

Neil deGrasse Tyson on NPR

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Science guy

Notes:

The director of the American Museum of Natural History's Hayden Planetarium and author of The Pluto Files, Neil deGrasse Tyson, talks about the future of NASA, Pluto's demotion to dwarf-planet status, and the difference between Darwin and Einstein.

00:00:00

From NPR News, this is All Things Considered. I'm Robert Siegel.

Melissa Block

00:00:04

And I'm Alyssa Block.

Neil deGrasse Tyson

00:00:06

Pity.

Melissa Block

00:00:06

Pluto officially demoted from planethood to dwarf planet status a couple of years back, but still out there doing its icy Plutonic thing on its 248 year voyage around the sun. Well, one of the people most sharply blamed for Pluto's downgraded status is the astrophysicist Neil deGrasse Tyson. He's director of the Hayden Planetarium at the American Museum of Natural History in New York, and he's with us to talk about his new book, the Pluto Files the Rise and Fall of America's favorite Planet. Mr. Tyson, thanks for being with us.

Speaker D

00:00:38

Thanks for having me.

Melissa Block

00:00:39

And I want to get to your role as Public Enemy in this debate in a minute. But first, I have to ask you how Pluto ended up becoming our favorite planet, as you put it.

Speaker D

00:00:47

Well, our I have to be specific. I think it's America's favorite planet. If you go overseas, they don't really care. I mean, they don't care more about Pluto than other planets. And so I had to think long and hard about why did Pluto have such a grip on the American sort of body and soul? And after sifting through all kinds of possible arguments, I landed on one very simple one, and it's that there's a dog that shares the name.

Melissa Block

00:01:12

You're blaming Disney for this?

Speaker D

00:01:14

Completely. I'm blaming Disney completely. Mickey's dog, Pluto.

Melissa Block

00:01:19

Well, let's talk about how the downfall begins, because it's when, as there's more and

more space exploration and more and more interlopers or debris are being discovered, that you start realizing or astronomers start realizing, look, if Pluto is a planet, it has a lot of company out there.

Speaker D

00:01:34

Yeah, because beginning in the 1990s, other objects were discovered in the outer solar system. Icy bodies. Pluto is an icy body beyond Neptune. We started discovering more of these, and it made you raise an eyebrow and say, Pluto. And these other icy bodies, they kind of look like each other. They have similar orbits, similar weird orbits, I might add. Pluto is the only planet whose orbit crosses the orbit of another planet. And so that's kind of misbehaving, if you think of it in those terms. And yet others of these icy bodies also cross the orbits of other planets. So you're confronted with the question, is Pluto simply an oddball planet, or is it a normal version of this other population that we're discovering in the outer solar system?

Melissa Block

00:02:22

Well, you were asked about this back in 1997 about how to classify Pluto. And then you wrote that Pluto gets your vote for full rank and privileges of planet. And then it's a few years after that, when you're designing a new exhibit for the museum, that you've changed your mind. What happened?

Speaker D

00:02:40

Well, could you learn more about what's going on in the solar system? And here's the catch. Many people viewed it as a demotion for Pluto. We had eight planets or nine planets. Now we only have eight. But I viewed it very differently. I didn't view it as the loss of a planet. I viewed it as we gained in a new swath of real estate in the outer solar system called the Kuiper Belt of comets. Maybe Pluto was, in fact the first discovered object of the Kuiper Belt rather than the 9th planet.

Melissa Block

00:03:10

Well, when you're putting this exhibit together at the museum and you have this display showing the relative size of the planets, pluto is not there. And you write that the very first person to notice the absence is not The New York Times. They didn't notice it until a year after the exhibit went up. It's a seven year old kid who wrote you a letter, and you put that letter in your book.

Speaker D

00:03:32

It's within weeks of opening the exhibit, I received a letter, and I didn't think much of it. I didn't think of it as, this is a storm brewing.

Not yet, anyway.

Speaker D

00:03:43

It was a letter. Dear. Natural History Museum. You're missing planet Pluto. Please make a model of it. This is what it looks like. And there's a crayon scrawl drawing of Pluto with an arrow pointing to it, said, It is a planet. Love, Will Galma. I'm seven years old. And so I said, It's just a kid. Who cares? It's just a kid. Well, a year later, The New York Times caught wind of this because they overheard a reporter on vacation just visiting the museum, not even on the beat. Overheard a mother and a child conversing where their child was looking for Pluto. Said, Mommy, where's Pluto? It's got to be there somewhere. Where's Pluto? It's got to be there somewhere. Where's Pluto? And so she goes over to look, can't find Pluto. And this reporter says, I think I got a story here. Telephones back to get the science reporter. And the science reporter files a story that makes page one of The New York Times on January 22, 2001, by the way. And what else is going on in the world that day? Bush had just been inaugurated in Washington. They're still counting chads in Florida. You'd think other news would be filling page one, but no, there it was. Pluto not a planet, only in New York. And that's when the real wave of hate mail started coming in.

Melissa Block

00:05:03

And you do yourself become the target of a lot of vitriol from other astronomers and fellow scientists. Maybe some of it tongue in cheek, but I'm not sure all of it is. One of them says, you're full of baloney. Another says, Tyson is so far off base with Pluto, it's like he's in a different universe.

Speaker D

00:05:19

Yeah, and that means something when coming from another astrophysicist.

Neil deGrasse Tyson

00:05:22

Yeah, I bet.

Speaker D

00:05:24

Plus, I put in the one he's full of bologna, because I always like it when people use bologna in a sentence. So really, what happened then? Over the years was we had the need to have to think this through. This is a quarter of a million dollar investment. We wanted to make sure that the exhibits had high shelf life. And so we had the need to look carefully at what was going on in the outer solar system. And that's what led us to organize the solar system's contents by like properties rather than as an enumeration of cosmic objects as it's so commonly taught in school. And as a result, over the years, people started realizing that maybe that kind of makes sense. And six years later, the International Astronomical Union, they took a vote, and basically they said Pluto should be reclassified. So we were, in

the end, kind of vindicated.

Melissa Block

00:06:15

That vote, though, by the International Astronomical Union is a little confusing because the classification now is dwarf planet. Well, is that a planet? Is it a kind of planet? What is that?

Speaker D

00:06:27

I think it's in the eye of the beholder. I can tell you coming to this from because my professional line of work is the structure of galaxies in the universe. We have large galaxies, we have dwarf galaxies, and there's no stigma attached to it. So I think if you think Pluto has stigma associated with it, that might be more your own projection onto it. But Pluto really, first of all, doesn't care.

Neil deGrasse Tyson

00:06:51

Not that anybody's checked.

Speaker D

00:06:53

Not that anybody's checked. And so others in fact, the proposers of dwarf planet had dwarf galaxies in mind as a kind of model for thinking of a kind of planet, but just a dwarf planet.

Melissa Block

00:07:06

But it's not a comet. Pluto is not a comet.

Speaker D

00:07:08

Well, I think of it as a comet because the thing is mostly by volume. It's mostly ice. If you slid Pluto to where Earth is right now, heat from the sun would evaporate that ice, and it would grow a tail. Now, that's no kind of behavior for a planet.

Neil deGrasse Tyson

00:07:21

What is that?

Speaker D

00:07:22

What's that about? So it's one of the odd things about Pluto that no other planet shares. And it's with other icy bodies who, if they came near the sun, would also grow tails. So I think Pluto is happier there. We didn't lose a planet. We gained the Kuiper belt. And now Pluto's, like one of the kings of the Kuiper belt. Pluto's just fine.

It's a coronation, really.

Speaker D

00:07:43

I like that. It's a coronation.

Melissa Block

00:07:45

Well, Mr. Tyson, it's been a pleasure. Thanks so much.

Speaker D

00:07:47

Well, thanks for having me on.

Speaker E

00:07:49

Neil deGrasse Tyson is director of the Hayden Planetarium at the American Museum of Natural History in New York. His new book is called The Pluto Files. You can see seven year old Will Galmott's letter to Mr. Tyson and his crayon drawing of Pluto at our website, npr.org.

Neil deGrasse Tyson

00:08:08

No, Pluto not planet anymore.

Robert Siegel

00:08:15

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