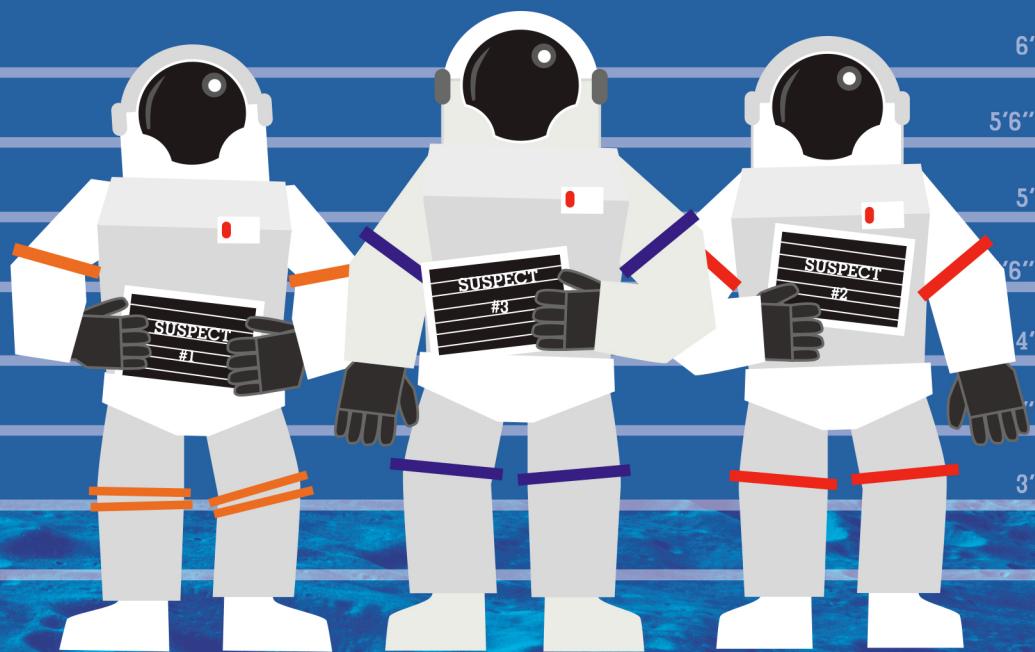


STUART GIBBS

AUTHOR OF *belly up* AND THE *spy school* SERIES

# space case



A **moon base alpha** NOVEL

**Also by Stuart Gibbs**

*Belly Up*

*Poached*

*Spy School*

*Spy Camp*

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# **Moon Base Alpha Resident Directory**

## **Upper floor:**

### **Residence 1** (*base commander's quarters and office*)

Nina Stack, moon-base commander

### **Residence 2**

Harris-Gibson residence

Dr. Rose Harris, lunar geologist

Dr. Stephen Gibson, mining specialist

Dashiell Gibson (12)

Violet Gibson (6)

### **Residence 3**

Dr. Maxwell Howard, lunar-engineering specialist

Kira Howard (12)

*(Note: The Howards are not due to arrive until Mission 6. This residence will remain empty until then.)*

### **Residence 4**

Brahmaputra-Marquez residence

Dr. Ilina Brahmaputra-Marquez, astrophysicist

Dr. Timothy Marquez, psychiatrist

Cesar Marquez (16)

Rodrigo Marquez (13)

Inez Marquez (7)

### **Tourist Suite**

currently occupied by the Sjoberg family:

Lars Sjoberg, industrialist

Sonja Sjoberg, his wife

Patton Sjoberg (16)

Lily Sjoberg (16)

**Residence 5** reserved for temporary base residents (female)

**Residence 6** reserved for temporary base residents (male)

### **Residence 7**

Dr. Ronald Holtz, base physician

**Lower floor:**

**Residence 8**

Garth Grisan, maintenance specialist

**Residence 9**

Dr. Wilbur Janke, astrobiologist

**Residence 10**

Dr. Daphne Merritt, base roboticist

**Residence 11**

Dr. Chang Kowalski, geochemist

**Residence 12**

Goldstein-Iwanyi residence

Dr. Shari Goldstein, lunar-agriculture specialist

Dr. Mfuzi Iwanyi, astronomer

Kamoze Iwanyi (7)

**Residence 13**

Kim-Alvarez residence

Dr. Jennifer Kim, seismic geologist

Dr. Shenzu Alvarez, water-extraction specialist

*(Note: Not due to arrive until Mission 6. This residence will remain empty until then.)*

## **Residence 14**

Dr. Viktor Balnikov, astrophysicist

*(Note: Not due to arrive until Mission 6. This residence will remain empty until then.)*

## **Residence 15**

Chen-Patucket residence

Dr. Jasmine Chen, senior engineering coordinator for  
Moon Base Beta

Dr. Seth Patucket, astrobiologist

Holly Patucket (13)

*(Note: Not due to arrive until Mission 8. This residence will be used  
as housing for temporary base workers until then.)*

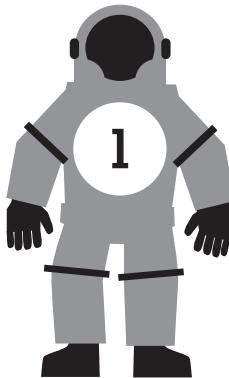
Excerpt from *The Official Residents' Guide to Moon Base Alpha*,  
© 2040 by National Aeronautics and Space Administration:

## **WELCOME TO MOON BASE ALPHA!**

Congratulations on your selection as a resident of the first permanent extraterrestrial human habitat! To ease your transition from earth, Moon Base Alpha (referred to from here on as "MBA") has been designed to feel as comfortable and familiar as any residence on our home planet. Our engineers and designers have spared no expense to provide all MBA residents—or "lunarnauts"—with everything they need for a relaxing, pleasurable existence.

However, life on the moon will not be without challenges. There are obviously many differences between this residence and one on earth—many of which you may be pleasantly surprised by! To that end, please take the necessary time to read this helpful, informative manual in its entirety, as it will likely answer any questions you have about your new home (and perhaps a few questions you hadn't even thought to ask yet)!

Once again, congratulations on your selection. Welcome to the moon. Enjoy your new home!



## EVIL PLUMBING

*Earth year 2041*

*Lunar day 188*

*Smack in the middle of the night*

**Let's get something straight, right off the bat:**

Everything the movies have ever taught you about space travel is garbage.

Giant spacecraft that are as comfortable as floating cruise ships? Complete fantasy. Warp-speed travel? Never going to happen. Holodecks? Terraforming? Beaming up? Don't count on any of it.

Life in outer space sucks. Trust me, I know.

My name is Dashiell Gibson. I'm twelve years old and I live on the moon.

On Moon Base Alpha, to be exact.

You know this, of course. Everyone on earth knows this, unless they've been living in the Amazon rain forest for the last few years, and since there's barely anything left of the Amazon rain forest, I'm guessing that's unlikely.

Moon Base Alpha—along with everyone who lives on it—has been the subject of an absolutely staggering amount of hype: The first human outpost in space! The first people to live on a celestial body besides earth! A glorious first step in mankind's ultimate colonization of the galaxy!

The government fed my family all that baloney as well, back when they recruited my parents. And I admit, I completely fell for it. We all did. The recruiters made everything sound so amazing: Moon Base Alpha would have all the comforts of earth—and more. We'd go down in history as one of the first families to live in space. We'd be the newest breed of pioneers, pushing the limits of human achievement.

Like I said: garbage.

Living in Moon Base Alpha is like living in a giant tin can built by government contractors. It's as comfortable as an oil refinery. You can't go outside, the food is horrible, it's always cold—and the toilets might as well be medieval torture devices.

Ever notice how, in all the science-fiction movies and TV shows you've ever seen—*Star Wars* and *Battlestar Galactica*

and all 142 versions of *Star Trek*—no one ever goes to the bathroom? That's not because, in the future, everyone has figured out how to metabolize their own feces. It's because going to the bathroom in space is a complete pain in the butt. Literally.

At least the moon-base toilet is better than the one on the spaceship we took here. In zero gravity, you have to take extreme precautions to ensure that whatever comes out of your body doesn't fly up into your face. (There's an old saying in zero-g space travel: If you ever see a piece of chocolate floating around the cabin, don't eat it. It's probably not chocolate.) However, using the toilet on Moon Base Alpha is no picnic. If I'd known how exceptionally complicated and disgusting it would be, I never would have agreed to leave earth.

It was because of one of those evil toilets that I wound up involved in far more trouble and danger than I ever could have imagined.

Now, before you get the idea that I'm some whiny, ungrateful kid who just likes to complain and wouldn't be happy anywhere . . . I'm not. Before my family made the awful decision to come live on the moon, I was happy as any kid you've ever met. Happier, maybe. We lived on the Big Island of Hawaii, which was awesome. Mom worked at the W. M. Keck Observatory, which runs the telescopes on the peak of Mauna Kea.

Although the scopes are thirteen thousand feet up, they're managed remotely from the town of Waimea, which meant we could live down by the beach. So my childhood was pretty idyllic. I had lots of friends. I did well in school and played on every sports team. I surfed every weekend—and when I did, there were usually dolphins in the waves with me.

Then the government came calling.

See, my parents have a very unique set of skills. Mom is a lunar geologist who wrote some landmark papers about the moon and the consistency of its mantle and core. Dad is a mining engineer with a specialty in environmentally sound mineral extraction. And one of the major reasons for the moon base is to explore the possibility of mining precious metals there.

Separately, Mom and Dad would each have been solid candidates for Moon Base Alpha. Together, they were an impossible combination to beat. Space is limited on the moon. With them, NASA got two scientists without having to send two separate families. So they wanted my folks badly. We got the full-court press. Politicians called us. The chairman of NASA came to visit. We were all flown to Washington, DC, first class for lunch with the vice president. And every last one of them lied to our faces about how great it would be to live on the moon.

They made it sound like MBA was going to be incredible.

Like our lives there would be nonstop thrills and amazement. Imagine hearing that you've just won a free three-year stay in the most luxurious hotel in the most insane location imaginable. Oh, and you get to be famous, too. Not flash-in-the-pan, one-hit-wonder, reality-TV famous. Have-kids-learn-about-you-in-school-a-hundred-years-from-now famous. We were going to be lumped in with the greatest explorers of all time, maybe even score our own chapter in the history books: Columbus. Magellan. Neil Armstrong. The Harris-Gibson Family of Moon Base Alpha.

It all sounded too good to pass up. So we said yes.

We spent the next year training—but then, you know that. All the families who were headed for MBA became celebrities right off the bat. (NASA tried to get everyone to refer to us as lunarnauts, but the public ended up calling us “Moonies” instead.) The whole world watched all our preparations for life on the moon, our multiple aborted launch attempts, and finally our successful blastoff into space and our triumphant arrival at our new home. And now that we’re on the moon, millions of people are still following our lives via webcams and ComLinks and beam-feeds.

And yet, despite all that, you earthlings never get to see the whole story. Instead you see the edited and sanitized version. There’s too much at stake to allow anything else through. We Moonies are barred from broadcasting, texting,

or transmitting anything to the public that might be “detrimental to the success of Moon Base Alpha.” (And if we try, NASA has censors who’ll delete it before it goes public.) We can’t complain about the toilets or the food or the malfunctioning equipment. We can’t mention that anything has ever gone wrong. We have to constantly present a positive face to the public, even when there is nothing to be positive about.

Which is why no one on earth has ever heard about the murder.

I only got involved because I had to use the space toilet at two fifteen in the morning. On the moon this is a major endeavor, because we don’t have a toilet in our private living quarters. (Something else the government neglected to mention when talking up the moon base.) Space toilets cost more than thirty million bucks a piece. So instead of springing for one for each family, the moon-base designers only bought six and placed them all in the communal bathrooms, three for the girls and three for the guys.

The living quarters are all in one section of the base, but the geniuses who designed MBA put the bathrooms on the opposite side. The “logical” explanation for this was that the bathrooms would be closer to the work and dining areas, where we—in theory—would spend most of our awake time. Unfortunately, this means that when the urge to purge strikes

in the middle of the night, you have to get dressed, leave your quarters, cross the base, use the complicated toilet, and then head back again. It can take fifteen minutes—or more if the toilet jams, which happens far more often than anyone predicted. Everyone at MBA loathes the entire process.

Sometimes I can resist the call of nature and go back to sleep, but on that night I knew it was useless. I'd had chicken parmigiana for dinner. Sort of. Like all our meals, it was a shrink-wrapped block of precooked food that had been irradiated, thermostabilized, dehydrated, and compacted, which meant it didn't taste anything like chicken parm back home. In fairness, a few space foods are actually pretty good—shrimp cocktail and chocolate pudding, for example—but for the most part they all taste like wet sawdust. Some of the other moon kids and I once did a blind taste test of three theoretically different space foods: beef stroganoff, blueberry pancakes, and chicken tikka masala. No one was able to tell the difference.

While almost everything tastes the same going in, though, it all has drastically different effects on my digestive tract. Chicken parm is the worst. It had sent me racing to the john in the middle of the night twice before, so I had avoided it like the plague ever since. But on that night, I screwed up.

All the meals don't merely taste alike. They also *look*

alike. Once you've irradiated, thermostabilized, dehydrated, and compacted a meal, it doesn't look like food anymore; it looks like toy blocks. For this reason, the meals all have identification stickers to tell them apart, but the stickers often come off. (And sometimes things just get labeled wrong.) I had rehydrated what I *thought* was beef teriyaki for dinner, but due to the blandness I was halfway through it before I realized my mistake. By then it was too late. I chucked the remnants in the trash compactor—a flagrant violation of the moon base's food-conservation directives—and hoped for the best.

Instead I found myself running for the toilets at two fifteen. My bowels were rumbling so loudly I was surprised they didn't wake everyone else at MBA.

Actually, what I really did was *bound* for the toilets. The moon's gravity is only one-sixth that of earth's. Zero gravity, which we experienced on the spaceship, could be fun, but one-sixth gravity is disorienting. For the first few days at MBA, everyone essentially had to learn how to walk again and spent a lot of time crashing into walls. We eventually got the hang of it, though we still made mistakes at times. I covered a dozen feet with each leap as I hurried through the base, doing my best not to wipe out en route.

At first glance, the men's bathroom looks like any normal communal bathroom on earth: tiled floor, three stalls, even a

bit of graffiti on the walls. (*For a good time, call Princess Leia.*) However, there are no sinks. And no urinals. And the toilets look as though some sadistic plumber mated a vacuum cleaner with an octopus.

The big problem with going to the bathroom on the moon is the scarcity of water. NASA found some ice near the north pole, but it's difficult to extract and there isn't much of it, which means every last drop of H<sub>2</sub>O we have is incredibly precious. Therefore, you don't flush your poop at MBA. Instead you essentially do your business in a plastic bag, which is then hermetically sealed, dehydrated, and sucked into a composter. As for pee, you have to use a suction hose, which whisks everything away to a processor that filters out the impurities and sends the rest back into the main reservoir tank.

Yes, we drink our own urine in space. They left that out of *Star Trek* too.

The sitting-on-the-toilet part of the process usually takes about five minutes, but thanks to the chicken parm, I was there for the long haul that night. Thankfully, there was a SlimScreen monitor on the inside of the stall door so I could catch up on the latest news from earth. (In game two of the World Series, the Charlotte Gladiators had beaten the Vegas Mustangs 6–3.) Once I was done, I hit the evacuate button.

To my dismay, the toilet jammed. It made a loud gagging noise, like a cat with a hairball. Then a message on the

SlimScreen informed me that the separator had failed and wouldn't evacuate my poop until it was replaced. Unfortunately, I had no idea what a separator was.

"Help," I said.

"How may I be of assistance?" the base computer asked, speaking through the SlimScreen. The base computer always speaks in an attractive female voice. (That's one thing the movies got right, although I think the computer might have been programmed with a female voice *because* the movies had conditioned us to expect one.) Most of the time it's rather soothing, but when you're a twelve-year-old boy on the toilet with your pants around your ankles, a sexy female voice can be a bit unnerving.

"How do I replace the separator on the toilet?" I asked, and then thought to add, "Quickly."

"I would be delighted to process your request," the computer replied. A second later, instructions appeared on the screen. Thankfully, they weren't too complicated and there were several spare separators stored in a bin above the toilet. Replacing it still wasn't *easy*, though. It took another fifteen minutes, which was why I was still in the bathroom when Dr. Holtz walked in.

Ronald Holtz was one of the most brilliant men I'd ever met. He was an expert in low-gravity human physiology—essentially, how the body holds up in space—and was his

own best guinea pig. He had done three extended tours on the International Space Station and thus had spent more time in space than virtually anyone alive. He was now almost seventy, though he was in better shape than most men half his age. Plus everyone liked him: He was always cheerful and friendly, and he knew thousands of jokes. When the time had come to select a physician for the base, there hadn't been any other choice.

I was almost done replacing the separator when I heard Dr. Holtz enter. I knew it was him because he was humming. Dr. Holtz hummed whenever he was in a good mood. He was doing an upbeat tune that night, one my parents liked by some old-time singer named Lady Gaga. He didn't have any idea I was there and I didn't try to tell him. I liked Dr. Holtz a lot, but I didn't want to startle him—and I didn't want to reveal that I'd busted the toilet. I listened to him enter the first stall, pee, evacuate it, and sanitize his hands, humming the whole time. He was walking out when I heard him stop suddenly.

"Hey," he said, as though he was greeting someone.

I hadn't heard anyone else enter, so I assumed Dr. Holtz had just answered a phone call. He didn't seem very surprised to be doing this at two thirty in the morning, so I figured he'd been expecting the call.

I felt guilty eavesdropping, but I also didn't want to burst

out of the stall and suddenly reveal my presence. I couldn't think of a third option, so I stayed put and listened.

"Yes," Dr. Holtz said, "I think the time has come to reveal the truth."

The other person must have asked why.

"Because I don't see any point in keeping it a secret anymore," Dr. Holtz replied. "It's too important. I know you have reservations, but I assure you, this is for the best."

There was a pause while he listened to the other person talking.

The space toilet chose this moment to belch some gas that had built up in the system. Luckily, it wasn't loud, and Dr. Holtz was too distracted to notice. However, since I was perched right over the bowl, the gust of space-sewage fumes hit me full on. It was like having an elephant break wind in my face. I almost heaved up the rest of my chicken parm.

"No, I don't think so," Dr. Holtz said, out in the bathroom. "This could be the most important discovery in all of human history. I've kept it under wraps for far longer than I expected, as is. People need to know—"

Another pause.

"Well, no, I can't tell *everyone*," Holtz said. "Not yet. I don't have the authority to inform the general public. But NASA should know about this. And the government. And

the National Institute of Science. There are far better scientists than I who ought to be privy to this.”

Another pause.

While I was fascinated by what Dr. Holtz was saying, wondering what he could possibly be talking about, I was also desperately trying to control my queasy stomach. The nausea was passing, but it was taking its time. If the toilet released any more gas, I’d puke for sure.

When Dr. Holtz spoke again, he sounded thrilled. Giddy with excitement. “Then you agree? That’s fantastic! I promise, you won’t regret this. Everything’s going to be fine. Better than fine. It’s going to be wonderful!”

The other person evidently asked when the news was going to be revealed.

“First thing in the morning,” Dr. Holtz replied. “I’d wake everyone here and tell them *now* if I could. We’ve waited long enough.”

A final pause.

“All right. Let’s say breakfast, then. Seven o’clock. Tomorrow we’re going to make history!”

Dr. Holtz then broke into laughter. Deliriously happy, uncontrolled laughter. Although I’d found his entire conversation intriguing, this was the most startling thing of all. I’d never heard Dr. Holtz laugh like that before. In fact I’d never heard *anyone* laugh like that before. It was like he’d

just snorted a whole tank of laughing gas. I listened to it fade away as Dr. Holtz left the bathroom and headed back toward the living quarters.

My stomach was feeling better, so I thought about running after Dr. Holtz and asking what was up, but I had my hands full with the toilet repairs. In retrospect, I wish I'd said to heck with the toilet. Because Dr. Holtz didn't end up revealing his amazing news to anyone the next morning after all.

Instead, at five thirty a.m., in a direct violation of official Moon Base Alpha rules, he made an unauthorized trip through the air lock onto the surface of the moon.

Two minutes later he was dead.