

1: thoughtcollision

Thought's Collision. likes. We sharing some conflicting situation, thoughts, ideas which sometimes make our head burdened. If you have any, share.

Correct me if I am wrong, but do not most galaxy collisions result in elliptical galaxies? Can collisions between galaxies result in a spiral galaxy at some later stage in the post collision evolution? LC October 13, at

There has been solid evidence for quite some time now that galaxy clusters form along filaments of gas. It stands to reason then that these same filaments are feeding nascent galaxies in the same way that a gas line feeds an engine. Such observation when extrapolated make alot of sense when considering how spiral galaxies might form. October 14, at

If galaxies are feeding on an interstellar medium, what is the byproduct in the wake of the galaxy? Like an organism might turn co2 to oxygen. How do galaxies connect in their local clusters? Is there a variance in the density of interstellar space. If so do galaxies travel randomly or follow higher densities. To me this paints a far more pleasing hypothesis of the universe, less random chance, more ecosystem on a grand scale. With lots of new questions to consider. Damian October 14, at 2: The former will leave the usual stardust, some of which will escape the gravity of te galaxy from SuperNova explosions. Metaphorically, the galaxy is sucking up the energy mass of the interstellar medium and storing it by conversion to heavier elements. The singularities remain the mystery here, the Milky way has a Circumnuclear Disk of molecular gas that orbits the Galactic center at two parsecs that is considered favorable for star formation. The hypothesis is that Star bursts may occur every million years in this region. Perhaps thats how long it takes for our galaxy to accrue enough ionized gas from the interstellar medium for this to occur.? Perhaps collected would be a better analogy.? Damian October 14, at 5: A mental picture of these structures might be spider webs in an attic. The sunlight which glints off the points on these webs are galaxy clusters. Further, the walls of the attic are moving outwards, to simulate the expansion of the universe. So the filaments are being drawn and thinned with time, while material also gravitationally accretes on the galaxy clusters. The dark matter will not so much accumulate there, but luminous matter which strongly interacts will lose energy so as to accumulate. The SDSS and related research has found large scale filaments and structures. It is worth mentioning that John Hurcha, who lead initial the research on the map demonstrating filaments and domain walls, died recently. These structures have a fractal structure to them and the question has occurred to me whether it has the same Hausdorff dimension as the structure of CMB anisotropy. The wastes produced by this process, if we call it that, are heavy elements and collapsed stellar cores. From a thermodynamic perspective the generation of heavy elements is a sort of cosmic chemical potential term in the thermodynamic first law conservation equation. LC October 14, at

I think it had something to do with barred spirals. The story was probably here in UT, so a search may answer your question. Our Milky way is a spiral, and several galactic collisions have taken place in the past, and IIRC two or three are happening now. This would support the idea that ellipticals are not the only outcome of a galactic collision. Sorry I could not be more specific, or cite specific papers. October 16, at 9: I will add a few comments addressing some issues above. It is thought that collisions of dwarf galaxies generate spirals and that the collision of spirals generates elipticals. Infalling gas from the interstellar medium would have been a phenomenon much more commonly seen in an younger universe, but still may go on today to some extent. Such infalling gas would concentrate around the core of the galaxy and could provide material that generates star formation there. It could also provide an alternative explanation for the frequency of quasar outbursts in the early universe as it accretes upon the supermassive black hole, especially when there is no evidence of a recent galaxy merger. Such streams would be very difficult, if not impossible, to spot in the early universe given the current resolving power of our biggest telescopes. Naturally it would occur on a larger scale in galaxy clusters which is why this process has been seen on that scale.

2: Collision Lab - Collisions | Momentum | Velocity - PhET Interactive Simulations

This set of 32 problems targets your ability to use the momentum equation and the impulse-momentum change theorem in order to analyze physical situations involving collisions and impulses, to use momentum conservation principles to analyze a collision or an explosion, to combine a momentum analysis.

Geoff Ziezulewicz June 17 A day with a Fitzgerald father: Recounting the loss Darrold Martin talks about receiving the news that his son Xavier was killed, and the aftermath that followed. Martin had just watched Coppock plead guilty to dereliction of duty. She oversaw navigating the ship at 1: Martin said she had been crying. A few months later, the John S. McCain would suffer its own collision, and another 10 sailors would die. Sarah Coppock pleaded guilty to a dereliction of duty charge. She was sentenced to a pay forfeiture, a punitive letter and waived her right to an administrative separation board. Geoff Ziezulewicz Big Navy reviews have blamed the collision on a failure of basic seamanship, exacerbated by an operational tempo that left sailors little time to train. You are no one but a scapegoat. All of you are. Seven sailors died aboard the warship Fitzgerald on June 7, Navy Some still have questions, while others are just trying to get through each day without a piece of themselves. A year after the Fitzgerald collision, Martin likened every day without Xavier to wearing smudged glasses. I sit on the edge of the bed, and then I crawl right back in. Alone in his home outside Baltimore, he sees commercials about troops battling PTSD, and his mind goes to dark places. Darrold goes to a memorial On Memorial Day, Darrold Martin attends a special ceremony to honor his son Xavier and other Maryland service members killed in the past year, and struggles with guilt and grief. He has only dreamed of Xavier twice. Inside, among other personal effects, was a small book of motivational poems Martin had bought for his son years ago. When the tattoo is scanned with a smart phone, the message plays. Xavier had a tattoo of a saying his dad often told him growing up: A day with a Fitzgerald father: Listening to the final message Almost one year after the crash of the Fitzgerald that killed seven sailors, Military Times spent Memorial Day with the father of one of the sailors drowned in the collision. Darrold Martin listens to the last voicemail message his son sent to him - through a sound wave tattooed onto his arm. View more special coverage here: While Martin blames the Navy for the collisions, he said that not every family sees it the same way regarding who was responsible. He blames the sea service. Sailors had less than a minute to escape as seawater blasted through a massive hole in the destroyer Fitzgerald after a container ship struck its starboard side on June Martin said they speak of a lack of counseling, of one attempting suicide, of other sailors on their new ships asking them: Small things grind Martin these days. He tried to tell Navy leadership about the Fitzgerald sailors needing support, prompting a master chief at the Pentagon to ask him for their names. How about the entire ship? A year later, Martin worries that traumatized Fitzgerald sailors moving to other crews could endanger those ships. What are you doing? The year-old was the oldest of four siblings and enlisted to give back to his mother and see the world, according to his little sister, Mary Huynh. Huynh said it was the last time the family spoke to Tan. When the collision occurred, Huynh said she was browsing news on her phone but had forgotten that Tan was on the Fitzgerald. Still, she remembered he was underway. Later that night, her younger brother and sister ran into her bedroom, hysterical. The Navy had just called. Like the rest of the Fitzgerald families, Huynh said her family no longer feels complete. Her family has issues with how the Navy has handled things.

3: Galaxy Growth Not Always Result of Violent Collisions - Universe Today

thoughts on collision detection see attached image. if i want to do something where the ball will fall (not necessarily in a straight vertical drop) think wind or something - onto the target area and i want to give scores based on where landed.

Nyarri offers us a view to what he saw, and, reflecting on this extraordinary event, shares his perspective on the Martu way to care for the planet. Collisions focuses on the needs of future generations, as we dive head-long into the fourth industrial revolution. Collisions is a story we urgently need to hear as we struggle to develop a meaningful response to the human-induced climate change of our shared planet. So this work was born, as a thought or an imagining. I have worked in immersive environments for over 20 years and I felt like VR was the technology I had been waiting for. A partnership with Jaunt VR has made Collisions a reality but only with the inexhaustible, unflappable energy of producer Nicole Newnham. I love new technology. I love the moment when the viewer experiences a new sensation for the first time. I know that moment gets seared into memory. I also believe in the power of story to reshape us collectively. I think the two belong together. VR will soon hit in a big way, very possibly to become ubiquitous. In the window of time that exists before then I wanted to make a work that has protocols of meeting at its core. The agency in Collisions belongs to Nyarri. From that moment, Nyarri become the one who decided what was seen and what was not to be seen, what was told and what was not told. The powerful sense of presence of VR makes everything personal. Nyarri knew who it was he was speaking to. So this work is something of a gift sent out from a private world. It contains an old story, held close till now. It is a technological message in a bottle to a world that teeters on the edge of climate catastrophe, but it is a message shared with a fundamental hope in our capacity to contemplate more carefully the consequences of our actions. A few people laughed, a few people cried, most people were silent. I remembered the line from the Hindu scripture, the Bhagavad-Gita.

4: The Film | Collisions: A virtual reality film by Lynette Wallworth

The physics of a car collision will never, no matter how energetic, emit a completely new car. The car would experience exactly the same force in both cases. The only force that acts on the car is the sudden deceleration from v to 0 velocity in a brief period of time, due to the collision with another object.

Traffic collisions can be classified by general types. Types of collision include head-on, road departure, rear-end, side collisions, and rollovers. Many different terms are commonly used to describe vehicle collisions. The World Health Organization uses the term road traffic injury, [4] while the U.S. Some organizations have begun to avoid the term "accident", instead preferring terms such as "collision", "crash" or "incident". Causes[edit] A study by K. Vehicle and road modifications are generally more effective than behavioral change efforts with the exception of certain laws such as required use of seat belts, motorcycle helmets and graduated licensing of teenagers. Examples include driver behavior, visual and auditory acuity, decision-making ability, and reaction speed. Nearly all drivers who had been in a crash did not believe themselves to be at fault. Although proficiency in these skills is taught and tested as part of the driving exam, a "good" driver can still be at a high risk of crashing because: Confidence feeds itself and grows unchecked until something happens – a near-miss or an accident. However, this does not translate to significantly lower crash rates in Ireland. There are demographic differences in crash rates. For example, although young people tend to have good reaction times, disproportionately more young male drivers feature in collisions, [20] with researchers observing that many exhibit behaviors and attitudes to risk that can place them in more hazardous situations than other road users. Older drivers with slower reactions might be expected to be involved in more collisions, but this has not been the case as they tend to drive less and, apparently, more cautiously. In Leeming warned that there is a balance to be struck when "improving" the safety of a road: This is, in part, because if drivers perceive a location as hazardous, they take more care. Collisions may be more likely to happen when hazardous road or traffic conditions are not obvious at a glance, or where the conditions are too complicated for the limited human machine to perceive and react in the time and distance available. High incidence of crashes is not indicative of high injury risk. Crashes are common in areas of high vehicle congestion, but fatal crashes occur disproportionately on rural roads at night when traffic is relatively light. This phenomenon has been observed in risk compensation research, where the predicted reductions in collision rates have not occurred after legislative or technical changes. One study observed that the introduction of improved brakes resulted in more aggressive driving, [23] and another argued that compulsory seat belt laws have not been accompanied by a clearly attributed fall in overall fatalities. Monderman developed shared space principles, rooted in the principles of the woonerven of the Netherlands. He concluded that the removal of highway clutter, while allowing drivers and other road users to mingle with equal priority, could help drivers recognize environmental clues. They relied on their cognitive skills alone, reducing traffic speeds radically and resulting in lower levels of road casualties and lower levels of congestion. Jose Luis Lopez Perez, a staged crash driver, died after one such maneuver, leading to an investigation that uncovered the increasing frequency of this type of crash. The evidence shows the risk of having a crash is increased both for vehicles traveling slower than the average speed, and for those traveling above the average speed. The risk of being injured increases exponentially with speeds much faster than the median speed. There is limited evidence suggesting lower speed limits result in lower speeds on a system-wide basis. Most crashes related to speed involve speed too fast for the conditions. More research is needed to determine the effectiveness of traffic calming. Assured clear distance ahead A common cause of accidents is driving faster than one can stop within their field of vision. These drivers have the highest incidence of both collisions and fatalities among all driver age groups, a fact that was observed well before the advent of mobile phones. Females in this age group exhibit somewhat lower collision and fatality rates than males but still register well above the median for drivers of all ages. Also within this group, the highest collision incidence rate occurs within the first year of licensed driving. For this reason, many US states have enacted a zero-tolerance policy wherein receiving a moving violation within the first six months to one year of obtaining a license results in automatic license

suspension. Old age Old age , with some jurisdictions requiring driver retesting for reaction speed and eyesight after a certain age. Sleep deprivation A graph outlining the relationship between number of hours driven and the percent of commercial truck crashes related to driver fatigue. Many jurisdictions now restrict or outlaw the use of some types of phone within the car. Recent research conducted by British scientists suggests that music can also have an effect; classical music is considered to be calming, yet too much could relax the driver to a condition of distraction. On the other hand, hard rock may encourage the driver to step on the acceleration pedal, thus creating a potentially dangerous situation on the road. National Safety Council compiled more than 30 studies postulating that hands-free is not a safer option, because the brain remains distracted by the conversation and cannot focus solely on the task of driving. For example, an accident may be caused by a driver who intends to commit suicide. Combining low doses of alcohol and cannabis has a more severe effect on driving performance than either cannabis or alcohol in isolation, [48] or Taking recommended doses of several drugs together, which individually do not cause impairment, may combine to bring on drowsiness or other impairment. Pedestrians or cyclists are affected in the same way and can similarly jeopardize themselves or others when on the road. Highway engineering and Road safety A potential long fall stopped by an early guardrail, ca. Guardrails , median barriers , or other physical objects can help reduce the consequences of a collision or minimize damage. Most of these crashes also involved a human factor. In these circumstances, it is frequently the driver who is blamed rather than the road; those reporting the collisions have a tendency to overlook the human factors involved, such as the subtleties of design and maintenance that a driver could fail to observe or inadequately compensate for. Individual roads also have widely differing performance in the event of an impact. In Europe, there are now EuroRAP tests that indicate how "self-explaining" and forgiving a particular road and its roadside would be in the event of a major incident. Vehicle design and maintenance[edit] A Chevrolet Malibu involved in a rollover crash Seat belts Research has shown that, across all collision types, it is less likely that seat belts were worn in collisions involving death or serious injury, rather than light injury; wearing a seat belt reduces the risk of death by about 45 percent. Several important driving behaviors were observed on the road before and after the belt use law was enforced in Newfoundland, and in Nova Scotia during the same period without a law. Belt use increased from 16 percent to 77 percent in Newfoundland and remained virtually unchanged in Nova Scotia. Four driver behaviors speed, stopping at intersections when the control light was amber, turning left in front of oncoming traffic, and gaps in following distance were measured at various sites before and after the law. Changes in these behaviors in Newfoundland were similar to those in Nova Scotia, except that drivers in Newfoundland drove slower on expressways after the law, contrary to the risk compensation theory. The design of vehicles has also evolved to improve protection after collision, both for vehicle occupants and for those outside of the vehicle. In the early s, British Leyland started an intensive programme of vehicle safety research, producing a number of prototype experimental safety vehicles demonstrating various innovations for occupant and pedestrian protection such as air bags , anti-lock brakes , impact-absorbing side-panels, front and rear head restraints, run-flat tires, smooth and deformable front-ends, impact-absorbing bumpers, and retractable headlamps. Common features designed to improve safety include thicker pillars, safety glass, interiors with no sharp edges, stronger bodies , other active or passive safety features, and smooth exteriors to reduce the consequences of an impact with pedestrians. The UK Department for Transport publish road casualty statistics for each type of collision and vehicle through its Road Casualties Great Britain report. Center of gravity Some crash types tend to have more serious consequences. Rollovers have become more common in recent years, perhaps due to increased popularity of taller SUVs , people carriers , and minivans , which have a higher center of gravity than standard passenger cars. After retrofitting these systems to its models in â€”, Mercedes saw its models involved in fewer crashes. This difference is reflected in the casualty statistics, where they are more than twice as likely to suffer severely after a collision. In , there were , road crashes with , reported casualties on roads in Great Britain. This included 3, deaths 1.

5: when thoughts collide

Random thoughts and collisions Ideas and thoughts about Microsoft Identity, C# development, cabbages and kings and random flotsam on the incoming tide Friday, December 08,

First Impressions It is invitingly cool but familiarly cold. The move away from real world icons skeuomorphism to more abstract flatter ones, right now is still a bit off-putting for me. It prevents or slows down emotional connection. That is what was great about iOS and the Mac itself. Subtly familiar but digital. Now it is overtly digital, and in turn overtly unfamiliar. Connection is what Jobs understood. That was his genius. How to make the impersonal code, computers, etc. Now it has to perform before even being close to loved because nothing is humanly familiar. That is not to say I dislike it. The more I use it, the more I appreciate it. However, it is different. Like a friend you grew up with who moved away for several years and is now back in the neighborhood. It is nice to see that person, again, but wow, have things changed! As with any adjusted relationship, only time will decrease those inherently awkward moments as you get to know each other better. Thankfully, the more you get to know iOS 7, the more you find to like about it. Even if it does remind you of Ghost in the Shell. New cybernetic body same person? Or if you upgraded, like most, same body, different person?! Welcome to the future.

6: DiPT - Erowid Exp - 'Collisions of Thought'

Material: 74 mg DiPT Body Weight: lb male Time: pm The Experience Several months ago, I picked up mg DiPT. I had read and re-read the Tihkal entry a dozen times, and I was interested in the 'auditory' hallucinations.

The more difficult problems are color-coded as blue problems. Momentum An object which is moving has momentum. The amount of momentum p possessed by the moving object is the product of mass m and velocity v . Knowing the numerical values of all but one of the quantities in the equations allows one to calculate the final quantity in the equation. An equation can also be treated as a statement which describes qualitatively how one variable depends upon another. Two quantities in an equation could be thought of as being either directly proportional or inversely proportional. Momentum is directly proportional to both mass and velocity. A two-fold or three-fold increase in the mass with the velocity held constant will result in a two-fold or a three-fold increase in the amount of momentum possessed by the object. Similarly, a two-fold or three-fold increase in the velocity with the mass held constant will result in a two-fold or a three-fold increase in the amount of momentum possessed by the object. Thinking and reasoning proportionally about quantities allows you to predict how an alteration in one variable would effect another variable. The product of force and time is known as impulse. The product of mass and velocity change is known as momentum change. In a collision the impulse encountered by an object is equal to the momentum change it experiences. In many of these problems, a piece of extraneous information is provided. Without an understanding of the above relationships, you will be tempted to force such information into your calculations. Physics is about conceptual ideas and relationships; and problems test your mathematical understanding of these relationships. If you treat this problem set as a mere exercise in the algebraic manipulation of physics equations, then you are likely to become frustrated quickly. As you proceed through this problem set, be concepts-minded. Do not strip physics of its conceptual meaning. Rebounding Several of the problems in this set of problems demand that you be able to calculate the velocity change of an object. This calculation becomes particularly challenging when the collision involves a rebounding effect - that is, the object is moving in one direction before the collision and in the opposite direction after the collision. Velocity is a vector and is distinguished from speed in that it has a direction associated with it. In a collision, the velocity change is always computed by subtracting the initial velocity value from the final velocity value. If an object is moving in one direction before a collision and rebounds or somehow changes direction, then its velocity after the collision has the opposite direction as before. Ignoring this principle will result in great difficulty when analyzing any collision involving the rebounding of an object. The Momentum Conservation Principle In a collision between two objects, each object is interacting with the other object. The interaction involves a force acting between the objects for some amount of time. This force and time constitutes an impulse and the impulse changes the momentum of each object. So with confidence it can be stated that In a collision between object 1 and object 2, the force exerted on object 1 F_1 is equal in magnitude and opposite in direction to the force exerted on object 2 F_2 . Now in any given interaction, the forces which are exerted upon an object act for the same amount of time. And the duration of time during which you contact the object is the same as the duration of time during which that object contacts you. Touch a wall for 2. Such a contact interaction is mutual; you touch the wall and the wall touches you. Thus, it is simply logical to state that in a collision between object 1 and object 2, the time during which the force acts upon object 1 t_1 is equal to the time during which the force acts upon object 2 t_2 . Now we have two equations which relate the forces exerted upon individual objects involved in a collision and the times over which these forces occur. It is accepted mathematical logic to state the following: Objects encountering impulses in collisions will experience a momentum change. The momentum change is equal to the impulse. The amount of momentum gained by one object is equal to the amount of momentum lost by the other object. The total amount of momentum possessed by the two objects does not change. Momentum is simply transferred from one object to the other object. Put another way, it could be said that when a collision occurs between two objects in an isolated system, the sum of the momentum of the two objects before the collision is equal to the sum of the momentum of the two objects after the collision. If the

system is indeed isolated from external forces, then the only forces contributing to the momentum change of the objects are the interaction forces between the objects. As such, the momentum lost by one object is gained by the other object and the total system momentum is conserved. And so the sum of the momentum of object 1 and the momentum of object 2 before the collision is equal to the sum of the momentum of object 1 and the momentum of object 2 after the collision. The following mathematical equation is often used to express the above principle. The symbols v_1 and v_2 in the above equation represent the velocities of objects 1 and 2 before the collision. Direction Matters Momentum is a vector quantity; it is fully described by both a magnitude numerical value and a direction. The direction of the momentum vector is always in the same direction as the velocity vector. Because momentum is a vector, the addition of two momentum vectors is conducted in the same manner by which any two vectors are added. For situations in which the two vectors are in opposite directions, one vector is considered negative and the other positive. Successful solutions to many of the problems in this set of problems demands that attention be given to the vector nature of momentum.

Two-Dimensional Collision Problems A two-dimensional collision is a collision in which the two objects are not originally moving along the same line of motion. They could be initially moving at right angles to one another or at least at some angle other than 0 degrees and degrees relative to one another. In such cases, vector principles must be combined with momentum conservation principles in order to analyze the collision. The underlying principle of such collisions is that both the "x" and the "y" momentum are conserved in the collision. The analysis involves determining pre-collision momentum for both the x- and the y- directions. If inelastic, then the total amount of system momentum before the collision and after can be determined by using the Pythagorean theorem. Since the two colliding objects travel together in the same direction after the collision, the total momentum is simply the total mass of the objects multiplied by their velocity.

Momentum Plus Problems A momentum plus problem is a problem type in which the analysis and solution includes a combination of momentum conservation principles and other principles of mechanics. Such a problem typically involves two analysis which must be conducted separately. One of the analysis is a collision analysis to determine the speed of one of the colliding objects before or after the collision. When solving momentum plus problems, it is important to take the time to identify the known and the unknown quantities.

Habits of an Effective Problem-Solver An effective problem solver by habit approaches a physics problem in a manner that reflects a collection of disciplined habits. While not every effective problem solver employs the same approach, they all have habits which they share in common. These habits are described briefly here. If needed, they sketch a simple diagram of the physical situation to help visualize it. They equate given values to the symbols used to represent the corresponding quantity e . Where needed, they perform the needed conversion of quantities into the proper unit. The following pages from The Physics Classroom tutorial may serve to be useful in assisting you in the understanding of the concepts and mathematics associated with these problems.

7: Random thoughts and collisions: ADFS : OAuth token timeout

A particularly powerful and unique instance of quotation, celebrity, stereotyping, and monochromatic painting uniting into one force is Ligon's Richard Pryor paintings.

History[edit] In , George Darwin made the suggestion that the Earth and Moon were once a single body. This drifting was later confirmed by American and Soviet experiments, using laser ranging targets placed on the Moon. Hartmann and Donald R. Their models suggested that, at the end of the planet formation period, several satellite-sized bodies had formed that could collide with the planets or be captured. They proposed that one of these objects may have collided with the Earth, ejecting refractory, volatile-poor dust that could coalesce to form the Moon. This collision could potentially explain the unique geological and geochemical properties of the Moon. Cameron and American astronomer William R. Ward , who suggested that the Moon was formed by the tangential impact upon Earth of a body the size of Mars. It is hypothesized that most of the outer silicates of the colliding body would be vaporized, whereas a metallic core would not. Hence, most of the collisional material sent into orbit would consist of silicates, leaving the coalescing Moon deficient in iron. The more volatile materials that were emitted during the collision probably would escape the Solar System, whereas silicates would tend to coalesce. This designation was proposed initially by the English geochemist Alex N. Halliday in and has become accepted in the scientific community. One of the attractive features of the giant-impact hypothesis is that the formation of the Moon and Earth align; during the course of its formation, the Earth is thought to have experienced dozens of collisions with planet-sized bodies. The Moon-forming collision would have been only one such "giant impact" but certainly the last significant impactor event. The Late Heavy Bombardment by much smaller asteroids occurred later - approximately 3. Basic model[edit] Simplistic representation of the giant-impact hypothesis. Astronomers think the collision between Earth and Theia happened at about 4. Theia is thought to have struck the Earth at an oblique angle when the Earth was nearly fully formed. However, a significant portion of the mantle material from both Theia and the Earth would have been ejected into orbit around the Earth if ejected with velocities between orbital velocity and escape velocity or into individual orbits around the sun if ejected at higher velocities. The material in orbits around the Earth quickly coalesced into the Moon possibly within less than a month, but in no more than a century. Estimates based on computer simulations of such an event suggest that some twenty percent of the original mass of Theia would have ended up as an orbiting ring of debris around the Earth, and about half of this matter coalesced into the Moon. The Earth would have gained significant amounts of angular momentum and mass from such a collision. The smaller moon may have remained in orbit for tens of millions of years. As the two moons migrated outward from the Earth, solar tidal effects would have made the Lagrange orbit unstable, resulting in a slow-velocity collision that "pancaked" the smaller moon onto what is now the far side of the Moon, adding material to its crust. One possible explanation is that Theia formed near the Earth. For this scenario to be viable, however, the proto-lunar disk would have to endure for about years. Work is ongoing to determine whether or not this is possible. Synestia model[edit] Further modelling of the transient structure has given rise to the concept of a synestia , a doughnut-shaped body that existed for a century before it cooled down and gave birth to the Earth and the moon. The highly anorthositic composition of the lunar crust, as well as the existence of KREEP -rich samples, suggest that a large portion of the Moon once was molten; and a giant impact scenario could easily have supplied the energy needed to form such a magma ocean. Several lines of evidence show that if the Moon has an iron -rich core, it must be a small one. Appropriate impact conditions satisfying the angular momentum constraints of the Earth's Moon system yield a Moon formed mostly from the mantles of the Earth and the impactor, while the core of the impactor accretes to the Earth. Comparison of the zinc isotopic composition of Lunar samples with that of Earth and Mars rocks provides further evidence for the impact hypothesis. Moon rocks contain more heavy isotopes of zinc, and overall less zinc, than corresponding igneous Earth or Mars rocks, which is consistent with zinc being depleted from the Moon through evaporation, as expected for the giant impact origin. For example, the giant-impact hypothesis implies that a surface magma ocean would have formed following the impact. Yet

there is no evidence that the Earth ever had such a magma ocean and it is likely there exists material that has never been processed in a magma ocean. If the giant-impact hypothesis is correct, they must be due to some other cause. A moon that formed around Venus by this process would have been unlikely to escape. If such a moon-forming event had occurred there, a possible explanation of why the planet does not have such a moon might be that a second collision occurred that countered the angular momentum from the first impact. For typical terrestrial planets with a mass of 0. For example, some orbits may cause the moon to spiral back into the planet. Likewise, the proximity of the planet to the star will also affect the orbital evolution. The net effect is that it is more likely for impact-generated moons to survive when they orbit more distant terrestrial planets and are aligned with the planetary orbit. Such objects may have stayed within the Earth-Moon system for as long as million years, until the gravitational tugs of other planets destabilized the system enough to free the objects. Especially, the indistinguishable relation of oxygen isotopes cannot be explained by the classical form of this hypothesis. According to research on the subject that is based on new simulations at the University of Bern by physicist Andreas Reufer and his colleagues, Theia collided directly with Earth instead of barely swiping it. The collision speed may have been higher than originally assumed, and this higher velocity may have totally destroyed Theia. None of these hypotheses can account for the high angular momentum of the Earth-Moon system. In this hypothesis, the formation of the Moon occurs 60 million years after the formation of the Solar System. Previously, the age of the Moon had been thought to be 4. The shared metal vapor bridge would have allowed material from the Earth and proto-Moon to exchange and equilibrate into a more common composition. The new model, developed by Robin M. Canup, suggests that the Moon and the Earth have formed as a part of a massive collision of two planetary bodies, each larger than Mars, which then re-collided to form what we now call Earth. After the recollision, Earth was surrounded by a disk of material, which accreted to form the Moon. This hypothesis could explain facts that others do not.

8: Galaxies: Collisions, Types and How They're Made

Beginning with an engaging interactive genre and artist selection process, and finishing with slick typographical treatments and rich artwork composing the user interface, Beats Music is proving to be as catchy and stylish as its headphone namesakes.

May 14, Many of the points of light we often think are individual stellar objects are actually galaxies, collections of millions to trillions of stars. Galaxies are composed of stars, dust, and dark matter, all held together by gravity. The sun is in a finger called the Orion Spur. At right is a composite image showing X-ray data from Chandra in pink and optical data from the Hubble Space Telescope in blue and yellow. The ULX is located near the bottom of the composite image. Left image - Optical: Galaxies come in a variety of shapes, sizes, and ages. Many have black holes at their centers. Material circling the black hole may be accelerated outward by its jets. Other galaxies may contain objects like quasars, the most energetic bodies in the universe, at their core. After the Big Bang, space was made up almost entirely of hydrogen and helium. Some astronomers think that gravity pulled dust and gas together to form individual stars, and those stars drew closer together into collections that ultimately became galaxies. Others think that the mass of what would become galaxies drew together before the stars within them were created. Island Universes In the s, many astronomers thought that the entire universe lay within our galaxy, the Milky Way. Others argued that the spiral-shaped blobs thought to be dust and gas were separate; Harlow Shapley called them "island universes. After Hubble measured the distance to individual galaxies, he went on to measure their Doppler shift — how much light from the galaxies was stretched out due to their motion. He determined that galaxies all around the Milky Way are moving away from us at terrific speeds. The farther away the galaxies are, the faster they are fleeing. Because of this, he was able to determine that the universe itself is expanding. Later astronomers determined that this expansion is accelerating. Galaxy Types Galaxies are classified by their shape. Each type has different characteristics and a different history of evolution. The gas and dust in a spiral galaxy circles the center at speeds of hundreds of miles per second, creating their pinwheel shape. Present in all spirals, the dust and gas fuel star formation, so spiral galaxies are constantly forming stars today. Elliptical galaxies lack the spiral arms of their more flamboyant cousins. Their appearance ranges from extremely circular to very stretched out. Elliptical galaxies have less dust than their spiral counterparts, and so the star-making process has all but ended. Most of their stars are older. Although they make up a smaller portion of the visible galaxies, astronomers think that over half the galaxies in the universe are elliptical. The remaining 3 percent of the galaxies in the universe are known as irregular galaxies. They are neither round nor boast spiral arms, and their shapes lack specific definition. The gravity of other galaxies has often affected them, stretching them out or warping them. Collisions or close calls with other galaxies can also deform their shapes. They are bunched together in groups known as clusters. Some clusters are large, containing over a thousand galaxies. The Milky Way lays within the cluster known as the Local Group, which only contains 50 galaxies. Occasionally, they slam into one another, merging their stars and dust together. This is an important step in the evolution and growth of many galaxies. The Milky Way is set to collide with the Andromeda galaxy in about 5 billion years.

9: A Collision of Thoughts – Arts & Culture Texas

One of the attractive features of the giant-impact hypothesis is that the formation of the Moon and Earth align; during the course of its formation, the Earth is thought to have experienced dozens of collisions with planet-sized bodies.

Though he works across media with great agility – installation art, photography, appropriation, and painting – Ligon foundationally connects himself to painting. I started as a painter, and I have returned to it over and over again. Reportage from newspapers, text from fiction, words from poets, passages from a stand-up comedy routine: Many of the texts Ligon quotes are historically and politically loaded. *Malcom X Version 1 1*, Vinyl based paint, silkscreen ink and gesso on canvas. *COLlection of Michael and Lise Evans*. Courtesy of the artist and Regen Projects, Los Angeles. More like Warhol than Kosuth or Baldessari, the words on his paintings are a matter of subtle appropriation framed as arbitrary and ignited by specific contents. Ligon is very interested in the life of an image or words in press. Their value as historical objects comes into play in his strategy of quotation: I am interested in the way a particular cultural moment resonates in the present or I am interested in bringing those moments into the present. It is ultimately, nonetheless, language that is the source of making images for Ligon. Ligon appropriates the lurid and hilarious language of Pryor – discussions of phallus size, copulation, the use of the N-word – rendering it intentionally messily by way of a stencil onto flat surfaces. Forcefully present, those words when placed on a canvas give Ligon a periscope that becomes a mirroring surface for us to look back to the time in which they were spoken and then at ourselves now, to query questions of political correctness, outright bigotry, and circuitous racisms in. When asked about the use of the N-word, Ligon, once again sounding like Warhol, rebuffed the pointed politics of the term, explaining that he is interested in the relationship between text and speech in the paintings. True, but oh what language, brilliant and vulgar at once! And oh what history it made! In capturing the opinions of everyday people he also distills the bully pulpit of the time, the NEA controversies of – Referencing the worlds in which we have lived and live today, the work is catalytic, a maker of debate and dialogue. Better, his work is a productive collision of thoughts.

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