

Summarizing

Level 4

A Collection of Readings

**Reading
Wings** 4th
Edition

The **Savvy
Reader**

This project was developed at the Success for All Foundation under the direction of Robert E. Slavin and Nancy A. Madden to utilize the power of cooperative learning, frequent assessment and feedback, and schoolwide collaboration proven in decades of research to increase student learning.

The Savvy Reader—Summarizing, A Collection of Readings

© 2011 Success for All Foundation. All rights reserved.

Produced by the Reading Wings 4th Edition Team

Director of Development: Nancy A. Madden

Assistant Director of Development: Kate Conway

Project Manager: Wendy Fitchett

Rollout Coordinator: Kate Conway

Developers: Kathleen Collins, Allison Dower, Richard Gifford, Angie Hale, Allison Hoge, Susan Magri, Brian Sevier

Interactive Whiteboard Developers: Austin Jones, Chris Jones, Tyler Keen, Adrian Mathenia, Becca Slavin

Editors: Marti Gastineau, Mary Jane Sackett, Janet Wisner

Project Coordinator: Kristal Mallonee-Klier

Designers and Production Artists: Dan Birzak, Debra Branner, Michael Hummel, Susan Perkins

Media: Tonia Hawkins, Peter Lance, Jane Strausbaugh

Proofreaders: Meghan Fay, Samantha Gussow, Betty Wagner

Online Tools: Michael Knauer, Victor Matusak, Terri Morrison, Christian Strama, Mary Conway Vaughan

Illustrators: James Bravo, Gina Capaldi, Jason Lego, Lylia Walker

Photo Credits: Photos used in the student readings are from the following sources:

- Burning Well
- Library of Congress American Memory
- Morguefile.com
- NationalAtlas.gov
- National Oceanic and Atmospheric Administration
- National Park Service
- National Aeronautics and Space Administration
- PDPhoto.org
- University of Texas Libraries
- U.S. Army
- U.S. Department of Agriculture
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Wikimedia Foundation



A Nonprofit Education Reform Organization

200 W. Towsontown Blvd., Baltimore, MD 21204
PHONE: (800) 548-4998; FAX: (410) 324-4444
E-MAIL: sfainfo@successforall.org
WEBSITE: www.successforall.org



Table of Contents

◆ Edgardo's Birthday Party.....	1
◆ The Gift.....	5
◆ Making the Team.....	11
◆ Pals of Puppies.....	15
◆ Bows for Betties.....	17
◆ Aaron Burr and the Stable Boy.....	19
◆ Leopards.....	55
◆ There's a Wild Thing in My Bedroom!.....	61
◆ Giant Pandas.....	64
◆ The Largest of the Small Cats: the Clouded Leopard...	66
◆ Beyond the Sky: The Solar System, Deeper Space, and the Scientists.....	69



Edgardo's Birthday Party

S.H.O.R.T. News

Volume 3, Number 7

We Summarize for You!

www.shortnews.org

Writers Wanted!



New "Review" Section Seeks Summarizers

We're looking for a few good summarizers. Coming soon, the S.H.O.R.T. News will feature a "Reviews" section to give you the essential information on a variety of books and movies. To bring you the best summaries we can, the S.H.O.R.T. News is looking for individuals who really know how to break down a book or movie to its most important elements and share that information in paragraph form.

If you or someone you know is a summarizing savant, or you just love to write paragraphs, please come see us at the S.H.O.R.T. News office. Applicants must be able to read a book or view a movie and write a paragraph answering essential questions about characters, setting, story problem, events, and ending.

Using the strategies that we provide, our reviewers will be able to summarize just like the experts do. In fact, many of our previous summarizers have gone on to fame and fortune in the fast-paced world of professional summarizing.

Many of today's most famous summarizers, such as the world-renowned Melville Felt, got their start right here at S.H.O.R.T. News. His experience was limited when he first joined the staff, but he quickly caught on to how easy summarizing can be when using the proper strategies. He became one of our top summarizers while summarizing countless books, movies, news stories, and his favorite poems. Melville makes himself available to help young summarizers when they have difficulty finding the essential

(continued on page 2)

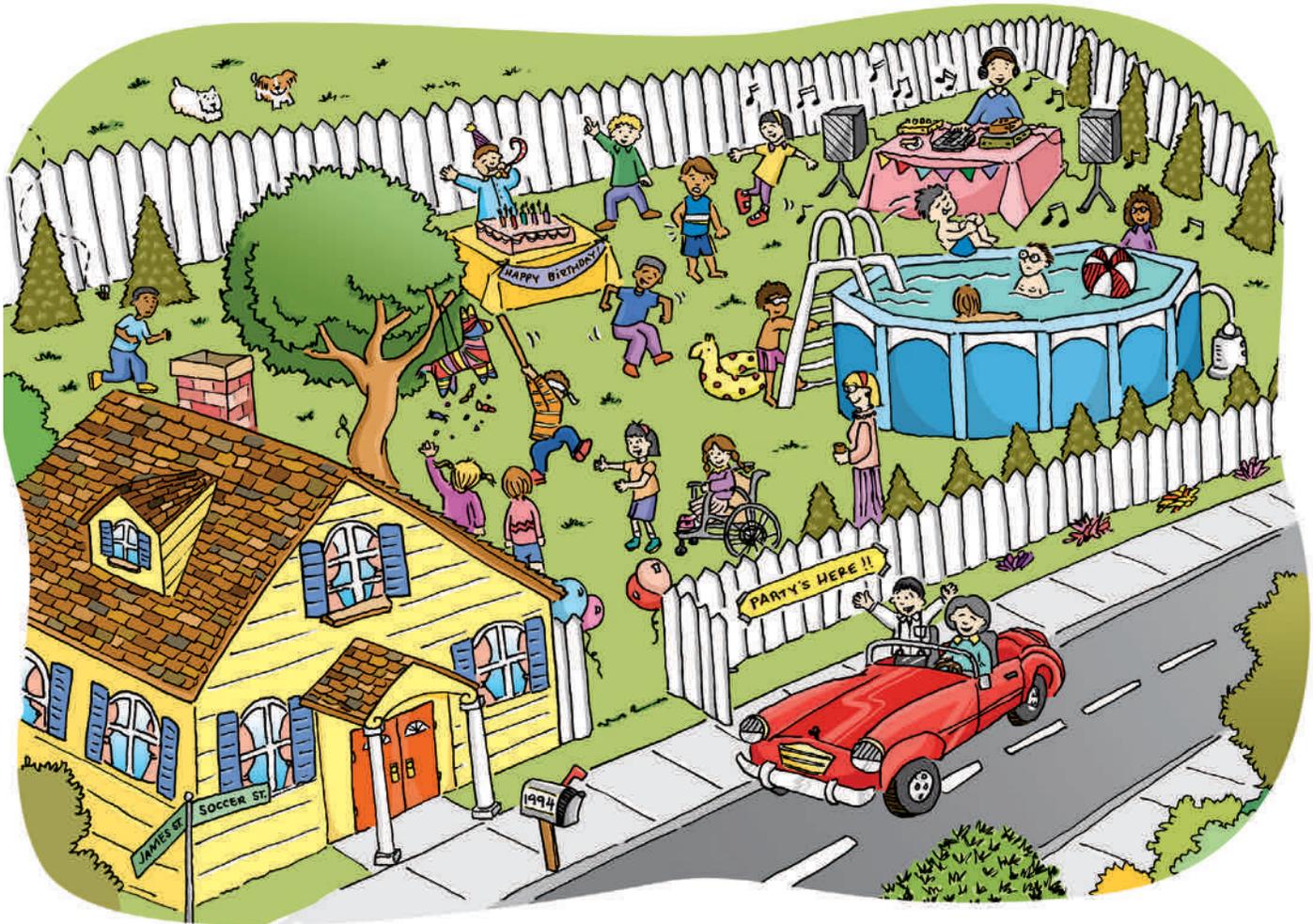
Summarizing Is Important

This year at the S.H.O.R.T. School News, we've been stressing the importance of summarizing in helping to understand what you've read. In this issue we will continue to help you, our valued readers, summarize whatever it is you may be reading.

Summarizing is not as difficult as it may sound. A summary is simply a paragraph detailing the important parts of a piece of writing. Once you know the strategies for good summarization, you can summarize anything that you may read: magazines, novels, news stories, poems, and anything else you may find yourself reading. Summarizing continues to be the best way to communicate ideas from a piece of writing quickly and accurately. A summary highlights the basic facts of a story or news article, making them stand out.

So now that you know the importance of summarizing, we know that you will have fun becoming a good summarizer.

The Editor's Challenge



List what you think would be important to tell a friend about the party.

1. Edgardo has been a good friend of mine since the second grade.
2. He mailed me an invitation to his tenth birthday party. His party will be at his tía's house, because she has a swimming pool.
3. My mother drove me to the party. I was careful to put the invitation in my pocket because it had Edgardo's aunt's address, 1994 Soccer Street. I thought the address was funny because I was born in 1994, and I'm a terrible soccer player!
4. The party was a blast! Everyone went swimming! There was a piñata, a birthday cake, and a bag of favors for each guest. Some of the favors were candies from Mexico shaped like tropical birds and fruit.
5. My favorite part of the party was the music. There was a DJ who played all the songs I requested. Lots of the kids were dancing. Edgardo danced with some girls and he danced with his aunt. He loves to dance. I noticed that he held his side while he danced. He said he had a cramp—probably from swimming.

The Editor's Challenge



- 6.** Many of Edgardo's relatives were at the party. His grandparents bought him a soccer uniform. His Aunt Jessie and Uncle Pedro got him a savings bond. Edgardo wasn't sure what a savings bond was, but he thought it looked important. I got him a chemistry set. Edgardo thought it looked like it came from a horror movie. He pretended to eat some of the chemicals. (At least, I thought he was pretending!)

- 7.** The party ended with a relay race. Edgardo couldn't run because his side hurt and he felt kind of sick. I thought he ate too much candy and cake, but he said he hadn't eaten any. My team won the relay race!



- 8.** When our parents came to pick us up, Edgardo waved good-bye to us. He felt worse and worse and had to be taken to the hospital. I think Edgardo's party was more fun for me than for him.





The Gift

by Elizabeth McGraw-Austin

S.H.O.R.T. SCHOOL News

Volume 3, Number 7

We Summarize for You!

www.shortnews.org

Writers Wanted!



New "Review" Section Seeks Summarizers

We're looking for a few good summarizers. Coming soon, the *S.H.O.R.T. News* will feature a "Reviews" section to give you the essential information on a variety of books and movies. To bring you the best summaries we can, the *S.H.O.R.T. News* is looking for individuals who really know how to break down a book or movie to its most important elements and share that information in paragraph form.

If you or someone you know is a summarizing savant, or you just love to write paragraphs, please come see us at the *S.H.O.R.T. News* office. Applicants must be able to read a book or view a movie and write a paragraph answering essential questions about characters, setting, story problem, events, and ending.

Using the strategies that we provide, our reviewers will be able to summarize just like the experts do. In fact, many of our previous summarizers have gone on to fame and fortune in the fast-paced world of professional summarizing.

Many of today's most famous summarizers, such as the world-renowned Melville Felt, got their start right here at *S.H.O.R.T. News*. His experience was limited when he first joined the staff, but he quickly caught on to how easy summarizing can be when using the proper strategies. He became one of our top summarizers while summarizing countless books, movies, news stories, and his favorite poems. Melville makes himself available to help young summarizers when they have difficulty finding the essential

(continued on page 2)

Summarizing Is Important

This year at the *S.H.O.R.T. School News*, we've been stressing the importance of summarizing in helping to understand what you've read. In this issue we will continue to help you, our valued readers, summarize whatever it is you may be reading.

Summarizing is not as difficult as it may sound. A summary is simply a paragraph detailing the important parts of a piece of writing. Once you know the strategies for good summarization, you can summarize anything that you may read: magazines, novels, news stories, poems, and anything else you may find yourself reading. Summarizing continues to be the best way to communicate ideas from a piece of writing quickly and accurately. A summary highlights the basic facts of a story or news article, making them stand out.

So now that you know the importance of summarizing, we know that you will have fun becoming a good summarizer.



Miguel Velasquez pulled his worn-out hat over his shaggy hair as he walked up the street. He hummed a tune his father, a trumpet player, had taught him. But Miguel's father had died three years before, when Miguel was nine. After that everything had seemed to go wrong. Miguel's mother, Katrina, was pregnant and the family did not have enough money to stay in the house where they lived. They had to move to a small, run-down house that they shared with another family. The house was so small, and the family so poor, that Miguel, his mother, his 8-year old brother Jorge and his 2-year old sister Isabella all had to sleep in the same room, with just blankets on the floor.

Miguel's mother became very sick, and she was forced to stay in bed for many weeks. With each passing week, she grew paler and softer of voice. Miguel knew he had to get some medicine to help his mother. An old woman from the neighborhood had said that if Miguel's mother got a tea made from a special combination of roots and herbs that she would get better, so Miguel took the last of their money to the old woman to buy the medicine.

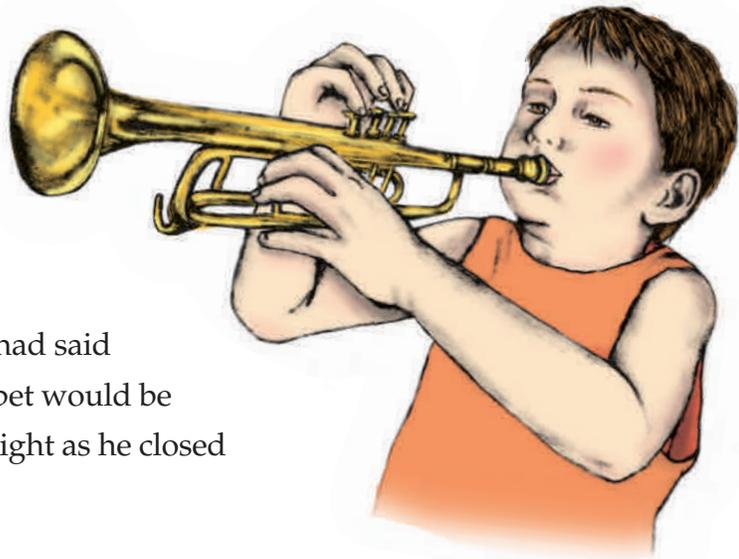
But as Miguel walked up to his house, he heard crying inside. It wasn't just the crying of his little sister, who sometimes cried for no reason. Miguel could also hear the sobs of Jorge, his brother. As Miguel passed through the front door and his eyes adjusted to the darkness in his house, he saw his brother and sister kneeling by his mother.

"She's gone, Miguel," said Jorge.

"Mama!" said Isabella. Then she turned to Miguel and started moaning and rubbing her stomach.

Miguel put the medicine on a dusty table and sat down slowly in a chair with one broken leg. He knew that Isabella was asking him for food. But he didn't have any. Miguel was very sad, but he couldn't cry now; he had to think.

There was no food in the house. There was no money to bury his mother. Miguel realized that it was time for him to try to get some money for his family. Everything they owned had been sold during the weeks of his mother's illness. Everything, that is, except for his most precious possession—the trumpet that his father had left him. Miguel's father had only taught him to play one song on it, but he took the trumpet out and played that one song every day. His mother would smile when he played. Then he would wipe the trumpet off and put it carefully away in the case. Miguel thought that he might have to sell the trumpet to get money to bury his mother. He opened the case where it lay and looked at it. It gleamed. He thought about how his father had said that if he ever died, that the trumpet would be Miguel's. He felt his throat grow tight as he closed the case, but he didn't cry.



He picked up the trumpet case and walked out the door. He walked slowly down the road to the marketplace.

As he walked, he thought of the song his father taught him. It made him feel better. He started to hum the song to himself as he approached the marketplace. The song grew louder and louder in his head, until he realized that he was really hearing it! There was a guitar player in front of the bus station in the marketplace, playing the song. People who got off the bus would stand and listen, and clap when he stopped playing.

“Hola, Miguel,” said the guitar player as Miguel walked closer. Miguel looked at the man closely—then he recognized him—he had been a friend of his father’s. They had been in a band together. “Hola, Señor,” said Miguel, sadly.

“How are you?” said the man.

Miguel told the man about how his mother had died, about having no money to bury her, and about how his sister was hungry. He even told him that he was going to sell the trumpet to get the money he needed. All the sadness welled up inside of him as he talked, but he did not cry.

The man listened with a serious expression on his face. Then he spoke.

“Miguel, didn’t your father teach you how to play that trumpet?”

“Only one song,” said Miguel. “That same song you were playing.”

“You know this song?” asked the man. “Could you play it with me? But your trumpet is a lot louder than my guitar, so put your hat over the bell of the trumpet to soften the sound.”

Miguel took the trumpet out of its case and began to play. All of his feelings poured out as he played the song. People stopped to listen and smiled with enjoyment. When the song was over, Miguel started to put his hat back on his head, but a man came up and put money in it! Then an old lady put money in. Then a mother gave a toddler some money to put in the hat.

“Now you can go buy some fruit and rice for your brother and sister and yourself,” said the man. “When you’ve all eaten, come back and we’ll play some more. But don’t sell that trumpet along the way—it is worth more to you than it is to anyone else!”

Miguel thanked him and ran up the street to the store, still carrying the trumpet in a case. He took food back to his brother and sister who ate hungrily. Then he went back to the marketplace to play his trumpet. At the end of the day, there was more money in the hat, and Miguel took it home to give to a man to bury his mother.

Every day after that, Miguel would take the trumpet to the marketplace and play. The man taught him a new song every week, and eventually another guitar player and a bongo drum player joined them. The crowds that watched them grew larger and larger, and more and more money found its way into Miguel’s hat.

One day, when Miguel had grown tall, a man pulled up in a big car and asked the band to play in his club. The band became very popular, and people would come to dance to their music. As the years passed, music from their island became famous around the world, so Miguel and the band traveled to the United States, to Africa, and to Europe. Everyone loved their music.

Miguel never forgot the feelings he had that day when he first played the song with the man. And every time he played it, whether it was in Europe, Africa, the United States, or in his country, he thought of how the song was his parents’ gift to him.





Making the Team

S.H.O.R.T. News

Volume 3, Number 7

We Summarize for You!

www.shortnews.org

Writers Wanted!



New "Review" Section Seeks Summarizers

We're looking for a few good summarizers. Coming soon, the S.H.O.R.T. News will feature a "Reviews" section to give you the essential information on a variety of books and movies.

To bring you the best summaries we can, the S.H.O.R.T. News is looking for individuals who really know how to break down a book or movie to its most important elements and share that information in paragraph form.

If you or someone you know is a summarizing savant, or you just love to write paragraphs, please come see us at the S.H.O.R.T. News office.

Applicants must be able to read a book or view a movie and write a paragraph answering essential questions about characters, setting, story problem, events, and ending.

Using the strategies that we provide, our reviewers will be able to summarize just like the experts do. In fact, many of our previous summarizers have gone on to fame and fortune in the fast-paced world of professional summarizing.

Many of today's most famous summarizers, such as the world-renowned Melville Felt, got their start right here at S.H.O.R.T. News. His experience was limited when he first joined the staff, but he quickly caught on to how easy summarizing can be when using the proper strategies. He became one of our top summarizers while summarizing countless books, movies, news stories, and his favorite poems. Melville makes himself available to help young summarizers when they have difficulty finding the essential

(continued on page 2)

Summarizing Is Important

This year at the S.H.O.R.T. School News, we've been stressing the importance of summarizing in helping to understand what you've read. In this issue we will continue to help you, our valued readers, summarize whatever it is you may be reading.

Summarizing is not as difficult as it may sound. A summary is simply a paragraph detailing the important parts of a piece of writing. Once you know the strategies for good summarization, you can summarize anything that you may read: magazines, novels, news stories, poems, and anything else you may find yourself reading.

Summarizing continues to be the best way to communicate ideas from a piece of writing quickly and accurately. A summary highlights the basic facts of a story or news article, making them stand out.

So now that you know the importance of summarizing, we know that you will have fun becoming a good summarizer.

The Editor's Challenge

Making the Team

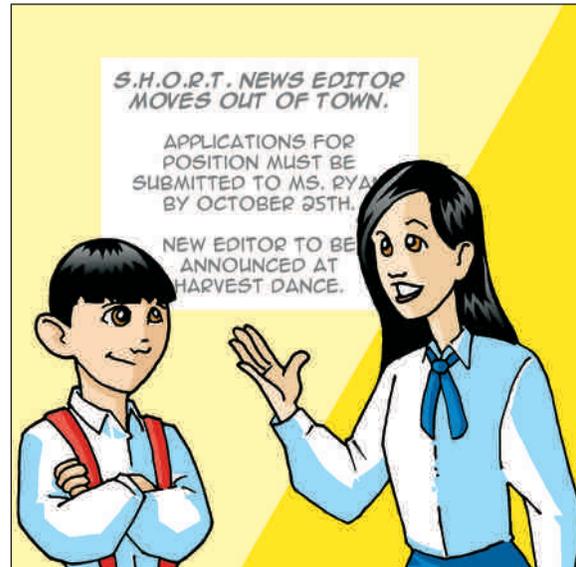
Partner 1 reads page 1 and Partner 2 retells; then you switch, so Partner 2 reads and Partner 1 retells.

Mica wasn't always a popular student at South Henry O. R. Thomas Elementary School, or the editor of the *S.H.O.R.T. School News*. In fact, if you had asked anyone on campus about Mica, that is if you could have found anyone who knew her, they would have told you that she was smart, a little bossy, and kept to herself. Mica's only friend was a boy one year younger than she who lived down the street. His name was Radford.

Radford didn't have many friends either. He was often teased by the other kids. When he tried out for soccer, he scored a goal for the other team. When he tried out for basketball, none of his shots found the net. During swimming tryouts, he nearly drowned! Even worse, his parents made him wear suspenders. His family didn't have much money, so his mom bought his pants one size too big so he could grow into them. He needed the suspenders to hold them up. The kids would snap his suspenders when Radford walked down the hall. Everyone started calling him Snappy.

Mica tried hard to fit in too. She thought about trying out for cheerleading, but decided it wasn't her thing. She did try out for the girls' volleyball team, but fell into the net and got so tangled up, she had to be cut loose.

Mica and Radford rode the bus to school together, and it was on the bus that their friendship blossomed and school became less lonely for both of them.



One day Mica read a poster on a wall near the principal's office: **S.H.O.R.T. News editor moves out of town. Applications for position must be submitted to Ms. Ryan by Oct. 25. New editor to be announced at Harvest Dance.** Mica grew very excited. "I can write really well!" she exclaimed. "What about you, Radford?"

"Well, actually, I'm a pretty good writer too," Radford replied.

The *S.H.O.R.T. School News* needed a lot of help. The articles were neither short nor interesting.

In fact, they were very long, filled with unnecessary details, and very boring. Most kids never even read the school paper. So Ms. Ryan was very surprised when Mica and Radford rushed breathlessly into her classroom to apply for the editor's position. "You'll have to write an essay explaining what you would do to make the *S.H.O.R.T. School News* a better school newspaper," she told them. "No problem!" cried Mica and Radford together.

The Editor's Challenge

Making the Team

(Partner 2 reads, Partner 1 restates)

"I'm suffocating in this costume, Dad," Radford complained, fussing with the straw in his scarecrow costume. "Could you roll down your window so I can get some air?"

Neither Radford nor Mica had much interest in going to the Harvest Dance, but they were dying to find out who would be named editor of the school newspaper. So, as Radford's dad drove them to school, the duo of Scarecrow and Pumpkin (Mica, in a hand-me-down costume) pledged that if one of them were named the editor, he or she would choose the other for the staff.

Just as the school band finished playing a tune ("I wish they knew some rock and roll," one student was overheard commenting.), Ms. Ryan stepped to the microphone. "Well, it looks like the *S.H.O.R.T. School News* has a new editor," she said, "It's Mica! Give her a round of applause everyone!"

Mica froze. Her face flushed bright red. "Mmmme?" she spluttered.

"Yes, Mica," Ms. Ryan continued, "Your suggestion that we make articles shorter and include just the important events, as well as your plans to include cartoons and book and movie reviews, earned you this prestigious position. Congratulations!"

Weeks passed and the students of South Henry O.R. Thomas Elementary found that the *S.H.O.R.T. School News* had really improved. The paper now reported the results of the volleyball, basketball and soccer games and had interesting articles like the one about the time the entire cheerleading squad had a bad hair day.



One day the captain of the swimming team bumped into Radford in the hall. "Hey, Snapp—I mean Radford, I liked your story about the swimming team," he said. "By the way, cool suspenders. I like the look."

Radford couldn't wait to tell Mica what had happened and about how amazing it was to be on the *S.H.O.R.T. School News* team and about how great school was now. He went on and on. "I agree, Radford," Mica replied, "But remember, keep it SHORT, keep it very, very SHORT!"



Pals of Puppies

1. José loved dogs. He loved big dogs and little dogs. He loved active dogs and lazy dogs. He would give anything to have a dog of his own. There was just one problem. His dad and his sister were allergic to dogs. If a dog got anywhere near their house, the sneezing began.

2. José wasn't going to let that small problem get in the way. He knew exactly what to do. He was going to start his own business. A dog-walking business would be a great way to make money doing what he loved: spending time with dogs.

3. José started by creating fliers. The fliers had a picture of José's favorite dog, a black lab. In an arc across the top, the flier read Pals of Puppies in black letters. It provided José's name and phone number and offered dog-walking services every day after 3:00. José posted the fliers all over the neighborhood on telephone poles, and he put them in people's mailboxes. Then, he went home and waited for the phone calls.

4. Mr. Rodriguez called first. "José! I can't believe we didn't think of this sooner. Mrs. Beasley would love to be walked every afternoon. I can pay you two dollars a day. What do you think?" José adored Mrs. Beasley, a fun-loving beagle. "Absolutely Mr. Rodriguez! That price sounds good to me, and I'd love to walk Mrs. Beasley!" José had his first customer.

5. Then Mrs. Hines called. Soon after, José heard from Mr. West, Mr. Gaines, and Mrs. MacDonnell. That was five dogs! Luckily, all the dogs got along, even though they were different sizes. There were two Pomeranians, which were little, two Labradors, one chocolate and one yellow, and, of course, Mrs. Beasley. But then Mrs. Teasdale and Ms. Gallon came to José's door. They each held a flier.

6. “José! We both need our dogs walked. My Shorty needs to get out of the house more! And Ms. Gallon wants Bear to be walked too,” said Mrs. Teasdale. José realized the problem immediately. Shorty was a Great Dane and she was BIG! Bear was a Saint Bernard—and bulky! There was no way José could walk Bear and Shorty at the same time! José didn’t want to turn down any customers. The more customers he had, the more time he got to spend with the dogs. He quickly thought of a solution.

7. “Mrs. Teasdale, Ms. Gallon...I have a solution. At 3:00 each day, I’ll walk Mr. Rodriguez’s beagle with Mrs. Hines’s chocolate lab and Mr. West’s Pomeranian, and I’ll take Shorty along. Then, at 4:00, I’ll walk Mr. Gaines’s Pomeranian, Mrs. MacDonell’s yellow lab, and Bear. I think those two groups would walk well together, and I won’t have two big dogs pulling me down the street. What do you think?” asked José.

8. “That sounds fabulous to me, José. What do you think, Ms. Gallon?” asked Mrs. Teasdale. “I think it’s great too. When will you start, José?” replied Ms. Gallon. José said, “I can start tomorrow. Just make sure the dogs have their collars and leashes on them at the right time, and I’ll be by to pick them up. Thank you very much for your business!” José could not wait for the next day. He knew he had better get his rest though, because now he had seven energetic dogs to walk!

9. After school on Tuesday, José was ready. At 3:00, he gathered Mrs. Beasley, Louie, Snowflake, and Shorty and headed to the park. He and the four dogs ran and played. The dogs rolled in the grass and playfully barked at one another. His first dog-walking job was a success! By 4:00, he had returned all the dogs to their homes and picked up Bear, Daisy, and Butter. Even though there was one less dog to walk at 4:00, these three gave José a run for his money! They were a hyper bunch who loved the park and loved to jump on José and lick his face. By 5:00, José was fully satisfied with his first day as a dog-walker. And, he was ready for dinner!

Bows for Betties

Comprehension Questions

Read *Bows for Betties*, and answer the following questions.

1. More than anything in the world, Lena wanted a new bike. To get a bike, Lena needed to make money. She decided that now was the time. So she started to think of ways to earn money to buy a bike.
2. As Lena was thinking, her twin sisters, Carly and Cameron, crawled into the room. They crawled right up to the foot of Lena's bed where she sat. They looked up at their sister with bright eyes and wide smiles. Lena looked down at their little heads and saw colorful bows in their hair.
3. Then Lena's mom walked in. "What are you up to, Lena?" her mom asked. "Mom, where did you get the bows for the girls' hair?" Lena asked in return. "I got them at my baby shower. I'd like to get the girls more, but they're so expensive for such little bows!" "Mom, that's about to change!" Lena exclaimed. "I'm going to start making and selling them to raise money for a new bike," Lena explained. "Well, that sounds like a great idea," Mom said.
4. Lena had always been good at crafts. And she loved going to the craft store, so that's where she went that afternoon. She used her birthday money from her grandmother to buy some ribbon and a couple of charms, along with glue and plain barrettes. She made sure to keep her receipt, and when she got home she wrote down exactly how much all of her supplies cost. Then she got started.
5. She cut all the ribbon first. She had purchased red ribbon, pink ribbon, and yellow ribbon. She cut each spool into even pieces. Next, she tied each piece into a perfect bow. She dabbed a bit of glue in the center of each bow to keep it tied. Then, she tied each bow onto one of the barrettes. This was a good start. But she couldn't wait to start finishing the barrettes with the charms.

6. She added flower charms to the pink and yellow bows. She added holiday charms to the red bows. She even had some snowflake charms that looked good on the red bows. “Perfect!” she thought. She ran to find her sisters. Carly had a red-and-white striped sweater on, so Lena put one of the red barrettes in her hair. Cameron wore purple, so Lena pushed her sister’s bangs back and fastened them with a yellow barrette. Finally, Lena put a pink bow in her own hair to match her pink sneakers.

7. “C’mon girls,” Lena said. “We’re going for a ride!” She gathered the girls and put them in their red wagon, next to a bag of bows. “Mom, we’re going for a walk down the street.” Lena pulled the girls up and down Wight Avenue. Soon enough, the girls were getting compliments on their bows. “I made them,” Lena would say. “I’m selling them for three dollars apiece if you’re interested.” Before long, she had sold almost twenty bows.

8. By the end of the week, mothers and grandmothers were asking Lena and her mother about the business that Lena had decided to call Bows for Betties. Suggestions for new ideas and requests started coming in. Lena was happy to make people’s bows to order. She made green bows with leaf charms, blue bows with rainbow charms, black bows with white charms. She even started making hair ties with beads for older girls. Her bow business was booming!

9. After a couple of months, Lena had enough money for her new bike. “I am so proud of you Lena,” her mother said. “You’ve really learned how to earn money to get the things you want. What will you do about your bow business now that you have your bike?” “Well,” answered Lena, “I made more money than the bike cost, so I also bought this.” Lena pulled a big basket out of a bag. She had fastened bows all over the outside of the basket. “My bows helped me get my bike. Now my bike is going to help me sell my bows!” And off Lena went, out the door to sell more bows.

Aaron Burr and the Stable Boy

Story by Sam R. McColl
Illustration by Gina Capaldi



PROLOGUE

Aaron Burr was an American politician, who lived from 1756 to 1836. Burr is famous for two things: he was vice president under Thomas Jefferson in the early 1800s, and he had a duel with Alexander Hamilton.

Hamilton, a fellow politician, was one of Aaron Burr's most hated rivals. Toward the end of Aaron Burr's career, Hamilton insulted him publicly. This insult had disastrous consequences for both men. First, the insult convinced many people that Burr should not be elected governor of New York, a position he wished to hold when his vice presidency was over. Second, the insult so maddened Aaron Burr that he challenged Alexander Hamilton to a duel.

Alexander Hamilton accepted the challenge, and the two faced off on July 11, 1804 in New Jersey. They faced each other from ten paces and fired their pistols. Hamilton missed. Burr did not. He shot and killed Alexander Hamilton.

At first, Burr was charged with Hamilton's murder (in both New Jersey and New York), but he was never brought to trial. He escaped to South Carolina, but later returned to Washington, D.C., to finish out his vice presidency. In time, the duel brought an end to Burr's political career, a career that might one day have led to the presidency.

Before the duel, Burr was a successful and wealthy politician. His estate was a busy place, full of people. There were maids and butlers bustling about the house, and footmen, gardeners, and stable boys tending to the vast grounds. What would it have been like to work there? Let us imagine the life of one of Aaron Burr's stable boys.

This story is a fictional account. The narrator, John Thomas Anderson, never lived. Some of the other characters are fictional too; however, some of them are real. But we can imagine what it would be like to grow up in the service of Aaron Burr, a bold and aspiring politician doomed to failure. Come, let us meet our stable boy and learn of his life as he tells us his story.

CHAPTER ONE

The early sun crept slowly through the window. It caressed my face and lit the flakes of dust that floated aloft in the barn. Stretching from under my scratchy woolen blanket, I opened my eyes to the morning. I could hear the cock crowing in the yard. It was time for me, John Thomas Anderson, your faithful storyteller, to awake. The day would bring much work, as Mr. Burr was to return home from his post in Washington, D.C.

Aaron Burr, my gracious and wise employer, was elected to the vice presidency of the United States under President Thomas Jefferson. Though Mr. Burr spent many weeks away from his home in New York (where I resided), he occasionally returned for a spell. Today would be one such visit. We had heard through the mail that he was coming home.

Preparing for Mr. Burr's arrival required much work. As the head stable boy, I was personally responsible for many tasks. I had to make sure that Mr. Burr's horses were fully prepared for any rides he might choose to take across the countryside. I also had to make sure the stables and surrounding grounds were as clean as possible. Indeed, it was time to get to work.

Arising from my simple cot in the rear of the stables, I set about making myself breakfast. I built a fire in the hearth near my cot and heated a pan in preparation for a corn cake breakfast. Many of Mr. Burr's servants preferred to eat with each other in the servant's quarters of the main house, but I liked the quiet solitude of the stables. As many of the other servants found friendship among themselves, I found my closest friendships with Mr. Burr's prized horses, which were under my care.

As the corn cakes cooked over the fire, I fetched hay to feed Chickasaw and Mohican, Mr. Burr's prized Arabian steeds. "A fine morning, Chickasaw. Greetings, Mohican," I said, scratching each horse in turn on their strong, broad noses. The horses snorted in greeting. Then I sat down to my breakfast. The sun and the hot corn cakes warmed me. I knew it was to be a grand day.

After breakfast I walked out into the morning sun to assess what needed to be done that day. I surveyed the stable and yard. The door to the stable needed a fresh coat of paint, and the pine fence around the corral needed a few new posts. But these were easy tasks that wouldn't take much time to complete. I decided to go back into the stable and survey the interior so I might see what other chores awaited.

It was then that I stumbled onto my first task. As I walked inside, I noticed that Mohican, the elder of the two Arabians, was gingerly holding his left foreleg up in the air. He did not want it touching the ground. I wondered why I hadn't seen that as I had fed the steeds, but even the keenest eye sometimes misses small details.

"Now there, Mohican," I said. "Why might you be holding your foreleg aloft?" Mohican snorted at my approach, and I carefully leaned down to inspect his left front leg. "Egad!" I gasped, for Mohican had quite a nasty gash down his foreleg.

My first thought, aside from my concern for Mohican's well-being, was the look on Mr. Burr's face were he to come to the stables for an evening ride (as he was wont to do after an early supper). What would he think if he were to find his prized Arabian horse deeply wounded? I knew I had to act fast. And act fast is exactly what I did.

I ran to the big house and into the servants' pantry. There I knew I'd find the materials I'd need to dress the wound. I hurried as fast as I could, for time was of the essence. Not only was it important for me to dress Mohican's wound before Mr. Burr arrived, but it was also important to stop the bleeding.

Rooting through the pantry, I found some medicine and old rags. I also found some sturdy tape. Gathering the supplies, I ran back to the stables. I filled a pail with water and the medicine. Mohican was still holding his foreleg aloft. I grabbed a stool and crouched on it just behind Mohican's left foreleg.

"Easy now, Mohican," I said softly as I reached for his leg. I dipped the rags into the water and wiped off the blood. Mohican snorted in pain and jerked his foreleg away as the stinging medicine touched his open wound. "Aye, Mohican, I know it hurts," I soothed, "but I need to dress this wound." Mohican snorted again. Slowly he placed his foreleg back into my hands. It was as if he knew why I was hurting him so.

Carefully I cleaned off the wound and tightly wrapped it with wet rags. Tying them in a knot, I hoped that this would help the poor animal.

When I was finished, I untied Mohican from his hitching post and led him outside.

I walked him around the corral, testing his leg. At first, he stepped gingerly with the injured foot. But as I led him, he began putting more weight on the leg. Soon enough he was prancing and trotting about. He was good as new. This crisis had been averted. Although I still envisioned Mr. Burr's displeasure when he saw his prized mount's bandaged foreleg, I knew he'd be grateful that I had done my best to nurse the horse back to health.



I led Mohican back into the stable and set about hammering the broken board into place. I figured out what had happened. Poor Mohican must have put his foot through the stable, injuring his leg as he pulled it out. “Now Mohican, I hope you’ve learned not to kick your stable walls.” Mohican snorted in understanding. All was well, for now.

I had finished mending the broken stable wall and was putting my tools away when I heard the sound of galloping hooves. I looked toward the entry to the property, my hand shading my eyes from the sun above. As I watched, a young man (not much older than I) rode into the corral. He held the reins tightly with one hand, the other holding his tricorner hat to his head as he galloped his horse into the yard. As a stable boy, it was my responsibility to greet all who rode into our corral. I ran to meet the horseman.

I took hold of the horse's halter as horse and rider came to a stop. "Good day, sir," I said as the man dismounted.

"And a good day to you," said he, dusting off his breeches and straightening his hat.

"I'm afraid, sir, that I don't recognize you. I am John Thomas Anderson, stable boy for Mr. Aaron Burr, at your service," I said, bowing gracefully.

"At ease, good man," said the stranger. "We are under the employ of the same gentleman. I am Wicks Cherrybond, the personal assistant to Mr. Burr. I attend to his personal matters in Washington. In fact, this is my first journey to New York."

"Tis indeed a joy to make your acquaintance," I said respectfully.

"The pleasure is mine," said Mr. Cherrybond. "I have been riding with Mr. Burr's coach from our nation's capital, Washington, D.C. I have ridden ahead to tell Mr. Burr's domestic staff that his coach is but a few hours away. He sent me to make sure that all was prepared for his arrival."

I cleared my throat. “Indeed, sir,” I said. “We have been busy at work preparing for our employer’s return. We had a bit of a hitch in plans, as one of Mr. Burr’s prized riding horses suffered a bit of a wound on his foreleg. But worry not, for I have bandaged it. All seems well, now.”

Mr. Cherrybond cocked his eyebrows. “Ah, you’ve dressed the wound?”

“Yes, sir,” I said humbly.

He continued, “I always respect the work of a field medic. Would you allow me to view your work?”

“It would be my honor,” I said.

CHAPTER TWO

I tied Mr. Cherrybond's horse to the hitching post. "If you would come with me, then, sir," I said, and led Mr. Cherrybond into the stable. Mohican and Chickasaw snorted as we entered.

"Beautiful horses, these," said Mr. Cherrybond. "If you please, what might their names be?"

I patted the back of Chickasaw. "This is Chickasaw, the younger of the two," I said. "'Tis a fine horse, and a friend." Then I pointed at Mohican. "And this is Mohican, the horse of whom I spoke earlier."

Mr. Cherrybond asked which leg had suffered the injury. I pointed to his left foreleg. Mr. Cherrybond knelt down and studied the bandage. "This is a spectacular bandage, sir," said Mr. Cherrybond. "Very impressive indeed."

I bowed my head. "It was my pleasure to help a distressed friend."

"You should not be so modest, good sir," said Mr. Cherrybond. "Keeping cool in times of pressure is quite an asset." He studied the bandage for a bit longer, then stood up and faced me.

"Mr. Anderson," he said. "One of my duties as Mr. Burr's assistant is to discover who in his employ excels at their duties. When I do so, I am instructed to reward them fittingly. Your deed merits a just reward."

"Indeed, sir?" I asked.

“Indeed. Now I know that Mr. Burr is in search of another personal assistant. I shall be taking over the duties of running the house here in New York, for I’ve always wanted to run an estate. Mr. Burr needs a new assistant to aid him in Washington, D.C. How would you like that duty?” he asked.

I couldn’t quite believe my ears. “Sir?” I said, clearing my throat. “Are you suggesting that I be promoted to personal assistant? No longer a stable boy?”

“That is indeed what I am suggesting. You have proven to be a loyal and trustworthy young man. Mr. Burr could use your services in Washington.”

This was good news indeed.

I cleared my throat once again. “That is quite an honor, sir,” I said. “I wonder, may I have a short time to think it over?”

“Very well. As I’ve said, Mr. Burr is but a few hours coach-ride from here. I shall attend to some matters inside. I will leave you here to consider this opportunity. You have a few hours to think it over. I will return before Mr. Burr’s arrival. Good day, Mr. Anderson.” With that, Mr. Cherrybond tipped his hat, spun on his heels, and left the stable.

I sat down on my stool. I had much to think about. I knew that this opportunity was a good one, one that could lead me to great fortune and fame. “John T. Anderson, personal assistant to the vice president of the United States,” I said to myself. I rather liked the sound of that. But still, I had grown accustomed to my simple life as a stable boy. Further, I had grown very close to Chickasaw and Mohican, whom I considered friends.

As I sat and thought, I remembered when I was a young boy, leaving my parents’ home. As I had prepared to make my way in the world, my father had taken me aside. “Jonathan,” he said, “I have some advice for you. First, always be true to yourself, and you will then be untrue to no one. Secondly, be kind to others. Thirdly, never let an opportunity pass if it knocks on your door. You can never know what the future might hold, but you can always face it gladly, with open arms.”

This seemed like such an opportunity. I had never been farther from home than the nearby Hudson River. The thought of leaving New York and traveling south to Washington, D.C., was at once exciting and frightening. Would I succeed in Washington? Would I be able to make my way so far from the places and people I had grown to know? These questions and others raced through my mind. I didn't know what to do.

The few hours Mr. Cherrybond had allowed me passed quite quickly as I considered my options. Before I knew it, Mr. Cherrybond was standing in the door of the stable.

“Have you made a choice, young Mr. Anderson?”

I stood up and faced Mr. Cherrybond. “Indeed, sir, I have,” I said. I could feel the quiver in my voice. “Mr. Cherrybond, it would be my great honor to serve Mr. Burr as his personal assistant.”

“Huzzah, Mr. Anderson!” Mr. Cherrybond cried. “A fine decision you’ve made! And just in the nick of time, for Mr. Burr’s coach has been spotted down the lane. It will be my pleasure to announce the news upon his arrival. But for now, I suggest you give the stable one last sweeping. It would seem that your morning of bandaging horses and making important decisions has left things rather unkempt.”

Quickly I grabbed my broom. “Yes, sir, Mr. Cherrybond,” I said.

“Consider it your last duty as a stable boy. And further, please call me Wicks.” He held out his hand. “Congratulations, John,” he said.

I took his hand and shook it. “Thank you, Wicks,” said I. “I shall not disappoint you. But let me sweep the stable, and I shall present myself to Mr. Burr when he arrives.”

“Very well,” said Wicks. “We shall await your presence.” Then once again, he spun on his heels and left the stables.

I started working. I swept the stables faster than I ever had before. Piles of dust gathered by the stable door. Soon the stone floor was free of the mess. I swept the dust out the door and into the corral just as Mr. Burr's coach pulled into the yard. I quickly put away the broom. Brushing myself off, I ran to join the others who had gathered on the porch to greet our employer.

Mr. Burr's grand white coach rumbled to a stop, the bells jingling on the team of black horses pulling it. The coachman leapt down from his seat and opened the door. Mr. Burr slowly exited the coach and soon stood before us. Holding his back with his left hand, he said, "Ah, it is nice to be out of that coach. I've been cramped in there for months, it seems. It feels good to stretch my legs."

His sharp brow knitted as he looked about the corral. "You've done a fine job keeping up the stables, young Mr. Anderson," Mr. Burr said.

I bowed graciously. "My pleasure to serve you, sir," I said.

Then Wicks spoke up. "Sir," he said, "young John has done a wonderful deed this morning. Mohican, one of your horses, suffered an injury to his left foreleg. John did an excellent job of tending to the wound. He bandaged it very well. He has shown himself to be an excellent employee. I suggest that he would be a perfect replacement for me as your personal assistant in Washington."

"Indeed?" Mr. Burr said. He studied me closely. "Well, I trust you, Mr. Cherrybond." Looking me over some more, he said, "We'll have to get you some newer clothes, Mr. Anderson. Perhaps some that are not as dusty." He smiled as he spoke. I grinned back at him.

"Yes, sir," I said. "I would be honored if you would allow me to tend to your coach horses one last time."



“That is just the sort of attitude I like,” said the vice president. “Very well, then. Both horses need fresh water and oats. Please see to that, Mr. Anderson,” he said, “and then, as my new personal assistant, please join us for supper in the house at 4 o’clock.”

Bowing, I said, “I shall look forward to it, sir.” The rest of the staff clapped and cheered at my good fortune. I bowed to everyone and then got to work.

CHAPTER THREE

I adapted rather well to my new role as personal assistant to Mr. Burr. To be honest, there were a few mistakes that I made in the early days, such as paying the wrong bills and forgetting to make sure that Mr. Burr's schedule was cleared for important meetings and such. But I eventually grew to the tasks. Things more or less went smoothly for me.

When I wasn't working, I spent my time exploring Washington, D.C., my new home. In many ways it was similar to New York. The climate was the same, with hot summer days and cool summer nights. The city was as busy as New York. The main difference was that New York was full of tradesmen selling things, buying things, and working with others. In contrast, Washington, D.C., was full of politicians and other government workers.

I would walk the streets looking at the buildings. Most impressive was the White House, the home of the president. The White House had recently opened. It was perhaps the biggest residence I had ever seen. I wondered if one day Mr. Burr might be president and live there. If so, would that mean that I, too, would live there? I knew not. Fortunately, I had many opportunities to see the inside of the White House, for Mr. Burr often had business there. I came to know the president and his staff quite well.

Sometimes if I didn't need to attend the meetings, I would venture onto the grounds of the White House. I would spend time in the presidential stables, trading ideas with the president's stable boys. They were fascinated that a stable boy like me had become a personal assistant. I could tell that they hoped they, too, might one day leave the stables and become personal assistants. To them I would pass along my father's advice: "Be true to yourself, be kind to others, and wait for opportunity to knock. When it does, take it. Face the future with open arms." They would thank me. I would leave the stables and hear the stable boys whistling as they cared for the president's horses.

Life was good for me in Washington, D.C.

Unfortunately, things did not go as smoothly for my employer. Mr. Burr was, for reasons I never understood, not well liked among many of the other important politicians in Washington. One person in particular, a man named Alexander Hamilton, especially disliked Mr. Burr. I could never understand why, for I found Mr. Burr to be a kind, fair, and just man. He treated his staff with respect and paid them handsomely. In turn, we worked well for him. We kept his affairs in order, his home running, and his stables clean.

Once when Mr. Burr was away, the staff and I discussed the potential reasons why some men did not respect Mr. Burr. His butler, a gentle man named Mr. Newton, confided that he'd recently seen a temper problem in Mr. Burr. Mr. Burr would snap at Mr. Newton for some of the slightest problems. If his riding boots were not perfectly polished or if there were the slightest smudge on the silverware, he would roar in anger at Mr. Newton.

“What do you do in those situations?” we asked of Mr. Newton.

“I just apologize and remedy the problem,” he said. “But the state of affairs troubles me.”

Mr. Newton was Mr. Burr's most senior employee. He had worked for Mr. Burr longer than anyone else. As a consequence, we took what he said very seriously.

I had not yet faced Mr. Burr's wrath, but I believed Mr. Newton's accounts and those of the other staff. Nevertheless we did our best to attend to our duties and serve our employer as best we could. "Some things," I said, "are beyond our control." Then we all got back to work, focusing on the tasks at hand.

CHAPTER FOUR

I have said that I had not yet faced Mr. Burr's wrath. That statement didn't hold true for very long. One night after a particularly grueling day on the Senate floor, Mr. Burr and I rode home in his coach. I could tell that Mr. Burr was unhappy with the way things had gone. I had not been with the vice president all day, as I had had business elsewhere in Washington to attend to. But I rode home with him that evening.

I could tell that something was bothering Mr. Burr. He sat stone still, in silence, on the silk cushions of the coach. It was a rainy night, and the gloomy drops of rain on the top of the coach did little to lighten Mr. Burr's foul mood. At one point, the coach ran through a particularly deep puddle. The coach lurched hard to one side, jarring us both.

Mr. Burr snapped. "Blast it, Williams!" he shouted through the roof of the coach. "Stop the coach!" The coach pulled to a hard stop, and Mr. Burr leapt out. I followed him. "Williams!" he shouted at his coachman. "If you can't avoid bumps and puddles in this road, then perhaps I should find a better coachman, one who might be able to get us home in one piece!"

"I'm dreadfully sorry, sir," said Williams, his head bowed in shame.

"Get us home!" Mr. Burr snapped. He climbed back into the coach. I followed suit.



In the coach, I looked at my employer closely. I could tell that he was angry, though I knew his anger wasn't directed at Williams. In my head I heard my father's voice say, "Be true to yourself, and you will then be untrue to no one." I knew I had to speak up for poor Mr. Williams.

I cleared my throat. "Mr. Burr," I said, my voice shaking a bit, "may I be candid?" Mr. Burr glared at me, but he said nothing. I continued. "It wasn't right for you to snap at poor Mr. Williams like that, sir. 'Twas not his fault that the coach ran through a puddle."

Mr. Burr stared at me, as though he were about to leap across the coach. Then his face softened a shade. He whispered, "You are right, young Mr. Anderson. It was not." He knocked on the ceiling of the coach with his cane. "Williams!" he called. "Please allow me to apologize for snapping at you!"

Through the roof of the coach I heard Mr. Williams shout, "Think nothing of it, sir." We rode the rest of the way home with no more incidents.

For weeks afterward, the staff noticed a change in Mr. Burr's moods. I had told them, in confidence, about the incident in the coach. Mrs. Wexby, the head maid, thanked me for speaking out for all of us. I told her that it was the honest and truthful thing to do.

She said, "Well, he's definitely leaving his problems at work where they belong, and that makes things easier for us. Thank you, Mr. Anderson."

The incident in the coach changed the way Mr. Burr and I acted toward each other. I became more of a colleague, so I thought, than I had been before. Sometimes Mr. Burr would ask my opinion on a public matter. Other times he would ask me whether I thought the staff was being treated fairly. I assured him that all was well, for I thought it was.

"Mr. Anderson," he said, "I appreciate all you do for me. Mr. Cherrybond was right to ask that you be promoted from simple stable boy. I've not had a better personal assistant in all of my days."

"Tis very gracious of you to say so, sir," I responded with humility. "The staff thanks you as well for keeping a professional relationship with them. Things are better when you don't let your problems in government affect the household." Some might say that I was a bit too honest, but it always seemed to work out.

"You are correct, Mr. Anderson," he said. "Now if you could make sure that I have no meetings for tomorrow afternoon, I'd like to go fox hunting."

“Indeed, sir, I shall take care of it. Shall I ask Newton to press your hunting clothes?”

Mr. Burr nodded, and I took care of business. Things did seem to be getting back to normal. Or so I thought.

CHAPTER FIVE

After a few weeks of relative tranquility at home, things took a turn for the worse. They took so bad a turn that nothing would ever be the same with Mr. Burr again.

As I have said, one of Mr. Burr's particular rivals was a man named Alexander Hamilton. It was well known that Mr. Hamilton and Mr. Burr shared no common feelings of goodwill toward each other. I had met Mr. Hamilton on occasion, and I found him to be a fine, upstanding public servant. I did not know what problems he and my employer had with each other, for there are some things that are still beyond my grasp. However, it was clear that they did not get along.

One evening Mr. Burr came home from work much earlier than usual. I heard the coach pull into the yard, and I looked out the window from my office where I was attending to some of Mr. Burr's accounts. Mr. Burr leapt out before the coach even coasted to a stop. I could tell that he was incredibly angry about something.

I heard him enter the main hall of the house and slam the door to his own office. He slammed it so hard that a portrait of his mother fell from the wall and crashed to the floor.

"Mr. Burr!" I called. "Whatever is the matter?"

Through the door I heard him shout, "You may as well come in here, Anderson!"

Quietly I opened the door and walked inside. As I entered, I could hear whisperings from the staff in the hall. I turned and sharply said to them, “I believe you all have tasks to attend to. Please do so.” They scuttled away, and I closed the door behind me.

Mr. Burr was pacing furiously back and forth in his office. His waistcoat was open at the throat, and he gripped his walking cane with white knuckles. I sat down.

“Tell me what is the matter,” I said calmly.

Mr. Burr eventually stopped pacing. I asked him if he would please sit at his desk and explain what was troubling him so. He sat down, and exhaled a breath of angry air.

“It’s that blasted Hamilton,” he growled. “I have had quite enough of him!”

Then he slowed his ranting and explained what had happened. It seems that that morning in the Capitol Building (where the Senate meets), Alexander Hamilton had publicly disgraced Mr. Burr.

“How so, sir?” I asked. Mr. Burr explained that in no uncertain terms, Hamilton had questioned Mr. Burr’s ability to act as a competent vice president. Further, he had done so in public.

“I cannot tolerate such disrespect from those with whom I work,” said Mr. Burr. “Never once have I insulted a man. Never once!” He was shouting now. I begged him to stop.

Mr. Burr took a deep breath and continued. He said, “Mr. Anderson, I have had my fill of Washington, D.C. I wish no longer to be vice president of the United States. I miss New York. I feel that I could do much better there. I was thinking about trying to become governor of that great state. Somebody in my close circle must have told Mr. Hamilton. I don’t know who. But in public today, Mr. Hamilton said that I was unfit to be governor of New York!” Mr. Burr was pacing again. “How dare he! I am very, very angry. It is an insult that I shall not abide. Mr. Hamilton must pay for his mistreatment of me. There is only one way to handle this.”

I didn’t like the sound of that.

Soon there was a knock at Mr. Burr's office door. It was Mrs. Wexby, who said, "This letter was just delivered, sir." I thanked her for it and closed the door.

"Go ahead and open it. Read what it says," said Mr. Burr.

I tore the wax seal from the envelope and unfolded the paper inside. I began reading. "Let it be known that this letter is an acceptance, on behalf of Mr. Alexander Hamilton, of Vice President Aaron Burr's request that the two men settle their differences in a duel of honor. Mr. Burr has requested that the duel be held near his home in New York. Thus Mr. Hamilton suggests that the time and place be as follows: at dawn on July 11, 1804, in Weehawken, New Jersey. Signed, Filbert Monroe, personal assistant to Alexander Hamilton."

I steadied myself as I closed the letter. "Mr. Burr," I began, but he cut me off.

"Mr. Anderson, a person can stand only so much insult to his character. This is the only way to settle this issue. And settled it shall be."

"Mr. Burr!" I insisted. "Violence is not an acceptable solution to personal conflicts. There must be a better way for you and Mr. Hamilton to solve your problems. There must be!" I stomped my foot as I spoke.

"The decision has been made, and the duel has been accepted. It is as it shall be," said Mr. Burr. "Now inform the staff that we shall be traveling to New York in the morning. Send a rider ahead to notify Mr. Cherrybond of our arrival. We shall leave at dawn. July 11 is less than a fortnight away. We don't have much time."

Sadly I stood up to take care of the necessary issues. I was heartbroken that a man whom I so trusted and admired would resort to such a dangerous and violent act as a duel of honor. But I could tell by Mr. Burr's words that there was to be no changing his mind. It was finished. With a heavy heart, I walked toward the door.

Before I reached it, Mr. Burr spoke again. "Mr. Anderson," he said, "please ensure that you know where my will is, and that my affairs are in order and my debts are all paid, in the event that things do not go well in New Jersey."

I could, for the first time, sense fear in Mr. Burr's voice. "Yes sir," I said, desperately trying to choke back tears.

Dawn the next day came quickly. I had spent much of the evening tending to Mr. Burr's financial affairs. A duel of honor was no light matter. Indeed, the chances were great that only one man would survive. I had to make sure that Mr. Burr's estate—all of his property and money—would be taken care of were he not to survive. It was a terribly sad task.

I was deeply disappointed in Mr. Burr. Part of me could not tolerate what I saw as his very poor decision. Another part of me, however, knew that he was my employer. It was not my place to try to dissuade him from his decision. But beyond this, I had a personal problem: I felt, for the first time, that I could no longer work for Mr. Burr. Challenging someone to a duel was perhaps one of the worst actions a person could take, and I didn't believe that I could trust a man who would do such a thing. Throughout the night, I thought about a very difficult choice I would soon have to make.

The next morning as we prepared the horses and coach for the ride to New York, my father's voice kept floating through my head: "Be true to yourself, be true to yourself." I knew there was only one decision I could make.

It was time for the journey to begin. Mr. Burr came from his office, carrying a wooden box that I knew held pistols. He had a look of determination on his face. "It is time to go, Mr. Anderson," he said.



I stopped him. Gathering my courage, I spoke. “Mr. Burr, I cannot in good conscience support the decision you have made. I simply cannot tolerate it. If this is what you must do, so be it. But if so, I feel I must leave your employ.” I cleared my throat. “I shall not be joining you on the journey to New York. I am resigning my post as your personal secretary. It is the only decision I can make.”

Mr. Burr looked closely at me. He shifted the wooden box to one arm. He reached out and took my shoulder with the other hand. “Young Mr. Anderson,” he said, “you have always been a man of honesty. I have never managed to be as truthful and honest with you. I understand your decision, and I respect it. Thus, I regretfully accept your resignation. If I return from this journey, I will make sure to write you an excellent letter of recommendation, so that any future employer shall hear from me what an upstanding young man you are. But now I must go.”

“Farewell, Mr. Burr,” I said, though my heart was breaking.

“Farewell, Mr. Anderson,” Mr. Burr said as he climbed into the coach. “Onward, Williams!” he shouted.

I watched the coach rumble away.

EPILOGUE

As I have said, a duel of honor is a dangerous and silly thing. Too often, men don't survive. Or, rather, one does and the other does not. This was the case on July 11: Aaron Burr survived the duel. Alexander Hamilton did not. He was shot and killed by Mr. Burr.

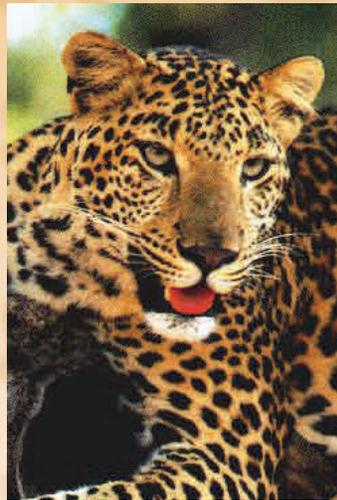
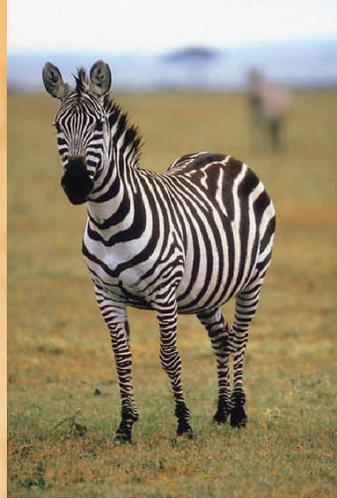
Although Mr. Burr survived the duel, his career decidedly did not. He was hounded by criminal charges. He was driven out of office by voters. He never served in government again. Mr. Burr was a great man, but one who had made a terrible mistake.

As for me, I found employment as a personal assistant to another famous American. I excelled in my work for this man, and it wasn't long before I was managing his entire estate, including his scientific laboratories. He also had a home in Paris, France, and I often traveled there with this man.

Often I thought of Mr. Burr and of my time in his employ. But more often, I thought how peculiar it was that a stable boy from New York would one day find himself in Paris, France, or crossing the ocean in a wonderful sailing ship.

I hope that my story has entertained you, also that you take from it a lesson or two. Remember the advice my father gave me: If you are true to yourself and kind to others, and if you keep your arms open to grab opportunity when it knocks, who knows where you may find yourself. With that, I bid you goodnight.

THE END



Leopards

by Dr. Nick Brown

Where to find a leopard

Leopards are very adaptable animals. They can be found living throughout parts of Africa, Asia, India, China, and Russia. Their adaptability has helped leopards to survive. When humans take over land where leopards are living, leopards simply move on to another location. They can live in both warm and cold climates and in many different types of environments, including mountains, forests, jungles, grasslands, and even deserts. Because they use trees for protection, leopards especially like to live in or near a forest.

How to spot a leopard

Leopards come in different sizes, depending on where they live. They can range from five to nine feet in length and weigh from 60 to 140 pounds. Even though this sounds huge (imagine having a pet cat that large), leopards are actually smaller than other types of big cats like lions and tigers. All leopards have spotted fur, but not all leopards look alike. The color of their fur can range from yellow to tan to dark brown to blend in with the color of their environment. Leopards that live in forests, for example, have darker fur than those that live on the grassy plains. Even their spots are different. Some leopards, like those found in the Samburu Wildlife Reserve in Kenya, have round spots, while in other places, the spots are square.



A leopard's fur helps it blend into its environment.

2

What's for dinner?

Leopards are meat eaters that hunt other animals for food. Some of the leopard's favorite foods are medium-sized animals like monkeys, but it will also attack and eat animals much larger than itself like zebras and giraffes. If it's very hungry, or if it can't find animals to hunt, leopards will eat birds, fish, or even insects. Every leopard sets up a zone where only it is allowed to hunt called its territory. The leopard marks the boundaries of its territory with scents that warn other leopards to stay away.

“Leopards are meat eaters that hunt other animals for food.”



“There's a cat stuck in that tree!”

Even though leopards are very large, they are very good at climbing trees. After a leopard kills an animal, it often carries the food into a tree to eat. This way, other animals, like lions, can't steal any of it!

Night life

Leopards are usually nocturnal animals. They sleep for most of the day and hunt at night. Leopards can see in the dark, giving them a huge advantage over the animals they hunt. Even if an animal has some ability to see in the dark, the leopard's spots camouflage it, so its prey can't see it coming until it's too late.

Baby leopards

Baby leopards, or cubs, live with their mother until they are two years old. For the first three months of their lives, their mother feeds them. Once they reach the age of three months, cubs start hunting with their mother. Cubs practice their hunting skills by pouncing and jumping on their mother's tail. The mother leopard also cares for her cubs by cleaning them with her tongue and carrying them to safety when there is danger.

Leopards in danger?

Although leopards are not an endangered species, they still need human protection—from hunters who kill leopards for their fur, from farmers who set out poisoned food to kill leopards so they won't eat their cattle, and from people who destroy the leopard's habitat by cutting down forests and building on the land where leopards live.



A leopard cub starts hunting at age three months.

4

“Usually leopards are nocturnal, but in Samburu they can be seen out and about during the day!”

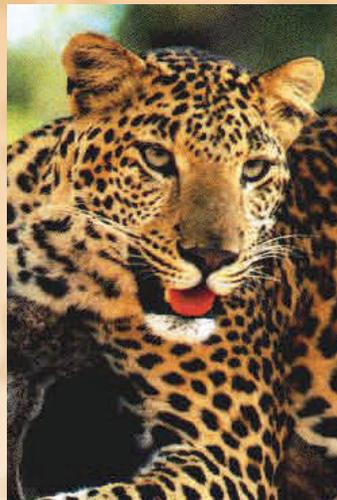
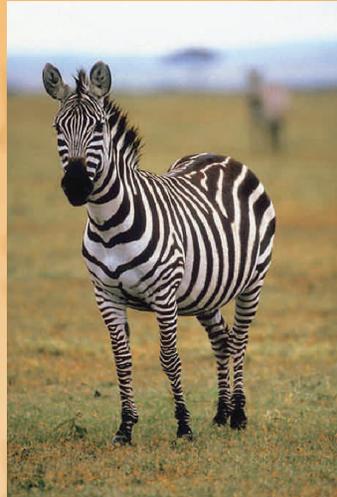
Samburu leopards

Leopards thrive in the Samburu Wildlife Reserve. The reserve has a mixture of environments for leopards to live in, including a scrub desert (a desert with some small bushes and trees), a savannah (dry grasslands), and small hills. There are many animals for the leopard to hunt, such as monkeys, zebras, and antelopes. Samburu leopards are special.

Usually leopards are nocturnal, but in Samburu they can be seen out and about during the day! The reason for this may be that the color of their fur blends in so well with the colors of Samburu that leopards can hunt there both day and night. The Samburu Wildlife Reserve is very important because it is a place where leopards can live freely in a natural, protected habitat.



In the African language Swahili, the word for leopard is *chui*.



There's a Wild Thing in My Bedroom!



Bakiri's Challenge

There's a Wild Thing in My Bedroom!



Range:

Africa

Description of Assassin Bugs:

The assassin bug is a predatory insect. It is about 1" long and mainly black with bright yellow legs and two white spots on its wing cases. Although it has wings, the assassin bug cannot fly. It catches its prey by a combination of stalking and ambush. It leaps on the prey, grasping with its two front legs, and follows by stabbing with its sharp, needle-like mouthparts and injecting a venom, or poison, which paralyzes the prey. The male and female assassin bugs look just about the same.



The African two-spot assassin bug has wings but cannot fly.

To Keep Assassin Bugs You Need:

Use a small glass or plastic aquarium with a well-ventilated lid. Line the floor with paper. Put moist vermiculite in a clean margarine tub in the aquarium. The assassin bugs should use the tub for egg-laying. Pieces of wood and plastic plants can be added to the set-up to give the assassin bugs places to climb and hide, and to make the set-up look pretty. Add a heating pad to keep the atmosphere warm.

Feeding Assassin Bugs:

Assassin bugs are predators of other insects and will tackle anything they can subdue. They can be fed live crickets, mealworms, giant mealworms, and small locust hoppers. Baby assassin bugs, which are called nymphs, should first be fed smaller insects, such as fruit flies, aphids, micro crickets, and buffalo worms (tiny mealworms), and can be offered larger insects as they grow. They can be given a light spray of water each evening and will drink from droplets that accumulate. Also a shallow water dish in the set-up will allow constant access to water as required.

Handling Assassin Bugs:

Assassin bugs should not be handled, because they can give a very painful bite. Also, they can shoot their venom up to a distance of 12" with great accuracy (even backwards over the shoulder), which can cause skin irritation and even temporary blindness if the venom hits the eye.

Giant Pandas

Range

China

Description of Giant Pandas

Giant pandas are white with black patches on their eyes and black ears, legs, and shoulders. Their coloration is unusual among bears, but it may have helped these animals hide from predators in the past. The pandas have thick, woolly fur to protect them from the cold.

While similar to other bears in some ways, pandas have some unique features to help them live in their environment. Their molars, or back teeth, are larger than other bears' to help them chew tough bamboo stalks. Pandas also have a pseudo (SOO-doh) thumb to help them grasp and hold bamboo branches. Strangely enough, this thumb is actually a wrist bone and not a finger.

The Giant Panda Diet

Pandas eat a diet made up almost exclusively of bamboo. To eat, these animals sit upright in a position that resembles how people sit on the floor. This leaves their front paws free to hold bamboo stalks. Pandas spend twelve to fourteen hours a day eating, and it takes twenty to forty pounds of bamboo for these bears to have a healthy diet. Pandas will eat fruits or small mammals in addition to bamboo.

Breeding Giant Pandas

Giant pandas are an endangered species. Scientists believe there may be fewer than 2,000 pandas left in the wild and 150 pandas in zoos. Pandas are solitary animals, only meeting with other pandas to mate. Female pandas are only fertile for one to three days every year, which leaves a small window for breeding. In the wild, the pandas' slow reproduction rate cannot balance the loss of pandas from illegal hunting and deforestation.

Many zoos have tried to start panda breeding programs, but pandas do not breed well in captivity either. When a couple does mate, it is difficult to tell whether the female is pregnant. Often the zoo doesn't know for sure until she gives birth.

Panda Cubs

If breeding is successful, a female panda will give birth to one or two cubs. Scientists thought that the birth of twin cubs was rare, but now know it happens often. Unfortunately, the mother can usually only care for one cub at a time, so the other cub dies. Panda cubs are born weighing about five ounces, which is tiny compared to their mothers, who weigh more than 200 pounds. Next to marsupial newborns, panda cubs are the smallest mammal newborns compared to their mothers' size. Panda cubs are born blind and helpless with only a little fur. They do not develop their black markings until later.

The Largest of the Small Cats: the Clouded Leopard

Comprehension Questions

Read *The Largest of the Small Cats: the Clouded Leopard*, and answer the following questions.

Range

Asia

Description of Clouded Leopards

Clouded leopards are an elusive member of the cat family. They are the largest of the small- to medium-sized cats, growing to be about as big as a Labrador retriever. Their fur ranges from pale yellow to brown and has darker splotches that look like clouds patterning it.

These cats have short legs for their body size, but large paws and sharp claws to aid them while climbing. Their tails are heavy and long to help with balance. Clouded leopards have the largest teeth relative to their body size of any living member of the cat family.

Their Forest Home

Clouded leopards call the rainforests of southern Asia home. They are nimble climbers who easily leap from tree to tree, and they are thought to be among the best of the climbing cats. Their large, broad paws help them keep their footing on tree branches. When climbing down from trees, these cats are able to descend headfirst like a squirrel. Most other climbing cats must climb down tail first.

Little is known about the clouded leopards' hunting habits because they are shy, but most scientists believe that the cats hunt small mammals, such as deer, on the ground or monkeys and birds in the trees. The cats may pounce on their prey from the trees.

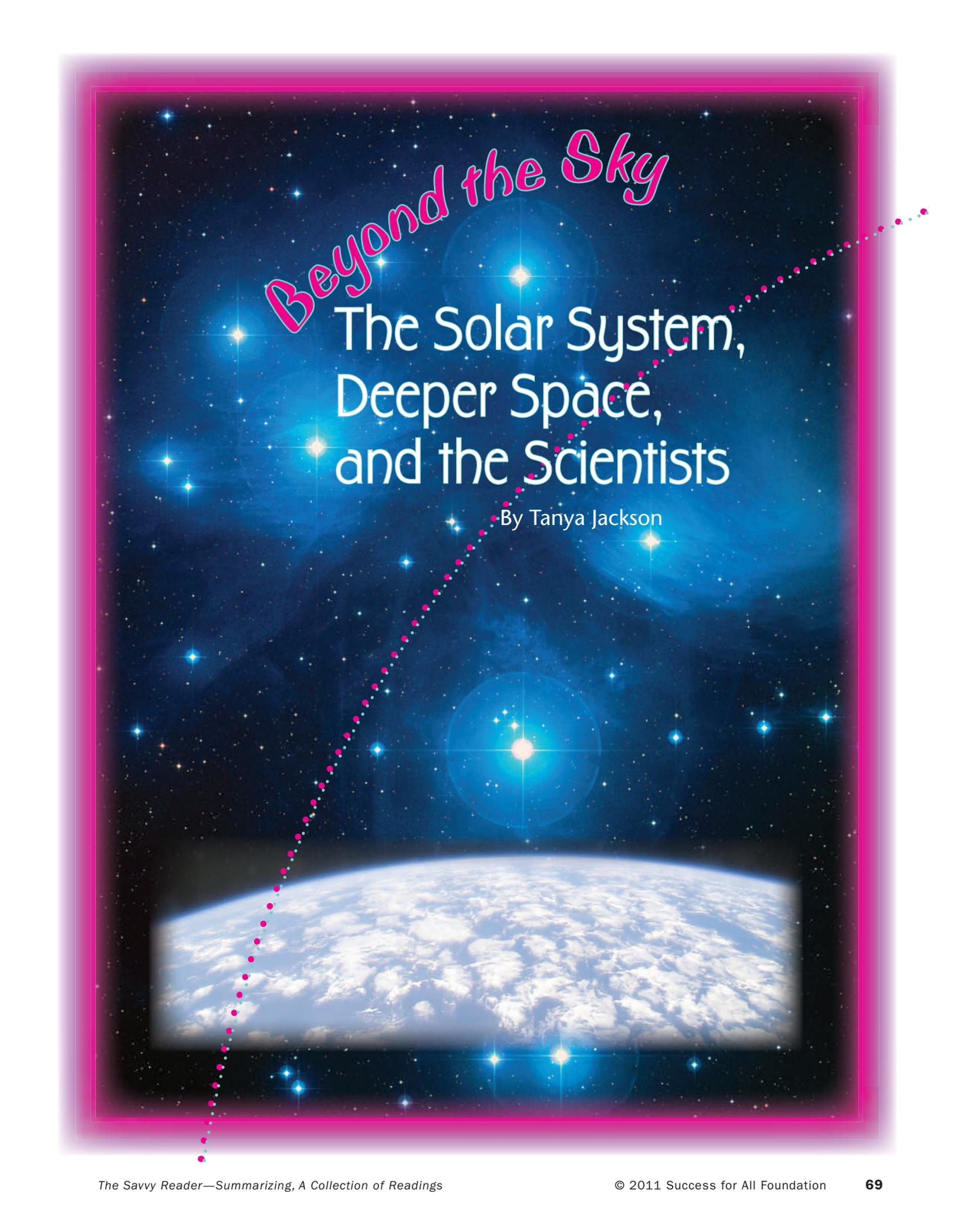
Threats to Clouded Leopards

Due to their shyness, scientists are not sure how many clouded leopards actually live in the wild. These cats prefer to avoid humans. They are listed as vulnerable because as their habitat shrinks or contact with humans increases, clouded leopards could become extinct. Although it is illegal to hunt these cats, there is high demand for their fur. So the native people of southern Asia often hunt clouded leopards for their beautiful fur pelts, as well as their teeth and bones. Clouded leopards, especially those on Borneo and Sumatra, are also in danger of losing their homes to deforestation.

Conserving Clouded Leopards

Since clouded leopards are threatened, scientists are trying to develop breeding programs to increase their population. Unfortunately, like pandas, clouded leopards are difficult to breed. The cats live solitary lives, usually only coming together to mate.

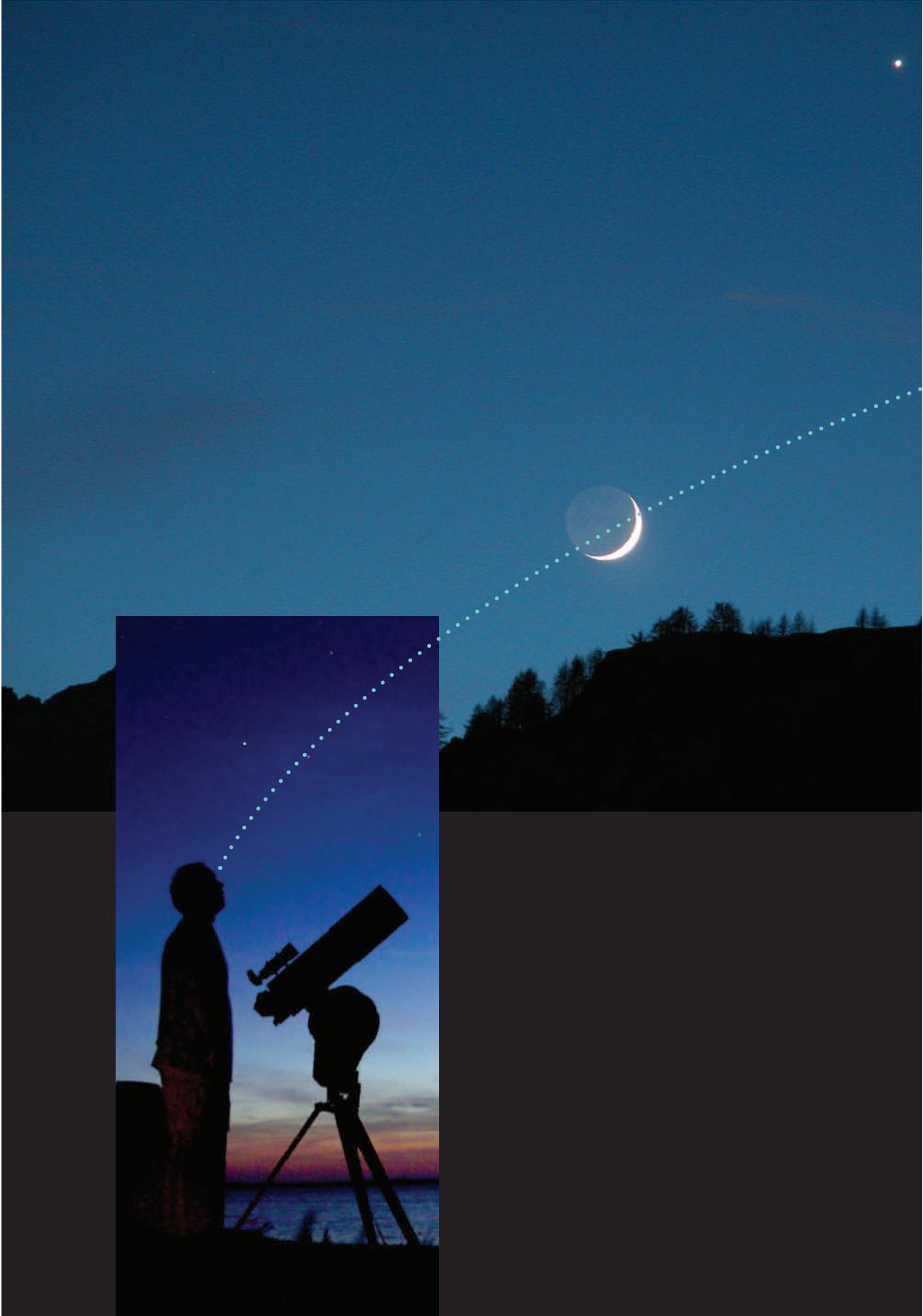
Clouded leopards that are paired together for breeding often do not respond to each other or the male is too aggressive. Few cubs have been successfully born in captivity, and what scientists know about clouded leopard breeding has only been observed in captivity.



Beyond the Sky

The Solar System, Deeper Space, and the Scientists

By Tanya Jackson



What do you see?

What do you see when you look up at the night sky? If the sky is clear enough, you can see the moon and stars. You might also be able to see certain planets during certain times of the year. Sometimes you can even see satellites. Those are man-made spacecraft that circle Earth. They take pictures from high above.

It's the planets and stars, though, that have fascinated stargazers for centuries. For as long as people have been on Earth, they have looked up and wondered just what is there. We may never know about everything there, but we do know about some of it. Let's take a trip through our solar system. We'll learn about the planets there. Then we'll learn about some of the things that are even farther away from our solar system. Finally we'll learn a little about the history of stargazing, and the future of space travel. Let's go, 3...2...1... blast off to the stars...and beyond!



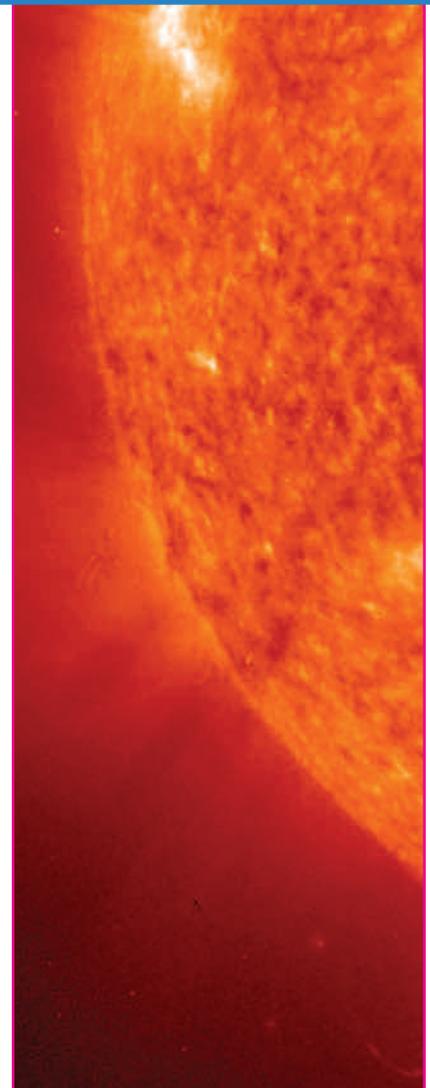
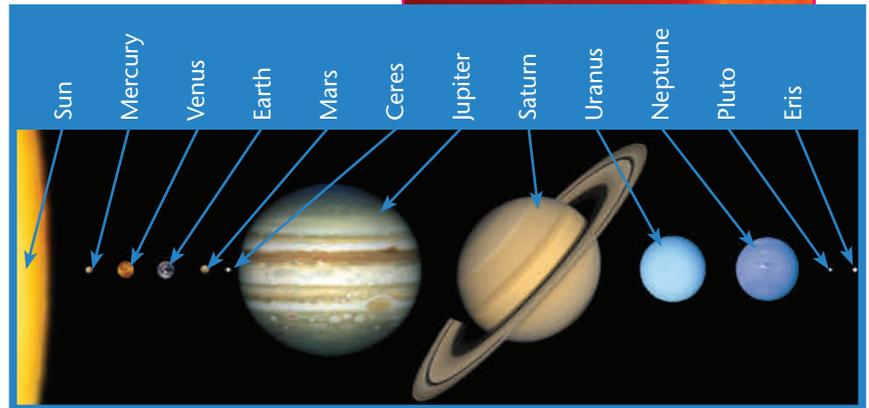
Part I: Planets

Our Neighborhood in Space

Have you ever heard of a solar system? That's a group of planets that all travel around the same star. Our planet, Earth, is in a solar system. There are seven other planets and three dwarf planets in our solar system. These planets all orbit a star called the Sun.

How old is the Sun? For a long time, people disagreed on the age of the Sun. Now most experts agree that the Sun was formed about 5 billion years ago. It is in the center of our solar system. That center is a long distance from us. The Sun is more than 150 million kilometers from Earth! Yet we still feel its warmth and see its light. That's because the rays of the Sun are strong and bright. In fact, we couldn't survive if Earth were any closer to the Sun. That's how powerful the Sun's rays are.

The Sun, like most stars, is shaped like a near-perfect sphere. Unlike planets, the Sun doesn't have a clear boundary, or edge. The outer limits of the Sun are hot gases, not rock or crust. The heat and light of the Sun come from its hot core. The core is like a giant space furnace. It produces energy and sends that energy into space. And we feel it here on Earth. Now let's learn about the other planets in our solar system.



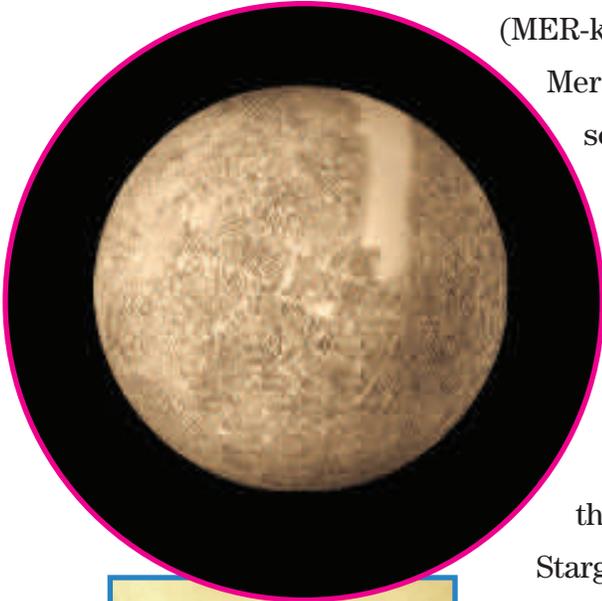
One Hot Planet

The planet closest to the Sun is Mercury (MER-kyer-ee). Because it is so close to the Sun, Mercury is one of the hottest planets in our solar system. It is also the second smallest planet in our solar system. Let's learn more about Mercury.

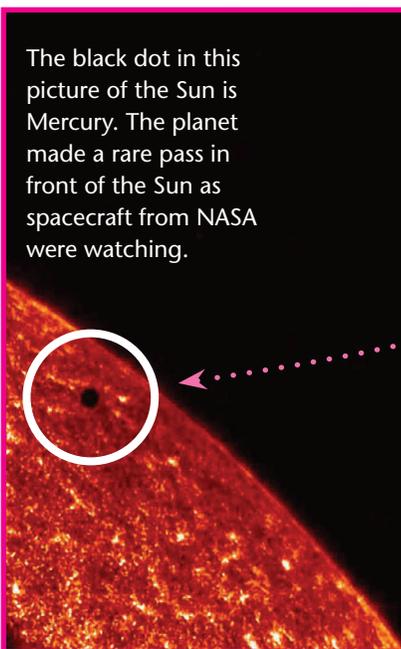
Mercury was named for the ancient Roman god Mercury. He was the god of trade and business. However, people had known of the planet for centuries before that. People noticed Mercury 5,000 years ago.

Stargazers in ancient China also made note of the planet. They called it the Water Star. Giovanni Zupi (GEE-oh-VAHN-ee ZOO-pee), an Italian astronomer, proved Mercury moved around the sun in 1639. Using an early telescope, he observed Mercury and saw it had phases, just like our moon! Mercury had to orbit the sun to have phases.

Unlike Earth, Mercury has very little atmosphere. It would be impossible for humans to breathe on the surface of Mercury. It would also be too hot for humans to survive there. The diameter of Mercury is about one third the diameter of Earth. Diameter is the distance across a circle, so Mercury is much smaller than Earth. Only one spacecraft from Earth has ever flown by Mercury. Maybe one day we will know more about this planet.



People noticed Mercury 5,000 years ago, about the same time that the Great Pyramids of Giza were being built in Egypt.



The black dot in this picture of the Sun is Mercury. The planet made a rare pass in front of the Sun as spacecraft from NASA were watching.

From the Goddess of Love

Let's proceed with our trip. We're traveling through our solar system. We're traveling outward from the Sun. The next planet is Venus (VEE-nus). The Romans also named Venus. They named Venus for the Roman goddess of love. However, as with Mercury, people had known of the planet Venus for thousands of years before it was named. Venus is next to Earth in our solar system. Some scientists call it our sister planet. This means that Venus and Earth are alike in many ways. They have similar sizes and weights.

Venus is the third brightest object in the sky.

Only the moon and the Sun are brighter.

Venus is one of two objects that can be seen at night and during the day.

Can you guess the other one?

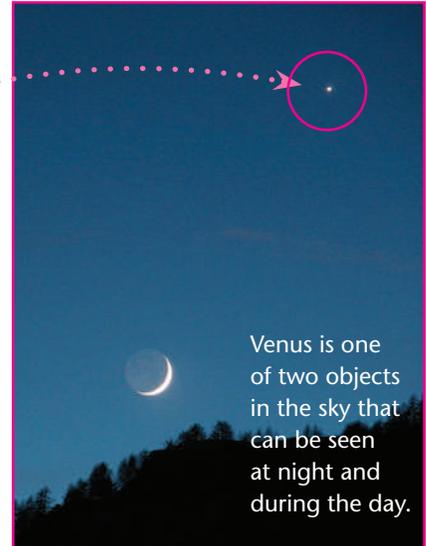
The moon! You can sometimes see the moon during the morning hours.

People could not live on Venus.

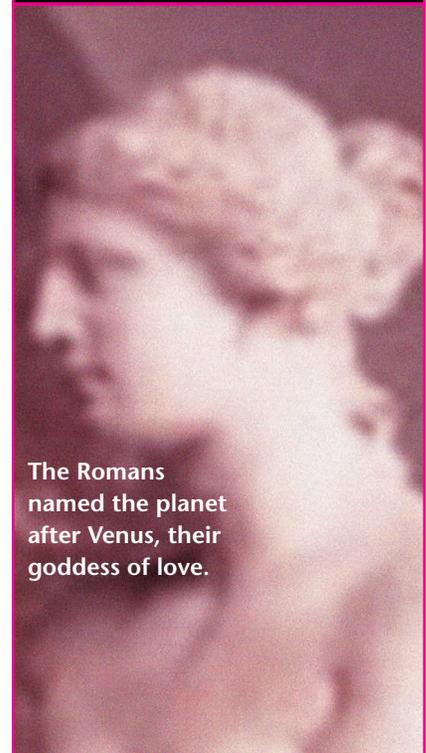
People need oxygen to breathe, but the air on Venus has no oxygen, so people could not survive there. The thick

clouds around Venus are actually poisonous. The thick clouds turn Venus into a giant greenhouse. It is the hottest planet in the solar system! The surface of Venus is about 870°F, and it never cools down. The temperature is the same on Venus, all day and all night. Scientists don't think they'll find evidence of life on such a hot planet!

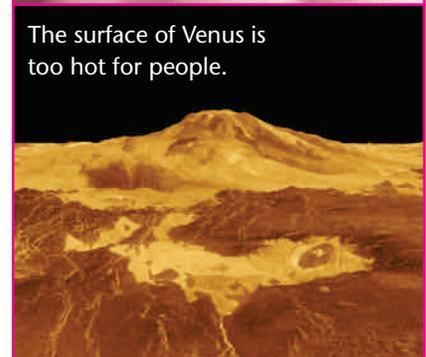
Venus is so bright, it can cast shadows. Check it out on a dark, moonless night!



Venus is one of two objects in the sky that can be seen at night and during the day.



The Romans named the planet after Venus, their goddess of love.



The surface of Venus is too hot for people.

The Red Planet

Now we continue our journey. The next planet we'll study is Mars, which is also called the red planet.

Mars was named for the Roman god of war.

Alien Life

Aliens from Mars have been the subject of many books and movies ever since astronomer Percival Lowell suggested it was possible in the early 1900s.



Many people think Mars is the most interesting planet in our solar system.

Many scientists agree. Do you know why?

Mars is the only planet we know about that could possibly have had life on it at one point.

It's also the only planet that has traces of water. Also, there is some oxygen in the air on Mars. These things are important to scientists.

They're important because they mean that it might be possible for people to live on Mars one day. If that day comes, it will be far in the future. Technology would need to advance very far before we could even send astronauts to Mars.

Scientists are monitoring two rovers that are on the surface of Mars. Each rover has the mobility and toolkit to function as a robotic geologist.

Scientists have, however, sent machines to Mars.

These machines have explored the sands and rocks

of Mars. They have told us much about what Mars is like. A few of these machines are still there. Maybe one day, in the distant future, humankind will be there too! Who knows?



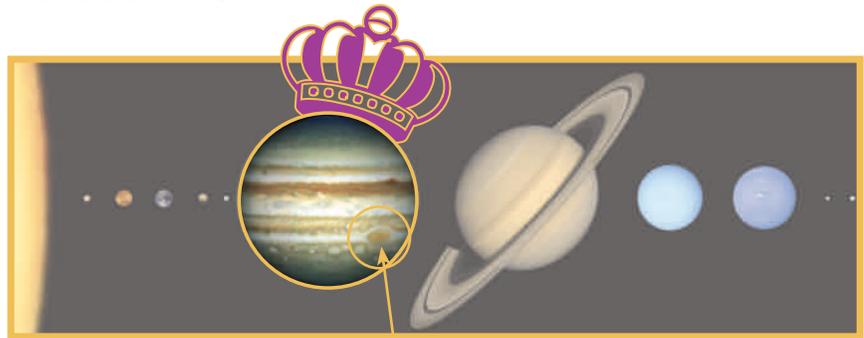
The King of the Planets

We'll learn about the dwarf planet Ceres soon. First, let's talk about Jupiter. It is fitting that Jupiter has this name.

Jupiter, the largest planet, gets its name from the king of the Roman gods. All the planets in our solar system are large, but Jupiter is huge. Jupiter is more than eleven times larger than Earth. It's many times larger than the dwarf planet, Pluto. Jupiter is 2.5 times heavier than all the other eight planets combined.

Jupiter, at its closest, is more than 550 million kilometers from Earth, and 740 million kilometers from the Sun. Earth takes a year to travel around the Sun. It takes Jupiter twelve times as long as Earth to travel around the Sun. Jupiter is so large that it's the fourth brightest object in the sky. The only brighter things are Venus, the Sun, and the moon.

Jupiter also spins faster than any other planet in our solar system. Spinning makes planets flatter over time. Jupiter also has something called the Great Red Spot. It's not actually a spot. It's a giant storm. The storm alone is larger than our planet. Jupiter really is the king of the planets.



Cosmic Collision!

In 1994, Jupiter was hit by the comet Shoemaker-Levy 9. This allowed scientists to see what happens when comets and planets collide.

You can fit at least two Earths inside the Great Red Spot!



Rings and Things

The next planet on our trip is Saturn.

Saturn is the second largest planet in our solar system. Only Jupiter is larger. Saturn is named for the Roman god of agriculture. Saturn is more than a billion kilometers from both Earth and the Sun.

Saturn is most notable for the rings that circle it. There are seven rings, made of different space materials. Some are water. Some are rocks and dust.

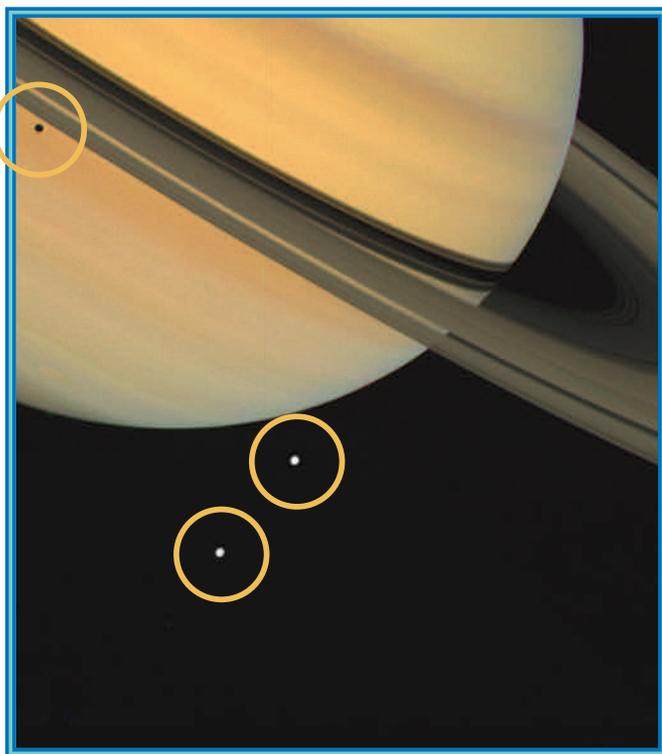
Some are other small particles. Saturn is not the only planet in our solar system to have rings. Jupiter, Uranus, and Neptune all have rings. Saturn's are most noticeable because there are so many of them. The rings are named Rings A, B, C, D, E, F, and G. Saturn also has gaps. The gaps have more interesting names. Among others, there are the Maxwell gap, the Enke (ENK-ee) Gap, and the Keeler Gap. The rings and gaps have been the subject of many beautiful photographs from space.

Saturn is another large planet. It is almost nine times the size of Earth.

It is also very, very heavy. It has almost 100 times the mass of Earth. Saturn takes almost thirty Earth years to travel around the Sun. Also, Saturn is known for spinning at different speeds. Other planets, including Earth, always spin at the same speed.

Did You Know?

Despite being the second biggest planet, Saturn is the least dense! That means that if you put Saturn in a glass of water, it would float like an ice cube!



Saturn and a few of its sixty-two satellites. Saturn's largest satellite, Titan, is bigger than Mercury!

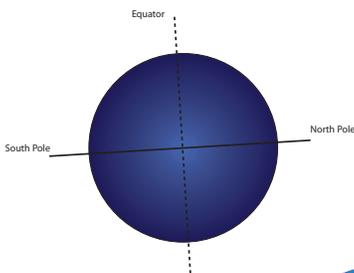
This one's greek!

Uour next stop is the planet Uranus. This name is pronounced two ways. Some pronounce it yer-AY-nus. Others say YER-uh-nus. It doesn't really matter which way you pronounce it. But there is something special about its name. All the other planets have Roman names. Uranus is named after an ancient Greek god. In Greek myth, Uranus is the father of Saturn, who is Cronos in Greek mythology. Uranus is also the grandfather of Jupiter, or Zeus in Greek myth.

Uranus is another of the larger planets. It is four times larger than Earth and 14 times heavier. Uranus is 2.8 billion kilometers from the Sun. It's also 2.7 billion kilometers from Earth. You can barely see Uranus without a telescope, so people saw it but did not think it was a planet. A scientist named

Topsy Turvy!

Uranus doesn't sit upright on its axis. As a result, it's poles are where its equator should be! The equator is still the warmest part of the planet.



William Herschel determined that it was a planet in 1781, making it the first planet discovered in modern times. Because it is so far away, only one spacecraft has flown by it. The ship *Voyager 2* flew by it in 1986. Then *Voyager 2* flew to Neptune, which we'll learn about next!



William Herschel originally named Uranus "George's Planet" after King George III of England. Other scientists wanted to name it "Herschel" after its discoverer.



Escape the solar system? Not quite!

Our trip across our solar system is nearly complete. Now we are stopping at Neptune. Neptune was named for the Roman god of the sea because of its bright blue color. Neptune is almost 5 billion kilometers from the Sun and over 4 billion kilometers from Earth.

Neptune's trident



Neptune has the highest wind speeds of all the planets. It even had a big storm on it called the Great Dark Spot, similar to the Great Red Spot on Jupiter. The storm disappeared in 1994.

Neptune is the eighth planet from the sun, but not always! Neptune and the dwarf planet Pluto sometimes switch places. Pluto's orbit is very different from the rest of the planets. Pluto's orbit brings Pluto inside Neptune's orbit every 248 years. Then Pluto is the eighth planet for about twenty years until they switch back.

Because it's so far from the Sun, Neptune is very cold. Its surface can drop below -200°C . That's -392°F ! That's cold! Neptune also has the highest wind speeds of all the planets. Winds blow at speeds up to 2,000 kilometers per hour there. Can you imagine that? People couldn't survive there at all.

After *Voyager 2* visited Uranus, it flew by Neptune. This was in 1989. Then *Voyager 2* escaped our solar system. It never flew by Pluto. But we will. Off we go to Pluto!

Voyager 2 visited Uranus in 1986 and then flew by Neptune in 1989. Then *Voyager 2* escaped our solar system.



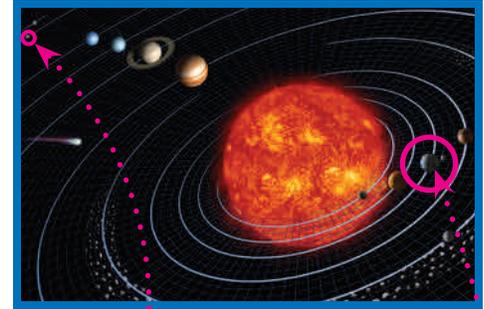
So, So Small

The last planets we'll learn about are the dwarf planets: Ceres, Pluto, and Eris. These three planets are really small compared to the other planets we've read about. That's why we call them dwarf planets. Ceres is located between Mars and Jupiter, while Pluto and Eris are the two planets farthest from the Sun.

Pluto was named after the Roman god of the underworld. It was suggested by a British girl named Venetia Phair, who had read about Greek and Roman myths in school. It happened that the name also allowed scientists to honor the astronomer who first suggested a ninth planet existed, Percival Lowell. His initials appear in the name Pluto. Ceres and Eris are mythological names as well. Ceres was named for the Roman goddess of agriculture and Eris was named after the Greek goddess of discord, or argument.

Pluto has officially been a part of the solar system since 1930, but scientists just recently reclassified it as a dwarf planet. Ceres was discovered in 1801, but scientists were not sure what to call it. They called it a planet for a long time before deciding it was an asteroid. It is the largest object in the asteroid belt between Mars and Jupiter. Eris was discovered in 2005. It is the largest dwarf planet and was considered to be the tenth planet before being reclassified. More planets and dwarf planets could be added in the future. For now, there is an easy way to remember the planets we've read about and their distance from the Sun. In 2008, the National Geographic Society recognized a fourth grader for coming up with the following phrase: "My Very Exciting Magic Carpet Just Sailed Under Nine Palace Elephants." See if that helps you remember all the planets!

Our trip through the solar system is now complete. It's time to travel outside our solar system and see what we find.



Pluto is more than 7.5 billion kilometers from the Sun and one tenth the size of Earth!



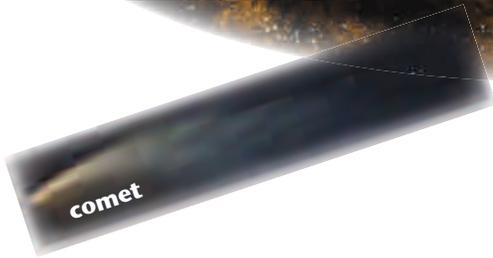
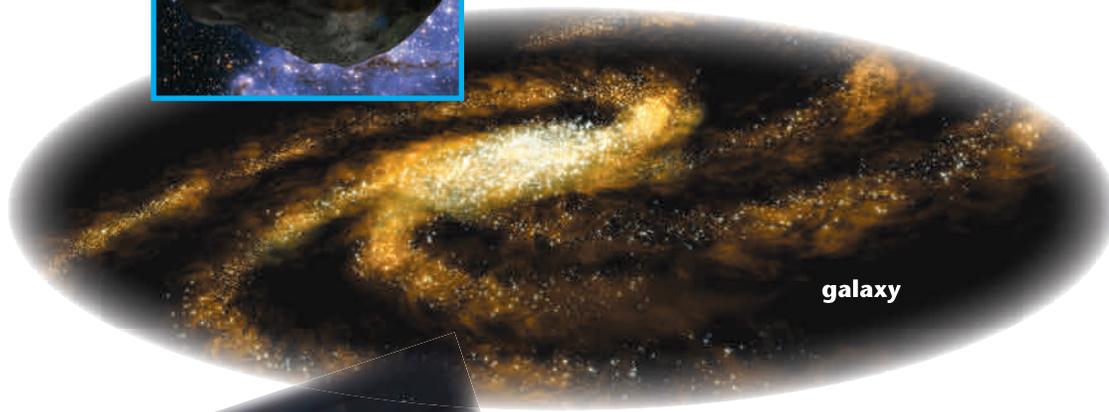
Find out!

Ask an adult what phrase they used to remember the planets. Chances are good that they will say, "My Very Educated Mother Just Served Us Nine Pickles!"

Part II: The Larger Region

A Milky Way?

We have left our solar system. Where are we now? We're still in our galaxy (GAL-ax-ee). What's a galaxy, you ask? A galaxy is a big assembly of things in space. Many solar systems can be found inside one galaxy. You'll also find comets, asteroids, stars, and dust in a galaxy. A galaxy often has trillions of stars.



The galaxy appears as a band of soft white light. The Best time to see it is on a dark night in winter



Our solar system is part of a galaxy. Our galaxy is called the Milky Way. It is a spiral galaxy. Here's what that means. You learned that all the planets spin around the Sun. The Sun is the center of our solar system. Our galaxy also has a center. It is near the constellation Sagittarius (SAJ-ih-TARE-ee-us). Everything in the galaxy revolves around that, so you can think of a galaxy as a much larger solar system.

You can see the galaxy in the night sky. It appears as a band of soft white light. That's how the galaxy got its name. Experts believe that our galaxy is around 13 billion years old. That's old! Let's travel around a bit in this huge galaxy. Let's explore some of the things you find in our galaxy and in others.

Twinkle, Twinkle

There are more stars than anything else in the galaxy. There are billions of them. Our sun is a star. What's the difference between a star and a planet? Stars are made of gas, not rock, so they give off, or emit, energy and light. That's why you see so many of them on clear nights.

There are different types of stars. They range in size and age. The tiniest are called neutron (NEW-tron) stars. They are no larger than a large city. The largest are called supergiants. If you look up in the night sky on a clear night, one of the brightest stars you'll see is Polaris (puh-LAIR-is), or the North Star. It is a supergiant.

Stars don't live forever. In fact, many of the stars you see in the sky are already dead. They have already run out of energy and light. But the light takes so long to get here that we see the light long after the star has died.

Sometimes stars die in explosions. These are called nova explosions or supernova explosions. When a star explodes in a supernova, you'll see it get much brighter one day. In the following weeks, it will gradually become dimmer and dimmer. Eventually it will disappear. Eventually, there will be no more light from it that reaches Earth. That's how the star's life cycle ends.



A massive star has exploded as a supernova and is the greenish-blue shell of debris in the lower left area of this image from NASA's Hubble Space Telescope.

Not Quite a Star

There are things in the galaxy that appear to be stars, but are not quite stars. They are called quasars (KWAY-zars) and pulsars (PUL-sars). These are like stars in that they give off light. But they both differ from stars in important ways.

Quasars look like stars. You can see them through telescopes. Certain telescopes make it look like quasars give off red light. But scientists have

Quasar



learned that quasars give off much more energy than the usual star. However, since they don't appear to be much brighter, they must be farther away. So quasars are huge objects in space that are much older, and much farther away, than stars. Scientists are very interested in quasars. By studying quasars, scientists learn about what the universe looked like at the very beginning of time.

Pulsars also look like stars. However, stars usually transmit steady amounts of energy. Pulsars don't. They pulse. Their energy and light come and go.

Crab Pulsar



Also, scientists have learned that they can pick up some of the energy from pulsars on radios. These radios are not like the ones you use in your home. They are special space radios. Like quasars, pulsars help scientists learn more about how space works.

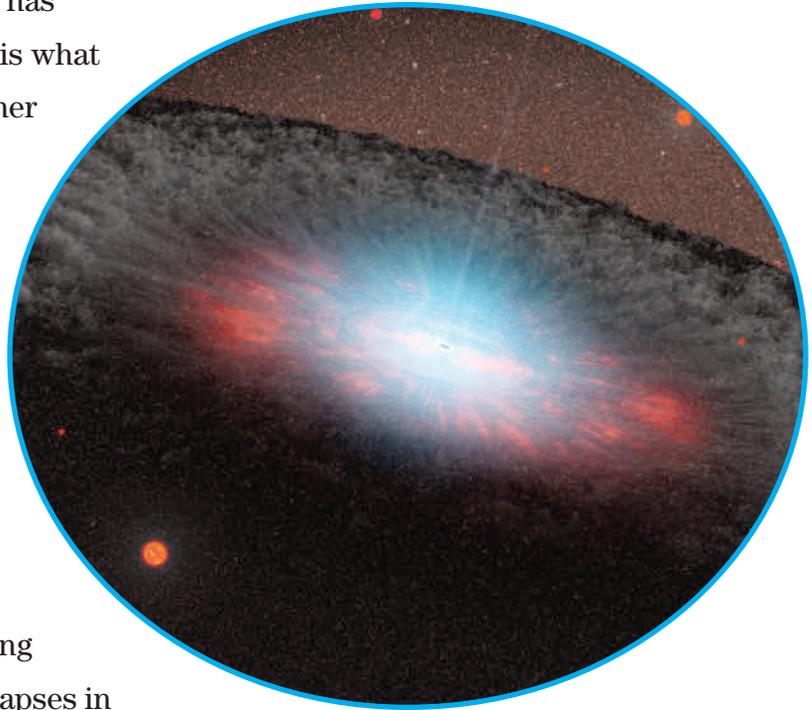
Holes in space?

Like Earth, everything in space has some amount of gravity. Gravity is what holds each star and planet together and what makes things stay on the surface of planets. If Earth had no gravity, everything would float off it, including buildings, trees, people, and dirt...everything! That's how gravity works.

Some objects in space have very, very strong gravity. Sometimes, the gravity is so strong that the object (often a star) collapses in on itself. When this happens, the force of the collapse pulls in everything around the star. It even pulls in light! This creates one of the most amazing things in all of space: the black hole.

Black holes are giant holes in space that nothing nearby can escape. Planets can't escape. Stars can't escape. Not even light can escape the pull of a black hole. You can't see black holes, so how do we know they exist? First, black holes are massive, or heavy. Scientists can find objects that are really heavy because their gravity affects other things. Unlike massive stars, black holes don't shine. When scientists notice the effect of a massive object on other things, but they can't see the object, they assume they have found a black hole.

Second, scientists are sometimes lucky enough to see a star being eaten by a black hole! They might notice a lot of radiation coming out of an area in the sky near a star. Have you ever had a broken bone X-rayed? Stars emit a lot of X-rays when they get trapped by black holes. Scientists hope to someday have better ways of viewing black holes.

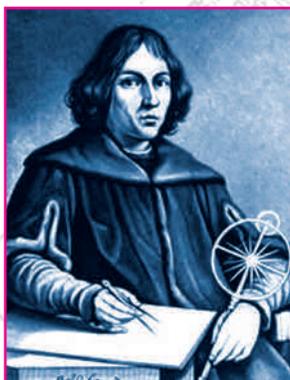


This NASA artist's concept shows a supermassive black hole at the center of a galaxy.

Part III: Into the Past, and the Future

Early Stargazers

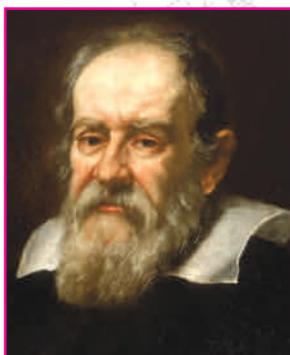
We've learned much about our solar system and the galaxy from modern science. But we've also learned much from the history of stargazing. Some ideas from the past have changed. They've led to new and better ideas. Other ideas from the past, however, are still held today. Let's learn about two important scientists from the past.



Copernicus discovered that the Sun, not Earth, was the center of our solar system.

Until the late 1500s, people had different ideas about space. Most people thought Earth was the center of our solar system. A man named Copernicus (kuh-PER-nick-us) changed all that. Copernicus discovered that the Sun, not Earth, was the center of our solar system. His idea was not popular at the time, but now we know that Copernicus was right.

Around the same time, advances in science supported Copernicus's beliefs. An Italian named Galileo (GA-li-LAY-o) was one of the first people to use a telescope to really study the planets and stars. He learned about how the planets travel around the Sun. He learned that some planets have moons, while others don't. Galileo did much to convince people that Copernicus was right. The ideas of these scientists are still accepted today.



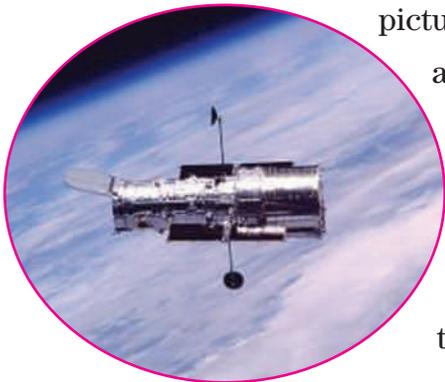
Galileo was one of the first people to use a telescope to really study the planets and stars.

Armillary Sphere

The First Machines

October 4, 1957, is the date of one of the most important events in learning about space. The Soviet Union launched *Sputnik* (SPOOT-nick). *Sputnik* was the very first man-made satellite to go into space. Never before had humankind built a satellite and successfully launched it into orbit. Scientists all over the world send rockets and satellites into space often now. But *Sputnik* was the very first one. Just months later, *Sputnik 2* carried the first live passenger, a dog, into space.

Thus the space age began. From that moment on, sending machines into space became a priority for both the Soviet Union and the United States. The United States responded to the *Sputnik* program with unmanned programs like *Explorer* and *Courier*. To this day, unmanned spacecraft tell us more about the workings of space than any of those carrying people. We learned earlier about the *Voyager* program, which has taken



The Hubble Space Telescope hovers at the boundary of Earth and space, where it can avoid the atmosphere and clearly see objects in space.

pictures of Uranus and Neptune. There's also the Hubble Space Telescope, which takes pictures deep in space and sends them back to Earth. In 2009, Hubble received some repairs and new equipment that has allowed it to see further and in more detail than ever before. There are the rovers that have landed on Mars and analyze the red planet. None of this would have been possible without the early programs like *Sputnik* and *Explorer*.



Model of the Soviet Union's *Sputnik*, the very first satellite to go into space.



Laika the dog, traveled inside *Sputnik 2* and was the first live passenger in outer space.

Great Steps

Another great step in space exploration happened in 1961. A Russian cosmonaut, named Yuri Gagarin (YOO-ri GAH-gah-REEN) became the first human to traverse the boundary between Earth's atmosphere and space. He traveled once around Earth before returning to it.



Yuri Gagarin, the first human in space.

"That's one small step for a man, one giant leap for mankind."

Eight years later another great step occurred. An American astronaut became the first human to step onto the surface of the moon. His name was Neil Armstrong. When he took his first step on the moon, he said, "That's one small step for a man, one giant leap for mankind." Indeed, it was a giant leap for humankind. Since then space programs have sent many people into space. The knowledge they bring back to Earth helps us learn more and more about the makeup of the universe around us. Manned space travel will continue to be an important part of learning about space. Perhaps one day humans will set foot on other planets in our solar system. Maybe it will be Mars. Maybe it will be Venus. Who knows?

Did you know?

The moon has no atmosphere, so there is no wind. Wires were sewn into the American flag to make it look like it was being blown in the wind.



After placing the American flag on the surface of the moon, Neil Armstrong works at the Lunar Module.

Who knows?

People have been looking into the sky for centuries upon centuries. The things we've learned over those



centuries are astounding. Every day, people learn more and more about what space is really like. They learn from the information astronauts bring back. They learn about the energy received from quasars. They learn from the pictures that satellites and telescopes send back. They learn from just gazing up into the sky. Many questions about the universe have been answered.

But many questions remain unanswered. How many planets like Earth are there in the universe? Is there life elsewhere out there? How old is the universe? How long will it last? There are probably some questions that scientists don't even know to ask yet. But as long as people continue to study, to learn, and to think about space, the answers may one day come because people continue to think about and study space. Until then, scientists will keep studying what it's like beyond the sky.

