

**Bertolt Brecht**

# **Life of Galileo**

*Play*

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Version 1

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## CHARACTERS

GALILEO GALILEI

ANDREA SARTI

MRS. SARTI, Galileo's housekeeper, Andrea's mother

LUDOVICO MARSILI, a rich young man

MR. PRIULI, procurator of the university of Padua

SAGREDO, Galileo's friend

VIRGINIA, Galileo's daughter

SENATORS

COSMO DE' MEDICI, Grand Duke of Florence

THE LORD CHAMBERLAIN

THE PHILOSOPHER

THE MATHEMATICIAN

THE OLD WOMAN

ASTRONOMER

A VERY THIN MONK

THE VERY OLD CARDINAL

FATHER CHRISTOPHER CLAVIUS, an astronomer

THE LITTLE MONK

THE CARDINAL INQUISITOR

CARDINAL BARBERINI, later Pope Urban VIII

CARDINAL BELLARMINE

SECRETARY

FILIPPO MUCIUS, a scholar

VANNI, an iron founder

A HIGH OFFICIAL

A SHADY INDIVIDUAL

A MONK

A BORDER GUARD

Galileo Galilei, teacher of mathematics in Padua, sets out to demonstrate the new Copernican system.

In the year sixteen hundred and nine  
Science' light began to shine.  
At Padua city, in a modest house  
Galileo Galilei set out to prove  
The sun is still, the earth is on the move.

*Galileo's modest study in Padua. It is morning. A boy, Andrea, the housekeeper's son, brings in a glass of milk and a roll.*

GALILEO (*washing his torso, puffing and happy*) Put the milk on the table, but don't shut any books.

ANDREA Mother says we've got to pay the milkman. Or he'll make a circle around our house, Mr. Galilei.

GALILEO You must say, "describe a circle," Andrea.

ANDREA Of course. If we don't pay he'll describe a circle around us, Mr. Galilei.

GALILEO I've got something for you. Look behind the star charts.

*(Andrea fishes a large wooden model of the Ptolemaic system from behind the star charts)*

ANDREA What is it?

GALILEO An armillary sphere. It shows how the stars move around the earth, in the opinion of the ancients.

ANDREA How?

GALILEO Let's examine it. First of all: description.

ANDREA There's a little stone in the middle.

GALILEO That's the earth.

ANDREA There are rings around it, one inside another.

GALILEO How many?

ANDREA Eight.

GALILEO Those are the crystal spheres.

ANDREA There are balls fastened to the rings . . .

GALILEO The stars.

ANDREA There are tags with words painted on them.

GALILEO What kind of words?

ANDREA Names of stars.

GALILEO Such as?

ANDREA The bottommost ball is the moon, it says. The one above it is the sun.

GALILEO Now spin the sun around.

ANDREA (*sets the rings in motion*) That's pretty. But we're so shut in.

GALILEO (*drying himself*) Yes, that's just what I felt when I saw the thing for the first time. Some people feel that way. (*Throws Andrea the towel, meaning that he should rub his back*) Walls and rings and immobility. For two thousand years

men believed that the sun and all the stars of heaven were circling around them. The pope, the cardinals, princes and scholars, the captains, merchants, fishwives and schoolchildren, all thought they were sitting motionless inside this crystal sphere. But now we'll get out of it, Andrea, we're in full sail.

Because the old times are gone, and this is a new age. For the last hundred years mankind has seemed to be expecting something.

Cities are narrow, and so are minds. Superstition and plague. But now we say: Since things are thus and so, they will not remain thus and so. Because, my friend, everything is in motion.

I like to think that it all started with ships. From time immemorial ships had hugged the shores, but suddenly they abandoned the shores, and sailed out upon the oceans.

And a great desire has arisen to find the causes of all things. Every day something new is being discovered. Even men a hundred years old let youngsters shout in their ears to tell them about the latest discoveries.

A great deal has been discovered, but there's much more to be discovered. Plenty of work for future generations.

When I was a young man in Siena I saw some masons, after arguing for five minutes, discard an age-old method of moving granite blocks in favor of a new and more practical arrangement of the ropes. Then and there I realized that the old times are over and that this is a new day. Some men will know all about their habitat, this heavenly body they live on. They're no longer satisfied with what it says in the ancient books.

Because where faith had ruled for a thousand years, doubt has now set in. Today everybody is saying: Yes, that's what the books tell us, but we want to see for ourselves. The most sacred truths are being looked into. Things that were never held in doubt are being doubted now.

All this has stirred up a breeze that lifts even the gold-braided coats of princes and prelates, revealing stout or spindly legs, legs just the same as ours. The heavens, we know now, are empty. And that has given rise to joyous laughter.

I foresee that in our lifetime people will talk astronomy in the market place. Even the sons of fishwives will go to school. The people of our cities are always eager for novelty, they will be glad to hear that in our new astronomy the earth moves too. It has always been taught that the stars are pinned to a crystal vault, which prevents them from falling down. Now we've mustered the courage to let them float free, with nothing to hold them; they're in full sail, just as our ships are in full sail.

And the earth rolls merrily around the sun, and all the fishwives, merchants, princes and cardinals, and even the pope, roll with it.

Overnight, the universe has lost its center and now in the morning it has any number of centers. Now any point in the universe may be taken as a center. Because, suddenly, there's plenty of room.

Our ships sail far out into the ocean, our planets revolve far out in space, and even in chess nowadays the rooks range over many fields.

What does the poet say? "Oh, early morning . . ."

ANDREA

"Oh, early morning of beginning!

Oh, breath of wind that

Comes from new-found shores!"

And you'd better drink your milk. There'll be people coming in a minute.

GALILEO Did you figure out what I told you yesterday?

ANDREA What? You mean Kippernick and all that turning business?

GALILEO Copernicus, yes.

ANDREA No. Why do you want me to figure it out? It's too hard for me, I'll only be eleven in October.

GALILEO I want you to understand it, you in particular. To make everybody understand, that's why I work and buy expensive books instead of paying the milkman.

ANDREA But I can see that the sun's not in the same place in the evening and morning. So it can't stand still. It just can't.

GALILEO You "see"! What do you see? You see nothing at all. You're just gaping. Gaping isn't seeing. *(He places the iron washstand in the center of the room)* Now, that's the sun. Sit down. *(Andrea sits down in the only chair. Galileo stands behind him)* Where is the sun, right or left?

ANDREA Left.

GALILEO And how does it get to the right?

ANDREA When you carry it over to the right. Naturally.

GALILEO Only then? *(He picks up the chair with him in it and turns it halfway around)* Where's the sun now?

ANDREA On the right.

GALILEO Has it moved?

ANDREA I guess it hasn't.

GALILEO What moved?

ANDREA Me!

GALILEO *(roars)* Wrong! Stupid! the chair!

ANDREA But me with it!

GALILEO Obviously, The chair is the earth. You're sitting on it,

MRS SARTI *(has come in to make the bed. She has watched the scene)* Mr. Galilei, what on earth are you doing with my boy?

GALILEO I'm teaching him how to see, Mrs. Sarti.

MRS. SARTI By carrying him around the room?

ANDREA Never mind, mother. You don't understand.

MRS. SARTI Is that so? But of course you understand. A young gentleman is here, he wants to take lessons. Very well dressed, and he has a letter of recommendation. *(Hands over the letter)* When you get through with my Andrea, he'll be saying that two times two make five. You've got him all mixed up. Last night he tried to prove to me that the earth moves around the sun. He says some fellow by the name of Kippernick figured it out.

ANDREA Didn't that 'Copernicus' figure it out, Mr. Galilei? You tell her.

MRS. SARTI Do you really tell him such nonsense? He blabs it out in school and the priests come running to me because of all the sinful stuff he says. You should be ashamed of yourself, Mr. Galilei.

GALILEO *(eating his breakfast)* Mrs. Sarti, as a result of our investigations, and after heated arguments, Andrea and I have made discoveries which we can no longer keep secret from the world. A new age has dawned, a great age, and it's a joy to be alive.

MRS. SARTI I see. I hope we'll be able to pay the milkman in the new age, Mr. Galilei. *(Pointing at the letter)* Just do me a favor and don't turn this one away. I'm thinking of the milk bill. *(Out)*

GALILEO *(laughing)* Just give me time to finish my milk!—*(To Andrea)* Well, you

seem to have understood something yesterday after all.

ANDREA I only told her to get a rise out of her. But it's not true. You only turned the chair with me in it around sideways, but not like this. *(He moves his arm in a circle to the front)* Because I'd have fallen off the chair, and that's a fact. Why didn't you turn the chair over? Because that would prove I'd fall off the earth if it moved that way. There.

GALILEO But I proved to you . . .

ANDREA But last night I figured out that if the earth turned that way I'd hang down head first at night, and that's a fact.

GALILEO *(takes an apple from the table)* Look here. This is the earth.

ANDREA Don't always use that kind of example, Mr. Galilei. That way you can prove anything.

GALILEO *(putting the apple back)* Very well.

ANDREA You can do anything with examples if you're clever. But I can't carry my mother around in a chair like that. So you see, it was a bad example. And what would happen if the apple were the earth? Nothing would happen.

GALILEO *(laughs)* I thought you weren't interested.

ANDREA All right, take the apple. What would keep me from hanging head down at night?

GALILEO Well, here's the earth, and you're standing here. *(He sticks a splinter from a log into the apple)* And now the earth turns.

ANDREA And now I'm hanging head down.

GALILEO What do you mean? Look closely! Where's the head? *(shows on the apple)*

ANDREA There. Below.

GALILEO Sure? *(Turns the apple back)* Isn't the head still in the same place? Aren't the feet still below it? When I turn it, do you stand like this? *(He takes the splinter out and turns it upside down)*

ANDREA No. Then, why don't I notice the turning?

GALILEO Because you're turning too. You and the air above you and everything else on the globe.

ANDREA But why does it look as if the sun were moving?

GALILEO *(again turns the apple with the splinter)* Look, you see the earth underneath, it stays that way, it's always underneath and as far as you're concerned it doesn't move. Now look up.

The lamp is over your head. But now that I've turned it, what's over your head, in other words, above?

ANDREA *(making the same turn)* The stove.

GALILEO And where's the lamp?

ANDREA Below.

GALILEO Aha!

ANDREA That's great. That'll get a rise out of her.

*(Ludovico Marsili, a rich young man, enters)*

LUDOVICO Good morning, sir. My name is Ludovico Marsili.

GALILEO *(examining his letter of recommendation)* You've been in Holland?

LUDOVICO Where I heard a great deal about you, Mr. Galilei. GALILEO Your family owns property in the Campagna? LUDOVICO My mother wanted me to look around and see what's going on in the world. That kind of thing.

GALILEO And in Holland they told you that in Italy, for instance, I was going on?

LUDOVICO And since mother also wanted me to take a look at the sciences . . .

GALILEO Private lessons: Ten scudi a month.

LUDOVICO Very well, sir.

GALILEO What are your interests?

LUDOVICO Horses.

GALILEO I see.

LUDOVICO I have no head for science, Mr. Galilei.

GALILEO I see. In that case it'll be fifteen scudi a month.

LUDOVICO Very well, Mr. Galilei.

GALILEO I'll have to take you first thing in the morning. You'll be the loser, Andrea.

Naturally I'll have to drop you. You understand, you don't pay.

ANDREA All right, I'm going. Can I take the apple?

GALILEO Yes.

*(Andrea leaves)*

LUDOVICO You'll have to be patient with me. Mostly because in science everything's the opposite of common sense. Take that crazy tube they're selling in

Amsterdam. I've examined it carefully. A green leather casing and two lenses, one like this *(he indicates a concave lens)* and one like this *(indicates a convex lens)*. As far as I know, one magnifies and the other reduces.

Any sensible person would expect them to cancel each other out. But they don't. When you look through the thing everything's five times as big. That's science for you.

GALILEO What do you see five times as big?

LUDOVICO Steeples, pigeons, anything far away.

GALILEO Have you seen these magnified steeples?

LUDOVICO Certainly, sir.

GALILEO You say the tube has two lenses? *(He makes a sketch on a sheet of paper)* Like this? *(Ludovico nods)* How old is this invention?

LUDOVICO I believe it wasn't much more than a few days old when I left Holland, at least it hadn't been on the market any longer than that.

GALILEO *(almost friendly)* Why do you insist on physics? Why not horse breeding? *(Enter Mrs. Sarti, unnoticed by Galileo)*

LUDOVICO Mother thinks a little science won't hurt me. Everybody's eating and drinking science nowadays, you know.

GALILEO Why not try a dead language or theology? They're easier. *(Sees Mrs. Sarti)* AH right, come Tuesday morning. *(Ludovico leaves)*

GALILEO Don't look at me like that. I've accepted him.

MRS. SARTI Because you saw me in the nick of time. The procurator of the university is here.

GALILEO This place is as busy as a pigeon house. Bring him in. It might mean five hundred scudi. Then I wouldn't have to take pupils. *(Mrs. Sarti shows the procurator in. Galileo has completed dressing while scribbling figures on a slip of paper)*

GALILEO Good morning, lend me half a scudo. *(Gives the coin the procurator has fished out of his purse to Mrs. Sarti)* Sarti, would you send Andrea to the spectacle maker for some lenses? Here are the measurements. *(Mrs. Sarti goes out with the slip of paper)*

THE PROCURATOR I've come in regard to your request for a raise of salary. You have asked for a thousand scudi. Unfortunately I cannot recommend such an increase to the university. You are aware, I am sure, that courses in mathematics don't attract students to the university. Mathematics doesn't

pay. Not that the republic doesn't value it highly. It may not be as important as philosophy or as useful as theology; still, it gives endless pleasure to the connoisseur.

GALILEO (*immersed in his papers*) My dear man, I can't get along on five hundred scudi.

THE PROCURATOR But, Mr. Galilei, all you do is give a two-hour lecture twice a week. Surely your extraordinary reputation must attract any number of students who can afford private lessons. Haven't you got private pupils?

GALILEO Sir, I have too many! I'm teaching all the time. When am I to learn? Good God, man, I'm not as clever as the gentlemen of the philosophical faculty. I'm stupid. I don't understand a thing. I've got to plug the holes in my knowledge. And where am I to find time for that? When am I to study and experiment? My knowledge, sir, is thirsty for more knowledge. In all the biggest problems we still have nothing but hypotheses to go by. What we need is proofs. How can I get anywhere if, to keep my household going, I have to drum it into the head of every idiot who can pay that parallel lines meet in infinity?

THE PROCURATOR The republic may not pay as much as certain princes, but don't forget, it guarantees freedom of inquiry. We in Padua even admit Protestants as students. And we grant them doctor's degrees. Did we hand Mr. Cremonini over to the Inquisition when we had proof—proof, Mr. Galilei!—that he had made sacrilegious statements? No, we even granted him an increase in salary. As far away as Holland Venice is known as the republic where the Inquisition has nothing to say. That ought to be worth something to an astronomer like you, working in a field where the doctrines of the church have not been held in due respect of late.

GALILEO You handed Giordano Bruno over to Rome. Because he professed the teachings of Copernicus.

THE PROCURATOR Not because he professed the teachings of Mr. Copernicus which, incidentally, are wrong, but because he was not a citizen of Venice and was not employed here. You can leave him out of it, even if they did burn him. And by the by, for all our liberties I shouldn't advise you to make too free with a name that has been expressly anathematized by the church, no, not even here.

GALILEO Your protection of freedom of thought is rather good business, isn't it? You get good teachers for low pay by pointing out that other towns are run by the Inquisition, which burns people. In return for protection from the Inquisition, your professors work for next to nothing.

THE PROCURATOR You're being unfair. What good would it do you to have all the time you want for research if any witless monk of the Inquisition could simply suppress your ideas? No rose without thorns, Mr. Galilei, no prince without monks!

GALILEO And what's the use of free investigation without free time to investigate? What happens to the results? Why don't you submit my work on the laws of falling bodies (*He points at a sheaf of manuscript*) to the gentlemen of the signoria and ask them if it's not worth a few scudi more.

THE PROCURATOR It's worth infinitely more, Mr. Galilei.

GALILEO Not infinitely more, sir, but five hundred scudi more.

THE PROCURATOR Only what brings in scudi is worth scudi. If you want money, you'll have to come up with something different. If you have knowledge to sell, you can ask only as much as it earns the purchaser.

For instance, the philosophy Mr. Colombe is selling in Florence brings the prince at least ten thousand scudi a year. Granted, your laws of falling bodies raised some dust. They're applauding you in Paris and Prague. But the gentlemen who applaud don't pay the university of Padua what you cost it. Your misfortune, Mr. Galilei, is your field.

GALILEO I get it: free trade, free research. Free trade in research, is that it?

THE PROCURATOR But Mr. Galilei! How can you say such a thing? Permit me to observe that I don't fully appreciate your witticism. The flourishing trade of the republic is hardly to be sneered at. Much less can I, as long-time procurator of the university, countenance the, I must say, frivolous tone in which you speak of research. (*While Galileo sends longing glances toward his worktable*) Think of the world around us! The whip-of-slavery under which science is groaning at certain universities—where old leather-bound tomes have been cut into whips. Where no one cares how the pebble falls, but only what Aristotle writes about it. The eyes have only one purpose: reading. What use are the new laws of gravity when the law of suavity is all that matters? And then think of the immense joy with which our republic accepts your ideas. Here you can do research! Here you can work! Nobody spies I on you, nobody oppresses you. Our merchants, who know the importance of better linen in their competition with Florence, listen with interest to your cry for "Better physics! And don't forget how much physics owes to the campaign for better looms! Our most eminent citizens—men for whom time is money—take an interest in your work, they come to see you and watch demonstrations of your discoveries. Don't despise trade, Mr. Galilei! None of us here would ever allow your work to be interfered with or permit outsiders to create difficulties for you. You've got to admit, Mr. Galilei, that this is the ideal place for your work!

GALILEO (*in despair*) Yes.

PROCURATOR Then the financial aspect: All you have to do is come up with another invention as clever as that splendid proportional compass of yours which a person ignorant of mathematics can use to (*He counts on his fingers*) trace a line, compute compound interest, reproduce a land survey in enlarged or reduced scale, and determine the weight of cannon balls.

GALILEO Flimflam.

THE PROCURATOR An invention that delighted and amazed our leading citizens and brought in money—you call that flimflam. I'm told that even General Stefano Gritti can do square roots with it.

GALILEO Quite a gadget—all the same, Priuli, you've given me an idea. Priuli, I may have something along those lines for you. (*He picks up the sheet with his sketch*)

PROCURATOR Really? That would be the solution. (*Gets up*) Mr. Galilei, we know you are a great man. A great but ,f,' dissatisfied man, if I may say so.

GALILEO Yes, I am dissatisfied and that's what you should be paying me for if you had any sense. Because I'm dissatisfied with myself. But you do everything to make me dissatisfied with you, I admit it amuses me to do my bit for my Venetian friends, working in your great arsenal with its shipyards and armories. But you leave me no time to follow up the

speculations which result from this work. You muzzle the ox that does your threshing. I'm forty-six years old and I've accomplished nothing that satisfies me.

THE PROCURATOR In that case I won't disturb you any longer.

GALILEO Thank you.

*(The procurator leaves, Galileo remains alone for a few moments and begins to work. The Andrea comes running in)*

GALILEO *(at work)* Why didn't you eat the apple?

ANDREA I need it to show her that the earth turns.

GALILEO I must tell you something, Andrea. Don't mention our ideas to other people.

ANDREA Why not?

GALILEO Our rulers have forbidden it.

ANDREA But it's the truth.

GALILEO Even so, they forbid it. And there's another reason. We still have no proofs for what we know to be right. Even the doctrine of the great Copernicus is not yet proven. It only a hypothesis. Give me the lenses.

ANDREA Half a scudo wasn't enough. I had to leave him my jacket. As a pledge.

GALILEO How will you get through the winter without jacket?

*(Pause. Galileo arranges the lenses on the sheet with the sketch)*

ANDREA What's a hypothesis?

GALILEO It's when we consider something probable but have no facts. In the face of the heavenly bodies we're like worms with dim eyes that see very little. The ancient doctrines that have been accepted for a thousand years are rickety. There's less solid timber in those immense edifices than in the props needed to keep them from collapsing. Too many laws that explain too little, whereas new hypothesis has few laws that explain a great deal.

ANDREA But you've proved it all to me. I want to be a physicist too, Mr. Galilei.

GALILEO Very sensible in view of all the problems remaining to be solved in our field. *(He has gone to the window and looked through the lenses. Mildly interested)* Take a look, Andrea.

ANDREA Holy Mary! Everything comes close. The bells of the campanile are right here. I can even read the copper letters: GRACIA DEI.

GALILEO It'll get us five hundred scudi.

Galileo presents a new invention to the republic of Venice.

No one's virtue is complete: Great Galileo liked to eat.  
You will not resent, we hope The truth about his  
telescope.

*The great arsenal of Venice near the harbor. Senators, headed by the I'doge. On one side Galileo's friend Sagredo and Virginia Galilei, fifteen; Isbe is holding a velvet cushion on which lies a telescope about two feet "long, encased in red leather. Galileo is standing on a dais. Behind him the tripod for the telescope; the lens grinder Federzoni is in charge*

GALILEO Your Excellency, august signoria! As professor of mathematics at your university in Padua and director of the great arsenal here in Venice, I have always felt it incumbent upon me not only to fulfill my duties as a teacher but also to procure special advantages to the republic of Venice by means of useful inventions. With great satisfaction and in all due humility, I shall demonstrate and present to you today an entirely new instrument, my spyglass or telescope, manufactured in your world-famous great arsenal in accordance with the highest scientific and Christian principles, the fruit of seventeen years of your obedient servant's patient labors.

*(Galileo leaves the dais and stands next to Sagredo)*

*(Applause, Galileo takes a bow)*

GALILEO *(softly to Sagredo)* What a waste of time!

SAGREDO *(softly)* You'll be able to pay the butcher, old friend.

GALILEO Yes, they'll make money on it. *(Makes another bow)*

THE PROCURATOR *(steps up on the dais)* Your Excellency, august signoria! Once again a glorious page in the great book of human accomplishments is being written in Venetian characters. *(Polite applause)* A scholar of world renown is presenting to you, and to you alone, a highly salable tube for you to manufacture and market at your pleasure. *(Stronger applause)* Has it occurred to you that in the event of war this instrument will enable us to recognize the nature and number of the enemy's ships at least two hours before they have a clear view of ours and, in full cognizance of his strength, decide whether to pursue, engage or withdraw? *(Loud applause)* And now, Your Excellency, august signoria, Mr. Galilei bids you accept this instrument of his invention, this evidence of his genius, from the hands of his charming daughter.

*(Music. Virginia steps forward, bows, hands the telescope to the procurator. The doge and the senators mount the dais and look through the tube)*

GALILEO *(softly)* I can't promise to go through with this farce. They think they're getting a profitable gadget, but it's much more than that. Last night I turned the tube on the moon.

SAGREDO What did you see?

GALILEO It has no light of its own.  
SAGREDO What?  
GALILEO I tell you, astronomy has been marking time for a thousand years for lack of a telescope.  
SENATOR Mr. Galilei!  
SAGREDO You're wanted.  
SENATOR One sees too well with that thing. I'll have to warn my ladies to stop bathing on the roof.  
GALILEO Do you know what the Milky Way consists of?  
SAGREDO No.  
GALILEO I do.  
SENATOR A thing like that is worth its ten scudi, Mr. Galilei.  
*(Galileo bows)*  
VIRGINIA *(takes Ludovico to her father)* Ludovico wants to congratulate you, father.  
LUDOVICO *(embarrassed)* Congratulations, sir.  
GALILEO I've improved on it.  
LUDOVICO So I see, sir. You made the casing red. In Holland it was green.  
GALILEO *(turns to Sagredo)* I wonder if I couldn't prove a certain doctrine with that thing.  
SAGREDO Watch your step!  
THE PROCURATOR Your five hundred scudi are in the bag, Mr. Galilei.  
GALILEO *(paying no attention to him)* Of course, I'm always wary of rash conclusions.  
*(The doge, a fat, modest man, has approached Galileo and is attempting, with clumsy dignity, to address him)*  
VIRGINIA Did I do it all right?  
LUDOVICO It seemed all right to me.  
VIRGINIA What's the matter?  
LUDOVICO Oh, nothing. A green casing might have done just as well.  
VIRGINIA I think they're all very pleased with father.  
LUDOVICO And I think I'm beginning to understand something about science.

January 10, 1610: By means of the telescope Galileo discovers celestial phenomena which prove the Copernican system. Warned by his friend of the possible consequences of his investigations, Galileo affirms his faith in reason.

January ten, sixteen ten: Galileo Galilei abolishes heaven.

*Galileo's study in Padua. Night. Galileo and Sagredo, both in heavy overcoats, at the telescope.*

SAGREDO (*looking through the telescope, in an undertone*) The edge of the crescent is quite irregular, rough and serrated. In the dark part near the luminous edge there are luminous points. They are emerging, one after another. From these points the light spreads out over wider and wider areas and finally merges with the larger luminous part.

GALILEO How do you account for those luminous points?

SAGREDO It can't be.

GALILEO But it *is*. They're mountains.

SAGREDO On a star?

GALILEO Gigantic mountains. Their peaks are gilded by the rising sun while the surrounding slopes are still deep in darkness. You can see the light descending from the highest peaks into the valleys.

SAGREDO But that contradicts all the astronomy of two thousand years.

GALILEO True. No mortal has ever seen what you are seeing, except me. You're the second.

SAGREDO But the moon can't be another earth with mountains and valleys, any more than the earth can be a planet.

GALILEO The moon can be an earth with mountains and valleys, and the earth can be a planet. Simply another heavenly body, one among thousands. Take another look. Is the dark part of the moon entirely dark?

SAGREDO No. When I look closely, I see a feeble gray light on it.

GALILEO What can that light be?

SAGREDO ?

GALILEO It's from the earth.

SAGREDO Nonsense. How can the earth with its mountains and forests and oceans—a cold body—give light?

GALILEO The same way the moon sheds light. Because both bodies are illuminated by the sun, that's why they shed light. What the moon is to us we are to the moon. The moon sees us by turns as a crescent, as a half-circle, as full, and then not at all.

SAGREDO Then there's no difference between moon and earth?

GALILEO Apparently not.

SAGREDO Less than ten years ago a man was burned in Rome. His name was Giordano Bruno and he had said the same thing.

GALILEO I know. But we can see it. Keep your eyes to the tube. What you see is that there's no difference between heaven and earth. This is the tenth of January. Humanity notes in its diary: Heaven abolished.

SAGREDO It's terrifying.

GALILEO I've discovered something else. Perhaps something even more amazing.

MRS. SARTI (*comes in*) The procurator.  
(*The procurator rushes in*)

THE PROCURATOR I apologize for the late hour. I'd be much obliged if we could talk privately.

GALILEO Mr. Sagredo can hear anything I can hear, Mr. Priuli.

THE PROCURATOR It might embarrass you to have the gentleman hear what has happened. Unfortunately, it's something quite incredible.

GALILEO Mr. Sagredo is used to hearing incredible things in my presence.

THE PROCURATOR I wonder. (*Pointing at the telescope*) There it is, your splendid gadget. You might as well throw it away. It's worthless, absolutely worthless.

SAGREDO (*who has been restlessly pacing the floor*) What do you mean?

THE PROCURATOR Do you realize that this invention of yours, "the fruit of seventeen years of patient labor," is for sale on every street corner in Italy for a couple of scudi? Made in Holland, I might add. At this very moment a Dutch freighter is unloading five hundred telescopes in the harbor.

GALILEO You don't say.

THE PROCURATOR Your equanimity, sir, is beyond me.

SAGREDO I fail to see what's troubling you. Let me tell you that just in these last few days Mr. Galilei—with this very instrument—has made the most revolutionary discoveries concerning heavenly bodies.

GALILEO (*laughing*) Have a look for yourself, Priuli.

THE PROCURATOR Let me tell you that after having Mr. Galilei's salary doubled on the strength of this worthless gadget I'm quite satisfied with the discovery I've already made. It's sheer accident that when the gentlemen of the signoria first looked through your tube, confident of having acquired something for the republic that could be manufactured only here, they failed to see—seven times magnified—a common peddler on the next corner hawking that same tube for a song. (*Galileo roars with laughter*)

SAGREDO Dear Mr. Priuli, I may not be able to judge the instrument's value to the economy, but its value to philosophy is so enormous that . . .

THE PROCURATOR To philosophy! What business has Mr. Galilei, a mathematician, meddling with philosophy? Mr. Galilei, you once invented a very respectable pump for the city; your irrigation system functions. The weavers, too, are very pleased with your machine. How on earth could I have anticipated anything like this?

GALILEO Not so fast, Priuli. Sea routes are still long, unsafe and expensive. We lack a dependable clock in the sky. A guide to navigation. I have reason to believe that with the telescope we can very clearly perceive certain stars with very regular motions. New star charts, Mr. Priuli, could save the shipping interests millions of scudi.

THE PROCURATOR Forget it. I've heard more than enough. In return for my kindness you've made me the laughingstock of the city. I'll be remembered as the procurator who fell for a worthless telescope. You have every reason to laugh. You've got your five hundred scudi. But I'm telling you, and I speak as an honest man: This world makes me sick! (*He leaves, banging the door behind him*)

GALILEO He's rather likable when he gets angry. Did you hear what he said; A world where you can't do business makes him sick.

SAGREDO Did you know about the Dutch instruments?

GALILEO Of course. From hearsay. But the one I made for those skinflints in the signoria is twice as good. How can I do my work with the bailiff at the door? And Virginia will need her trousseau soon, she's not bright. Besides, I like to buy books, and not only about physics, and I like to eat well. I get my best ideas over a good meal. A rotten time to live in! They weren't paying me as much as the teamster who carts their wine barrels. Four cords of firewood for two courses in mathematics. I've wormed five hundred scudi out of them, but I've got debts, some of them twenty years old. Give me five years of leisure and I'll prove everything. Let me show you something else.

SAGREDO (*hesitates to go to the telescope*) I almost think I'm afraid, Galileo.

GALILEO I want to show you a milky-white patch of luminous mist in the galaxy. Tell me what it's made of.

SAGREDO Why, stars, countless stars.

GALILEO In the constellation of Orion alone there are five hundred fixed stars. Those are the many worlds, the countless other worlds, the stars beyond stars that the man they burned talked about. He didn't see them, but he knew they would be there.

SAGREDO Even if our earth is a star, it's still a long way to Copernicus' contention that the earth revolves around the sun. There isn't any star in the heavens with another revolving around it. And the earth, you'll have to admit, has the moon revolving around it.

GALILEO Sagredo, I wonder. I've been wondering for two days. There's Jupiter. (*He adjusts the telescope*) Now, near it there are four smaller stars that you can only make out through the tube. I saw them on Monday but I didn't pay too much attention to their positions. Yesterday I looked again. I could have sworn that all four had moved. I recorded their positions. Now they're different again. What's that now? There were four of them. (*Getting excited*) You look!

SAGREDO I see three.

GALILEO Where's the fourth? Here are the tables. We must compute the movements they can have made. (*Agitated, they sit down to work. The stage turns dark, but on a cyclorama Jupiter and its satellites remain visible. When it grows light again, they are still sitting there in their winter coats*)

GALILEO Now we have proof. The fourth must have moved behind Jupiter where we can't see it. There you have a star with another revolving around it.

SAGREDO But the crystal sphere that Jupiter is fastened to?

GALILEO Where is it indeed? How can Jupiter be fastened to anything if other stars revolve around it? There is no scaffolding in the sky, there's nothing holding the universe up! There you have another sun!

SAGREDO Calm down. You're thinking too fast.

GALILEO Fast, hell! Man, get excited! You're seeing something that nobody ever saw before. They were right!

SAGREDO Who? The Copernicans?

GALILEO Yes, and you know who. The whole world was against them, and yet they were right. That's something for Andrea! (*Beside himself, he runs to the door and shouts*) Mrs. Sarti! Mrs. Sarti!

SAGREDO Galileo, please calm yourself!

GALILEO Sagredo, please get excited! Mrs. Sarti!

SAGREDO (*turning the telescope aside*) Will you stop yelling like a fool?

GALILEO Will you stop standing there like a stockfish when we've discovered the truth?

SAGREDO I'm not standing here like a stockfish, I'm trembling for fear it's the truth.

GALILEO What?

SAGREDO Have you taken leave of your senses? Don't you realize what you're getting into if what you see is really true? And if you go shouting all over town that the earth is a planet and not the center of the universe?

GALILEO Yes, and that the whole enormous cosmos with all its stars doesn't revolve around our tiny earth, as anyone could have guessed anyway.

SAGREDO So that there's nothing but stars!—But where does that put God?

GALILEO What do you mean?

SAGREDO God! Where's God?

GALILEO (*furious*) Not out there! Any more than He'd be on earth if somebody out there started looking for Him here, SAGREDO Where is God then?

GALILEO Am I a theologian? I'm a mathematician.

SAGREDO First of all you're a human being. And I ask you: Where is God in your world system?

GALILEO Inside us or nowhere!

SAGREDO (*shouting*) As the man who was burned said?

GALILEO As the man who was burned said!

SAGREDO That's why he was burned! Less than ten years ago!

GALILEO Because he couldn't prove it! Because all he could do was say so! Mrs. Sarti!

SAGREDO Galileo, I know you're a clever man. For three years in Pisa and seventeen here in Padua you've patiently instructed hundreds of students in the Ptolemaic system as advocated by the church and confirmed by the scriptures on which the church is grounded. Like Copernicus you thought it was wrong, but you taught it.

GALILEO Because I couldn't prove anything.

SAGREDO (*incredulous*) You think that makes a difference?

GALILEO All the difference in the world! Look here, Sagredo! I believe in man and that means I believe in reason. Without that belief I wouldn't have the strength to get out of bed in the morning.

SAGREDO Then let me tell you this: I don't believe in reason. Forty years' experience has taught me that human beings are not accessible to reason. Show them a comet with a red tail, put dark fear into them, and they'll rush out of their houses and break their legs. But make a reasonable statement, prove it with seven good reasons, and they'll just laugh at you.

GALILEO That's all wrong and it's slander. I don't see how you can love science if you believe that. Only the dead are impervious to argument.

SAGREDO How can you mistake their contemptible cunning for reason?

GALILEO I'm not talking about their cunning. I know they call a donkey a horse when they're selling and a horse a donkey when they're buying. That's their cunning. But the old woman with calloused hands who gives her mule an extra bunch of hay the night before setting out on a trip; the sea captain who allows for storms and doldrums when he lays in his stores; the child who puts on his cap when he realizes that it may rain—these people are my hope, they accept the law of cause and effect. Yes, I believe in the gentle force of reason, in the long run no one can resist it. Nobody can watch me drop (*He lets a pebble fall from his hand to the floor*) a pebble and say: It doesn't fall. Nobody can do that. The seduction of proof is too strong. Most people will succumb to it and in time they all will. Thinking is one of the greatest pleasures of the human race.

MRS. SARTI (*comes in*) Did you want something, Mr. Galilei?  
GALILEO (*back at the telescope, scribbling notes, very kindly*) Yes, I want Andrea.  
MRS. SARTI Andrea? But he's in bed, he's sound asleep.  
GALILEO Can't you wake him?  
MRS. SARTI What do you want him for, may I ask?  
GALILEO I want to show him something that'll please him. He's going to see something that no one but us has ever seen since the earth began.  
MRS. SARTI Something through your tube?  
GALILEO Something through my tube, Mrs. Sarti.  
MRS. SARTI And for that you want me to wake him in the middle of the night? Are you out of your mind? He needs his sleep. I wouldn't think of waking him.  
GALILEO Not a chance?  
MRS. SARTI Not a chance.  
GALILEO Mrs. Sarti, in that case maybe you can help me. You see, a question has come up that we can't agree on, perhaps because we've read too many books. It's a question about the sky, involving the stars. Here it is: Which seems more likely, that large bodies turn around small bodies or small bodies around large ones?  
MRS. SARTI (*suspiciously*) I never know what you're up to, Mr. Galilei. Is this a serious question or are you pulling my leg again?  
GALILEO A serious question.  
MRS. SARTI Then I can give you a quick answer. Do I serve your dinner or do you serve mine?  
GALILEO You serve mine. Yesterday it was burned.  
MRS. SARTI And why was it burned? Because you made me get your shoes while I was cooking it. Didn't I bring you your shoes?  
GALILEO I presume you did.  
MRS. SARTI Because it's you who went to school and can pay.  
GALILEO I see. I see there's no difficulty. Good morning, Mrs. Sarti.  
(*Mrs. Sarti, amused, goes out*)  
GALILEO And such people are supposed not to be able to grasp the truth? They snatch at it.  
(*The matins bell has begun to peal. In comes Virginia in a cloak, carrying a shaded candle*)  
VIRGINIA Good morning, father.  
GALILEO Up so early?  
VIRGINIA I'm going to matins with Mrs. Sarti. Ludovico will be there too. How was the night, father?  
GALILEO Clear.  
VIRGINIA May I look through it?  
GALILEO What for? (*Virginia has no answer*) It's not a toy.  
VIRGINIA I know, father.  
GALILEO By the way, the tube's a big flop. You'll hear all about it soon. It's being sold on the street for three scudi, it was invented in Holland.  
VIRGINIA Didn't you find anything new in the sky with it?  
GALILEO Nothing for you. Only a few dim specks on the left side of a big star, I'll have to find a way of calling attention to them. (*Speaking to Sagredo over his daughter's head*) Maybe I'll call them the "Medicean Stars" to please the grand duke of Florence. (*Again to*

*Virginia*) It may interest you, Virginia, to know that we'll probably move to Florence. I've written to ask if the grand duke can use me as court mathematician.

VIRGINIA (*radiant*) At court?

SAGREDO Galileo!

GALILEO I need leisure, old friend. I need proofs. And I want the fleshpots. With a position like that I won't have to ram the Ptolemaic system down the throats of private students, I'll have time—time, time, time, time!—to work out my proofs. What I've got now isn't enough. It's nothing, it's just bits and pieces. I can't stand up to the whole world with that. There's still no proof that any heavenly body revolves around the sun. But I'm going to find the proofs, proofs for everybody from Mrs. Sarti to the pope. The only thing that worries me is that the court may not want me.

VIRGINIA Oh, I'm sure they'll take you, father, with your new stars and all.

GALILEO Go to your mass. (*Virginia leaves*)

GALILEO I'm not used to writing letters to important people. (*He hands Sagredo a letter*) Do you think this will do?

SAGREDO (*reading aloud the end of the letter which Galileo has handed him*) "Withal I am yearning for nothing so much as to be nearer to Your Highness, the rising sun which will illuminate this age." The grand duke of Florence is nine years old.

GALILEO I know. I see, you think my letter is too servile. I wonder if it's servile enough, not too formal, as if I were lacking in genuine devotion. A more restrained letter might be all right for someone with the distinction of having proved the truth of Aristotle; not for me. A man like me can only get a halfway decent position by crawling on his belly. And you know I despise men whose brains are incapable of filling their stomachs.

(*Mrs. Sarti and Virginia walk past the two men on their way to mass*)

SAGREDO Don't go to Florence, Galileo. Why not?

SAGREDO Because it's ruled by monks.

GALILEO There are distinguished scholars at the Florentine court.

SAGREDO Toadies.

GALILEO I'll take them by the scruff of their necks and drag them to my tube. Even monks are human beings, Sagredo. Even monks can be seduced by proofs. Copernicus—don't forget that—wanted them to trust his figures, I'm only asking them to trust the evidence of their eyes. When truth is too weak to defend itself, it has to attack. I'll take them by the scruff of their necks and make them look through the tube.

SAGREDO Galileo, you're on a dangerous path. It's bad luck when a man sees the truth. And delusion when he believes in the rationality of the human race. Who do we say walks with open eyes? The man who's headed for perdition. How can the mighty leave a man at large who knows the truth, even if it's only about the remotest stars? Do you think the pope will hear your truth when you tell him he's wrong? No, he'll hear only one thing, that you've said he's wrong. Do you think he will calmly write in his diary: January 10, Heaven abolished? How can you want to leave the republic with the truth in your pocket and walk straight into the trap of the monks and princes with your tube in your hands? You may be very skeptical in your science, but you're as gullible as a child about anything that looks like a help in pursuing it. You may not believe in Aristotle, but you believe in the grand duke of Florence. A moment ago when I saw

you at your tube looking at the new stars I thought I saw you on a flaming pyre and  
when you said you believed in proofs I smelted burnt flesh. I love science, but I love  
you more, my friend, don't go to Florence!

GALILEO If they'll have me I'll go-

*(On a curtain appears the last page of the letter)*

In assigning the sublime name of the Medicean line to these stars newly discovered  
by me I am fully aware that when gods and heroes were elevated to the starry skies they  
were thereby glorified, but that in the present case it is the stars that will be glorified by  
receiving the name of the Medici. With this I recommend myself as one among the number of  
your most faithful and obedient servants, who holds it the highest honor to have been born your  
subject. Withal I yearn for nothing so much as to be nearer to Your Highness, the rising sun  
which will illuminate this age

Galileo has exchanged the Venetian republic for the court of Florence. The discoveries he has made with the help of the telescope are met with disbelief by the court scholars.

The old says: What I've always done I'll always do.  
The new says: If you're useless you must go.

*Galileo's house in Florence. Mrs. Sarti is getting Galileo's study ready to receive guests. Her son Andrea is seated, putting celestial charts away.*

MRS. SARTI Ever since we arrived in this marvelous Florence I've seen nothing but bowing and scraping. The whole town files past this tube and I can scrub the floor afterwards. But it won't do us a bit of good. If these discoveries amounted to anything, the reverend fathers would know it, wouldn't they? For four years I was in service with Monsignor Filippo, I never managed to dust the whole of his library. Leather-bound volumes up to the ceiling and no love poems either. And the good monsignor had two pounds of boils on his behind from poring over all that learning. Wouldn't a man like that know what's what? The big demonstration today will be another flop and tomorrow I won't be able to look the milkman in the face. I knew what I was saying when I told him to give the gentlemen a good dinner first, a nice piece of lamb, before they start in on his tube. Oh no! *(She imitates Galileo)* "I've got something better for them."  
*(Knocking downstairs)*

MRS. SARTI *(looks in the window-mirror)* Goodness, there's the grand duke already. And Galileo still at the university! *(She runs downstairs and admits Cosmo de' Medici, grand duke of Tuscany, accompanied by the lord chamberlain and two ladies-in-waiting).*

COSMO I want to see the tube.

THE LORD CHAMBERLAIN Perhaps Your Highness would prefer to wait until Mr. Galilei and the other gentlemen have returned from the university.  
*(To Mrs. Sarti)* Mr. Galilei wanted the professors of astronomy to examine the newly discovered stars which he calls the Medicean stars.

COSMO They don't believe in the tube, far from it. Where is it?

MRS. SARTI Upstairs, in his workroom.

*(The boy nods, points to the staircase, and upon a nod from Mrs. Sarti dashes up the stairs)*

THE LORD CHAMBERLAIN Your Highness! *(To Mrs. Sarti)* Must we go up there? I only came because the tutor is ill.

MRS. SARTI Nothing can happen to the young gentleman. My boy's upstairs. COSMO *(entering above)* Good evening.  
*(The two boys ceremoniously bow to each other. Pause, Then Andrea goes back to his work)*

ANDREA *(much like his teacher)* This place is as busy as a pigeon house.

COSMO Lots of visitors?

ANDREA Stumble about and gape and don't know beans. COSMO I see. Is that . . . ?

*(Points at the tube)*

ANDREA Yes, that's it. But don't touch it. It's not allowed.

COSMO And what's that? *(He indicates the wooden model of the Ptolemaic system)*

ANDREA That's the Ptolemaic system.

COSMO It shows how the sun moves, doesn't it?

ANDREA Yes, so they say.

COSMO *(sitting down in a chair, he takes the model on his knees)* My tutor has a cold. So I was able to get away early. It's nice here.

ANDREA *(is restless, ambles about irresolutely, throwing suspicious glances at the strange boy, and at last, unable to resist the temptation any longer, takes from behind the star charts another wooden model representing the Copernican system)*

But of course it's really like this.

COSMO What's like this?

ANDREA *(pointing at the model on Cosmo's knees)* That's the way people think it is and that's *(Pointing at his model)* the way it really is. The earth turns around the sun. See?

COSMO You really think so?

ANDREA Of course. It's been proven.

COSMO You don't say!—I wish I knew why they didn't let me go in to see the old man. Last night he was at dinner as usual.

ANDREA You don't seem to believe it, or do you?

COSMO Why certainly, I do.

ANDREA *(pointing at the model on Cosmo's knees)* Give it back, you don't even understand that one!

COSMO But you don't need two.

ANDREA Give it back this minute. It's not a toy for little boys.

COSMO I don't mind giving it back but you ought to be a little more polite, you know.

ANDREA You're stupid and I don't care about being polite. Give it back or you'll see.

COSMO Hands off, do you hear.

*(They start fighting and are soon rolling on the floor)*

ANDREA I'll show you how to treat a model. Give up!

COSMO You've broken it. You're twisting my hand.

ANDREA We'll see who's right and who isn't. Say it turns or I'll box your ears.

COSMO I won't. Ouch, you redhead. I'll teach you good manners.

ANDREA Redhead? Am I a redhead?

*(They continue to fight in silence. Below, Galileo and several university professors enter. Behind them Federzoni)*

THE LORD CHAMBERLAIN Gentlemen, a slight illness has prevented Mr. Suri, His Highness' tutor, from accompanying His Highness.

THE PHILOSOPHER Nothing serious, I hope.

THE LORD CHAMBERLAIN No, no, by no means.

GALILEO *(disappointed)* Isn't His Highness here?

THE LORD CHAMBERLAIN His Highness is upstairs. May I ask you gentlemen to proceed. The court is so very anxious to hear the opinion of our illustrious university about Mr. Galilei's extraordinary instrument and those marvelous new stars.

*(They go upstairs)*

*(The boys lie still. They have heard sounds downstairs)*

COSMO Here they come. Let me up.

*(They quickly get up)*

*(Salutations upstairs)*

GALILEO Your Highness, I am extremely pleased that you should be present while I communicate our new discoveries to the gentlemen of your university.

*(Cosmo makes formal bows to all, including Andrea)*

THE PHILOSOPHER *(seeing the broken Ptolemaic model on the floor)*

There seems to have been some breakage here.

*(Cosmo stoops quickly and hands the model politely to Andrea. At the same time Galileo slyly puts away the other model)*

GALILEO *(at the telescope)* As Your Highness no doubt knows, we astronomers have for some time been encountering great difficulties in our calculations. We are using a very old system which seems to be in agreement with philosophy but unfortunately not with the facts. According to this old system, the Ptolemaic system, the movements of the planets are extremely complicated. Venus, for instance, is supposed to move something like this. *(He sketches on a blackboard the epicyclic course of Venus according to Ptolemy)* But if we predicate these complicated movements, we are unable to calculate the position of any star accurately in advance. We do not find it in the place where it should be. Furthermore there are stellar motions for which the Ptolemaic system has no explanation at all. According to my observations, certain small stars I have discovered describe motions of this kind around the planet Jupiter. If you gentlemen are agreeable, we shall begin with the inspection of the satellites of Jupiter, the Medicean stars.

ANDREA *(pointing to the stool in front of the telescope)* Kindly sit here.

THE PHILOSOPHER Thank you, my child. I'm afraid it will not be so simple. Mr. Galilei, before we apply ourselves to your famous tube, we should like to request the pleasure of a disputation: Can such planets exist?

GALILEO I thought you'd just look through the telescope and see for yourselves.

ANDREA Here, if you please.

THE MATHEMATICIAN Yes, yes.—You are aware, of course, that in the view of the ancients no star can revolve around any center other than the earth and that there can be no stars without firm support in the sky.

GALILEO Yes.

THE PHILOSOPHER And, regardless of whether such stars are possible, a proposition which the mathematician *(He bows to the mathematician)* seems to doubt, I as a philosopher should like with all due modesty to raise this question: Are such stars necessary?

GALILEO The cosmos of the divine Aristotle with its spheres and their mystical music, with its crystal vaults and the circular courses of its heavenly bodies, with the oblique angle of the sun's course and the mysteries of its tables of satellites and the wealth of stars in the catalog of the southern hemisphere and the inspired construction of the celestial globe is an edifice of such order and beauty that we shall be well advised not to disturb its harmony.

GALILEO Your Highness, would you care to observe those impossible and unnecessary stars through the telescope?

THE MATHEMATICIAN One might be tempted to reply that if your tube shows something that cannot exist it must be a rather unreliable tube.

GALILEO What do you mean by that?

THE MATHEMATICIAN It certainly would be much more to the point, Mr. Galilei, if you were to tell us your reasons for supposing that there can be free-floating stars moving about in the highest sphere of the immutable heavens.

THE PHILOSOPHER Reasons, Mr. Galilei, reasons!

GALILEO My reasons? When a look at these stars and my calculations demonstrate the phenomenon? This debate is getting absurd, sir.

THE MATHEMATICIAN If it were not to be feared that you would get even more excited than you are, one might suggest that what is in your tube and what is in the sky might be two different things.

THE PHILOSOPHER It would be difficult to put it more politely.

GALILEO You accuse me of fraud?

THE PHILOSOPHER We wouldn't dream of it! In the presence of His Highness!

THE MATHEMATICIAN Your instrument, whether we call it your own or your adoptive child, has doubtless been very cleverly constructed.

THE PHILOSOPHER And we are convinced, Mr. Galilei, that neither you nor anyone else would ever dare to grace stars with the illustrious name of the ruling house if there were the slightest doubt of their existence.  
*(All bow deeply to the grand duke)*

COSMO *(turning to the ladies-in-waiting)* Is there something wrong with my stars?

LORD CHAMBERLAIN Your Highness' stars are fine. The gentlemen are only wondering whether they really and truly exist. *(Pause)*

ANDREA Yes, and you can see all sorts of things on the Bull.

GALILEO Are you gentlemen going to look through it, or not?

THE PHILOSOPHER Certainly, certainly.

THE MATHEMATICIAN Certainly.  
*(Pause. Suddenly Andrea turns around and walks stiffly out through the length of the room. His mother intercepts him)*

MRS. SARTI What's got into you?

ANDREA They're stupid. *(Tears himself loose and runs away)*

THE PHILOSOPHER A deplorable child.

THE LORD CHAMBERLAIN Your Highness, gentlemen, may I remind you that the state ball is due to start in forty-five minutes?

THE MATHEMATICIAN Why beat about the bush? Sooner or later Mr. Galilei will have to face up to the facts. His moons of Jupiter would pierce the crystal sphere. That's all there is to it.

ANDREA You'll be surprised, but there is no crystal sphere.

THE PHILOSOPHER Any textbook will tell you there is, my good man.

ANDREA Then we need new textbooks.

THE PHILOSOPHER Your Highness, my esteemed colleague and I are supported by no less an authority than the divine Aristotle,

GALILEO *(almost abjectly)* Gentlemen, belief in the authority of Aristotle is one thing, observable facts are another. You say that according to Aristotle there are crystal spheres up there and that certain motions are impossible because the stars would have to pierce the spheres. But what if you observed these motions? Wouldn't that suggest to you that the spheres do not exist? Gentlemen, I humbly beseech you to trust your own eyes.

THE MATHEMATICIAN My dear Galilei, though it may seem dreadfully old-fashioned to you, I'm in the habit of reading Aristotle now and then, and I can assure you that when I read Aristotle I do trust my eyes.

GALILEO I'm used to seeing the gentlemen of all faculties close their eyes to all facts and act as if nothing had happened. I show them my calculations, and they smile; I make my telescope available to help them see for themselves, and they quote Aristotle.

ANDREA The man had no telescope!

THE MATHEMATICIAN Exactly!

THE PHILOSOPHER (*grandly*) If Aristotle, an authority acknowledged not only by all the scientists of antiquity but by the church fathers themselves, is to be dragged through the mire, a continuation of this discussion seems superfluous, at least to me. I refuse to take part in irrelevant arguments. Basta.

GALILEO Truth is the child of time, not of authority. Our ignorance is infinite, let's whittle away just one cubic millimeter. Why should we still want to be so clever when at long last we have a chance of being a little less stupid? I've had the good fortune to lay hands on a new instrument with which we can observe a tiny corner of the universe a little more closely, not much though. Make use of it. THE PHILOSOPHER Your Highness, ladies and gentlemen, I can only wonder what all this will lead to.

GALILEO I submit that as scientists we have no business asking what the truth may lead to.

THE PHILOSOPHER (*in wild alarm*) Mr. Galilei, the truth can lead to all sorts of things!

GALILEO Your Highness. In these nights telescopes are being directed at the sky all over Italy. The moons of Jupiter don't lower the price of milk. But they have never been seen before, and yet they exist. The man in the street will conclude that a good many things may exist if only he opens his eyes. And you ought to back him up. It's not the motions of some remote stars that make Italy sit up and take notice, but the news that doctrines believed to be unshakeable are beginning to totter, and we all know that of these there are far too many. Gentlemen, we oughtn't to be defending shaky doctrines!

GALILEO Your Highness! My work in the great arsenal of Venice brought me into daily contact with draftsmen, architects and instrument makers. Those people taught me many new ways of doing things. They don't read books but they trust the testimony of their five senses, most of them without fear as to where it will lead them . . .

THE PHILOSOPHER Fancy that!

GALILEO Very much like our seamen who left our shores a hundred years ago, without the slightest idea of what other shores, if any, they might reach. It looks as if we had to go to the shipyards nowadays to find the high curiosity that was the glory of ancient Greece.

THE PHILOSOPHER After what we have heard here today, I have no doubt that Mr. Galilei will find admirers in the shipyards.

THE LORD CHAMBERLAIN Your Highness, I note to my great dismay that this exceedingly instructive conversation has taken a little longer than foreseen. Your Highness must rest a while before the court ball.

(*At a signal, the grand duke bows to Galileo. The court quickly prepares to leave*)

MRS. SARTI (*stepping in the way of the grand duke and offering him a plate of pastry*) A bun, Your Highness? (*The older lady-in-waiting leads the grand duke away*)

GALILEO (*running after them*) But all you gentlemen need do is look through the instrument.

THE LORD CHAMBERLAIN His Highness will not fail to obtain an expert opinion on your statements by consulting our greatest living astronomer, Father Christopher Clavius, astronomer-in-chief at the papal college in Rome.

Undaunted even by the plague, Galileo continues his investigations.

a)

*Early morning. Galileo bending over his notes at the telescope. Virginia comes in with a traveling bag.*

GALILEO Virginia! Is anything wrong?

VIRGINIA The convent is closed. They sent us home. There are five cases of plague in Arcetri.

GALILEO *(calls out)* Sarti!

VIRGINIA And last night our market was roped off. They say two people have died in the old city, and there are three more dying in the hospital.

GALILEO As usual, they've hushed it up until the last minute. MRS. SARTI *(comes in)* What are you doing here?

VIRGINIA The plague.

MRS. SARTI My God! I'd better pack. *(Sits down)*

GALILEO No need to pack. Take Virginia and Andrea. I'll go get my notes. *(He hurries back to the table and gathers his papers in great haste. Mrs. Sarti puts a coat on Andrea as he runs in, and goes to get some food and bedding. Picks up mail and reads)* His Highness has left the city for Bologna because of the raging disease. Before leaving he insisted that you should be given an opportunity to escape. The coach will be here soon.

MRS. SARTI *(to Virginia and Andrea)* Go right outside, you two. Here, take this.

ANDREA Why? If you don't tell me why, I won't go.

MRS. SARTI It's the plague, my child.

VIRGINIA We'll wait for father.

MRS. SARTI Mr. Galilei, are you ready?

GALILEO *(wrapping the telescope in a tablecloth)* Put Virginia and Andrea in the coach. I'll join you in a minute.

VIRGINIA No, we won't leave without you. You'll never be ready if you start packing your books.

MRS. SARTI The carriage is here.

GALILEO Be reasonable, Virginia. If no one gets in, the coachman will just drive away. The plague is no joke.

VIRGINIA *(protesting as Mrs. Sarti leads her and Andrea out)* Help him with his books or he won't come.

MRS. SARTI *(calls out from the house door)* Mr. Galilei! The coachman says he won't wait.

GALILEO Mrs. Sarti, I don't think I should leave. Everything is in such a muddle here, you know, all my notes of the last three months, I might as well throw them away if I don't go on with them for a night or two. And anyway the plague is everywhere.

MRS. SARTI Mr. Galilei! Come this minute! You're out of your mind.

GALILEO You go with Virginia and Andrea. I'll come later.

MRS. SARTI In another hour they won't let anyone leave the city. You must come! *(Listens)* He's driving off! I've got to stop him. *(Out)*

*(Galileo walks hack and forth. Mrs. Sarti returns, very pale, without her bundle)*

GALILEO Don't stand around like that! The coach with the children will leave without you.

MRS. SARTI They've left. They had to hold Virginia down. The children will be taken care of in Bologna. But who'd get you your meals?

GALILEO You're crazy. Staying in the city to cook! . . . , *(Takes up his papers)* You mustn't take me for a fool, Mrs. Sarti. I can't interrupt my observations. I have powerful enemies, I've got to supply proofs for certain propositions.

MRS. SARTI You needn't apologize. But it's not reasonable.

b)

*Outside Galileo's house in Florence. Galileo comes out of the door and looks down the street. Two, nuns are passing by.*

GALILEO *(addresses them from above the window)* Sisters, could you tell me where I can buy milk? This morning the milk woman didn't come, and my housekeeper is away.

*(man passes)*

GALILEO *(addresses man)* Aren't you the baker who brings us our bread? Have you seen my housekeeper? She must have gone out last night. She hasn't been here all morning.

*(The man shakes his head. A window across the street is opened and a woman looks out)*

GALILEO Do you know anything about my housekeeper?

THE WOMAN Your housekeeper collapsed in the street. Up there. She must have known. That's why she left you. How can people be so inconsiderate? *(She bangs the window shut)*

GALILEO *(at a window addressing other people on the street)* Can you tell me what's happened to the woman?

THE WOMAN *(appears at her window again)* They take 'em to potter's field. The whole street back there's infected. Why don't you close it off?

*(The soldiers stretch a rope across the street)*

THE WOMAN But now nobody can get into our house! Don't put your rope there. We're all well here. Stop! Stop! Can't you hear? My son's gone to the city, he won't be able to get back. You beasts! You beasts!

*(Her sobbing and screaming are heard from inside.)*

GALILEO There seems to be a fire back there.

THE WOMAN The firemen won't touch it if there's any suspicion of plague. All they can think about is the plague.

GALILEO Just like them! Their whole system of government is like that. They cut us off like a withered fig branch that's stopped bearing fruit.

THE WOMAN You mustn't say that. They're helpless, that's all.

GALILEO Are you alone in your house?

THE WOMAN Yes. My son sent me a note. Thank God he heard last night that

someone had died around here, so he didn't come home. There've been eleven cases in the neighborhood during the night.

GALILEO I can't forgive myself for not sending my housekeeper away in time. I had urgent work to finish, but she had no reason to stay.

THE WOMAN We can't go away either. Who would take us in? You mustn't reproach yourself. I saw her. She left this morning, at about seven o'clock. She was sick, because when she saw me step out to bring in the bread she circled around me. I suppose she didn't want your house to be sealed off. But they get wise to everything.

*(A rattling sound is heard)*

GALILEO What's that?

THE WOMAN They're making noise to drive away the clouds that carry the seeds of the plague.

*(Galileo roars with laughter)*

THE WOMAN How can you laugh?

*(A man comes down the street and finds it roped off)*

GALILEO Hey, you! The street's closed and there's nothing to eat in the house.

*(The man has already run away)*

GALILEO You can't just let us starve here! Hey! Hey!

THE WOMAN Maybe they'll bring us something. If they don't, I can put a pitcher of milk on your doorstep, if you're not afraid, but not until after dark.

GALILEO Hey! Hey! Somebody ought to hear us.

*(Suddenly Andrea stands at the rope. His face is stained with tears)*

GALILEO Andrea! How did you get here?

ANDREA I was here this morning. I knocked, but you didn't open. People told me . . .

GALILEO Didn't you go away?

ANDREA I did. But I managed to jump out. Virginia went on. Can I come in?

THE WOMAN No, you can not. You must go to the Ursulines. Maybe your mother is there too.

ANDREA I've been there. But they wouldn't let me see her. She's too sick.

GALILEO Did you walk the whole way back? You've been gone for three days.

ANDREA That's how long it took, don't be angry. And once they caught me.

GALILEO *(helplessly)* Don't cry, Andrea. You know, I've found out a few things in the meantime. Shall I tell you? *(Andrea nods, sobbing)* But listen carefully, or you won't understand. Remember when I showed you the planet Venus? Don't listen to that noise, it's nothing. Remember? You know what I saw? It's like the moon. I saw it as a half-circle and I saw it as a crescent. What do you think of that? I can show you the whole thing with a little ball and a lamp. It proves that Venus has no light of its own either. And it describes a simple circle around the sun, isn't that marvelous?

ANDREA *(sobbing)* Yes, and that's a fact.

GALILEO *(softly)* I didn't stop her from leaving. *(Andrea is silent)*

GALILEO But of course if I hadn't stayed it wouldn't have happened.

ANDREA Will they have to believe you now?

GALILEO I've got all the proofs I need. You know what? When all this is over, I'll go to Rome and show them.

*(Two muffled men -with long poles and buckets come down the street. With the poles they hold out bread to Galileo and the old woman in their windows)*

THE WOMAN There's a woman with three children over there. Give her some too.

GALILEO I've nothing to drink. There's no water in the house.

*(The two shrug their shoulders)* Will you be back tomorrow?

GALILEO If you do come, could you reach up to me a little book that I need for my work?

GALILEO This boy, my pupil, will be here to give it to you. It's a table showing the period of Mercury, Andrea. I've mislaid mine. Will you find me one at school?

*(The men have already moved on)*

ANDREA Sure. I'll get it for you, Mr. Galilei. *(Out)*

*(Galileo retires. The old woman steps out of the house opposite and places a pitcher at Galileo's door)*

1616: The Collegium Romanum, the research institute of the Vatican, confirms Galileo's discoveries.

Things take indeed a wondrous turn  
When learned men do stoop to learn.  
Clavius, we are pleased to say  
Upheld Galileo Galilei.

*Large hall in the Collegium Romanum, Rome. It is night. High ecclesiastics, monks, scholars, in groups. Galileo on one side, alone. Great merriment. Before the scene opens, boisterous laughter is heard.*

\*PRE-RECORDED -

A FAT PRELATE (*holds his belly for laughter*) Oh stupidity! Oh stupidity! Can anyone tell me of a proposition that has *not* been believed?

A SCHOLAR What about the proposition that you have an unconquerable aversion to food, monsignor! THE FAT PRELATE Will be believed, never fear. Only reasonable statements are not believed. The existence of the devil is being doubted. But that the earth spins around like a marble in a gutter, that's being believed. Sancta simplicitas!

A MONK (*acting out a comedy*) I'm dizzy. The earth is turning too fast. Permit me to hold on to you, professor. (*He pretends to stagger and holds on to a scholar*)

THE SCHOLAR (*joining in the fun*) Yes, she's dead drunk again, the old hag.

THE MONK Stop, stop! We're sliding off! Stop, I say!

ANOTHER SCHOLAR Venus is listing badly. I can only see half of her behind. Help!

ANOTHER MONK If only we don't get thrown on the moon. Brothers, they say it bristles with sharp mountain peaks!

THE FIRST SCHOLAR Plant your foot against it.

THE FIRST MONK And don't look down. I feel as sick as a monkey.

THE FAT PRELATE (*pointedly loud in Galileo's direction*) What! Monkey business in the Collegium Romanum? (*Loud laughter. Two astronomers of the Collegium come out of a door. Quiet sets in*)

A MONK Still investigating? That's a scandal!

ANOTHER ASTRONOMER (*angrily*) Not us!

THE ASTRONOMER Where's this going to end? I can't understand Clavius . . . Are all the claims made in the last fifty years to be taken at face value? In 1572 a new star appeared in the highest sphere, the eighth, the sphere of the fixed stars. It was rather larger and brighter than its neighbors and a year and a half later it was gone, overtaken by perdition. Is that any reason to question the eternal immutability of the heavens?

THE PHILOSOPHER If we let them, they'd smash up the whole universe.

THE ASTRONOMER Yes, what's the world coming to! Five years later, Tycho Brahe,

a Dane, determined the trajectory of a comet. It started above the moon and broke through all the spheres, the material carriers of all movable celestial bodies. It met with no resistance, its light was not deflected. Is that any reason to doubt the existence of the spheres?

THE PHILOSOPHER Out of the question! How can Christopher Clavius, the greatest astronomer of Italy and of the church, lower himself to investigating such stuff!

I THE FAT PRELATE Scandalous!\*

ASTRONOMER But there he is, investigating. There he sits, gaping through that devil's tube..Principiis obsta! The whole trouble began years ago when we started using the tables of Copernicus—a heretic—for calculating such things as the length of the solar year, the dates of solar and lunar eclipses, the positions of the celestial bodies.

A MONK I ask you: What is better, to get a lunar eclipse three days behind schedule or to miss out on eternal salvation altogether? \*

A VERY THIN MONK (*steps forward with an open Bible, fanatically stabbing his finger at a passage*) What does the Book say? "Sun, stand thou still upon Gibeon; and thou, moon, in the valley of Ajalon." How can the sun stand still if it never moves as these heretics claim? Does the Book lie?

ASTRONOMER No, and that's why we're leaving. Yes, there *are* phenomena that perplex us astronomers, but must man understand everything? (*Goes out*)

THE VERY THIN MONK They degrade the home of mankind, a planet they call it. They load man, animal, plant and soil on a cart and chase it in circles through the empty sky. Heaven and earth, they claim, have ceased to exist. The earth because it's a star in the sky, and the sky because it consists of many earths. There's no longer any difference between above and below, between eternal and transient. That we are transient, that we know. But now they tell us that heaven itself is transient. There are sun, moon and stars, but we live on this earth, that's what we've learned and what the Book says; but now, according to them, the earth is just another star. One day they'll be saying there's no difference between man and beast, that man himself is an animal and only animals exist.

THE FIRST SCHOLAR (*to Galileo*) Mr. Galilei, you've dropped something. \*

GALILEO (*who had taken his pebble out of his pocket during the preceding speech and dropped it on the floor, as he stoops to pick it up*) It didn't drop, monsignor, it rose.

THE FAT PRELATE (*turns his back on him*) The insolence of the man! \*

(*A very old cardinal comes in, supported by a monk. The others reverentially make room for him*)

THE VERY OLD CARDINAL Are they still in there? Can't they get this foolishness over with? Surely Clavius knows his astronomy. I hear this Mr. Galilei has moved man from the center of the universe to somewhere on the edge. Obviously he's an enemy of mankind. And ought to be treated as such. Man is the crown of creation, every child knows that, he's God's

highest and most beloved creature. Would God have put his most marvelous work, his supreme effort on a little far-away star that's constantly on the move? Would he have sent His Son to such a place? How can there be men so perverse as to believe these slaves of their mathematical tables? How can one of God's creatures put up with such a thing?

| THE FAT PRELATE (*in an undertone*) The gentleman is present. \*

THE VERY OLD CARDINAL (*to Galileo*) Oh, you're the man? You know, I don't see too well any more, but I can see that you look remarkably like the man — what was his name again? — whom we burned a few years ago. You want to degrade our earth, though you live on it and receive everything from it. You're fouling your own nest! But I for one will not stand for it.

I'm not some nondescript being on some little star that briefly circles around somewhere. I walk with assurance on a firm earth, it stands still, it is the center of the universe, I am in the center, and the Creator's eye rests on me, on me alone. Around me, fixed to eight crystal spheres, revolve the fixed stars and the mighty sun, which was created to illumine my surroundings. And myself as well, in order that God may see me. Hence obviously and irrefutably, everything depends on me, man, the supreme work of God, the creature in the center, the image of God, imperishable and . . . (*He collapses*)

(*At this moment the door in the rear is opened and the great Clavius comes in at the head of his astronomers. Quickly, without a word or a glance aside, he traverses the hall and, near the exit, says to a monk*)

CLAVIUS He's right.

(*He goes out, followed by the astronomers. The door in the rear remains open. Deadly silence. The very old cardinal revives*)

THE VERY OLD CARDINAL What happened? Has there been a decision? (*No one dares to tell him*)

(*The old man is helped out. All leave the hall, perturbed. A little monk, a member of Clavius' investigating commission, stops at Galileo side*)

THE LITTLE MONK (*furtively*) Mr. Galilei, before he left Father Clavius said: Now the theologians can see about setting the heavenly spheres right again. You have prevailed.

GALILEO (*trying to hold him back*) It has prevailed. Not I, reason has prevailed!

(*In the doorway he meets a tall cleric, the cardinal inquisitor, accompanied by an astronomer. Galileo bows. Before going out, he whispers a question to Little Monk*)

LITTLE MONK (*whispering back*) His Eminence the cardinal inquisitor.

(*The astronomer leads the cardinal inquisitor to the telescope*)

But the Inquisition places the Copernican doctrine on the Index (March 5, 1616).

When Galileo was in Rome  
A cardinal asked him to his home.  
He wined and dined him as his guest  
And only made one small request.

*The house of Cardinal Bellarmine in Rome. A ball is in progress. In the vestibule, where two ecclesiastical secretaries are playing chess and exchanging observations about the guests, Galileo is received by an applauding group of masked ladies and gentlemen. He is accompanied by his daughter Virginia and her fiance" Ludovico Mar-sill*

VIRGINIA I won't dance with anyone else, Ludovico.

LUDOVICO Your shoulder clasp is loose.

GALILEO

"Your tucker, Thai's, is askew. Don't  
Set it straight, for preciously it shows me  
And others too some deeper disorder.  
In the candlelight of the swirling ballroom  
It makes them dream of  
Darker coigns in the expectant park."

VIRGINIA Feel my heart.

GALILEO (*places his hand on her heart*) It's beating.

VIRGINIA I want to look beautiful, GALILEO You'd better, or else they'll start  
doubting again that the earth revolves.

LUDOVICO It doesn't revolve at all. (*Galileo laughs*) All Rome is talking of nothing  
but you, sir. After tonight Rome will be talking about your daughter.

GALILEO Everybody agrees that it's easy to look beautiful in the Roman spring. I  
myself probably look like a paunchy Adonis,

(*To the secretary*) I'm to wait here for the cardinal. (*To the  
couple*) Run along and enjoy yourselves!

(*Before they reach the ballroom in the rear Virginia skips back once more*)

VIRGINIA Father, the hairdresser on Via del Trionfo took me first and made four  
ladies wait. He knew your name right away. (*Out*)

GALILEO (*to the secretaries playing chess*) How can you go on playing chess the old  
way? Too confined. As it's played now, the larger pieces can range over  
many fields. The rook goes like this (*He demonstrates it*) and the bishop like  
this, and the queen like this and this. That gives you plenty of room and you  
can plan ahead.

THE SECRETARY It doesn't fit in with our small salaries. We can only afford to  
move like this. (*He makes a short move*)

GALILEO It's the other way round, my friend. If you live grandly, you can get  
away with anything. You must go with the times, gentlemen. You mustn't

keep hugging the shore, one fine day you must venture out on the high seas.  
*(The very old cardinal of the previous scene crosses the stage, steered by his monk. He notices Galileo, passes him by, then turns uncertainly and greets him. Galileo sits down. The beginning of Lorenzo de' Medicos famous poem about the transience of the world is heard from the, ballroom, sung by boys)*

"I who have seen the summer's roses die And all their petals pale and shriveled lie Upon the chilly ground, I know the truth: How evanescent is the flower of youth."

GALILEO Rome.—Big party?

SECRETARY The first carnival after the years of plague. All the great families of Italy are represented here tonight. The Orsinis, the Villanis, the Nuccolis, the Soldanieris, the Canes, the Lecchis, the Estensis, the Colombinis . . . Their Eminences, Cardinals Bellarmine and Barberini. *(Enter Cardinal Bellarmine and Cardinal Barberini. They hold, respectively, a lamb's and a dove's mask mounted on sticks before their faces)*

BARBERINI *(pointing his index finger at Galileo)* "The sun also ariseth, and the sun goeth down, and hasteth to his place where he arose." So says Solomon, and what does Galileo say? GALILEO When I was this big *(He shows with his hand)*, Your Eminence, I was on a ship, and I cried out: The shore's moving away.—Today I know that the shore stood still and the ship was moving.

BARBERINI Clever, clever. What we see, Bellarmine, to wit, that the stars in heaven are turning, need not be so, witness ship and shore. And what is true, to wit, that the earth turns, cannot be observed! Very clever. On the other hand, his satellites of Jupiter are hard nuts for our astronomers. Unfortunately, I too once read a little astronomy, Bellarmine, It clings to you like the itch.

BELLARMINE We must go with the times, Barberini. If star charts based on a new hypothesis make navigation easier for our seamen, let's use them. We disapprove only of doctrines that put scripture in the wrong. *(He waves a greeting to the ballroom)*

GALILEO Scripture.—"He that withholdeth corn, the people shall curse him." Proverbs of Solomon.

BARBERINI "A prudent man concealeth knowledge." Proverbs of Solomon.

GALILEO "Where no oxen are, the crib is clean: but much increase is by the strength of the ox."

BARBERINI "He that ruleth his spirit is better than he that taketh a city."

GALILEO "But a broken spirit drieth the bones." *(Pause)* "Doth not wisdom cry?"

BARBERINI "Can one go upon hot coals, and his feet not be burned?"—Welcome to Rome, my dear Galileo. You remember the founding of Rome? Two little boys, the story goes, received milk and shelter from a she-wolf. Ever since then all the she-wolfs children have had to pay for their milk. In return, the she-wolf provides all manner of pleasures, spiritual and worldly, from conversations with my learned friend Bellarmine to three or four ladies of international repute, would you like to see them? *(He leads Galileo toward the rear to show him the ballroom. Galileo follows reluctantly)* No? He prefers a serious discussion. Very well. Are you sure, friend Galilei, that you astronomers aren't just trying to make astronomy a little easier for yourselves? *(He leads him back to the front)* You like to think in

circles or ellipses and in uniform velocities, in simple motions commensurate with your minds. But what if God had been pleased to make His stars move like this? (*He moves his finger through the air in a very complicated course with varying velocity in the air*) What would become of your calculations?

GALILEO Your Eminence, if God had created the world like this (*He retraces Barberini's course*) He would have constructed our minds like this too (*He repeats the same course*) to enable them to recognize these courses as the simplest. I believe in reason. BARBERINI I consider reason inadequate. No answer. He's too polite to say he considers mine inadequate. (*Laughs and returns to the balustrade*)

BELLARMINE Reason, my friend, doesn't go very far. All around us we see nothing but falsehood, crime and weakness. Where is the truth?

GALILEO (*angrily*) I believe in reason. BARBERINI (*to the secretaries*) Don't take anything down. This is a scientific discussion among friends.

BELLARMINE Consider for a moment the intellectual effort it cost the church fathers and many after them to make some sense out of this world (abominable, isn't it?). Consider the cruelty of those who have their peasants whipped half-naked around their estates in the Campagna and the stupidity of the wretches who kiss their feet in return. GALILEO Shameful! On my way here I saw . . . BELLARMINE We've transferred the responsibility for such conditions (the very stuff of life) which we cannot understand to a higher being, we say that certain purposes are served thereby, that a master plan is being followed. Not that our minds are set entirely at ease. But now you come along and accuse this supreme being of not knowing how the planets move, when it's perfectly clear to you. Is that wise?

GALILEO (*launching into an explanation*) I'm a faithful son of the church . . .

BARBERINI He's really dreadful. In all innocence he accuses God of the juiciest boners in astronomy! I suppose God didn't work hard enough at His astronomy before He wrote Holy Scripture? My *dear* friend!

BELLARMINE Don't you think it likely that the Creator knows more about His creation than any of His creatures?

GALILEO But, gentlemen, after all we can misinterpret not only the movements of the heavenly bodies, but the Bible as well.

BELLARMINE But wouldn't you say that after all the interpretation of the Bible is the business of the Holy Church? (*Galileo is silent*)

BELLARMINE You see, you don't answer. (*He makes a sign to the secretaries*) Mr. Galilei, the Holy Office has decided tonight that the doctrine of Copernicus, according to which the sun is the center of the cosmos and motionless, whereas the earth moves and is not the center of the cosmos, is inane, absurd, and heretical. I have been charged to admonish you to relinquish this opinion. (*To the first secretary*) Please repeat. WSST

SECRETARY His Eminence, Cardinal Bellarmine, to the aforementioned Galileo Galilei: The Holy Office has decided that the doctrine of Copernicus, according to which the sun is the center of the cosmos and motionless, whereas the earth moves and is not the center of the cosmos, is inane, absurd and heretical. I have been charged to admonish you to relinquish this opinion.

GALILEO What does this mean?

(*From the ballroom another verse of the poem is heard, sung by boys*)

"I said, the seasons do not stay Pluck the roses while it's May."

*(Barberini motions Galileo to keep quiet while the singing continues. They all listen)*

GALILEO What about the facts? I understand that the astronomers of the Collegium Romanum have confirmed my observations.

BELLARMINE And expressed their profound satisfaction, in a manner most complimentary to you.

GALILEO But the satellites of Jupiter, the phases of Venus . . .

BELLARMINE The Holy Congregation has arrived at its decision without taking these particulars into account.

GALILEO In other words, all further scientific research . . .

BELLARMINE Is guaranteed, Mr. Galilei. In keeping with the church tenet that we cannot know but may investigate. *(Again he salutes a guest in the ballroom)* You are at liberty to deal with this doctrine as a mathematical hypothesis. Science is the legitimate and most beloved daughter of the church, Mr. Galilei. None of us seriously believes that you wish to undermine man's trust in the church.

GALILEO *(angrily)* To invoke trust is to exhaust it.

BARBERINI Really? *(Laughing heartily, he slaps his shoulder. Then with a sharp look he says, not unkindly)* Don't throw the baby out with the bath water, my friend. Nor shall we. We need you more than you need us.

BELLARMINE I can't wait to introduce Italy's greatest mathematician to the commissioner of the Holy Office who has the highest regard for you.

BARBERINI *(taking Galileo's other arm)* Whereupon he changes back into a lamb. You too, my friend, should have come here in disguise—as a respectable doctor of scholastic philosophy. It's my mask that allows me a little freedom tonight. When I wear it, you may even hear me murmuring: If God did not exist, we should have to invent Him. Well, let's put our masks on again. Poor Galilei hasn't got one. *(They take Galileo between them and lead him into the ballroom)* *(Secretary writes eagerly)* What was that about his believing in reason? *(Enter the cardinal inquisitor)*

THE INQUISITOR Has the interview taken place?

SECRETARY *(mechanically)* First Mr. Galilei arrived with his daughter. She was betrothed today to Mr. . . . *(The inquisitor motions him to skip it)* Mr. Galilei went on to tell us about the new method of playing chess in which, contrary to the rules, the pieces are moved over many squares.

THE INQUISITOR *(again beckons "no")* The minutes. *(A secretary hands him the minutes and the cardinal sits down to skimthrough them. Two young ladies in masks cross the stage and curtsy to the cardinal)*

LUDOVICIO Who's that?

VIRGINIA The cardinal inquisitor.

THE INQUISITOR *(from his corner)* Well, my daughter?

VIRGINIA *(with a little start as she has not seen him)* Oh, Your Eminence! *(The inquisitor, without looking up, tenders his right hand. She approaches, kneels down, and kisses bis ring)*

THE INQUISITOR Glorious night! Allow me to congratulate you on your engagement. Your fiance comes of a distinguished family. Will you stay in Rome?

VIRGINIA Not for the present, Your Eminence. There's so much to be done for a wedding.

THE INQUISITOR Then you'll go back to Florence with your father. I'm glad to hear

it. I imagine your father needs you. Mathematics is a cold housewife, I should say. A woman of flesh and blood in such surroundings makes all the difference. It's so easy to lose oneself in the universe which is so very immense if one happens to be a great man.

VIRGINIA (*breathless*) You're very kind, Your Eminence. I really know practically nothing about these things.

THE INQUISITOR Indeed? (*He laughs*) Well, I suppose they don't eat fish in the fisherman's house. It will amuse your father to hear that, come right down to it, you learned what you know about the heavenly bodies from me. (*Leafing through the minutes*) I read here that our innovators, whose acknowledged leader is your father—a great man, one of the greatest—regard our present ideas about the importance of our good earth as somewhat exaggerated. Well then, from the age of Ptolemy, a sage of antiquity, to the present day, the whole of creation, that is, the entire crystal globe with the earth at its center, has been computed to measure approximately two thousand earth diameters. Quite a lot of space, but not enough, not nearly enough, for the innovators. They maintain, so I hear, that the universe extends further than we can imagine, that the distance between earth and sun—a rather considerable distance, we always thought—is so negligibly small when compared with the distance between our poor earth and the fixed stars on the outermost crystal sphere, that there is no need whatever to consider it in our calculations. Yes, our innovators live on a very grand scale. (*Virginia laughs*)

THE INQUISITOR And indeed, certain gentlemen of the Holy Office, not so long ago, came very close to taking offence at such a picture of the world, compared to which our old picture is a mere miniature that might well be hanging from the charming neck of a certain young lady. The gentlemen of the Holy Office are worried that a prelate or even a cardinal might get lost in such enormous spaces. The Almighty might even lose sight of the pope himself. Yes, it's all very amusing. But even so, my dear child, I'm glad that you'll be staying with your eminent father, whom we all hold in the highest esteem. I wonder if I know your father confessor . . .

VIRGINIA Father Christopher of St. Ursula.

THE INQUISITOR Well then, I'm glad you'll be going with your father. He will need you, perhaps you can't conceive of such a thing, but the time will come. You're very young and very much alive and greatness is not always an easy thing to bear for those to whom God has given it, no, not always. No mortal is too great to be included in a prayer. But I'm keeping you, dear child, and I'm making your fiancee jealous and perhaps your father too by telling you something about the heavenly bodies—which may, to be sure, be quite obsolete. Hurry back to the ball, but don't forget to give Father Christopher my regards. (*Virginia, after a deep curtsy, leaves quickly*)

## A Conversation

Galileo, feeling grim  
 A young monk came to visit him.  
 The monk was born of common folk.  
 It was of science that they spoke.

*In the palace of the Florentine ambassador to Rome, Galileo listens to the little monk, who after the session of the Collegium Romanum repeated Father damns'<sup>l</sup> remark to him in a whisper.*

GALILEO Speak up, speak up! The cloth you wear entitles you to say what you please.

THE LITTLE MONK I've studied mathematics, Mr. Galilei.

GALILEO That might be a good thing if it led you to admit that two times two is sometimes four.

THE LITTLE MONK For three nights I haven't been able to sleep, Mr. Galilei. I can't figure out how to reconcile the decree which I've read with the satellites of Jupiter which I've seen. So I decided to read mass this morning and come and see you.

GALILEO To tell me that Jupiter has no satellites?

THE LITTLE MONK No. I recognized the wisdom of the decree. It showed me how dangerous unrestricted inquiry can be to mankind, and I've decided to give up astronomy. Still, I felt I had to acquaint you with the motives which compel me, even though I'm an astronomer, to desist from pursuing a certain doctrine.

GALILEO I can assure you that such motives are well known to me.

THE LITTLE MONK I understand your bitterness. You're thinking of certain exceptional means of pressure exerted by the church.

GALILEO Don't beat about the bush: instruments of torture.

THE LITTLE MONK Yes, but I'd like to speak of other motives. Forgive me if I talk about myself. I grew up in the Campagna. My parents are peasants, simple folk. They know all about olive trees, but very little else. As I observe the phases of Venus, I can see my parents sitting by the stove with my sister, eating lasagna. I see the beams over their heads, blackened by the smoke of centuries, I see distinctly their work-worn old hands and the little spoons they hold in them. They're very poor, but even in their misery there is a certain order. There are cyclic rhythms, scrubbing the floor, tending the olive trees in their seasons, paying taxes. There's a regularity in the calamities that descend on them. My father's back wasn't bowed all at once, no, a little more with every spring in the olive grove, just as the child-bearing that has made my mother more and more sexless occurred at regular intervals. What gives them the strength to sweat their way up stony paths with heavy baskets, to bear children, even to eat, is the feeling of stability and necessity they get from the sight of the soil, of the trees turning green every year, of their little church standing there, and from hearing Bible verses read every Sunday. They have been assured that the eye of God is upon them, searching and almost anxious, that the whole

world-wide stage is built around them in order that they, the players, may prove themselves in their great or small roles. What would my people say if I were to tell them they were living on a small chunk of stone that moves around another star, turning incessantly in empty space, one among many and more or less significant? What would be the good or necessity of their patience, of their acquiescence in their misery? What would be the good of the Holy Scripture which explains everything and demonstrates the necessity of all their sweat, patience, hunger and submission, if it turns out to be full of errors? No, I can see their eyes waver, I can see them rest their spoons on the table, I can see how cheated and betrayed they feel. In that case, they will say, no one is watching over us. Must we, untaught, old and exhausted as we are, look out for ourselves? No one has given us a part to play, only this wretched role on a tiny star which is wholly dependent, around which nothing turns? There is no sense in our misery, hunger means no more than going without food, it is no longer a test of strength; effort means no more than bending and carrying, there is no virtue in it. Can you understand now that in the decree of the Holy Congregation I discern a noble motherly compassion, a great goodness of soul?

GALILEO Goodness of soul! Don't you simply mean that there's nothing left, the wine's been drunk, their lips are parched, so let them kiss the cassock. But why is nothing left? Why is there no order in this country but the order in an empty drawer, and no necessity but the necessity of working oneself to death? Amid overflowing vineyards and wheat fields? Your peasants in the Campagna are paying for the wars which the vicar of gentle Jesus is waging Spain and Germany. Why does he put the earth at the center of the universe? Because he wants the See of St. Peter to be in the center of the world! That's the crux of the matter. You're right; the question is not the planets, but the peasants of the Campagna. And don't talk to me about the beauty of phenomena in the golden glow of old age. Do you know how the Margaritifera oyster produces pearls? By contracting a near-fatal disease, by enveloping an unassimilable foreign body, a grain of sand, for instance, in a ball of mucus. It almost dies in the process. To hell with the pearl, give me the healthy oyster. Virtue is not bound up with misery, my friend. If your people were prosperous and happy, they could develop the virtues of prosperity and happiness. But today the virtues of exhausted people derive from exhausted fields, and I reject those virtues. Yes, sir, my new water pumps can work more miracles than your preposterous superhuman toil.—"Be fruitful and multiply," because your fields are barren and you are decimated by wars. You want me to lie to your people?

THE LITTLE MONK (*in great agitation*) The very highest motives bid us keep silent: the peace of mind of the wretched and lowly!

GALILEO Would you care to see a Cellini clock that Cardinal Bellarmine's coachman left here this morning? You see, my friend, as a reward for my letting your good parents have their peace of mind, the government offers me the wine which they press in the sweat of their countenance, which as you know was fashioned in the image of God. If I agreed to keep silent, my motives would undoubtedly be rather sordid: an easy life, no persecution, and so on.

THE LITTLE MONK Mr. Galilei, I'm a priest.

GALILEO You're also a physicist. And you can see that Venus has phases. Look out there. (*He points out the window*) Can you see the little Priapus by the laurel tree at the well? The god of gardens, birds, and thieves, rustic, obscene, two thousand years old. He wasn't so much of a liar. All right,

we'll skip that, I too am a son of the church. But do you know the *Eighth Satire* of Horace? I've been rereading him lately, he gives me a certain balance. (*He reaches for a small book*) He puts words in the mouth of this same Priapus, a little statue that used to stand in the Esquiline Gardens. Here's how it starts:

"I was a figtree stump, wood of little use  
When once a carpenter,  
pondering whether To fashion a Priapus or a footstool  
Decided on the god . . ."

Do you think Horace would have let anyone forbid him the footstool and put a table in the poem instead? Sir, a cosmology in which Venus has no phases violates my esthetic sense! We can't invent machines for pumping river water if we're forbidden to study the greatest machine before our eyes, the mechanism of the heavenly bodies. The sum total of the angles in a triangle can't be changed to suit the requirements of the curia. Nor can I calculate the courses of flying bodies in such a way as to account for witches riding on broomsticks.

THE LITTLE MONK Don't you think the truth will prevail, even without us, if it is the truth?

GALILEO No, no, no. Truth prevails only when we make it prevail. The triumph of reason can only be the triumph of reasoning men. You describe your peasants in the Campagna as if they were moss on their huts. How can anyone imagine that the sum of the angles of a triangle runs counter to *their* needs! But if they don't rouse themselves and learn how to think, the best irrigation systems in the world won't do them any good. Damn it, I see the divine patience of your people, but where is their divine wrath?

THE LITTLE MONK They're tired.

GALILEO (*throws a bundle of manuscripts in front of him*) Are you a physicist, my son? Here you'll find the reasons for the ocean's tides. But don't read it, do you hear. Ah, reading already? I see you're a physicist. (*The little monk has immersed himself in the papers*)

GALILEO An apple from the tree of knowledge. He gobbles it up. He'll be damned for all eternity, but he's got to bolt it down, the hapless glutton. Sometimes I think I'd gladly be locked up in a dungeon ten fathoms below ground, if in return I could find out one thing: What is light? And the worst of it is: What I know I must tell others. Like a lover, a drunkard, a traitor. It's a vice, I know, and leads to ruin. But how long can I go on shouting into empty air—that is the question.

THE LITTLE MONK (*points at a passage in the papers*) I don't understand this sentence.

GALILEO I'll explain it to you, I'll explain it to you.

After a silence of eight years Galileo feels encouraged by the enthronement of a new pope, himself a scientist, to resume his research in the forbidden field. The sunspots.

Eight long years with tongue in cheek  
Of what he knew he did not speak.  
The temptations grew too great  
And Galileo challenged fate.

*Galileo's house in Florence. Galileo's pupils, Sagredo, the little monk and Andrea Sarti, now a young man, are gathered for an experiment. Galileo, standing, is reading a hook.— Virginia and Mrs. Sarti are sewing bridal linen.*

VIRGINIA Sewing a trousseau is fun. This is for the long dining table, Ludovico loves to have company. But it has got to be right, his mother notices every stitch. She isn't happy about father's books..Any more than Father Christopher.

MRS. SARTI He hasn't written a book in years. VIRGINIA I think he saw he was mistaken. In Rome, a very high ecclesiastic told me a lot of things about astronomy. The distances are too great.

ANDREA (*writes the program for the day on a blackboard and reads aloud*) "Thursday afternoon: Floating bodies."—That means ice again; bucket of water; scales; iron needle; Aristotle. (*He fetches the objects*)  
(*The others are looking up things in books. Enter Filippo Mucius, a scholar in his middle years. He appears to be upset*)

MUCIUS Would you tell Mr. Galilei he must see me? He has condemned me without a hearing.

MRS. SARTI I've told you he doesn't wish to see you.

MUCIUS God will reward you if you ask him again. I must speak to him.

VIRGINIA (*goes to the staircase*) Father!

GALILEO What is it?

VIRGINIA Mr. Mucius!

GALILEO (*looks up brusquely, goes to the head of the stairs, his pupils trailing behind him*)  
What do you want?

MUCIUS Mr. Galilei, I request permission to explain the passages in my book which seem to indicate a condemnation of the Copernican doctrine that the earth revolves. I've . . .

GALILEO What is there to explain? You are in full agreement with the Holy Congregation's decree of 1616. You are perfectly within your rights. It's true, you studied mathematics with us, but we have no authority to make you say that two times two is four. You have every right to say that this stone (*He takes the pebble from his pocket and throws it down to the ground floor*) has just flown up to the ceiling.

MUCIUS Mr. Galilei, I . . .

GALILEO Don't talk about difficulties! The plague didn't prevent me from

going on with my observations.

MUCIUS Mr. Galilei, the plague is not the worst.

GALILEO Let me tell you this: Not to know the truth is just; stupid. To know the truth and call it a lie is criminal! Leave my house at once!

MUCIUS (*tonelessly*) You are right. (*He goes out*) (*Galileo returns to his study*)

SAGREDO That's how it is, I'm afraid, He doesn't amount to much and no one could pay any attention to him if he hadn't been your pupil. But now of course they all say: He's heard everything Galileo had to say and is forced to admit that it's all wrong.

MRS. SARTI I feel sorry for the gentleman.

VIRGINIA Father was very fond of him.

MRS. SARTI I wanted to talk to you about your marriage, Virginia. You're such a young thing, and you have no mother, and your father just puts little pieces of ice in water. Anyway, I wouldn't ask him questions about your marriage if I were you. He would say the most dreadful things for a week, naturally at meals when the young people are there, because he hasn't half a scudo's worth of shame in him, never did have. That's not what I had in mind, I'm thinking of what the future has in store. Not that I know anything, I'm only an ignorant woman. But this is a very serious thing, you mustn't go into it blindly. I do think you should go to a real astronomer at the university and consult him about your horoscope. Then you'll know what to expect. Why are you laughing?

VIRGINIA Because I've been.

MRS. SARTI (*very curious*) What did he say?

VIRGINIA For three months I must be careful because the sun will be in Aries, but then I get a very good ascendant and the clouds will part. As long as I don't lose sight of Jupiter, I can go on any journey I please, because I'm an Aries.

MRS. SARTI And Ludovico?

VIRGINIA He's a Leo. (*After a little pause*) That means sensual, I think. (*Pause*)

VIRGINIA I know that step.

MUCIUS (*comes back*) Just thought I'd bring you a book that might be of interest to you. I'll just put the book in your little hands, and disappear, on tiptoe. (*He goes out. Virginia hands the book to Sagredo*)

GALILEO What's it about?

SAGREDO I don't know. (*Spelling it out*) "De maculis in sole."

ANDREA On the sunspots. Another one! (*Sagredo hands it to him*)

ANDREA Listen to this dedication! "To the greatest living authority on physics, Galileo Galilei." (*Galileo has immersed himself once more in his book*)

ANDREA I've read the treatise by Fabricius in Holland. He believes the spots are clusters of stars passing between the earth and the sun.

THE LITTLE MONK Isn't that doubtful, Mr. Galilei? (*Galileo does not answer*)

ANDREA In Paris and Prague they think they're vapors from the sun.

SAGREDO Hm?

ANDREA Sagredo has his doubts.

SAGREDO Kindly leave me out of it. I said "Hm," that's all.  
 (*He gesticulates with the scales. A pan falls to the floor. Galileo walks over and silently picks it up*)

THE LITTLE MONK It's blissful to doubt; I wonder why.

ANDREA Every sunny day in the last two weeks I've climbed up to the attic, right under the roof. A thin beam of light comes down through a tiny crack in the

tiles. With that beam you can catch the reverse image of the sun on a sheet of paper. I saw a spot as big as a fly and blurred like a small cloud. It moved. Why don't we investigate those spots, Mr. Galilei?

GALILEO Because we're working on floating bodies.

ANDREA Mother has whole baskets full of letters. All Europe wants your opinion. With the reputation you've built up, you can't be silent.

GALILEO Rome has allowed me to build up a reputation because I've kept silent.

SAGREDO But you can't afford to be silent any more.

GALILEO Nor can I afford to be roasted over a wood fire like a ham.

ANDREA Do you think the spots come into it?  
*(Galileo does not answer)*

ANDREA All right, let's stick to our little pieces of ice. They can't hurt you.

GALILEO Exactly.—Our proposition, Andrea!

ANDREA We assume that whether a body floats or not depends essentially not on its shape, but on whether it is lighter or heavier than water.

GALILEO What does Aristotle say?

THE LITTLE MONK "Discus latus platique . . ."

GALILEO Translate, translate!

THE LITTLE MONK "A broad, flat disk of ice floats in water, whereas an iron needle sinks."

GALILEO Why then, according to Aristotle, doesn't ice sink?

THE LITTLE MONK Because, being broad and flat, it cannot divide the water,

GALILEO Very well. *(A piece of ice is handed to him and he puts it into the bucket)* Now I press the ice firmly down to the bottom of the bucket. I remove the pressure of my hands. What happens?

THE LITTLE MONK It rises to the surface.

GALILEO Correct. In rising it seems to be able to divide the water. Fulganzio!

THE LITTLE MONK But why then does it float at all? Ice is heavier than water, because it is condensed water.

GALILEO What if it were diluted water?

ANDREA It must be lighter than water, or it wouldn't float.

GALILEO Aha!

ANDREA Just as an iron needle can't float. Everything lighter than water floats, everything heavier sinks. Which was to be proved.

GALILEO Andrea, you must learn to think carefully. Give me the iron needle. A sheet of paper. Is iron heavier than water?

ANDREA Yes.  
*(Galileo places the needle on a sheet of paper and floats it in the water. Pause)*

GALILEO What happens?

SAGREDO The needle floats! Holy Aristotle, they never checked up on him!  
*(They laugh)*

GALILEO One of the main reasons for the poverty of science is that it is supposed to be so rich. The aim of science is not to open the door to everlasting wisdom, but to set a limit to everlasting error. Take that down.

VIRGINIA What's the matter?

MRS. SARTI Every time they laugh, a fright comes over me. I wonder what they're laughing about.

VIRGINIA Father says theologians have their church bells and physicists have their laughter.

MRS. SARTI At least I'm glad he doesn't look through his tube so much any

more. That was much worse.

VIRGINIA No, he only puts pieces of ice in water. No harm can come of that.

MRS. SARTI Who knows?

*(Enter Ludovico Marsili in traveling garb, followed by a manservant with luggage. Virginia runs toward him and embraces him)*

VIRGINIA Why didn't you let us know you were coming?

LUDOVICO I was near here inspecting our vineyards, and I just couldn't stay away.

GALILEO *(as though nearsighted)* Who's that?

VIRGINIA Ludovico.

THE LITTLE MONK Can't you see him?

GALILEO Oh yes, Ludovico. *(Goes toward him)* How are the horses?

LUDOVICO They're fine, sir.

GALILEO Sarti, let's celebrate. Bring us a jug of that old Sicilian wine!

*(Mrs. Sarti goes out with Andrea)*

LUDOVICO *(to Virginia)* You look pale. Country life will do you good. Mother is expecting you in September.

VIRGINIA Wait, I want to show you my wedding dress. *(Runs out)*

GALILEO Sit down.

LUDOVICO I hear you have more than a thousand students in your lectures at the university, sir. What are you working on at the moment?

GALILEO Routine stuff. Did you come through Rome?

LUDOVICO Yes.—Before I forget, mother congratulates you on your admirable tact in connection with all that fuss over the sunspots in Holland.

GALILEO *(dryly)* That's kind of her.

*(Mrs. Sarti and Andrea bring wine and glasses. All gather around the table)*

LUDOVICO Rome has found a topic of conversation for February. Christopher Clavius said he was afraid the whole earth-around-the-sun circus would flare up again because of those sunspots.

ANDREA Don't let it worry you.

GALILEO Any other news from the Holy City, apart from hopes for new sins on my part?

LUDOVICO You heard, of course, that the Holy Father is dying?

THE LITTLE MONK Oh.

GALILEO Who's mentioned as successor?

LUDOVICO Mostly Barberini.

GALILEO Barberini.

ANDREA Mr. Galilei knows Barberini personally.

THE LITTLE MONK Cardinal Barberini is a mathematician.

SAGREDO A scientist in the chair of St. Peter!

*(Pause)*

GALILEO I see, now they need men like Barberini who've read a little mathematics. Things will start moving, FecterToni, we may live to see the day when we won't have to glance over our shoulders like criminals every time we say that two times two is four. *(To Ludovico)* I like this wine, Ludovico. What do you think of it?

LUDOVICO It's good.

GALILEO I know the vineyard. The slope is steep and stony, the grapes are almost blue. I love this wine.

LUDOVICO Yes, sir.

GALILEO There are little shadows in it. And it's almost sweet, but stops at the

"almost."—Andrea, put the stuff away, the ice and bucket and needle.—I value the consolations of the flesh. I have no patience with cowardly souls who speak of weakness. I say: To enjoy yourself is an achievement.

THE LITTLE MONK What are you taking up next?

SAGREDO We're starting in again on the earth-around-the-sun circus.

ANDREA (*singing in an undertone*)

The Book says it stands still. And so

Each learned doctor proves.

The Holy Father takes it by the ears

And holds it fast. And yet it moves.

(*Andrea, Federzoni and the little monk hurry to the workbench and clear it*)

ANDREA We might even find out that the sun revolves too. How would you like that, Marsili?

LUDOVICO What's the excitement about?

MRS. SARTI You're not going back to those abominations, Mr. Galilei?

GALILEO Now I know why your mother sent you here. Barberini is on the rise.

Knowledge will be a passion and research a delight. Clavius is right, these sunspots do interest me. You like my wine, Ludovico?

LUDOVICO I said I did, sir.

GALILEO You really like it?

LUDOVICO (*stiffly*) I like it.

GALILEO Would you go so far as to accept a man's wine or his daughter without asking him to give up his profession? What has my astronomy got to do with my daughter? The phases of Venus don't affect my daughter's rear end.

MRS. SARTI Don't be vulgar. I'll go get Virginia.

LUDOVICO (*holds her back*) In families like mine marriages are not decided by sexual considerations alone.

GALILEO Did they prevent you from marrying my daughter for the last eight years because I was on probation?

LUDOVICO My wife will also have to cut a figure in our village church.

GALILEO You mean, your peasants won't pay their rent if the lady of the manor is insufficiently saintly?

LUDOVICO In a way.

GALILEO Andrea. Sagredo, get the brass mirror and the screen! We'll project the sun's image on it to protect our eyes. That's your method, Andrea.

(*Andrea and the little monk get mirror and screen*)

LUDOVICO Years ago in Rome, sir, you signed a pledge to stay away from this earth-around-the-sun business.

GALILEO Oh well. We had a reactionary pope in those days.

MRS. SARTI Had! His Holiness isn't even dead yet!

GALILEO Pretty near, pretty near!—Put a grid over the screen. We'll proceed methodically. And we'll be able to answer all those letters, won't we, Andrea?

MRS. SARTI "Pretty near!" Fifty times that man weighs his pieces of ice, but when something happens that suits his purposes he believes it blindly! (*The screen is put up*)

LUDOVICO Mr. Galilei, if His Holiness should die, the next pope—no matter who he is or how much he loves science— will have to take account of how much the country's leading families love him.

THE LITTLE MONK God made the physical world, Ludovico; God made the human brain; God will allow physics.

MRS. SARTI Galileo, let me tell you something. I've watched my son fall into sin for the sake of these "experiments" and "theories" and "observations," and I

haven't been able to do anything about it. You set yourself against the authorities and they gave you a warning. The greatest cardinals spoke to you the way you'd speak to a sick horse. It worked for a while, but two months ago, right after the Immaculate Conception, I caught you sneaking back to your "observations." In the attic! I didn't say anything, but I knew. I ran out and lit a candle for St. Joseph. It's more than I can bear. When we're alone you show some sense, you say you've got to behave because it's dangerous, but two days of "experiments" and you're as bad as ever. If I lose my eternal salvation because I stand by a heretic, that's my business, but you have no right to trample your daughter's happiness with your big feet!

GALILEO (*gruffly*) Get the telescope!

(*They uncover the telescope*)

LUDOVICO Giuseppe, put the luggage back in the coach. (*The manservant goes out*)

MRS. SARTI She'll never get over this. You can tell her yourself.

(*She runs out, still holding the pitcher*)

LUDOVICO I see you've made up your mind. Mr. Galilei, three quarters of the year mother and I live on our estate in the Campagna and I can assure you that our peasants lose no sleep over your treatises on the moons of Jupiter. They work too hard in the fields. It might upset them, though, if they heard that attacks on the holy doctrine of the church were going unpunished. Don't forget that those poor brutalized wretches get everything mixed up. They really are brutes, you have no idea. A rumor that somebody's seen a pear growing on an apple tree makes them run away from their work to gab about it.

GALILEO (*with interest*) Really?

LUDOVICO Animals. When they come to the manor with a trifling complaint, mother has to have a dog whipped in front of them to remind them of discipline and order and good manners. You, Mr. Galilei, you may occasionally see flowering corn fields from your traveling coach, or absent-mindedly eat our olives and our cheese, but you have no idea how much effort it takes to raise all these things — all the supervision!

GALILEO Young man, I never eat my olives absent-mindedly. (*Rudely*) You're wasting my time. (*Calls toward outside*) Is the screen ready?

ANDREA Yes. Are you coming?

GALILEO You whip more than dogs to keep discipline, don't you, Marsili?

LUDOVICO Mr. Galilei, you have a marvelous brain. Too bad.

THE LITTLE MONK (*amazed*) He's threatening you.

GALILEO Yes, I might stir up his peasants to think new thoughts. And his servants and his overseers.

SAGREDO How? They don't know Latin.

GALILEO I could write in the vernacular for the many instead of in Latin for the few. For our new ideas we need people who work with their hands. Who else wants to know the causes of everything? People who never see bread except on their tables have no desire to know how it's baked; those bastards would rather thank God than the baker. But the men who make the bread will understand that nothing can move unless something moves it. Fulganzio, your sister at the olive press won't be much surprised — she'll probably laugh — when she hears that the sun is not a gold escutcheon, but a lever: The earth moves because the sun moves it.

LUDOVICO You'll always be a slave to your passions. Convey my apologies to Virginia. It's better, I think, if I don't see her now.

GALILEO The dowry is at your disposal. At any time.

LUDOVICO Good day. (*He goes*) ANDREA Our regards to all the Marsilis!

SAGREDO Who tell the earth to stand still so their castles won't fall off.  
ANDREA And to the Cencis and Villanis!  
SAGREDO The Cervillis!  
ANDREA The Lecchis!  
SAGREDO The Pierleonis!  
ANDREA Who'll only kiss the pope's foot as long as he tramples the people with it.  
THE LITTLE MONK *(also at the instruments)* The new pope will be an enlightened man.  
GALILEO And now let's start observing these spots in the sun which interest us—at our own risk, not counting too much on the protection of a new pope . . .  
ANDREA *(interrupting)* But fully confident of dispelling Mr. Fabricius' star shadows and the solar vapors of Prague and Paris, and proving that the sun rotates.  
GALILEO Reasonably confident that the sun rotates. My aim is not to prove that I've been right, but to find out whether or not I have been. I say: Abandon hope, all ye who enter upon observation. Maybe it's vapors, maybe it's spots, but before we assume that they're spots, though it would suit us if they were, we'd do better to assume they're fishtails. Yes, we shall start all over again from scratch. And we won't rush ahead with seven-league boots, but crawl at a snail's pace. And what we find today we'll wipe from the blackboard tomorrow, and not write it down again until we find it a second time. And if there's something we hope to find, we'll regard it with particular distrust when we do find it. Accordingly let us approach our observation of the sun with the inexorable resolve to prove that the earth *stands still!* Only after we have failed, after we have been totally and hopelessly defeated and are licking our wounds in utter dejection, only then shall we begin to ask whether the earth does not indeed move! *(With a twinkle)* But then, when every other hypothesis has gone up in smoke, then no mercy for those who have never observed anything, yet go on talking. Take the cloth off the tube and focus it on the sun!  
*(He adjusts the brass mirror)*  
THE LITTLE MONK I knew you had taken up your work again. I knew it when you didn't recognize Mr. Marsili. (  
*In silence they begin their examinations. When the flaming image of the sun appears on the screen Virginia in her bridal gown runs in)*  
VIRGINIA You've sent him away! *(She faints. Andrea and the little monk rush to her aid)*  
GALILEO I've got to know.

In the course of the next ten years Galileo's doctrine is disseminated among the common people. Pamphleteers and ballad singers everywhere seize upon the new ideas. In the carnival of 1632 the guilds in many Italian cities take astronomy as the theme for their carnival processions.

*A half-starved couple of show people with a five-year-old girl and an infant enter a market place where many people, some with masks, are awaiting the carnival procession. They carry bundles, a drum and other props.*

THE BALLAD SINGER (*drumming*) Citizens, ladies and gentlemen! Before the great carnival procession of the guilds arrives we bring you the latest Florentine song which is being sung all over northern Italy. We've imported it at great expense. The title is: The horrendous doctrine and teaching of Mr. Galileo Galilei, court physicist, or, A Foretaste of the Future. (*He sings*) When the Almighty made the universe He made the earth and then he made the sun. Then round the earth he bade the sun to turn— That's in the Bible, Genesis, Chapter One. And from that time all beings here below Were in obedient circles meant to go.

They all began to turn around The little fellows round the big shots  
And the hindmost round the foremost On earth as it is in heaven.  
Around the popes the cardinals Around the cardinals the bishops  
Around the bishops the secretaries Around the secretaries the aldermen  
Around the aldermen the craftsmen Around the craftsmen the servants  
Around the servants the dogs, the chickens and the beggars.

That, my friends, is the great order, *ordo ordinum*, as the theologians call it, *regula aeternis*, the rule of rules. And then, my friends, what happened then? (*He sings*)

Up stood the learned Galileo  
(Chucked the Bible, pulled out his telescope, and took a look at the universe)

And told the sun: Stand still!

From this time on, the wheels

Shall turn the other way.

Henceforth the mistress, ho!

**Shall turn around** the maid.

Now that was rash, my friends, it is no matter small: For heresy will spread today like foul diseases. Change Holy Writ, forsooth? What will be left at all? Why: each of us would say and do just what he pleases!

Esteemed citizens, such doctrines are utterly impossible. (*He sings*)

Good people, what will come to pass  
If Galileo's teachings spread?  
The server will not serve at mass  
No servant girl will make the bed. Now that is grave, my friends, it is no  
matter small: For independent spirit spreads like foul diseases! Yet life is  
sweet and man is weak and after all— How nice it is, for once, to do just as  
one pleases!

Now, my good friends, here, look to the future and see what the most learned  
doctor Galileo Galilei predicts. (*He sings*)

Two ladies at a fishwife's stall  
Are in for quite a shock  
The fishwife takes a loaf of bread  
And gobbles up all her stock.  
The carpenters take wood and build  
Houses for themselves, not pews  
And members of the cobblers' guild  
Now walk around in shoes!  
Is this permitted? No, it is no matter small:  
For independent spirit spreads like foul diseases!  
Yet life is sweet and man is weak and after all—  
How nice it is, for once, to do just as one pleases!

The tenant kicks his noble master  
Smack in the ass like that  
The tenant's wife now gives her children  
Milk that made the parson fat. No, no my friends, for the Bible is no matter  
small: For independent spirit spreads like foul diseases! Yet life is sweet and  
man is weak and after all— How nice it is for once to do just as one pleases!

THE SINGER'S WIFE

The other day I tried it too And did my husband frankly tell Let's see now if  
what you can do Other stars can do as well.

BALLAD SINGER

No, no, no, no, no, no, stop, Galileo, stop!  
For independent spirit spreads like foul diseases.  
People must keep their place, some down and some on top!  
Though it is nice for once to do just as one pleases.

BOTH

Good people who have trouble here below  
In serving cruel lords and gentle Jesus  
Who bids you turn the other cheek just so  
While they prepare to strike the second blow:  
Obedience will never cure your woe  
So each of you wake up and do just as he pleases!

THE BALLAD SINGER Esteemed citizens, behold Galileo Galilei's phenomenal  
discovery: The earth revolving around the sun!

A DEEP VOICE (calls out) The procession!

(Enter two men in rags drawing a little cart. The "Grand Duke of Florence," a figure in sackcloth with a cardboard crown, sits on a ridiculous throne and peers through a telescope. Over the throne a painted sign "Looking for trouble. " Next, four masked men march in carrying a huge tarpaulin. They stop and bounce a large doll representing a cardinal. A dwarf has posted himself to one side with a sign "The New Age. " Among the crowd a beggar raises himself by his crutches and stomps the ground in a dance until he collapses. Enter a stuffed figure, more than life-size, Galileo Galilei, which bows to the audience. In front of it a child displays a giant open Bible with crossed-out pages.

THE BALLAD SINGER Galileo Galilei, the Bible-smasher!

1633. The inquisition summons the world-famous scholar to Rome.

The depths are hot, the heights are chill  
The streets are loud, the court is still.

*Antechamber and staircase of the Medici Palace, Florence. Galileo and his daughter are waiting to be admitted to the grand duke.*

VIRGINIA It's been a long wait.

GALILEO Yes.

VIRGINIA There's that man again who's been following us, *(She points at a shady individual who passes by without paying attention to them)*

GALILEO *(whose eyesight is impaired)* I don't know him.

VIRGINIA I've seen him several times lately. He gives me the shivers.

GALILEO Nonsense. We're in Florence, not among Corsican robbers.

VIRGINIA There's Rector Gaffone.

GALILEO *He frightens me.* The blockhead will draw me into another interminable conversation.

*(Mr. Gaffone, the rector of the university, descends the stairs. He is visibly startled when he sees Galileo and walks stiffly past the two, with rigidly averted head and barely nodding.)*

GALILEO What's got into him? My eyes are bad again. Did he greet us at all?

VIRGINIA Just barely.—What have you said in your book? Can they think it's heretical?

GALILEO You hang around church too much. Getting up before dawn and running to mass is ruining your complexion. You pray for me, don't you?

VIRGINIA There's Mr. Vanni, the iron founder. The one you designed the smelting furnace for. Don't forget to thank him for the quails.

*(A man has come down the stairs)*

VANNI How did you like the quails I sent you, Mr. Galileo?

GALILEO Maestro Vanni, the quails were excellent. Again many thanks.

VANNI They're talking about you upstairs. They claim you're responsible for those pamphlets against the Bible that are being sold all over.

GALILEO I know nothing about pamphlets. My favorite books are the Bible and Homer.

VANNI Even if that were not the case: Let me take this opportunity of assuring you that we manufacturers are on your side. I don't know much about the movement of stars, but the way I look at it, you're the man who is fighting for the freedom to teach new knowledge. Just take that mechanical cultivator from Germany that you described to me. Last year alone five works on agriculture were published in London. Here we'd be grateful for one book about the Dutch canals. It's the same people who are making trouble for you and preventing the physicians in Bologna from dissecting corpses for research.

GALILEO Your vote counts, Vanni.

VANNI I hope so. Do you know that in Amsterdam and London they have money markets? And trade schools too. And newspapers that appear regularly. Here we're not even free to make money. They're against iron foundries because they claim too many workers in one place promote immorality. I swim or sink with men like you, Mr. Galilei! If ever they try to harm you, please remember that you have friends in every branch of industry. The cities of northern Italy are behind you, sir.

GALILEO As far as I know no one has any intention of harming me.

VANNI Really?

GALILEO Really.

VANNI I believe you'd be better off in Venice. Not so many cassocks. You'd be free to carry on the fight. I have a coach and horses, Mr. Galilei.

GALILEO I can't see myself as a refugee. I love comfort.

VANNI I understand. But to judge by what I heard up there, there's no time to be lost. I got the impression that right now they'd prefer not to have you in Florence.

GALILEO Nonsense. The grand duke is a pupil of mine, not to mention the fact that if anyone tries to trip me up the pope himself will tell him where to get off.

VANNI You don't seem able to distinguish your friends from your enemies, Mr. Galilei.

GALILEO I'm able to distinguish power from lack of power. *(He brusquely steps away)*

VANNI Well, I wish you luck. *(Goes out)*

GALILEO *(back at Virginia's side)* Every Tom, Dick and Harry with a grievance picks me as his spokesman, especially in places where it doesn't exactly help me. I've written a book on the mechanism of the universe, that's all, What people make or don't make of it is no concern of mine.

VIRGINIA *(in a loud voice)* If people only knew how you condemned the goings-on at last year's carnival.

GALILEO Yes. Give a bear honey if it's hungry and you'll lose your arm.

VIRGINIA *(in an undertone)* Did the grand duke send for you today?

GALILEO No, but I've sent in my name. He wants the book, he's paid for it. Ask somebody, complain about the long wait.

VIRGINIA *(goes to talk to an attendant, followed by the individual)* Mr. Mincio, has His Highness been informed that my father wishes to speak to him?

VIRGINIA *(has come back)* He says the grand duke is still busy.

GALILEO I heard you say something about "polite." What was it?

VIRGINIA I thanked him for his polite answer, that's all. Can't you just leave the book for him? You're wasting your time.

GALILEO I'm beginning to wonder what my time is worth. Maybe I should accept Sagredo's invitation to go to Padua for a few weeks. My health hasn't been up to snuff.

VIRGINIA You couldn't live without your books.

GALILEO We could take some of the Sicilian wine, one, two cases.

VIRGINIA You always say it doesn't travel. And the court owes you three months' salary. They won't forward it.

GALILEO That's true.

VIRGINIA *(whispers)* The cardinal inquisitor!

*(The cardinal inquisitor descends the stairs. Passing them, he bows low to*

*Galileo)*

VIRGINIA What's the cardinal inquisitor doing in Florence, father?

GALILEO I don't know. His attitude was respectful, I think. I knew what I was doing when I came to Florence and held my peace all these years. Their praises have raised me so high that they have to take me as I am.

LORD CHAMBERLAIN (*announces*) His Highness, the grand duke!

*(Cosmo de Medici, who hasn't aged, comes down the stairs. Galileo approaches him. Cosmo, slightly embarrassed, stops)*

GALILEO May I present Your Highness with my *Dialogues on the Two Chief Syst . . .*

COSMO I see, I see. How are your eyes?

GALILEO Not too good, Your Highness. With Your Highness' permission, I should like to present my . . .

COSMO The state of your eyes alarms me. Yes, it alarms me a good deal. Haven't you been using your splendid tube a little too much? *(He walks off without accepting the book)*

GALILEO He didn't take the book, did he?

VIRGINIA Father, I'm afraid.

GALILEO (*subdued, but firmly*) Don't show your feelings. We are not going home, but to Volpi, the glass cutter's. I've arranged with him to have a cart with empty wine casks ready in the tavern yard next door, to take me away at any time.

VIRGINIA Then you knew . . .

GALILEO Don't look back. *(They start to leave)*

HIGH OFFICIAL (*descending the stairs*) Mr. Galilei, I have orders to inform you that the court of Florence is no longer in a position to oppose the request of the Holy Inquisition for your interrogation in Rome. Mr. Galilei, the coach of the Holy Inquisition is waiting for you.

## The pope.

*A room in the Vatican. Pope Urban VIII (formerly Cardinal Barberini) has received the cardinal inquisitor. During the audience the pope is being dressed. From outside the shuffling of many feet is heard.*

THE POPE (*very loud*) No! No! No!

THE INQUISITOR Then Your Holiness really means to tell the doctors of all the faculties, the representatives of all the religious orders and of the entire clergy, who have come here guided by their childlike faith in the word of God as recorded in scripture to hear Your Holiness confirm them in their faith — you mean to inform them that scripture can no longer be considered true?

THE POPE I won't permit the multiplication tables to be broken. No!

THE INQUISITOR Yes, these people say it is only a matter of the multiplication tables, not of the spirit of rebellion and doubt. But it is not the multiplication tables. It is an alarming unrest that has come over the world. It is the unrest of their own minds, which they transfer to the immovable earth. They cry out: The figures force our hands! But where do these figures come from? Everyone knows they come from doubt. These people doubt everything. Is our human community to be built on doubt and no longer on faith? "You are my master, but I doubt whether that is a good arrangement." "This is your house and your wife, but I doubt whether they should not be mine." On the other hand, as we can read on the house walls of Rome, disgraceful interpretations are being put on Your Holiness' great love for art, to which we owe such marvelous collections: "The Barberinis are stripping Rome of what the barbarians failed to take." And abroad? It has pleased God to visit heavy tribulation upon the Holy See. Your Holiness' policy in Spain is misunderstood by persons lacking in insight, your rift with the emperor is deplored. For fifteen years Germany has been a shambles, people have been slaughtering one another with Bible quotations on their lips. And at a time when under the onslaught of plague, war and reformation, Christianity is being reduced to a few disorganized bands, a rumor is spreading through Europe that you are in secret league with Lutheran Sweden to weaken the Catholic emperor. This is the moment these mathematicians, these worms, choose to turn their tubes to the sky and inform the world that even here, the one place where your authority is not yet contested, Your Holiness is on shaky ground. Why, one is tempted to ask, this sudden interest in so recondite a science as astronomy? Does it make any difference how these bodies move? Yet, thanks to the bad example of that Florentine, all Italy, down to the last stableboy, is prattling about the phases of Venus and thinking at the same time of many irksome things which are held in our schools and elsewhere to be immutable. Where will it end, if all these people, weak in the flesh and inclined to excess, come to rely exclusively on their own reason, which this madman declares to be the ultimate authority? They begin by doubting whether the sun stood still at Gibeon and end up

directing their unclean doubts at the church collections. Since they began sailing the high seas—to which I have no objection—they have been putting their trust in a brass sphere that they call a compass, and no longer in God. Even as a young man this Galileo wrote about machines. With machines they expect to work miracles. What kind of miracles? Of course they have no more use for God, but what is to be the nature of these miracles? For one thing, they expect to do away with Above and Below. They don't need it any more. Aristotle, whom in other respects they regard as a dead dog, said—and this they quote—: If the shuttle were to weave by itself and the plectron to pluck by itself, masters would no longer need apprentices nor lords servants. They believe that this time has come. This evil man knows what he is doing when he writes his astronomical works not in Latin but in the idiom of fishwives and wool merchants.

THE POPE It's certainly in bad taste. I'll tell him.

THE INQUISITOR Some he incites, others he bribes. The north Italian ship owners keep clamoring for Mr. Galilei's star charts. We shall have to yield to them, since material interests are involved.

THE POPE But these star charts are based on his heretical statements, on the movements of certain heavenly bodies which become impossible if his doctrine is rejected. You can't reject the doctrine and accept the star charts.

THE INQUISITOR Why not? It's the only solution.

THE POPE This shuffling makes me nervous. Forgive me if I seem distracted.

THE INQUISITOR Perhaps it speaks to you more clearly than I can, Your Holiness. Are all these people to go home with doubts in their hearts?

THE POPE After all the man is the greatest physicist of our time, a beacon for Italy, and not some good-for-nothing crank. He has friends. There's Versailles. There's the court in Vienna. They will call the church a cesspool of rotten prejudices. Hands off!

THE INQUISITOR Actually, we wouldn't have to go very far in his case. He is a man of the flesh. He would cave in very quickly.

THE POPE He gets pleasure out of more things than any man I ever met. Even his thinking is sensual. He can never say no to an old wine or a new idea. I will not stand for any condemning of physical facts, any battle cry of "church" against "reason." I gave him leave to write his book provided it ended with a statement that the last word is not with science but with faith. He has complied.

THE INQUISITOR But how did he comply? His book is an argument between a simpleton who—naturally—propounds the opinions of Aristotle, and an intelligent man, just as naturally voicing Mr. Galilei's opinions; and the concluding remark, Your Holiness, is made by whom?

THE POPE What was that again? Who states our opinion?

THE INQUISITOR Not the intelligent one.

THE POPE That is impudence. This stamping in the halls is insufferable. Is the whole world coming here?

THE INQUISITOR Not the whole world, but the best part of it.

*(Pause. The pope is now fully robed)*

THE POPE At the very most the instruments may be shown to him.

THE INQUISITOR That will suffice, Your Holiness. Mr. Galilei is well versed in instruments.

On June 22, 1633, Galileo Galilei abjures his doctrine of the motion of the earth before the Inquisition.

June twenty-second, sixteen thirty-three  
A momentous day for you and me.  
Of all the days that was the one  
An age of reason could have begun.

*Palace of the Florentine ambassador in Rome. Galileo's pupils are waiting for news. The little monk and Federzoni are playing the new chess with its sweeping movements. Virginia kneels in a corner saying an Ave Maria.*

THE LITTLE MONK The pope refused to see him. No more scientific debates.  
SAGREDO The pope was his last hope. I guess Cardinal Barberini was right when he said to him years ago: We need you. Now they've got him.  
ANDREA They'll kill him. The *Discorsi* will never be finished.  
SAGREDO *(with a furtive glance at him)* You think so?  
ANDREA Because he'll never recant. *(Pause)*  
THE LITTLE MONK When you He awake at night you chew on the most useless ideas. Last night I couldn't get rid of the thought that he should never have left the republic of Venice.  
ANDREA He couldn't write his book there.  
SAGREDO And in Florence he couldn't publish it. *(Pause)*  
THE LITTLE MONK I also kept wondering whether they'd let him keep the stone he always carries in his pocket. His touchstone.  
SAGREDO Where they're taking him people don't wear pockets.  
ANDREA *(screaming)* They won't dare! And even if they do, he'll never recant. "Not to know the truth is just stupid. To know the truth and call it a lie is criminal."  
SAGREDO I don't think so either, and I wouldn't want to go on living if he did, but they have the power.  
ANDREA Power isn't everything.  
SAGREDO Maybe not.  
THE LITTLE MONK *(softly)* He's been in prison for twenty-three days. Yesterday was the great interrogation. Today the judges are in session. *(As Andrea is listening, he raises his voice)* When I came to see him here two days after the decree, we were sitting over there; he showed me the little Priapus by the sundial in the garden—you can see it from here—and compared his own work with a poem by Horace, in which it is also impossible to change anything. He spoke of his esthetic sense, which compels him to look for the truth. And he told me his motto: Hieme et aestate, et prope et procul, usque dum vivam et ultra. He was referring to the truth.  
ANDREA *(to the little monk)* Did you tell him what he did in the Collegium Romanum while they were examining his tube? Tell him! *(The little monk*

*shakes his head*) He acted the same as always. He put his hands on his hams, stuck out his belly and said: Gentlemen, I beg for reason! (*Laughingly he imitates Galileo*) (*Pause*)

ANDREA (*referring to Virginia*) She's praying for him to recant.

SAGREDO Let her pray. She's all mixed up since they talked to her. They brought her confessor down from Florence. (*Enter the shady individual from the grand ducal palace in Florence*)

THE SHADY INDIVIDUAL Mr. Galilei will be here soon. He may want a bed.

SAGREDO Has he been released?

THE SHADY INDIVIDUAL Mr. Galilei is expected to recant at five o'clock before the plenary session of the Inquisition. The big bell of St. Mark's will be rung and the wording of the abjuration will be proclaimed publicly.

ANDREA I don't believe it.

THE SHADY INDIVIDUAL Because of the crowds in the streets, Mr. Galilei will be conducted to the postern on this side of the palace. (*Out*)

ANDREA (*suddenly in a loud voice*) The moon is an earth and has no light of its own. And Venus has no light of its own either and is like the earth and moves around the sun. And four moons revolve around the planet Jupiter which is as far away as the fixed stars and not fastened to any sphere. And the sun is the center of the universe and immovable in its place, and the earth is not the center and not immovable. And he was the man who proved it.

THE LITTLE MONK No force can make what has been seen unseen. (*Silence*)

SAGREDO (*looks at the sundial in the garden*) Five o'clock.  
(*Virginia prays louder*)

ANDREA I can't stand it! They're beheading the truth! (*He holds his hands to his ears, so does the little monk. The bell is not rung. After a pause filled with Virginia's murmured prayers Sagredo shakes his head in the negative. The others drop their hands*)

SAGREDO (*hoarsely*) Nothing. It's three minutes past five.

ANDREA He's resisting.

THE LITTLE MONK He hasn't recanted!

SAGREDO No. Oh, my friends!  
(*They embrace. They are wildly happy*)

ANDREA You see: They can't do it with force! Force isn't everything! Hence: Stupidity is defeated, it's not invulnerable! Hence: Man is not afraid of death!

SAGREDO Now the age of knowledge will begin in earnest. This is the hour of its birth. Just think! If he had recanted!

THE LITTLE MONK I didn't say anything but I was very worried. I was faint of heart.

ANDREA I knew it.

SAGREDO It would have been as if morning had turned back to night.

ANDREA As if the mountain said: I'm water.

THE LITTLE MONK (*kneels down in tears*) Lord, I thank Thee.

ANDREA But now everything has changed. Man is lifting his head, tormented man, and saying: I can live. All this is accomplished when one man gets up and says No!  
(*At this moment the big bell of St. Mark's begins to boom. All stand transfixed*)

VIRGINIA (*getting up*) The bell of St. Mark's. He hasn't been condemned!  
(*From the street the announcer is heard reciting Galileo's recantation*)

ANNOUNCER'S VOICE (*recorded*) "I, Galileo Galilei, professor of mathematics and

physics in Florence, hereby abjure what I have taught, to wit, that the sun is the center of the world and motionless in its place, and the earth is not the center and not motionless. Out of a sincere heart and unfeigned faith, I abjure, condemn and execrate all these errors and heresies as I do all other errors and all other opinions in opposition to the Holy Church."

*(Darkness)*

*(When it grows light again, the bell is still booming, then it stops. Virginia has left. Galileo's pupils are still there)*

ANDREA *(loudly)* Unhappy the land that has no heroes!

*(Galileo has come in, completely, almost unrecognizably, changed by the trial. He has heard Andrea's exclamation. For a few moments he hesitates at the door, expecting a greeting. As none is forthcoming and his pupils shrink back from him, he goes slowly and because of his bad eyesight uncertainly to the front where he finds a footstool and sits down)*

ANDREA I can't look at him. I wish he'd go away.

SAGREDO Calm yourself.

ANDREA *(screams at Galileo)* Wine barrel! Snail eater! Have you saved your precious skin? *(Sits down)* I feel sick.

GALILEO *(calmly)* Get him a glass of water.

*(The little monk goes out to get Andrea a glass of water. The others pay no attention to Galileo who sits on his footstool, listening. From far off the announcer's voice is heard again)*

ANDREA I can walk now if you'll help me.

*(They lead him to the door. When they reach it, Galileo begins to speak)*

GALILEO No. Unhappy the land that needs a hero.

*A reading in front of the curtain: (by Andrea as a child)*

Is it not obvious that a horse falling from a height of three or four ells will break its legs, whereas a dog would not suffer any damage, nor would a cat from a height of eight or nine ells, or a cricket from a tower, or an ant even if it were to fall from the moon? And just as smaller animals are comparatively stronger than larger ones, so small plants too stand up better: an oak tree two hundred ells high cannot sustain its branches in the same proportion as a small oak tree, nor can nature let a horse grow as large as twenty horses or produce a giant ten times the size of man unless it changes all the proportions of the limbs and especially of the bones, which would have to be strengthened far beyond the size demanded by mere proportion.—The common assumption that large and small machines are equally durable is apparently erroneous.

Galileo, *Discorsi*

1633-1642. Galileo Galilei spends the rest of his life in a villa near Florence, as a prisoner of the Inquisition. The *Discorsi*.

Sixteen hundred thirty-three to  
sixteen hundred forty-two  
Galileo Galilei remains a prisoner  
of the church until his death.

*A large room with a table, a leather chair and a globe. Galileo, now old and almost blind, is experimenting carefully with a small wooden ball roiling on a curved wooden rail. In the anteroom a monk is sitting on guard. A knock at the door. The monk opens and a peasant comes in carrying two plucked geese. Virginia emerges from the kitchen. She is now about forty years old. The monk takes them from her and examines them-suspiciously. Satisfied, he gives them back and she carries them by the necks to Galileo in the large room)*

VIRGINIA A present, dropped off by someone who's passing through.

GALILEO What is it?

VIRGINIA Can't you see?

GALILEO No. *(He goes closer)* Geese, Was there any name?

VIRGINIA No.

GALILEO *(taking one goose from her)* Heavy. Maybe I'll have some.

VIRGINIA You can't be hungry again. You just finished dinner. And what's wrong with your eyes today? You ought to be able to see them from where you are.

GALILEO You're standing in the shadow.

VIRGINIA I'm not in the shadow. *(She carries the geese out)*

GALILEO Put in thyme and apples.

VIRGINIA *(to the monk)* We must send for the eye doctor. Father couldn't see the geese.

THE MONK I'll need permission from Monsignor Carpula.— Has he been writing again?

VIRGINIA No. He's dictating his book to me, you know that. You have pages 131 and 132, they were the last.

THE MONK He's an old fox.

VIRGINIA He doesn't do anything against the rules. His repentance is real. I keep an eye on him. *(She gives him the geese)* Tell them in the kitchen to fry the liver with an apple and an onion. *(She comes back into the large room)* And now we're going to think of our eyes and stop playing with that ball and dictate a little more of our weekly letter to the archbishop.

GALILEO I don't feel up to it. Read me some Horace.

VIRGINIA Only last week Monsignor Carpula, to whom we owe so much—those vegetables the other day—told me the archbishop keeps asking him what you think of the questions and quotations he's been sending you.

*(She has sat down ready for dictation)*

GALILEO Where was I?

VIRGINIA Section four: Concerning the reaction of the church to the unrest in the arsenal in Venice, I agree with Cardinal Spoletti's attitude concerning the rebellious rope makers . . .

GALILEO Yes. (*Dictates*) . . . agree with Cardinal Spoletti's attitude concerning the rebellious rope makers, to wit, that it is better to dispense soup to them in the name of Christian charity than to pay them more for their ship's cables and bell ropes. All the more so, since it seems wiser to strengthen their faith than their greed. The Apostle Paul says: Charity never faileth.—How does that sound?

VIRGINIA It's wonderful, father.

GALILEO You don't think it could be mistaken for irony?

VIRGINIA No, the archbishop will be very pleased. He's a practical man.

GALILEO I rely on your judgment. What's the next point?

VIRGINIA A very beautiful saying: "When I am weak then I am strong."

GALILEO No comment.

VIRGINIA Why not?

GALILEO What's next?

VIRGINIA "And to know the love of Christ, which passeth knowledge." Paul to the Ephesians three nineteen.

GALILEO I must especially thank Your Eminence for the magnificent quotation from the epistle to the Ephesians. Inspired by it, I found the following in our incomparable "Imitation": (*He quotes from memory*) "He to whom speaketh the eternal word is free from much questioning." May I seize this opportunity to say something on my own behalf? To this day I am being reproached for once having written a book on celestial bodies in the language of the market place....

(*A knocking at the door. Virginia goes into the anteroom. The monk opens the door. Andrea Sarti appears. He is a man in his middle years*)

ANDREA Good evening. I am leaving Italy. To do scientific work in Holland. I was asked to see him on my way through and bring the latest news of him.

VIRGINIA I don't know if he'll want to see you. You never came to visit us.

ANDREA Ask him.

(*Galileo has recognized the voice. He sits motionless. Virginia goes in to him*)

GALILEO Is it Andrea?

VIRGINIA Yes. Should I send him away?

GALILEO (*after a pause*) Bring him in.

(*Virginia leads Andrea inside*)

VIRGINIA (*to the monk*) He's harmless. He was his pupil. So now he's his enemy.

GALILEO Leave us alone, Virginia.

VIRGINIA I want to hear what he says. (*She sits down*)

ANDREA (*cool*) How are you?

GALILEO Come closer. What are you doing? Tell me about your work. I hear you're on hydraulics.

ANDREA Fabricius in Amsterdam has asked me to inquire about your health.

(*Pause*)

GALILEO I'm well. I receive every attention.

ANDREA I shall be glad to report that you are well.

GALILEO Fabricius will be glad to hear it. And you may add that I am living in reasonable comfort. The depth of my repentance has moved my

superiors to allow me limited scientific pursuits under clerical control.

ANDREA Oh yes. We too have heard that the church is pleased with you. Your total submission has borne fruit. The authorities, I am told, are most gratified to note that since your submission no work containing any new hypothesis has been published in Italy.

GALILEO *(listening in the direction of the anteroom)* Unfortunately there are countries which elude the protection of the church. I fear the condemned doctrines are being perpetuated in those countries.

ANDREA There too your recantation has resulted in a setback most gratifying to the church.

GALILEO You don't say. *(Pause)* Nothing from Descartes? No news from Paris?

ANDREA Oh yes. When he heard you had recanted he stuffed his treatise on the nature of light in his desk drawer.

*(Long pause)*

GALILEO I keep worrying about some of my scientific friends whom I led down the path of error. Has my recantation helped them to mend their ways?

ANDREA I am going to Holland to carry on my work. The ox is not allowed to do what Jupiter denies himself.

GALILEO I understand.

ANDREA Fulganzio, our little monk, has given up science and returned to the fold.

GALILEO Yes. *(Pause)* My superiors are looking forward to my complete spiritual recovery. I'm making better progress than expected.

ANDREA I see.

VIRGINIA The Lord be praised.

GALILEO *(gruffly)* Attend to the geese, Virginia.

*(Virginia leaves angrily. In passing she is addressed by the monk)*

THE MONK I don't like that man.

VIRGINIA He's harmless. You heard what he said. *(On her way out)* We've got fresh goat cheese. *(The monk follows her out)*

ANDREA I'm going to travel through the night so as to cross the border by morning. May I go now?

GALILEO I can't see why you've come, Sarti. To stir me up? I've been living prudently and thinking prudently since I came here. I have my relapses even so.

ANDREA I have no desire to upset you, Mr. Galilei.

GALILEO Barberini called it the itch. He wasn't entirely free from it himself.

*(Pause)*

*(whispering)* I've been writing again.

ANDREA You have?

GALILEO I've finished the *Discorsi*.

ANDREA What? The *Discourses Concerning Two New Sciences: Mechanics and Local Motion*? Here?

GALILEO Oh, they let me have paper and pen. My superiors aren't stupid. They know that ingrained vices can't be uprooted overnight. They protect me from unpleasant consequences by locking up page after page.

ANDREA Oh God!

GALILEO Did you say something?

ANDREA They let you plow water! They give you pen and paper to quiet you! How could you ever write under such conditions?

GALILEO Oh, I'm a slave of habit.

ANDREA The *Discorsi* in the hands of monks! When Amsterdam and London and Prague are clamoring for them!

GALILEO I can just hear Fabricius wailing, demanding his pound of flesh, while he himself sits safely in Amsterdam.

ANDREA Two new branches of science as good as lost!

GALILEO No doubt he and some others will feel uplifted when they hear that I jeopardized the last pitiful remnants of my comfort to make a copy, behind my own back so to speak, for six months using up the last ounces of light on the clearer nights.

ANDREA You have a copy?

GALILEO So far my vanity has prevented me from destroying

ANDREA Where is it?

GALILEO "If thine eye offend thee, pluck it out." Whoever wrote that knew more about comfort than I do. I'm sure it's the height of folly to let it out of my hands. But since I've been unable to leave science alone, you may just as well have it. The copy is in the globe. Should you consider taking it to Holland, you would of course have to bear full responsibility. You'd say you bought it from someone with access to the Holy Office.  
*(Andrea has gone to the globe. He takes out the copy)*

ANDREA The *Discorsi*! *(He leafs through the manuscript. He reads)* "It is my purpose to establish an entirely new science in regard to a very old problem, namely, motion. By means of experiments I have discovered some of its properties, which are worth knowing."

GALILEO I had to do something with my time.

ANDREA This will be the foundation of a new physics.

GALILEO Put it under your coat.

ANDREA And we thought you had deserted us! My voice was the loudest against you!

GALILEO You were absolutely right. I taught you science and I denied the truth.

ANDREA That changes everything. Everything.

GALILEO You think so?

ANDREA You were hiding the truth. From the enemy. Even in ethics you were centuries ahead of us.

GALILEO Explain that to me, Andrea.

ANDREA With the man on the street we said: He'll die, but he'll never recant.— You came back and said: I've recanted but I shall live.—Your hands are stained, we said.—You said: Better stained than empty.

GALILEO Better stained than empty. Sounds realistic. Sounds like me. A new science, a new ethics.

ANDREA I should have known—better than anyone else. I was eleven when you sold another man's telescope to the senate in Venice. And I watched you make immortal use of that instrument. Your friends shook their heads when you humbled yourself to that child in Florence: But science found an audience. You've always laughed at heroes. "People who suffer bore me," you said. "Bad luck comes from faulty calculations," and "If there are obstacles the shortest line between two points may well be a crooked line."

GALILEO I remember.

ANDREA And in thirty-three when you decided to abjure a popular item of your doctrine, I should have known that you were merely withdrawing from a

hopeless political brawl in order to further the true interests of science.

GALILEO Which consist in . . .

ANDREA . . . the study of the properties of motion, the mother of machines, which alone will make the earth so good to live on that we shall be able to do without heaven.

GALILEO Hm.

ANDREA You won the leisure to write a scientific work which you alone could write. Had you perished in the fiery halo of the stake, the others would have been the victors.

GALILEO They are the victors. Besides, there is no scientific work that one man alone can write.

ANDREA Then why did you recant?

GALILEO I recanted because I was afraid of physical pain.

ANDREA No!

GALILEO They showed me the instruments. ANDREA Then it was not premeditated?

GALILEO It was not. *(Pause)*

ANDREA *(loud)* In science only one thing counts: contribution to knowledge.

GALILEO And that I have supplied. Welcome to the gutter, brother in science and cousin in treason! You like fish? I have fish. What stinks is not my fish, it's me. I'm selling out, you are the buyer. Oh, irresistible sight of a book, that hallowed commodity. The mouth waters, the curses are drowned. The great Babylonian whore, the murderous beast, the scarlet woman, opens her thighs, and everything is different! Hallowed be our haggling, whitewashing, death-shunning community!

ANDREA To shun death is human. Human weaknesses are no concern of science.

GALILEO No?!—My dear Sarti, even in my present condition I believe I can give you a few hints about the science you are devoting yourself to.  
*(A short pause)*

GALILEO *(in lecture style, bands folded over his paunch)* In my free time, and I've got plenty of that, I have reviewed my case and asked myself how the world of science, of which I no longer consider myself a member, will judge it. Even a wool merchant, in addition to buying cheap and selling dear, has to worry about the obstacles that may be put in the way of the wool trade itself. In this sense, the pursuit of science seems to call for special courage. Science trades in knowledge distilled from doubt. Providing everybody with knowledge of everything, science aims at making doubters of everybody. But princes, landlords and priests keep the majority of the people in a pearly haze of superstition and outworn words to cover up their own machinations. The misery of the many is as old as the hills and is proclaimed in church and lecture hall to be as indestructible as the hills. Our new art of doubting delighted the common people. They grabbed the telescope out of our hands and focused it on their tormentors—princes, landlords, priests. Those self-seeking violent men greedily exploited the fruits of science for their own ends but at the same time they felt the cold stare of science focused upon the millennial, yet artificial miseries which mankind could obviously get rid of by getting rid of them. They showered us with threats and bribes, which weak souls cannot resist. But can we turn our backs on the people and still remain scientists? The movements of the heavenly bodies have become more comprehensible; but the movements of their rulers remain unpredictable to

the people. The battle to measure the sky was won by doubt; but credulity still prevents the Roman housewife from winning her battle for milk. Science, Sarti, is involved in both battles. If mankind goes on stumbling in a pearly haze of superstition and outworn words and remains too ignorant to make full use of its own strength, it will never be able to use the forces of nature which science has discovered. What end are you scientists working for? To my mind, the only purpose of science is to lighten the toil of human existence. If scientists, browbeaten by selfish rulers, confine themselves to the accumulation of knowledge for the sake of knowledge, science will be crippled and your new machines will only mean new hardships. Given time, you may well discover everything there is to discover, but your progress will be a progression away from humanity. The gulf between you and humanity may one day be so wide that the response to your exultation about some new achievement will be a universal outcry of horror.—As a scientist, I had a unique opportunity. In my time astronomy reached the market place. Under these very special circumstances, one man's steadfastness might have had tremendous repercussions. If I had held out, scientists might have developed something like the physicians' Hippocratic oath, the vow to use their knowledge only for the good of mankind. As things stand now, the best we can hope for is a generation of inventive dwarfs who can be hired for any purpose. Furthermore, I have come to the conclusion, Sarti, that I was never in any real danger. For a few years I was as strong as the authorities. And yet I handed the powerful my knowledge to use, or not to use, or to misuse as served their purposes. (*Virginia has come in with a dish and stops now*) I have betrayed my calling. A man who does what I have done, cannot be tolerated in the ranks of science.

VIRGINIA You have been received in the ranks of the faithful.  
(*She -walks on and sets the dish on the table*)

GALILEO Yes.—I must eat now.  
(*Andrea offers him his hand. Galileo sees it but does not take it*)

GALILEO You are teaching now yourself. Can you afford to shake a hand such as mine? (*He goes to the table*) Somebody on the way through has sent me two geese. I still like to eat.

ANDREA Then you no longer believe that a new era has dawned?

GALILEO I do.—Take good care of yourself when you pass through the country with the truth under your coat.

ANDREA (*unable to leave*) Regarding your opinion of the author we discussed I cannot answer you. But I refuse to believe that your devastating analysis can be the last word.

GALILEO Thank you, sir. (*He begins to eat*) VIRGINIA (*seeing Andrea, out*) We don't like visitors from the past. They upset him.  
(*Andrea leaves. Virginia comes back*)

GALILEO Any idea who could have sent the geese?

VIRGINIA Not Andrea.

GALILEO Maybe not. How is the night?

VIRGINIA (*at the window*) Clear.

1637. Galileo's book *Discorsi* crosses the Italian border.

The great book o'er the border went  
 And, good folk, that was the end.  
 But we hope you'll keep in mind  
 You and I were left behind.  
 May you now guard science' light  
 Keep it up and use it right  
 Lest it be a flame to fall  
 One day to consume us all.

*A small Italian border town. Early morning. Children are playing by the turnpike near the guard house. Andrea, beside a coachman, is waiting for his papers to be examined by the guards. He is sitting on a small box reading in Galileo's manuscript. The coach is on the far side of the turnpike.*

THE BORDER GUARD Why are you leaving Italy?

ANDREA I'm a scholar.

THE BORDER GUARD "Reason for Leaving": Scholar.

THE FIRST BOY *(to Andrea)* Don't sit there. *(He points at the hut in front of which Andrea is sitting)* A witch lives there.

THE SECOND BOY Old Marina isn't a witch.

THE FIRST BOY Want me to twist your arm?

THE SECOND BOY She is too. She flies through the air at night.

THE FIRST BOY If she's not a witch, why can't she get any milk anywhere in town?

THE SECOND BOY How can she fly through the air? Nobody can do that.

*(To Andrea)* Or can they?

THE FIRST BOY *(referring to the second boy)* That's Giuseppe. He doesn't know anything, because he doesn't go to school, because his pants are torn.

THE BORDER GUARD What's that book?

ANDREA *(without looking up)* It's by Aristotle, the great philosopher.

THE BORDER GUARD *(suspiciously)* What's he up to?

ANDREA He's dead.

*(To tease Andrea, the boys walk around him in a way indicating that they too are reading books)*

THE BORDER GUARD Lets see if there's anything about religion in it.

*(checking Andrea's belongings)*

THE BORDER GUARD Nothing. Anyways there's no point in looking. Nobody'd be so open about anything he wanted to hide. *{To Andrea}* You'll have to sign a paper saying we examined everything.

*(Andrea hesitantly gets up and reading all the time goes into the bouse with the guards)*

THE SECOND, BOY *(pointing at the box)* Look, there's something else.

THE BORDER GUARD Wasn't it here before?

THE FIRST BOY The devil's put it there.

THE SECOND BOY No, it belongs to the traveler.

THE BORDER GUARD *(almost at the box hesitates and goes back)* Well, we can't examine everything. We'd never get through.  
*(Andrea returns with a pitcher of milk. He sits down on the box again and continues to read)*

THE BORDER GUARD *-(following him with papers)* Close the boxes.

THE SECOND BOY *(to Andrea)* You say you're a scholar. Then tell me: Can people fly through the air?

ANDREA Just a moment.

THE BORDER GUARD You may proceed.

*(The luggage has been picked up by the coachman. Andrea takes his box and prepares to go)*

THE BORDER GUARD Wait! What's in that box? ANDREA *(taking up his book again)*  
Books.

THE FIRST BOY It's the witch's box.

THE BORDER GUARD Nonsense. How could she hex a box?

THE SECOND BOY If the devil's helping her!

THE BORDER GUARD *(laughs)* Not in our rule book. We open it.  
*(The box is opened)*

THE BORDER GUARD *(listlessly)* How many?

ANDREA Thirty-four.

THE BORDER GUARD *(who has started rummaging superficially through the box)*  
All printed stuff. You'd have no time for breakfast, and when do you expect me to collect the overdue toll from Passi the coachman when his house is auctioned off, if I go through all these books?

THE BORDER GUARD You're right, we've got to get that money. *(He kicks at the books)* What could be in them anyway? *(To the coachman)* Pffft!  
*(Andrea and the coachman who carries the box cross the border. Beyond it Andrea puts Galileo's manuscript in his bag)*

THE SECOND BOY *(points at the pitcher which Andrea had left behind)* Look!

THE FIRST BOY And the box is gone! Now do you see it was the devil?

ANDREA *(turning around)* No, it was me. You must learn to use your eyes. The milk and the pitcher are paid for. Give them to the old woman. Oh yes, Giuseppe, I haven't answered your question. No one can fly through the air on a stick. Unless it has some sort of machine attached to it. Such machines don't exist yet. Maybe they never will because man is too heavy. But of course, we don't know. We don't know nearly enough, Giuseppe. We've hardly begun.