Radio Interferometric Studies of Cool Evolved Stellar Outflows

A dissertation submitted to the University of Dublin
for the degree of Doctor of Philosophy

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Declaration

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

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Summary

You should write a nice summary here...

A dedication if you wish...

Acknowledgements

Some sincere acknowledgements...

List of Publications

1. **Surname, A.**, Surname, B. A., & Surname, C.
   "A Wonderful Paper that I Wrote",
   Proceedings of the 16th Wonderful Workshop on things that are Great. Lovely Society of the Amazing Conference Series, vol. 448, pp. 713 (2011)

Contents

List of Figures

List of Tables

1 Introduction

Here is the introduction of the thesis, complete with a few references (Prothero & Buell, 2007; Sagan, 1997). Section 1.1 contains Equation 1.1, Section 1.2 has Figure 1.1 and Section 1.3 has Table 1.1. Chapter 2 has pretty much nothing in it.

1.1 First Section

This section has an equation. Here it is:

$$L_{\odot} = 4\pi R_{\odot}^2 \sigma T_e^4 \tag{1.1}$$

which is a nice way of describing the luminosity.

1.2 Second Section

So this section has a figure in it[1]. That figure depicts the basic structure of a red giant.

[1] And also a footnote.

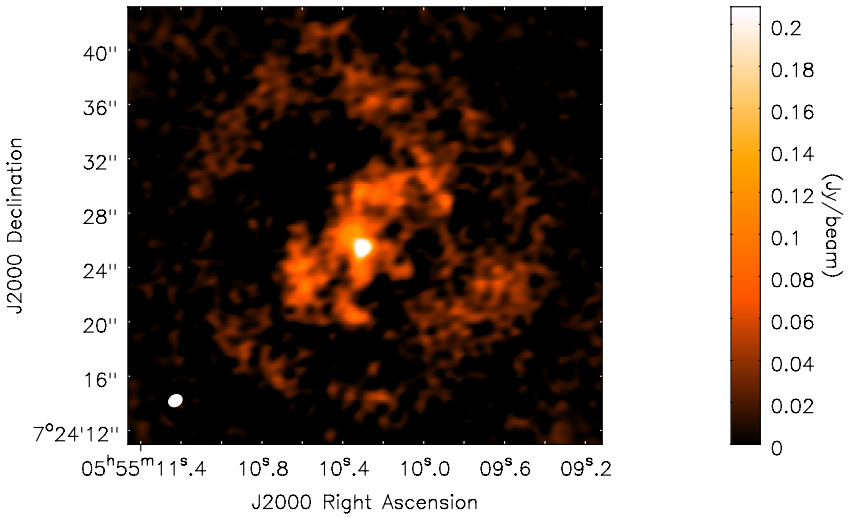

Figure 1.1: Red Giant and Asymptotic Giant Branch Stars. The left side of the figure shows the basic structure of a star on the giant branch of the HR diagram, while the right side shows a similar star after it has evolved to ascend the asymptotic giant branch. *Image Credit: Australian Telescope National Facility.*

1.3 Second Section

This section contains a basic table.

Table 1.1: Physical Properties of α Boo and α Tau.

Property	α Boo	α Tau	Reference
HD Number	124897	29139	...
Spectral Type	K2 III	K5 III	1, 2
ra (ICRS: ep=J2000)	$14^{h}15^{m}39.672^{s}$	$04^{h}35^{m}55.239^{s}$	3
dec (ICRS: ep=J2000)	+19 10 56.673	+16 30 33.489	3
pm-ra (mas yr^{-1})	-1093.39 ± 0.44	63.45 ± 0.84	3
pm-dec (mas yr^{-1})	-2000.06 ± 0.39	-188.94 ± 0.65	3
π (mas)	88.83 ± 0.54	48.94 ± 0.77	3
Distance (pc)	11.3±0.1	20.4±0.3	3
M ($M_{\odot}$)	0.8±0.2	1.3±0.3	6, 4
$\theta_{\rm UD}$ (mas)	21.0±0.2	20.2±0.3	5
$\theta_{\rm LD}$ (mas)	21.0±0.2	20.2±0.3	5
L ($L_{\odot}$)			
R ($R_{\odot}$)	25.4±0.3	44.4±1.0	...
Log g			
$T_{\rm eff}$ (K)	4294±30	3970±49	5
$v_{\rm rad}$ (km s^{-1})	$+5.19 \pm 0.04$	$+54.11 \pm 0.04$	9
$v_{\rm esc}$ (km s^{-1})	110	106	...
v_{∞} (km s^{-1})	∼40	∼30	7, 8
$T_{\rm wind}$ (K)	∼10,000	<10,000	7, 8
$\dot{M}$ ($M_{\odot}$ yr^{-1})	2×10^{-10}	1.6×10^{-11}	7, 8
H ($H_{\odot}$)			...

References.-(1);(2)Gray *et al.* (2006); (3)van Leeuwen (2007); (5)di Benedetto (1993); (6)Kallinger *et al.* (2010); (7)Drake (1985); (8)Robinson *et al.* (1998) (9)Massarotti *et al.* (2008)

2
More Stuff

So this Chapter has nothing really, apart from a shout out to Appendix A, and maybe a few more sample references (Harper & Brown, 2006; Seaquist & Taylor, 1990).

A

A Nice Appendix

This is where the appendix would go...

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