



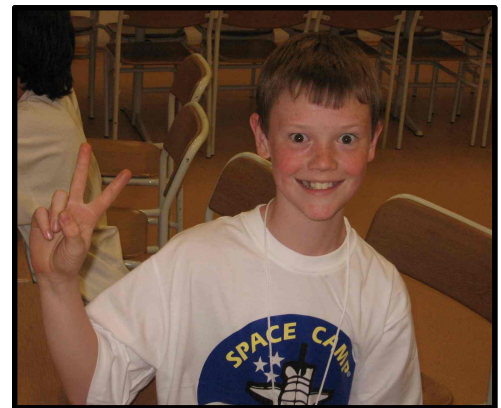
Global Friendship Through Space Education

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**ASTRO**

DECEMBER 17  
2007

# Partner School Science Program Newsletter



**WELCOME TO ASTRO, THE  
PARTNER SCHOOL SCIENCE  
PROGRAM NEWSLETTER!**

**EACH WEEK WHEN YOU CHECK  
YOUR MAILBOX, YOU WILL FIND  
COOL PICTURES, FUN FACTS,  
SPACE NEWS, AND MORE....**

**TO GET THE MOST OUT OF  
BEING IN THE PARTNER  
SCHOOL SCIENCE PROGRAM,  
MAKE SURE TO SEND  
MESSAGES TO YOUR E-PAL AS  
OFTEN AS YOU CAN!**

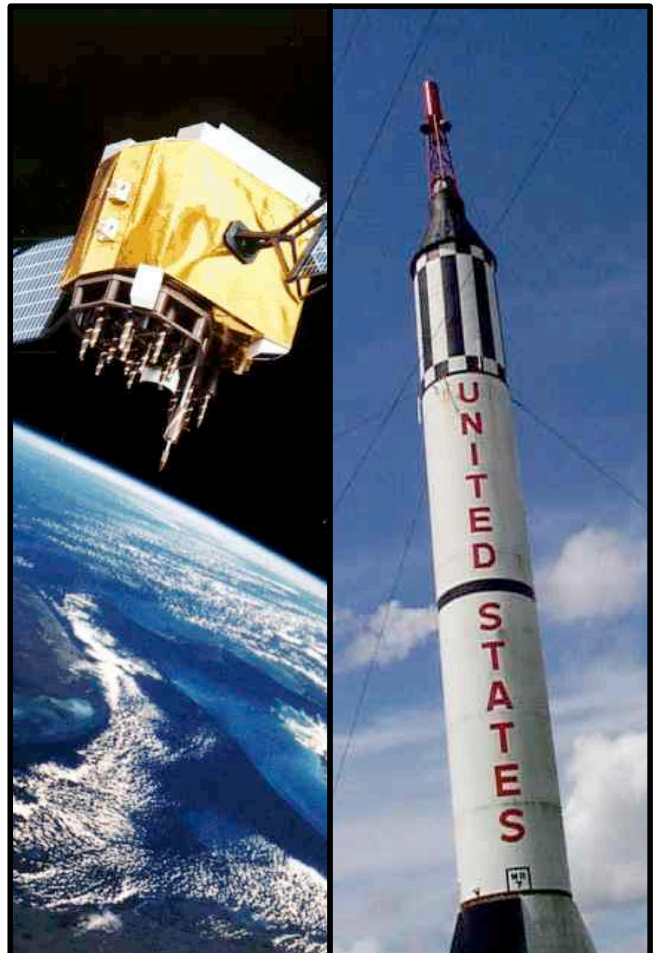
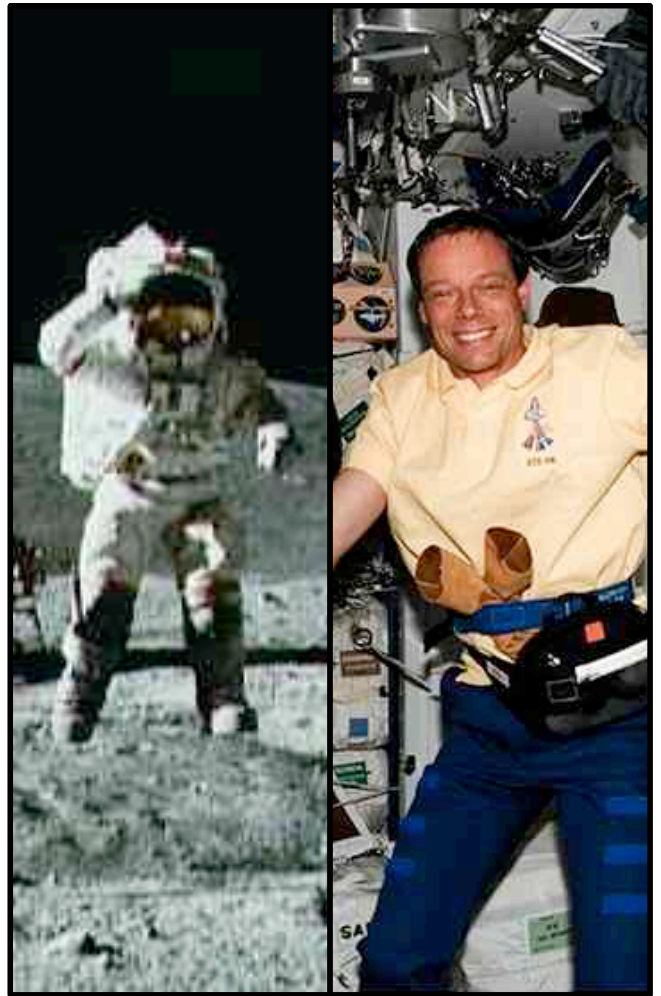
**DO YOU HAVE SOMETHING YOU  
WOULD LIKE TO SEE IN ASTRO?  
IF SO, ASK YOUR TEACHER TO  
SEND AN E-MAIL TO  
TYILDIRIM@GFTSE.ORG WITH  
THE PHOTO, STORY, OR LINK.  
YOU MIGHT JUST SEE IT IN  
NEXT WEEK'S ASTRO!**

**TEACHERS CAN SUBMIT  
PICTURES AND STORIES OF  
THEIR CLASS TO BE INCLUDED  
IN THE PARTNER SCHOOL  
SPOTLIGHT SECTION!**

**IN THIS ISSUE:**

**ASK AN ASTRONAUT: DR. DREW  
GAFFNEY**

**PARTNER SCHOOL SPOTLIGHT:  
GEVANIM JUNIOR HIGH  
SCHOOL, ISRAEL**



# ASK AN ASTRONAUT: DR. DREW GAFFNEY

Dr. Gaffney has read your questions and the answers are in! Global Friendship would like to thank Dr. Gaffney for taking the time to participate in this new section of Astro.

**Daniel from MEF International School in Izmir, Turkey, asks:** What were the purposes of your travel to space? Did you enjoy these or feel like "Boy, I can't wait till this is over!"?

Daniel, the purpose of our mission, Spacelab Life Sciences 1, was to understand how the body adapts to weightlessness and then how it readapts to Earth's gravity. I'd been studying that in some form for most of my career as a physician and professor at the University of Texas. The spaceflight was a great opportunity to learn things that couldn't be learned on Earth. I would have been happy if the flight had been 9 months instead of 9 days, but with the Shuttle, that wasn't possible. I was happy to be home, see my family, etc. and to have successfully completed our mission, but I never felt like I wanted it to be over.

**Risaury from MS324 in New York City, USA, asks:** Are you scared when you are about to land?

Risaury, interestingly, launch is more dangerous, but I think most of us worry more about landing. Most astronauts have trained a long time for their mission, so at launch, there's the excitement and anticipation of finally getting into space. At the end of the mission, you've been in space, met your goal, and are ready to come home, be with our family, etc. You're very close, but not there and still have the dangers of re-entry. I remember thinking, "...only another few minutes and I'll have done it. I hope this thing (Columbia) stays in one piece. We're so close..." Ironically, it was at about the same point in the mission when Columbia exploded and killed its crew.

**Saskia from MEF International School in Izmir, Turkey, asks:** Dr. Gaffney, what do you think is the most important thing to learn before going to space?

Saskia, good question! I think there's a lot of technical information that must be mastered, but I am convinced that it's far more important to be good at teamwork and communication. That's probably true in almost everything we do. We rarely work alone and almost never can we do complex tasks without communicating with others.



**Dr. Drew Gaffney**



**Dr. Gaffney speaks with students at Space Camp Turkey.**

**See Next Page for More!**

# ASK AN ASTRONAUT: DR. DREW GAFFNEY

**Brandon from MS324 in New York City, USA, asks:** How do you go to the bathroom in space?

Brandon, there is a space toilet, located just aft of the entry hatch in the mid-deck. It's about the size of a phone booth. There's a toilet that uses a fan to create airflow whenever someone is having a bowel movement. For urination, there's an attached hose with a funnel-shaped device. The men just urinate into the funnel. The women's device is shaped so they can hold it against their body and urinate. Afterward, the funnels are rinsed and put into a holder that is color-coded, so each person can get their own.

**Dror from The Science & Knowledge School in Israel asks:** We heard that the bone mineral density is reduced in space. Our teacher told us that bone builds itself according to tension applied to it. Can NASA build a training machine to be used in space?

Dror, bones require "loading" or weight to keep strong. A good analogy on Earth is when someone has a spinal cord injury and is paralyzed. That person begins to lose calcium and bone strength within days of becoming paralyzed. Because there's no weight on the bones in space, NASA has developed ways to load the bones during exercise. The simplest way is to use a harness over the shoulders and hips while running on the treadmill. The harness attaches the astronaut to the treadmill with bungee cords, which create loading on the bones. It's not the same as gravity, but it helps. They also use drugs that encourage the bones to stay mineralized. These drugs were invented to treat bone loss in patients on Earth.

**Anajari from MS324 in New York City, USA, asks:** Have you seen anything weird in space?

Anajari, probably nothing weird, like aliens, but lots of strange and interesting stuff. When the shuttle dumps excess water, it creates a massive blizzard that goes out behind the shuttle in a long white tail. We saw the Russian space station Mir. It was strange to think we were the only people in space, but couldn't visit or talk to each other. There was also a time when Mars, Venus, and Jupiter were all lined up, with the moon. It was neat to see them together. Finally, just seeing all the places I knew as a child. Places that would take all day to drive took seconds to cover. I could see the whole area where I spent my childhood. It was very big to a child, but only a small spot on the globe to an astronaut.



**Dr. Gaffney and other Astronauts working**



**STS-40 Mission Patch**



**The crew of STS-40**

# *PARTNER SCHOOL SPOTLIGHT: GEVANIM JUNIOR HIGH SCHOOL, ISRAEL*



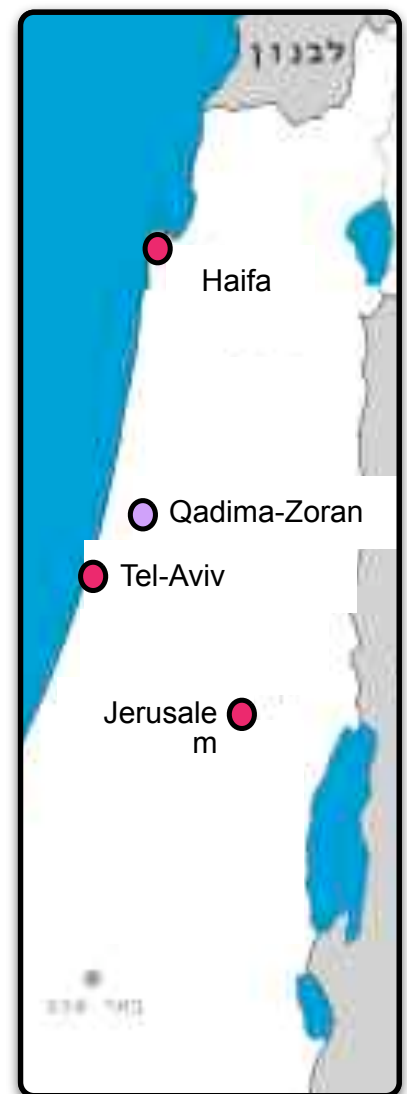
Gevanim Junior High School recently joined the Partner School Science Program. Their school is located in Qadima-Zoran, Israel, North of Tel-Aviv. (See Map to Right) Qadimia-Zoran is a small town near the sea with 17,000 people.

Gevanim is a relatively new school that hosts 500 students in 15 classes for 7th, 8th, and 9th grades. The name of the school, which means "shades of color" in Hebrew, was chosen by students and parents.

The 8th grade class that participates in the Partner School Science Program is led by teacher Miri Oren and has 16 boys and 9 girls.

To see what a day in the life of a student at Gevanim is like, check out all of the cool pictures on the next page!

Special Thanks to Miri Oren for sending us all this great information and pictures of her class!





# *ASTRO NEWS:*

Thanks for reading the first 10 issues of Astro this school year! We hope you have enjoyed them. Astro will start back in January of 2008 with all new segments, including one where you will be able to ask an engineer at NASA anything you want!

Partner School Spotlight is a great opportunity for the schools to learn about each other. If you would like your school and class featured in the Partner School Spotlight, like Gevanim school was this week, please e-mail us pictures and information about your school.

All of us at Global Friendship want to wish you and your family a happy and safe holiday season and look forward to seeing you in the new year!



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