An impact Flood submodel—dealing with issues

I would like to comment on Michael Oard's fine report, 'An impact Flood submodel—dealing with issues'.[1] I think this is a much needed effort in creation science circles but I have concern. The Late Heavy Bombardment (LHB) event dated to the Flood year certainly looks like it will destroy the planet and burn up the surface of the earth as I read Michael's report. This impression is also supported by secular sources like a recent news report, 'Surviving the Late Heavy Bombardment'.[2] The computer model used in the report shows how much of the earth's surface was superheated during the LHB period according to the evolution model. According to the evolution model, some LHB impacts would virtually sterilize the entire surface, and perhaps early Earth bacteria survived the LHB 3.9 billion years ago several km underground and repopulated the surface from which all life descended today as evolutionists would argue.

Placing the LHB during the Flood year and the earth hit by 36,000 asteroids 4,500 to 5,000 years ago, this solution will be used by evolutionists and old-earth creationists to argue that the LHB can never be fitted into biblical history or a young-earth timescale so only the evolution model and dating makes sense of the LHB in the solar system. In order for Oard or other creationists to avoid this criticism, we must invoke God working a miracle to save the earth and Noah on the Ark to avoid total destruction and sterilization of the planet. This will be a serious issue I feel for young-earth creationists unless we can solve the LHB problem within the biblical timeframe of Genesis 1–11. I know such arguments arose over the vapour canopy theory before the Flood when more detailed computer models disclosed that such a vapour canopy could heat up the earth too much for Noah. The LHB during the Flood year appears to superheat Earth's surface too.

Another concern I have is that the sidereal period of the planets drop off as we move farther away from the sun. Mars, for example, is 1.88 years, the asteroid belt is about 4.4 years, and Jupiter is 11.856 years. Does this suggest that a uniform mass of trillions of asteroids coming from outside the solar system would cause more damage for the closer orbiting bodies around the sun and less impacts the farther out we move? My other comment on this report is should we also see a highly inclined and very eccentric orbiting population of asteroids relative to the sun's equator that became trapped in the sun's gravity field when this group of trillions of asteroids came from outside the solar system? Placing the LHB from an outside source travelling through the solar system has merit, but on a short timescale, this could suggest we should see another asteroid belt with a different inclination and eccentricity to the sun's equator than the main belt observed today.

Rod Bernitt
Upper Marlboro, MD
UNITED STATES of AMERICA

References

1. Oard, M., An impact Flood submodel—dealing with issues, *J. Creation* **26**(2):73–81, 2012.
2. News Notes, Surviving the Late Heavy Bombardment, *Sky & Telescope* **119**(1):20, January 2010.

Michael Oard replies:

I thank Rod Bernitt for his compliments and interest in the subject of impacts. It is because of such interest and the controversial nature of the subject that I wrote the article dealing with issues,[1] hopefully shedding more light on the subject. In our previous letter exchange[2,3] I admitted that my simple extrapolation of the number of impacts from the moon to the earth would be much too catastrophic and that God would have had to modulate the impacts. Bernitt brings up further concerns in his letter.

The use of miracles during the Flood

His first concern is that that evolutionists and old agers would use this information to claim biblical earth history is wrong. But critics of the Bible have already used this argument, and I am sure they will use it even more now that I have published on this issue. I think we creationists must realize that it is really a worldview issue. Critics will always find objections, even if we solve all mysteries. They seem to have a problem with God himself even existing or acting in nature and being able to accurately record biblical earth history in His Word.

So, this issue revolves especially around philosophical and theological issues of God using miracles in His creation. But we have miracles at creation, we have them when Jesus lived, and we will have more during the end times. We cannot avoid miracles during the Flood; after all, God brought the animals to Noah, closed the door to the Ark, started the Flood, ended the Flood, sat as King over the Flood, and *remembered* Noah and the animals during the Flood. In *The Flood Science Review* of Flood models, Joe Bardwell had a problem with invoking miracles, but thinking through the issue he concluded at the end of the review:

> "Can we be certain from these passages that God was or was not supernaturally involved in the Flood? It is difficult to say, but I no longer believe it is unwarranted when an author claims God acted supernaturally during the Flood …. My conclusion is, for an author to invoke a miracle, it must be referenced in the Bible or it must be solidly backed up by evidence that it happened …. For us, the cardinal sin should not be to propose a supernatural event. The cardinal sin should be to propose a supernatural event that cannot be backed up by a body of evidence that it actually happened."[4]

I believe these are wise words.

Would asteroids from outside the solar system produce more damage closer to the sun?

My first guess is that there would be no more impacts on solar system bodies closer to the sun than farther from the sun, assuming the same size, density, etc. of the solar system bodies and a uniform distribution of impactors. I do not think the sidereal period would have much effect, but I may be wrong on this. The relationship between the sidereal period and the number of impacts should be related to the velocity of the solar system body. At a faster velocity, the rate of impacting would be faster than at a slower velocity, but after the asteroids pass, the number of impacts should be the same.

I think the situation would be like a little boy caught in a rain shower a block away from home. He would be hit by the same number of raindrops whether he walked or ran home.

Should we see left-over impactors?

I am glad Mr Bernitt sees the merit of the trillions of asteroids originating from outside the solar system, but I do not have an answer to this question. I think it would take a sophisticated calculation of the gravitational effects of the sun and other solar system bodies on such a population of asteroids.

Michael J. Oard
Bozeman, MT
UNITED STATES of AMERICA

References

1. Oard, M.J., An impact Flood submodel—dealing with issues, *J. Creation* **26**(2):73–81, 2012.
2. Bernitt, R., How many impact craters should there be on the earth? *J. Creation* **24**(1):48, 2010.
3. Oard, M.J., How many impact craters should there be on the earth? Michael Oard replies, *J. Creation* **24**(1):48–49, 2010.
4. Bardwell, J. (Ed.), *The Flood Science Review*, In Jesus' Name Productions, Inc., pp. 1641, 1644, 2011; www.injesusnameproductions.org.

A new magnetic field theory and Flood model

I really appreciate your efforts to shine light on the changes to which our planet has been subjected. Thank you for your effort. However, I have some problems with some details and I look forward to your comments. I hope that my observations are wrong, but I submit the following for your consideration.

1. You calculate the original mass of an isotope given its present mass, its half-life and the duration of the decay period (the 'elapse time'). To do this you insert numbers into an equation to give, for example, ^{235}U:

$$\frac{(1.3\times10^{15}\,kg^{235}U)}{\left(1-\frac{1}{2^{\frac{(7.038\times10^{8}\,yrs)}{(4.5\times10^{9}\,yrs)}}}\right)}$$

$$=1.3\times10^{16}\,kg^{235}U$$

It is bad practice to simply wind numbers into an equation. It is always good to quote the equation being used, and for the benefit of those of us who are not familiar with a field, give some idea of its origin and derivation. The equation, as printed, is

$$m_o=\frac{m_c}{\left(1-\frac{1}{2^{\frac{t_{Half-life}}{t_{Elapse}}}}\right)}$$

m_o = Original total mass of isotope
m_c = Current total mass of isotope
t_{Elapse} = Elapse time from when original mass of isotope was present
$t_{Half-life}$ = Half-life of isotope

By my calculations the numerical value yielded by this equation is obviously wrong because it produces spurious results. I suspect the equation you have used is wrong.

2. Perhaps the equation you had intended to use was

$$m_0=\frac{m_c}{\left(1-\frac{1}{2^{\left(t_{Half-life}/\,t_{Elapse}\right)}}\right)}$$

The results I get from this equation are close to the values you get—as can be seen from the table below. However, I cannot see where this equation comes from.

3. I am not intimate with the details of radioactive decay, but I understand that

$$m_c=m_o\left(1/2\right)^{\left(t_{Elapse}/t_{Half-life}\right)}$$

So that

$$m_o=m_c(2)^{\left(t_{Elapse}/t_{Half-life}\right)}$$

to give

$$m_o=1.3\times10^{15}\,kg^{235}U\times(2)^{\left(\frac{4.5\times10^{9}\,yrs}{7.038\times10^{8}\,yrs}\right)}$$

$$=1.09\times10^{17}\,kg^{235}U$$

Is there any reason why the masses you want cannot be calculated from 'first principles'?

The following table shows the significant difference in the results.

	Your result	My result from your equation	Original mass from first principles
U-235	1.30×10^{16}	1.27×10^{16}	1.09×10^{17}
U-238	3.60×10^{17}	3.62×10^{17}	3.62×10^{17}
Th	7.30×10^{17}	7.34×10^{17}	8.12×10^{17}
K-40	1.10×10^{18}	1.14×10^{18}	2.43×10^{18}

Lance Reece
Shortland, NSW
AUSTRALIA

Don Stenberg replies:

Thank you for reading my paper and contacting me about it. I think you're exactly right—I did use the wrong equation in my paper to determine the original radioisotope