

Introduction Scene: Earth in Trouble

Created Using: Maya, ZBrush, Photoshop, Mental Ray, After Effects, Nuke

Responsible For: All Models, Textures, All Animation, Shading & Lighting, Particle Effects, Rendering, and Compositing

Source Satellite imagery: USGS, NASA, NOAA  
Completion Time: 11 days



Scene 01: Asteroid Aftermath



Created Using: Maya, Photoshop, Mental Ray, Syntheyes, Shake

Responsible For: Building Models and textures, All Setup and Animation. Particle and Fluid Effects, Shading & Lighting, Rendering, Tracking and Compositing

Original Helicopter model & textures: Turbosquid.com  
Completion Time: 6 Weeks

Scene 02: Catching the Silver Siren

Created Using: Maya, Photoshop, Mental Ray, Syntheyes, Shake

Responsible For: Location Filming and HDRI Photography, All Models. Textures, Animation, Shading & Lighting, Rendering, Tracking and Compositing

Filmed with permission at  
The Peabody Hotel; Orlando, Florida.  
Completion Time: 6 Weeks



Scene 03: Orlando Grand Prix



Created Using: Maya, Photoshop, Mental Ray, Syntheyes, Shake

Responsible For: Environment Models and Textures, All Setup and Animation. Particle and Heat-Bloom Effects, Shading & Lighting, Rendering, Tracking and Compositing

Original vehicle model & textures: Turbosquid.com  
Completion Time: 2 Weeks

## Introduction Breakdown

The objective of this project was to create a composite was to show the foreboding approach of asteroids towards Earth. The piece was to serve as a transition piece from the introduction credits to the first composite project. The project had to be completed, from start to finish, in 14 days time.

The Earth, its clouds and atmosphere, was created with NURBS Spheres and series of textures for color, bump, specular color and eccentricity, ambient and glow. Asteroids created in Z-Brush and rendered in Maya. Textures stitched together from satellite imagery and then added-to and edited as-needed in Photoshop. All rendering was done in Mental Ray, except for software particle and shadow passes, which were done with Maya software renderer.

The Visual Effects involve small geometric meteorites controlled and animated by a particle system, as well as ice and dust particles. Scripts and expressions control all particle animations and collisions.

Space matte painting was done in Photoshop and sphere-filtered for Maya rendering. Paint FX star effects were added to fill out the scene as needed to accommodate final camera animation.

All elements were combined in The Foundry's Nuke 4.7. Sun flare and fog effects generated in After Effects and integrate with the rendered sun and meteorites in Nuke. Planetary glow and asteroid-bloom effects were generated in Nuke. Total time was 8 days time.

## Composite One Breakdown

The objective of this composite was to create a scene with two helicopters flying towards an asteroid-damaged building. The scene would be an Aerial shot with the camera following the two helicopters. CG assets would be used to create the Helicopters as well as the damaged building. Visual Effects would encompass faint fluid-dynamic smoke and fire, as well as particle debris, re-entering asteroids, and heat distortion from the helicopter exhaust.

The HD film was purchased from artbeats.com. The Film was then tracked in Syntheyes and a 3D camera was exported for use in Maya 8.5. The track was initially autotracked and fair results. High-error trackers were removed and additional supervised trackers added to assist with the placement of CG assets and reduction of hpix error.

The Helicopter was purchased from TurboSquid.com, as there was not sufficient time to both create the vehicle and complete the project. The Model was already textured, but I did have to set up the materials and light the vehicle to work optimally with Maya and the scene's lighting. I did all scene rigging and animation. The damaged building is CG, and I created it and all textures related to this asset. Proxy buildings were created for catching shadow information from the helicopters and place them into the buildings they flew over.

The Visual Effect start with red and green particles emitted from the helicopter exhaust vents. These particles were rendered and the plate was used in shake with an iDisplace to create the heat distortion that results from the hot, volatile exhaust from military helicopters. The smoke and fire within the building were created with Maya dynamic fluid simulations. The Papers/debris floating in front of the building are particles with instanced geometry assigned to them. All asteroids were created with non-dynamic, 3D Fluids

All elements were combined in Apple Shake 4.01. The resulting scene was color graded to a reddish, warm hue, as the original film plate was a cool blue. This was done to convey a sense of danger into the scene, which is associated with warm colors more then cool colors. Color correction and film graining and Rotoscope work were done as needed. Vignette was added to help direct the eye away from the screen edges.

## Composite Two Breakdown

The objective of this composite was to place myself in the lobby of an Art Deco style train station. The shot would have me walking across the lobby towards the boarding ramp of the train terminal. Near the end of the scene, a fictitious Art Deco inspired train would arrive at the station.

The HD footage was filmed locally at the Peabody hotel on International Drive. This film was shot with permission under NDA, stating that I would not use this footage for any public broadcast without permission from Hotel Management. I do have permission to use said film for a demo reel. Additionally, photos were taken on site to assist in the creation of textures, as well as HDRI probes for use in lighting any CG elements that would be required. These elements were also covered under the NDA.

All Camera settings (focal length, shutter speed, etc) were recorded on a sheet at the event by the Full Sail employee in-charge of the camera. However, when the resulting digital film was extracted from the camera and delivered to me, the associated data sheet was missing.

It was explained to me that the sheet was stored in the camera bag, which was the property of Full Sail University. However, upon return to the school the camera was immediately appropriated for another student's project and before the camera bag was again available to the camera operator, the data sheet was missing.

The HD Film I received was then tracked in Syntheyes. This scene is a Nodal Pan shot, so synthese was not able to provide tracker depth information or extract any of the filming camera settings due to the shot's lack of parallax. Therefore, 'distance from camera' information was attained for some key trackers via trigonometry (law of cosines) using known camera data (vertical angle was 27.5 degrees, camera height from floor) with known set dimensions (the doors at the hotel were 8ft tall). The scene was then reconstructed in 3D and a viable 3D Camera was exported for use in Maya 8.5

The loss of the set data sheet meant that the Camera settings of the resulting 3D scene were completely inaccurate. Therefore, the scene camera was set with the numbers as best the operator could remember. The camera was further dialed in to match the geometric perspective of the objects in the scene as best as possible.

However, all objects created for this shot had to be manually altered to look accurate 'to the viewer' as the camera's settings were still not perfect. The resulting Maya scene contained square columns that were actually warped and scaled into trapezoids. However, in the camera, the column looked square and matched the perspective of the geometry in the film. The lattice tool was used a great deal on whole sections of 3D set to achieve the desired scene perspective.

The CG set and train were constructed using Maya 8.5. All textures were created from photos attained on the set and completed in Adobe CS3 Photoshop. The Train is a NURBS model. Detail was kept at medium level as the vehicle would be heavily motion blurred. The Lobby set is a combination of NURBS and Polygons. All Shading and Lighting was done in Mental Ray, using HDR IBL maps photographed on location.

All Compositing was done using Apple Shake 4.01. CG elements were integrated and color corrected to match the overall lighting of the original Peabody Lobby. I had to completely rotoscope myself for approximately one half of the scene. All visual assets, including CG models, textures, rigging, animation, shading, lighting, and compositing were created by me.

Composite Two Concept Art



## Composite Three Breakdown

The objective of this composite was to create a short clip of a Formula One Race on the streets of Orlando, Florida. It would require the addition of cage walls, fencing, rubber stains on the road, billboards and advertising typical of a major racing event. Acquired racecars models would have to be altered, textured, rigged and animated in a realistic way.

The HD footage was filmed locally on the streets of Orlando. Additionally, a series of HDRI light probes were taken in downtown Orlando on the same day and about the same time. The HD Film was then manually tracked (all supervised trackers) in Syntheyes and a Maya scene was then reconstructed in 3D and a viable 3D Camera was exported for use in Maya 8.5.

The racecar was purchased from TurboSquid.com, as there was not sufficient time to both create the vehicle and complete the project. The model was already textured, but I did have to set up the materials and light the vehicle to work optimally with Maya and the scene's lighting. To support photorealistic requirements of the project, the vehicles suspension and aerofoil system had to be completely remodeled to facilitate realistic animation. Tire rotation rate and random pilot head oscillation driven by vehicle velocity and rate of turn via mel script. All environment elements were created and textured by me, including the walls, fencing, billboard, textures, road stains and 'Rubber Marbles', edging and lines.

The Visual Effect start with red and green particles emitted from the rear-mounted engine. These particles were rendered and the plate was used in shake with an iDisplace to create the heat distortion that results from the hot, volatile exhaust from Formula One racecars during methanol. A red/green cloud texture was animated over the scene with a subtle iDisplace to simulate road heat shimmer and bloom. There was a pass of particle-driven rubber marbles rolling around the road as the cars passed by, but it was visually distracting. In the interest of avoiding visual clutter, it was removed.

All elements were combined in Apple Shake 4.01. The resulting scene was color matched to the HD film plate, then color graded to intensity the feeling of a hot raceway. The inner track wall was darkened to match the shadow color and the outer wall brightened to help keep the scene dynamic looking and the eye on the right-hand side of the road, where the action is to take place.