CANS OF JAM²

From the editors

Merry Christmas to you all!
This new issue of *cans of jam²* is a lightweight one (just right for this pre-festive season time), but as you probably do not have much time, this is just as well... We hope you will enjoy it, because **we** certainly did!
All the best for the New Year, and see you again in 2011!!

Gliese 581 c

Gliese 581 c is a planet that was discovered in April 2007 by La Silla observatory in Chile. This planet is orbiting the red dwarf star Gliese 581, in the constellation Libra. Gliese 581 c has a mass 5 times bigger than Earth's mass.

Gliese 581 c is 20.5 lightyears away from Earth. The temperature on Gliese 581 c varies between 0°C and 40°C. This planet is not very different from Earth.

On Gliese 581 c, there can be life but it's too far from Earth to check that. Gliese 581 c is the second planet discovered in the system.

In September 2010 a new planet was discovered in orbit with Gliese 581 : it is named Gliese 581 g, and this planet seems to be an even better one to live on...

Readers' emails

(with very little translation or correction work from the editors : our readers wrote in near -perfect English this month!)

Can you say to Mr Bouichou I have obtained the prize for the girls' scientific vocation (in French, *prix de la vocation scientifique et technique des jeunes filles*) ? 'Cause I have prepared my study with him (I received it on November 10th, but as I did not have his email address, I could not tell him in advance).

Aurélie, from Beauvais, 60

Editors' answer : Well Aurélie, as we said, it is a great pleasure to know of your prize, and Mr Bouichou talks about it every day since he learned of it. Keep on like this, we are proud of you!

Hello,
Thank you for your email, I find it's good to have news from "cans of jam²".
I think I forgot a little my competence in English because I have less hours of English than at high school and English courses are not very interesting because we always do the same thing and the professor is not very nice ! Lol ! However my courses are interesting in psychology. I hope that is going to continue.
I hope to have news about you and the newspaper "Cans of jam²"

Florine, from Beauvais, 60

*Editors' answer : And that is another former pupil and writer for **cans of jam²** who gets in touch with us; it is good to know that some of them are faithful!*
*We hope your English courses will get better, but we can reassure you : you have not lost your excellent English! And of course, yes, you will receive **cans of jam²** in the future.*

Hello everybody,
I found "cans of jam²", issue 6, on Langevin's web site, and I think that it's a good work !
About the temperatures, do you know how to convert Celsius degrees to Farhenheit degrees ?
It's a good exercise for our pupils from 2nde because we have to use an affine function :

$$F = 1.8 \times C + 32$$

For the editors : I found on the web issues 3,4 and 5 of cans of jams², will you send me issues 1 and 2, please ? A question for you : The title, cans of jam ², why the "²" ?
I do look forward to issue 7, I'll take time to read it with great pleasure.
Bye,

François, from Beauvais, 60

Editors' answer : That is an important moment : you are the first declared reader who did not receive our magazine, but found it! Congratulations! We try to send the magazine to everybody we can think of, but it is also published on the school site and the school blog, and you are the living proof that some people visit these sites! That will certainly be a relief and a joy for those who keep these sites alive, like Michel O. and Julie G.! And thank you for your precisions on degrees...
As for our title, it is as we said one of the best-kept secrets in the world, but we can tell you something : there were some clues in issue 4 (the summer issue). Enjoy your detective work!

The harness of Father Christmas's sleigh

Legends say that Father Christmas's sleigh is pulled by flying reindeers.

So, first, we do not actually know of any species of reindeer that can fly, but try to keep the enchantment and imagine they exist.

If each child on Earth gets 1Kg of presents, as there are approximately 370,000,000 children on planet Earth, the sleigh will bear about 378,000 t.

And given that a « traditional » reindeer can pull up to a maximum of 150 Kg,
378,000,000 / 150 = 2,520,000 reindeers

So Father Christmas needs more than 2.5 millions reindeers to pull his sleigh!

A medium reindeer measures 2 meters in length, so if the harness is made of reindeers which are connected two by two, that makes an harness of 2,520 Kilometers!!!

This must lead to problems of communication between reindeers and Father Christmas. For instance, when Father Christmas says «Go!», or «Stop!», since the speed of sound is 300 meters/second (0.3 Km/s), we have 2,520 Km / 0.3 Km/s = 8,400 s = 2h20.

So the head reindeers hear him only 2h20 after he spoke! We can suppose that Father Christmas doesn't communicate by voice... But how does he do, then?? Mystery....

And yet, every year you have presents under the Christmas tree; as you can see, Father Christmas resolved these problems, so **Christmas is really magic!!!**