

THE GEONAUTS INQUIRE INTO THE OCEANS

Observatoire de la Côte d'Azur

Centre National d'Études Spatiales

An interactive CD-Rom to learn altimetry

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Earth is a space station put successfully in orbit around the Sun 4.5 billions year ago.
This station is manned and welcome 6 billions of people; to emphasize our common venture we rename inhabitants of the Earth
GEONAUTS. GE is Earth, our ship; we are Nautes on it and navigate in the solar system (as Internautes are surfing on the web).
GEONAUTS are anxious to control the behavior of Earth ship and send around it automated and manned stations.
This extra vehicular activity provides the requested observations to forecast their future.
Michel Lefebvre

1- Origins of oceans topography



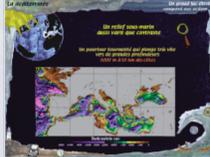
2- From fabrication to measurement



3- Principle of radar altimetry



9- The Mediterranean sea



4- Steric effect



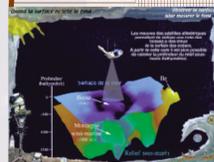
8- Ocean-atmosphere interactions



5- Tides



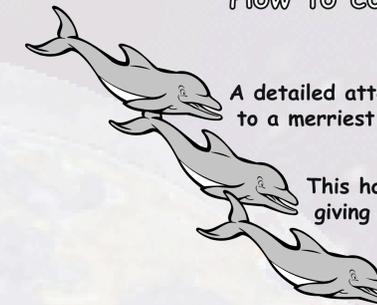
7- Ocean circulation



6- Sea floor

A playground

How to consider education without a part of recreation ?



A detailed attention, throughout the CD-Rom, was given to a merriest presentation.

This hopscotch, with several games, is illustrating each topic, giving this necessary entertainment.

This range of relaxation can incite children to go back and forth, between checking understanding and looking further into a subject.

A space of knowledge



Let's start from a report:

We are all aware of the great need to improve information, education and training in the field of environmental science.

Children, future planetary hosts, have spontaneous interest and curiosity for Earth's behavior.

The goal of the prospect is to connect the world of research and that of schools, permitting to approach science in a global way, with a less theoretical vision.



A glance at our approach:

This experience is based on an exchange and emulation in educational circles, between children, teachers and researchers.

To show the concept of team work, each of the topics was presented by a different specialist.

A crucial point is a bilateral exchange, which consists in presenting subjects, suggesting an active participation in various forms (text or drawings).

Close-up on the scenario:

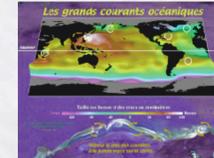


The sea surface is covered with bumps and hollows, whose causes are various, accurately measured with satellite altimetry.

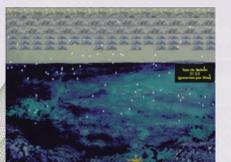
By isolating each one of the reliefs, the goal is to explain the phenomena, allowing children to apprehend the scales of time and size.

This leads to understand the influence of the interaction between ocean and atmosphere on climates, and the role of TOPEX/Poseidon and soon Jason-1 ocean-observing missions, but also maybe the predictions of earth climate.

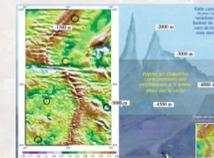
Find oceans currents



Break the clouds



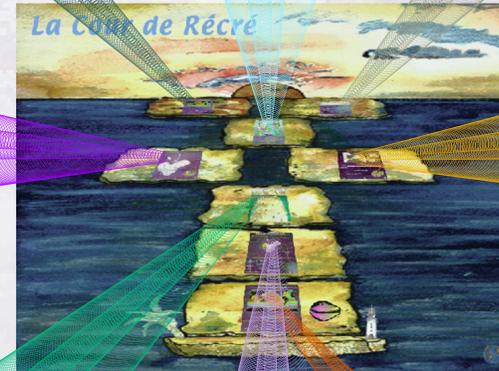
From sea surface to bathymetry



Color TOPEX/Poseidon



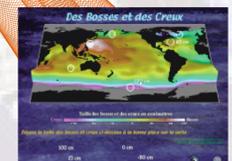
Build a color scale



The tides quiz



Find TOPEX/Poseidon instruments



Measure the dynamic topography

Visit our web site for kids: grasse.obs-azur.fr/cerga/gmc/kids