

8th grade Week 10 notes

8th Anchor Questions Week 10 (Nov. 4-8)

Due: Anchor Questions as assigned daily, complete by Friday, 11.07 Assessment: Friday, 11.07

- 1. Explain how our solar system formed (Nebular Theory)**
- 2. Explain what a star is**
- 3. How do stars, like the sun produce energy?**
- 4. What is the "life-cycle" of a sun-sized star?**
- 5. What is the "life-cycle" of a massive star?**
- 6. List three layers of the Sun's Interior**
- 7. What is in the "solar wind"?**
- 8. List three solar effects and their effects on Earth**
- 9. Describe what the "11 year cycle" is for the sun**
- 10. What are sunspots and why are they important**
- 11. Describe what causes the "Northern Lights"**

The Story of our Solar System

Once upon a time there was a star named GIBRATS. He had been around a long time- as old as the Milky Way as a matter of fact. He was also giant, the biggest star in the neighborhood. For almost 5 billion years he had produced EM waves and shined brightly. But he was aging- and lonely. You see, GIBRATS was a star without any planets, moons, asteroids or comets around it.

He knew his end was near. He would look longingly at those stars that had planets- a planetary system they called it. He thought to himself: "I wish I could have had some company during these billions of years...too bad that's not going to happen now." He was right, planets and everything else usually form at the same time.

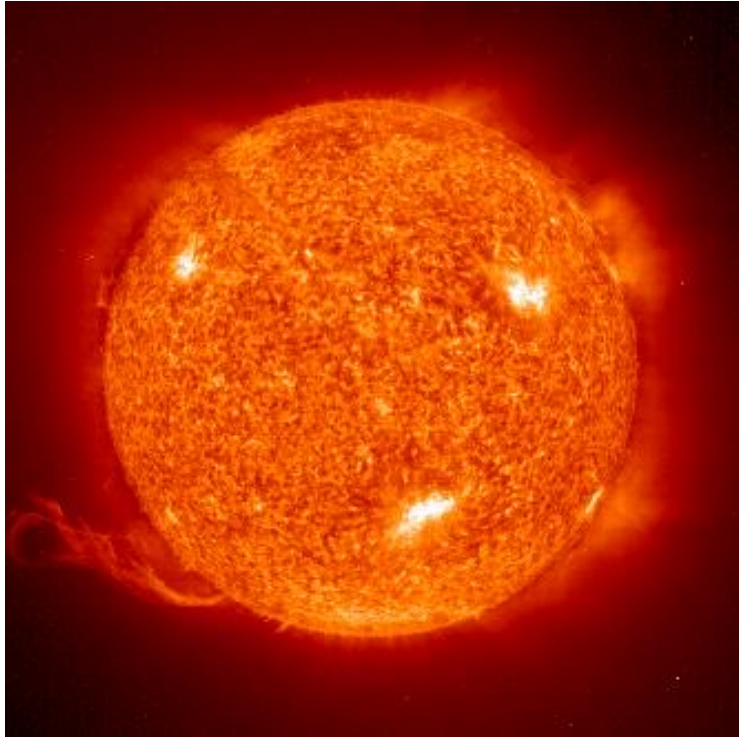
Then, one day, he was glowing but he could feel rumbling deep in his core. The rumbles became stronger and stronger and in an instant, the biggest explosion occurred. GIBRATS, was no longer but in his last moment he produced more light and energy than when he has alive- he went super nova. In this explosion all of him was spread out, even all the elements that were in his core, all the gases that made up the outer shell shot into space forming a nebula.

Years passed and then something amazing happened! The matter that made up GIBRATS started to come together, because of gravity, spinning ever faster and faster. In a burst of light our sun was born and the materials that weren't in the center started forming "planetesimals", which are the beginnings of planets. After millions of years, the sun continued putting out light and the planets became what they are now.

In the end, GIBRATS wish to have partners in space became true. The sun, the planets, the moons, the comets, the asteroids and US are all made up of the matter provided by GIBRATS. He lives on in the soil we walk on, the rocks we use for building and each and everyone one of us that is reading this story.

C-notes

Sun: What is it?



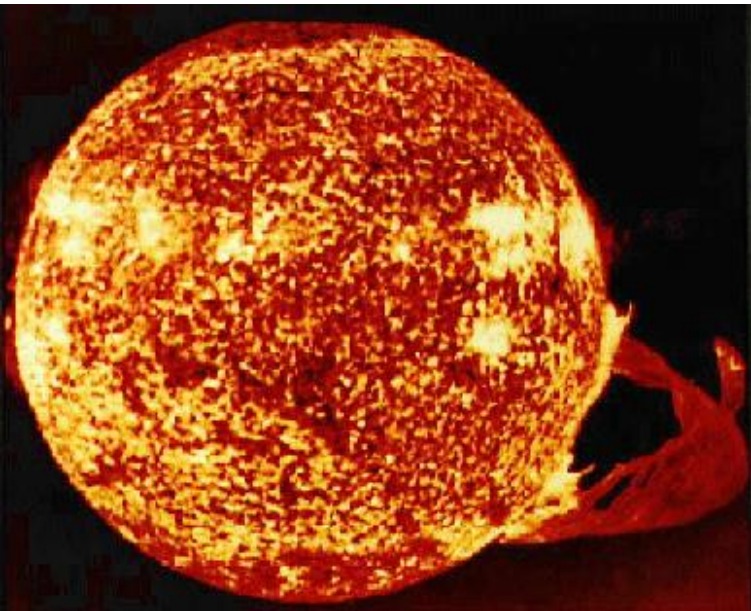
It is a star- it produces its own light

Age: 4.6 Billion years old

WILL “stop” shining in another 4 billion years
Provides ENERGY for all living things on Earth

C-notes

Sun: Energy



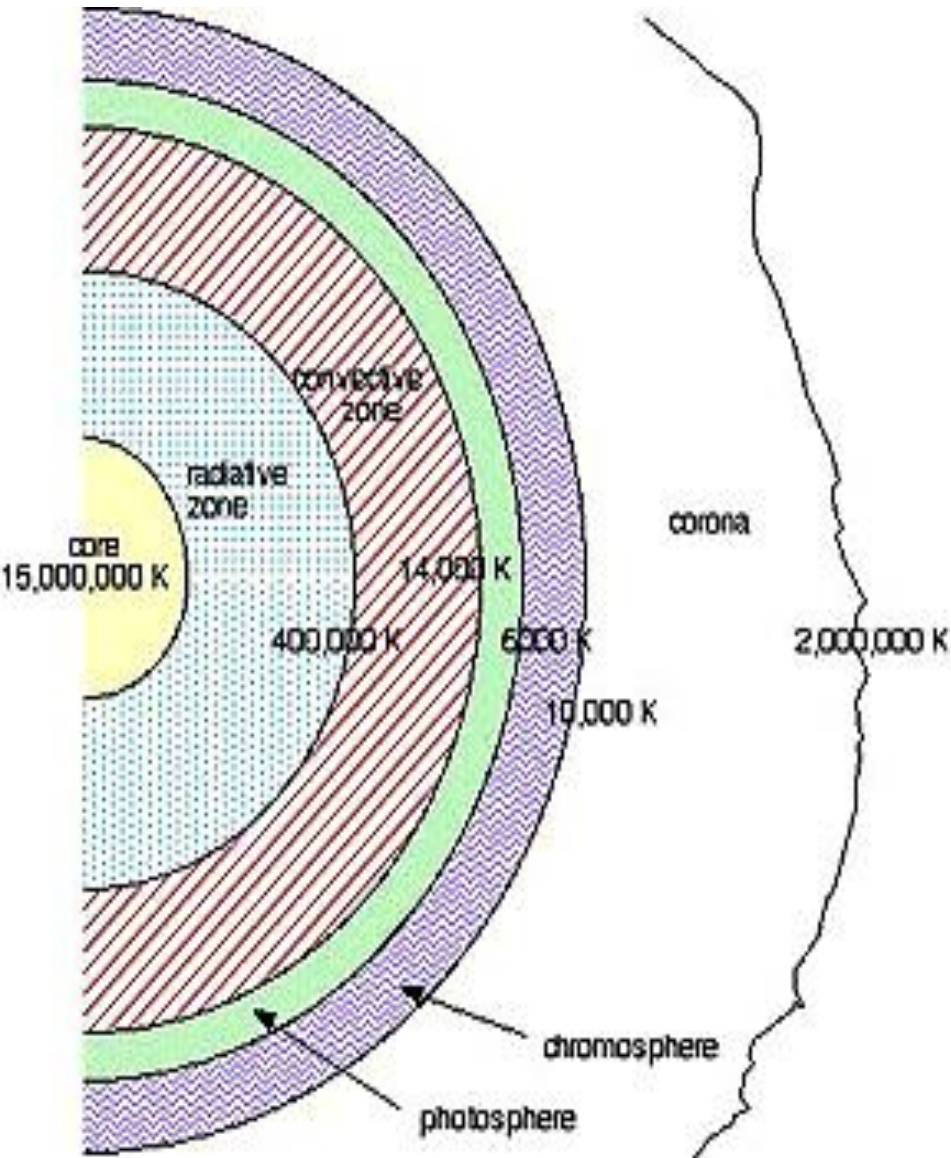
Sun “makes” its energy
The process that the sun
uses to produce energy is
called NUCLEAR

FUSION (NF)

NF- takes two H atoms
and smashes them
together to make a He
atom

That smashing releases
ENERGY

The sun's Layers



Sun's Interior

Core

Radiative zone

Convection Zone

Photosphere

Sun's Atmosphere

Chromosphere

Corona

Layers of Sun's Interior: Explained

Sun Interior

Core- hottest, deepest layer. This is where **NUCLEAR FUSION** happens

Radiative Zone- this is the first layer where radiation exits the core. Usually involves electrons, protons and photons (light)

Convection Zone- is where “matter” rises and falls due to convection

Photosphere- this is the “surface” of the sun. Light escapes from here

C-notes

Layers of Sun's Atmosphere: Explained

Atmosphere

Chromosphere- thin layer colored red. Barely visible at sunrise or sunset

Corona- very hot, extends into space. You can only see during total eclipse

Presentations:
Solar System Formation & Sun

Topics:

- Formation of the solar system
- Sun- energy
- Sun- Interior
- Sun- Atmosphere

Presentation Forms:

- Video
- Poster
- Typed story
- Foldable (brochure)

**8th grade Partner Project Week 10 *Solar system and Sun intro*
Members-**

Hour-

Total Grade-

Project Instructions-

Each member must complete each of the topics below and be ready to explain them Friday, November 7

Display Options:

Video, PowerPoint, story, poster, graphic organizer

Checklist	Complete
a- How the solar system formed	
b- Sun- how it makes its energy	
c- Sun- the layers of the interior	
d- Sun- the layers of the atmosphere	

Rubric

Quality (Max 3)	Score
Complete (Max 2)	
Accurate (Max 5)	
Presentation of material (Max 3)	
On task- Thursday (Max 2)	

1. What is GIBRATS?
2. Why is GIBRATS important to the solar system?
3. What is the name for the “explosion” that happened to GIBRATS?
4. What happened to all the matter that made up GIBRATS?
5. What is a “planetesimal”?
6. What happens inside a star?
7. Where were the 88 elements formed?
8. What did the guy spinning with the lead spheres (balls) represent?
9. What is the HELIOSPHERE?
10. What is the KUYPER belt?

1. What is GIBRATS?

A big star that existed before the solar system

2. Why is GIBRATS important to the solar system?

Because the matter from GIBRATS formed the solar system

3. What is the name for the “explosion” that happened to GIBRATS?

Super Nova

4. What happened to all the matter that made up GIBRATS?

It formed a nebula

5. What is a “planetesimal”? **The beginnings of a planet**

6. What happens inside a star? **Hydrogen atoms are smashed together to make Helium atoms**

- 7. Where were the 88 elements formed? Inside a star- the star that existed before the solar system**
- 8. What did the guy spinning with the lead spheres (balls) represent? What happened to the nebula (molecular cloud) that formed our solar system**
- 9. What is the HELIOSPHERE? The farthest region in the solar system, it is the "border" between our solar system and interstellar space**
- 10. What is the KUYPER belt? A band of asteroids, icy rocks, etc. beyond the planets**