

How to read and present a paper?

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ASTRONOMY PAPER SEMINAR
PARTICIPATION GUIDE & READING WALKTHROUGH

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Questions to ask when reading a new paper

First Q: What is the Mystery/Controversy being Addressed?

A: This paper is investigating [this specific problem] with [these objects].

Second Q: How do They Address This Topic?

A: To address this problem, they observed [their sample] using [x telescope] so they could determine [physical measurement], which will answer their problem.

Hint: Focus on the basics and physical meaning.

Third Q: What did they find/not find?

A: The authors find that [these objects] do the following behavior . . . This is a new result because we previously thought. . .

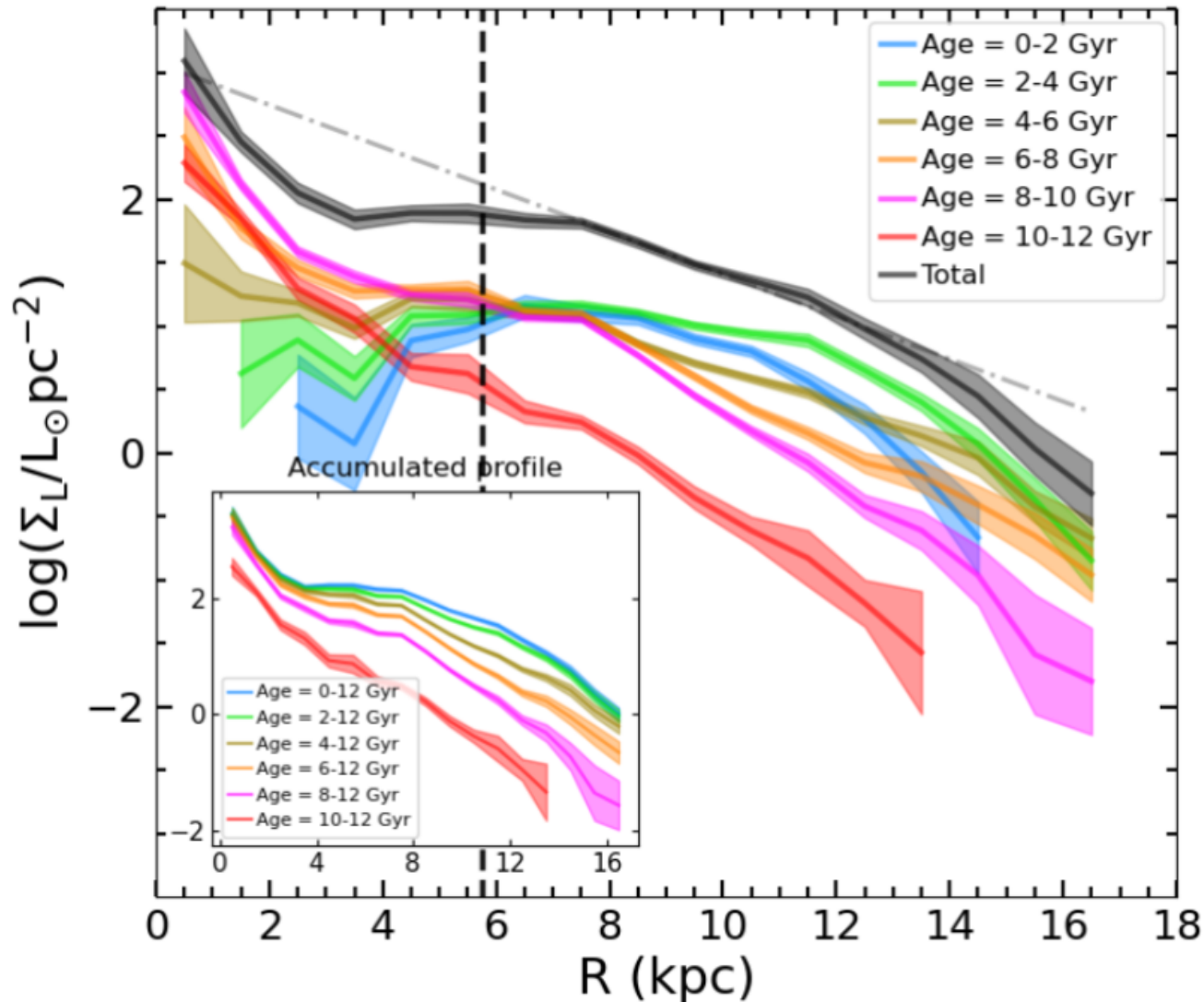
Things to cover when introducing a paper

- Explain the physical meaning of the problem being studied, i.e. the big picture: “This paper is investigating [this specific problem] with [these objects]’ .
- Explain the data and analysis they performed: “To address this problem, they estimated [these physical quantities] by measuring [a certain wavelength range of light, spectra, images, etc.].
- Explain the physical meaning of the results: “With these measurements, they found [these objects] were exhibiting [such and such a behavior].
- Explain again how this fits into the larger picture: “This means that these objects are evolving [in a specific way related to the original problem stated in the introduction].

How to introduce plots

1. Go through important plots slowly.
2. Review the X and Y axes of the plot and mention their quantities.
3. Go through the plot legend and point out which color, line, and/or symbol is the sample of this paper.
4. Go into the scientific meaning of the plot.

Example



MW's surface brightness profile is complex.

Disk profile flattens between 3.5-7.5 kpc.

Younger disk is more extended, consistent with inside-out disk formation.