

IDENTIFY THE CELESTIAL OBJECT

(20 points)

Name _____ Date _____ Moravian University

Instructions: The following astronomical images found on the bulletin boards to the left of Room 106, Collier, represent some common types of objects found in the universe. You will be observing similar objects on Moravian's Sky Deck and at Shooting Star Farm during the semester, but they will look very different than the colorful pictures that are present on the bulletin board. Some of the images were taken with the Hubble Space Telescope, but most of the smaller pictures were imaged by an amateur astronomer. Define the following words listed below to help you in your quest to identify these objects. Some of the words will be used many times while others may not be used at all. For Question 9 on the *Interstellar* poster, identify the person in the credits who recently won the Nobel Prize in Physics for the detection of gravity waves. **Google pictures of these basic types of objects to help you in your quest.**

1. **Planet** (four parts): An object... which orbits the sun, is round, is not a satellite of another planet, and clears its orbital space of debris.
2. **Star** (Think about energy production here): A self-luminous body that... that is composed of mostly that is composed mostly of ionized gases and generates its energy from thermonuclear fusion, either in its core or in a shell(s) surrounding its core. Its composition is mainly hydrogen and helium surrounding its Earth-sized core.
3. **Nebula**—there are dark nebula and emission nebula—include both in your general definition: Any cloud of luminous gas and or dust found in space.
4. **Planetary Nebula:** The end-product of the evolution of a low mass, red giant star, where the star sheds approximately 30-70 percent of its mass before becoming a white dwarf.
5. **Galaxy** (Note the number of stars—and the different shapes along with the definition): Basic way in which matter congregates in the universe—million to trillions of stars—irregular, spiral, elliptical.
6. **Irregular/Spiral/Elliptical Galaxies—Your Choices:** (size—small, midsize, huge; age—young, old, combination; shape, pinwheeled, oval, no specific shape; gas remaining—little, lots, in arms
Irregular: size: small age: young shape: no specific shape gas remaining: lots
Spiral: size: mid-size age: young to old shape: pinwheeled gas remaining: lots in arms
Elliptical: size: small to huge age: old shape: elliptical gas remaining: little
7. **Universe:** All... matter/energy everywhere.
8. **Electromagnetic Spectrum** (speed of travel): All energies... that travel at the speed of light.
9. **Globular Cluster** (Age and number of stars are key here): Aggregates of very old stars in orbits of high eccentricities situated within a galaxy. They may represent the original building blocks

(galaxies) of the universe before being cannibalized into larger systems. They have between 10,000 to a million stars and may be responsible for generating new stars as they pass through the hydrogen rich areas of the galaxy in this they reside. They are gravitationally stable.

10. **Open Cluster** (Age and number of stars are key here): A loose grouping of stars numbering between dozens and several thousand members which were born at the same time, but will eventually dissipate (evaporate).
11. **Star Field:** A general widefield area of the sky showing stars or other objects of interest.
12. **Supernova Remnant:** The expanding shell of debris which follows the detonation of a massive star signally the end of its thermonuclear life. The remaining object is generally a neutron star.

IDENTIFY THE TYPE OF CELESTIAL OBJECT FROM THE PICTURES

INSTRUCTIONS: All objects will have a minimum of two words—Use the definitions on the previous page

No.	Type of Object	No.	Type of Object
1	Name:	21	
2		22	
3	Name:	23	
4	One word	24	
5		25	
6		26	
7		27	
8		28	
9	He won the Nobel Prize in Physics.	29	
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