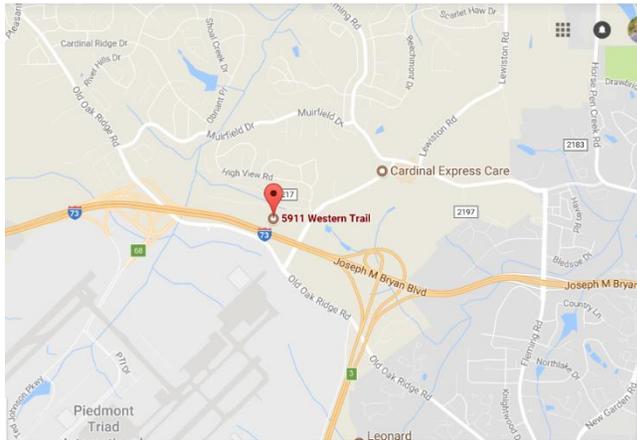


An Invitation to Take the Universe Story Walk



Directions: Take the Fleming Rd. exit from Bryan Blvd. Follow Fleming Rd. north around to the third traffic light. Turn left at the light onto Inman Rd. Pass the shopping center and a church to the second street. Before getting back to Bryan Blvd., turn right onto High View Rd. and immediately turn left onto Western Trail. Go to the bottom of the hill. The 300' driveway going into the woods is just beyond the two mail boxes.

Individuals and groups are welcome to take the Universe Story Walk by making an appointment with Elaine or Nelson Stover. Voyagers are asked not to take food or smoking materials on the journey. Walkers travel at their own risk, Elaine and Nelson Stover, or any other guides, are not responsible in any way for any physical harm or shaken ideological foundations that may occur on the journey.

For additional information, or to schedule a walk, contact: Elaine or Nelson Stover, 5911 Western Trail, Greensboro, NC 27410. Phone: (336) 605-0143; e-mail: StoverN@BellSouth.net.

Universe Story Walk

Guidebook

A 1/2-mile narrated pathway
through the woods at
Stover's Séjour
5911 Western Trail
Greensboro, NC 27410

Inaugurated by
Thomas Berry
April 1999

© F. Nelson and Elaine K. Stover
(336) 605-0143
StoverN@BellSouth.net

Dedication

The Universe Story Walk
at Stover's Séjour
is dedicated to the memory of

Dr. Kenneth Edwin Williams
(1914-1994)

A master teacher of the Universe's wonders,
Kenneth told the story to classes and contacts in:

Emison, Indiana; South Bend, Indiana;
Zanesville, Ohio; Hue, Viet Nam; Truk Island;
Naples, Florida; and Greensboro, North Carolina.

Kenneth would definitely appreciate this narrated walk.
The tools he left helped with its construction.

Elaine and Nelson Stover
1999

A re-useable guidebook is available at the beginning of the journey so that voyagers may read a bit of the Universe's story at they traverse the pathway. For each of the billion-year posts, voyagers will find a contextual reading that tells the Universe's accomplishments and developments during that period. The guidebook also makes suggestions to the voyagers of places in their own lives where they might see the great dynamics at work. Voyagers are asked to return the guidebook so that others may use it.

The readings draw extensively on the work of Brian Swimme and Thomas Berry. Many of the selections are excerpted from their book *The Universe Story* (HarperCollins, 1992). The pages from which each selection is drawn are indicated as "Further Reading" at the bottom of the guidebook page. Persons interested in pursuing, in detail, the concepts and insights touched upon in this narrative are encouraged to read *The Universe Story* in its entirety. The authors of this Universe Story Walk narrative assume sole responsibility for selection and editing of the material presented herein.

The permanent Universe Story Walk at Stover's Séjour itself manifests the dynamics of our emergent reality. Each of the billion-year points has been marked with a number-bearing signpost. As creativity coalesces at these points, additional graphic representations may be presented. Woods gardens and other reflective spaces may also develop as the pathway takes on significance for those who pass by. Benches are available at three points along the way for resting and contemplation.

**Permanent
Universe Story Walk
At Stover's Séjour**

Overview

Greensboro's first Permanent Universe Story Walk guides voyagers on a ½-mile gentle walk through the 5-acre upland woods on the property of Elaine and Nelson Stover, 5911 Western Trail, north of Bryan Blvd. near Piedmont Triad International Airport. The journey begins in the pine glen adjacent to the parking pad at the south end of the 300' gravel drive. Stepping out of the comfortable confines of the glen symbolizes the Primal Flaring Forth, the cataclysmic event almost 14 billion years ago that sent matter scattering through time and space. Participants may ring the bell hanging in the oak tree to symbolize the beginning of their own journey. Through a portal in a stand of tall pine just east of the glen, the Universe Story Walk heads toward the first marker. At intervals of 100 feet stand numbered markers; each interval represents 1 billion years of the Universe's growth and development. The story continues through the birth of the hydrogen stars, and their eventual collapse. The Sun we know is born at the 9-billion-year post and life begins just 100' away. The last billion years is divided into four sections (each representing 250 million years) as the pace of change accelerates. One foot from the end of the journey, Lucy -- the first human -- emerges and the rest is history. Voyagers step out of the woods into the Ecozoic Era and arrive at a place suitable to reflect on their journey through time, space and consciousness.

Universe Story Walk

Guidebook
(Fifth Edition)

Readings and reflections
for voyagers
on the Universe Story Walk
at
Stover's Séjour

© F. Nelson and Elaine K. Stover
(336) 605-0143
StoverN@BellSouth.net

How to use this guidebook

This guidebook is intended for use by individuals and groups traversing the Universe Story Walk at the Stover's Séjour.

The walk is demarcated by 20 numbered signposts. The group can pause at each signpost and have someone read aloud the passage for that number. Suggestions for reflecting while continuing the journey are also provided.

Some reminders, cautions and courtesies while taking the Universe Story Walk:

- Stay on the trail; especially keep children on the trail. The underbrush is often uneven and may result in injury. Poison ivy grows on the edges of the forest at some places. Every attempt is made to keep the trail clean, but the forest has a mind of its own.
- Please do not take food or smoking materials on the walk.
- Voyagers travel at their own risk, Elaine and Nelson Stover, and any other guides, are not responsible in any way for any physical harm or shaken ideological foundations that may occur on the journey.
- Please respect the forest and the personal properties of the neighbors.
- When the airplanes take off low overhead, don't try to read over their roar. Just stand still and let them pass.

The format and reflective questions of the Universe Story Walk are copyrighted by F. Nelson & Elaine K. Stover, 2000-2010.

May 6, 2015

The Universe Story Walk offers an opportunity to begin to tell a new story; a story that spans 14 billion years of time and untold light years of space. A story that includes the emergence of the elemental ancestors that we often take for granted and yet whose very existence required daring creativity fostered by unimaginable pressures. The Universe Story Walk points to dynamics, rhythms and patterns often disregarded as insignificant by awakened individuals yet mastered eons ago by the growing universe. By walking with often forgotten predecessors from the long distant past, participants in the Universe Story Walk can begin the process of creating their own story of birth, growth and death. Possession of a coherent understanding that encompasses the best intellectual understandings available in combination with deep and compassionate sensitivities enables individuals and the societies in which they live to have the confidence and competence to live creative lives of substantial significance.

The Universe Story Walk helps those who traverse its pathways to understand their creative role in determining the shape of the 3rd Millennium and to deepen their own interior resources commensurate with the task.

F. Nelson Stover
Greensboro, NC

The historical mission of our times is to reinvent the human – at the species level, with critical reflection, within the community of life systems, in a time-developmental context, by means of story and shared dream experience.

- Thomas Berry, *The Great Work*, p. 159.

Why a Universe Story Walk

Human beings, and the societies in which they live, are guided and empowered by the stories they tell about their origins, their principles and their visions. For several thousands of years human society has operated out of a story of an externally created universe guided by unchanging rules and patterns. As the rational powers of the human community developed and their attention began to focus on the world in which they lived, this picture of the universe got pieced together by creative individuals around the globe. Such a picture allowed the human species to build cities with populations in the millions and communications systems that interconnect nations, households and planets. Institutions, cultural patterns and educational systems were developed and proliferated which propagated and maintained this understanding.

As the second millennia of the Common Era drew to a close, sensitive eyes began seeing holes in the traditional patterns. Environmental degradation, social tensions and individual stresses hold initial clues to the limitations of previous operational understandings. Furthermore, inquisitive minds probing both the infinitesimally small and the unimaginably huge realms of the universe are exposing creativity, chaos and wonder unexpected and unpredicted by previous mechanistic and deterministic models. In society as a whole, and within individuals' lives, broad-based educational opportunities and the benefits of centuries of physical and social development are opening new horizons of physical achievements and fostering new depths of interior richness. Eyes no longer see, and hearts no longer feel, the pulse of a static framework into which yesterday's inhabitants forced themselves to fit. As people become aware that they live in an Emerging Universe, they need a memorable story that coincides with their experience and knowledge.

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(20 pages)

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Why a Universe Story Walk

Overview

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(back cover)

A New Global Story

Growing up as a child in Greensboro, North Carolina, at the beginning of the 20th Century Thomas Berry came to appreciate the lilies in the field as portals to the beauty, awe and wonder of the Universe in which he lived. As he continued his journey through life he became increasingly aware of the ecological crisis being caused by the daily actions of the human species. When looking deeply into the underlying causes of the global predicament, he came to realize that the cultural patterns that were driving global civilization were, in fact, giving rise to unsustainable conditions around the planet. These cultural patterns, he pointed out, were human inventions and could be reinvented.

In his writings, Thomas Berry called each person to seriously reconsider the fundamental assumptions that they make about the natural world and its integral connection to each individual and global society. At the core, he detailed the importance of understanding a new story of the Universe, a story which told of the grandeur of the emerging Universe. In his collaboration with Brian Swimme they told "**The Universe Story** *From the Primal Flaring Forth to the Ecozoic Era – A Celebration of the Unfolding of the Cosmos*".

The 20 excerpts for this Universe Story Walk provide highlights of their longer story. For details see: *The Universe Story* by Brian Swimme and Thomas Berry, HarperCollins Publishers, New York, New York, 1992.

[**Editorial Note:** In their book, a 15-billion year story was detailed; recent scientific calculations have placed the Universe's age closer to 14 billion years. The shorter time frame has been used in this updated version of the Universe Story Walk. Revised October 7, 2013.]

Capaneus. The first living being to climb out of the seas and live upon the land. The plant that invented the structure necessary for standing up in a gravitational field. In Greek mythology, Capaneus is a fearless warrior ready to overcome all limitations, even those set down by the heavens.

Kronos. The first creature to thrive by swallowing whole some of its living neighbors. The name in the ancient Greek tradition refers to a being who swallowed his own children alive.

Prospero. The first living being capable of dealing creatively with oxygen. In Shakespeare's *The Tempest*, Prospero transforms his enemies and their devastation into a serene and creative renewal.

Promethio. The living being who was first capable of taking the energy from the sun and thriving on it. The name derives from Prometheus of Greek cosmology, who procured fire from the heavens for the benefit of his companions on earth.

Tiamat. The star whose supernova explosion some five billion years ago gave birth to the elements that would form the Sun, Earth, Mars, Jupiter and the other planets. The name is taken from Middle Eastern cosmology, which imagined the world as made from a divine being, Tiamat. Tiamat's body was dismembered; half of Tiamat became Heaven and half of Tiamat became Earth.

Glossary of Names

In their book, *The Universe Story*, Thomas Berry and Brian Swimme suggest names for some of the main actors in the drama. As stated in the glossary of *The Universe Story*:

Some of these actors are neither well known nor easily identified for the simple reason that they have only recently emerged into human awareness. For the most part they do not even have names in scientific literature. Concerning this group, our way of proceeding has been to bring forward some ancient names, names that were invented for entirely different purposes, but names that already carry the feelings and meanings appropriate for these new entities.

Argos, Aries, Capaneus, Kronos, Prospero, Promethio and, Tiamat are referenced in the Universe Story Walk narrative. The background from *The Universe Story* is given below.

Argos. The first multi-cellular animal, a community of formerly autonomous cells now governed by a unifying cybernetic mind. In Greek mythology, Argos was a being with eyes all over its body.

Aries. The first living being to arise within the primordial waters of earth some four billion years ago. The name within Egyptian cosmology referred to the thunderbolt that arises out of the primordial waters – the creative spirit at the moment of actualization.

Signposts on the Universe Story Walk

Phase I: *Turning Energy into Matter*

- 0 Primal Flaring Forth
- 1 Hydrogen Bonding
- 2 Galactic Clouds
- 3 1st Generation Stars
- 4 Supernova Erupt

Phase II: *Turning Matter into Systems*

- 5 Resistance, Energy, Dreams
- 6 2nd Generation Stars
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- Now The Ecozoic Era

Primal Flaring Forth

Time Begins

Reading

Originating power brought forth a universe. All the energy that would ever exist in the entire course of time erupted as a single quantum – a singular gift – existence. Particles, light, and time emerged in the beginning. Space foamed forth to create the vast billowing event of the expanding universe. The universe venture was under way. Each thing in the great Flaring Forth existed only for the briefest of instants. For in the beginning nothing was permanent. After less than a second – but already an interval of time in which the universe had transformed itself many millions of times – the second great macro transition of the universe began. The universe had expanded to the point where the energy of the photons was no longer capable of evoking new particles from the quantum vacuum, that realm of cosmic fecundity. The tiny portion of the primordial universe that managed to slide through this eye of the needle near the beginning of time thus entered a new state of being. The universe developed an exterior dimension.

Think about on the journey

What would it be like to be running so fast that you could not connect or relate to anybody else? This was the condition of the early particles.

Further reading: *Universe Story*, p.17-21.

Reflecting on your Journey

Envisioning tomorrow

3. Interpreting this, what does it mean?

- What images or concepts started to connect, to make new sense for you during this walk?
- What part of this story is like your present situation? How?
- What kind of creativity is being called forth from you?
- In what ways is this story of the Universe your own story?

4. Deciding, how will you act differently?

- How does this journey enlarge your daily context (your world view)?
- What difference will this change make next week? Next year? In the new Millennium?
- How will you act, think and feel differently?
- What is one thing you will tell others now that you've walked the Universe's story?

Reflecting on your journey

Remembering today

1. Objectively, what do you remember?

- What words do you remember from the readings?
- Where did you see colors or hear sounds?
- What activities do you remember?
- What images came into your mind?

2. Reflecting, how did you respond?

- What was your first response to your journey?
- Where did you get confused? Overwhelmed?
- Where were you drawn in to this event?
- What personal experiences did this story remind you of?

Hydrogen Bonding

1 billion years have passed

Reading

Time passed on the calendar no eyes were watching. The universe bloomed into existence, settled on its fundamental laws, and stabilized itself as baryons and simple nuclei. It expanded and cooled and then, in an instant, at the very end of the fireball, the universe transformed itself into the primordial atoms of hydrogen and helium. A wandering proton snapped into a new relationship with erstwhile freely interacting electrons. These bonded relationships were impossible during the violent former eras, but now became the predominant mode of reality. This new mode of being had the power to seal a proton and an electron into a seamless community and the fundamental qualities of the fireball were changed forever. Hydrogen and helium allowed light to shoot through without destroying their relationship.

Think about on the journey

What conditions and decisions foster lasting and indestructible relationships?

Further reading: *Universe Story*, p. 29.

Galactic Clouds

2 billion years have passed

Reading

The universe became transparent. Suddenly the pressure that had been exerted by the photons vanished. The formerly insignificant ripples in the fireball could flex their muscles and grab matter to themselves. The universe constellated into a trillion separate clouds of hydrogen and helium. New presence emerged; powers of self-determination erupted within each of these clouds. The galaxies were born. Each galaxy set to work immediately; sweeping vast reaches of itself into a central concentration of matter and energy so extreme it punctured the very fabric of space and time. These "black holes" sent out ripples that amplified, damped out, and sometimes superseded the fluctuations that had been generated by the universe as a whole. The Universe broke itself into a trillion clouds, each with its own dynamics, enabling each cloud to escape from the universe's expansion in that the diameter of each cloud remained the same while the space between the clouds was progressively extended.

Think about on the journey

What early influences in your life have had long lasting affects?

Further reading: *Universe Story*, p. 33.

The Ecozoic Era

Now

Reading

The time is now. Tomorrow is not yet born. All the galaxies, atoms, cells and creatures await your decisions about the shape of the future.

Human energies combine to enliven the universe with powers unimaginable in previous eras. This new time might be called the Ecozoic Era. Understanding that the universe contains a communion of subjects rather than a collection of objects forms the central commitment of the Ecozoic Era. The well-being of the planet serves as a pre-condition for the well-being of any component members of the planetary community.

New styles of personal and family life will shape the future. At the community and national levels, imaginative policies and procedures are required to provide ways for humans to live in mutually enhancing relationships with the non-human realms. International cooperation will be necessary to enhance the quality of the natural environment and to deepen the overall human experience. Choices and creativity await each individual and creature.

Think about on the journey

How do your actions and decisions draw on the creativity of previous generations? How are you shaping the face of tomorrow?

Further reading: *Universe Story*, p. 241-261.

Lucy – First Human

13.996 billion years have passed
(4 million years before now)

Reading

From the forests of Africa, a new species emerged – walking upright and thus freeing its hands to grasp and carry. Throats and voices developed as jaws no longer provided the only means of moving food from hunting ground to home. Brain size grew and communication skills developed. Lucy lived in northern Ethiopia; her skeletal remains indicate that she lived on a vegetarian diet near the edge of the forest. Footprints left by Lucy’s contemporaries in the volcanic ash of northern Tanzania show a family group walking side by side as they fled from impending danger. From these humble beginnings, flowered the rest of the human experience. The door to the interior dimension had begun to open.

Think about on the journey

The board at the end of the forest path represents, to the scale of this walk, the total human presence in the Universe’s journey. As this Universe Story Walk concludes, each person can stand on the board and share with the group one great gift that the human species has given to the Universe.

1st Generation Stars

3 billion years have passed

Reading

Dark clouds float through an expanding darkness. These great clouds then collapse upon themselves, each one becoming millions of times smaller. In this way, one by one, and then almost simultaneously, a hundred billion galaxies light up with a splendor new to the universe. The cloud that had drifted undisturbed for eons undergoes a profound transformation that destroys its basic form but gives birth to a cluster of ten thousand diamond lights in a sea of dark night. In these primal stars hydrogen and helium atoms are drawn together by their mutual attractions. As they collide and interact with each other, the friction creates ever-higher temperatures which finally burst into brilliant luminescence.

Think about on the journey

Where has friction caused your life to achieve new levels of creativity?

Further reading: *Universe Story*, p. 49.

Supernova Erupt

4 billion years have passed

Reading

Eventually, each star's resources against collapse are all used up. The remaining materials rush toward each other. Nothing in the universe can stop them now. All remaining structure is destroyed as the star implodes to a pulsar or collapses all the way down to a naught entity, a singularity of space and time, a black hole. And yet in the great violent collapse of the star, there is a surprising twist of events: the supernova. The neutrinos, those wispy and seemingly unimportant elementary particles, escape the collapse. They rush out in all directions to blow off the outer layers of the star. Freed from the gravitational death of the star, the carbon, oxygen, nitrogen and other elements journey into the night sky. Eventually, driven by their own powers of attraction, the remnants of the explosion form entirely new systems.

Think about on the journey

What resources and insights from previous generations inform you the most? What old perspectives will you be leaving behind?

Further reading: *Universe Story*, p. 49.

Cenozoic Era

13.9 billion years have passed
(65 million years before now)

Reading

During the Cenozoic Era, the world we know today took on much of its present form. As the Indian landmass slid east and collided with China the Himalayan Mountains arose where the land crumpled. About the same time lava flows covered the land creating the Deccan Plateau. At the time of the transition from the previous eras, the dinosaurs and thousands of other species vanished completely from the face of the planet. Maybe the flowers eliminated the dinosaurs. Dinosaurs ate ferns; flowers became more prolific than fern. Eventually the birds and mammals that ate seeds overtook their larger predecessors.

In this era, the flowers came forth in all their gorgeous colors and fantastic shapes. The great deciduous trees in the temperate zones and the tropical rain forests in the equatorial regions flourished. The birds, in all their varieties of forms and colors, created their songs and mating rituals. Above all, this was the era of the mammals. The varied multitude of living species, possibly twenty million, came into their greatest splendor in this era.

Think about on the journey

Which elements of your personal past do you most want to carry with you into the future?

Further reading: *The Great Work*, p. 29.

Dinosaurs Roam

13¾ billion years have passed

Reading

The greatest Mesozoic creativity among the terrestrial vertebrate world was the dinosaur, a further development of the warm-blooded reptilian line of therapsids and thecodonts. Dinosaurs ranged in size from a couple of feet to a hundred feet in length. Many of them benefited from the anatomical modifications of their ancestors and with their quick movements, they soon replaced the lizards in many niches. For one hundred million years the dinosaurs were the most prevalent vertebrate form. They were social animals that often traveled and hunted in groups. Dinosaurs developed a behavioral novelty unknown in the reptilian world – parental care. They carefully buried their eggs and stayed with the young after they hatched, nurturing them toward independence.

The first birds appeared as direct descendants of the dinosaurs. Birds retained the endothermy – the power to maintain a warm body even in the face of a cold outer world – as well as the parental care of the dinosaurs.

Think about on the journey

What novel social inventions are you developing?

Further reading: *Universe Story*, p. 121-122.

Resistance, Energy and Dreams

5 billion years have passed

Reading

Our universe is self-energizing. A pattern of growth in the universe has become clear – resistance, energy and dreams (the past, the present and the future) – have intertwined in a delicate balance. **Resistance**, or opacity, comes from the insistence that accomplishments of the past be preserved against attempts to remove them. **Energy** – the cost of creativity – points to the finite nature of the present universe. Since energy is required to sustain anything, a decision must be made concerning what we energize in the present moment. **Dreams** refer to the unborn, to the darkly felt inclinations toward a new world, a not-yet world. The future as not-yet works in the present by making a bid for a quantum of energy necessary for its fresh and novel embodiment.

Think about on the journey

Think of times you've been the one to resist change. Think of times you've been the one to energize the present moment. Think of times you've dreamed the not-yet.

Further reading: *Universe Story*, p. 52-53.

2nd Generation Stars

6 billion years have passed

Reading

Darkness and light continue a dance throughout space and time. From within the clouds left from their predecessors, new stars emerge. Fueled by compounds forged in previous fires, these stars achieve higher temperatures and heat clouds of more complex molecules.

Each star and cloud, while showing its own unique characteristics, embodies an emerging pattern of creativity that spans all of time and space. The universe is ordered by differentiation, structured by autopoiesis – the power each thing has to participate directly in the cosmos-creating endeavor – and organized by communion. Were there no differentiation, the universe would collapse into a homogenous smudge; were there no subjectivity, the universe would collapse into inert, dead extension; were there no communion, the universe would collapse into isolated singularities of being.

Think about on the journey

When have you felt different from everything else? When have you set out in new ways? How have you felt connected to others?

Further reading: *Universe Story*, p. 69-79.

Capaneus Ventures Landward

13½ billion years have passed

Reading

The ultimate obstacle to the movement of life onto land was more ferocious than blazing sunlight, barren rock or blowing winds. Gravity, the ordering principle of the universe whose effects are suspended for organisms in the oceans, threatened to flatten whatever ventured beyond the waves. There, at the boundary of sea, continents, and air a new being emerged. Capaneus, a hero who invaded an alien world. Capaneus invented the wood cell and became the first creature able to withstand gravity. Capaneus built solid structures with vascular vessels to transport food and material through its body. Capaneus' descendants improved upon these systems and developed elaborate root structures and seed delivery systems. Small insects and other animals followed the plants as the eons passed. As Capaneus ventured out of the water, the continents had begun to drift apart and the Appalachian mountains were formed when two great plates collided.

Think about on the journey

What universal characteristics impinge upon you? What creative solutions have you found for responding to these?

Further reading: *Universe Story*, p. 116.

Multi-cellular Argos

13¼ billion years have passed

Reading

Life's 3-billion years of experience with single-celled existence took a turn toward complexity with the emergence of multi-cellular Argos. The first multi-cellular animals were as much a surprise as the emergence of the galaxies. Cells had learned to communicate with one another, to cooperate and to share resources. They had developed symbiotic relationships and thrived in mutually beneficial relationships. But one day a cell received a message that was not from another cell but from a creature that was the combination of cells. Argos appeared with a mind of its own, training ten thousand cells on its own particular aims. Stupendous creativity had been required for the emergence of Argos, and now it fed with ease on individual cells, undoubtedly disrupting a great many ancient communities. The universe's social dimension became visibly manifest.

Think about on the journey

Consider groups of which you have been a part in which a group consciousness emerged, where the total creativity was greater than the sum of the parts. (For example, the Chicago Bulls in the NBA finals or a labor union taking a stand during a strike.) What is required to make this kind of thing happen?

Further reading: *Universe Story*, p. 110.

Galaxies Swallow Galaxies

7 billion years have passed

Reading

As the galaxies were born, the density of the universe made collisions inevitable. Entire galactic worlds that could have conceivably given birth to seashores rich in shellfish life were blasted into shreds of gas or scattered into abandoned stars. Most of the galaxies that did survive the beginning storms were in regions so dense that their spiral structures were destroyed, leaving them in the shape of elliptical galaxies no longer capable of creating stars. The Virgo cluster harbors more than a thousand galaxies, most of them elliptical in shape. Had such galaxies not been crippled, they might have blossomed with living joy. Instead, the violence of the universe left them stillborn, frozen away from their possible destinies.

Think about on the journey

Where have you seen individuals or organizations frozen away from their potential destinies?

Further reading: *Universe Story*, p. 50.

Tiamat Goes Supernova

8 billion years have passed

Reading

In the unbearable pressures of a star, hydrogen is burned into helium; helium to carbon and carbon is burned into oxygen. Tiamat, an aging star in the Milky Way galaxy, found herself pressed to the wall. When her core had been transformed to iron, she sighed a last time as collapse became inevitable. In a cosmological twinkling, her gravitational potential energy was transformed into a searing explosion. Out of the spectacular tensions in her stellar core, Tiamat had forged tungsten, copper and vanadium and all the other elements that would eventually find homes on the blue marble called Earth. Great destruction, unbearable violence, and out of this Tiamat invented the cosmic novelties of a panoply of heavy metals, astounding structures that would one-day sparkle as life, as consciousness.

Deep in the fiery furnaces a special element was forged – carbon. Carbon is not just one element among others. Carbon's presence in the universe is special. This special power comes from the nature of carbon itself and is related to its intrinsic powers of being -- its ability to dynamically relate to many other atoms. We may refer to carbon as the "thinking element" or the "element of life". Carbon would eventually form only a millionth of the planet Earth. And yet, out of this, squids and anteaters and Olympic athletes have come forth.

Think about on the journey

Remember crises in your own life. How did one collapse lead to future possibilities?

Further reading: *Universe Story*, p. 36-38 and 60-61.

Kronos Discovers Heterotropy

13 billion years have passed

Reading

Two billion years earlier, the ocean waters had been rich in chemically energetic compounds evoked by the lightening storms and the cosmic radiation. But the storms had long since ceased and the oxygenated atmosphere now shielded the oceans from most intense radiation. There was an over-population of life, a multitude of new forms of cells and a nutrient-poor sea. So, life mutated. One cell, Kronos, brought forth a novel strategy. Kronos consumed its living neighbor. Unable to feed its internal flame by using the Sun's energy or the sea's chemistry, Kronos broke with life's ancient traditions and swallowed a living creature while it still throbbed with life. Earth's adventure turned onto yet another new branch with its own particular pathways into power and beauty.

Think about on the journey

Think about what you have eaten in the past 24 hours. How did this empower you? At what cost?

{The scale of the walk now changes. Up to now every 100' represented 1 billion years. From now on every 100' only represents 250 million years.}

Further reading: *Universe Story*, p.108.

Prospero Breathes Oxygen

12 billion years have passed

Reading

The descendants of Aires proliferated in the fertile seas and near the expanding shorelines. In so doing they sounded their own death knell as the oxygen released from their photosynthesis filled the skies and seas. Just by being what they were, they set themselves on fire in an oxygenated atmosphere. Instead of failing, life mutated. A cyano-bacterium appeared, Prospero, which could deal with this oxygen, this powerful element that was tormenting all life. It was this very obstacle that made it possible for a creative advance to take place. For the bacterium Prospero not only survived, it invented respiration, the power to deal with oxygen. This alone gave it more than ten times the energy of any other cell. It got its energy from the Sun, its hydrogen from the water and its carbon from its surroundings. And it powered its activities with the controlled combustion made possible with oxygen. Life had crossed another threshold.

Think about on the journey

Recall successes that have led to their own failures and in turn precipitated new creativity.

Further reading: *Universe Story*, p. 98.

Sun is Born

9 billion years have passed

Reading

The spiral arms of the Milky Way galaxy were relatively rich in all the elements – products of countless supernova. Star-making waves of energy rippled through the spiral blowing and enlivening this matter into clouds. The solar cloud gathered itself into a state of increasing non-equilibrium; matter fell into a center, creating a great deal of heat that radiated out from the collisions. When the temperature at the center reached ten million degrees, the hydrogen fires once again ignited. Our Sun was born. The vast majority of the gas that did not make its way to the Sun's core would be blasted away. A cool remnant of the cloud, a hanger-on, a residue, something left over, this swirling disk of elements eventually gave birth to the planets and their moons as well as a host of comets and asteroids locked in orbit around the solar center.

Think about on the journey

Are you a stable center or an orbiting satellite or periodic passer-by in the social dynamics of which you are a part?

Further reading: *Universe Story*, p. 63-66.

Aries, Life Begins

10 billion years have passed

Reading

Earth took complexity to the extreme limit of inanimate forms. Then in a searing lightning flash the universe witnessed the emergence of a profoundly novel event – Aries, the first living cell. Aries emerged from the cybernetic storms of the primeval oceans and found itself alone, in a sea devoid of other life forms. Earth's life is lightening embodied and made flesh. These living cells were dependent upon the conditions of the universe for their origin. But once such new dynamic centers emerged, their very powers of self-organization enabled them to step to the task of maintaining their existence. Aries' most impressive power is that of memory. Cellular memory powers all of life, for nothing is more important to a living being than memory of the past.

Think about on the journey

Share a memory, a childhood story, a tradition passed down through generations.

Further reading: *Universe Story*, p. 85.

Promethio Harnesses Sunlight

11 billion years have passed

Reading

Earth's soupy surface separated into solid and watery areas. Great landmasses congealed and rose above the seas. Floating on the molten mantel of the earth's crust, these plates began to take on a destiny of their own – dividing, sliding, uplifting, folding and re-submerging under the ever-present sea. They also invited life to leave the sea's depths to face the sun's light unprotected by a water cloak. Fortunately, another mutation appeared that is one of the greatest acts of creativity in history. A mutation had taken place to create a molecular net with the power to capture photons in flight. This had the ability to convert the energy of a particle rifling through space at the speed of light into the molecular structures of food. Suddenly, in at least one cell, in Promethio, a new intimacy was established between the Earth's living surface and the radiant energy from its central star.

Think about on the journey

How do human actions, today, change the balance and flow of sunlight? What are the long-term and short-term affects of these actions?

Further reading: *Universe Story*, p. 88.