

in those letters. I suspect that he could not imagine why the timeless zone would expand and contract at the speed of light, forming straight diagonal edges in the graph. End note 25 of my Pioneer paper should help him visualize a reason. However, this is another of those questions which are outside the purview of the Pioneer paper, again requiring patience until a further paper can appear with more details. Dr Worraker's conclusion, 'Unless the above issues can be satisfactorily addressed for this model, it is difficult to see its value as an addition to the cosmological models already available to creationists.' expects the impossible—that a scientific paper answer in advance all the new questions it will stimulate! I've answered each of Worraker's questions, to my satisfaction if not to his. But I'm surprised he does not see the value I mentioned in the paper: it provides evidence against big bang theories and for creation cosmologies.

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References

- Humphreys, D.R., Creationist cosmologies explain the anomalous acceleration of Pioneer spacecraft, *Journal of Creation* 21(2):61–70, August 2007; <www.creationontheweb.com/images/journal_of_creation/vol21/5181creationist.pdf>.
- Humphreys, D.R., Creation cosmologies solve spacecraft mystery, *Acts & Facts* 36(10):10–12, October 2007; <www.icr.org/article/3472/>.
- Weinberg, S., *Gravitation and Cosmology*, John Wiley and Sons, New York, p. 413, 1972.
- Rindler, W., *Relativity: Special, General, and Cosmological*, 2nd ed. Oxford University Press, Oxford, p. 367, 2000.
- Anderson, J.D. et al., Study of the anomalous acceleration of Pioneer 10 and 11, *Physical Review D* 65:082004-1–082004-50, 2002. See p. 082004-41.
- Humphreys, D.R., *Starlight and Time: Solving the Puzzle of Distant Starlight in a Young Universe*, Master Books, Green Forest, AR, p. 66, 1994.
- Humphreys, D.R., Russell Humphreys replies, *Journal of Creation* 15(2):47–48, August 2001; <www.creationontheweb.com/images/pdfs/tj/j15_2/j15_2_46-48.pdf>.
- Humphreys, D.R., D. Russell Humphreys replies and clarifies cosmology, *Journal of Creation* 16(3):76–78, December 2002; <www.creationontheweb.com/images/pdfs/tj/j16_3/j16_3_75-78.pdf>.

Just plain ordinary water?

I admire the stamina of DeRemer, Amunrud and Dobberpuhl¹ in offering a detailed commentary on a section of Scripture about which everybody has deeply-entrenched and idiosyncratic opinions, the first four days. While the authors stay within a good basic framework—ordinary-length days, no 'gap', and stars completed on the 4th day—they offer enough details to stimulate everybody to gallop off on some hobbyhorse or another. The one I ride here at least has the advantage of illustrating a very important principle in Scripture interpretation, the principle of trying to take all the Scriptures on any given topic as straightforwardly as possible. On page 71, the authors finish their 'Earth' section by saying:

'Conclusion: The original fluidic 'earth' is not seawater or H₂O, but a primitive liquid-like substance (like quark soup?) from which first particles and atoms, then bodies in the cosmos, will be made, as shown next.'

In this they are saying that the word for 'waters' in Genesis 1:2, 6, 7 and 9 is not to be taken straightforwardly, but instead as code for some other material. One problem I have with that is that there are plenty of ways in Hebrew for God to have said 'primitive liquid-like substance' with great accuracy. And in a parallel New Testament passage, 2 Peter 3:5 (NAS), '... the earth was formed out of water and by water', there are even more ways to say 'fluid-like' in Greek, rather than using the word that means literal 'water'. If it were indeed 'quark soup', it would have been an enormously hot, fully ionized material, and a much better word would have been 'fire.'

But God chose none of those options. Is He a poor communicator?

But the passage itself offers strong evidence that God meant ordinary liquid water. In verses 6 and 7 He divides up the original body of water into two parts, one above the expanse (firmament) and the other below it. Then in verses 9 and 10 He gathers the part of the waters below the expanse into one place and then calls the gathering 'seas'. The pre-Flood seas probably were less salty than today's seas, which gained a lot of salts by erosion as the waters ran off the continents at the end of the Flood. The created seas probably had only as much salt as God allowed them to have by erosion when the dry land appeared. My point is that the lower part of the original body of water appears to have been ordinary water. Thus the most straightforward thing to imagine is that the original, undivided waters were also just plain ordinary liquid H₂O.

As some readers may recall, I built a theory about the origin of planetary magnetic fields on this startling foundation ... that when God said 'waters', He meant it.² Remarkably, the theory not only matched observed magnetic properties of solar system bodies, but also correctly specified the magnetic properties of several solar system bodies *before* they were observed: Uranus, Neptune³ and the Martian crust.⁴ This fit of theory and data could not have happened for any other originally-created material than H₂O. I would have thought such success would encourage all creationists to take the Genesis record more straightforwardly.

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References

- DeRemer, F., Amunrud, M. and Dobberpuhl, D., Days 1–4, *Journal of Creation* 21(3):69–76, December 2007.
- Humphreys, D.R., The creation of planetary magnetic fields, *Creation Research Society Quarterly* 21(3):140–149, 1984; <www.creationresearch.org/crsq/articles/21/21_3/21_3.html>.

3. Humphreys, D.R., *Beyond Neptune: Voyager II supports creation*, *ICR Impact*, May 1990; <www.icr.org/article/329/>.
4. Humphreys, D.R., Mars Global Surveyor confirms creation, *Creation Matters* 4(3), May/June 1999; <www.creationresearch.org/creation_matters/99/cm9905.html>.

Frank DeRemer,
Delmar Dobberpuhl and
Mark Amunrud reply:

We appreciate Dr Humphreys' response to our article. Appendix B in his book *Starlight and Time* is an excellent resource regarding the physics of the biblical creation account.¹ We agree with that appendix with one exception. We believe that the context of Genesis 1:2 argues for the second literal meaning of *mayim*, namely 'liquid'. We agree that *mayim* is 'just plain ordinary water' in 1:9–10, but only after God has made major transformations and named the gatherings 'seas'.

Perhaps 99% of the time in Scripture *mayim* (waters) means some form of H₂O. However, it does not mean H₂O when it is used as an adjective to describe another noun: 'hearts of the people melted and became waters' (Joshua 7:5) or 'all knees go waters' (Ezekiel 21:7) (literal translations). In such cases, 'waters' means soft, pliable, weak or liquid (water-like).

The key to correctly translating *mayim* in 1:2 is determining whether (a) it is used as an adjective to describe the initial 'earth' or (b) whether God is introducing two new nouns, the deep and the waters, that make up part of a structured Planet Earth. A strong case can be built that God is saying that the initial raw materials were formless, void, dark, deep and waters. In this case, 'liquid' would be an appropriate translation. If, instead, God is saying Planet Earth was formless, void, dark, and contained, in part, deep waters, then 'waters' would definitely be H₂O.

There are at least six additional contextual reasons to conclude that *mayim* is used as an adjective and should be translated as 'liquid'.² A

key to understanding Genesis 1 is carefully examining the five words that God defines. There are only 100 different Hebrew words in Genesis 1.³ God defines five of these words in the account where He knows people will make improper interpretations. For example, He defines 'day' as a period of light because He knows that many people will try to define 'day' as long periods of time. Another word He defines is 'seas'—but not until Day 3. Whatever the deep and waters are on Day 1, they are not something that God would call seas.

Dr Humphreys says, 'There are plenty of ways in Hebrew for God to have said "primitive liquid-like substance" with great accuracy ... a much better word would have been "fire".' He is correct that there are other Hebrew words beside 'waters' that could be translated as liquid. God could have used 'fire' or 'melted wax'. However, these words strongly suggest heat and/or light. The context of the account makes it clear that there was absolutely no light and there is no mention of heat. Thus, 'fire' does not fit the context. 'Waters' does fit the context and was the appropriate Hebrew word if God wanted to describe this initial material as liquid.

Dr Humphreys' next point is that 'there are even more ways to say 'fluid-like' in Greek', and he cites 2 Peter 3:5 as referring to H₂O waters. We agree that 2 Peter 3:5–6 and Genesis 1:9–10 are describing H₂O. Our point is that the story indicates a major transformation from 1:2 to 1:9–10. We start with utterly light-less, unformed, uninhabitable raw-material 'waters'. They are then lit and spread across the universe. Then they become (among other things) 'seas' on Planet Earth ready to support life. Surely the story's flow indicates a vast transformation in the structure and nature of these 'waters'. There is such a contextual contrast between these two 'waters' that translating *mayim* as H₂O waters in 1:2 does not seem to do the text justice.

The conditions of Day 1 were vastly different from anything we have today, but for us to understand them,

God had to use words that we would understand. Heavens, earth and waters, all changed dramatically from Day 1 to Day 4. (Dr Humphreys' 'fit of theory and data' probably fits right in on day two, after H₂O exists but has not yet been gathered.) The definitions that God gives to heavens on Day 2 and Earth on Day 3 were not possible on Day 1.

It is of utmost importance that we interpret the creation account accurately. If we get even one word of it wrong, we become guilty of proclaiming that God said something that He did not say. We, like Dr Humphreys, want to take all the words and phrases in their straightforward senses *as indicated by the context*.

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References

1. Humphreys, D.R., *Starlight and Time: Solving the Puzzle of Distant Starlight in a Young Universe*, Master Books, Colorado Springs, CO, p. 53, 1994.
2. 1. The 'earth' material was formless, whereas the molecular structure of water is very formed; also if the 'earth' was all H₂O, gravity would put it into an orderly shape.
2. The 'earth' was 'void' or uninhabitable—H₂O is habitable for many types of life.
3. The initial 'earth' was completely dark—no electromagnetic radiation (EMR), but everything with atomic structure (including H₂O) emits EMR. God didn't speak 'light' until mid Day 1.
4. The conditions on Day 1 are described as something very different from anything we see today that might be called 'seas'.
5. Isaiah looks at Day 2 of the creation (the separation of waters from waters) and says that God spreads out the 'earth' (Isaiah 42:5). Isaiah seems to understand that the material 'earth' is being spread out and that waters describes the condition of the earth.

6. If the entire 'earth' was H₂O water, then why wouldn't God say, "In the beginning God created the heavens and the waters"?"

Also, translating *mayim* as 'liquids' does not eliminate H₂O because it is a specific, but very common liquid. Thus, 'liquids' is a broader word.

3. Taylor, C., *The First 100 Words*, The Good Book Co, Gosford, NSW, Australia, p. vii, 1996.

215-year sojourn still 'short'

The replies of Mike Vicary and David Austin¹ to my defence of Israel's 430-year sojourn in Egypt² did not, in my view, satisfactorily address the evidence. On three fronts in particular—the statistical problems, the textual case and the question of consistency—the 'short', 215-year sojourn still fails to measure up.

First, the *statistical problems*. One entire book of the Bible is called Numbers, and it is unfortunate that Mike and David chose to ignore the evidence of Numbers 3:27–28, concerning the Amramites, which my letter addressed. That evidence restated is this: Moses shows, by reasonable inference, that the Amramites just after the Exodus numbered some 2,150 males. If this Amram was the same Amram as Moses' father, this means that Moses must have had '2,147 brothers and brothers' sons', as Keil and Delitzsch point out.³ Such a proposition, of course, is absurd. Yet it is statistical conundrums like this that compel even a short-sojourn advocate like Nahum Sarna to concede that the population data '*poses intractable problems*' for a two-century sojourn⁴ (emphasis added).

Mike appeals to a 'miraculous increase' to explain how 70 people could become some two million in just 215 years. But this amounts to special pleading. Nowhere does the Bible (while certainly setting forth a robust growth rate, Exodus 1:7) describe it as a 'miracle'. In any event, an increase from 'about 600,000 men' at the Exodus to '603,550' at the first census thirteen months later hardly suggests,

even allowing for the approximate nature of the first figure, a growth rate of 'miraculous' proportions! (Exodus 12:37; Num. 1:46).

But why need there be any 'problems' at all when, as we see from Joseph's line in 1 Chron. 7:22–27, there were all of *eleven* adult generations of Israel in Egypt, not just the four which Moses' modest abridgement of his own ancestry (later emulated by Ezra in abbreviating his own family tree⁵), might suggest?

Secondly, the *textual case*. By any *prima facie* reading, Exodus 12:40–41 settles the issue of how long the sojourn in Egypt lasted. Notwithstanding David Austin's denial of the fact, it emphatically states *twice* that the period in Egypt lasted 430 years:

'Now the *length of time* that the Israelite people *lived in Egypt was 430 years*. At the *end of the 430 years*, to the very day, all the LORD's divisions *left Egypt*' (NIV, emphasis added).

David's semantic quibbles about whether 'lasted' means 'dwelt' (for the record, the Hebrew *moshab*, 'living time', is related to *yashab*, 'lived') really miss the obvious. Namely, as *The JPS Torah Commentary: Exodus* observes, that 'the text [i.e. Exodus 12:40–41] *speaks clearly enough only of the Egyptian episode* [emphasis added]'.⁶ This reflects the similar admission of *Encyclopaedia Judaica*,⁷ noted in my previous letter, concerning the plain meaning of the passage, and makes all the more astonishing Vicary and Austin's attempts to argue around that plain sense. As the *Dictionary of Old Testament Pentateuch* points out, there is no doubt about the duration in Egypt: 'The record takes pains, in fact, to underscore that it *lasted exactly 430 years* [emphasis added]'.⁸

Nor, it seems, has David understood that the Dead Sea Scroll manuscript, 4QExodc, corroborating our text of Exodus 12:40–41, is in *Hebrew*, not 'in Greek' as he claims. My whole point was that the Greek LXX, which the short sojourn is forced to invoke in the absence of any Hebrew textual support, is demonstrably suspect on chronology, as well as coming

more than a thousand years *after* Moses' original Hebrew (discredited liberal assumptions denying Moses' authorship are, of course, totally irrelevant, as Mike and David would agree; cf. John 5:46, 47).

But it is the *sheer inconsistency* of the short-sojourn position that makes it even harder to defend. Historically, its advocates are not even agreed among themselves as to how long Israel's time in Egypt actually lasted. The Talmud puts it at 210 years (and elsewhere at 430 years).⁹ Nahmanides/Ramban gives the two figures of 220 years and 227 years.¹⁰ Josephus says in one part that it was 215 years, and in another 400 years.¹¹ A footnote to Ramban gives 240 years.¹² Midrash Rabbah says it was 210 years,¹³ while those Christian scholars who accept it generally plumb for a 215-year period. Such variation—representing *five different short-sojourn periods* (there are others beside)—is understandable when it is recalled that, *if Exodus 12:40–41 is not to be read at face value, there is no passage in the entire Bible that states the length of the Egyptian Sojourn*. Compare this with the far shorter Babylonian Captivity, whose duration of 'seventy years' is spelt out all of six times.¹⁴ Indeed, the above inconclusiveness is in stark contrast to the precise 430-year sojourn 'to the very day', also confirmed by the rounded four-century ('400 years') references of Gen. 15:13 and Acts 7:6 to Israel being 'enslaved and mistreated'.

So again, with the utmost respect to short-sojourn advocates, including Mike and David, I believe that the evidence is more than a little partial towards the 430-year sojourn of Israel in Egypt.

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References

1. Mike Vicary replies, *Journal of Creation* 21(3):64–65, 2007; David Austin replies, *Journal of Creation* 21(3):65–66, 2007.
2. Brenton Minge, Short sojourn comes up short, *Journal of Creation* 21(3):62–64, 2007.