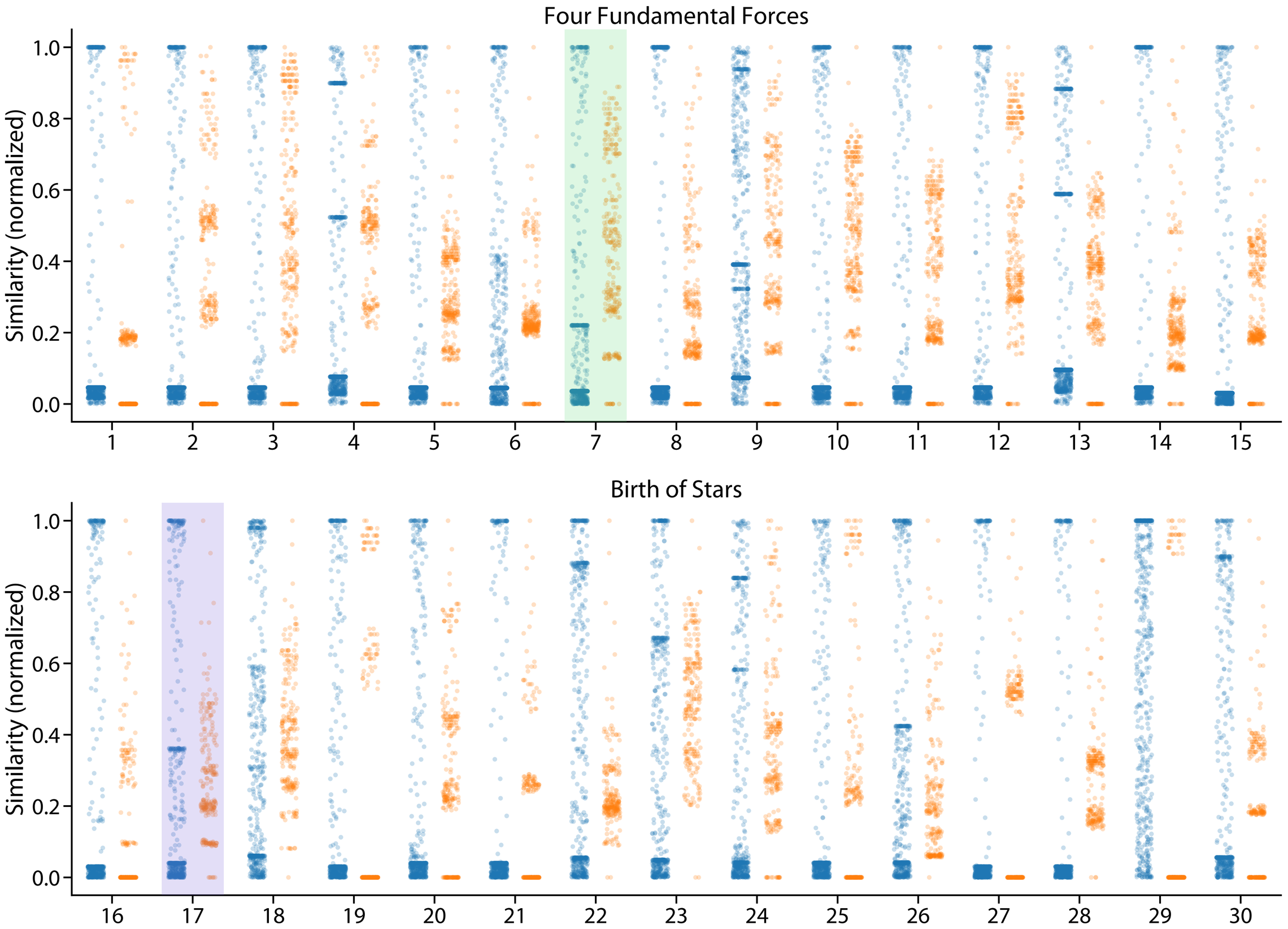

Q 7 "Which of the following are the primary two forces acting in opposition between the positively-charged protons in an atom's nucleus?"

7:10–8:35 "...reference now the strongest of the force is probably the best name of them all and that's the strong force that is the strong force the strong force and although you probably haven't seen this yet in our in chemistry classes it actually applies very strongly in chemistry because from the get-go when you first learn when you first learn about atoms let me draw a helium atom a helium atom has two protons and it's nucleus two protons in its nucleus and it has two neutrons and then it also has two electrons circulating around so it has an electron and I can draw the electrons is much smaller than well I won't I won't try to do anything in relative size but it has two electrons floating around and one question that may or may not have jumped into your mind when you first saw this model of an atom is like well I see why the electrons are attracted to the nucleus it has a negative Coulomb charge the nucleus has a net positive Coulomb charge but what's not so obvious and that what tends not to sometimes be explained in chemistry class is these two positive charges are sitting right next to each other if the electromagnetic force was the only force in play if the Coulomb force was the only thing happening these guys would just run away from each other they would repel each other and so the only reason why they're able to stick to each other is that there's an even stronger force than the electromagnetic force operating at these very very very small distances..."

"Which of the following occurs as a cloud of atoms gets more dense?" ***Q1 7***

0:06–1:37 "...and I say huge cloud huge both in distance and in mass if you were to combine all of the hydrogen atoms it would just be this really really massive thing so you have this huge cloud well we know that gravity would make the atoms actually attracted to each other instantly we normally don't think about the gravity of atoms but it would slowly affect these atoms and they'd slowly draw close to each other it would slowly condense they'd slowly they slowly move towards the center of mass of all of the atoms they'd slowly move in and so if we fast forward if we fast forward this cloud is going to get denser and denser it's going to get denser and denser and the hydrogen atoms are going to start bumping into each other and rubbing up against each other and interacting with each other and so it's going to get denser and denser and denser and remember was a huge mass of hydrogen atoms so the temperature is going up the temperature is going up and it'll they'll keep condensing they'll just keep condensing and condensing until something really interesting happens so let's imagine that they've gotten really dense here in the center they've gotten really dense here in the center and there's a bunch of hydrogen atoms all over it's really dense I could never draw the actual number of atoms here this is really give you an idea there's a huge amount of inward pressure from gravity from everything that wants to get to that center of mass of our entire cloud the temperature here the temperature here is approaching 10 million Kelvin and at that point..."