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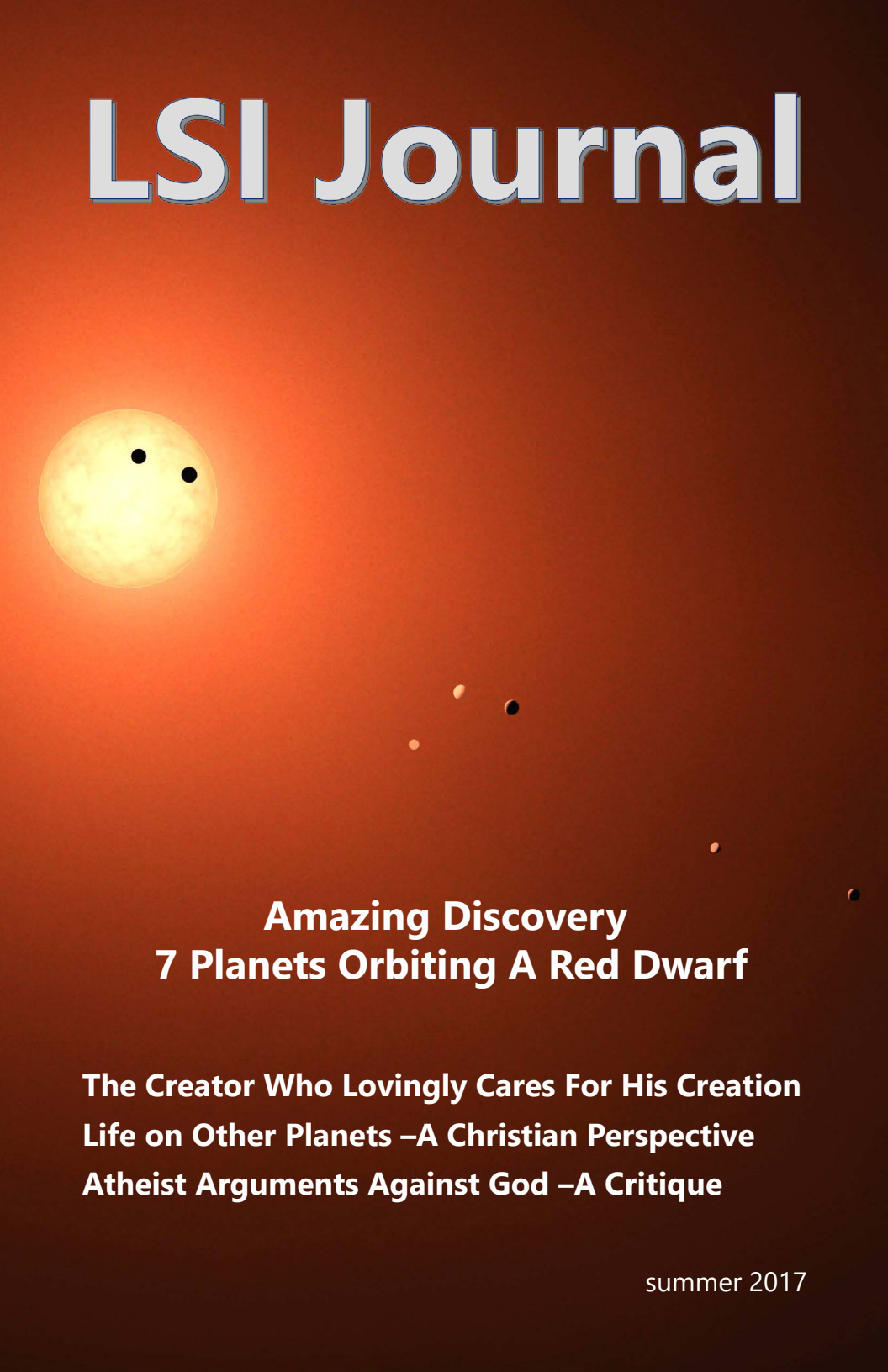

Amazing Discovery
7 Planets Orbiting A Red Dwarf

The Creator Who Lovingly Cares For His Creation

Life on Other Planets –A Christian Perspective

Atheist Arguments Against God –A Critique

summer 2017

Lutheran Science Institute

Creation / Evolution: a Confessional Lutheran view

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a forum for diverse views consistent with Scripture

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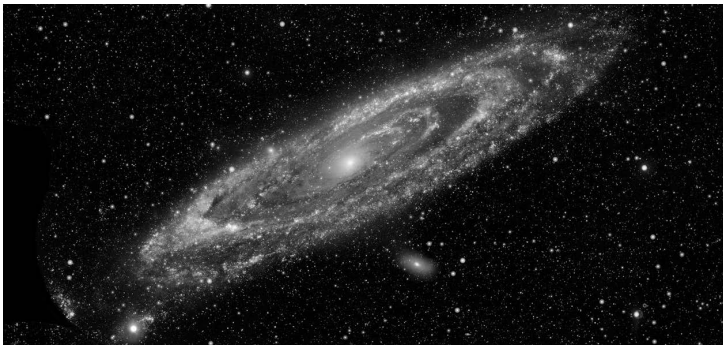
WELS
Christ's Love, Our Calling.

Vol. 31, no. 3 (summer 2017)

The Creator
Who Lovingly Cares For His Creation

He counts the number of the stars; He gives names to all of them. Our Lord is great, vast in power; His understanding is infinite. *Psalm 147:4-5*



Andromeda Galaxy
Credit: NASA/JPL-Caltech

Our Creator has the power to care for his creation. He "is great, vast in power." His power is such that He created billions (maybe trillions) of galaxies simply by speaking. In Psalm 33 we read, "The heavens were made by the word of the LORD, and all the stars, by the breath of His mouth."

Our Creator has the knowledge and wisdom to care for his creation. His "understanding is infinite." "He counts the number of the stars; He gives names to all of them." The number of stars in the universe is estimated as 10 followed by 24 zeros. Our Creator keeps track of each one. He knows the path that each has traveled since creation. He knows which stars have exploded. He knows everything about everything in the past, present, and future. His understanding truly is infinite.

Our Creator has the love to care for his creation. His very essence is love. He demonstrates that love in caring for everything He created, from the least to the greatest. He even names each star. In Matthew 10:29-31 God reveals, "Aren't two sparrows sold for a penny? Yet not one of them falls to the ground without your Father's consent. But even the hairs of your head have all been counted. So don't be afraid therefore; you are worth more than many sparrows." Our Creator is active in the lives of every creature, even little birds.

Our Creator cares greatly for the crown of His creation, for you and me and every individual person in the whole world. God cares for us not just in the big things, but even in the smallest details. Our Creator knows how many hairs are on our head right now, how many hairs we lost and gained yesterday, and how many we will lose and gain tomorrow!

Our Creator's greatest loving act is that He was born as a little baby human, lived a sinless life in our place, and died on the cross as payment for our sins. That Creator, Jesus Christ, now offers His sinless life, his robe of righteousness, as a free gift to everyone in the whole world.

We Pray

Loving Creator: You are great and vast in power. Your understanding is infinite. Your great love and care for me and everyone else is amazing. Thank you for the uncountable gifts you give. In Jesus name, the name above all other names, we pray.
Amen

-MSB

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evangelism programs provide a solid foundation for his apologetic endeavors. For many years he directed summer VBS, Christmas-For-Kids, and outreach booths at community fairs, all while serving as chair of his congregation's evangelism board. He currently serves as president, editor, and webmaster of the Lutheran Science Institute, a 43 year old WELS affiliated creation apologetics ministry.

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From the Editor

Life On Other Planets

Two articles in this issue of the LSI Journal center on alien life. *Life On Other Planets and Our Place in The Universe -a Christian Perspective*, looks to Scripture for what God reveals on the subject. The second, *Amazing Discovery: Seven Planets Orbiting a Red Dwarf*, examines how evolutionists want to prove that life is common in the universe, and how NASA advances that claim.

MLC Creation Apologetics Course

Pages 6-7 advertise something new: Online creation apologetics courses offered by Martin Luther College. It is an honor to be asked to develop and teach these courses, which are available to anyone who has Internet access. Whether you have a Ph.D. in science or are science illiterate, I predict you will find this course informative, interesting, and valuable.

Adobe InDesign

This is the first issue to be produced using Adobe InDesign publishing software, an industry standard. This gives us the proper CMYK files for commercial printing, allows printing to the edge of the page (bleed), and so much more. Even though most of our LSI membership receives their LSI Journal in electronic formats, our paper print circulation has risen to nearly 1,000. InDesign also gives us new options for electronic publishing.

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Life on Other Planets and Our Future Place in the Universe
–A Christian Perspective

Derek Rabbers

Star Trek

As a young boy, one of my favorite television shows was *Star Trek*. I wasted away many hours in front of the television wondering in amazement at what the future could be like. One of the cornerstones of the stories of that science fiction series was the presence of alien species working together for the good of all under the banner of the United Federation of Planets. Through the grand technology of that time and the sharing of knowledge between alien cultures, humanity had almost eliminated violence, war, sickness, and even greed. However, as I grew older I started to realize *that there was an irreconcilable difference between the philosophy of Star Trek and the reality that is laid out for us in God's Word in terms of an evolving humanity and in the chances of finding life elsewhere in the universe.*

Star Trek is based on the idea that humans are continuing to evolve, not just biologically but morally and ethically as well. In several scenes from *Star Trek: The Next Generation* the main character, Captain Picard, claims that the human race has evolved beyond our more violent tendencies and beyond the need to acquire wealth. In other episodes, we see alien species who have evolved rapidly, developing fantastic powers or even evolving beyond the point of needing a body. One recurring character, an omnipotent entity known as Q, says that he has seen how far humanity will develop in the future and that humanity will even surpass the power of Q.[1]

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1 "*The Next Generation Transcripts - Hide and Q.*" Chakoteya.net. http://www.chakoteya.net/NextGen/111.htm (accessed Aug 28, 2017)

The Truth About Humanity

The Bible paints a very different picture of humanity. One instance from Matthew gives us an idea of how humanity will get worse, not better, as we approach judgment day. God reveals in Scripture,

> You are going to hear of wars and rumors of wars. See that you are not alarmed, because these things must take place, but the end is not yet. For nation will rise up against nation, and kingdom against kingdom. There will be famines and earthquakes in various places. All these events are the beginning of birth pains. (Matthew 24:6-8)

Sin is a constant in the universe. With sin there is no hope for any type of earthly utopia in the future. No matter how technologically advanced we become, sin will always be there to stain our accomplishments.

Today we focus on the question:
"Is there life on worlds other than Earth?"

Genesis chapter one clearly states that God created Earth in six days along with all the living things that reside here. We also know that God created the rest of the universe – a universe that appears to be immense. Astrophysicists estimate the size of the universe to be 92 billion light years in diameter[2]. Inside our galaxy, astronomers, using telescopes and specialized techniques, have been able to find thousands of planets.[3]

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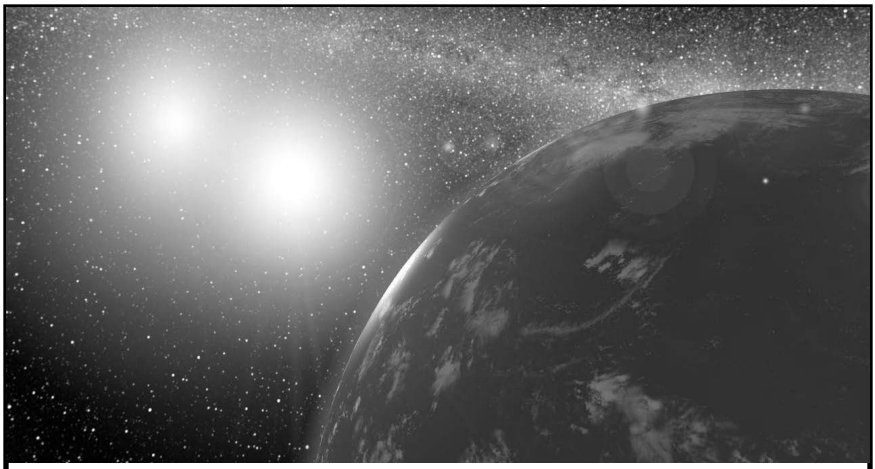
2 This estimate is based on the assumption that evolution is true. Based on indirect measurements and assumptions, astronomers estimate that the farthest stars we observe are 13.8 billion light years from the earth. That estimate may indeed be correct and is not contrary to Biblical creation and a young universe. What is against Scripture is that they assume it took 13.8 billion years for this light to travel from the star to the earth. It is further assumed that the stars have moved farther away from earth during that time, resulting in an observable universe 92 billion light years in diameter. Some scientists think the universe is infinite in size. Nola Taylor Redd, *How Big is the Universe?,* SPACE.com, http://www.space.com/24073-how-big-is-the-universe.html (accessed Aug 28, 2017)

3 "*NASA Exoplanet Archive.*" http://exoplanetarchive.ipac.caltech.edu/ (accessed Aug 28, 2017)



NASA Imagines a Habitable Planet Orbiting Kepler-35A, B
[credit: NASA/JPL-Caltech]

NASA writes (April 12, 2017),

> This artist's concept shows a hypothetical planet covered in water around the binary star system of Kepler-35A and B. https://photojournal.jpl.nasa.gov/catalog/PIA21470

Astronomers claim that some of those planets may be able to support life based on size (mass, radius) and orbital characteristics (stellar flux). Even so, planets with size and stellar flux values similar to earth do not necessarily mean that they are habitable. Habitability depends upon other factors such as surface and atmospheric composition, which are unknowns.[4] Early in 2016, it was discovered that there may be a planet in the habitable zone of Proxima Centauri, which lies just 4.24 light years away.[5] One might think, with so many potentials, there must be life on at least a small percentage of them.

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4 *The Habitable Exoplanets Catalog,* Planetary Habitability Laboratory @ UPR Arecibo. http://phl.upr.edu/projects/habitable-exoplanets-catalog (accessed Aug 28, 2017)

5 Nadia Drake, *New Planet Found Orbiting Proxima Centauri.* National Geographic, Aug 24, 2016. http://news.nationalgeographic.com/2016/08/earth-mass-planet-proxima-centauri-habitable-space-science/ (accessed Aug 28, 2017)

As Christians, we know that life can only arise from God himself. Those who reject God as the source of life propose abiogenesis - life spontaneously arising from non-living chemicals. Evolutionists have put vast efforts into showing how non-living chemicals might self-assemble into life, such as the 1953 Miller-Urey experiment and so many since then. While these experiments have been heralded as practically making life in a test tube, they have actually made almost no progress at all. So little progress has been made, that world renowned evolutionist Paul Davies[6] recently wrote in Scientific American,[7]

> We do not know the process that transformed a mishmash of chemicals into a living cell, with all its staggering complexity. …We are almost as much in the dark today about the pathway from nonlife to life as Charles Darwin was when he wrote, "It is mere rubbish thinking at present of the origin of life; one might as well think of the origin of matter."[8]

God made the heavenly bodies in the universe to display his wisdom and power[9], to give light to the earth and to serve as a chronometer.[10]

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6 Paul Davies, theoretical physicist, cosmologist, astrobiologist, best-selling author, and winner of many prestigious science awards. http://cosmos.asu.edu/ (accessed Aug 28, 2017)

7 For a commentary on this quote see: Mark Bergemann, "We Do Not Know," *LSI Journal* 31, no. 1 (2017): 23-24. www.LutheranScience.org/2017winter (accessed Aug 28, 2017)

8 Paul Davies, "Many Planets Not Much Life –We Still Have No Idea How Easy It Is for Life To Arise-and It May Be Incredibly Difficult," in *Forum –Commentary on Science in the News From the Experts*, Scientific American, September 2016, 8.

9 Romans 1:20 "For His invisible attributes, that is, His eternal power and divine nature, have been clearly seen since the creation of the world, being understood through what He has made. As a result, people are without excuse."

10 Genesis 1:14-18 "Then God said, "Let there be lights in the expanse of the sky to separate the day from the night. They will serve as signs for festivals and for days and years. They will be lights in the expanse of the sky to provide light on the earth." And it was so. God made the two great lights—the greater light to have dominion over the day and the lesser light to have dominion over the night—as well as the stars. God placed them in the expanse of the sky to provide light on the earth, to dominate the day and the night, and to separate light

Since only God can create life, and if there is life on other planets, we must assume that God was the one who put it there.

In the future, if spaceflight between planets becomes regular, we may see colonies forming on the Moon, Mars, and other planets and moons in the same way colonies formed in America in the 16th and 17th centuries. Finding water and simple life on these heavenly bodies would certainly help in any endeavor to live on those worlds. Since the Bible does not forbid travel to nor colonizing other planets, we certainly have the Christian freedom to explore his creation further and gain a better understanding of it. From this perspective, it might be understandable for God to have created life (such as algae or bacteria) on other worlds when he created the universe, although the Bible is silent on this matter.

I would have no trouble and no conflict of conscience if scientists discovered bacteria or small animals and plants on other planets someday. As was mentioned earlier, our universe is vast and the amount of complexity and beauty it contains is breathtaking. God has blessed us with minds that are able to not only appreciate this beauty but also explore and study it.

The struggle would be if we found intelligent life elsewhere in the universe. With such a discovery, a number of theological questions arise. Do they also have souls? Do they know about Jesus? We know that, as a result of humanity's fall into sin, all creation (the entire universe) has been affected.[11]

We see in the account of the creation that God took special care to create Adam and Eve. They were special creations. He formed Adam from the dust of the earth and breathed life into him. God also took special care to create Eve from the rib of Adam to create the perfect partner for

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from darkness. And God saw that it was good."

11 Romans 8:19-22 "For the creation eagerly waits with anticipation for God's sons to be revealed. For the creation was subjected to futility—not willingly, but because of Him who subjected it—in the hope that the creation itself will also be set free from the bondage of corruption into the glorious freedom of God's children. For we know that the whole creation has been groaning together with labor pains until now."

Adam.

God created humanity "in his image," that is with "a special knowledge, knowing God to be the source of every blessing" (Colossians 3:10) as well as "an absence of sinfulness" (Ephesians 4:24).[12] He set man to be above all other animals and organisms on earth saying, "Be fruitful, multiply, fill the earth, and subdue it. Rule the fish of the sea, the birds of the sky, and every creature that crawls on the earth" (Genesis 1:28). God blessed man with a level of intelligence and self-awareness that no other organism on earth possessed. Humans were created by God to be with him and worship him in a perfect world.

Conclusion

The question people sometimes ask is, "Are we alone?" With a question like this, my reason would like to say that if God had created other intelligent life elsewhere in the universe, he would have mentioned it in the Bible.

Nevertheless, by faith, I say with the writer to the Hebrews, "By faith we understand that the universe was created by God's command, so that what is seen has been made from things that are not visible" (Hebrews 11:3). By faith, I am content with the fact that God is often silent about questions that my curiosity wants answered. And, by faith,

> I am persuaded that not even death or life, angels or rulers, things present or things to come, hostile powers, height or depth, or any other created thing will have the power to separate us from the love of God that is in Christ Jesus our Lord! (Romans 8:38)

Derek Rabbers teaches grade 5 and also teaches science to grades 5-8 at St. John Lutheran School in Milwaukee, Wisconsin. He is a graduate of Martin Luther College with a bachelors of science in education with an emphasis on physical science.

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12 John C. Jeske, The People's Bible –Genesis, (Milwaukee: Northwestern Publishing House, 1991), 24.

Atheist Philosophical Arguments Against God's Existence
–A Critique

Jeffrey Stueber

Atheists have no shortage of reasons for not believing in God. Atheists, for instance, believe God does not exist because there is evil in the world. They also believe that God is incapable of being known by some means. Neither one of these reasons are valid.[1] [2]

In 1997, former atheist Patrick Glynn had his book, *God: The Evidence,* published by Prima Publishing. Glynn uses cosmological design arguments and near-death experiences to argue for God's existence.

My analysis of atheist arguments explores Michael Martin's critique[3] of Patrick Glynn's book. Before I jump into a critique of Martin, I will briefly explain why Glynn wrote his book.

Glynn, the associate director and scholar at George Washington University Institute for Communitarian Policy Studies in Washington, D.C., was by the late 1970s a convinced atheist. This was partly due to the influence of academia. Glynn's professors didn't tell him God was dead, but the message he received from them was,

It was simply assumed that religious belief had become im-

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1 **To be clear, no one can come to faith in the Triune God without the working of the Holy Spirit, as Martin Luther points out in his explanation to the Third Article of the Apostles' Creed.**

2 For additional information, the reader is directed to my book, *The Vast Wastelands of Unbelief*, a testimony to fallible atheist arguments.

3 Michael Martin, *Patrick Glynn's God: the Evidence*, The Secular Web - a drop of reason in a pool of confusion, Internet Infidels, http://infidels.org/library/modern/michael_martin/glynn.html. (accessed Aug 29, 2017). All quotations from Martin henceforth in this chapter will be from this essay unless otherwise noted.

possible for rational beings in the modern era, a fact that one accepted with a certain melancholy and nostalgia for previous ages when it was still possible for 'men' to believe." [4]

However, beginning in the 1970s his beliefs were challenged. First, in 1973 Brandon Carter[5] gave a presentation on the anthropic principle suggesting the universe was not a random accident but had physical constants that were finely tuned for life to exist on our planet. Two years later Raymond Moody[6] published *Life After Death*, a book recounting people's near-death experiences. This suggested to Glynn that there might be a realm beyond life on Earth where spiritual beings and God could reside. Later in the 1970s, other authors, like M. Scott Peck,[7] argued faith and mental health could not be separated, and that one's faith had a beneficial effect on one's health. These authors laid the groundwork for Glynn's doubt and his relationship with Gabriele, a spiritually strong woman who would become the love of his life, finally led him to change his mind.

If we apply Martin's reasoning to a bicycle, we would say the individual parts of a bicycle were never purposed nor intended to end up making a working bicycle. Obviously, Martin's argument does not work where design is present.

When theists[8] use the anthropic principle to argue for God's existence, they are saying that the universe appears to be made to support life and therefore, they conclude, that the universe must have been designed for that specific purpose.

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4 Patrick Glynn, *God: the Evidence: The Reconciliation of Faith and Reason in a Postsecular World* (Rocklin, CA: Prima, 1997), 4.

5 An Australian theoretical physicist who proposed the anthropic principle.

6 A philosopher, psychologist and physician

7 A psychiatrist and Methodist minister

8 By this I mean individuals who believe in a god but not necessarily the Triune God of the Bible.

Incredibly, Michael Martin claims that the anthropic principle can be restated to imply nothing more than functionality. Martin would suggest that the universe's designed nature is only apparent and not a result of some supernatural being's desires.

What sort of reasoning is this? If we apply Martin's reasoning to a bicycle, we would say the individual parts of a bicycle were never purposed nor intended to end up making a working bicycle. Obviously, Martin's argument does not work where design is present because bicycle parts are obviously designed. Taken to its logical conclusion, and using Martin's own illogic, we could also say that the words in Martin's critique are not purposely designed for the end result of his essay.

What Martin misses is that the reason many things have a specific function is because they are designed. The function of the parts that make up a bicycle is to ultimately provide a means of transportation for someone —they were designed that way. Without design, it would never provide that function. Martin's rebuttal only pushes the issue back a step. Why does the universe have the function it has? Most likely it is because it was specifically designed to have that function.

Referencing fellow atheist Victor Stenger, Martin suggests, in order to disprove that God had any hand in creation, that order can be produced from disorder. In a Huffington Post article, Stenger explains his claim that nature tends to go from disorder to order.

> That's an easy one since you don't have to rely on complex biological arguments. You can go back to simple physics and look at something like water. Water appears in three phases: gas, liquid, and solid. If you are out in space or in a polar region, then the natural state of water is solid--ice. But that occurs only after water vapor, which is a gas, is condensed into liquid water, which is then frozen into ice. That original vapor has little structure and is about as simple as it could be. Then when it becomes a liquid, it develops some structure but can still flow and change shape. Finally, when it becomes solid

> ice it has considerable structure--crystal layers and so forth. So, there is this tendency in nature, in physics, for physical substances to go from simplicity to complexity. That is actually the natural trend of physical processes.[9]

This is another example of an argument that has been answered years ago. Creationists like Charles Thaxton have described the difference between complexity and order. Crystals, for instance, are examples of periodic structures that have order but not complexity. A crystal, as far as information-possessing capability, is like a book with one word repeated throughout. By contrast, an aperiodic structure has complexity. DNA macromolecules have a low degree of order but a high degree of complexity.[10]

Ice is not complex, but DNA is complex. Ice is not complex, but the words that make up a book are complex. If Stenger's argument were true, we would have to believe that the words that make up Martin's critique of Glynn could come about by chance since water can form into ice. That, however, would be absurd.

A crystal is like a book with
one word repeated throughout.
It has order but not complexity.

Atheists try to refute divine design of the universe by suggesting there are an unlimited quantity of universes, and eventually one would be produced by chance that has the properties necessary for life to exist. Glynn correctly points out that the multiple universes in this theory are

---

9 Victor Stenger, *Questions on Science and Religion*, The Blog, Huffpost, June 11, 2012, updated Aug 11, 2012. http://www.huffingtonpost.com/victor-stenger/questions-on-science-and-_b_1585151.html. (accessed Aug 29, 2017)

10 Charles Thaxton et. al., *The Mystery of Life's Origin* [Dallas: Lewis and Stanley, 1984] 129-130.

"speculative, undetected, and undetectable in principle."[11] Martin, however, claims that God's existence has the same problems. He has a point. Is God as undetectable as multiple universes?

Christian apologist William Lane Craig, in response to atheist Walter Sinnott-Armstrong, suggests the design hypothesis is simpler. According to the principle of Ockham's Razor, we should not multiply explanations beyond what is necessary. If there were a simple mechanism for creating these universes then it would be preferable to the design hypothesis. Since there is no mechanism, the design hypothesis is preferred. There have been attempts to explain a mechanism for creating these many universes, but they require fine-tuning, and this once again requires a designer.[12]

While my review of Martin's critique of Glynn does not represent all atheist objections to the design argument, it's clear that the few presented here don't come close to refuting the claim that God created the universe and life on this planet. It is also clear that the evidence reveals the God of the Bible as the only one true creator of everything.

Jeffrey Stueber, a free-lance writer, serves as secretary of the Lutheran Science Institute. He is a member of St. John Evangelical Lutheran in Watertown WI. His published works include:

- Evolution Is Faulty Moral Theory, chap. 14 in *Persuaded By The Evidence - True Stories of Faith, Science, & the Power of a Creator,* editors Doug Sharp and Jerry Bergman, [Green Forest: Master Books, 2008].

- *The Vast Wastelands Of Unbelief,* [Mustang: Tate Publishing, 2014]. See a review of this book at www.LutheranScience.org/books

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11 Glynn, 50.

12 William Lane Craig and Walter Sinnott-Armstrong, *God?: A Debate Between a Christian and an Atheis*t [New York: Oxford, 2004] 13-14.

Amazing Discovery: **Seven Planets Orbiting A Red Dwarf**

Mark Bergemann

Most Americans mistakenly consider their country's space agency, NASA, to be an impartial reporter of what they discover. These Americans misunderstand science.

Every scientist has preconceived assumptions which direct their science. Several recent articles in the LSI Journal have detailed how science is a biased process. NASA uses science. Because science is a biased process, NASA's scientific conclusions will also be biased. NASA imposes many god-less assumptions on their science, biasing their observations, analyses, and conclusions. This is of course no different than other scientific organizations such as the National Academy of Sciences, whose anti-creation booklets were reviewed in the winter 2017 LSI Journal.

Thousands of exoplanets (planets outside our solar system) have been discovered in recent years, but a new discovery is so far unique, as NASA details later in this article.

Telescopes Dedicated to Search For Exoplanets

The University of Belgium operates telescopes in Chile and Morocco which are dedicated to finding planets outside our solar system. That telescope network is called "TRAPPIST" (TRAnsiting Planets and PlanetesImals Small Telescope).[1] In May 2016, TRAPPIST found three exoplanets orbiting a red dwarf star (more specifically, an M-dwarf star). They named that planetary system TRAPPIST-1. NASA subsequently studied that planetary system and found four more planets.

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1 http://www.trappist.ulg.ac.be/cms/c_3300885/en/trappist-portail (accessed Aug 26, 2017)

"Transiting" is an indirect method of finding exoplanets by observing temporary reductions in a star's brightness. It is assumed these reductions in light intensity are from an orbiting planet, temporarily blocking some of the star's light. The amount, duration, and repetition rate of these light intensity reductions can be used to calculate the assumed planet's size and orbital characteristics. The mass for some of the TRAPPIST-1 planets was roughly estimated through calculations based on the planets' apparent effect on each other's orbits.

Important Discovery Reported Worldwide

This is an important discovery, and science reporters world-wide hailed it as such. TIME magazine included Michaël Gillon, lead scientist at TRAPPIST, in its 2017 list of "*The 100 Most Influential People*." Alan Stern, leader of NASA's New Horizons mission, writes in TIME (italics and underlines added),

> Human beings have long wondered whether they are alone in the universe. Now *we are closer than ever to getting an answer.* That's thanks in large part to the *astronomers who are searching for exoplanets—planets orbiting other stars—that could be home to life.*
>
> Three have been most influential of late: Guillem Anglada-Escudé of the Queen Mary University of London, who last year discovered an Earth-size planet orbiting Proxima Centauri, our closest neighboring star; Michaël Gillon of the University of Liège in Belgium, who in February announced the discovery of a full solar system of seven Earth-size planets orbiting Trappist-1, another comparatively local star; and Natalie Batalha, the current lead scientist for NASA's Kepler space telescope, who has helped find approximately 4,700 new worlds since 2009. *If life exists on the closest of these exoplanets, telescopes should be able to confirm its chemical signatures within a decade.*
>
> There was a time when Pluto—which NASA's New Horizons spacecraft at last explored in 2015, a mission I led—was con-

sidered the last planet. *We now know there are thousands of other, possibly inhabited, planets. Perhaps later in this century or in the next, we will even develop the technology to visit them*.[2]

On May 2, 2017, Aeon magazine published an article by Michaël Gillon, who leads the TRAPPIST team, and Amaury Triaud , an exoplanet expert from the University of Cambridge. Their article, entitled "*Dwarf planetary systems will transform the hunt for alien life*" states (italics and underlines added),

> A nearby star, called TRAPPIST-1A, is orbited by seven planets similar in size and mass to Earth. All seven planets are temperate, meaning that under the right atmospheric and geologic conditions, they could sustain liquid water. Three of the planets show particular potential for habitability, receiving about as much energy from their star as the Earth receives from the Sun. Our discovery received ecstatic and gratifying news coverage around the world.
>
> ...*We seek an answer to "How frequently is life found elsewhere?"*
>
> ... Claiming a discovery of life will be hard. We cannot rely on the detection of a single gas but instead will need to detect several, and will need to measure their relative abundances.
>
> ... If we manage to identify the presence of life on a planet similar to those in the TRAPPIST-1 system, then *we can start measuring how frequently biology emerges in the universe. We could have the first clues of extraterrestrial biology in a decade!*[3]

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2 Alan Stern, TIME, *Natalie Batalha, Guillem Anglada-Escudé and Michaël Gillon* in *The 100 Most Influential People*, 2017 http://time.com/collection/2017-time-100/4742707/natalie-batalha-guillem-anglada-escude-michael-gillon/ (accessed Aug 26, 2017)

3 Amaury Triaud, Michaël Gillon, Aeon, Dwarf planetary systems will trans-

Hyped Reports Stressing Watery, Habitable Planets

Unfortunately, much of the general public hearing about exoplanet discoveries will take these reports at face value, believing that Earth-like planets orbiting stable stars with life supporting atmospheres and liquid water have been found, or at least are about to be found in a few years. In reality, the possibility of Earth-like atmospheres and liquid water on any exoplanet planet is still conjecture, based on the desire of evolutionists to prove that life is common in the universe.

Journalists commonly hype scientific discoveries as being more than the scientists report, but in the TRAPPIST-1 case NASA is partly to blame. NASA has sensationalized this discovery by repeatedly publishing numerous artistic renderings (stills and video) of what these planets may look like, *assuming they have an Earth-like atmosphere, assuming they have water, and assuming their star is stable like our sun. These assumptions may eventually prove to be true, but for now they are highly speculative.*

To NASA's credit, they do use words like "imagined planets" and "artist's concept" to describe the photo-like depictions of these planets. NASA does though center their many TRAPPIST-1 articles, drawings, and videos on the potential for liquid water and life on these planets. Since NASA has no actual photos to show the public (something to which the public is accustomed), they fill the void with artwork showing Earth-like planets with an Earth-like atmosphere and liquid water. I found no artwork by NASA or any other group showing other TRAPPIST-1 possibilities, where no Earth-like atmosphere and no liquid water is present.

Seven Exoplanets Orbiting One Star

On February 22, 2017, NASA reported (italics and underlines added),

> NASA's Spitzer Space Telescope has revealed the first known system of seven Earth-size planets around a single star. *Three*

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form the hunt for alien life, May 2, 2017. https://aeon.co/ideas/dwarf-planetary-systems-will-transform-the-hunt-for-alien-life (accessed Aug 26, 2017)

Evolutionists imagine that non-living chemicals can self-assemble into a living thing. Since they think it happened once on earth (to produce all plant and animal life), they think it should be a common event which has occurred on countless planets and moons.

of these planets are firmly located in the habitable zone, the area around the parent star where a rocky planet is most likely to have liquid water. The discovery sets a new record for greatest number of habitable-zone planets found around a single star outside our solar system. All of these seven planets could have liquid water – key to life as we know it – under the right atmospheric conditions, but the chances are highest with the three in the habitable zone.

...At about 40 light-years (235 trillion miles) from Earth, the system of planets is relatively close to us, in the constellation Aquarius. Because they are located outside of our solar system, these planets are scientifically known as exoplanets. ...The new results were published Wednesday in the journal Nature,[4] and announced at a news briefing at NASA Headquarters in Washington.

Using Spitzer data, the team precisely measured the sizes of the seven planets and developed first estimates of the masses of six of them, allowing their density to be estimated. Based on their densities, all of the TRAPPIST-1 planets are likely to be rocky. *Further observations will not only help determine whether they are rich in water, but also possibly reveal wheth-*

4 Alexandra Witze, *These seven alien worlds could help explain how planets form*, Nature, Feb 22, 2017. http://www.nature.com/news/these-seven-alien-worlds-could-help-explain-how-planets-form-1.21512 (accessed Aug 26, 2017)

One assumption of evolutionists is that the earth is an ordinary planet, orbiting an ordinary star, in an ordinary part of the Milky Way, which is in an ordinary place in the universe.

er any could have liquid water on their surfaces. The mass of the seventh and farthest exoplanet has not yet been estimated – scientists believe it could be an icy, "snowball-like" world, but further observations are needed.

"The seven wonders of TRAPPIST-1 are the first Earth-size planets that have been found orbiting this kind of star," said Michael Gillon, lead author of the paper and the principal investigator of the TRAPPIST exoplanet survey at the University of Liege, Belgium. *"It is also the best target yet for studying the atmospheres of potentially habitable, Earth-size worlds."*

...Spitzer, Hubble, and Kepler will help astronomers plan for follow-up studies using NASA's upcoming James Webb Space Telescope, launching in 2018. With much greater sensitivity, *Webb will be able to detect the chemical fingerprints of water, methane, oxygen, ozone, and other components of a planet's atmosphere. Webb also will analyze planets' temperatures and surface pressures – key factors in assessing their habitability.*[5]

5 *NASA Telescope Reveals Largest Batch of Earth-Size, Habitable-Zone Planets Around Single Star*, editor Karen Northon, NASA, Feb 22, 2017, updated Aug 4, 2017 https://www.nasa.gov/press-release/nasa-telescope-reveals-largest-batch-of-earth-size-habitable-zone-planets-around (accessed Aug 26, 2017)

Cover Artwork

Our LSI Journal cover shows the seven TRAPPIST-1 planets orbiting their star as envisioned by an artist. NASA describes the artwork,

> This illustration shows the seven TRAPPIST-1 planets as they might look as viewed from Earth using a fictional, incredibly powerful telescope. The sizes and relative positions are correctly to scale: This is such a tiny planetary system that its sun, TRAPPIST-1, is not much bigger than our planet Jupiter, and all the planets are very close to the size of Earth. Their orbits all fall well within what, in our solar system, would be the orbital distance of our innermost planet, Mercury. With such small orbits, the TRAPPIST-1 planets complete a "year" in a matter of a few Earth days: 1.5 for the innermost planet, TRAPPIST-1b, and 20 for the outermost, TRAPPIST-1h.[6]

NASA explains the sketch on the top of page 31 which shows each planet with imagined details,

> In the imagined planets shown here, TRAPPIST-1b is shown as a larger analogue to Jupiter's moon Io. TRAPPIST-1d is depicted with a narrow band of water near the terminator, the divide between a hot, dry day and an ice-covered night side. TRAPPIST-1e and TRAPPIST-1f are both shown covered in water, but with progressively larger ice caps on the night side. TRAPPIST-1g is portrayed with an atmosphere like Neptune's, although it is still a rocky world. TRAPPIST-1h, the farthest from the star, would be the coldest. It is portrayed here as an icy world, similar to Jupiter's moon Europa, but the least is known about it.[7]

NASA writes about the beautiful, icy world depicted on page 32,

> This artist's concept allows us to imagine what it would be like to stand on the surface of the exoplanet TRAPPIST-1f,

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6 *Transit Illustration of TRAPPIST-1*, NASA, Feb 22, 2017 https://www.jpl.nasa.gov/spaceimages/details.php?id=PIA21429 (accessed Aug 26, 2017)

7 *TRAPPIST-1 Planet Lineup*, NASA, Feb 22, 2017. https://www.jpl.nasa.gov/spaceimages/details.php?id=PIA21422 (accessed Aug 26, 2017)

located in the TRAPPIST-1 system in the constellation Aquarius. Because this planet is thought to be tidally locked to its star, meaning the same face of the planet is always pointed at the star, there would be a region called the terminator that perpetually divides day and night. If the night side is icy, the day side might give way to liquid water in the area where sufficient starlight hits the surface.[8]

Hoped For Water

These TRAPPIST-1 planets are too far away to be viewed from Earth. Even the star they orbit, TRAPPIST-1A, is visible only as a few bright pixels on the powerful Kepler Space Telescope.

The only actual photograph of TRAPPIST-1 is that shown on page 29. The brightness reductions in these few pixels are the data used to calculate the number, size, orbit, and mass of these planets. NASA describes that image,

> The image depicts the location of TRAPPIST-1, an ultra-cool dwarf star home to seven Earth-size planets, in NASA's Kepler spacecraft's field of view. The call out box shows the amount of light detected by each pixel in a small section of Kepler's onboard camera. The light collected from TRAPPIST-1 is visible at the center of the image. Not directly visible are the planets that orbit TRAPPIST-1.[9]

I think it good that NASA provides artwork like that shown on our LSI Journal cover. That depiction is a valid representation based on reasonable conclusions from indirect observations.

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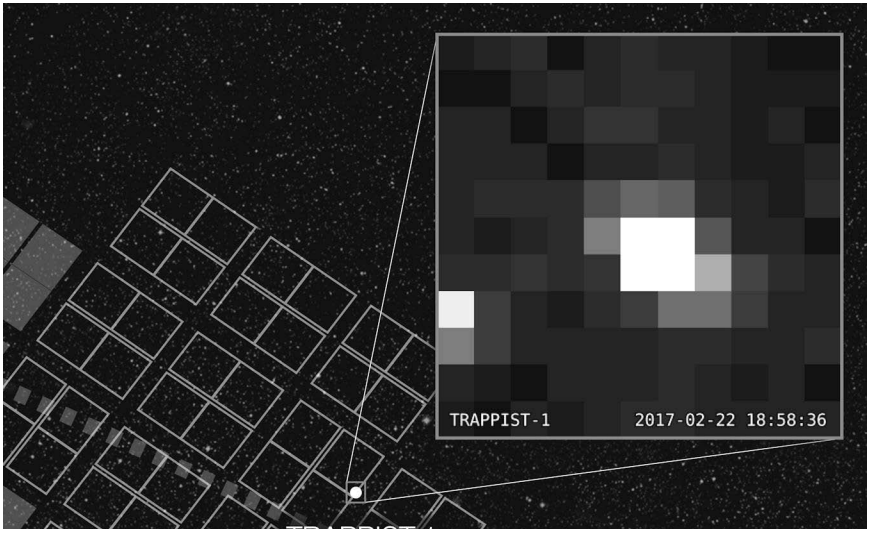
8 *Surface of TRAPPIST-1f*, NASA, Feb 22, 2017. https://www.jpl.nasa.gov/spaceimages/details.php?id=PIA21423 (accessed Aug 26, 2017)

9 *NASA's Kepler Provides Another Peek At Ultra-cool Neighbor*, editor Michele Johnson, NASA, March 8, 2017, Updated: Aug 4, 2017. https://www.nasa.gov/feature/ames/kepler/nasas-kepler-provides-another-peek-at-ultra-cool-neighbor (accessed Aug 26, 2017)



TRAPPIST-1A star as seen by Kepler Space Telescope
[*Credit: NASA Ames/W. Stenzel*]

The artwork on pages 31-32 is different. Those drawings depict one possibility, primarily based on a hope that life is common on the universe. How many people who see these drawings realize the large difference between artwork based primarily on observations, and artwork based primarily on a hope to prove life is common in the universe?

The presence of liquid water on these planets is purely conjecture at this point, but evolutionists have a great hope that it does exist on some of these planets. Life as we know it requires liquid water. Evolutionists want to prove that life is abundant and common in the universe, so they hope that liquid water is abundant too.

Evolutionists imagine that non-living chemicals can self-assemble into a living thing. Since they think it happened once on earth (to produce all plant and animal life), they think it should be a common event which has occurred on countless planets and moons.

One assumption of evolutionists is that the earth is an ordinary planet, orbiting an ordinary star, in an ordinary part of the Milky Way galaxy, which is in an ordinary place in the universe.

Christians know for certain that the Earth is indeed very special. God reveals in Scripture that the earth was created to be the home for the crown of creation, human beings. The sun, moon, and stars were created for people also, "to separate the day from the night. They will serve as signs for festivals and for days and years." (Genesis 1:14.)

A Major Discovery

So an amazing scientific discovery has been made. Seven planets orbit a small red dwarf star close enough to Earth (40 light years) that we can study those planets. Three of these planets are at a distance from the star which may provide a planet surface temperature where water would be liquid, if (a big if) the planet has an earth-like atmosphere. The potential for water is very important to evolutionists because they desire to show that life is common in the universe, and liquid water is needed for life to exist.

Future observations, especially those of the James Webb Space Telescope (planned launch is in 2018) may determine if water is or is not present on these planets. While we wait for actual data, NASA continues to publish new articles and drawings proclaiming the possibility of life on these planets, based on their desire for that to be true.[10, 11, 12]

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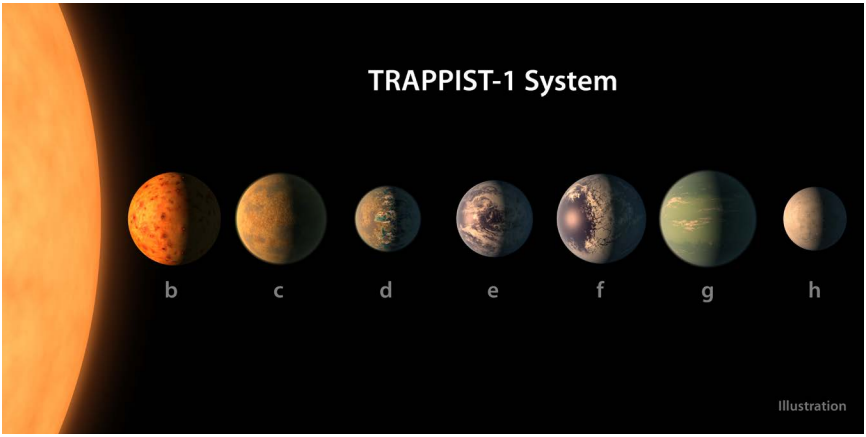
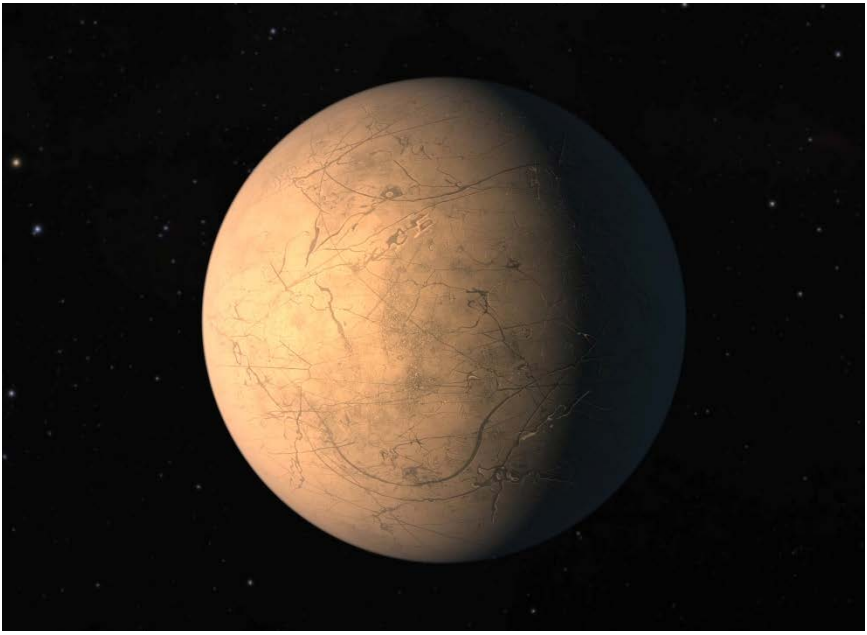
10 Elizabeth Landau, *TRAPPIST-1 is older than our solar system,* NASA's Jet Propulsion Laboratory, August 11, 2017. https://exoplanets.nasa.gov/news/1448/trappist-1-is-older-than-our-solar-system/ (accessed Aug 27, 2017)
11 Pat Brennan, *An image is worth a thousand worlds*, NASA's Exoplanet Exploration Program, June 8, 2017. https://exoplanets.nasa.gov/news/1440/an-image-is-worth-a-thousand-worlds/ (accessed Aug 27, 2017)
12 Michele Johnson, *Astronomers confirm orbital details of TRAPPIST-1h,* NASA's Ames Research Center, May 22, 2017. https://exoplanets.nasa.gov/news/1437/astronomers-confirm-orbital-details-of-trappist-1h/ (accessed Aug



Artwork showing imagined details of the seven exoplanets
[*credit: NASA/JPL-Caltech*]



Artwork showing imagined details of exoplanet TRAPPIST-1h
[*credit: NASA/JPL-Caltech*]

See video https://www.jpl.nasa.gov/news/news.php?feature=6851
(accessed Aug 26, 2017)

Imagined Water on Planet TRAPPIST1-f
[*credit: NASA/JPL-Caltech*]

[*continued from page 30*]

Scientific Discussion

The scientific discussion has begun. This summer is seeing the battle of articles. Here are a few with contradictory claims.

• Newsweek published an article on models developed by Harvard astrophysicists, "*TRAPPIST-1 Has High Odds of Interplanetary Life, New Mathematical Model Shows.*"[13]

• Space.com published, "*Bad News For Life: TRAPPIST-1 planets' Atmospheres May Have Been Destroyed.*" Their models suggest that the red dwarf star's radiation has destroyed the atmosphere on the TRAPPIST-1 planets.[14]

27, 2017)
13 Jessica Wapner, Newsweek, June 13, 2017 http://www.newsweek.com/trappist-1-has-high-odds-interplanetary-life-new-mathematical-model-shows-625182 (accessed Aug 25, 2017)
14 Mike Wall, Space.com, July 17, 2017. https://www.space.com/37530-trappist-1-planets-atmospheres-stripped.html (accessed Aug 25, 2017)