

PR. RAIS

8 points

M 4 ELM

M 1 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

astronomer

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

AG Astrae

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

page 1

3 points

D

MAGNETIC LEVITATION  
IN THE U.S.A.

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

page (2)

3 points

## 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 :  
protéger :  
se répandre :  
mousse :  
dont (...) a besoin :

Layer  
shield  
scatter  
Foam  
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 :  
objectif :  
ouverture de la taille  
d'une tête d'épingle :  
petite quantité :  
installation :

Chip  
Lens  
tiny pinhole  
small amount  
facility

1,5

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