


# LITTLE UNIVERSES





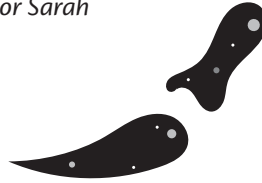
# LITTLE UNIVERSES

**Heather Demetrios**



Henry Holt and Company  
New York

For Sarah



Henry Holt and Company, *Publishers since 1866*  
Henry Holt® is a registered trademark of Macmillan Publishing Group, LLC  
120 Broadway, New York, NY 10271 • [fierecereads.com](http://fierecereads.com)

Copyright © 2020 by Heather Demetrios  
All rights reserved.

Library of Congress Cataloging-in-Publication Data

Names: Demetrios, Heather, author.

Title: Little universes / Heather Demetrios.

Description: First edition. | New York : Henry Holt and Company, 2020. | Summary: Two sisters struggle with the secrets brought to light in the aftermath of their parents' sudden death.

Identifiers: LCCN 2019018790 | ISBN 9781250222794 (hardcover)

Subjects: | CYAC: Sisters—Fiction. | Substance abuse—Fiction. | Adoption—Fiction. | Death—Fiction. | Tsunamis—Fiction. | Family life—Fiction. | Dating (Social customs)—Fiction.

Classification: LCC PZ7.D3923 Li 2020 | DDC [Fic]—dc23

LC record available at <https://lcn.loc.gov/2019018790>

Our books may be purchased in bulk for promotional, educational, or business use. Please contact your local bookseller or the Macmillan Corporate and Premium Sales Department at (800) 221-7945 ext. 5442 or by email at [MacmillanSpecialMarkets@macmillan.com](mailto:MacmillanSpecialMarkets@macmillan.com).

First edition, 2020 / Designed by Liz Dresner

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

*I'm ready  
To meet what refuses to let us keep anything  
For long.*



—TRACY K. SMITH, *The Universe as Primal Scream*



# Part 1

## The Universe as Primal Scream







# Mae

HERE ARE PIECES OF STARS IN OUR GUTTERS.

(!!!!!!!!!!).

It wasn't a Nobel-winning astrophysicist who made this discovery, but a Norwegian jazz musician named Jon Larsen. A completely random human who's into the cosmos and got to thinking.

His experiments led to the observation that these micrometeorites are EVERYWHERE—gutters, yes, and in our hair, the tops of cars, on the rosebushes in your front lawn. Stick out your tongue long enough, and perhaps you can SWALLOW THE STARS.

In case you didn't know, these micrometeorites are older than the planets themselves, some of the oldest matter in existence. Some of them are older than the sun, even. One hundred metric TONS of stardust crashes into Earth—Every. Single. Day.

And it's just raining down on us, all the time.





## Hannah

**M**y mom has this book called *Acorn* by Yoko Ono and, I'm warning you right now, if you read it, you will never be the same again. It should maybe come with a warning label.

Say her name to yourself, softly: *Yoooooh . . . kooooohhhhhh*.

Mom says Yoko's presence in the world is the universe's way of reminding us all that we don't have to spend our lives wearing business casual. Or sensible shoes.

*Spend our lives.* Minutes as currency. It's like we're paying God, handing Her our time in exchange for more breath: Here's a minute, here's another minute, another. And sometimes I want to be like, *Can I have a refund?* Or maybe an exchange. A new life. A new me. Because I'm only seventeen and I feel broke. Like I spent my life already.

Do you ever feel like your skin is a little too baggy, like a pair of jeans that you should probably get rid of, but can't bring yourself to because maybe you wore them the night you lost your virginity or they're your good-luck charm on test days? But you really want to get a new pair. Or some days your skin is too tight, like all of you got stuck in the dryer too long?

And that's where Yoko comes in. She is the great reminder that It Doesn't Have To Be This Way.

*Yoooooh . . . kooooohhhhhh.*

Whisper with me. Come on.

Do it.

I'll wait.

The sound of her name is just like these wooden wind chimes my mom keeps on our back porch. The wind comes in off the beach and bumps them around, soft wood clunking out poetry. Sound medicine. An incantation.

Good word. *Incantation*. Almost as good as *Yoko*.

Yoko fronts her own rock band even though she's a senior citizen, and she sees the truth of the world and writes about it and draws about it, too, and one time I got to see her art for real, and it made me cry, it was so good. Most people only know about Yoko because she was married to John Lennon. You know, the Beatle. He's the *imagine all the people* guy. I'm a George girl, 'cause he's the silent, sexy one who's all enlightened and plays the sitar, but even I have to admit that John is the man.

People say Yoko broke up the Beatles, but that's just dumb humans blaming a girl for boy problems. The thing is, people change. You know? You love someone, you make things with them, and then you realize you don't *fit* anymore. And that's what happened for John and Paul. They understood that it wasn't working. No matter how good it was. Before.

In her book *Acorn*, Yoko has all these suggestions that she writes down for people to do. Like in "Connection Piece I":

*Whisper your name to a pebble.*

Sometimes late at night I sneak out of the house and walk over to the beach. I go past the boardwalk, past those iconic Cali lifeguard huts, and the homeless guys and stoners, right down to where the water kisses the shore. I pick up a pebble and I whisper my name to it. Then I throw it into the ocean.

Maybe it will tell the crabs or jellyfish or dolphins my name when they come by.

Maybe someday the whole ocean will be whispering

*Hannah. Hannah. Haaaaaa . . . naaaaaahhhhhhh.*

I always have a Sharpie in my pocket, and when no one's looking, I write my own acorns. They're not like Yoko's. They're more like secrets I whisper to the whole world. Or just thoughts I want to share, but have no one to share them with because if I did they would give me that blank look they always do when I say things like what I write down with my Sharpies. I say stuff like that and Dad goes, "Maybe we should make an appointment with Dr. Brown," and then I say I don't really need to sit in her stupid paisley chair and talk about my problems and I walk out before he can start rattling off statistics about adolescent junkies, though he would never use that word. Neither would I. Because I'm not one—a junkie, no matter what they say in group. Mom tries to sweeten the deal with some Reiki from her friend Cynthia after the Dr. Brown appointments, to balance things out.

There isn't enough Reiki in the world to fix me, but I don't tell her that.

I wrote this on a stop sign a few days ago, after my first week of senior year:

*i am invisible.*

Mae would say this is a *scientifically unsound assertion*, but she doesn't understand that some things are true even if you don't have proof.

I don't know why I do them. The acorns. It's weird, I guess, to leave little pieces of yourself all over Los Angeles and never go back to pick them up.

# Mae



*ISS Location: Low-Earth Orbit*

*Earth Date: 29 August*

*Earth Time (PST): 20:10*

find out in waves.

My grandmother picks up her cell phone in Florida and dials my number. She calls me because I'm the commander of our crew while my parents are in Malaysia. And also because, even though she doesn't know what my sister did in March, doesn't know about the stuff Mom found in Hannah's room and the counseling sessions and her failed classes, Gram somehow knows that Nah is not okay right now. It's hard to talk on the phone to someone who only speaks crying, or doesn't speak at all. So Gram calls me.

My phone rings, and I answer in the way I always do, our way, which is to tell her something I've learned today. She says this is good practice for my NASA interview. Never mind I still have to get three degrees and become a test pilot in between now and then. Sometimes, just to see if I'm in fighting shape, she'll throw a devilishly hard calculus problem my way. That's what you get for having a grandmother who's a retired math teacher.

"Gram. Hello! I can't get in touch with Dad—have you tried? It's just after breakfast in Malaysia and he's probably on the beach, but maybe

the guesthouse has a number? It's of the *utmost importance* that I call him immediately because I was reading today's *Bad Astronomy* post and it's all about how Dad's quintessence theory about dark energy is getting more support from that Harvard string theorist nemesis of his! This paper came out, and in it, they mentioned Dad by name: *Dr. Winters's theories gain more credence . . .* That's my Scientist Voice, in case you didn't know. I'm aware of the neurological benefits of rest when one is on vacation, but this is a DARK MATTER EMERGENCY, so—"

"Sweetie—"

"These physicists are seeing that Dad's probably right about string theory not being compatible with the rapid expansion of the universe. Finally! Of course, we have to see from the experiments up in space if the rate of acceleration is constant, because if it's not, that's a whole other—"

"Mae."

I stop talking. The way she says my name causes tiny electrical pulses to spread across the tips of my fingers. I'm not like Mom and Nah—I don't believe in vibes, and I certainly don't allow Cynthia to do "energy work" on me (good grief). But I do get tingles. Specifically in my fingers. And that's never good. Never. I know it's only a biological reaction to external stimuli, but Mom insists it's an indication of my female intuition; never mind that *female* is a concept up for debate, anyway.

There's a pause while my grandmother's phone converts her next words into an electrical signal, which is then transmitted into radio waves to the cell tower nearest her. The network of towers carries that wave across the country from a condo in Fort Lauderdale to my cell phone in Venice Beach, California. My phone converts her radio wave to an electrical signal and then back to sound.

And the sound I hear is Gram's crinkly, butterscotch-candy-wrapper voice whisper, "Honey? Something's happened."

*i am not enough.*

Elevator Door  
Hedrick Hall, UCLA  
Westwood, Los Angeles



## Hannah

I hate cell phones. They skeeve me out. Priscilla, this circus aerialist who basically lives on the boardwalk and used to sell weed or pills to me sometimes—okay, more than sometimes—she told me that the government can track where you are—and listen in on you—through your cell phone. I'm not a conspiracy theorist or anything, but that's messed up. Mom's yoga friends say that cell phones fuck with your vibes and so they're always setting amethysts on top of their phones to clear the negative energy or whatever. I don't need any more bad energy than I have, so I figure keeping a safe distance from my cell is the smart play.

And then after March, after what happened, it got annoying, my friends texting me *Are you okay?* They finally got the hint and now they don't text me anything anymore and I'm okay with that. I became the Hermit card in Mom's tarot. I got off social media, too—and, you know, it's kind of true that if you're not online you don't really exist to the rest of the world. Besides, what would I post pictures of? Here's an empty Suboxone package—physician-approved nicotine for opiate users! Here's my flat stomach. Here's my stupid/pointless/lame group therapy Circle of Sad. Here's the vegan chocolate cake Mom made on day sixty that says *Clean Machine* in pink frosting, even though I'm not vegan. It was good, though. Here's the Death card I keep getting.



So when Micah picks me up in his ancient Jeep, I leave my phone at home. Mom and Dad are halfway across the world—there'd be no check-in calls, no curfew. Mom said we're almost eighteen now, so she's going to trust us. Or at least trust Mae to make sure I don't fuck up too much. Cynthia has already come by twice, and taken me to the Circle of Sad herself—I'm sure she's sending Mom reports.

"You hungry?" Micah asks.

He has to shout because the top is down and we're on the 405 and there's magic happening somewhere close because there isn't much traffic. Blond hair flying around his face—perfect California boy. I shake my head.

"Mind if I get a burrito?"

"Whatever you want." I smile; he smiles.

When we get to UCLA, we squeeze onto his twin bed with the striped comforter I helped him pick out at Target. The roommate took a three-day weekend to roll in the desert, so we have the place to ourselves.

A poster of Bob Marley hangs on the wall beside us, and Bob looks down, giving us his blessing, one hand holding a joint, raised in benediction.

Normally we would smoke a little, but I can't, haven't since last spring—golf clap for my five months of sobriety—so we have to try and remember how to be together without any help. It's awkward. We've forgotten. Even though we've done this so many times since what happened in March, we still can't remember how it was Before.

Micah should have come that day.

He wasn't there because I told him not to be—I knew he'd rather be anywhere else. He'd looked so relieved when I said it was okay not to come. Smiled. I wanted him to come anyway, to, like, *be* there for me, but the only guy who came through the door was this dad-aged dude wearing a polo shirt, and that made me think about how Dad offered to come, which was actually really sweet, but I was like, *this isn't Take Your Daughter to Abortion Day*, you know? Mom kept trying to feed me Life

Savers, those wintergreen ones, until I told her the name was kind of ironic, wasn't it (*lifesavers*, get it?), and then she stopped.

Micah looks down at me. "Could we have a drink? Or is that against the rules?"

Yes, it's against the rules. And he knows it, or at least he should know it. I start to say *yes, but you go ahead, I'm cool* like I have been since April, but Jesus, I've been so good. And a drink is not a pill, and the pills are the problem, the main problem, right? One drink is not the same as one pill. I'm good now, I am. Before, I never could have gone *five months* without a diamond. I could hardly go *five hours* without one. Before.

And the thought of doing this—spending the night, a *whole night*, with Micah and not being a drag like I know I am: I need help. Just a little something.

I bite my lip. Nod. "A drink would be nice."

"You're sure? I'm not, like, fucking with your serenity or whatever?"

Some tatted-up college guy who came to speak at group used that phrase once, and I dig it.

"I'm sure. Yeah. Totally. It's not, you know, Percs."

Just one little blue pill, one teensy-tiny Percocet, and I'd be fine.

Micah reaches under the bed and grabs a bottle of Popov, which is like drinking Windex, and we drink it straight because the only thing in his fridge is a suspicious-smelling carton of chocolate milk. When we're done, he sets the bottle on the desk behind us. We will need it later, I think.

The relief is almost instant. Not being me anymore.

It is so warm.

And then I realize: I am no longer sober.

"Hey." Micah rests a hand on my arm. "You good?"

He's not in my Circle of Sad, where we try to be honest when people ask questions like that. So I say:

"What? Yeah. Totally. All good."

All those days of denying myself, of doing the right thing, all that torture—down the drain. So I take another drink, then another.

“This is what got us in trouble in the first place,” Micah says, running his finger along the edge of my lacy bra. He’s just teasing—he’s *trying*, you know?—but it isn’t funny. *Trouble*? There are no words to describe what happened in March, but some are better than others, and *trouble* isn’t one of them. *Gutting*, maybe. That would be a good one.

*This is Micah, I remind myself. He loves you.*

But in the elevator up here, when he was tapping his foot and talking about the waves he’d caught this morning, I realized I didn’t give a shit about the waves, and the foot tapping might make me commit a homicide, it really might.

And, look, I know he was right. About what I had to do back in March. The pills, who knew what they would have done to the acorn inside me? Before it happened, the counselor and I talked, and she said that a pregnancy is an acorn—not the tree, not yet—but it contains the possibility of a tree. *Acorn*. Perfect, right? She didn’t know about Yoko, but it was like she kind of *did* know, on a psychic level only the sisterhood operates on. And she said it was okay to do whatever I wanted. Did I want to do this? And I told her about the pills and we talked about damage to acorns exposed to high levels of opiates and about risks, but how it’s also possible the acorn would be fine. And I told her about all the trees I wanted someday, I really do, and am I a bad person if I do this? And she hugged me and she said no, but that this decision was mine.

I don’t know what makes you a woman, but I don’t think it’s getting your period or losing your virginity or having guys suddenly notice you and the harassment beginning, especially when you have hips like mine. I think it’s the moment when you get to decide something for yourself, something that will affect the rest of your life.

And this decision: It grew me up.

I told the counselor that I’d had this idea, like this momentary thought that maybe, maybe if I *had* a baby, then things would be okay. Like, I’d have some value in the world. Someone would need me and maybe that need would be the thing, the thing that would make me good and also

would keep me from the pills. And maybe take the sadness away. But the thought, the thought of ending up like Mae's birth mother, with the drugs and child protective services and then this acorn-that-is-now-a-tree having to go into foster care because I'm such a fuckup—Micah was right. The clinic, it was the right thing to do. I'm glad I had the choice. That no one took it away from me.

I just wish I hadn't had to make it in the first place.

The counselor looked at me for a long moment: She had red hair and green eyes and it was like this Celtic priestess had come to hear my confession. And she rested a hand on my knee and she said, "Whatever you decide, Hannah, remember this: You are enough."

When she left the room, I put on the scratchy gown, lay down, and closed my eyes.

What haunts me isn't what happened—I don't think it was wrong. But what is killing me is how something got taken off the table. Taken by the look on Micah's face when I showed him the stick with the two lines. And because I'd made other choices, bad ones. I didn't really get to decide—am I ready to be a mom yet?—because of what was in my blood, all those diamonds I couldn't stop swallowing because they fill me with sparkling, glittery light. Like binge-eating starlight.

But the universe gave me this wake-up call and I didn't ignore it. I didn't. Five months clean.

Until today. Because a drink counts. Which means I'll be back to day one, if I get to day one, and day one fucking sucks.

They say *you're clean*, but then why do I still feel so dirty all the time? There is no *clean*. Not for girls like me.

"Where've you gone, Nah?" Micah murmurs. He runs a finger between my eyes, to the thinking-too-hard wrinkles between them.

"Nowhere," I say.

He smiles. He doesn't understand what *nowhere* means to me.

"I miss you." He rubs the tip of my nose with his. "I miss my girl. I know

it's been hard. That you've been sad. I want us to be okay. Me being here, in college—this isn't going to change anything. I promise.”

And this is why love is so confusing; because now he's my sweet surfer boy who makes my heart beat a little fast again.

“I love you,” I whisper.

“I love you more than the best wave in the ocean.”

I reach for the bottle next to his alarm clock and gulp down more fire. I notice the time, written in big red numbers that glow in the dark of the room: 8:06 p.m. I am suspended in this minute, just for a moment—drunk girl's prerogative—and I see them, I see my parents. I conjure them.

It is morning in Malaysia, and the sun is beating down, and Mom's wearing that wide-brimmed hat Mae and I got for her, the one with the red bow that matches her swimsuit.

*Wow, Mom says, way out there on her island in Malaysia. The current's strong today. Look at how the water is pulling back into the ocean.*

Dad lifts up his phone and takes a picture to show to his oceanographer friend. Then he points.

*Look at the water breaking, way out there.* He takes another picture. It is a wave and it is coming.

Micah whispers, *I remembered a condom this time.*

. • • •

“Holy shit. Wake up, Nah. Baby, wake up.”

Micah is shaking me and something has died in my mouth and my head is full of shards of glass. Fuck. Why do I do this to myself?

*“The universe is telling you something, Nah,” Mom is saying when we walk out of the clinic. I ask her what the hell the universe could possibly be telling me other than to practice safe fucking and she doesn't even blink at my use of the word fucking. She just shrugs and says, “She speaks through the gut.” But I can't think about my gut because it's empty now and all I*

want to do is fill it with pills, real pills, and those bitches inside only gave me Tylenol. And I don't ask Mom what she means by speak. What does that mean when you can't hear the universe—or when it doesn't speak to you at all?

When we get home, Mom grabs a bundle of sage and sits me down in front of her altar. On it is a picture of Amma, this lady famous for hugging who Mom says taught her how to love, and also a picture of Yoko, looking kick-ass in a bowler hat and shades. "Okay," Mom says, lighting the sage, "I'm gonna smudge the shit out of you."

I have promised I will do better. No more almost-failing my classes, no more being stoned and pregnant and generally useless. I told Mom I was doing better. I was. Technically, I *was*. I told her to go on this trip. I wanted her off my back. And how was I to know I was going to drink half a bottle of vodka last night? I didn't mean it, didn't *plan* it.

Fuck. Fuck me and fuck my life and I fucking hate myself so much.

Hungover as a mother. But not a mother. Because who would want me, who would want to be a copy of *this*?

You'd think getting knocked up and almost failing the eleventh grade would be rock bottom enough for any girl. Ha.

"Hannah," Micah says, his hand on my arm.

"Go to class," I mumble, throwing his pillow over my head. "You can take me home after."

It's too late to go back to Venice and get to school on time. Ditching school on a Friday is what any self-respecting senior would do.

His phone rings. "Mae? Sorry—sorry. I just saw your text. Fuck. I'm freaking out. I just woke up. My phone was on silent, so I missed all your—No. She's asleep." Micah's voice veers in my direction. "Nah. Seriously, wake up. Please."

I turn over. "Just tell her I'm ditching. Christ, she has to stop micro-managing my life. Only one of us is going to be an astronaut someday, and it isn't me. The world will be *fine* if I cut a few more classes."

I wonder what it must be like for Mae, to know that she matters, that she will maybe change the world. Dad is delighted by her. Mom is in awe of her. It's like the universe had to even out her being adopted. I might have my parents' genes, but she's the best of them.

I'm so fucking basic.

"I'm looking now," he says to Mae. "CNN."

The room fills with the sound of people screaming. I bolt up. Micah's at his desk, staring at his laptop.

"What is that?" I'm getting out of bed. "What?"

He turns toward me. Tries to say words, but all that comes out is a croak. Like when I said, *Hey, I have to tell you something*, and held up that stick with the two lines.

And I know, I think. I don't know *what*, but it's like I *know* everything in my life is turning to utter shit. Again.

"Was there a terrorist attack?" I ask.

He shakes his head. What scares me isn't the fear on his face. It's the confusion. Like the tables have been turned. Like whatever is on CNN is actually personal, like it's going to be more than just some randomness you talk about, not a school shooting across the country or a famine on the other side of the world.

I hold out my hand and he gives me his phone.

"It's me," I say.

I hear words and Mae has the kind of voice doctors on TV use when they come into the hospital waiting room with really bad fucking news. But I don't know what she's saying because I'm looking at Micah's screen. And I see it.

I see the wave.



## Mae

*ISS Location: Low-Earth Orbit*

*Earth Date: 30 August*

*Earth Time (PST): 09:52*

A tsunami can travel at 500 miles per hour, as fast as a commercial jet.

The tallest tsunami ever recorded was in Alaska. It was 100 feet.

Rossby Waves, which aren't tsunamis, just large-scale ocean waves, take roughly 221 days to cross an ocean. A tsunami? *One* day. Sometimes less than one day.

Tsunamis rush the shore at the speed of a major league pitcher's fastball. Faster, even.

They're caused by underwater earthquakes, volcanic eruptions or other explosions under the ocean's surface, movement in glaciers—even meteorites crashing down from space.

Many survivors report that a tsunami sounds like a freight train and that the water is gray-brown because it's churning up the ocean floor.

The water is full of all sorts of things:

- Metal
- Pieces of buildings



- Cars
- Shards of glass
- Toys
- Palm trees
- Beach umbrellas
- Gold watches
- Cell phones
- Bathing suit tops
- My parents

It takes eight to ten minutes to drown in seawater. Fresh water is two to three minutes. You die from cardiac arrest. I didn't know that. I thought it was your lungs filling with water, but it's your heart that gives out. That gives up.

For the past seventeen minutes and thirty-two seconds, I have been on a mental EVA—Extravehicular Activity, more commonly referred to by laypersons as a *space walk*.

It is ten years in the future, and I am on the International Space Station, scrunched into a tiny window seat.

There's a bright blue line on the horizon, mixing with the emerald smoky green of the aurora that swirls over Earth's surface like a potion in a cauldron—another sunrise, one of the sixteen I get to see up here every day on the ISS. Since we orbit Earth every ninety-two minutes, that means sixteen sunrises and sixteen sunsets. How's that for a life?

We race toward it, toward the light, and neon cerulean turns to blinding gold as the sun rises over the east, spilling across the beaches of Malaysia right below us.

Up here, I can just make out the rocky coastline of the islands, edged by white sand, green water giving way to the darkest blue of the ocean. A raft of clouds floats by, covering my view, and then we're speeding past those beaches, heading toward our next sunset.

## ***Mad Matter Magazine Vol. 4, No. 12***

Today, we're sitting down with theoretical physicist Dr. Greg Winters to talk dark matter, the nature of the universe, and time travel.

**Mad Matter:** Dr. Winters, you are one of the world's leading physicists, doing groundbreaking research on the very nature of the universe. NASA calls you when they're stumped. People say there might be a Nobel Prize sitting in your office someday. Yet you've taken a sabbatical. Why?

**Dr. Winters:** My research on dark matter and dark energy—

**Mad Matter:** For our readers, I'll just interject here: This is the stuff that makes up ninety-five percent of the universe, but we have no idea what it is.

**Dr. Winters:** Correct. My work in this field has inadvertently created a, shall we say, event horizon of sorts in my life—not to get all heavy on you with general relativity and spacetime.

**Mad Matter:** [Laughs] Give us your best explanation of what an event horizon is.

**Dr. Winters:** An event horizon is the point of no return. It's a terrain in spacetime that's created when the gravitational pull of a massive object is so great that escaping it is impossible. Imagine a huge magnet, pointed at you, and you're covered in metal. There's no avoiding its pull. When that massive object is coming your way, it's creating that point of no return. You can't escape the object. You have to face it.

Event horizons are mostly discussed in relation to black holes, but they're a great metaphor for life, too.

**Mad Matter:** How so?

**Dr. Winters:** Well, all of us, at one time or another, are going to have something happen that creates an event horizon—a point of no return. The first thing is to accept that we can't escape it, and so we need to face it head-on. Next, we need to look for the potential this event horizon presents us with.

**Mad Matter:** What is the potential of an event horizon?

**Dr. Winters:** Theoretically, if you could actually make it across the event horizon, you could see the entire history of the universe playing out before you. You see Napoleon on his horse and your ancestors in the fields and the suffragettes marching in the streets of New York City, and you see your children sleeping in bed in the other room and you see the cancer diagnosis you will get five years from now. You see every bit of it. All of time is happening at the same moment all around you.

Now, here on Earth, we can't get ourselves to actual event horizons that let us see the future and thus help us make better choices in the present. We can't time travel. Yet.

**Mad Matter:** So how does it help us—knowing event horizons are out there, and that there's potential to see all of time playing out at once?

**Dr. Winters:** For me, it makes life on Earth a little more bearable: There's comfort in knowing that whatever is going to happen *is already happening right now*. In spacetime. It takes the pressure off. The deaths and births and screwups and victories—it's already playing out. There's nothing you can do to stop it.



## Mae

*ISS Location: Low-Earth Orbit*

*Earth Date: 30 August*

*Earth Time (PST): 11:30*

Anything can happen in space. It's an environment in which human life is impossible. But if you're an astronaut, you're human. WHICH MEANS YOU'RE DOING THE IMPOSSIBLE. You're floating around in a tin can with a finite amount of oxygen, in a very vulnerable body, hoping that the math is right because it's the only thing that's going to keep you alive.

Actually, that's not entirely accurate. There are things you can control, like how well trained you are, the ability to stay calm under pressure—literal and figurative—and your intelligence. And if you've got a good crew, like the kind that would go into Mordor with you, and *they* are well trained and intelligent, then you exponentially increase your chances of survival.

The fact that we can go to space and survive there is proof positive that we can do impossible things. That's what my dad is always saying—*We can do impossible things.*

When I was six, I alerted my father to the fact that maybe there are certain conditions in society that make it impossible for female members of our species to do impossible things. Such as, women make up less than

eleven percent of humans sent into space. I informed my father that the probability of me wearing a NASA space suit wasn't great. His answer was to sit me down to watch an interview with astronaut Peggy Whitson, who would go on to become the commander of the International Space Station and would break records for time spent in space: 665 DAYS, the most of any American woman. "We can do impossible things," he said. Then we went to the Griffith Observatory to look at stars.

And this year? Fifty percent of NASA's astronaut candidates are women. FIFTY PERCENT!

Someday I'm going to be up there. I'm going to be on the International Space Station and I'm going to do space walks and listen to "Starman" while watching my sixteenth sunrise of the day and I'm going to call my dad *from space* and it is going to be SPECTACULAR.

That phone call is going to happen because my father is alive. We are going to find him and he'll come up with a great metaphor about this wave. *Just another opportunity to visit the event horizon*, he'll say. And Mom will announce she's going to make soup and we'll help her and it will be so good, the best soup anyone has ever eaten, and maybe we'll call it Miracle Soup, even though only half our family believes in miracles. I'm not in that demographic, but maybe I could be, if they came home.

I started training to be an astronaut when I was six years old, but I think I actually began preparing when I was born. I had to learn, from day one, to adapt to hostile environments that threatened my existence.

Not being picked up when you cry is a hostile environment.

Having a social worker come into your home and realize your diaper hasn't been changed in an entire day is a hostile environment.

By the time I was three, when my parents adopted me after my biological mother officially chose drugs over me, I'd been in *seven* foster homes.

The thing about being an astronaut is that you have to spend your whole life training. From the second you decide you want to be in that big white suit someday, to the moment you're strapped in, listening to that *ten, nine, eight, seven, six*—you never stop getting ready for the mission.

Your whole life is a sim.

Practicing for disaster. For the worst-case scenario. For *Houston, we have a problem*.

Expecting the unexpected.

The worst happens and you work the problem. Right away. That's what you do. You do not cry or have a panic attack or pray or get angry at the engineers on Earth who did incorrect calculations or blame it on the Russians or have a deep-space existential crisis. No. You work the problem.

*Work the problem* is NASA protocol when there's bad news or flashing red lights or space debris in your trajectory: Work the problem.

My favorite scene in *Apollo 13* is when the engineers all get in a room and one of them holds up a cylindrical carbon dioxide filter and says, "We need to fit this"—and then he holds up a square one—"into this"—and then he points to a bunch of junk he's thrown on the table—"using this." The *Apollo* crew is up there breathing in CO<sub>2</sub>, dying, in a shuttle that might not have enough juice to make it back to Earth. These engineers on the ground have to figure out how to turn what those astronauts have on the shuttle into the ultimate breathing hack. In outer space. *And they do it*. They save the astronauts. *That's working the problem*.

Astronauts spend hours in simulators, dying every single day so that they can stay alive on the day that counts.

A good astronaut knows that anything—rejection, failure, death—can be a sim. Everything in your life is preparation for the mission.

I start working the problem before Hannah gets to the house, which means I have been on hold with the Red Cross or the State Department for the past twelve hours. From the time Gram called last night, I had to alternate between calling my sister's boyfriend and trying to ascertain whether my parents have survived a wave that has destroyed a good portion of the Malaysian coast.

My vitals are good—coffee and math have assisted in this—but

Hannah's are not. This is apparent as soon as I see her step out of Micah's Jeep. I suspect she cried all the way down the freeway.

There is a part of me—irrational, I understand—that is surprised to see her. Somehow, in calling and not hearing from her and in calling Dad's and Mom's cells and not hearing from *them*, I started to think that Hannah had been caught in the wave, too. That, somewhere in Malaysia, my sister was floating facedown.

And so, when her feet hit the driveway, I run. Her mouth opens in an O, an expanding galaxy, because I am not given to displays of emotion and have never run *toward* her, just beside her, but I can't help it when I throw my body against hers, which is much taller and softer than mine.

"You're *alive*."

I don't know why I say this, because of course she is. I attribute this cognitive malfunction to a severe lack of sleep.

Nah cries harder, her whole body sagging against me, as though we are doing a trust exercise for AP Psych. I shift my weight as we start to fall, keeping us upright because she can trust me. I am working the problem. I will find them.

"We got here as fast as we could," Micah says. "Fucking 405. You know."

Nah pulls away, just a little. "Have you heard anything? Like, *anything*?"

I didn't notice at first: the smell. In my rush to catch our fall, with my nose pressed against the clothes she left the house in yesterday, my olfactory system was hoodwinked. But the breath is an excellent carrier of alcoholic substances.

I check her pupils first: normal-sized. No opiates. But that just means no pills in the past few hours. I couldn't check her pupils last night, because she didn't come home. Didn't check in.

I should have known. When she didn't check in. But I trusted Micah—and I shouldn't have.

I am perfectly capable of handling a natural disaster. My sister is another matter entirely. All those nights, holding back her hair. Lying to

Mom and Dad for her when I caught her buying from Priscilla because, she promised, this was the last time. Becoming smaller to help make her feel bigger, talking less at the dinner table, after she made that joke that wasn't a joke about how, since I'm six months older, I'm the heir and she's the spare. "You're the Elizabeth," she said, "and I'm the Margaret." I don't read the magazines my sister does, but because of my extensive research for an AP Euro paper on sibling dynamics in the monarchies of Europe between the fourteenth and twenty-first centuries, I did get her reference about sibling rivalry in the House of Windsor.

I have never been angry at my sister for the drinking, the drugs. I have felt scared and sad and sorry for her, but never furious. Until now.

How can she choose to drink instead of look for our parents? What kind of person *does* that?

I pull away from her. "I have been trying to call you since 8:17 last night."

"That's my fault," Micah says. "My phone wasn't on."

I am just now realizing how often we all make excuses for Hannah. It is Micah's fault because his phone wasn't on, not her fault because she didn't bring one in the first place.

It was Dad's fault—according to him—that Hannah had a drug problem, because he worked such long hours. Or Mom's theory: Pappoús was also tempted by the devil more than once. Like grandfather, like granddaughter. It's in the blood. Their blood, not mine, since mine is different. Hannah's addiction, the counselor said, was also, in part, attributed to me: Having a high-performing sibling can, she noted, trigger a user's lack of self-esteem.

The literature on addiction says it's no one's fault, that you can't blame yourself for a loved one's substance abuse, but I don't buy that theory. Every time a rocket goes down, there is an inquiry. Someone is always to blame.

Hannah's lower lip trembles. "I'm here, okay? I'm sorry. I'll start . . . doing whatever you think I should."



"I'm not sure how much assistance you'll be if you're not sober," I say.

"Dude, Mae. Lay off her—" Micah starts.

"Don't." I give him the look my father gives exceptionally obtuse graduate students, then turn back to Hannah. "Have you seen the videos online? Of the wave?"

She nods.

"And you thought the best way to help our parents survive that was to get *drunk*?"

Hannah steps back, as though I have hit her. And I want to. I have never wanted to slam the back of my hand against her cheek, but right now, that would feel really excellent.

"Hey." I have never heard this edge in Micah's voice. "She is *not* drunk. We had *some* drinks last night. Responsibly. Don't make her feel worse than she already does. It's not helping anyone."

I cover my face with the palms of my hands because I am very, very tired. And perhaps I have made a tactical error. The psychologist would say this response of mine could result in Hannah falling into a shame spiral—and more nights of me looking for her on the boardwalk at three a.m. before Dad and Mom realize she's not in bed.

"I'm sorry, Mae," Nah says. "It was just *one* night. Just *drinks*. I'm here, okay? How can I help?"

Does this mean it all starts again? The using and the lying and the detoxing and the days when there is even less light in my sister's eyes? And will it be the wave's fault—or mine?

"Do you know who's going to be blamed for you drinking when they get home?" I ask her. My vocal cords are masking my fear with the sound of anger, a higher pitch than usual, and I'm grateful for that. "Not you. Never you. It will be *my* fault. And maybe it is. You told me to lay off, and I did, but I shouldn't have. I should have followed Mom's rules, and now—"

"Oh, like you'd actually get in trouble." Maybe she is still drunk and this is why she says: "Besides, I wouldn't worry, because they might not even *come* home."

I stare at her.

“I didn’t mean—” Hannah stops herself, looks around in a panic, then lunges toward the wooden fence that forms a lazy barrier to our front yard.

Three knocks.

The thing about working the problem is that you can’t work all the problems at once. And I don’t have time to work the problem of my sister.

I need to help my parents come home.

*there is no point to me.*

Bathroom Stall Door  
Peet's Coffee  
Westwood, Los Angeles



## Hannah

On this first night, we sleep in Mom and Dad's room. I lie on Mom's side and Mae lies on Dad's and we hold hands and watch CNN, which is the only light in the room. It's on mute because they keep replaying the cell phone videos where everyone is screaming.

We made up. It took ten hours, but when she offered to braid my hair, I knew we were okay.

It wasn't like the vodka just fell into my mouth. I know I made a choice, the wrong choice. But it's hard to explain to my sister about *why* I did it. Hard to explain to myself. I'm not saying Mae's lucky for what happened to her before she officially became one of us (Mom says she's *always* been one of us, and I agree), but I think it made her strong. Maybe knowing you are safe and loved and that all your needs will be met is the trade-off for my weakness.

If Mom and Dad were here, it would all begin again, right away: the random drug tests at home, more meetings in the Circle of Sad, extra appointments with Dr. Brown. As it is, Mae keeps checking my pupils, and her nostrils flare so much I know she's checking for whiffs of booze on me.

"It was just one time," I say. "A slipup. It won't happen again."

Mae's eyes slide toward me, and you can almost see her brain working

behind the bright turquoise of them, like her brain is a really fast, expensive computer: assessing, calculating, sorting.

"I don't think it works that way, Nah. All the websites say—"

"Can you at least let me be the expert on my own shit? You can know best about everything else—space is all yours, okay? The whole universe."

Nobody gets under my skin like my sister.

That thinking crinkle we both get—it's like our bodies know we're sisters, even if our blood doesn't—forms between her two pale eyebrows. When Mae gets it, it means she's confused. Which means you rarely see the crinkle on her face.

"I'm just trying to help," she says.

"You can help by trusting me, for once." In the blue light of the TV, she glows a little, milky-white skin and hair the color of wheat. Light to my dark. How cliché is that? "I'm clean. I didn't take any pills. And I'm not going to. I just fucked up because Micah had the stuff and—"

"He shouldn't have let you."

"He's my boyfriend, not my boss. Micah doesn't *let* me do anything. Drinking isn't my problem, anyway."

She gives me a look.

"Legit addicts are way worse than I ever was," I say. "I was the one who told Mom and Dad I was using. I wasn't, like, stealing from them to buy smack on the boardwalk or something."

Everyone keeps telling me I'm an addict. I'm not. I had a problem, and now I don't. I'm only seventeen—you can't be an addict when you're seventeen. What happened to sowing wild oats and experimenting and all that? They've written me off before I'm even legally allowed to vote.

Mae squeezes my hand. "You can talk to me. Just because we're not the same doesn't mean I can't understand."

"You can't. This one thing, Mae—you *can't*."

People that don't wake up every morning feeling like what's the point will never understand. It's impossible. They say: exercise, meditate, think happy thoughts, snap out of it, wear this crystal, drink this tea,

find your goddamn bliss. But I literally—and I am not exaggerating—do not remember a time when I was truly happy. Except for when I was on Percocet. Those fuckers in their fancy labs actually figured out how to bottle happiness. Thing is, when you don't have those diamonds in you, it's all worse. So much worse. The Sad is so big it's like, I don't know, it's like that movie Mae loves where the astronaut can't get back to the ship and he just floats off into the complete, utter, terrifying darkness of space listening to cowboy music. My sister studies the void—but I look into it Every. Single. Day.

The universe is so big and terrifying, and we are so small and weak. What is the point of getting out of bed in the morning when you are so utterly insignificant?

I turn away from her, push my face into the pillow, and the tears come fast and hard because—

"It smells like her," I say into the cotton, into the pretty forget-me-nots Mom picked out.

Mae scoots closer and presses her nose to the pillow. "Roses."

She rubs her palm between my shoulder blades, which always makes me feel better, I don't know why. After a while, after she smooths away my crying, I hear her sit up, and when I look over, Mae is holding Dad's pillow to her face. I know exactly what it smells like: my great-grandpa's cologne, Brut, which Dad started wearing after he died. Sweet and cedary. Dad says it keeps his feet on the ground, since his head is mostly in space.

"It smells like morning hugs," Mae says.

He's a scientist, but I'm pretty sure Dad thinks it's bad luck not to hug people when they leave the house in the morning.

And I realize: "I didn't get to hug him. When he left."

Mae got up early to see them off, but I slept in. Why do I always do the wrong thing?

"I hugged him for both of us," she says.

I wish the bed didn't smell like them, because I know that if they don't

come back, there will be a moment when it stops smelling like them, and I don't want to know that moment, not ever.

I curl back into the pillow.

Sometime around eleven, Micah comes back from his shift at the restaurant and squishes onto the bed next to me without a word, him on one side, Mae on my other.

I can't even look at him, I can't, because I hate him. I suddenly just hate him. *Fuck you for fucking me while my parents were dying.*

There is nothing rational about grief. I'm already learning this.

I'm also worried his scent will eat up Mom's.

"Anything new?" Micah asks.

"I don't think so," Mae says. "Let's see." She turns the sound back on.

"It's hard to believe, but this is even worse than the tsunami that hit Indonesia, Thailand, and Sri Lanka back in 2004," a reporter is saying.

The landscape behind her is still bright, since it's not even sunset yet over there. Every few minutes, they cut to footage of the wave. I've memorized all the cuts they have—I'll never forget them. Her voice talks over someone's cell phone video, the camera jumping around as they run, and you keep hearing *oh my God, oh my God* and then crying and screaming. There's one taken by someone who was standing on the roof of a resort while the wave covers the pool below, a perfect, clear shot. There's the one of the wave surging up over a dock, taken by someone too fucking stupid to run. There's the satellite map, the graphs showing the earthquake's radius on the ocean floor. And dozens of other things people caught and sent in.

"Malaysia's never seen this level of devastation, and aid workers are struggling to respond," the reporter says.

The wave is a monster, devouring everything. It covers whole hotels, throwing cars around. It moves like a starving, wild beast. I try to picture my petite mother in that water. I try to picture her swimming, but I can't. You can't swim in that.

"Fuck," I say. I draw my knees up and push my eyes against my kneecaps. Micah rests his hand on my back. *I hate you! I hate you!*

"Hannah." Mae presses closer to me on my other side. She smells like oranges and sugar. "Listen, the chances of dying in a tsunami are one in five hundred thousand. Obviously the fact that they actually experienced a tsunami raises the odds, but even so, people survive these things all the time. I mean, look at all the survivors they've interviewed so far. A lot of people are going to live, so why shouldn't Mom and Dad be two of them?"

This is self-preservation. This is Mae hiding in her books, behind her telescope. Numbers and formulas and theories. She has to say this because nothing else is allowed to be true.

I look at her so I can't see the images in my mind: Mom choking on the ocean she'd been deliriously happy about—*Did you get the pictures, Nah? Look how BLUE it is!* Dad, his body bashing into a wall that surrounds the seaside bed-and-breakfast they were staying at. He'd lose his glasses. Wouldn't know which way was up.

Micah tries to hold my hand, but I pull away and stick my hands in my armpits and stare at the TV. He doesn't get mad. Just keeps calling the embassy in Kuala Lumpur again and again while Mae turns her focus to the Red Cross, since they already have people on the ground. I can hear through their speakers: *Due to high volumes . . .*

"I love you," I say to him, after a bit, because I do, right now I do, and because I feel guilty for hating him, too. He's not perfect and I'm not perfect and maybe I've just been too hard on him all these months.

"Love you back." He kisses my forehead. "They're alive. I know it."

I nod. "Right. Yes. You're right."

"The death toll is astronomically high—at least two hundred thousand people," a doctor is saying when I change the channel.

His scrubs are bloody, and his eyes are so heavy I'm surprised he can still stand up.

The anchor's voice cuts in. "Please be warned that what you're about to see contains graphic imagery that may not be appropriate for children."



Hell.

Behind the doctor, there are bodies covered in white sheets, and people crying and brown skin and white skin and chaos. A little boy is screaming for his mom and he hasn't got any pants on.

"How can people find their loved ones?" the reporter is asking. She shoves a mic in the doctor's face.

"We're working around the clock to update our list of patients. At this point, anyone being brought in is . . . They are beyond our help. Most bodies don't have any identification, of course, so we're taking photographs." He gestures toward a wall filled with Polaroids. Tons of people are gathered in front of it, and every now and then someone sobs as they recognize someone they're looking for.

"They're taking pictures of *dead* people?" I say.

Mae begins typing furiously. "It's probably unethical to put the photos online, but . . ."

"We're not looking at them," I say.

"But—"

"Mae. We are not looking at photos of dead people because our parents are not *dead*. Okay?"

She hesitates for a second, the knowledge-seeker in her warring with the sister in her, then finally nods. "All right."

"The worst damage is in Langkawi Island," the reporter is saying. "We expect—"

*"Where are you going again?" I ask Mom.*

*"Langkawi," she says.*

*"Ohhhh," I say, sounding snooty. "Lang-cow-eeee."*

*She hits my arm, playful. I hit her back.*

"—been over thirty hours since the tsunami hit," a reporter says. "The American embassy in Kuala Lumpur says they're making every effort to—"

“Why can’t anyone fucking *answer* this shit?” Micah growls into his phone.

*Due to high volumes . . .*

A McDonald’s commercial comes on. Fuck Happy Meals and Ronald McDonald, that creepy-ass clown. Probably a pedophile. My eyes fill, and when Micah reaches for me, I let myself collapse.

“I’m sorry,” I whisper.

Why can’t I be strong like Mae? Why do I always have to be an open wound?

“Nothing to be sorry about,” he murmurs, fingers in my hair.

Later, half-asleep, I hear Mae and Micah talking.

Mae tells him how she just read on the National Geographic website that many bodies are never found after a tsunami because they’re washed out to sea. Jesus *fuck*. So there’s actually something even *worse* than them dying.

I get that Mae has to know how things work so she can form a hypothesis—*If many bodies wash out to sea, then we may never find our parents*—but I don’t care how things work, just that they actually *freaking work*. I need unicorns in the sky shitting rainbows, not data.

“Do you think they made it?” Micah asks quietly.

I stop breathing. There’s a long pause. Too long. Remember: Mae knows all the things.

“Ask me at ninety-six hours,” she says.

Four days. In the modern world, if you can’t contact someone within that amount of time, you are incapable of contacting them.

“But what’s your gut feeling?” Micah says. His voice is so hopeful, so broken.

I can imagine the look on her face. “I need more data.”