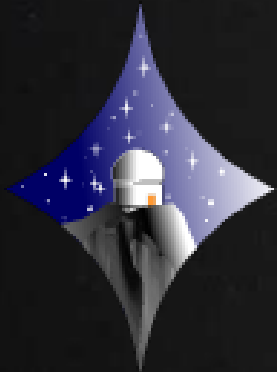
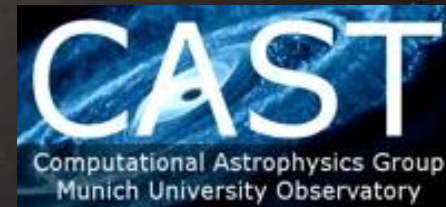


Chemodynamical Properties of Galaxies: Connecting Ages and Kinematics of Simulated Galaxies



Master's Students Science Day SS 2024
Johannes Stoiber
Supervisor: Rhea-Silvia Remus

April 09, 2024

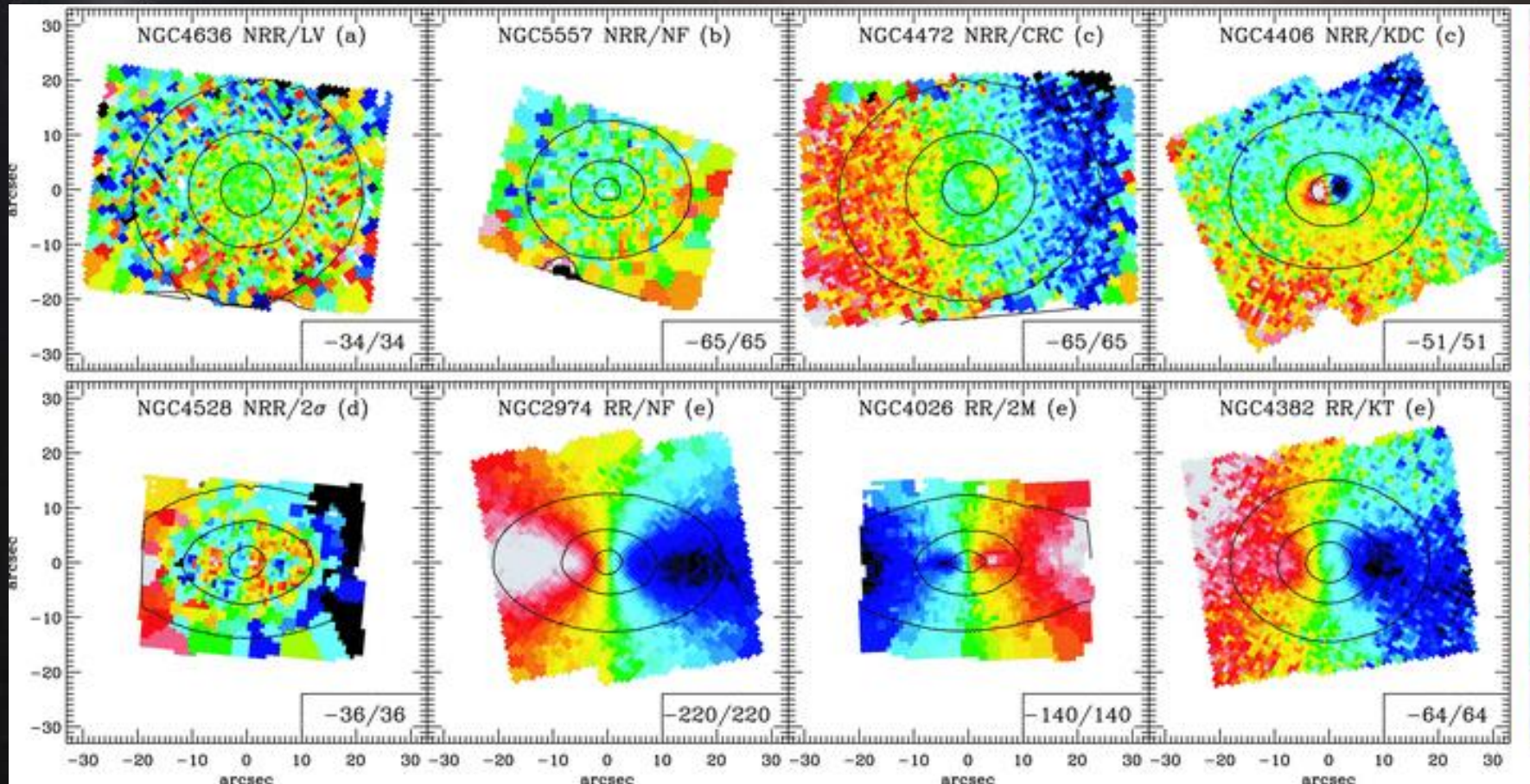


Motivation and Observations

Boring, right?

Motivation and Observations

Not at all, if Kinematics are considered!

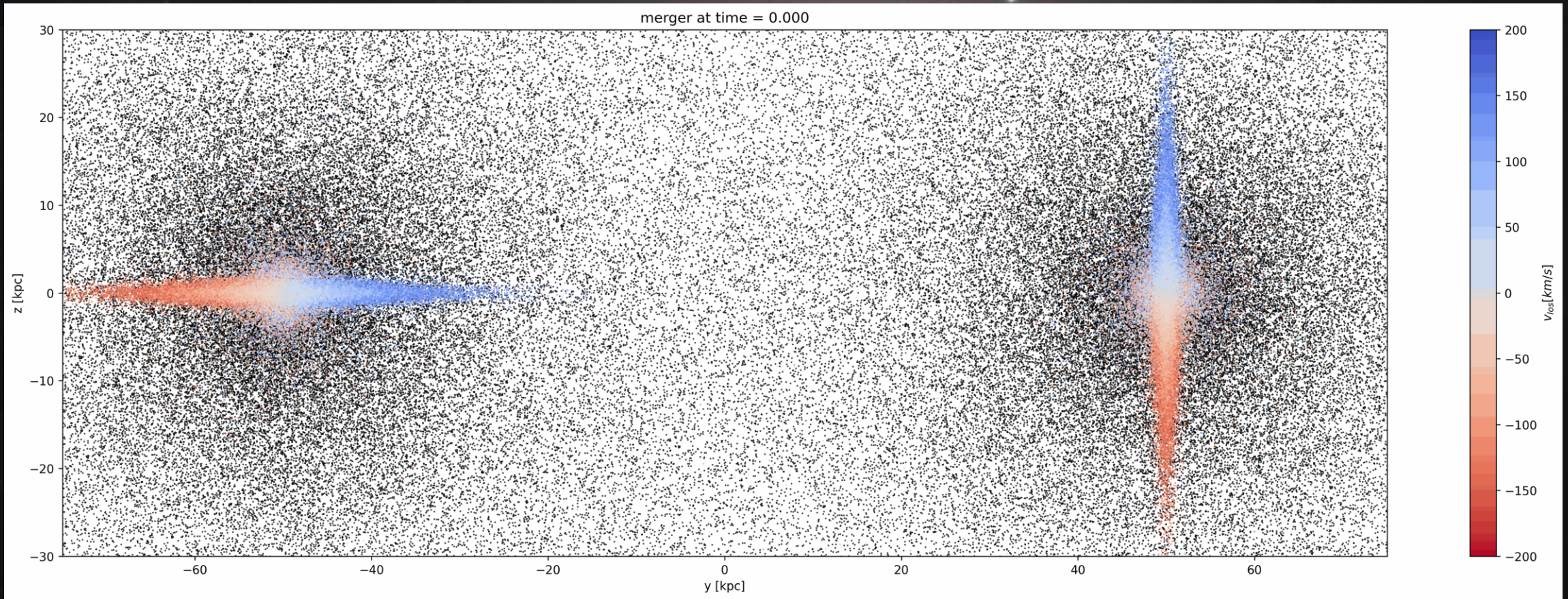


ATLAS 3D

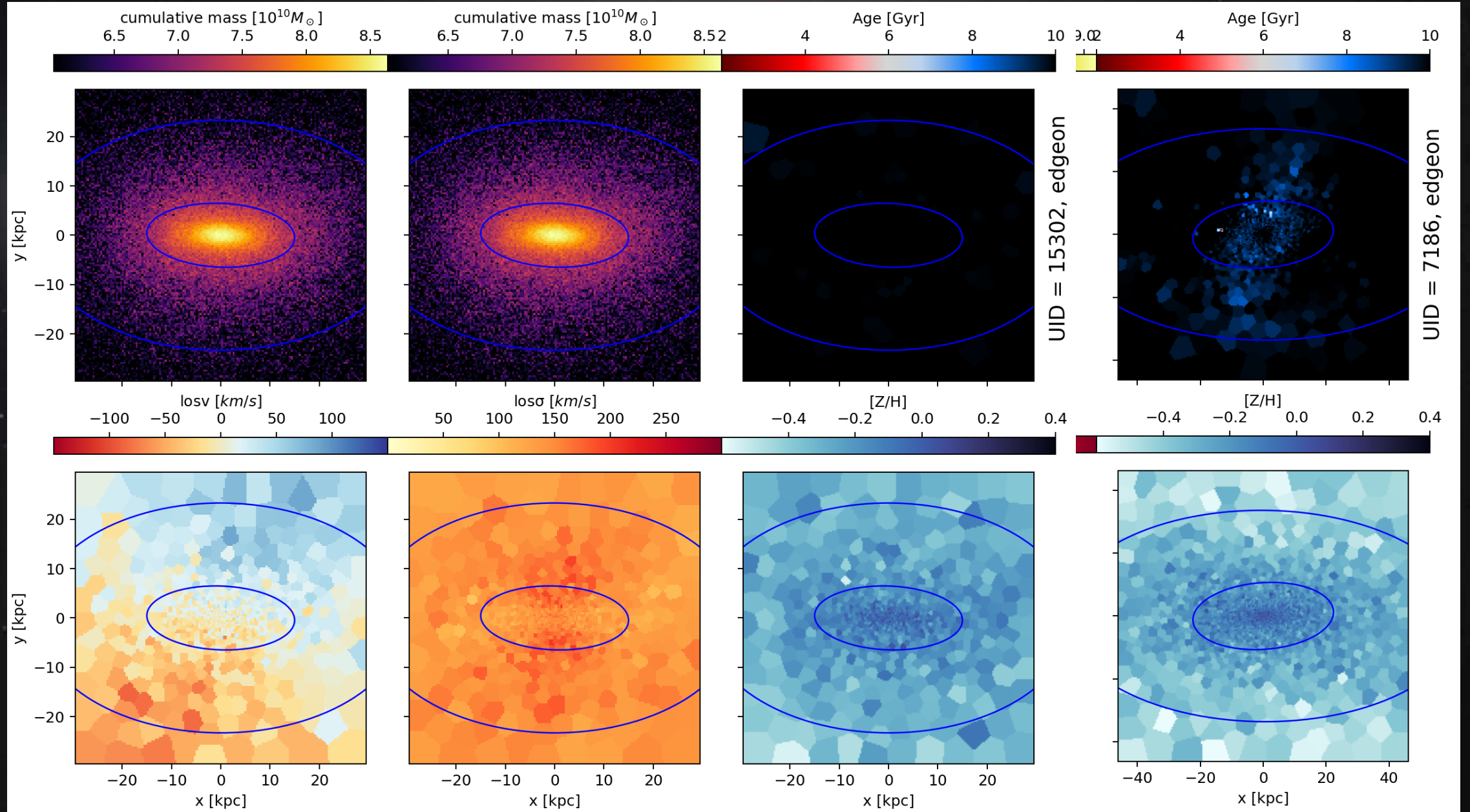
Krajnovic et al., 2019

Prolate Rotators

Hydrodynamics Tutorials



Ages of Prolate Rotators



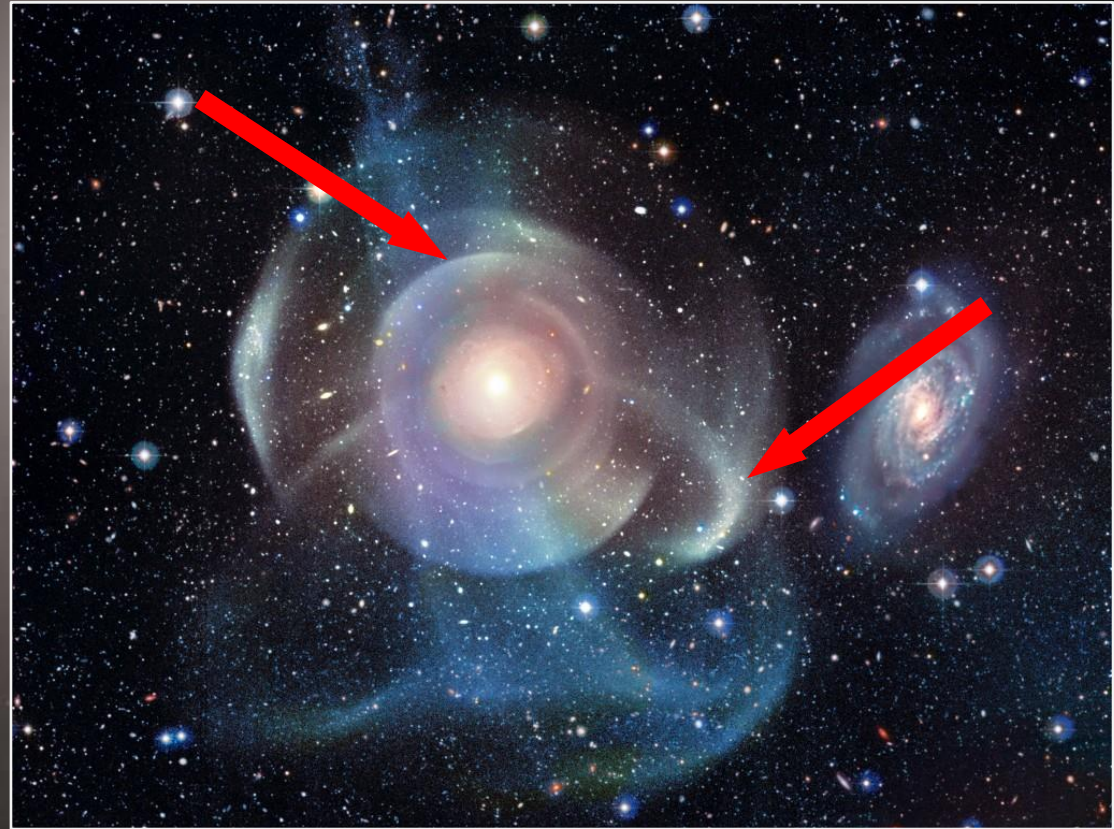
Motivation and Observations

Example: Low Surface Brightness: NGC 474

Wikipedia: Hubble ST: NGC 474



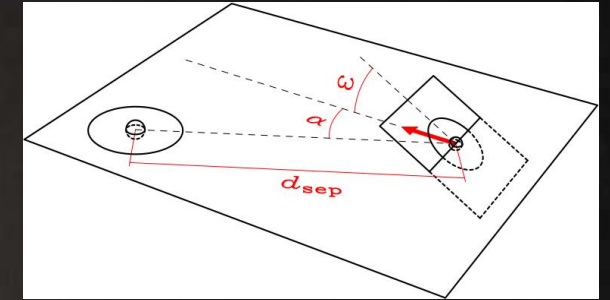
MATLAS: MegaCam: NGC 474



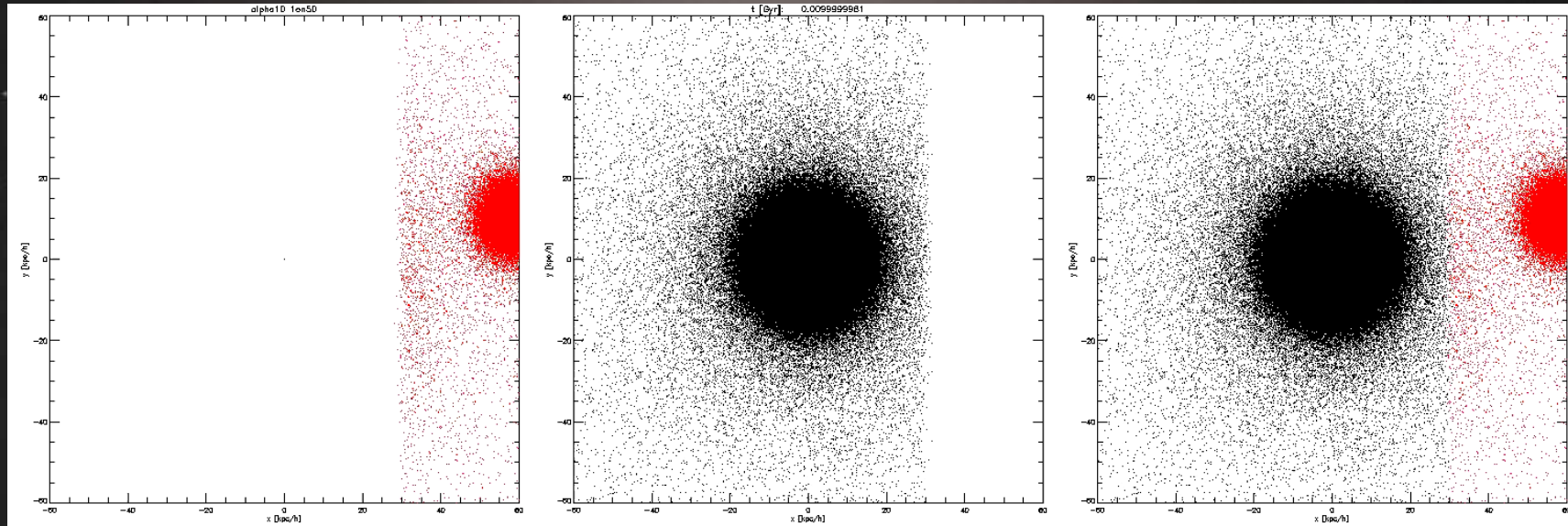
Shells and Streams

Mass Ratio: 1:50

$$\alpha = 10^\circ$$



Karademir et al., 2019



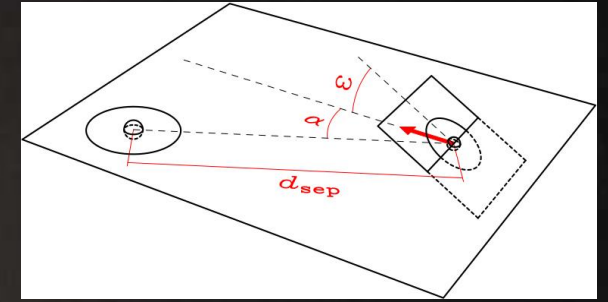
Karademir et al., 2019

Idealized Simulation

Shells and Streams

Mass Ratio: 1:50

$\alpha = 10^\circ$: Shells



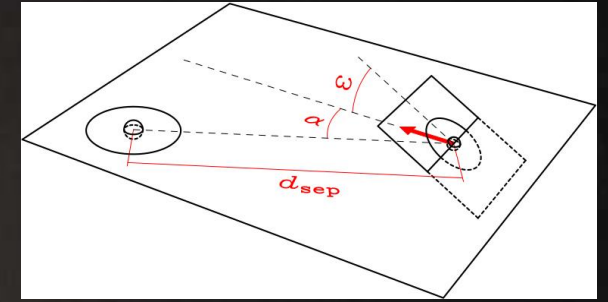
Karademir et al., 2019

Shells and Streams

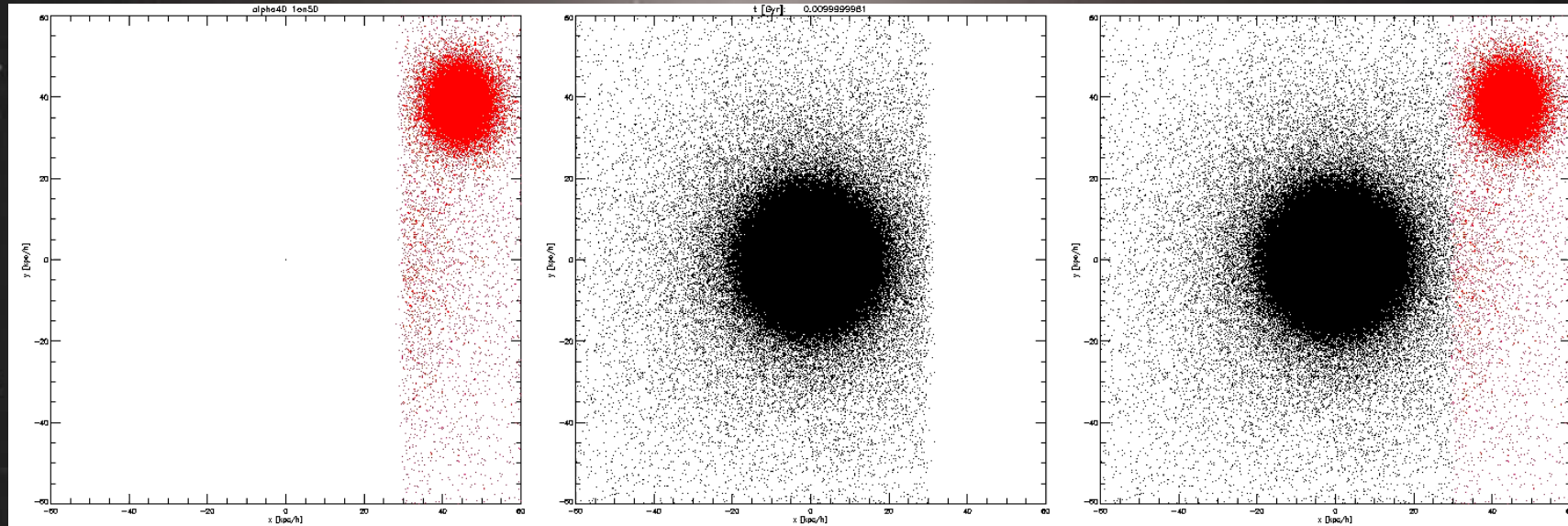
Mass Ratio: 1:50

$\alpha = 10^\circ$: Shells

$\alpha = 40^\circ$



Karademir et al., 2019



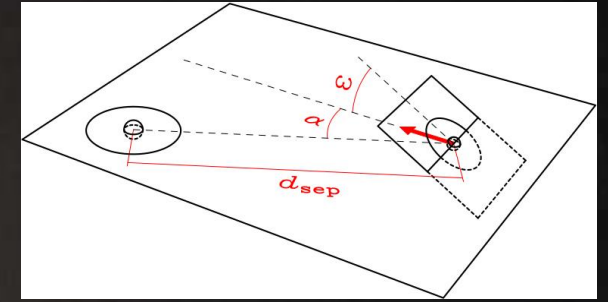
Karademir et al., 2019

Shells and Streams

Mass Ratio: 1:50

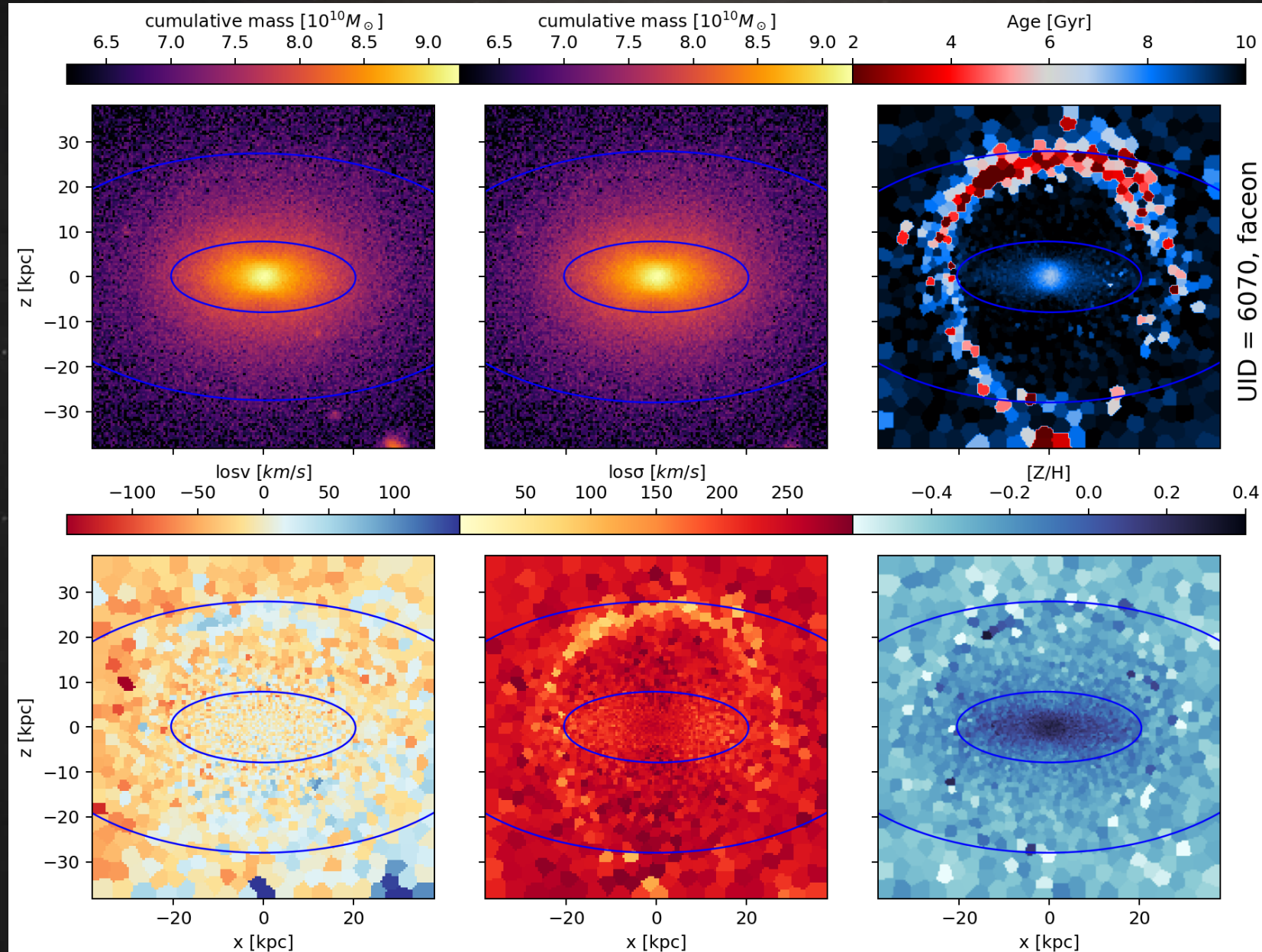
$\alpha = 10^\circ$: Shells

$\alpha = 40^\circ$: Streams



Karademir et al., 2019

Ages of Streams



Sources

Krajnovic et al., 2019: <https://dx.doi.org/10.1111/j.1365-2966.2011.18560.x>

MATLAS: MegaCam: NGC 474: http://obas-matlas.u-strasbg.fr/WP/?attachment_id=106

Karademir et al., 2019: <https://arxiv.org/abs/1808.10454>