



ZOOM

in on america

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The November issue of "Zoom in on America" is looking at space. We will talk to the extraordinary female astronaut Shannon Lucid, who spent 188 days in space on a single mission. We will also look at the universe through artists' eyes and try to catch up on what's new out there.

This year the world celebrates the 50th anniversary of space exploration. On October 4, 1957 the first artificial satellite Sputnik I, was launched into orbit by the Russians. Early the following year, the U.S. satellite Explorer I was launched into orbit. In that same year the National Aeronautics and Space Administration (NASA) was founded, and Russian Yuri Gagarin became the first man to walk in space, while American Neil Armstrong became the first man to walk on the moon.



Astronomy is by no means an invention of our times; it is actually one of the oldest known sciences. Man has always been curious about outer space, and ancient civilizations possessed unbelievably vast knowledge of the stars.

And yet, the real breakthrough in exploring outer space came with the development of space engines in the 20th century. The relatively short history of man's physical presence in space has rendered countless discoveries in manifold fields.

Ours truly is the Space Age.

Recommended Links:

NASA (<http://www.nasa.gov/>) has launched a highly recommended site "NASA's 50th Anniversary Website" (<http://www.nasa.gov/50th/home.html>). In addition to presentations on the history of space exploration, you can also find an interactive reference guide for the international space station (ISS): how it was built, how it operates currently, including what astronauts eat and how they sleep and exercise. You can also watch docking animation, see the crew of the 23rd shuttle mission to the ISS and much, much more.

A Woman Who Paced into Space

As a child, Shannon Lucid wanted to be an explorer, like the world's explorers she learned about in school. She was afraid, however, that everything would already be explored by the time she grew up. When she was a teenager, Shannon Lucid learned about the work of Robert Goddard, an American rocket scientist. She also read a lot of science fiction. Shannon Lucid realized that space was still a frontier to be explored. She pursued a career in science and was accepted in NASA's 1978 astronaut class, the first to include women.

Shannon Lucid's career as an astronaut has been marked by lucky coincidences. She owes her record for the longest stay in space by a woman to a little luck. Due to an unexpected delay in providing trans-

portation, her mission onboard the Russian station Mir was prolonged by six weeks. She spent the American record breaking hundred and eighty-eight days in space in good spirits, showing exemplary patience and passing the time with a pile of books, including her earthly discovery made in space: Charles Dickens. She carried out experiments the whole time that ranged from chemical and biotechnological, to physical and medical.

Now, ten years after this great feat, she travels the world meeting young people who want to excel in science and astronomy. She finds time to listen to them and to tell them of her own experience.

Shannon Lucid - a true ambassador of good will ☺

Study What You Really Enjoy

An Interview with Shannon Lucid, "Zoom in on America" Exclusive!

Dr. Lucid, what subjects would be useful for students to study if they want to prepare for a career in space?

Shannon Lucid: Well, they should study science and math and any kind of technical subject. And also, I would think it's very helpful for students to really study things they really enjoy because you should do what you really enjoy and do well in.

What aspect of everyday life was the most difficult to cope with when you were aboard Mir?

Shannon Lucid: I think what I disliked most about living on Mir was exercising every day. We had to exercise because you weren't using your muscles to walk, so you needed to exercise to make sure that you still had muscles when you got back. And we had to exercise every single day. It was very hot on Mir sometimes and so sometimes exercising was just not a lot of fun.

You've said that reading was a great help to you when you were on Mir. Are there any books you would recommend from that time?

Shannon Lucid: I really enjoyed reading when I was on Mir. I enjoy reading any time. And I enjoy a variety of books and I was fortunate that I did have a wide variety of books when I was on Mir, I had never read any Charles Dickens for whatever reason

and so I had a couple of his books on Mir and I really enjoyed them.

Did you ever feel lonely when you were on Mir or in space?

Shannon Lucid: No, I never felt lonely because I had wonderful crewmates that I was with and we just really enjoyed working together and socializing together so I never felt lonely.

Did you bring any special objects from home to help you feel less homesick?

Shannon Lucid: I didn't bring any special objects

because we couldn't really bring much with us, but on the Progress - there were several Progresses that came up. Progresses were shipped to bring supplies, so on the Progress there were letters from home, there were pictures from home, and that was really nice.

Do you think that some day people will be living in space?

Shannon Lucid: I certainly hope that the time will come and will come soon when space travel becomes much less expensive so that many more people can have the experience of living in space.

Thanks!



The Universe's Unceasing Inspiration

Regardless of the billions of dollars spent on exploring the universe, the countless discoveries already made, the continually faster and better space shuttles and the new galaxies discovered by powerful telescopes, a simple question remains: "Is there anybody out there?" The future will likely provide a clear answer to this question. But, when the answer

comes, will it strip space of its magic and appeal? Will it discourage the imagination of painters, poets, writers, filmmakers? Will space ever stop intriguing us? It is hard to say, but for the time being let's take a look at how the universe has inspired and continues to inspire scientists, artists, dancers and businesses.

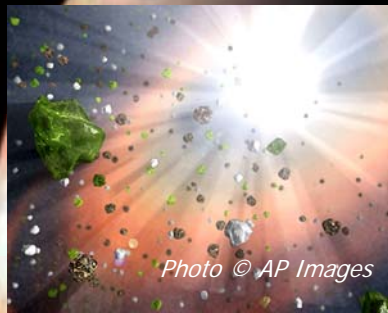


Photo © AP Images

This artist's work, provided by NASA shows dusty grains - including tiny specks of the minerals found in the gemstones peridot, sapphires, and rubies— that can be seen

blowing in the winds of a quasar, or an active black hole. The quasar is at the center of a distant galaxy. Astronomers using NASA's Spitzer Space Telescope found evidence that such quasar winds might have forged these dusty particles in the very early universe. The findings are another clue to an ongoing cosmic mystery: where did all the dust in our young universe come from?



Photo © AP Images

This image, provided by NASA, shows a computer generated artist's rendering of the International Space Station. Zarya module's arrays are retracted to allow room for the future deployment of the thermal control system radiators.

This artist's conception, provided by NASA on Wednesday, October 3, 2007, shows a binary-star, or two-star, system, called HD 113766, where astronomers suspect a rocky Earth-like planet is forming around one of the stars. Using NASA's Spitzer Space Telescope, astronomers have spotted a huge belt of warm dust swirling around a



Photo © AP Images

young star called HD 113766 that is just slightly larger than our sun. At approximately 10 million years old, the star is just the right age for forming rocky planets, the researchers say.

To the left, Morrison Dance company members pose in costume on stage for their performance of "Rendezvous." Morrison Dance Company's choreography incorporates imagery from the 2000 NASA's space shuttle Discovery mission and from pictures of planets.



Photo © AP Images

The world's first currency for use in space is called 'Quids'. A team of scientists from the National Space Centre and the University of Leicester worked together to design a currency that could withstand the stresses of space travel and the extreme environment found in the orbit around Earth. The group calls the money "Quasi Universal Intergalactic Denomination" or "Quids" for short.

This image, provided by NASA, shows a Hubble Space Telescope image of thousands of sparkling young stars nestled within the giant nebula NGC 3603. This stellar "jewel box" is one of the most massive young star clusters in the Milky Way Galaxy. NGC 3603 is a prominent star-forming region in the Carina spiral arm of the Milky Way, about 20,000 light-years away.



Photo © AP Images

To the right is Alan Chinchar's 1991 rendition of the Space Station Freedom in orbit. The painting depicts the completed space station. Earth is used as the image's backdrop. Freedom was to be a permanently crewed orbiting base to be completed in the mid 1990's. It was to have a crew of 4. The image shows four pressurized modules and six large solar arrays.



Photo by NASA

Activity Page

Win a Prize!

NOVEMBER 2007
CONTEST

Who was the first man
to walk on the moon?

Send the answer (with
your home address) to:
zoom@usinfo.pl

Deadline: December 5

Win a Prize!

The answer to the
October 2007 Contest
Question was:

New Orleans

The winners are:

**Gulshan, Pawel
and Anna**

CONGRATULATIONS

Prizes will be sent to
you via mail

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in on america

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■ Exercise 1. Answer these questions about Earth:

1. What are the names of the Earth's two poles?
2. What are the names of the Earth's two tropics?
3. What are longitude and latitude?
4. Where is the prime meridian?
5. What is the latitude and length of the equator?
6. What is the division line between the northern and southern hemispheres called?
7. Give the longitude and latitude of the place where you live.

■ Exercise 2. Answer the questions and provide the dates:

What solstices and equinoxes are there in a year?

When did or will they fall in 2007?

■ Exercise 3. Speaking. "Man on the Moon."

Describe the man in the picture.

What challenges do astronauts face in their work?

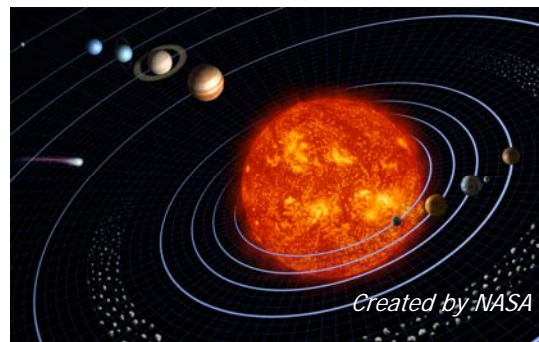
What benefits compensate the for the risk of the job?

Would you like to be an astronaut? Why? Why not?



■ Exercise 4. Below are the names of the eight planets and three dwarf planets of the solar system. Put them in the right order starting with the one farthest from the sun:

Mars, Eris, Jupiter, Pluto, Mercury, Neptune, Jupiter, Venus, Earth, Uranus, Ceres.



Glossary - (in the order of appearance)

grain - a small hard particle of a substance such as salt or sand

speck - a very small piece of a powdery substance

gemstone - a jewel

peridot - a green gem variety of olivine, composed of magnesium iron silicate

quasar - stands for QUASI-stellar radio source, an extremely bright and distant active galactic nucleus

withstand - to survive some force or action, to not give in

incorporate - to put or take in as a part of a whole, include

rendering - a work of visual art

array - an ordered arrangement

deployment - bringing into action

nestle - to settle or lie comfortably within or against something

nebula - a cloud of gas and dust in outer space

stellar - of or relating to a star

cluster - a group of stars or galaxies forming a close association

rendition - a visual representation

backdrop - the setting or background of a scene