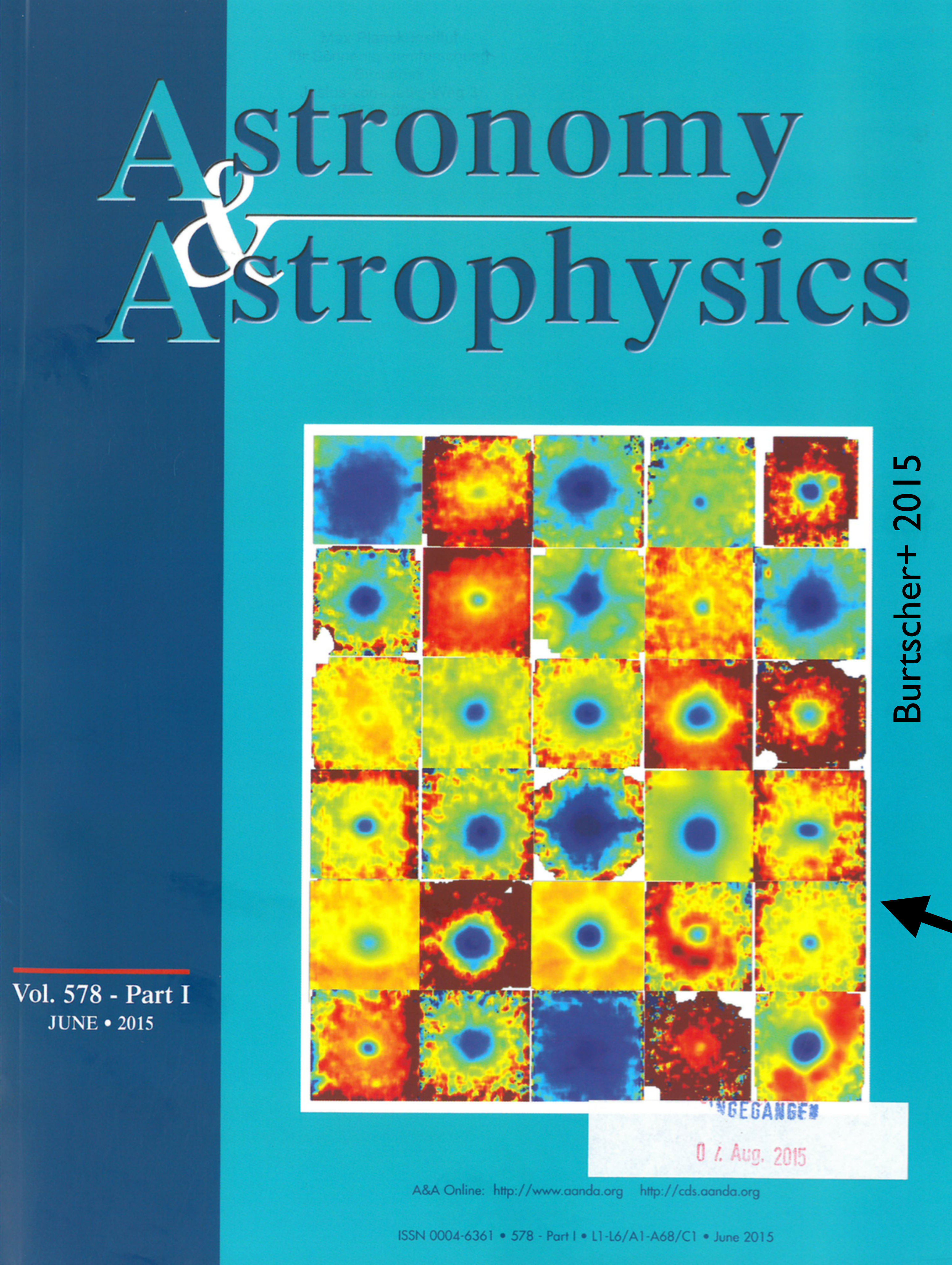


Hydrogen emitting clouds are ~ at sublimation radius

Object	r_b
MCG–05-14-012	1.0
MCG–05-23-16	0.5
MCG–06-30-015	1.0
NGC1365	0.7
NGC2992	0.8
NGC3783	0.8
NGC4235	1.8
NGC4593	0.9
NGC6814	0.9

Schnorr-Müller+ 2016 (re-submitted)

A near-IR high-resolution atlas of local AGNs

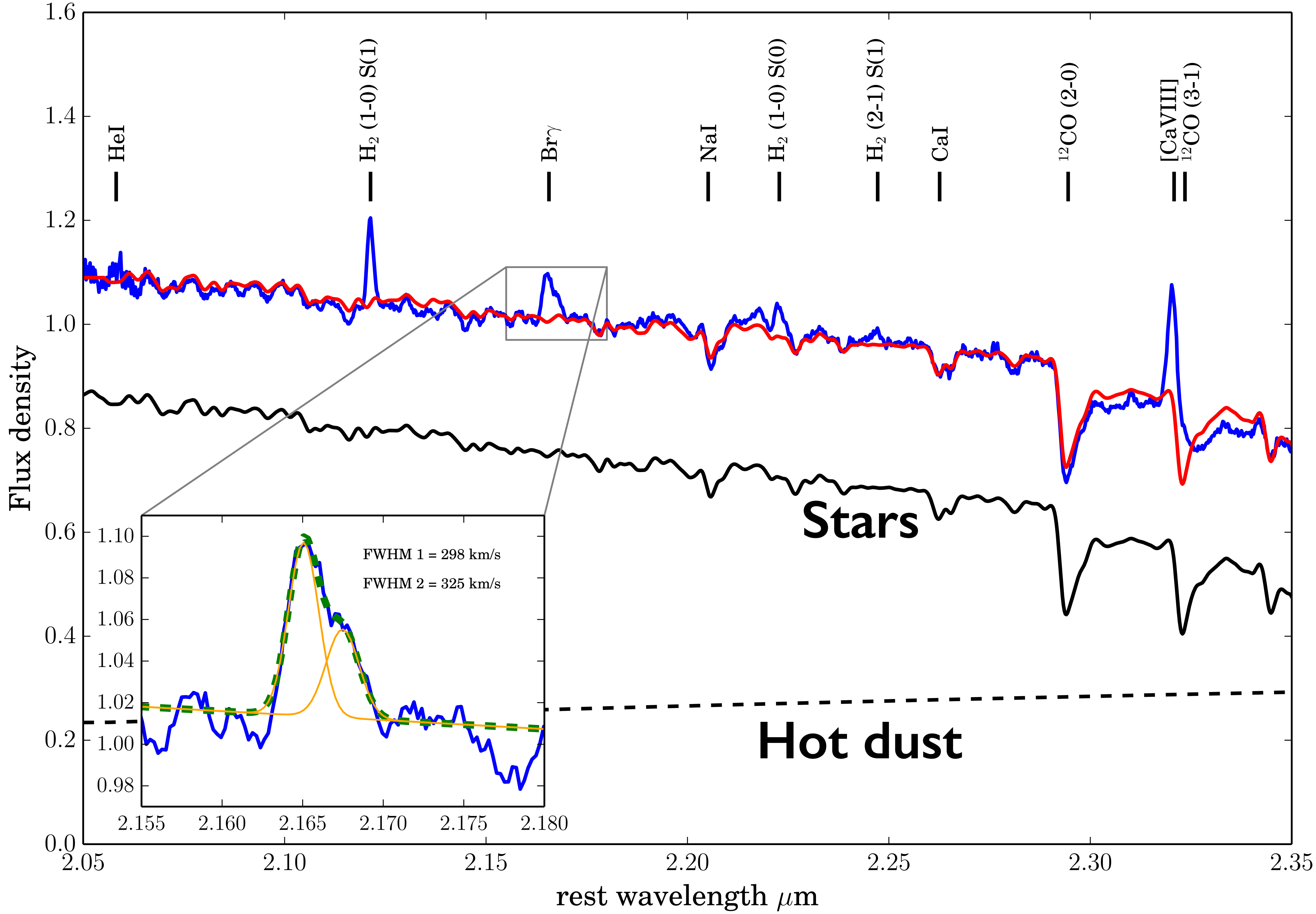


Burtscher+ 2015

Dilution of stellar light by the AGN continuum

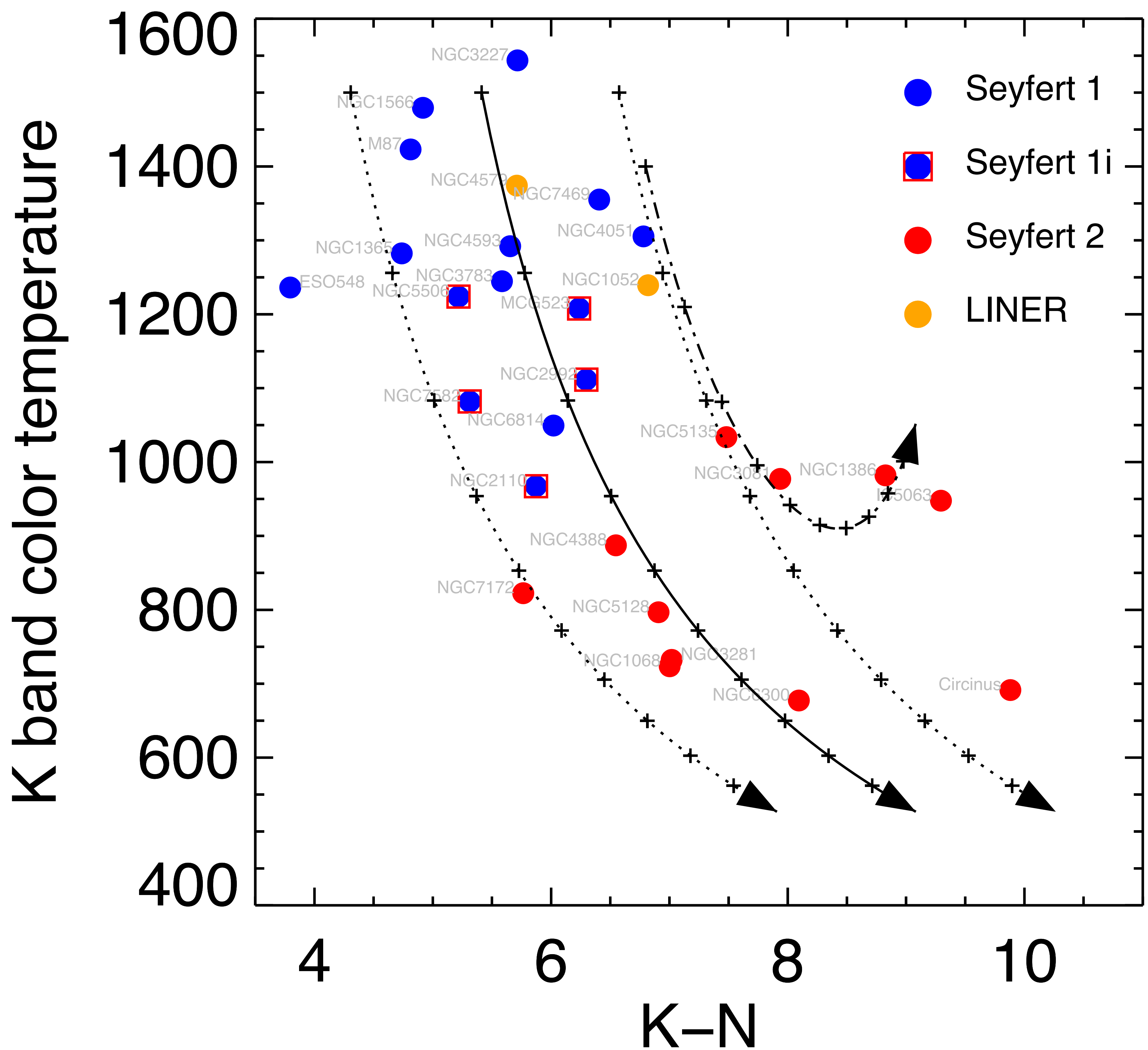
Spectral decomposition

NGC 1386 (Sy 2)



Burtscher+ 2015

A robust way to estimate the obscuration



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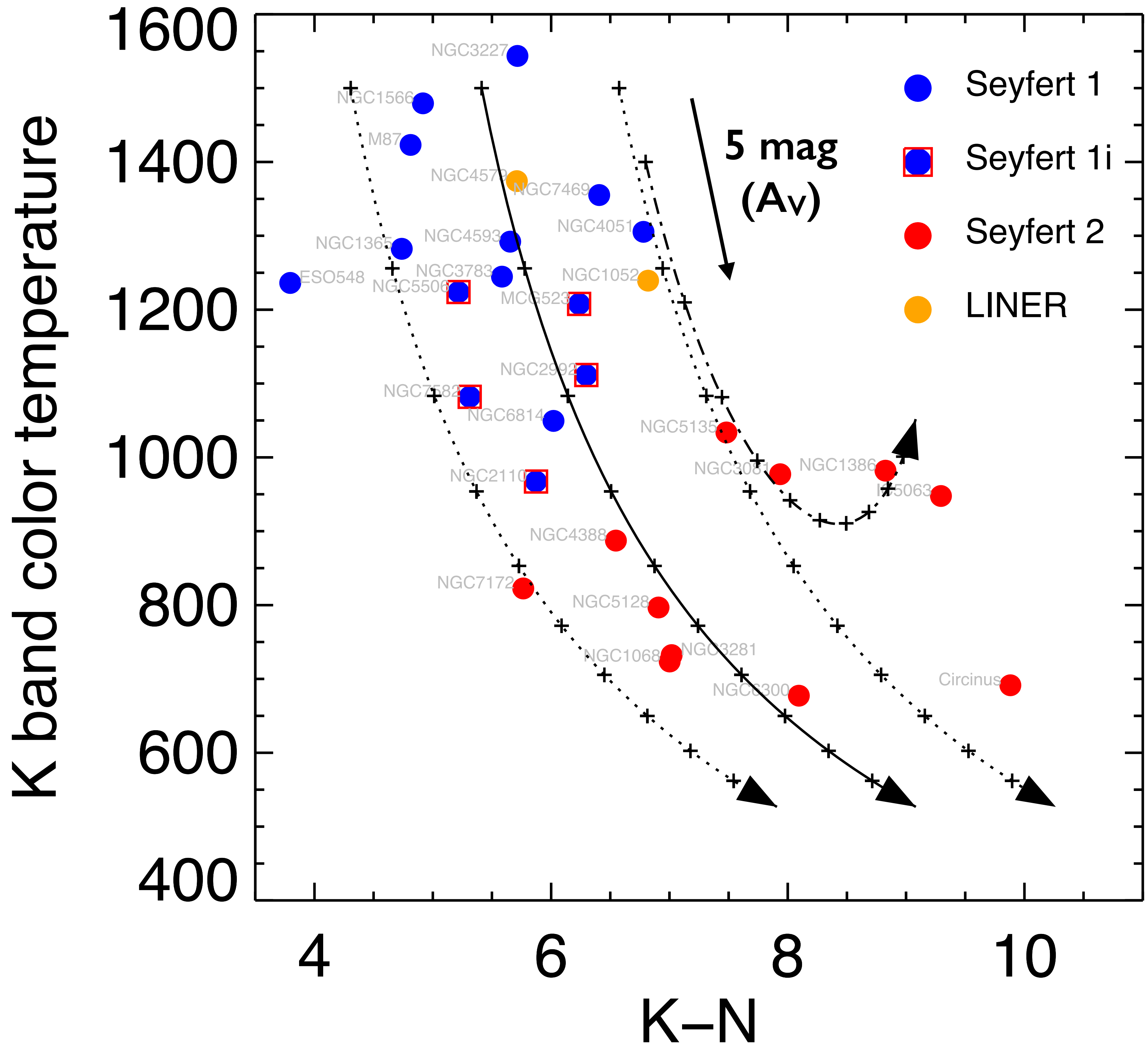

- **color temperature** consistent with optical appearance → obscuration

Burtscher+ 2015

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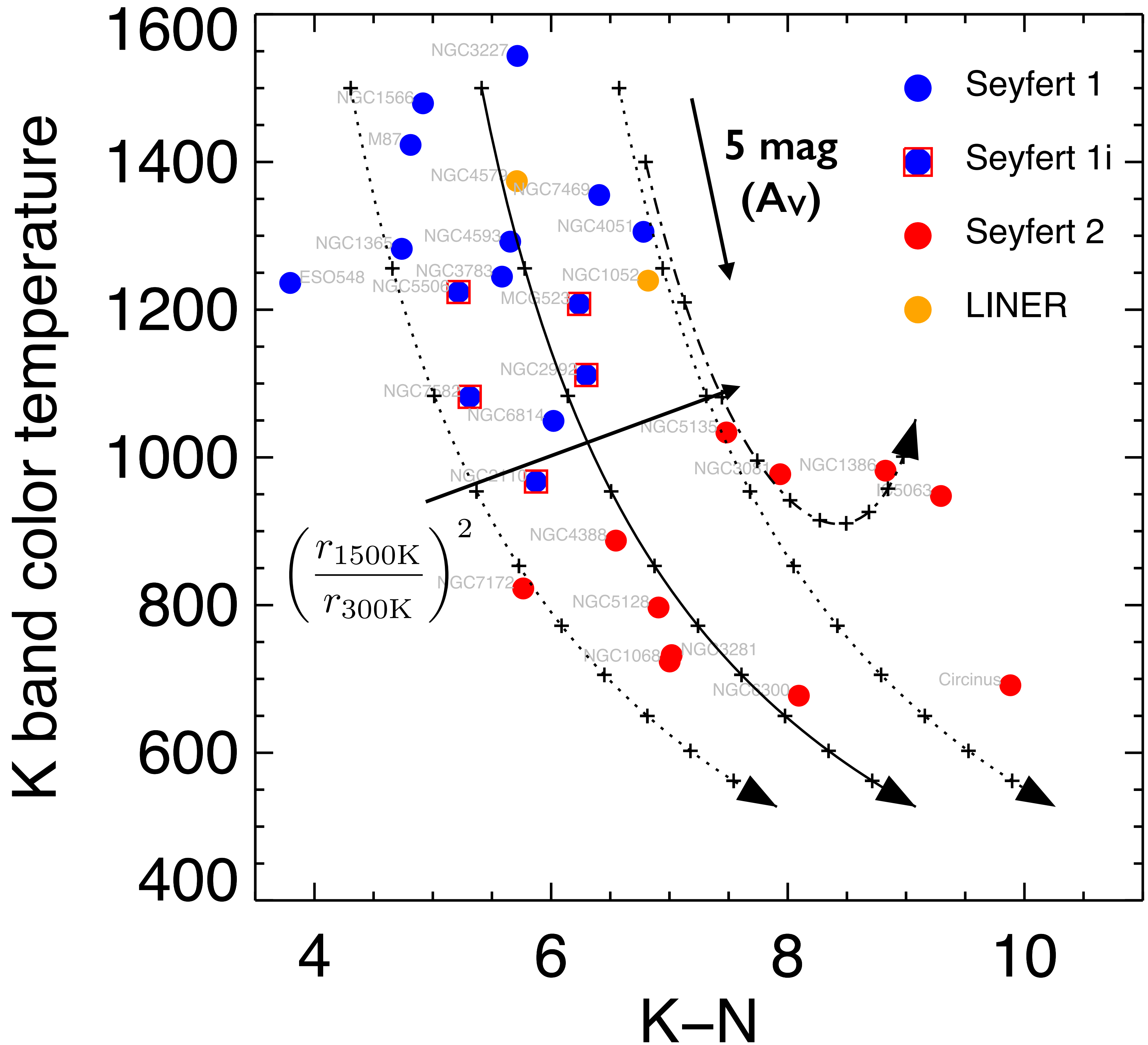
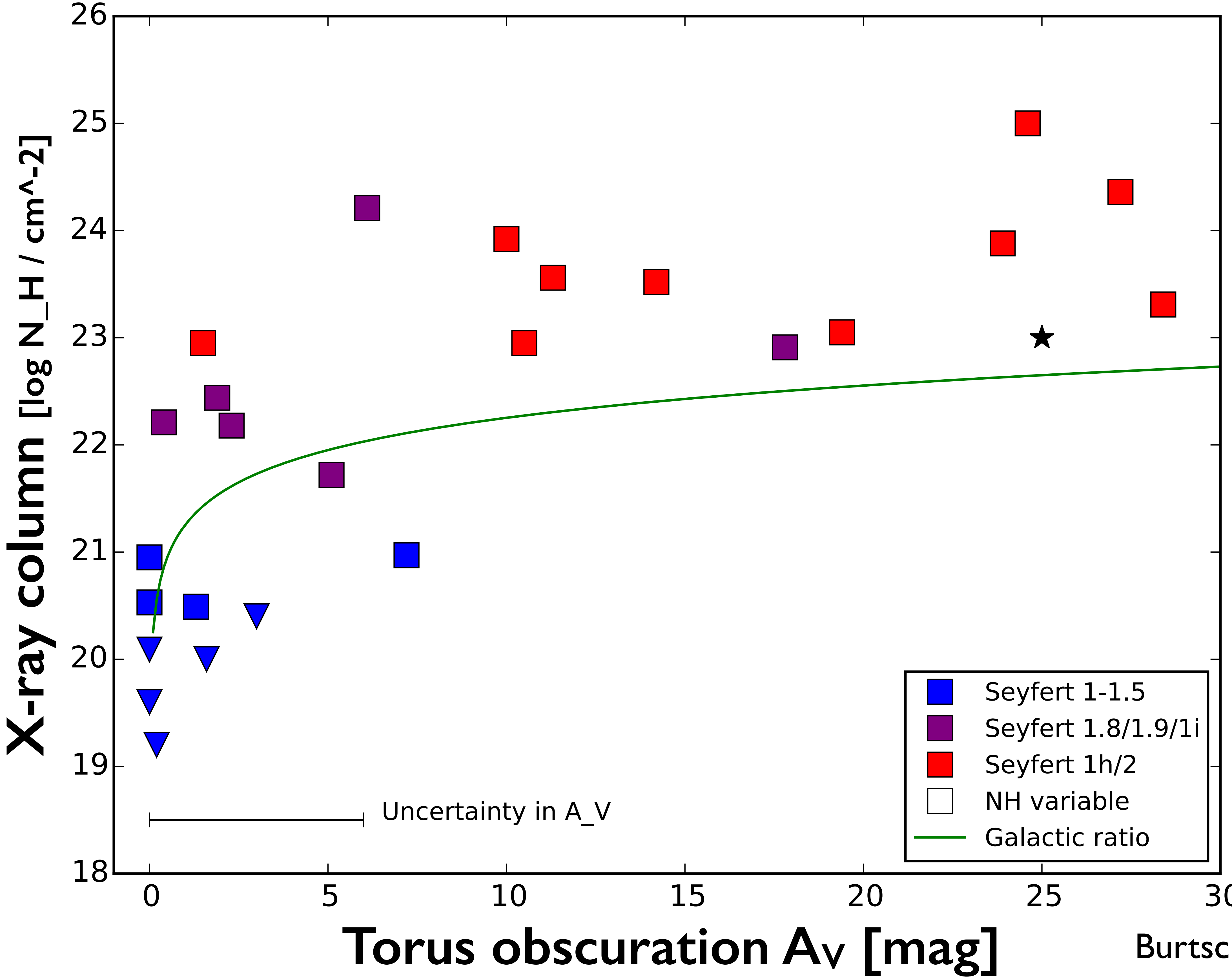


- **color temperature** consistent with optical appearance → obscuration
- **normalization** consistent with observed radii of hot/warm dust

Burtscher+ 2015

Obscuration: Torus vs. BLR



Burtscher+ 2016

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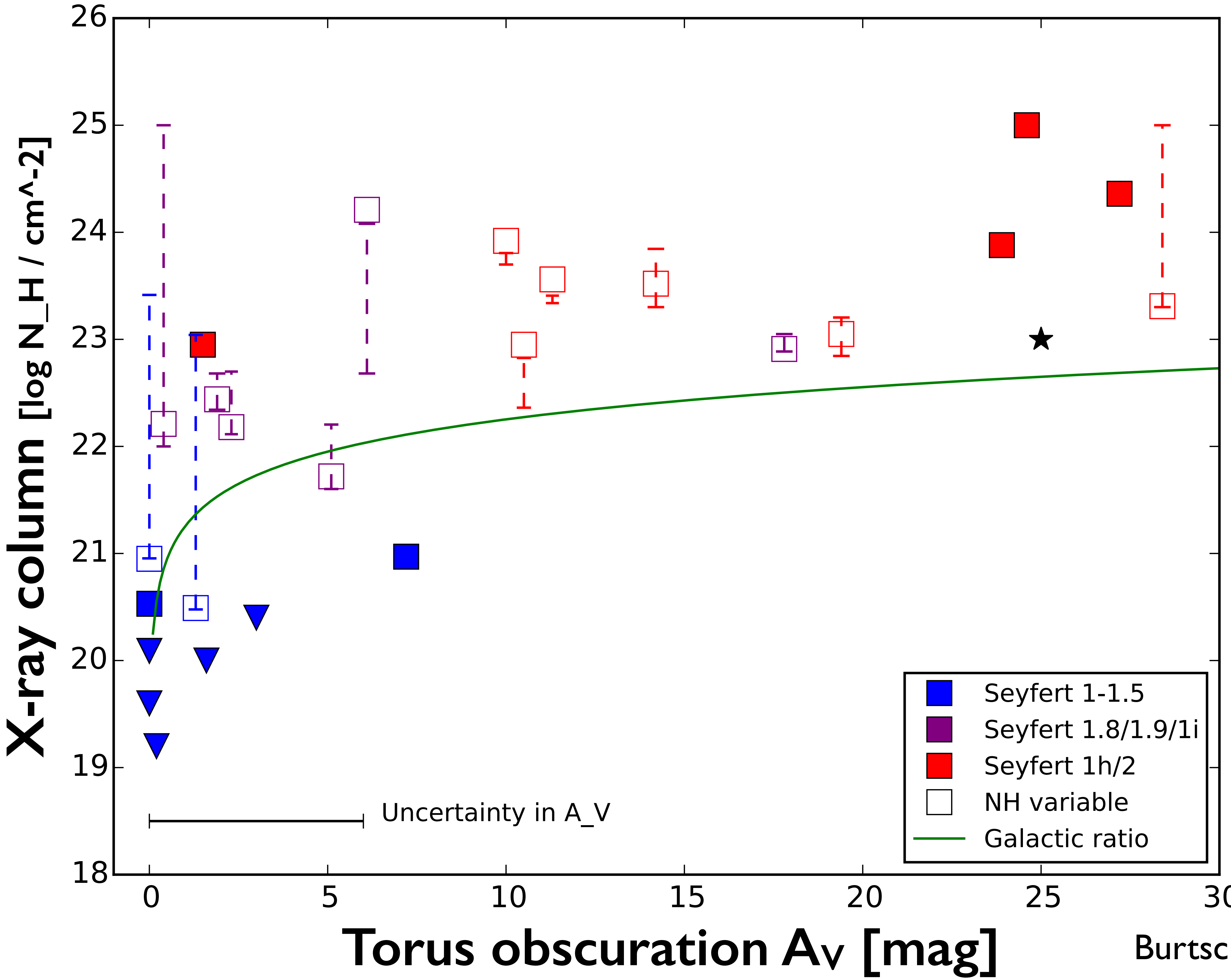

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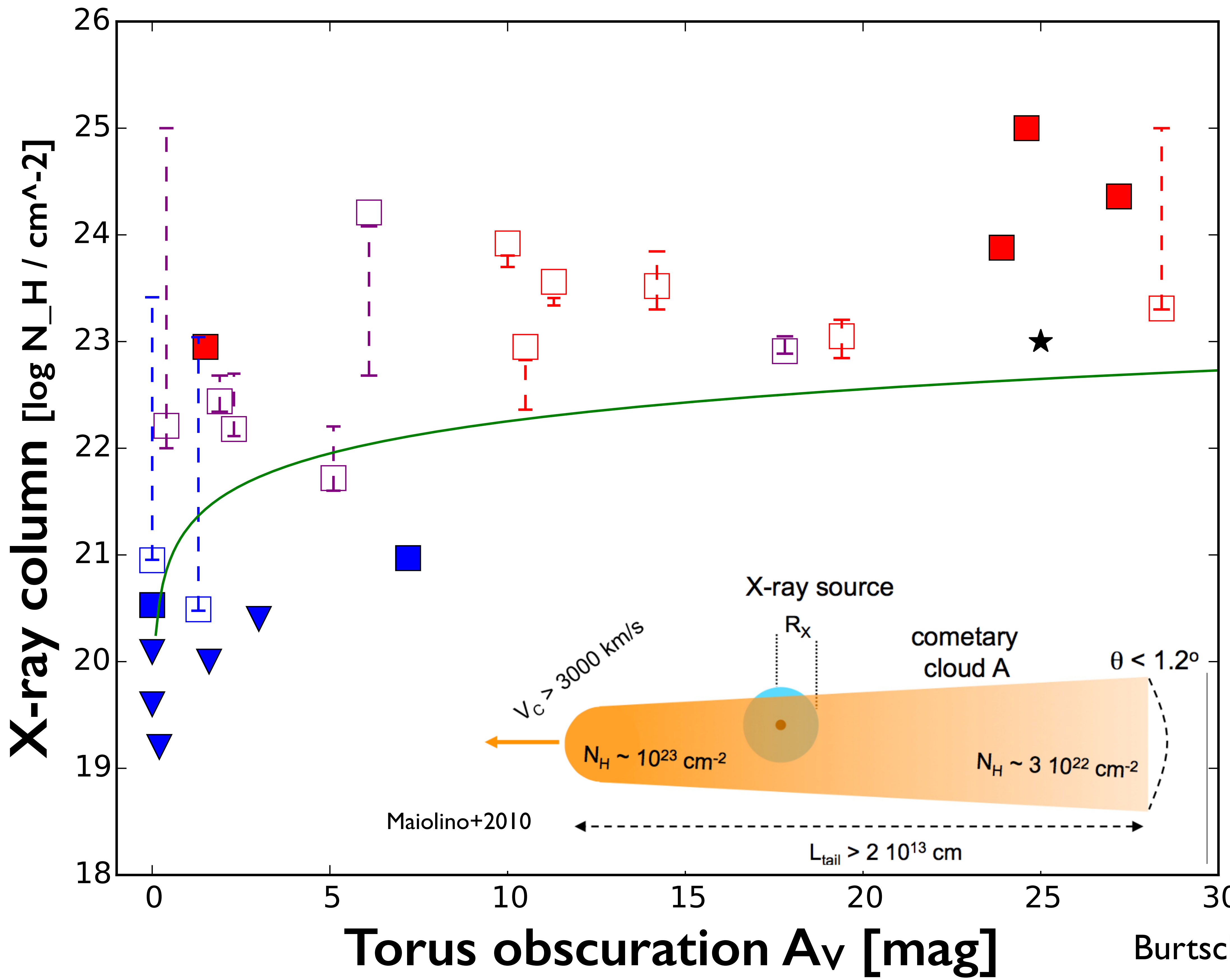

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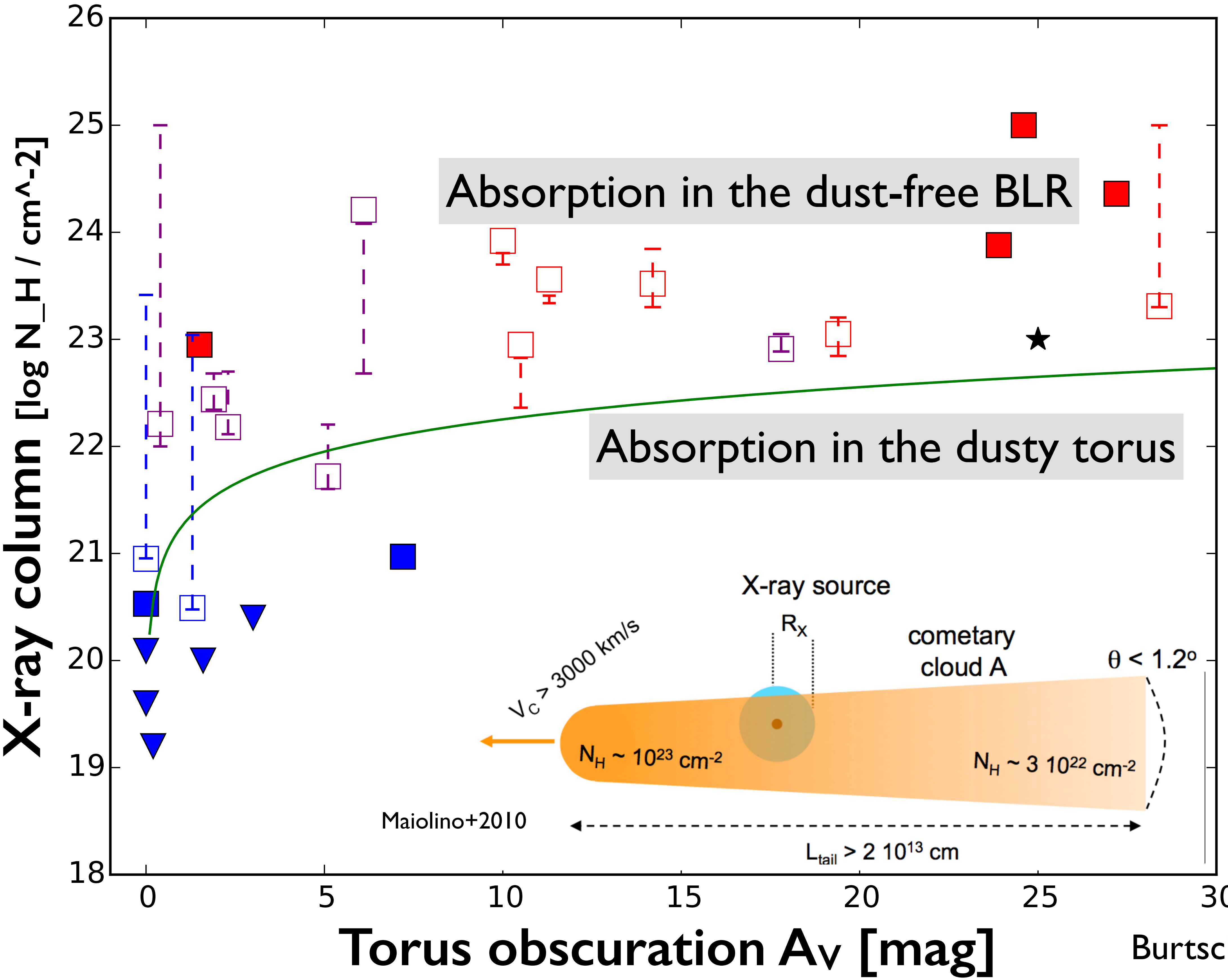

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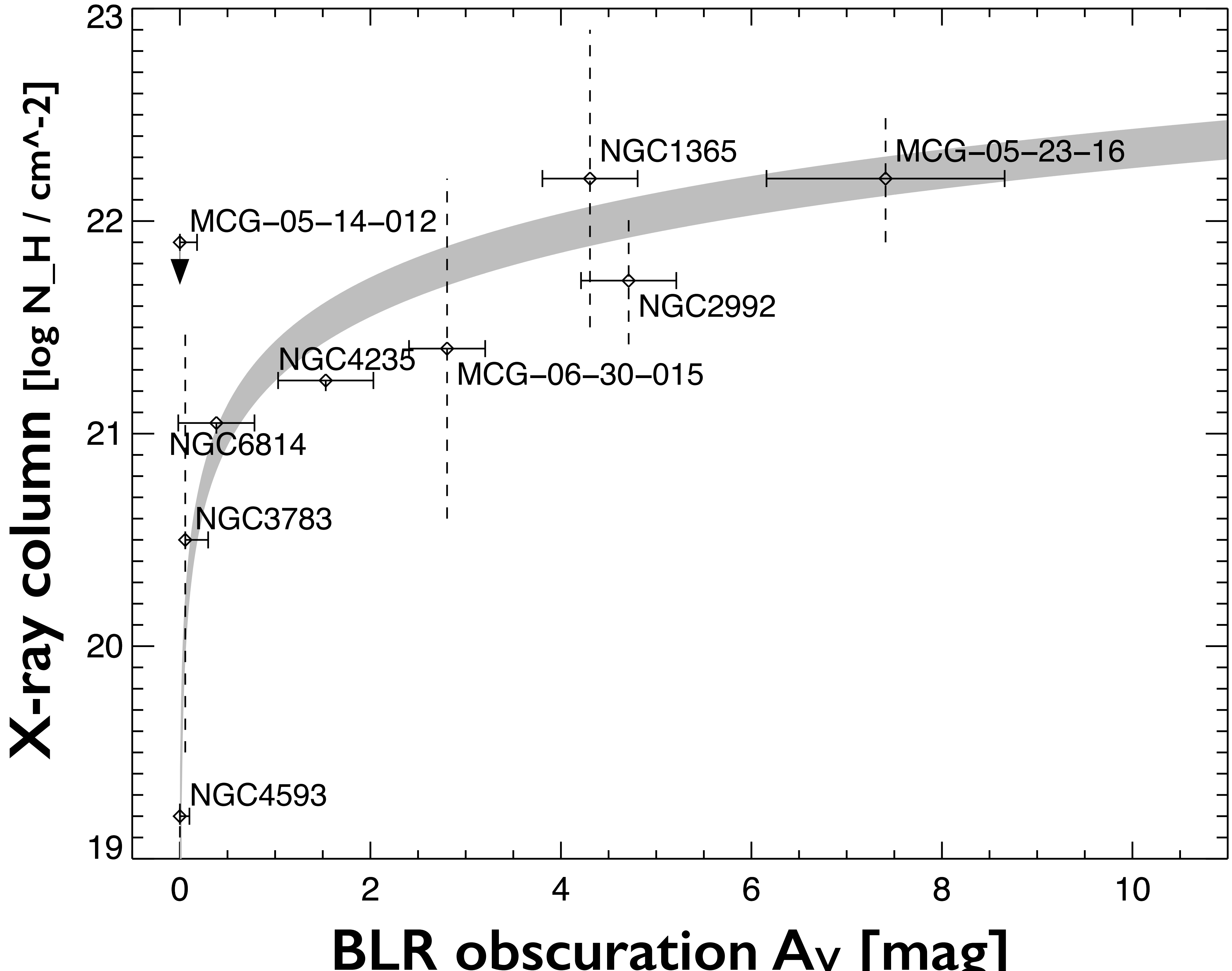

Schnorr-Müller+ 2016 (re-submitted)

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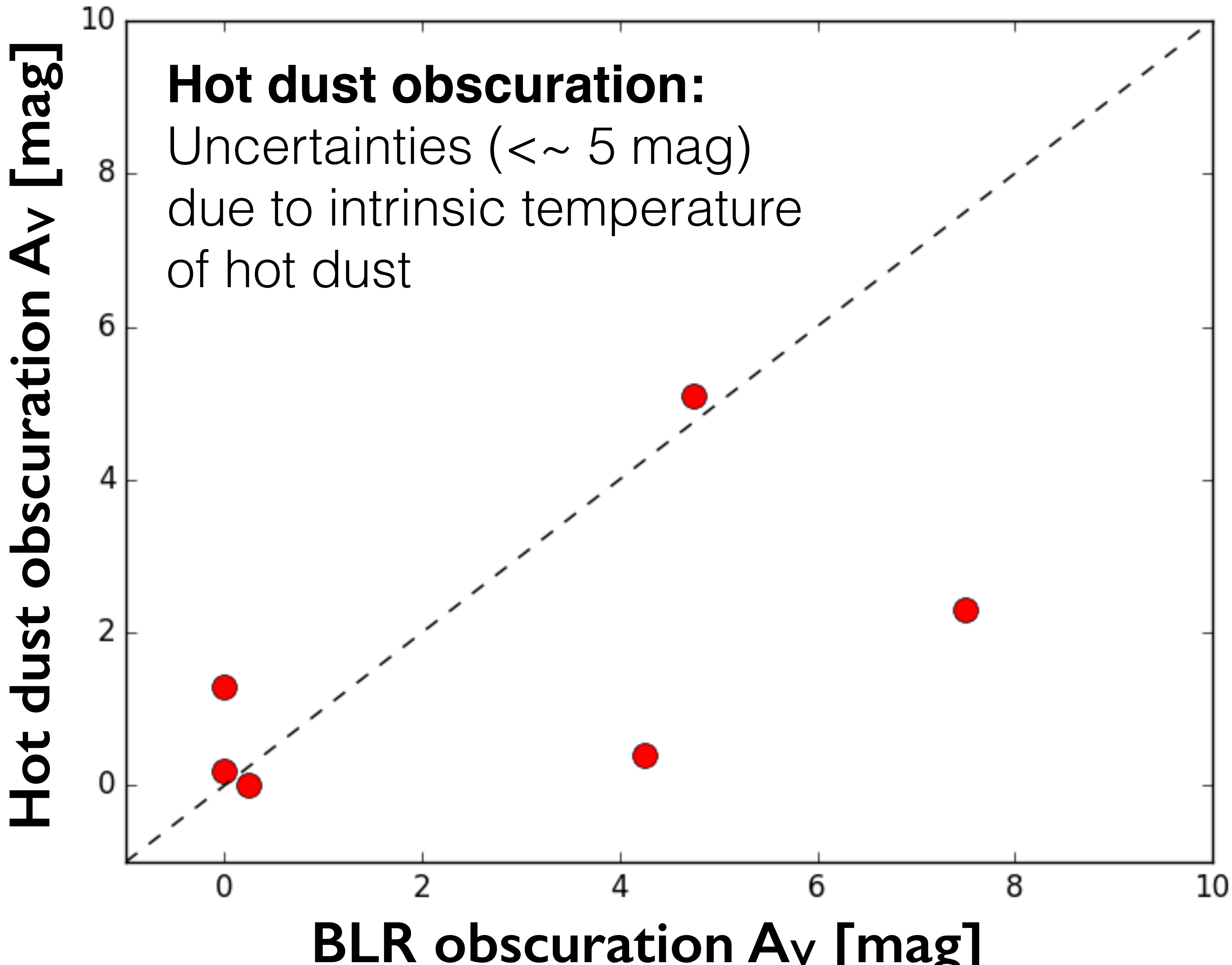

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Outlook

for local, high-resolution AGN studies

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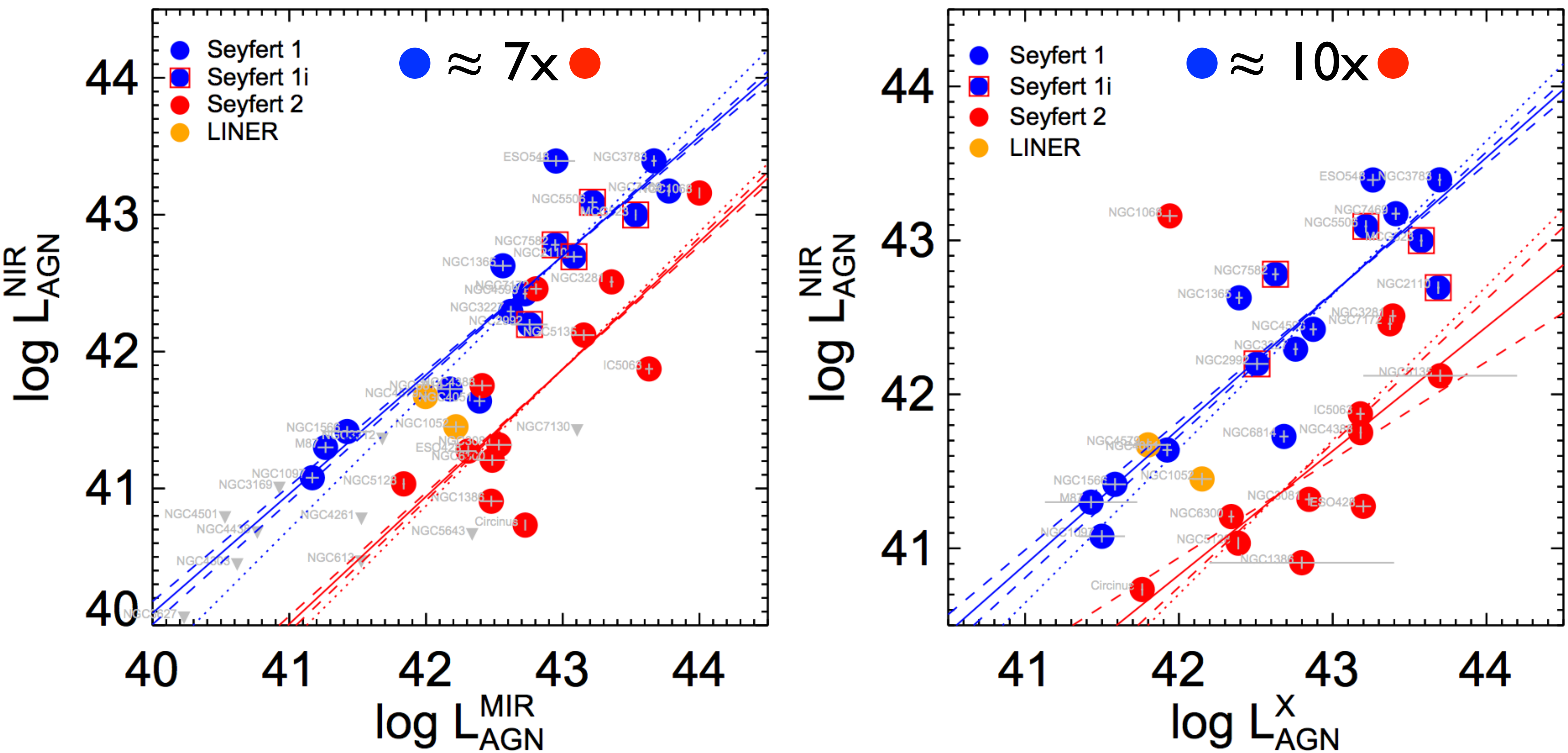
    - resolve stellar populations very close to nearby AGNs

AGN NIR luminosity relations



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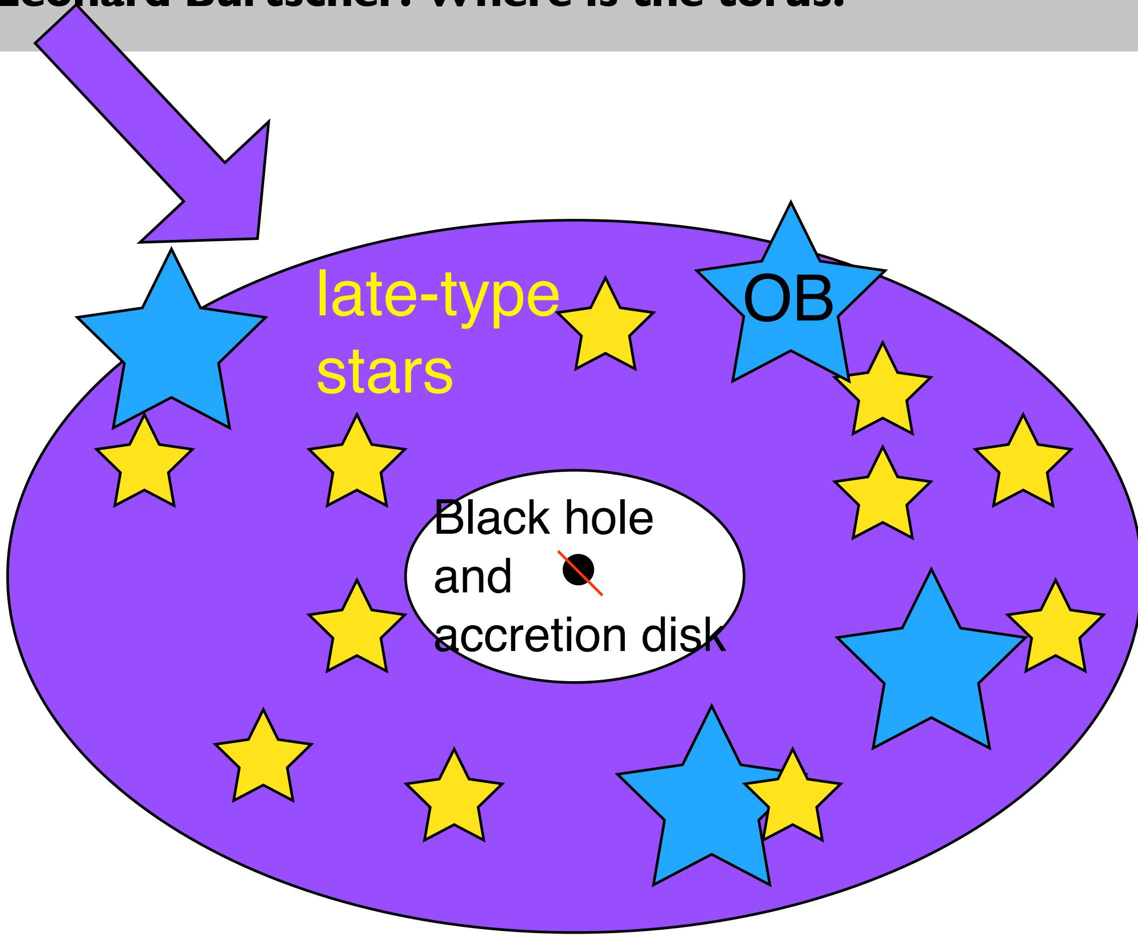
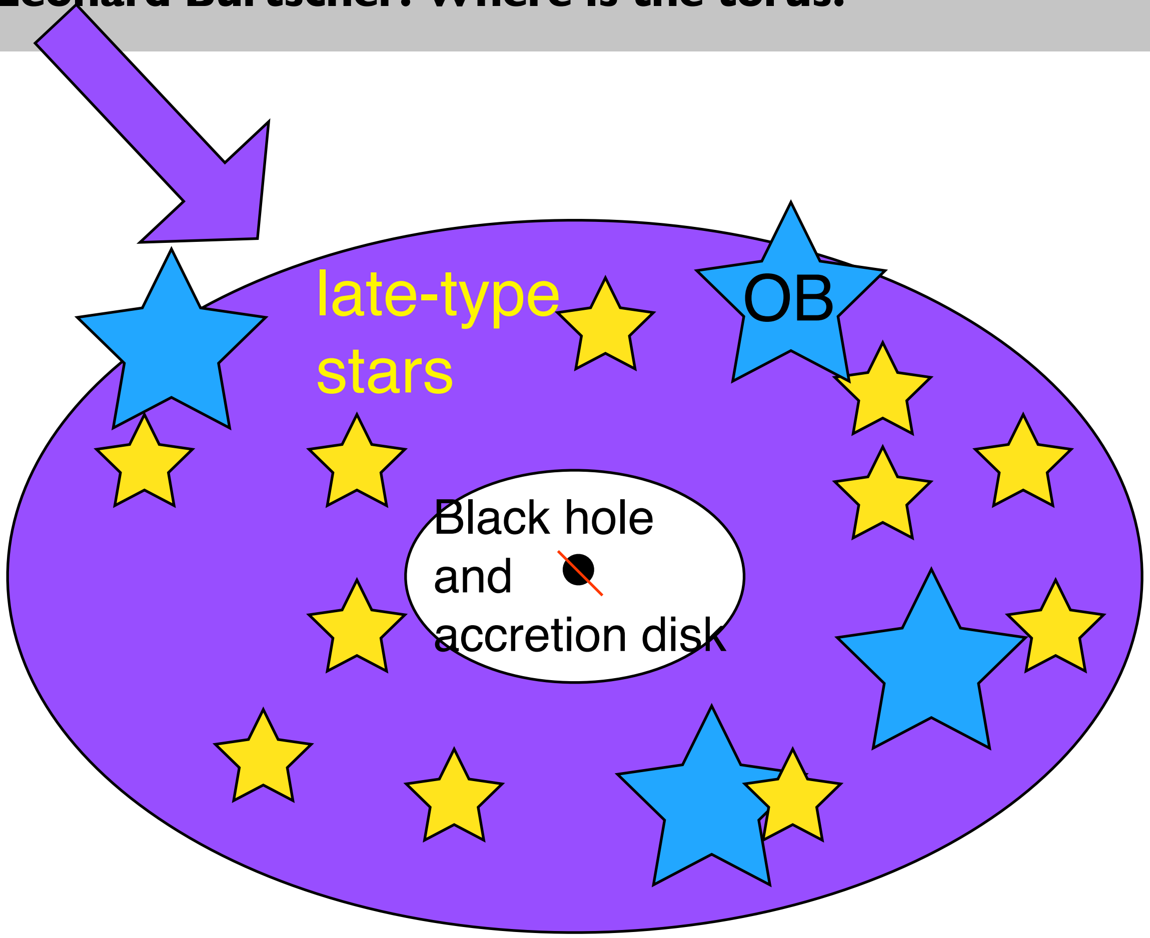


(1) inflow + starburst

e.g. Norman & Scoville 1988



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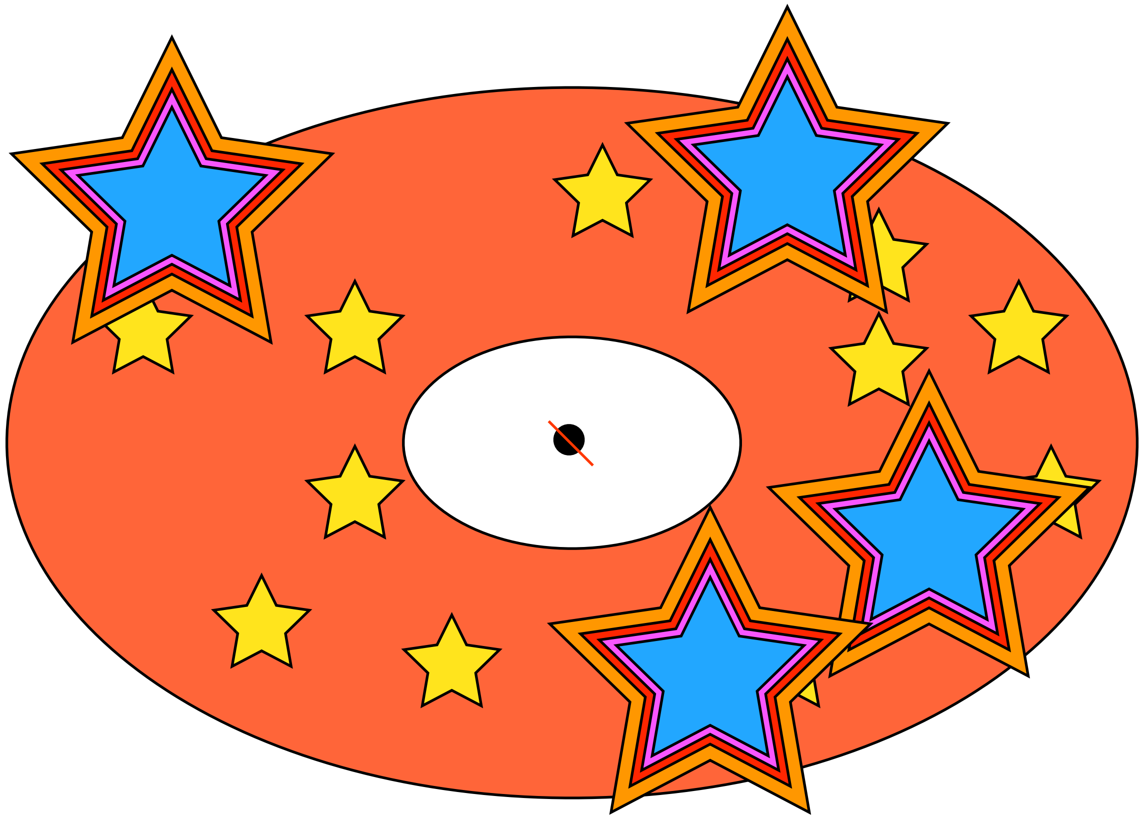

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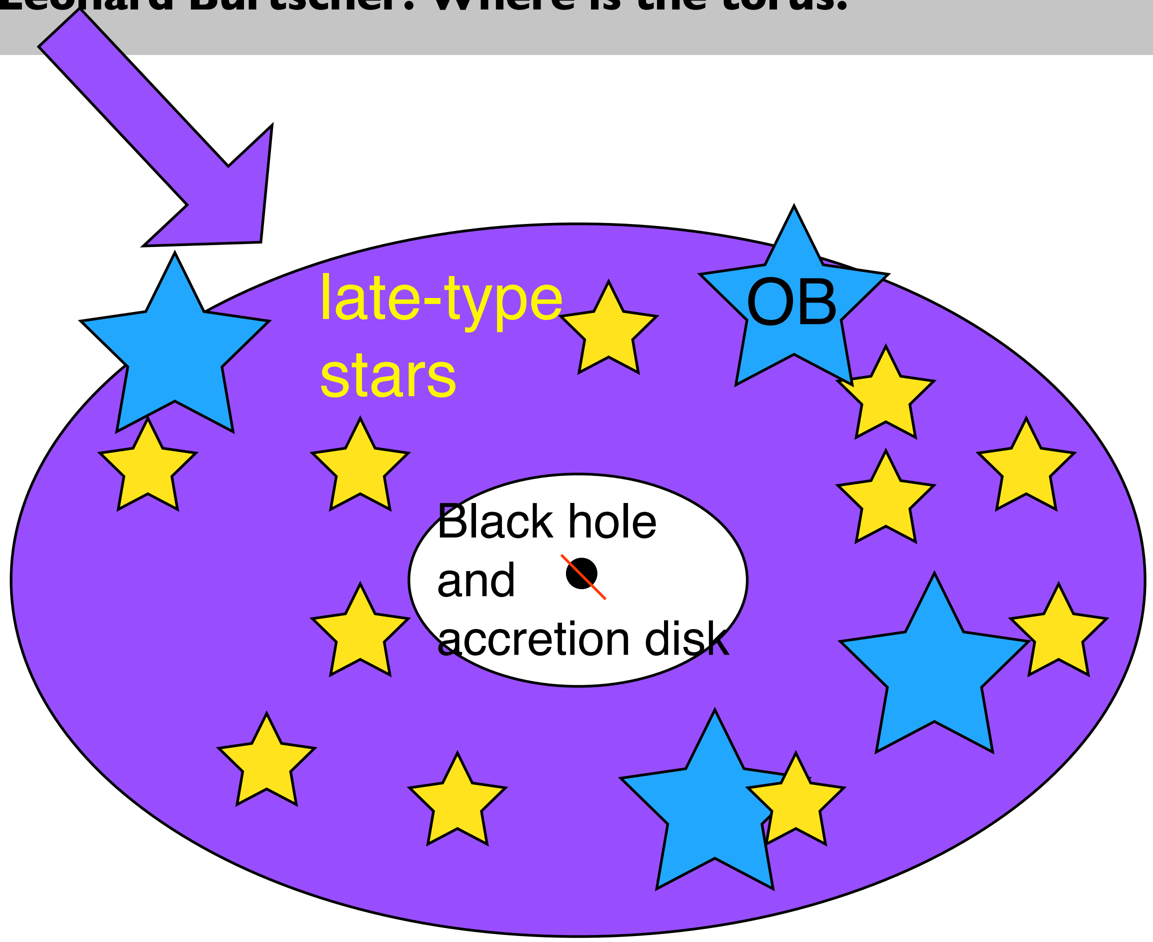

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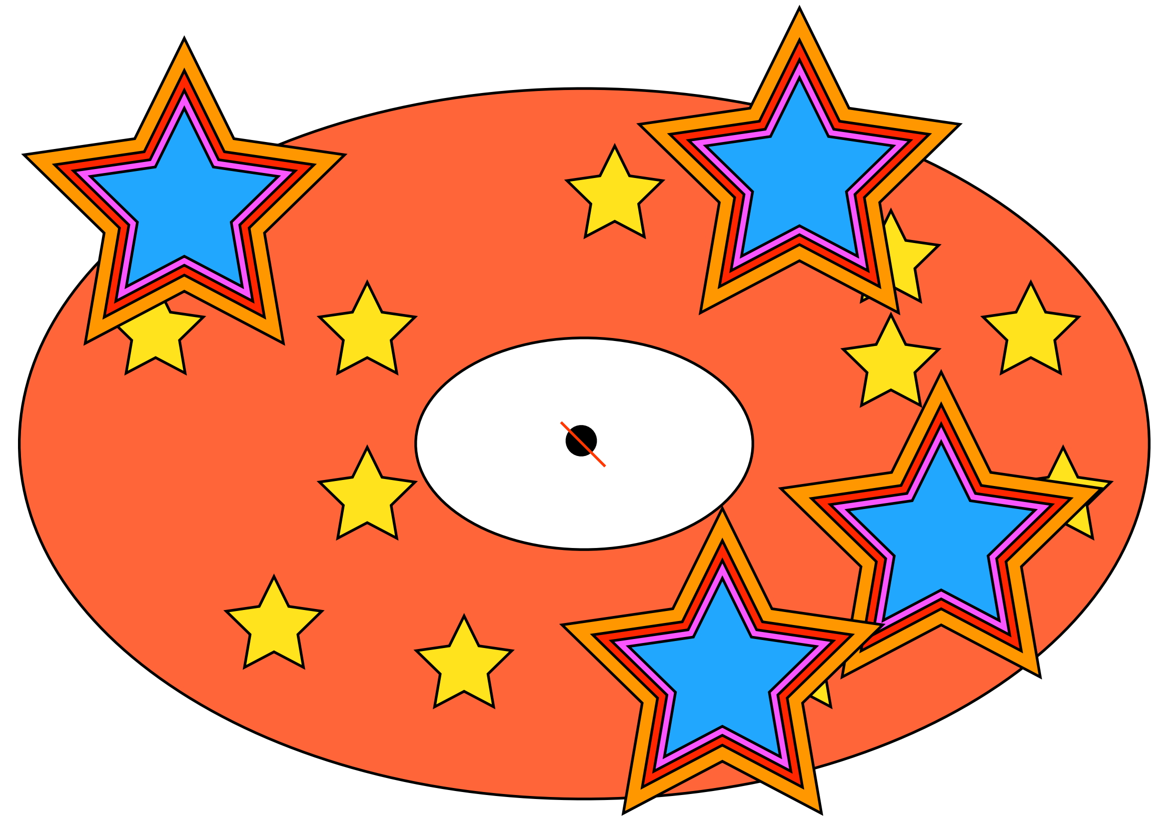

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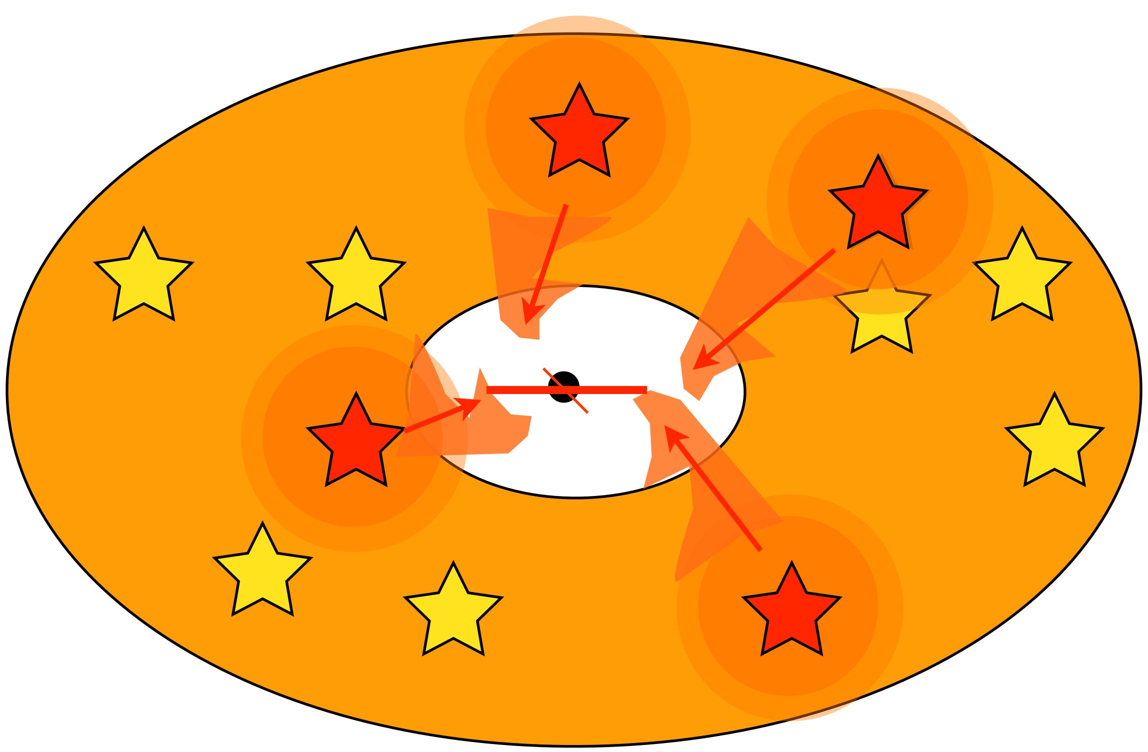

(3) AGB stars and stellar winds

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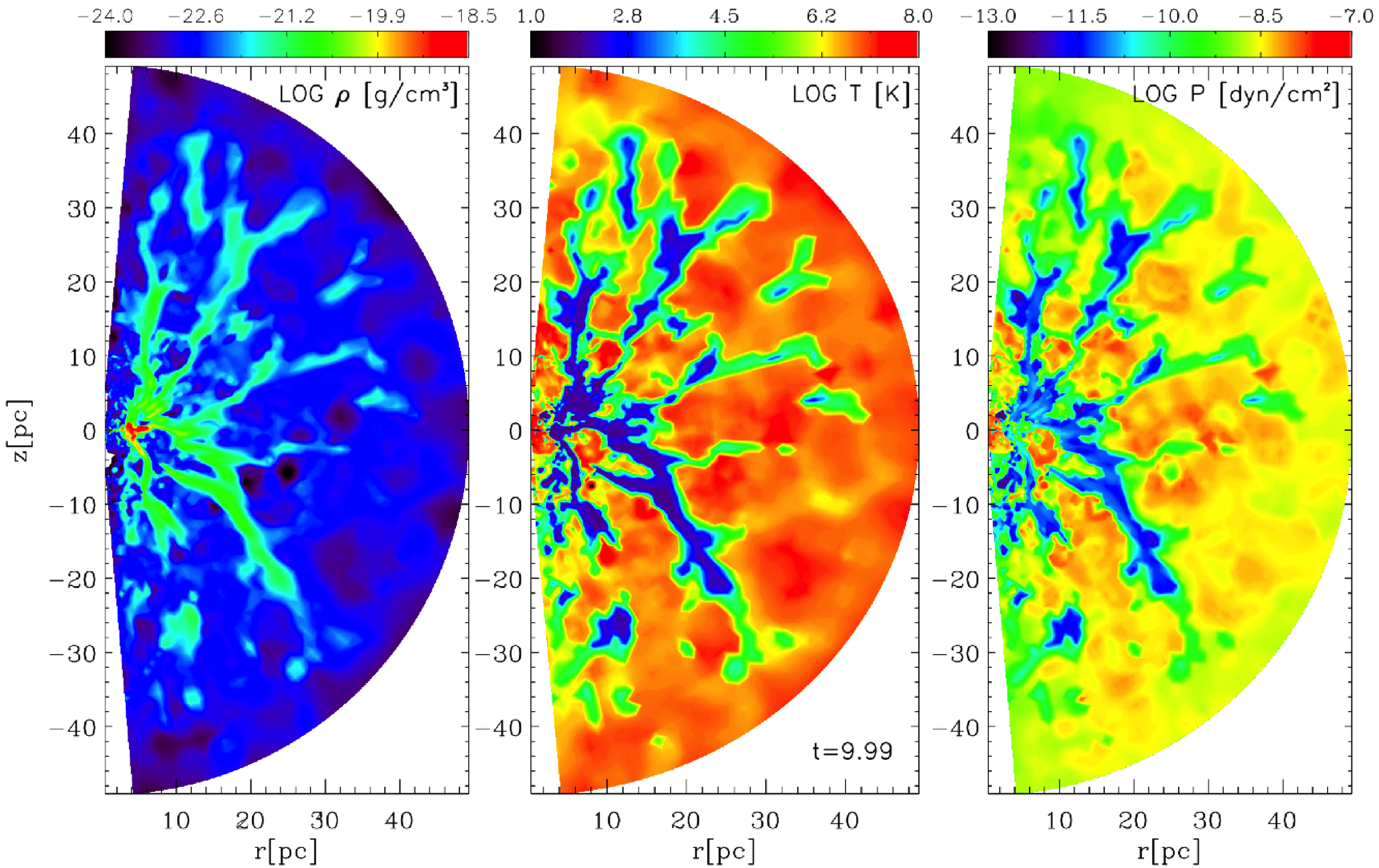
Physical torus models



Schartmann+ 2009

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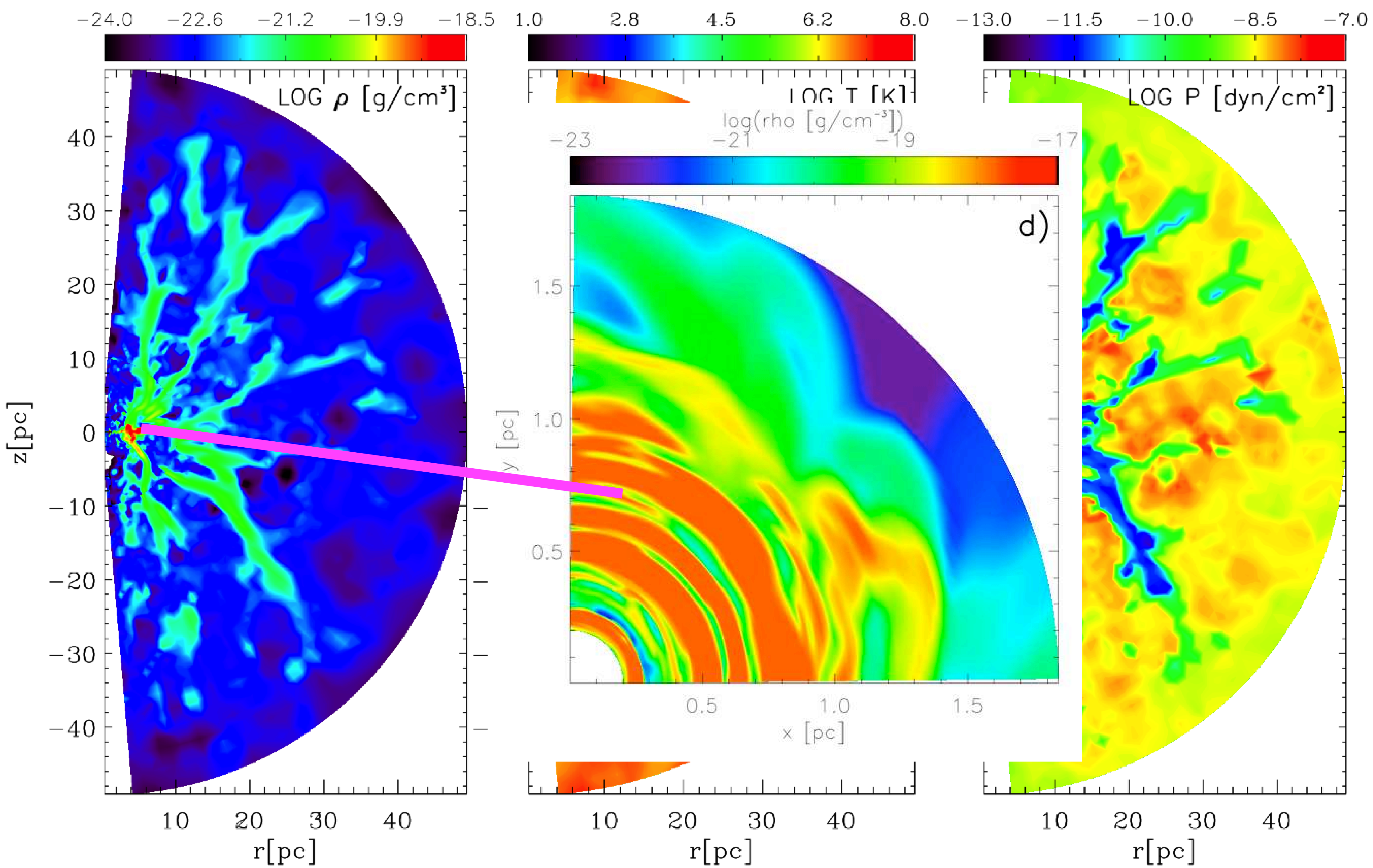

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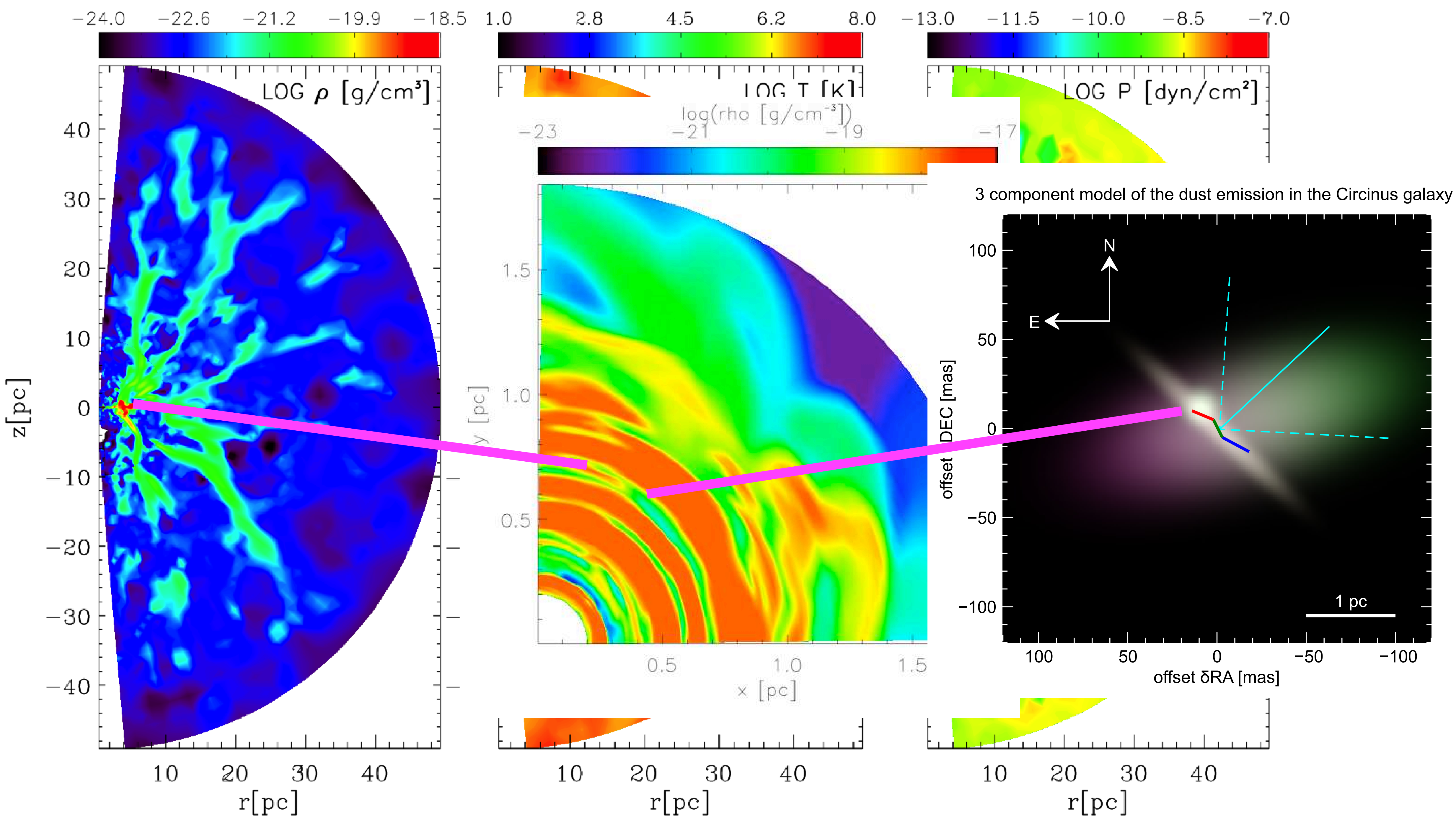

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