

Picture perfect

A unique and intriguing look at astronomers will be presented in a brand new exhibition at the Royal Albert Hall throughout October. **Keith Cooper** finds out more.



▲ The portrait of Professor Carlos Frenk from Durham University illustrates what the Universe is made from. All images: Max Alexander/STFC.

A good portrait accomplishes more than simply reproducing the likeness of its subject; it can capture the essence of that person, their mood and personality. We see so many photographs of movie stars, sports stars and pop stars because they are often presented as larger than life, but what about astronomers who spend their time looking at the stars? Their 'star appeal' has been captured in a new portrait exhibition at the Royal Albert Hall in London by photographer Max Alexander.

The portraits show over forty astronomers in a dynamic new light, many away from their natural environments of offices, computers and observatories. They're not just the perennial favourites either, or lots of old men. Alexander's photographs emphasise the diversity among UK astronomers, mixing the great astronomers of the past, the successful astronomers of today and those young scientists who are already on the way to carving a name for themselves in the coming years.

Max, with the aid of a grant and support from the Science and Technologies Facilities Council (STFC), came up with the idea as a unique way of celebrating the International Year of Astronomy. "I think there is a big overlap between astronomers and photographers because astronomers photograph the sky. There are certainly resonances and a visual appreciation in what we both do."

Teamwork

While studying for a diploma in astronomy a few years ago, Max met Professor Ian Howarth of University College London, and so when he needed a professional scientist to work with him on the portraits, Howarth was his first choice. For his part, Howarth describes himself as a "tame astronomer", but in reality the pair worked together to brainstorm ideas. Hence the portraits are not just straightforward photographs; instead, many of them incorporate subtle scientific ideas.

"Max is very pragmatic, but at the same time he is very artistically driven, and he incorporates all these clever ideas," says Howarth.

The portraits are saturated with clever concepts, but even if you don't immediately see the idea, you can still take something from the picture. For instance, the portrait of Professor Carlos Frenk, a cosmologist from Durham University, works on so many levels.

"People can take what they want out of this picture," explains Max. "Some will say it looks like the light on a quarter moon, or just staring out into the void. It's great if you just see the picture for what it is and get something from it as a lay-person."

Then there's a deeper layer to the portrait, almost like one of those magic eye pictures. "The picture is motivated by the way the Universe is broken up," explains Max. "So four percent of the frame is taken up by the lit part of Carlos' face, which represents normal baryonic matter. The unlit part of his face is 23 percent of the frame, which represents dark matter, and the remaining 73 percent of the frame is dark energy, so it is a representation of what astronomers know about the Universe."

The likes of Sir Patrick Moore, Lord Martin Rees and Professor Jocelyn Bell-Burnell feature in the exhibition, as do the younger breed of astronomers including Dr Haley Gomez of the University of Cardiff, Professor Brad Gibson of the University of Central Lancashire, Dr Hiranya Peiris from Cambridge University and Professor Nial Tanvir of the University of Leicester. The goals of the project, shared by Alexander, Howarth and STFC, were to focus on the diversity of UK astronomers that the public can relate to, and who younger people can aspire to be like. Hence Max freely admits that some of the portraits have a 'heroic' tilt to them, and many of the younger astronomers were chosen from the winners of the RAS Fowler awards.

Royal dates

An estimated 120,000 people will see the Explorers of the Universe exhibition whilst attending concerts at the Royal Albert Hall between 24 September and 2 November. There will also be open days on 3, 10, 14 and 24 October, and a wine and talk evening on Sunday 4 October starting at 5pm with a lecture by Professor John Zarnecki about 'Explorers of the Solar System', followed by a chance to view the exhibition. So if you want to see Professor Alan Fitzsimmons on a merry-go-round, Nik Szymanek in front of his subway train, Professor Colin Pillinger on 'Mars' or Professor Jocelyn Bell-Burnell and her stellar lighthouse, and many others besides, make sure you get down to the Royal Albert Hall. For those who can't make it, you can view the photographs at www.maxalexander.com/astronomy.

Ingenuity

How did the astronomers react to having their picture taken? "Most people were up for it," reveals Max. He recounts the story behind the portrait of Professor Emeritus Alan Watson from the University of Leeds. "I had in my head the Oscar Wilde quote, 'we are all in the gutter, but some of us are looking up at the stars', so I said to Professor Watson, 'how would you feel about lying down in the gutter?' and he looked at me and said 'ok' just like that!"

Another portrait is of Dr Serena Viti of University College London, who researches star birth and the chemistry of life. By pure coincidence she was eight months pregnant at the time, playing into the themes of star birth, life and stellar nurseries.

The ingenuity isn't just in the ideas behind the portraits, but also in how they were taken. Take the 'dark matter' photograph of Dr Sean Paling from the University of Sheffield. It's taken one kilometre down at Boulby Mine in North Yorkshire, where there is a scientific experiment to try and detect dark matter particles. The photograph is a single two-minute exposure, without any tampering. In the dark, Paling spelt out the letters in reverse with his torch, guided by marks on the floor, then when he reached his final position he gave a little wave with the torch, and he was illuminated with the flash. It sounds simple, but there is an enormous amount of planning in it. Another photograph is looking down on Max's fellow Kiwi, Professor Gerry Gilmore of the University of Cambridge, stood on a beach with the words 'there are more stars in the Universe than grains of sand on the Earth' spelt out in the beach in front of him.

"That was very difficult to do because we had to get the tides and the lighting just right, on a day when both Gerry and I were free, and I had to scout the location a few times. I was quite nervous writing that out in the sand because I had one chance, and if I messed up the spelling like I did in one of the tests it would ruin the whole picture!"

The resounding feeling one gets from looking at the portraits is that astronomers can be fun and inspiring; in short they are real



▲ Dr Sean Paling, a dark matter researcher from the University of Sheffield, a kilometre underground in Boulby Mine where the ZEPLIN-III dark matter detector is located.

▶ Dr Haley Gomez from the University of Cardiff studies the formation and evolution of cosmic dust, thrown off by stars and recycled in planets.

people, and Max Alexander has captured the essence of astronomers' personalities perfectly. The portraits will hopefully inspire the thousands of people who see them, especially younger people who may see something in them that they can relate to and aspire to become themselves. Who knows, in twenty or thirty years time maybe they will be the ones getting their picture taken?

Keith Cooper is the Editor of *Astronomy Now*. Max Alexander would like to thank STFC, the RAS, Ian Howarth, and IYA coordinator Steve Owens for their assistance with the exhibition.

