The geological column is a general Flood order with many exceptions

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Whether the geological column represents an exact sequence of Flood events or not can be resolved by applying a geological model that is based on biblical presuppositions. Walker's model is ideally suited to analyzing the rock record because it is based on the true mechanism for the deposition of the strata and incorporates logical stages and phases that can be identified in the field. Comparing Walker's model to the geological column reveals several surprises. First, sedimentary rocks labeled Precambrian (if from the Flood), Paleozoic, and Mesozoic strata are early Flood. Second, Cenozoic strata can be early Flood, late Flood, or post-Flood depending upon the location and the particular fossil used to define the Cenozoic. Third, Flood deposition is highly nonlinear with a large percentage of strata deposited early in the Flood. This means the geological column is a general order of Flood deposition but highly nonlinear and with many exceptions.

There is a degree of controversy in creationist circles about the relationship between the evolutionary geological column and Flood geology. Some creationists hold that the geological column represents the exact sequence of deposition during the Flood as well as the post-Flood period. The only change needed is to shorten the uniformitarian timescale. Other creationists want to throw out the entire geological column. Still others believe that it is a general sequence with many exceptions.

In a previous paper,[1] I addressed the question of whether the geological column was indeed a global sequence. I showed that local stratigraphic sections seem to line up with the general order of the geological column at hundreds of locations around the world. But there are many problems with the details. One obvious problem is that the geological column is a *vertical* or stratigraphic representation that has been abstracted from rock units that are mainly found *laterally adjacent* to each other in the field. In addition, new fossil discoveries continue to expand the fossil stratigraphic ranges on which global correlations are based. These problems are compounded by the methods that geologists have used to try to incorporate the fossil evidence into their uniformitarian paradigm. These methods include giving different names to the same or a similar organism when found in 'different-aged' strata. In addition, there are various techniques for handling fossils that are found in anomalous locations and fossils that are found out of order.

These problems mean that creationist geologists should be cautious about accepting the geological column as it stands and relating it directly to the Flood. I advocate viewing the rocks and fossils through 'Flood glasses'—through the *actual mechanism* that produced the rocks and fossils, the Genesis Flood. Why look at the rocks and fossils through a false philosophical system based on the hypotheses of uniformitarianism, an old earth, evolution, and naturalism? By using a geological Flood model we can independently evaluate how valid the geological column is to Flood geology. Since I believe that the geological column is a general sequence of the Flood, I expect to find some overlap between a Flood classification and the geological column.

I advocate the model or classification of Walker,[2] which is similar to the model derived by Whitcomb and Morris in *The Genesis Flood*.[3] Although Froede produced a similar model,[4] I prefer Walker's model mainly because it is more developed with defining criteria for his stages and phases. Klevberg modified Walker's timescale for the stages to correspond with the Flood peaking on Day 150,[5] which seems to be the Scriptural position and also corresponds to the 21 weeks of prevailing and the 31 weeks of assuaging in the Whitcomb-Morris model. By working in this way I have found that the geological column is a general Flood sequence but with many exceptions.

Does the geological column represent the Flood depositional sequence?

In examining fossils and fossil successions with regard to the Flood, we must distinguish between animals that survived the Flood and those that did not. This distinction will help determine whether a fossil was buried by the Flood or is post-Flood. The animals that God brought onboard the Ark were a male and female of each unclean kind and seven of each clean kind. These animals had to be terrestrial and breath air (Genesis 7:21, 22).

The Genesis *kind* cannot be equated with modern species in many cases.[6] If the kind is at the genus level, the ark needed only 16,000 animals,[7] primarily mammals, birds, and reptiles. Many other organisms could have survived the Flood outside the Ark. Therefore, all mammals, reptiles (including dinosaurs), and likely all birds had to be dead by the time the water started retreating

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off the land around Day 150 (Genesis 7:22–8:3). So, evidence of a live mammal or reptile would indicate either an early Flood or post-Flood time. Marine organisms, such as foraminifers, could potentially represent early Flood, late Flood, or post Flood.

1) Walker's model

To bypass all the confusion with the geological column, I advocate Walker's model of the Flood (figure 1).[2] Viewing the strata through flawed uniformitarian concepts does not seem logical. So, we need to put on our 'Flood glasses' when looking at the rocks and fossils. Walker's model was derived directly from the Bible, seperate from the geological column or any other philosophical presupposition. It also provides a template for examining how the geological column relates to the Flood.

When Walker's model is applied it is at odds with even the relative dating of the column. For example, Walker classified the basement rocks around the Brisbane area as being from the Eruptive Phase of the Inundatory Stage of the Flood—its very beginning, even though these rocks are generally dated as middle Paleozoic in the geological column.[8] Walker then assigned the shale and sandstone deposits of the Great Artesian Basin to the upper Zenithic Phase of the Inundatory Stage (just before the Floodwater peaked).[9] The strata of this basin cover an area of 1,800,000 km^2 and are over 2,000 m in thickness. They are dated as mostly Jurassic and Cretaceous in the geological column, but represent the first half of the Flood. Thus, in eastern Australia, the Paleozoic and Mesozoic strata are *early* Flood.

2) Precambrian to Mesozoic strata in the Rocky Mountains

In the Rocky Mountain region of the United States, Precambrian sedimentary rocks commonly outcrop in mountain ranges and their thickness indicates that they

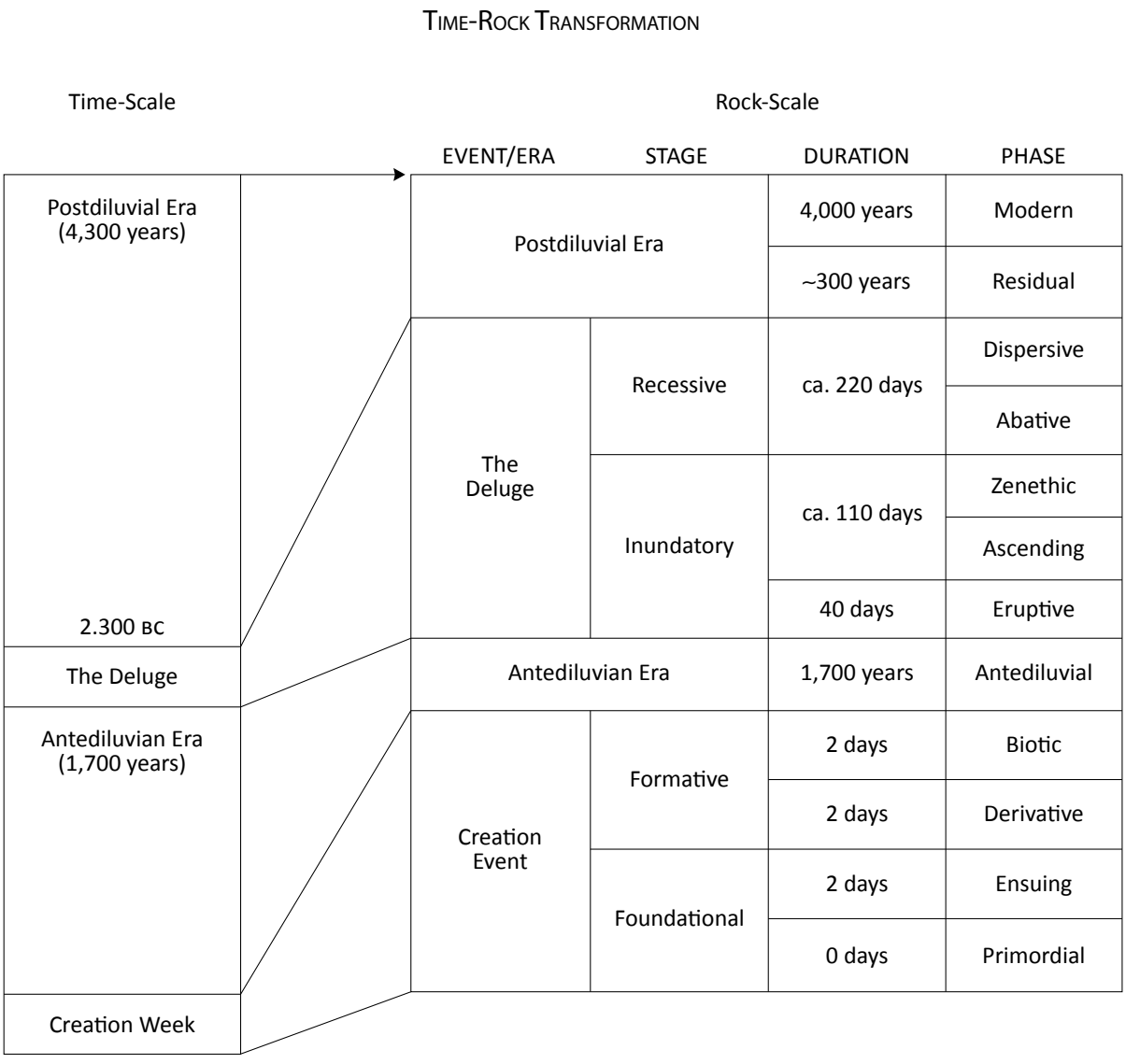

Figure 1. Walker's biblical geological model, modified by Klevberg.

Figure 2. The conformable contact between the Precambrian Belt Supergroup, Lahood conglomerate (bottom right), with the conglomeritic Cambrian Flathead Sandstone (upper left) in the steeping dipping strata (generally about 60 degrees to the northeast) near the top of the Bridger Mountains, northeast of Bozeman, Montana (view southeast). There is one billion years of missing uniformitarian time at the contact.

represent deposits from large, isolated basins that have uplifted. Examples include the Belt Supergroup that forms the northern Rockies of western Montana and northern and central Idaho, the Uinta Mountains in northeast Utah, and the Precambrian sedimentary rocks in the eastern Grand Canyon. Whether these Precambrian sedimentary rocks are pre-Flood or Flood has not yet been resolved.

Paleozoic and Mesozoic strata can form large sheets over extensive areas such as the Great Plains, but they are generally broken and tilted in the mountains in the western United States, except for the Colorado Plateau. It is possible that the Paleozoic and Mesozoic strata in the Rocky Mountains were once continuous over the region like on the Colorado Plateau.

Tracks are one of Walker's defining criteria for the Inundatory Stage.[10] The Mesozoic of the Rocky Mountains and High Plains has millions of dinosaur tracks, as well as thousands of eggs, on flat bedding planes. It seems obvious that these tracks and eggs are from the Flood, and since they represent live dinosaurs, the Mesozoic in this area would be from the Inundatory Stage, early in the Flood.[11] So, these Paleozoic and Mesozoic strata were deposited early in the Flood, similar to eastern Australia. Although the general sequence of Paleozoic to Mesozoic seems valid, the periods within those eras may not represent an exact sequence, since the Devonian in one place may be deposited before the Cambrian in another.

3) The 'Cenozoic' can be Early Flood, Late Flood or Post Flood

The 'Cenozoic', on the other hand, is the most problematic.[12] It generally fills basins in the Rocky Mountains and outcrops as sheets on the High Plains. There are indications of erosion of many hundreds and even a few thousand meters of rock in these areas.[5,13,14] The high areas of the western United States are a scoured surface. That is why there is so much bedrock close to the surface in those areas. There is clear evidence for sheet erosion followed by channelized erosion, which correspond to Walker's two phases of the Recessional Stage of the Flood. This erosion must have occurred mainly in the Recessional Stage of the Flood between Days 150 and 371. So, much of the Cenozoic strata not eroded in the Rocky Mountain basins and High Plains was likely deposited during the Inundatory Stage of the Flood. Some of this strata is dated late Cenozoic in the geological column,[15] implying that 'late Cenozoic' strata can be early Flood!

There also are mammal tracks in some of the Cenozoic strata in these basins that reinforce the deduction that most of the remaining Cenozoic strata were deposited in the Inundatory Stage.[16,17] Based on Walker's model, tracks of mammals on Flood strata must have occurred in the Inundatory Stage. This evidence indicates that practically all strata, clear up to the Pliocene, in the higher areas of the western United States were deposited in the first half of the Flood during the Inundatory Stage.

Sediments eroded from the high areas of the western United States were redeposited far to the west and east. Eroded debris would have been deposited in deeper areas where currents would decrease. Strong currents eroding the uplifting western United States would have pulverized much of the rock, but the most resistant rocks would have been carried far from their source and deposited as a lag or as basin fill. The most resistant rock of significant volume is quartzite. Quartzite cobbles and boulders, well rounded by water, are found over 1,000 km to the east and 700 km to the west of their Rocky Mountain sources.[18–21] These quartzites are practically all dated as Cenozoic by mainstream geologists, based on included mammal fossils, especially in interbeds, but they would be part of the Recessional or late Stage of the Flood.

Furthermore, the eroded strata would have been redeposited on the continental shelf off the western US—a Recessional Stage feature of the Flood.[2,22] The eroded material probably would also have been deposited in basins near the coast, such as the lower Mississippi River Valley. Much of the Cenozoic strata of Washington, Oregon, and California could be Recessional Stage sedimentation. Mammals, which are found in Cenozoic high western U.S. basins, should be mostly pulverized by the powerful recessional stage currents and turbulence, which Klevberg and Oard estimated would have flowed over 30 m/sec.[23] The strata in these areas are generally dated as "Cenozoic" by microorganisms and terrestrial mammals. These Cenozoic strata would be a late Flood or Recessional Stage feature.

Massive Recessional Stage erosion may also explain sparse human fossils in sedimentary rocks. If human remains were mostly deposited in the upper sedimentary layers by Day 150, these layers would have been heavily eroded from currently high areas of Earth, pulverized, and deposited over lower areas towards the continual edges including the shelves.[24]

There is also the likelihood that some 'Cenozoic' sediment on the bottom of the ocean, mostly dated by microfossils, is post-Flood, although microfossils could have been laid down early in the Flood, late in the Flood, or afterwards. Microorganisms would have proliferated in the oceans during the Recessional Stage of the Flood because of the huge amount of nutrients flowing into the ocean and mixing at all depths. High microorganism productivity would be expected to continue after the Flood due to the warm ocean and rapid overturning during the Ice Age that would help keep nutrient levels abundant in the upper layers of the ocean.[25] The Flood probably deposited the deeper sediments while the upper sediments are likely post-Flood, although ocean bottom reworking would result in exceptions.[26,27] Some Paleocene ocean bottom sediments may be post-Flood, while some Pliocene sediments could be from the Flood, based on uncertainties in evolutionary microorganism classification.

Another indicator of post-Flood Cenozoic sediments on the bottom of the ocean is ice-rafted material. Ice rafting into the ocean would be expected in the middle to late Ice Age because of the need for sufficient time for glaciers and ice sheets to build and spread to the oceans, which were warm at the beginning of the Ice Age.[25,28] Ice rafted debris (if the interpretation is correct) is found in sediment dated by microfossils as Oligocene and Miocene.[29] Some of the sediment from the early Ice Age could be dated as Paleocene or Eocene by uniformitarians. If the oxygen isotope/temperature relation holds generally true for ocean bottom microorganisms, much of the Cenozoic shows a cooling trend, as would be expected in the oceans during the post-Flood Ice Age.[30]

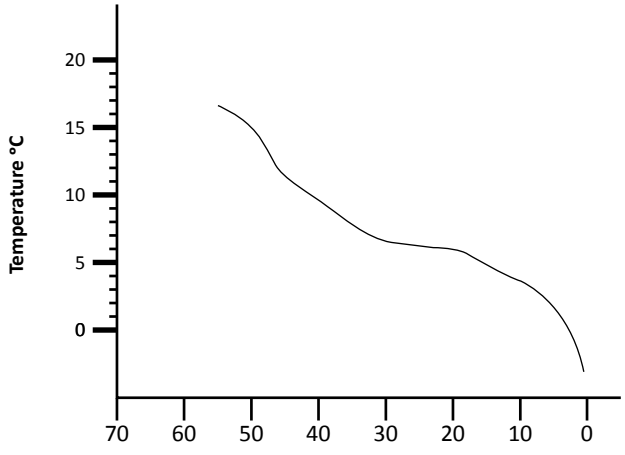

Figure 3. Tertiary cooling curve for the bottom of the ocean off Antarctica based on oxygen isotopes of benthic foraminifera from Deep Sea Drilling Project sites 277, 279 and 281.

So, in the Flood model 'Cenozoic' can be early Flood, late Flood or post-Flood, depending upon the location. This comparison is based on logical deductions from Walker's biblical geological model and the post-Flood Ice Age. The 'Cenozoic', as a worldwide part of the geological column, can refer to almost any specific time in the Flood.

4) Nonlinear Flood deposition

Many creationists have assumed a linear relationship between the geological column and the Flood and post-Flood period with the 'Cenozoic being' late Flood or post-Flood.[31] However, based on Walker's model and reasonable defining criteria for his stages and phases, Flood deposition appears highly nonlinear with respect to the geological column. Practically all the current strata in the high western United States (and probably some of that eroded) were deposited *early* in the Flood. It is highly unlikely that 'Cenozoic' strata in the high western United States are post-Flood or even late Flood.[13,15,32,33] Thus, a vast amount of deposition occurred in the western United States early in the Flood. This has serious implications for any Flood model. Most creationist believe that the most violent part of the Flood was at the beginning with the start of the catastrophic mechanism, while the latter half of the Flood was more subdued and mainly an erosional event caused by differential up or down motion of the crust and upper mantle.[12,14] This generally goes along with the geological energy curve of Reed *et al*.[34]

Conclusion

When we consider the question of how well the geological column represents a Flood order of deposition, we need to decide whether the column is an exact sequence of the chronology of the Flood or if it should be disposed of entirely. At the outset, we should be looking at the rocks and fossils by the *mechanism* that deposited them. In other words, we should begin with a system that treats the biblical Flood as the real event and not with a system that was set up assuming the Flood never occurred and that Earth is billions of years old.

That is why I recommend Walker's classification or model, which is based on reasonable deductions from Scripture. Walker uses classification criteria for his phases and stages of the Flood. When we apply Walker's model to the field evidence, we find that much of the Precambrian, Paleozoic, and Mesozoic strata were laid down in the Inundatory Stage or the first 150 days of the Flood. The Cenozoic strata can be early Flood, late Flood, or post-Flood depending upon what particular index fossil was used to classify the strata and the location. In other words, Flood sedimentation is highly nonlinear with most sediment deposited in the Inundatory Stage, as the Floodwater was rising on the earth. The Recessive Stage represents mainly continental erosion by receding Floodwater and deposition on the continental margins.

This means that the geological column sits in the middle position between the two extremes of either an absolute global sequence or total irrelevance. The geological column is a general order of Flood deposition but highly nonlinear and with many exceptions.

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Abbreviation: *CRSQ = Creation Research Society Quarterly*

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