The Wonder of it All: Our Nearly Perfect Star

By Mark Jurkovich

It's hard to take our sun for granted, from the beautiful sunsets, to wishing a cloud would grant some relief on a hot summer day, to wishing it would come back out to warm things up on a frigid winter day. But have you realized how perfectly designed it is so life can flourish on this earth?

As technology has advanced enough that scientists now have ways of detecting planets around other stars, we are seeing more and more how unique not only our earth is, but how unique the sun is as well. Carl Sagan once said "We live on an obscure hunk of rock and metal circling a humdrum sun, which is on the outskirts of a perfectly ordinary galaxy…"[1] I wonder if he ever realized how truly special that 'humdrum' star is.

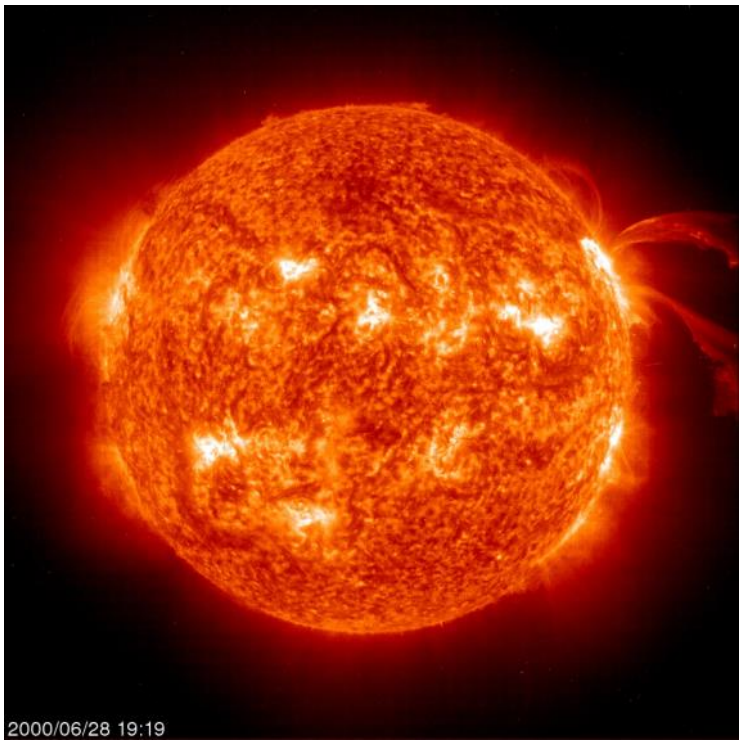

Image Credit NASA SOHO

Small sun - If the sun was much smaller, the habitable zone would be too close, causing the planet to be tidally locked like our moon (i.e. one side always faces the star, and the other side always facing away). In such a case, even though the planet is in the zone where liquid water can exist, it could only be liquid in the twilight zone; literally that thin band between perpetual daylight and perpetual night. Even if not tidally locked, it would have too much tidal activity promoting earthquakes and dangerous shorelines. And there would be higher exposure to deadly radiation due to closeness to star.

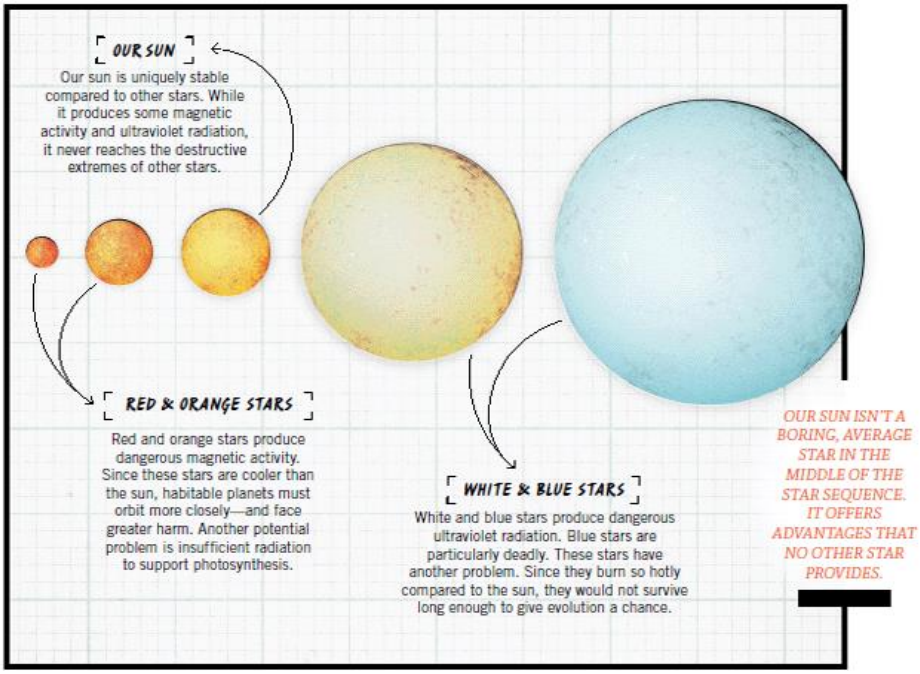

Image credit: Answers in Genesis; see reference 3.

If the sun was much larger - First of all, large stars just burn out too fast for evolution to occur, so are not considered candidates for life on a planet around them. Plus, large stars put out too much ultraviolet radiation for a planet to effectively protect any life that might be on it.

Sun's color - If our son was a red star, there would be too much infrared radiation for a given amount of visible light. On the other hand, if blue, there would be too much ultraviolet radiation.

So only stars of similar size and color to the sun are appropriate for supporting life. Our sun "belongs to a spectral

class representing only 5% of all stars: a G2V yellow dwarf mainsequence variable."[2] But the vast majority of these remaining 5% of stars are highly variable; which leads to our next point.

Image by author

Amazing stability - I am not sure if astronomers have detected many (if any) stars as stable as ours. Sure, our sun does have its own cycles of increasing and decreasing activity (most notably, the 11 year sunspot cycle). And it does fairly regularly send out solar flares whose effects are sometimes felt on earth. But other stars exhibit much greater changes in brightness and flaring. Many of these flares would destroy any life on a planet in its habitable zone. In fact, a 32 year-long study of our sun concluded that our sun is uncommonly stable.[2] As Dr. Danny Faulkner puts it; "Astronomers have found a few solar twins that have the same temperature, size, mass, and brightness as the sun, but nearly all of them are variable. That is, they vary in brightness. With all the concern about global warming today, it ought to be obvious that a constant sun is essential for life."[3]

Paradox - On the other hand, it is impossible for our sun to have been stable enough for the billions of years needed for the evolution scenario. If the sun were billions of years old, 3.5 billion years ago the sun would have been cooler, and heated the earth to an average of only 31 degrees, or below freezing. That would have been too cold for life to start. Evolutionary astronomers call this the faint sun paradox. Yet another indicator that the earth and sun cannot be as old as they claim.[4]

Position of our sun in the galaxy - It also turns out that where our solar system is located relative to the rest of the galaxy is also important to life surviving on our planet. If we were closer to the galactic center, there would be too much deadly cosmic radiation for our sun's solar wind, and our earth's atmosphere to protect us. On the other hand, if we were farther out on the rim of the galaxy, half of the sky would be nearly void of stars, invalidating God's stated purpose of being used for "signs, and for seasons, and for days, and years" (Gen 1:14)

When you factor in the very limited number of stars that can support life with the very few planets found so far around other stars that could also support life[5,6], I suspect the number of star-planet combinations truly capable of supporting life is vanishingly remote. Truly our Lord has lovingly designed our sun different from any star out there. So the next time you thank the Lord for a beautiful sunset, remember to also thank him for His loving provision of that nearly perfect sun.

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2) Coppedge, D. 2007. More Than a Rising Star. Acts & Facts. 36 (11): 15.

3) Dr. Danny R. Faulkner, Not Just Another Star, Answers Magazine, Vol 9, No. 1, Jan 2014

4) Dr. Danny Faulkner, Faint Sun Paradox, Answers Magazine, Vol 7, No. 4, Oct 2012

5) Russell Grigg, "Trappist-1's Seven Planets – None Suitable for Life!", Creation Magazine, Vol 39, No.3, 2017, p. 49.

6) "Finally, a Really Earth-Like Planet?", Answers Magazine, Vol. 12, No. 1, Jan 2017, p. 29

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