

LBRIS

We know
books

PROJECT HAIL MARY

ANDY WEIR



CHAPTER 1

“**W**hat’s two plus two?”

Something about the question irritates me. I’m tired. I drift back to sleep.

A few minutes pass, then I hear it again.

“What’s two plus two?”

The soft, feminine voice lacks emotion and the pronunciation is identical to the previous time she said it. It’s a computer. A computer is hassling me. I’m even more irritated now.

“Lrmln,” I say. I’m surprised. I meant to say “Leave me alone”—a completely reasonable response in my opinion—but I failed to speak.

“Incorrect,” says the computer. “What’s two plus two?”

Time for an experiment. I’ll try to say hello.

“Hlllch?” I say.

“Incorrect. What’s two plus two?”

What’s going on? I want to find out, but I don’t have much to work with. I can’t see. I can’t hear anything other than the computer. I can’t even feel. No, that’s not true. I feel something. I’m lying down. I’m on something soft. A bed.

I think my eyes are closed. That’s not so bad. All I have to do is open them. I try, but nothing happens.

Why can't I open my eyes?

Open.

Aaaand . . . open!

Open, dang it!

Ooh! I felt a wiggle that time. My eyelids moved. I felt it.

Open!

My eyelids creep up and blinding light sears my retinas.

"Glunn!" I say. I keep my eyes open with sheer force of will. Everything is white with shades of pain.

"Eye movement detected," my tormenter says. "What's two plus two?"

The whiteness lessens. My eyes are adjusting. I start to see shapes, but nothing sensible yet. Let's see . . . can I move my hands? No.

Feet? Also no.

But I can move my mouth, right? I've been saying stuff. Not stuff that makes sense, but it's something.

"Fffr."

"Incorrect. What's two plus two?"

The shapes start to make sense. I'm in a bed. It's kind of . . . oval-shaped.

LED lights shine down on me. Cameras in the ceiling watch my every move. Creepy though that is, I'm much more concerned about the robot arms.

The two brushed-steel armatures hang from the ceiling. Each has an assortment of disturbingly penetration-looking tools where hands should be. Can't say I like the look of that.

"Ffff . . . oooh . . . rrrr," I say. Will that do?

"Incorrect. What's two plus two?"

Dang it. I summon all my willpower and inner strength. Also, I'm starting to panic a little. Good. I use that too.

"Fffoouurr," I finally say.

"Correct."

Thank God. I can talk. Sort of.

I breathe a sigh of relief. Wait—I just controlled my breathing. I

take another breath. On purpose. My mouth is sore. My throat is sore. But it's *my* soreness. I have control.

I'm wearing a breathing mask. It's tight to my face and connected to a hose that goes behind my head.

Can I get up?

No. But I can move my head a little. I look down at my body. I'm naked and connected to more tubes than I can count. There's one in each arm, one in each leg, one in my "gentlemen's equipment," and two that disappear under my thigh. I'm guessing one of them is up where the sun doesn't shine.

That can't be good.

Also, I'm covered with electrodes. The sensor-type stickers like for an EKG, but they're all over the place. Well, at least they're only on my skin instead of jammed into me.

"Wh—" I wheeze. I try again. "Where . . . am . . . I?"

"What's the cube root of eight?" the computer asks.

"Where am I?" I say again. This time it's easier.

"Incorrect. What's the cube root of eight?"

I take a deep breath and speak slowly. "Two times e to the two- i -pi."

"Incorrect. What's the cube root of eight?"

But I wasn't incorrect. I just wanted to see how smart the computer was. Answer: not very.

"Two," I say.

"Correct."

I listen for follow-up questions, but the computer seems satisfied.

I'm tired. I drift off to sleep again.

I wake up. How long was I out? It must have been a while because I feel rested. I open my eyes without any effort. That's progress.

I try to move my fingers. They wiggle as instructed. All right. Now we're getting somewhere.

"Hand movement detected," says the computer. "Remain still."

The robot arms come for me. They move *fast*. Before I know it, they've removed most of the tubes from my body. I didn't feel a thing. Though my skin is kind of numb anyway.

Only three tubes remain: an IV in my arm, a tube up my butt, and a catheter. Those latter two are kind of the signature items I wanted removed, but okay.

I raise my right arm and let it fall back to the bed. I do the same for my left. They feel heavy as heck. I repeat the process a few times. My arms are muscular. That doesn't make sense. I assume I've had some massive medical problem and been in this bed for a while. Otherwise, why would they have me hooked up to all the stuff? Shouldn't there be muscle atrophy?

And shouldn't there be doctors? Or maybe the sounds of a hospital? And what's with this bed? It's not a rectangle, it's an oval and I think it's mounted to the wall instead of the floor.

“Take . . .” I trail off. Still kind of tired. “Take the tubes out. . . .”

The computer doesn't respond.

I do a few more arm lifts. I wiggle my toes. I'm definitely getting better.

I tilt my ankles back and forth. They're working. I raise my knees up. My legs are well toned too. Not bodybuilder thick, but still too healthy for someone on the verge of death. I'm not sure how thick they should be, though.

I press my palms to the bed and push. My torso rises. I'm actually getting up! It takes all my strength but I soldier on. The bed rocks gently as I move. It's not a normal bed, that's for sure. As I raise my head higher up, I see the head and foot of the elliptical bed are attached to strong-looking wall mounts. It's kind of a rigid hammock. Weird.

Soon, I'm sitting on my butt tube. Not the most comfortable sensation, but when is a tube up your butt ever comfortable?

I have a better view of things now. This is no ordinary hospital

room. The walls look plastic and the whole room is round. Stark-white light comes from ceiling-mounted LED lights.

There are two more hammock-like beds mounted to the walls, each with their own patient. We are arranged in a triangle and the roof-mounted Arms of Harassment are in the center of the ceiling. I guess they take care of all three of us. I can't see much of my compatriots—they've sunken into their bedding like I had.

There's no door. Just a ladder on the wall leading to . . . a hatch? It's round and has a wheel-handle in the center. Yeah, it's got to be some kind of hatch. Like on a submarine. Maybe the three of us have a contagious disease? Maybe this is an airtight quarantine room? There are small vents here and there on the wall and I feel a little airflow. It could be a controlled environment.

I slide one leg off over the edge of my bed, which makes it wobble. The robot arms rush toward me. I flinch, but they stop short and hover nearby. I think they're ready to grab me if I fall.

"Full-body motion detected," the computer says. "What's your name?"

"Pfft, seriously?" I ask.

"Incorrect. Attempt number two: What's your name?"

I open my mouth to answer.

"Uh . . ."

"Incorrect. Attempt number three: What's your name?"

Only now does it occur to me: I don't know who I am. I don't know what I do. I don't remember anything at all.

"Um," I say.

"Incorrect."

A wave of fatigue grips me. It's kind of pleasant, actually. The computer must have sedated me through the IV line.

"... waaaait . . ." I mumble.

The robot arms lay me gently back down to the bed.

I wake up again. One of the robot arms is on my face. What is it doing?!

I shudder, more shocked than anything else. The arm retracts back to its home in the ceiling. I feel my face for damage. One side has stubble and the other is smooth.

“You were shaving me?”

“Consciousness detected,” the computer says. “What’s your name?”

“I still don’t know that.”

“Incorrect. Attempt number two: What’s your name?”

I’m Caucasian, I’m male, and I speak English. Let’s play the odds. “J—John?”

“Incorrect. Attempt number three: What’s your name?”

I pull the IV out of my arm. “Bite me.”

“Incorrect.” The robot arms reach for me. I roll off the bed, which is a mistake. The other tubes are still connected.

The butt tube comes right out. Doesn’t even hurt. The still-inflated catheter yanks right out of my penis. And that *does* hurt. It’s like peeing a golf ball.

I scream and writhe on the floor.

“Physical distress,” says the computer. The arms give chase. I crawl along the floor to escape. I get under one of the other beds. The arms stop short, but they don’t give up. They wait. They’re run by a computer. It’s not like they’ll run out of patience.

I let my head fall back and gasp for breath. After a while, the pain subsides and I wipe tears from my eyes.

I have no idea what’s going on here.

“Hey!” I call out. “One of you, wake up!”

“What’s your name?” the computer asks.

“One of you *humans*, wake up, please.”

“Incorrect,” the computer says.

My crotch hurts so bad I have to laugh. It’s just so absurd. Plus, the endorphins are kicking in and making me giddy. I look back at the

catheter by my bunk. I shake my head in awe. That thing went through my urethra. Wow.

And it did some damage on the way out. A little streak of blood sits on the ground. It's just a thin red line of—

I sipped my coffee, popped the last fragment of toast into my mouth, and signaled the waitress for my check. I could have saved money by eating breakfast at home instead of going to a diner every morning. Probably would have been a good idea, considering my meager salary. But I hate cooking and I love eggs and bacon.

The waitress nodded and walked over to the cash register to ring me up. But another customer came in to be seated right that moment.

I checked my watch. Just past seven A.M. No rush. I liked to get in to work by seven-twenty so I could have time to prep for the day. But I didn't actually need to be there until eight.

I pulled out my phone and checked my email.

TO: Astronomy Curiosities astrocurious@scilists.org

FROM: (Irina Petrova, PhD) ipetrova@gaoran.ru

SUBJECT: The Thin Red Line

I frowned at the screen. I thought I'd unsubscribed from that list. I left that life a long time ago. It didn't get a lot of volume, and what it did get, if memory served, was usually pretty interesting. Just a bunch of astronomers, astrophysicists, and other domain experts chatting about anything that struck them as odd.

I glanced at the waitress—the customers had a bunch of questions about the menu. Probably asking if Sally's Diner served gluten-free vegan grass clippings or something. The good people of San Francisco could be trying at times.

With nothing better to do, I read the email.

Hello, professionals. My name is Doctor Irina Petrova and I work at the Pulkovo Observatory in St. Petersburg, Russia.

I am writing to you to ask for help.

For the past two years, I have been working on a theory related to infrared emissions from nebulae. As a result, I have made detailed observations in a few specific IR bands of light. And I have found something odd—not in any nebula, but here in our own solar system.

There is a very faint, but detectable line in the solar system that emits infrared light at the 25.984 micron wavelength. It seems to be solely that wavelength with no variance.

Attached are Excel spreadsheets with my data. I have also provided a few renders of the data as a 3-D model.

You will see on the model that the line is a lopsided arc that rises straight up from the sun's North Pole for 37 million kilometers. From there, it angles sharply down and away from the sun, toward Venus. After the arc's apex, the cloud widens like a funnel. At Venus, the arc's cross-section is as wide as the planet itself.

The infrared glow is very faint. I was only able to detect it at all because I was using extremely sensitive detection equipment while searching for IR emissions from nebulae.

But to be certain, I called in a favor from the Atacama observatory in Chile—in my opinion the best IR observatory in the world. They confirmed my findings.

There are many reasons one might see IR light in interplanetary space. It could be space dust or other particles reflecting sunlight. Or some molecular compound could be absorbing energy and re-emitting it in the infrared band. That would even explain why it's all the same wavelength.

The shape of the arc is of particular interest. My first guess was that it is a collection of particles moving along magnetic field lines. But Venus has no magnetic field to speak of. No mag-

netosphere, no ionosphere, nothing. What forces would make particles arc toward it? And why would they glow?

Any suggestions or theories would be welcome.

What the heck was that?

I remembered it all at once. It just kind of showed up in my head without warning.

I didn't learn much about myself. I live in San Francisco—I remember that. And I like breakfast. Also I used to be into astronomy but now I'm not?

Apparently my brain decided it was critical that I remember that email. Not trivial things like *my own name*.

My subconscious wants to tell me something. Seeing the line of blood must have reminded me of the "Thin Red Line" title of that email. But what's that got to do with me?

I shimmy out from under the bed and sit up against the wall. The arms angle toward me, but still can't reach.

Time to get a look at my fellow patients. I don't know who I am or why I'm here, but at least I'm not alone—aaaand they're dead.

Yes, definitely dead. The one closest to me was a woman, I think. At least, she had long hair. Other than that, she's mostly a mummy. Desiccated skin draped over bones. There's no smell. Nothing is actively rotting. She must have died a long time ago.

The person in the other bed was a man. I think he's been dead even longer. His skin is not only dry and leathery but also crumbling away.

Okay. So I'm here with two dead people. I should be disgusted and horrified, but I'm not. They're so far gone they don't even look human. They look like Halloween decorations. I hope I wasn't close friends with either of them. Or, if I was, I hope I don't remember it.

Dead people is a concern, but I'm more concerned that they've been here so long. Even a quarantine area would remove dead people, wouldn't they? Whatever's wrong must be pretty darn bad.