# AWESOME UNIVERSE, AWESOME GOD

**Opening Worship: One God – August 31**
**David Wilkinson and Jennifer Wiseman**

*Conference Video: http://worldmethodistconference.com/wp-content/uploads/wmc2016-videos/Wmc16-wedpm-wisemanwilkinson-v2-1.m4v*

***Wiseman*:** I bring you greetings from my little home church Deer Park United Methodist Church in Reisterstown, Maryland in the United States on the East Coast. We're a tiny congregation with a big heart. My name is Jennifer Wiseman and I am an astronomer. I'm a scientist. I study space. I study the Universe. I study Physics and astrophysics in the university and I love nature. I love to study nature. But I didn't grow up as a scientist. I grew up on a farm in the middle of this country in the state of Arkansas. How many of you have ever heard of Arkansas? Okay I grew up raising cattle with my parents and I didn't know any scientists. But we did love the Lord and we believed that all of nature was God's handiwork. And as I wandered the meadows and the valleys and the forest, I'd love to look at the trees and the grass and the sky. And I've always loved animals, whether wildlife, livestock, or pets. I loved to see how animals feel for one another and how they enjoy life as we do. And at night we would walk out and look at the night sky. We had a dark sky. We could see skies from horizon to horizon and I wondered what it would be like to explore the universe. How many of you have ever had the privilege of going out to a very dark place where you could really see many, many stars? Raise your hand if you have ever had that experience. I hope all of you have. Not many people have that experience today because of all of the lights that we create in our cities, but it's a wonderful experience to have. Now we are able to study the heavens with telescopes. Telescopes are tools that enable us to see the heavens with more precision than we can see with our own eyes. We are seeing marvelous things in the heavens using telescopes and scientific tools, beautiful things. What you are seeing here,.... we need to get the slides up, There we go...are stars. This is a collection of stars like you've probably never seen with your own eyes. But if you can get above the atmosphere of our own planet you can see many, many more stars. And in this case it's a very dense cluster of stars. We can see thousands of them in this tiny area of the sky in a cluster where they are held near each other by gravity. We see different colors: reds and blues, greens and whites, and yellows. The stars are not all the same, just like people are not all the same and yet they are beautiful together. We use all kinds of telescopes to study the universe. Telescopes on the ground. Telescopes that are in space like this one. Telescopes that get above the clouds to give us clear pictures of the earth and this technology is helping us to see more of the wonder of the heavens. In fact Psalm 19 tells us that "the heavens declare the glory of God and the sky proclaims the work of his hands." That day after day and night after night they're pouring forth speech and wisdom and yet without using words or language like we use and yet somehow their message goes out around the world. Everyone everywhere regardless of different cultures and languages can get some message from looking at the heavens. Here's the beautiful horse- head nebula, interstellar gas. Gas fills our galaxy between stars and we see these beautiful formations and we now know that inside these dense clouds of majestic gas new stars are still forming. Star formation is my own field of scientific research and it's an active process. With their telescope we can look at all the planets in our solar system and see great detail such as the beautiful gas clouds on Jupiter. Jupiter is mostly made of gas and we see the giant red spot there which we now know is a huge hurricane, is a huge storm changing on the surface of Jupiter. We can look farther out and see other stars like this one. But it helps to see these things in context. So with a different telescope we can see a broader field of view. This is looking towards the center of our Milky Way galaxy where we can see lots of stars. And we see that lane of dust and gas trickling down across the middle. We're going to zoom in now if the computer will let me, and we're going to see something that might startle you. Because with the big field of view like this we can see the bigger picture. And as we zoom in and transition to the more detailed view, that we can see with a space telescope, we can see one of these stars in the region, in this constellation is not actually a star like several others it is actually a dense cluster of stars. And as we zoom in and get a higher resolution with a space telescope, that we can see this is actually that same cluster of majestic stars. It helps to get perspective doesn't it? We can see details with telescopes that we haven't been able to see before with just our

eyes. This is a region of the sky many of you will recognize as Orion, the Orion Constellation. Many beautiful stars. Many people throughout human history have looked at this region of the sky and wondered what it might tell us. But when we look closely, for example at this star, it turns out that this is not just one star. When we zoom in with a space telescope we see this majesty, this beautiful colorful gas the Orion Nebula. And again this is an active cloud of gas, it's lit up in beautiful colors by new stars that have recently been born out of this gas. Stars continue to form. Stars continue to live and use fuel and radiate their light in beautiful ways.

Stars and gas fill what we call galaxies. This is a spiral galaxy. We believe our own sun, a star situated in a galaxy similar to this one. But we cannot get all the way out to get a picture of it. But galaxies like this contain hundreds of billions of stars. So many stars that the light all blends together in the core, and overtime the rotation of this galaxy takes on this beautiful spiral structure. Now for the last few decades during the last century, which isn't very long in terms of human history, we now know that there are other galaxies besides our own Milky Way. In fact there are billions of galaxies. This is a deep image of space taken with the space telescope and collecting light for many days so that we can see the faintest most distance objects. And in a tiny field of view of space, this is showing us not a collection of individual stars, but a collection of distant galaxies almost every one of these points of light is not a single star but a galaxy with hundreds of billions of stars. If our Milky Way Galaxy were in a picture like this, if you could give her away and look back it would look like one of these points of light. And within these points of light there can be billions upon billions of stars. We live in an enormous universe, a magnificent universe that's hard for us to fathom. And now I'd like to introduce Reverend David Wilkinson who is going to give us some spiritual insight into what this all can mean.

***Wilkinson*:** Thank you Jennifer. Good evening everyone. How exciting is that? I too have been an Astrophysicist although not as eminent as my friend, Jennifer here. These days I teach theology and lead a College of students in a place called St. John's College in Durham in the United Kingdom. I was interested therefore in this story that I heard the other day. It was in that generation before emails and social media.

It was concerning a young undergraduate student away at university. His parents hadn't heard from him in some time. They were getting a little worried. And then they received this letter:

> *'Dear Mum and Dad, I know you haven't heard much from me in recent months, but let me tell you what happened. A few weeks back there was a fire in my accommodations and I lost all my possessions. I jumped out of my second floor window and broke my leg in four places. However, while in hospital I met a most wonderful nurse. To cut a long story short we fell in love and got married a couple of weeks ago. I will send the photographs to you. In order to support her and her eight children and two grandchildren, I left college and tried to rob a bank. Unfortunately, I was caught and I am now in prison for four years, although the authorities say that I will be released in two, due to my terminal illness.'*

The parents were understandably shocked until they realized, at the bottom of the letter there was a large 'Please turn over.' And so they quickly turned the letter over and read:

> *'Mum and Dad, by this time, I guess you are getting a little worried. So let me tell you straight that everything I have written in this letter up to this point is completely untrue. The truth is that 2 weeks ago I heard that I had failed my final exams. I just wanted you to get this in proper perspective'.*

Do you ever get things out of perspective? In relationships, in work, in ministry, in sports? I mean, if my football team, and I mean real football, not the type of thing that's done here in America. I mean win or lose, my whole world is affected!

Part of this is understandable. Part us that makes us human. Part of God's gift to us is the way that we can think about relationships, the way that we can think about success in ministry, or in work, or even the gift of sports. And yet if we get those things out of perspective we deny our humanity. We deny the very gift God gives us by finding our humanity as one people together and indeed in relationship with Him. And that's why Psalm 8 is one of my favourite scripture passages. It's a song of praise and worship. And hasn't the worship just been wonderful this evening. Now we don't know whether this psalm was based on wisdom literature, its connection with lament and a

number of other scholarly questions, but we do know that in the history of Jewish and Christian worship this psalm was used for worship. It begins with a song:

"O LORD, our Lord, how majestic is your name in all the earth!"

And it gives us that picture which Jennifer has presented to us in such exciting ways.

"*The moon and the stars,*" the Psalmist says, you notice? "...the \work of your fingers."

God is so great that the hundred billion stars in each of a hundred billion galaxies is simply the work of God's fingers. He didn't have to use his whole arm, he just had to use his fingers to create it. The Psalmist stands in awe of such a God, and in light of those things and those things in my life that seem so important: those moments of selfishness, those moments of pride, those moments of fear are put into proper perspective. I've never found attempted proofs for God convincing in science, but I do think there are things about the universe, about its beauty about the sense of awe, about the fact that there are beautiful, subtle, intelligible laws of physics, the fact that things are just right to make you and I possible - what Paul Davis calls the "Goldilocks Enigma." Those things don't prove God, but they lead us to wonder, they lead us to awe, and this sense of awe that Jennifer has been describing for me is one of those bridges between science and faith. It's one of those bridges between the academy and laity. It's one of those bridges between people of faith and those of my friends who are scientists who are agnostics or indeed atheists, and just as I'm getting carried away by all of this, the Psalmist comes back and just says a couple of puzzling things. Verse 2 is difficult to translate. It's not clear whether "from the lips of children and infants" relates to verse one or relates to later on but what it seems to be saying is that God invests into children, into the weak, his praise in order to overcome his enemies. Isn't that fascinating? The God who created a hundred billion stars in a hundred billion galaxies first of all has enemies, but actually uses the weak in the world to show forth his praise. And yet that second puzzling question the psalmist goes on to say, "in such a vast universe, what are human beings that you're mindful of them. Jennifer you've been working a little bit on our place in the universe, what it means for humanity. Just take us on from there.

***Wiseman:*** Yes, I will do that. You didn't know you were getting an Astrophysics lesson this evening, did you? We have lots more to tell you about what's going on in the universe. Here is back to that ultra-deep feel, looking into deep space. These galaxies (a collection of hundreds of billions of stars) and here you see a whole lot of galaxies, but they're not all at the same distance. You're seeing this collection of galaxies, but some of them are farther away from us than others, and astronomers spend a great deal of time and effort trying to measure distances to objects like stars and even these galaxies. And when we look at things in distant space we're actually looking back in time because it takes time for the light to get to us. So when we look at a galaxy that is more distant than another galaxy we can compare those two galaxies to see how they've changed over time. So by looking at a collection of galaxies like this and discerning the different distances of galaxies we're truly looking farther into space and time. This graphic is meant to show, in a kind of graphical way, how as we go from top to bottom, as telescopes get better over time, as the instruments have improved, as cameras have gotten more sensitive, that out telescopes have been able to see fainter and fainter objects in space, and that translates into seeing more and more distant galaxies that appear fainter and fainter to us because of their distance. Well if you're looking farther into space you're actually looking at things farther back in time. And so we are now looking closer and closer to the very beginning of our universe, and to see how things were at that time, and we can actually compare how the galaxies were at that time with how our own Milky Way galaxy is today. And we find out that things have changed. That our universe has not been stagnant over its history. In fact astronomers everywhere will nearly all agree that our universe seems to have begun in a major burst of energy, an incredible burst of energy, at a finite time at about 13.8 billion years ago a burst of energy and over time that energy cooled, the universe expanded. Atoms were able to form. They were able to coagulate together and form gases. And the earliest stars, which are simply gravitational collapsed balls of gas, and in those stars gravitationally pulled themselves close to each other along with gas and created early galaxies, and then those galaxies began to merge together, some of them to form bigger galaxies. We are now looking so far back in time, that for our universe, which we believe scientifically began in a majestic burst of energy about 13.8 billion years ago, we are looking at seeing things from within that first .8 of the 13.8 billion-year history of the universe. And we can see as we look at galaxies across time and space, what's happened. We see that galaxies

have grown, they've merged together, the stars within them have come and gone. Stars don't last forever. But while they are shining they fuse hydrogen gas into heavier elements like helium. And the helium fuses and produces heavier elements still, and eventually when the star runs out of its inner fuel it will release its atmosphere and all of these elements its created in this spectacular burst. Here's an old star releasing its outer atmosphere. And many of these heavier elements it's produced. It looks like a butterfly, so we call this the Butterfly Nebula. Isn't it beautiful? Some stars are so big that when they run out of inner fuel, they become very unstable and they actually explode in a magnificent explosion that we call a supernova. Here's the remnant of an exploded star, a supernova remnant. And you can see, basically the guts of this star being expelled into interstellar space. This is not only energetic and magnificent, but it's also very beautiful. It's also very important for life on earth. Why is that? Because this exploded star has distributed heavier elements that it created like carbon, oxygen, and nitrogen, into interstellar space and future generations of stars will form out of this material and that can allow planets and solid bodies to form around stars. In fact we now know there have been several generations of stars in our own milky way galaxy to the point where now galaxies like our own have stars that have solid planets orbiting around them, like our own. Our planet earth has elements that we need for life, carbon and oxygen. That's why I think of stars as God's factories - what a magnificent process that God has designed for creating what we need for life. So that is the science. I think at this point I would like to go on and say a few words about something very intriguing that has happened in that last few years. About 25 years ago, we didn't know if there were planets orbiting other stars. We know about the planets in our own solar system, like Earth, and Venus, and Mars. But we didn't know if there were planets that were also orbiting the many other stars. We thought there might be and certainly science fiction has imagined there might be, but within the last 2 ½ decades or so scientists with better technology have started detecting for the first time in all of human history planets orbiting other stars. This image you're seeing is an artist conception of a real system, discovered with the Kepler Space Telescope of a star, in this case with six planets orbiting in very tight orbits. This is taking off. It's a very hot topic in astronomy. If you can understand this chart, what it's showing you is as the time goes from left to right here, for the last couple of decades that's the number of planets that have been discovered each year. These exoplanets, that means planets outside our solar system. It goes from zero, to a few here and there as the technology began to enable us to find them, to current years where now every year we are discovering more than 1,000 of these planets, every year. In fact, if you're paying attention, just a few days ago there was an announcement of a discovery of planet that's not much bigger than earth orbiting the star nearest to our sun, orbiting Proxima Centauri. And not only that, that planet is orbiting its star in the habitable zone. It's not too close to the star to be too hot for life and not too far away to be too cold for life. So that's very exciting. Astronomers are now developing better telescopes to help us analyze the atmosphere of these exoplanets to see if there might be signs of life. So it's a very exciting time in astronomy, we know our universe is very dynamic. It has been throughout its history. It's very rich and active, and we wonder, are there other planets with life in the universe as we look back on our own planet Earth? That's the mystery we're trying to find out. Now David, what does that mean for significance of human life.

***Wilkinson*:** You might be thinking to yourself, "to be honest, I'm not very excited. I'm a bit fearful of all of this. I mean, billions and billions? Mathematical graphs? Other planets around other stars with the possibility of life? "Maybe we resonate with the Psalmist in saying what are mere mortals in the midst of all of this? What are human beings? Because we're not the center of the universe. And does God really love this insignificant small gathering of humans on a little rocky planet around a rather insignificant star in a rather insignificant galaxy, and this mounting sense of despair if we go back to the psalm has an answer. It's not an answer about us being at the center of everything. It's an answer about god and his graciousness. You notice that the psalmist says the answer to our human significance is not about how we're made in terms of our atoms. It's in terms of what God has done. His initiative. You made, says the psalmist, you crowned us with glory and honor, you made us rulers, you put things under our feet. God's graciousness of the gift of life, of the gift of relationship, of the gift of love, is the real significance of human beings within this universe. There's a clear resonance here of Genesis 1, where the gift of intimate relationship with God is the thing that truly makes us human. Not what we've achieved. How much money we have. Not how many PhDs in Astrophysics we may have between us. It is about being loved by God Himself. And in a success, fame, money culture, which becomes a globalized culture at times, this dehumanizes many people. If you don't pass the exams, if you don't have enough money, if you don't have success, are you truly human. Yes,

says scripture, because you have been created by God. You are loved by God, and that means we have a sense of responsibility in how we live our lives, and in deed how we use science. Science is not meant to be a gift to inflict suffering on others. It's a gift to liberate, it's a gift to heal, it's a gift to instill in us awe and wonder. The end of the Psalm comes back to repeat that refrain, O Lord, our Lord, how majestic is your name in all the earth." That's important to me, because you might say that's all well and good, but how do you know it's true. In that little phrase, "O Lord OUR Lord" the psalmist gives us a clue. For this was Yahweh, the God of Israel, the one who had redeemed his people, who'd acted in history, taken them out of Egypt, sustained them in the desert, brought them into the promised land. It is OUR Lord, and for Christians we know the love of God because of Jesus, the one who has acted in history, the one who has delivered us, the one who sustains us, the one who is risen from the Dead. That's why we can say O Lord, OUR Lord. Jennifer, tell us, you're a scientist and you're Christian. What does this revelation of God in Jesus mean to you?

***Wiseman*:** I never reached the end of my sense of wonder and amazement and curiosity about how the God of this unfathomable universe also cares for us individually, and yet that is exactly what we're told in scripture, and most profoundly through the coming of Jesus Christ, coming in the flesh. The word of God made flesh, and this flesh is made of that same "star stuff" that we all are . God is part of this universe that He created and he is incarnate and has become so. I find that incredibly hard to fathom, and yet I'm also incredibly grateful. I also think that knowing about the generosity of God - God didn't have to create a universe with hundreds of billions of galaxies, and yet this tells us something about the character of God - when we try to make God small - God is big! And you know there's a lot we don't even know. I sometimes ask, Lord there are all these billions of galaxies that we didn't' even know about until the last century of human existence, why didn't you tell us about this before. But i think God is enabling us as we use technology for good things to explore and learn more about God's character. It's not like science tells us directly about the divine things of the world. Science tells us about how the physical world works, but I think we as Christians can also then infer philosophical and spiritual truths that are beyond science. I glean from this that the God we pray to is awesome. And it can enrich our prayer life when we remember that the God who care about us and knows the number of hairs on our head is also very interested in a universe that is beyond our human ability to comprehend. I also think that it's quite interesting that God has this patience. I mean God could have snapped His godly fingers and everything would suddenly appear, and yet it appears that God has been very patient in allowing the physical forces of nature to work out a most incredible impressive universe that we could really not fathom ourselves using forces, using the order of nature that speaks of our orderly, and our God. And I think that is something we can take in our spiritual lives as an analogy. Our spiritual life doesn't get mature instantly. Have any of you become spiritually mature in an instant? I haven't. God is working with us from the time we first recognize God's voice in our lives through the rest of our lives and all of eternity. There is a sense of God's patience and God's creativity and God's love for life. God has created a universe that is also rich for life on at least one planet. There may be life on other planets. We don't know. But we know there is life on at least one planet. It shows a generosity and, I believe a love of God. I also believe that God's creativity, here in this gorgeous image, you'll see yet another majestic image made with the space telescope, showing interstellar clouds that are productively still producing beautiful stars. In this case a cluster right off to the side, you can see a very young, very mass of stars. These are things that life the human spirit. We are meant to see these things, we are meant to be awestruck and we are meant to be uplifted. How can that happen?

Here are some folks, some friends. The woman in this picture works in is a scientist in the field of astronomy. Her name is Gladys. She is also a Christian. Every year she takes her holiday time to go on mission trips around the world. In this image she is visiting an orphanage. This orphanage is filled with the children of martyrs. These children have had traumatized lives. And yet these children have enough clothing and food. What they yearn to learn about from Gladys is about space! These are the things that lift the spirits and the eyes and the hearts of these kids.

So you see the heavens and learning about God's handiwork and nature both in the universe and in the earth around us, in the animals, in the plants, in the water, in the streams, in the mountains, can lift our spirits if we let it speak to us. Those are the kinds of things I glean from trying to imagine what it means to live in an enormous, magnificent universe.

***Wilkinson*:** I wanted to be an astronaut but they couldn't find a rocket big enough to get me into space! We're in Houston for the next few days and you will be well aware that not far from us is NASA's Johnson Space Center which has served as a hub of human space flight activity for more than half a century. It's been the home to Astronaut Corps and of course led to the Apollo moon landings. For some of these astronauts the new perspective that they got from looking at the universe was "earthed" by their knowledge and experience of the love of Jesus of Nazareth. Charlie Duke of Apollo 16 said, "Walking on the moon lasted only 3 days, walking with Jesus lasts a lifetime." James Erwin of the earlier Apollo 15 said "Jesus walking on the earth is more important than man walking on the moon." A piece of paper was taken to the surface of the moon by Buzz Aldrin on Apollo 11. On it he wrote some verses from Psalm 8, and when asked by NASA to comment on the significance of the experience as he traveled back from the surface of the moon, he recited "when i consider your heavens, the work of your fingers, the moon and the stars, that you established, what are mere mortals, what are human beings." But his answer to the question had been embodied just a few hours earlier, because there on the surface of the moon, Buzz Aldrin took a small piece of bread and small glass of wine, given to him by his Presbyterian church many miles away on earth, and as he administered holy communion, remembering that this one God was the god of the whole universe, that he was one with all people, he found in remembering the death of Jesus for him, that one mission that puts things in proper perspective. And as he took the bread and wine he recited from John 15:5 "Apart from me you can do nothing."