

Suggestions for Literature Projects (Part II)

1. *Thermal pulses*

How were they discovered? What is their structure, and what effects do they have on the star. What observational clues do we have about their existence.

2. *s-process in AGB stars*

How does it work? What are the observational signatures? What are the neutron sources? What neutron flux is needed? What is the contribution of AGB stars to the abundance of s-process elements in the galaxy?

3. AGB stars in the Magellanic Clouds

Why are they useful to study? How have they been studied? What have we learned from them? How do they differ from those in the Milky Way?

4. Mass loss models for AGB stars

What ingredients are needed? How are they dealt with? Why are the models still not able to really "explain" mass loss from AGB stars. Differences between C and M-stars. Time-variability of mass loss.

5. *Dust Formation around AGB stars*

How is dust formation supposed to work? Differences between C- and Si-based dust. Observational evidence for dust from AGB stars. Role of dust in mass loss and chemistry.

6. Astromineralogy around AGB stars

What is astromineralogy? What tools do we have to find out about the different types of material around AGB stars? What can we learn about the evolution of the circumstellar material?

7. OH-IR stars

What are OH-IR stars and how do they fit in in the picture of AGB evolution? What can OH-IR stars be used for and what results have been achieved?

8. Post-AGB Objects

You can choose either a specific post-AGB object (e.g. Red Rectangle, Egg Nebula), or the whole group. What different sort of post-AGB objects exist? How can we study them? What do we learn from them about the evolution around the end of the AGB?

9. Born-again AGB stars

What observational evidence do we have for born-again AGB stars? What happened to Sakurai's Object, and on which time scales? What is the theoretical explanation for these phenomena?

10. Origin of aspherical mass loss

What are the suspected causes of aspherical mass loss towards the end of the AGB, or during the early post-AGB. What observational clues do we have about the transition? What can we do to solve this puzzle?

11. Use of AGB stars/Planetary Nebulae in extragalactic studies

How can AGB stars/PNe be used in extragalactic studies? What do we learn about stellar populations, galactic dynamics, distances, etc...

12. Initial-final mass relation

How is it observationally determined? What uncertainties are there? Which parameters are important for the IFMR? How is it used in stellar evolution calculations?