

The story begins
in the seventh century during
the reign of the King Harshavardhana.
Bhikku Sariputta, the Head of the Buddhist
Vihar at Sthanvishwar is a keen observer of the
star-studded heavens. His pet student Rohit witnesses
a remarkable sight in the sky and rushes to his teacher for
guidance. Sariputta suspects that the event is of such great signi-
ficance that he immediately reports it to the King. At the King's behest
with Rohit's help Sariputta prepares meticulous records of the event
which the buried underground for posterity. It is in the twentieth
century that the records in the form of brass plates are acciden-
tally unearthed. Tatyasaheb Bhagvat, a scholar on ancient
Indian studies and the astrophysicist Avinash Nene
together find might have momentous impli-
cations for the earth and its inhabitants.
Did the event records by Sariputta
spell doom? The final part of the
novel tells us what happened
several more centuries
later...



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THE COSMIC EXPLOSION

Jayant V. Narlikar

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THE COSMIC EXPLOSION

(Science Fiction)

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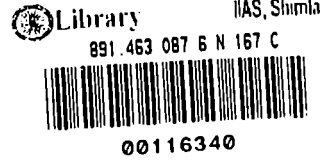
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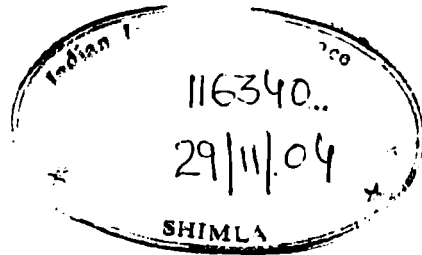
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One

“ISN'T Rohit back yet?” asked the Royal Physician as he sat down to dinner. The sun was about to set and ‘dinner before dark’ was his practice.

Sucharita shook her head to indicate her negative reply. Before she could say anything their eight year old daughter Vishakha replied: “Oh father! Brother said he would be late when he went to study in the afternoon. His teacher with the difficult name has asked him to stay on as he is going to show them something unusual.”

The Royal Physician looked at his wife questioningly. She could not hide her disapproval and said, “Aryaputra,* what Vishakha says is right. Bhikku Sariputta has asked Rohit to stay on for some time after sunset in order to show him the conjunction of some stars.”

“Oh yes, today there is the conjunction of Venus and the moon,” said the Royal Physician.

“Father, what is a conjunction? Do Venus and the moon really get united?” asked Vishakha.

“No dear, not really. But they appear to have united. Just as you see the moon going round the earth, so does Venus move in the sky. Sometimes when they both come to the same side, they look like they are united...”

“Does Venus hide behind the moon?”

“Oh Vishakha! Stop chattering. Now don't open your mouth till you eat everything on your banana leaf.”

“Oh Mother! How will I eat without opening my mouth?”

The Royal Physician let out a guffaw in appreciation of his daughter's wit. The mother was not amused.

“All because of you. Now Vishakha too will follow in Rohit's footsteps.”

* A form of address for the husband in olden days.

“Rohit’s footsteps? What do you mean?”

“You are only concerned about your patients. Otherwise you would have understood what I meant,” continued Sucharita. “Asking questions and arguing all the time. Why is this so and why is that so? I have already given up. His teacher too was quite annoyed that instead of learning things by heart, he asked questions continuously.”

The Royal Physician knew that his wife’s disapproval concealed a grudging appreciation. He smiled and said, “that is precisely why we have sent him to Bhikku Sariputta. He can satisfy all his queries very well.”

“Yes, but I was hoping he too will become an expert physician like his father. He will study the treatises of Charak and Sushrut. But instead he is reading the works of Aryabhata and those other books written by foreigners.”

“Knowledge has many facets. Some follow Ayurveda like me, some follow Vishwakarma and build palaces, some study mathematics and some learn by observing the stars in the sky. I sent Rohit to Sariputta only because of his fascination for the stars. I did not think it right to force him to study any subject against his wishes. I am sure he will be an expert in his chosen subject.”

The Royal Physician Maheshbhatt himself had become famous in spite of a childhood spent in poverty. Right from his schooldays, he was fond of observing various plants and was curious about their medicinal qualities. Ayurvedacharya Anand Mishra saw the 12 year old Mahesh apply a self-made paste to a wounded bird and on his own invited him to his medical school. Anand Mishra always impressed upon his students that medical treatment must not be based only on our ancestral knowledge, but must be enriched with new research based on actual experimentation. Mahesh followed his teacher’s advice in his study and practice and soon became his favourite student.

While starting his own practice, Maheshbhatt had to face many difficulties. People were afraid to go to him because he often gave a new line of treatment instead of adopting the usual remedies. But slowly the word spread that his new remedies were very effective. Finally he climbed the ladder of success and was appointed Royal Physician at the Court of Emperor Harshavardhana. He still continued to treat the common people; in fact he had accepted his new appointment only on that condition.

The Royal Physician Maheshbhatt was proud that his son Rohit was also demonstrating similar instincts in another branch of knowledge. Despite the pre-

valent custom, he had also decided to educate Vishakha till she became a learned person.

“Oh Father! But I would like to dispense medicines like you do,” said the Vishakha of her dreams.

“Vishakha,” called her mother angrily.

“See, Mother! I have eaten everything on my banana leaf. Why can’t I talk now?”

“I have told you many times that children are not to intervene when elders are talking. What a physician you will make! Other parents are already worrying about the marriages of their daughters who are your age.” Her mother raised her voice slightly.

Vishakha kept quiet. The Royal Physician realised that if he did not intervene, tears would start flowing from his daughter’s eyes. He said, “Oh daughter! Don’t you worry, we will marry you only after you become a physician. All right? Now your mother and I are worried about your brother Rohit—when will he come home and when will he have his meal ...”

“I know that. Brother has told me. But why should I intervene when you are talking?” Vishakha exclaimed while throwing an angry glance at her mother.

“Tell me in my ear so that mother will not know,” said the Royal Physician looking at his wife with a twinkle in his eyes.

Vishakha got up from her seat enthusiastically, after washing her hands and mouth, whispered something in her father’s ear.

On hearing her, the Royal Physician’s eyes widened in surprise.

Two

Buddham śaranam gacchami !
Dharmam śaranam gacchami !
Sangham śaranam gacchami !

THE distant prayer could be heard against the background of chiming bells lending enchantment to the quiet atmosphere. The Buddhist monastery was about a mile away to the north of the city of Sthanvishwar. Bhikku Sariputta, its Head, was its foremost teacher and philosopher. His reputation had spread upto Srilanka in the south, Burma in the east, China in the north and Baghdad and Istambul to the west. That is why students came to the Sthanvishwar monastery from great distances.

Besides religion and philosophy, Sariputta was also interested in science. He had collected volumes on astronomy from Arabia and Greece and had read them and spent many a night in observing the skies. He believed that science should be taught at a young age and he also realised that it cannot be taught by memorization. By kindling the spark of curiosity in the minds of the young he strove to inculcate in them an appreciation for science. So he had collected a few promising young boys around him. Rohit was one of them.

Rohit was still quite fresh even after walking about four miles from his house as if the sound of the prayer put new energy in his body. He always felt a kind of excitement while on his way to Sariputta. He wondered which new mystery of nature would be unfolded that day. Sariputta had unravelled many secrets through science—right from the core of a flower to the surface of the stars and today he was going to show him an unusual phenomenon in the sky. Today he was going to see a comet.

He was, in any case, going to Sariputta to watch the conjunction of Venus and the moon tonight. But the preceptor had promised to show him something else, for which he would have to stay awake for two hours after midnight.

Sariputta had urged him to take permission from his parents for returning late. His father would have allowed it but his mother might have worried and said 'no'. So Rohit had told only Vishakha and run away. He had even told the secret of the comet to her which was to be shared only with their father! He knew that a comet was considered inauspicious and that his mother believed it to be so and therefore would not let him go.

"Oh Rohit! We were just waiting for you." His classmate Anand called out. Ashok, another student, was also with him.

"Where is our revered teacher?"

"On the hill; let us go there quickly."

The three of them ran up the hill. The monastery was at the foot of the hill and the monks were busy with their activities. Only two or three of them were climbing the hill as others had no interest in watching the skies or in the science-teaching of Sariputta.

The 15 to 20 students in the group were of about the same age as Rohit—which was about 15 or 16. Some were residents of the monastery while others had come from Sthanvishwar like Rohit.

Stars were seen shining after sunset. The moon and Venus were very close to each other. The distance between them was narrowing imperceptibly.

"We are lucky that there are no clouds today," said Sariputta. "Now concentrate only on Venus and the moon. You will see the conjunction after some time. But tell me what actually happens there."

"The moon and Venus collide against one another," said Vijay.

"The moon swallows Venus."

"The moon attracts Venus," said Mahanand.

The revered teacher moved his head to indicate his negative response. "What you see is not always true. Think again, children."

"I shall tell you, revered teacher," said Rohit.

"Speak, my child," said Sariputta hopefully. Rohit was his brightest student.

"I think the moon and Venus move in the sky through their own paths. I think the path of Venus must be much farther from the earth than that of the moon. When the moon comes in the path of Venus, it appears as if there is a union."

"Well done! Congratulations for finding the right answer." The revered teacher patted Rohit on the back and continued, "I had told you about the



Look towards East about 10 degrees northward.

eclipse. When does a solar eclipse take place? When the moon comes between the sun and the earth, the sun hides behind the moon for a while. Simpletons believe that some demon has swallowed the sun. There is less light because the sun is covered, it gets dark during the day. So people get scared unnecessarily. But is there anything to be scared of when you know the real reason?"

"No, not at all," the children said in unison. Sariputta looked satisfied.

"Revered teacher," said Rohit.

"Yes, my child?" asked Sariputta.

"When will you show us the comet?"

"Have some patience, my child; the comet is just rising. You know that the stars near the horizon don't look very clear. After a while they will be clearer."

"Revered teacher, please tell us something about the comet while we wait," persisted Anand.

"My grandmother says that a comet is inauspicious," said Vikram.

"Yes, our priest says that we should not look at a comet," added Vijay. Sariputta smiled.

"That is why, children, we must know about the comet. First, let us see, why is a comet inauspicious?"

"Because there are epidemics when the comet appears. Great men die suddenly," said Rohit.

"Does this not happen when there is no comet? Last year there was an epidemic of fever with headache, body ache, etc. Hundreds of people died. Was there a comet then? Death is inevitable. One dies because of old age or disease or accident. Four years ago the famous Lord Chandavarma in Emperor Harshavardhana's Cabinet, fell off his horse. Was there a comet then? ... In short, whether there is a comet or not, people die because of accidents, diseases or war."

"But then what is a comet? Why does it have a tail?" asked Ashok.

"In fact I too do not have an answer. But I am sure that science will find the answer one day. Now about the tail: it can have different shapes. Varahamihira has recorded and classified many comets. My guess is that the tail must be a fountain of gas and dust particles. Look about 10 degrees south to the east—a little above the horizon."

The children started looking with concentration. Sometimes someone would think that he saw the comet, but then it would become clear that it was only his

imagination which made him say so.

"There, there, I can see it!" shouted Mahanand suddenly. There was conviction in his voice.

"Where? ... where?" asked others excitedly.

"Look at the top of the tree—one finger's length above it."

The children tried and finally succeeded. Actually Sariputta had seen it with his expert eyes long back, but had said nothing. He wanted the children to experience the thrill of discovery—the greatest pleasure in scientific observation.

One by one each one was convinced that the small nebulous cluster of light was indeed the comet. It definitely had a short tail.

"Is the tail in the opposite direction from that of the sunset?" asked Sariputta.

"Yes," they all exclaimed together.

"It is always so. The tail of the comet is always in the direction opposite to the sun," said Sariputta.

"Why?" rose a collective question.

"I do not know ... But I think the light from the sun and the pressure of its gas must be pushing the tail away from the sun."

It was not possible to know how many children understood and accepted the explanation. They were all lost in watching the comet. Sariputta was replying to their questions.

After some time he called them all together. "Children, it is late now. The monks and the students from the monastery will return with me. Others should return home. The comet will become bigger and brighter in the next few nights. We will come here again for observation after a fortnight. Till then continue to study. God bless you."

The master turned and started descending the hill followed by five or six students who stayed in the monastery. Soon they disappeared into the darkness.

"Come on Veerabhadra, half the night is over. We have to prepare for our examination early tomorrow morning," said Vikram.

"Oh yes! Acharyapad Krishnaswamy is very strict about the study of the Vedas," agreed Veerabhadra.

"I do not like learning by heart at all. Instead, the method of Acharya Sariputta is much better. Rohit, are you not coming with us?"

"You two go ahead. I will wait here a little longer," replied Rohit.

Vikram and Veerabhadra started on their way back and were soon out of sight.

There was no one else on the hill. Rohit alone had stayed back. He had a great attraction for the sky and today he could not get the comet out of his mind.

From where do the comets come?

Where do they go after staying in the sky for a few months?

Does a comet ever return?

Suppose a comet dashes against the earth by mistake?

Rohit reclined against a rock. In front of him the tail of the comet was more clear now. If Acharya does not know the answer, he says so clearly. On the contrary, Acharya Krishnaswamy always says that all the answers are to be found in the study of the Vedas. But when I don't even understand the questions in the Vedas how can I get the answers? If I were skilled in learning by heart like Veerabhadra and Vikram, I too would have been Acharya Krishnaswamy's favourite student just like them. But since I cannot learn by heart what I do not understand, I have to receive punishment.

Watching the skies always gave rise to so many questions in Rohit's mind.

Planets are near but stars are far away—that means exactly how far?

Acharya Sariputta says that the sun is a star. Hard to believe but he is going to convince me one day.

Are all the stars similar?

Is there really nothing between the stars or are there some other invisible things in between?

Rohit became drowsy while thinking about all these things. Even though he knew that he must return home, he still wanted to sleep under the canopy of the stars. The cool breeze was so pleasant. He decided to stay there for some more time. In any case, everyone at home would be asleep. No one would know if he reached a little later.

But one cannot keep track of time while asleep. When Rohit was awakened by the chirping of birds, dawn was about to break. The comet that was one finger above the tree, was much higher now. Rohit got up with a start but he was not watching the comet.

He was dumbstruck by an extraordinary sight in the sky.

But only for a few seconds.

Like someone possessed of an extraordinary energy, Rohit went bounding down the hill to see the Acharya.

Three

Victory be to Shrikanthadhipati Kanyakubjanaresh
Paramabhattacharak Emperor Harshavardhana!

THE entire city of Sthanvishwar was resounding with cries of victory. Harshavardhana was returning today after defeating King Dhruvasen II of Vallabhi. The city was decorated with colourful buntings, traditional flags, arches and a shower of flowers to the accompaniment of *mridang* and conch. The singing of holy hymns added to the festive atmosphere. Harshavardhana's sovereignty over the territory to the north of river Narmada was established beyond doubt. All other kings were aware of the power of the peace loving Emperor.

The royal elephant was gracefully progressing along the main street to the royal palace as though he alone represented the enormous power of the kingdom. Of course, this was nothing new to him. During the victorious reign of the Emperor, the elephant had taken part in many such processions. It would not be a matter of surprise if it had boasted to the other elephants that the King was victorious only because he carried him on his back!

With great fanfare the procession arrived at the main gate of the palace. Harshavardhana got down from the elephant with grace and energy. The Royal Priest Vasubhuti welcomed him.

"May you have a long life! May you conquer the whole world! May you be happy!"

"With the grace of Mahavarah and with your blessings, I have succeeded in doing my duty," exclaimed Harshavardhana as he bowed to the priest. Before entering the city, he had offered his prayers in the Mahavarah temple outside the city. Suddenly he noticed someone standing in front of him and he smiled for a moment.

"Oh Bana! No doubt, you are going to include this event in your poetical

works embellishing it in your flowery style!”

Banabhatta bowed to him and said, “You really have not left much scope for our poetic imagination. Your triumphs are so brilliant.”

“See, you have already exaggerated! Well, I shall enjoy your poetry at leisure some other time.”

“Yes Maharaj, Mahadevi and the other ladies of the palace are waiting to welcome you with the lighted oil lamps. I do not want to face their wrath!” Banabhatta bowed and stepped aside. Amidst the welcoming lights the King entered his private chambers for rest.

The Royal Physician Maheshbhatt was waiting there. He checked the King’s pulse and examined the wounds he had received in the battle and nodded.

“Rajavaidya, are you alarmed on any account?” asked the king.

“No Maharaj, I nodded only to indicate that by the grace of God you are in sound health. On your iron strong body, these wounds are just decorations. There is nothing for me to do ... there is really no need to do anything,” assured the Royal Physician.

“I would only request you to take rest for one full day and only then resume your royal duties of governing the State.”

“What the Royal Physician says is right” said Amatya Sudaksha. “In your absence Mahasandhivigrahi Kumar Krishnavardhana has looked after the affairs with great competence. So no urgent work is awaiting your attention.”

“Kumar is an efficient administrator. I was not worried about it at all. But Sudaksha, I will not be at ease till I have talked to you and to him. I will rest after that. Where is Kumar?” asked the King.

“After receiving you at the city gates, Kumar hurried to the judicial chamber.” replied Sudaksha.

“Then please call him to the conference room immediately” and the King started chatting with the Royal Physician. He enquired about the physician’s family, particularly about Rohit and Vishakha. With a little surprise and joy the physician asked,

“Maharaj, you are busy looking after millions of your subjects from Kashmir to Narmada and Saubir to Banga... and how do you still remember the names of common people like those in my family?”

Harshavardhana smiled and said, “Oh, it is only due to your modesty that you count yourself among the common people. I have observed both your

children when as tiny tots they used to come to play in the palace. Your son Rohit is unusually bright. He can argue with grown-ups even at a young age. Do you know what happened before I left for the campaign?"

"That is during the auspicious four months last year? What did he do?"

"Kumar asked the royal astrologer to find an auspicious time for me to set out for the war. Ramanuja studied his almanac and went over the calculations for a long time. Finally he said, "Don't go to war this year. The planetary position is not favourable. Both Kumar and I were disappointed. Chanakyaniti was clearly indicating that there will not be a better chance than this to defeat Dhruvasen. But the astrologer insisted that the only auspicious time was after the month of Chaitra (the first month of the New Year). I was going to give in to the predictions and keep quiet. But your Rohit intervened.

"Goodness Gracious! and what did he say? Sometimes he oversteps his limits in his enthusiasm," said Maheshbhatt in utter disbelief.

Harshavardhana smiled and said, "He was studying the calculations made by the royal astrologer. On hearing his verdict, he said, "Maharaj, you are going on this expedition to conquer Dhruvasen because of his wrongful deeds; any time is an auspicious moment for a task that is morally right and based on justice. So instead of depending on irrational beliefs, you should select the time that diplomacy indicates to be the best."

"This is too much! Did he say so? He said too much for his age and experience" the Royal Physician was very upset.

"This is exactly what Kumar said," continued the King. "Ramanuja of course was terribly angry. An argument about astrology ensued between him and Rohit. When Ramanuja remarked that making some light hearted comments on astrology was a sign of ignorance, child Rohit replied that to believe that the planets affect human life and behaviour without any proof was a sign of blind faith."

"All this is the teaching of Sariputtapada," said the Royal Physician.

"There is no doubt about the scholarship of Sariputtapada. But the strength of a statement does not depend on who has made it and how old the person is, but on the pure logic of the statement. And I would say that in this argument Rohit was definitely superior to Pandit Ramanuja. Finally he said to me, "Maharaj! Did Krishna find an auspicious time to kill Kansa and did Rama wait for an auspicious moment before attacking Ravana? Did the Mahabharata begin at an auspicious moment? If it did, then the astrologers must have chosen it as an

auspicious time for both Kauravas and Pandavas ... And still why were the Kauravas completely eliminated? Why were the Pandavas victorious? Was it because of the planetary position or because of Yogeshwar Krishna's advice in the war or because of the skills of Dhanurdhar Partha in the war?"

"Oh, so the child had many arguments," exclaimed Maheshbhatt with approval.

"And finally he said, 'Rajadhiraj! Pardon me for reminding you about a sad happening. But your elder brother King Rajyavardhana had set out to conquer Malavaraj and the Gandadhipati Shashank at an auspicious time.' That reminder really shook both Kumar and myself. When Shashank killed my brave brother by treachery, where were these auspicious planets? We both then decided to launch the expedition immediately against the advice of Ramanuja," said Harshavardhana with satisfaction.

"And today you have returned after a successful expedition! As his father, I am proud of Rohit," exclaimed the Royal Physician.

Just then the messenger came and said, "Mahasandhivigrahi Kumar Krishnavardhana and Amatya Sudaksha are waiting for Maharaj." On hearing this Harshavardhana got up.

Four

“‘**R**ED flag,” the King told the guard as he entered.

“As per your order,” the guard bowed and put the red flag on the door.

The guard had two more coloured flags with him, a green one and a yellow one. The flags indicated who could enter the conference room while the king was inside. With the green flag, anyone could enter—of course after sending a message through the guard. With the yellow flag, the entry was restricted to only three persons—Mahadevi herself, Prince Krishnavardhana and Amatya Sudaksha. The red flag indicated maximum secrecy of the meeting and as such *no one* could enter.

The guard closed the door after Harshavardhana entered. There were nine seats in the room. After occupying the main seat, he nodded and Krishnavardhana and Sudaksha occupied their seats.

“In my absence, both of you took care of the kingdom with competence. Therefore, I could go to war without any worries. I am indeed grateful to both of you,” said the King.

“It was our duty, Maharaj. You do not have to be grateful for that,” replied Prince Krishnavardhana. “Instead you should judge if we have done our duty as well as we should have,” said Amatya Sudaksha.

“Kumar and Amatya! I did not thank you as a king but as a person. When you become a king, along with the powers you also have certain responsibilities. More powers mean more responsibilities which can be overwhelming for the King.” Saying this the King addressed himself to the main business.

Krishnavardhana and Sudaksha had brought notes about the tasks assigned to them. They knew from previous experience that the King would ask them about these even before taking food or rest.

“Speak, Amatya, you proceed first.” Upon this order of the King, Amatya

bowed slightly and started, "Maharaj, according to the practice established by yourself ... bad news first ... Messengers from the region of Banga have brought news of a great famine."

"That is bad. This is a big problem for that region. Even though they are far away from Kanyakubja, I want the people of Banga to know that we are equally concerned about them," said Harshavardhana sadly.

"Yes Maharaj. When the representatives of the Banga came here seeking assistance we told them that a large part of the stock of grains from Kurukshetra was already on its way to Banga through the Ganga."

"Wonderful. Next?"

"We have arrested the prominent citizen Dhanadatta from Prayag."

"Dhanadatta? Arrested such a benevolent person?"

"His benevolence and donations were at the cost of the royal treasury. It was proved that he had not paid taxes for many years."

"We are indeed living through bad times Kumar, what punishment did you give him?"

Mahasandhivigrahi replied calmly, "The goddess of justice is harsh, Maharaj. Dhanadatta gave many donations for temples and other works, at times, even helped you monetarily for your expeditions. Even then, I had to give him punishment according to the law. We collected double the amount of the tax he had evaded and sent him to jail for one year."

"That was just. All people must know that the same rules and regulations apply even to people close to the King. Any other bad news Amatya?"

"Fortunately I have no bad news to report Maharaj." Saying this Sudaksha looked at Krishnavardhana.

"Well then, Kumar, what is your news?"

"There is only one matter causing worry. The nuisance from the Yaudheyas has gone up from Gandhar to Saubir. Their attacks are increasing especially from the banks of the river Indus."

"We always face some danger from the north west. The Huns have been defeated. Unfortunately we cannot say that all our problems are now over. What should be done to remedy the situation?" asked Harshavardhana.

"We have already taken action. The Chief of our Army Shiladitya himself has gone there with sufficient forces," replied Kumar.

"One needs the army to defeat the enemy, but that is not the only remedy,

Kumar! The population in that area should be on our side. We must listen to their problems and find their solutions. If there is no unrest, then the enemy from outside cannot take any advantage."

"If the Emperor would permit, I will tour the area myself."

"Very well! You can leave tomorrow. Good projects should not be delayed. Now I am eager to hear the good news ... Amatya?"

"One good news is that Kumar Krishnavardhana has got a baby boy," answered Amatya.

"Congratulations! But then, Kumar, you may not like to go on tour right now. Would you like to go after a few days?" asked the King.

"Maharaj! You yourself believe that it is the sacred duty of a king to look after his subjects as if they were his own progeny ... just as has been mentioned in the Manusmriti. I would not like to delay obeying your order by succumbing to the temptation of being with my newborn son. I will enjoy being with my child after fulfilling my tour of duty."

"Very well! I can discharge my responsibilities only because I have assistants like you ... Any other good news?"

"Maharaj, Pratyant Dasyus have been defeated and there is peace in the whole region of Aryavarta. This is the achievement of the newly trained unit of our army."

"Wonderful! Reward them in a fitting manner."

Suddenly the bell at the door chimed. This was the first time that it had rung when there was a red flag outside. Kumar Krishnavardhana did not hide his disapproval. Amatya got up to admonish the guard. But the King instructed him to sit down and said, "Vishram knows his responsibility. Unless there is an emergency, he will not ask for permission. Call him by sounding the bell."

Amatya rang the bell indicating consent. The guard opened the door, entered and said, "I am sorry for disturbing you Maharaj, but Bhikku Sariputta has come to see you. He says that he has some very urgent work."

Five

“ACHARYAPAD Sariputta? In the royal palace?” The King stood up in surprise. Kumar and Amatya too were equally surprised.

“Maharaj, I will escort Acharyapad,” said Kumar Krishnavardhana.

“Sudaksha, you go too!” said the Emperor.

After the two of them left, Harshavardhana started pacing up and down in the conference room. When he was restless, his mind full of problems, he always paced up and down. Since the last two years he was more and more inclined towards the “Mahayana” cult of Buddhism. The scholarly preachings of Bhikku Sariputta were the cause for this change. He used to visit the monastery outside the city limits to listen to his preachings and to find answers to the doubts in his mind. Discussions with Sariputta used to give him immense satisfaction. But Acharyapad never misused the devotion of the King to him. Even though he was the Chief of the Mahāyana sect, he never imposed his own opinion on others and never used (or misused) his important office for interfering in the administration.

Not only that but he had declined the King’s invitation on various occasions and had never entered the palace so far. He believed that scholars and seekers of knowledge should continue their studies and meditation in quiet woods and not frequent royal palaces. Consequently, he stayed away from any kind of royal patronage. What then was it that made him break his rule and ask for an immediate audience with the King?

That is why the King was so restless and was pacing up and down. He was peering out of the official chambers with expectation. Just then one of the guards hurried in with an announcement.

“Acharyapad Sariputta is approaching accompanied by Mahasandhivigrahi Kumar Krishnavardhana and Amatya Sudaksha.

Soon two figures clad in regal dress and a third one in the robes of a monk of the Mahayana sect appeared ~~outside the~~ conference room. The King

approached and greeted the monk with a respectful bow.

"May you be happy! May your earthly body have the strength to complete its many duties for a long time," Sariputta blessed him.

The King made him occupy the central seat and then said: "I welcome you and hope you and the other occupants of the monastery are keeping well. Not only human beings but even the wild animals respect your person and do not disturb the monastery in anyway. Even so do tell me if something untoward has happened. It bothers me that you had to come here personally. Acharyapad, if you had only sent a message, I would have been in attendance myself."

"Rajan! You have only just returned from a long victorious campaign ... I did not think that it was proper to bother you today. You know that I never come to the place myself. But the circumstances required otherwise."

"Circumstances?" the King interrupted the Acharya in great surprise. "That you should have encountered any trouble in my kingdom is the most unhappy incident of my life. Please tell me who has caused you the problem ... whom should I punish for that? ... I will not spare anyone even from the royal family."

Sariputta laughed and said "Rajan! No untoward incidents take place in your kingdom and when the fame of your bravery is spread all over the world, your subjects do not fear any danger from any enemy, even from outside the kingdom. When I used the word "circumstances" I did not imply that my colleagues in the monastery or I faced any problems. We are all doing well and are living happily and peacefully. I have come to caution you about a possible danger."

"But Bhagwan," Amatya Sudaksha could not contain himself.

"Sudaksha, I do not deserve the title 'Bhagwan'" Acharya reprimanded him mildly.

"I am a seeker .. trying to ascend the innumerable steps towards the ultimate divinity. I may have climbed just one or two steps. It may perhaps be pardoned if a vain crow sitting on the top of the royal palace thinks that he is an eagle, but human beings should realise their own limits."

"I am sorry Acharyapad," said Sudaksha in humility.

"But do tell me what is the trouble?"

"Sir, at first you said that the kingdom is safe from inside and outside and that there is no danger ... and afterwards you talk about cautioning us. Caution against what?"

“Harshavardhana! As long as you have a competent minister like Sudaksha, no one else need advise you about diplomacy. Your kingdom is safe and secure because of the just and proper behaviour of both, Kumar Krishnavardhana and Amatya Sudaksha.” But then he became serious and said, “We differentiate between the inside and outside of the kingdom which is limited only to the Earth. I have come to warn of danger from outer space.”

“Outer space?” cried the three listeners in unison.

“Yes, and if that happens, the consequences may affect not only this kingdom, or this continent, but the entire earth.”

Danger of the unknown is quite another thing. The three royal personages who never feared an attack from the Huns or any foreigners and who always faced natural calamities like famine, shortage or excess of rainfall or the excess of cold weather conditions with determination, were shaken to the core and did not utter a word. Finally Kumar Krishnavardhana said, “Acharya, if you would kindly explain the nature and background of this danger, Maharaj could make some plans for tackling it.”

“Yes Kumar! that is my duty and the object of my visit. I must explain to you the whole long background ...” Then Sariputta started explaining.

“You know that Bhikku Sariputta, whose name has been given to me, was one of the principal followers of Lord Buddha. He used to discuss many subjects with his disciples. The teachings of Buddhism were based on the divine illumination of Gautam Buddha. The origin of this knowledge is based on philosophy which attracts the human mind and satisfies all its uncertainties. That this knowledge which gives peace of mind should spread far and wide is not a matter of surprise.

“But the knowledge that Buddha had was many faceted and he used to discuss these aspects with Sariputtapad. This knowledge was not limited only to philosophy but it has a base in the observations of natural phenomena. Sariputta was curious about nature: Why is this so? What is the reason behind it? What would be the repercussions of a certain phenomenon in future? These questions and the replies given by Bhagwan Buddha led to many things and Acharyapad started recording them.

“Other disciples were not as interested in these discussions. With their minds focussed on the ultimate liberation, they were not very curious about the design and rules of nature. Therefore, this knowledge did not spread from monastery



You can still have the glimpse of it.

to monastery, from generation to generation like the philosophy of Bhagwan Buddha. Only the records and notes of Sariputta were preserved and I laid hands on them after many centuries.

Acharya was talking in a serious manner and the three enraptured listeners were eagerly waiting to hear what happened next. Acharya continued:

“I found the records of Sariputta extremely interesting and they increased my curiosity, especially about space. I have always been very attracted towards the sky. I had studied the volumes on astronomy from Unan and Arabia as well as the works of scholars like Aryabhat and Varahmihir from our own country. With this background I was specially interested in the records of the discussions between Lord Buddha and Sariputta. Without being long winded, I will tell you only what is necessary for understanding today’s warning. The mortal life of a human being goes through the cycle of birth, childhood, adolescence, youth, middle age, old age and death, and then again starts with the next birth. In the same manner, stars also have a life and death cycle. In Sthanvishwar we can find all the various stages of human life. We see the celebration for the birth of a child and we also watch a funeral procession. There are babies just trying to crawl and youths trying to compete with horses in running. One finds a mace wielding strongman as well as an old man trying to walk slowly with the support of his walking stick.

“The records show that the same is true about the residents of the sky—meaning the stars. To an uninitiated observer they all look the same. In reality that is not so. If you observe carefully, you can notice the differences. Stars are small or big, dull or bright. They also have different colours. The sun looks yellow and star Bharat* looks red.

“Is the sun a star?” Harshavardhana asked in surprise. Then it must be far brighter than the other stars. In its presence all others become invisible.”

Acharya smiled and said, “I had exactly the same doubt while going through the records of Sariputta. But Lord Buddha explained it like this: A lamp in a house looks bright in a room but it looks less bright from the compound of the house and if you observe it from the boundary of the village with no obstructions in between, it becomes so dim that you can hardly see it. The sun being so close to earth is very bright for our eyes. Stars are very far. That is why they look

* The star Betelgeuse

smaller and fainter. If we could see the star 'Bharat' from close quarters, it would appear many times bigger and brighter than the sun.

"Now I will come to the main thing. The differences among the stars visible to us reflect the different stages in their lives. As recorded in notes, changes are taking place during the life of stars. The sun will get bigger and bigger and swallow the earth—at that time it will look red like the star Bharat."

"Blessed be the universe! Acharyapad, is this the warning you came to convey? Then what is the remedy for this calamity?"

"Do not be afraid, oh King! Even though this calamity is certain, it will not happen for at least a billion years," said Acharya laughing. "Let me first tell you about the end of the life of a star. A star cannot remain in its gigantic form for a long time. Especially a giant star cannot maintain its internal balance—it explodes and splits into small bits, only the small core remains. When it explodes, it becomes extremely bright but only for a short time. If one of the nearby stars in our galaxy explodes, it becomes extremely bright and is visible even during the day but only a short time.

"I must admit frankly that I was disappointed on one score while going through the notes. I do not accept any statement at its face value. "Why is this so?" is my first question. If it is not discussed properly, I do not accept it. While going through the recordings about the stars, "why is this so?" was the question that bothered me all the time and I did not find an answer to it. May be Bhagwan Buddha did not give the reasons because the details are too complicated or even if he did, may be Sariputta did not record them because he did not follow them ...

"Instead of being satisfied, my curiosity increased further. I tried to look for the reasons based on my meagre observations but I did not succeed. So I am not sure whether the records are based on facts or they are only a matter of guess work. If there was no mention of Buddha I would have discarded them all as the figments of somebody's imagination. I wanted proof ... proof of actual observations. I found that today.

"Rajan, today I watched the explosion of a star in the early morning."

Six

“‘EXPLOSION of a star?’” exclaimed Harshavardhana as though awakening with a start. For, all three were stunned by this news.

“When and where did it happen?” asked Kumar at the same time.

“And why did we not hear it?” asked Amatya.

Sariputta raised his hand as if to stop this stream of questions. “I will answer your questions as best as I can. But first let me tell you about last night.” Saying this Acharya paused for a moment wondering from where to start, then he began to speak.

“I have started an astronomy group for the interested observers. Watching the stars in the sky is one of its regular activities. Last night there was an important occasion—the conjunction of the moon and Venus. Some fifteen to twenty interested youths from this group had gathered on the top of the hill of our monastery to watch it. I also showed them another unusual phenomenon and that was the comet which has just appeared.

“A comet? Oh my God!” exclaimed Amatya Sudaksha.

“Now we will have to start special prayers and rituals,” added Mahasandhivigrahik. Acharya shook his head, “That indicates your blind faith. The youths in our astronomy circle have already discarded that. A comet is not an inauspicious visitor but a ball of snow and dust. It looks spectacular because its tail is made up of gas and vapour. But never mind that. The group was engrossed in watching the comet for a long time. Finally, I took their leave and told the boys from the town to return home on time, or else they would have defaulted in their morning studies.

“But one of the boys did not follow my instructions. Rohit, the son of the Royal Physician, is full of enthusiasm, and stayed longer to observe the Comet.”

“That does not surprise me. Rohit is a combination of curiosity and perseverance” laughed Harshavardhana. Agreeing with this the Acharya said, “Some-

times the body cannot keep up with the mind. Rohit fell asleep in the gentle breeze under the canopy of the starry sky while thinking about the Comet and when he awoke, he realised that it was the hour before dawn. He got up in a hurry to go home. Before leaving, he glanced at the sky ... and saw that unusual sight!

"In what may be called the 'Shashak'* constellation, he saw an extremely bright source of light. It was becoming brighter and the other stars in that constellation became dimmer and dimmer. Rohit watched this sight in disbelief but only for a few moments. He came running to the monastery so that I would not miss the sight. Since he knew my sleeping quarters, he came there directly. I was fast asleep in the early morning and was quite stunned to see Rohit. But on hearing his account I got up immediately and looked out of the window ... The Constellation was behind the hill, so I had to climb up the hill.

"While climbing the hill with Rohit, I was apprehensive that since the sun was about to rise, I may not be able to see this sight. Most of the stars had disappeared.

"Acharya, there ... look at that ... that star is still visible," said Rohit excitedly indicating the direction and I saw a heavenly sight.

"A shining bright light in the direction of the Constellation *Shashak*."

The listeners realised that Acharya had reached the climax of his account and they remained silent.

"Rohit and I were impressed by what we saw. It was like watching another sun from a distance. As we watched till sunrise, the other sun grew dimmer, but we could still see it when the sun was on the horizon. It was just like the description in the notes of Sariputta—the scene of the explosion of a star. The bright light is still visible." Saying this, Acharya led the three towards the door. They went up the exterior stair. On reaching the roof, Acharya looked around. Finally he saw something. He said, "Look at the western horizon. It is still visible."

The trio turned to look. Kumar saw it first, then the King and finally the Amatya.

"Now to answer your pronounced and unpronounced questions! From what I have read, I can predict that this star will become much brighter in the next few days. It will be extremely bright especially before dawn. By and by, its light will diminish and it will disappear completely in a couple of years.

* The Marking on the moon are supposed to resemble a hare or rabbit.

“That is why I came to caution you. Do not be alarmed by what you will see in the sky in the next few days. The light caused by the explosion might be brighter than the light of the full moon. Many rumours will circulate among the people. But you must remain firm.”

“Suppose the Royal Astrologer advises me to perform certain rituals, and make offerings to fire?” asked the King.

“That will be test of your leadership यद्यदाचरति श्रेष्ठः तत्तदेवेतरो जनाः has said Lord Krishna in the Geeta for the same reason. This explosion is not an expression of the wrath of the Gods. It will have no repurcussions in the near future and whatever is happening, is all as per the laws of nature. Special offerings to the fire and prayers will have no effect on it. I would request you to convince the people by your own behaviour.

“Acharyapad, please do not embarrass me by making such a request. I will follow what you suggest with conviction,” said Harshavardhana.

“That is where we have a difference of opinion, Oh King! To follow anything because Sariputta says so, is not right. Listen to the logic behind it, and do as I say only if you are convinced.”

“But Sir, one portion of what you have said is bothering me. You said. “We will not feel the effects of the explosion in the near future.” Does that mean there is danger tomorrow, if not today? How should I protect my subjects?”

“Rajan, I expected a caring emperor like yourself to ask this question.” Sariputta smiled as he said this but soon he looked quite worried. A few moments later he said, “On the basis of knowledge that I have, I can tell you that there is no danger at least during your reign. The first indication of this explosion is light. Even though it travels at a very high speed, that speed is limited. My guess is that heavy objects travel at a speed much less than that of light, which means that the particles thrown out by the explosion will reach here after some time. But outer space is so vast that we cannot measure our distance from the explosion. I cannot predict if the delay will be in tens, hundreds or thousands of years.”

“But my responsibility is not limited to my lifetime alone. This occurrence has taken place during my reign, and I do not know what its repurcussions will be after I am gone. We must make sure that my heirs have enough information available to take the right decisions.”

“With the permission of Maharaj, can I make one suggestion?” asked Sudaksha.

30/*The Cosmic Explosion*

“Certainly. A practical solution has to come from you,” said the King laughing.

“If accurate notes are kept of continuous observations of the event from today itself, it will be of help. If you request him to do so, Acharyapad would accept the responsibility,” said Amatya humbly.

“Sir, would you undertake this important task?” asked the King.

“Certainly, Rajan, and gladly too. But I cannot devote all my time to this job. I have other responsibilities in the monastery also. I would need an assistant who is energetic and intelligent.”

“I know the person Acharyapad has in mind,” said Kumar.

The King also understood and he laughed loudly.

Seven

“‘**B**ELOVED, did you hear the good news?” asked the Royal Physician to his wife as soon as he returned from the King’s Court. “Good news? Aryaputra, about whom?”

“About our Rohit.”

“I was worried since morning—when you took him with you.”

“That was the order of Mahasandhivigrahik,” replied the Royal Physician. In reality he too had been worried when he got the message from Kumar Krishnavardhana. Kumar was a little hot-tempered and a hard disciplinarian. He was wondering what wrong Rohit may have committed to invite the wrath of Kumar.

“What happened in the Court ... please tell me quickly.”

“I will.” Maheshbhatt put the betel leaf and nut in his mouth and sat on the swing. “Your son Rohitbhatt has been appointed the “Royal Observer” today. Maharaj himself adorned him with the symbolic official scarf. He will come home later after getting detailed instructions from Kumar.”

“Wonderful news indeed, Aryaputra!”

“First of all, together let us visit the Mahavarah to offer our greetings and gratitude and pray for Rohit’s success.” Saying this Sucharita hurried to the kitchen.

When she returned she had a plate of sweets, a lamp and the other paraphernalia for offering the prayer. There was a small temple of Mahavarah in their garden. Both of them expressed gratitude and prayed to the Mahavarah to guide Rohit. Just then Rohit arrived.

With the official scarf, he looked quite grown up all of a sudden. Noticing his parents in front of the temple, he too came there and bowed to the God. He recited his favourite verse in praise of the Mahavarah and asked for his blessings.

Then he prostrated himself in front of his parents in anticipation of their blessings.

“May you be happy,” said Sucharita and hugged him affectionately with tears in her eyes. “May you be successful,” added Maheshbhatt and said, “Dear, I hope at least now you will allow me to treat my son like a friend.”

Sucharita turned in mock anger. She always said that children become



Rohit stared at the brightness of the Shashak Star conglomeration.

naughty if the father is too indulgent. When Rohit entered his sixteenth year, Rajavaidya had declared that at least now he must behave like a friend with his son. But Sucharita had objected to this.

“Dear child, will you tell me what is a Royal Observer? I do not know the customs and practices in the Court, that is why I ask you,” said Sucharita.

“Mother, it is a new post. I have to make observations of the sky—of the planets and stars in the sky. Especially of the source of light that I located yesterday. I have to keep notes of all the observations under the guidance of Acharya Sariputta.”

“Blessed be the universe! Blessed be the universe!” For the first time, Sucharita looked worried.

“They say you discovered the source of light, and now it is your job to keep a watch on it. Who will save you from this unknown heavenly wrath?”

Rohit laughed, “Why should you call an unusual natural phenomenon ‘heavenly wrath’? Yesterday the night became bright because of the new light ... as if there were a hundred full moons in the sky. If our great poet Banabhatta had seen the sight, he would have composed a great poem ... so I am specifically going to show it to him. Mother! imagine, a star explodes at an unimaginable distance and we get a chance to see it today. This is the proof of the heavenly power hidden behind nature ... why should we call it heavenly wrath?”

Maheshbhatt agreed with his son. But his traditional upbringing was making him apprehensive, like his wife, of the fear of the unknown. However, he grasped certain words that Rohit had used.

“Explosion of a star? I am hearing this for the first time. Why should this not be regarded as heavenly wrath?”

“Father, when a ripe mango falls to the ground, do we call it heavenly wrath? This is a part of the natural cycle. Just as human beings go through the cycle of life and death, so do the stars follow nature’s laws. It is just that our astronomy is not sufficiently developed for us to know about the life of a star.”

“This must be the wisdom of your Buddhist teacher,” remarked Sucharita.

“Yes! Sariputtapad gave me this information, which aroused my curiosity even more. But he admits frankly that he does not have the answers to my questions. He says the answers are hidden in the future. You know, Mother, sometimes I wish I could travel through time some fifteen or twenty centuries into future so that I could find the answers to my questions.”

“But then what is the need for keeping these records, if we do not know

their meaning?" asked Maheshbhatt.

"Acharyapad hopes that future generations will make use of the recordings. Explosions like this one must take place occasionally. In future when they know the reasons for them, they can verify them from my notes. That is why Maharaj has ordered me to take notes for as long as the light in the sky is visible and then we will inscribe the summary on copper plates according to the instructions of Acharya Sariputta."

"And then ...?"

"Many copies of the copper plates will be buried at various locations in the Empire of Kanyakubja—one near Sthanvishwar, one near Takshashila, another one near Nalanda and one at Kashi. Four locations have also been selected towards the South on the banks of the Narmada. According to Acharya, today's prosperity and glory may not exist tomorrow. Like all living things, buildings are also mortal. We can't tell for how many centuries the palaces, monasteries and temples will last. These copper plates will be safe inside Mother Earth .. and will be found unexpectedly during the excavations of the ruins of today's buildings," explained Rohit.

"That means your work will be useful after hundreds of years. Neither you nor the Acharyapad will be living then. Don't you both feel dissatisfied that your work will be left incomplete?" asked Sucharita.

"Yes, Mother, at least I feel so. But Acharyapad lives beyond all hope and despair, satisfaction and dissatisfaction. His behaviour is the epitome of the teaching of the Bhagwad Geeta. "Karmanyevadhikaraste ma phaleshu kadachana" (You have a right to the duty not to its fruits). All necessary work must be undertaken without the expectation of any gain. His aim is Eternal Bliss. Even though he is making all arrangements for the future of mankind, he is not involved in it.

"But I am not like him," continued Rohit. "I really wish to see the unfoldings of this great drama—right upto the end-of which I saw the very beginning in the early morning yesterday. For that ... I do not even mind going through the cycle of life and death again and again!"

Maheshbhatt and Sucharita watched their son, impressed by his mature thinking at that young age.

Rohit could not take his mind off the bright light coming from the Constellation Shashak; what was hidden behind it? That great drama was going to unfold very slowly in the future. It was not possible for Rohit to watch the future developments ... but to the human race they were to have a profound significance.

AD 1996

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One

IN an area of Bombay called 'Fort' the old building of the Town Hall survives somehow on the memories of the golden era of the British Empire. There are broad steps leading to the main entrance on the first floor and one feels happy to see some boys and girls studying there. It proves that one still can find time and also a place to sit, in order to concentrate and study even in the fast and tumultuous life of Bombay.

Inside the town hall, there is a big library of the Asiatic Society. The Library too had seen better days. Because of lack of interest and paucity of funds, the books there are barely surviving in the hope that things might change. Only a few scholars and connoisseurs of books patronize them—as only they know their importance.

Today there was a special function and one could see more people moving about than was normal. In particular, the main auditorium 'Darbar Hall' was overflowing with people. Normally not many attend the lectures in the Society. But today both, the lecture and the lecturer had attracted the people. There were young collegians along with old pensioners.

The lecturer was the astronomer, Professor Avinash Nene and the subject was 'The Life Story of Stars'

The speaker was explaining in great detail how stars are born, how they shine, what happens inside them, how it affects their size and appearance, etc. The audience was responding warmly to his humourous and lively style and some were asking questions.

"Now look at this slide," Avinash Nene paused for a moment. He wanted to show the slide of a 'Supernova'—the explosion of a star.

The picture of a colourful cloud became visible on the screen. There were some stars around the cloud.

"One cannot see this nebula with one's eyes, but it has been recorded by

a camera. What you are looking at is the scene after the explosion of a star.

This happened nine centuries ago. It occurred on the 4th of July 1054 and it has been recorded."

The audience was taken by surprise. The echoes of fireworks during Diwali last only a few seconds but the aftermath of this explosion should be visible even after so long?

"Oh yes! Nine centuries in human terms is nothing in the life of a star! Avinash responded to the question in the minds of his listeners. "Even today, many sensational happenings are taking place there. There is a Pulsar. After the outer material is lost in the explosion, only a small core remains—it throws out a ray of light at a precise interval after every 0.033 seconds. This clock is very accurate—even more than our watches."

A boy in the audience stood up—according to the tradition of standing up before asking a question non-stopped talking.

"Sir, what is the name of this cloud and in which direction is it?"

"This is Crab Nebula and it is in the Taurus sign of the zodiac."

"One more question! How do you know the date to be 4th July 1054?"

Avinash smiled with satisfaction. This question led him to his next topic. He replied, "Good question. This was recorded by the royal astrologers in China and Japan. In those days, there was a popular belief in China that when the King follows a wrong path or when his reign is unjust and full of immoral actions, God will caution him from the sky. Heeding the warning, the king was expected to correct his ways in order to avoid future calamities. Naturally then, a royal astrologer was appointed to watch the sky minutely.

"This is what happened according to the records. Suddenly an extremely bright star appeared in the sky. The entire sky was bathed in its glow. The star was visible even after sunrise, like Venus. The brightness lasted for some time, then it became less and less and finally it disappeared. This star which was visible in the sky only for a few days, was named—the 'Guest Star' by the Chinese." A girl stood up. Avinash waited for her question.

"This star must have been visible in the northern hemisphere. So Sir, are there any other recordings of its sighting from other countries?"

"We naturally ask ourselves this question" said Avinash "Let's first look at the two examples where one finds these records.

"Around 1955 a scientist called Bill Miller found this picture engraved in a

cave in the mountain in the Navaho Canyon in the USA.”

Avinash showed the next slide. There was a crescent moon and a star. He continued.

“Miller’s guess is that the American Indian tribe who lived there earlier, must have recorded an unusual sighting in the sky through this engraving in the rock. Because he found many such pictures at various places, he began calculating to find out if there was any star or planet that would have been visible at the position, above the moon, if seen from that cave. The ‘Guest star’ in the Crab Nebula fit the description exactly. The period of the rock carving also tallied with the period of the explosion in the Crab Nebula. Of course we cannot fix the date as accurately as in the Chinese or Japanese records.

“In 1979 Kenneth Brecher and Elinor and Alfred Lieber presented more evidence from the Middle East. In the accounts written by a Christian doctor called Ibn Buttan, there is mention of his having seen an extremely bright star sometime between 12th April 1054 and 1st April 1055. The location of the star tallies with the Crab. This doctor lived in Cairo between 1052-1053 and it is recorded that he spent another year in Constantinople.

“Now the question arises as to why we do not find any record of the sighting of this explosion from Europe. Actually Europe has a long tradition of preserving manuscripts. Catholicism was prevalent everywhere and their priests and monks used to do a lot of research, writing and teaching. Why are their records not available then?”

Avinash paused for a little while after raising this question. Then he himself gave the answer. “Astronomer Fred Hoyle has put forward the following guess: Religion wielded a lot of power in Europe at that time. Nobody dared go against religious practices and teaching. Copernicus and Gallileo had to undergo a lot of torture for opposing this same power ...

“In such a period, every word in the Bible was respected. According to the Bible, God created this universe full of many wonders in seven days. Against this background, how would the religious leaders accept the sudden appearance of an extremely bright star and its gradual disappearance from the sky? The chiefs of the monasteries must have deliberately not kept any records of this phenomenon. Whether we accept this line of reasoning or not, we must still look for records of this occurrence ... because the fallout of the explosion is visible even today and it gives useful information to researchers.”



At the International Conference he posed the question that was terrifying everyone.

A gentleman from the distinguished listeners in the front row stood up. About sixty years old and looking very untidy in his dress and hair style, Avinash wondered who this nut might be.

“Now tell me Professor ... this occurrence must have been visible even from India. Is there any proof of that? In those days our learned astronomers were very much in place ... the tradition of Aryabhat and Varahmihir was being continued ... Bhaskaracharya was yet to come ... So we must go through our records also.”

“Certainly, I think that our scholars of ancient studies and archaeology should look for such references to various happenings in the sky. Talking specifically about Crab, July is a month of monsoon, the sky is overcast, so may be it was not visible from India. But I do not believe so. In the first week of July, the whole of India is not under the cover of monsoon clouds. People must have seen this from somewhere and I am sure, they must have worried about it at least in the context of astrology. So we must continue our search.”

Avinash Nene then started concluding his lecture but the untidy gentleman had lost all interest. He opened his briefcase and started looking through some papers. Actually it was improper to continue one's own activity that too in the front row—while the lecture was going on. But who would tell him?

And even if someone had, would he have listened?

Two

AVINASH Nene came out of the Town Hall when the question answer session after his lecture was over. It was five o'clock in the evening and it was the 'rush hour' in Bombay. Most of the traffic is north-bound at this time. There were many taxis on the road, but most were occupied ... and the available ones were not prepared to go South towards Navy Nagar where Avinash wanted to go. But there is an exception to every rule. One taxi stopped after some 20-25 had refused.

"Navy Nagar please," said Nene with hesitation. He expected the taxi driver to give some excuse and refuse to go there ...

"O.K. get in," the driver dashed his hand out of the window and lowered the meter. Nene relaxed and was about to enter the cab when someone spoke from behind.

"Professor, may I come with you?" Avinash turned unhappily to see who the intruder was. It was the same untidy person in the front row with his brief case.

"At this time? I still have a lot of work, if you come with an appointment ..."

"That I will in any case! But you can give me at least the time you will spend in the taxi? In any case, this time will be a waste ... O.K.?"

Avinash did not know what to say. He was tired after the lecture and he had no energy to talk or discuss anything intellectual. And yet how could he say no to this untidy but elderly man?

"Hurry up Sir, I cannot keep the taxi here for long," said the driver using his peculiar brand of Hindi typical to a Bombay taxi-driver.

"Let's go," said Avinash as he got into the cab. After the stranger got in, the taxi started.

"Thank you for being indulgent about my intrusion," said the man, "Let me first introduce myself. I am Bhagwat, popularly called Tatyasaheb Bhagwat.

O.K.? But you can call me just 'Tatyasaheb'. I came from Pune specially to meet you."

"Are you the same Dr. Bhagwat who is an expert in ancient Indian studies? Excuse me, Sir, I did not recognise you." Instead of being angry, Avinash was curious now.

"How could you recognise me? We have never met. I don't come on the TV like you, O.K.?"

"Mr. Bhagwat ..."

"Call me Tatyasaheb, O.K.?"

"I am sorry Tatyasaheb, but I will be happy if you call me Avinash." Avinash repressed the urge to add 'O.K.' at the end of the sentence.

The taxi was going towards the Cooperage ground. Some match had ended and a big crowd was coming out. The taxi slowed down.

"We do not have much time, so let me come to the point." Bhagwat opened his ancient briefcase, took out some papers and said, "I had listened to one of your lectures in the Spring Lecture series in Pune Mr. Avinash ...

"Just Avinash, Don't call me Mr. Avinash. Tatyasaheb, there is a difference of at least twenty years in our ages," said Avinash.

"In research, knowledge is more important than age Avinash. But anyway! In that lecture also, you had talked a little about the Crab Nebula and raised the question as to why no recordings are found about it in India. Expecting you to refer to that today, I have brought this one evidence."

"Oh really! You have found a recording of the Crab?" exclaimed Avinash, straightening in his seat.

"No, not of Crab but of an explosion before that."

Avinash was disappointed. The old man would probably take out some incident from the Mahabharata and claim that to be the description written by our ancestors about the explosion of a star. He had had heated discussions with many people who claimed that there were many scientific descriptions in our religious scriptures on many occasions. He would urge that scientific description had to have specific figures and numbers and be given in a particular format, not in a poetic hyperbole. No one had given him any such description to date.

"You said that an explosion must be taking place every 20 or 40 years in the Galaxy but one that can be observed from the earth would take place only once in two or three centuries. Crab supernova took place in 1054 or rather was

seen from the earth in 1054. The papers I have brought are about a happening about 400 years before that. That has been recorded by the Indians. This must be a supernova O.K.?

Bhagwat held a paper in front of Avinash. Many people cannot read in a moving vehicle but Avinash was not one of them. Not only that he could read but at times he even used to write travelling. He could not afford to waste the long time taken to travel in a big city like Bombay. The taxi had stopped at the traffic light opposite the President Hotel at Cuffe Parade.

Avinash glanced through the paper. There were some verses in Sanskrit and below that their meaning (probably given by Tatyasaheb himself). The verses were in simple Sanskrit and Avinash understood the meaning immediately.

The verses were :

स्थाणीश्वर विहारस्थः हर्षदेवेन प्रेरितः ।
लिखामि सारिपुत्तोऽहम् अद्भुतं रोमहर्षणम् ॥
तथागत प्रदत्तेन ज्ञानविज्ञान चक्षुषा ।
मया दृष्टं महारूपम् तारका स्फोटमेवखे ॥
रात्रौ चंद्र सहस्रस्य भवेद्युगपदुत्थिता ।
यदिदां सदृशी स्यात्सात स्फोटानुसारिणी तथा ॥
अल्पज्ञेऽहं न जानामि विपाकः किं भवेदतः ।
धरात्राणाय युक्तं स्यात् भविष्ये वर्णनं इदम् ॥
बोधाय तु समाजानां आख्यानार्थं इतः परम् ।
देववाणी समभ्यर्च्य लोकवाणी समाश्रये ॥

I, Sariputta, resident of the monastery in Sthanvishwar am writing this unusual and exciting description by the order of Harshdev. With the knowledge and understanding given to me by the teachings of Bhagwan Buddha, I could see with my own eyes an explosion of a star in the sky. The glow after the explosion was as if there suddenly were a thousand moons in the sky. My knowledge is limited and I do not know what its effect will be in the future. This description may be of use for the protection of the earth. In order that the general public may understand, I will continue my description in the prevailing local language after paying my respects to the language of the Gods (Sanskrit).

At first sight itself, Avinash found this description different from what he had

seen before. In simple language, the writer had recorded the period (Harshadeva's reign) and the place (Sthanvishwar) at the very beginning. It was quite obvious that Sariputta who lived in a monastery and who claimed to have Gautam Buddha as his Guru, must be a Buddhist monk. He had clearly mentioned the explosion of a star and the light emanating from it. He had been prudent about keeping detailed records in the hope that future generations would anticipate effects of the explosion.

"We are at Navy Nagar Sir, now which way?"

Avinash came back to the present when he heard the taxi driver. They had come to the Central School. His question about where to go now was timely.

"Go right upto the end. You stop when you see the watchman at the gate," replied Avinash.

The road looked beautiful with the Gulmohar trees in full bloom. There were lots of people on both sides. The taxi stopped at the gate of the Institute.

"Wait, I have to go back." Bhagwat said to the taxi driver. He prevented him from accepting the fare from Avinash.

"Where and when was this description found? Is it imaginary or real? Suppose someone had composed the verses at a later date?" asked Avinash.

"I was sure to arouse your curiosity; that is why I have brought all these papers. Go through them at leisure. I will telephone you tomorrow in the Institute, O.K.?" Bhagwat stuffed all the papers in his hand and left in the taxi. Avinash stood there looking at the papers, lost in thought.

Three

“‘SIR, your visitor is waiting.”

“Alright, ask him to remain at the reception.”

Avinash instructed the duty officer, picked up the papers on his desk and rushed to the lift. His opinion about Mr. Bhagwat had changed completely after reading the papers. Today he was eagerly waiting for him.

Bhagwat with his loose, flowing dhoti and the wrinkled shirt under his not so clean coat looked quite out of place against the background of the spacious reception hall of the very modern Tata Institute of Fundamental Research. Avinash just imagined the reaction of the founder had he been present there at this moment, and he smiled.

Putting aside that thought, he greeted Tatyasaheb. Bhagwat, who was absorbed in looking at an oil painting turned.

“Hello. I thought I was in an art gallery and not in an Institute of Science. I like paintings and understand them somewhat,” said Bhagwat and did not forget to add his customary “O.K.”

“In that case, let’s look at the paintings first and later I will show you around the campus. Then you will say that this is a beautiful garden and not an Institute of Science.” Avinash did not have to say much. Bhagwat continued to comment on the paintings and also the artists. Finally they both sat down in the shade of the cypress grove by the sea side.

“It is hard to believe that we are in Bombay O.K.?”

“This is the only place that can be called quiet. I prefer to do my thinking here rather than in my office in the Institute. There is no telephone to disturb me, no files and no visitors.”

“Like me ... O.K.?”

“You are different. In fact I was very eagerly waiting for you. I have read

the papers you gave me yesterday. The information is fascinating. I was restless for the whole night because you left without giving me the whole background.”

Bhagwat laughed. “I did not give you the background purposely because first I wanted your frank opinion about this writing. Does it mean anything?”

“A lot. After the first few Sanskrit verses, the rest is written in some language like Pali which you have translated below.”

“That’s right. I wish the writer had continued to use Sanskrit. I had to go through a lot of difficulty in figuring out this dialect. There may be some mistakes and of course I could not fill certain gaps ... O.K.? But generally what does the writer want to convey?

The writer has conveyed his thoughts about the stars in a very descriptive manner. His actual observations are in the first part, what he learnt from Bhagwan Buddha in the second part and his own theories in the third part. He had made these three parts very precise.

“Today his information seems rather elementary. But his manner of thinking is akin to the modern scientific attitude. He has noticed the differences among the stars by simple observations with the naked eye and one of his examples is very significant.”

“He says that if you watch life on earth, there are different species ... humans, tigers and lions, birds and insects are all different. Even in the same species there are differences because of age. A newborn baby, a crawling infant, a school boy, an adolescent, a middle aged man and an old man are all different stages in man’s life. Every human being goes through them. One experiences all the different stages in one single life time.

“Sariputta says that these latter differences in the stages are not because they belong to different species but because they are in different stages of their lives. Present day astronomers will agree with his line of thinking. In fact he should be admired for that, because he was not aware of the processes of this change. He admits this ignorance very frankly.

“But to me, his records are the most important. They are not among these papers. Where are they? Even though he had no telescope and other such instruments, we must look at what he has recorded. I would like to know where you excavated this information from. What was the reference?”

Without uttering a word, Bhagwat took out a tattered old file from his briefcase and showed him a paper cutting. It was a six month old news item. Avinash read it quickly.

“Copper Plates of Harsha Period”

‘UNI’

Patna, Dec. 10, During the digging for the foundation of a big building complex, the labourers found several ancient copper plates. The Archaeological Survey of India is scanning them. The preliminary findings indicate that these were buried in the 7th century by the order of Emperor Harshavardhana. The engravings are being deciphered.”

“The paper I gave you contained the deciphered engraving from the copper plates. In our Institute of Ancient Studies we spent a lot of time on this, O.K.? The writer had used the local dialect so that everyone could understand. However, it was very difficult for us to interpret it. We were unable to fill in the gaps. I wish he had used Sanskrit instead,” said Tatyasaheb.

“Yes. But I think Sariputta’s decision must have been right in his context. Since Buddhism was prevalent in those days, languages like Pali were very commonly used ... Anyway the information that you gave me, was that all in the copper plates? Where is Sthanvishwar? I do not think it is near Patna. If we assume that it is Thanesar, then it is in North India, near Delhi. That is what I found out today. Why should the writing of the monk from that monastery be buried so far away?” asked Nene.

Tatyasaheb gave a big laugh. “Excuse me, Avinash! I kept the trump card with me. I gave you the information only about five copper plates. O.K.? The sixth one is in Pune. It contains the order of the King. We could not decipher much. But it has an answer to your question.

“The royal order says that four copies of the copper plate should be buried at four places in the north and four places in the south. Takshashila, Sthanviswhar, Kashi and Nalanda in the north and four places in the South upto the banks of the Narmada in the empire of Harshavardhana have been mentioned. The copies that we have found are from Nalanda O.K.? The order also says that all the detailed recordings of Sariputtapada be buried along with the copy at Sthanvishwar.”

Avinash was excited to hear this. “Tatyasaheb, that means that we must obtain the copies at Sthanvishwar. We must find and decipher all the information given by Sariputta. I am not saying this only because of my interest in astronomy,

but there is one more important reason ...

"We must find out how far and how big the Supernova seen by Sariputta was. From the information you have given, we know the location of the star and one realises that the explosion must have been very big. If that star was not too far from us, then the earth could be in danger of the cosmic rays following the explosion."

"But Avinash, the explosion took place thirteen centuries ago. How will we be affected today? What kind of danger do you expect from the cosmic rays?" asked Bhagwat.

Avinash noticed that just for these questions Bhagwat did not add his customary 'O.K.?' But he continued.

"No Mr Bhagwat, light emerging from the explosion travels extremely fast. The other remnants of the explosion cannot reach that speed. They are mainly clusters of particles and nuclei of atoms. These are the cosmic rays. They also travel very fast, but at a speed less than that of light. There can be hurdles in their path, so they come after some time and are a little weak ... But how weak? Because if they have enough energy, they can penetrate the atmosphere around us, and can destroy the layer of ozone."

"If that happens the bright ultraviolet rays from the sun would be harmful to life on earth O.K.? Is there not a lot of discussion about the depletion of the ozone layer? If that happens the bright ultraviolet rays from the sun would be harmful to life on earth. O.K.?"

"That's right. But this depletion is because of man made chemical gases and there are attempts to ensure that they are controlled. But the possible danger from the explosion of a star can be far more harmful. It is essential to find out how and where this explosion took place. Therefore, we must study the recordings of Sariputta."

"You will have to come to Pune for that ... because some references in that plate are of an astronomical nature, O.K.?"

"We will leave by the Deccan Queen this afternoon," said Avinash.

"Easily said ... But how will we get the seats?"

Avinash smiled. He had faced this problem before. He knew the right people in the Secretariat and because of them he got tickets from the VIP quota. He replied, "Leave that to me. We will meet at platform 9A at V.T. near the ticket checker."

Four

AVINASH knew how cumbersome it was to get tickets for the Deccan Queen at the last minute. Tickets for Pune are available only three days in advance and most of them are sold in the first hour of sale itself. What is left is only the 'quota'. If there are no VIPs then the seats kept for them are given away at the last minute. But if you look at the long line of people on the waiting list, only a diehard optimist will join the queue.

The second alternative is to buy an ordinary first class ticket and board the train. The T.C. charges a fine from these standing passengers and they must leave the train at Karjat station because the train is meant only for passengers with reservations. One can then board the train again at Karjat before it leaves the station and again pay the fine for standing and then get down at Pune. To do all this one must have a lot of grit.

Avinash was neither an optimist nor did he have the grit. He had found another way to travel as a VIP. Even though he was a well known scientist, he was not a VIP according to Government terminology. However, because of his popularity, Government officers obliged him informally. Of course he used their help only rarely and in cases of emergency.

It was necessary to go to Pune to follow up on the information given by Bhagwat. Actually it would not matter if they went three days later in search of information that lay buried for thirteen centuries. But impatient as Avinash was, he could not wait that long. Once he was obsessed by a problem, he could not rest till it was solved or till he was convinced that it could not be solved.

One could pick out Tatyasaheb Bhagwat even in the crowd at V.T. The old briefcase was stuffed into an even older suitcase.

"Our names are on the list, O.K.? Coach No. FC2, seat Nos. 3 and 4," he said and continued, "I have made arrangements for you in our Institute's Guest House. That will be convenient O.K.?"

“Thanks Tatyasaheb. While trying to get the tickets, I forgot to make arrangements for my stay,” replied Avinash.

“We will get down at Shivaji Nagar. The Institute car will be waiting there for us O.K.?”

“This person looks untidy but seems effective at management,” thought Avinash to himself.

On the platform, they passed the second class coaches and finally reached FC2. Bhagwat was chattering without a second’s rest.

“Old days were so different O.K.? When I was a student, once I came to V.T. at 5 o’clock, bought the ticket, boarded the train and occupied a seat. There was no crowd then, nor was reservation compulsory. Today’s situation is the effect of unchecked population growth O.K.?”

Avinash knew that no reply was expected for the question ending with ‘O.K.’

Exactly at 5.10 the train began moving and Bhagwat opened a book. Avinash also took out a book but he could not concentrate. He began wondering whether he was getting unnecessarily involved in a pointless endeavour.

But then he would reason again ... there is no doubt that these copper plates are from the old period. He could read Sanskrit. The detailed description in the popular language was examined by someone experienced like Tatyasaheb. How could one say that it was a hoax?

Who was this Sariputta? Sariputta was one of the disciples of Bhagwan Buddha, but this Sariputta could not be the same. The Harsha period is almost a thousand years after the Buddha period. It was obvious from the writings that this monk had great intellect. He was precise in his statements. Nothing could escape his observations.

What exactly must have happened? The summary in the five copper plates tallied with a Supernova-meaning an explosion. That a star explodes is a concept of modern science, but he had stated it very clearly. Was he imagining things or were his writings based on scientific knowledge?

So far Avinash had many discussions with the ‘old is gold’ types. In our ancient texts, there are descriptions of highly developed arsenals, superhuman powers and some extraordinary happenings. Are these the descriptions of actual happenings or are they imaginary? Was the description of the aeroplane ‘Pushpak’ the description of a real aeroplane or was it someone’s fantasy about a vehicle after watching birds fly?

The ancient texts, according to its proud supporters, depict the state of scientific progress in those days. Avinash did not oppose this, but he did not support it either. All he asked for was a scientific description of any such phenomenon.

Take the airplane, for example. The scientific principles behind the flight of an airplane are given in scientific textbooks. The calculations and detailed information is given in the syllabus of the 10th and 12th standard textbooks. No such information is found in any of the ancient texts.

Not only that, but modern technology presupposes electricity. Humans use electricity to light up a lamp in a small village and also to send spaceships right upto Mars and Saturn. This description is given not only in the text books but also in short stories and novels. We do not find even such simple descriptions in the Ramayana or the Mahabharata. What then is the proof that those people were highly evolved?

Avinash used to tell the proud supporters of the ancients, that he would not accept their statements without proof. He would explain to them the difference between a scientific description and a poetic description. He would urge them to find scientific recordings. But so far no one had given him information in a scientific manner.

Would the copper plates of Sariputta prove to be the exception? The third verse in the description echoed the Bhagwad Geeta : “the glow of thousand moons”—Was it poetic or based on actual observation? The cursory descriptions on the copper plates led Avinash to believe that Sariputta would not give just poetic descriptions. However the scientist in him needed more details to be convinced.

It was certain that the sixth copper plate would not provide that. But would it at least give the location of where to find that information? It was with this hope in mind that Avinash had suddenly decided to go to Pune.

“Prof. Nene? Avinash ... to Pune?” Someone always recognised him in the Deccan Queen. Chandan Bajpai—a classmate of Avinash was a scientist in the Inter-University Centre for Astronomy and Astrophysics in Pune. “Oh Chandan! How are you? Good, I think I will have to come to your Institute anyway.”

“Then do come! Would you like to give a Seminar?”

“Not this time, but I want to use the Data Centre in IUCAA. That is only if my mission does not misfire” IUCAA was the acronym of Chandan’s Institute.

“Mission? What is all this about? Or are you under an oath of secrecy?”

Avinash looked at his neighbour. Bhagwat was snoring with his book on his lap. He got up.

“Come, let’s go to the dining car. It is better to have more than one brain to tackle this problem.”

The two of them started walking in the direction of the dining car.

Five

BHAGWAT found the way to his desk through the bundles of papers lying all over the floor in the Department of Ancient Indian Studies. Among those heaps, were very old tattered manuscripts, old records on the barks of Birch trees tied in cloth and many other bundles of papers. Avinash was always surprised to see smiliar mountains of files in various government offices .. and wondered how one could find a file that was needed.

“Tatyasaheb, I am flabbergasted to see your papers,” Tatyasaheb could guess the purpose for this introduction. He laughed and said, “You are not the first one to ask me how I find the exact reference from these various heaps. Every newcomer to this place asks me exactly the same question O.K.?”

On seeing the embarrassed look on Nene’s face, Tatyasaheb patted him on the shoulder and said, “You computer fellows are used to storing all your files in the computer. Don’t your files have a code number? And if it is a secret file, then only one or two people know it, isn’t that so? Like the computer I store all the information in my head. I know each and every paper here ... O.K.?”

“It is like this ... when we see a herd of sheep, to us they all look the same, but the shepherd knows each of his animals!” said Avinash laughing.

“But even I keep some of my most important information separately.” Saying this, Bhagwat took out a bunch of keys from his desk and opened the lock on the door behind it. Inside was a small airconditioned room. They both entered it.

“Here I keep some old papers and other reference material that needs to be handled very carefully. See, all the Sariputta copper plates are here.”

“Let me see!” Avinash moved forward with curiosity.

“Wait! Let’s first take some precautions.” Bhagwat took out two pairs of gloves from a box. He put on one and gave the other to Avinash.

“No Nene, you scientists also take some precautions while entering the

electronics lab; the same here. Why leave our finger prints on these ancient documents, O.K.?"

"Absolutely right," said Avinash as he put on the gloves. In the meantime Bhagwat was carefully arranging the copper plates from a cardboard box on the table. Nene noticed the discrepancy between this methodical working habit and the untidy personal appearance of Mr. Bhagwat.

In all, there were six copper plates. He had seen copies of these very plates. The letters and other signs engraved in the original plates were very clear even after so many centuries. Nene's curiosity had increased greatly.

"Actually, these copper plates are from the Department of Archaeology which has lent them to me temporarily in order to decipher them. And now I am going to take your help for that O.K.?"

They both set to work. First Bhagwat explained the meaning of the information on the first five plates. Wherever the meaning was unclear and there were references to astronomy, Avinash tried to reason and help. Finally he said,

"We cannot really congratulate enough this Buddhist Acharya for his neat writing. The description is a fine example of how scientific records should be kept. But all this is only the tip of the iceberg, because he himself says that this is the summary of his detailed observations. So we have to undertake some excavations near Sthanvishwar and that is why the sixth plate is very important."

Tatyasaheb glanced at the clock. It was past 1.30. They had not realised how the morning had passed.

"Before tackling the copper plates, we must make arrangements for some other plates ... let us go to our canteen. I had asked them to reserve two plates for us. If we do not go on time, they will finish everything and close the canteen for cleaning at 2 o'clock O.K.?"

"Alright," said Avinash and got up.

The lunch was a Maharashtrian thali.

"Sorry, Mr. Nene! we have a simple fare not quite as stylish as yours in Bombay."

"I like this and yet it has become so rare, Tatyasaheb," said Avinash relishing his meal. "In any good restaurant in Bombay, you get Punjabi or Gujarati food. Ask for snacks and you get Idli-Vada-Dosa or North Indian *chat*. You may even get a so-called Chinese meal but a Maharashtrian meal is disappearing from the capital of Maharashtra."

“Let me tell you, Nene saheb! What happens in Bombay, happens in Pune shortly afterwards.

“There are no old fashioned banquets in this city of the Peshwas any more. Plain dal and rice, masala rice, Shrikhand, Puranpoli, all these things are on the wane and instead, we have buffets! Pulao, Nan, Chhole, Paneer, vegetables and carrot Halva or Gulabjamun for dessert. The Bengalis and the South Indians have managed to stall this North Indian invasion. Why can't we do the same? O.K.?”

Avinash laughed. He remembered that a 5 Star hotel in Bombay had made a special announcement: “In celebration of Maharashtra Day, next week we will serve a special Maharashtrian meal.” This was proof that a Maharashtrian meal is so rare that it has to be specially advertised!

When lunch was over, Avinash said, “Let's go and look at the sixth plate.”

“Oh! oh! Don't call it just a plate—call it a copper plate. It is not your photographic plate,” asserted Tatyasaheb.

“Sorry! But you know Tatyasaheb, the photos that we take of the faraway galaxies, also give pictures of the past like these copper plates. If a star is at a distance of one thousand light years, it takes a thousand years for the light to travel ... which means the photos are like the copper plates of a thousand year ago, isn't that so?”

Tatyasaheb looked quite satisfied with Nene's interpretation.

Avinash was both excited and curious to open the sixth copper plate. He was expecting a lot of material engraved on it. But that was not so. It had only a few words and one picture. Tatyasaheb commented, “We could understand a little from these words O.K.? But that does not mean very much ...”

“What could you make out?” asked Avinash looking at the picture.

“It says, the picture shows where the copper plates are buried near the Buddhist Monastery outside Sthanvishwar town or something like that.”

There was a hill in the picture. At its foot there were some caves like those in Ajanta and Ellora and some buildings. Avinash concentrated on the sky above the hill. A tiny circle and a shining moon were shown there. There was a straight line going from the circle towards the ground. The line touched the top of the hill very lightly, and where it crossed the ground, the moon was in a line perpendicular to the ground from that point. Avinash smiled.

“My guess is that it means the following: When the moon was exactly above

one's head, the line from the ground to that tiny circle, which I take to be a star touched the top of the Hill. Now tell me, Bhagwat Saheb, is there such a hill?"

"I had gone to Thanesar in the North a few days ago. It is indeed the old Sthanvishwar. I remember to have seen a hill outside the city. Some ruins from the Buddhist period were also found there," said Bhagwat.

"Fine, that solves one question. Now the next. Is there a date of the burial of the copper plates near the picture in this or in any other copper plate?"

"Yes, certainly. It is a Harsha Year. I have calculated that date to be 29th May 633 A.D. The copper plates must have been buried that night.

"Very well! You told me that in the first five copper plates, the date of the explosion of the star is calculated to be 9th April 632 A.D. That means the copper plates were buried after about one year which leads us to believe that Sariputta continued his observations for almost one year. Wonderful! that means we will get the recordings for a period of one year after the explosion," said Avinash enthusiastically. "Now one last question—Has he said which is this round star?"

"Bhagwat shook his head. That is a big question. I cannot understand the name that he has used for the star. We will have to guess that."

Avinash was lost in thought for a while. After a few minutes the lines on his forehead disappeared and he smiled.

"Now we must go to IUCAA to solve this problem," said he with determination.

Six

IUCAA was the acronym of the Inter-University Centre for Astronomy and Astrophysics. This Institute came into existence in 1988. Its buildings were situated in the beautiful campus of Poona University. All modern facilities for the study of astronomy were available there for all the universities in India. The University Grants Commission had made a special provision for its utilisation by researchers from every corner of the country.

When Bhagwat and Avinash got out of the autorickshaw at the spacious gate of IUCAA, Chandan Bajpai was waiting for them. 'I am honoured that those living in the ivory towers in Bombay have deigned to visit poor folk like us in our hut,' said Chandan in the typical theatrical court style of North India. This was a dig at Avinash's Institute dedicated to higher research.

"Even if we accept the term 'ivory tower' for a moment, to call this a 'hut', would necessitate changing the meaning of that word itself," Avinash laughed and patted Chandan's back. He explained to Bhagwat, "Tatyasaheb, this is a private joke between us! My institute was known as the centre for astronomy during the fifties, sixties and seventies. Then Bangalore challenged that, and now the leadership has come from Bangalore to Pune to these huts!"

"There must be competition for maintaining and enhancing quality", said Bhagwat. "But Chandanji, the first step that Pune took in astronomy in modern times, is because of Prof. Nene's Institute."

Bhagwat was referring to the telescope at Narayangaon. Avinash's institute had built a huge telescope on a quiet, flat piece of land surrounded by mountains on the highway from Pune to Nasik. The project for the telescope was approved in 1984 and it was completed after 10 years. This was the biggest telescope in the world that used the metre wavelength.

"Your statement is absolutely right, Prof. Bhagwat," Chandan agreed with a smile. "It is because of the telescope, that we followed them to Pune. Such a

big telescope, but where are the astronomers to make use of it? We came here to create interest in the subject among the new generation.”

“Chandanji, we Pune-ites are proud of IUCAA,” said Bhagwat. “But will someone explain to a layman like me exactly what information we are going to find out today?”

“Tatyasaheb, the Data Centre in IUCAA has sky charts, survey prints etc. so that we know the location of the stars in the sky. There is also a big computer. We are going to make use of all this to find out the answer to our question—what is the star in the sixth copper plate and—where was the star that exploded—Let’s go to find out.”

The rooms of the scientists were to the left and the lecture halls were to the right past the main entrance. Beyond that was the computer centre and the laboratory and further on was the library and canteen. All these buildings were located around various courtyards.

“I have been here to listen to lectures many times, but never beyond that!” said Bhagwat.

Outside the computer terminal room, they all removed their footwear and left it on the shelf outside the door. This was a modern way of preserving the sanctity of the place like in a temple.

The terminals are connected to each other and the ‘server’ supplied the information.

“The sanctum sanctorum,” murmured Bhagwat glancing towards the server.

Chandan sat in front of a terminal and pulled up two more chairs for his visitors. He started the terminal and gave his identification. The computer would work only after recognising the identity. The computer accepted Chandan’s password and the work started.

“Give the date when the copper plates were buried,” said Chandan. Bhagwat had already calculated the date according to the modern calendar. He replied, “29th May 633 A.D.”

Chandan smiled. “Bhagwatji, even if you had given the date, month and year according to the ancient Indian Calendar, the computer would have calculated it—Look,” Chandan pressed a few buttons. A menu appeared on the screen. “Give the day, the year according to the almanac,” it said.

Bhagwat gave the day. Every calendar system had a code number. Chandan selected the code number for the Harsha period from the menu and printed it

along with the day that Bhagwat gave and pressed the enter button.

The computer remained silent for a while. After some 10 to 12 seconds, when the calculations were completed the screen showed:

29th May, 633 A.D.=J.D. 1952409.3

“Good! Even though I was not very good in Maths, this calculation was not wrong. Chandan Saheb, what is this JD?” asked Bhagwat. “JD is Julian Date ... Astronomy has its own calendar for all its calculations. The calendar used by Julius Caesar is known as the Julian calendar and is adapted for use in Astronomy. It had an 11 minute error in the calculation of time taken by the earth to go round the sun once. Julian date starts from the 1st January 4713 B.C. The number of days from then on upto 29th May 633 AD is the Julian date.” explained Chandan. “Now let’s look at that day’s sky—which was visible from Sthanvishwar. Our data centre will give this information.”

He gave two words ‘Sthanvishwar’ and ‘Thanesar’. ‘Thanesar, Haryana, India’ appeared on the screen along with its latitude and longitude. He pressed the ‘enter’ key once again. Another menu appeared. There were many choices. “Can we use the windows?” asked Avinash.

“Yes, certainly. We will see the sky in one window, the names of the stars along with the degree of brightness in the second and the third will be reserved for anything else we might specify,” replied Chandan and started giving instructions to the computer.

“What are these windows?” asked Bhagwat. Chandan replied: “There are many aspects to the information that appears on the screen. The menu gave us different types ... ”

“Like the menu in a restaurant,” said Bhagwat.

“That’s right. Just as we can order several different items at the same time and take them in our plate all at once, we can also make choices about the information. The screen can be divided into different squares and we can get the information we want in them,” said Avinash.

In the meantime, information had appeared in the windows prepared by Chandan.

The sky full of stars was visible in one. The second had a list of stars according to the magnitude scale.... the brightest first, then the second brightest and so on. According to the rules of measurement in astronomy, the magnitudes were also indicated.

“The magnitude scale is very old, dating from the last century,” Avinash explained to Bhagwat. “From the difference in their magnitudes, one can tell how many times one star appears brighter than the other. A star of the first magnitude is 100 times brighter than a star of magnitude six and it is brighter by $100 \times 100 = 10,000$ times brighter than one of magnitude 11.

“That means the brightness is less by 100 times when the magnitude differs by five. Is that right?” asked Bhagwat.

“That is correct! Now look at this window. The brightest object is the planet Venus. Its magnitude is 4.22, the brightest star Sirius comes after Venus.”

“This is the sky about 45 minutes after sunset. I have taken the stars only from a particular direction,” said Chandan. If I change the direction or the time, naturally, I will see different stars.” He pressed some buttons. The display in both the windows changed. Venus was not present in the first window and its name had also disappeared from the second window. The list obviously was of different stars.

“This picture changes according to the direction and the time of observation. Now tell me the exact time and direction of the sky that you want to see,” said Chandan.

“Chandan, we will decide the direction later. First, I’ll give you the time. The moon was at the zenith,” replied Avinash.

“All right. Let us first think of the moon.” Chandan once again brought the menu on the screen. It contained information regarding the orbit and the phases of the moon.

He selected the item on the menu and pressed the ‘enter’ key. A diagram showing the lunar orbit appeared in one window and another chart in the other window.

“We can see the phases of the moon in the third window,” Chandan prepared a third window. The chart indicated the angle of the moon from the horizon according to the time and the East-West angle. He selected a time and after following certain instructions, the moon appeared in the third window.

“This is a full moon,” said Chandan.

“Correct. That night according to the lunar calendar, there was a full-moon. O.K.?” Bhagwat agreed. He appreciated the skill of the computer based purely on mathematics.

“Now let’s check the time when the moon was at the zenith ... in the second

chart the maximum angle from the horizon was 35.5 degrees and the time was 1.46 p.m. Let us see the sky at that time once again,” said Chandan.

“Now we need the direction of some of the stars in the sky, so that we can search for the location of the excavation near Thanesar,” said Avinash.

They were busy for the next one hour, checking their calculations with the aid of the computer from time to time. They did not notice when Bhagwat quietly went out to admire the beauty of the IUCAA buildings.

Seven

THAT morning Avinash's mind was full of conflicting thoughts as he travelled in the jeep with Mr. Bhagwat. This was the first time that he was taking part in an excavation. "What is the basis of this search for the objects hidden in the earth thirteen centuries ago?" he asked himself. A small diagram on a copper plate and its connection with astronomy. Though tenuous, he was confident that it was a strong connection. How useful would the basic picture be? Will we be able to recognise the location for the excavation indicated by the Buddhist monk? Or, was it all going to prove futile?

Avinash had been unaware of all the procedures required for beginning an archaeological excavation. It was necessary to secure permissions from various government authorities, then take the consent of the person who owned the land and improvise a suitable road upto the site if none existed. Bhagwat had guided him in all these and many other procedures and formalities.

"Tatyasaheb, I could not have come upto this stage without you. I would have been totally entangled in the governmental red-tape," said he to Bhagwat.

"Oh dear! The knots in the red tape have to be untied with skill. You cannot cut them by force or by throwing tantrums, O.K.? When I was your age, I used to create quite a racket—but by and by I realised that the only outcome was to raise one's own blood pressure."

The jeep approached the hill outside the city. As they came nearer the hill, Avinash got more and more excited. Bhagwat was absorbed in studying a map. Avinash thought that he was not paying any attention to the surroundings.

"Tatyasaheb, we are now very close to the hill," said he, patting Bhagwat's shoulders.

"I know," said Bhagwat looking up. There will be a dirt road to the right after the tamarind tree, O.K.?"

He was right. To the right was the road leading to the foot of the hill. The

jeep moved forward in jerks.

"Ruins of the monastery can be seen here," said Bhagwat pointing to some rocks. He jumped out expertly as soon as the jeep stopped and rushed towards them. Avinash was quite amazed at his youthful enthusiasm.

The ruins were there only in name. Was there really a Buddhist monastery at any time? Did Sariputta actually conduct his teaching and research at this place? Avinash wondered once again. Was there something here or would this search turn out to be a red herring?

Sensing the hesitation in his mind Bhagwat said, "Can you get any idea of the empire of Harshavardhana from today's Thanesar? At least these rock columns give some indication of the monastery, O.K.?"

"The Archaeologists are used to going upto heaven with the help of a single thread ... I shall accept something only when I see the actual proof," said Avinash.

"Alright, let us begin by locating the spot that we have selected. Then we will start digging. If we find the records of Sariputta, will you accept that as proof?"

Avinash gave an affirmative reply to Bhagwat's question. The excavation point was near the monastery. Its exact location had to be determined from the information regarding its latitude and longitude, based on the calculations made in Pune.

The assistant who accompanied them carried some instruments with the help of the jeep's driver. Using them Bhagwat started searching for the place.

They halted at a distance of 100 metres north of the monastery. The place was flat and grass had grown over it. Bhagwat continued his survey of the surrounding area with the help of some other instruments. He stopped when he had marked out a 3 square metre area.

"I will bet all my previous experience and say that the place we need is in this square area," said he.

"Alright, let us take a bet. Tatyasaheb, if your statement proves right, I will give you a dinner party and if you lose, you will give me one ..."

Bhagwat laughed and said, "We will know one way or the other very soon." He took out one of the spades they had brought with them and started digging. Following him the others too picked up some spades.

They dug for two hours. Finally Avinash said, "Will you admit that you have lost?"



They removed the earth around it carefully.

66/The Cosmic Explosion

“Not at all?” said Bhagwat wiping his forehead, “Let us go down one more foot!”

After another hour, Avinash was about to stop when suddenly he heard a sound. It was the sound of the driver’s spade striking against metal. Bhagwat too had heard it and he jumped towards the spot. He removed the soil very carefully.

They saw an iron plate with some letters engraved on it. Bhagwat read them expertly:

कान्यकुब्ज नरेशेन हर्षदेवेन प्रेरितः ।
लिखामि सारिपुत्तोऽहं तारकास्फोट वर्णनम् ॥
तत्तच्च संस्मृत्य संस्मृत्य दृश्यमत्यद्भुतं दिवि ।
विस्मितोऽहं न जानामि अभद्रं भद्रमेव वा ॥
निरीक्षामि दीर्घानि अत्रसंकलितानि भो ।
विज्ञानिनः पठिष्यन्तु रहस्यछेदनाय हि ॥

“I Sariputta, am writing the description of the explosion of a star by the order of Harshdev, the emperor of Kanyakubja. I was overwhelmed by the memory of the most extraordinary sight in the sky and I do not know whether this will lead to our prosperity or doom. Scientists should read the copious notes of our observations which may help them to uncover the mystery.”

After digging a little deeper, they found an iron box. Even before opening it, Avinash said, “Tatyasaheb! where would you like to go for dinner?”

Eight

THE jeep carrying three people besides the driver was speeding from Bangalore to Kavalur.

"Kumarswami, I thank you once again! You were going to start your own research from today, yet you gave me all of your three nights. How can I ever repay you?" said the person in front.

Kumarswami laughed and glancing at the young man sitting next to him said, "You may compensate Ramanath rather than me! He was going to observe some quasars for his Ph.D. thesis. Isn't it Ramanath? How should Prof. Nene repay you?"

Ramanath was a bright student of few words. He said, "If something results from this night, then I will write my thesis on the Supernova."

"That is a smart fellow," exclaimed Avinash.

"Oh no, I am just a villager from U.P.!"

Everyone laughed at Ramanath's reply. Kumarswami remarked, "Ramanath takes bets only on facts. That means that he is sure that today or at least in the next two nights, something will be found."

"I think that means that he is convinced by the recordings of Sariputta," said Nene.

"Of course," said Ramanath. "The sharp thinking and the neatness of the careful observations of the monk puts us young researchers of today to shame. From those observations I expect this to be the Supernova of type II."

"How do you know that?" asked Avinash.

"From the light curve! Sariputta himself has observed how the light increased every week, every fortnight, every month and then how it decreased later. He has given the pictures and descriptions."

"Any estimate of how much light came out of it?"

"Possibly. He has compared it with Venus. One can guess somewhat from that ... on that basis ..."

Saying this, Ramanath was lost in his thoughts. He looked quite worried. Looking at him Kumarswami asked, "What are you worried about?"

"I will tell you later, Sir. Perhaps, I may be wrong," replied Ramanath. Sensing that he was in no mood to elaborate, Kumarswami kept quiet.

Soon the sandalwood forest near Kavalur was in sight. The jeep entered the observatory and stopped in front of a huge building.

The 90" diameter Vainu Bappu Telescope was standing there in all its glory.

Avinash glanced towards the sky through the window of the guest house while having dinner. It was a cloudless sky and the stars were shining brightly.

"So far so good," he said finally with satisfaction. Kumarswami did not agree.

"Not so good. Kavalur sky is very unpredictable. Last month I came here for some observations. The sky was like this till we reached the telescope, but within half an hour it was full of clouds."

"Sir, I heard that in the site survey tests regarding where the VBT should be installed, Kavalur got the maximum marks. But my own little experience has been quite disappointing," said Ramanath.

"Even though your experience is short, you are right. As we started the installation of the telescope, the weather began to change."

"But Kumarswami, I am sure tonight will be quite clear ... want to take a bet?" asked Avinash with a smile. This was his strategy. He used to take bets so that whatever he wanted to happen may happen—as if his taking a bet would cause it.

At least today it happened to be so when they gathered in the control room at 1.30 a.m. The sky was still clear. Ramanath took control of the CCD and gave instructions to the computer to move the telescope in the desired direction.

Like the photographic plate, the CCD too has brought about a revolution in the field of astronomical observations. When one started getting the stars and nebulae that were not visible even to experienced astronomers, in the form of photographs, the scope of observations increased. With the inventions and discoveries in the field of electronics and solid state physics, one could catch the very faint light photons which could not be converted into photographs. The charge coupled device has made this possible.

Even though Avinash was familiar with these fields, he still thought of the CCD as a magic machine. A few specks of light that have travelled through

millions of light years are caught in this box and the computer converts them into a picture and shows the different parts of the source, with varying brightness in different colours ... all this was strange indeed! He started waiting for Ramanath very eagerly.

The facility for observation is available on the prime focus of the VBT where the rays from far off are collected. This was the special feature of this telescope devised by its founder, the late Vainu Bappu. But very little space is available for the observer to manoeuvre. He has to sit in a cramped posture and there is not too much space for the instruments that catch the light. Small-statured Ramanath used the space expertly. Kumarswami gave him instructions from outside.

Avinash had decided the direction of observations after a careful study of the detailed records of Sariputta. They had decided to search in a square area of $1/2^\circ \times 1/2^\circ$. In human terms $1/2^\circ$ is a small angle, but in the vast universe that small area contains innumerable objects. What exactly was Avinash looking for?

After a star explodes, its contents are thrown out. The core remains as a pulsar and gives rise to X-rays, radio waves and cosmic rays around it. The remnants of the explosion of the star in 1054 can be seen today as the Crab Nebula. Inevitably they become weak with the passing of time.

The explosion that Sariputta had seen was older than the Crab by four centuries. Avinash expected to locate the remnants, if not in the photos, at least in the CCD pictures. Ramanath and Kumarswami were helping him in this search. He could only watch from a distance.

The restlessness of his mind was fully camouflaged by his calm countenance.

Nine

REMNANTS OF A HUGE EXPLOSION OF A STAR DISCOVERED

BANGALORE, January 5, Indian scientists have discovered the remnants of the explosion of a star by making use of the Vainu Bappu Telescope at Kavalur. The scientists are Avinash Nene, V. Kumarswami and Ramanath Pande. Such remnants today give out very faint light and therefore are not visible to the naked eye. Study of the accidentally discovered copper plates from the 7th century led Prof. Nene to observe the remnants of this Star in the Lepus Constellation. The copper plates provide records of observations of the explosion of a star. Normally, there is a pulsar in such a remnant, but that is absent in this instance. Commenting on this, Kumarswami explained that if the exploding star was colossal, the core could be in the form of a black hole instead of a pulsar. A black hole is not visible but one can learn about its existence by studying the effects of gravity on the surrounding area. Research is continuing in this direction. In the meantime, scientists are debating the possible effects on earth of this explosion a thousand light years away."

Avinash noticed this news item with great satisfaction at the Bangalore airport while waiting for his plane to take off. The three of them had announced the discovery in a press conference the previous day. Many times he had seen scientific news items being wrongly reported. He was pleased that the reporter had made no mistake here.

"Excuse me for bothering you, but aren't you Prof. Nene?" said a stranger and sat next to him. The person was overweight, he was wearing a tie, the red boarding card of the Executive Class was peeping out of his pocket. Must be from some industry! As if to support his guess, the man opened his pink financial newspaper and showed Avinash his picture.

"Yes, but I do not recognise you!" said Avinash.

"Naturally! I am Ramesh Karkera. I have a business near Ambarnath. I was just reading this news item, and I saw you. Can I ask you some questions?"

"All right," said Avinash in a resigned manner. There was no escape now until the boarding call.

"Are we in any kind of danger because of this explosion? I am not asking this from the point of view of astrology, I don't believe in that. But you see, if there is a bomb explosion on earth, the effects are felt in the surrounding area."

"It is a very good question. Let us take the example of a bomb explosion," said Avinash. "If the bomb explosion is very big, its effects are felt over a long distance. But if it has misfired, then it has no effect even on the surrounding area. It is the same with the explosion of a star. The best known explosion to date was seen from the earth in 1054. Chinese astronomers have described it. The debris of the explosion can be seen even today. There is a lot to see there.... it is called the Crab Nebula.

"Now the Crab is at a distance of six thousand light years from us. This means that the light that the Chinese saw had come out of the explosion 6000 years ago. But if that had taken place within 50 light years, life on earth would have been destroyed. The spray of cosmic rays coming out of the explosion would have depleted the ozone layer in the earth's atmosphere."

"And the ultraviolet rays of the sun would have annihilated us, isn't it? I have read about the CFCs in *Business India*", said Karkera. "But now what is the diagnosis about this explosion? It is at 1000 light years. That means twenty times 50 light years. Is that not very far?"

"Whether it is far or near depends upon the magnitude of the explosion. Twenty into twenty is 400. If the explosion is four hundred times more powerful than the Crab, it is dangerous to us by the theory of inverse square law."

Karkera laughed and said, "Please don't tell me about inverse square laws. All that is beyond my comprehension."

"It is quite simple! Compare a 10 watt light bulb with a 1000 watts. One thousand is 100 times 10! This means that a bulb of 1000 watts is 100 times more powerful than that of 10 watts. The inverse square law is this ... 100 is the square of 10 that is 10 into 10. So if the bulb of 1000 watts is kept at a distance of 10 times that of a bulb of 10 Watts, both of them will look equally bright."

"I understand now ... But actually how powerful was this explosion?"

"That is precisely what we want to find out. Because the future of life on earth depends on that." And suddenly Avinash was lost in thought.

Seeing this Karkera opened his pink newspaper. He was more concerned about the share market than the future of the earth.

Ten

AVINASH, Kumarswami and Ramanath together published the information about their discovery in the world renowned journal, *Nature*. Avinash also wrote another article with Mr. Bhagwat giving a summary of the recordings of Sariputta found in the excavation. Both the articles together caused quite a stir among scientists.

Until now many records have been found of explosions of stars from our Galaxy. But the remnants of the explosion noted by Sariputta being very weak, had escaped all previous records. Naturally, experts very carefully examined the information provided by the Avinash-Kumarswami-Ramanath trio.

The outcome of this study was shocking. Using modern technology, the distance of the debris of this explosion was fixed at about 1000 light years. By comparing that with the records of Sariputta, the magnitude of the explosion could be determined. The explosion was phenomenal—about 500 times greater than that of Crab ... But it did not last for long. As Avinash had told Karkera, this was going to be dangerous to life on earth.

This important conclusion depended on the accuracy of Sariputta's observations. Were they really trustworthy? A search was launched to see if others elsewhere on the earth had also kept such records. At the time when the Harsha empire was prosperous, the Roman empire had disintegrated in Europe and the Renaissance had yet to take place. So there was no possibility of finding any written records. Only some writings by Catholic monks were found and they mentioned things like "heavenly wrath", or "Doomsday is approaching." Nothing much was found in China but the scholars studying the American Indians in the United States linked some of their rituals to this explosion.

So, one had to depend only on the recordings of Sariputta. Finally, the International Confederation of Scientific Unions (ICSU) organised an international conference to study the situation. This was an unprecedented step in the history

of ICSU. Experts from different scientific disciplines were going to come together to discuss the issue. The possible calamity for the earth was so grave that astronomers, physicists, chemists, and biologists were needed to find a solution. The conference took place in the building of the United Nations.

Avinash was given the honour of presenting the keynote address. He explained briefly the background of the explosion of the star, the records of Sariputta and the observations from Kavalur and put forth the dreaded problem in the following words:

“If we assume the distance of the explosion to be 1000 light years, that means that the light from the explosion takes 1000 years to reach us. When will the cosmic rays—which would comprise various nuclei reach us following the explosion? Cosmic rays are thrown out almost at the same speed as light. If they had come directly, they would have reached the earth during the Sariputta period itself. But that is not the case. By our good fortune, nature has given us some time to protect ourselves.

“Different magnetic fields create disturbances in the path of the cosmic rays. That slows down their speed towards the earth. They will take say 2 to 3 times the time taken by light to reach the earth. Let us imagine that the cosmic rays will reach us two or three thousand years after the explosion. First the light reached here thirteen and a half centuries ago, and that too after a long journey of a thousand years, which means the explosion took place about two thousand three hundred and fifty years ago. We are in that period of 2 to 3 thousand years.

We are lucky that the cosmic rays have not arrived here so far. But they could arrive at any time.”

The experts divided themselves into various groups and started discussing the problem. There was no agreement on anything and so the discussions continued endlessly. “There is no danger from the explosion. The rays coming from such a distance would be too weak,” thought some. Some were convinced that the calamity was inevitable and that we would be helpless in defending ourselves.

“I used to think that scientists are very logical. I never expected so much bickering,” remarked Bhagwat to Avinash during the tea-break while balancing his tea-cup and tasting the biscuits. He was invited to the conference because the whole episode had started with him.

“Don’t ask me!” said Avinash, “Everyone thinks that only his own point of view is based on reason and that everyone else is wrong. But something will

finally come out of all these discussions and I am sure they will come to a decision.”

Finally that is what happened.

There was unanimity about one thing in the conference. It was possible to study the nature and quantity of the cosmic rays. It was decided to send ten ‘space probes’ in the direction of the explosion. It was their job to intercept the cosmic rays and send detailed information about them to the earth with a warning about the arrival of such rays. In the meantime, every nation should take whatever precautions it could for the protection of its citizens.

Bhagwat and Nene were returning to India after the conference. In the plane Avinash was lost in thought.

“What are you thinking about? Nothing much came out of the conference. O.K.?” said Bhagwat.

The plane was travelling through a cloudless sky. From the windows one could see the lights of New York city and its vicinity. Looking down, Avinash replied:

“Man is becoming complacent because of the progress in science and technology. Nature is not confined only to our earth. We have forgotten what great power exists in outer space. If we are complacent, as now, the next generation will hold us responsible.”

AD 2710



One

DADU woke up when the sun entered his hut. He looked around and got up with a yawn. His parents had gone to the field. His mother had left some bread for him.

But Dadu was not interested in eating. For him, today was a very important day. He along with his friends Ramu, Pampu and Sadu was going to test what Grandpa had told him. In addition, by his own guess, he was going to get a lot of money. So much so that his parents would not have to work again. His mother could stay at home and cook all his favourite dishes and his father could tell him stories.

Since all the parents used to go out to work, the job of telling stories was left to the Grandpa. The old man played grandfather to all of them. He used to stay outside the village. His hair was white and he had a long beard. These were his only qualifications for being the “grandfather” there. And he used to tell interesting stories from the many old books that he had. Dadu was thinking about them.

“The earth on which we live, it seems is like a ball! Can’t believe it. But why will grandpa tell any lies? Anyway, we are going to investigate that today. If we go on digging deep inside, then we should come out on the other side. We must!”

For this purpose, Dadu, Ramu, Pampu and Sadu were going to bring spades from their houses and were going to dig near the old fort. Dadu’s guess was that the King of the old fort must have buried a lot of money there. So that both the purposes would be served with one stroke.

Dadu finished his bread and milk in a hurry and went out. The other three were waiting for their leader near the main entrance to the fort.

“You told us to come on time, but you yourself came so late!” Even though he was their leader, he was not immune from their criticism.

“Yes, what Pampu says is right. Look at the shadow of the wall—it is already shorter than what we had decided,” said Sadu.

"Let me guess. Dadya must have got up late." Dadu's guilty face confirmed that Ramu's guess was right, but still he said like a leader, "O.K., I am late! But let's make up for it!"

The red colour of the fort, its delicate carvings and the massive buildings were a reminder of its prosperity in the old days. The four of them entered and came to the place fixed by Dadu. That was the centre of one of the courtyards.

"Come on, let us start digging", said he taking off his sweater.

They dug and dug with all their might till lunch time.

"Now we must go home for lunch," said Pampu. Sadu and Ramu nodded in agreement.

"All right ... But everyone must come back after lunch."

As Dadu had insisted, they all started work again after lunch.

They kept on digging till the sun set on the horizon. They had still not reached the other end of the earth ... Suddenly they heard a metallic sound. A spade had struck something. Ramu bent down to look carefully.

"Looks something like metal."

The four of them removed the object slowly and carefully. It was a sealed steel cylinder. Some letters were carved on it.

"This is the treasure. Didn't I tell you?" Dadu said proudly. Everyone started guessing.

"What might it contain? Gold coins?"

"No, must be gems and diamonds."

"I think it is a magic stick."

"And what if there is a demon in it?"

With the last possibility, they all became cautious. Grandfather had told them the story of a fisherman. The fisherman got a big sealed bottle from the sea. On opening it, a demon came out and he had vowed to eat whosoever set him free. "Suppose there is a demon in this cylinder as well? Why take chances?" They started arguing.

"Let us bury the cylinder again."

"Do you take the responsibility of opening it?"

"He might open it but we all will have to suffer the consequences."

"All right, then let us show it to Grandpa." Everyone agreed with the last suggestion made by Dadu. "He can read many things. He will read these letters and tell us what is in it. Let him decide whether to open it or not."

Leaving their spades at home they all ran to meet the Grandpa.

Two

THERE was a small forest about a kilometre outside the village. It used to be nice and cool out there in the shade of the big trees. The old man had his hut here. Nearby was the river. In the rainy season when there was a flood, the river water used to spread far and wide. But the hut was safe. The Grandpa had built it after giving it a lot of thought.

A stranger would be quite surprised upon entering it. From outside, it was just like all the other huts in the village, but inside it was very different. There were a number of books on wooden shelves set against the walls. Villagers generally had no idea what a “book” was. They learnt from the old man that you have to ‘read’ what is ‘written’ in the books. But they never thought of reading for themselves. And even if they wanted to who had the time?

Children like Dadu were, however very curious about the books. Grandpa used to tell them so many interesting things that they were keen to read them for themselves. Taking advantage of that, Grandpa had started teaching them the alphabet. He started by making them study before he told them stories.

Such interesting things: it seems man used to travel in a house that could fly. He could go over water and also under it. He had such boxes that if you spoke in one, you could hear it in another one very far away. Not only that, but in a strange box, you could even watch pictures moving and talking like those in the stories of grandpa. There were all kinds of stories. Some to make you laugh and some to make you cry and some even to frighten you. The books had many stories of all kinds.

Today Grandpa was looking at a manuscript. He had many such manuscripts which had been handed down from generation to generation. The paper had decayed but the writing was quite clear. Even then he could not understand the context.

“Will someone ever tell me what exactly happened?” he said to himself.

He could get an idea from the old books and papers about the developed civilization that had existed on earth. But that civilization had lasted only upto a certain period—more than five centuries had passed since then. A phenomenal number of people had died then. Now only a few people seemed to be left.

His information indicated that the red fort near where they lived was built by kings known as Moguls. Their city was called Delhi and that was the capital city of the country known as India. But today the fort was in ruins. There was no sign of the city; and the country—well, did it matter when so few people were left there?

Grandpa's own settlement had about fifty people—they were making their livelihood by farming—Nearby was the river—that was called Jamuna. They were making use of its water ... The books said that in the initial stages also man used to live just like this. Later on he learnt about nature, began to harness natural powers and raised his standard of living. The books contained descriptions of their high standard of living ... But then what happened? What made man come back to the original stage? Grandpa had been terribly anxious to know the answer. He had read a lot but had not found an answer to this question. There was a mention of atomic power in the books. Man had mastered the technique of extracting the tremendous power hidden in the atoms and utilising it. But not all power was used for the well-being of mankind. On the contrary, man had made weapons to annihilate living beings from the face of the earth. The books had expressed the fear that unless these weapons were destroyed, they would destroy mankind. Had this fear proved right?

The second possibility was that of pollution. While utilising science and technology it is essential to maintain the balance of nature. But one has to make special efforts to ensure that and it costs money. The books discussed how the danger from pollution had increased. Everybody thought only of himself and not of the society. People behaved in a selfish manner as if the responsibility for maintaining the natural balance was somebody else's and not their own. Had things really gone beyond control?

He could think of many other possibilities but he could not come to any definite conclusion. There was such a tremendous difference between the developed civilization described in the books and the condition of mankind today! This city of Delhi that was once a highly populated, prosperous city with big buildings and sprawling gardens, now lay in ruins. This city that had faced

and withstood so many human invasions was today covered in dust ...

How had this happened?

Suddenly he heard the excited voices of children. No one came to him after dark, especially children. Something unusual must have happened.

"Dadu? At this time? Is everything all right at home?"

"At home? I have not gone home since the afternoon. Look at what we have brought," said Dadu and handed over the cylinder.

"What is this strange thing?" asked the old man looking at the cylindrical object.

"It has gems and jewels," said Dadu.

"No, it has a map showing the location of a treasure," said Sadu. "Oh, no, Grandpa, there must be a magic wand," asserted Pampu with confidence.

"No Grandpa, please do not open it, there is a demon inside," pleaded Ramu.

Grandpa laughed. He brought an oil lamp from the house. He read the writing on the cylinder and became serious. The children did not miss the changed look.

"Is it something bad?"

"Shall we bury it back?"

"Or should we burn it, so that no one will ever be harmed?"

"Let us throw it into the river." But the grandfather conveyed his disagreement by the movement of his head.

"No, children! This is a very important thing. It may have an answer to the question that has been bothering me for so many years."

"Which question, Grandpa?" asked Dadu.

"Now look here! It is very late. Your parents are waiting for you at home. Come back tomorrow afternoon, then I shall tell you everything."

"Why not in the morning?" asked Ramu.

"Yes, Grandpa! We will all come in the morning after breakfast," cried all three in unison.

"Have some patience," said the old man. "It is dark now. I will open the cylinder tomorrow morning and read what is inside. I think there must be a very long story ..."

"A story! Hurray!" cried all four in joy. "Then we must listen to it."

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“All right! All right! But at least I must read it before I tell you. So then, no one should disturb me in the morning. Agreed?”

“Agreed!” was the chorus of the four.

“Now run along home!”

The old man watched them for a while. Then he started opening the cylinder. He too did not have the patience to wait till the morning.

Three

THE next afternoon the quartet entered the hut where the old man lived. Grandpa looked serious but he smiled as he was soon infected by the enthusiasm of the children.

"Oh! Grandpa, tell us what did you find in the cylinder?"

"Certainly not a demon—or we would not have found you here."

"Oh! What do you know? Grandpa can put a spell even on the demon."

"Keep quiet. Let Grandpa tell us everything."

When they heard the last statement from their leader Dadu, they all became quiet. The old man made them all sit down and started.

"First of all I must disappoint you a little. There was no gold or silver, gems or jewels in the cylinder. And there was no demon either. Even then I will say that you have found a very precious object. As I said yesterday, I found answers to many of my questions. My friends, this is a time-capsule."

"A time-capsule?" asked all of them together. They had never heard this word before.

"Let me tell you what a 'time-capsule' is. Our ancestors who lived hundreds of years ago, wrote everything about themselves and put it in this cylinder which they buried underground in the hope that after many years someone may find it. You fulfilled their hope yesterday," said the old man.

The four of them were quite disappointed. It was the first time that they had seen this 'time-capsule' but it was so drab compared to hidden treasure. Noticing this the old man continued.

"Children, what you have found is indeed a treasure. It has many interesting things in it. It gives a detailed description of how people used to live on earth."

"Meaning the ones who could fly in the sky, speak to each other from far away distances, who lived in very tall houses? You mean the people about whom you used to tell us?" interrupted Ramu.

"Then what happened to them? Why do we live like this? Why can't we live like them?" This question from Dadu made the grandfather serious once again. After thinking for a while he said, "That was my question too. I found an answer today in this time-capsule. It is a very long story."

"Do tell us! Tell us!" They all shouted at once. Grandpa raised his hand to make them quiet. He wondered from where he should begin. Finally he started.

"Children, I have already told you that the earth on which we live moves round the sun. All the light we get comes from the sun. The stars that we see in the sky at night, are also bright like the sun. They appear to be small and dim because they are very far away."

"You have already told us that" said Sadu.

"Be quiet! Let Grandpa talk," Dadu said.

"So, these stars are of different types. Some small, some big, they have different colours. Some of them explode after a while and their outer portions get scattered all over like splinters."

"You mean like what happens when there is thunder?" Dadu remembered what had happened in the last rainy season.

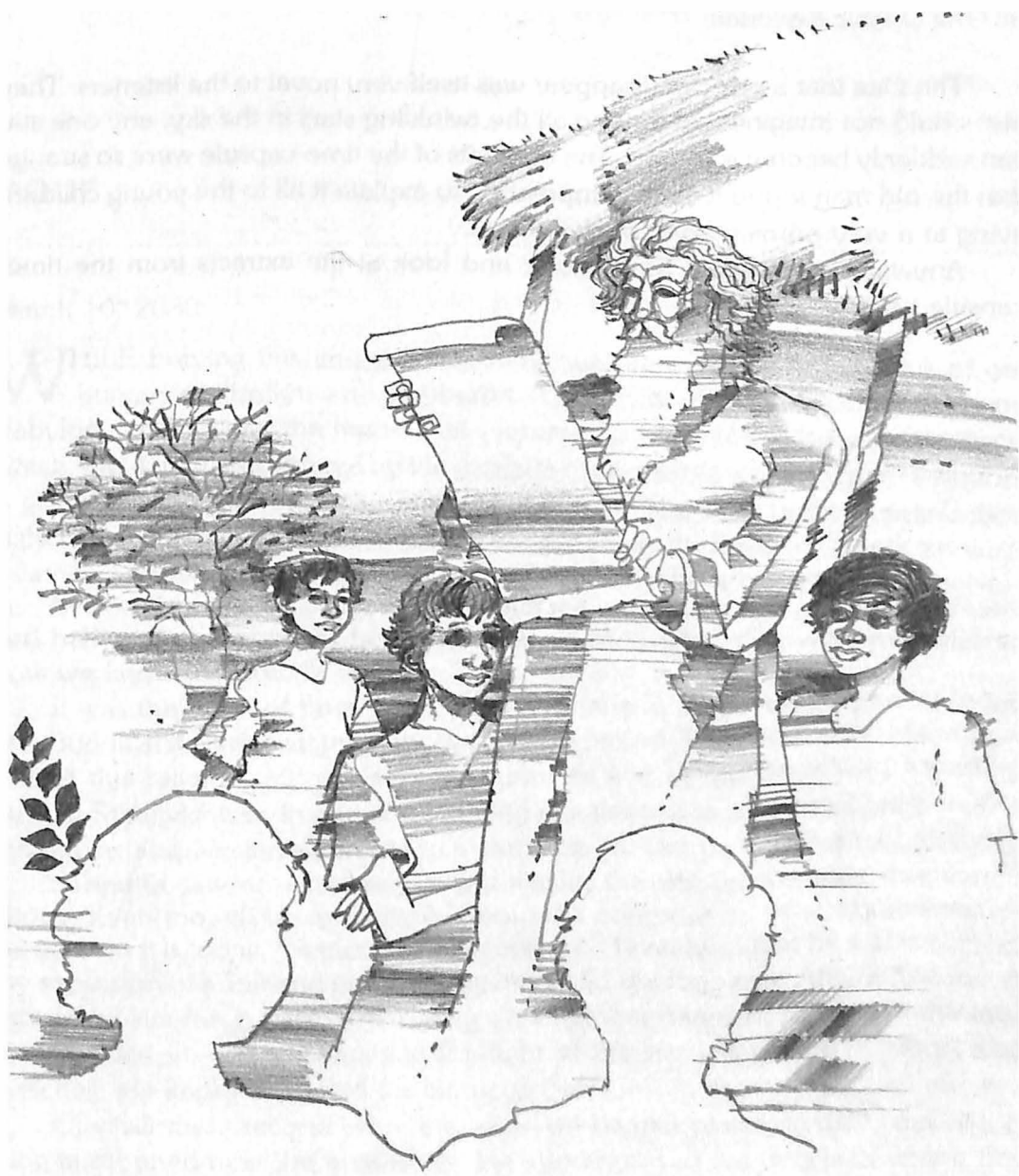
"But when a star explodes, the explosion starts from inside. Because of the explosion, there is intense light in its surrounding area. From a distance it looks as if it has become a very powerful star. So much so, that the night can appear like day."

"Oh my God!" exclaimed all of them.

"This is the story of what happened years ago. King Harshavardhana ruled this country. There lived a Buddhist monk named Sariputta during his reign."

"Long long ago, there lived a very wise man called Gautam Buddha. He gave many lectures so that people may get the knowledge that he had. His temperament, his manner of living was like that of a monk. His needs were very few and he used to beg for his food. Those of his followers who lived in the same manner and imparted his knowledge were called Buddhist monks. Sariputta was one such monk.

"One night, Sariputta watched a star explode. He had never seen anything like this before, but he had a vague idea of what it might be. He explained everything to the King and started keeping detailed notes of his observations. The star that had become extremely bright, slowly became dimmer and dimmer and finally disappeared altogether."



Why not we read excerpts from the time capsule.

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The idea that a star can disappear was itself very novel to the listeners. They also could not imagine that among all the twinkling stars in the sky, any one star can suddenly become so bright. The contents of the time-capsule were so strange that the old man found it almost impossible to explain it all to the young children living at a very primary level of civilization.

Anyway, let us leave them alone and look at the extracts from the time-capsule itself.

Four

March 10, 2080

WHILE burying this time-capsule here, we are aware that the days of our human civilization are numbered. This civilization that included Egypt, Babylonia, China and the Indus, that successfully faced many human invasions, which could not be destroyed by the dangers of an atomic war or global pollution, is going to be wiped out in a period of one year! The only point of satisfaction is that inconsiderate human actions are not the cause for this end. This is a natural calamity. Our science and technology are not sufficiently developed to combat it.

Man had an inkling of the calamity that we are going through almost thirteen and half centuries ago. To be precise, on April 9, 632. You will know shortly how we know the precise date.

It was the reign of Emperor Harshavardhana in the northern part of India. The Buddhist religion was prevalent during this period. The Chief of the Mahayana cult of this religion, Monk Sariputta—used to live in the Buddhist Monastery outside Sthanvishwar. In addition to being enlightened in matters of religion, this monk was also a scientist. In today's parlance, he can be called a real scientist.

Sariputta saw an extremely bright star in the sky on the date mentioned above. Even though his knowledge about the composition of a star was not as accurate as it is today, his guess proved correct. He realised that he was watching the explosion of a star and immediately informed the Emperor. After a discussion with the Emperor, he started keeping detailed recordings of this phenomenon. He recorded the slow changes in the light of the star using both numbers and sketches. He kept this record for almost a year.

Later all these records were engraved on copper plates by the order of the King and buried near the monastery. He also engraved the details of where this information was buried on many other copper plates and buried them in different parts of India. The idea was that detailed information about this occurrence should be available to future generations and if there was possibility of danger to earth

from this occurrence, then it should help in its protection in whatever way possible. We cannot admire the foresight of Sariputta enough. (Sariputta's recordings in Annexure 'A')

These copper plates were discovered in an excavation in 1996. Archaeologist Prof. Bhagwat perceived its importance and brought it to the notice of the astronomer Prof. Nene. After considerable research by both of them, they managed to obtain the detailed recordings made by Sariputta from Sthanvishwar (Thanesar). With the help of that information, Prof. Nene, his friend Kumarswami and Ramanath, discovered the remnants of the explosion from Vainu Bappu Telescope at Kavalur. (The details of these discoveries are in Annexure 'B').

Initially it was believed that this star from the cluster was at a distance of a thousand light years, hence it would cause no ill effects to earth. On the contrary, if we assume Sariputta's recordings to be accurate, then the explosion must have been colossal. The cosmic rays given out by such a mammoth explosion, could prove to be dangerous to us. This was the conclusion of many scientists. (Their calculations in this regard and its results are given in Annexure 'C'). In 1997 on a global level some space probes were sent in the direction of the stellar explosion in the cluster known as Lepus. They measured the intensity of the cosmic rays coming towards the earth and sent that data to earth. This continued for many decades but nothing much happened. People and even scientists became quite complacent and assumed the cosmic rays to be very weak.

That nothing happened even when half of the twenty-first century was over, did not mean that the danger had been averted. No one could predict at exactly what rate the cosmic rays would be travelling towards the earth and so it was not possible to say exactly when they would present themselves. As time passed, however, people forgot all about them. Astronomers started considering it as simply another of many such remnants of explosions. But the space probes were doing their job continuously. Their data was being received by 5 centres on earth. Because of increased mechanisation, their messages were being recorded automatically. No one had time to go through them. Thus even the danger signal was received quite accidentally.

When some students were being trained in the centre in Japan, a student called Yabushita selected these messages for analysis and was surprised. The intensity of these messages had risen much above the normal level. The scientists were shocked to find that this was not the result of any technical failure.

Messages at the other centres too were checked and it was found that the intensity of cosmic rays had increased everywhere. The scientists called an urgent international conference. Experts in atmospheric studies started measuring the ozone layer which protects us from the ultraviolet rays of the Sun. In the twentieth century when it was noticed that this danger was serious because of the spray of CFCs all nations had taken some immediate steps.

Now it has been noticed that the ozone layer began depleting very fast. The space probes were reminding us that the intensity of cosmic rays was increasing day by day. A lot of discussion took place at the international conference. If the cosmic rays become weak, then the ozone layer could be regenerated soon ... but how soon? In one month? If that happens, there will be destruction on a small scale and a major calamity would be averted. All human projects non-friendly to the ozone, such as ultra sonic aeroplanes were banned.

That was a year ago. The flux of cosmic rays is subsiding a little—but it is already too late. Almost half the life on earth has been destroyed and the rest is on its way to extinction because of skin cancer. We can last at most one year.

Perhaps those inhabiting some caves in the mountains may survive. There is no point in going to the caves now. It is already too late for us.

We hope that humanity will not be destroyed totally. It will be revived. Most of us would not survive this natural calamity. Maybe if it had taken place after a couple of centuries, we could have technological means to find some remedy. But the technology in the 21st century is not developed to that extent. We cannot augment the ozone layer artificially. (The detailed account of our last year in Annexure 'D').

We do not know how long the process of revival will take. So that mankind may not take another two thousand years to progress slowly back to the present level, we have given detailed information about our science and technology and preserved it in underground iron vaults in every country. The nearest location is indicated on the map inside this time-capsule. The people in this country should find the place and start the renaissance. When the technology is developed, they can communicate with other areas on earth.

Will some humans really survive? Will the human race vanish? Will they understand our language? If they do, will they learn any lessons from it? Will man achieve the same level of progress as we enjoy today?

We do not have the answers. We are sure about one thing. For a star an

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explosion is a momentary occurrence in its long life of billions of years. Sariputta observed the explosion in the seventh century. But it had taken place a thousand years earlier when scientist like Euclid and Aristotle were engaged in scientific discussions in the Greek civilization. The cosmic rays reached the earth towards the end of the 21st century and humanity lived for two thousand five hundred years more while this astronomically momentary occurrence took place. Science and technology are not sufficiently developed and we have to watch the annihilation helplessly.

We humans realise that our pride in having achieved control over nature was pre-mature.

Five

WHEN the old man completed the long story, the sun had gone down considerably. In conclusion he said.

“Children, that is why this time-capsule that you have found is more precious than any hidden treasure and more effective than any magic wand.”

“How come? This story gives us the account of how people lived in the old days and how they were destroyed. How can we benefit from that?” asked Dadu. “And just now you said that even though our ancestors had progressed so much, they could do nothing about this calamity,” said Ramu.

“That is why we are living in such poverty,” exclaimed Pampu.

“I feel very sad after hearing this story,” confessed Sadu.

“At first I also had the same reaction. Such a developed civilization and it was all lost in a natural calamity! What they had achieved in two thousand years, was all proven useless in just two years. It is true that all this does make us feel very sad and humble, but then one begins to think again. Tell me why did these people take the trouble of burying this time-capsule when they were being destroyed?” asked grandfather.

“So that someone like us may find it in the future and that we should know about them,” answered Dadu.

“Your answer is correct but not totally. The fact that they took so much trouble means that they hoped that some day there would be people who could read the time-capsule. If not today, then tomorrow. You have fulfilled their dream after six hundred years. But they certainly do not expect us to keep quiet on reading this ...”

“But what can we do?” asked the children.

“We must achieve the same level of progress as our ancestors. By not doing anything in the last 600 years, things have fallen into ruins. We have to rebuild all that. Our ancestors have made a provision for that also,” explained Grandpa.



What was in that ? Gold coins ?

“We must find that steel box, isn’t it?” asked Dadu.

“It is not a box! It is a basement with steel walls ... way under the ground.”

The old man laughed and added, “Is the basement also not like a box? A box, so big, so big that we can get into it and examine all the things in it.”

“Will there be a treasure?”

“The things in it will be even more important than any treasure.”

“What does that mean, Grandpa?”

“It contains knowledge and science. Do you remember the stories I had told you? How man used to live? How many things he had? Planes that used to fly in the sky, telephones to speak from a distance, medicines to cure a sick person, remedies to set broken arms and legs, computers that could store huge amounts of information and could think very fast ... ”

“Oh yes, Grandpa.”

“Then we have to build all that up again. And the key to that lies in that basement.”

All four children got very excited by this last sentence. “If we can really get all things, then of course our cylinder is better than any other treasure. But where is the basement?” The old man had unfolded a paper and he was reading.

“See, this is called a map. The basement is under the big garden where the chief of this country—who was then called President—used to live. We will start for that place early tomorrow morning but you will have to walk a lot.”

“What if we take my father’s bullock cart?” asked Dadu. Grandfather thought for a while. He had already crossed sixty, the children were quite young. Finally he agreed.

The children started making plans for the next day.

Six

THE huge building once known as Rashtrapati Bhawan was in ruins. But it still showed signs of its past opulence and glory. The beautiful Mogul Garden of olden days was beyond recognition ... instead there was a virtual forest there.

After consulting the map, the Grandpa stood on a particular spot. It was not very easy to recognise the spot mentioned in the map in these changed circumstances.

"If we dig here, we will find the basement." said he. The children welcomed, this announcement with a lot of excitement and enthusiasm.

"We should have brought our spade ... "

"Then we could have dug here and gone to the basement."

"And we would have taken out the aeroplane."

"Have some patience, my dears. I appreciate your enthusiasm, but we cannot get what we are looking for so easily. Certainly not the aeroplane."

"But why?" asked all the four in disappointment.

"Ramu, you have a little brother at home. Does he run?" asked Grandpa. They were all taken aback by this unexpected question. Then Ramu replied.

"What a question! How can he run? He is so small that he cannot even turn on his side when he is lying down."

"That means we will have to wait for some time before he can run, isn't it?"

"Of course. First he will turn, then he will learn to sit up, then stand, walk, only after that will he run."

"Ramu, our case is exactly like that. First we will locate the basement, find all the papers in them and read them. Then we will make the smaller things first, and the bigger, more complicated things later," replied the old man.

"Grandpa, you had told us once that long long ago, man made use of stone implements. Then he discovered metals like iron," said Pampu.

"Yes Pampu! That took thousands of years. While discovering and inventing new things, by solving the puzzles and challenges of nature, slowly he made some progress. He did not get an aeroplane immediately, just like that!"



Towards progress.

The children were greatly disappointed. "Are we also going to take all those thousands of years to reach that level?"

"No! I do not think that it will take that long now." Pointing to the selected spot grandfather said, "The master key to the problem is over there. Our ancestors have buried all the information over there. To understand it and implement all the things one by one, will take time, but not thousands of years."

"Then how many?"

Looking at the excited faces of the children, the old man thought to himself how nice it would have been if one could establish the developed human civilization of the 21st century just by the touch of a magic wand!

"Come on! Let us go home and prepare for a big digging expedition tomorrow. Only three or four persons cannot do that. Our whole village has to cooperate in that effort. Once we open the basement and take out all the information then it will be your job to fulfil that dream."

The children ran past the old man and got into the bullock cart. When Grandpa reached it and got in slowly, Ramu started it. The old man was lost in his thoughts throughout the journey.

This same city that witnessed the prosperity of Kauravas and the Pandavas, the zenith glory of the Mogul empire, where the British once ruled in all splendour and might was standing there in ruins, hidden below the thick forest. What new form will it take in the future?

The huge sun was visible on the western horizon just before sunset. Now it will go down and there will be darkness. But that will last only for some time. The earth will be flooded with light once again when the sun rises again.

Will human civilization rise again with a new vigour after these six dark centuries? In this colossal universe mankind was defeated because of a small and momentary explosion, but was not annihilated. Man did not lose hope even when he realised that his civilization could not survive. He made provisions for the surviving heirs to achieve the past glory. Now it was the responsibility of those heirs to make use of those provisions. Will they fulfil those expectations?

The old man smiled with satisfaction when he heard the excited voices from the front portion of the cart. He murmured to himself.

"May be not today—nor tomorrow, but certainly the day after !"

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