

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# **Final Exam Study Guide- 2014**

## **The Universe**

Cosmology is the study of what aspect of astronomy?

List the two most abundant gases in the universe and explain why we have so much of them.

What was the Big Bang and why is it important to cosmology?

## **Life Cycle of Stars**

What forces are responsible for creating stars?

What is a young star called and what causes these young stars to heat up and glow?

What physically happens to a star as it moves through the main sequence?

What is the most influential factor in the life and death of a star? Why?

What features can form when a star dies and what are these figures based on?

## **Hertzprung-Russell Diagram**

What can an H-R diagram tell you about a star?

What is the difference between apparent magnitude and absolute magnitude?  
When is one more useful than the other?

## **The Sun**

Describe the interior of the Sun. (layers)

Explain how granules allow energy to be released from the Sun.

What kind of star is the Sun? What does this mean about the Sun's location in its life cycle?

What type of fusion is going on inside a main sequence star?

What is nuclear fusion? How is it different from nuclear fission?

## **Solar System**

***Review your planet information!***

Which planet is the largest? Smallest?

Which planets have ring systems?

Which planets have atmospheres?

What are the Great Red Spot and Great Dark Spot? On which planets are they found?

Which planet is the hottest? coldest? What makes these planets hot or cold?

What objects are included in our solar system?

What is the asteroid belt? Where is it located?

What is a comet made of? Draw and name the 3 parts of a comet.

### **Telescopes**

Describe a: meteor, meteoroid, meteorite? What is the difference amongst these?

What is the difference between a meteoroid and a comet?

What are the two types of optical telescopes? What is the difference in how they collect light?

Which of the two types of optical telescopes gives a better image? Why?

Name the other types of telescopes and what they detect.

### **Eclipses**

Describe the two types of eclipses.

What is the difference between the umbra and penumbra?

### **Geology**

What is the shape of the Earth? How do we know this?

List and describe the four types of geologic events.

How do the Laws of Superposition and Cross-Cutting Relationships help determine the age of a rock?

## **Minerals**

List the five criteria that must be met for a substance to be considered a mineral.

Compare and contrast the types of minerals.

List the other mineral identification properties and explain how they are used to aid in identifying minerals.

## **Rocks**

What is a rock?

List the three types of rocks. How do these three rock types form?

What is the difference between a mafic and felsic rock? (both physically and chemically)

What is the difference in texture between an intrusive and an extrusive igneous rock? How does where the rock cooled effect the texture of the rock? Why? How do the three types of sedimentary rocks form?

What are the different features that can be found in sedimentary rocks?

What forms metamorphic rocks?

What is foliation?

What is the difference between regional and contact metamorphism?

Describe the rock cycle and how it can determine how different rock types are made.

### **Plate Tectonics**

Compare and Contrast Uniformitarianism to Catastrophism.

What is plate tectonics and how does it explain the formation of the Earth's surface?

What is the difference between the lithosphere and aesthenosphere?

What was Alfred Wegener's contribution to plate tectonics?

What are the three types of plate boundaries?What occurs at these boundaries?

What features can form at convergent plate boundaries?

What is seafloor spreading?

How did Harry Hess' seafloor spreading help to support continental drift?

### **Volcanoes**

List the three volcano types.

Describe the eruptions and shape of each type of volcano.

What is a crater? caldera? vent?

What is tephra? Describe the various types of tephra.

List and describe the three states of volcano activity.

Name some benefits of volcanic activity.

## **Earthquakes**

What is an earthquake?

What is the elastic rebound theory?

What is a fault? epicenter? focus?

List the three types of seismic waves and describe the characteristics and movements of each.

What are the scales used to measure an earthquake's strength. What does each measure?

List some earthquake hazards.

## **Soils**

Define soil.

List the five soil forming factors?

What is the difference between weathering and erosion?

What are the two types of weathering?

What can cause erosion?

What are the 2 types of parent material?  
How can transported parent material be created?

Sketch the soil master horizons and describe each.

What is the difference between the coarse fraction and the soil separates? What is the importance of each?

## **Oceanography**

What is a salt?

What is salinity?

What are the three temperature zones in the ocean? Describe each.

List the different types of tides and describe each.

How can density currents be created?

List the three types of currents and describe their temperature and direction of flow.

What is the shoreline? continental margin? continental shelf? continental slope? continental rise?

What are submarine canyons? Abyssal plains? Seamounts? Guyots? Trenches? midocean ridges?

### **Waves**

What is the motion of water particles inside ocean waves?

What two ways can waves form?

What are the parts of a wave? (making a diagram would help)

What is a breaker? How and why do they form?

What is a tsunami? How is it different from a wind created wave?

### **Meteorology**

What are the three major components of our atmosphere?

What are the 4 main layers of our atmosphere?



List the two types of barometers and describe each.

Define: air pressure, humidity, relative humidity and temperature

What does a psychrometer measure? a hygrometer? Describe how each works.

List the different air masses, describe where they form, their humidity and temperature.

Be able to convert °C to °F, °F to °C, °C to °K, °K to °C, °K to °F and °F to °K.

What is adiabatic cooling?

List the ways that a cloud can form and explain each.

What are the three main types of clouds and what are their altitudes?

What is the Greenhouse Effect? Is it a bad thing?

List the four fronts and the weather associated with each.

Explain how the types of precipitation form.

List the types of clouds and their altitudes. Why are some clouds more vertically developed than others?

Explain what a tornado is and some hazards.

What is the difference between a watch and a warning?

Explain how a tropical cyclone forms and some hazards associated with it. (three stages)

Describe the 3 stages of thunderstorm development. (sketches may help)

Explain how hail forms in a cumulonimbus cloud.

Explain how lightning is created in a cumulonimbus cloud.

**Be able to place isobars and fronts on a weather map and create a weather forecast!**