RINGWORLD'S CHILDREN

Larry Niven

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CAST OF CHARACTERS

Recent arrivals

Louis Wu: Earth born. First and second Ringworld expeditions.

Teela Brown: Earth born, of a line bred for luck by Pierson's puppeteer manipulation. Turned protector in The Ringworld Engineers, and now deceased. First Ringworld expedition.

Nessus: Pierson's puppeteer, the Hindmost's partner and mate. Led the first Ringworld expedition.

The Hindmost: Pierson's puppeteer, once Chief-in-Command of his species. Led the second Ringworld expedition.

Chmeee, once Speaker-to-Animals: Kzin. First and second Ringworld expeditions.

Roxanny Gauthier: Earth born, Detective-One in the ARM. Served aboard Snail Darter and Gray Nurse.

Oliver Forrestier: Wunderland born, Detective, ARM. Served aboard Snail Darter and Gray Nurse.

Claus Raschid: Earth born, Detective-Two, ARM. Served aboard Snail Darter and Gray Nurse.

Detective-Major Schmidt: Earth born. Served aboard Gray Nurse.

Wes Carlton Wu: Earth born, Flight Captain aboard Koala.

Tanya Haynes Wu, Earth born, Purser aboard Koala.

Ringworld's children

Seeker: species unknown, last seen with Teela Brown.

Acolyte: Kzin, Chmeee's exiled son.

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Bram: Vampire turned protector, ruler of the Repair Center for countless aeons until killed by Tunesmith with Louis Wu's help.

Wembleth: species unknown, Ringworld-born traveler.

Tunesmith: Night Person (Ghoul) turned protector.

Kazarp: Night Person, Tunesmith's son.

Hanuman: Hanging Person turned protector.

Valavirgillin: Machine People, represents Farsight Trading.

Proserpina: surviving Pak protector.

The Penultimate: Pak protector, long dead.

Szeblinda: Hinsh. Giraffe People

Kawaresksenjajok: City Builder

Fortaralisplyar: City Builder

PREFACE

The Ringworld is about the same mass as Jupiter. Its shape is that of a ribbon a million miles across and six hundred million miles long, which makes it a bit larger than the Earth's orbit, and a few miles thick. It circles a yellow dwarf star. Its spin, at 770 miles/second, is enough to give it about Earth's gravity of centrifugal force. Walls along both rims, standing a thousand miles high, are enough to hold an atmosphere for millions of years.

Much else derives from these basic assumptions.

The inner surface is a habitat three million times the area of planet Earth. The topography is literally a work of art, carved in by whoever built the thing, so that from underneath the Ringworld resembles the back of a mask.

An inner ring of shadow squares block the sun, giving periods of night; else it would always be noon. A system of pipes leads from the bottoms of oceans, under the Ringworld floor, up the back of the rim wall and over the edge, to recycle seabottom ooze (or flup) into spill mountains. Huge attitude jets stand atop the rim wall, Bussard ramjets using the solar wind of protons for their fuel, to hold the Ringworld

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against its inherent instability. There are spaceport ledges outside the walls. Two vast salt oceans serve as preserves for seagoing life, and as something more: maps of several worlds at one-to-one scale. The Ringworld floor is of unnaturally strong material, dubbed scrith, with other unusual properties.

The sun itself is involved in the Ringworld's meteor defense. A superconducting network embedded in the Ringworld floor generates a superthermal laser effect in a solar flare. The drawback: it can't fire through the Ringworld itself. Thus any meteorite that strikes the Ringworld, such as the one that made Fist-of-God Mountain, generally rams upward from underneath.

Some details become clues to the nature of the Builders.

The plethora of harbors and fjords, plus the shallow oceans (most of them), suggest a race that uses only the top of an ocean.

The nastier life forms – mosquitoes, flies, jackals, sharks, vampire bats – don't exist. Hominids have moved into some of those ecological slots. The Engineers weren't ecologists, they were gardeners.

The inhabitants are hominids in bewildering variety, some intelligent, some not. They fill ecological niches which on Earth are held by almost any mammal, but particularly the nastier life forms, jackals and wolves and vampire bats . . . as if mankind's ancestor, Homo habilis, had been protected until they numbered hundreds of billions, then abandoned to mutate endlessly.

You don't know the Ringworld until you've grasped its size.

After the book came out, a friend was going to build a scale model for an upcoming convention. He had a marble, a blue immy, to serve as the Earth, for scale. Turns out he'd need a ribbon five feet tall and half a mile long. The hotel wasn't big enough.

One guy who tried to map the Ringworld told me he ran out of computer space very rapidly. He ran into too many powers of ten.

David Gerrold speaks of a class of novel called 'the Enormous Big Thing.' Today you could fill a fair-sized shelf with them. Arthur C. Clarke's Rendezvous with Rama and Bob Shaw's Orbitsville are in that class, and so is my own Rainbow Mars.

But Ringworld came first, published in 1970.

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It might have been laughed at. Too big, too improbable. Any normal structural material would be torn apart by its spin. I waited for the reviews in some fear.

James Blish wrote that he thought it would win the Hugo Award, but it shouldn't.

The readers gave it a Hugo Award anyway.

The writers gave it a Nebula.

I didn't have a sequel planned. I was not expecting a flood of redesigns.

During one of my speeches, a man pointed out that the Ringworld's mathematics are simple: it's a suspension bridge with no endpoints.

An academic in England pointed out that the tensile strength of the Ringworld frame must be approximately the force that holds an atomic nucleus together. (Hence, scrith.)

A grade school class in Florida spent a semester on the Ringworld. Their conclusion: the worst problem is that, without tectonic activity, all the topsoil would flow into the oceans in a few thousand years. (Hence, flup and the spillpipes.)

At the 1970 World Science Fiction Convention there were MIT students in the halls chanting, 'The Ringworld is unstable! The Ringworld is unstable!' (Did the best that I was able . . . hence, attitude jets.)

Somebody decided that the shadow squares shed too much twilight. What's needed is five long shadow squares orbiting retrograde.

Ultimately there was too much opportunity for redesign. I had to write The Ringworld Engineers.

All of these readers had found something worth knowing. The Ringworld is a great, gaudy, intellectual toy, a playground with the gates left wide open.

Some readers just read a book and stop.

Others play with the characters, or the assumptions, or the environment. They make up their own homework. We readers have been doing that for unguessable thousands of years: demanding more data on Atlantis from Plato, inventing Purgatory to put between Hell and Heaven, redesigning Dante's Inferno, writing new Odysseys. An amazing subculture has sprung up around Star Trek.

The Internet opens a whole new metaplayground for such people. A number of Web sites have sprung up (well, at least two) whose topic is Larry Niven's fiction.

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In September 1999, tipped off by my lovely agent, Eleanor Wood, I logged onto larryniven-1@bucknell.edu. They were arguing about whether you can clone a protector, and whether Seeker and Teela Brown might have left a child behind. If they'd been right I wouldn't have seen a story, but they were off on the wrong foot, and I could fix it. After a few months of following these discussions, rarely interrupting, I had enough material for Ringworld's Children.

This is a playground for the mind. It's a puzzle too, a maze. Question every turn or you'll get lost. When you've finished the book, remember not to lock the gate.

'All this was indispensably necessary,' replied the one-eyed doctor, 'for private misfortunes are public benefits, so that the more private misfortunes there are, the greater is the general good.'

– Pangloss, in Candide, by Voltaire

2893 A.D.

CHAPTER 1

Louis Wu

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Louis Wu woke aflame with new life, under a coffin lid.

Displays glowed above his eyes. Bone composition, blood parameters, deep reflexes, urea and potassium and zinc balance: he could identify most of these. The damage listed wasn't great. Punctures and gouges; fatigue; torn ligaments and extensive bruises; two ribs cracked; all relics of the battle with the Vampire protector, Bram. All healed now. The 'doc would have rebuilt him cell by cell. He'd felt dead and cooling when he climbed into the Intensive Care Cavity.

Eighty-four days ago, the display said.

Sixty-seven Ringworld days. Almost a falan; a falan was ten Ringworld rotations, seventy-five thirty-hour days. Twenty or thirty days should have healed him! But he'd known he was injured. What with all the general bruising from the battle with Bram, he hadn't even noticed puncture wounds in his back.

He'd been under repair for twice that long the first time he lay in this box. Then, his internal plumbing systems had been leaking into each other, and he'd been eleven years without the longevity complex called boosterspice. He'd been dying, and old.

Testosterone was high, adrenalin high and rising.

Louis pushed steadily up against the lid of the 'doc. The lid wouldn't move faster, but his body craved action. He slid out and dropped to a stone floor, cold beneath his bare feet. Stone?

He was naked. He stood in a vast cavern. Where was Needle?

The interstellar spacecraft Hot Needle of Inquiry had been embedded in cooled magma when last he looked, and Carlos Wu's experimental nanotech repair system had been in the crew quarters. Now its components sat within a nest of instruments and cables on a floor of cooled lava. The 'doc had been partly pulled apart. Everything was still running.

Hubristic, massive, awesome: this was a protector's work. Tunesmith, the Ghoul protector, must have been studying the 'doc while it healed Louis.

Nearby, Hot Needle of Inquiry had been fileted like a finless fish. A slice of hull running almost nose to tail had been cut away, exposing housing, cargo space, docking for a Lander now destroyed, thruster plates, and the hyperdrive motor housing. More than half of the ship's volume was tanks, and of course they'd been drained. The rim of the cut had been lined with copper or bronze, and cables in the metal led to instruments and a generator.

The cut section had been pulled aside by massive machinery. The cut surface was rimmed in bronze laced with cables.

The hyperdrive motor had run the length of the ship. Now it was laid out on the lava, in a nest of instruments. Tunesmith again?

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Louis wandered over to look.

It had been repaired.

Louis had stranded the Hindmost in Ringworld space by chopping the hyperdrive in half, twelve or thirteen years ago. Dismounted, it looked otherwise ready to take Needle between the stars at Quantum I speeds, three days to the light year.

I could go home, Louis thought, tasting the notion.

Where is everybody? Louis looked around him, feeling the adrenalin surge. He was starting to shiver with cold.

He'd be almost two hundred and forty years old by now, wouldn't he? Easy to lose track here. But the nano machines in Carlos Wu's experimental 'doc had read his DNA and repaired everything down through the cell nuclei. Louis had done this dance before. His body thought it was just past puberty.

Keep it cool, boy. Nobody's challenged you yet.

The spacecraft, the hull section, the 'doc, machines to move and repair these masses, and crude-looking instruments arrayed to study them, all formed a tight cluster within vaster spaces. The cavern was tremendous and nearly empty. Louis saw float plates like stacks of poker chips, and beyond those a tilted tower of tremendous toroids that ran through a gap in the floor right up to the roof. Cylinders lay near the gap, caged within more of Tunesmith's machinery. They were bigger than Needle, each a little different from the others.

He'd passed through this place once before. Louis looked up, knowing what to expect.

Five or six miles up, he thought. The Map of Mars stood forty miles high. This level would be near the roof. Louis could make out its contours. Think of it as the back of a mask . . . the mask of a shield volcano the size of Ceres.

Needle had smashed down through the crater in Mons Olympus, into the repair center that underlay the one-to-one scale Map of Mars. Teela Brown had trapped them there after she turned protector. She had moved the ship eight hundred miles through these corridors, then poured molten rock around them. They'd used stepping disks – the puppeteers' instant transport system – to reach Teela. For all these years since, the ship had been trapped.

Now Tunesmith had brought it back to the workstation under Mons Olympus.

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Louis knew Tunesmith, but not well. Louis had set a trap for Tunesmith, the Night Person, the breeder, and Tunesmith had become a protector. He'd watched Tunesmith fight Bram; and that was about all he knew of Tunesmith the protector. Now Tunesmith held Louis's life in his hands, and it was Louis's own doing.

He'd be smarter than Louis. Trying to outguess a protector was . . . futz . . . was both silly and inevitable. No human culture has ever stopped trying to outguess God.

So. Needle was an interstellar spacecraft, if someone could remount the hyperdrive. That tremendous tilted tower – forty miles of it if it reached all the way to the Repair Center floor – was a linear accelerator, a launching system. One day Tunesmith might need a spacecraft. Meanwhile he'd leave Needle gutted, because Louis Wu and the Hindmost might otherwise use it to run, and the protector couldn't have that.

Louis walked until Needle loomed: a hundred-and-ten-foot diameter cylinder with a flattened belly. Not much of the ship was missing. The hyperdrive, the 'doc, what else? The crew housing was a cross section, its floor eighty feet up. Under the floor, all of the kitchen and recycling systems were exposed.

If he could climb that high, he'd have his breakfast, and clothing too. He didn't see any obvious route. Maybe there was a stepping disk link? But he couldn't guess where Tunesmith might place a stepping disk, or where it would lead.

The Hindmost's command deck was exposed too. It was three stories tall, with lower ceilings than a Kzin would need. Louis saw how he could climb up to the lowest floor. A protector would have no trouble at all.

Louis shook his head. What must the Hindmost be thinking?

Pierson's puppeteers held to a million-year-old philosophy based on cowardice. When the Hindmost built Needle, he had isolated his command deck from any intruders, even from his own alien crew. There were no doors at all, just stepping disks booby-trapped a thousand ways. Now . . . the puppeteer must feel as naked as Louis.

Louis crouched beneath the edge of some flat-topped mass, maybe the breathing-air system. Leapt, pulled up, and kept climbing. The 'doc's repairs had left him thin, almost gaunt; he wasn't lifting much weight. Fifty feet up, he hung by his fingers for a moment.

This was the lowest floor of the Hindmost's cabin, his most private area. There would be defenses. Tunesmith might have turned them off . . . or not.

He pulled up and was in forbidden space.

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He saw the Hindmost. Then he saw his own droud sitting on a table.

The droud was the connector between any wall socket and Louis Wu's brain. Louis had destroyed that . . . had given it to Chmeee and watched the Kzin batter it to bits.

So, a replacement. Bait for Louis Wu, the current addict, the wirehead. Louis's hand crept into the hair at the back of his head, under the queue. Plug in the droud, let it trickle electric current down into the pleasure center . . . where was the socket?

Louis laughed wildly. It wasn't there! The autodoc's nano machines had rebuilt his skull without a socket for the droud!

Louis thought it over. Then he took the droud. When confused, send a confusing message.

The Hindmost lay like a jeweled footstool, his three legs and both heads tucked protectively beneath his torso. Louis's lips curled. He stepped forward to sink his hand into the jeweled mane and shake the puppeteer out of his funk.

'Touch nothing!'

Louis flinched violently. The voice was a blast of contralto music, the Hindmost's voice with the sound turned up, and it spoke Interworld. 'Whatever you desire,' it said, 'instruct me. Touch nothing.'

The Hindmost's voice – Needle's autopilot – knew him, knew his language at least, and hadn't killed him. Louis found his own voice. 'Were you expecting me?'

'Yes. I give you limited freedom in this place. Find a current source next to—'

'No. Breakfast,' Louis said as his belly suddenly screamed that it was empty, dying. 'I need food.'

'There is no kitchen for your kind here.'

A shallow ramp wound round the walls to the upper floors. 'I'll be back,' Louis said.

He walked, then ran up the ramp. He eased around the wall above a drop of eighty feet – not difficult, just scary – and was in crew quarters.

A pit showed where the 'doc had been removed. Crew quarters were not otherwise changed. The plants were still alive. Louis went to the kitchen wall and dialed cappuccino and a fruit plate. He ate. He dressed, pants and blouse and a vest that was all pockets, the droud bulging one of the pockets. He finished the fruit, then dialed up an omelet, potatoes, another cappuccino, and a waffle.

He thought while he ate. What was his desire?

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Wake the Hindmost? He needed the Hindmost to tell him what was going on . . . but puppeteers were manipulative and secretive, and the balance of power in the Repair Center kept changing. Best learn more first. Get a little leverage before he reached for the truth.

He dumped the breakfast dishes in the recycler toilet. He climbed around the wall, carefully. 'Hindmost's Voice,' he said.

'At your command. You need not risk a fall. Here is a stepping-disk link,' and a cursor arrowhead showed him a spot on the floor of crew quarters.

'Show me the Meteor Defense Room.'

'That term is unknown.' A hologram window popped up in the portside wall. 'Is this the place you mean?'

Meteor Defense beneath the Map of Mars was a vast, dark space. All the stars in the universe ran round an ellipsoidal wall thirty feet high, and the floor and ceiling. Three long swinging booms ended in chairs equipped with lap keyboards, and those stood black-on-black before the wall display.

Past the edge of the pop-up window, under a glare of light, knobby bones had been laid out for study. This was the oldest protector Louis knew of, and Louis had named him Cronus. In the far shadows stood pillars with large plates on top, mechanical mushrooms. Louis pointed into the window. 'What are those?'

'Service stacks,' the Hindmost's Voice said, 'each made from several float plates topped by a stepping disk.'

Louis nodded. The Ringworld engineers had left float plates all through the Repair Center. If you stacked them, they'd lift more. Adding a stepping disk seemed an obvious refinement . . . if you had them to spare.

Louis saw a boom swing across the starscape. It ended in a knobby, angular shadow.

All protectors look something like medieval armor.

The protector was watching a spray of stars. His cameras would be mounted on the Ringworld itself, maybe on the outside of the rim wall, looking away from the sun. He didn't seem aware that he was being spied on.

Louis knew better than to expect asteroids or worlds. Unknown engineers had cleared all that out of the Ringworld system. This drift of moving lights would be spacecraft held by several species. Now the view focused on a gauzy, fragile

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Outsider ship; now on a glass needle, a General Products' #2 hull, tenant unknown; now a crowbar-shaped ARM warship.

Tunesmith's concentration seemed total. He zoomed on starscape occluded by a foggy lump, a proto-comet. Tiny angular machines drifted around it, marked by blinking cursor circles. A lance of light glared much brighter: some warship's fusion drive. Here came another, zipping across the screen. No weapon fired.

The Fringe War is still cold, Louis thought. He'd wondered how long that could last. A formal truce could not hold among so many different minds.

The protector's arms jittered above the keyboard.

In the corner of Louis's eye, sunlight glared down. Louis spun around.

Above Needle the crater in Mons Olympus was sliding open, flooding the cavern with unfiltered light.

The linear accelerator roared; an arc of lightning ran bottom to top.

The crater began to close.

Louis turned back to the display. Looking over Tunesmith's shoulder, he watched fusion light flare from offscreen and dwindle to a bright point. Whatever Tunesmith had launched was already too far to see.

Tunesmith had joined the Fringe War!

A protector could not be expected to do nothing, even if the alternative was to bring war down on their heads. Louis scowled. Bram the protector had been crazy, even if supremely intelligent. Louis must eventually decide if Tunesmith was crazy too, and what to do about it.

Meanwhile this latest maneuver should keep the protector busy. Now, how much freedom had Louis been allotted? Louis said, 'Hindmost's Voice, show me the locations of all stepping disks.'

The Hindmost's Voice popped up three hundred and sixty degrees of Map Room. The Ringworld surrounded Louis, a ring six hundred million miles around and a million miles wide, banded in blue for day and black for night and broad fuzzy edges for dusk and dawn. Winking orange cursor lights were displayed across its face. Some were shaped like arrowheads.

This pattern had changed greatly since Louis had last seen it. 'How many?'

'Ninety-five stepping disks are now in use. Two failed. Three were dropped into deep space and probes launched through them. The fleets shot them down. Ten are held in reserve.'

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The Hindmost had stocked stepping disks aboard Hot Needle of Inquiry, but not a hundred and ten! 'Is the Hindmost building more stepping disks?'

'With his help Tunesmith has built a stepping-disk factory. Work proceeds slowly.'

The blinking orange lights that marked stepping disks were thick along the near side of the Ringworld, the Great Ocean arc. The far side looked sparse. Two blinking orange arrowheads had nearly reached the edge of the Other Ocean. Others were moving in that direction.

The Other Ocean was a diamond shape sprawling across most of the width of the Ringworld, one hundred eighty degrees around from the Great Ocean. Two such masses of water must counterbalance each other. The Hindmost's crew had not explored the Other Ocean. High time, Louis thought.

Most of the stepping disks were clustered around the Great Ocean, and of those, most were in a tight cluster that must be the Map of Mars. Louis pointed at one offshore from Mars. 'What is that?'

'That is Hot Needle of Inquiry's lander.'

Teela the protector had blasted the lander during their last duel. 'It's functional?'

'The stepping-disk link is functional.'

'What about the lander?'

'Life support is marginal. Drive systems and weaponry have failed.'

'Can some of these service stacks be locked out of the system?'

'That has been done.' Lines spread across the map to link the blinking lights. Some had crossed-circle verboten marks on them: closed. The maze was complicated, and Louis didn't try to understand it. 'My Master has override codes,' the Voice said.

'May I have those?'

'No.'

'Number these stepping-disk sites for me. Then print out a map.'

As the Ringworld was vast, the scale was extreme. His naked eye would never get any detail out of it. When the map extruded, he folded it and stuffed it in a pocket anyway.

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He broke for lunch and came back.

He set two service stacks moving and changed a number of links. The Hindmost's Voice printed another map with his changes added. He pocketed that too. Better keep both. Now, with luck, he'd have avenues of travel unknown to Tunesmith.

Or it might be wasted effort. The Hindmost, when he woke, could change it all back in a moment.

The Voice refused to make weapons. Of course the kitchen in Needle's crew quarters hadn't done that either.

Tunesmith was still at the end of a boom, still tracking whatever he'd launched.

'Where are the rest of us?' Louis asked the Voice.

'Who do you seek?'

'Acolyte.'

'I do not have that name—'

'The Kzin we shared this ship with. Chmeee's child.'

'I list that LE as—' blood-curdling howl. Louis had to pry his fingers loose from a table edge. 'Rename him Acolyte?'

'Please.'

The map was back, and a blinking point next to Fist-of-God . . . a hundred thousand miles port-and-antispin from Fist-of-God – four times the circumference of the Earth – and twice that far to spinward of the Map of Mars. The hugeness of the Ringworld had to be learned over and over. The Voice said, 'Here we set Acolyte, with a service stack, thirty-one days ago. He has since moved by eleven hundred miles.' The point jumped minutely. 'Tunesmith has altered the setting for the stepping disk. It sends to an observation point on the Map of Earth.'

Home to Acolyte's father. 'Has he used it?'

'No.'

'Where are the City Builders?'

'Do you mean the librarians? Kawaresksenjajok and Fortaralisplyar and three children were returned to their origin—'

'Good!' He'd meant to do that himself.

'To the library in the floating city. I note your approval. Who else shall I track?'

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Who else had been his companions? Two protectors. Bram the Vampire protector was dead. Tunesmith was . . . still busy, it seemed. In the Meteor Defense Room the protector's telescope screen was following a receding point, the vehicle he'd launched earlier. Its drive was off . . . flared brilliantly and blinked off again.

That was a warship. Reaction motors were still needed for war; modern thrusters couldn't switch on and off as fast.

Louis asked, 'Have you kept track of Valavirgillin?'

The map jumped. 'Here, near the floating city and a local center of Machine People culture.'

Good, and she was well away from vampires. They had not met in twelve years. 'Why did you track her, Hindmost's Voice?'

'Orders.'

Carefully, 'Who do you take orders from?'

'From you and Tunesmith and—' a blast of orchestral chaos, piercingly sweet. Louis recognized the Hindmost's true name. 'But all such may be countermanded by—' the Hindmost's name again.

'Is Tunesmith restricted from any interesting levels of this ship?'

'Not currently.'

The Hindmost was still in wrapped-around-himself catatonia. 'How long since he's eaten?' Louis asked.

'Two local days. He wakes to eat.'

'Wake him up.'

'How shall I wake him without trauma?'

'I saw him in a dance once. Turn that on. Prepare food for him.'

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