

Excerpt from *Circus* *Celestia*

Backstory: Our young heroine, Opal, has recently failed yet another algebra exam. Disappointed in herself and discontented with life, she sits on a grassy hill near her school and sulks. Suddenly, a star appears to fall from the sky, momentarily blinding her. To Opal's surprise, the star begins to speak to her, and offers her a tour of the Universe to cheer her up.

Below, the dialog begins just after the Star Guide has shown Opal that the Milky Way and Andromeda galaxies will collide in approximately 4.5 billion years.

Opal: When the Milky Way and Andromeda collide, will we all die? Will all the stars explode?

Star Guide: It doesn't really happen like that. The galaxies, after a painful embrace, will find harmony with each other...in fact, most of the Galaxy's solar systems will survive the merge.

Opal: Hmmm...

Star Guide: But if you're interested in the deaths of stars, I have a lot to show you.

Opal: Woah...sounds morbid...

Star Guide: Maybe not as morbid as you'd think. There's tons of dead stars all over the Galaxy!

In a flash of lights, Opal and Star Guide travel back to the innards of the Milky Way. To the right of Opal and Star Guide, three stars spin at different speeds, each with lights beaming from their poles, with one star in particular with poles pointed at the audience so that the audience is flashed consistently by the lights.

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Opal: Woah...what's up with them?

Star Guide: They died a long time ago. These stars are no longer fusing hydrogen atoms...they're devoid of helium, and in fact, we don't really know what's inside these strange creatures anymore...but we do know they're incredibly dense... This is a neutron star. The second densest object in the Universe, in fact. The star, though dead, continues to spin, and sometimes, if we're lucky, we can see the pointed beams of light shining from them.

Star Guide holds up a small Earth figurine, placing it to show the pulsar beam shining on the Earth.

Star Guide: If we're lucky enough to be able to see the flashes, the neutron star is a pulsar, a cosmic lighthouse in the dark. They spin at all sorts of speeds too – look at this!

Star Guide points out the other two pulsars on the stage, who are spinning at noticeably different speeds than the other one.

Opal: Wow, that's so bright! It's like it's been reincarnated!

Star Guide: Indeed. A second life of light. However, there are other, more morbid things that stars are capable of upon their deathbeds.

Opal: Oh, that sounds sort of scary...like...what else could happen?

Star Guide: I'll show you.

Star Guide and Opal travel again, arriving at a black hole. The black hole is monstrous, nearly taking up the entire stage, and spins very, very slowly. There's something hypnotic about it.

Opal: Oh my word! What is that? It looks like a great cosmic hand came in with a spoon and scooped out a hole in the Universe...

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As Opal is saying this, a great cosmic hand appears in the upper-right corner of the stage and, using a spoon, scoops out a hole in the Universe.

Opal: [disconcerted] Err...

Star Guide: A pulsar is what happens when a heavy star dies, explodes, and then collapses back in on itself. What you're looking at now is a black hole. This is what happens when an even heavier star dies and collapses in on itself. This...is the densest object in the known Universe.

Opal: Wow...

Star Guide: Actually, this is a pretty puny one. I could've picked a better one now that I'm thinking about it.

Opal: What?!

Star Guide: Yes, there are some, residing in the centers of galaxies, that are a million times more massive than this shrimp! Or even more!

Opal: What happens if I...touch it...?

Opal, hypnotised by the black hole, lurches towards it with an outstretched hand.

Star Guide: Opal, no!

Star Guide swats Opal's hand away.

Star Guide: If you get too close, you can never come back. Not even light, the fastest thing in the entire Universe, can escape the gravitational pull of a black hole. Nothing comes out of it – nothing. There is no way to transfer information to and from this monstrosity. You would be lost forever.

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Opal: Oh...but it sounds sort of nice in a way...I bet there's no algebra exams in a black hole...or chores...or places to go or other Opal's to see...

Star Guide: Right...well, maybe. We have no way of knowing what lies within a black hole. But it's probably safe to say that the intense gravitational pull from it is capable of ripping you to pieces!

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