

Name \_\_\_\_\_

Class \_\_\_\_\_

## Rendezvous with a Comet

*Comets are an interesting and popular space phenomenon. But what are they really?*

*Where do they come from? What is their relationship with the Sun? Why have they gotten so much attention? You will find the answers to these questions in this Extra Fun Page.*

**Where do they come from?** Comets are actually collections of materials left over from the formation of the solar system. This makes them especially interesting to astronomers because the solar system formed around *4,600 million years ago!* Studying the composition of comets can tell us something about the history of the solar system.

**What do they have to do with the Sun?** Without the Sun, we wouldn't be able to see comets very easily, maybe at all! This is because they reflect the light from the Sun, rather than having their own source of light. This makes the sun vital to the observation of comets. The Sun is actually what "makes" the various parts of the comet listed above. As a comet approaches the Sun, the radiation evaporates the ice. This causes gases and dust to drag from the nucleus--the coma. Radiation from the Sun blows the dust away from the head of the comet, creating the dust tail. The solar wind drags ionized gas from the comet, creating the ion tail.

**Where do they go?** Comets orbit around the Sun just like planets, but their orbits are more elongated and take longer. Most of them go beyond Pluto! Periodic comets are those that have an orbit of less than 200 years, but they make up the minority of known comets.

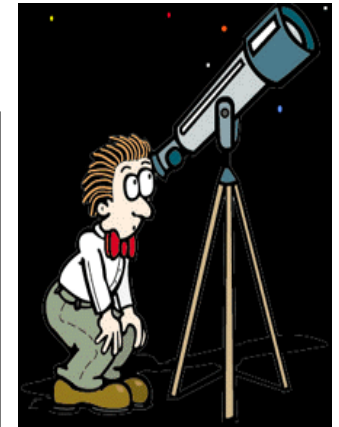
**How long do they last?** That depends on the comet's orbit. A comet loses some of its ice and gases every time it goes by the Sun. After about 500 passes, most of the ice and gas is lost, and the comet turns into something close to an asteroid. So the amount of time it takes a comet to orbit the Sun determines how long the comet will last.

**Why are comets so important?** Comets are actually more than just objects flying through space that are neat to look at. They may have had a huge effect on Earth! Many astronomers believe that impacts with comets brought the large amounts of water to Earth that we have today. Water allowed life to begin on Earth. Comets could be the reason for our existence! Many scientists also believe that a comet caused the extinction of the dinosaurs. If this is true, what would have happened if a comet had not collided with the Earth? Would we be here today if the dinosaurs had not gone extinct? Before they were understood, comets caused quite a stir throughout history. People have blamed them for all sorts of tragedies, from the start of wars, to plagues, illnesses, and deaths of leaders. In recent times, with the onset of the new millennium, there has been a lot of hype about "doomsday" comets, which are comets that people believe will hit the Earth.

The reality is that comets only impact the Earth every few million years. There are also several telescopes devoted to scanning the solar system to look for potentially dangerous objects, so even if a comet looked like it was heading our way, we would be able to detect it ahead of time and possibly change its course. Although this does not rule out the possibility of a comet impact with Earth, the chance it will happen while humans are still alive on this planet is unlikely



To be able to do this project, you must use the resources from the web page and the back of this sheet.  
You will have to also use your reasoning power to determine the best scenarios for different events.



**Comets**

**Your Name**

**Teacher's Name**

**Draw the parts of a comet on this page**(include the coma, nucleus and the tail)

Slide 1

**What do Comets have to do with the Sun?**

Slide 2

**Why are Comets so important?**

Slide 3

**Where do Comets go when they are not visible here on Earth?**

Slide 4

**Why are Comets so important?**

Slide 5

**The one interesting fact I learned was.....**

Slide 6

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