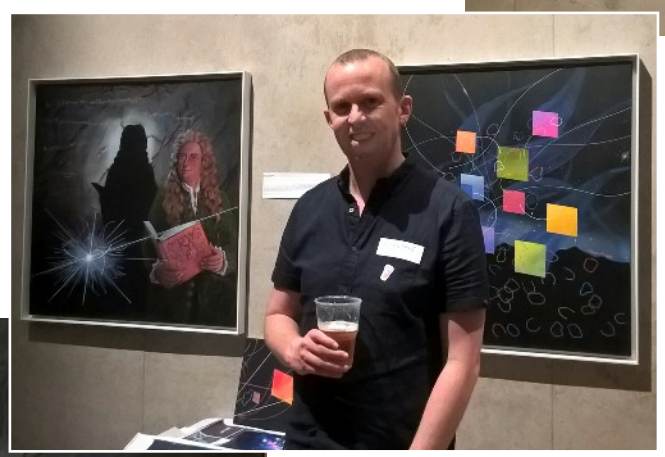
The 2 paintings shown below were painted as part of the **Pint of Science 'Creative Reactions' Festival.** *https://pintofscience.co.uk*

Pint of Science is a non-profit organisation that brings some of the most brilliant scientists to your local pub to discuss their latest research and findings with you. You don't need any prior knowledge, and this is your chance to meet the people responsible for the future of science (and have a pint with them). The festival runs over a few days in May every year. **Creative Reactions** is a part of the festival where scientists are paired with artists to collaborate on a work of art. The resulting works are then shown in a prestige gallery and the public invited to view and listen to the scientists/artists as they discuss the collaboration.

I was paired with particle physicist and cosmologist **Tony Padilla**, meeting with him four times before coming up with the concept for **Collision** and **Dances with Dimensions**.

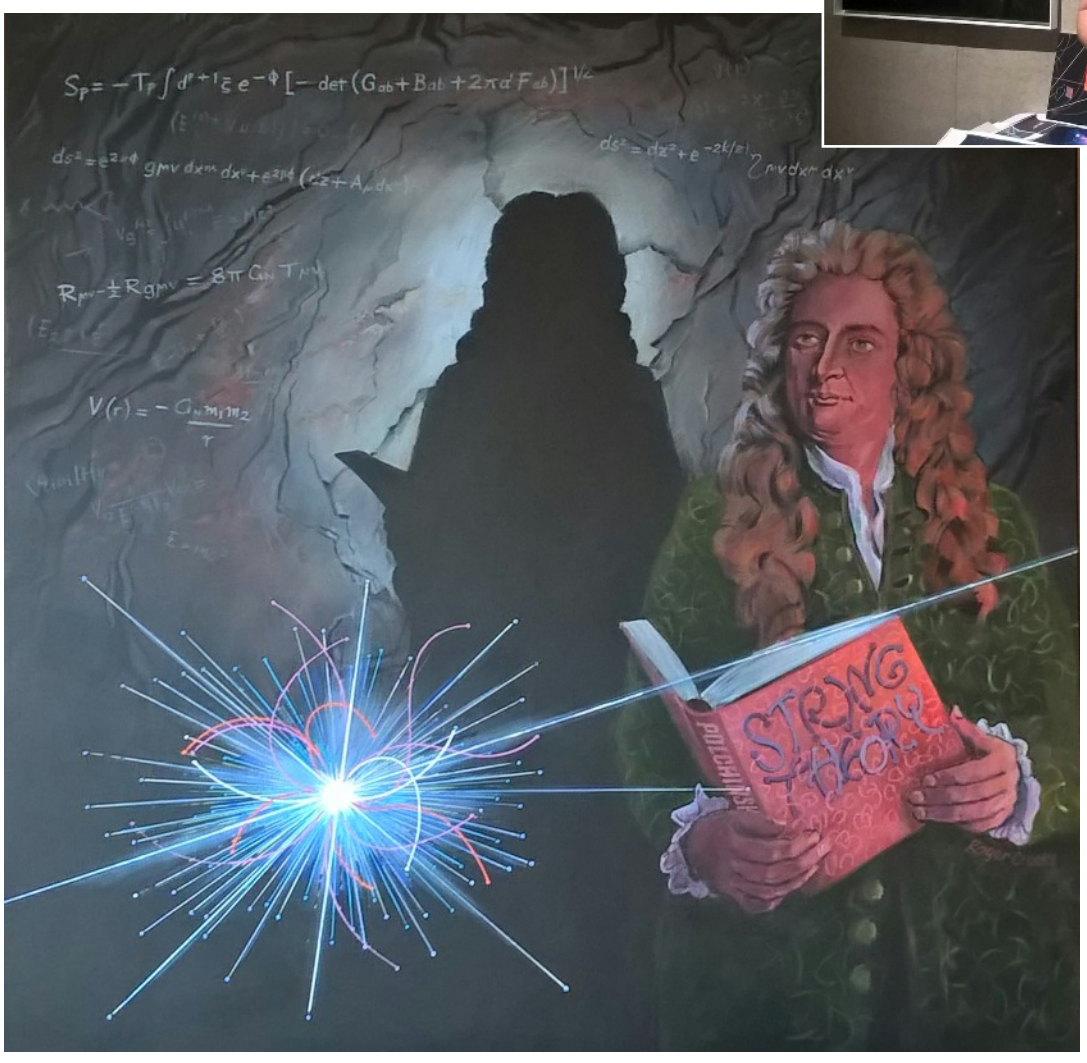
We gave short talks at the Contemporary Gallery, Nottingham on May 16th and 18th 2017.



Above - Roger with his paintings at the Grand Exhibition Show at the Contemporary Gallery, Nottingham

Left - Particle Physicist Tony Padilla in front of Dances with Dimensions

Collision - *Acrylic on canvas 94cm x 94cm*



Collision *is set against a background of* ***Plato's Cave**** *I have tried to show a story that begins and ends with* ***Isaac Newton****. I asked Tony "If Newton could have read* ***Polchinski's book on String Theory,*** *would it have made sense to him?" His answer was that Newton would have 400 years of physics to catch up with and some big advances in mathematics, but he would probably get there eventually.*

So the idea *behind the painting* ***(through some strange warped space - time loop - black-hole event****) is that* ***Newton*** *(who's* ***Principia*** *formulated the laws of motion and universal gravitation which was key to advances made in the following centuries) ends up being able to read* ***Polchinski's*** *book and have an insight to the current thinking about particles, string theory and the search for dark energy leading to a unified theory of everything which he laid the foundations for in the 17th century.*

The equations which are chalked on the cave wall are key moments in Physics from Newton to Polchinski and the ***particle collision*** *a reference to current research at the* ***Large Hadron Collider*** *in the search for the unified theory of why and how the universe exists.*

Dances with Dimensions - *Acrylic on canvas 94cm x 94cm*

Dances with Dimensions *is a sort of follow-up to the discussion we had about* ***String Theory and other dimensions*** *when I was surprised to learn that in the world of particle physics,there are* ***plenty of dimensions (9 plus time)*** *which we cannot see! So Part two - Dances with Dimensions was also a chance to bring into play the particles that are a feature of* ***string theory*** *- this painting set against a young universe* ***(when it was only one o'clock*)***

Plato's Cave –

A group of people who have lived chained to the wall of a cave all of their lives, facing a blank wall. The people watch shadows projected on the wall from objects passing in front of a fire behind them, and give names to these shadows. The shadows are the prisoners' reality.

The analogy of Plato's cave is that the shadow is two dimensional. That's what the prisoner perceives. He doesn't see the form creating the shadow, which is three dimensional. Only through thought and philosophy can they become aware of the forms

The analogy today is that we have been prisoners, only able to see the three dimensions of space. Through scientific thought and philosophy we have come to see that in actual fact our world is nine dimensional (plus one dimension of time)

It's one o'clock *- originally in the painting - a reference to the age of the Universe using a* ***24 hour clock*** *as the* ***life-span of the universe****. However, Tony tells me that the Unified Theory may prove the universe to be infinite in longevity so this may not be quite right. I thought about this and have decided to leave it in anyway because I wanted the universe to have a moment in time when I made this snapshot. The time could be one o'clock in the morning or as I prefer it* ***'It's one o'clock and time for lunch'****

I Know What I Like *Genesis - Selling England by the Pound*