

# Preface

Although I was perhaps only 6 or 7 years old at the time, I remember my dad taking me out on cold winter evenings, pointing out the constellations as we walked slowly up the frost-glazed road. This was suburban Glasgow, then a city of one million people, and there was relatively less light pollution and many thousands of stars that were visible. I was immediately intrigued by the differences in brightness and colors of the stars, as much as I was about their twinkling effervescence. Even from a city as big as Glasgow, the sheer beauty of space never failed to amaze me.

I suppose it was my dad's enthusiasm for a night sky – a love born during his time on HMS Orion in the First World War – that really pushed me in this direction. By eight, I had developed an unhealthy love of explosions. Early on my main area of explosive interest, aside from James Bond movies, was volcanoes. However, once I knew that entire stars could blow themselves to pieces, I was never really going to look back. At eight, I had my first book on stars, and even though it was soon chewed to pieces by my pet hamster, it was still heavily thumbed in search of facts about why something as awesome as a star could blow up. By the time I was ten, I had already grasped how stars evolved, understood that there were different types of supernovae, and had absorbed some of the more peculiar aspects of the evolution of the universe.

In my teens, in the 1980s, I realized that there were very few books that extended what I already knew about stars, and although I was subsequently able to access peer-reviewed articles while at Glasgow and Cambridge Universities, it was evident that the number of more advanced titles were limited to the point of virtual non-existence.

The aim of this book is not to produce a comprehensive coverage of supernovae, nor is it going to rehash the general mechanisms of

supernovae that can be found elsewhere in abundance. Instead, I wish to take this opportunity to present the more unusual examples of stellar deflagration and detonation that are pouring out of automated searches for supernovae. The science of stellar death has ballooned in the last decade, on the back of decades of theorization and observation. This is an attempt to bring those new understandings to a broader audience. In this title, I have attempted to cover as wide a range of discoveries as possible. However, if you trawl websites such as [www.universetoday.com](http://www.universetoday.com) or [www.ArXiv.com](http://www.ArXiv.com), you will undoubtedly discover more that I either could not include for reasons of space or continuity or simply was not aware of. However, this book should serve to extend considerably the baseline knowledge of those interested in stars and form a starting point for further personal discovery. I hope you enjoy it.

Nottingham, UK

David S. Stevenson

Extreme Explosions

Supernovae, Hypernovae, Magnetars, and Other  
Unusual Cosmic Blasts

Stevenson, D.

2014, XIII, 369 p. 75 illus., 61 illus. in color., Softcover

ISBN: 978-1-4614-8135-5