

Identifying the dominant mode of star formation in galaxies from $z = 0$ to 4 with *Herschel*

Corentin Schreiber

Maurilio Pannella, David Elbaz

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A few words about me

Name: Corentin Schreiber

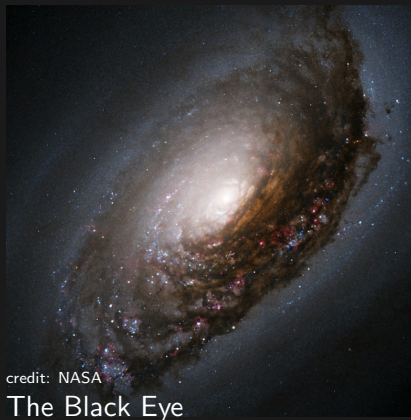
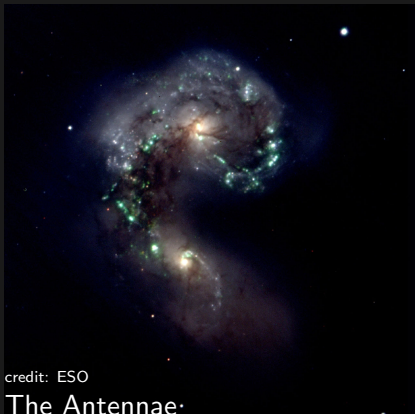


Studies:

- **Licence** of physics (2007 – 2009)
Université de Nantes, Nantes
- **Master 1** of fundamental physics (2010)
Université Pierre et Marie Curie, Paris
- **Master 2** “Fundamental concepts of physics” (2011)
École Normale Supérieure, Paris

A few words about my PhD

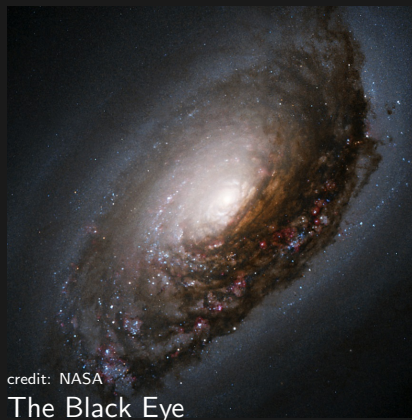
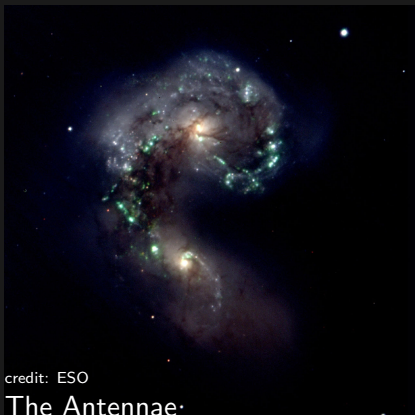
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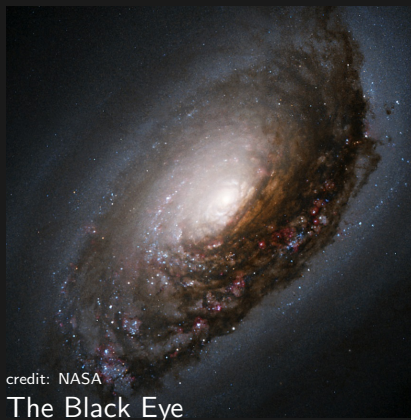
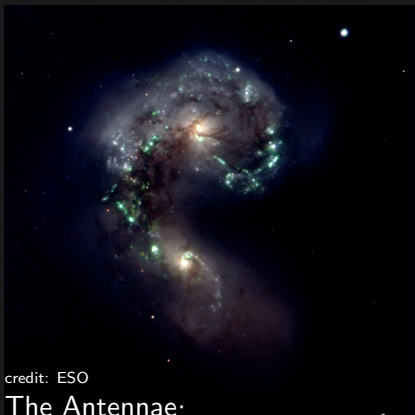
*How are galaxies **born**? How do they **grow**? How do they **die**?*



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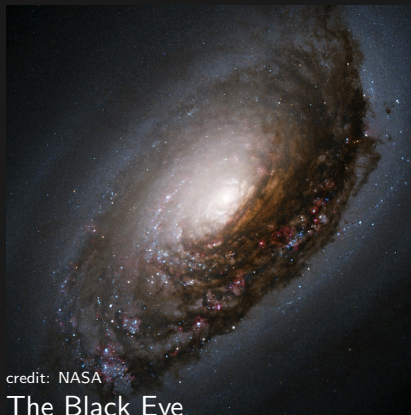


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*How are galaxies born? How do they **grow**? How do they die?*

- M_{\star} = “stellar mass”
total mass of stars inside the galaxy
- SFR = “star formation rate”
total mass of new stars that the galaxy produces each year
- z = “redshift”
epoch of the universe at which the galaxy is observed

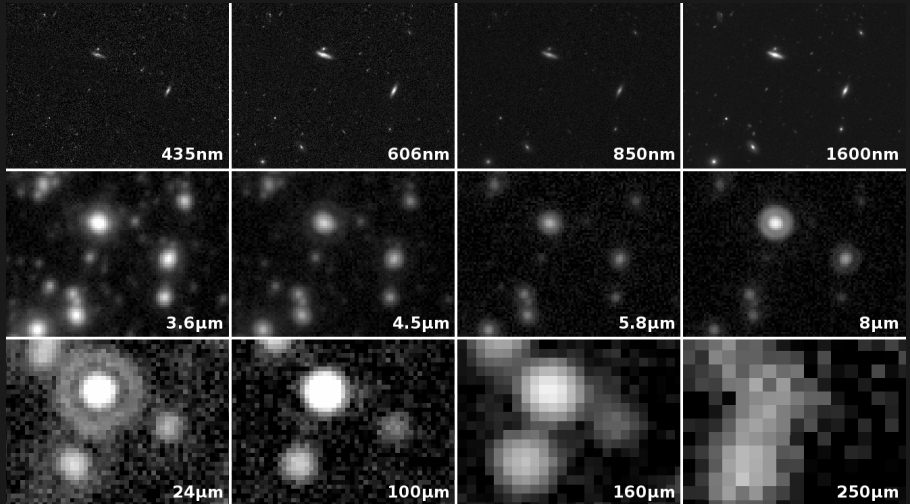


credit: NASA

The Black Eye

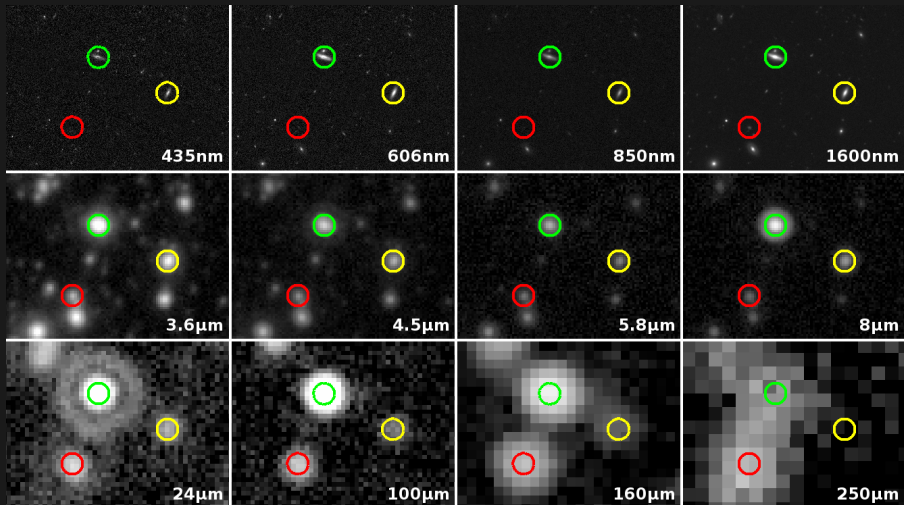
Measuring physical properties of galaxies

Our only tool: photons



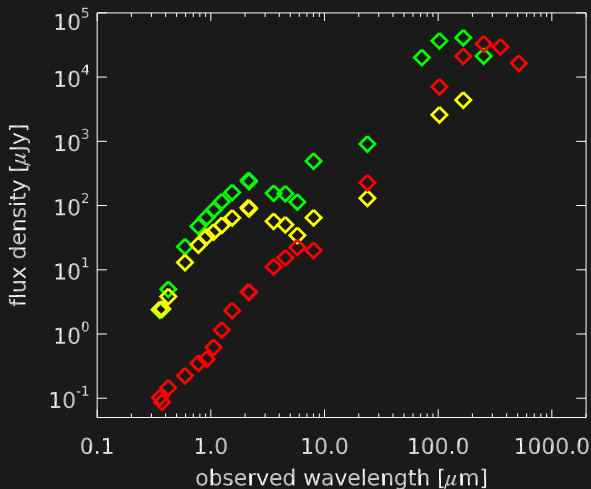
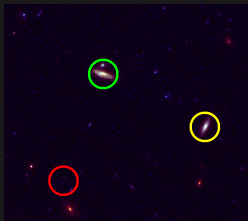
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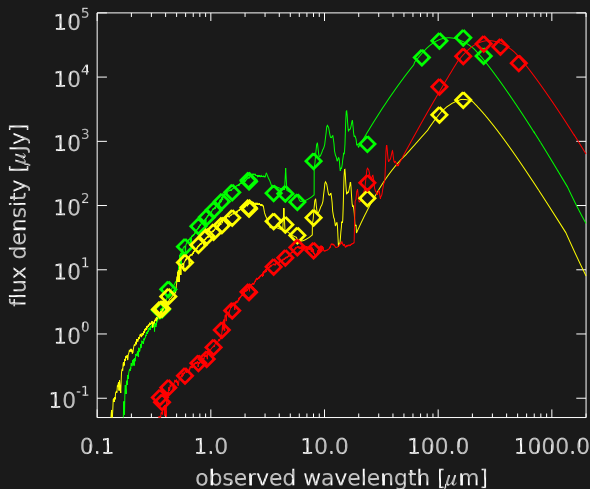
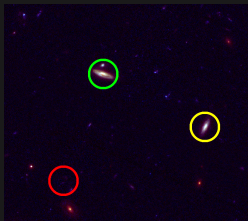
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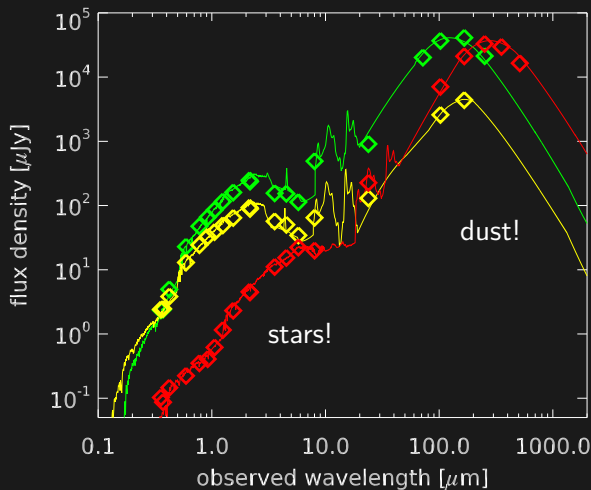
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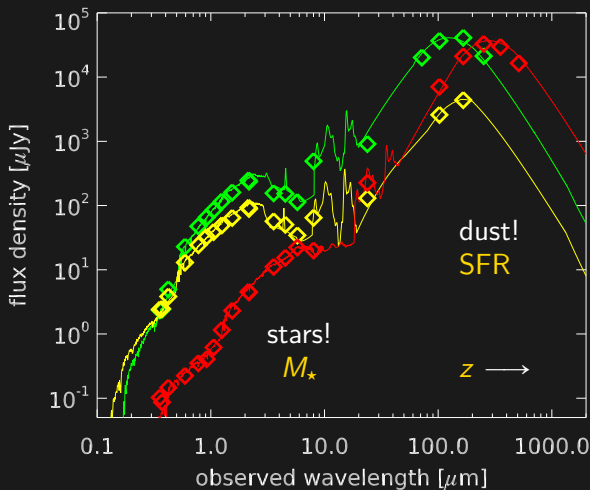
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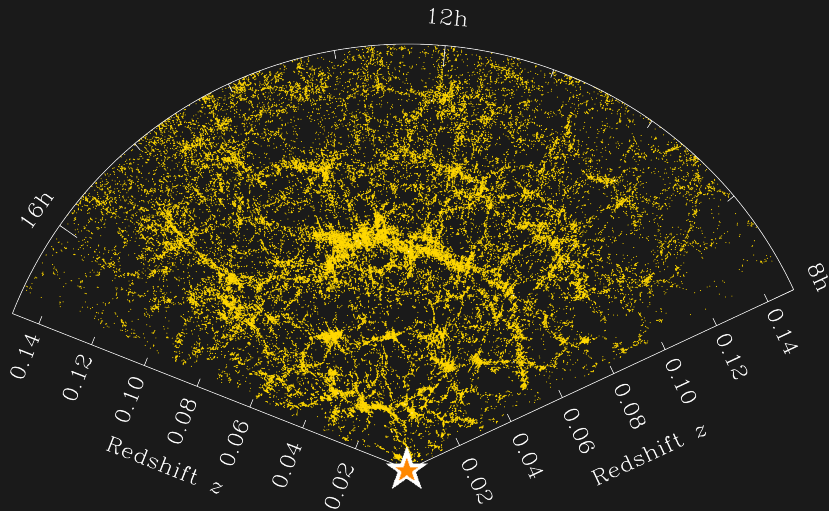
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Once upon a time in the universe

In the Milky Way's neighborhood

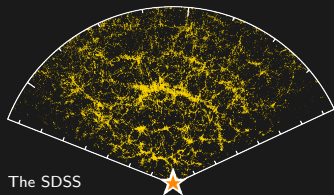


credit: Blanton et al. 2003

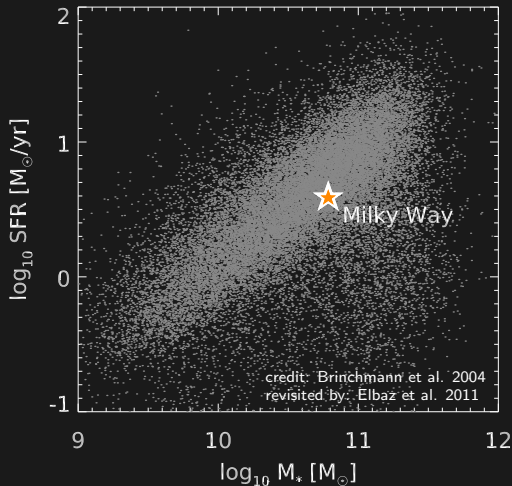
The Sloan Digital Sky Survey (SDSS)

Once upon a time in the universe

An intriguing correlation



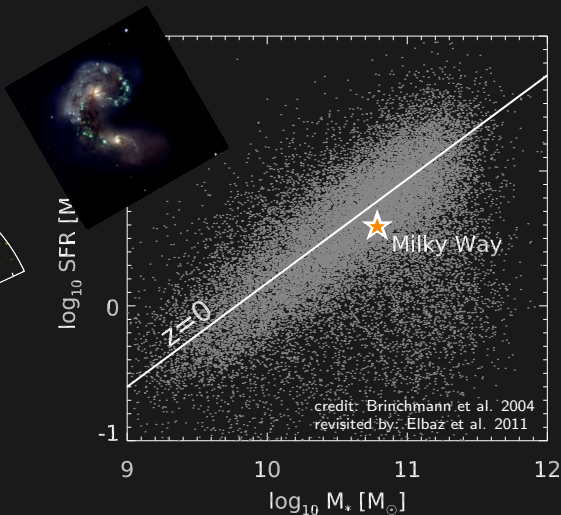
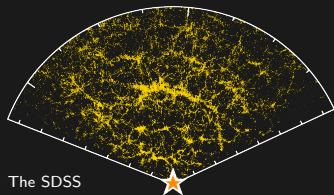
The SDSS



credit: Brinchmann et al. 2004
revisited by: Elbaz et al. 2011

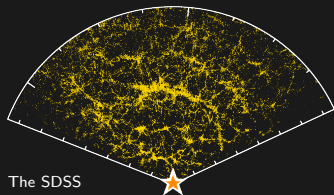
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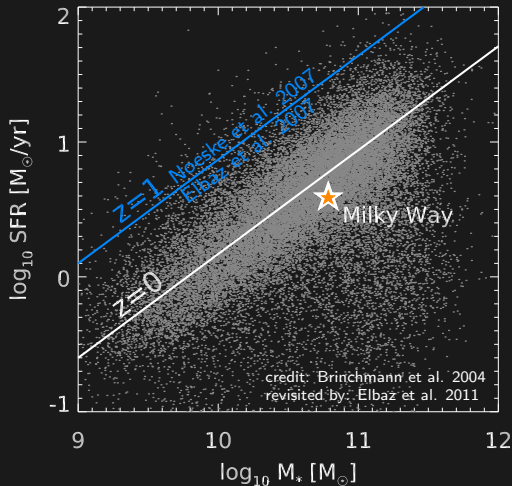


Once upon a time in the universe

An intriguing correlation: the "*main sequence*" of star-forming galaxies

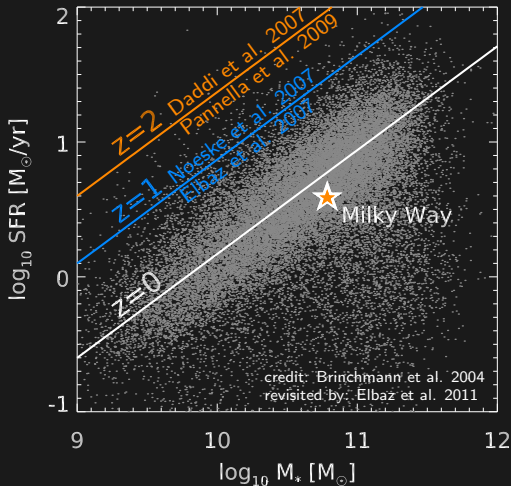
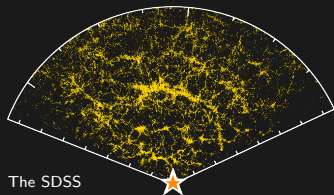


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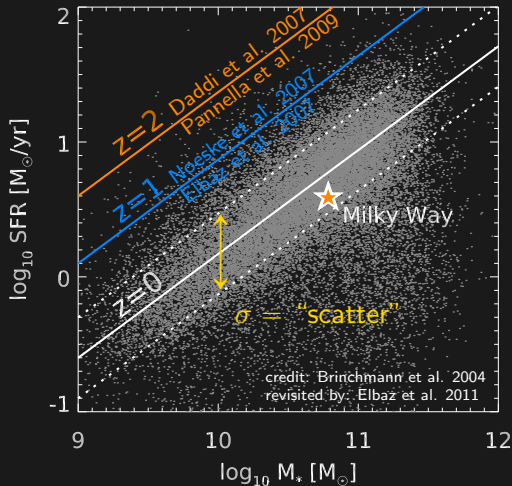
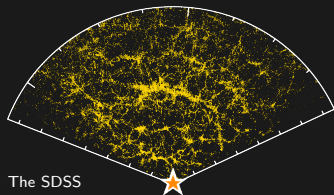
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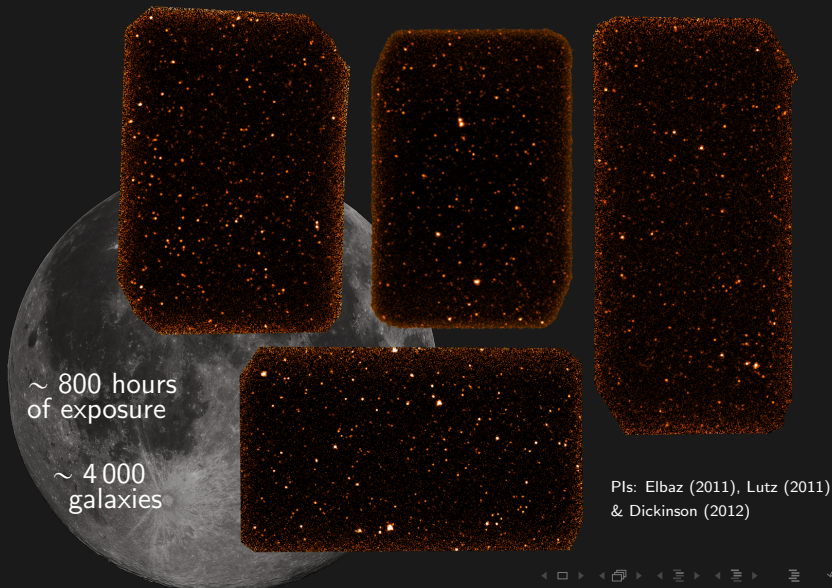
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The GOODS and CANDELS fields

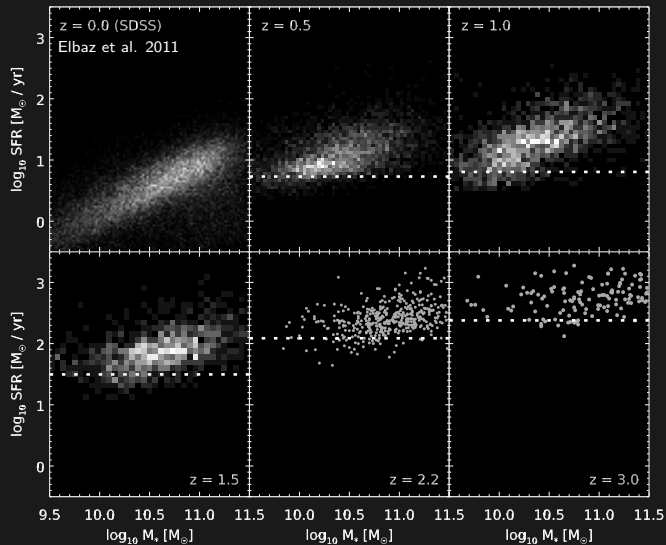
The deepest look at the early universe with Herschel



Our results

The deepest look at the early universe with Herschel

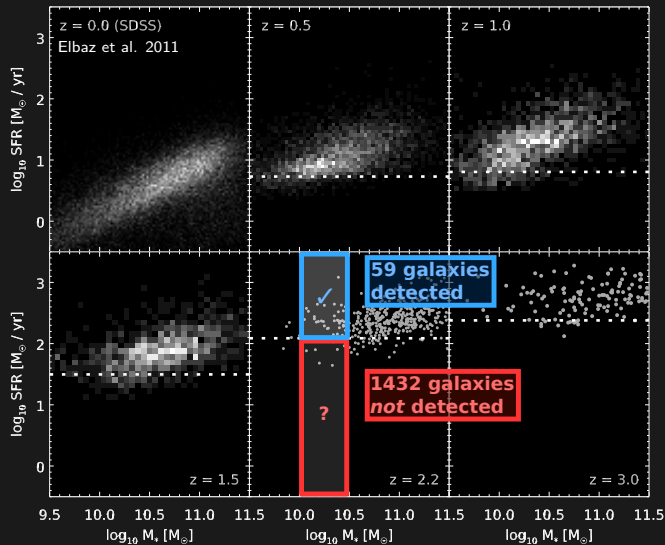
Schreiber et al. in prep.



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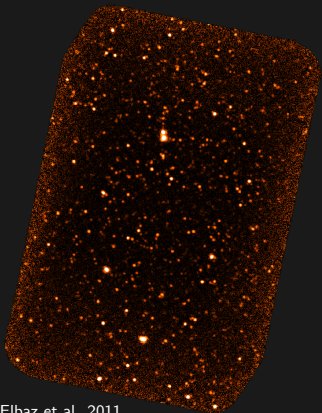
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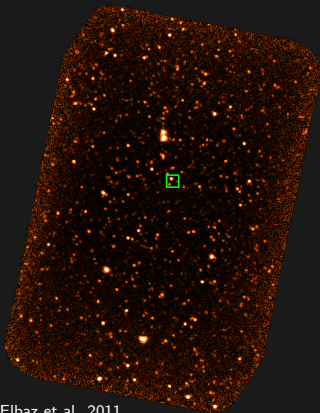


Elbaz et al. 2011

GOODS South

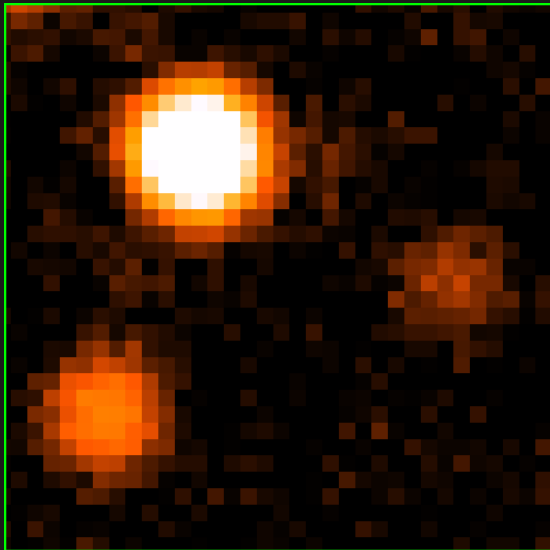
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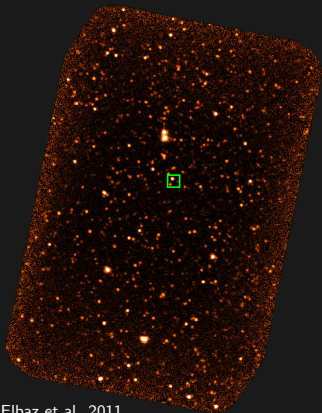
Elbaz et al. 2011

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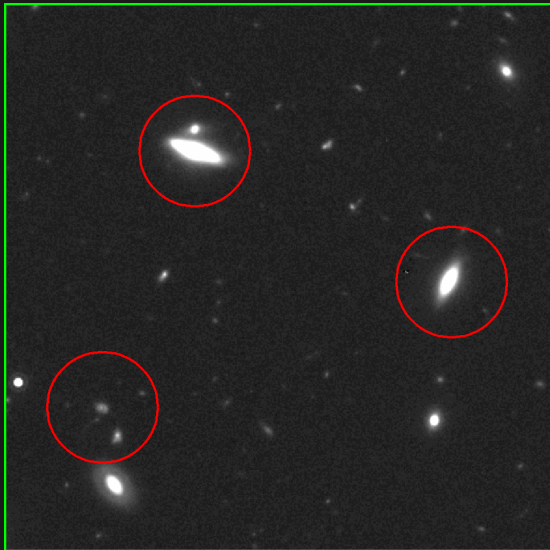
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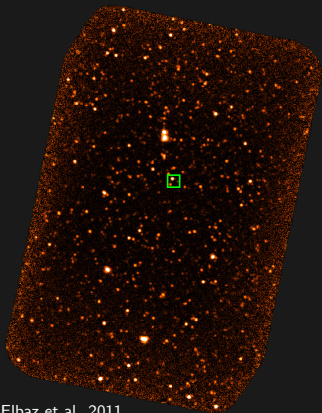
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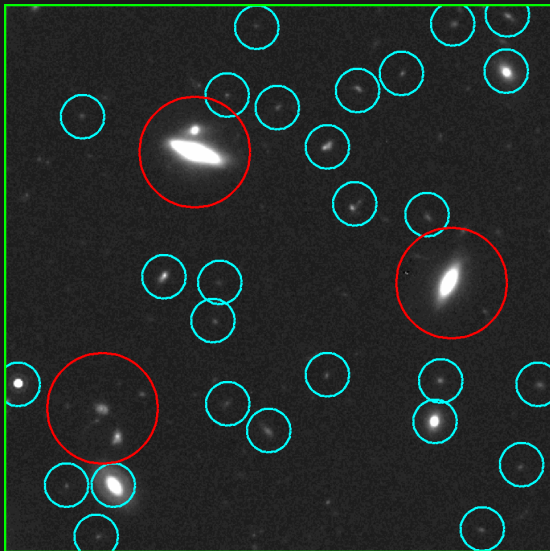
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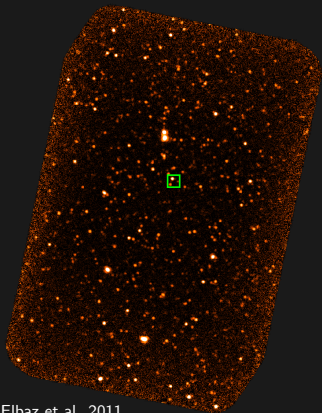
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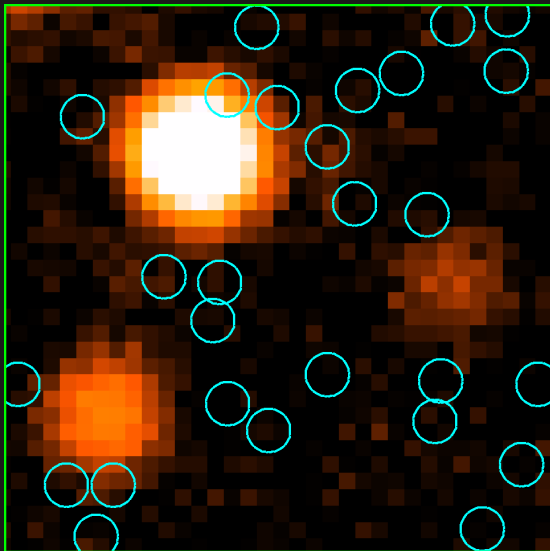
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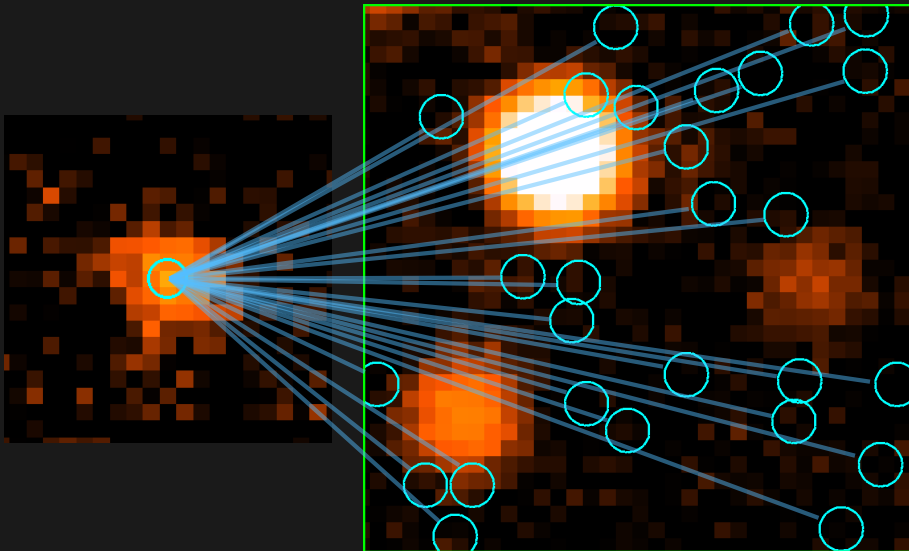
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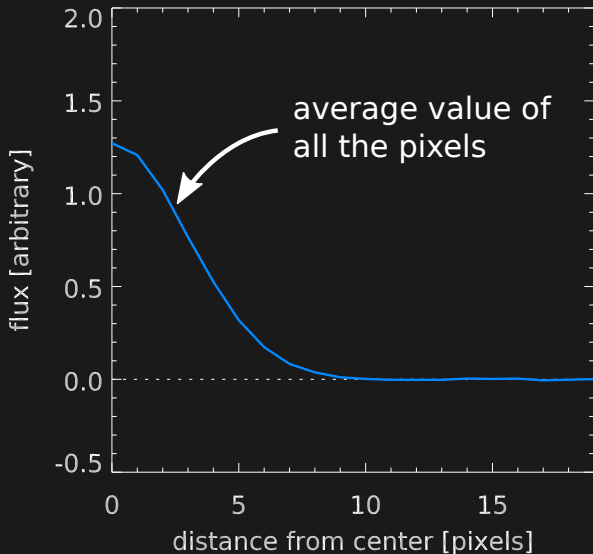
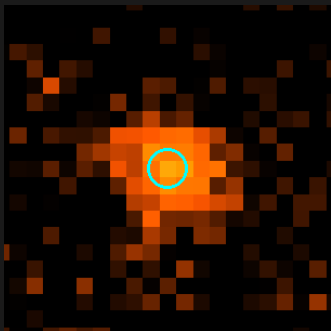
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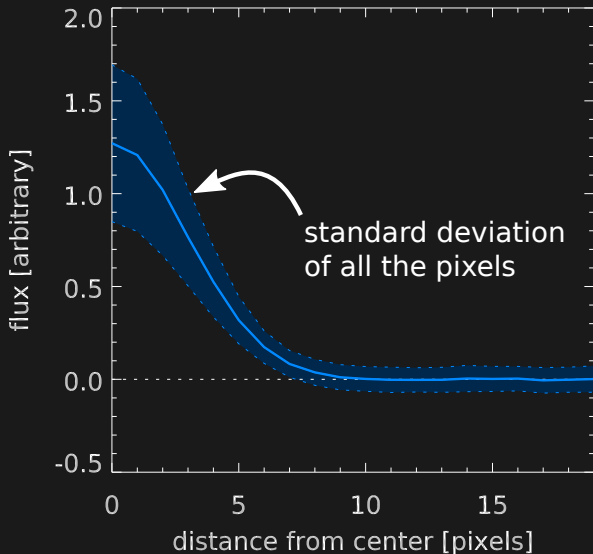
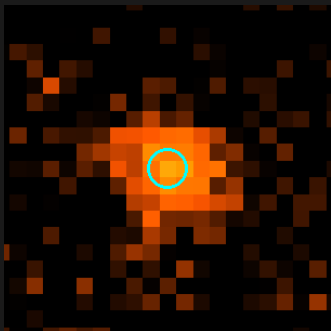
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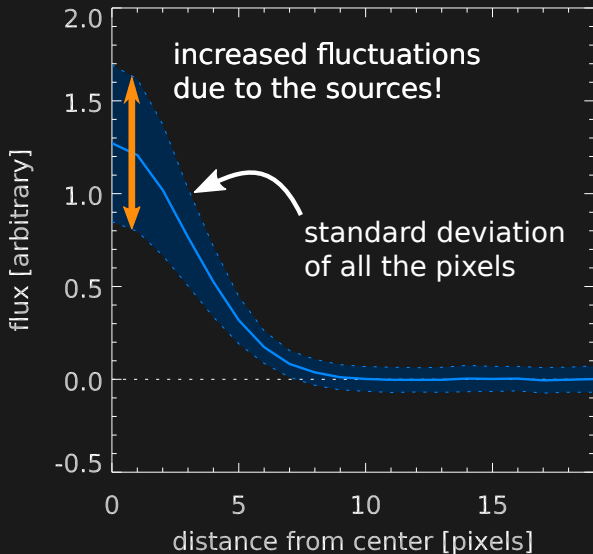
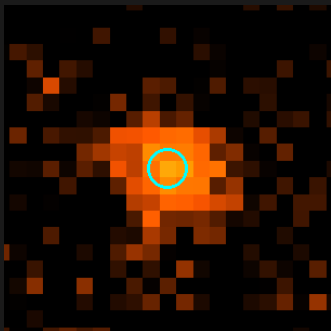
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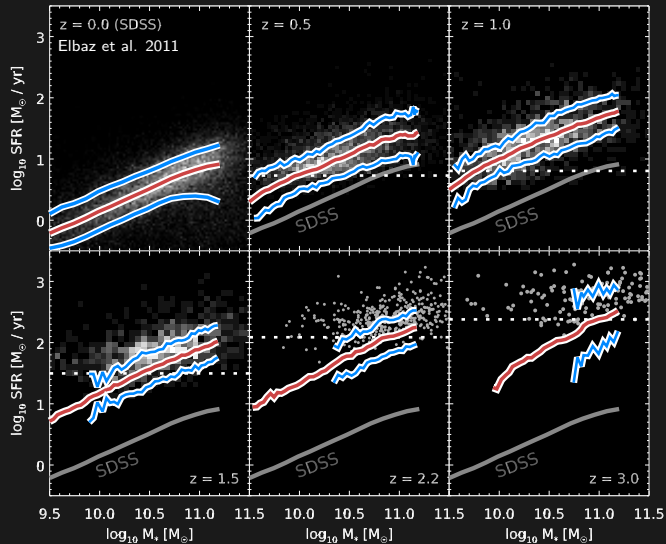
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