

Director Paul Verhoeven presented a formidable task when he described the fleet battles and space settings for Starship Troopers. His vision was one we are all familiar with: something he had never seen before. He wanted a stage to balance the bug wars on the ground, one that would bring epic scope to the film.

Our creative focus and goals were based on execution of the major battle sequences and establishment of the Starship fleet's presence as air cover and troop transport. This involved creation of 122 visual effects shots and utilized thousands of elements and a vast combination of techniques including digital composites, scale models, pyrotechnics, stop-motion animation, practical elements and in-camera effects enhanced, expanded, and supported by digital animation, compositing, and model work.

Our creative inspiration was drawn from historic naval and air attacks but applied a modern point of view and editorial style most similar to car chases. Action was supported by rich and detailed planets, large models, and dramatic lighting. Scenes were designed to give beautiful vistas while keeping the audience pinned and framed within the action. We called this "epic claustrophobia."

The digital needs of the show were numerous and challenging. The crew created the planets, suns, stars, and effects animation required by each scene. The work also included animation of small ships and quick-moving details. Integrating the digital effects work with the live-action and stage elements required an enormous amount of data sharing, match modeling, and match moving.

Planet development led our attack. As our action developed, the planets provided a frame, a claustrophobic limit to our views, and provided the contact with the action below. Motivated by NASA photographs and reference films, we provided each planet with animated atmosphere, storms, and atmospheric shadows, and physical surface detailing such as canyons and mountains. Each planet was rendered in Renderman and digitally composited into the scene.

Engine technology was also a design element, and each flying ship was given a distinctive thruster effect. The Rodger Young class of ships have a bluish comb-like signature, drop ships have blue flame signatures, retrieval boats have whiter flames, other ships have more yellow emissions. In the atmosphere, thrusters also create heat distortion and interactive smoke. All of these elements were data matched, hand tracked, and dynamically fit into the environment, including mattes and interactive effects.

"Bug plasma" created the primary focus of our effects animation team. This concept, developed at Tippett Studio during early testing for the film, was creatively and technically adjusted and adapted by the Imageworks crew for its "space plasma." Bug plasma was the motivating force to everything in our universe. It would cause lighting effects, some of which were built into first-unit photography and had to be replicated, or accounted for otherwise. As such a strong lighting element, foreground plasma had been roughed in by pre-vis and accounted for on stage. Precise action and all background plasma was designed in digital. The bug plasma was generated in a combination of in-house code, Dynamation, and RenderMan.

Our digital animators and technical directors also created the stars, numerous smoke and debris elements, background Rodger Young class ships, and the TAC fighters and drop ships seen maneuvering through the fleet. Procedural code implemented by our technical directors was utilized to assist in the "flocking" and combat maneuvers seen in the distant and fast-moving ships.



Visual Effects by Sony Pictures Imageworks, "Starship Troopers" Courtesy Tristar Pictures and Buena Vista International.