Formation of Planetary Nebulae

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1 Introduction

A planetary nebula (abbreviated PN or plural PNe) is an interstellar cloud composed of ionized gas ejected from a low- to intermediate-mass star near the end of its stellar lifetime.

1.1 things to write about

general planetary nebulae stuff
mira variables, oh/ir stars, pulsation theory
mass loss of agb stars
agb transition to planetary nebula, protoplanetary nebula
conditions required, temperatures required/reached, timescales of stages
central star
enrichment

1.2 potentially useful sources

kogan 9.3 (113)
kogan fig 9.48 + caption (142)
kogan 9.3.5, 9.3.6 (124-132)
co 516-519
co example 3.1 (626)
pottasch chapter x (240-270). focus on part f.

1.3 Readings

https://www.cfa.harvard.edu/research/oir/planetary-nebulae
https://en.wikipedia.org/wiki/Mira_$variable$
https://en.wikipedia.org/wiki/Asymptotic_$giant_branch$
https://en.wikipedia.org/wiki/Protoplanetary_$nebula$
https://en.wikipedia.org/wiki/Planetary_$nebulaOrigins$
https://web.williams.edu/Astronomy/research/PN/nebulae/nebulaegallery.php

References

[1] Pottasch, S. R., *Planetary Nebulae*, D. Reidel Publishing Company, 1984.

[2] Carroll, B.W., Ostlie, D.A., *An Introduction to Modern Astrophysics*, Pearson Education Limited, 2014.

[3] Bisnovatyi-Kogan, G.S., *Stellar Physics 2: Stellar Evolution and Stability*, Springer, 2011.