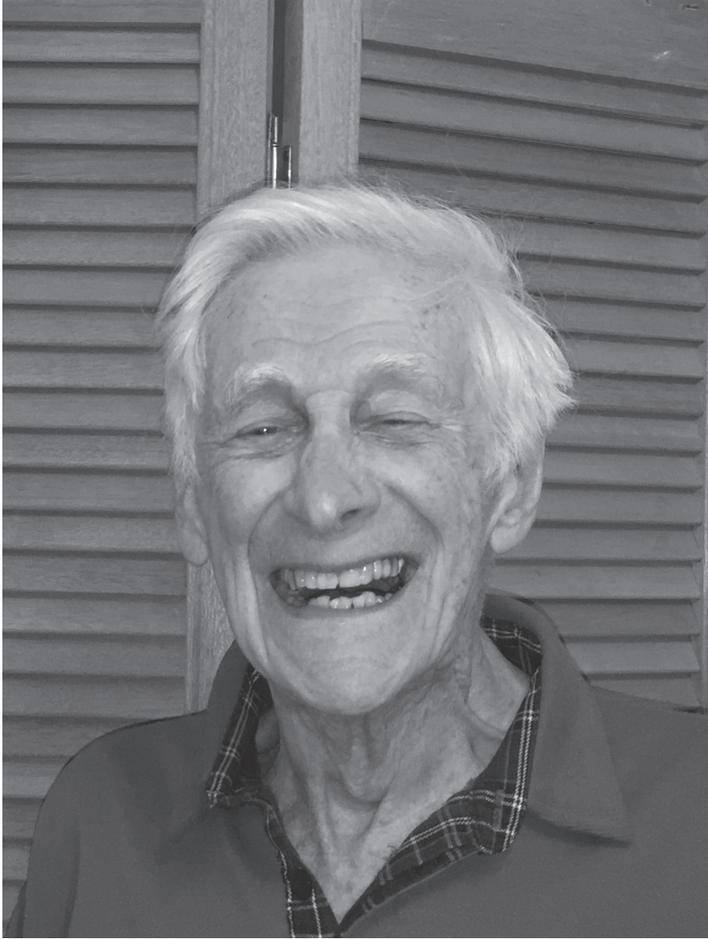


## THE LION HYPOTHESIS



# The Lion Hypothesis



EDGAR LION

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*I want to thank my daughter Diana Lion for assisting  
with the research and editing.*

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## CONTENTS

Introduction 9

About the Author 13

Mankind and the Divine Illusion 28

The Big Bang Theory 33

Our Own Galaxy — Present and Future 43

Are We Alone? 50



1.

## Introduction

WHEN I WAS A TEENAGER, I was an avid reader. I was interested in many topics and I could never get enough information. My parents also supported my interests by buying me a lot of books and sometimes, for some reason, it seems to pay off indirectly. To give an example, here is what happened with one of them: at one time, my parents gave me a book which was called *With Twenty Dollars into the Wild West*. It was written by a journalist of a Berlin newspaper who spent close to a year in different regions of Canada and experienced life in parts of Canada which we had never heard about. Canada in Vienna was an unknown country. We knew a lot about the United States but we had never heard enough about Canada. What happened was that many years later, when I spent time in internment camps in Canada, I was one of the few people who knew something about this country. All of us were displaced from England and it was not of course voluntarily, but we were sitting

in those internment camps, wondering what the future would bring. This book incidentally, also had photographs. One of the photographs was of Hotel Vancouver, which, in those days, was the tallest building in Vancouver with a peculiar roof that stuck in my mind all along. Many years later when my wife and I went to Vancouver for the first time, I remember that I saw the hotel from a distance and recognized it, remembering this particular photograph. The difference was that since then, the hotel was surrounded by high-rise buildings, even taller than the hotel. Nevertheless, I still remember that remembrance from my teenage years.

Over time, I met many people who were similar to myself. In other words, they were interested in many things but at the same time, they were not keen on having to read long books about each topic. So it occurred to me to write a book about some of these topics but put them into a somehow concise form so that people could get some information without having to spend innumerable hours on reading books for this purpose.

Thus, I wrote about the development and evolution of animals and plants and incidentally, also about humans, because they were part of the animal kingdom in a way, so I was satisfied in developing this topic. At the same time, there was

also the question of religion. Some of which had the idea that the world was created by some kind of a divine entity and this was the rule of these particularly religions and it had to be followed. Any deviation was considered heresy and punished very severely. Then, of course, astronomy refuted some of these principles and it was also a very interesting topic for me. Starting with the Big Bang Theory, which always was somewhat controversial, I came up with my own idea of how it started and how it possibly might end or continue. I also decided to write in more detail about our own galaxy which, after all, is of great interest to us. I found a little more information in this respect and developed my own hypothesis about some of these principles.

Ultimately, of course, there is also the question of whether we are alone in the universe and these questions, in a way, are answered very easily as you can see when you read this chapter in my book. I also decided to include a chapter on my own adventurous life which was shaped partly by my experiences under the Nazis and the consequences of what happened afterwards. All in all, I felt that this is a book that is of interest to people who would like to learn all kinds of things about all kinds of subjects without spending an enormous amount of time reading up on all this.

I was handicapped in writing this book because I developed a few years ago AMD which is macular degeneration. This is a disease which comes with age and I have heard of more and more people who also suffered from AMD. What it meant for me was that I had no close vision and I could not use my computer at all. It was extremely difficult for me to write this book because I had to use a system of dictating my materials on tapes and then a friend of mine who was a very good secretary transcribed all my thoughts on paper and came up with the initial version of this book which, of course, we edited eventually.

[I am preparing this book intentionally with a slightly larger font to provide a little assistance to visually handicapped persons.]

2.

## About the Author

MY NAME IS EDGAR LION. I was born on August 9, 1920, in Vienna, Austria. Until I learned English and French in school I did not know that my name had a meaning in another language because the name Lion, spelled Lion and pronounced Leon as if it were written L-e-o-n in English, has no meaning in German. Quite a few years later, when I arrived in Canada, some people asked me whether I had ever changed my name or shortened it and I said no. My name was never changed and I know that for sure because I know that at least two of my great-grandfathers had the same name and it was pronounced the same way.

My father was a very well-known lawyer in Vienna, the equivalent of a corporation lawyer and among his clients were the Austrian Government Party, the League of Veterans from World War I, the League of PTA's of Austria, the National Railways and many other corporate clients. In World War I he was a highly decorated officer in

the Shock Troops of the Imperial Army called the 'Deutschmeister' Regiment. His men adored him and that was very important because a number of years later, it actually saved his life and saved him from ending up in a concentration camp. My mother was a first rate pianist, of concert pianist caliber. However, she never became a performing artist.

I was very fortunate that my parents were able to enroll me in the Number One boys' school in Vienna, the so-called 'Theresianische Akademie'. This school was a boarding school. We spent six days a week there and on Sundays we were allowed to go home to visit our families. When we left the school we always had to wear the school uniform because the school was run on semi-military lines.

The school was housed in an old palace built by the Empress Maria Theresia around 1750. The school building was under protection as a national monument and, therefore, could not be tampered with. As a result we had only cold water in our dormitories. However, twice a week we were taken to a different part of the building where they had hot showers. The school day was as follows: we had five lectures from 8:00 to 1:00. In the afternoon we would do sports and in the evenings we would do our homework. In this school we had subjects which you do not normally get. We had

riding, fencing and of course languages. I had seven years of Latin, which was a very good basis for other languages. I had six years of English and six years of French at the same time. By the time I was through with it, I spoke English practically fluently. I also spent a couple of summers in England where my parents sent me for the holidays, so I perfected the language.

I also had ballroom dancing, which was one of my favorites. Now, I have to explain that in Vienna we had a cinema which specialized in American movies. It only showed two types: Gangster movies and musicals. I saw all the Fred Astaire and Ginger Rogers musicals, Gene Kelly and many other dancers like this. I loved the dancing and especially the tap dancing. However, tap dancing did not exist in Vienna. That was an American thing and I just had to put it on the back burner. Many years later, when I retired from my profession in 1986 and I was 66 years old, that is when I took up tap dancing and I have tap danced ever since all my life.

In 1938 I was going to finish my senior matric but fate showed us that things can change drastically. In March 1938 Germany invaded Austria, the so-called 'Anschluss'. They sent a bunch of SA and SS troops. Some of these troops occupied my school as barracks. That was bad enough because these people were very uneducated, uncivilized and

behaved like animals. They threw garbage around, they did not clean, they did not wash. They were simply filthy types of persons. Because they had nothing to do, as a result and as a pastime and for their kind of entertainment, they decided to start torturing people. The so-called 'undesirables', as far as the Nazis were concerned, that means they caught Jews, priests, communists and so on. I would like to mention a couple of examples for you so you can have an idea of what went on.

Our dormitories were on the third floor of the building which had a number of courtyards. One day there was a big commotion in the courtyard outside our dormitory. We looked down and there was a group of a dozen and a half Nazis standing in a circle. Each one had a wooden club. In the middle was a man, obviously Jewish. One Nazi would hit him and he would stagger against the outside of this circle. Every time somebody hit him they all would laugh uproariously. It was a big joke for them. So they kept hitting him and he would stagger against the outside again on the other side and this went on until he finally collapsed in the middle in a bloody heap and he did not move. At this point a couple of these men picked him up, carried him outside the building and threw him into the street in front of the building.

It was a hot summer day. The man was lying on

the sidewalk, bleeding profusely and we thought that he was dead. People would walk around him into the street. They were afraid to move him or to help him in any way. Finally what happened was, in the afternoon, the sun went down and that revived him. We saw him crawl away on all fours and he left a bloody trail behind him. It was a horrible sight and it will stay with me for the rest of my life. Even when I think back about it now, I can see it in my mind. I can see the scene of him just crawling away, half dead.

But this was not the only thing that happened that affected me personally. One day a bunch of these hoodlums came to our house and took my mother out, as well as a few other women, and they made them wash a sidewalk with water laced with acid. When my mother came home, her skin was completely burned on her hands and her elbows. That evening my father came home from the office and he said that it was fortunate that it did not happen when he was there because he would not have survived this day. He would have killed some of them and they would have killed him in turn. It would have been the end. So this is what happened to us on a personal level.

I still finished my studies and my senior matric 'with honors' under the Nazis and then, the question was, what would happen with me? My parents

and I knew that I had to get out of the country, but they were not sure if they would be able to leave. But first, I have to tell you about one of the first things the Nazis did. They decreed very stiff penalties, culminating in the death penalty, for any foreign money transactions no matter how small. This was because they knew that Jews would want to get some money out of Austria. So this was something that was very difficult to deal with. I had always wanted to become an engineer and I always had a flair for technical matters. Since I had distant cousins studying engineering at Edinburgh University, I thought I should try and go there, too. I wrote to the University and they said yes, your qualifications are alright for engineering and all you have to do is write an exam for foreign students in English. That was no problem for me since I already knew it fluently. At the bottom of the letter there was a note that to become a student, you had to send a registration fee of five shillings, let us say one dollar, but I could not send the five shillings (let us say one dollar) because of the law which the Nazis had enacted. It was a foreign money transaction. There I was in Vienna, stuck there and my life literally was worth one dollar!

Then, a minor miracle occurred. A late uncle of mine, the oldest brother of my father, who had also lived in Vienna, used to have an import-export

company for textiles and he dealt with a Scottish millionaire by the name of Innes who had some textile plants near Edinburgh. This man had salesmen who travelled around in Europe to sell his merchandise. One of them, a Belgian by the name of Dewinter, came to Vienna and paid a courtesy call on my father. When he heard about my predicament he said not to worry about it, as soon as he comes back to Scotland he would pay those five shillings for me. So that solved my problem. Now I was ready to leave but my parents did not see any way of getting out of Vienna, because no country would take Jewish refugees in those days.

I was able to get a flight on a plane that would take me to London and my parents arranged for me to be met by some distant relatives and they would put me on a night train to Edinburgh and I would go to Mr. Innes's place and ask him to look after me until I could get settled in Edinburgh. This we did but, on the way, it was very difficult for me to get through because when I came to London, I had to see the immigration official. There I was, six foot one, talking to this fellow, five foot three. He took one look at me and said:

'You look suspicious. Where are you going? What are you doing?'

I said, 'I am a student at Edinburgh University.'

He said, 'Where are your documents?'

I said, 'I don't have any yet because I didn't have a chance to get them yet.'

He said again, 'You look suspicious, I will send you back.'

Which would have meant concentration camp for me.

I felt like throwing him through the closest window but I restrained myself.

He finally said: 'Okay, I will give you one week and if you have not got your papers as a student, we will send you back.'

I said, 'Alright, one week is enough for me to settle my affairs in Edinburgh.'

So that is how I was finally able to get out. In the meantime what happened later, I found out much later that my parents did manage to come out because it was another minor miracle. Great Britain had a shortage of domestic help and this is how my parents managed to escape. My father became a chauffeur and gardener. He hated driving and he never wanted to get a car although he could afford it and he said what is the point of getting a car. There are no garages, there is no parking. And I can take my newspaper and sit on the streetcar and it will take me directly to my office in the inner city.

My mother, who was a mediocre cook because our maid did all the cooking and cleaning, became a cook and housekeeper. That is how my parents

came to England. They did not work even one day at those jobs, they found other work. My father found some legal work with a company in London and my mother found a job as a designer in a textile factory. They stayed in London during the blitz, during the war, until I was, much later, able to bring them to Canada. I was able to get to Edinburgh and enlist at the University. I must tell you that much later, years later, I found out that the money actually came from my grandmother who was still living in Poland and she was able to send money to Scotland and pay for my fees and expenses. But this happened many years later that I found out about it.

I was in Edinburgh for about a year and a half and then what happened changed my life tremendously. When the Nazis invaded Europe, the British panicked and in May 1940, they decided to intern all German and Austrian men only, not the women and that happened on Sunday, the 12<sup>th</sup> of May, 1940. It was Mother's Day. I was going for a short bicycle trip and I was stopped by a dark limousine with a British secret service agent who asked for me.

He said, 'We ask you to come with us to the police station to ask you a few questions. You may have to stay overnight, so bring a toothbrush and pajamas.'

I brought a toothbrush and pajamas and that is how I eventually came to Canada. They took me to the police station. They did not ask any questions for the whole day, they had no food for us, we were not allowed to get in touch with anybody, we were held completely incommunicado. The student hostel where I used to stay did not know what happened to me. I had disappeared from the face of the earth. A few days later, they took us to a collection camp near Liverpool, and there we stayed for a few weeks. Then they took us to the Isle of Man, which in peace time is a luxury resort. However at that time they put barbed wire around some of the high rise hotel buildings and each building became its own internment camp. We were there for several weeks and then, one day, they took us to Glasgow. There were two ships and they just told us to take one or the other. If you took one ship, you ended up in Australia. And later, when internment was completed, they sent you back to England. Australia did not permit anybody to emigrate there permanently. I happened to take the other ship and I ended up in Canada.

In Canada, I went through three different internment camps. One in particular was in New Brunswick where we spent over 10 months, right through the winter. It was a pretty tough trip because, at the time, we did not know what would

happen to us. It was our worst worry, the future, because we did not know if they would permit us to immigrate and if so, what would we do? We had no money, we had no connections and we did not know anything about the country. The question was: the future.

As it happened I was very fortunate. After a few months, when we were finally allowed to get in touch with our families, when I got in touch with my parents, they were surprised that I, their only son, was interned in Canada, of all places. But soon they found out that we had distant relatives in Montreal and so, someone managed to arrange that some of these relatives would eventually sponsor me and get me out of internment. I stayed with them while I finished my studies at McGill University in Montreal in 1945. Under normal conditions, I would have been able to finish my studies in Edinburgh in 1942. I lost three years out of my life, but I consider myself fortunate that I was able to finish my studies and actually have a profession.

After completing my studies, I was able to bring my parents to Montreal from England. Later, when I started in my career in construction, I was able to establish myself and really formulate and shape my future there. In 1949, I married Phyllis Joseph, a girl from one of the oldest Jewish fam-

ilies in Quebec and we had a daughter, Diana, in 1951, and twin sons in 1955. Unfortunately, we lost both twin sons sometime later.

Clifford was a doctor, and a partner in the Oshawa Clinic in Ontario. When he was a student in medicine, he developed Hodgkin's disease and this later came back in the form of lung cancer and killed him in 1999. He was 44 years old. Clifford was married to Sherrill Barth. They had no children. He was a dedicated physician, who was beloved by all his patients. He was one of the very few doctors who continued to make house calls, and he spent a lot of time listening to his patients as part of his practice.

Douglas, who became a fire chief, was in charge of a municipality on the Island of Montreal. He had a habit of taking a couple of weeks every year to go up north to teach firefighting and fire prevention to the Inuit. In 2005, while he was up north he suddenly died in his sleep. The government only said very briefly that it was due to a silent heart attack. He was 50 years old. Douglas was married to Connie Roberts. They had two children, my grandsons, who are still students. Alan, the older one, got married in 2012 and his wife also is still a student but I was able to help them to buy a small house in the vicinity of Ottawa. He is getting his Master's in mineralogy and geology. Jeremy, the

younger one, is becoming an expert in automotive mechanics.

Diana went back to University in San Francisco in the 1980's and got her Master's Degree in Rehabilitation Engineering. After working for a decade with disabled people, she became very ill. An extensive search showed there was no western medical cure for her illness. After healing herself through using ancient Eastern methods, she trained extensively in those methods herself. She has since established herself as a dedicated meditation and Qigong teacher in California for many years. She is dedicated to helping others who are suffering like she did, and is very involved in organizing the non-profit and community.

I married Phyllis Annette Joseph on March 16, 1949. Although Phyllis and I were at McGill University at the same time, we only met in person several years later. Our graduation (she in Arts and I in Civil Engineering) were in the 1940s. Phyllis worked in radio advertising. Many years later she became the office manager for one of our friends, a well-known orthodontist. At the same time she got a second degree in Fine Arts from Concordia University. The degree was in Photography, but she later switched to Portraiture, which became her passion for the rest of her life.

My career was in direct construction. I was run-

ning projects as a project manager but in the second half of my career, I was a construction management consultant and that is how I retired in 1986. I was 66 at the time and this was when I started a second career in amateur show business, essentially as a dancer. I took up tap dancing and I also was a very good ballroom dancer all my life and I was in many shows. I had a partner, she was my partner in tap dancing and we were a local duo performing in Montreal.

My wife and I were ardent square and round dancers and we kept it up until she could not dance any longer. I lost her in 2009. Officially she died of failure of her lungs, but it was actually her heart that failed, due to both her sons' deaths. It was a very difficult situation for me at the time.

Years later I looked around to see who was left among my friends. At the time, I had survived all my close male friends and among my female friends I found one of the girls I had known about 70 years before. She was a geriatric care manager and it clicked between us. Now we meet in Montreal and New York, where she lives, every two months taking turns and it works very well for us in this arrangement. In between we meet very often on Skype. She was widowed twice and lost her second husband around the time when I lost my wife. The timing for both of us is just right.

During my career in construction I also published several books which included a book on *Shopping Centers, Planning, Development and Administration*. It also included a book, a *Practical Guide on Building Construction*. A third book I published was on *Building, Renovation and Recycling*. These books were published by prominent American publishers and found very good distribution on the American continent as well as in Europe and other places throughout the world. I have a cousin Susi in Melbourne, Australia and she found those books in her library which I found very surprising. I also wrote but did not publish two other books: 'How to Write a Book' and 'A Handbook on Tap Dancing.'

I also wrote a musical play called 'Romedeau and Julivesque' which I wrote in 1980 and it was supposed to have been playing in a local summer theater in Montreal. Unfortunately, the company producing it went bankrupt before the season started, so this play never saw the light of stage. The play was a parody of Shakespeare and Quebec politics.

After Phyllis and I got married my parents moved to California; they found the Canadian winters too tough in Montreal. In 1962 my father was appointed Honorary Austrian Consul for the South-Western United States. He held this post based in Hollywood, California until his death. He died on his 91<sup>st</sup> birthday on November 5, 1977. My mother died in 1984.

3.

## Mankind and the Divine Illusion

A SINGLE-CELL AMOEBEA is found undulating in the fertile mud of a river delta in a river near the Equator. Biologists feel that this is a scenario of how life actually began and that this amoeba, also called protozoa, was the ancestor of modern animals and plants. This event may have happened approximately two billion years ago. For the development of these animals and plants we have to rely on some of the fossil finds that science was able to discover over time. Unfortunately, they are very scarce and we have very little findings to really prove the whole history of these animals and the plants.

Our knowledge of prehistoric man is based on fossil finds and some of these are named after the location of where they were found. One of the best known types is the Neanderthal man of whom many specimen were found. About the same time there were equivalent finds in Java, Palestine, Russia, South Africa and other locations.

There are names like Peking man, Piltdown man,

Heidelberg man, etc. Most of these creatures looked very ferocious, some were found by anthropologists to have lived around the time of the third ice age. Somewhat later finds found traces of races such as Cro-Magnon which looked far gentler and more like Modern man.

Development of animals and plants was a very slow process and it took over one-and-a-half billion years before we find more interesting items, e.g. the dinosaurs. They roamed the earth for about 150 million years. It appears that their extinction seems to have coincided with the advent of the glacial epoch which lasted about 60 million years. The glacial epoch broke down into four ice ages. In fact we are presently living at the end of the fourth ice age.

I am more concerned about the development of humans. It was found that although there is a great similarity between humans and the great apes, there is a big difference between them and anthropologists have decided that both the great apes and humans had a common ancestor. They both derived from this common ancestor but went in different directions. This event happened approximately one million years ago.

I am more concerned with the development of the human race and I personally like to call the early creatures in this series humanoids, because although they were similar in appearance, they were not yet

human in terms of their nature, in terms of their development and in terms of how their brain was trained to be effective. Although these humanoids eventually spread over our globe, they developed differences gradually which came out and eventually ended up in having different races that were populating the globe. I also felt that there were certain differences which were of a geographical nature. In other words, it was a function of how close these particular creatures were geographically in the location between the Equator and the Poles.

Here are some of the differences which I felt existed. Closest to the Equator, these creatures tended to be smaller and as you went more towards the Poles, they tended to be taller and bigger. Initially, all these creatures made noises until gradually, over time these noises became more structured and were converted into actual languages. I felt that some of these languages were faster as you were closer to the Equator and as you went towards the Poles, the languages became slower. I also felt that closer to the Equator the languages were at a higher pitch and the pitch became lower as you approached the Poles. The creatures also tended to be darker in skin color near the Equator and as you went towards the Poles, the skin colors became lighter until they became actually white.

The creatures sometimes were separated by geo-

graphic features such as rivers, lakes or seas, or mountains so that they became different types of peoples that were separate from each other and very often quite different. They were distributed over different geographic locations. As they became what I might call more civilized, they also changed from humanoids to humans, jumping forward to a point where many of those peoples were structured in complete groups of people who might have called themselves a folk or a nation.

The more dominant individuals in each group became the rulers or alternately, they may have become priests. The priests were the people who usually created religions of different types. These religions had rules and had all kinds of dicta which were considered law and everyone had to stick by them. If anybody would challenge anything, it was considered heresy and it was punished severely if you did not adhere to it. In some of these religions, heresy was punished by the death penalty. For example, in the days of the Romans and Greeks and so on, you had crucifixion which was common punishment. In the modern era, which comprises our various centuries, most religions were highly structured and everybody living in this particular area was forced to join it. However, at certain times, you had people who rebelled against the authorities and decided to come up with their own

religion. A good example of that is the Reformation in Europe in the 17<sup>th</sup> Century.

Many of these religions had the idea that the world was created by a higher entity which was a god. They also had certain ideas of an afterlife you would enter after death. I think it was modern astronomy which more or less put an end to these beliefs because it showed that the world was not created by a single God.

As for the afterlife, I believe that most scientists would agree with me that after death the only thing left of us is a bunch of chemicals.

The world was not created by one higher entity. This is strictly an illusion.

Also, I would like to say that I personally believe that when you are dead, there is no afterlife and all that is left of you are chemicals.

## 4.

## Big Bang Theory

Astronomy is one of the oldest and at the same time newest of the sciences. In prehistoric times, early man must have noticed that there were certain happenings above him in the sky and he probably attributed it to the various gods he found in nature and did not think very much more about it. So he just went along with all the events caused by nature in his life. Some of these events were not caused by what happened up in the sky and this of course kept him busy for a long, long time. And nothing much happened in the next centuries until the very 1<sup>st</sup> Century.

The very 1<sup>st</sup> Century, which I might call the beginning of a new era in Roman and Greek societies, started the science of astronomy in a more serious manner. They had noticed that there were various happenings up in the sky and they also realized that there were certain celestial bodies that followed certain movements. They became accustomed to call them names and found names

particularly for what we now know as the planets. Some of these names are still active nowadays in our own era. So this is really when astronomy got its first official start. Nothing much happened over the next few centuries, but what made the biggest difference for astronomy and what really started modern astronomy, was the invention of the telescope. That only occurred in the 17<sup>th</sup> century. In fact it occurred by coincidence with a Dutch workman who was trying to make a pair of glasses for people who were short-sighted, or who had problems with their eyesight. He found that when he put two lenses together in a certain position relative to each other, they magnified the picture that you saw with them. This eventually was put into the frame of a tube and became the first telescope.

And from then on, the development of telescopes took off and gradually became more and more of a science. Of course it helped the scientists to investigate what was going on in the sky. Over time scientists found all kinds of celestial bodies and other phenomena in the sky and eventually found names for all of them. In fact they maintained some of the names for planets which go back to Roman and Greek times. As the science of telescopes proved over time, it meant that astronomers could look further and further into the sky and observe what

was going on and learn what happened to various planets and other celestial bodies. It became the modern science of astronomy.

We have come a long way since those days and we are now in the 21<sup>st</sup> century. In other words, it was only a few centuries ago that astronomy made tremendous progress in its advance of science.

Modern men soon realized the vastness of space in the universe above them and how far they could look into this universe. And in fact, what they were seeing was the past, because what they were really looking at were events that happened a long, long time ago, but which appeared to them as if they were actually looking at them happening now.

At this time the largest telescopes in the world are one 409-inch telescope in Spain's Canary Islands and a 394-inch telescopes in Hawaii. The lenses in these telescopes were fabricated with amazing accuracy because the slightest deviation would create a tremendous difference in the readings which astronomers could obtain by using those telescopes. In fact, very large telescopes, or any telescope that might be larger than those that were ever built, may require a special mechanism to rotate the lenses, to make sure that there are no distortions in the accuracy due to their own weight. Because, as you can imagine, lenses in those telescopes are extremely heavy and it is a

very difficult job to grind those and make them as accurate as they have to be.

Whether a larger telescope than the existing ones will ever be built is a big question mark because the cost would be enormous. We would probably be talking about a billion dollars for one of those mechanisms and also the difficulty in creating a lens like this, which has to be fabricated from the most perfect optical glass that can be obtained. At this time I am not aware of any country that is trying to build a bigger telescope.

As some of us have known for a long time, the universe is a huge expanse and for some time there were two parties who thought they were right in describing the universe. One group of astronomers felt the universe was a space that curved back into itself; in other words, that it was limited. It did not have an unlimited range. The other group and nowadays the majority of astronomers agree that the universe has no limits and would expand until all celestial bodies have found space in it. And that seems to be what is happening now.

From a little event that I will describe later, there has been a movement of galaxies and celestial bodies in the firmament away from the observer. In fact, there are many galaxies that are receding, what is called recession. These galaxies are receding further and further into space until they can-

not be observed any longer. However, astronomers found that some of these galaxies were picking up speed and were receding faster, the further away they went. And that was rather peculiar. However, it has been proven by methods of measurement.

In astronomy, we are working with very, very large distances. And to give you an idea, one of the measures that is used is a light-year. A light-year is the distance that light travels through a whole year. This distance is actually of the order of six times ten to the twelfth power miles, or in other words, approximately six trillion miles. The universe has many inhabitants. There are millions of galaxies of all kinds, all sizes, all compositions, and so on. Some are similar to ours and others are completely different. Many of them have a star in their center, equivalent to our sun. In other words, it is like a nuclear furnace, like an atomic power plant.

In addition to that, you have planets, many of whom have satellites. Then you may have such items as nebulae, which come in different types and sizes. Nebulae are usually very large clouds of gas which are distributed in different parts of the universe and they may be stationary or, at times travel around. You also have such items as comets and meteors, and very often, you have meteor showers. Many of these originated with comets and in a way, they were debris left by comets. In

addition to that you had some stars which were by themselves, or they could be double stars, or even triple stars, so they were special systems. In addition to that there were from time to time, stars that shone very brightly and lasted for a limited time, called Nova.

If they were very large, they were called Super Nova. It is thought that the legend of the star of Bethlehem that shows up in the Bible, actually was a Nova star that happened to be in the sky at that particular time. There are also a lot of planetoids and asteroids and other small debris that circulate in space in irregular fashion and show up as what we might call space junk.

In the course of time, people were always interested in how the world was actually created and for many centuries, this question was answered very simply by saying that it was a superior being that created the world and it became an intrinsic part of various religions. In fact, if you dared to contradict this idea, you may have been punished as severely as the death penalty for being a real traitor to the religion. I have disproved this idea of the creation of the world in a previous chapter in great detail.

Modern astronomers had, of course, a completely different idea and they came up with a hypothesis relatively recently, in the 20<sup>th</sup> century, and

this was called the Big Bang Theory. What it postulated was as follows: That at some time in the distant past and they put this time period as 13-and-a-half billion years, there was a cataclysmic explosion where all the material that was in the universe up to this point exploded into the new universe. And in space, it distributed itself in a regular manner. It is doing this still as of today. How did all this material collect and where did it collect? I will explain some items to you that have been puzzling astronomers all along. There are some properties of material matters such as celestial bodies which have never found any explanation, such as magnetism, which has never been explained properly. In this case, the activity, or the property we are talking about is called gravitation and gravitation manifest itself in two different ways we know about. One we know because it is very common to us, we call it gravity. Gravity is a property which adhere certain items to a celestial body, such as a planet. The earth has gravity which means that, for example, if we throw a ball in the air it will fall down and come back to the earth. It will be attracted by the earth. If gravity didn't exist, in other words, if the gravitational attraction of gravity would not exist, everything on the earth would fall off into space. That means people, buildings, everything that is loose, and also all the water. The oceans, the rivers, lakes, every-

thing would just simply dissipate into space. Gravity, as scientists have found out, is proportional to the size and density of the heavenly body. In other words, if the size and density are larger, then gravity is stronger. That is a general observation. Now, the other part of gravitation is the attraction between two celestial bodies, or, for that matter, between any two bodies. So when, for example, you have a galaxy and you have planets, and a galaxy that would be similar to ours, the planets would be gravitating, would be circulating around this galaxy and they would be held in place by centrifugal force of the rotation and it would be held together by gravitation, so they don't fly off into space. And that is very important.

Apparently, the explanation in the Big Bang Theory is that the universe was in existence before this event in a very similar manner to the way it is now, except the arrangement of galaxies and planets, stars, and other celestial inhabitants, was somewhat different. And what may have happened is that the galaxies that were rotating gradually lost their centrifugal force. When the centrifugal force stopped, gravitation took over and the planets and the galaxies would attract each other till they came together in a mass. Planets that have satellites would attract the satellites – the satellites that came to them in the first place, and would come

back to them. Gradually, all the mass of celestial bodies would gather in one place and, as they got together, they would exert pressure on each other, and the pressure in turn, would exert them so much that it would develop a certain amount of heat. This heat would become stronger and stronger as they force themselves faster together until the point where the whole mass exploded.

And this would have been the Big Bang. And this is how I would say was the origin of how our world seems to exist. But now what is happening is that many galaxies are receding. They are getting away and I suspect that what may happen is that all the celestial bodies that are moving away, will move until they find their final resting place and then they will stop. They will continue to move until they lose any centrifugal force. And when they lose their centrifugal force, they will start to come together again through gravitation so that the celestial inhabitants of the universe will again collect in a mass. When this mass collects in one area and starts to heat up exactly the way it did before, then what may happen is that we will get another Big Bang, which of course, will be in an unimaginably longest time period in the future.

So, what I predict in my hypothesis is, this turn of events was something that happened in the past and will happen again and it will probably be that

way for all eternity. In other words, the universe just was there and it will be there and it has nothing to do with religion whatsoever. Obviously, nobody will be around to pay witness to these events and it is impossible to prove it or disprove it. However, what I am saying is that, for humans, the idea of eternity is a very difficult concept to understand and to accept. However, that is the way I feel about it, this is what is going to happen. And that is my idea behind the Big Bang Theory.

[In order to avoid confusion, I have kept numerical references to a minimum. This applies especially to astronomical items.]

## 5.

## Our Own Galaxy – Present and Future

WHEN YOU LOOK AT a clear summer sky you may see stars twinkling. That is called scintillation. What you see are stars, equivalent to our sun which may be part of some galaxies. You may also see a white luminous band called the Milky Way. This is a look into a collection of galaxies, constellations, nebulae and other celestial bodies at different distances from the observer, but they appear to present a uniform surface. There is a gap near the middle known as the 'Great Rift'. Astronomers have no explanation for that.

There are millions of galaxies in the universe. Our own galaxy is probably one in the middle range, in other words, it is a very typical galaxy. It has a star in the center which is our sun and it has planets surrounding it in a sort of circular pattern. Obviously, our galaxy was ejected after the Big Bang explosion and it arrived with a circular movement of its planets.

Our galaxy, apart from the sun and the planets

and their satellites contains all kinds of other matter such as comets, meteors which sometimes create meteor showers and what astronomers call space junk, such as planetoids, asteroids, space dust and other floating debris. Astronomers sometimes perform experiments which can have lengthy preparation and duration. In 2014 they completed the Rosetta experiment successfully. In this, they succeeded in placing a suitcase size box of instruments on the core of a comet. This took 10 years to complete. The planets in our galaxy are in the order of close to a sun and then further and further away and it is in the following order that we find them.

Mercury is the smallest of our planets and it has only about 15% of the mass of the earth. It has no satellites.

The next in line is Venus. Venus is a little bit smaller than the Earth and it also has no satellites.

Then of course, we come to the Earth. The Earth has one satellite and that is our moon.

After the Earth we find Mars. Mars is a little bit larger than the Earth and it has two satellites. Mars is a close neighbour of the earth. In fact, it is closer than any other planet. These planets are considered as minor planets.

We now come to Jupiter. This is the largest of our planets. It is very massive and many times larger

than earth. Jupiter has 67 satellites. Some of these are much smaller and were only found after the largest telescopes were installed.

The next planet is Saturn. Saturn has 62 satellites but it has another feature which is quite extraordinary. It has a number of rings and these rings are planetoids, asteroids and particles of dust. Those rings rotate and speculations among astronomers are that they could have resulted from the explosion of a large satellite in the distant past. That is speculation and they have never been able to really pin down the real reasons why Saturn developed those rings.

Uranus is the next planet and it has 27 satellites. It is also larger than the Earth.

Neptune follows and has 14 satellites.

These last four planets are considered the major planets. The next and last planet is Pluto. Pluto has been very controversial in its whole history. It was discovered in 1930 and astronomers are not sure whether Pluto should be included because it was extremely far away from the earth. For a while the question was whether it should be excluded completely but finally, it was decided that they would include it as a half planet. Now they call it a dwarf planet. Actually very little is known about Pluto at this time because it is so far. To give you an idea of the distance, when Pluto circulates around the sun, it needs 248 years to do it.

Astronomers have never known too much of the details of Pluto because the telescopes did not reveal enough. We know that Pluto has five satellites and there may be some more but they have never been found yet. Pluto appears to be roughly the same size as the earth. Astronomers have revealed that they sent a probe to Pluto some time ago to try and find out all the data that are needed from this planet. The time it took for the probe to land on Pluto was 9 years which gives you an idea of the distance of Pluto.

Since I wrote this book the probe has reached Pluto and shows that the planet presents a jagged surface of icy peaks and valleys.

The planets of the solar system are circulating around the sun in an elongated elliptical circuit because the earth is at different distances. Over the course of a year it experiences the different seasons. In summer it is closest to the sun and in winter it is farthest from the sun, hence we get summer and winter.

The place of the planets may also have shifted at times in the course of its history. This could have been the cause of the glacial epoch and the Ice Ages. We are now at the end of the fourth Ice Age. We are entering a period of global warming. Various efforts by the United Nations have been unsuccessful so far and I doubt that they will make a difference.

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On Earth, we have heard of a phenomenon which is called global warming which is due to pollution of the atmosphere around the earth, specifically from countries which seriously spoiled their own atmosphere. This global warming has an effect on earth inasmuch that it will melt the ice caps at both poles and if the icecaps melt completely, the effect will be that the oceans on earth will rise by several feet. It will mean that huge tracts of coastlines will be under water and could affect huge sections of various cities that are right on the ocean. There were people who were concerned whether the earth would become less livable.

They were thinking, 'Where could we go? Could we leave the earth and move to another planet?' The closest planet to the Earth and the most similar one is Mars and in 2011 some kind of a peculiar movement, a group of people wanted to arrange a test flight to Mars in a spacecraft. It would be only one-way because of the time it would take to travel to Mars and it would have no chance of coming back from there. This means that people who are going on this flight would really be going on a suicide mission. When this was advertised in the media, I understand that 200 people applied to go on this flight although they knew they would not come back. The final choice of the people who

were supposed to be on this flight would amount to six persons which of course includes one or two pilots. Can you imagine the size of the spacecraft that could hold the necessary supplies for such a trip? However, there was no more in the papers since then and it is possible that this whole project was abandoned.

We know that no planet in our solar system has an atmosphere close to the one on Earth. Mars certainly has no atmosphere. We also do not even know whether there is water on Mars that could be used. Astronomers have found some strange structures on Mars that look like canals. The question is whether those canals are full of water. Years ago, a spacecraft was sent to Mars called the Mars Lander which was sent in order to test whether there is water on Mars and maybe there is ground water available. However, so far any result that has been returned by this Mars Lander has been negative. Besides, to try and colonize Mars would be impossible because it is impossible to create an artificial atmosphere in a celestial body of that size.

I would like to give you my idea of what our galaxy can look forward to in a very distant future. As I said before, the galaxy probably originated from the Big Bang explosion. The planets are circulating in it and they are being driven and controlled by two forces:

the centrifugal force from the rotation around the sun and the gravitational force from the sun. The centrifugal force will eventually spend itself and will cease to exist and exhort power on the planet. At this point gravitation will take over and the planets will gradually come closer and closer to the sun and eventually be absorbed by the sun. But before that happens the planets will absorb their own satellites. They will all be absorbed by the planets and they probably came from the planets in the first place. It is quite obvious that the moon came from the Earth because it has always shown the same face towards the Earth as it rotated around it.

After all the planets and the satellites have fallen into the sun and have been consumed by the sun, the sun will continue burning until it exhaust all its energy at which point it will just shut down, and at this point, our galaxy will have been finished. It will just disappear and another would probably take its place.

6.

## Are we Alone?

THE SEARCH FOR extra-terrestrials has been a very important question for mankind for a long, long time. Pre-historic man, of course, was not interested in what happened outside our earth because he did not know that there were some other worlds somewhere else. He was just concerned with what was going on around him. However, as civilization developed and people became more sophisticated and more serious about what happened in the skies, they wanted to find out if there was a possibility that other life, similar to ours, existed somewhere else in the universe. Chances are that this arose probably around the time of the Greeks and Romans, when astronomy became a science on its own merits and it started in a very primitive manner. It is possible that people among the Greeks and Romans were wondering if there are other civilizations which are not on earth. Thus let us investigate what the conditions are. Because obviously, it is of interest to us, but we have to

analyze what conditions have to be for extra-terrestrial life to be present somewhere.

Let us see what we have to look for. Let us look out at our own earth and see the conditions on earth. First of all, the most important one on earth is that we have water. Water is an essential requirement for life somewhere else as well. We have 118 different chemical elements in our periodic table on earth. Astronomers with spectrographic methods were able to determine whether there are some of these elements on other celestial bodies. They did find them. For example, they found that comets and meteors very often have metallic elements in their cores. They also found different types of chemical elements, the same as what exist on Earth or on other celestial bodies. Thus it is very interesting that if there is some being out there, that it is chemically very similar to us and in similar conditions. That is already one similarity. Next is the necessity of a compatible atmosphere.

Our Earth has certain conditions which are due to the fact that the earth is just at the right distance from our sun so that it does not get over heated or over cooled. Therefore, life as we know it is possible. In addition to the foregoing is the rotation of the earth and that it travels around the sun, the climate varies and can be adjusted accordingly to when it gets too cold and when it gets too warm;

and furthermore it depends on where you are located on our earth. Therefore, those conditions may be necessary somewhere else in space. Let us assume that we found the right conditions on some celestial body. Usually, when you have stars, many of them may be very similar to our sun. In other words, they are extremely hot and they probably have nuclear reactions in their make-up so that they would not be suitable for developing life supporting conditions. However, it is possible that if they are part of a galaxy, since many galaxies which are similar to ours, have similar conditions. After all, there are millions of galaxies, so statistically it is possible that there is one or more of them in space with very similar conditions. Therefore, it is possible that there is some kind of planet which has the right type of conditions to foster life as we know it on earth.

Another factor of importance is the density of the planet because it affects the gravity of this planet and that will affect any potential creatures there. However, there are some other factors which we have to consider. The biggest of course is the distance and that is the biggest obstacle. We talk about distance in our universe. The distances are unimaginably large between celestial bodies. The distance is of course very important. For example, let us assume that there is a planet somewhere near earth in some

other galaxy and it fosters some kind of civilization which is comparable to ours. It contains creatures which are human-like perhaps, or similar and also have a certain amount of civilization. The question is: how far advanced are they? Are they similar to us? What type of creatures are they? Are they friendly or unfriendly? It is of course, open to conjecture and there is no way of telling.

The other question is: is this civilization friendly? Is it more advanced than ours or less advanced? If it is more advanced, do they have similar ideas of trying to contact us? And perhaps send some expedition to contact us? It is a big question mark. Of course, the distances are so large, that the time factor is a very important one. Let us say that there are some creatures in a neighbouring galaxy trying to reach us, the time it would take to travel to our galaxy could be a matter of many years. In other words, if they could send a space expedition to reach us, it would take several generations of people on this journey. So can you imagine an astronaut starting out and his children and grand-children and great grandchildren who may still be on this same journey till they finally find us? Which is quite possible but ridiculous, of course.

The other factor is the question of technical aspects. Is there a space craft that could make this trip, assuming that they can get it off their planet? This

space craft would have to be huge in order to accommodate all the supplies that are necessary for such a long travel. In addition to that, the weight would cause tremendous problems to get it off the ground on their planet and would be more of a problem when they reach earth. If they tried to land on earth in the normal manner, they would be burned up with friction in the atmosphere because the speed at which it would come would be so great that it would be impossible to break it down and to have a slow descent. It would have to circle the earth a number of times and eventually land somewhere on land and, as far as we know, it could land in the middle of the ocean. You can see that there is a big problem.

Another question is: what kind of a language would they speak? How would we be able to communicate? Assuming they could land, would they be able to eat the food we eat or would they eat something special? And if they need something special and we have not got any or enough, that means that they would die. It is very unlikely that we can make contact with extra-terrestrials in our time or in a time of the people who read this book. There will be generations before there is any real contact between us and some extra-terrestrial bodies.

Another factor you do not realize is that there

is a tremendous amount of noise around earth, around different planets, stars. It is what we might call space noise. We do not hear any space noise because there is no medium like air in space. But there is also a huge amount of electronic noise in space which you do not hear but which causes a lot of problems to general communications. That noise is so concentrated and so heavy, it would be extremely difficult to try to get specific signals from other civilizations from ours; almost impossible.

Considering all these reasons, I would say categorically:

**WE ARE ALONE!**

