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Chapter 1

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1.1 Presentazione Digital Universe

"THE DIGITAL UNIVERSE"

Astronomy Software for the Amiga Computer

1996/02/26

PRODUCT DESCRIPTION

"The Digital Universe" is a complete astronomy program for the amateur

or professional observer. It combines the advantages of traditional

"planetarium" programs with a massive hypertext multimedia encyclopedia

to create an effective tool which assists the user in observing and

learning about the heavens. 50,000 lines of code, more than 700 pages

of hypertext, and thousands of man-hours have gone into this product to

make it the most complete program of its class. The software would not

have been possible without the generous assistance of countless

individuals from the Canadian Space Agency, the National Research

Council of Canada, NASA, JPL, NORAD, the European Space Agency, the

Bureau des Longitudes, the Smithsonian Astrophysical Observatory, the

Russian Academy of Sciences, and several other organizations worldwide.

We are proud to have received the coveted "Blue Chip" and "Gold" awards

for software excellence from Amiga Computing and Amiga Format magazines.

Reviews of the package appear in their January 1996 and March 1996 issues

respectively.

PRODUCT UNVEILING

"The Digital Universe" was first unveiled at the September 20, 1995

meeting of the Amiga Users of Calgary (AMUC) to an overwhelming

response. More than 1/3 of the attendees purchased a copy of the
software immediately after the presentation. Some of the unsolicited
comments made by members
include:

"This is the best piece of Amiga software which has come out in a
long time"

"This program 'blows away' all other astronomy programs I've ever
seen - not just on the Amiga, but on the IBM and Macintosh as well"

There are actually two packages available - "The Digital Universe"
software and user manual, as well as a printed version of the hypertext
encyclopedia. See "Ordering Information" below for pricing information.

PRODUCT FEATURES

The following features by no means summarize all the things which
the software is capable of. Due to space considerations, only the
major features can be summarized here.

- The following databases are integrated into the software:

1. Yale Bright Star (YBS) Catalogue of 9110 stars.

2. Smithsonian Astrophysical Observatory (SAO) Catalogue of over
250,000 stars.

3. Messier's Catalogue of 110 deep sky objects (galaxies,
nebulae, and clusters).

4. Sky & Telescope's NGC 2000.0 Catalogue of 13,226 deep sky
objects.

5. Tom Lorenzin's "1000+" database of observing comments for
over 2000 objects.

6. Jost Jahn's comet database containing 2298 cometary orbits.

7. Jost Jahn's minor planet database containing orbital
information for thousands of asteroids.

8. Ted Molczan's and T. S. Kelso's orbital information for
approximately 900 Earth-orbiting satellites.

- The software can generate accurate views of the night sky for any date
from 100,000 BC to 100,000 AD.

- The package includes over 700 pages of hypertext, including an
introduction to astronomy, dictionary of terms, biographies of famous
people, celestial object descriptions, and summaries of every
interplanetary spacecraft launched to date.

- More than 250 pictures are linked into the hypertext encyclopedia.
They include images of all the planets, most of their satellites, all

of the Messier objects, some NGC objects, and many miscellaneous
images. A few audio clips are incorporated as well.

- A context-sensitive help system, linked into the online encyclopedia,
is integrated into the software.

- The user can select whether or not they want to consider effects such
as precession, proper motion, nutation, aberration, or refraction.

- "The Digital Universe" uses the latest analytic theories of motion for
the planets (VSOP87) and their satellites, resulting in typical
accuracies of better than 1 arcsecond (1/3600th of a degree).

- The current analytic theory of motion for the moon (ELP2000-85) has
been extended to improve its accuracy even further for times within
a few hundred years of the present. The extension was done specifically
for "The Digital Universe".

- NORAD's SGP4 model of orbital motion is used to accurately predict
the apparent positions and movement of Earth-orbiting satellites.
"The Digital Universe" can work with standard "2-line" orbit files.
Hundreds of satellites are included with the software, and information
is provided to explain how to obtain future data sets as new
satellites are launched and older orbits decay.

- Unlike many other astronomy programs which only consider the four
brightest satellites of Jupiter, "The Digital Universe" accurately
computes orbits for the moons of:

Earth: Our Moon

Mars: Phobos and Deimos

Jupiter: Io, Europa, Ganymede, Callisto, Amalthea, and Thebe

Saturn: Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion,
Iapetus, Phoebe, Telesto, Calypso, and Helene

Uranus: Miranda, Ariel, Umbriel, Titania, and Oberon

Neptune: Triton and Nereid

Pluto: Charon

When the software is zoomed in sufficiently to the planet of
interest, the moons are rendered in their proper positions.

- When zoomed in to most planets and satellites, the object's
orientation and phase is determined and a latitude/longitude grid
superimposed if the user desires. Maps of Venus, the Moon, Mars,
Jupiter, and Saturn are incorporated into the software to generate
accurate renditions of the appearance of these objects. The ring
systems of Saturn and Uranus are rendered.

- Supports the Amiga preferences printer. Plots of star charts, etc.

are far more than a simple screen dump. The maximum resolution of
the printer is used for outstanding clarity.
- The user can enter his or her own horizon, if desired. Horizons for
multiple observing sites can be configured.
- The user can select their location from a list of over 1000 cities,
or enter their latitude, longitude, and altitude above sea level
manually if higher accuracy is desired.
- Completely configurable IFF animations can be generated. To mention
just two examples from the infinite number of possibilities, you
can see how stars move and constellations distort over centuries, or
view how Saturn's rings change their orientation and appearance over
time. "The Digital Universe" can also save screen snapshots as ILBMs.
- A report generation feature lets you choose between a wide variety
of data and customize tabular reports. They may either be printed
or saved to disk.
- Provided that you have sufficient chip memory, the screen upon which
"The Digital Universe" runs can be of any size. If the screen is
larger that can fit on the monitor, you can scroll around simply by
moving your mouse to the edge of the visible area. A screenmode
requester is provided to allow users to specify their particular
monitor.
- All development was done entirely on Amiga. It is not a port from
the IBM or Macintosh world. As a result, the software closely
adheres to the Amiga style guidelines and behaves in the manner you
would expect from Amiga software.
SYSTEM REQUIREMENTS

The software will run on any Amiga with Workbench 2.04 or greater, at
least 3 megabytes of memory, and a minimum of 11 megabytes of hard drive
space (17 megabytes of hard drive space is required for a full
installation). Due to the calculation-intensive nature of this
software, an accelerated Amiga and math chip (FPU) is strongly
recommended, though not required.

1.2   News del 5 Novembre 1996

Hi everyone. This message is being sent out to registered owners of "The
Digital Universe", and though it is not completely "Digital
Universe"-specific, we thought we would let you know of a few changes to

our web site.

Essentially, we've added two new features:

- a WebBoard: This allows you to post public messages and carry on
discussion with other users about a wide variety of topics. We encourage
Digital Universe owners to use this service to talk with others who share
your interest in astronomy.

- a Guest Book: Please take a moment to sign our guest book and provide us
with any comments you might have about our services.

Both of these services are accessible from our home page at http://www.syz.com/

And if you haven't already discovered our "Astronomical Image Library", we
also maintain the largest searchable index of astronomical images available
on the Internet - 17,000 and growing. Join the thousands who are currently
using this resource to find images of any particular astronomical object.

It's accessible at http://www.syz.com/images/

We thank you for your continued support!