4. PARACONFORMITIES

LOCATION

Paraconformities (and closely related similar features called disconformities) are found in many places in the sedimentary layers of the world. The specific location of the various paraconformities discussed below is provided with the legends of the illustrations.

DESCRIPTION

Paraconformities are widespread gaps in the geologic layers where there is essentially no irregular erosion of the surface at the gaps, hence the sedimentary layers below and above the gaps are parallel. As you consider paraconformities keep in mind two characteristics: a **gap** and **parallel layers**. Dead Horse Point in Utah gives a good introduction. Good paraconformities are also mentioned in the Grand Canyon (Section 2) of this guide. The red arrows in Figure 1 point at two gaps in the geologic layers of some 10 and 20 million years (Ma) each, and the layers just below and above the gaps are parallel, hence here you have two paraconformities.

FIGURE 1. Valley of the Colorado River as seen from Dead Horse Point, Utah. Top arrow points to an assumed 10-12 million year (Ma) depositional (time) gap. Lower arrow points to a 15-20 million year gap. Note the striking contrast between the flat depositional patterns of the layers at these 10 and 20 million year hiatuses and the deep irregular erosion of the canyon by the Colorado River.

FIGURE 2. View to the south from E of the town of Hurricane, Utah. The arrow points to the paraconformity between the Shinarump that forms the thin caprock and the Moenkopi below. Between the two there is an assumed gap (Middle Triassic missing) representing 10-12 million years (Ma) of geologic time. The lack of erosion during such extended time challenges the validity of the geological time scale.

These paraconformities can be very widespread. The arrow in Figure 2 points to the same paraconformity designated by the upper arrow in Figure 1, yet these localities are 200 miles (320 km) from each other. The 10 million year gap lies between the Shinarump Conglomerate that is found at the base of the Chinle Formation, and the Moenkopi Formation below. To find a description of these units look towards the back of this guide in the Stratigraphic Section. There you will find them in the Triassic portion of the Mesozoic.

Keep in mind that we are dealing here with **paraconformities** where parts of the geologic column are missing and the layers above and below the gap are parallel. These localities are hard to detect because (1) the layers representing the gap are missing, so there is nothing there; and (2) the layers above and below the gaps are parallel as is the case for many sedimentary deposits. The way paraconformities are identified is by noting that a part of the standard geologic column is missing between the layers below and above the gaps. In other words where we find these gaps, there are parts of the geologic column in other parts of the world that represent the missing layers. Identification of the layers is based mainly on their fossil content, however the kind of rocks associated with them is also important. Rarely, radiometric dating is used.

The sequence outlined below for Dead Horse Point is assumed to have taken some 60 million years. See the "Geologic Column" in the References Section for details. The listing, in the order they appear, given below illustrates the details of the gaps at Dead Horse Point.

MESOZOIC

Jurassic

Navajo Sandstone

Triassic

Kayenta Formation
Wingate-Moenave Sandstone
Chinle Group
Shinarump Conglomerate of Chinle

(Paraconformity of about 10-12 million years, middle Triassic missing)

Moenkopi Formation

PALEOZOIC

Permian

(Paraconformity of about 15-20 million years, upper part of Permian missing)

Kaibab near Hurricane, Utah and Cutler Group (top is White Rim Sandstone) at Dead Horse Point

The lower gap in Figure 1 is also present at the locality of Figure 2, however it is difficult to see there, being visible only in parts of the Virgin River Gorge.

A CREATION-FLOOD PERSPECTIVE

Paraconformities present a challenge to the long geologic ages that are generally accepted for the sedimentary layers of the earth because we don't see the expected effects that time should produce at these gaps. Those effects include weathering and especially erosion (Figures 3 and 7). The contrast between the amount and irregularities of erosion by the Colorado River at Dead Horse Point and the flatness of the sedimentary layers in the region is instructive. Between some of these layers, significant parts of the geologic column are missing. That is supposed to represent lots of time. However, if lots of time occurred between the deposition of some of the layers, one would expect evidence of this in the form of lots of irregular erosion, as the huge canyon cut by the Colorado River ably demonstrates. Yet where there are gaps (paraconformities), the layers we see lie flat (on top of each other) indicating that the long ages suggested for the significant missing parts of the geologic column, did not occur.

It also needs to be kept in mind that the present average rate of erosion of the continents of the earth is way too fast to fit into the standard geologic time scale (See Roth 1998 p 263-266 for references). Our present continents are being eroded at the rate of 61 mm per thousand years. This may seem slow, but according to that rate, including correcting for the present accelerating effects of agriculture, our present continents should have been eroded to sea level over 100 times during their proposed geologic ages of billions of years. The average amount of erosion expected at the flat paraconformities is very significant. At a 10 million year gap, one would expect about 1000 feet (300 m) of erosion, and at a 100 million year gap one would expect 10,000 feet (3 km) of erosion. Occasionally one sees a little erosion, but the contacts are usually nearly flat, indicating that the long geologic ages never took place. The lack of irregular erosion that would be expected at the surface of

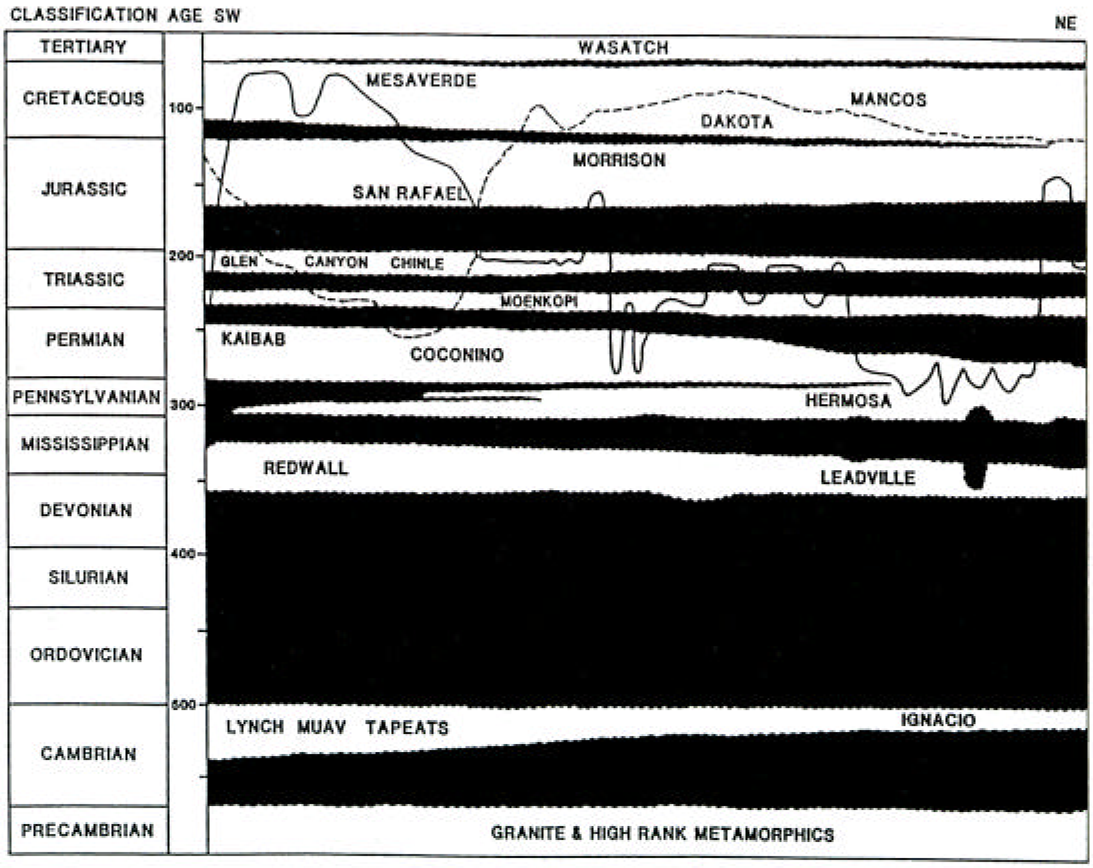

FIGURE 3. Representation of the sedimentary layers in eastern Utah, based on the standard geologic timescale (instead of thickness, although the two are related). The clear (white) areas represent sedimentary rock layers, while the black areas represent the time for the main gaps (hiatuses, paraconformities) between layers where parts of the geologic column are missing in this region. The layers (white areas) actually lie directly on top of each other with flat contact planes. The black areas stand for the postulated time between the sedimentary layers. The irregular dashed and continuous lines through the upper layers represent two examples of the present ground surface in the region as carved by erosion. The dashed line (---) represents one of the flattest surfaces of the region as found along Interstate 70, while the smooth line ( ) is in the hills farther south. This provides evidence for a flood model wherein the layers (white areas) were deposited rapidly in sequence without much time for erosion between. Erosion toward the end of the flood and afterward produced the irregular topography that exists today (dashed and continuous lines). If millions of years had elapsed between the layers (black areas), as postulated by the geologic timescale, we would expect patterns of erosion somewhat similar to the present surface pattern (dashed and continuous lines) between the white layers. The main divisions of the geologic column are given in the left column, followed by their putative age in millions of years. Names in the sedimentary units represent only the major formation or groups. Vertical exaggeration is about 14x. The horizontal distance represents about 133 kilometers while the total thickness of the layers (white part) is about 3½ kilometers. (Based on references for Figure 3 given in References below.)

FIGURE 4. Location: View to the N, from near Whipple Point in Petrified Forest National Park. The red, gray and white layers below the tip of the red arrow are the Trassic Chinlee Formation or Group. The gray layer just above is the Pliocene Bidahochi Formation. The line separating the two, right at the top of the red layer, represents a major paraconformity of some 190 million years (Ma).

FIGIRE 5. Location: At the intersection of Interstate 40 and the Continental Divide in New Mexico. The thin tan layer just above the tip of the red arrow is the Cretaceous Dakota Sandstone or Dakota Formation. Just below it is the Jurassic Morrison Formation. A significant part of the Lower Cretaceous is missing here representing a gap of some 40-50 million years (Ma), yet the Dakota lies very flat on top of the Morrison. This relatively flat contact can be followed for 150 miles (240 km) along Interstate 40.

FIGURE 6. Location: View E from U.S. Highway 191, N of Steinaker Reservoir and Vernal, Utah. The Cretaceous Cedar Mountain Formation lies just above the tip of the red arrow; below the tip is the Jurassic Mmorrison Formation. Between the two is a paraconformity of some 20 million years (Ma). The lower part of the Lower Cretaceous is missing over a wide area. The Dakota Formation forms the light tan scarp some distance above the red arrow.

the lower layer at these gaps over time challenges the millions of years that are proposed for the standard geologic time scale.

The difficulty with the extended time proposed for these gaps is that one cannot have deposition, nor can one see much erosion. With deposition, there is no gap, because sedimentation continues, and fossils would be preserved. With erosion, one would expect abundant channeling and the formation of deep gullies, canyons and valleys; yet, the contacts are usually flat or nearly flat. Over the long periods of time envisioned for these processes, erosion would erode the underlying layers and all the rest of the continents. One has difficulty envisioning little or nothing at all happening for millions of years over such widespread areas on the surface of our planet.

This is not an isolated situation (Roth. 1988; 1998, pp. 222-229; 2003). Figure 3 illustrates the missing layers towards the middle of the Colorado Plateau and contrasts the flat sedimentary layers with the present topography illustrated by the dashed and dotted lines superimposed on the diagram. Figures 4-6 illustrate other paraconformities on the Colorado Plateau. Figure 7 contrasts what would be expected from slow and rapid deposition. What we see in the rocks favors rapid deposition as expected for the Biblical model of origins.

As one travels over the Colorado plateau, one is struck with the irregular topography of the present surface of the land, as contrasted to the flatness of the sedimentary layers. This is well illustrated in Figure 3 (study the legend), and most anywhere you look on the Colorado Plateau. When you realize that according to the standard geologic time scale there are substantial parts of the geologic column, representing lots of time, that are missing (paraconformities) between some of the layers, one has to wonder if the proposed millions of years ever occurred; because what we see is more like Figure 7 A, E and not like Figure 7 C, D (study the legend) as we would expect over the millions of years postulated. What we see speaks of a very different kind of world with rapid, widespread deposition and little time between the depositions of the layers. This is just what we would expect from the Genesis Flood.

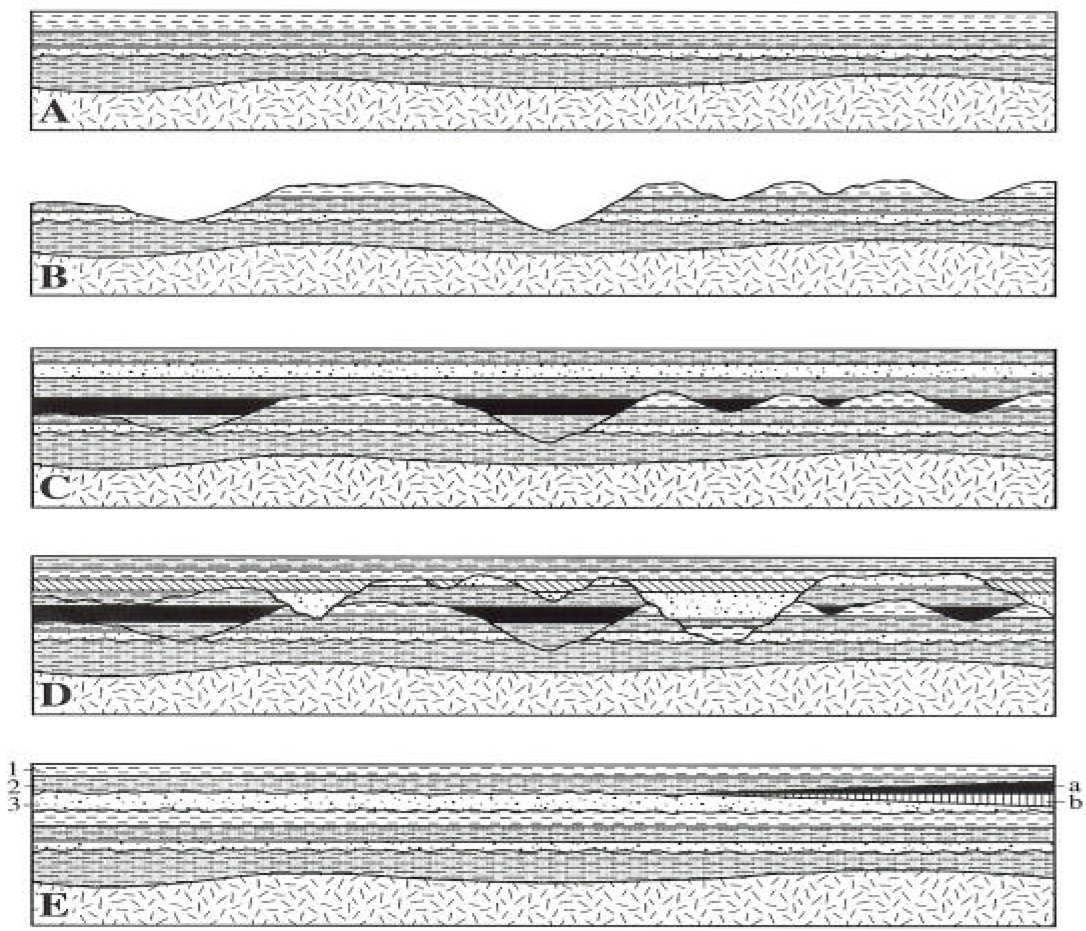

Figure 7. Deposition-erosion patterns. (A) Pattern of continuous deposition. Sediments are usually laid down in a flat, horizontal pattern as shown. (B) Erosion. (C) Resumption of sedimentation. The old erosion surface is still visible. This pattern should be common within the earth's sedimentary layers whenever significant parts of the geologic column are missing. (D) A second cycle of erosion and deposition further complicates the pattern. (E) The more normal pattern seen. In E we would expect significant erosion between layers 2 and 3 (left side), if extensive time was involved in depositing layers a and b wedged in on the right.

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Figure 3 based on: Bennison, A. P. 1990. Geological highway map of the southern Rocky Mountain region: Utah, Colorado, Arizona, New Mexico. Rev. ed. U.S. Geological Highway Map No. 2. Tulsa, Okla.: American Association of Petroleum Geologists; Billingsley, G. H. and W. J. Breed. 1980. Geologic cross section from Cedar Breaks National Monument through Bryce Canyon National Park to Escalante, Capitol Reef National Park, and Canyonlands National Park, Utah. Torrey, Utah: Capitol Reef Natural History Assn; Molenaar, C. M. 1975. Correlation chart. In: Fassett, J. E., editor. Canyonlands country: A guidebook of the Four Corners Geological Society eighth field conference, p. 4.