

## Stellar properties

There are no notes following each slide for the final section on stellar properties. See Koupelis & Kuhn chapter 12.

### *Final reflection*

I'll leave you with a final reflection. If you could go back in time and speak to a leading intellectual in this country who was alive two hundred years ago, what achievements of today would he find most astonishing? If you showed him 21<sup>st</sup> century Nobel prize winning literature, he might be amazed at the subject matter but probably not at the literature itself. I suspect he wouldn't be that impressed at modern painting, sculpture, poetry or music, though he would certainly acknowledge that they belong to a different era than his own. Descriptions of airplanes, TV and modern computers would astonish him and the knowledge that such things are possible would deeply impress.

What would change his view of life would be a description of what we know in modern astronomy: what we now know about the planets as other worlds, totally different from anything he or his contemporaries imagined; what stars actually are, what they are made of and how they are born, evolve and die over a timescale that he would consider unimaginable; what we know about the extent of the universe and our picture of how galaxies fill the universe on a large scale. He would scarcely credit that mankind has gone to the Moon, explored a tiny bit of it and brought back moon rocks to prove it; that spacecraft have gone to every planet in the solar system barring Pluto (which he wouldn't know about) and sent us back pictures of places so different from the Earth that they are beyond his wildest dreams. If you were button-holed by such a person you would be detained for days and interrogated about almost the whole content of this course, and more besides. Astronomy has advanced astonishingly, not just in 200 years but in my lifetime and even in yours. What is reported in a matter of fact way as weekly news today would have seemed scarcely believable even 50 years ago.

One fact that will astonish you as an adult - it has certainly astonished me - is how reluctant many of your contemporaries are to change their views in adult life, to absorb new knowledge and change their ways of looking at the world. I'm referring here to all aspects of society, political, religious, artistic, social and almost any aspect you can think of. Studying such a rapidly changing subject as astronomy is a wonderful way of acquiring a flexible mind that will benefit you in every walk of life. I hope you have enjoyed our course and will keep reading about developments in astronomy.