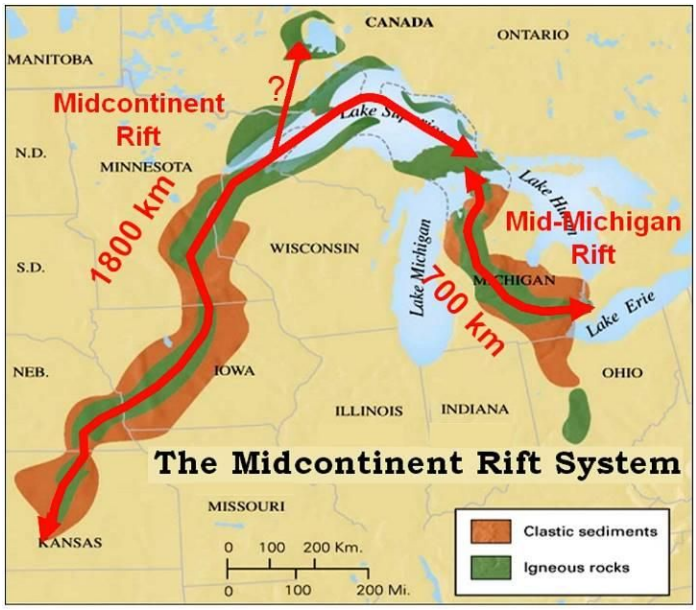
Creation Vacation- Minnesota

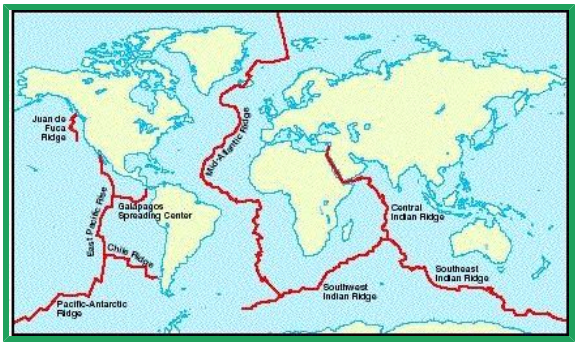
North Shore

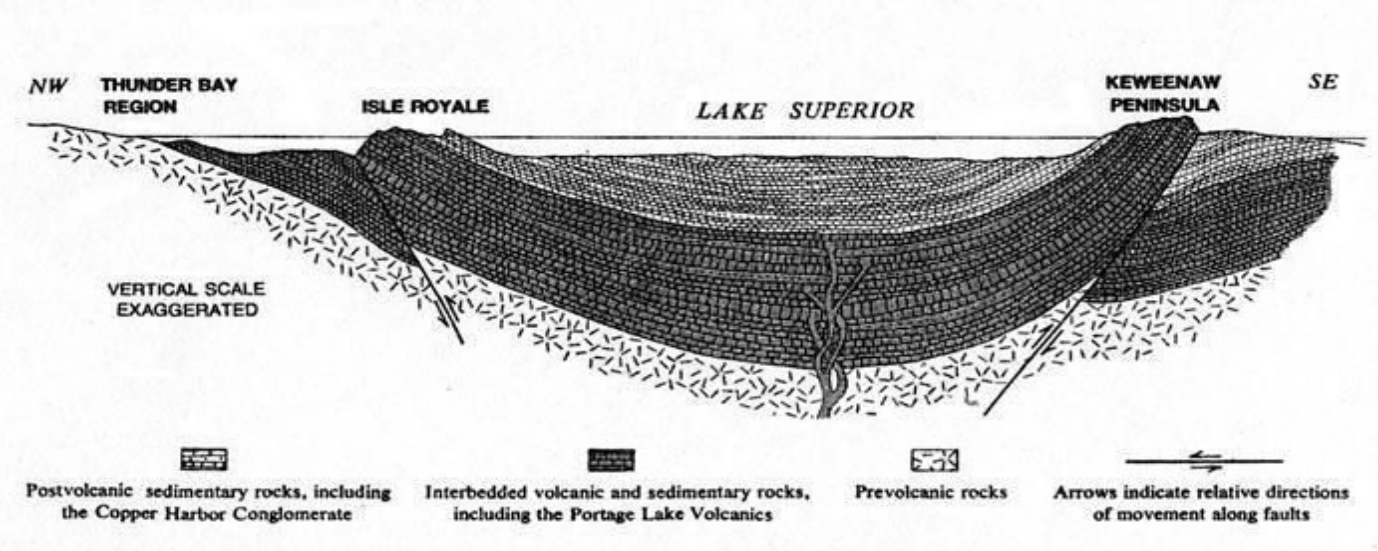
North Shore: Lake Superior is centered over the Midcontinent Rift System; this is often said to be where the fountains of the deep erupted at the beginning of the Flood of Noah's day. The Midcontinent Rift system forms an arch from Detroit to Lake Superior to Kansas, covering about 1,300 miles. As the continents were splitting apart, the plates moved away from each other. Lava flooded out onto the land. The lava flows piled up. With the emptying of the magma beneath the crust and the piling up of lava, the crust sagged forming the Lake Superior Basin. Eventually the flood basalts along the rift were up to 200 miles wide with surveys having mapped the volcanic rock up to 16 miles thick! These lava flows can be seen along the North Shore of Lake Superior.

(Did the onset of Noah's Flood, with the fountains of the deep bursting forth, happen in the Lake Superior basin? Note: In John Reed's monograph *The North American Midcontinent Rift System* on page 104 it states, "Because the MRS lava was extruded onto basement rock, and because the MRS does not cross cut thick sedimentary strata…the MRS is <u>best seen as an event marking the initiation of the Genesis Flood."</u>) The fountains of the deep did not continue to erupt because, the Midcontinent Rift failed as plate tectonics shifted. The Midcontinent Rift was not a complete rifting event, it failed. The "fountains of the deep" then started to erupt in the mid oceanic rifts which we observe today in the rifts that run like a baseball seam around the world.



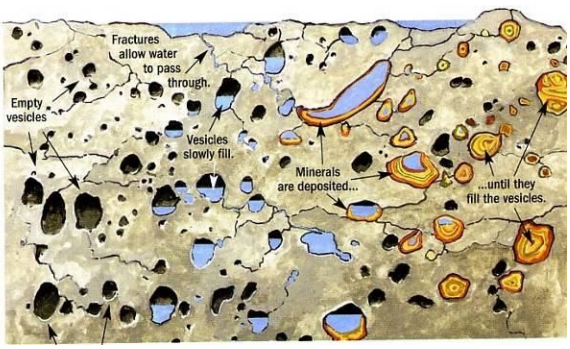
Mid oceanic ridge-red

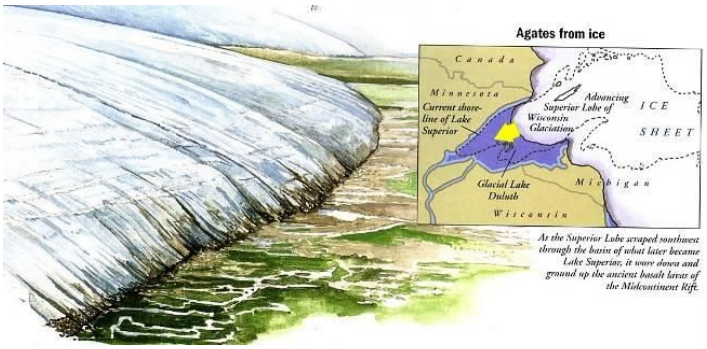




Lake Superior basin

As the lava cooled along the Midcontinent Rift system, the steam escaped from the rock. Holes in the rock were formed by steam bubbles that did not escape; it's like removing the cap from a bottle of soda and the fizz rises to the top. Lava cooled quickly and the gas bubbles in the lava did not escape quickly enough. We call them "fossilized gas bubbles". Later hot mineral rich waters peculated through these empty holes depositing minerals in layers thus creating agates like the famous Lake Superior agate. (Other mineral deposits included - copper, nickel, and smaller amounts of gold, silver, platinum, and titanium. The color variations in agates are a result of mineral impurities in the water. Iron causes much of the red and orange color that we see in the Lake Superior Agate. As the Gooseberry Falls State Park pamphlet states, "The lava flows are the 'birthplaces' of Lake Superior agates". After Noah's Flood came the Ice Age with significant snowfalls staying all year long and eventually turning into ice. One of the ice sheets, the Superior Lobe gouged the Lake Superior basin deeply. As the broken rock pushed along under the Superior Lobe, the hardened lava tops were crushed and smashed releasing the harder Lake Superior agates and dispersing them even down to Iowa.





Diagrams from *Rock Picker's Guide to Lake Superior's North Shore* by Mark Sparky Stensaas (great secular book).

Noah's Flood caused the one and only Ice Age.
Have you considered
……..what causes an ice age. An ice age is when the winter's snows do not melt each year but are continually added to. It takes very special conditions to make an ice age. So, what are the conditions needed for an ice age to develop? Lots of warm oceans and cooler continents. What event in history would have lots and lots of warm water and continents that were cooler? The Flood of Noah's time. During the Flood, the fountains of the deep burst opened which brought great quantities of hot water to the oceans. Add to that, volcanoes erupting, of which, 90% of the eruption's content is water. Again, a significant volume of very hot water was being added to the oceans. These volcanoes also spewed great quantities of volcanic dust into the air. These dust particles would reflect the sunlight back into space making the continents cooler. These warmer oceans would cause lots of evaporation and winds would carry the moisture onto the cold continents. The cold continents would cause the moist air to condense and fall as snow. Snow on the ground would not melt during the summer. Each year the snow would build up. Just after the Flood, ice sheets would have formed quickly around the world in the higher latitudes such as Greenland and North America. **The Twin Cities probably had a thousand feet of ice, with summer temperatures averaging 30 degrees Fahrenheit.** One inch of ice corresponds to an average of 10 inches of powder snow. Minneapolis would need 4,000 inches of powder snow each year.
As the earth settled down and the volcanoes stopped erupting, the volcanic dust would have dissipated out of the air. Eventually the sun would shine on those ice sheets and the snow would melt. Creation scientists have calculated that the one and only Ice Age lasted for 700 years, 500 years to build up and 200 years to melt down. What causes an ice age? Very special conditions. An ice age needs lots and lots of warm water and cooler continents. What event in history would have these two ingredients? The Flood of Noah's time.

Frozen in Time: The Woolly Mammoth, the Ice Age and the Bible, Michael Oard, 2004.

As you travel along the North Shore you make want to pick up and keep rocks and agates. A great little book to let you know which beaches you can pick and save rocks at is the *Rock Picker's Guide to Lake Superior's North Shore* by Mark Sparky Stensaas. i.e Stoney point between Duluth and Two Harbors, Burlington Bay in Two Harbors, Flood Bay between milepost 27 and 28, Gooseberry Falls State Park, Split Rock River milepost 43 and 44 (I like), Beaver River-⅓ - mile past milepost 51, Tettegouche State Park milepost 58 and 59, Good Harbor Bay milepost 104 and 105 (I like), Paradise Beach milepost 123 (I like). Remember at State parks you cannot keep the rocks. Leave them for others to enjoy.

Traveling the North Shore begins with Jay Cooke State Park.
If you only have a weekend, check out this website:
North Shore Waterfall Tour – Weekend Itinerary
http://www.dnr.state.mn.us/itineraries/north_shore_waterfall_itinerary.html
If you have more than a weekend check out the rest of the state parks along the North Shore. Be sure to click on the snapshot tour so you will see what the waterfalls look like at each park.
http://www.dnr.state.mn.us/state_parks/map.html
Also if you need to have a map and summary of the park click on map under each state park i.e. go to
http://www.dnr.state.mn.us/state_parks/gooseberry_falls/index.html now click on map.

Jay Cooke State Park:
View tilted beds of slate near the swinging bridge. Slate is a metamorphic rock; formed in a process from mud to shale to slate. These rocks were compressed and hardened by heat and pressure.
Tilting is visible throughout the park. Also look for rain prints, mud cracks, and ripple marks within the rocks. The St. Louis River cuts through tilted beds. During the Flood of Noah's time sedimentary layers were laid down horizontally, like a stack of pancakes. At the end of the Flood at Jay Cooke State Park, these beds became tilted.

Duluth:
Drive along the old beach terrace of Glacial Lake Duluth (the name of the lake before being called Lake Superior), the Skyline Parkway some 600 feet above present day Lake Superior. During the one and only Ice Age, just immediately after the Flood, Lake Superior was much higher. The ice lobe blocked the melt water from leaving to the north therefore the lake rose. In fact, as you drive along the Skyline Parkway you are really driving on the old beach terrace of Glacial Lake Duluth (this is the name geologists give for Lake Superior during the Ice Age). Stop at Enger Tower and climb up and visualize the depth and vastness of Glacial Lake Duluth.

The North Shore has nine state parks.
At the start of the Flood of Noah's day the "fountains of the deep" opened. Also, lava flowed from the Midcontinent rift onto the land. Lava flow after lava flow poured forth. This hardened. Hardened lava is very resistant to erosion so along the North Shore this type of rock produced wonderfully beautiful waterfalls cascading down to Lake Superior.

- Along Hwy 61 before Gooseberry Falls are tunnels cut through massive ridges of volcanic rocks.

Two Harbors- Agate City 721 7th Ave.
Great store to see Lake Superior agates!

Gooseberry Falls State Park:
1. Have a picnic on a lava flow? Why go to Hawaii.
2. The three falls (Upper, Middle and Lower) are created by columnar jointing. Columnar jointing is caused by lava cooling quickly from the outside thus resulting in shrinkage cracks of hexagonal shapes, shrinkage cracks range from 3 to 12 sided. As you walk over the bedrock river bed or shore ledges by the picnic area look for the pentagonal or hexagonal (pattern 5 or 6 sided) of the columnar jointing. Especially check out the Middle Falls as seen from the Falls View Trail.
Columnar jointing creates the three waterfalls.

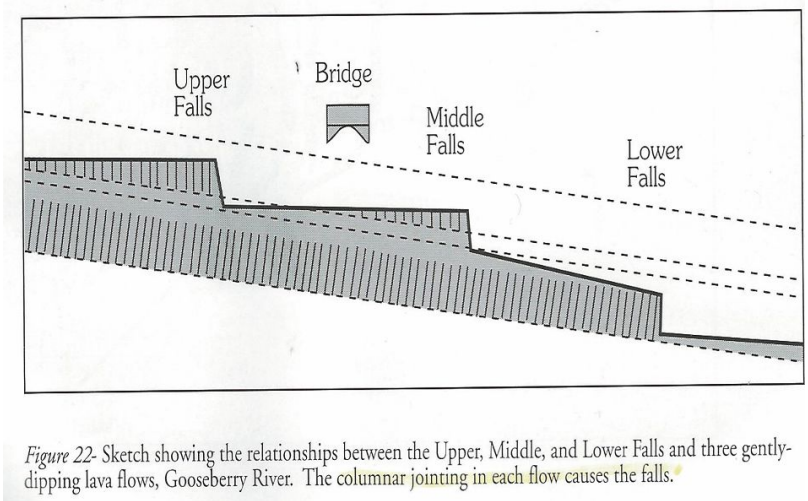


Figure 22- Sketch showing the relationships between the Upper, Middle, and Lower Falls and three gently-dipping lava flows, Gooseberry River. The columnar jointing in each flow causes the falls.

Iona's Beach scientific and natural area: 3 miles north of Gooseberry Falls State Park

Split Rock Lighthouse: is built atop cliffs of basalt lava flows from the Midcontinent Rift. A wayside rest near milepost 45 is a good spot to get a good view of the lighthouse.

Tettegouche State Park:

1. Off Highway 61 look for Palisades Head signage. Take this steep road to the parking area on top of Palisades Head. The view is fantastic! To the northeast is Shovel Point sticking out into the lake. Both Palisades Head (~300 feet above Lake Superior) and Shovel Point are made of the same lava flow. The lava cooled quickly from outside in and formed the columnar jointing. The sheer cliffs are a result of the columns breaking off.
2. Entrance to Tettegouche State park and rest area between milepost 58 and 59. Walk out to Shovel Point and see Palisade Head. Also this park has beautiful waterfalls (one of the falls is the highest in the state of MN) see http://www.dnr.state.mn.us/itineraries/north_shore_waterfall_itinerary.html

Sugarloaf Cove State Scientific and Natural Area near Schroeder between mileposts 73 and 74: beautifully preserved examples of lava flows, columnar joint, ropy tops, pipe amygdule (fossilized gas bubbles filled with minerals).

1. A one-mile hike that takes you to a tombolo, once an island now connected to the mainland. As you walk the beach, notice how wave action sorted the sizes of the rocks-sand, gravel, cobbles.
2. On the south side of Sugarloaf point are several lava flows. You can recognize the top of the lava flows by the filled in holes of minerals or agates. When the Midcontinent Rift began, lava flowed out, gases in the lava moved upward toward the surface, leaving holes that "fossilized". Then another flow occurred and gases flowed to the top of the flow and "fossilized". Then heated mineral rich waters percolated through the hardened lavas depositing the minerals and agates in the holes. At Sugarloaf point you can see the tops of the lava flows by the presents of light colored minerals called zeolites.

Temperance River State Park and wayside rest area:

1. Well preserved ropey or pahoehoe lava can be seen just below the foot bridge downstream from Highway 61, overlooking the big pool. Ropey lava is fast flowing lava that forms in a rope shape. Hawaiians call this pahoehoe lava.

2. As you hike along Cauldron Trial look for flow contacts and columnar joints. Notice the potholes or cauldrons which are well displayed in this gorge. Cauldrons are formed when cobbles and boulders get caught in an eddy and are swirled around and around in rushing waters and eat into the bedrock, forming pothole or cauldrons. Note: as you hike you may see what looks like white bird poop on the ground, in reality they are white minerals that filled the "fossilized" gas bubbles.

Cascade River State Park:

A series of 5 small waterfalls cutting through lava flows. Stunning scenery.

South of Grand Marais near milepost 104 just after Thompsonite Beach is a historical marker. Pull over and look to the non-lakeside. There are two distinct rock layers visible here, sedimentary layers with lava on top. Below the sedimentary layers are also lava flows.The sedimentary layers are sandwiched between lava flows. How would sedimentary layers get between the lava flows? Even at the beginning of the flood, rocks were ground up and deposited in sedimentary layers. Then lava from the Midcontinent Rift covered these sedimentary layers. This all happened during Noah's Flood, it did not take millions of years as the sign states. The sandstone and siltstone beneath the top layer of lava is 130 feet thick. Drive down to Cut Face Creek rest area.

South of Grand Marais at Cut Face Creek rest area:

See Fossilized ripple rock.

Park in parking lot at Cut Face Creek rest area on the Lake Superior side and cross over Highway 61 and follow Cut Face Creek. Follow this almost dry creek bed. Along the way notice the sedimentary layers of sandstone showing fossilized ripples. For beach ripples to fossilize it would require fast quick coverage and the Flood of Noah's day would have provided that. If as evolutionists believe these layers were laid down over a long-time period would the ripple mark still exist?
Also, at this beach is a great place to search for thomsonite, a banded green, pink and white zeolite mineral. Gas bubbles in the lava were trapped as the lava cooled. Then hot waters circulated through the rock and the minerals precipitated out. In this area the mineral is called thomsonite.

Paradise beach milepost 123: great beach for picking rocks.

Nanaboujou restaurant: 14 miles northeast of Grand Marais on Hwy 61 Nanaboujou Lodge and Restaurant:
Inside is breathtaking with vivid colors to delight the eye and the largest field stone fireplace in MN. The meals are delicious and reasonable. Public welcomed.

Judge C. Magney State Park: 14 miles from Grand Marais across from Nanaboujou.
Lava poured forth from the Midcontinent rift. As these flows accumulated, the land along the rift zone sank to form a great basin, into which huge volumes of sediments were deposited. After the Flood the one and only Ice age, which lasted 700 years, gouged out the Lake Superior basin.
The Mystery of Devil's Kettle in the park! This popular hike leads upstream along the Brule River to Devil's Kettle. Here the river splits around a bedrock knob of volcanic rock. The eastern half of the river cascades over a waterfall into a deep canyon with walls some 50 feet high. The western half of the river plunges into a great pothole or kettle. The water simply disappears.

Hovland: Runningen Fur store, inexpensive pelts, gloves, and other interesting artifacts. 3197 E. Hwy 61.

Grand Portage National Monument: 35 miles eastward from Grand Marais. This monument commemorates eighteenth century fur trade history. Because of the Pigeon

River and its waterfalls, a nine-mile portage connected Lake Superior to the upper part of Pigeon River and the inland system of lakes. By the time the European fur traders reached this area the trail was already a well-worn highway to the interior.

Grand Portage State Park: 36 miles eastward from Grand Marais. This is the Canadian border.
This is Minnesota's highest waterfall at 120 feet. (In other books I found that Tettegouche State Park had the highest fall in the state of MN at 60 feet. Why didn't the books acknowledge this falls at 120 ft. as the highest in MN? Because technically, it is not in MN, but on the Grand Portage Indian Reservation. In 1989, a joint effort of the DNR and Grand Portage Band of Ojibwe made a deal to lease the land, making this park the only park not owned by the State of MN.) The falls is gorgeous and has three viewing decks on this ½ mile hike. The park is also a highway rest area with a travel information center. The falls is not eroding rapidly because of the dike of igneous rock. The surrounding rock is sedimentary rock. When viewing the high falls on the Pigeon River note that the far side is Canada. The Pigeon River forms the boundary between USA and Canada. It is called Pigeon River because as recently as 1879, huge flocks of passenger pigeons raised their young here, ate blueberries and then flew south for the winter. The passenger pigeon is now extinct, the last one died in 1914 in the Cincinnati Zoo. The population went from 3-5 billion in the 1850's to a few thousand in the 1890's and then zero! The passenger pigeon was probably the most abundant bird in North America.
This extinction reminds me of the dinosaurs…..
Dinosaurs were created on Day 6 of creation week along with man. Did man and dinosaurs live together? Yes. Then Noah took 2 of each kind on board the Ark. Probably 50 kinds of dinosaurs went on board, the others were killed in the Flood. The dinosaurs got off the Ark and multiplied. In the past we did not call them dinosaurs. That is a new word invented in 1841. Prior they were often called dragons. Do we have lots of dragon legends from around the world? Yes.
So, what happened to the dinosaurs? Let's look at two modern examples, the demise of the Asian elephant and the tiger. Today, across Asia, wild elephants are killing hundreds of people every year. Here are some accounts: in Thailand an elephant stomped three rubber plantation workers to death; in Nepal, 11 people in the past two week were killed by elephants while gathering firewood; in Vietnam a herd of elephants killed at least 10 people. In response, villagers are fighting back and killing the elephants. Remember, elephants are herbivores not carnivores like tigers.
In 1819 Singapore was a swampland teeming with tigers. By 1840, tigers were killing 200-300 people a year. As the city grew, 600-800 people a year were killed; a certain area was even called "Tiger Resort". Desperate, authorities offered bounties and by 1930 the last wild tiger was shot in Singapore. The parallel between the extinction of dinosaurs and the localized "extinction" of elephants and tigers today are many. What happened to the dinosaurs? They became extinct. As the human population grew, these dangerous dinosaurs had to be eradicated.

"Enraged elephants, terrifying tigers, and dangerous dinosaurs", David Catchpoole, Creation 37 (1) 2015 p.34-37.

Iron Range

Ely, MN: pillow lava. From Hwy. 1 on the East side of Ely turn north on 13th Avenue East, then left on Camp Street, then turn right on 12th Avenue E., and then turn right on Main Street. There it is a small knob of pillow lava, eight feet high and 15 feet wide. Pillow lavas form when lava is cooled **underwater**. This particular pillow lava has been metamorphosed - changing into what we call greenstone. As lava poured forth underwater the outer lava cooled first forming pillow shapes, then later this pillow lava experienced heat and pressure to change into greenstone. This area was underwater during Noah's Flood then it was covered by more sediments and the pillows became metamorphic.

Soudan Underground Mine State Park: fantastic tour!
There are two types of iron ore here in MN
1. **Soudan mine** has non-magnetic ore. It is found deep below ground. Its formation differs from the rest of the Iron Range. They discovered this type of ore by looking to the tops of the hills and then "kicking off the sod" to find the rich ore underneath. Remember this ore is not magnetic. This iron ore was coveted because it was not only high in iron but high in oxygen therefore easier to smelt. That is until the blast furnace was developed, forcefully blowing hot air into the lower parts of the smelting furnace. This was MN's first iron mine operating from 1884 to 1962. It became the deepest mine at 2,341 feet deep and more than 50 miles of tunneling and shafts. This iron formation would have been precipitated out of hot fluids. Noah's Flood with its "fountains of the great deep" would have erupted hot fluids containing many minerals. These would have precipitated out as the waters cooled. It is thought that the original rock consisted of layers of iron, jasper and chert. This BFI (Banded Iron Formation) had hot waters flowing through removing some minerals and concentrating the iron into a high grade such as here, 69% of the ore is iron. (The open pit mines today produce taconite. Taconite ore contains 20-30% magnetic iron so it is crushed or ground and strong magnets then

concentrate the iron. The open pit mines of iron in the Virginia and Hibbing area have magnetic irons. This type of iron was just dug out of the ground, like with a snow shovel, very different from the Soudan mine which had to be blasted out.)

2. **Highly folded outcrop in the park**, ask for directions. Worth it! Here is one of the most photographed outcrops in Minnesota. You will see a highly folded iron formation. An area with layers of white chert, red jasper and metallic iron oxide (hematite) was folded without breaking. This means these horizontal layers were still pliable or plastic - the rock had not hardened yet when it was folded. These layers were laid down in the Flood of Noah's time. Then with the movement of plate tectonics it folded these layers while still soft. During the Genesis Flood there would have been rapid movements of the plates on the Earth's crust. No sooner would the floodwaters have laid down great quantities of water sorted materials, sand, and mud then moving plates would have crumpled the sediment while still soft and pliable resulting in folded rocks. The Genesis flood would have been a powerfully destructive event leaving this type of evidence around the world.
The scratches (striations) are from the glaciers during the world's one and only Ice Age. This Ice Age was a follow-up caused by the heated waters of the Flood of Noah's time.

Classic outcrop of graded greywacke beds and slate: Well worth the stop! Northwest of Peyla, MN, near the Y-store find the junction of 169 and MN 1 at milepost 258 (on MN 1), turn north on County Road 77 (Angus road) and drive ½ mile to the Pike River Bridge. Note the small waterfalls on the west side of the road as you cross the bridge. Immediately after crossing the bridge, turn left into a pull-off. This outcrop is layers of light grey greywacke (originally clay-rich sandstone) and black slate beds (originally mud). During the Flood the beds were deposited in horizontal layers but now are vertical because of tilting. Get down on your hands and knees and look closely as the grey greywacke, each bed is graded; that is the base has coarse-grained sand while the top is finer-grained. Each bed was deposited by swift moving currents dropping the heavier load first. There are 228 greywacke beds of which 146 are graded. Microscopic study of the greywacke shows these grains came from a volcano. (Ojakangas, 104-105)

Have you considered

…..that sedimentary rocks cover three-quarters of the earth's surface. Sedimentary rocks are from bits of rock and minerals that settle out in water. These bits of rocks were eroded, transported and deposited. What event would have lots and lots of rocks being ground up, moved, deposited and then water laden with minerals percolated on down, causing the sediments to solidify? The Flood of Noah's day! Sedimentary rocks form just the same way concrete hardens. A concrete company breaks down big rocks and then adds cement and water. As it dries, concrete is formed. The Flood of Noah's day would have been one big cement mixer with the pulverizing of rocks, minerals, and water resulting in the continents being ¾ covered with sedimentary rocks.

Why are there Iron Mines in Minnesota?

Iron is one of the most abundant minerals on earth. Wherever iron is concentrated we put our mines. During the Flood of Noah's time, hot thermal waters from the fountains of the deep had iron rich particles which precipitated out in a cool ocean.

Banded Iron Formations (BIFs)

Two views of BIF's

1. "Michael Oard suggests that the banded iron formations, allegedly evidence of the early earth atmosphere, are actually the result of the initial stages of the Flood. He speculates that BIFs could have formed quickly from the hot water and magma flows that resulted as the fountains of the great deep broke open.

Rapid currents then spread out from the eruptions, forming the BIFs. (M. Oard, "Could BIFs be caused by the fountains of the great deep?" *TJ* **11**:3, 1997, pp. 261–262)
https://answersingenesis.org/kids/science/world-without-oxygen/

2. BIFs may also be pre-Flood hydrothermal deposits. "Some geologists note that the oxygen in the iron oxides of BFIs is about 20 times that of the current atmosphere. Since the BFIs were deposited in water, the implication is that the atmosphere contained plenty of oxygen. This suggests that the atmosphere has always been oxygenated, and possibly at a higher level than today. No wonder uniformitarian geologist consider the origin of BFIs an enigma." http://creation.com/did-early-earth-atmosphere-contain-oxygen

We need to remember our Bible now, during the first week God created everything and that included creatures and man that needed oxygen. So, was oxygen available right away? YES! It did not take millions of years for oxygen to come about through stromatolites (blue green algae).

Minnesota Museum of Mining, Chisholm

Petrified candlesticks in the museum display case.

http://www.mnmuseumofmining.org/hours-rates--location.html

Have you considered

…..that it does not take a long time for things to petrify? In a museum in Northern Minnesota visitors are surprised to see a sign next to some candlesticks, "petrified candlesticks". The candlesticks are as hard as rock. How could wax candles become petrified in such a short time? Up until WW2, the mines were dug underground, when that type of iron played out, they became open pit mines. As the miners were digging these open pits, they would come across drifts and shafts which contained past mining items. Candlesticks were one such item. The candlesticks were used by the miners for light. Weekly rations of 5-6 candlesticks were given to each miner. He would attach one to his helmet and stash the others. Many of the underground mines were wet and had to be pumped. Miners often had to wear rain gear with boots, for the mine floors could be knee deep in water. After WW2 the underground mines were closed; pumps were turned off and many of the mines became flooded with water. As the open pit mines started to come into vogue, miners would come across these old drifts and shafts which held mining items; such are the now petrified candlesticks. Many petrified candlesticks were found. How did the candlesticks become petrified? Mineralized waters saturated the soft wax candles turning them into rocks. Does it take millions of years to petrify as commonly believed? No just the right conditions.

Have you considered

……that it does not take a long time for things to petrify. Near York, England is the Dripping Well of Yorkshire. A place that turns soft cuddly teddy bears into stone. Since the 1600's, this has been a tourist attraction where people have hung clothes, hats, shoes, and teddy bears under a waterfall and they have turned to stone. The waterfall's water originates underground and has high mineral content. As the water splashes onto the hanging objects, the mineral calcite (calcium carbonate) is deposited along with small

amounts of other minerals. Over the months, these deposits build up and coat the object with a crust of rock. Petrifaction time depends on the size and porosity of the object. Small teddy bears take three to five months. While, larger teddy bears take six to twelve months. This is not the only place in the world where petrification has been observed. Australia has its own petrified water wheel that has become totally encased in stone in only decades, while New Zealand has a petrified bowler hat on display. It does not take millions of years for petrification, it just takes the right conditions.

What is the difference between a fossil and petrification? Fossils are remains of once living things; they can be rock hard or not. The soft tissue found in dinosaur bones is called a fossil, if it were rock hard it would be a petrified bone. Petrification, as in petrified wood, happens when minerals replace the object leaving it rock hard. Fossils are just old remains which can be either petrified (rock hard) or not.

Again, it doesn't take millions of years for rocks to form only the right conditions. When water is driven out and minerals such as quartz or calcite are present, the sediment can be turned rapidly into rock. Many examples of rocks forming rapidly have been reported.
1. A hat turned into rock. A soft felt miner's hat found in a Tasmanian mine had turned to stone. For 50 years mineral rich waters covered the felt hat turning it to stone.
2. Sacks of flour from the Blue Spring Mill in Eureka Spring Gardens in Arkansas, USA have turned into a rock. Since the 1840's spring water was used to drive a large mill and grind wheat and corn. These bags of flour were probably made in the mill and left when it stopped operating in 1903. When bags became saturated by spring water, the minerals in the water precipitated into the waterlogged flour sacks turning them into solid rock.
Petrified bag of flour: http://creation.com/petrified-flour

Creation Magazine, "The Amazing Stone Bears of Yorkshire", Monty White, June-August 2002, pp. 48-49.
Creation Magazine, "The Earth: How Old Does it Look?", Carl Wieland, December 2000, pp. 8-13.

Hibbing: Hull Rust Mine View https://www.hmdb.org/marker.asp?marker=2833
1. One of the largest open pit iron mine in the world and still working!
The irons of the Virginia and Hibbing area are magnetic irons. This type of iron was just dug out of the ground, like with a snow shovel. These are very different from the Soudan mine which had to be blasted out.
2. Hill of Three waters. Can be seen from the mine view. "Near the north edge of the pit near the processing plant is a knob that is a triple divide watershed point. Rain water falling at this spot flows in three directions, east to Lake Superior, south to the Gulf of Mexico, north to Hudson Bay. Detail surveying methods located the point in the 1930's. The hill was a sacred meeting spot for Native Americans, who hundreds of year ago named it the hill of three waters. How did they know this?" (*Roadside Geology of MN* by Ojakanagas, p. 102.) How did they know this? This question shows evolutionary thinking, that the people in the past were not intelligent and each generation is more

intelligent than the past. Really? They knew that this was a three way divide and named it. We just caught up with them in the 1930's

Hill Annex Mine State Park, Calumet. 880 Gary St, Calumet, MN
At this mine you can go fossil hunting in the mine dumps. You can find and keep fossils of snails, clams, shark teeth, …
http://www.dnr.state.mn.us/hill_annex/fossil_tour.html
These fossilize animals were alive at the time of Noah's Flood. What does it take to make a fossil?

Have you considered
…….how a fossil is made. A fossil is a rock. It takes very special conditions to make a rock or fossil. Think about this, what happens to a dead animal? Scavengers eat it; bugs and bacteria cause it to rot and decay, eventually leaving no remains behind. It takes very special conditions in order to make a fossil – preserved remains of what was once living. Here is the general fossil recipe:
1. Fast coverage by sediment. So, scavengers and bacteria don't eat it.
2. Deep coverage by sediment so no oxygen is present to start decay.
3. Lots and lots of water so the minerals can seep into the bone and turn it into stone – but not all fossils have turned to stone.

What event in history had fast, deep coverage with lots of water? The Flood of Noah's time. Every time a fossil is dug up, it is a reminder of the Genesis Flood. Fossils remind us of God's judgment and God's mercy. God's judgment in that He destroyed the entire world with a worldwide flood because it was so wicked. God's mercy in that He saved Noah and his family on the Ark.

Gilbert Junior High School: on the north end of Wisconsin Avenue behind the school's ball field. Pillow lava scraped by glaciers.
As lava flowed out onto the sea floor, during the Genesis Flood, the lava was cooled quickly and formed pillows. After the Flood, the Ice Age with its glaciers scoured this outcrop leaving behind grooves or striations; the result of abrasion by the sediment load carried within the glacial ice mass.

Scenic State Park: (Near Bigfork, MN) Has an esker called Chase Point Esker that is between two lakes. This winding ridge of stratified sand and gravel is 60 to 70 feet high amidst a Norway pine forest. This high sinuous ridge was created by stream channels under the glacier which left the sand and gravel in tunnels of glacial ice. As the ice melted, these mounds were left as ridges. Within this park are other glacial features; kames and ice-block lakes. Many time eskers are easily mined for their sand and gravel. There is a cute t-shirt that says, "Save the eskers".

West Central Minnesota

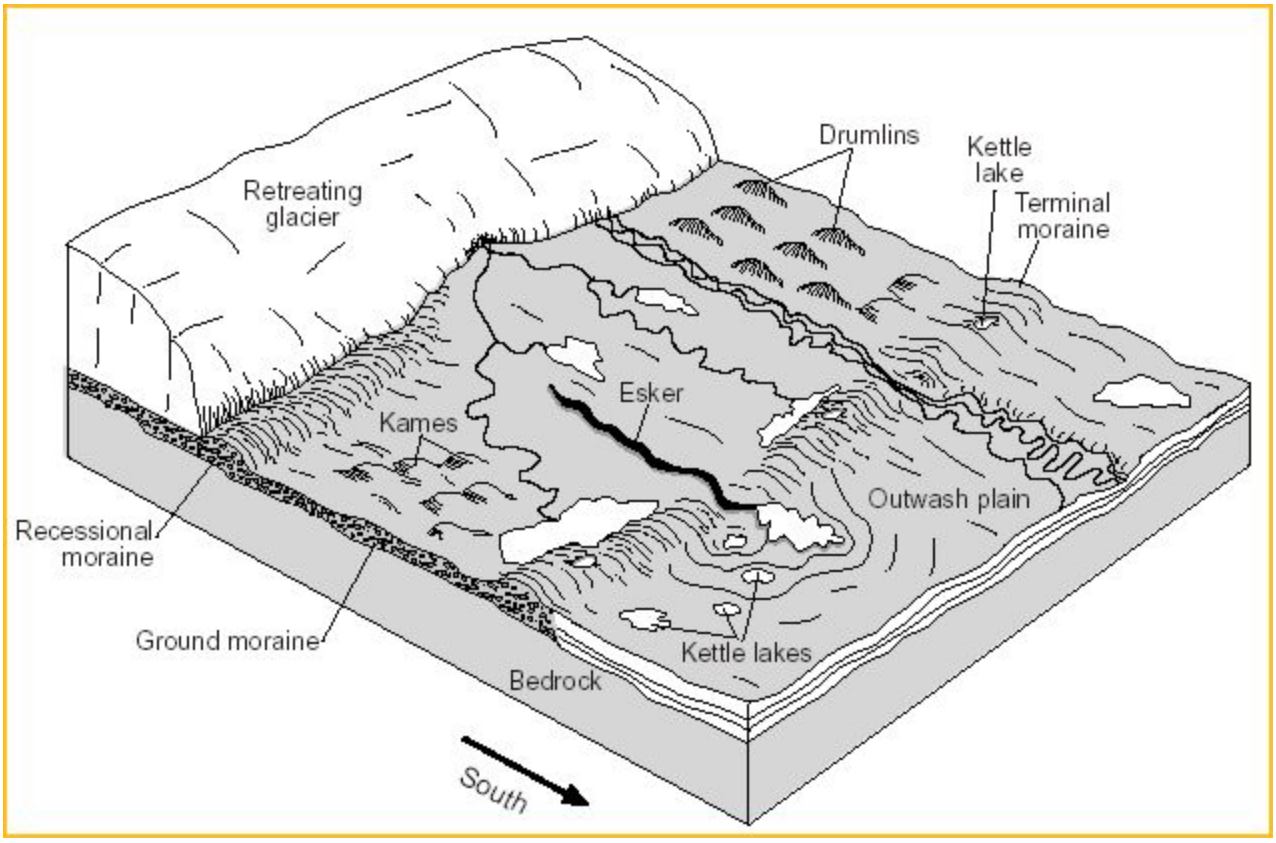
Has many glacial features from the Ice Age.

Have you considered
……..what causes an ice age. An ice age is when the winter's snows do not melt each year but are continually added to. It takes very special conditions to make an ice age. So, what are the conditions needed for an ice age to develop? Lots of warm oceans and cooler continents. What event in history would have lots and lots of warm water and continents that were cooler? The Flood of Noah's time. During the Flood, the fountains of the deep burst opened which brought great quantities of hot water to the oceans. Add to that, volcanoes erupting, of which, 90% of the eruption's content is water. Very hot waters were being added to the oceans. These volcanoes also spewed great quantities of volcanic dust into the air. These particles would reflect the sunlight back into space making the continental air and land cooler. These warmer oceans would cause lots of evaporation and winds would carry the moisture onto the cold continents. The cold continents would cause the moist air to condense and fall as snow. Snow on the ground would not melt during the summer. Each year the snow would build up. Just after the Flood, ice sheets would have formed quickly around the world in the higher latitudes such as Greenland and North America. **The Twin Cities were probably covered with a thousand feet of ice and summer temperatures of 30 degrees.** One inch of ice corresponds to an average of 10 inches of powder snow. Minneapolis would need 4,000 inches of powder snow each year.
As the earth settled down and the volcanoes stopped erupting, the volcanic dust would have dissipated out of the air, eventually the sun would shine on those ice sheets and the snow would melt. Creation scientists have calculated the one and only Ice Age to last for 700 years, 500 years to build up and 200 years to melt down. What causes an ice age? Very special conditions. An ice age needs lots and lots of warm water and cooler continents. What event in history would have these two ingredients? The Flood of Noah's time.

Frozen in Time: The Woolly Mammoth, the Ice Age and the Bible, Michael Oard, 2004.

Ripley Esker: a glacial esker is like a long snake made up of stratified sand and gravel from the glacier. Eskers are made by a river flowing beneath the melting glacier and depositing the sedimentary load of sand and gravel. Between Fort Ripley and Camp Ripley, drive east on County road 48 for 0.7 mile, then north on County Road 282 for about 1 mile. You have arrived at a geological marker at the Ripley Esker Scientific and Natural Area. This esker is about 7 miles long. Many eskers have been mined away for their sand and gravel. There is a cute t-shirt saying," Save the esker".

Wadena Drumlins: The Wadena drumlin field has about 1,200 drumlins. This "roller coaster" road cuts across the drumlins which are elongate hills composed of glacial drift Take a 25-mile loop trip to experience the roller coaster ride, ending up back on US 10. At Staples turn onto MN 210 going south, MN 210 passes over the roller coaster ride of many drumlins between Staple and Hewitt. At Hewitt, take US 71 north to Wadena and join up with US 10 again. Ride the "roller coaster". Drumlins are elongated teardrop shaped hills. They are usually found in groups known as a drumlin field or swarm, this field has 1,200 drumlins! Their orientation indicates the direction of glacial moment. Drumlins are found world-wide.



http://www.edusolution.com/edusolution2/earthsci/jan2002/ques15.gif

Inspiration Peak State Wayside Rest: is a glacial kame. Climb the kame, a conical hill formed by sediment-laden glacial melt flowing downward at a specific spot within a melting glacier. The winding path takes you to the top; 400 feet above the prairie. Also look at the array of large granite and gneiss boulders along the edge of the parking lot, all glacial erratics from northern Minnesota and Ontario.

Glacial Lakes State Park: near Starbuck has kames, an esker, a moraine, erratics and kettles. Camp on an esker! Check out map:
http://files.dnr.state.mn.us/maps/state_parks/spk00166_summer.pdf

Alexandria, Runestone Museum: Were the Vikings here before Columbus during the Middle Ages? According to the Kensington Runestone they were here in 1362. (It is greywacke stone and was found about 17 miles SW of Alexandria, MN.) The Runestone originally was declared a hoax but now research shows the stone to be genuine.
https://www.runestonemuseum.org/
A Minnesota Mystery: the Kensington Runestone by Ben Tracy
http://www.think-aboutit.com/a-minnesota-mystery-the-kensington-runestone/

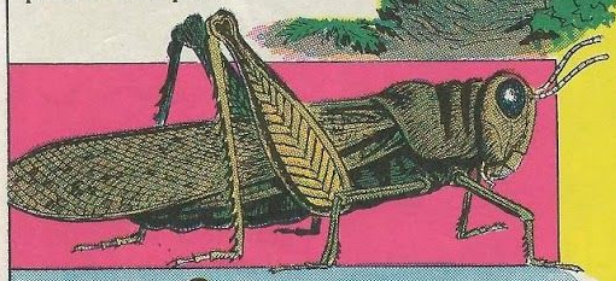
Viking Altar Stone: near Sauk Centre, the area recently came into private ownership and will be renamed "The Sauk Lake Altar Rock. Eventually this 27' x 17' rock will be opened to the public.

St. Cloud area:
Grasshopper Chapel, 22912 Chapel Hill Rd, Cold Spring, MN 56320
This chapel was built to remember how God heard the prayers of the people of Minnesota. This was their memorial, built of stones, so no one would forget His intervention in saving them from the grasshopper plague.
Grasshoppers had invaded Minnesota. It wasn't anything new. But the year was 1873 and MN prairies were covered with wheat fields, at that time only a small area was plagued by grasshoppers. But the new ones hatched and spread east and north. And so, it went, year after year, until 1876 that was when Henry H. Sibley came out of retirement to head a committee to aid impoverished plagued farmers. Other groups worked on ways to stop the grasshoppers. Fields were burned, trenches dug and filled with oil. Contraptions were dragged over fields to crush or trap the grasshoppers. Farmers plowed in the fall to destroy the eggs. Bounties of a dollar a bushel for grasshoppers and fifty cents a quart for their eggs were offered. Yet the grasshoppers kept increasing in numbers. By the spring of 1877 farmers were desperate. Some claimed the grasshopper plague was Minnesota's punishment for their treatment of the Dakota Indians. Most agreed only supernatural help could save the crops. Governor John Pillsbury designated April 26 as a state-wide day of fasting and prayer for deliverance from the grasshoppers. Some claimed the storm with freezing sleet that swept the state the following day was the answer. Still a good share of the insects managed to survive. But in July when they developed wings, they rose up and disappeared into the west. The grasshoppers left MN without destroying crops or laying their eggs! The crops of 1877 were large beyond the farmer's dreams. The people built a chapel to remember how God heard their prayers. (They wanted future generations to know that God hears the prayers of His people. "If my people who are called by my name humble themselves, and pray, and seek my face, and turn from their wicked ways, then I will hear from heaven and will forgive their sin and heal their land." ~ 2 Chronicles 7:14). from the Story of MN by Jerry Fearing published by the MN Historical Society 1979. You can still visit the Grasshopper Chapel today.

The Story of MINNESOTA

by Jerry Fearing

Grasshoppers invaded Minnesota in 1873. It really wasn't anything new. The insects had been coming and going for centuries. Jonathan Carver, in 1767, described periodic invasions of grasshoppers into this area. They were little more than a nuisance then. But with Minnesota's prairies covered by wheat fields they were a disaster. The year had started with a terrible blizzard which killed 70 people and hundreds of farm animals in Minnesota. After a wet spring, crops finally were growing well in June when suddenly the western sky darkened with billions of hungry grasshoppers. They swooped down upon southwestern Minnesota, destroying every plant in their path.



2

Everyone called them grasshoppers. Actually they were Rocky Mountain locusts and not native to this part of the country. The difference between locusts and grasshoppers is mainly that locusts have shorter antennae. Locusts hatch in early spring and feed in a limited area for about 80 days. Then they develop wings and often gather in great swarms to fly to new feeding grounds. They die at the end of summer but the land they've ravaged is left infested with eggs which hatch the following spring to start the cycle anew.

3

The full power of the grasshopper plague was felt in a relatively small area in 1873. But the following year newly hatched locusts spread east and north. So it went, year after year, until by 1876 most of Minnesota west of the Mississippi was in the grip of this terrible scourge. Henry H. Sibley came out of retirement to head a relief committee to aid impoverished farmers, while other groups searched frantically for a way to destroy the insects.

4

Every imaginable method was tried. Fields were burned, trenches dug and filled with oil. Contraptions were dragged over fields to either crush or trap the insects. Farmers plowed in the fall to destroy the eggs. Bounties of a dollar a bushel for grasshoppers and fifty cents a quart for their eggs were offered. Yet each spring the locusts were there in greater numbers.

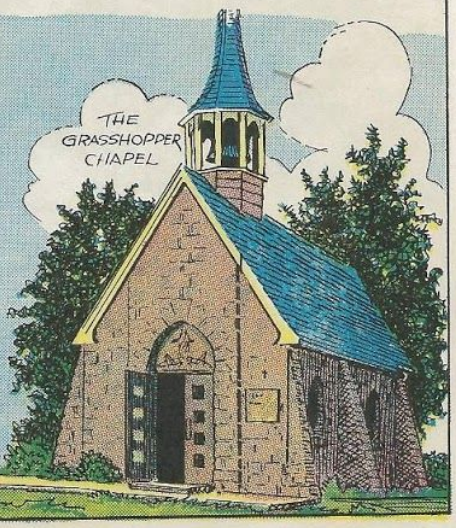
5

By the spring of 1877 farmers were desperate. Some claimed the plague was a punishment for Minnesota's treatment of the Dakota people. Most agreed that only supernatural help could save the crops. Governor John Pillsbury designated April 26 as a state-wide day of fasting and prayer for deliverance from the grasshoppers.

JOHN S. PILLSBURY

6

Some claim the storm with freezing sleet that swept the state the following day was the answer. Still a good share of the insects managed to survive. But in July, when they developed wings and it was time to move to greener fields, they rose up and disappeared into the west. The locusts left Minnesota without destroying crops or laying their eggs! As if in payment for the years of hardship, the crops of 1877 were large beyond the farmers' dreams. One of the few shrines in Minnesota is dedicated to this event. It stands in the town of Cold Spring, west of St. Cloud, and is known as the Grasshopper Chapel.



Twin Cities Area

Stillwater: St. Croix Boom Site and wayside rest: crossbedding and worm burrows. North of Stillwater, MN. 1.4 miles north of the intersection of Hwy 95 and Hwy 96.

Interstate Park, Taylor's Falls: At least 10 different lava flows are exposed in the park.

St. Anthony Falls formation: When Glacial River Warren (today we call it the Minnesota River) was draining Glacial Lake Agassiz, these high-volume floodwaters were eroding a deep trench across the state of Minnesota in the location of present day Minnesota River. At that time the Mississippi River was a small tributary of Glacial River Warren. As Glacial River Warren deeply cut the area near Fort Snelling, the Mississippi river was left hanging, creating a waterfall. The waterfall eventually eroded upstream 8 miles making a deep gorge on the Mississippi River and St. Anthony falls. (The I-35 bridge collapsed over this gorge. This is the only gorge on the Mississippi River.) Today St. Anthony falls has been stabilized by concrete.

Lake Agassiz was the largest freshwater lake in the world: 700 miles long, 200 miles wide and 400 feet deep. When Lake Agassiz breached a moraine the waters left the lake and roared across Minnesota. Imagine a river 5 miles wide and 300 feet deep (Glacial River Warren) roaring through the present day Minnesota River Valley. Later the Minnesota River meandered through the valley.

This is the total extent that Lake Agassiz reached in its during its lifespan.

<u>Lilydale Regional Park, St. Paul</u>, across the river from the Science Museum of MN
Fossils from the bottom of the sea: sea lilies, trilobites, cephalopods, brachiopods, …
Closed to the public. Parts may open in 2019.
These were creatures caught in Noah's Flood and became fossilized.

Have you considered

…….how a fossil is made. A fossil is a rock. It takes very special conditions to make a rock or fossil. Think about this, what happens to a dead animal? Scavengers eat it; bugs and bacteria cause it to rot and decay, eventually leaving no remains behind. It takes very special conditions in order to make a fossil. Here is the general fossil recipe:

1. <u>Fast coverage</u> by sediment. So, scavengers and bacteria don't eat it.
2. <u>Deep coverage</u> by sediment so no oxygen is present to start decay.
3. <u>Lots and lots of water</u> so the minerals can seep into the bone and turn it into stone.

What event in history had fast, deep coverage with lots of water? The Flood of Noah's time. Every time a fossil is dug up, it is a reminder of the Genesis Flood. Fossils remind us of God's judgment and God's mercy. God's judgment in that He destroyed the entire world with a worldwide flood because it was so wicked. God's mercy in that He saved Noah and his family on the Ark.

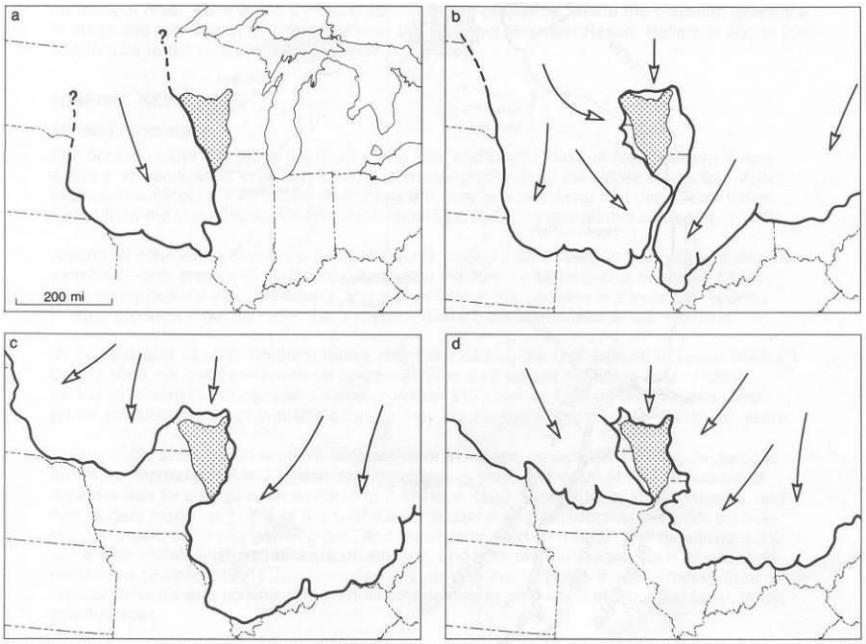
Science Museum of MN (120 W Kellogg Blvd, St. Paul, MN) has a <u>skeleton of a giant beaver from the Ice Age.</u>

Southeast, MN

Karst or limestone region-a lakes free area.
During the Flood of Noah's day, limestone was precipitated out and laid down in layers. Evolutionists will tell you that a great inland sea deposited these limestone beds and the marine fossils. Yes, there was a great inland sea, it covered the entire world and the bible calls it Noah's Flood. This area of MN is called karst (limestone). We asked the forest ranger why there were no mosquitoes at Forestville campground. His reply, "It's the geology. Limestone is like a sponge and any rain we receive soaks in. The streams are tree shaded and cold, which again is not a good breeding ground for mosquitoes. Trout fishing is great. Forestville and White Water State Park campgrounds are a well kept secret, we have no mosquitoes!" In southeastern MN are two cave systems open to the pubic: Mystery Cave and Niagara Cave.

After the Flood came the one and only Ice Age, 500 years to build up and 200 years to melt down. Southeastern Minnesota is called the driftless area. It did not see any drift from the glaciers. This driftless area was not glaciated. So, what we have here is an area untouched by glacial scouring This driftless area gives testimony to the biblical view of one Ice Age. If there had been 4 ice ages (some glaciologists say up to 30 in this region) would not this area have experienced glaciation? Here we find a Driftless Area that has not been impacted by a single ice age! **The driftless area gives testimony to a single ice age following the Flood.**

Evolutionists believe there were four Ice Ages near the driftless area. What is the probability that this area was missed four times by glaciation? This driftless area gives testimony to ONE ice age not 4 or 5 or 30!



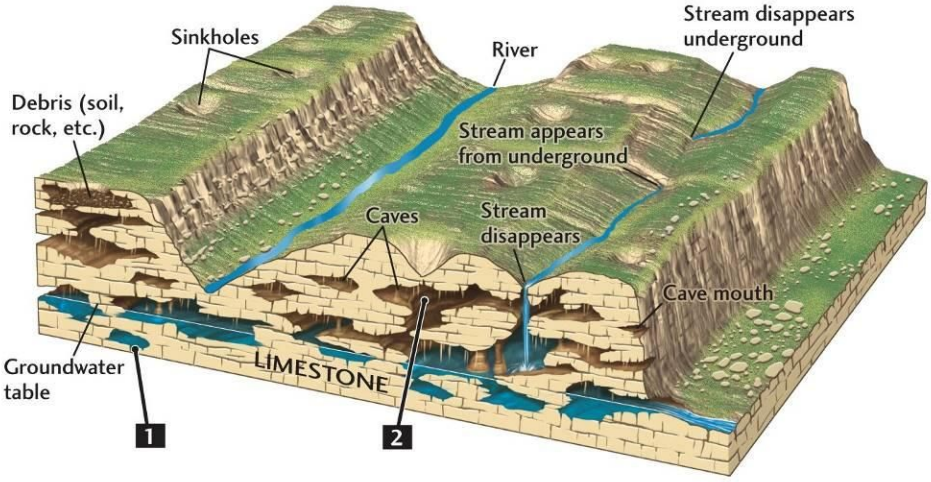
Pix from
http://all-geo.org/highlyallochthonous/2010/11/the-driftless-area-fewer-glaciers-but-more-topography-than-the-rest-of-minnesota/

Biblical view of caves:
Have you considered the origin of caves? Most caves are limestone caves. They are usually found in nearly pure limestone layers hundreds of feet thick. There are two stages of cave formation: 1. the cave cavity formation, 2. the decorating of the caves (stalactites, stalagmites…). The Flood of Noah's day would have laid down these nearly pure layers of limestone. At the end of the Flood, "the mountains rose, the valleys sank (tectonic activities)" ~Psalm 104:8. These tectonic activities would have caused many cracks in the limestone which would have allowed waters to drain through them. These were no ordinary waters but waters rich in acid, acids from volcanic activity, decaying dead animals and vegetation from the Flood, which would have quickly eaten away limestone forming the cave tunnels.
Now stage two: decorating the caves. These decorations were formed by waters loaded with limestone. Just after the Flood, the ground would have been much wetter, due to the Flood waters and the post-Flood Ice Age. Limestone rich waters dripped from the cave ceilings and evaporated, leaving behind a variety of cave decorations. Since that time, the water supplies have decreased, and the growth of cave decorations has slowed. When we put on our Biblical glasses, we can see where caves formation and decoration fit in. Limestone cave formations began with the Flood of Noah's day some 4,300 years ago.

Oard, Michael J., Tara Wolfe & Chris Turbuck. *Exploring Geology with Mr. Hibb*. Creation Book Publishers: Powder Springs, Georgia. p.61-63.

1. Mystery Cave Forestville State Park: Several tours. The scenic tour is one hour. The park is located just south of Wykoff, Minn. Mystery cave has fossils and cave decorations such as stalactites, stalagmites, flowstone, soda straws .... Notice the layers laid down, the bedding planes. Be sure to ask the tour guide before caving, "will we see any fossils and can you point them out?" Ask to see the fossil squid like creature called a cephalopod. The tours are not scripted therefore ask to see the fossils!

Disappearing river near mystery cave: Ask the folks at Mystery Cave for its location. The Root River sink is about ½ mile downstream from the Mystery Cave Visitor Center. The South Branch of the Root River passes over a fractured area, its river bed leaks significant amounts of water into Mystery Cave. During low flow, so much water can be lost from the river that the stream literally disappears into its bed leaving a dry valley. Stand on the bridge and look on one side then cross over and look on the other. If you do not see the river the river is now flowing below the surface. The river bed on the surface is dry. The location of this sink is at the corner of Mystery Cave Road and Old Cave Road. Stand on the Old Cave Road bridge (43°37'24.5"N 92°18'29.6"W) look on one side of the bridge then to the other side of the bridge; see if the river has disappeared. The river does not surface until five river miles downstream.



2.Niagara Cave : about 30 minutes from Mystery Cave. Niagara cave, a commercial cave, has a stream with a ~ 60 ft. waterfall, 1 hour tour. Fantastic cave tour! Has some 500 steps. 29842 County 30, From Harmony, Minn., head 2.5 miles south on Minnesota Hwy 139, then 2.5 miles west on County Road 30.. See severally pitted walls- these are from fossil worm burrows (this formation is 40 -50 feet thick), see fossil worm-like creatures, and other marine fossils . All deposited during Noah's Flood. You will be in an Amish neighborhood. Enjoy some of their products.

3.Fountain, MN "Sinkhole Capital of the US". FREE. More than 10,000 sinkholes in Fillmore county. Walk out on a DNR path to see a sinkhole up close. Then as you

drive through Fillmore county if you see any trees in a crop field know that they are probably growing in a sinkhole. Notice that you do not see the tree trunks easily but the tops of the trees. To get to the DNR sinkhole observation deck along the Root River Trail take Hwy. 52 to **Fountain** then turn onto County Road 8 drive about one mile passed the city's softball field to the Root River Trail system's parking lot. Park. Walk on the pavement trail for about ½ mile. Here you will find the DNR sinkhole and observation deck, it is just a hole in the ground with trees growing everywhere. Nothing spectacular.

4. Perrot State Park, Wisconsin. (Out of state day fee is $11 as of 2017) Located on the western side of Wisconsin along the Mississippi River. This area is known as the Driftless Area. During the Ice Age this area was not covered by glaciers so it is a good place to view the Flood deposits. Hike the Brady's Bluff Trail. The bluff is composed of sandstones capped with erosion resistant dolomites (a type of limestone with magnesium in it). Across the USA Flood sediment was laid down. At the top of the Brady's Bluff you get a sense of how much sediment was laid down during the Flood. As Flood water retreated off the land, at the end of the year long Flood, erosion would have taken place.
Look to see Trempealeau Mountain, a lone island visible from the bluff standing some 400 feet above the river. When the Flood waters flowed off the land it first came in sheets, then channelized. Trempealeau or "mountain with feet in river" is an example of what is called in geology an inselberg.

One of the great mysteries in geology is inselbergs, like Ayers Rock in central Australia. The German word inselberg means a hill or island jutting up from a placid sea or "island mountain". From a distance that is exactly how an inselberg looks, like an island jutting from a flat sea. They are found on all continents; some famous inselbergs are Sugarloaf jutting 1,300 feet tall out of the Rio de Janeiro harbor in Brazil or Stone Mountain in Georgia, USA jutting 785 feet above the land. Inselbergs are said to be millions of years old, but if that were true they should have eroded down to nothing; yet they are still steep-sided. From a biblical perspective the retreating waters of the Flood of Noah's day would explain inselbergs. The retreating Flood waters would have scoured the land planning them off flat, and then the waters would have become channelized cutting away the land leaving isolated remnants with steep sides, tall inselbergs. The Genesis Flood explains these "mysterious" landforms which are found worldwide. The Genesis Flood was global just as the Bible records.

"The waters prevailed fifteen cubits upward, and the mountains were covered." ~ Genesis 7:20

Flood By Design, Michael Oard, Master Books, 2008, p.72-75.

After hiking Brady's Bluff trail stop at the state park's overlook.

B. From the **top of Brady's Bluff** notice the topography of the Driftless Area. Evolutionary geologists believe there have been multiple ice ages in our two states (MN. and Wis.) with some sources stating that there have been as many as 30 ice ages. Yet here we find a Driftless Area that has not been impacted by a single ice age! **The Driftless Area gives testimony to a single ice age following the Flood.** (*Wisconsin's Flood Geology* by Stacy Lung. (2016). p.33-36.

5. Buena Vista Park, Alma, Wisconsin FREE: Drive County Road E from Main Street in Alma up the bluff to Buena Vista Park and walk to the overlook. County Road E starts at Wisconsin Highway 35 (the Great River Road) in Alma. Located 500 feet above Alma, it's a small park with a big view of the Mississippi River for several miles to the north and south. Notice the large Mississippi River Valley some six miles across. The Mississippi river runs down a small channel in the valley. According to Better Homes & Gardens magazine, "Buena Vista Park is one of the river valley's finest natural balconies." The Mississippi river is considered an underfit river for it does not fit the valley from side to side. When standing at Buena Vista Park, image the glacial flood waters roaring through this area carving out this vast river valley. Later the small Mississippi river followed.

- Also notice the pavers you are walking on, many have fossilized worm burrows**. How is a fossilized worm borrow made?**

Have you considered
…….how a fossil is made. A fossil is a rock. It takes very special conditions to make a rock or fossil. Think about this, what happens to a dead animal? Scavengers eat it; bugs and bacteria cause it to rot and decay, eventually leaving no remains behind. It takes very special conditions in order to make a fossil. Here is the general fossil recipe:
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We do not see worm burrows being fossilized today.

6.National Eagle Center at Wabasha. 50 Pembroke Ave, Wabasha, MN. 15,000 square foot interpretive center. In the winter both Golden and bald eagles can be seen in the area. Admission fees. www.nationaleaglecenter.org

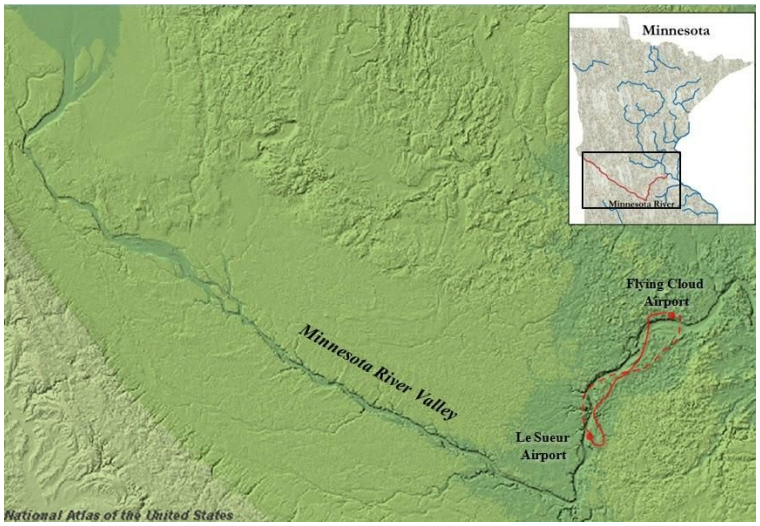
7.Winona: Gavin's Heights: drive to a free overlook of the Mississippi River Valley. Look for the scenic view turnoff sign along US 61 near the turnoff to Winona State University. This view is some 500 feet above the river and this island city. Winona is built on dropped sediment that was transported by Glacial River Warren. The Mississippi river is considered an underfit river for it does not fit the valley from side to side. When standing at Gavin Heights image the glacial flood waters roaring through this area carving out this vast river valley. Later the small Mississippi river followed.

- Winona: Sugarloaf: As you drive through Winona look for the prominent, 85 foot high rock knob named Sugarloaf. It is located on the SW side of Hwy 14 and near the County road 43 (W Valley Road) intersection. This was leftover by an old quarrying operation, it is a remnant of dolomite.

Southwestern Minnesota

The Minnesota River Valley was created when Lake Agassiz, the largest lake in the world (700 miles wide, 200 miles long 400 feet deep) breached a moraine sending the waters roaring across Minnesota. Imagine a river 5 miles wide and 300 feet deep (Glacial River Warren) roaring through the present day Minnesota River Valley. Later the Minnesota River meandered through the valley.

This is the total extent that Lake Agassiz reached in its during its lifespan.



Glacial River Warren- 5 miles wide, 300 feet deep
Minnesota River meanders through the carved-out valley.

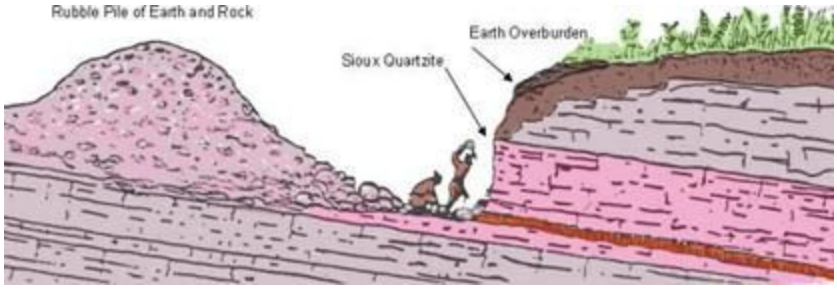
1. Minneopa Falls State Park: 7 miles west of Mankato off State Hwy 68. 54497 Gadwall Rd, Mankato. Minneopa in the Dakota language means, "water falling twice". And indeed, there are two falls, the upper dropping 10 feet and the lower dropping 40 feet.
2. Minnemishinona Falls: located about 5 miles west of North Mankato on the Judson Bottom Road… From Minneopa State Park go back out on Highway 169. Drive north into Mankato and take a right onto Lookout Drive. At the next stop light turn left onto Judson Bottom Road or County Highway 71 for almost 2.5 miles the waterfall will be on the left. Look for signs. It will be several hundred feet before you reach a GPS address of 40910 Judson Bottom Rd. The falls plunges about 40 feet over a sandstone ledge. During periods of high water, the falls roars but during low flow periods, the falls has barely a trickle of water.
3. Rapidan Dam Falls Park: the small white-painted store by a dam site (Dam Store of Rapidan, 54116 Glory Ln, Mankato, MN) is a "throwback" of Americana with small booths, a counter, chairs and tablecloths. They make the best pie. Try the sour-cream raisin. From Mankato take hwy 169 south for about 7 miles then turn on Blue Earth County Rd. 9. In 2-3 miles Rapidan will appear. If you cross the bridge, turn around. Pull into the Dam Store parking lot and drive to the dam. This dam was built in 1910 and supplied Mankato with electricity. It is still in use today.
4. Ramsey Falls in the town of Redwood Falls: This falls drops 30-40 feet. There is a scenic overlook with excellent viewing. Located in Alexander Ramsey Park near Hwy 19. A GPS address is approximately: 398-314 MN-67, Redwood Falls, MN
5. There are more than 20 waterfalls along the MN River Valley, they were created when Glacial River Warren roared through and carved this valley. In fact, there is a book called *A Field Guide to Waterfalls in Southern Minnesota* by Bob Douglas.

Jeffers' petroglyphs Historical Center: 27160 Co Road 2, Comfrey, MN. Well worth the stop! Admission fee. http://sites.mnhs.org/historic-sites/jeffers-petroglyphs
This red rock ridge about 250 yards wide containing some 5,000 petroglyphs dating thousands of years old. The largest petroglyph is a snake. Prior to 2011 the historical society did not know how many petroglyphs were present. So, with the removal of lichens and the use of a zero-impact light the resulting 3-D images were now seen. These petrophyphs are carved in quartzite, not quartz, but quartzite. Quartzite is harder than granite, on the Mohn's scale of 1-10 with 10 the hardest, quartzite is a 7. Quartzite is formed from sandstone primarily made up of quartz. The sandstone is then metamorphized with heat and pressure to form quartzite. The reddish color is caused by iron oxide film surround the grains of quartz sand. This quartzite deposit runs to Pipestone National Monument.

- Ripple marks in the quartzite. These look just like the ripple marks we see on beaches today. So how were they formed? During the Flood of Noah's time great amounts of rocks were ground up and laid down. Some of the layers were laid down creating ripple marks. Then they were quickly covered up. If they had not been quickly covered the ripple marks would have been destroyed. Then the sandstone would then have experienced heat and pressure (metamorphism) changing into quartzite. Later the top layers would have been removed by flood waters rushing off the continents at the end of the flood and/or glacial ices scraping off the layers and leaving behind glacial striations (scratches).
- Fossilized mud cracks: These were formed during the Flood of Noah's day, then quickly covered, become metamorphosed, later top layers razed by glaciers (notice the glacial striation -scratch marks)to reveal mud cracks from Noah's flood.

Notice the definition of how quartzite is formed: "Quartzite is a metamorphic rock formed when quartz-rich sandstone or chert has been exposed to high temperatures and pressures." It says nothing about a long time period for the sandstone to become metamorphic, just high temperatures and pressures. Noah's Flood would have provided that. High temperatures from hot volcanic waters and hot mineralized water erupting from the deep would have provided high temperatures. (One lecture I attended by a geologists gave a temperature to form quartzite at 150° C or 302° F) As far as pressure, Noah's Flood would have laid down hundreds of feet of sediment during the year long flood.

Pipestone National Monument: 36 Reservation Ave, Pipestone, MN
For centuries Native Americans have come to this site to quarry a soft red clay-rich stone to carve pipes out of it. The stone is called pipestone. There are three rock types in this Sioux quartzite: pipestone (originally mud), quartzite (originally sand) and conglomerate (originally gravel). This pipestone (specifically called catlinite) is unique for it has other minerals and crystals and hardly any quartz. This catlinite is found sandwiched between thick beds of quartzite. Catlinite is easily carved, not being very hard, later as the catlinite is exposed to air, it hardens. In the picture below red is the pipestone or catlinite.



1. Visitors can watch a 22-minute film "Pipestone: An Unbroken Legacy". It tells of a maiden running up to the top of a high hill while the rest of the area experienced a great flood. All were drowned. Then a bird came and saved her. From this all rest of the world

was repopulated. The red in pipestone is from the blood of all those who drown in the flood.

Have you considered

……why there are over 360 flood legends from around the world. All the flood legends have a basic theme of…. God sent a worldwide flood to judge the sinfulness of man. One righteous family, who was forewarned, was saved. They built a boat and took animals on board and survived the flood. At the end of the worldwide flood, their boat came to rest on high mountains. The people and the animals got off and repopulated the earth….. This cultural story is what we would expect to find as the survivors told and retold it to their children and grandchildren. With the tower of Babel, the people dispersed even farther across the earth, carrying with them the story of Noah and the Flood. That is reason we find more than 360 cultures having flood legends.

Here at Pipestone we have a remembrance of the Noah's Flood, the red pipestone is from the blood of all those who drown in the flood.

2. Walk the ¾ mile long Circle Tour starting at the visitor center. You will see quarries, wild prairies, a waterfall and sedimentary layers, cross-bedding, and ripple marks in the quartzite.

- Sedimentary layers were laid down in the Flood. See the layers stacked as pancakes.
- Cross-bedding in quartzite. How is cross-bedding formed?
- Strong, fast-flowing water currents move sands across the ocean floor as sand waves or dunes (Figure 7a). As the sand grains are swept over the dune crests, they fall on the advancing dune faces to produce sloping sand beds, and on top of the trailing edges of the dunes in front. The dunes thus advance over one another, resulting in stacked sand layers (Figure 7b) with internal sloping beds (cross-beds).. https://answersingenesis.org/geology/rock-layers/transcontinental-rock-layers/
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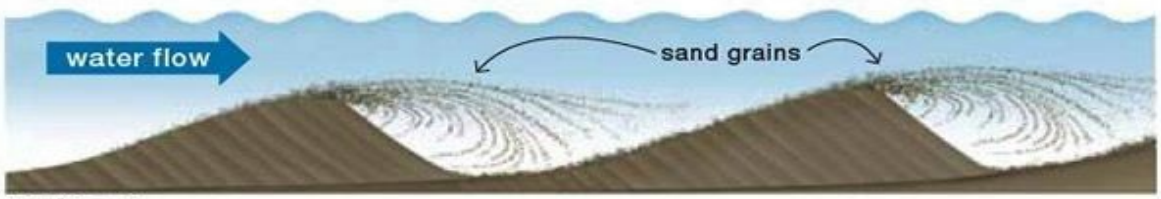


FIGURE 7a

- Ripple marks in quartzite. So how were they formed? During the Flood of Noah's time great amounts of rocks were ground up and laid down. Some of the layers were laid down creating ripple marks. Then they were quickly covered up. If they had not been quickly covered the ripple marks would have been destroyed. Then the sandstone would then have experienced heat and pressure (metamorphism) changing into quartzite.

3. At the entrance of the monument are large granite boulders called the Three Maidens. These humongous granite boulders are not from the surrounding area of quartzite. The sign says they were transported from Canada within the ice sheets and deposited here; these types of rocks are called erratics.

Blue Mounds State Park: 1410 161st St, Luverne, MN

Blue Mounds State Park is a high hill of Sioux Quartzite. Those early settlers heading west saw a blue mound rising above the prairie. The cliff rises some 90 feet high. The website says that Sioux quartzite rock was formed on the bottom of an ancient sea where vast quantities of sand were deposited on the seafloor. This is true; the ancient sea was Noah's Flood and the flood ground up huge quantities of rock into sand. Sandstone was formed and then with heat and chemical reactions, sandstone transformed into a very hard quartzite. The pinkish color is due to the presence of iron oxide. This Sioux quartzite extends from New Ulm, MN to 500 miles west into South Dakota, then to Iowa and Nebraska and Wisconsin. This quartzite is thousands of feet thick. This size and volume would require a worldwide flood to deposit. Ripple marks, cross-bedding and raindrop imprints can be seen in the park's quartzite- ask for their location. Mention that it is in their literature. http://www.dnr.state.mn.us/state_parks/blue_mounds/narrative.html see geology and then continue on to http://www.dnr.state.mn.us/state_parks/blue_mounds/geology_details.html

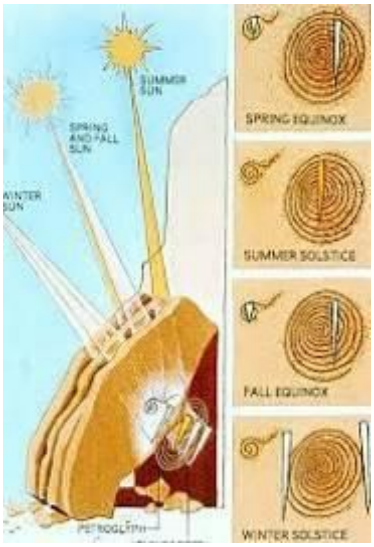
Raindrop imprints are formed when relatively sticky mud experienced heavy rains. The raindrops hit the mud and formed an impression. Then the area is quickly covered over and hardened. Sounds like the Flood of Noah's day!

2. On top of the Blue Mound's southern end is a 1,250 foot long line of rocks aligned in a east-west direction. Equinox wall: on the first day of spring and fall, the sunrise and sunset are lined up on this stone alignment. Visitors can hike to these rocks. There is no signage so ask for directions.

Archaeoastronomy

Ancient man was a genius as depicted throughout the world in the numerous ancient structures from Stone Hedge to Chaco Canyon which were built to determine the solstices, equinoxes, and more.

-Chaco Canyon's Sun Dagger on Fajada Butte: Three rocks leaning against a cliff were set up such that shafts of sunlight passed through onto a spiral petroglyph. The sun dagger's location varied throughout the year. To mark the winter solstice two daggers appear on each side of the spiral petroglyph. The summer solstice has one dagger piercing the center of the spiral.



(pix https://misfitsandheroes.wordpress.com/tag/stonehenge/)

- Medicine Wheel high in the Bighorn Mountains, Wyoming, USA. Using rocks, cairns and spokes, the solstices and other astronomical alignments are revealed.
-  Sunset on the summer solstice.

(Pix from http://solar-center.stanford.edu/AO/bighorn.html)

-At Chichen Itza the Maya pyramid called El Castillo is known for the Snake of Sunlight. At the spring equinox, March 21, in the late afternoon the sun casts a shadow such that it crosses the pyramid's balustrade creating a wriggling snake descending; ending with the carved head of the serpent as its base, marking the first day of spring.

-The Mayans (c. 2000 B. C.) also were precise with their calculations of the length of a solar year to within two ten thousandths of a day. Their year was 365.2420 days long. We were not able to achieve this level of accuracy until modern times and calculated the solar year as 365.2422 days long.

These are just a few examples of the discoveries that have been made in the field of archaeoastronomy. Man, in the beginning was created intelligent!