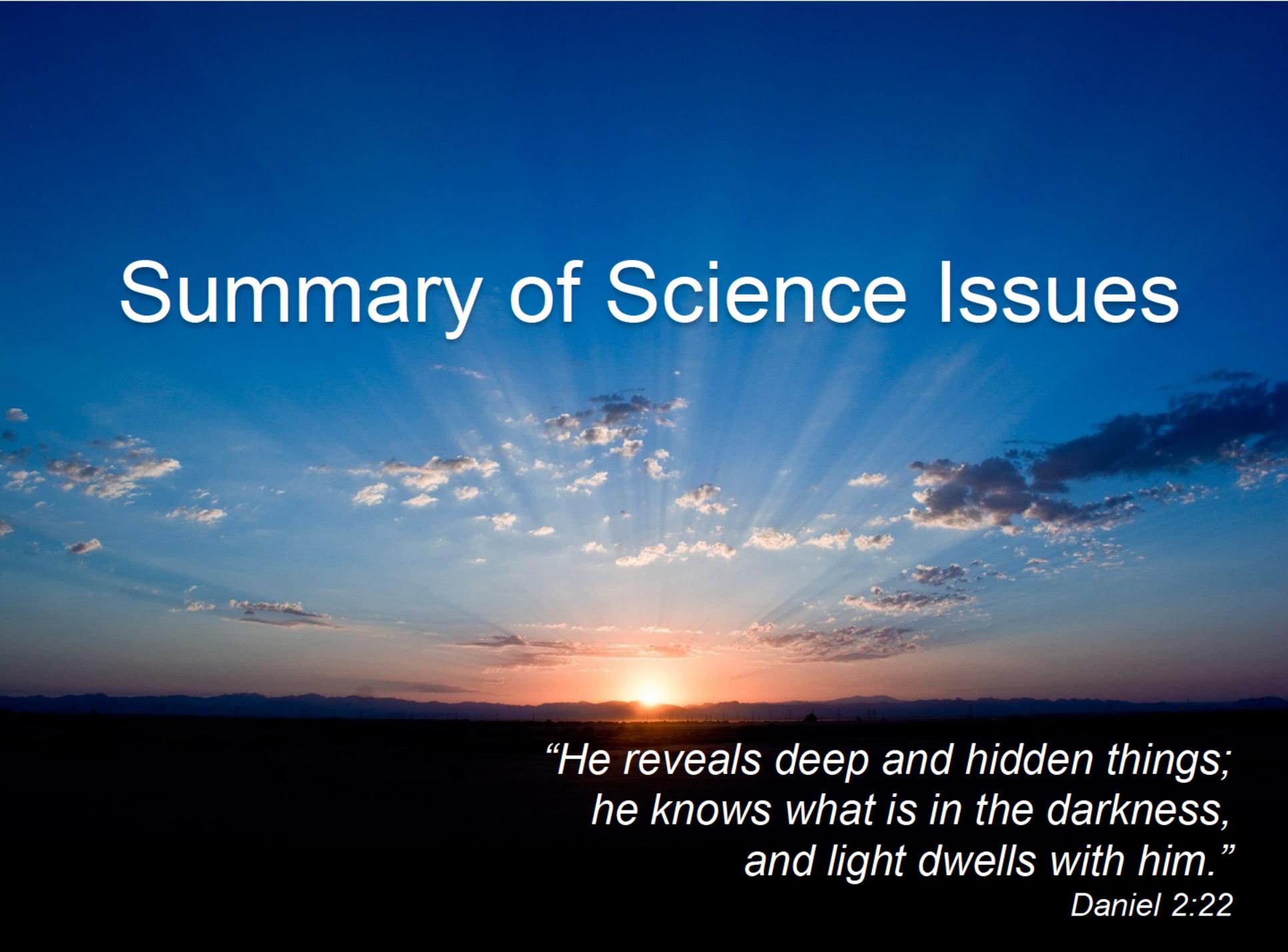


Summary of Science Issues

A sunset scene with a bright sun low on the horizon, casting long rays of light through scattered clouds. The sky transitions from a deep blue at the top to a warm orange near the sun. The foreground shows a dark silhouette of a field and distant mountains.

*“He reveals deep and hidden things;
he knows what is in the darkness,
and light dwells with him.”*

Daniel 2:22

Why Do We Have “Science Issues?”

- Testimonies for the Church, vol. 8, chapter 42—
God In Nature

“While it is true that in the beginning God could be discerned in nature, it does not follow that after the Fall a perfect knowledge of God was revealed in the natural world to Adam and his posterity.”

“Deprived of the heavenly light, they could no longer discern the character of God in the works of His hand. And through man's disobedience a change was wrought in nature itself.” *(the subject and the object)*

Why Do We Have “Science Issues?”

“Apart from Christ we are still incapable of interpreting rightly the language of nature. The most difficult and humiliating lesson that man has to learn is his own inefficiency in depending upon human wisdom, and the sure failure of his efforts to read nature correctly.”

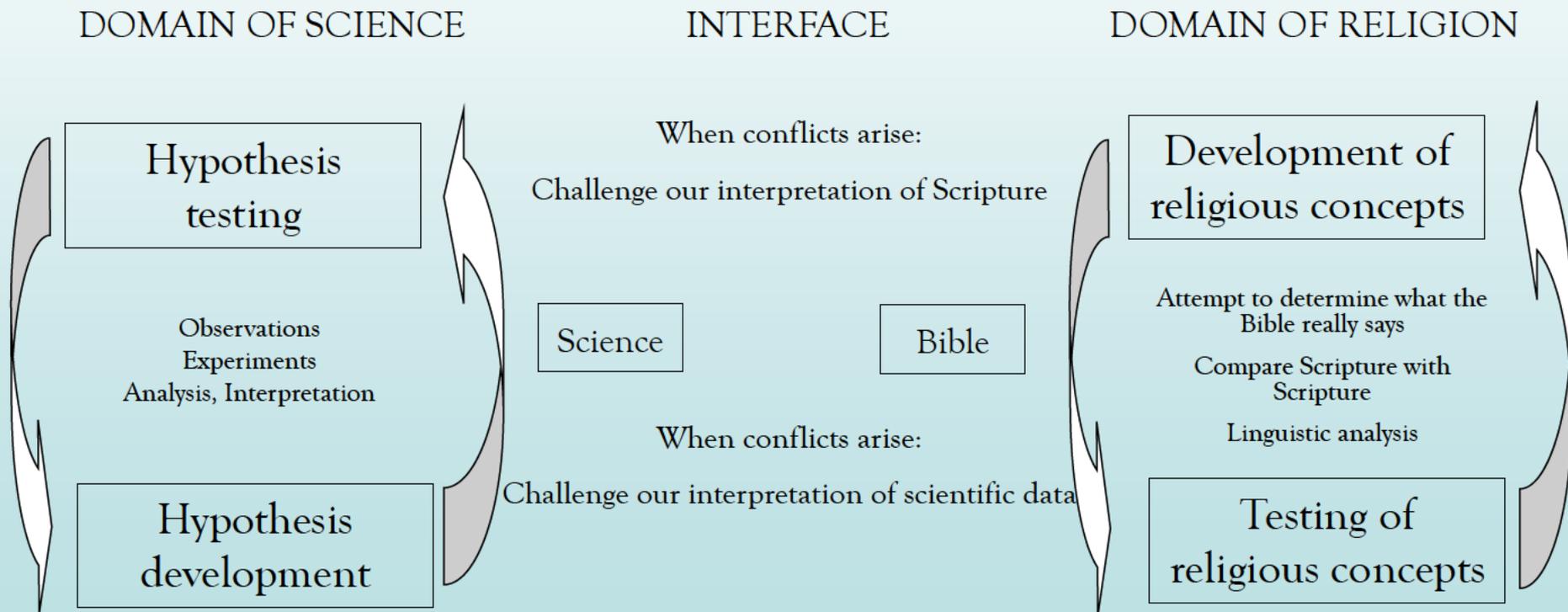
“The greatest minds, if not guided by the word of God, become bewildered in their attempts to investigate the relations of science and revelation. The Creator and His works are beyond their comprehension; and because these cannot be explained by natural laws, Bible history is pronounced unreliable.”

Why Do We Have “Science Issues?”

“In true science there can be nothing contrary to the teaching of the word of God, for both have the same Author. A correct understanding of both will always prove them to be in harmony. Truth, whether in nature or in revelation, is harmonious with itself in all its manifestations. But the mind not enlightened by God's Spirit will ever be in darkness in regard to His power. This is why human ideas in regard to science so often contradict the teaching of God's word.”

Challenges but also Opportunities

Things we can learn about God, things we still need to work on



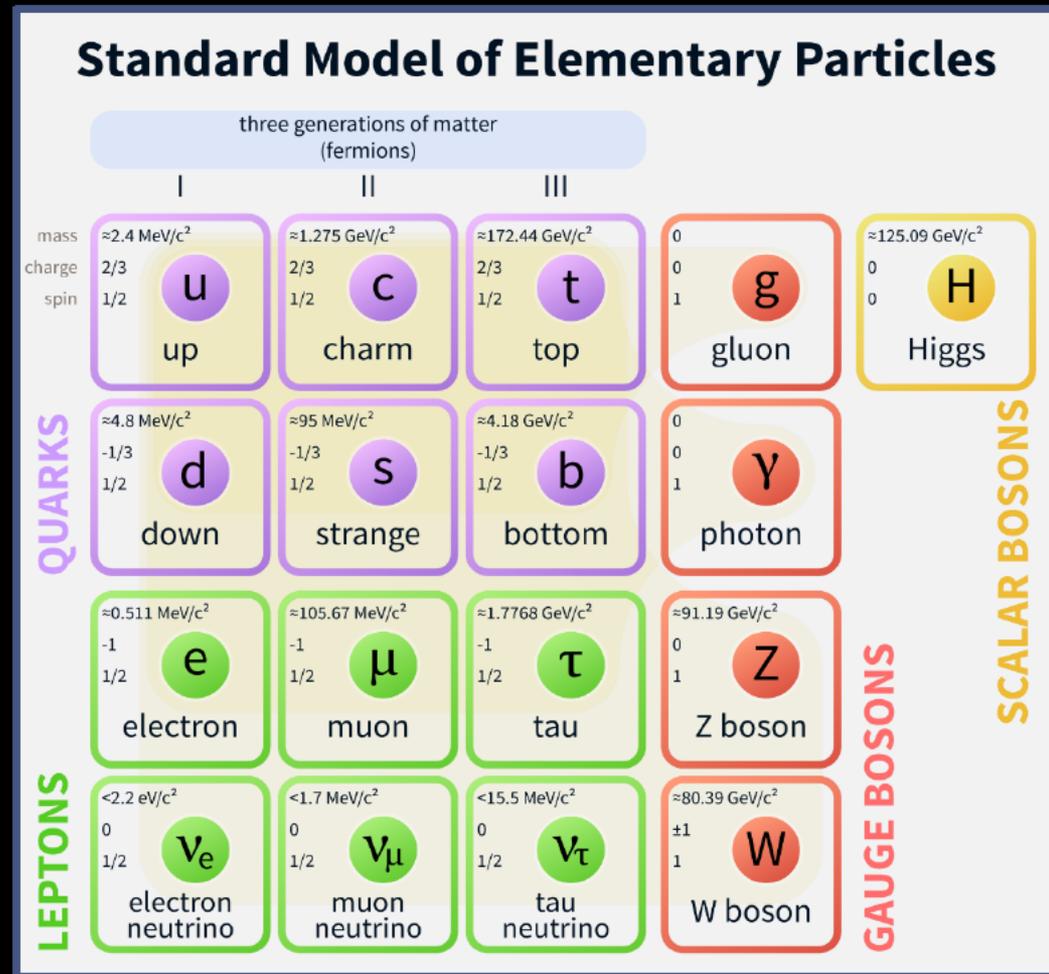
Physics

- Predictability:

At the scale of subatomic particles

Standard model and new particles

(Higgs boson, LHC)



“Surely I spoke of things I did not understand, things too wonderful for me to know.” Job 42:3

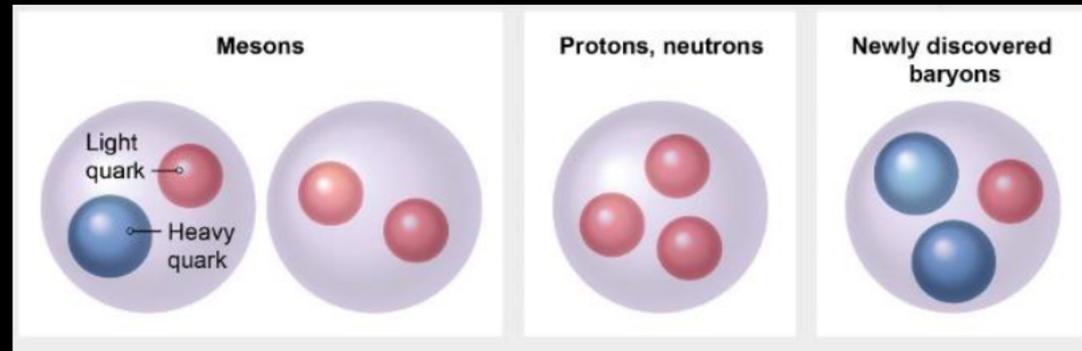
Physics

- Predictability:
At the scale of
subatomic particles

Standard model and
new particles

Ξ_{cc}^{++} particle, first baryon to comprise two heavy quarks «the signal of the LHCb's newfound particle “is statistically overwhelming and matches very nicely with the theoretical expectations,” Wilkinson says. “It looks, smells and tastes like a doubly charmed baryon should.”»

L. Billings, Scientific American, July 7, 2017



From

<https://www.scientificamerican.com/article/lhc-physicists-unveil-a-charming-new-particle/>,

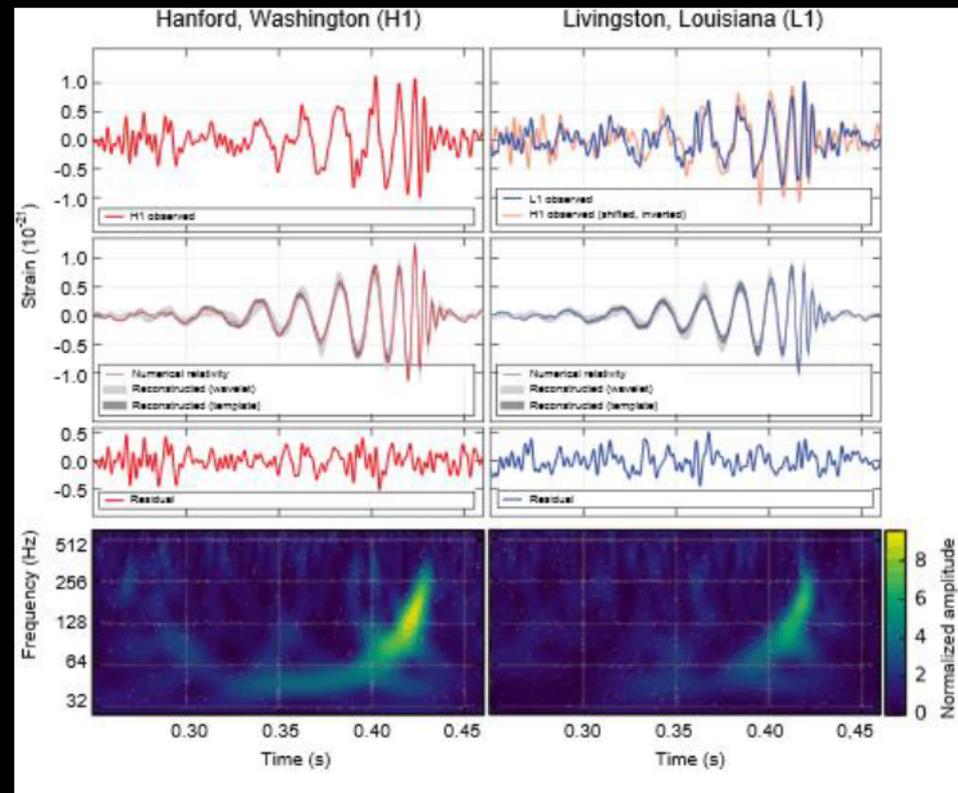
credit Amanda Montañez

Physics

- Predictability:
At the scale of the universe

General relativity and detection of gravitational waves

On 11 February 2016, the LIGO collaboration announced the detection of gravitational waves, from a signal detected on 14 September 2015. Two black holes with masses of 29 and 36 solar masses merging about 1.3 billion light years away.



From Abbot et al., available at https://en.wikipedia.org/wiki/Gravitational_wave#/media/File:LIGO_measurement_of_gravitational_waves.svg (CC BY 3.0)

Physics

- However, theory of everything still elusive (e.g., standard model does not account for gravity).
Much more to learn.
- Theologically: how God works through His laws
- The extremes of pantheism and naturalism

Physics

- The extremes of pantheism and naturalism

“In dwelling upon the laws of matter and the laws of nature, many lose sight of, if they do not deny, the continual and direct agency of God. They convey the idea that nature acts independently of God, having in and of itself its own limits and its own powers wherewith to work. In their minds there is a marked distinction between the natural and the supernatural. The natural is ascribed to ordinary causes, unconnected with the power of God. Vital power is attributed to matter, and nature is made a deity. It is supposed that matter is placed in certain relations and left to act from fixed laws with which God Himself cannot interfere; that nature is endowed with certain properties and placed subject to laws, and is then left to itself to obey these laws and perform the work originally commanded.

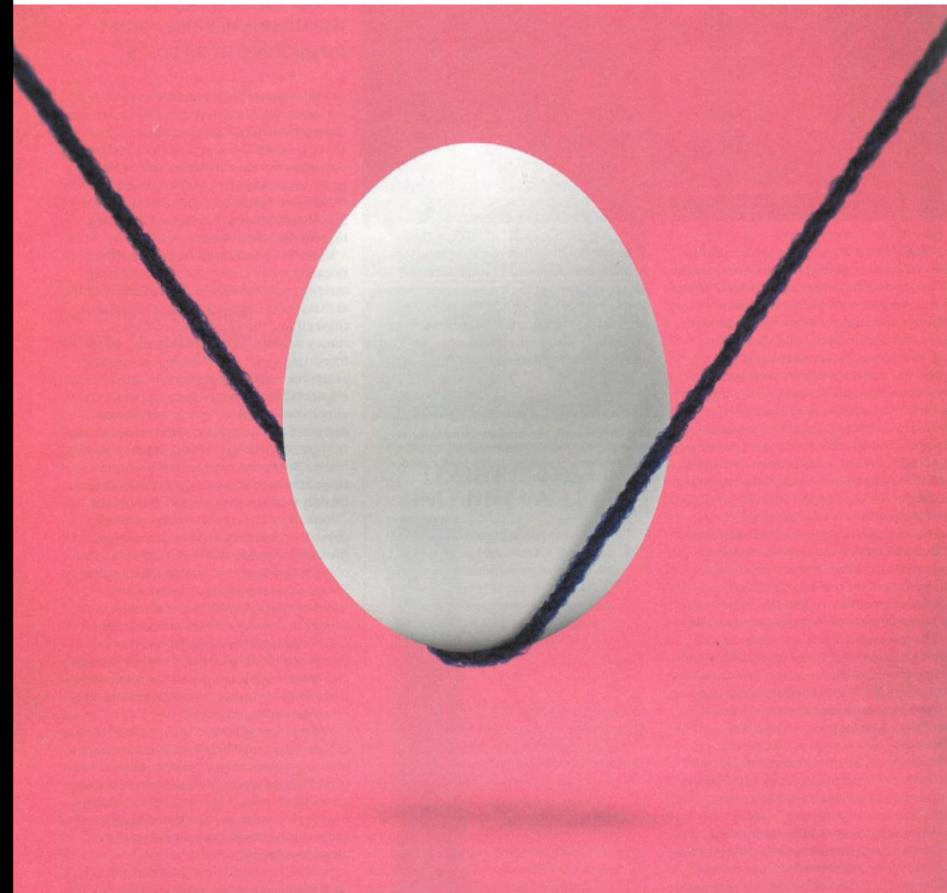
This is false science; there is nothing in the word of God to sustain it. God does not annul His laws, but He is continually working through them, using them as His instruments. They are not self-working.”

Cosmology and Astronomy

- **Fine tuning or coincidences at the cosmic level?**
 - 1) Cosmic dark matter and energy balance – for now. Coincidence?
 - 2) The universe lines up along the ‘axis of evil’. Coincidence?
 - 3) The universe is flat as a pancake. Coincidence?
 - 4) Space is all the same temperature. Coincidence?
 - 5) The Higgs boson makes the universe stable – just. Coincidence?

OUR IMPLAUSIBLE UNIVERSE

The more we look at the cosmos, the stranger it becomes. Here we examine five of its unlikeliest traits – and ask what might lie behind them



Cosmology and Astronomy

- Exoplanets, habitability, astrobiology

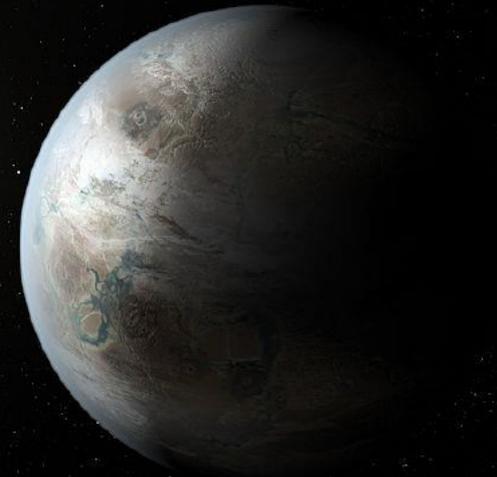
“We define a ‘potentially habitable’ planet to be one that is mostly rock, with a small (≤ 100 bar), high molecular weight atmosphere, and with energy sources and an internal structure such that the surface temperature and pressure permit liquid water for geological timescales.”

Barnes et al. (2015), *The Astrophysical Journal*

“Forming and filling:”

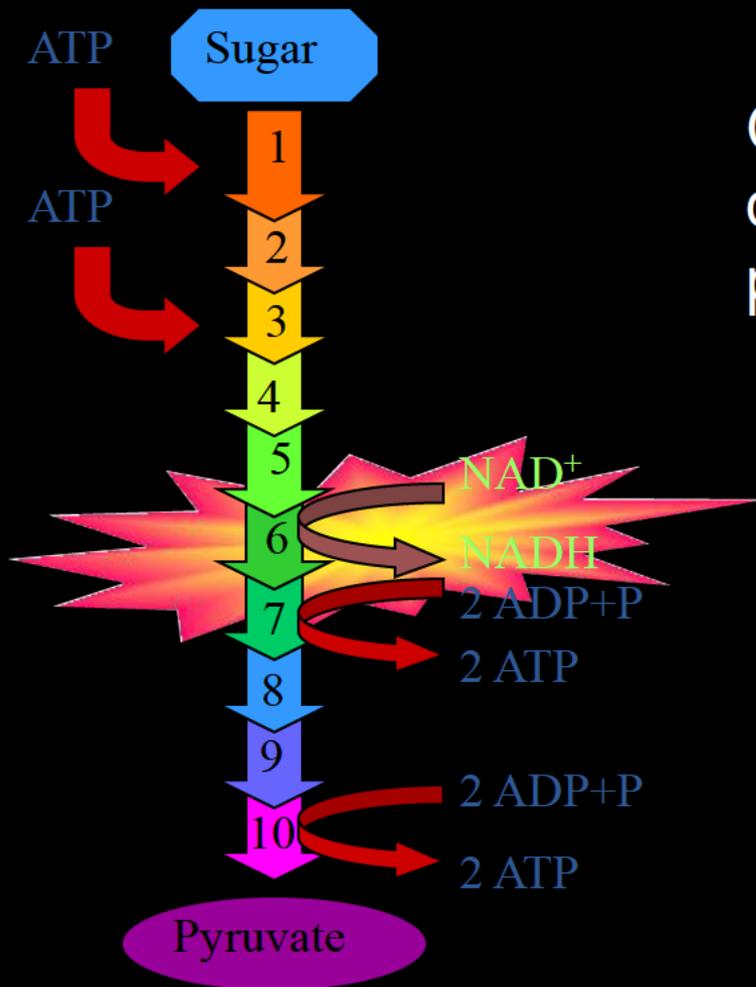
Light, water, atmosphere, dry land,
orbital parameters (seasons)

<https://grisda.wordpress.com/2017/06/01/would-you-move-to-an-exoplanet/>



Biology

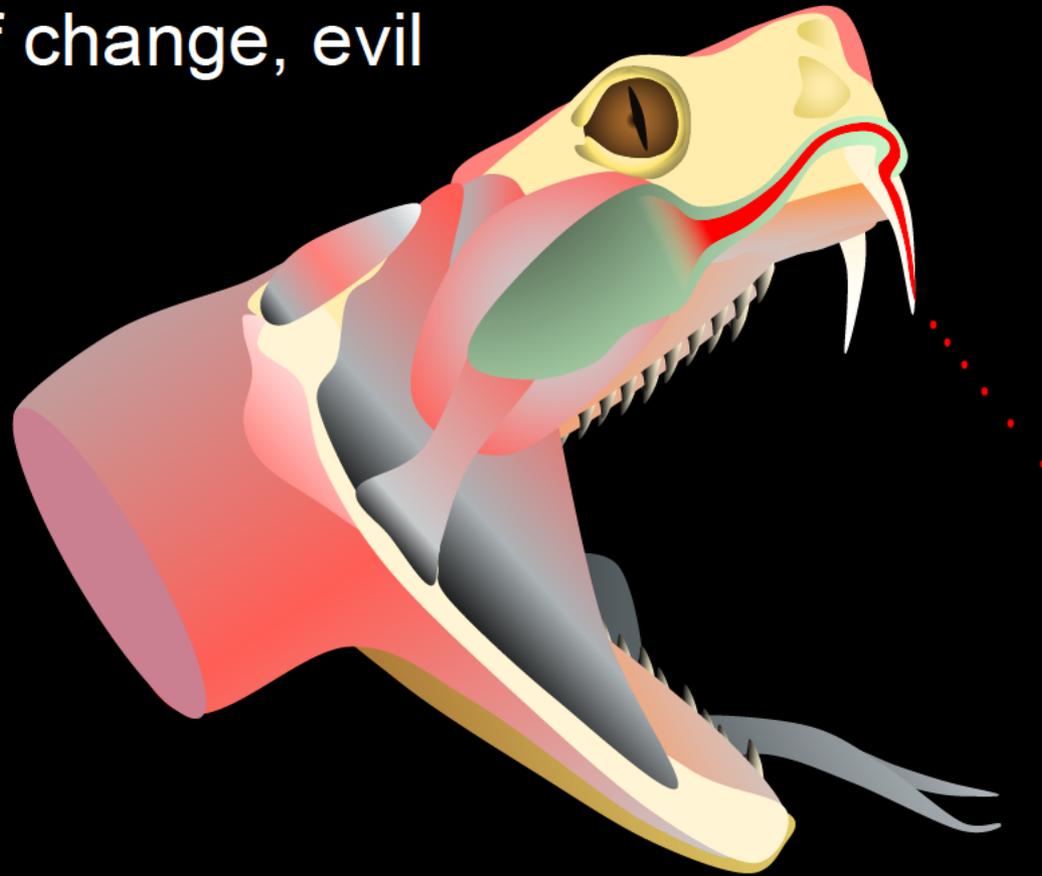
- Complexity and design at the biomolecular level



Glyceraldehyde-3-phosphate dehydrogenase and glycolytic pathway

Biology

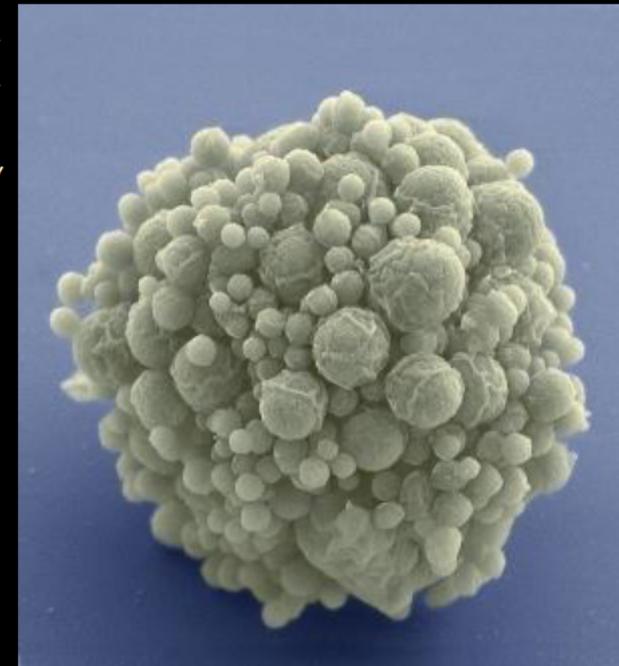
Mechanisms of change,
scope of change, evil
design



Biology

- Ethics

Image by Thomas Deerinck
and Mark
Ellisman/NCMIR/UCSD, from
[http://www.nature.com/news/
minimal-cell-raises-stakes-in-
race-to-harness-synthetic-life-
1.19633](http://www.nature.com/news/minimal-cell-raises-stakes-in-race-to-harness-synthetic-life-1.19633)



NATURE | NEWS

‘Minimal’ cell raises stakes in race to harness synthetic life

Craig Venter’s creation comes as CRISPR gene-editing methods provide alternative ways to tinker with life’s building blocks.

Ewen Callaway

24 March 2016

Biology

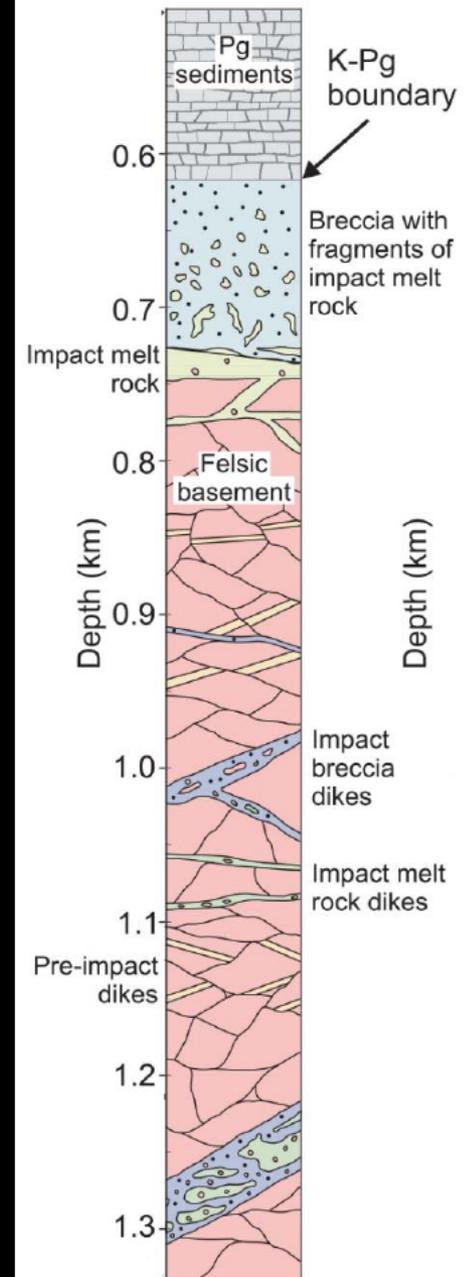
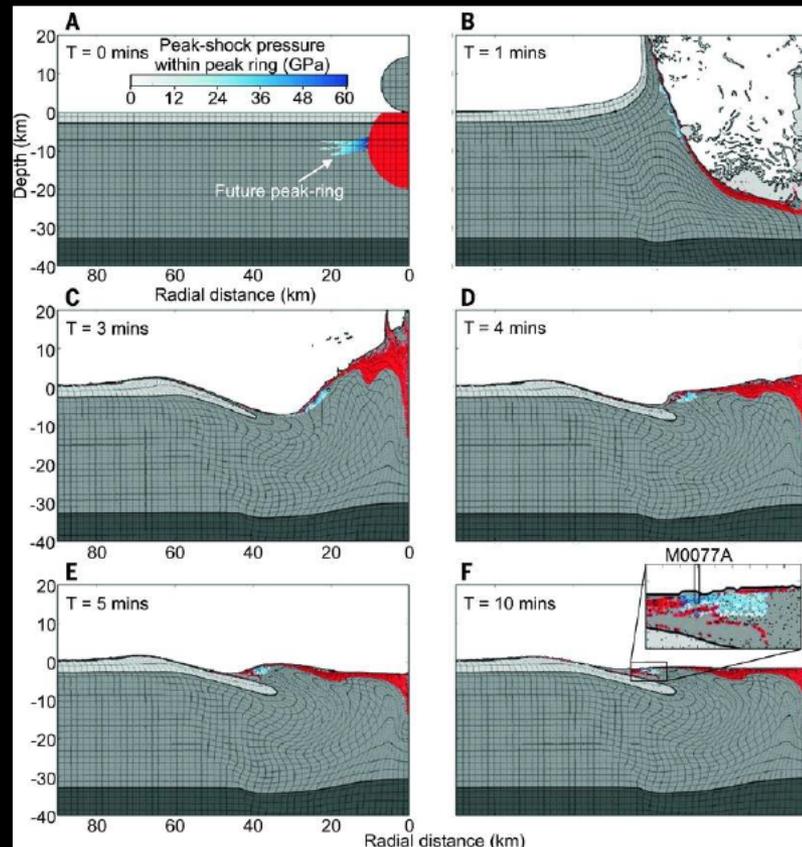
- Ethics

‘Even Venter acknowledges that syn3.0’s genome, although new, was designed by trial and error, rather than being based on a fundamental understanding of how to build a functioning genome. But he expects fast improvements, and thinks that genome synthesis from scratch will become the preferred approach for manipulating life. “If you want to make a few changes, CRISPRs are a great tool,” he says. “But if you’re really making something new and you’re trying to design life, CRISPRs aren’t going to get you there.”’

Geology

- Catastrophism
- Non-uniformity of conditions

Drilling of the Chicxulub crater:
Granitic basement
interpreted as
uplifted by
kilometers in
minutes



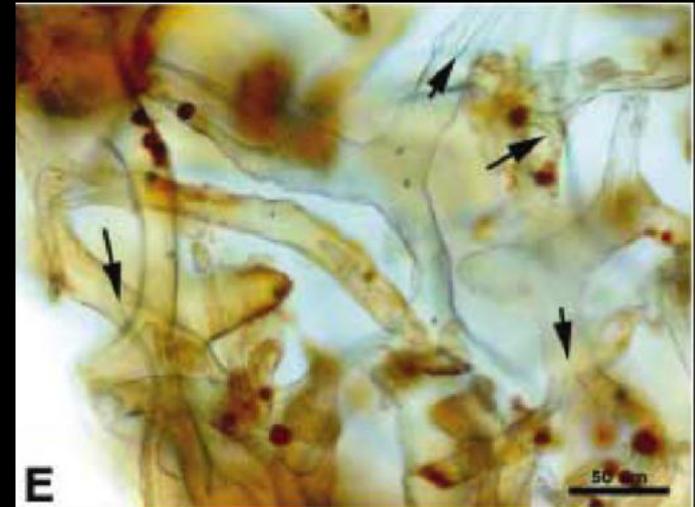
Geology

- 1) Sequence of events (mapping/stratigraphy)
- 2) Tie them to underlying processes (e.g., plate tectonics)
- 3) Time (dating) and physics (rheology, metamorphism, cooling)

- So many areas, and so many experts needed! (evaporites, mass-wasting processes, rheology and deformation, impacts, geochronology, cyclostratigraphy, geomorphology, etc...)

Paleontology

- How good is the record (real discontinuities)
- Preservation of biomolecules
- Ordered distribution
Biome succession is an idea which has not reached yet a high level of detail (account for biostratigraphic distribution of thousands of fossil forms, including taphonomy and sedimentology)



From Schweitzer, et al., 2005

Conclusions

1) When we look at the world of nature through the filter of our biblical understanding of origins we encounter both challenges (opportunities?) and affirmations

Conclusions

2) The balance:

a. Value in studying the regularities of nature: prediction, management, inspiration, understanding

b. Acknowledgment of God's greatness and our limitations. A humble approach

Conclusions

3) The treasure in jars of clay: a necessity?



The Necessity

- “Divine inspiration asks many questions which the most profound scholar cannot answer. These questions were not asked that we might answer them, but to call our attention to the deep mysteries of God and to teach us that our wisdom is limited; that in the surroundings of our daily life there are many things beyond the comprehension of finite minds; that the judgment and purposes of God are past finding out. His wisdom is unsearchable.”
- “Both in divine revelation and in nature, God has given to men mysteries to command their faith. **This must be so.** We may be ever searching, ever inquiring, ever learning, and yet there is an infinity beyond.”