Blueshift - November 15, 2010

When Science Inspires Comedy

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Sara: Welcome to Blueshift, brought to you from NASA's Goddard Space Flight Center. I'm Sara Mitchell.

If you've been reading our blog, or following us on Twitter, then it's probably no secret that we had a pretty exciting adventure recently! When we wrote an article about an educational beach ball that's produced by one of the missions here at Goddard, we found out that the beach ball has been seen on the show "The Big Bang Theory." So we went hunting for a good photo of the ball on the set, which was much, much harder than we expected!

We got our big break when I tweeted a message to Bill Prady and asked him if we could get a photo. Bill's the show's co-creator and executive producer. Next thing we knew, well, we ended up visiting their stage at Warner Brothers Studios to snap our own pics while we were at a conference out in LA!

One of our passions at Blueshift is the merging of science and popular culture, and science and art. As you might guess, here at Goddard we know a lot of fans of "The Big Bang Theory." It's a show that includes a lot of science, even the nitty-gritty details, and even more, it tries hard to get that science right. So we asked Bill Prady if we could talk to him about how he ended up making a show about scientists, and how they nail that science in every episode.

Bill Prady: "Well, before I was a television writer, I was a computer programmer. And there were guys I worked with who were amazingly bright, and somewhat socially challenged. (And I strongly include myself in that group!) And they were always interesting characters to me. And I've been talking about them with people for years, as, you know, characters that might go in something someday. And Chuck Lorre, who I've known, since I worked with him on Dharma and Greg. And he and I started talking about, you know, the idea for a series, and I started talking about these characters, and we said, 'yeah, there's something there.' But at some point we decided to not let them be computer programmers. There are a lot of reasons for it. One, among other things, that visually what computer programmers do isn't as interesting as other kinds of engineering and scientific work. And then we started talking about what interested us. Because our characters were going to talk about something, and it should be interesting, and Chuck and I both have a fascination with space and technology and we said, how about if we they do that. And working from there, what characters would represent sort of the smartest people and earth?

And who is it that's looking into figuring out how fundamentally everything is put together, and we found ourselves in the world of physics.

Sara: What always impresses us about the show is how the physics is so perfectly blended with an episode's plot. It just fits. And it doesn't bore a segment of the audience because it's too detailed, or annoy another segment because it's not detailed enough. We asked Bill how they make that work.

Bill: So there are times when our characters, as opposed to coming home and saying I had a good day at work or a bad day at work, we have the say specifically what went on and to use the real words and to talk about what really guys like this would be doing, but there are times that it's not necessary to understand it to understand the story. So if you get it great, if you don't, it doesn't matter. But if you do get it, we want it to be right. One of the things that was important to us from the beginning,is that when these guys talk about science, we want them to be right. Or as right as things can be on a half hour sitcom – which is, you know, we're constrained somewhat by the nature of the beast. But as best we can we want the stuff to be real and right, and everything from what's on their white boards to what a lab looks like. So we have a consultant, who is Dr. David Saltzberg, from UCLA, who is an astrophysicist. And he helps us make sure that it's right. Often he'll say (of a piece of scientific dialogue), well, that's technically correct, but that's just not how we would say it. It sounds funny to my ear. So, we say, ok, well, that's what we want. We want it to sound right. If you understand what these guys do, and what they're talking about and you're watching the show, we don't want you to have that moment, where it's like "ew, that's so wrong".

Sara: We definitely appreciate it when they get it right, and even more so when we get it ourselves! But we were wondering – where do they get ideas for the science?

Bill: We do it a couple of ways. Sometimes there is something that we know about. There are a bunch of writers, we're all kind of science geeks, so there'll be something we know about that we think is cool, that we'll put in the script, and then Dr. Saltzberg will correct us if we're off a little bit on it. Sometimes it's a piece of science that is completely incidental to the story and we will actually put it in the script as "science to come" and we'll ask Dr. Saltzberg to fill something in for us that makes sense in that context.

Sara: We wanted to talk more about choosing the science, so we asked Bill about times when they've gotten the science so right... it's almost uncanny.

Bill: One of my favorite things that happens on the show is every now and then, we predict the future. A slightly amusing thing is, Sheldon was working on graphene, and graphene is what the Nobel Prize in physics was recently awarded for. But my absolute favorite was our accidental prediction of the failure of the toilet on the International Space Station. We did a story where Wolowitz realizes that the toilet that he's designed and has been installed on the International Space Station is going to fail. And it's going to fail in space. And it's not going to be good. And about 2-3

weeks after the episode aired, the toilet on the International Space Station did fail and it failed almost exactly as we predicted it might. And I was kind of happy about this because we looked at the schematics for the toilet that's used there, and we said, "Well, where is this thing weak?" so that we could come up with what Wolowitz thinks might go wrong. And it was kind of a plumbing problem, so we felt confident that we could look at it and come up with something. And we did. We pinpointed what looked like a weakness and in fact that's how the toilet actually failed! The moral of the story is, if you're installing plumbing off the planet Earth, consult comedy writers!

Sara: I might just start consulting comedy writers for all of my plumbing work! If nothing else, it would make it all much funnier.

So since a beach ball on the set of the show had gotten this whole adventure started, we wanted to talk about where they get all of the cool science stuff we see in the apartments and labs and everything. Having visited the set, I can say with certainty that I'd love to live in Sheldon and Leonard's apartment, with all of the books and toys!

Bill: I know that a lot of the things that are on the set that are sort of sciency and geeky happened because our set designer, Ann Shea, our wonderful Emmy-award winning set designer, went, and she went down to UCLA and looked at labs and office and we also sent her into the homes of scientists. And she did a lot of work photographing the nicknacks that are around and the pictures and so on. And then she went out and tried to see how much of that stuff she could find.

Sara: We found out afterwards that our beach ball actually came from their science advisor, Dr. Saltzberg's, office at UCLA. We've offered to replace it with one signed by Nobel Laureate John Mather.

And speaking of Dr. Mather, we wondered how they get the scientists that end up on the show.

Bill: The invitation to all scientists is generally vaguely open. We've actually had some amazing people just sit in the cafeteria. The great Harvard astrophysicist Lisa Randall, for example, was just sitting in the cafeteria. So if you happened to notice her, she was there, otherwise, you know. And I think that Neil Tyson, who is the head of the Hayden Planetarium is going to be on the show shortly. So the invitation is open. You just have to be in the neighborhood.

Sara: Now we just have to get the word out here at Goddard and get our scientists sitting in that cafeteria!

We could've chatted with Bill all day about space science and putting science into a show and all of the juicy Hollywood secrets he has. But we also wanted to congratulate him on having a show that is successful both as a sitcom and also as a science show. And we thought he had the best take on this:

Bill: I would say of all the reviews the show as gotten, my favorite is, we're the only situation comedy to have been reviewed, and reviewed favorably in the Journal Science."

Sara: We had a great time visiting the set of "The Big Bang Theory," and talking to Bill Prady about the show in our phone interview. If you want to read more about our visit, and check out all of the cool photos we took, visit our blog at universe.nasa.gov/Blueshift. We even took them some NASA stuff when we visited, and saw some of our posters and magnets and things in that episode with Neil Tyson! We've got photos and video of that, too!

Check out our blog and follow us on Twitter, where we're just @NASAblueshift. We'd love to answer your questions and find out what you'd like to know about the astrophysics work that's going on here at Goddard.

I'm Sara Mitchell, bringing the Universe closer to you with Blueshift.

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