DARK MATTER

by
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Within him lay the universe's finest seed...
But since the universe was crippled, his way was tortuous.

- Meng Chiao (751–814)
FADE IN:

EXT. JOANNA'S BACK YARD - DAWN

JOANNA, 50, in a designer track suit, practices Tai Chi in front of her pool. The sun is just peaking over the mountains.

INTERCUT:

INT. SEMINAR ROOM - DAY

Fragmentary images of a shooting, but we don’t see the gunman.

EXT. THE COSMOS

Pinpoints of light fade into a dark background.

TITLE: DARK MATTER

[NOTE: Italicized dialogue is spoken in Chinese.]

EXT. COLLEGE CAMPUS - DAWN

Tilt down from early morning sky to a long shot of LIU XING (20’s) walks alone across the campus. He’s full of energy, exploring every nook and cranny of his new world.

Title Insert: Valley State University, 1991.

LIU XING (V.O.)
Mom, Dad, How are you? The stars are shining down on your son!

FLASHBACK: BEIJING AIRPORT - DAY

MAMA and BABA wave goodbye at the foot of an escalator.

BABA
Be safe!

MAMA
Send a letter when you arrive!
LIU XING pauses in front of a statue of Edwin Hubble, father of modern astronomy. He touches Hubble's foot for good luck, then walks to the entrance of the Hubble Building.

LIU XING
As an undergraduate at Beijing U.,
I studied the famous Reiser Model.
Now I have the honor to work for
the great man himself. Under his supervision, I will make important discoveries, and bring honor to our family.

INT. HALL NEAR REISER'S OFFICE - DAY
LIU XING arrives way too early and sits in a corner on the floor and waits.

CHAPTER HEADING (Chinese character): EARTH.
A couple of STUDENTS walk by.

HILDY (O. S.)
Liu Xing.
He jumps up and walks toward Reiser's office.

INT. REISER'S OFFICE - DAY
LIU XING looks expectantly at HILDY (50’s), assistant to Jacob Reiser, and copy editor of his Cosmology Quarterly.

HILDY
Go ahead, he won't bite.

Liu Xing reverentially approaches the inner office.

Professor JACOB REISER, a former golden boy now in his forties, reclines in a green leather chair, fighting sleepiness. A pen rests on a blank yellow pad in front of him.

The wall behind him is covered with medals, plaques, diplomas, and a framed photo of Reiser shaking hands with president George H.W. Bush at the White House, signed "reach for the stars" by the president.

REISER
Come in, come in, come in. Liu Xing -- am I saying it right?

(MORE)
REISER (cont'd)
This is the highest score we've
ever had on the qualifying exam.
Do you know that?

LIU XING
It's a great pleasure to meet you,
Professor Reiser.

Reiser pats him on the shoulder.

REISER
We don't really go in for all that
formality here, just call me Jake.
Sit down. Sit down.

Liu Xing nods and sits at attention on the edge of a chair.

REISER (CONT'D)
Have you read my cosmic string
theory?

LIU XING
I read about it in Beijing. Very
good.

REISER
Good. Sit down, sit, sit, sit,
sit. What we're doing here is
we're creating a computer model of
the early universe using my theory.
Have you done work with computer
models in Beijing?

LIU XING
Yes, but -- very basic, because
computer there is very slow.

REISER
Well, ours here are very fast.
State of the art as a matter of
fact -- until next week.

LIU XING
(didn't get it)
I think so.

Liu Xing laughs with him, unsure.

REISER
So how would you like to join our
team?

Liu Xing springs to his feet.
LIU XING
It will be my great honor.

Reiser takes a stack of computer disks from a drawer, and hands them to Liu Xing.

REISER
OK, all right. My assistant Hildy will get you set up with all the redshift data, and the computer. Welcome to the team. My door is always open.

LIU XING
Thank you, Professor Reiser.

REISER
Just call me Jake.

LIU XING
Thank you, Professor Jake.

REISER
Could you close the door on your way out?

Liu Xing walks out of Reiser's office.

HILDY
Ah, good meeting? Redshift data? Reiser Model? Yes?

LIU XING
Okay. Thank you.

HILDY
(pointing to the disks)
Codes. You know where the lab is?

LIU XING
Yes, thank you.

HILDY
Down the hall, to the left. Goodbye.

INT. CORRIDOR - DAY

LIU XING walks alone down a long corridor.
INT. LAB - DAY

LIU XING arrives at a dark, airless space, with high ceilings and dark blue walls. Liu Xing stares wide-eyed at the gleaming mainframes.

A corps of young GRADUATE STUDENTS, including ZHANG MING, WANG YING (all 20's), work at chaotically arranged desks with computers.

Liu Xing finds an empty desk, puts it in, and starts the computer. An image of cosmic strings appears on the computer. He goes to work.

Wang Ying pokes his head out from behind his computer, puts a pencil in the automatic sharpener, which makes a loud noise, once, twice, to get Liu Xing's attention.

WANG YING
Are you new?

LIU XING
Yes.

ZHANG MING
Have you eaten?

LIU XING
Yes. Hello.

Everybody stands up and gives him a little wave, brotherhood extended.

EXT. LIU XING'S HOUSE - DAY

WU (30's), the oldest of Liu Xing’s roommates, makes an illegal cable connection on top of the roof.

INT. LIU XING'S HOUSE - DAY

LITTLE SQUARE (20’s) plays with cards on the couch, while LIU XING reads in bed. Outside the window WU climbs down the ladder, humming tunes from the Communist Revolution. He feeds the cable through the window.

WU
Take the cable.

LITTLE SQUARE
Put it back.
WU

Why?

LITTLE SQUARE
It's private property.

LIU XING
How can a TV signal be private property?

LITTLE SQUARE
You can ask the American police on your way to jail. They love to debate such questions.

WU
Bullshit.

Wu connects the wires, and turns on the TV. The sound of a porno film comes up -- but no picture. Wu frantically bangs the TV set.

FEMALE VOICE (V.O.)
I'm coming!

LIU XING
Picture, Wu, picture!

FEMALE VOICE (V.O.)
I'm coming!

Wu frantically adjusts the rabbit ears.

LITTLE SQUARE
Why can't we just buy a new TV?

The snowy static gives way to suggestively wavy vertical lines -- but still no picture to speak of.

FEMALE VOICE (V.O.)
I'm coming, I'm coming.

LIU XING
"I'm coming, I'm coming." Where are they going?

WU
You don't know? It means "rain clouds gathering, about to burst."

The three huddle together and watch, mesmerized by the wavy lines.
EXT. CHURCH - DAY

A white clapboard church against a clear blue sky.

INT. CHURCH BASEMENT - DAY

REV. HOLLINGS, 40's, reads to a group of CHINESE STUDENTS seated in rows.

    REV. HOLLINGS
    Welcome to Bible study.  Today, we
    have food provided by the
    auxiliary.  Which I thought we
    would have afterwards, but...

LIU XING, LITTLE SQUARE and WU walk in and immediately go to the food table.

    REV. HOLLINGS (CONT'D)
    Or, we can do it this way.  I see
    we have three new students here.
    Welcome.  Let’s do our bible study.

Liu Xing, Little Square and Wu sit back down with their food. Hollings opens his Bible.

    REV. HOLLINGS
    (sound under)
    "‘Behold.. he bid them come to the
    marriage feast...

    LITTLE SQUARE
    I hear the church does a lot to
    help foreign students.

    WU
    We can get a free ride to the
    supermarket and buy some cheap
    stuff.

    LITTLE SQUARE
    They also give furniture away.

JOANNA (50’s) enters, in a Chinese silk shirt. She greets the students with a bow.

    JOANNA (CONT'D)
    Ni hao.

The students stand up.

    STUDENTS
    Ni hao.
REV. HOLLINGS
Oh, Mrs. Silver.

JOANNA
Oh, my God, am I interrupting a prayer?

REV. HOLLINGS
No, sorry, I'm running late. Let me introduce you. For those of you who haven't met this lovely lady, this is Joanna Silver, a great patron of Chinese culture at the university, and one of the most caring members of our community.

JOANNA
Well, that's a very elaborate introduction for somebody who's just a driver. I'm here for the field trip. Does anybody want to go?

REV. HOLLINGS
Yes, the field trip.

The students rush out the door.

EXT. CHURCH - DAY

JOANNA, LIU XING, LITTLE SQUARE, WU and the other CHINESE STUDENTS skip down the stairs of the church, passing a pile of furniture and a "Help Yourself" sign. Joanna looks around.

JOANNA
Come on.

HAL (50's), Joanna's husband, pulls up in another car with his DRIVER.

JOANNA (CONT'D)
(to Hal)
My god, I thought you'd forgotten us.

HAL
No, no, my meeting went late, I'm sorry.

JOANNA
Some of you can get into Hal's car, and some in mine. Three in my car.
Liu Xing, Little Square and Wu walk toward Joanna's car.

HAL
Where are we going?

JOANNA
Pioneer Village. Oh, you'll love it. Thank you for doing this.

Joanna joins the boys, who are busy inspecting her car.

WU
What's the name of the car?

JOANNA
It's a Jaguar.

LIU XING
How many miles per gallon?

JOANNA
Miles per gallon. I have no idea. Sorry.

Joanna pushes the seat forward so Wu and Little Square can get in back.

JOANNA (CONT'D)
Pile in fellas.

She gets in and starts the car. A Bach cello concerto begins to play on the stereo.

LITTLE SQUARE
Cool sound system! What's the music?

JOANNA
It's Bach. Do you like it?

LIU XING
Yes. Bach is very mathematical.

JOANNA
Yes, but at times very moving too.

LIU XING
To me, mathematics can be very moving.

WU
Especially square roots. I find them so moving.
LIU XING
I am scientist.

JOANNA
You certainly are. All right, seat belts everyone.

They drive off.

EXT. PIONEER VILLAGE - DAY

LIU XING
Did the cowboys live here?

JOANNA
Actually no, they didn't. This is all a reproduction. It's a fake.

LIU XING
Ah, there should be cowboys.

JOANNA
Yes, it would be more fun if there

JOANNA is accompanying LIU XING, LITTLE SQUARE, WU, ZHANG MING, and WANG YING on a walk through a reconstructed pioneer village. There are freshly painted signs, and chairs on the porches, but no people were cowboys, but you see, the first people who settled here were homesteaders. They were farmers, and they had sheep and cattle and, no, they didn't have cattle. They had crops and, I don't know what else.

Hal points another group of students toward the General Store.

HAL
They have cowboy things, like guns and things.

He escapes to make a call on his cell phone.

Wu and Little Square emerge with cowboy hats and cap guns. Wu fires his cap gun at Little Square's feet.

Now Liu Xing emerges with a white hat, and the stoic look of John Wayne about to confront the lawless cowboys. He walks out and stands opposite his room-mates in classic face-off position.
Tight shots of eyes and twitching trigger fingers, as in a Spaghetti Western.

The boys fire their cap guns, and all fall down dead. Joanna emerges from the store, with water in hand.

    JOANNA
    Well, I wonder who was the fastest gun in the East. I guess we'll never know.

The boys are still lying there, playing dead.

INT. LAB - DAY

LIU XING works intently at the computer, running a simulation of the early universe.

Reiser passes by on his way out, eating jellybeans. He stops behind Liu Xing and looks at the screen.

    REISER
    Whoa!

    LIU XING
    Professor Reiser.

    REISER
    Call me Jake. Now we're cooking with gas! Listen, do you think you could get to the next stage by tomorrow? Because I've got a journal deadline.

    LIU XING
    No problem.

    REISER
    No problem?

    LIU XING
    No problem.

    REISER
    Great. Do you want some?

Reiser holds out the jellybeans.

    LIU XING
    No, thanks.
REISER
No? How do you say I love Beijing in Chinese?

LIU XING
Wo ai bei jing.

REISER
Wo ai bei jing students!

Reiser pats Liu Xing on the shoulder and leaves.

LIU XING
Thank you.

Liu Xing puts another floppy disk in the computer.

ZHANG MING and WANG YING watch Reiser disappear. They nod to each other, then get up.

ZHANG MING
Let's get out of here. I'm going to be late for my night job.

TIME LAPSE:

Liu Xing does some calculations on the blackboard, while the printer spews out data paper.

Now Liu Xing sits on the floor against the wall, his head buried in his arms. A JANITOR comes in, empties the trash, and leaves.

INT. LAB - DAY

Liu Xing sleeps on a little couch. ZHANG MING and WANG YING notice him as they walk in.

ZHANG MING
Why's he sleeping here?

WANG YING
Let's wake him up.

He does a parody of a Maoist wake-up broadcast.

WANG YING
Good morning, comrades! We must strengthen our body to protect our country. The People's exercise starts now.
Wang Ying sings an upbeat revolutionary tune, as the two of them perform an aerobic dance routine.

Liu Xing smiles, then goes back to sleep.

WANG YING (CONT'D)
Get up, the rooster has crowed.

LIU XING
What time is it?

ZHANG MING
It's past eight o'clock.

LIU XING
Shit.

INT. HALL NEAR REISER'S OFFICE - DAY
LIU XING rushes down the hall, and into Reiser's office.

INT. REISER'S OFFICE - DAY
HILDY looks up from her desk at LIU XING's hair, which is defying gravity. Liu Xing tries to smooth it down, but it springs back up. He holds up the manila folder.

HILDY
Liu Xing! Good morning.

LIU XING
Morning.

HILDY
You look exhausted.

LIU XING
I have this most urgently for Professor Reiser.

HILDY
You should be home in bed.

LIU XING
He need it for article deadline.

HILDY
Oh, that doesn't need to be in until Thursday afternoon.

LIU XING
Are you sure?
HILDY
Yeah, I’m positive. You have time.

LIU XING
Okay.

HILDY
Do you want to wait for him anyway?

LIU XING
Yes.

HILDY
Okay, he should be here very soon, all right?

LIU XING
Okay, okay.

Liu Xing sits, and dozes.

INT. HUBBLE BUILDING, STAIRS - DAY

Through the blinds Liu Xing sees REISER walking up the stairs. He dashes out.

LIU XING
Professor Reiser, I have finished.

REISER
You’re done?

LIU XING
Yes.

REISER
So early.

LIU XING
Yes, you see, in second run I adjust the parameter of omega for better result.

Reiser looks over his calculations.

REISER
This is excellent work, Liu Xing.

LIU XING
Thank you.
REISER
Listen, I'm giving a talk at the Early Universe Symposium later this summer, would you like to join me?

LIU XING
Thank you so much!

REISER
Great food, free booze, and beautiful high-strung women.

LIU XING
Strong women!

REISER
Strung, strung -- hot chicks. O.K?

LIU XING
Hot chicks. I think so. Thank you, Professor Reiser.

REISER
Okay, call me Jake.

INT. BEIJING APARTMENT - DAY

MAMA cooks an egg, while BABA reads a newspaper.

LIU XING (V.O.)
Baba, Mama, How are you. I've been very lucky recently. I am the number one assistant to Professor Reiser. Also, I met a nice lady named Joanna who loves Chinese culture. There's plenty of food here, please don't send me any more.

They begin assembling a care package of food for their son.

BABA
I read in the papers that kids in America watch over thirty hours of TV every week. And at thirteen they're already doing it.

MAMA
Where do they find time?
BABA
Those Americans are efficient. Maybe they do homework while watching TV, and doing it too.

MAMA
Our Liu Xing knows nothing but studying.

INT. REISER'S OFFICE - DAY

REISER enters his office sipping coffee. HILDY looks up from her work.

HILDY
That boy's been pulling a lot of all-nighters!

REISER
Oh, come on, these kids are grateful for whatever work I give them. They come from a place where astrology is considered a science, and toilets a luxury.

HILDY
They've got two thousand years of culture on us. I imagine they think we're the barbarians. Anyway, what do you know about it? You've never even been to China.

REISER
I'm a theorist. I don't have to actually go there. Although I do like Chinese food.

CHAPTER HEADING (Chinese character): METAL

EXT. LIU XING'S BACK YARD - DAY

LIU XING, WU and LITTLE SQUARE lie on three lounge chairs, drinking beer in their shorts, with music playing on a boom box.

INT. JOANNA'S HOUSE - LATE AFTERNOON

A modern Western kitchen with Chinese tea sets and lacquer trays. JOANNA and HAL sit at the table with opened pizza boxes.
JOANNA
We should probably go get dressed right away. We have to leave in fifteen minutes. You're taking tickets with Sarah.

HAL
Aw, Jo, do you really think you need more than one ticket-taker?

JOANNA
Hal.

HAL
I'll be glad to pay for more ticket-takers.

JOANNA
It's not about writing a check. It's very important that you be there. You're a patron of the arts. Everybody's expecting you.

HAL
I just don't want to spend my Saturday night taking tickets and being a big patron of the arts.

JOANNA
I have the Monkey King coming all the way from Salt Lake City.

HAL
I've seen Monkey Kings in Beijing and Shanghai--

JOANNA
I just want to make a connection with these new Chinese students.

HAL
I don't understand this need you have to connect all the time. I'm kinda tired of connecting. I'm connected out.

INT. AUDITORIUM - LATE AFTERNOON

Decked out in a bright silk costume and monkey mask, CHEN JIAN (40) performs "the Monkey King Wreaks Havoc in Heaven," a famous scene from Chinese opera. He is accompanied by DEMONS, GODS and LESSER MONKEYS.
Off to one side of the stage, a group of MUSICIANS plays along on authentic Chinese instruments.

JOANNA watches excitedly from backstage.

In the audience are small clusters of students, including LIU XING, LITTLE SQUARE, and WU; a few AMERICAN PROFESSORS; a group of JOANNA'S LADY FRIENDS. The Americans are wowed by the spectacle, but the Chinese kids look bored.

INT. AUDITORIUM LOBBY - NIGHT

AUDIENCE MEMBERS and PERFORMERS mingle in an ornate lobby, eating dumplings and drinking wine. ZHANG MING, WU, LITTLE SQUARE and the other CHINESE STUDENTS are clustered together.

Joanna dings an empty champagne bottle with a chopstick until the room falls silent, then raises her glass.

    JOANNA (CONT'D)
    I would like to propose a toast to our wonderful performers, and to our new Chinese students who have made their own journey west. We'd like to welcome you to our country. Gan bei!

They drink. Little square nudges Liu Xing.

    LITTLE SQUARE
    Liu Xing, say something, say something.

    WU
    Start with "On behalf..."

    LIU XING
    On behalf of Chinese students, so lucky to come to America, Mei Guo, the Beautiful Country. May we all find our dream here.

    JOANNA
    Here, here!

    LITTLE SQUARE
    (whispers to Liu Xing)
    Therefore, therefore...

    LIU XING
    Therefore, we make this toast to our new American friends. Gan bei! Up the bottoms!
JOANNA
Oops! Bottoms up!

Everyone laughs.

LIU XING
(to Little Square)
What’s so funny?

Liu Xing shrugs. Zhang Ming pours more wine.

LITTLE SQUARE
You have to work tonight?

ZHANG MING
Yeah, this is my dinner.

WU
Better stuff yourself before you go.

ZHANG MING
That’s exactly what I’m doing.

INT. AUDITORIUM - NIGHT

LIU XING sits alone in the empty auditorium, gazing up at the dome, which looks just like the night sky. JOANNA walks in, and finds him there.

JOANNA
Looking at the stars?

LIU XING
I'm looking at the dark matter.

JOANNA
Oh. You mean, space.

LIU XING
It isn't all space. There's stuff we can't see, even with the most powerful telescope, but we know it's there because of gravitational effect.

She studies the space between two stars.

LIU XING (CONT’D)
Picture the universe as a mountain range. Only the highest peaks get snow.

(MORE)
LIU XING (CONT'D)
These snowy peaks are the stars and
galaxies we can see through our
telescope. But these are just the
tiniest part of the universe --
maybe one percent. The rest of the
mountain is dark matter. 99% of
the universe, dark matter. But no
one pays attention to it, because
they can't see it. I can see it
with mathematics. I can use
mathematics to see the whole dark
mountain.

EXT. LIU XING'S BACK YARD - DAY

LIU XING is battling LITTLE SQUARE in a game of foosball,
while old WU cooks in the kitchen. They're drinking beer and
smoking.

The Chinese boy's dialogue is punctuated with close shots of
the faceless little foosball men spinning in unison.

LITTLE SQUARE
In academics, you get $50,000 a
year, tops. Industry is twice
that. Plus royalties.

The ball flies out.

LITTLE SQUARE
Put it back quick.

LIU XING
What industry?

LITTLE SQUARE
Pharmaceuticals. I'm going to find
a cure for AIDS. I'll definitely
be a millionaire.

Liu Xing wins another round.

LITTLE SQUARE (CONT'D)
Why are you always winning?

Liu Xing raises his beer bottle.

LIU XING
I'm going to solve the Dark Matter
Problem, win the Nobel Prize, and
marry a blond blue-eyed American
girl.
LITTLE SQUARE
Dark matter again. You have a one-track mind.

EXT. BEEHIVE TEA ROOM - DAY

LIU XING looks in the window of the Beehive Tea Room. He sees JACKIE (20’s) working behind the counter.

INT. BEEHIVE TEA ROOM - DAY

LIU XING looks around the tea room, with its teapot clocks, framed photos, and canister of exotic teas. He plays a game of cat and mouse with JACKIE, who is restocking the glass display case with cakes and fruit.

JACKIE
Now, what can I do for you?

LIU XING
Uh, I want a cup of tea.

JACKIE
Any particular kind?

LIU XING
Which one is the best?

JACKIE
Gosh, I don't know, I'm more of a coffee drinker myself, but we have lots to choose from.

She points to a blackboard listing scores of exotic teas, most from China, and quite expensive.

LIU XING
I would like the Togo.

JACKIE
Togo?

He points to a line that reads “Iced tea to go $1.50.” It's the cheapest thing on the menu.

JACKIE (CONT'D)
Oh, “to go”! Sure, no problem.

She pours him an iced tea. He sips it.

LIU XING
Are you a student here?
JACKIE
Me? No. Not anymore. Are you?

LIU XING
Yes. Cosmology.

JACKIE
Oh yeah? Hey, maybe you could get me a free makeover.

LIU XING
(confused)
I think so.

INT. REISER'S HOUSE - DAY

A small party in the living room of Reiser's modern middle class home. REISER, his wife CLAIRE, Professor COLBY (50’s), Professor SMALL (30’s), JOANNA, ZHANG MING, WANG YING, and a sleepy LIU XING sit around a table with wine.

COLBY
A theorist and an experimentalist are on death row --

REISER
Where they belong.

COLBY
-- and the guard asks each of them for their last wish. The theorist says "I'd like to give a seminar to present my latest theoretical breakthrough." And then the guard asks the experimentalist and he says, "I'd like to be executed before the seminar."

Joanna turns to Wang Ying next to her.

JOANNA
Do you get it?

Wang Ying nods.

REISER
All right everybody, let's toast Joanna and thank her for taking such great care of our Chinese students. I have heard about the high cultural experiences of the Pioneer Village, the cineplex -- high culture.
JOANNA
Oh come one, everyone had fun, didn't you? I think it's important for these kids to get out of that lab that we gave you --

REISER
-- and for which we are very grateful to you and Hal --

JOANNA
-- once in a while.

REISER
We're incubating some truly remarkable scientists here. Liu Xing, we let you out sometimes, don't we?

LIU XING
Yes, Professor Reiser is very inspire me.

SMALL
(correcting him)
To me. Inspiring to me.

LIU XING
To me, to me.

JOANNA
And dark matter is also very inspiring to you.

REISER
What do you know about dark matter? I thought you weren’t interested in science.

JOANNA
No, I mean I'm more interested in the cultural side, but Liu Xing explained it to me very eloquently the other day.

COLBY
Maybe I should hire him to do my fund raising.

Claire brings a chocolate cake to the table.

COLBY (CONT'D)
Speaking of dark matter, look at that!
LIU XING
Very interesting, dark matter.
Motions of stars and galaxies, all
determine by dark matter around it,
like a dark halo.

CLaire
Hello?

Joanna
Halo. Like an angel.

Reiser leaves the table, and takes Liu Xing with him.

Reiser
Liu Xing!

INT. REISER'S KITCHEN - DAY

LIU XING and REISER stand by the sink, smoking cigars while
each holding a glass of whisky. Reiser blows the smoke out
an open window.

Reiser
She's probably going to kill me for
this. I'll survive.

LIU XING
Professor Reiser, are you afraid of
your wife?

Reiser
What? Oh, no, no. Just about the
cigars. That's all.

LIU XING
Drinking problem?

Reiser
No, no.

Liu Xing notices a framed black-and-white photo of Reiser at
age 24, with his former advisor, an Iranian physicist in his
mid-forties. Sporting the long hair and thick-framed glasses
of the era, Reiser and his teacher are posed in front of a
blackboard covered with equations.

LIU XING
Who's that?

Reiser
Oh, that's my advisor, Dr. Gazda.
I was just about your age then.
(MORE)
REISER (cont'd)
After I graduated I published a
critique of his black hole
accretion flows theory.

LIU XING
I read this paper. Very good.

REISER
You did? Well, he didn't think so,
but that's how it goes.

LIU XING
In China this would never happen.
Student never challenge the
teacher. Have too much respect.
It's a big problem because -- no
challenge, no progress.

REISER
Well, feel free to challenge me all
you want. Just keep in mind, I'm
always right.

LIU XING
I think so.

They both laugh. Liu Xing takes a big gulp of whiskey.

REISER
Oh, drink that slow. It'll go
straight to your head. Drink it
slow.

LIU XING
Slow.

REISER
Slow.

EXT. HIGHWAY - TWILIGHT

LIU XING drives JOANNA's car on the open highway, JOANNA is
on the passenger's side. Liu Xing hums a song in Chinese.

JOANNA
Ah, I love that song.

They sing together.

LIU XING
You know this?
JOANNA
Yes. It's my favorite song. I love this song.

LIU XING
Your favorite?

JOANNA
Mm hmm.

They continue singing.

JOANNA (CONT'D)
I don't know what it means. Something about the blue sky... white clouds... sheep white as snow...

The car zooms by against a backdrop of snow-covered mountains.

INT. COUNTRY CONFERENCE HOUSE - DAY

REISER stands at the podium of a large lecture room, speaking to a crowd of a hundred COSMOLOGISTS on folding chairs. Behind him, LIU XING assists by placing transparencies on the overhead projector. On the screen is a transparency of Liu Xing's computer simulation, with hundreds of tiny loops radiating chaotically from the center.

REISER
Cosmic strings continue to be the most elegant explanation of how the galaxies have emerged from the beginning of time. And with my revised model, we will be able to reproduce all of the observed large-scale structure of the entire universe.

Applause. Liu Xing remains standing in the dark space next to the projector. A hand shoots up in the back row.

REISER (CONT'D)
Thank you. Obviously we are not there yet, but -- yes, my old professor, Dr. Gazda.

DR. GAZDA
Yes, I am going to invoke the privilege of an old teacher and chastise my former pupil.
REISER
Why am I not surprised?

DR. GAZDA
Some things never change, Jake.
Once again, you're in denial about
the data. Have you seen the latest
redshift images from the CSA?

REISER
Yes, as a matter of fact, I have.
Would you like to share it with
everyone?

Gazda strides up to the podium and slaps his own transparency
on the projector. It shows a dense band of points surrounded
by mostly empty space.

DR. GAZDA
Ladies and gentlemen, this is not a
model. This is reality.

Laughter from the audience, with scattered applause. Gazda
circles the big empty spaces.

DR. GAZDA (CONT'D)
Now, where are these voids in your
model, Jake?

He peers over his bifocals at Reiser. Reiser hops back up on
the podium and points out two tiny stray loops in one of the
voids circled by Gazda.

REISER
What about these?

DR. GAZDA
Insignificant.

Gazda jabs at the larger of the two voids.

DR. GAZDA (CONT'D)
That's the trouble with you
theorists. You get so caught up in
your computer models that you
forget to open your eyes, look up
and see the truth. It's staring
you in the face.

REISER
You're reminding me of the old joke
about the theorist and the
experimentalist.
During this argument, Liu Xing pulls out a marker and sketches warm dark matter halos in the voids, on a new transparency. He whispers something in Reiser's ear, and hands him the new transparency.

REISER (CONT'D)
These two transparencies are a work in progress, but you are forcing my hand. Um, let me show you something here. You can see how even a slight temperature change in the dark matter could easily generate these voids over time.

A hush falls over the room as everyone studies Liu Xing's sketch, followed by appreciative laughter, then applause.

DR. GAZDA
It's a band-aid. But, an elegant one.

Liu Xing's face brightens.

INT. COUNTRY CONFERENCE HOUSE - NIGHT

Chairs removed, the place is decorated for a big party. COSMOLOGISTS mill around, networking with drinks in hand. REISER and LIU XING stand in a small group watching SMALL perform the "Dark Matter Rap."

SMALL
(rapping)
I said in 1933 Observe the Coma cluster / the redshifts of the galaxies / imply some big velocities. / They're moving so fast, there must be missing mass! / Dark Matter. / Do we need it? What is it? Where is it? How much? / Do we need it? Do we need it? Do we need it? Do we need it?

A WAITRESS serving martinis approaches the group.

REISER
Now Liu Xing, take a look at this woman. Now this is America. Try this drink -- put that one away. Try this, and drink it slowly.

Reiser sees someone he knows. A bit more of the Dark Matter Rap.
They walk off, leaving Liu Xing standing by himself with his martini. He takes a sip, and winces. Dr. GAZDA approaches.

DR. GAZDA
Liu Xing, I have been looking all over for you. That was you who saved Jake's derriere this morning, wasn't it? You're doing some marvelous work.

They find a table together.

DR. GAZDA
We both come from cultures that propose a universe with no beginning and no end. Yet, here we are, discussing the Big Bang. The ultimate beginning.

LIU XING
But maybe there have been many beginnings, many big bangs.

DR. GAZDA
You know, Liu Xing, I think you should focus on the Dark Matter Problem. I think you could do some serious damage.

Reiser returns, drink in hand.

REISER
Lies, lies, all lies. Please do not believe a word that this man says about me.

DR. GAZDA
We weren't talking about you, you egomaniac!

They embrace. Gazda slaps Reiser's back.

DR. GAZDA
I was just telling Liu Xing that I think he should focus on this Dark Matter Problem. He seems to have a real passion for it.

REISER
Well, he better have a real passion for it, he works for me. You work for me, don't you? Yes, he works for me.
The search is getting popular as many realize / the detector of dark matter may well win the Nobel Prize...

INT. BEIJING COAL REFINERY - DAY

BABABA takes hunks of coal from a conveyor belt and tosses them into a metal bin.

LIU XING (V.O.)
Dad, Mom, how are you? Professor Reiser invited me to attend the Early Universe Symposium, where I learned that Dark Matter is the bright future of cosmology. Here in America, I am free to follow my dreams. I will definitely win the Nobel Prize.

EXT. CAMPUS - DAY

LIU XING sits in front of a fountain, and smokes.

CHAPTER HEADING: Water

INT. JOANNA'S LIVING ROOM - DAY

Joanna walks around the living room practicing a Chinese tongue twister.

JOANNA
Chi pu tao bu tu pu tao pi. Bu chi pu tao dao tu pu tao pi.

[Subtitles: Eat the grape without spitting out the skin of the grape. Do not eat the grape but spit out the skin of the grape.]

Hal enters the room.

HAL
Sounds like I never left Shanghai.

JOANNA
Oh, hi!

HAL
Ni hao! How you been?
JOANNA
I missed you.

HAL
I missed you.

JOANNA
Did everything go good?

HAL
Went really good. We're this close to 2 million units.

JOANNA
Fantastic! What about Mommy?

Hal hands her a box.

JOANNA (CONT'D)
It's oolong. It's my favorite! I just made some oolong, you want some?

HAL
No thanks.

JOANNA
You sure?

HAL
I wanna sit. Tell me the news.

JOANNA
Ooh, lots going on. A whole new crop of Chinese students. Oh, and one of them, Laurence Feng, was Liu Xing's rival at Beijing University. He was the number two scholar. So that's a big deal. I'm taking the new students to Pioneer Village tomorrow -- you want to come?

HAL
No, thanks. You going to dazzle them with your language skills?

JOANNA
Don't make fun of me. It's actually kinda cool. It forces you to have a whole other perspective on the world, because their language is so indirect and subtle. You know they don't have any tenses?

(MORE)
JOANNA (cont'd)
So, they say, “Last year I am...”
and “Next year I am...” You know,
it’s like “be here now”...

INT. HALL NEAR REISER'S OFFICE - DAY

LIU XING walks by Reiser's office on his way to the lab. Hearing Reiser in conversation with another student whose voice seems familiar, he peeks inside. Through two doorways, he sees LAURENCE FENG (20’s).

REISER
Finally someone is showing me the data! These are just the results I’ve been waiting for.

LIU XING
(to himself)
Feng Gang?

Laurence is enthusiastically handing print-outs to Reiser.

LAURENCE
Thank you. Also, starting the string network at non-equilibrium gives us an even better result.

REISER
Laurence, this is very impressive work. You are welcome on my team any day.

LAURENCE
Thank you, Professor Reiser.

REISER
Call me Jake. No formalities here.

LAURENCE
Jake.

INT. LAB - DAY

LIU XING and LAURENCE sit at opposite desks. Liu Xing stares Laurence down as he works.

LIU XING
Feng Gang. What happened to you? Why did you change your name to Laurence? What kind of name is that?
LAURENCE
Yes, my wife thinks it's easier for Americans to say, to make them feel more comfortable.

At the next desk, WANG YING laughs quietly. Liu Xing walks over to Laurence's desk, and looks over his shoulder.

LIU XING (CONT'D)
It doesn't work. Galaxies start forming way too late. You'll never explain quasars at redshift four.

LAURENCE
I know. We can fix that.

LIU XING
You get much better results with warm dark matter. And inflation instead of cosmic strings.

LAURENCE
That's not the Reiser Model.

LIU XING
We should have our own ideas and language.

LAURENCE
But we're all working for Reiser here.

INT. BEEHIVE TEA ROOM - LATE AFTERNOON

LIU XING and JACKIE share a table.

JACKIE
Why did you come here?

LIU XING
To meet you.

JACKIE
No, I mean to America.

LIU XING
Ah, America. To meet you.

JACKIE
Seriously.
LIU XING
Seriously, seriously. I have so much seriously all day.

Jackie is about to add cream to her coffee...

LIU XING
Wait. I'll show you galaxy in a cup. Watch closely.

He takes the creamer, and holds it poised above the mug. He stirs the black coffee briskly, then pours a dot of cream in the center of the swirling liquid.

INSIDE THE CUP, the whirling white blob grows spiral arms on the dark liquid surface. It's the cosmos in a mug.

JACKIE
I figured out that cosmology has nothing to do with skin care. You must think I am an idiot.

LIU XING
Of course. Not.

JACKIE
You study the Big Bang? It's supposed to be the beginning of the universe?

Liu Xing nods.

JACKIE (CONT'D)
I don't believe it. Because something had to cause the Big Bang, you know. It didn't just come out of nothing.

LIU XING
What do you think cause the Big Bang?

JACKIE
God.

LIU XING
Then what caused God? He can't come out of nowhere neither.

JACKIE
He's eternal. He's always been there.
LIU XING
In my new theory, the universe is eternal. Big Bang is a major event, but not the beginning. Universe has no beginning, no end, just like God. So you see we are really the same. Universe and God is the same.

She's speechless.

INT. SEMINAR ROOM - DAY
LIU XING arrives late, but takes time to sharpen his pencil.

Physics and astronomy GRAD STUDENTS are pitching their dissertation proposals to REISER, COLBY and SMALL. LAURENCE, wearing something similar to Reiser, speaks in very precise English.

LAURENCE
And so, for my dissertation, I intend to develop new non-equilibrium techniques for the Reiser model, running from 10 to the minus 36 seconds to one second after the Big Bang.

Reiser smiles at Laurence.

SMALL
That's what I call a dissertation!

REISER
Impeccable, Laurence. We look forward to those results.

LAURENCE
Thank you.

REISER
Liu Xing, I believe, is next. He's been very secretive about his proposal. I'm his advisor and I don't even know what it is.

Some laughter.

REISER (CONT'D)
(to Small)
This kid is quite brilliant.
SMALL
This is your boy, eh?

Liu Xing gets up in front of the class, in his usual thrift store clothing.

LIU XING
At present, the model doesn't explain large voids seen by observer.

REISER
The model?

COLBY
The model doesn't explain it?

REISER
My model. Ha ha ha! My model.

LIU XING
What if the voids are not empty at all, but full of dark matter? I will use superstring theory to find a new dark matter particle that surpr --

SMALL
Suppresses.

LIU XING
-- supresses galaxy formation.

An awkward silence, in which all eyes are on Reiser.

REISER
Well, I think I speak for the Chair and for Professor Small in saying that we're impressed with your tremendous creativity, but there is no guarantee that superstring theory will predict such a particle. You need to change your dissertation proposal, and pick a problem that you know has a solution.

SMALL
Unless he wants to be a grad student for the rest of his life.
INT. LIU XING'S BEDROOM - NIGHT

LIU XING does a headstand on his bed, leaning against the wall. He comes down, sits, and pants.

EXT. CHURCH - DAY

LIU XING, LITTLE SQUARE and WU approach the church, smoking cigarettes. From inside, the sound of a woman singing "Amazing Grace" in Chinese.

WU
You need to be more practical.

LITTLE SQUARE
Just find something that Reiser will approve, and graduate first.

LIU XING
That doesn't sound like the guy who wants to cure AIDS.

LITTLE SQUARE
My dissertation is on a molecule invented by my professor ten years ago.

LIU XING
Aren't you wasting your brain cells?

INT. CHURCH - DAY

LIU XING, LITTLE SQUARE and WU are the last to arrive in a congregation full of CHINESE and AMERICAN FRIENDS, including JOANNA and HILDY. Laurence’s wife CINDY finishes singing "Amazing Grace," then moves to the baptismal font, where LAURENCE stands holding their new baby, NOELLE. REV. HOLLINGS looks out at the congregation.

HOLLINGS
Today I welcome all of you here as one more little child... (sound under)

WU
We have Buddha, Tao, and Confucius. Why do they need Jesus?
HOLLINGS
Do you, Laurence and Cindy promise
to raise Noelle in the Christian
faith, and to be an active member
of our church?

LAURENCE AND CINDY
We do.

Hollings pours water over the baby. Everyone applauds. The
baby starts crying.

HOLLINGS
Then through water and through
spirit, I welcome you to the
Christian faith to be one of God's
own children. In the name of the
Father, the Son, and the Holy
Spirit. Amen.

EXT. CHURCH - DAY

LIU XING, LITTLE SQUARE and WU join a group of CHINESE
STUDENTS congratulating LAURENCE and CINDY.

CINDY
Liu Xing! We’re having a party
tonight. Come join us.

LIU XING
Thank you.

The baby starts to cry.

CINDY
Say “Uncle Liu Xing.”

Liu Xing shakes Laurence's hand.

LIU XING
Congratulations, Feng Gang. Ten
years of school was not in vain.
You’re making a life in America,
with your pretty Shanghainese wife.

LAURENCE
Now I have mouths to feed.

LIU XING
Congratulations.

LAURENCE
Thank you.
CINDY

Goodbye.

INT. LIU XING'S HOUSE - NIGHT

LIU XING stands in the kitchen, boiling black sesame balls, lost in thought. WU is in the living room watching a Chinese costume drama. Competing with the TV is the sound of LITTLE SQUARE and his AMERICAN GIRL #1 having very noisy sex in the bedroom. We hear little squeals of pleasure from the girl.

WU

I think she's faking it for our sake.

LIU XING

Sounds real to me.

WU

They're just trying to make us jealous. A true female orgasm builds very slowly. It starts deep in the throat, like this...

Wu makes a gargling sound. Liu Xing smiles absentmindedly.

Remembering the sesame balls, Liu Xing looks into the pot. The pastry has dissolved, exposing the black sesame fillings, which explode into the water and turn it dark. Liu Xing’s eyes widen.

LIU XING

Got it, got it, got it. I've got it. Major breakthrough! Absolutely, major breakthrough! Old Wu, Old Wu, I have a major breakthrough. Little Square, Little Square!

He runs over to Little Square's room, and tries to pull him out of bed.

LITTLE SQUARE

Fuck off! I’m busy!

Liu Xing drags Little Square out. Little Square clings to the sheets. The three of them huddle over the pot of overcooked sesame balls.
LIU XING (CONT'D)
Superstring theory predicts shadow particles that interact with ordinary matter only through gravity. This is a major breakthrough!

Neither Little Square nor Wu has the slightest idea what he's talking about. Little Square’s girlfriend leaves in a huff. Liu Xing points to the exploded black sesame balls in the pot.

LIU XING (CONT'D)
This could be the dark matter that solves the problem of the Reiser Model!

EXT. HUBBLE BUILDING - DAY
LIU XING parks his bike and runs in.

INT. HUBBLE BUILDING, STAIRWAY - DAY
REISER is walking upstairs with HILDY.

REISER
Just tell him it's against the journal's policy. He's a bit of a bureaucrat. He'll understand that kind of language.

HILDY
So basically you want me to do your dirty work for you.

LIU XING charges up the stairs them.

LIU XING
Professor Reiser!

HILDY
Listen, there are two more things. You’ve got the reception tonight at 6:00. And call your sister, it's her birthday. You sent flowers. Call her please.

REISER
I sent flowers? How nice of me.

Hildy peels off.
LIU XING
Huge, huge breakthrough.

REISER
Huge breakthrough?

LIU XING
Yes, huge breakthrough.

Liu Xing digs through his backpack for his note pad, and some loose paper.

REISER
Huge breakthrough. Yes, I heard that.

LIU XING
Huge implication for cosmology.

Liu Xing smiles proudly. Reiser reads. He is stunned.

REISER
You did this?

LIU XING
Yes. Can this be my dissertation?

Reiser glares at him.

REISER
Are you out of your mind? This is way over your head. Way past your capabilities.

LIU XING
But I already got a good result.

REISER
Let me explain something to you. This is a marathon. You cannot sprint all the way. All right? Pick something simpler, then build on that. You’re going to have to learn that you have to pay your dues first. Okay?

LIU XING
Pro, Profess--

REISER
I said absolutely not. No. Okay?
Reiser brusquely hands the note pad back to Liu Xing, and walks away. Liu Xing stands there for a while, like a hurt puppy.

LIU XING (V.O.)
Dad, Mom, how are you? Great news!

INT. BEIJING INDUSTRIAL LAUNDRY - DAY

MAMA fold laundry with a CO-WORKER.

LIU XING (V.O.)
I made a major breakthrough. Professor Reiser is very pleased. He says that this discovery can be the basis of my Ph.D. thesis. I will make you proud of me.

CO-WORKER
I hear American children don’t take care of their parents. They let them die in retirement homes.

MAMA
My son will not.

INT. REISER'S OFFICE - DAY

Reiser reads the latest Journal of Astrophysics. His face reddens as he sees the lead article: "Superstrings and the Dark Matter," by Liu Xing, M.S."

LIU XING (V.O.)
After generating much important research, cosmic strings -- first proposed by Jacob Reiser -- no longer explain the observed structure of the universe.

REISER
Hildy!

LIU XING (V.O.)
By using superstrings, I have discovered a new dark matter particle.

INT. HUBBLE BUILDING, ELEVATOR - DAY

HILDY and REISER go down in the elevator together.
REISER
Did you know it was going to happen like this?

HILDY
How was I supposed to know? I'm not a mind reader!

REISER
How dare he! Without my permission, without even showing it to me!

HILDY
I believe he tried.

REISER
He did not. He showed me some scribbles on a yellow legal pad. Why are you siding with him?

HILDY
Liu Xing worships you. All he wanted was your blessing. You didn't give it to him. That's what happened.

REISER
He's so respectful, bowing on the outside, but on the inside he's an arrogant bastard! Maybe they all are.

Through the glass wall of the elevator, we see a group of CHINESE STUDENTS, laughing and teasing each other.

INT. DESIGNER BOUTIQUE - DAY

An elegant boutique. The manager, RENE, is helping JOANNA shop for shirts. LIU XING is tagging along.

CHAPTER HEADING: Wood

LIU XING
Joanna, Professor Reiser think I am attacking him. I am not attacking him.

JOANNA
Of course you're not.
LIU XING
This can help improve his model. I was hoping so much he will publish my breakthrough.

JOANNA
Well, if he doesn’t, you can send it out to be published somewhere else.

LIU XING
I did. They did.

JOANNA
Good for you. (to Rene) Oh my good god, that's exactly what I want. See, I just wanted something strong.

She admires a striped shirt. Liu Xing accidentally knocks a dark blue shirt on the floor.

LIU XING
Sorry.

Liu Xing picks it up, about to hang it back.

JOANNA
Oh, no, no, no. Wait, wait, wait.

She holds the shirt up to Liu Xing.

JOANNA (CONT'D)
I think you should have this one.

LIU XING
Too expensive.

RENE
The lady has impeccable taste.

JOANNA
It's only money. When is your dissertation presentation?

LIU XING
Next week.

JOANNA
Next week? And you're going to wear this terrible shirt?

She points to his frayed shirt. Liu Xing nods.
JOANNA (CONT'D)
No, no, no. Wear this one! You walk in, you have confidence. You look good. You feel good. Hit it out of the park.

LIU XING
I really don't need that shirt.

JOANNA
No, you don't need it, but we're gonna get it.

RENE
Dress for success.

JOANNA
You're just worrying. You're worrying too much. You really are. You know what my mother said? Worry is interest paid on trouble that hasn't happened yet. So don't worry.

INT. LIU XING'S HOUSE, LIVING ROOM - NIGHT

WU is soaking his feet, while smoking. He picks up Liu Xing's new shirt. LIU XING snatches it back from him.

LIU XING
Don't touch it while washing your feet.

WU
Typical American thinking. To climb a mountain, you need hiking shoes. To ride a bike, you need a helmet. You can't just drink regular water, it has to be mineral water. Even when sleeping, you have to wear sexy underwear.

Wu gets up to dump the basin of water. Liu Xing tries the shirt on in front of the tiny mirror by the door. Wu stops next to him.

WU (CONT'D)
I don't think that shirt is so great.

LIU XING
"Dress for success." Haven't you heard of that?
Liu Xing looks at himself in the mirror, adjusting the collar.

INT. HUBBLE BUILDING, GLASS CORRIDOR – DAY

LIU XING reviews his notes. Through the plate glass windows, he sees CHEERLEADERS practicing a routine.

Liu Xing hovers outside the seminar room, taking one last look at his transparencies, distracted by the bouncing cheerleaders.

COLBY (O.S.)

Liu Xing?

Liu Xing gets up and goes inside.

INT. LIU XING'S HOUSE – DAY

A home-made banner saying "Congratulations Liu Xing, Ph.D.!" hangs on the door. A party is getting started in anticipation of Liu Xing’s triumph.

WU stands by the door with a beer and a cigarette in hand. LITTLE SQUARE is dancing with AMERICAN GIRL #2 in the kitchen. WANG YING and ZHANG MING dance with each other.

INT. SEMINAR ROOM – DAY

LIU XING finishes his presentation before the tribunal of professors REISER, COLBY and SMALL.

LIU XING

Therefore, my new form of dark matter make a better match to observation, as you can see from final frame of simulation.

He puts up the last transparency, and stands nervously at the projector while the three judges silently write notes.

REISER

Did you use single- or double-precision computations?

LIU XING

Single.

Small raises his eyebrows at Reiser.
But even the slightest computational error -- like a round-off error -- can significantly alter the results.

LIU XING
Result not cause by round-off error.

REISER
So you say, but you have no way to prove it. Do you?

LIU XING
Professor Reiser, simulation is accurate!

REISER
Double-precision is standard procedure.

LIU XING
But, but, but Professor Reiser, why you never tell this to me? I do one thousand runs for your model, single-precision, and you never tell this to me, never tell me do different!

COLBY
Excuse us for a moment.

The three professors go into a huddle. Liu Xing stands nervously, straining to interpret the snippets of whispered English, but unable to understand.

COLBY (CONT'D)
You have to admit, it's a highly original piece of work.

REISER
Do you really want to sign off on a thesis that may be entirely inaccurate simply because some of the ideas in it are intriguing?

COLBY
Come on, Jake, he made a very persuasive argument.

SMALL
It's pure speculation!
REISER
He took the most speculative theory in physics, and he speculated a little further. He's in way over his head.

COLBY
Maybe he's way over our head.

The three judges come out of their huddle.

REISER
Liu Xing, I'm afraid we can't accept your dissertation until you re-do the computations.

Liu Xing stands, shattered, in front of the projection screen.

FLASHBACK to him getting shot down at Pioneer Village.

INT./EXT. GLASS CORRIDOR - NIGHT
Pacing under the fluorescent lights, LIU XING tears off his new shirt, and throws it on the floor. The light bulbs begin blow up, one by one, sending shards of glass flying into the corridor -- and leaving Liu Xing in the dark.

EXT. LIU XING'S HOUSE, ALLEY - NIGHT
The house is empty, LITTLE SQUARE, WU, ZHANG MING and WANG YING are half asleep, surrounded by empty beer bottles

LITTLE SQUARE
What time is it?

WU
Two o'clock.

EXT. LIU XING'S HOUSE - DAY
LITTLE SQUARE pulls up in his recently acquired Dodge Charger.

INT. LIU XING'S HOUSE - DAY
A dishevelled LIU XING sits in front of the TV, with a noisy martial arts movie on.

Little Square knocks on the window.
LITTLE SQUARE

Liu Xing!

Liu Xing doesn't budge. Little Square enters the apartment.

He looks at his morose friend, and gets two beers from the fridge. They open the beers and drink in silence.

LITTLE SQUARE (CONT'D)
Come on, let's get you a haircut.

Liu Xing chugs the rest of his beer.

LITTLE SQUARE (CONT'D)
Enough, put this down, let's go.

He pulls Liu Xing away.

Through the kitchen and the open bathroom door, we see Little Square cutting Liu Xing's hair. All that can be heard is the snipping of the scissors.

Little Square puts down the scissors and applies some gel, massaging Liu Xing's scalp. Liu's facial muscles begin to relax, and tears flow down his cheeks.

INT. LIU XING'S HOUSE - DAY

LIU XING takes a shower.

INT. LIU XING'S HOUSE - DAY

LIU XING sits on his bed, writing in his notebook. WU and LITTLE SQUARE are packing their suitcases. Wu offers Liu Xing a cigarette.

LITTLE SQUARE
Fuck dark matter!

WU
Come back to China with me. I'll get a job for you at the China Science Academy. With your talent, you qualify for a nice apartment in central Beijing. Then you find a wife who cooks, so you can focus on your research. Wouldn't that be great?
LITTLE SQUARE
Get a corporate job here like me, so you can research dark matter in your spare time. Even Einstein had a day job.

EXT. RESIDENTIAL STREET - DAY
Liu Xing rides a bike around town, carrying a sample case with the words "Skin Sheen."

INT. BEEHIVE TEA ROOM - DAY
Liu Xing sits at a table, as Jackie approaches with a cup of coffee.

    Liu Xing
Thank you.

    Jackie
Yeah.

    Liu Xing
How are you?

    Jackie
Good! How are you?

    Liu Xing
Fine. Thank you.

Liu Xing places a face cream on the table.

    Liu Xing (CONT'D)
Happy Birthday!

    Jackie
(startled)
Liu Xing, who told you it was my birthday?

    Liu Xing
Ah, you forgot I am a scientist. I just know.

    Jackie
I see you're a cosmetologist after all.

    Liu Xing
Please come to my house after work. I will prepare your birthday feast.
JACKIE
Oh, that's so sweet, but I already have plans.

LIU XING
No problem. Tomorrow.

JACKIE
I don't think so.

Liu Xing looks at her, trying to understand her sudden coldness.

JACKIE (CONT'D)
I like you Liu Xing. You're a really nice guy, but I don't think it's going to work out between us. I'm sorry.

LIU XING
No problem.

He squeezes out a smile, which awkwardly freezes on his face.

JACKIE
Want some more coffee?

LIU XING
Mmm hmm.

Liu Xing sips his coffee.

LIU XING (V.O.)
Baba, Mama, how are you?

EXT. BEIJING WATERFRONT - DAY

BABA and MAMA are taking an exercise walk.

LIU XING (V.O.)
I am proud to report that I graduated with the highest honors. Soon you'll be coming to America to live with me. Then you'll be the proud parents of Dr. Liu Xing. Now all the universities are fighting over me. I'm trying to decide which job offer to accept. I miss you both very much.
EXT. REISER'S BACK YARD - DAY

A graduation barbecue. REISER serves up grilled hamburgers to CHINESE STUDENTS and faculty. JOANNA chats with a group of students.

REISER
Beer, wine, salad - everything is there. Sorry the burgers are a little overdone.

LIU XING is off in a corner of the yard, a ghost-like presence.

REISER
No. You're far better. Everybody, Professor Richard Colby has the floor! Please.

COLBY
Thank you, professor. I want to share some good news with you all. For the third year running, the Gelman Prize for the best science dissertation has been awarded to one of our own -- Laurence Feng. Larry, take a bow.

Laurence takes a bow, while CINDY claps Noelle's little hands together.

COLBY
And now I believe we have some entertainment.

Cindy begins singing the final aria from Madame Butterfly, in Chinese.

Around the side of the house, Liu Xing sits with Joanna.

JOANNA
I brought you a present.

LIU XING
Joanna, I didn't even graduate.

JOANNA
I never said it was a graduation present.

Liu Xing takes the box and slowly opens it. Inside is an antique brass telescope.
It’s very old.

He extends it to its full length, and looks out, very excited.

Liu Xing, my husband Hal has a company that does a lot of business in China. Not in your field -- it’s import/export. I know some of the people. I thought I might contact them.

I'm okay. I'm Okay. No problem. I can find a job myself.

Of course.

Thank you.

Cindy's dramatic aria continues in the background, as JOANNA approaches REISER.

So, I am not clear on the protocol here now. Liu Xing hasn't passed his dissertation.

I am sure he'll get his doctorate, some day, somewhere. I mean, he is a brilliant guy.

Yeah.

But, unfortunately, he's not a team player.

Well, you wouldn't put that in a letter of recommendation?

No, I wrote him a very fine recommendation.
JOANNA
You did?

REISER
Believe me.

JOANNA
Great. Because I remember when he first came here you said he was the most brilliant student you'd ever seen.

REISER
Yes, yes. And I have no doubt, he'll make a lasting contribution to cosmology. Someday. Somewhere.

JOANNA
I wish there was something you could do, because he looks up to you so much.

Reiser laughs and shakes his head.

REISER
I don't think he still wants to work for me, Joanna.

EXT. REISER’S BACKYARD - DAY

CINDY is at the end of her aria.

CINDY
(sings)
Though you must not know it,/ for you alone,/ for your lovely blue eyes/ dies Butterfly...

She hands the microphone to WANG YING, and takes a badminton racket to use as a sword. She slits her throat with the racket, and falls down. Flower petals are tossed on her. Laurence, holding the baby, kneels next to her.

LAURENCE
(sings)
Butterfly... butterfly...

INT. BEIJING APARTMENT - NIGHT

MAMA does her family laundry. A NEIGHBORHOOD GIRL, hair wet from a shower, stops by.
NEIGHBORHOOD GIRL
Will he return home or stay in America?

MAMA
It's up to him.

NEIGHBORHOOD GIRL
Does he have a girlfriend in America?

MAMA
He's too busy. Maybe later.

BABA shows up with some hangers.

BABA
Here you go. All he knows is studying, like a fool. Who's going to date him?

EXT. RESIDENTIAL STREET - DAY

LIU XING rings a doorbell, carrying his bag of Skin Sheen products. No one answers.

On his way back to the sidewalk, he runs into SELIM, a Middle-Eastern grad student.

SELIM
Hey! Liu Xing, right? I read your article on dark matter -- it's really good!

Liu Xing hops on his bike and takes off.

EXT. JOANNA'S HOUSE - DAY

LIU XING walks toward Joanna's house, carrying the Skin Sheen sample case.

INT. JOANNA'S HOUSE - DAY

JOANNA is relaxing on the couch, reading a book and listening to a Bach cantata on her stereo. The doorbell rings. She goes to the door, peeks through the little window, sees it's Liu Xing, and opens the door.

JOANNA
Liu Xing, what a nice surprise! Come in!
LIU XING

Joanna.

She leads LIU XING to the living room couch.

JOANNA
How wonderful to see you. I was just thinking about you.

LIU XING
Thank you.

JOANNA
I can't even look at the sky without thinking about dark matter. Come in. Can I get you some tea?

LIU XING
Yes.

JOANNA
Oh, good.

She goes to the kitchen, and returns with the tea tray, sets it on the coffee table, and sits next to Liu Xing.

JOANNA (CONT'D)
Come in. Sit down.

LIU XING
Thank you.

JOANNA
It's so good to see you. I thought you'd disappeared completely.

LIU XING
(notices music)
Bach.

JOANNA
Yes. So, do you have some good news?

LIU XING
News?

JOANNA
I mean, have you heard from any of the other universities?

LIU XING
No. Not yet.
JOANNA
I'm sorry. Not yet, of course not. What's "Skin Sheen"?

LIU XING
Oh, it's a beauty product I sell.

JOANNA
Oh. You sell?

LIU XING
Just to kill time. It's pretty good stuff. Do you like to try some?

JOANNA
Oh, no thank you. I have a lot of, God knows, things that I --

LIU XING
Sorry.

JOANNA
No, don't be sorry. I -- maybe I will try it. I'm always looking for something new. You know, I'd just love to try it.

LIU XING
You sure?

JOANNA
Sure.

Liu Xing removes a cream from the bag, the lid has come off and cream gets all over him.

JOANNA (CONT'D)
Uh oh. Can I help?

LIU XING
No, no, no problem.

Liu Xing pulls out bottle after bottle, all cheaply packaged.

JOANNA
Oh, my! This is an extensive line of -- products. What do they all do?

Liu Xing fumbles with his bottles.

LIU XING
Sorry.
JOANNA
No, no.

He takes a small bottle of anti-aging cream out of the sample case.

Liu Xing applies the cream to the back of her hand.

LIU XING
First, you put it here. And do this.

He rubs the cream in circles.

LIU XING (CONT'D)
Yes?

JOANNA
Yes. It feels nice.

LIU XING
And then second...

Liu Xing pushes up the sleeve of Joanna's shirt.

LIU XING (CONT'D)
...you put it here. And then -- I am not good at it.

JOANNA
That's okay.

LIU XING
And then...

Liu Xing brings out a spray. He accidentally sprays in the wrong direction, onto Joanna's shirt.

JOANNA
It's okay.

LIU XING
Sorry. Sorry.

JOANNA
It really doesn't matter.

Liu Xing sprays the product on her hand and smells it.

LIU XING
Good smile.

JOANNA
Good smile.
Liu Xing puts more cream on his fingertips.

    LIU XING

      May I?

He moves his hands toward her face.

    JOANNA

      Of course.

She closes her eyes as he dabs around them, then rubs the cream into her face.

    JOANNA

      Lovely. Liu Xing.

Tears come to her eyes.

    JOANNA (CONT'D)

      I'm sorry. Sometimes I get allergic...

    LIU XING

      It's just a temporary job.

    JOANNA

      Yes. It's just for a little while. Then you'll find something -- wonderful. I know you will.

She looks warmly and openly at him.

    LIU XING

      Joanna, I have many, many things left to do. I'm so busy. I must go to the library.

Liu Xing hastily packs up and goes, leaving the jar of cream behind.

INT. LIU XING'S HOUSE - DAY

LIU XING writes a check to his father for $10,000 and puts it in an envelope that's already addressed and stamped, and contains a letter.

CHAPTER HEADING: Fire.

    LIU XING (V.O.)

      Baba, Mama, how are you? Here is the money I saved in America to repay you for the gentle care you gave me when I was a young boy.
He gets up and walks to the calendar beside the mirror, hesitates, then draws a big circle on today's date, June 28.

He looks out the window and sees snow.

He puts on a big, white, down snowsuit that makes him look like an astronaut.

He takes the envelope and walks out the door.

EXT. JOANNA'S BACK YARD - DAY

JOANNA is practicing Tai Chi, as in the beginning.

EXT. VACANT LOT - DAY

LIU XING walks to the nearest mailbox and mails the letter.

EXT. BEIJING STREET - DAY

MAMA rides her bicycle to work.

EXT. BEIJING FACTORY - DAY

As she waits at the factory gate to park her bike, MAMA gazes up at a smokestack, and sees the smoke turn from pale grey to pitch black.

Suddenly seized with anxiety, she turns around and rides away from the factory, nearly colliding with another worker.

MAMA

Excuse me, excuse me.

EXT. HUBBLE BUILDING - DAY

LIU XING walks past the Hubble statue, toward the entrance.

INT. HUBBLE BUILDING, BATHROOM - DAY

LIU XING splashes water on his face and hair, in front of the large institutional mirror.

EXT. JOANNA’S BACK YARD - DAY

In the middle of a Tai Chi movement, JOANNA senses that something is wrong. She grabs her bag and rushes to her car.
LIU XING dries his face and leaves the bathroom.

MAMA races her bicycle down a crowded street -- going in the opposite direction of a steady stream of workers on bicycles.

LIU XING approaches the seminar room.

    REISER (O.S.)
    Marvin Gelman believed that science can flourish only where people are free to express their ideas. This year's winner of the Gelman Prize came to America from Communist China three years ago, and has flourished at this university. Ladies and Gentlemen, Doctor Laurence Feng.

EXT. HIGHWAY - DAY

JOANNA is speeding in the Jaguar, along the same mountain road they traveled before.

INT. SEMINAR ROOM - DAY

LAURENCE addresses a room full of NEW STUDENTS and faculty, including REISER, COLBY, and SMALL.

LIU XING approaches along the side of the room.

    LAURENCE
    By starting at 10 to the minus 36 seconds after the Big Bang, I have derived new initial conditions for the Reiser Model that generate more accurate predictions of the present-day structure of the universe. In broad terms, I'm provi--

He turns and sees Liu Xing, standing in front of him, like a ghost.

    LAURENCE (CONT'D)
    What are you doing?

BANG - Liu Xing shoots Laurence in the face.

BANG - Liu Xing shoots Reiser in the forehead.

Everyone is running, screaming, ducking for cover.

BANG - Liu Xing shoots Colby in the back.
EXT. BEIJING STREET – DAY

Biking hard, MAMA rounds the corner onto her little lane, the light at the end of the street shifting toward the blue end of the spectrum.

LIU XING’S APARTMENT

JOANNA parks her Jaguar in front of Liu Xing’s apartment.

THE SEMINAR ROOM

LIU XING hunts down Small amid the pandemonium.

BEIJING STREET

MAMA parks her bike at her apartment and runs upstairs.

THE SEMINAR ROOM

Liu Xing finds Small crouching under a chair, protecting his face with his hands.

LIU XING’S APARTMENT

JOANNA runs to Liu Xing’s door.

THE SEMINAR ROOM

BANG – Liu Xing shoots SMALL through his hand.

BEIJING APARTMENT

MAMA rushes into her apartment.

INT. HUBBLE BUILDING, STAIRS – DAY

On his way downstairs, LIU XING bumps into CINDY, carrying NOELLE, on their way to pick up Daddy.

CINDY

Liu Xing, why you are here?

No answer.
CINDY (CONT’D)
Is Laurence finished?

No answer. Liu Xing is already gone. Cindy shouts into the staircase below.

CINDY (CONT’D)
Are you okay?

INT. REISER’S OFFICE - DAY

Sweating in his down coat, LIU XING enters Reiser's office. He looks around, then sits in Reiser's green leather chair, resting his feet on the desk. He holds the gun, panting.

EXT. LIU XING’S HOUSE - DAY

Through the window, JOANNA sees a brown suitcase on the floor.

INT. REISER’S OFFICE - DAY

LIU XING puts the gun to his temple, closes his eyes...

Flashback to BABA and MAMA waving goodbye when he first left home.

Liu Xing pulls the trigger.

The phone rings. Mama rushes to answer it.

MAMA
Hello?

JOANNA (V. O.)
Hello. My name is Joanna...

ANIMATION

Travelling deep into the cosmos, the distances between the stars getting greater and greater, until all that’s left is blackness.

LIU XING (V.O.)
I am a scientist who believes in the conservation of matter and energy. Although my flesh-and-blood body is dead, my spirit is quantum leaping to another corner of our universe.
(MORE)
LIU XING (V.O.) (cont'd)
So long, dear Mama and Baba, maybe
we will meet again in another time
and another place.

FADE OUT.