

Finding Your Place in the Universe

DENISE C. STEPHENS

Years ago my husband bought me a cute little plaque that says, “If it weren’t for the last minute, I would never get anything done.” I am sure we can all relate.

In our hurried and rushed lives, we often focus too much on the things that have deadlines, and we fail to make time for the things that matter most. We forget who we really are, and we lose sight of the eternal. We fail to take the time to pray, to ponder, to seek personal revelation, to follow the promptings of the Spirit, to recognize God’s hand in our lives, and to feel His love. With eyes cast down and focused on the task at hand, we forget to look up.

Today I want to remind all of us to take the time to look up.

All Things Bear Record of God

I am an astronomer, and I have always been fascinated with space. One of my earliest memories involves being at a school book fair when I was five or six years old and picking up a picture book containing photographs of Jupiter and its moons.

The *Voyager* spacecraft had just arrived at Jupiter and had returned the most stunning images of the four Galilean moons. I can still remember pictures of the moon Io in this book, with its volcanoes and intense orange and yellow colors. This little moon, just slightly larger than Earth’s moon, should have been geologically

dead—a gray, cratered world similar to our own moon. Instead it presented a beautiful, chaotic, changing landscape that absolutely intrigued me as a child. I was hooked.

As an astronomer, I often wonder why God created objects like the moon Io? If you really think about it, there is no reason for our solar system to consist of anything more than a sun, a moon, and an earth. So why put eight planets around the sun instead of one? Why create exotic moons like Io around giant planets? Why create Pluto and his friends in the Kuiper belt?

When I first saw pictures of Pluto and the heart-shaped region we call the Tombaugh Regio, I couldn’t help but wonder if God had intentionally created this geological feature in the shape of a heart on Pluto—a feature that would just happen to be in the right location for us to see as the *New Horizons* spacecraft flew by during a four-hour window on July 14, 2015. Did God put that feature on Pluto billions of years ago, knowing we would never see it until these last days, to remind us of His love and to remind us that He is aware of us? I don’t know, but maybe.

As I have studied God’s creations in the heavens, I have come to believe that all of God’s

Denise C. Stephens, a BYU associate professor of astronomy, delivered this devotional address on July 3, 2018.

creations serve a purpose and exist for a reason. When Moses asked God to tell him “why these things are so,” God’s response was, “For mine own purpose have I made these things. Here is wisdom and it remaineth in me” (Moses 1:30–31).

We may not know the whys of all of God’s creations, but each of God’s vast creations is a reminder that He is in charge, that there is a divine plan, and that we are here on this earth for a much greater purpose than what the world would espouse.

The Lord taught Adam:

And behold, all things have their likeness, and all things are created and made to bear record of me, both things which are temporal, and things which are spiritual; things which are in the heavens above, and things which are on the earth, and things which are in the earth, and things which are under the earth, both above and beneath: all things bear record of me. [Moses 6:63]

Likewise, Alma taught:

The scriptures are laid before thee, yea, and all things denote there is a God; yea, even the earth, and all things that are upon the face of it, yea, and its motion, yea, and also all the planets which move in their regular form do witness that there is a Supreme Creator. [Alma 30:44]

Each of God’s creations is a witness that He lives.

God’s Most Important Creation: You

Sadly, we have done our best to build concrete jungles and light polluted skies that block our views of God’s creations. We walk through this life with screens in front of our faces and plugs in our ears, completely oblivious to the wonder that surrounds us. With all of our technological advances, we have become complacent, like the Nephites.

If you recall, after the sign of Christ’s birth was given, Nephi recorded:

And it came to pass that . . . the people began to forget those signs and wonders which they had heard,

and began to be less and less astonished at a sign or a wonder from heaven, insomuch that they began to be hard in their hearts, and blind in their minds, and began to disbelieve all which they had heard and seen. [3 Nephi 2:1]

When you look at a picture of a star-forming region like the Orion Nebula, do you realize how blessed you are to live in a day and age when the Lord has provided us with the technology to view His vast creations in the process of creation? Do you realize that only the prophets of old, such as Adam, Abraham, Enoch, and Moses, were blessed with the knowledge we have today—knowledge so great that it caused Moses to exclaim, “Now, for this cause I know that man is nothing, which thing I never had supposed” (Moses 1:10).

I want to challenge each of you to put the phones away and to put aside YouTube and video games and to take time each day to be a witness to creation. Take a walk and feel the breeze on your face, run your hand through the grass, enjoy a starry night sky, and give thanks for a Supreme Creator, who has made this world for you.

In Primary we are learning the words to the song “My Heavenly Father Loves Me,” written by Clara W. McMaster:

*Whenever I hear the song of a bird
Or look at the blue, blue sky,
Whenever I feel the rain on my face
Or the wind as it rushes by,
Whenever I touch a velvet rose
Or walk by our lilac tree,
I’m glad that I live in this beautiful world
Heav’nly Father created for me.*

*He gave me my eyes that I might see
The color of butterfly wings.
He gave me my ears that I might hear
The magical sound of things.
He gave me my life, my mind, my heart:
I thank him rev’rently
For all his creations, of which I’m a part.
Yes, I know Heav’nly Father loves me.
[Songbook, 228]*

Heavenly Father does love you. And He knows you. Among all of His creations, you are the most important.

A Lesson from the Stars

Thanks to modern revelation, we know much about what happened in the premortal life, the purpose of this earth and our sojourn on it, and the exaltation that awaits us after this life if we are faithful. We also know something about the glory of stars.

In Abraham 3, the Lord gave Abraham an astronomy lesson. Abraham related:

And I saw the stars, that they were very great, and that one of them was nearest unto the throne of God; and there were many great ones which were near unto it;

And the Lord said unto me: These are the governing ones; and the name of the great one is Kolob, because it is near unto me, for I am the Lord thy God: I have set this one to govern all those which belong to the same order as that upon which thou standest. [Abraham 3:2–3]

I am going to do my best to give you an astronomy lesson about the different glories of stars based on the limited knowledge of man.

When you look at stars in the night sky, they all appear to be roughly the same. That is because they are so far away. They appear as points of light, and they are so dim that not enough photons reach your eye for you to distinguish the color of most stars.

But if you look closely, you will notice that the brighter stars tend to be red or blue. Stars aren't all white. Their color corresponds to their temperature. And when you are able to calculate the distance to a star, you can determine its luminosity, or its true brightness. By combining information about the temperature and luminosity of a star, we can calculate its radius.

When we plot the luminosity of a star against its temperature, we get a plot called a Hertzsprung–Russell (H–R) diagram. What we have found is that stars are not all the same; they vary in glory.

Betelgeuse is one of the largest stars in our galaxy. It is colder than the sun, but it is much brighter and produces far more energy than the sun does. It is a supergiant star that is about 1,000 times larger in radius than the sun. If we replaced our sun with Betelgeuse, it would engulf all of the planets out to Jupiter! Betelgeuse, along with other supergiant stars, is near the end of its life and will die soon—in the next fifty million years or so.

The smallest stars, called white dwarfs, are not really stars. A star is an object that produces energy through nuclear fusion; a white dwarf is the leftover core of a star that has died and shed its outer layers into space. In the Cat's Eye Nebula, there is a white dwarf at the center surrounded by layers of gas that were blown off when the star died. Seven billion years from now, when our sun dies, it may look very similar to this nebula, with a white dwarf at the center.

If you compare the glory of the sun to the other stars, it becomes quite obvious that the sun is not a great star. It is not the largest. It is not the hottest. And it is not the brightest. But even though it is not the greatest, the sun perfectly fills the measure of its creation. It provides the energy we need for life on this earth. If it were hotter or more luminous, it would be too hot for water to be a liquid on the surface of the earth, and life could not exist. And if the sun were colder or fainter, we would freeze.

As you further compare the sun's characteristics—such as its color, lifetime, and magnetic activity—to that of other stars, you quickly realize that stars like the sun are ideal for providing an environment that can sustain life. The sun has the perfect set of attributes to fulfill the calling it has been given.

After the Lord taught Abraham about the differences in stars, he began to teach Abraham about the intelligences or spirits that existed before this earth. Abraham saw you and me and all of the spirit children of God.

The Lord taught Abraham:

Howbeit that he made the greater star; as, also, if there be two spirits, and one shall be more intelligent

than the other, yet these two spirits, notwithstanding one is more intelligent than the other, have no beginning; they existed before, they shall have no end, they shall exist after, for they are gnolaum, or eternal.
[Abraham 3:18]

Now, at first it might seem unfair that the Lord called some spirits “more intelligent” than others. But remember our lesson on stars. Each star is different: each has different attributes, each is at a different stage in its development, and each has a different mission. Likewise, each child of God is different: we each have different attributes or talents, we each are at a different stage in our eternal development, and we each have a different mission on this earth. Because we are God’s children, He perfectly knows us and what gifts and talents we brought with us to this earth. He has placed us on this earth at this time and in our current situation so that we can best grow, develop, and fulfill our mission here on the earth. Just like the sun, each of you has the perfect attributes and qualities you need to fill the measure of your creation.

If we continue to read in Abraham, the Lord explained:

These two facts do exist, that there are two spirits, one being more intelligent than the other; there shall be another more intelligent than they; I am the Lord thy God, I am more intelligent than they all. [Abraham 3:19]

By combining these two verses, we learn some important truths about ourselves. First, we learn that we are not all the same. There will always be someone more intelligent or more gifted in something than you are; likewise, you will be more intelligent or gifted with some attribute than someone else is.

But we also learn that we are eternal. While all the stars you see in the sky will eventually die, you will live forever. That means you have an infinite amount of time to change and to grow. You are not stagnant. You are a spirit son or daughter of God, and, as such, you have inherited the potential to become like Him. And because He

is the most intelligent of all, each of us can grow in intelligence and ability to become like Him and eventually become perfect, as He is.

Perfection won’t happen in this life, but you will carry with you into the next life the growth and development you obtain in this life, and these will give you that much more advantage in the life to come as you continue in your quest to become like our Father in Heaven (see D&C 130:19).

In this day of Facebook, Snapchat, and Twitter—pick your favorite social media app—it is easy to get caught in the trap of comparing your life to the lives of others and to feel that your life is somehow lacking. When we are caught up in the race to perfection, setbacks, challenges, trials, and failures can seem overwhelming. Remember the lesson on stars. We are not all the same. We are not all meant to be the brightest star, the largest star, or the hottest star. In fact, we may not even be meant to be a star, and if we keep comparing ourselves against something that we are not, we will never find true happiness in this life. We will never become the person our Heavenly Father wants us to become.

In my research I study objects called brown dwarfs. The scientific community often refers to these objects as “failed stars” because they form like a star out of a cloud of gas and dust but don’t have enough mass to ignite hydrogen fusion in their cores. Thus they never become stars.

I hate the label “failed stars” because these objects were never meant to be stars! They were created to be brown dwarfs. And they are amazing!

When a brown dwarf first forms, it is relatively hot, but without an internal energy source, it slowly cools over time. Some of the younger and more massive brown dwarfs are as hot as the coldest stars at 3,500 degrees kelvin, while some of the older and less massive brown dwarfs have temperatures near 200 degrees kelvin. That is colder than the earth!

As these objects cool, clouds form in their atmospheres, similar to the cloud formation we see on Earth or on Jupiter. With their cloud structures, brown dwarfs look a lot more like planets than stars.

Brown dwarfs provide valuable knowledge for scientists who want to understand the atmospheres of gas giant planets that are orbiting other stars. You see, it is almost impossible to directly image a gas giant planet around its parent star. The star is so much brighter than the planet that we cannot directly detect light from the planet with our current technology. But since a brown dwarf is isolated in space and is not in orbit around another star, it can easily be studied to determine the properties of its atmosphere and cloud structure. Because the temperatures of brown dwarfs are similar to what we find for the gas giant planets, we can apply our knowledge of brown dwarf atmospheres to make assumptions of what the atmospheres of these extrasolar planets must be like.

Thus brown dwarfs provide astronomers with essential knowledge that could be obtained in no other way. They perfectly fill the measure of their creation and are not failed stars. If anything, they are overachieving planets.

You Are a Child of God

The next time you doubt your self-worth or feel you are lacking as you compare yourself to others, remember that you are a child of God. You are His creation, and you are perfect in who you are meant to be. Reach out to Him, and He will help you discover the gifts and talents He has given you and the mission He has for you in this life. None of us are failures.

Like Abraham, Moses also had the privilege to talk with God face to face and to be shown the earth and all the inhabitants of the earth. I want to highlight some of the scriptures in Moses 1 as we conclude today.

In verses 3 and 4, God instructed Moses:

Behold, I am the Lord God Almighty, and Endless is my name; for I am without beginning of days or end of years; and is not this endless?

And, behold, thou art my son; wherefore look, and I will show thee the workmanship of mine hands.

Remember, you are a son or a daughter of God. Let that knowledge inspire you to take the time

each day to seek His guidance in your life. If you will just look and just ask, He will reveal truths unto you—truths you need to know.

In verse 6 God instructed Moses, “And I have a work for thee, Moses, my son.” Can each of you hear God’s voice speaking to you in your heart, telling you that you are His son or His daughter and that He has a work for you?

God continued: “And thou art in the similitude of mine Only Begotten; and mine Only Begotten is and shall be the Savior, for he is full of grace and truth” (Moses 1:6). God created you. He created you in His likeness and in His image, and He provided a Savior for you because He wants you to return to Him. He is doing all within His power to make it possible for you to gain exaltation. You just have to choose His path and endure to the end.

God concluded by telling Moses, “But there is no God beside me, and all things are present with me, for I know them all” (Moses 1:6). God knows you! He knows all His children. He knows your strengths, and He knows your weaknesses. He knows precisely what you need to do in this life to return to Him, to partake of His glory, and to become like Him. Let that knowledge inspire you to put your full trust in Him, and commit now to follow the promptings that He sends you.

Knowing that he was a son of God inspired Moses and gave him the strength he needed to withstand Satan. When he knew his divine nature, Moses made the commitment to serve God, to worship Him only, and to continually call upon the name of God (see Moses 1:13, 17–18). Likewise, each of us can take strength in knowing that we are children of God and are of infinite worth. That knowledge can see us through our most difficult challenges and struggles, especially if it inspires us to continually call upon God for help and guidance.

Remember to Look Up

When you are most weighed down with anger or doubt, if you can remember to look up and behold God’s vast creations, you will be reminded of your eternal nature and that your current challenge or struggle is just a small moment in the time frame of eternity.

Remember that after the Lord showed Moses this incredible vision of the earth and taught him about worlds without number and that there was no end to His works, the Lord explained to Moses the purpose of this earth: “For behold, this is my work and my glory—to bring to pass the immortality and eternal life of man” (Moses 1:39).

Among all of our Father in Heaven’s vast creations, you are the focus of His work and His glory. While earths will come and go and stars will live and die, you are eternal. Your exaltation

is the reason for the creation of everything you see around you.

Remember that our Father in Heaven knows you and loves you. You are His child and “the workmanship of [His] hands” (Moses 1:4), and He wants nothing more than for you to return to Him and become like Him someday.

Never forget to look up. He is there, and He is waiting for you, and He will help you find your place in this universe. In the name of Jesus Christ, amen.