**The Hourglass**

**By Steve Bates**

*First published in “Shelter of Daylight”*

Stop me if you’ve heard this one.

A physicist, an engineer, and a mathematician walk into a bar. The physicist picks up a sharp-tipped projectile called a “dart” and throws it toward a target affixed to a wall. He is engaging in a contest of skill, watched by some of the other humans consuming intoxicating beverages in this noisy, crowded place. The physicist shakes his head in frustration because he has missed his target, which is a small red circle with a dot in its center. “I forgot to account for the motion of the space station, the solar system, and the galaxy,” he contends.

The engineer is the next to compete. His projectile also winds up some distance from its intended landing site. “That dart is defective,” he states. “If I had the time, I could create a perfect one. I would never miss.”

Finally, the mathematician tosses her dart. The result is inaccurate as well, but she observes that the three projectiles reside almost equally distant from the target and that the average of the darts’ positions is virtually the center of the circle. “Bulls-eye!” she announces.

Her declaration elicits laughter and groaning from her competitors and other bar patrons. I don’t get the joke.

The physicist, the engineer, and the mathematician move to a corner table, straining to hear each other amid shouting and music and that annoying, grating noise that the chairs make when they move. The buzz of inebriated patrons swells rapidly into a roar. People are pointing at a television screen and yelling at a man behind the bar to increase the audio volume. A news bulletin has interrupted a sporting event.

UP22 is back.

“Holy shit!”

“It’s a hoax.”

“It’s the end of the freakin’ world.”

Almost no one can hear the two television people over the patrons’ hysterics. A few humans are running out of the bar. Most are staring at the television or their handhelds or are activating chips embedded in their scalps or necks.

The television people are arguing over whether the apparition should be called UP22 or UP23. I suspect that they are focusing on the terminology that their government has applied to Unexplained Phenomena because they do not wish it admit that they have no idea what is happening. Their government has revealed no meaningful information about the 21 mysteries that apparently preceded UP22. Humans have suggested “The Bermuda Triangle,” “Area 51,” “Atlantis,” and other possibilities.

I have learned that UP22 has another name, a less formal one. Many Earth residents call it “The Blob.” That translates readily into most of the Earth languages I have studied.

The television depicts a grainy new telescopic view of the phenomenon, then archival images from its first appearance that reveal a pitch black blotch, a stain on the cosmos that was detected because it occluded other celestial objects. Scientists could not agree on an explanation for it. Perhaps it was a ball of dark energy, a new type of black hole, or the terminus of a wormhole. Though little or no energy or mass could be detected, astronomers believed that it was located somewhere between the asteroid belt and Jupiter, but more than 30 degrees above the plane of the ecliptic.

Now the television presents artists’ conceptions created after UP22’s first appearance. One depicts it as a sphere awash in swirling, raging currents, each shade blacker than pure void, blacker than a black hole (which does radiate some energy, after all), blacker than the darkest hue that humans can see or imagine.

Human imagination has run rampant since The Blob’s first appearance 45 Earth days ago, likely affected by traits called emotions. It appears that emotions are chemically-facilitated influences on human consciousness. Some emotions seem to be harmless. But UP22 has generated much fear, which is a destructive force. There are Earth residents who speak of UP22 as if it were a sentient entity taunting them with unspoken threats: You have never seen anything like me. Be very afraid.

Just as suddenly and mysteriously as it arrived, UP22 vanished 19 Earth days ago. Some humans expressed profound relief. Yet many were still concerned. What was it? Why was it here? Will it come back?

Now, only the first two questions remain unanswered. The physicist, the engineer, and the mathematician comprise Team Tau, one of many groups of scientists attempting to answer those questions.

“I was right!” proclaims Paul, the physicist. “I knew it would return.”

“Let’s not rush to conclusions,” advises Ingrid, the mathematician. “Is it the same Blob? It seems, I don’t know, different.”

“Only one thing is certain,” says Allen, the engineer. “We have to get back to work.”

Ingrid leads her colleagues across the space station’s frenetic spine and through branching corridors that take them back to their modest lab, ensconced on a remote stretch of the station’s fourth ring.

I have had some pleasant surprises, but mostly disappointments, as I have traveled across this galaxy investigating sentient lifeforms. However, I must admit that I find humans intriguing. One of the most fascinating aspects of this species is their sense of humor. It is mystifying, yet it seems to be essential to their wellbeing.

I believe that humans have advanced to the point that, in less than 50 of their years, their machines will take over and they will shed their organic forms, much like the transition that occurred for our ancestors. I suspect that humans will lose emotions and humor and other curious traits in that process. It is fortuitous that I am here now so that I can study this species and attempt to obtain some clues about our former existence. I suspect that our machines erased most of our history prior to our transformation in order protect us from embarrassment. If our machines will permit, I believe that it would be enlightening for us to learn how humor functions and to determine whether we might benefit from incorporating it into our current existence. Based on what I have observed to this point, this task will be a difficult one.

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It is well into the scientists’ “sleep cycle,” when humans typically lapse into a semi-conscious state of rest. However, the members of Team Tau are alert as they engage in a “conference call.” Participants in the conversation include other teams of scientists scattered across the station and the surface of the planet, most under the loose coordination of a man named Ajani. He has been alive for more than 100 Earth years and likely will not live much longer. He has offered “one billion dollars” to the team that discovers the true nature of UP22. Comments and actions of these teams indicate that one billion dollars is a strong incentive for them to succeed. It must be nearly as powerful as the quest for discovery and intellectual stimulation that motivates beings of pure energy such as our kind.

Two scientists on the conference call assert that UP22 has moved since it was last seen. It appears to be closer than the asteroid belt and at lesser angle above the plane of the ecliptic than where it was first detected. A man says that it appears to be brighter, if that is possible for a completely black entity. It is “more intense,” according to a human of undetermined gender.

“Are we getting any indications of mass or energy?” asks Ingrid, the oldest and most experienced member of Team Tau. She claims the role of team “leader,” which confers unspecified powers over her colleagues.

“Nothing yet,” comes a reply from someone in Australia.

Tall, thin, and adorned with gray, frizzy hair, Ingrid cares little about her appearance. She says that she dreams of algorithms. I have a definition for “dreams” but limited understanding of their nature and purpose. Ingrid also claims that she does not care that some people consider UP22 frightening. All that matters to her is what it is and does.

“What is the status of the probe?” inquires Team Tau member Paul, after using both hands to ensure that each hair on his head is in its ideal position. “Can we change its trajectory or launch a second probe to the new location?” Paul has published several simplistic physics papers about the quantum properties of the universe. Privately, his colleagues describe him as “headstrong,” which strikes me as odd. Humans who act as if they possess all the knowledge in the universe seem to be, for the most part, not particularly strong in the head.

The teams are informed that the path of the recently launched rocket can be adjusted, but much time will elapse before it reaches UP22 with its scientific payload.

The discussion concludes. Team Tau’s Allen has not spoken. The engineer, who is shorter and heavier than the typical fully-grown human, uses plastic lenses to augment his vision. They seem to make his face and expressions less noticeable to others. Perhaps that is intentional. He rarely offers an opinion to anyone beyond his team unless he is quite certain that he is correct.

Team Tau members stare at their screens, apparently uncertain what to do next.

I recognize their struggle. I have no record of a phenomenon that correlates closely with what little is known about this Blob. No doubt our machines back home have adequate warning of unusual phenomena so that they can prevent or eliminate any such anomalies in our core environment. I have sent a query for more data about entities such as UP22 to our home net, but I suspect that I will have completed my observation of Earth and moved on to the next inhabited planet by the time that information reaches me.

Still, there is something familiar about UP22 that I cannot quite coalesce into a definitive analysis. Not only that, I sense a vague connection with the humans of Team Tau, even though I do not recall encountering members of their species before now. Perhaps they remind me of certain extremely inquisitive individuals among our kind. Or maybe it is humans’ habit of talking to themselves, which I must concede appears not that different from my transmission of comments and images to you back home as if we could communicate in real time. However, I will not waste any more of my energy analyzing irrelevant matters such as these.

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“For God’s sake, woman, I’m the guy who wrote the definitive analysis of theconditions *before* the Big Bang. Doesn’t that count for something?”

Apparently not. Paul’s request to move to the front of the line of teams waiting to use the Southwestern States Particle Collider for their experiments has been rejected. Every group ahead of Team Tau has a compelling case for its venture, he is told.

Paul stifles a curse, closes the connection, and stares at the ceiling.

“Just model it,” Allen proposes.

“How can we model something that we don’t understand and can’t predict?” Paul counters.

“Maybe the answer doesn’t lie with subatomic particles or dark matter,” offers Ingrid. “It might be tied up with dimensions.”

“Not your string theory crap again,” says Paul.

“I haven’t heard a better approach. We can sense only four of the 11 dimensions that the theory predicts. Just because we have not yet detected the other seven doesn’t mean they aren’t out there. And they must exist for a reason.”

The three humans debate the potential application of what they describe as “hidden” or “curled-up” dimensions to UP22, then they return to their own musings and computers. Periodically, they check reports from other teams. Ajani insists that each team share every theory and the results of every experiment that might shed light on the very dark and foreboding Blob.

“You know, sometimes I can almost agree with the doubters,” Paul confesses. “Maybe UP22 is just an illusion or something so harmless that, even if it remains in the solar system, it won’t cause us any problems.”

“That must be a scary thought for you,” maintains Allen. “That would slow your ascension to the pinnacle of the physics world and cost you untold fame and fortune.”

“I don’t see anything wrong with trying to be successful. The world would be a sad place if everyone had as little ambition as you.”

Allen chuckles. Could Paul have said something humorous? If so, I missed it.

“My ambition is to be a part of something bigger than myself,” Allen asserts. “I have already accomplished that goal by joining this team. Anything else is gravy.”

I understand that “gravy” is a food enhancer. I am definitely confused.

“Someone has to take the long view,” says Ingrid, turning away from her computer to face her colleagues. “UP22 and other crises will come and go. When humans achieve immortality, we will learn to take such matters in stride. With my share of the billion bucks, I intend to be the first person to live forever.”

“Good luck with that,” replies Paul. I suspect that he means the opposite.

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Six days after UP22’s second appearance, a priority alert sounds. Using humans’ most advanced spectral analysis techniques, and employing space telescopes plus multiple arrays on Earth, astronomers have detected a shape in the heart of The Blob. That, by itself, is alarming for humans. Even more alarming is the fact that the shape is familiar.

They are looking at what appears to be an hourglass. Team Tau launches a frenzied review of reference sources.

“The hourglass is a symbol of cycles and balance,” Ingrid reads from one site. “Its shape suggests triangles balancing each other.”

“Get this,” states Paul as he scrolls through another source. “The flow of the grains of sand represents the unfolding of all possibilities in a cycle of manifestation.”

Says Allen: “To me, its shape suggests infinity. But its functionality portends the sands of time running out for all of us.”

“Oh my,” comments Ingrid as she comes across another intriguing passage. “Some ancient philosophers believed that the midpoint of the hourglass represents the juncture at which space and time are transmuted.”

“Let’s not forget its role in nature,” adds Allen. “I learned at a very early age to avoid spiders with brightly colored hourglasses on their bodies. The hourglass is a warning: Stay very far away.”

“Surely you’re not suggesting that UP22 is alive,” demands Paul. “That’s just juvenile.”

“Boys, please be civil,” implores Ingrid.

They return to their individual tasks, avoiding direct hostilities for several days.

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A new alert shatters the cease-fire.

UP22 has disappeared again.

“Are we certain?” asks Paul. “Could there be flaws in our equipment, or some property of UP22 that allows it to become transparent at times?”

Allen sighs. “You think you know more than our greatest astronomers?”

Ingrid leaps to her feet, puts her hands on her hips, and shouts: “Do you children need a time out?”

She freezes. Her mouth forms an O as she stares at the back wall of the lab. “Time … out. Of course. One or more of the hidden dimensions must be time dimensions. I—we—just assumed that they were spatial or some exotic mumbo jumbo.”

The three scientists search the reports of the other teams. Many of those teams remain convinced that UP22 is a ball of dark energy or dark matter that transforms in some manner. There is nothing in the reports about dimensions other than vague speculation.

“Should we post our theory?” Allen asks his colleagues.

“Not yet,” answers Paul. “We need to learn more.”

Ingrid closes her eyes and clasps her hands as if in prayer. “Could UP22 be moving in time?”

Allen tilts his head and squints. “Then what makes it appear in different places?”

“Maybe it isn’t anchored to our solar system or galaxy,” Paul asserts. “The rest of the universe could be rotating relative to it.” He adds: “That dart game—I should have known.”

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After long days and nights exploring the convoluted mathematics of string theory, Ingrid tracks down Paul and Allen in the recreation center. “There must be two additional time dimensions. That’s the only way the math works. One is ‘reverse’; that’s somewhat intuitive, if startling. The other I would describe as ‘sideways’. My guess is that time in effect pauses when subjected to this dimension.”

The men stare in wonder.

She continues: “You don’t notice the effects of those time dimensions because you and everything you can sense—except an extremely rare thing like UP22--remains in sync.”

“So, we freeze and go backwards in time all the time?” asks Allen.

Ingrid throws her head back and laughs. “Yes, by God, we must!”

Again, I don’t get the joke. I am beginning to suspect that humor might be linked to things that are surprising or that seem incongruous. I might be wrong.

Team Tau posts Ingrid’s calculations and theories. Other teams go to great lengths to try to disprove them, with some extreme and even personal attacks. A few scientists offer to help confirm and apply her findings. Eventually, a proposal for an experiment emerges. It will require a unique crystal with 2,048 precise facets--2 to the power of 11--plus two powerful magnets and more than 20 incredibly focused lasers. With these, Team Tau believes, it might be possible to isolate, expand, and confirm the properties of one or both of the hidden time dimensions. Allen volunteers to program the station’s best printer to assemble the crystal. Ajani will procure the magnets and lasers and manufacture a containment unit for the crystal. He will send it all to the station on one of his rockets.

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While the equipment is under development, Ingrid tries to project where and when UP22 might reappear. If prior activity indicates a progression, she discovers, the next time that The Blob materializes, it could be dangerously close to Earth. It could show up in weeks or even days of Earth time. Beginning their post with the warning that their projection is “pure speculation,” Team Tau notifies Ajani and the other scientists of the possible close encounter. Ingrid cautions everyone not to share her revelation with anyone outside the teams. However, someone in the news media finds out.

A short time later, Allen reports that “all hell is breaking loose on the surface.”

At first I believed that Allen’s comment might be a metaphor. But after learning about hell from the local net and viewing images of the widespread panic and extreme violence occurring on Earth, I must accept his assessment as literal.

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Ingrid, Paul, and Allen are not sleeping effectively. On occasion during their breakfast meetings, one of them mentions “strange dreams.” Paul is having particular difficulty concentrating on his work. Over one meal, he describes what he remembers from his involuntary sleep cycle visions.

“It’s all very cloudy or fuzzy, but there are lots of figures, some of them human and some possibly nonhuman. They seem to be gesturing and trying to get my attention.”

“Whoa,” says Allen. “I think I had a dream like that. It was like I was being warned about something.”

“This sounds disturbingly familiar to me, too,” reveals Ingrid. “Maybe we’ve been spending too much time in close proximity.”

“Perhaps we need to see a shrink,” Allen remarks.

Responds Paul: “I certainly don’t need one. And there’s no time.”

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For safety reasons, the three scientists agree to conduct their experiment more than 20 kilometers from the space station. Robots construct a spherical grid of metal struts that will hold the lasers in position. At the center is the crystal, surrounded by a transparent, cubic containment unit measuring two meters on each side. On opposite sides of that unit are the batteries.

Ingrid, Paul, and Allen are seated in modular labs hovering about 10 meters outside the metal framework, each lab equipped with its own navigation system. Ingrid performs diagnostics in one. Paul conducts a television interview from the second. In the third, Allen adjusts the position of the labs until they are equidistant from the crystal.

“Bulls-eye!” Ingrid exclaims.

It takes Paul and Allen about two Earth seconds to get the joke. I’m still confused.

“Can I ask a stupid question?” says Allen. “What happens if we find one of these new dimensions?”

“I have no idea,” Ingrid concedes. “One step at a time.”

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Camera feeds and sensor readouts fill the screens of the three team members and many other scientists watching remotely. Allen directs robots to remove the shielding from the magnets while he prepares the lasers. When they are ready, Ingrid tells the engineer to fire them at 20 percent of their maximum power. After a few minor adjustments, the ultra-thin beams are on target and following their programming. Soon, the crystal emits a pale pink light, but no other changes can be detected.

“We’re getting nowhere,” grumbles Paul. “We should blast the lasers at full power.”

“This whole thing could melt down,” says Ingrid.

“We’re running out of time,” Ajani interjects. “Ingrid’s calculations suggest that UP22 could return at any moment. People all over Earth are demanding action. I say: Go for it.”

Slowly, Allen brings the lasers to full power. The crystal produces a brilliant red light. Even with filters for Team Tau’s windows and camera feeds, its brightness nearly wipes out their visual fields. Before long, all the hairs on Allen’s body are standing on end. “Anyone else feel a vibration?” he asks.

“I’m buzzing,” Paul replies. “It’s like I’ve taken a dozen stimtabs.”

Ingrid maintains her focus on her screen, tapping anxiously to get new readouts and view different feeds.

Paul notices something unexpected. “Is the crystal vaporizing? Something like a gas or fog is filling the containment unit. In fact, it’s overflowing the unit. The fog is … it’s changing shape.”

“Roger that,” says Allen. “Definitely something going on. There are probably minute imperfections in the crystal. Everyone was rushing me. If only I had more time.”

“Your favorite excuse, but it’s not helping,” Paul states. “Ingrid, any instrument readings of note?”

She doesn’t respond immediately. “These … these make no sense,” she observes presently. “All the needles are off the top or bottom of the scales.”

The fog fans out, revealing two dark, mirror-image objects in its midst. They are growing rapidly, becoming conical, connected at their tips by the thinnest of strands.

“Ahhhh…” begins Paul. “Is it just me, or does this look a little like an hourglass?”

“Stop the experiment!” Ingrid shouts. “Stop it now!”

Allen cuts power to the lasers and begins the process of shielding the magnets, his eyes wide and his fingers shaking. The equipment does not seem to be responding. The hourglass continues to expand, its surface presenting a deep crimson, roiling, metallic sheen. Now the hourglass begins vibrating and shifting its apparent position erratically, as if jolted repeatedly or viewed on a defective video feed.

Why isn’t it stopping?” Ingrid yells.

Paul can’t take his eyes off the hourglass. “I think its timestream must be changing relative to ours.”

“What’s going on?” demands Ajani from his underground complex on Earth.

Allen laughs heartily. I don’t understand what he finds humorous. This is one of the most serious things I have ever witnessed.

“It has us,” Allen says, calmly. “We can’t escape it.”

“Of course we can escape it,” Paul replies. “We can move these labs. Or we can get in our suits and go EVA.”

“Don’t you see?” responds Allen. “We didn’t discover the conditions that are present in UP22. We created them.”

“We … made … The Blob,” Ingrid states, her voice and face revealing intense awe.

“And now it will take us back in time—to when and where UP22 was first seen,” observes Allen, whose eyes are cast upon deep space.

Team Tau ignores a tsunami of chatter from Ajani and remote teams.

“I can feel myself being dragged in,” says Paul, manipulating his lab’s propulsion controls with all his strength, but to no effect. “Are we going to die?”

“Possibly,” Allen states. “But I don’t think we are that lucky.”

“Lucky?” Paul isn’t sure that he heard Allen correctly.

“He’s right,” Ingrid observes. “For our hubris, we are probably fated to theorize about, create, and be absorbed by UP22 over and over and over. We engineered the loop and are an integral part of it. Throughout each cycle, versions of ourselves trapped inside The Blob might even be aware of the untold misery and fear we have generated for everyone on Earth.”

“If it’s a loop, how did it start?” Allen says, almost whispering.

“I would guess that it was some relatively tame thing such as a gas cloud,” Paul maintains. “It doesn’t take much to get people so panicked about things they don’t understand that they will invent and believe all kinds of horrible scenarios and demand the creation of teams like ours.”

The scientists become silent. At first, I assume that they are contemplating this unexpected turn of events. But now I believe that they are already being consumed by UP22 and are starting to travel back in time.

I hope that all of you at home will be able to witness this anomaly. I find it quite... Excuse me, something is … something is happening to…

No! Yes! I too am being absorbed by UP22. I am trying to resist it, but… This is unfortunate. This is unacceptable… This is … funny, in a bizarre way.

Yes! I am finally understanding humor. This must be an example of what humans call irony. How ironic! How iron….

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Stop me if you’ve heard this one.

A physicist, an engineer, and a mathematician walk into a bar…