

LESSON 1

GAS GIANTS PLAYING BIG BROTHER

Living Under God's Protection



FIGURE 1

It's hard to read the title of this lesson without laughing.

I know what my brothers and I said when we heard the term “gas giants”! But there’s a lot more to these planets than most people think.

A gas giant planet is made up mostly of gas (duh) and some of them, especially Neptune, could be quite—umm—aromatic! There are four gas giants in our solar system: Jupiter, Saturn, Uranus, and Neptune. Jupiter is the largest planet in our solar system and is very important for us here on Earth. Jupiter is so big that its gravity affects everything in our solar system, even comets

that come speeding through Earth's atmosphere. With such gravitational force (power to pull other objects toward it), Jupiter provides a shield of protection to the planets that are between it and the Sun.

I remember seeing pictures of Comet Shoemaker-Levy 9. In 1992, Jupiter's gravity tore the comet apart, and two years later as those pieces flew by Jupiter again they got sucked into the planet.

That's right. In fact, the original comet was broken into more than 20 fragments. By the way, it may be somewhat misleading to use the word "fragments" because these pieces were very large. They ranged in size from a few football fields to nearly one mile across—and they unleashed enormous amounts of energy upon impact with Jupiter. The explosion from *each* collision released more energy than all the world's nuclear bombs—combined! Check out the picture of Jupiter on page 5 (figure 1). The dark spots on the planet show the damage caused by these impact events.

So Jupiter could be seen like a (good) big brother for planets in the inner solar system, protecting its smaller brothers and sisters from dangerous things. Because it's bigger and more massive than all the other planets in the solar system combined, it "eats" most of the comets, asteroids, and other things that would hit Earth and do some major damage.

Exactly. And believe it or not, the relatively small number of asteroids and comets that *do* impact Earth reflects another equally important role that Jupiter and Saturn played during the early years of the solar system. Roughly 500 million years after Earth formed, it experienced a huge bombardment of asteroids and comets. One likely cause of this bombardment was the migration of Jupiter and Saturn from their original orbital locations to their present ones. This migration would have hurtled the left-over planetary debris toward the inner solar system planets. Not only did this bombardment clear debris out of the solar system, but also it proved vital to early Earth. It supplied heavy elements to our planet, including iron, iridium, and osmium. Most critically, it brought water!

Although we tend to think of water as rare in the universe, it's actually the third most abundant molecule in the cosmos. Comets and asteroids deposit their collection of water on Earth when they collide with our planet.

So you're saying that Jupiter and Saturn caused this bombardment which, I'm assuming, also cleared the rest of the debris out the solar system?



FIGURE 2

Well, the bombardment didn't quite clear all of it. We still see evidence of relatively recent impact events.

For example, one hundred years ago, a 10–20 meter object impacted Earth (it actually exploded 5–10 miles above the surface) in Russia knocking over 80 million trees covering 800 square miles. A similar sized meteor struck central Arizona 50,000 years ago and left a mile-wide crater.

Didn't a huge meteor also wipe out the dinosaurs?

Most scientists believe that a meteor six miles wide hit Earth 65 million years ago and caused the last of the dinosaurs to go extinct.

But what about God's protection?

Two things. First, as mentioned above, these impact events “protect” us (even if not the dinosaurs) by supplying Earth with important resources for our life and technology. Second, because of the early timing of this bombardment, the impact rate now is about 1,000 times less than it would have been, making Earth a much safer place to live.

INTERESTING FACT: For the Sun and eight planets, the mass in each object is larger than all the smaller objects. For example, the Sun contains more mass than all the planets put together and Jupiter has more mass than the seven remaining planets combined. Continuing that trend, Earth has more mass than Mercury, Mars, and Venus combined.

SO WHAT?

God seems to have placed these gas giants in the just-right place in our solar system so that we don't have to worry about being pulverized by all the stuff flying around.

And that's a perfect example of what God does in our spiritual lives. There are many verses in the Bible that talk about God's protection over His people. He has placed people, angels, and circumstances around us to protect us from danger. But it's important that we follow His ways so we can actually benefit from that protection.

Very true. Think about this as an example: what if the Earth just changed its orbit and left the protection of the gas giants. You can probably guess what would happen. Wham!—more bombardments.

As a personal example, I remember a time when, because of my naivety, I easily could have ended up in serious trouble. As a five- or six-year-old, I visited a state fair with my parents, brothers, grandparents and other family. A few of us walked over to watch a car race. Amid the noise and excitement of the race, I lost track of the rest of my group. When I finally looked around, I was alone in a crowd of strangers.

I've had nightmares about this happening to one of my kids.

After realizing my predicament—and getting over the initial panic—I finally remembered something my parents told me when we arrived at the fair. We had agreed that if we got separated, we would meet at a specific building. I made my way to that building and my folks showed up shortly afterward. I was back under their protection.

The same thing happens in a spiritual sense. If we place ourselves under God's authority, His protection is promised.

Psalm 5:11–12 says, “But let all who take refuge in You [God] be glad; let them ever sing for joy. Spread Your protection over them, that those who love Your name may rejoice in you. For surely, O LORD, You bless the righteous; You surround them with Your favor as with a shield.”

Read the verses on the following page and write down the things that God has given us for our protection and what we are protected from.

- Psalm 119:89–96
 - Source of protection:
 - Protected from:
- 1 Corinthians 15:50–58*
 - Source of protection:
 - Protected from:
- Ephesians 6:1–3
 - Source of protection:
 - Protected from:
- 2 Thessalonians 3:1–5
 - Source of protection:
 - Protected from:

*Note: We encourage you to read the entire chapter of 1 Corinthians 15 (it's the gospel summed up in one chapter!) but here's the punch line just in case you don't get to it right away: Jesus Christ died for your sins and because He was raised from the dead, those who trust in Him are no longer guilty of their sin and have victory over death!

IMPACT EVENT

Jupiter plays a critical role in protecting Earth from destructive impacts. If we follow the Lord's commands, we are promised protection from spiritual harm.

My son, if you accept my words and store up my commands within you, turning your ear to wisdom and applying your heart to understanding, and if you call out for insight and cry aloud for understanding, and if you look for it as for silver and search for it as for hidden treasure, then you will understand the fear of the LORD and find the knowledge of God. For the LORD gives wisdom, and from his mouth come knowledge and understanding. He holds victory in store for the upright, he is a shield to those whose walk is blameless, for he guards the course of the just and protects the way of his faithful ones. (Proverbs 2:1–8)

Look at your answers in the So What? section. What are two things you can do in order to place yourself under God's protection?

- 1.
- 2.

BONUS QUESTION! Jupiter's role in Earth's safety usually goes unnoticed and unappreciated. Who has God placed in your life as a source of protection? Do you have the guts to thank that person for their protection and/or provision?