

Scene 2 – At Prague Castle

(King Karel is holding forth about astronomy. He is lecturing some of his courtiers – Leopold, Josef, Eliska and Hana. Queen Maria Anna and Komornik are also present, but are playing chess, or snap or ludo or something, and are taking no part in the discussion. Clearly the king’s knowledge is very limited. He is using a blackboard – a child’s blackboard would be ideal – to illustrate his ideas. A flip chart will do if you can’t find a blackboard. On the board are drawn the Earth and Sun. They are the same size. A ring around the Sun indicates the orbit of the Earth. The ring shows an uneven path – in some places it is closer to the sun, in others it is further away.)

Karel: And so you see, my ignorant subjects, that the orbit of the Earth around the Sun must be uneven.

Leopold: And you’re saying that that’s why some days are colder than others, sire?

Karel: Exactly! When the Earth is further away from the Sun – that’s when it is a cold day, like here, here and here. **(He indicates places on the orbit.)**

Eliska: Begging your majesty’s pardon, but I’d heard that cold weather was caused by cloud cover and the movement of air from colder regions. And by the seasons, of course.

Karel: Nonsense! That’s far too complicated. My theory is much simpler and therefore must be correct.

Eliska: So the seasons aren’t caused by the tilt of the Earth?

Karel: No – look – you can see winter here. **(He points to a region where the orbit is much further from the Sun.)** We are much further from the sun and so the Earth cools down and it snows. It’s snowing right now.

Hana: But it’s only snowing in the north, your majesty.

Karel: What?

Hana: It's only snowing in the north. We're having winter in the northern hemisphere, but it's summer in the south.

Karel: Well that doesn't make any sense at all. If it's winter in my kingdom it must be winter everywhere.

Hana: I think the seasons being caused by the tilt of the Earth is a reasonably well-established fact, sire.

Karel: I'm king! If I say it's winter everywhere, it's winter everywhere! Look – Earth – further away from Sun – colder!

(There is an uncomfortable silence. Eventually Josef breaks the silence.)

Josef: Sire – on your diagram you show the Sun as being the same size as the Earth, but in fact it's much bigger, isn't it?

Karel: Yes, yes. My diagram is not drawn to scale. The Sun is, of course, twice as big as the Earth.

Josef: *Twice* as big?

Karel: Roughly twice as big, yes.

Leopold: But it's much bigger!

Karel: Twice as big *is* much bigger. If I was twice as big as you, Leopold, I'd be *much* bigger than you, wouldn't I?

Leopold: No – I mean the Sun's much bigger than twice as big as the Earth.

Karel: Twice as big!

Josef: I'm sure I read it was 100 times as wide.

Karel: Twice as big!

Josef: Meaning its volume is a million times greater than...

Karel: Twice as big!

(Another uncomfortable silence.)

Hana: But the Sun is hot, isn't it, sire?

Karel: About a hundred degrees according to my calculations. Phew – pretty hot. **(He flaps a hand in front of his face.)**

Hana: One hundred degrees?

Eliska: I don't think we would feel much heat from the Sun if it were only one hundred degrees, your majesty.

Karel: A hundred degrees is hot enough to burn you. I remember Nanny once had a cup of tea and I put my finger in it to see how hot it was and it burnt my finger. **(He holds his finger.)** Nanny said I was a very silly boy. I miss Nanny.

Eliska: But it's millions of miles away, sire.

Karel: Twelve!

Hana: Twelve?

Karel: Twelve miles away, yes. If it were any closer we would never get any snow. Be too warm, you see.

Eliska: I don't think there's any danger of our thinking it could be *closer*, sire.

Leopold: Your diagram doesn't show the Moon, your majesty.

Karel: Ah yes – the Moon...which rides upon the back of the Great Celestial Cow.

Leopold: Celestial...*Cow*?

Karel: Of course! It's obvious isn't it? That's why it's called the *Mooooon*.

(Vilem bursts in.)

Vilem: Sorry I'm late your majesty.

Karel: That's OK, Vilem. I have just been expounding my theories about the solar system to some of my courtiers, here.

Vilem: Theories, sire? Oh no...

Karel: What's the matter?

Vilem: You haven't been telling them about the Great Celestial Cow, have you?

Karel: As a matter of fact I have.

Vilem: Oh dear. Well – the show's over, ladies and gentlemen. His majesty and I have some very important matters to which we must attend.

Karel: I will finish my lecture after tea. Komornik, let cook know I shall be taking tea in the nursery.

Komornik: Very good, sire.

(Komornik exits.)

Leopold: Do we have to come back? We're very busy with preparations for the Christmas festivities.

Karel: Don't you want to hear my ideas about the planets? That Jupiter is, in fact, just a big ball of string?

Leopold: With respect, your majesty, I fear your theories may be a little...um...*advanced* for us.

Karel: OK – remain in ignorance. But don't come running to me when the Galactic Aardvark comes and slurps up the world.

(The four courtiers exit.)

Vilem: This is the end of the 19th century – the facts about how the solar system works are pretty well established, your majesty. I'm not sure there's much room for your somewhat *progressive* theories.

Karel: I'm bored of that now. Do you have a solution to the problem I set you last week?

Maria Anna: I do hope so. Ickle dumpling has been driving me mad trying to work out how many grains of sand there are in all the deserts and oceans, haven't you?

Karel: Dear! But yes I have been trying to find my own answer. And do you know what? I do believe the answer came to me this morning as I was doing my number twos.

Vilem: You have your own solution? Perhaps you don't need mine after all.

Karel: No, no. We can compare answers.

(Enter Komornik)

Vilem: How shall we do that, sire?

Karel: You show me yours and I'll show you mine.

Komornik: Majesty!

Karel: What?

Komornik: The royal Johnson is not for public display!

Karel: We're talking about mathematical solutions you silly chamberlain.

Komornik: Oh I do apologise, your majesty. I thought you were talking about...well...you know. Downstairs.

Karel: Don't be ridiculous. **(To Vilem)** I have my solution on this piece of paper. Here. **(He hands it over.)** Now give me yours. **(He takes Vilem's solution.)**

(Vilem opens up the piece of paper. He looks puzzled and holds the piece of paper in different orientations.)

Karel: Well?

Vilem: According to your majesty, the answer to 'how many grains of sand are there in all the deserts and oceans' is...a picture of a duck **(he turns the paper over to reveal a child's drawing of a duck).**

Karel: What do you think?

Vilem: I don't know what to say, your majesty.

Maria Anna: Isn't he a clever boy?

Vilem: His thinking is certainly very original, your majesty. Perhaps his majesty would like to look at mine now?

Komornik: I think you already have your answer, Mr Pospisil. His majesty is never wrong.

Vilem: Um – sometimes problems can have more than one solution?

(Karel opens up the paper. He looks at it and turns the paper much as Vilem did, trying to make sense of it.)

Karel: But what's this?

Vilem: It's a number, your majesty.

Karel: Oh, I see. Yes. A one with lots of zeroes. Let me see, that would be...a hundred billion trillion gazillion.

Vilem: A gazillion, as I have told his majesty before, is not a real number.

Karel: It is if I say it is.

Vilem: Of course, sire. A one followed by twenty-four zeroes is more commonly called one septillion. That would be my upper estimate.

Maria Anna: Twenty-four zeroes? Can the answer possibly be that large?

Vilem: I believe so, your majesty.

Komornik: Is that more or less than the number of stars in the sky, mathematician?

Vilem: It could be about the same as the number of stars in the universe. Of course we can't see them all.

Karel: Not with the Great Celestial Cow in the way.

Vilem: Quite sire.

Karel: You are a clever man, Vilem Pospisil. You know I would believe most anything you tell me.

Vilem: His majesty flatters me.

Karel: Not at all.

Komornik: His majesty has a new problem for you, mathematician. One that is particularly pertinent to the time of year.

Maria Anna: We thought of it together, didn't we dear, while you were writing your Christmas list.

Karel: We did. I sent my Christmas list to Santa yesterday. I want a toy train. Have you sent yours?

Vilem: Not yet, sire.

Karel: You'd better hurry. It's only three weeks until Christmas, you know. I'm so excited already I can hardly sleep. Nanny used to make me warm milk when I couldn't sleep. I miss Nanny.

Vilem: So what's the new problem, your majesty?

Karel: Tell him Komornik.

Komornik: As you know, Santa Claus visits every house in the world on Christmas Eve leaving presents for every boy and girl who's been good.

Karel: (Excitedly) I've been good this year! I've been *so* good. **(To Maria Anna)** Haven't I been good?

Maria Anna: Yes, my little lamb, you have been very good.

Komornik: What his majesty would like to know is how quickly must Santa Claus travel in order visit every house in the world?

Vilem: Santa Claus?

Karel: It must be jolly quick, don't you think?

Vilem: (Uncertainly) Yees..... that's going to be a tricky one. I shall return home straight away and start work on it so that I may have an answer for you next week. Good day **(to the king)** your majesty, **(to the queen)** your majesty.

(Exit Vilem. Enter the carollers.)

Baruska: Time for another carol. Come on your majesty – you can join in too.

Karel: How did these people get in here? Komornik?

Komornik: I haven't the faintest idea. Shall I have them removed, sire?

Baruska: You just try it, buster. Come on, you'll like this one.