



Illustrated by Eldar Zakirov

Heart of Stone

Tom Jolly

Chapter 1— Bright Rock

Flew Too Far was the first to see the distant arcs of lightning, followed by a sudden bright flash, like a tiny sun appearing and fading away. “Did anyone else see that flash?” it broadcast. “Or see what caused it?”

Five Circles responded, “The flash occurred deep within the Field, obscured by rocks and dust. I doubt that anyone saw what it was.”

That was true. The Field supported many Stones like us but also carried considerably more unthinking rocks that obscured our far view. Stones occupied a narrow band within the Field; the ones too close to or too far from the Sun could not maintain the fluids needed to stay alive, or they lost their fluids long ago and became rocks.

“Was anyone near it?” I asked. My given name is *Bright Rock*. It is a rude joke, as rocks have no mind at all, unsuitable to maintain a core. I earned it over four hundred cycles ago, as measured by Standard Rock, which never changes its orbit. How I earned it is not relevant.

“If someone was close, *Bright Rock*, they will let us know,” said *No Sense Of Humor*. “But if it was too far outside the Liquid Zone, then no one will have any useful information.”

Two minutes later, *Flew Too Far* broadcast, “It is within the Liquid Zone. I have five of my surface lenses observing the area at my best magnification. There are pieces flying away from the flash point.”

We were never sure about *Flew Too Far’s* statements. Its mind was damaged, partly frozen when it made an exploratory excursion to the cold rocks outside the Liquid Zone. It still drifted along the furthest edge of the Liquid Zone in a tilted orbit to gather the Sun’s weaker rays, looking for nearby rocks that might be pushed into lower orbits.

“An explosion? Was some Stone foolish enough to mix a hotfire?” *No Sense Of Humor* said.

Hotfire. It was one of many options we had to move ourselves around in the Field, but it was by far the most dangerous. Mixing two gases together and sparking at a skin port gave us powerful thrust, but there was a risk that the high pressure would force the flame back into our internals, destroying tissue, possibly creating secondary fires if there were other gases stored within our membranes. In my memory, two Stones had destroyed themselves this way; one desperately trying to dodge a fast-moving out-of-field rock, and one young Stone (less than eighty cycles) that felt it necessary to test the limits of its abilities. Both are just plain rock now, scattered among the other nameless rocks in the Field. There are safer gases that burn colder, and even organic solids, waste, that burn with stored air, but for fine movement or turning, steam or even simple pressurized air can be exhausted from a skin port.

Five Circles sent out, “I am not that far away, and I have a surplus of organic residue that I was saving for egging. But it will work as well as propellant to move closer.”

I could not see *Five Circles* turn to position itself, but the warm glow of flame reflected from rocks near it marked its position as it burned organics to move toward the explosion. I saw a long, thin spark leap through the darkness and wondered.

Five Circles cursed and broadcast, “Something wet just hit me. Not an ice ball.”

Every Stone within range turned to face it, skin ports aligned for movement or surface lenses aligned for observation. Something strange was happening.

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Chapter 2— Five Circles

My given name is *Five Circles*. When I was young, I sent worker cells to secrete a pattern of white rock on my stone surface, small tubular towers, like the extensions and decorations that the other Stones create, and the pattern I made became my name over time. Nobody calls me by my chosen name, but why would they?

Now there was a Thing on my surface, and I could not see it. My twenty eyes were all pointed outward, away from my stone skin. I was sure that the Thing came from the explosion that we all saw, flung away from it, and I was in its orbital path, but I was only able to see the tumbling Thing for a few fractions of a second before it struck me. It was a strange shape with a bright surface.

I sent a flexible tubule through one of the surface ports with an eye mounted in the end, the same tubule I’d used a hundred twenty cycles before to watch my circles as they were built. It still functioned against the vacuum, the membrane holding steady. Flexing this way and that, I was finally able to perceive the object that had collided with me, failing to bounce away as a rock would have, though a small cloud of water-ice crystals surrounded it, sublimating into the vacuum as I watched. The Thing was part shiny metal, part white, wrinkled external membrane, with a convoluted red and white interior. Some hard, clear material, like our crystalline eyes we use to far-see, domed across one end of the Thing, but it looked as though it had been shattered. It was so clear! I had never come across a rock like this.

Some liquids were bubbling out of the Thing’s internal convolutions. Pure metals and fluids. I was lucky to have been in its path.

I sent harvesters out for the fluids and found that much of the internal material was organic. It was surprisingly warm, warmer than our own internal fluids. There was both water and organics, mixed together, much like our own minds and cells. Some of the outer covering was organic, too, but didn't taste the same; it looked like it had been made, like some object we might excrete on our own stony surface. It was flexible. Had this Thing been alive? Regardless, the resources were too valuable to waste. As we spent water to propel ourselves on occasion, we needed to replenish it when we could, and the Thing was an excellent resource. I wondered if there were more Things available. It would save me from having to chase after every wayward comet that fell our way, putting a rock into its path and hoping some of the scattered ice shards would come my way, so that I might gather and store them for the future.

I broadcast my findings to the others, and the ones with close vectors propelled themselves in my direction, keeping a sharp eye out for more Things.

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Chapter 3— Heart Of Stone

"There is another object like your Thing moving away from the explosion," I said to *Five Circles*, though everyone heard. "I can see the heat from it."

Anyone can see heat, but not all of us grow the best cells for detecting it or have the best optics to pick up the radiation. I am *Heart Of Stone*, and I can see better than most of the Stones.

"I can catch up to it with warmfire and take its water," I continued.

"Dangerous, *Heart Of Stone*," said *No Sense Of Humor*.

"My thrust cavity is isolated from the rest of my internals. I will be fine," I said. I didn't need its warning.

I rotated my Stone with a light touch of pressurized gas, then I pushed the warm-burning gas and a bubble of oxygen into my thrust cavity, plugged the access, and sparked the chamber. It pulsed a bright orange flame from my Stone, and I was on my way to intercept.

"You would do well to avoid impact," *Five Circles* told me. "You may damage it. Perhaps you can slow down to match velocities."

"That would be a horrible waste of gas," I told it, "if I'm just going to harvest it anyway."

"It might still be alive."

There was stunned silence for as far as *Five Circles*' broadcast went. I could still hear faint, incomprehensible whispers of energy from far away, outside our immediate range, but our local group had become very quiet. I felt panic and excitement, like when a new Stone, fluids shaping within it, is just learning to think and act and move. I narrowed my vision for hotter light, better detail, and I saw the Thing twitch as it got closer and closer. I cursed as if a giant boulder were about to clip my Stone.

"You think there is other life outside the Field?" I finally said.

"We know there are other suns. Why not?" *Flake Of Stone* interjected.

"You *think* those bright points are other suns." I said.

"We have measured . . ." it started, but I broadcast loudly over the top of its voice, "I'm getting close, I'll need to slow down." I didn't need to hear its argument again. I turned and burned, slowing until I paced the Thing, no more than three Stone-widths from it.

I had seven eyes pointed toward the Thing, glittering lenses on tall stone tubules, filled with pressurized fluids, feeding the images into my mind-mass deep in my core.

The Thing moved one of its extensions back and forth. Did that have meaning? I could not tell. The Thing possessed symmetry that might only come from a mind secreting and building onto itself. Such symmetry did not exist naturally except in some of our internal structures. Living, growing things. Could the whole thing be a growth of some sort, unprotected by Stone? A membrane of tough organics containing a floppy fluid mass? How could such a thing ever come to exist? I was curious what its core might taste like; *Five Circles* had already consumed an entire Thing, and was unlikely to share mass with me. And I was running low on water.

The back of the Thing appeared to be damaged; it lacked the symmetry of the rest, a jagged rent in the surface of its structure, as though a fast rock had torn through the crust of a Stone. But

the Thing was still alive. Perhaps the damaged structure performed some non-life function, like my eyes, or the scale growth on my Stone surface.

There was a hiss of voice from the Thing, but it was just one continuous sound as far as I could tell, a drawn-out shout lacking any information. A single frequency, but dirty, a thin veneer of noise polluting it. I offered the same frequency back, purified, no noise. The Thing sent back another noisy, narrow cry, and I responded with a true voice, a rainbow of mixed frequencies, asking, "What are you? Where are you from? How did you get here? Are there many more like you? Do you always use explosions to distribute your seed-bodies through a system like this?"

The Thing was silent for a while. I could see a light blinking inside its shell when I talked. Was it carrying one of the tiny lights from the sky? It knew that I was talking, I think. That was the only communication we had, the only information; on or off. But what more did it tell us? Merely that we both wanted to communicate.

A distant flicker of light distracted me from the Thing, and I jettied precious gas to turn, to re-orient my primary eyes. It was another strange piece from the explosion; perhaps another Thing, or something they brought, perhaps some thing that let them travel far from a sun. Perhaps *Flake Of Stone* was right about that. The Thing saw me turn, and to my surprise, it also jettied a tiny bit of gas and turned its body, presumably to look the same direction, though I saw nothing I could discern as a visual organ on it. There was a highly reflective piece of its outer skin covering a bulbous section of the body; perhaps it served in some way like my own lenses. Then, a much bigger surprise. The Thing slowly jettied toward me!

I was torn between jetting violently away from it or holding steady. What if the Thing tried to consume my own volatiles? Or invade my inner flesh like the mindless scavenging eaters sometimes tried to do? But it seemed so fragile. Instead, I held my place; I was Stone, and it was small. What could it do? The other Stones, watching from afar, were shouting at me to break away, that this unknown Thing could be dangerous.

I pushed warmgas in my thruster pocket, unsparked, just in case I needed to shake the Thing off quickly, but the Thing only landed lightly on me, two of its extensions touching my Stone, and one extension with tiny manipulators grasping the pillar stalk of one of my eye-lenses. It turned its eye-reflector toward the scrap that was moving past us, bent two of its extensions nearly double, then unfolded them suddenly, launching itself off of my Stone skin to intercept the scrap! Stealing some of my own momentum!

I reabsorbed some of the warmgas, knowing that I wouldn't need to escape an attack from the Thing, and ignited the rest, following the Thing to its rendezvous with the new bit of scrap. Would this be another living thing?

No Sense Of Humor was nearby, and said to me, "That Thing is going to miss its target. If you wish to help it, you must get in front of it."

"I have little fuel to spare," I said. This was a common lie, since few Stones would allow themselves to get so low that they could not maneuver. That would mean a slow death, perhaps even consuming the core's water to chase after more volatiles. It was a subtle request for help, whether actually needed or not.

"I can toss some ice to you when I am nearer. If you garner some benefit here, I expect some sharing," said *No Sense Of Humor*.

It was a good response. I sparked some more warmgas and accelerated beyond the Thing's position as it flew toward the scrap, and used simple steam to position myself in front of it. More volatiles than I would normally use in two cycles, but it seemed so important. I really was hurting for propellants. It was so rare that we ever needed to move anywhere quickly, and so expensive.

We flew past the debris together, the Thing coming down on my Stone, and then I accelerated slowly back toward the debris. The Thing seemed content to ride on my surface, though it kept pointing the shiny nob of its outer surface at me. I did not know what that might mean, but the Thing did not seem frightened. We closed with the debris, and I slowed. At that point, *No Sense Of Humor's* promised volley of small spheres of ice hit me and the Thing. The Thing jerked and stood, and I take it that it was surprised by the balls of ice, though I had no good way to measure its reaction. It held a ball of ice in its extension, crushing it with its tiny manipulators. I sent clusters

of harvesters out to retrieve the ice before it sublimated away and brought it inside my Stone.

I examined the bit of scrap with a few of my eyes. Was this another living thing?

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Chapter 4— No Sense Of Humor

I slowly matched the velocities of the Thing and *Heart Of Stone*, drifting ever closer, and announced to it that I was there. Other Stones were estimating the mass they would have to expel to reach us, but they were still far away.

“*No Sense Of Humor*, I did not realize you were so close,” *Heart Of Stone* said to me.

“I ate well from the last comet we shattered.” I used steam to propel myself, effective because I am light as Stones go, and creating chemical heat is not difficult. Using flammables for propulsion scares me. A Stone a hundred cycles ago completely burned out its core because of the gasses it stored in its membranes, and was soon filled with scavenging eaters who finished the job, took up residence, and became the Stone now called *Flame Out Of Every Hole*. *Flame Out Of Every Hole* thinks it is an unfair name, mostly representing the dead Stone whose shell it/they filled, but then, it does not get to choose what others call it. “What is the Thing doing now?” I asked.

“There is a large piece of torn metal with a number of symmetric bumps on it. I think they are all made things. It is looking at them as though searching for something.”

Metal was not a rare thing. There were certain cell groups that could excrete and build metal structures, mostly as waste, but we had taken to adding little structures to our Stone exteriors. Sometimes for sight, sometimes for art. *Five Circles* was good at that. *Flew Too Far* has some shiny pieces mounted on its stone that it says can make it warmer or cooler, but I find this unlikely.

The Thing found a shiny cylindrical object similar to one it already had, and it removed the one object from its surface, disconnecting a flexible tube-shape from the old one and connecting the cylinder it had found. It released the old one and let it drift away, and continued looking through the wreckage. It was so alien to me. There was nothing so smooth and shiny out here.

Heart Of Stone and I drifted two Stone-widths from the slowly rotating scrap while the Thing crawled carefully through it. During one moment, it caught its outer covering on a sharp piece and made a hole; gas came out of the hole, and the Thing quickly put a flexible square piece on it to seal the hole.

“The inside is under pressure,” *Heart Of Stone* broadcast.

Flake Of Stone replied, “Like our own insides. We have seen that water cannot be liquid without pressure.”

It was a conundrum often discussed; how did we ever come to be? What was the first organism to have a membrane that could retain some pressure? Was it a very small stone with liquid inside, sitting just the right distance from the Sun to allow growth? We didn’t know. I am not sure we ever will. How can one know the past without living through the past? Only *Flake Of Stone* and a few like it thought there were ways to learn.

Lured perhaps by my steam, *Heart Of Stone’s* exhaust, and the Thing’s own gases escaping with whatever interesting biological signs were present, I started to perceive the arrival of small scavengers. There were many of them in the Field, so one was never far away from the tiny organic pods. But some of them puffed over to the Thing and grabbed onto it, and ate at its outer membrane. The ones that came near *Heart Of Stone* and me, we repelled by shouting, but the Thing did not know how to get rid of them, how to let them know it was alive.

Heart Of Stone said, “It can make noise! Why does it not do so now, and drive off the scavengers?”

I did not know, but I pulsed steam and closed the gap with the small Thing, and shouted as loud as I could across the whole spectrum, what my cells could create, anyway, and the startled scavengers darted away from the Thing. The Thing became busy patching new holes in its covering, just as we might excrete sealing organics into cracks in our own Stone, turning slowly as venting gases rotated it. It must have detected my own shout and surmised its purpose, because now it copied it, and drove off the remaining scavengers.

Afterward, the Thing continued looking through the scrap until it found another piece that it pulled out. It did some things with the piece and attached a long flexible object between its surface and the piece, then did some more with it. There were small lights on it. It made its own light! The Thing finally disconnected from it and let the new piece float free. I could not tell if it had accomplished anything at all.

There was a way to make light without fire. Maybe *Flake Of Stone's* ramblings about science were not so foolish after all.

The Thing just floated there with us, alternating its attention between us and an area in space facing away from the Sun. I saw nothing there.

Heart Of Stone and I didn't move, keeping a few eyes trained upon the Thing, wondering what it would do next, but it seemed to just be waiting for something. Anxious. After a while, I broadcast a pulse to it on the same frequency that it had used before, the noisy pulse, but I didn't try to add information to it. Just, "Hey, I'm here." It pulsed back, once, but without the noise that accompanied the signal before.

It pushed off the debris and slowly drifted toward me at a pace that would allow me to easily move out of the way. I didn't. It touched down using the two extensions that had no manipulators, then grabbed a gnarled piece of my Stone near a steam propulsion vent. Reaching up, it turned on another light mounted on its bulbous protrusion with the reflective surface, shining it on my Stone, and examined my outer surface: the extensions I'd secreted, the crystalline lenses that helped me see, the depths of the scattered orifices I used to propel myself or expel waste. As it moved over the surface, I prepared a group of cells to leave my main body and go to the surface, excrete a shape, and return, so the Thing could learn more.

I wished I could see inside its covering, but based on *Flew Too Far's* report on the dead one, the thin covering might keep the Thing's core alive, like our own Stones protected the organics inside. Eating away at its covering may harm it, and as attractive as the fluids were that were secured behind that covering, the true value could be much, much greater. Where had it come from? What could we learn? Could we find a place where organics and water were not so rare that we competed for them constantly?

My cluster of cells poured out of an orifice near the Thing, and it jerked suddenly, but did not move away. They gathered together and excreted a small, flat disk on a narrow stem over a period of a few minutes as the Thing closely watched. I meant to add something to the surface indicating some bit of math or science or language that our species had acquired, but in the excitement of the moment, opted for adding an abstract geometric pattern. It wouldn't be able to read anything anyway. Then, I instructed the cluster to break the flat disk from the stem and lift it toward the Thing, while watching it from another mobile cluster.

The Thing stared at the disk and finally reached out and took it. It turned it over and after a while put it inside an area on its surface, securing it. A place to hold small objects on the outside. It removed a small device from its center, disconnecting an interesting mechanical thing, and then pressed a spot on the side of the object.

Light!

It was a tiny maker of light. I did not know what I could do with it . . . perhaps look at my own insides? That would be strange, but so informative.

I took the small device from the Thing and used my cluster to turn the light-tool off and on. But truly, the most incredible part of this exchange was that the Thing knew the concept of barter, just as when Stones traded water for certain organics, or spent mass to push a rock into the path of an icy comet and was owed by all who feasted.

The Thing pushed away then and drifted back to the scrap metal. I could see that it was having trouble regulating its temperature, which had been steady up until now. It seemed to be waiting. We waited with it. On occasion, it would speak to us with its one noisy frequency, but it made no sense. *Heart of Stone* would talk back sometimes, but I was sure that its voice was just as meaningless to the Thing.

We didn't move. After a while, neither did the Thing.

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Chapter 5—
Flake Of Stone

I am *Flake Of Stone*, and these were my observations from that period.

Heart Of Stone pulsed a short message to the Thing, but it didn't respond. "It isn't moving," *Heart Of Stone* said. "It's dead."

We were all silent as we considered the meaning of this.

"Are you two going to consume it?" I asked. "As *Five Circles* did? There is a lot of fluid there."

Five Circles broadcast, "Perhaps the scavengers could collect the waste and make a new Stone."

"Don't be ridiculous," *No Sense Of Humor* said, "You need a Stone shell in which the scavengers can coalesce before they can merge and learn. This only has some thin flexible outer shell. And it isn't big enough."

"It already has propulsion orifices." *Heart Of Stone* mentioned.

"Yes, but it still needed to push away from you to save its steam. Or gas, whatever," *No Sense Of Humor* argued.

"Well, the scavengers will consume it if we don't. We may as well take the resources for ourselves," *Heart Of Stone* said.

"The scavengers need water, too. They can't survive entirely from our waste eggs and surface scale," *Five Circles* said.

"Not really fair that *Five Circles* had an entire Thing to itself." *Heart Of Stone* complained.

Flew Too Far, still skimming along at the outer edge of the Liquid Zone, many light-seconds away from the rest of the group, reported, "There's another flash of lightning near the original. Bright light, like our hotfires. There may be plenty of Things to consume if they keep sending them."

But the new Thing didn't explode, despite the brief play of thin tendrils of lightning around it, and it entered orbit among the Field of rocks and Stones.

"It's large," *Flew Too Far* said. "Maybe twenty Stones wide."

"Did anyone see their first Stone before it blew up? How big it was?" *Heart Of Stone* asked.

"We're calling *them* Stones now?" *No Sense Of Humor* said, a somewhat muted broadcast.

"It's a thing that flies through the Field and the vacuum, and holds living things. What else would you call it?" *Heart Of Stone* said.

They were all quiet for a period, then I observed, "They don't seem to be looking for their Thing."

"The Thing is dead, I think, and is not talking to them." *Heart Of Stone* said. "I hear them making noise. It isn't responding or doing anything, and it is starting to cool."

"What if they think we killed it?" *No Sense Of Humor* said. "They could be angry."

"Well, *Five Circles* already ate one of them." *Heart Of Stone* said. "If they locate that Thing first, then they will certainly be angry. We will appear no better than the scavengers."

"There is not much left except metal." *Five Circles* said. "And a white internal structure. It is harder to consume and the taste does not agree with me."

"Um," I said. "*Heart Of Stone*, you said you actually talked to it?"

"It's more like we shouted noise at one another, at one frequency," *Heart Of Stone* replied.

"Perhaps that noise is common to all of them. Can you shout it again? Maybe they can find you and their missing Thing," I suggested.

"Is that safe? We don't know what they want. Perhaps we taste good to them, our Stones broken open and insides scraped out to feed them."

I pulsed disgust at *No Sense Of Humor*. "There is an entire universe that we don't know how to reach. They do. This is well worth the risk. They are intelligent. Not eating one another must be a basic philosophy," I suggested.

Heart Of Stone wrapped a small cluster around the little light the Thing had given it and played with it. On. Off. On. Off. It had no eyes on the inside of its Stone to see the result, though it could still sense the light, a situation that it would resolve after it grew internal eyes. It would be interesting. And there was a lot to learn. Without any preamble, it picked a pure tone in the voice of

the Thing and sang it. On. Off. On. Off. And the giant new Stone from the visitors turned toward *Heart Of Stone* and approached.

By the time the huge, shining, smooth alien Stone recovered the body of the Thing, there were six Stones gathered to watch. Lights shone through portals and blinked on tendril-thin extensions and their thrusters glowed with heat, a promise of a future we couldn't imagine.

"Do you think they know we are here? That we are not just rocks? Are they listening to us?" *No Sense Of Humor* said. "We should talk to them."

"Where do we start?" said *Five Circles*.

"Does it matter?" asked *Heart Of Stone*. "As long as we start. They are so different."

And we began to communicate.

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Chapter 6— Diamond Eye (16 cycles later)

When the humans came, I was on the other side of our stellar system. The voices of *Five Circles*, *Heart Of Stone*, and the rest were too far away for any of us to hear directly, but voice after voice relayed the message, distorting the meaning little by little until we were certain that our system was being invaded by huge monsters crushing and eating us. This was obviously incorrect.

After the second human spaceship arrived, it dealt with the disparity in static charges easily, which their first ship should have handled as well, but had other issues that exacerbated the problem. Apparently, humans tell us, exploration vehicle maintenance tends to be low on the budget, as they say. But humans say a lot of odd and incomprehensible things. We do not have their references.

From their perspective, they tell us that our stellar system is rare. We've learned that the winds of charged particles thrown from our Sun can result in an electrical imbalance; one sort of tiny light particle escapes from our Sun's pull, and the other heavier particle falls back. We are still trying to understand this science. But the result is that everything in the system, rocks and stones and dust, acquires a small electrical surface charge. That's how the humans describe it, anyway. And when two things are charged the same, they push each other apart.

They tell us that if this were not true, all of the rocks and Stones and dust within the system would have fallen together into giant balls long ago, tens of thousands of Stone-widths wide. This is insane, and I don't believe it, but we have researchers who have gone abroad with the humans to see the truth. But will anyone believe them when they come back from their journey?

The humans have learned our language, and we have not learned theirs, though we have a basic idea how theirs works. Vibrating air to communicate is a bizarre concept when you exist in a vacuum. But they can also modulate radio waves at the same frequencies we use to talk, and they have tools that help them interpret and learn our language. So it is easier.

They refer to us *asteroids*. It is a strange word, and they do not differentiate between Stones and mere rocks. They will need new words.

Evolution is a subject we discuss a lot. We are certainly curious about our origins, and how the first Stone might have come to be, or the scavengers that work around us (and become us, within the hollow shells of the dead), or the surface growths we carry that aid in our biological processes, and even the utility and origin of the eggs of biological waste we spit into the Field. It is complex and fascinating. We have also learned about human biology. They are terrifying ugly with their suits off, with their organs and membranes and meat exposed for all to see, but they hide most of it with various coverings, so are certainly aware of their hideous appearance to others.

Heart Of Stone and *Flew Too Far* have joined the humans in another star system, carried within their ship, and the rest of the Stones are anxious for them to return to see what they have learned. In the meantime, the humans are building a small base of operations outside our Liquid Zone, farther away than we expected, but within shouting distance. Apparently components of our biosystem extend out much further than we can reach on our own, and they did not wish to interfere with that, though they do seem keen to deal with us for permission to use aspects of our system's biology, in exchange for access to their technology and science.

ANALOG

Lacking any central government, as they have described it, it has been difficult for us to arrange trades at anything more than an individual basis, and you might guess how that is flying.

So it is complicated. It is difficult. It is new. But it is exciting, and we will learn.

-Diamond Eye,
Chronicler, Earth date 2245