



CHURCH OF TREK

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Church of Trek

Concept artist extraordinaire Ryan Church provides an enlightening behind-the-scenes look at the design of *Star Trek's* new *U.S.S. Enterprise*

by Bob Plant

One of the best-known concept designers working in the film industry today, Ryan Church's resume reads like a sci-fi fanatics dream: *Star Wars Episode 2: Attack of the Clones*, *War of the Worlds*, *Star Wars Episode 3: Revenge of the Sith* and *Transformers* are only a few of the high-profile projects Ryan has designed for. With *Star Trek*, Mr. Church's hefty portfolio recently became even more impressive: not only did Ryan contribute the design of the *Jellyfish* and the *U.S.S. Kelvin*, but that most iconic of starships, the mothership herself, the *U.S.S. Enterprise*.

Currently working on Disney's *John Carter of Mars*, Ryan was kind enough to take the time to answer questions about his interests and influences, working in the world of digital art, and collaborating with production designers, directors and effects artists. Passionate about his craft and the subjects he works on, Ryan's sleek, curvilinear designs have graced movie screens for the past decade — and he shows no signs of letting up.

Disciple of Design

(or, What do *Star Wars*, Aeronautics and a '69 *corvette* Have in Common?)

Thanks so much for taking the time to talk to us. I'd like to start out with a few questions about your background as a concept artist. Have you always been interested in art and design?

Yes. My dad is an industrial designer and I was exposed to commercial art at an early age. When I first saw *Star Wars* I was as blown away as anybody my age, but I also had the



Ryan's final approved concept art of the new *U.S.S. Enterprise*.



insight that all of that cool stuff on the screen was designed and built by somebody; I was more aware of the process.

As a designer, what inspires you?

I'm inspired by real engineering and natural solutions to problems — lots of aerospace and aviation stuff is so cool to study and analyze aesthetically. You look at an SR-71, an XB-70 or a Raptor and you have these amazing, aggressive shapes that were arrived at with zero regard to aesthetics — it's all engineering down to the thousandth of a percent. But they look so cool and beautiful! They almost define "cool" and "beautiful."

Part of what I try to do is find out what about these purely functional designs makes them look cool, and then use that formula when attacking a design problem. I'm probably making real engineers cringe right now, but that's what I do.

That's a very rational approach, and I am sure is a big reason why your designs have that all-important sense of believability on screen. On a related note, who are your influences?

My favorite designers are the standard greats — Ralph McQuarrie and Joe Johnston from the *Star Wars* movies, and then there's the guy who started it all and is still the best at it — Syd Mead. I also love the work of aviation artists Keith Ferris and Shigeo Koike.

Those are great influences; I still love leafing through those "*Art of Star Wars*" books and marveling at the work McQuarrie and Johnston did. Amazing when one thinks about the work those guys produced using gouache and marker — the "pre-digital" age. You pretty much work exclusively in the digital world. I assume you started out painting and drawing using traditional media — was it a difficult transition to digital? What are the advantages of digital media over traditional, particularly as it relates to concept design for films?

I went through school completely traditionally trained — I've done hundreds of gouache, acrylic and pen and marker illustrations. Fast computers were just coming around as I got out of school but I wanted no part in them — I even proclaimed more than once, "I'll never use a computer to do art."

At ILM for the first few years I was working traditionally, and I ended up having to scan my paintings and drawings into the computer and make lots of revisions or versions. I could see the writing on the wall! By that time, computers were getting a lot faster and the software was getting more intuitive, so I made the leap to digital and never looked back. Basically I was getting paid to learn on the job so I said, "Why not," and just went for it.



Views of the final CG U.S.S. Enterprise, as rendered by the Industrial Light and Magic visual effects team.



The U.S.S. Kelvin, as seen in the film.



The U.S.S. Kelvin under attack, as seen in the film.



The U.S.S. Kelvin under attack by the Narada, as seen in the film. Note the pop-out phaser cannons.



Now I love working on the computer — the sense of freedom to try anything is there and there are no excuses any more; all the tools are there to help the designer create the most complex and sophisticated forms and it's really great.

You've been involved with number of high-profile sci-fi films over the past decade or so, notably two of the *Star Wars* prequels, Spielberg's *War of the Worlds* and now, *Star Trek*. Was working on this type of film a particular career goal, and have you always been interested in sci-fi?

Yeah, like I was saying, *Star Wars* was big for me — it made a huge impression. I grew up during a golden era of cool sci-fi fantasy films and I would always go out and get the "art of" book, which in the end influenced me much more than the actual movie would.

But, yes, it was always my goal to work on a *Star Wars* movie and I was very lucky that things worked out and I got to work on *Episodes 2* and *3*; since then I've worked on other high-profile projects that were a lot of fun to do. Designing something and then seeing it up on the screen as part of a story is extremely satisfying.

Your spaceship designs often have a curvilinear, organic feel to them (the war machines in *War of the Worlds*, some of the spacecraft in the *Star Wars* prequels and now, the *Enterprise* and the *Jellyfish* in *Star Trek*), is this something that you feel is inherent in your style, or is this in response to the director's vision or notes in the script?

A lot of that comes from the story and script and a lot of it is my own personal aesthetic. Part of it is just a fad — generally speaking stuff that is blocky or angular like the original trilogy *Star Wars* stuff is looked at as being kind of "old school" and can therefore be dismissed by directors as such when they want to appear cutting edge.

The script almost always calls for "something we've never seen before" and many people in control think that it [the blocky angular look] is played out or something. I couldn't disagree more, but then I'm not a director — I just come up with the stuff! The more curvilinear and subtle stuff is much harder to do as a practical model or in CG and therefore tends to look "newer." Sometimes it's as simple as that.

Plus, it just fits in with what I personally think looks good and makes for a functional design — not curvy, organic out-of-control, but the type of shape you see in 1950s and 1960s cars and aircraft: the fender on a '69 *corvette* or the way that a compound-curved *B-58* fuselage transitions to the wings. Look at these airplanes — they're beautiful and subtle and curvy and it's all engineering. Not a single line on a *Raptor* or *Eagle* is arbitrarily or aesthetically chosen; every line is the result of a hundred tradeoffs and compromises between the demands of the mission and the engineering, cost, aerodynamic, weight, fabrication and a million other considerations. It's the way fairly simple large shapes are made more complex by their interaction and the way they blend together. And all the while having these long accelerating curves — not constant radius or simple extruded shapes which are pretty boring.

I should mention that I studied Automotive Design at the Art Center College of Design; I wanted to be a car designer going through school until I really realized how hierarchical and limited their job

Ryan's final concept art of Spock's Jellyfish Ship.



From the film: the Enterprise preparing to go to warp, with United Federation of Planets Space Port visible in the background.



From the film: the massive United Federation of Planets Space Port. Note the variety of Federation starships docked around the perimeter of the station. The Enterprise is visible in the upper right.

actually is. Car design is actually a lot like movie design — both are aesthetic objects made to look functional and to "sell" the design whether the goal is to look sensually beautiful or rugged or aggressive or whatever.

The level of detailed thought that goes into the design of these fictional objects is amazing. When working on a specific film project, especially something that has a history like *Trek*, there are other requirements and other parties that need to be considered: when you start concept work on a film, do you purely rely on the script and director's comments, or is additional research involved? I believe I had read somewhere that in the case of *Star Trek*, you had thoroughly researched the various iterations of the *Enterprise* for inspiration and reference...

I rely on the script and the director. The director is the one that makes all the final decisions, so that's my boss — he's making the calls and is ultimately responsible for what's up on the screen. The production designer is the liaison between the art department and the director, and he is making a lot of big decisions and steering the look of the film as well.

All of us were immersed in the long history of *Star Trek* and we really wanted to do it justice while updating the look — which was J.J.'s intent all along. We had access to basically everything that's ever been done, plus we had *Star Trek* designer and guru John Eaves there looking over everyone's shoulder and keeping everyone honest.

Revelations: A New *Enterprise*

In the case of the new *Enterprise*, how much direction were you given up front, and did that come exclusively from J.J. Abrams? Conversely, how much freedom were you given? I am sure it was a daunting task to take on the redesign of what is arguably the best-known spacecraft in the history of pop culture.

J.J. wanted a "new *Enterprise*" and that was the description he and production designer Scott Chambliss gave me — they were open to *anything* and wanted to see everything at that point. My concepts ranged from "extremely faithful to the original," with just material and detail update, to "complete rethink," which I don't think anybody ever really considered, but sometimes you have to go too far in order to see the right answer.

And J.J. had a very specific idea with the direction of the script and the update of the mythology and therefore how the look of a new *Enterprise* would fit in. So only he knew which one would be "right," that's the one he picked, and so we went with that direction and I finessed it and finished it out.

It was a huge honor of course — hugely intimidating and a lot of fun to play with and develop. Hopefully, some day I'll be able to show some of the other directions we tried — some are pretty interesting.

I'd love to see those! Your final concept art of the *Enterprise* is a bit of a revelation — it's sleek and has a more conservative surface treatment than what ended up on screen. It is very respectful of what has come before while still offering up some unique twists on the original design. There are some notable differences between the concept art and the final ship as seen on the screen, including greater surface detail and more pronounced "hoods" on the nacelles, just to name a couple. Could you address some of the evolution that took place between the concept and the finished ship as rendered by ILM? What kind of input did you have during that evolutionary process?

Yes, the concept was at a fairly early stage when the basic shapes were locked but the details were yet to be worked out — that was the end of the "concept design" stage and the beginning of the detail design process. I did a bunch of passes resolving details and playing with different markings, surface treatments, dish, engine, and hangar configurations before sending the package over to ILM.

There, the process was continued by ILM visual effects artist Alex Jaeger and the entire team as they built the actual CG models and did the effects for the movie. I had worked with Alex on *Star Wars*:

Episode 3 and he is a great guy, a fantastic designer and a real asset to ILM — he and the other ILM artists refined and added detail as they built and textured the final CG model shown in the film. They took the concept designs and turned them into a photo-real, performing asset.

There are a few details in your concept art that either didn't make it to final or were rethought. What are the two big, slit-like openings in the front of the saucer in your concept art?

They look like openings but were actually indications of where windows and other scale details would go — at the time of that particular design iteration we were unsure of the scale, so we left it blank so as not to confuse the issue.

You have a far more traditional deflector dish in your concept art; at what point did it evolve into the glowing blue dish, which presumably is an influence of the *Star Trek : The Motion Picture Enterprise*? Also, the domes of the bussard collectors in your concept art are amber-colored; likewise, at some point the decision was made to have the domes glow blue.

Both of these color changes were made later during the animatic and visual effects process; I think J.J. liked the more monochromatic look.

In regards to how the new *Enterprise* relates to the "alternate reality" plot point of the film: one would assume that the *Narada's* attack on a Federation starship forced Starfleet to develop ships that were more technologically advanced than they would have in the "prime" timeline, in order to effectively face a far more threatening adversary than the Federation had ever encountered before. Did this factor come into play as you developed the new ship design?

This is illustrated in the way the *Enterprise* looks different than the *Kelvin*, which is much more conservative and traditional in design.

The size of the new ship has been of some debate among the *Star Trek* fan base; according to ILM the ship is a whopping 2379.75 feet long, as contrasted with the original series *Enterprise*, which is about 948 feet long. Was this something that was determined up front, (and why?) and did it have any bearing on your design?

I'm not able to comment on the scale change, I think ILM or J.J. could better address the ship scale.

The *Kelvin* (originally called the *U.S.S. Iowa*) is also one of your designs, and was one of the first images from the film officially released by Paramount. Fan response to the *Kelvin* has been extremely positive, so much so that we frequently receive requests to recreate the *Kelvin* as a model kit. Could you talk a bit about the design decisions on the *Kelvin*? The single nacelle is quite unique...

I did many concepts for the look of the *Kelvin*, some conservative and some fairly pushed, in the end we figured out that it really had to look a lot more "traditional *Trek*." It's a very simple basic shape and ILM was responsible for a lot of the details including the way the guns pop out — very cool stuff. The bridge was worked on by illustrator James Clyne, you don't see much of it in the movie but it really looked great on set.

Speaking of very cool stuff — the *Jellyfish* truly is an original design and has a lot of great features going for it: again, like some of your other work it has very organic feel to it, a bit alien yet somehow familiar. The constantly moving elements, "propellers," if you will, add an interesting dimension to the ship. Was much of the look of the *Jellyfish* dictated by the script?

The script was pretty vague about this one — basically the name "Jellyfish Ship" and the fact that Spock describes it as "we outfitted our fastest ship" or something like that. I tried a lot of different designs for this one; I had a lot of transparency in some of the designs which I thought was unique and certainly looked "jellyfishish," but in the end we went with this more bizarre shape with the unique propulsion system. I knew it had to look very alien and advanced so I went with that — the production designer and J.J. had a lot of ideas, too, which I incorporated, resulting in the design you see in the film.

"Jellyfishish." That's a good word one doesn't get to use too often. What are the "propellers" on the ship, exactly?

The spinning was part of the idea that we were selling a very exotic and alien propulsion system, something very advanced and impossible to understand given the technology we are familiar with. I always thought of the two fixed round "pincers" as focusing the propulsion from the spinning field generators. The trick was specifically to make something that hadn't been seen before in the *Star Trek* universe.

The ship also has a unique texture, which is apparent in your concept art — besides looking cool, did you have a purpose or reason in mind for the textured "skin?"

The very interesting skin texture was the concept of Scott Chambliss, the production designer. I had been doing a lot of metallic and transparent concepts and he suggested that texture, which I think gives it just the right alien look — very interesting. I always thought of it as some kind of heat shield or low observables coating or something...

Is the ship referred to as the "Jellyfish" in the script, or did the name evolve out of the look? (By the way, I can't recall it ever actually being called "Jellyfish" in the film...)

I remember reading it in the script early on with that name.

I am also quite taken by the gigantic, octopus-like United Federation of Planets satellite/space station. Is that your work as well?

That was another Scott Chambliss design. Everybody had taken a stab at the spaceport, then Scott came up with that idea; I did a lot of illustrations of variations on the basic concept.

The Lost Book of Trek

Any other work for *Star Trek* you would like to talk about?

I did a lot of concepts that didn't make it into the movie, from a much larger *Enterprise* construction yard to completely different concepts for what Delta Vega might look like.

One design I had fun with was Kirk's bike — they made one for the movie and it was a great chance to do some old fashioned automotive design.

I hope we get to see some of those other concepts one day! Anything about working on *Star Trek* you would like to mention? What is J.J. Abrams like?

I've been very fortunate to work for some great directors and J.J. was very cool. He's just a great director and he loves making great-looking stuff — which makes it such a pleasure to show up to work each day. He's just so passionate and excited with everything, every day — it really motivates you to do your best.

I'm a sucker for those "art of the film" books that are released as part of the merchandising of the film. Where is the "*Art of Star Trek*" book?!

In a way, for me the "art of" book is way more important than the movie is — that's where people get to see my work and how I spent a year of my life, not to mention the fascinating design process and all the dead ends and discarded concepts. So it's really too bad when the movie comes out and there is no "art of" book! One can only hope they decide to make one in the future, and my Union lets me show some of my work on my website.

Will you be back for the inevitable (and anticipated) *Star Trek* sequel?

I would love to work on any sequels — the *Star Trek* universe is vast and a lot of fun to play around in. And more importantly the team was great fun to work with — that's the part that really matters. You can sit home and draw spaceships all day, but to be a part of the type of team that came together on *Star Trek* and hang out and kid around all day while creating is fantastic fun. I hope my schedule allows for a return...

Were you a fan of Trek before you took the job? Any particular iteration of the *Trek* franchise that you prefer?

I am a huge fan of the first two movies. *Star Trek: The Motion Picture* is true sci-fi which is so rare these days; great concepts and designs. And *Star Trek: The Wrath of Khan* is pretty much the perfect movie — story, characters, design, effects — fantastic.

Life Beyond Trek

You've been involved in some very high profile projects lately, including *Transformers 2* and a very secretive film from legendary director Jim Cameron, of *Terminator* and *Titanic* fame. Can you tell us a little about your work on Cameron's *Avatar*? Did you create ship and character design?

I cannot comment on *Avatar* other than to say it was an amazing experience and I can't wait for the movie to come out.

As a *John Carter* fan, I'm pretty excited to see that you are concept artist for the Disney/Andrew Stanton *John Carter of Mars* production. Can you tell us a little about your work on that? It seems that your style is perfectly suited for a *Barsoomian Flyer*...

I can't comment on *JCOM* either but to say that I think my style is perfectly suited for a Barsoomian flyer, too! We are going in some very cool directions on this show and I can't wait for the movie to come out — I'm very proud of the work I'm doing and it's so much fun.

Since this is a model kits website, and you mentioned that you are a big fan of modeling... any favorite kits you've built, sci-fi or otherwise?

I am a huge fan of modeling and I used to do tons of it; mainly military aircraft modeling — tons of Hasegawa and Monogram and other kits. I really think that's where a lot of my aesthetic comes from — I didn't grow up with access to real planes or anything, so building models and being able to study the forms of these engineering masterpieces really sunk in deep, and I think really helps me design beautiful, functional stuff. I guess my favorite kits I've ever actually built were a nice 1/48 Monogram *A-10* that I detailed out pretty nicely, and I did a 1/72 scale *XB-70* which was really impressive — big.

Any subjects you'd like to see made into a kit, that haven't been before?

As far as aircraft I'd love to see: I know that Zactomodels is working on a 1/32 resin *YF-23* which looks absolutely superb and I want to be first in line for.

I've always wanted to see a nice big kit of the *Tripod* I designed for *War of the Worlds*; I know somebody did a resin version but didn't quite get the details right. I wish I'd been able to release the detail design and orthos I did of it, but Paramount is very protective of that property. It's always great to see kits of things I designed, often that's the first time I get to see a real practical version of the design, since these days, so much of it goes right into CG land and film-practical models of vehicles are becoming rarer and rarer.

When I worked up at the Lucas Ranch I would go do a lot of "research" in the archives where all the models for *Star Wars*, *Indiana Jones*, etc., are kept. There are so many icons that haven't been turned

into models, and I can only hope in the future we see a lot of this stuff available as detailed kits.

I could go on and on...

Hey, and I would let you. Ryan, thanks so much for your time — you've provided some very insightful, thoughtful answers, and I appreciate the peek into the design process, as I think will many visitors to this site. And thanks for your excellent work that continues to inspire and entertain. Can't wait to see what you've come up with for *John Carter*!

For more background on Ryan, his art techniques and to see more of his work, check out his website, www.ryanchurch.com.

To discuss [this article](#) and more, head on over to our blog at collectormodel.com

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