PER ARDUA AD STRA

It's hard enough to be a star investor in the City, but as **Lora Walsh Benson** discovers, Bob Barber FSI has also invested his talents in the stars

Bob Barber FSI: a PhD followed his career in the City

When Bob Barber FSI retired after 20 years in the City as a financial analyst covering the automotive and engineering sectors, none of his former colleagues and clients could have guessed that he would go on to create a tool that is now essential to astronomers.

Bob was born in Stoke-on-Trent and attended Birmingham University, after which he worked for Laing and Cruickshank (subsequently Credit Lyonnais), Phillips and Drew (UBS) and James Capel (HSBC). On retirement, resolving to return to university, he was accepted at University College London (UCL) to read astrophysics. He followed a first class honours MSc in 2002 with a PhD in theoretical molecular spectroscopy (which involved computing a line list for water, based on quantum mechanical principles) and is now a post-doctoral research fellow at UCL.

He explains that the spectra of light from the stars and the spaces between them include billions of dark lines that are the fingerprints of the atoms and molecules in the stellar atmospheres and interstellar space. Because there are many lines very close together, it is impossible to measure their positions, so only about 100,000 of them are known experimentally. Yet knowledge of the positions of the lines of the important molecules (and water is the third most common molecule in the universe) is essential to astronomers trying to understand the nature of distant stars.

"I calculated the position of over half a billion water lines, together with the data necessary to be able to compute the intensities of the lines at different temperatures. The Barber-Tennyson line list is now the most complete and most accurate spectral water line list in existence," says Bob.

He has collaborated with astronomers worldwide who have used the line list to interpret their data, examine the atmospheres of cool dwarf stars and measure the temperature and molecular production rates of comets.

His time as a City analyst taught him to apply himself effectively and to remain focused. "I still learn something new every day. Most of my work is computer-based and special knowledge is necessary to generate scientific data using supercomputers."

And what do the stars hold for investment? He forecasts: "The growth in hedge funds will come to an end. Once they hold a substantial portion of the market it will be impossible for them to outperform the average significantly. The average can only perform as well as the markets as a whole. Performance can be increased by leverage, but there are corresponding risks. As is often said, investing is a zero-sum game and the emergence of hedge funds does not alter that."

His work in astrophysics has taken Bob to many interesting places. "I have been on observation trips to the UK's infra-red telescope, located near the summit of Mauna Kea at an altitude of more than 14,000 feet, in Hawaii. It is a desolate and beautiful spot. I have also visited the Canary Islands, the USA and various European countries." Currently planning trips to Paris, Dresden, Potsdam and Tomsk, he hopes to be awarded more observation time in Hawaii. Surprisingly, the place that has impressed him most is Berlin. "It is vibrant and is developing its own special character as the capital of the country with the largest economy in Europe," he says.

Apart from astrophysics, Bob loves music, regularly attending concerts and operas. He is interested in early English porcelain and helps raise funds for the British School in Athens. He has just completed a sponsored walk in the Peloponnese for it and hopes to walk the 100 miles from Corinth to Sparta in five days. ■

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