ASTRONOMY CLASS DISCUSSION

A university student discusses astrophysical evidence with his professor. Let's listen in on the conversation. This is science vs. evolution—a *Creation-Evolution Encyclopedia,* brought to you by Creation Science Facts.

This material is excerpted from the book, *ORIGIN OF THE SOLAR SYSTEM.*
An asterisk (*) by a name indicates that person is not known to be a creationist. Of over 4,000 quotations in the books this *Encyclopedia* is based on, only 164 statements are by creationists.

Instructor: Everything began with a Big Bang, when nothing suddenly came together and exploded.

Student: But prof, "nothing" can't explode.

Instructor: Our theoreticians have theorized that nothing might be able to explode under the right conditions, if compacted enough.

Student: But prof, there would be nothing to press "nothing" together; gravity surely wouldn't.

Instructor: It was an immense explosion, fueled by a massive amount of energy.

Student: But prof, if there was nothing there, then there was no matter and no energy there. Only matter can explode, and it takes a source of energy to fire it.

Instructor: This hydrogen shot outward, then stopped, and then began whirling, and formed itself into stars.

Student: But prof, out-rushing hydrogen would never stop in outer space, and there is no way it could start whirling.

Instructor: This hydrogen pushed itself together into stars. This is because there is immense gravitation exerted by a star.

Student: But prof, hydrogen in the vacuum of outer space never jams itself together. Instead, it continually flows outward and becomes less dense, not more. Yes, stars have immense gravity, but only after they are formed, not before.

Instructor: Then many of those first stars exploded. The extra-large explosions—*the* supernovas—made all the post-helium elements in the universe.

Student: But prof, because of the *helium mass-4 gap,* very few—if any—heavier

elements could be made from hydrogen or helium. Analysis of outflowing gases from the Crab supernova explosion of A.D. 1054 revealed the presence of only hydrogen and helium, and none of the heavier elements.

Instructor: Each supernova explosion compacted and produced more stars.

Student: But prof, an exploding star would only produce outflowing gas, not another star. Loose, gaseous matter never compacts itself together in the vacuum of outer space. It does not even do it here on earth.

Instructor: The Big Bang, and later random explosions of stars, produced all our present stars. And then they got together into intricately balanced orbits. We theorize that random motion can do that.

Student: But prof, random explosions could never produce carefully balanced orbits of stars, binaries, clusters, and galaxies.

Instructor: Then all those stellar explosions suddenly stopped. By coincidence, we think the explosions stopped just before human civilization and records suddenly began a few hundred years ago.

Student: But prof, that means it is only a theory that says all those explosions occurred. Why then did they suddenly stop? Thousands of supernova explosions—brighter than our planets—should occur each night.

Instructor: We have been searching for years for the *missing mass*, which is 90 percent of all the matter produced by the theoretical Big Bang. We finally think we have found it: It is invisible and all around us!

Student: But prof, this is just another example of evidence which is no evidence.

Instructor: Thus, because of the Big Bang, we have stars and galaxies all through space.

Student: But prof, a Big Bang explosion would only produce gas that would keep flowing forever outward toward the edges of space. It would not turn around and go back in, much less from itself into stars.

Instructor: Planets are just gas spun off from the stars, which then compacted themselves together.

Student: But prof, why then do planets have a totally different elemental composition? And how could outflowing gas from stars squeeze itself into planets?

Instructor: Now I want to explain celestial mechanics. It is because of *angular momentum*—the turning motion (revolutions) of stars, binaries, planets, moons, and galaxies, along with their orbits around other bodies (rotations), that they are able to maintain their precise relationships to one another—without all crashing together or flying apart.

Student: But prof, how could outward explosions of Big Bang—and later of stars—produce spin and orbit? How could linear motion change into angular momentum?

Instructor: That Big Bang produced all our present matter and, fortunately, almost no antimatter. If both had been produced in equal amounts, the two would have instantly destroyed one another—and no matter would have remained.

Student: But prof, every calculation requires the production of equal amounts of both matter and antimatter. And, yes, they then would have totally destroyed one another.

Instructor: We think we have solved that problem: Our theorists suspect that all that antimatter traveled off somewhere else by itself. It has been suggested that perhaps it has been hidden behind some stars and galaxies, and has just so far eluded us.

Student: But prof, that antimatter would not—could not—travel off by itself. Under laboratory conditions, the two instantly fly to one another, annihilating both.

Instructor: The Big Bang theoretically produced only smooth gas; and, as it flowed outward, it changed itself into all our stars and galactic systems.

Student: But prof, even the theoreticians know that smooth gas could never do that.

Instructor: The very best evidence of the Big Bang is background radiation. We consider it the "last whisper" of the Big Bang, which exploded 15 billion years ago.

Student: But prof, background radiation does not fit the theory. It is the wrong temperature, is totally smooth, has the wrong spectrum, and comes from every direction—instead of just one.

Instructor: Our other best evidence of the Big Bang is a theory we devised about the redshift. We think the spectral shift of distant stars is caused because they are speeding away from us. The farther a star is from us, the faster it is moving outward.

Student: But prof, there is an abundance of evidence against the speed theory, and for the other redshift theories.

Instructor: Let us now turn our attention to the expanding universe theory. It is based on the speed theory, which in turn is based on the Big Bang theory. That is why we know the universe is expanding outward.

Student: But prof, it is just one theory piled on another theory. Everything is theory without serious evidence. *Instructor:* Then there are quasars. According to the speed theory, they are rushing away from us nearly as fast—and some eight times faster—than the speed of light!

Student: But prof, the quasar problem would be solved if we would admit the speed theory is incorrect.

Instructor: It is really no problem at all: We are thinking of changing the speed of light to fit the theory. Quasars are also remarkable in that, although extremely distant from us, they are still bright enough to see through our telescopes.

Student: But prof, this is but another evidence that the current speed theory and quasar theory are both incorrect. Visible quasars so far away would be impossible, and would violate the *inverse-square law.*

Instructor: Our matter and stellar origin theories demonstrate that, everywhere throughout the universe, there is a continual production of matter and a continual progression from disorder to order.

Student: But prof, the *First and Second Laws of Thermodynamics* make it impossible for either of those possibilities to occur.

Instructor: Some stars are older and others are younger. We know this for three reasons. The first is that many of the first generation of stars (*Population III stars*) exploded, producing second and third generation stars (*Population I and II*) which have heavy metals—elements above hydrogen and helium.

Student: But prof, if that were true, there would be some Population III stars in the sky somewhere, but none are to be found.

Instructor: The second reason is that we have theorized that red giant stars are very old, blue stars are younger, and dwarfs are the oldest of all. This shows variations of age in the stars and proves our theory.

Student: But prof, you are using a theory to prove a theory. The metalicity of all those stars is essentially the same! Then all show essentially the same chemical composition. If the theory were correct, then the youngest stars would have the highest content of heavy elements—elements above helium,—and the oldest would be non-metalicity stars—and only have hydrogen and helium. In addition, red giants and dwarfs are both found in each galaxy. The *mass-luminosity law* requires that the brightest, hottest stars burn themselves out the fastest,—yet they are all found together in the same galaxy, and there is no evidence that new stars are being formed.

Instructor: The third reason is that we have theorized that the central stars in galaxies are much younger while nearly all of those in the outer disk are much older. In addition, we have decided that the stars in globular clusters must be much younger still. These are outstanding evidences that our general theory of stellar origins and evolution must be true.

Student: But prof, the metalicity of both types of stars in the galaxies is essentially the same! And the same holds true for the globular cluster stars in relation to the disk and central sphere stars. The theory requires that the youngest stars have extremely high metalicity and the oldest extremely low metalicity or none at all.