



A woman with long blonde hair, wearing a black t-shirt and black pants, is sitting on the floor in a room. She is looking off to the side with a thoughtful expression. The room has a white wall and a metal shower rack. The lighting is dim and blue-toned.

SURVEYING INNER LANDSCAPES

Created by **NOAH HAWLEY**, FX's *Legion* is an unexpected superhero saga, one in which its hero's paranoid schizophrenia both obscures his own knowledge of his powers while giving the series rich visual possibilities. Cinematographer **DANA GONZALES** talks with **MATT MULCAHEY** about the show's innovative lens work as well as his beginning days in '80s B independent movies.



Figure 1 (see pg. 73)

In the current climate of conglomerate studio entertainment, the Holy Grail is no longer the summer tentpole or the once fabled franchise. It is now the “shared universe,” a property capable of infinite expansion across an ever-enlarging landscape of consumption platforms. No outfit has embraced this new paradigm more than Marvel, whose television and film empire spans multiple networks and studios.

As a product of FX and Marvel Television, *Legion* belongs to that universe, yet the new series from *Fargo* creator Noah Hawley feels like its own creature — not an offshoot or a spinoff or a cog in a machine constructed for an inevitable super friends mega-merger. In fact, for much of its eight-episode debut season, *Legion* doesn't really feel like a superhero story at all.

That's because protagonist David Haller (played by *Beauty and the Beast*'s Dan Stevens — or, as I prefer to call him, *The Guest*'s Dan Stevens) doesn't know he's a superhero. For his entire life Haller has been convinced his telekinetic powers are merely a delusional figment of his paranoid schizo-

phrenia — a condition that finds him starting the series as a resident of Clockworks Psychiatric Hospital.

The thin line that separates Haller — and by extension the audience — from reality and hallucination gives series cinematographers Dana Gonzales (*Fargo*, *Longmire*, *Pretty Little Liars*) and Craig Wroblewski license to turn things trippy, complete with extreme wide-angle lenses, swing and tilt effects and super-slow motion.

With *Legion* now binge-able in its entirety, Gonzales — who shot five of the season's episodes, including the pilot — spoke to *Filmmaker* about the show's eclectic arsenal of lenses, pumping in 100,000 watts of light for a single shot and his formative

years toiling in the B-movie trenches of the 1980s.

Before we get into Legion, I'd love to hear some stories from when you broke into the business in the 1980s as an Assistant Camera. You worked for pretty much every legendary B-movie outfit in Hollywood at the time. Tell me about your experience with Cannon Films on Allan Quatermain and the Lost City of Gold. That was literally my first year in the business. I was maybe 21 years old. In Hollywood in those days there was a huge pool of non-union people because the unions were so closed. There were literally 20 films' deep worth of crew to do non-union films and Cannon's whole thing was that

HOW THEY DID IT

PRODUCTION FORMAT: DIGITAL CAPTURE, UHD PRORES XQ • CAMERA: ARRI ALEXA XTS (PILOT ONLY) AND ALEXA MINIS, PHANTOM FLEX 4K (ALEXA MINIS WERE THE MAIN CAMERA ON THE SERIES) • FILM/TAPE STOCK: DIGITAL CAPTURE • EDITING SYSTEM: AVID MEDIA COMPOSER • COLOR CORRECTION: DAVINCI RESOLVE AT ENCORE

they were going to come into Hollywood and be this independent studio that hired non-union. So Cannon would pay actors big money to be in these movies, but then they saved money by using all non-union talent behind the lens.

Was Quatermain shot on some jungle backlot in Los Angeles? There were some exteriors shot somewhere in Africa, but it was mostly shot on stage in Culver City at Culver Studios, which is the lot where they shot *Citizen Kane*.

There are two DPs listed for the movie — and one of them is Frederick Elmes (*Blue Velvet*, *Paterson*). Fred Elmes shot all of the part of the film in L.A. that I was on. There was that kind of talent working on those kinds of films in those days. That doesn't exist today because everything is either super small or super big.

How about your time on something called *Hollywood Cop*? I haven't seen that one, but I did catch the same director's *Samurai Cop*, which has become a bit of a cult favorite. *Hollywood Cop* was my very first film. On the first day of shooting I ended up driving the truck with all the equipment in it — like literally every piece of equipment for the entire movie was in this truck. The film was supposed to last a month. It ended up going on for four months and I eventually became the 2nd assistant camera on it. They started with a crew of about 40 and by the time we were done it was like 12 people left trying to make this movie. (laughs)

It was produced by these two Iranian brothers that had some kind of bottling distributing company or something, and they sold it and had all this cash. They actually wanted to be the next Cannon. They had slated that they were going to do like five films back-to-back, and what happened was the director of *Hollywood Cop*, Amir Shervan, kept re-writing scenes and basically kept extending the shoot. Some days we'd show up and we'd just be sitting around while they were scouting locations or Amir was writing a scene. So the movie just went on and on and on. But I didn't care. I was 20 years old, it was my first movie, and I was as happy as a clam. And there were a lot of really interesting actors that came in



Noah Hawley (center) on the set of *LEgion*

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and out of there — James Mitchum, who was Robert Mitchum's son, Troy Donahue, Cameron Mitchell. All these old-time actors. I never saw the movie. I guess it's out somewhere on videotape.

Oh, it's out there. I own it on VHS. Yeah, I think it came out many, many years later.

One funny thing I remember was that on Fridays we would all have to line up and we would be taken into a room to get paid. We'd go in one-by-one and the producers would ask you what you did on the movie that week, and you'd have to tell them before they wrote out the check to you. (laughs)



Figure 2



Figure 3



Figure 4

What about your days working with Fred Olen Ray? I see about a half-dozen of his titles on your IMDb page. I probably did more than the ones that are on IMDb. I did maybe 10 movies with him. Fred Olen Ray always hired the same actors in those days — he literally had his Fred Olen Ray players — and it was kind of like that, too, with the crew. The director of photography that I worked with a lot on those movies was Gary Graver. He was Orson Welles's cameraman for probably the last 10 years of Orson's life.

Orson would call him and Gary would come down and shoot a scene for one of these unreleased movies that Orson did. Gary had a very interesting career, and he was a very colorful guy. In those days Hollywood was a lot smaller and tighter. There were a lot of guys on the fringes, and they'd do a decent film like a John Cassavetes film, and then you might be working with them on a Fred Olen Ray film. That doesn't really happen today, but that's how it was then.

But Fred was awesome. He was a guy

who knew everything about every movie, and he was really great to work with. I became a 1st assistant camera on those films. I was young, and I was making \$100 a day, but my rent was \$400 a month, and I was loving it. I wouldn't want to be back in that low-budget world now for anything (*laughs*), but that was my foundation, and I learned a lot about what to do and what not to do.

It's funny that you asked about working on things like those Fred Olen Ray mov-



Figure 5



Figure 6



Figure 7

ies. Nobody ever really asks me about that. Once I was in Paris working as an operator on *Rush Hour 3* and the French are movie crazy and all the French crew guys wanted to talk to me about was Fred Olen Ray and some of the B-movies I did. *(laughs)*

I grew up on those movies so I romanticize that era a bit. And we didn't even get into others you worked for, like Abel Ferrara and Albert Pyun. Abel Ferrara was amazing. One of my best experiences was doing *Body*

Snatchers (1993) with him. It wasn't the best film, but the experience of it was one of my best ever. It's a very corporate and structured world that I work in now — though I'm very fortunate that I still get to work in a very artistic environment. But those days working with Abel were really special moments that weren't in any way about making money. Abel Ferrara wasn't about making money.

Let's pivot into Legion and start by getting some tech info out of the way. What did you

shoot with? We shot the pilot in February and March of 2016 and for that we used ARRI Alexa XTs and we had one Alexa Mini. Then when we shot the rest of the show from August to November we used all Minis. We shot everything in 4K UHD ProRes, except for when we did high-speed stuff at like 120 frames per second, and we'd switch to ARRIRAW.

How about lenses? I had a lot of lenses. *see page 73*

can't believe we don't have enough money to do this." Oh, all the time. When I first came and worked at Marvel, I was like, "Okay, let me see the budget." And they were like, "What?" Because their directors never look at the budget. And I'm like, "Listen, this isn't a matter of me producing, this is a creative decision, because when I have to go through those lines and figure out how much does this set cost versus how much this effect costs versus how much this actor costs versus how much whatever, those are creative decisions, because I don't want to be spending \$2 million on a single shot if it's not that important, and then not spend that money on a set that's incredibly important to the movie." So for me, putting the money into it is a way of balancing out what matters creatively, what doesn't.

It's fun visiting you on the set because it was like— [Laughs] What was I doing?

You were chewing your hand and stuff. It was this tiny little insert of one face, and I was just going, "Oh good. I'm not crazy. That's exactly what I do." That was an easy day, too. ■

SURVEYING INNER LANDSCAPES

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(laughs) Our main lenses were ARRI Zeiss Master Primes, and then I also shot with Master Anamorphics. We also had this Ultra Wide Zoom that ARRI makes, and I had the spherical and anamorphic version of that as well. We also used a 9.8mm Kinoptik, which is one of the lenses Kubrick used on *A Clockwork Orange*, and various swing and tilt lenses, macro lenses and Skater Scopes. And I had pretty much all of those lenses as part of our package all of the time.

Alternating between spherical and anamorphic also gives you these differing aspect ratios that Legion utilizes. I introduced the anamorphics for a scene in the pilot, and I thought it worked out so well that I started using them more in the arc of the show. And sometimes — like when they do the memory work in episodes two and three — we would shoot anamorphic but crop it to 16:9. I didn't always want the anamorphics to make the audience feel this big jump, but I wanted these subtle differences like the background bokeh to be a little different.

Is there a standard shooting schedule for each episode or does it fluctuate depending on the complexity of the episode? It varies. The fifth episode was shot in eight days, but

the pilot was a 26-day episode. Episodes two and three were probably 10 days each.

The pilot opens with a montage of shots in which the camera pulls back in slow motion as we see David Haller's childhood progress from infant to teenager. [See Figure 1 on pg. 44.] I can see where that would be very difficult to pull off with an eight-day schedule because a montage like that means 10 different locations, 10 different actors, 10 different lighting setups, etc., for what is maybe a minute or two of screentime of an hour-long episode. Yeah, it takes time to do something like that, and on an eight-day schedule it would not probably happen. But we were able to get a longer schedule for the pilot, and that montage is a very important part of that episode because it shows the creation of David Haller.

Let's talk about a few specific shots from Legion, starting with this establishing shot [Figure 2] from Clockworks Psychiatric Hospital in the pilot. This is using those swing/tilt lenses you mentioned? Yes, we used a Century Precision swing and tilt set. This shot is probably on the 24mm, and it has a pretty radical shift happening in the image. I've been using those lenses forever, and they have a really interesting character.

One of the ways that Legion expresses David Haller's powers is in these moments where Haller loses control and sends all the contents of a room flying through the air, which you capture in slow motion. This frame [Figure 3] is from a sequence of shots where all the items in Haller's kitchen become airborne. Almost everything you see in that scene is done practically. We used a Bolt high-speed, motion-control rig, which is a rig used a lot for commercials. We had it shipped up from Los Angeles to where we were shooting in Vancouver. I shot this with a Phantom Flex4K at 1,000 frames per second. If you notice in this shot there's a lot of depth of field. To do that at 1,000 frames per second you need a lot of light. I think I had 100,000 watts of light for this shot. But I felt like — especially in the closer shots in this sequence — it would've been a shame to experience it at a T1.3. So I shot at a T11. Also when you're moving at 1,000 frames a second the camera really has to move very quickly, and the whole event is over so fast.

For this particular frame, how many different passes did you do on the motion control rig? Just two passes — one with all the stuff and another with the actor in.

During one of Haller's hallucinations a choreographed group dance number breaks out on one of the Clockworks sets. What can you tell me about that sequence [Figure 4]? I had to find the perfect lights to work in this incredible set from our production designer Michael Wylie, who's one of the most artistic production designers I've ever worked with. I ended up choosing LED Lekos. We had about 180 of them that stayed up there pretty much the entire show. Those lights allowed us to do any color we wanted in that room. Actually every light on every set of the whole show was DMX-able. So they were all controllable, and I could do any lighting cue or any color imaginable at any moment.

The next frame [Figure 5] is the end of a long pullback from a shot that starts as a tight close-up. What kind of camera rig did you use to cover such a long distance overtop of water? We called it the *I Am Cuba* rig. *I Am Cuba* is this Russian film made in the 1960s that used all these incredible custom-made cranes and camera rigs because they didn't have the tools that we have today to move the camera. To come from a close-up to this wide shot that you have above, I couldn't do it with a crane because I couldn't fit one in this location. So we basically used this big truss — like a truss they'd use to hang lights at a rock and roll concert — and we put it on two dollies, one on each side of the pool. Then I put the camera on a Ronin in the center of the truss and two guys basically pushed the dollies manually. If you look closely you can actually see the track in the shot. It's a very archaic rig, but it worked. We wanted to do as much as we could practically and organically in camera. Even though we have a healthy CGI budget, we always tried to find a practical approach first.

One of the hallmarks of Legion's aesthetic is the use of extreme wide-angle lenses. Here's a shot [Figure 6] from the lobby of Clockworks that's so wide we can see the lens vignetting. That's the 9.8mm Kinoptik I told you about — the wide lens Kubrick used on *A Clockwork Orange*. Sometimes we pushed in on the image in post to get rid of the vignetting, and sometimes we just left it. We had that Zeiss Ultra Wide Zoom as well that was a 9.8mm-17mm lens, but that lens is very flat. It doesn't have the wide-angle distortion like the Kinoptik does. That Kinoptik has this incredibly cool distortion. I'm looking for character in a lens. I did a lot of testing before I shot *Legion*, and (series creator) Noah

Hawley and I loved that lens, and we used it for specific times in the story.

Lastly, tell me about shooting this giant volume knob prop [Figure 7]. This is used for a scene in which Haller learns to control the volume of the voices he hears in his head. It's a nod to old-school practical effects, something out of Honey, I Shrunk the Kids or even The Incredible Shrinking Man, depending on which era of sci-fi you grew up watching.

This is a classic Noah Hawley late addition. I think we shot this at the end of the series, and then we put it into episode two. Going back to what we talked [about] before, those early movies I worked on taught me what I could get away with organically. Some of those movies didn't have any visual effects at all. You had to find a way to sell the effect in camera, and so much of my early training ground was learning how to do that. That prepares you for when you get to a project like *Legion* where you can do all these crazy things like build giant volume knobs. It teaches you what you can get away with. ■

HELICOPTER PARENT

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everyday events in my own life, living there. I don't know how to tackle this and how to solve this, but none of [these problems] are connected with my work as a filmmaker. So as a filmmaker, I feel completely free to speak about whatever theme and whatever else I want to do.

In the past you have done both long takes and a lot of takes. I'd like to ask about the pragmatics of doing that by using a specific example, the scene in the police station, which is very carefully choreographed. There's an officer standing stage left, who's looking over everything silently and who comes and goes. It took a while for me to even notice how choreographed it was.

First of all, I'd like to say something about the meaning of this. I work like this because I feel that as much as film is not reality, when you are making these kind of realistic films, you should try and keep reality as much as you can in the film. This is why I shoot all these scenes in just one shot, because I feel that it's a failure, in a way, to use editing, in the sense that reality is not edited at all. You can't take out things which you consider not to be important. Everything is important. Even if there are moments which are not important, you have to live through them. So there is a philosophy behind all of these decisions, of using long

takes and to have all this filtered through the subjective perspective of just one character, from a unique position of the camera, not using music and not using editing and not moving the camera, unless it follows something moving in the shot.

Of course, finally, cinema is an organized reality, but at least if you allow these moments to just happen without editing, you won't include your comments into these shots. You won't be telling people that this close-up is more important than this other thing. Let them figure out themselves what's more important. Of course, when you shoot, as you say, this involves a lot of choreography, a very different way of staging the situations, and this starts the moment when you start writing the screenplay, because this is the decision that you make before writing. I know before writing that I am going to shoot the film like this, and therefore, I write the screenplay in a certain way.

I imagine all these sets where things are happening. I know where I am going to place the camera, more or less. I can imagine where the people are, so I describe what the camera will see. When I get to shoot on the set, it's complicated to have everything covered from one perspective of the camera because people, when they talk, pretty much face each other. So you have to be very, very inventive in finding ways of staging situations in which people will cross the frame doing actions from one point to the other which belong to the scene, that would allow you to see as many characters as possible facing the camera. Sometimes it's possible, like in this scene. If you work like this, you understand that you win something and you lose something.

And there are moments which will just fall off camera completely. There are moments in this film as well, which are completely off camera. You learn, if you use just one shot per scene, how to use depth of field. This is the only freedom that you have, and how to use off-camera, but not only for the sound. We use off-camera for important portions of the scenes, and of the narrative. There is the scene, which was very difficult to shoot in this film, when the father gets to the police and he overhears his daughter talking to this policeman. That's very difficult because the precise level of ambiguity [about what she's saying] is very difficult to [establish]. So, on one hand, you are always with him in all the film, so we need to stay with him.

On the other hand, what these other people talk [about] on the other side of the door is important. So how do you fix this precisely? It's a very fine balance. And there's something else about shooting like this: It's very difficult to make actors be a lot in a scene where the camera is not in the room. That's very strange for an actor. So I shot the scene two different ways. I shot it the way I wanted to have it in the film, but then I shot it with the camera pointing at these other actors in this other room. And I used all the emotions and all the sound from that perspective and included them in this other scene. Because if not, they feel that you're not there. They don't deliver the same way.

In terms of blocking, how involved do you get? Is it very precise? It's very precise.

For example, is this an actual police station?

No. It's a set? It's some postal office which was abandoned. This is why I wanted to shoot there. I could create whatever I wanted. The room was too small for me to get the whole situation with the camera, no matter what lens I was using. So because I treated this as a set, I dug a hole into the wall. But the blocking is very precise. I start by spending a lot of time myself in all these places, just before we shoot, without anybody else, just to figure out how I am going to play the situation. I am also saying everybody's lines, especially the main character's, because I need to make sure that what they do while talking is precisely covering the length of what they say. After all, the actors know what they have to say, there is another layer of staging the situations in which I want them to do something all the time. So this needs to match what they say, and I calculate this very precisely by doing this myself. And as you see, that's a very good take to talk about this. The choreography is very precise, even for the second and third level of extras. They know when they get in, when they get out. There is an extra who has a small line saying, "Can you please sign this?" That needs to fit a moment when all the others are not talking. So it's important for me at the end, that the general feeling is that it's just life and accidents in life. But actually, to get there, you need to be very, very organized. And you need to be very organized because it's a five-minute shot, and you don't get there by improvising things.

So by extension of that, in the scene where Romeo goes to see the gentleman who's having a party in his living room, that's a lot