



# CREATOR

VOLUME 10

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## UNIVERSE OF LOVE

*For great is Your love, higher than the heavens  
(Psalm 108:4 a).*

How far will love travel? Have you ever gone a long distance to visit a relative or a friend? If so, was your journey difficult? When I was a young boy, my family and I would drive an hour to see my grandmother. It seemed like it took forever to arrive at her house! After we got married, my wife and I lived in several different states, and then many hours were needed to return home for a visit.

Why did we make the effort? Because we loved our families and we so badly wanted to be with them. We have good friends who recently flew by plane from the United States to Papua New Guinea, a distance of 13,000 miles. Their total trip lasted 30 hours, one way! They traveled to New Guinea to be with their parents and help dedicate the completion of a translation of the Bible into a local tribal language. They sacrificed a great deal of time and comfort to show love in a substantial way.

The Bible says that **God is love** (1 John 4:8) and Jesus is proof of that! He traveled from Heaven to Earth to save His enemies from eternal death. Christ's love is greater than the heavens themselves. But how big are the heavens? How far did Jesus go to love us? Well, let's find out.

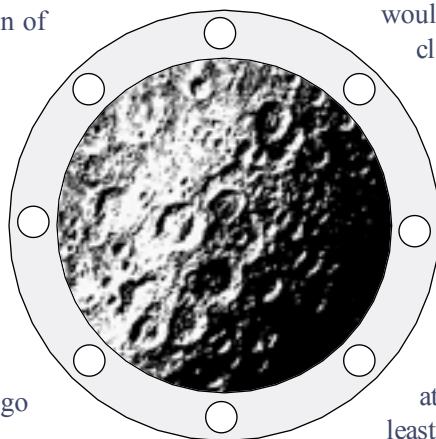
We are going to take an imaginary trip through the universe. We will start at Earth and move further and further outward, deeper and deeper into the

cosmos. Along the way, we will discuss the wonderful things our Heavenly Father has created. Our journey will be in a make-believe spaceship, the **Creation Explorer**, that moves one-half the speed of light, which is very, very fast indeed!\* Incidentally, the Holy Spirit placed a "speed limit" on light, thus astronomers can use it as a yardstick for gauging the incredible size of the universe. So if you're ready, let's start...three, two, one. BLASTOFF!

### SO MANY MOONS!

Two-and-one-half seconds into our space voyage we pass the Moon—it whizzes by our porthole on the right. The Moon is one-quarter of a million miles from Earth, but only two shakes of a lamb's tail are needed to get there! It took astronauts three days to reach it back in 1969. If we could ride a bicycle nonstop to the Moon (i.e., 24 hours a day), it would take us three years! So, it's not very close by Earth standards, yet our spaceship is so fast that if we blinked we would miss seeing it altogether.

Among moons in the solar system, the Earth's single moon is fairly large, but not the biggest. This distinction goes to Ganymede (pronounced GAN - ah - meed), one of the many moons of Jupiter. Mercury and Venus possess no moons at all, but the rest of the planets have at least one or more. The total number of satellites that God placed in the solar system is roughly 65, and greater than half of them are found



\* The speed of light is 186,000 miles per second or 300,000 kilometers per second.

orbiting around Jupiter and Saturn. (“Satellites” is another name for “moons.”)

When we consider the word “moon” we probably think of our own gray, airless, and cratered companion-world. This description does not necessarily hold true of other moons though. (The Creator, Jesus, is not that boring!) There are three moons in the solar system—Titan, Triton, and Io—that possess an atmosphere. Saturn’s moon Titan, in fact, is covered with a blanket of air that is thicker than Earth’s! We wouldn’t want to live there because the surface of Titan is minus 300° F. (-185° C.) and its smoggy atmosphere contains poisonous gas. Neptune’s largest moon, Triton, boasts the coldest temperature recorded thus far in the solar system, minus 400° F. (-240° C.)!

The two moons of Mars, Phobos and Deimos, resemble really big potatoes. These “spuds” are very small by lunar standards—the largest, Phobos, is only 17 miles (27 kilometers) in length.

Jupiter has four large moons (Io, Europa, Ganymede, and Callisto) plus several smaller ones. Io (pronounced EYE - oh), which is slightly bigger than our own moon, has no craters whatsoever. Its orange and red, pizza-like surface is covered by a layer of sulfur that comes from its active volcanoes.

Europa is the smoothest world in our solar system because it is completely encased in a thick sheet of ice. This frozen water gives Europa a beautiful blue sheen. Its surface is criss-crossed by countless fissures—an appearance that resembles a gigantic, cracked, ice pond.

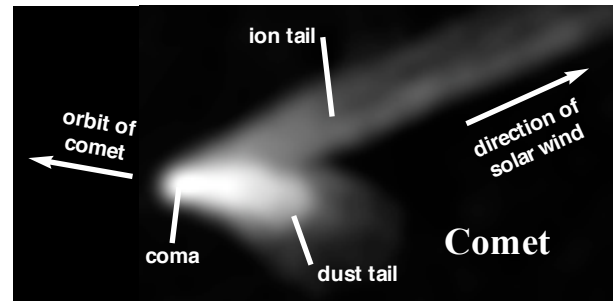
All these moons reveal the monumental and, dare I say, playful creativity of Christ’s Spirit.

### DIRTY SNOWBALLS

As our speedy rocket pierces the blackness of space, we spot a beautiful, large **comet** about 15 minutes from Earth. Careful observation reveals that the comet has two tails. All comets are balls of ice mixed with dust—like dirty snowballs, only a lot bigger. The icy part of a comet is called the **nucleus** and is usually a mile to several miles in diameter. The nucleus is surrounded by a much larger cloud of glowing gas and dust called the **coma** (pronounced KO - mah).

An ideal comet has one long, blue tail—the **ion tail**—and a much shorter, white tail, known as the

**dust tail**. Energy from the Sun heats the surface of a comet nucleus, causing ice to evaporate. The Sun also produces **solar wind**—high energy protons and electrons moving at one million miles per hour (1,600,000 kilometers per hour). The blue tail is created when solar wind reacts with gas given off by a comet as it warms up. This ion tail is like a “wind-



sock,” pointing in the direction the solar wind is traveling. Dust particles are also released into space as the comet approaches the Sun. These freed particles are what make up the comet’s short, curved white tail (dust tail).

### OTHER WORLDS

Colorful **Jupiter**, the largest planet in the solar system, is our next stop. It takes us one hour and ten minutes to get there from Earth. If we tried to land on this mammoth planet...well, we simply couldn’t. Like the other giant planets—Saturn, Uranus, and Neptune—Jupiter is composed largely of gas. If a spaceship attempted a landing, it would first pass through an increasingly dense atmosphere, only to encounter a bizarre sea of boiling liquid hydrogen. Jupiter has no mountains or valleys, no deserts or volcanoes; just a lot of hot poisonous gas and liquid.\*

In terms of perspective, Jupiter dwarfs our human pride by presenting a whole new scale of values. Jupiter is so big that if it were hollow, the Lord Jesus could fit more than 1,400 Earth-size planets inside. A nonstop airplane flying 600 miles per hour, 24 hours a day, would take 19 days to circle the planet once! That’s big—but God is bigger!

Jupiter’s magnetic field is ten million times greater than Earth’s. The colossal magnetic pull of Jupiter creates invisible belts of radiation that are

\* For an in-depth discussion of the planets, please see the Jan/Feb 1996 issue of **CREATOR**.



hundreds of times stronger than what is needed to kill a human being. Even getting close to Jupiter is deadly business, so we will keep our distance and admire its beauty from afar! All this shows us yet another way that our Heavenly Father highlights His untouchable holiness in creation!

### STARRY, STARRY FLIGHT

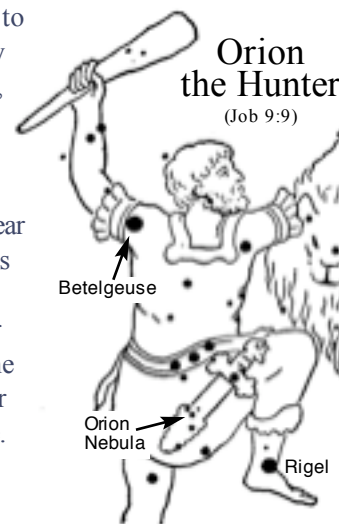
We're now settling in for a long ride because we're headed for the star **Alpha Centauri**. Though it is the third closest star to Earth (the Sun is the closest), it is four light-years\* away. It would take the *Creation Explorer* only 17 minutes to reach the Sun from Earth, but more than eight years will pass before we see Alpha Centauri in our porthole. (Remember, we're going half the speed of light.) So, I hope you brought along a lot of books to read!

Once we get there, we discover that Alpha Centauri is a star very similar to our sun. It is almost one million miles in diameter. Do you remember our jetliner attempting to fly around Jupiter? Well, it would take the same airplane six or seven **months** to go around Alpha Centauri! Of course it could never survive the star's seething surface temperature of 10,000° F. (5,600 °C.).

There are stars smaller than Alpha Centauri and our sun, but many are much, much bigger. Go out on a winter's night in the Northern Hemisphere, or a summer evening in the Southern Hemisphere, and find the constellation Orion.\* The left leg of Orion is defined by the bright blue star, Rigel. Rigel is 50 times larger than the Sun. That's big! Now look to the

right shoulder of Orion and you'll find the orange-red supergiant Betelgeuse (pronounced beetle - juice). This star is **800 times** the size of our sun. If the Holy Spirit were to place Betelgeuse where the Sun is now—the orbits of Mercury, Venus, Earth, Mars, and Jupiter would fit *inside* the star and we would be burnt to a crisp! God is certainly great enough to do this, but let's thank Him that He doesn't!

The reason Betelgeuse doesn't appear really huge from earth is that it's 520 light-years away. It would take our imaginary spacecraft, the *Creation Explorer*, over 1,000 years to get there. I'd like to go but we simply don't have time now.\*\*



### VAST GAS !

We've passed by Alpha Centauri and we're now en route to the **Orion Nebula**. It is one thousand, five hundred light-years from Earth, so we'll arrive at the Orion Nebula in about...oh, say, **3,000 years**. I should have just enough time to explain what a "nebula" is! (Just kidding.) The word "nebula" is Latin for "cloud"—a nebula is a cloud located in space. But it doesn't rain in space because a nebula is not like the clouds found on Earth. Instead of droplets of water or ice, a nebula is composed of a vast amount of dust and gas. And when I say vast, I mean **humongous!**

The Orion Nebula spans six light-years end to end—that's 35,000,000,000,000 miles (35 trillion miles or 56 trillion kilometers) across. That's huge, but remember, God is much bigger! This great object can be seen with the naked eye from Earth—the Orion Nebula is the second "star" of three that form the sword of Orion the Hunter.

When we finally arrive, we behold breathtaking beauty like nothing on Earth. (By the way, we're now almost three times as old as Methuselah, who lived 969 years.) Our aging instruments indicate that the

\* A light-year is the distance light travels in one year, or 6 trillion miles (nine and one-half trillion kilometers).

\* The constellation Orion is mentioned three times in the Bible—Job 9:9, 38:31 and Amos 5:8.

\*\* A more thorough presentation of stars can be found in the Nov/Dec 1993 issue of **CREATOR**.



nebula is composed of hydrogen, nitrogen, helium, carbon, and oxygen, as well as other gases. The beautiful red color we see is caused by glowing hydrogen and nitrogen gas, while the blue-green hues of the nebula are due to excited oxygen.



The energy Jesus uses to light up the Orion Nebula comes from a kite-shaped group of four stars He placed at the center of the nebula, called the *trapezium*.<sup>\*</sup> As we venture closer to these stars, we realize that the brightest, *Theta 1 C*, is 100,000 times more brilliant than the Sun! Whoa—that’s bright—I need some sunscreen! We’re temporarily blinded by the spectacle of Theta 1 C and are reminded that our Heavenly Father “lives in unapproachable light” (1 Timothy 6:16). If the Lord Jesus can make something like this, I wonder just how brilliant He is....

There are many more nebulae (plural of nebula and pronounced NEB - you - lee) in our galaxy, but we just don’t have time to visit them now. Our next destination is a cluster of stars in the constellation Tucana.

### STAR TOWNS & CITIES

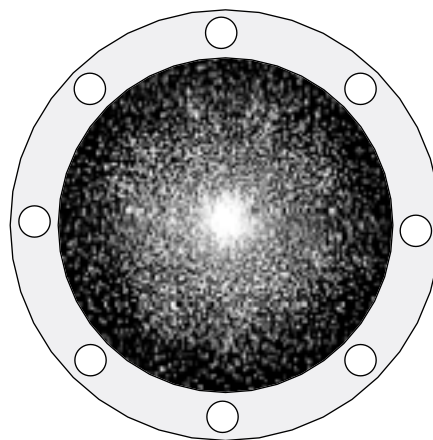
About half of the stars in our galaxy spend their lives all by their lonesome. But our powerful Lord Jesus ordered the remaining stars into teams of two or more. When two stars orbit around each other they are known as *binary stars*. God also gathered together

<sup>\*</sup> Read about shapes in nature in **CREATOR** Volume 9 Number 2.

large groups called *open clusters*, that contain between 50 and 1,000 stars. Pleiades,<sup>\*</sup> which is found in the constellation Taurus, is an example of an open cluster—it possesses hundreds of stars. All told, our Creator wove approximately 20,000 open clusters into the disk of our galaxy.

Open clusters are impressive to see in person, but the Father of Lights created even bigger “cities” of stars which astronomers call *globular clusters*. As I speak, we are headed for the globular cluster *47 Tuc* in the constellation Tucana, the toucan.<sup>\*\*</sup> (Scientists give things funny names, don’t they?!)

A typical globular cluster contains 10,000 to 1,000,000 suns, but unlike open clusters, Jesus molded globular clusters into tight ball-like shapes. Astronomers have identified 150 or so such clusters in our galaxy. Actually, I should say *outside* our galaxy—globular clusters are located in a spherical halo surrounding the Milky Way. The globular cluster 47 Tuc is 15,000 light-years from Earth, thus it will



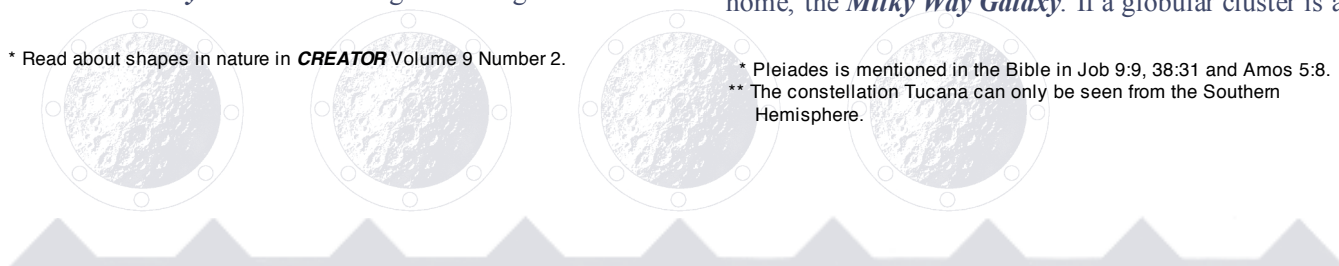
take us 30,000 years to get there. Are you starting to see how large the universe is and just how big God’s love must be?!

### WHAT A MILKY WAY !

Boy, 30,000 years is a long time! I’m tired of sitting, aren’t you? From the vantage point of the toucan star cluster we get a pretty good view of our home, the *Milky Way Galaxy*. If a globular cluster is a

<sup>\*</sup> Pleiades is mentioned in the Bible in Job 9:9, 38:31 and Amos 5:8.

<sup>\*\*</sup> The constellation Tucana can only be seen from the Southern Hemisphere.



“city” of stars, then our spiral galaxy is a “continent” of suns. The Milky Way has between 100 and 200 billion individual stars. It is so immense that it would take us 200,000 years to go from one end to the other! The Earth and the Sun reside in the disk of the galaxy, moving about the center at a distance of 26,000 light-years (see kids’ kreation #46). Two-hundred-and-twenty-five million years are needed for the solar system to orbit our galaxy just once!

The Milky Way truly radiates the awesome beauty of its Creator, and I’d like to hang around here, but we have a long, long way to go to discover how far Jesus traveled to love us. There are other galaxies to explore—the problem is, they’re SO far away!

### ISLAND UNIVERSES

It’s not difficult to see the never-ending grandeur of God as we travel outward toward more and more distant galaxies. This is going to take us *millions and billions of years*, so I hope you’re extremely patient! We have a problem though: The food replicator isn’t working very well these days. Our meal choices have been narrowed to one—beans with goat cheese. I hope we can hold out!

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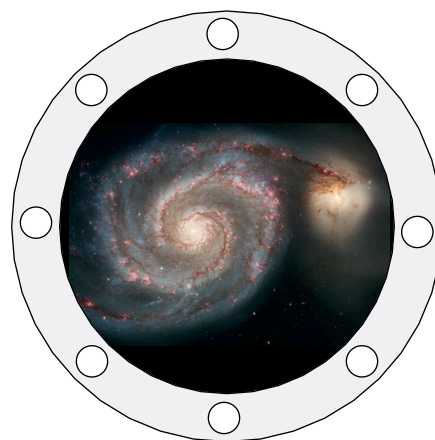
Mankind’s understanding of the universe has radically changed over the centuries. The ancient Greeks believed that the stars were tiny points of light attached to a crystal dome 2,000 miles above the Earth. Five hundred years ago, the universe was thought to be no bigger than the solar system, with all the stars lying just beyond the orbit of Saturn. It wasn’t until the 19th century that astronomers realized that the Sun was one of many stars that reside in the Milky Way Galaxy. Then, in the 1920s, astronomer Edwin Hubble showed that many of the faint fuzzy objects or “nebulae” seen in his telescope were actually distant galaxies like our own—millions of light-years away. Recently, the Hubble Space Telescope discovered a myriad of galaxies, some 11 *billion* light-years from Earth! (Eleven billion light-years from Earth?! Just how big is our Creator?!) As technology has improved, we have been privileged to see a more accurate (and mind-boggling!) view of the universe that our Lord Jesus Christ has traveled.

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If you look out the porthole, you can now see the *Whirlpool Galaxy*. It is smaller than our Milky Way, but God painted it with a striking blue color which is a delight to behold! We can also clearly see a dwarf companion galaxy circling it. Companion galaxies are common in the universe.

A spiral galaxy is like a titanic pinwheel of stars revolving around the galactic center. There are three different types of galaxies in the cosmos: *spiral*, *elliptical*, and *irregular*. Three out of every four galaxies are spiral in shape and are usually blue in color. On the other hand, Jesus painted elliptical galaxies a shade of red.\*

We have now traveled 15 million light-years and we’re 30 million years old! I’m not sure we can keep



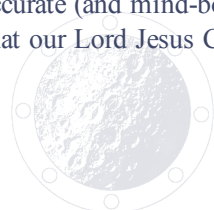
going. We’ve visited only one of the closest “star continents” to Earth—the Whirlpool Galaxy. There are 100 billion more galaxies in the universe, each possessing billions of stars. Most galaxies are hundreds, if not thousands, of times further away from Earth than the Whirlpool Galaxy! I want to continue our exploration, but I’m pooped!

### INFINITE LOVE

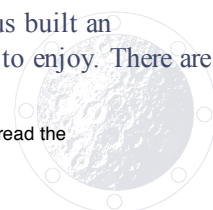
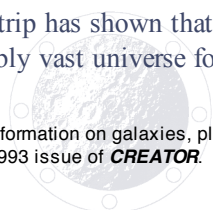
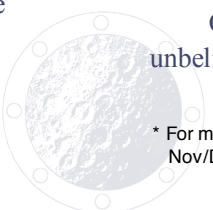
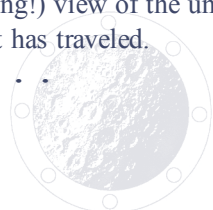
*He who descended is the very One who ascended higher than all the heavens, in order to fill the whole universe (Ephesians 4:10).*

Our trip has shown that Jesus built an unbelievably vast universe for us to enjoy. There are at

\* For more information on galaxies, please read the Nov/Dec 1993 issue of *CREATOR*.



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least 10,000,000,000,000,000,000,000 stars that make up the heavens and the Lord Jesus knows each of them by name (Psalm 147:4). He could have made creation much smaller. After all, the people of the Middle Ages perceived of a cosmos which was tiny by today's standards, yet they had no problem in believing in God's greatness! Our modern view of the universe should leave no doubt about Christ's love for us, "for great is [God's] love, higher than the heavens" (Psalm 108:4 a).

But what if we continued our trip in the *Creation Explorer*—would we ever come to know the full extent of God's love? The truth is, we never would! It's one thing to glimpse the **magnitude** of His infinite love from a distance, and quite another to encounter it **personally**. In order for us to experience His compassion, God had to come to us here on Earth (Ephesians 4:10).

In an act of incredible humility, Jesus stepped off His holy throne in Heaven and came to a sin-stained world, a journey of infinite distance (John 16:28). Though God is everywhere, sin has placed a great gulf between Him and us. Jesus paved an infinite path through the heavens (Hebrews 4:14) that we might personally know that **God is love**. For all eternity we will never see—nor need to see—a greater sacrifice for mankind!

Please don't be mistaken—God's love is not like the "love" of the world. His compassion does not tolerate sin. God cannot simply overlook man's rebellion, because our sins are an infinite offense to His holy nature. And no man will ever be strong enough or clever enough or good enough to reach God. God sent His Son to the world to become the payment for our sins (Matthew 25:14,15,19; 1 Timothy 2:6). Jesus became a man, and, though perfect, He died a miserable death on a cross for the wrongs we committed against His Father.

If you have never seriously considered the love that the Lord Jesus Christ has for you, **now is the time!** Please recognize that you are a sinner—in your heart you have committed murder, lied, cheated, stolen, and cursed God—we all have! In order for your life to be right with God you need to repent of your sins, surrender yourself to Him in humility, and let Jesus "wash you totally clean by His blood." This is the **only way** you can personally know His eternal love. Please don't be deceived—neither our spaceship nor any other religion can do that for you! His love is a free gift that you can't earn.

Christ's love for us is bigger than any star or galaxy—in fact, it is bigger than the universe itself

because He, being limitless in glory, sacrificed everything for us! Oh, what great love!

Dear Father, I recognize that I have lived my life independently of You and You consider this sin. Please forgive me through Your Son, Jesus Christ—through His death on the cross. Jesus, please come into my heart right now. I embrace You as my God and my Savior. I accept Your gift of eternal life. Show me how to live the way You want me to live. In the name of the Lord Jesus Christ I pray, Amen.

*And I pray that you, being rooted and established in love, may have power, together with all the saints, to grasp how wide and long and high and deep is the love of Christ, and to know this love that surpasses knowledge—that you may be filled to the measure of all the fullness of God*  
(Ephesians 3:17-19).



#### PHOTO/ILLUSTRATION CREDITS

Orion Nebula and Whirlpool Galaxy: NASA and STScI



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