

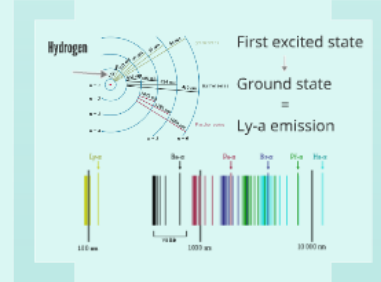
Observing Lyman alpha

Andreas Sandberg
Uppsala April 11, 2014



Göran Östlin, Lucia Guaita,
Matthew Hayes, Fatemeh Kiaerad
Florent Duval, Thøger Rivera-Thorsen et al.

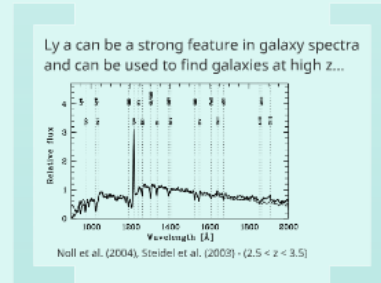
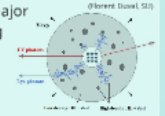
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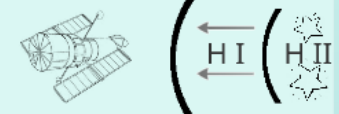
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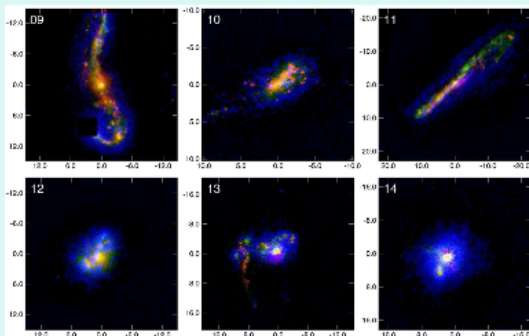


Ly α can escape more easily if the covering fraction of neutral hydrogen is low or if the neutral gas is flowing out from the region

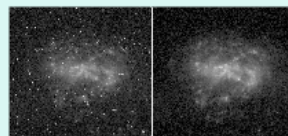


LARS Lyman Alpha Reference Sample

HST photometry and spectroscopy of ~ 50 nearby galaxies
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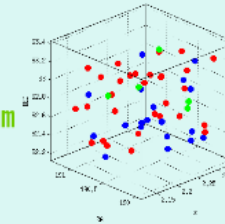
Cosmic ray removal, CTE correction, skewness, drizzling...

Analyze all parameters than can affect Lyman alpha escape:
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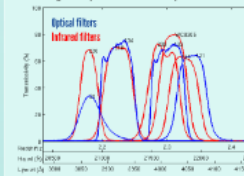


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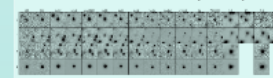
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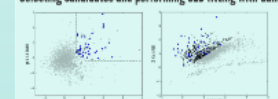


Combining many observations

- Ly α - Multi cycle treasury proposals at HST:
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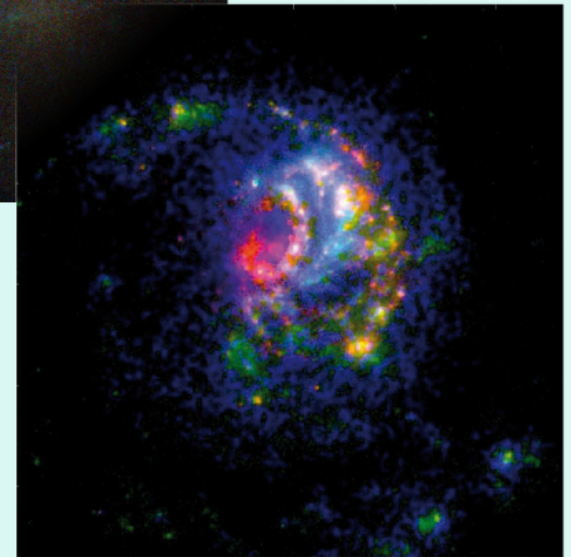
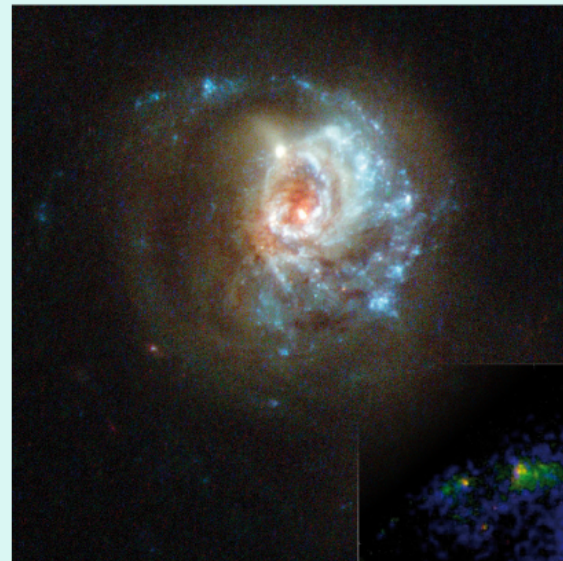
13 Ly-alpha emitting galaxy $z=2.2$

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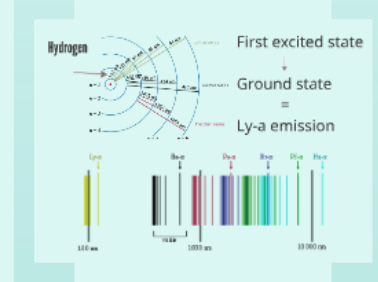
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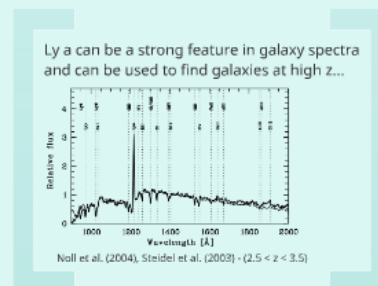
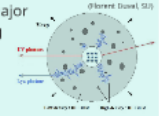
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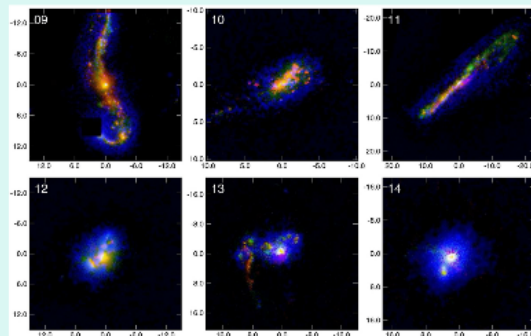
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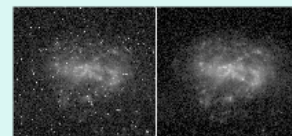
Ly α can be doppler shifted out of resonance: The gas sees a slightly different wavelength

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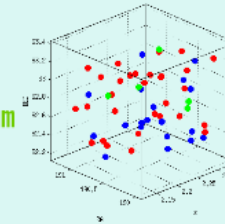
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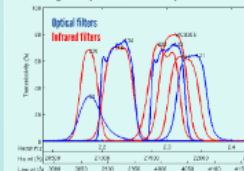


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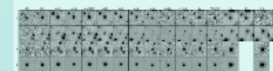
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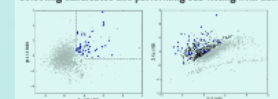
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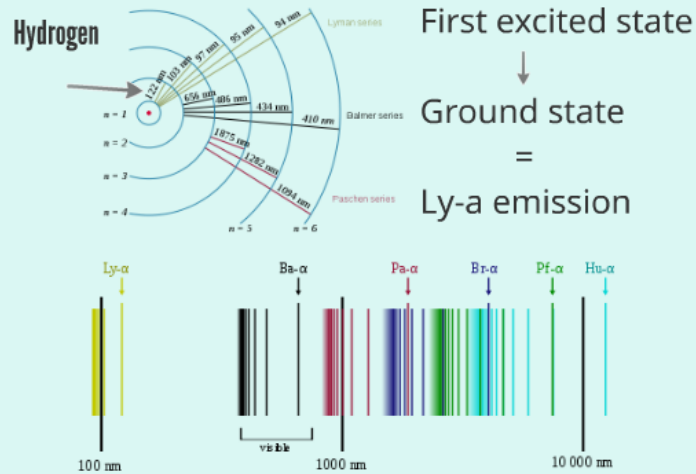


Selecting candidates and performing SED fitting with GalMC



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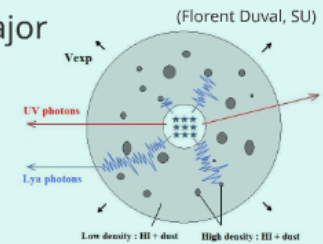
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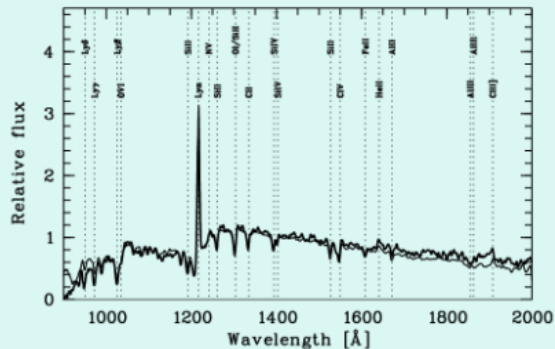
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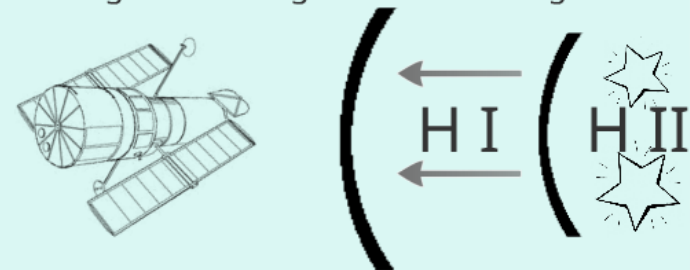


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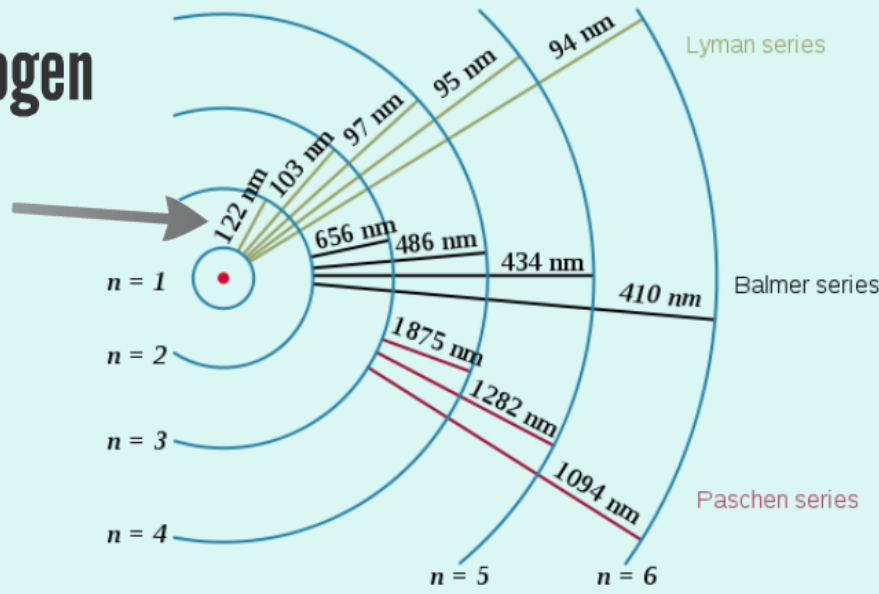
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Hydrogen



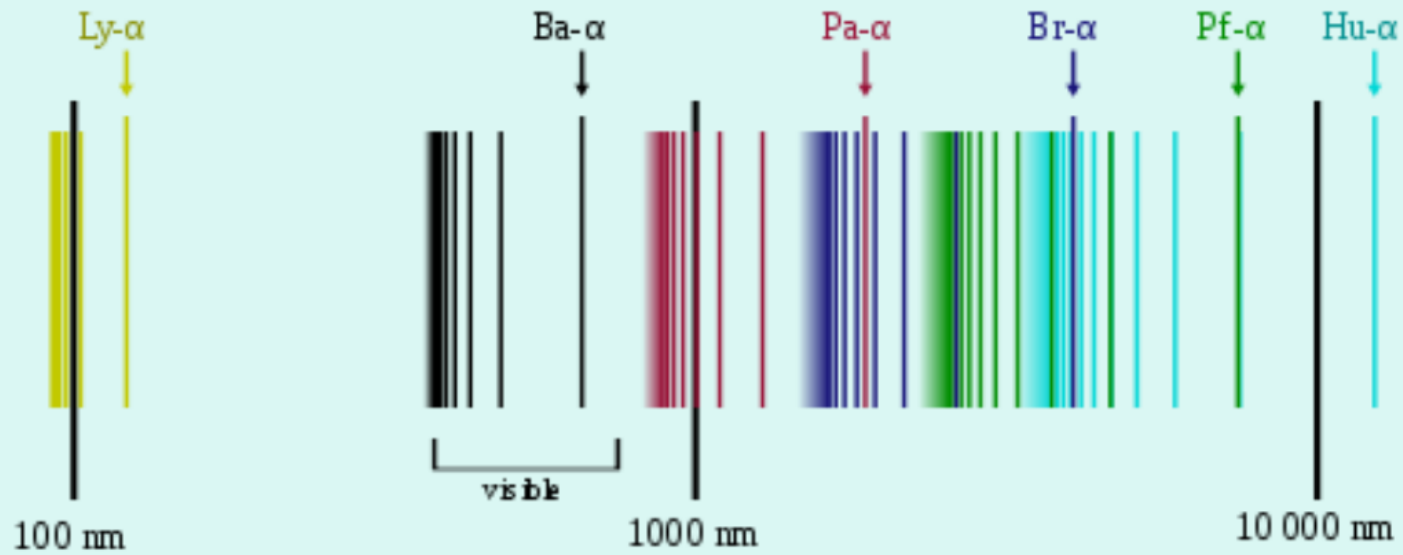
First excited state



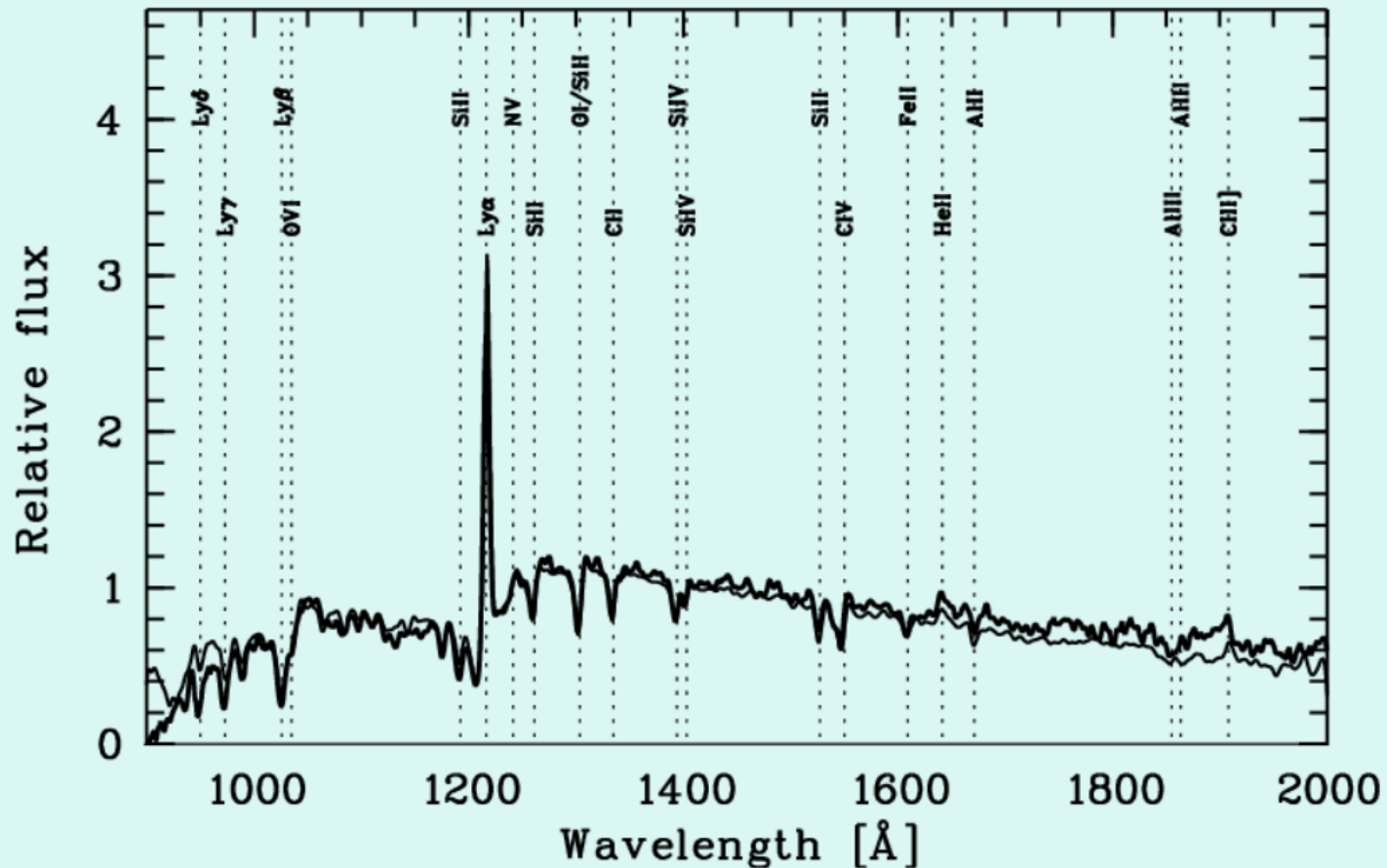
Ground state

=

Ly-a emission



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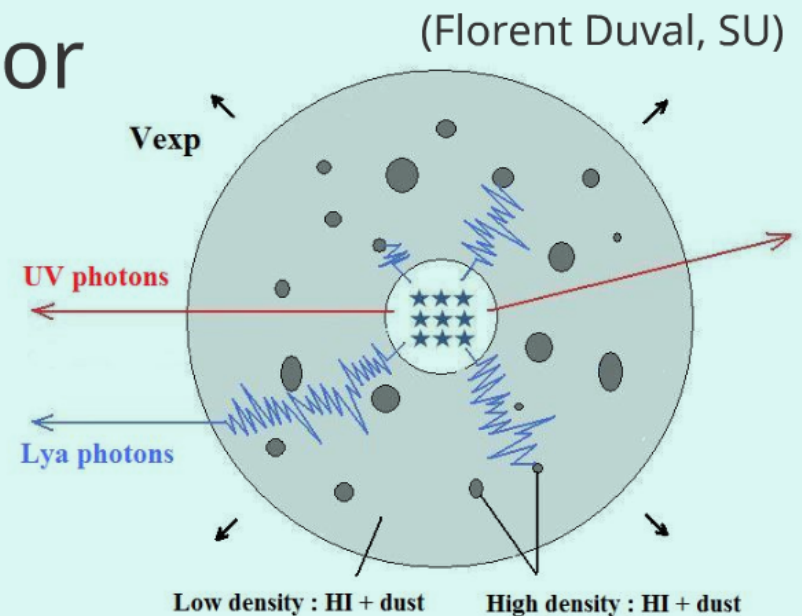


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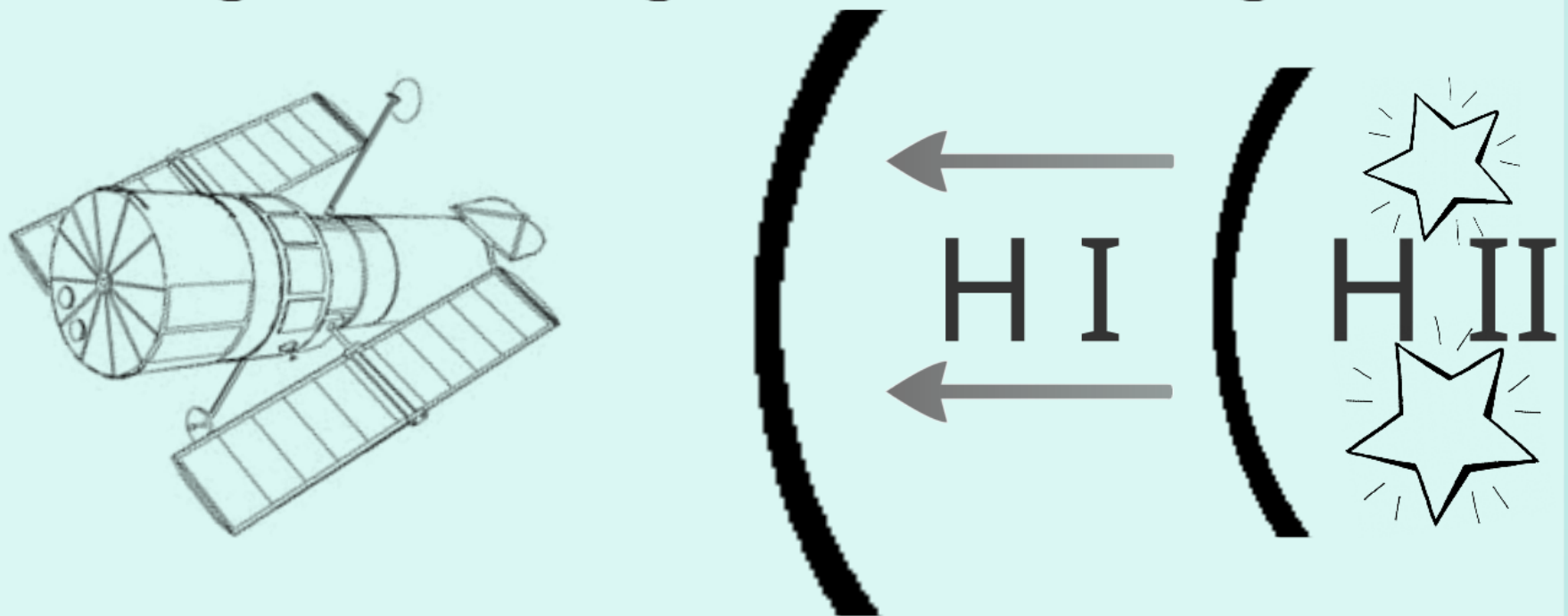
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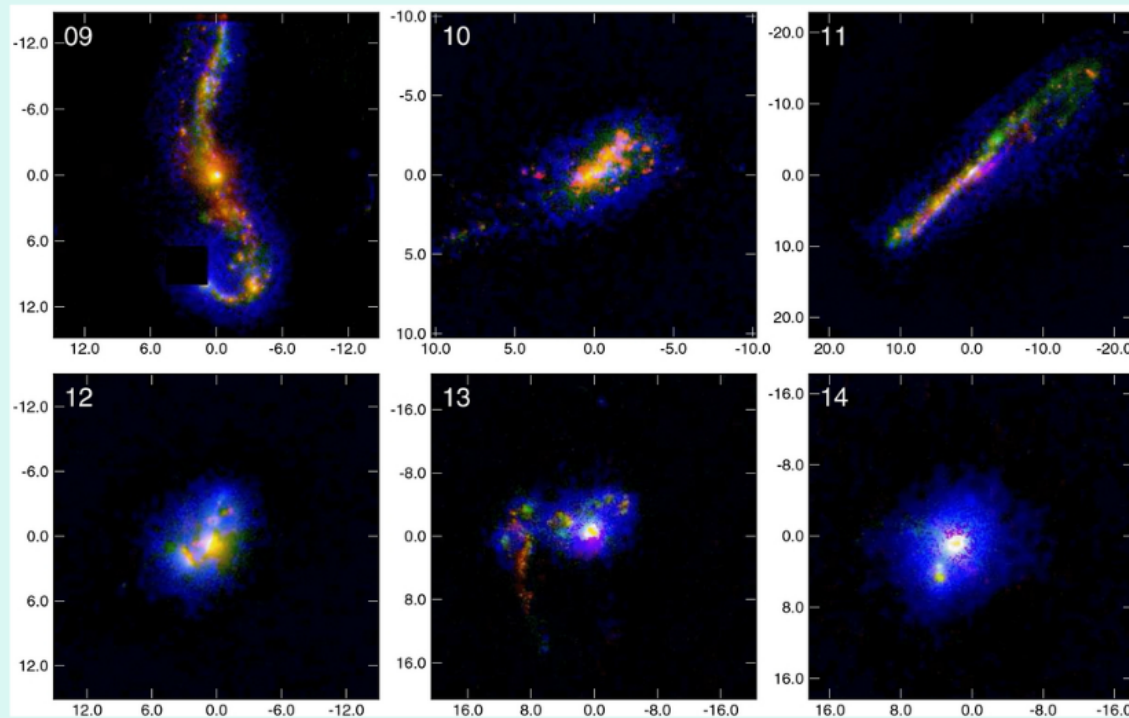
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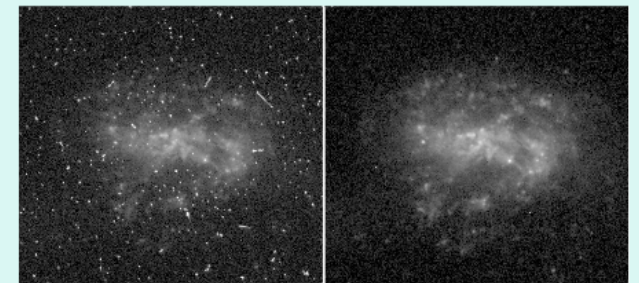
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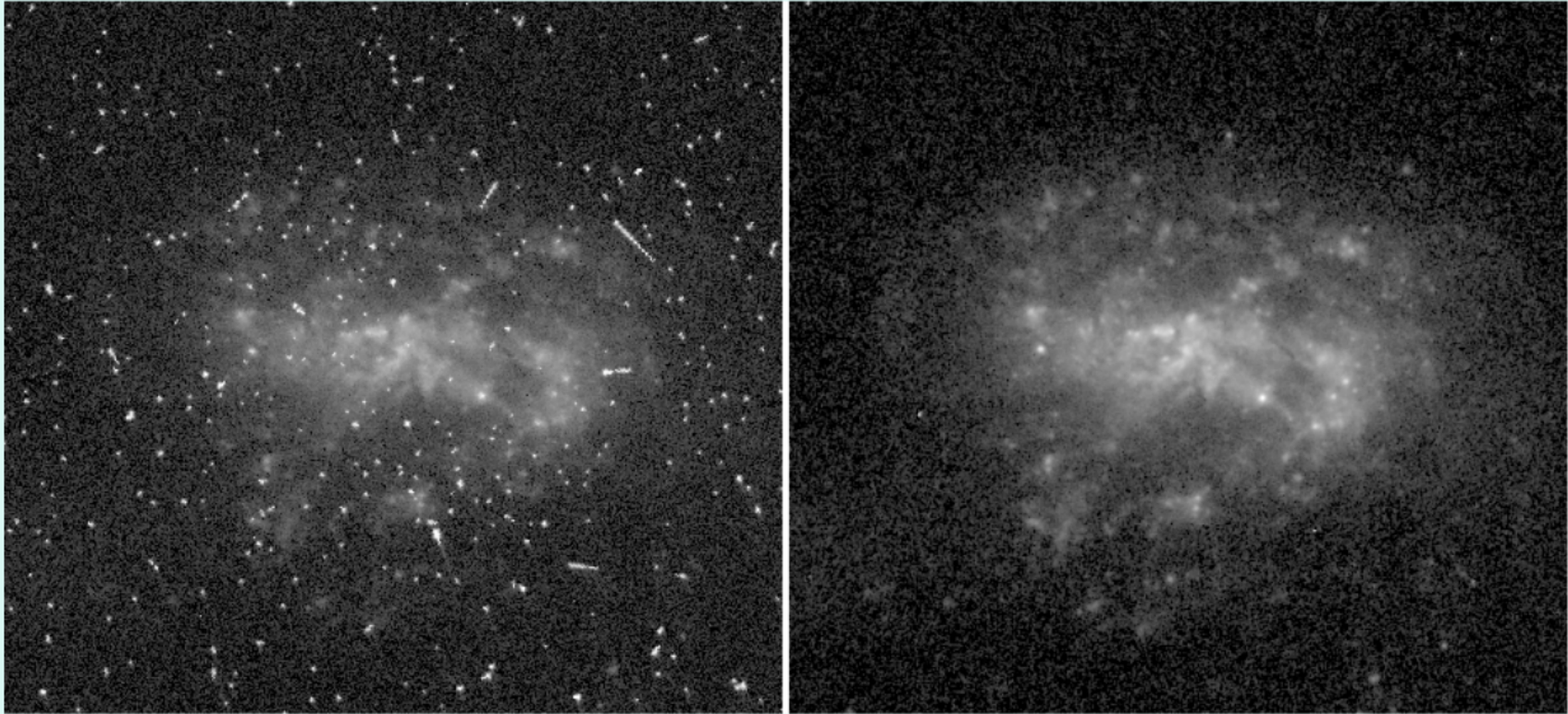
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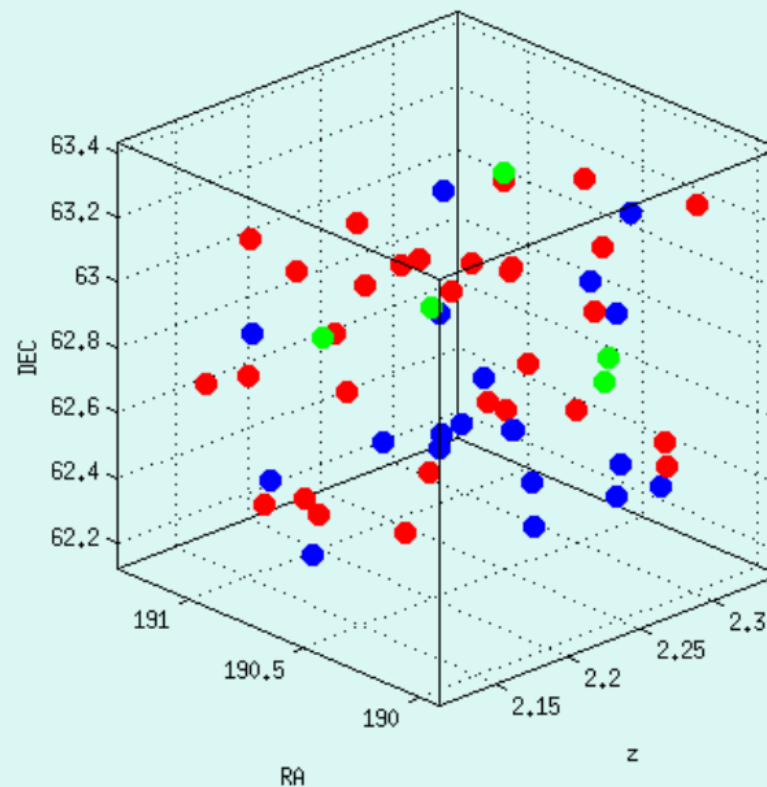
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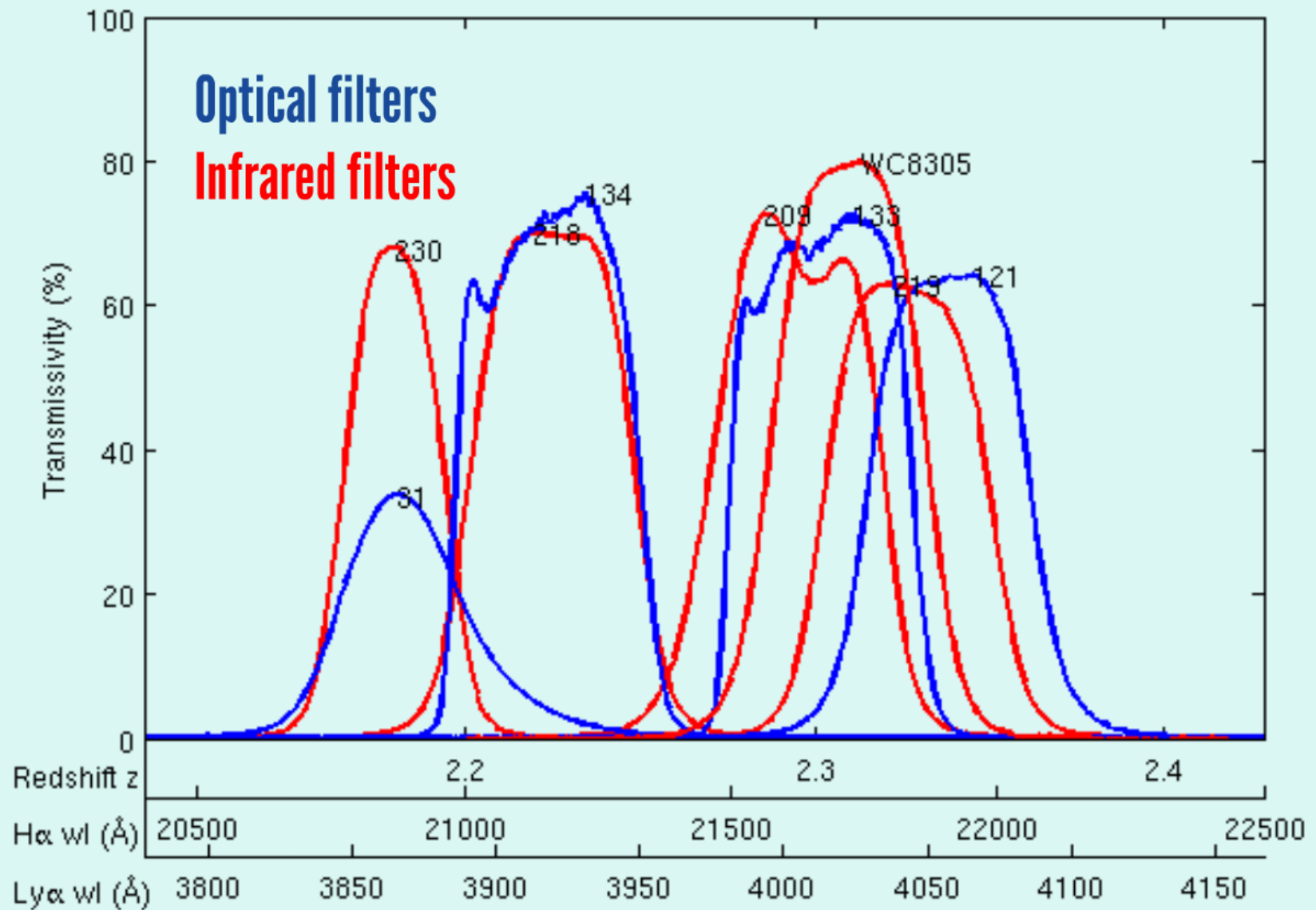
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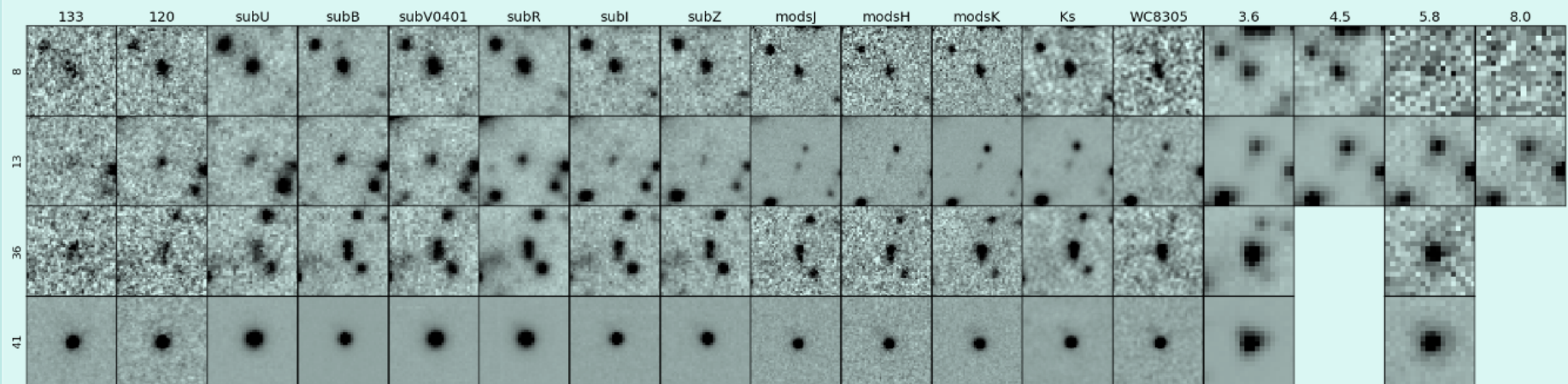
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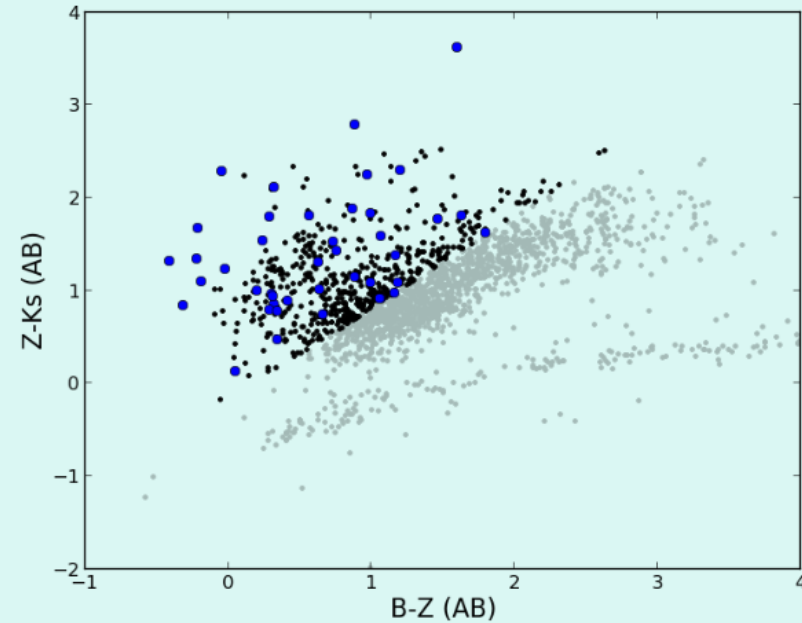
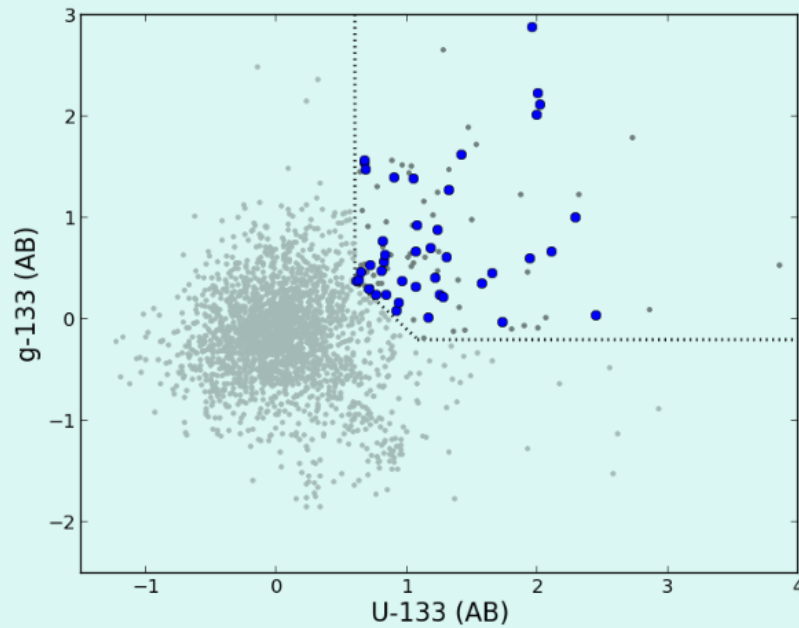


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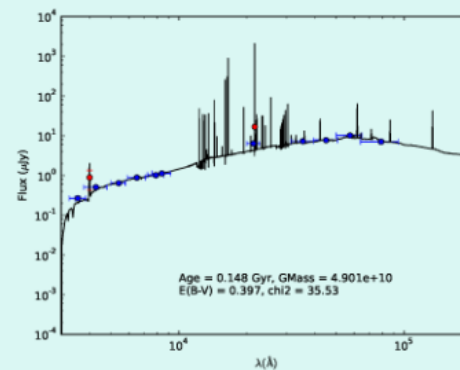
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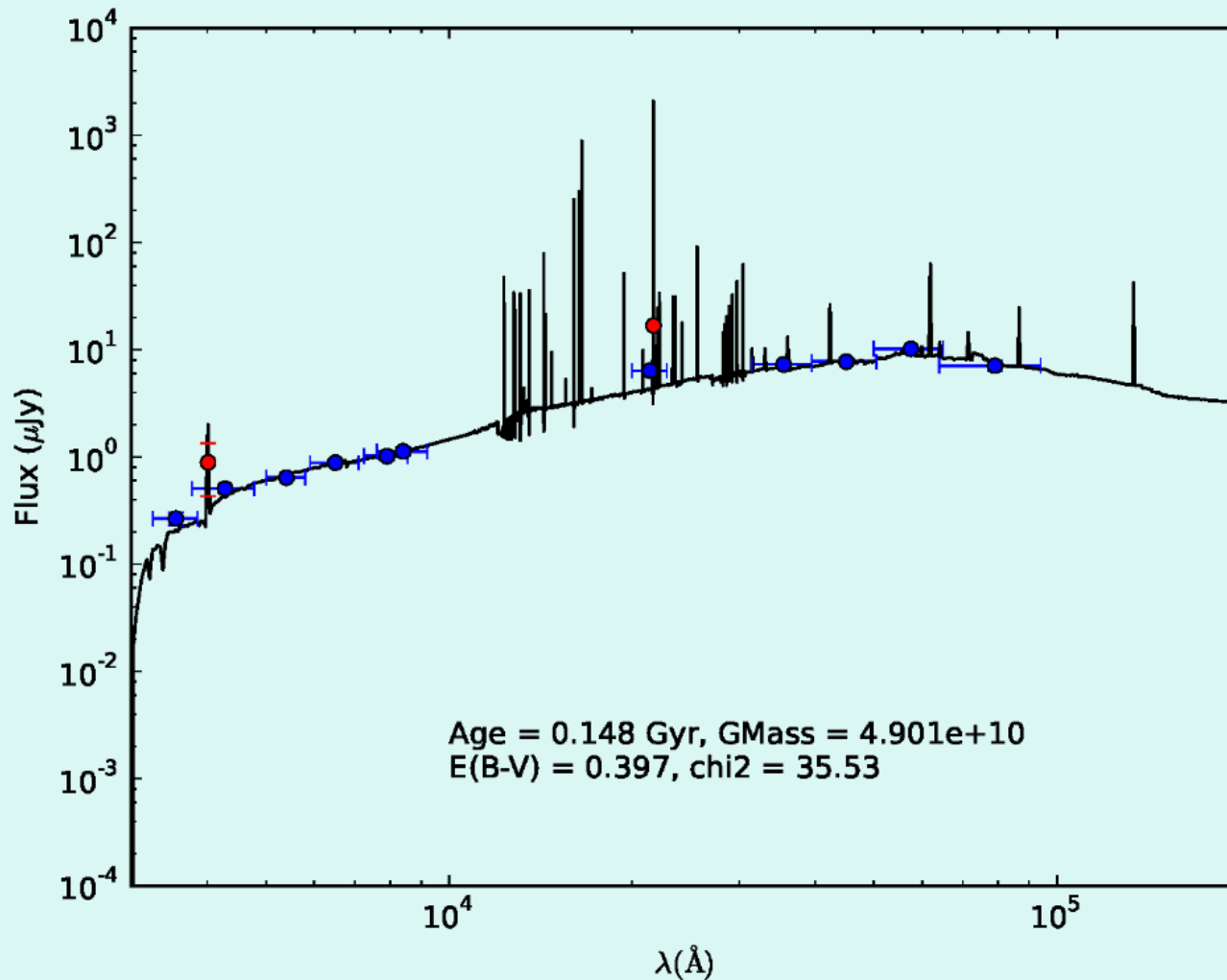
SED fitting example of known galaxy at $z = 2.3$



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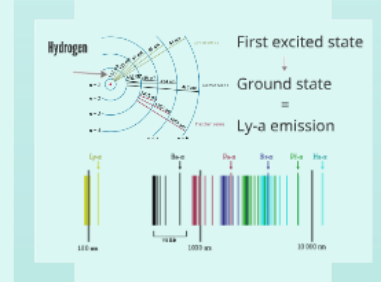
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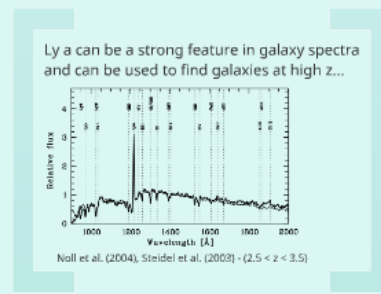
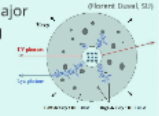
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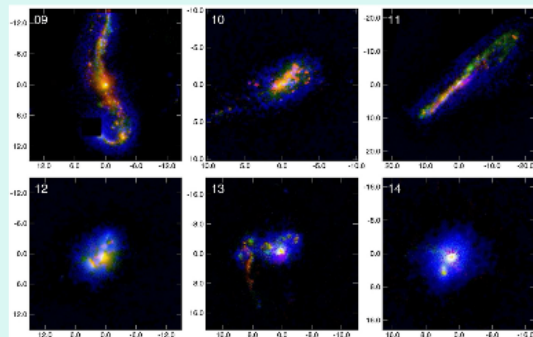


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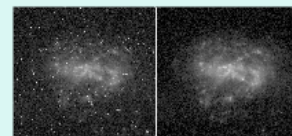


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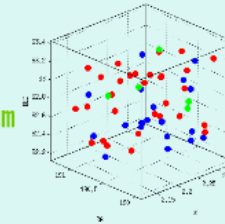
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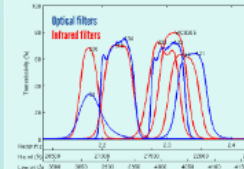


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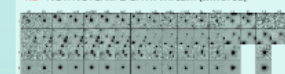
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