

Q&A Tom Boles

How did your interest in astronomy begin?

When I was at school in Glasgow a friend brought in an ex-coast-guard refractor and let me see Saturn and the Pleiades. I knew at once that I wanted a telescope like that, so I started to make them, at home, often from cardboard tubes. Eventually I ground my own 6-inch mirror, which gave me a reasonably large telescope to have at home. I later became a telescope designer and maker at Chas Franks, the Glasgow instrument company. I moved from telescope design at Franks to computing with NCR in the 1970s and continued my career with Siemens, among others. My professional claim to fame was bringing the first ATMs into banks in the UK. I also have a degree in biochemistry from the Open University – I was one of their first students.

Who influenced you?

The late TR Tannahill of Glasgow University was a mentor to me. He helped me sneak into his astronomy lectures when I was 15. He gave me good advice and listened to my half-baked theories about astronomy without laughing. For anyone of my era in the UK, Patrick Moore has got to be the most influential astronomer, with his own work and *The Sky at Night*, which started the year after I discovered astronomy. I first met Patrick in 1960 when he visited our telescope workshop in Glasgow. During my supernova work, two people helped immensely. Brian Marsden at the Central Bureau for Astronomical Telegrams gave encouragement and advice when I started, and Weidong Li at Lick Observatory, University of California, helped with practical advice with candidates and testing. I have also had a strong relationship with Stephen Smartt's team at Queen's College Belfast, based on our mutual interest in supernovae.



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Amateur astronomer Tom Boles has discovered more supernovae than any other individual: 154.

Why supernovae?

I chose supernovae because of my interest in cosmology. Even before the discovery of dark energy, supernovae played a major role in distance determination. A secondary reason – and a practical one – is that I intended to build my own observatory in the UK. The British sky conditions, variable at best, were better suited to searching for supernovae than any other of my interests. I started to look for supernovae in 1996 and now have three telescopes in my observatory in Coddham, Suffolk. I need, on average, to record 4000 images to discover one supernova. Imaging, processing and checking each image takes about 2 minutes, and I have over half a million images. That is about 17000 man hours.

Do you have a favourite astronomical object?

For beauty it has to be M104, the Sombrero Galaxy in Virgo. You see it almost edge-on and, with its distinctive dust lanes, it looks three dimensional. There's a wonderful Hubble Space Telescope

composite that is real eye candy for an observer. More personally, I grew up gazing at pictures of the 200-inch telescope on Palomar. All my early library books boasted images of this marvel of its time, so I had a particular thrill the first time it observed one of my supernovae.

What is your greatest achievement, so far?

Discovering my very first supernova was particularly exhilarating, but also stressful. I am especially proud of discovering SN2003L. At the time, it was the most powerful radio SN ever observed and the second brightest optical SN; it turned out to be aligned with a previous gamma-ray burster. Its mechanism is still not fully understood because its ejecta velocity is too low for its energy output. The discovery drove a change in thinking about the internal engine driving supernovae.

What do you like most about your work?

I simply enjoy looking at the night sky. I patrol 12 000 galaxies throughout the year and, while I can't recite the catalogue numbers of each, I can recognize most of them and I look forward to their first appearance each season. I also do about 20 talks a year to local clubs and schools. I find astronomy outreach really rewarding – and it's fun. I learn as much from my audiences as I hope they learn from me.

How do you find the time?

If you really enjoy doing something then finding the time isn't an effort, although fitting it into your social and family life can be challenging. I once promised to attend a friend's birthday party in the local pub, but the night was so wonderfully clear that I couldn't resist. I set my telescopes up automatically and headed to the party – but couldn't help sneaking outside every 15 minutes to check that the skies hadn't clouded over. My cameras caught a supernova that night, so I am probably the only person to have discovered a supernova while in the pub.

What's the future for your supernovae observations?

That is the million-dollar question. The future for supernovae discoveries seems to lie with the large professional surveys sweeping the skies regularly. It is becoming increasingly difficult for individuals to contribute. But these large science projects don't always go as planned. People have been saying that private observatories are finished for many years now, but we persist and we make discoveries. I wouldn't write off the amateurs quite yet.

<http://www.coddhamobservatories.org>

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