Life in the Universe Manual

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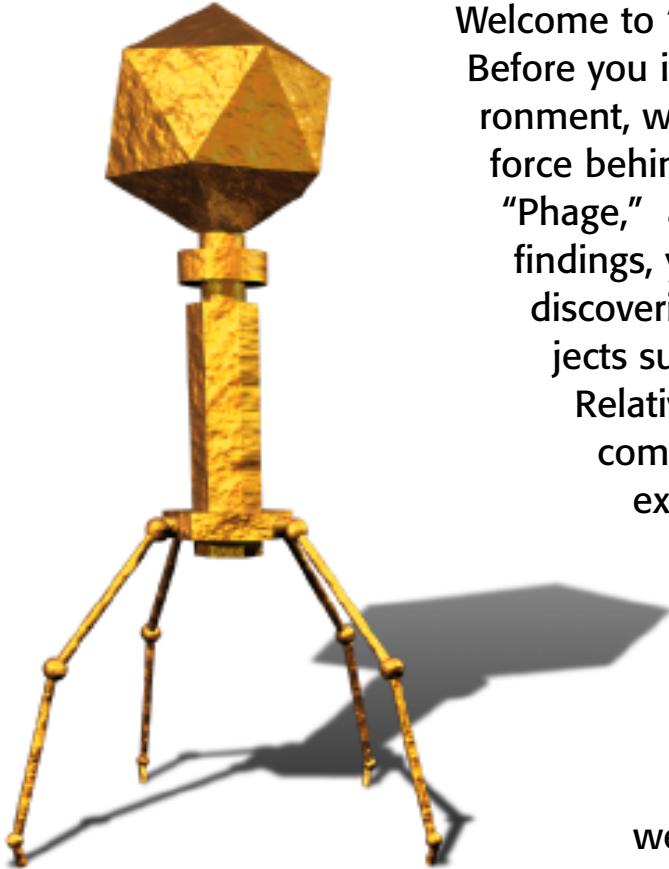
Welcome to "Life in the Universe," with Stephen Hawking. Before you is an exploratory CD-ROM/World-Wide-Web environment, where the acquisition of knowledge is the driving force behind your investigation. Accompanied by the "Phage," an animated intelligent agent who records your findings, you'll navigate through 3D virtual world terrains, discovering "infobits" that contain information on subjects such as the Big Bang, Einstein's Theory of Relativity, Black Holes and the Origin of Life. These complex physics and cosmological concepts are explained with gorgeous animations, detailed graphics and plain language. During your journey, you can link to the Web (Microsoft Internet Explorer included free) to access the proprietary "Life in the Universe" website. View up-to-date information, engage in Web discussions and access links to related science websites. Also included are two challenging games,

System Requirements

Macintosh

68040-based Macintosh with FPU, System 7.5 or greater, 8-bit video, 12 MB RAM, 17 MB free hard drive space, CD-ROM drive. *Recommended: Power Macintosh, 16 MB RAM, 16-bit video, 27 MB free hard drive space, 4xCD-ROM drive.*

Windows

486DX or greater processor, Windows 95/NT, 8-bit video, 8 MB RAM, 9 MB free hard drive space, CD-ROM drive. *Recommended: Pentium, 16 MB RAM, 16-bit video, 20 MB free hard drive space, 4xCD-ROM drive.*

Installation

Macintosh

1) Double click on the "Life in the Universe Installer" icon located on the "Life in the Universe" CD-ROM.

2) Read the "ReadMe" file and click on the Continue button.

3) At the main installer window choose your installation type. The Full installation option will provide faster performance.

4) Click the Install button.

5) The installer will create a "Life in the Universe" folder on your hard drive.

** The "Life in the Universe" Installer automatically installs QuickTime 2.5.

Windows

1) From the Windows 95 START menu select "RUN". In Windows NT Program Manager select "FILE" and choose "RUN".

2) Type D:\Setup.exe where "D" is the drive letter of your CD-ROM drive.

3) Select the Installation type. (20MB installation for faster performance). Click "Install".

4) The installer will create a "Life in the Universe" folder on your hard drive.

** The "Life in the Universe" Installer automatically installs QuickTime 2.1.2.

Starting "Life in the Universe"

Macintosh

1) Insert the "Life in the Universe" CD-ROM into your CD-ROM drive.
2) Locate the "Life in the Universe" Folder on your hard drive.
    Double click the "Start Life" icon.

** Please make sure that the AppleScript extension is installed and active. For more information on Apple extensions consult your Apple Owner's Manual.

Windows

1) Insert the "Life in the Universe" CD-ROM into your CD-ROM drive.
2) If you would like to acces the Web from within "Life in the Universe" launch your preferred web browser (Internet Explorer or Netscape) *before* launching the "Life in the Universe" application.
3) To run the application select "Life in the Universe" in the Programs directory in the Windows 95 Start menu or double click on the Universe icon in the Windows NT Program Manager.

Intro Screen

After launching "Life in the Universe," an introduction movie will play in the Intro screen's main window. Once the movie has finished playing you can begin your journey by clicking on one of the following buttons:

Lecture Stephen Hawking's "Life in the Universe" Lecture

Articles The complete text to five Scientific American Articles

Terrains Launches you to one of the three terrains

History File Lists the information that you have viewed

Preferences Adjusts Voice, Music and Effects levels

Help Animated online Help (Visit here first!)

Stephen Hawking's Lecture
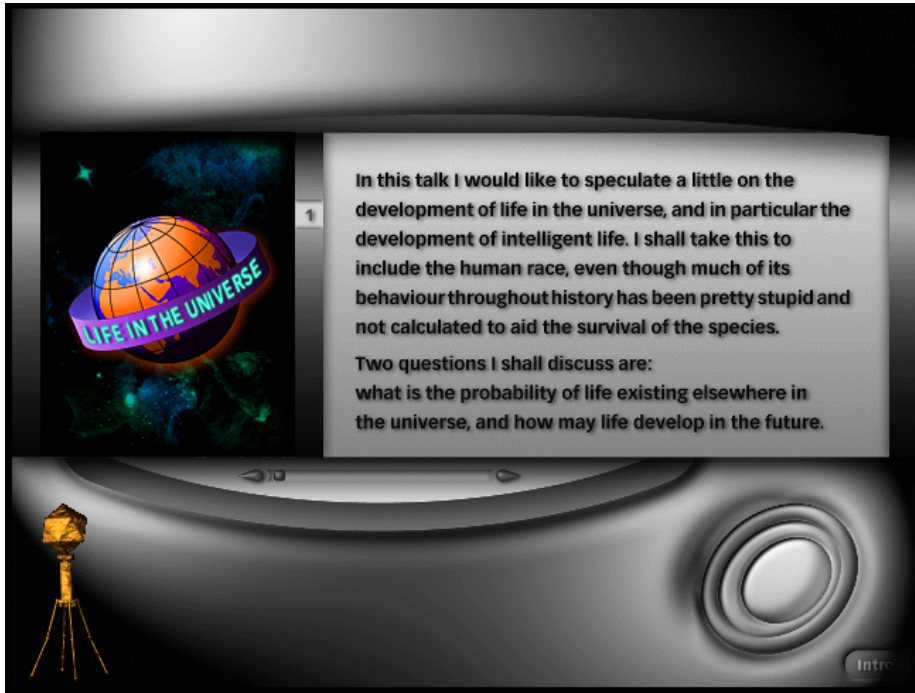
Professor Hawking's lecture "Life in the Universe" serves as the foundation from which exploration begins. The lecture is accessible to you at any point in your investigation. The entire lecture is presented in a self-running slideshow. Slides relating to the subject matter appear to the left and the lecture text appears to the right. As you scroll over the text, key words and phrases highlight, indicating active links for you to make to related "bits" of information. Clicking on any of these highlighted words or phrases will take you to one of the three terrains that contains related information.

Cosmological

Organic

Mathematical

Terrains

The terrains are scrollable environments that correspond to the bits of information found within them. There are three basic terrains — cosmological, organic, and mathematical. The "cosmological terrain" contains information related to the size of the universe, the big-bang, the origin of life in the universe, black holes, and other relevant topics. In the "organic terrain" you will find discussion of such things as RNA/DNA, the origin of life on earth, human evolution, the emergence of intelligence, and technological processes.
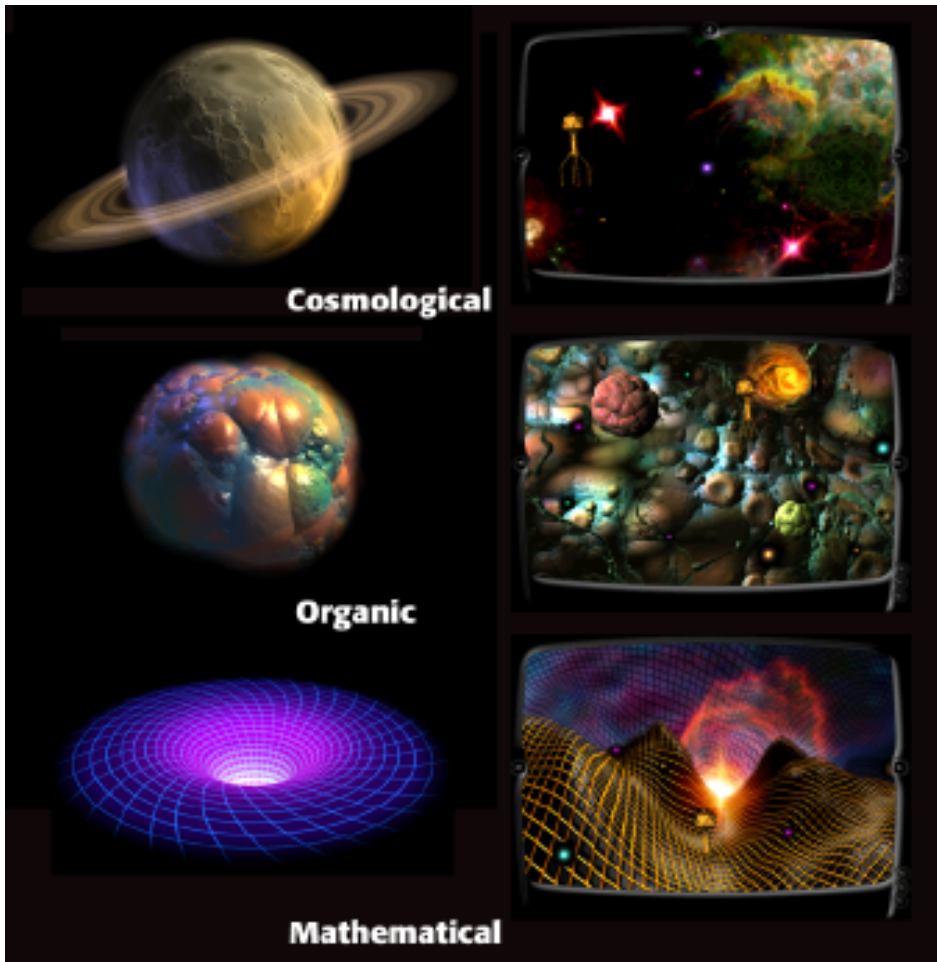
The "mathematical terrain" includes information connected to the speed of light, the theory of relativity, gravitational forces, radioactive decay, density and mass, and many other abstract scientific principles.

Once you have entered a terrain, the Phage will appear through a "portal". Each terrain contains only one portal which launches to a different terrain when clicked. Once the Phage fully materializes into the terrain, you can begin exploring.

To navigate through the terrain simply move the cursor to the right side of the screen to move right, or move the cursor to the left side of the screen to move left. (The cosmological terrain also allows upwards movement). To increase the speed of movement, leave the cursor to one side for a longer period of time. Move the cursor to the center of the screen to stop movement.

Scattered throughout each terrain are several small colored spheres. Each of these colored spheres is an "Infobit" of knowledge. To access the infobit, position the cursor over one of the colored spheres. The Infobit should enlarge to its activated state and its subject title will appear in the bottom right of the screen. To view the information simply click on the Infobit and the "Animation Player" will appear.
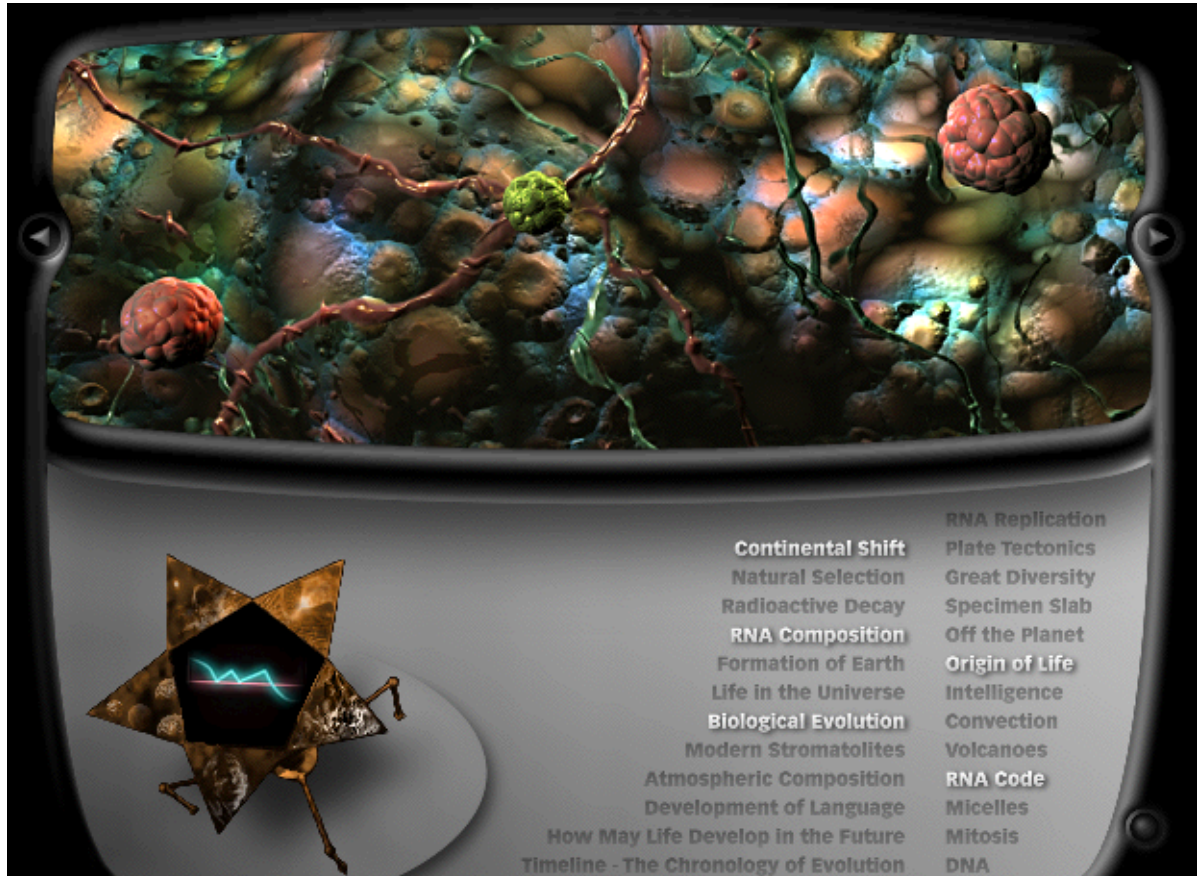
Natural Selection

Organic

Intro
Return
Lecture
Articles
Web

Click the text label "Return" to go back to the terrain.

All about the Phage

The "Phage" is an animated intelligent agent who accompanies you throughout your journey logging your findings and recording the information into your "User History File." To access your User History File, CTRL-click directly on the "Phage."

Continental Shift
Natural Selection
Radioactive Decay
RNA Composition
Formation of Earth
Life in the Universe
Biological Evolution
Modern Stromatolites
Atmospheric Composition
Development of Language
How May Life Develop in the Future
Timeline - The Chronology of Evolution

RNA Replication
Plate Tectonics
Great Diversity
Specimen Slab
Off the Planet
Origin of Life
Intelligence
Convection
Volcanoes
RNA Code
Micelles
Mitosis
DNA

The "User History File" displays a text list of all the Infobits in one of the three terrains. The highlighted Infobit titles represent the information that you have viewed. To clear the highlighted titles click on the "Reset the History File" button located at the bottom right of the interface. Click on any Infobit title to go directly to its information screen.

In the bottom left corner of the User History File, the Phage unravels five flaps containing links to the Articles, Stephen Hawking's Lecture and the three terrains. Click once on the Articles or Lecture flaps to launch to that screen. Click once on one of the three terrain flaps (Cosmological, Organic and Mathematical) to activate that terrain's User History File. Click a second time to enter that terrain.

WebTeleporter

The "Web-Teleporter" provides
access to the "Life in the Universe"
online environment from within
any part of the CD-ROM. After
clicking on the Web teleporter or
one of the Web labels, a dialog box
will appear asking you to locate
your Web Browser.   Select your
Web Browser application.
(Typically Netscape Navigator™,
netscape.exe, Internet Explorer or
Iexplore.exe) The Microsoft
Internet Explorer installer is includ-
ed on the "Life in the Universe"
CD-ROM. (www.microsoft.com)
Your Web Browser will display the
"Life in the Universe" opening page
which resides on the "Life in the
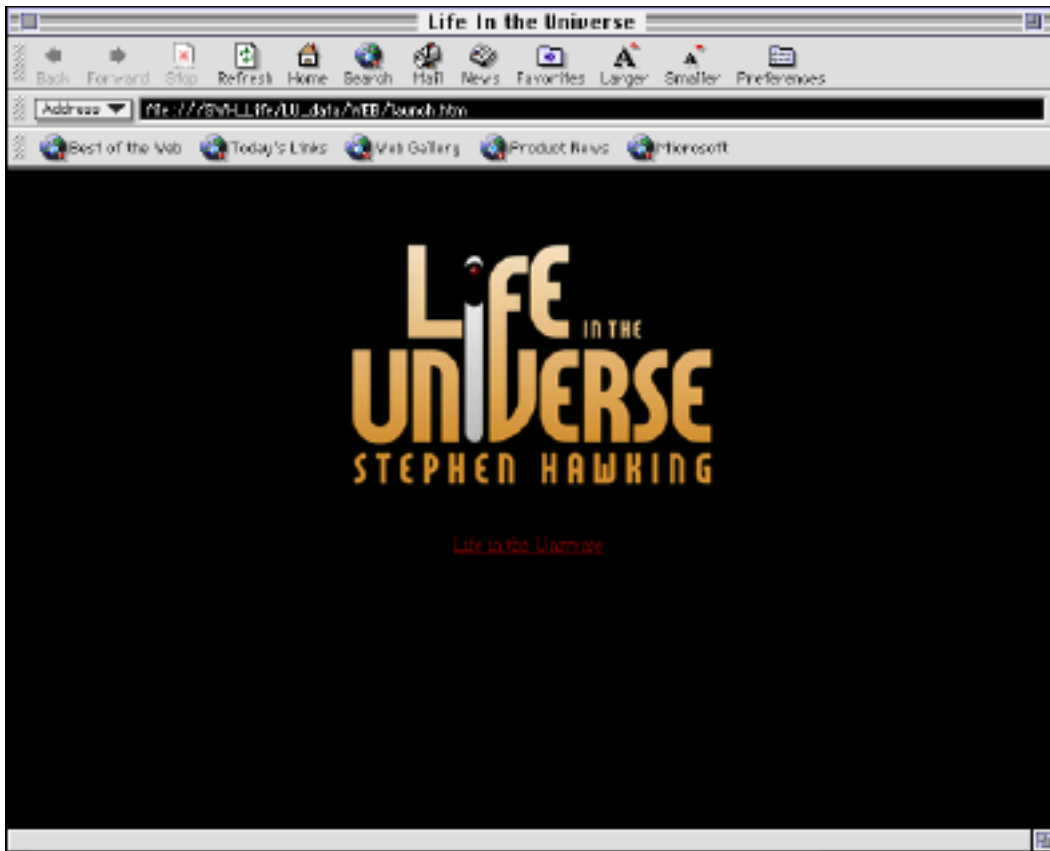
Universe" CD-ROM. To access the official "Life in the Universe" website, located at http://www.lifeintheuniverse.com, click the hypertext "Life in the Universe." Here you can view up-to-date information, engage in Web discussions and access links to related science websites. When you are finished, close your Web Browser and click to continue.

NOTE: Launching your Web Browser from within the "Life in the Universe" application requires at least an additional 5 MB of RAM.

Games

There are two challenging games for you to play — "RNA-Code" and "Catch the Signal". In RNA-Code you must translate descending genetic code to build protein molecules. In Catch the Signal you are tracking and honing in on an incoming radio wave. Once you have located its position and frequency, you must decode the signal in order to find out if it comes from an intelligent life-form. (See www.lifeintheuniverse.com for more information on building protein molecules, tracking incoming radio waves and SETI-The Search for Extraterrestrial Intelligence)

RNA Code

Keyboard Controls
> **Number keys (1-4)**
> release molecules
> **Direction arrows (Down, Right and Left)** move the descending molecules

Object
> Build Protein Molecules

At the top are four molecules labeled 1- 4. To release a molecule press its corresponding number key on your keyboard.   Using the left, right and down arrow keys, try to match the molecules by shapes or letter sequence. The molecules will attach when an exact match is made and detach from the building protein upon completion of the next match. A green molecule signifies a new level (the beginning of the protein synthesis). A red molecule signifies the end of the level (the completion of a protein synthesis), at which point a new green molecule appears and the process begins again at the next level. Every level becomes more challenging than the last. Good luck!
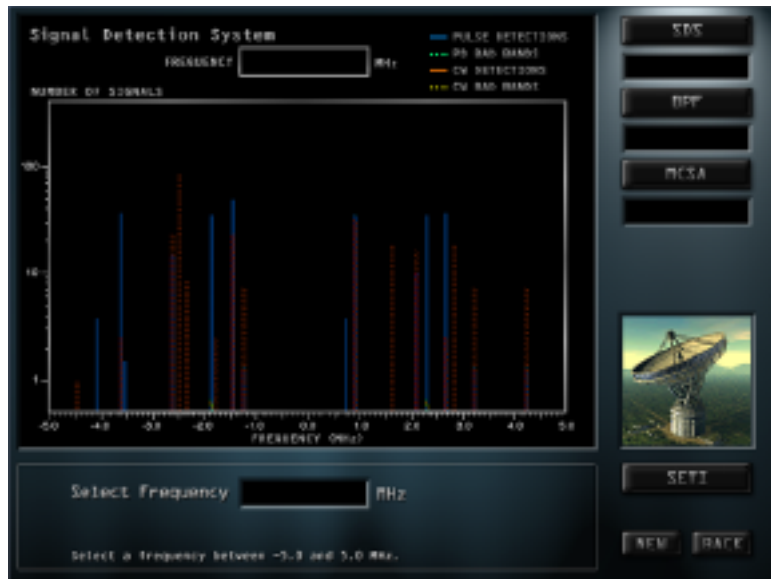
Catch the Signal

Object   Decipher an incoming signal to determine if it was sent from an extraterrestrial life-form.

Procedures for decoding the signal (modeled after the method of decoding signals at the SETI Institute, The Search for Extraterrestrial Intelligence)…..

1) In the Select Frequency Numerical Field enter a frequency between 1000 and 3000 (Mhz). Press Return(Enter).

2) Click the BPF button to run a digital band pass filter which will reduce the signal to noise ratio.

3) Enter a frequency between -5.0 and 5.0 Mhz (Generates a waterfall plot of the night sky over time). Press Return (Enter).

4) Enter 1 - 5 to select one of the five signals displayed in the main window (Multi Spectrum Analyzer). Press Return (Enter). This generates a waveform based on the incoming signal.

5) Enter a new combination of the five number sequence (i.e., 2,1,5,3,4) in the numerical fields. Click the Decode button.   This applies a decoding algorithm to the waveform resulting in a re-ordered sound. As the correct combination is approached, the noise will decrease and the message (if any) becomes clear.

Timelines
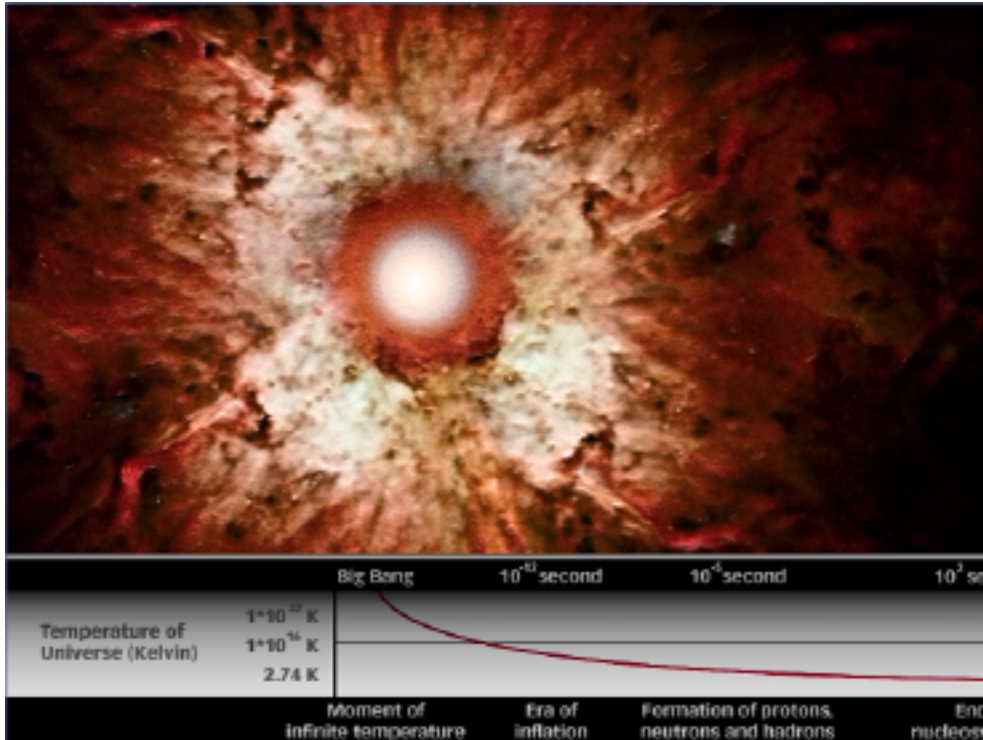
There are two scrollable time-lines, Organic (The Chronology of Evolution) and Cosmological (History of the Universe), that you can access from within the associated terrains. The timelines are an additional way to acquire information bits and link to dynamic visualizations related to Professor Hawking's lecture, and the included articles from Scientific American. The timelines provide an historic back-drop, and place a subset of the projects total information chronologically, providing additional context to the content.

Scientific American Articles

This CD-ROM includes the entire text of five articles:

"The Evolution of the Universe"
"The Evolution of the Earth"
"The Origin of Life on Earth"
"The Evolution of Life on Earth"
"The Emergence of Intelligence"

These articles were written by distinguished scientists for a special issue of Scientific American on "Life in the Universe." The articles and related visualizations are immediately accessible to you no matter where you are in your journey.

Technical Support

Detailed help instructions are included on the "Life in the Universe" website at
http://www.lifeintheuniverse.com

Free direct e-mail support only is available for the first 90 days after purchase at support@metatools.com.
On America Online, we can be reached by using the keyword KPT to go to our online forum. Also, visit
our World Wide Web site at http://www.metatools.com.

We invite you to get online and join the rapidly growing group of graphics professionals and enthusiasts
who share knowledge and ideas in our weekly America Online live chat, often hosted by Kai himself.
Currently we meet Tuesday nights at 7:30 pm Pacific Time. Use Keyword KPT to enter our forum, and click
on the Meta Chat button to enter the fray!

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Contemplate and Enjoy!
"Life in the Universe" is published by: MetaTools, Inc.; 6303 Carpinteria Avenue; Carpinteria, CA 93013 and
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