COMPRENDRE LE VOCABULAIRE
PAR LE CONTEXTE

→ Retrouver dans le texte, par le contexte uniquement (sans dictionnaire), l'équivalent anglais de :

Ozone savers

The race to find substitutes for the widely used chemicals that have been helping destroy the ozone layer has produced two winners. Ozone high in the atmosphere helps shield all life from lethal ultraviolet solar radiation. Chlorofluorocarbons—CFCs, for short—contribute to the disintegration of the ozone molecule. And CFCs have been pouring into the atmosphere because they are used heavily in air conditioners, refrigerators, and foams and as solvents. Early in the year AT&T announced it had successfully tested a substitute for CFC-113, relied on by the electronics industry as a solvent for cleaning circuit components. Called BIOACT EC7, it was originally developed by Petroferm, a Fernandina, Fla., technology company. And DuPont announced a substitute for CFC-12, used in making polystyrene foam for the ubiquitous packagings of fast-food restaurants, as well as egg cartons and supermarket meat trays. The chemical, named Formacel-S, is claimed to be one-twentieth as harmful to ozone as CFC-12.

OZONE SAVERS

couche :	Layer
protéger :	shield
se répandre :	scatter
mousse :	Foam
dont (...) a besoin :	relied on

1,5

Robots on the cheap

Researchers at the Georgia Institute of Technology have created a low-cost vision system that could be used to guide future robot arms or automate vehicles. The camera uses a conventional CCD chip as the imaging device, but instead of using a lens, the chip sees the subject through a tiny pinhole that focuses and passes only a small amount of light. A strobe, placed near the camera, illuminates only specific parts of the subject—orientation points that are made of reflective material. Because only the reflective points are seen by the CCD chip, very small amounts of data need to be digitized and processed. That makes the system fast and inexpensive—only about $200 for the components.

The initial application for the system is guiding automated vehicles through an industrial facility. Reflectors on the walls provide the orientation points the vehicles need, eliminating the usual stripes and guide wires along the floor.

ROBOTS ON THE CHEAP

puce :	Chip
objectif :	Lens
ouverture de la taille d'une tête d'épingle :	tiny pinhole
petite quantité :	small amount
installation :	facility

1,5

74

3

It's not just "zing, zip, bleep, boink and fnapp" anymore—from Bach fugues to sampling to FM synthesis, sound adds the spice of excitement, soups up the energy level, and attracts new players to video arcade [glab] .

S OME TIME AGO I read an article on David Crane, the famous [glab] designer for Activision. Throughout the electronic [glab] industry he is known as a "coding machine" and he helped start the video [glab] business. I was interested in the article for his creations, but what I remember most about it is Crane's Law— "Man will always use his most advanced technology to amuse himself." How true! Today's electronic [glab] boggle the mind as well as entertain it. An entire industry is devoted to arcade [glab] , songs have been written about them, movies made about them, money spent on them. Video [glab] are only about ten years old, but they have gone around the world and back. Why are they popular? One of the main reasons is music.

Music makes everything more enjoyable. Can you picture driving to work without listening to the radio or a tape? I can't. Even while I'm reading the newspaper I'm humming a tune if I don't have a cassette playing. Advertising can't survive without music; try watching a car commercial on TV and imagine how ridiculous it would be without the music. Even while I'm writing this, I'm listening to a Mannheim Steamroller compact disc—and I wouldn't be surprised if you're listening to music or humming to yourself too!

Many people enjoy music while having fun. But lately, video [glab] manufacturers have added bright, rhythmic soundtracks to coincide with the on-screen action. The big companies (Atari Games Corp., Bally/Midway, and Sega Enterprises) have done this to increase profits. In order to survive, a [glab] must have staying power—the essential element that keeps players coming back—and that's how a [glab] makes money. Pong, the first arcade [glab] raked in dollar after dollar in the early '70s; but it would die a quick death today in most arcades, partly because it has almost no interesting sound whatsoever. As new [glab] are introduced, their sounds and music become ever more important.

mot-clé porteur du thème de l'article : _____ Game

1,5

Anyone currently using [reka serp] will tell you that the [reka serp] has given a new meaning to productivity around the office. At any corporate level, from office worker to manager and executive, the [reka serp] helps accomplish more in less time, with less waste.

The [reka serp] is no longer an anomaly; it is just another way work gets done. The fact that diskette holders are as commonplace (and as nondescript) as pencil holders on the desk top is a likely indication that some of the [reka serp] novelty is fading.

It's a fact that the workstation is responsible for a measurable and dramatic impact on personal productivity; however, as the number of [reka serp] grows, overhead grows with it. The placement of workstations that include printers and duplicate file systems in every office soon becomes impractical and expensive.

mot-clé porteur du thème de l'article : _____ Personal Computer

1,5

3 point

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                    MAGNETIC LEVITATION
                       IN THE U.S.A.
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     Immediate need for improvement in public transportation, rising
concerns about devastating effects of noise and pollution and the "peace
dividends" are fueling new hope for R&D (research and development) on
magnetic levitation (maglev).

     Maglev represents the latest evolution in high-speed ground
transportation. Maglev vehicles glide above their guideway, suspended
by frictionless magnetic forces, at speeds that can exceed 300 MPH.

     Pioneering maglev research and development was conducted in
the U.S. in the 1960's and early 1970's, but most federally-sponsored
efforts were halted in 1975. West Germany and Japan have built on the
foundations of the work done in the U.S. and have separately developed
operational prototypes.

     There are two maglev systems developed, one each by West Germany
and Japan.

     -     German system relies upon conventional electromagnets to hold
and propel a wrapped around the guideway vehicle at 10mm above guideway's
surface. This system is expensive, difficult to build and maintain as
this 10mm magnetic levitation gap requires utmost precision in every aspect.

     -     The Japanese, faced with electricity cost three times higher
than in the U.S., have pursued much stronger and more efficient super-
conductive magnets. Magnetic repulsion principle holds and propels the
vehicle 4 to 6 inches above the guideway. Capital cost on this system
is higher but running cost is much lower and bigger magnetic levitation
is much easier to handle.

     As both systems are using outdated technology, the U.S. maglev,
if quickly developed, has a potential to "leap-frog" (over-jump) these
systems creating a third one, a technologically new and economical system.

     Original maglev inventor is French engineer Emile Bachelet who
levitated and propelled a model vehicle with magnetic forces in 1912.

TEXTE D

1)   Les coûts de maintenance sont plus élevés :

      ❏ pour le train japonais
      ☑ pour le train allemand

2)   Le système japonais

      ❏ est à la pointe de la technique
      ☑ est déjà dépassé

3)   Les Etats-Unis

      ☑ vont profiter de la recherche de l'Allemagne et du Japon
   ❏ sont à l'origine du développement des trains à lévitation magnétique

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page 2

Le contexte permet de déduire la signification d'une phrase, même très complexe. des textes qui suivent, une phrase a été supprimée.

→ Parcourir chaque texte avant de choisir parmi les idées proposées, celle qui est pée dans la phrase manquante.

☐ a. Comme la glace fond chaque année, on perd toutes ces traces malgré recherches très importantes.

☐ b. Et l'analyse chimique de la glace fournit des informations sur les changements de climat et d'atmosphère.

☐ c. Malheureusement, il fait si froid que l'on ne peut pas faire sur place les recherches nécessaires.

☐ d. Les analyses jusqu'ici sont trop imprécises pour être prises en compte par la communauté scientifique.

# OUR FRAIL PLANET IN COLD, CLEAR VIEW

The South Pole as global laboratory
By Barry Lopez
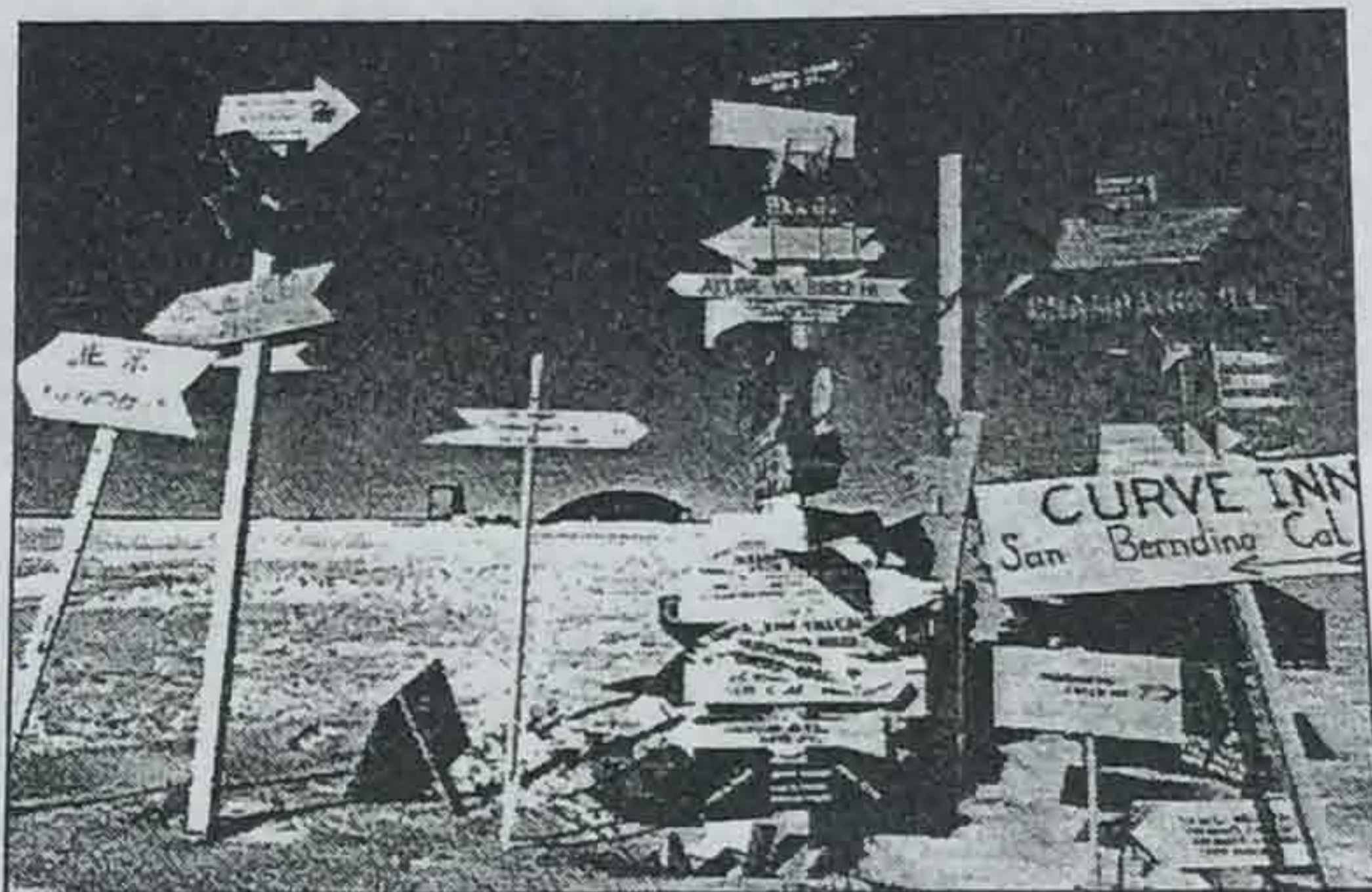
Snow and ice chemistry, a very recent branching of earth and atmospheric science, has an unprecedented potential to clarify complex environmental issues. Falling snow preserves, in a relatively undisturbed state and apparently with great fidelity, a record of the chemical composition of the atmosphere through which it descends. From snow pits, and from ice cores pulled from deep within glaciers and ice caps, scientists can piece together a chemical history of the earth's atmosphere—a record of climatic and environmental change.

Ice cores—the American effort to retrieve and analyze them is being led by the Glacier Research Group at the University of New Hampshire, with which I'd journeyed to the polar plateau—preserve a diverse and esoteric historical record. The ice itself retains particles of wind-blown pollen and fallout from thermonuclear tests.

(b) ?
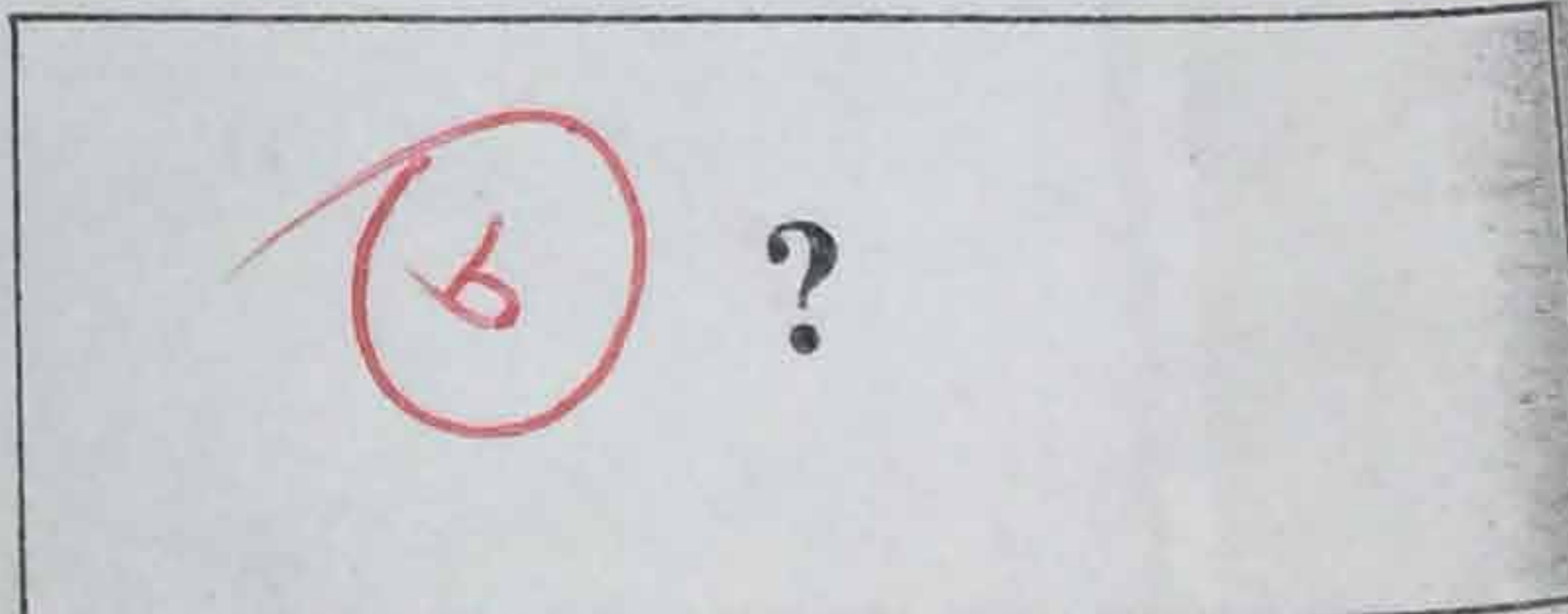
The record goes back thus for 160,000 years (a Soviet ice core, from Vostok Station on the polar plateau) and is precise in some instances down to the level of pinpointing seasons in a particular year.

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THE ASTRONOMER

YOUR COMPUTERIZED GUIDE TO THE HEAVENS

by Ignac A. Kolenko Jr.

Move over, Carl Sagan! Even if you can't say ''billions'' with a plosive ''b,'' you can still pick out those bits of star stuff from the rest of the cosmos. All you need to find your way around the night sky is a clear view, your ST and the aSTronomer, a universe-mapping program you'll find on your START disk.

The aSTronomer is an easy-to-use GEM-based program written in Personal Pascal. I chose Personal Pascal because of its extensive support of GEM, and wrote the program with the user in mind. All keyboard input is done using dialog boxes, which helps eliminate inadvertent errors (such as entering a string when an integer is asked for), and all questions the program asks are answered with alert boxes. All program output can be sent to either the screen or the printer (which you can configure from a menu option). The program also works in both medium and high resolutions.

THE OLDEST SCIENCE

The science of astronomy is an ancient one. Since earliest times, man has wondered about the twinkling lights in the sky—why some of them moved as others remained stationary, why the Moon appeared to grow and shrink in size each month, and why the Sun seemed to disappear occasionally, swallowed by a blackened disk with a shimmering halo in an eclipse.

Ancient civilizations began to record such celestial events in calendars, and began formulating ideas about how the universe was structured. One noted Greek astronomer, Hipparchus, mapped the constellations and estimated the brightness of the stars; another, Ptolemy, devised the Earth-centered view of the universe, where everything, including the Sun, planets and stars revolved about the Earth.

WHAT'S UP, DOC?

First, a few terms and facts.

What's up there? You've seen the Sun and the Moon; only a little more difficult to spot are the planets. The planets look like stars, but they seem to move slowly around the sky from week to week—and they don't twinkle as the stars do. The planets Mercury and Venus are known as either ''morning stars'' or ''evening stars''; they seem to stay close to the Sun, and are usually the first or last objects you'll see in the night sky (more often Venus than Mercury, since Venus is far brighter). Jupiter usually dominates the night sky, because it is also a very bright planet. Saturn is a visual feast because of its rings—you can see them easily with all but the smallest telescopes! Mars is occasionally bright enough to be domi-

nant in the night sky and presents many interesting views (though, contrary to tradition, there are no canals or Martians to speak of!). The other planets in the Solar System are usually too faint to be seen easily by beginning astronomers.

THE DATA FILES

The PLANETS.DAT file is a sequential data file consisting of the orbital elements of each of the planets in the Solar System. Each planet has an entry which is structured as follows: name, period of revolution (years), longitude at the start of 1980 (degrees), longitude of closest approach (degrees), eccentricity of the orbit, semi-major axis of the orbit (astronomical units), inclination of the orbit (degrees), longitude of the ascending node (degrees), angular size at one astronomical unit (arc seconds), and a brightness factor. A good astronomical manual can further explain each of the above orbital elements.

AD ASTRA

If the aSTronomer increases your interest in astronomy, just go to your nearest library and read up on mankind's oldest, and still perhaps most interesting, science. I hope that amateur astronomers will find the data generated by this program an excellent supplement to their studies, and that beginning astronomers, and people with no previous interest in astronomy, will be able to pick up new information and gain an appreciation of the starry heavens. ∎

8 points   M1 ELM
            M1 AOUTO

C

■ SKIMMING

→ Repérer la définition qui est fournie du programme ASTRONOMER dans le premier paragraphe :

1   *The aSTronomer is an easy to use GEM Based program.*

■ SCANNING

Technique de repérage: noms propres / sous-titres

1) Pour quel ordinateur ce programme est-il conçu ?

1   ❏ IBM AT
     ❏ MACINTOSH
     ❏ (ATARI ST)

2) Comment l'auteur joue-t-il à la fois sur le nom du programme et sur celui de l'ordinateur ?

1   *a STronomer*

3) En observant uniquement les sous-titres, auxquels des développements suivants peut-on s'attendre ?

1   ❏ microprocesseurs nécessaires pour faire fonctionner le programme

     ❏ (astronomie: la plus vieille science du monde)

     ❏ voyage de Voyager II

     ❏ fichiers du programme

4) Le(s)quel(s) de ces sous-titres n'aide(nt) aucunement à la compréhension ?

1   *An Astra*

5) Repérer le nom d'un fichier :

1   *Planets. dat*

6) Repérer les différents astres mentionnés dans le corps de l'article :

2   *Moon   Sun   Mercury*
     Venus   Saturn
     Jupiter   Mars

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