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# The pre-Flood/ Flood boundary: scholarship and clarification

## Carl Froede Jnr. replies

I appreciate the time and effort expended by Dr Steve Austin in responding to my recent article<sup>1</sup> that questioned some of his work, especially the part relating to the Grand Canyon. I believe his clarification of these issues reflects a modification to some of his earlier ideas. I would encourage Dr Austin to consider revising his excellent Grand Canyon book<sup>2</sup> to reflect the useful information he has shared in his letter. These changes will be explained later within this letter. First, I would like to address Dr Austin's concern regarding my 'scholarship'.

### What is 'scholarship'?

The Webster's II New Riverside University Dictionary<sup>3</sup> defines scholarship as:

1. The methods, discipline, and achievements of a scholar.
2. Knowledge resulting from study and research in a field.
3. Financial aid awarded to a student.

When Dr Austin questioned my 'scholarship', he apparently had reference to the second definition of this word. Dr Austin has reviewed and cited most of the references in my article and found that some, but not all of them, are inconclusive. Some of these references state that metazoans have been found, and indicate that some of the anomalies thought to be metazoans may not be metazoans at all, but features caused by uncertain processes. This highlights what scientists do in proposing theories and debating the physical evidences that lend support to a particular theory. Metazoans have been found in Precambrian strata within the Grand Canyon at a lower level than Dr Austin has recognized them. Not all scientists studying metazoans have recanted their original finds, although Dr Austin's letter gives the impression that uniformitarian scientists are all in agreement about this. Because the Precambrian is said to speak about the roots of the evolution of life on Earth, many scientists are wary of exposing their model(s) to the possibility that animal life on Earth is much older than allowed by mainstream models. Although not openly acknowledged, a sort of scientific peer pressure exists that tends to keep researchers within the accepted bounds of current evolutionary thought, this being especially true with

regard to ancient animal life (i.e. metazoans).

Scholarship cuts two ways because it provides a basis for making assumptions about a subject as well as making predictions about what might develop in the future with the subject. Unfortunately, most scientists are willing to accept the existing model(s) and are unwilling to modify their thinking when new information is publicized. Metazoans found in the Precambrian provide a good example of this. Some deny their existence because the discoveries violate their previously accepted model(s). Others openly embrace them because of the potential they bring in opening up new perspectives in understanding the 'evolution' of early animal life. Dr Austin seems to accept the status quo position, not choosing to recognize the evidence of metazoans having been found deeper in the Precambrian record, even within the Grand Canyon. My scholarship is merely documenting the fact that uniformitarian geoscientists differ when dealing with metazoans in the Precambrian, even those found within the Grand Canyon. I am interested to know what other parts of my metazoan article (other than the four-sentence paragraph) are not considered by Dr Austin to be examples of good scholarship.

For those individuals who are interested in learning more about the historic study of Precambrian life forms, consider reviewing the recent books by Schopf<sup>4</sup> and McMenamin.<sup>5</sup> These references provide great insight into how early life forms were identified, and what 'evolutionary' models were developed to explain how it all began. Advancement of some of the models only occurred in some cases with the death of the scientists who failed to acknowledge or recognize current information! The Precambrian, as a period of biological development within the evolutionary model, is presently in a major state of flux with uniformitarian scientists. Young-earth creationists should stay current with the latest discoveries that provide fresh insight so as to be better able to define Earth's history within the biblical framework.

### **Where is the pre-Flood/Flood boundary in the Grand Canyon?**

With regard to the Grand Canyon, Dr Austin contends that I have ignored his 'three-fold division of Precambrian strata'. Because this division was not well developed, justified, or carefully explained in his monograph, I did not address it.

Dr Austin also asserted that I incorrectly accused him of using the Precambrian/Cambrian boundary as the pre-Flood/Flood boundary. The reason I stated that Dr Austin uses the Cambrian/Precambrian boundary to correspond to the pre-Flood/Flood boundary within the Grand Canyon is demonstrated in my Figure 1. Here I have presented only the lower portion of Dr Austin's Grand Canyon section taken directly from his book. Note that it shows the pre-Flood/Flood boundary at the Precambrian/Cambrian boundary.

Although he states in his letter that he believes that the pre-Flood/Flood boundary should be located in the Sixtymile Formation, he clearly does not convey this in his monograph. There is no mention of any pre-Flood/Flood boundary within the Sixtymile Formation in his book. With regard to defining the Chuar Group, Dr Austin<sup>6</sup> stated:

*'The evidence seems to favour the interpretation that most of the Chuar Group is pre-Flood (most representing, perhaps, the first 1,656 years after Creation), with only the uppermost strata representing redeposition by the initial upheaval beginning the Flood. More study on these strata is needed.'*

This sounds very promising, but in working his way up-section, Dr Austin<sup>7</sup> comes to the Great Unconformity where he stated:

*'Most creationist geologists regard the Great Unconformity as the feature formed during the tectonic and erosive catastrophe at the onset of Noah's Flood.'*

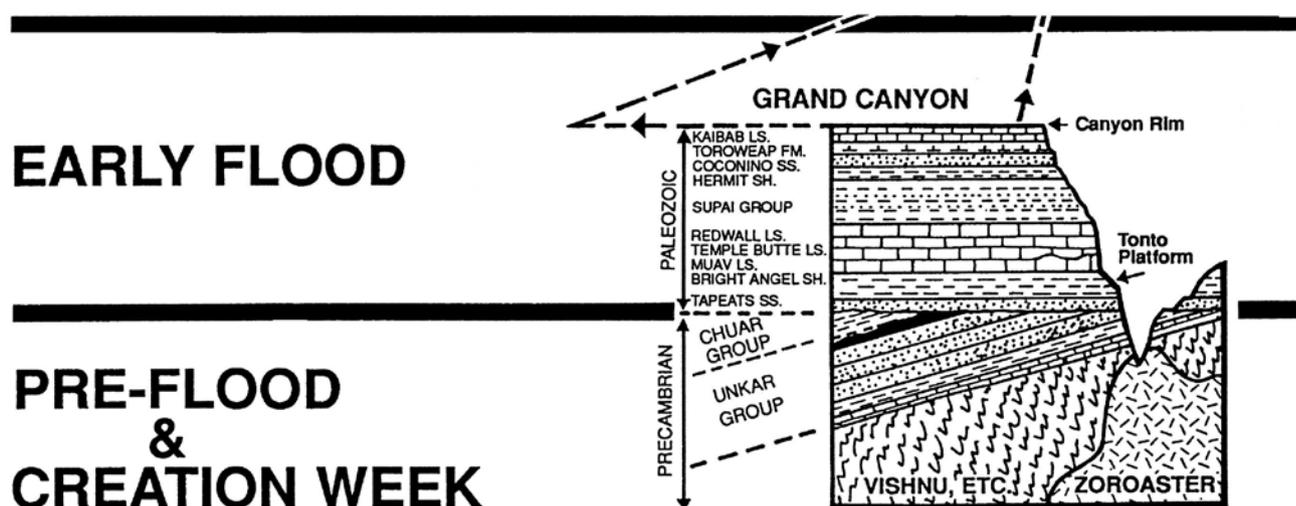
The Great Unconformity marks the boundary between the Precambrian and the Cambrian (Figure 1). Because Dr Austin's letter redefines where he wishes to place the pre-Flood/Flood boundary, perhaps a revision to this part of the book would be appropriate. This should eliminate any confusion that anyone might have when reading his book, the article<sup>8</sup> from the Proceedings of the International Conference on Creationism (ICC), or his most recent letter.

Possibly Dr Austin might consider redrawing his Figure 4.1 to reflect what he has stated in his letter, along with some indication that metazoans and spores/pollen have been identified in certain strata within the Precambrian beneath where he presently defines the pre-Flood/Flood boundary in the Grand Canyon. This would then be an up-to-date and informative resource for young-earth creationists who might wish to further investigate the boundary issue.

In examining the ICC article by Drs. Austin and Wise,<sup>9</sup> they stated that they draw the pre-Flood/Flood boundary at the base of the Sixtymile Formation:

*'When all five pre-Flood/Flood boundary criteria are simultaneously applied to the Grand Canyon stratigraphic sequence, the pre-Flood/Flood boundary is most likely to correspond to the sub-Sixtymile unconformity. This identifies the Sixtymile Formation as the earliest Flood deposit in Grand Canyon.'*

It should be noted that this boundary is defined based on all five of the proposed Austin and Wise 'discontinuity criteria,' one of which (i.e. paleontological discontinuity) is that no animal or plant fossils of any real significance should be found beneath this boundary. If metazoans and plants have been identified beneath the Sixtymile Formation basal contact, then this would no longer be a valid boundary to define the pre-Flood/Flood stratigraphic contact. I contend (and have cited references<sup>10</sup> documenting this within the Grand Canyon) that the Sixtymile Formation is too high in section to define the pre-Flood/Flood boundary. At present, I do not wish to speculate about a particular



**Figure 1.** This is the lower portion of Figure 4.1 in Dr Austin's *Grand Canyon* book<sup>2</sup> that illustrates the placement of the pre-Flood/Flood boundary. The Precambrian/Cambrian boundary is shown as this boundary, which is contrary to what Dr Austin has stated in his letter. It is also inconsistent with the information presented in his ICC article. Perhaps Dr Austin could revise this and other figures to better present a more consistent model. I remain convinced that the existing physical evidence requires that the pre-Flood/Flood boundary be moved lower in section than Dr Austin presently acknowledges.

boundary that could be presented as the pre-Flood/Flood contact. With regard to stratigraphy and tectonism, I believe that Hunter's model<sup>11</sup> might hold great promise for the Grand Canyon stratigraphic section. This would then move the boundary downward toward the contact between the igneous/metamorphic rocks and initial overlying sedimentary layers (i.e. between the Bass Limestone and the underlying Vishnu Schist), with the possibility that some of the igneous/metamorphic rocks could also have been formed during the Flood. Reed<sup>12</sup> has demonstrated this relationship in his new monograph which deals with the origin and development of the Midcontinent Rift. Further investigation into the pre-Flood/Flood boundary is clearly warranted for the Grand Canyon.

A careful examination of Figure 1 in the Austin/Wise article<sup>13</sup> (reproduced as my Figure 2) supports this approach. Note that Austin and Wise cite the base of the Sixtymile Formation (within the Grand Canyon) as their boundary, and they do so from the standpoint of geologic energy which I believe is important in defining strata within the young-earth Flood model.<sup>14,15</sup> However, in attempting to correlate this high-energy contact toward the west, no corresponding strata have been identified until one moves laterally to the Kingston Peak strata in Death Valley, a distance of approximately 323 kilometers (201 miles). Are there other possible formations in the thousands of feet of strata in the Death Valley section which might exhibit the same five discontinuity criteria as the Kingston Peak strata? This seems to be a great physical separation solely to attempt to correlate two similar (?) stratigraphic units, considering that basement rock serves as the intervening boundary marker (see Figure 2). Are the strata missing because they were never deposited, or were they deposited and subsequently eroded? It is my opinion that the applica-

tion of the five discontinuity criteria following the Austin/Wise proposal will not provide a *unique* pre-Flood/Flood boundary in a vertical section for the southwestern United States. Therefore, using these criteria leaves the potential for honest disagreement when looking at the rock record. It would appear that extrapolating the basal unconformity of the Sixtymile Formation in the Grand Canyon toward the west presents more problems than it provides answers. My point is to demonstrate that Austin and Wise appear to have settled on a pre-Flood/Flood boundary that has no continuously traceable lateral expression and is based on whatever discontinuity criteria they apply to a particular setting. Because their Figure 1 (my Figure 2) reveals the Precambrian/Cambrian (i.e. the Great Unconformity/Tapeats Sandstone) boundary as the pre-Flood/Flood boundary, clarification needs to be provided.

Although Dr Austin claims that I improperly cited him as using the Precambrian/Cambrian boundary as the pre-Flood/Flood boundary, the words and illustrations in his book and ICC article are in agreement with what I stated in my article. Simply making them consistent would be beneficial in presenting a clearer position, which would increase the scholarship of this approach.

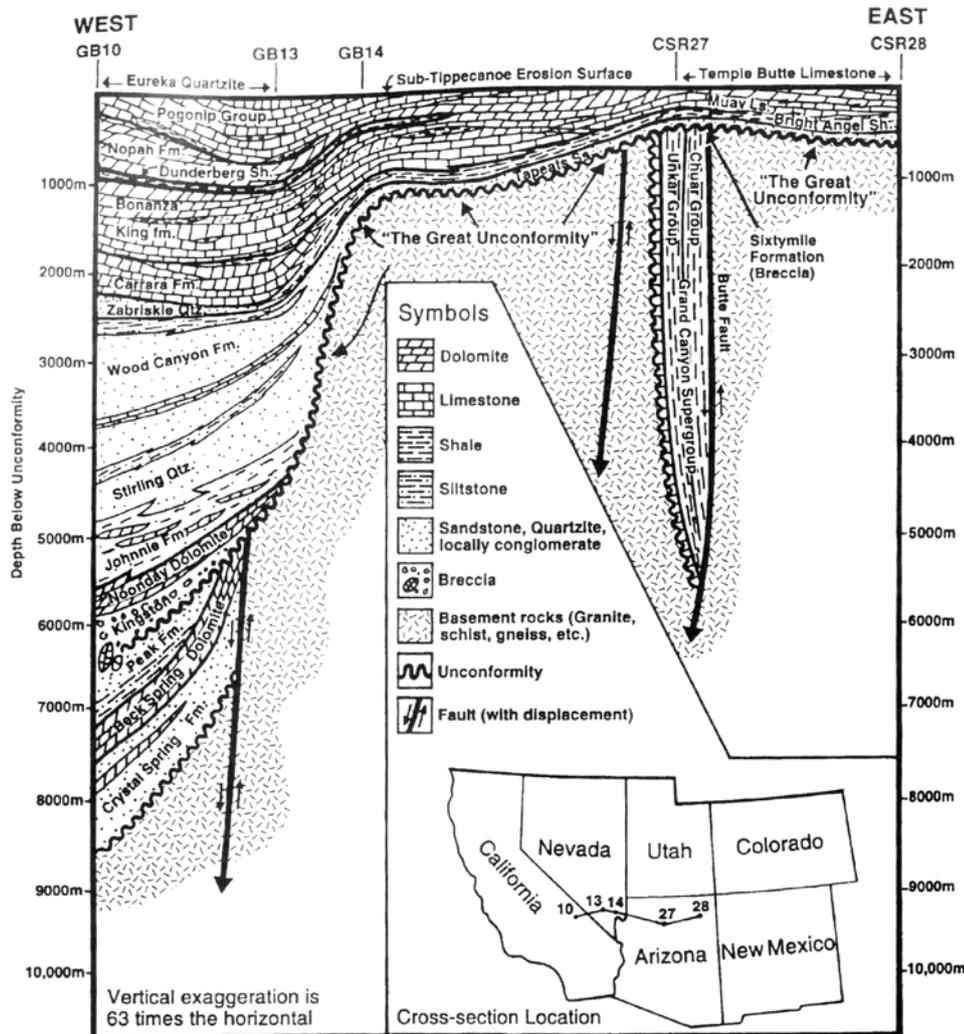
### Evolutionary bias

Dr Austin<sup>16</sup> is one of several creationist geoscientists who has stated that he supports using the general framework of the uniformitarian global stratigraphic column in defining his young-earth Flood model of Earth history, without evolutionary assumptions and corresponding deep time:

*'We recognize the general validity (but are cautious about the details) of the lithostratigraphic and biostratigraphic columns, question the assumptions in*

**Table 1.** Five points where clarification is needed to present a clear and consistent model to define the Austin model for the pre-Flood/Flood boundary within the Grand Canyon.

	<b>Froede on Austin’s position</b>	<b>Austin’s position</b>	<b>What needs to be addressed</b>
1.	Austin believes the pre-Flood/Flood boundary occurs at the base of the Cambrian in southwestern United States	Austin believes the pre-Flood/Flood boundary occurs within the Precambrian in southwestern United States	Austin needs to consider revising his Grand Canyon book (text and figures) and further clarify his southwestern stratigraphy between GC and Death Valley
2.	Austin believes in global correlation of pre-Flood/Flood boundary at the base of the Cambrian	Austin believes that five boundary criteria should be used to locate the pre-Flood/Flood boundary globally.	Austin uses the five criteria in a manner that denies the physical reality of fossils (both animal and plant) deep in the GC section. He is cited as following a piece-meal version of the global stratigraphic column that will consistently play into how he arbitrarily picks and chooses his boundaries — see ICC paper.
3.	<del>Austin’s model requires all Precambrian strata of Grand Canyon region to be Creation Week rocks.</del>	Austin has a three-fold division of Precambrian strata of Grand Canyon: (1) Creation Week, (2) post-Creation but pre-Flood, and (3) early Flood	<del>This needs to be better presented in the GC book as now the criteria used to define these strata appear arbitrary and deny the evidence of plant and animal fossils deeper in the section. The Austin GC book figures fail to clearly present this information.</del>  Scientists need to be objective and report what has been found. Plenty of references have reported that plant and animal fossils have been found (some deeper than the Austin model presently acknowledges). This needs to be clarified within the GC book. Let the reader decide based on available evidence.
4.	<del>Austin’s boundary model has significant problems with fossils within Precambrian strata of Grand Canyon, especially metazoans and tracheophytes.</del>	Austin’s boundary model explains well-documented cyanobacteria, algae, and protists (metazoans and tracheophytes are not well documented) within Precambrian strata of Grand Canyon	<del>Austin’s figures show that despite the claim for the Sixtymile Formation being a Flood deposit, the Precambrian/Cambrian boundary is consistently shown as the pre-Flood/Flood boundary. These figures need to be revised along with the text. Some serious consideration should be given to the fact that plant and animal fossils are reported deeper in the GC section.</del>
5.	<del>Austin’s criteria for locating the pre-Flood/Flood boundary are biased by uniformitarian and evolutionary assumptions.</del>	Austin’s five criteria for locating the pre-Flood/Flood boundary are grounded on presuppositions derived from the historical framework of Scripture.	



**Figure 2.** This is Figure 1 from the Austin/Wise ICC article.<sup>8</sup> Notice that they define the pre-Flood/Flood boundary below the Precambrian/Cambrian boundary at the base of the Sixtymile Formation. They correlate this formation in the Grand Canyon to the Kingston Peak Formation in Death Valley, leaving many questions unanswered about the intervening strata. This approach appears to be a piecemeal effort to define the pre-Flood/Flood boundary. This interpretation is especially questionable because the basement rocks appear to impact the lateral expression on most of the overlying strata in a manner that would better fit with a possible Flood boundary.

*the chronostratigraphic column, and reject entirely the absolute geological time-scale. As a consequence, we prefer to utilize lithostratigraphic terms ... over time-rock terms ... and reject entirely the use of chronostratigraphic terms ....'*

While this sounds like a fair approach, it completely ignores the fact that the global stratigraphic column is based on evolution and time regardless of whether one chooses to use only part of it. I have written about this<sup>17-18</sup> and believe that any attempt to use or follow the global uniformitarian stratigraphic column, either wholly or in part, requires defining a biblical approach through uniformitarian doctrine.<sup>19</sup> Because Dr Austin seems to believe that he can use the global uniformitarian column to define biblical history, he will have an evolutionary bias whether

or not he wishes to admit it.

### Conclusions

Dr Austin questions my use of certain references, stating that metazoans were found deep within the strata of the Grand Canyon while not mentioning having problems with my listing their occurrence in the Precambrian at other locations across the globe. I simply cited where these supposed ancient animal fossils have been found and identified. Whether or not certain scientists view them as being animal fossils is strictly a matter of interpretation. We need to be cautious with the evidence, but where the evidence is clear, (and to me much of it is clear) we need to revise our models instead of working in the opposite direction and invalidating the physical evidence to preserve a particular model. A new Precambrian metazoan fossil find in the Grand Canyon might serve to clarify or resolve the controversy surrounding a particular model, and again, it might not. I see nothing constructive with arguments as to whether or not these fossils exist, but rather view it as a matter

of models. Dr Austin should consider revising his Grand Canyon book to reflect where these 'controversial' plant and animal fossils have been reported and carefully consider other possibilities. This is fertile ground for future studies by young-earth creationists, and perhaps someone will thoroughly investigate this matter.

By revising his Grand Canyon book to be consistent with his ICC article and letter, Dr Austin can eliminate any controversy surrounding where he views the pre-Flood/Flood boundary within the Grand Canyon. However, I continue to advocate a lower boundary because many evidences of plant and animal fossils much lower in the section already exist. These fossils appear to violate the 'paleontological discontinuity' used by Dr Austin to place the boundary at

the base of the Sixtymile Formation. Perhaps an explanation should be considered for Dr Austin's belief that the Kingston Peak strata, which are 323 kilometers from the Sixtymile Formation, are chronostratigraphically equivalent. How are the strata between these two formations to be interpreted?

I am hopeful that Dr Austin and the other geoscientists, who believe that young-earth creationists can use the global stratigraphic column in a piecemeal fashion, will soon present a case study in support of their approach. This approach must be able to reflect the physical evidence instead of existing solely as a model. I have been working<sup>20</sup> along with others<sup>21</sup> to present specific areas that logically defy a credible interpretation using the global uniformitarian stratigraphic column. Because of the apparent scientific impediments involved in an interpretation from that direction, I have advocated a different approach.<sup>22</sup> Even with our differences of interpretation, creation science will grow as we all work together to resolve Earth history within the biblical framework. These are exciting times to be working as young-earth creation scientists.

### Acknowledgments

I thank Dr Emmett Williams, Dr John Reed, Mr Jack Cowart, and Mr Jerry Akridge for their review and helpful comments in the preparation of this letter. I also appreciate the kind support provided by Dr Tas Walker in getting my response in suitable form for publication. However, any mistakes that remain are my own. I thank my wife Susan for giving of her time in allowing me to address Dr Austin's letter. Glory to God in the highest! Proverbs 3:5–6.

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