

# Solar System B

UT Invitational, Fall 2017



*Exploring the World of Science*

**Competitors:** \_\_\_\_\_

**School Name:** \_\_\_\_\_

**Team Number:** \_\_\_\_\_

This test contains 4 parts: matching (30 pts), picture identification (20 pts), short answer (30 pts), and the Interpretive Task™ (20 pts). As always, you'll have 50 minutes to complete the test. You may separate the pages; be sure to put your team number at the top of every page. You may use two letter-sized notes sheets. Good Luck, Have Fun! And always remember: The Eyes of Texas Are Upon You!

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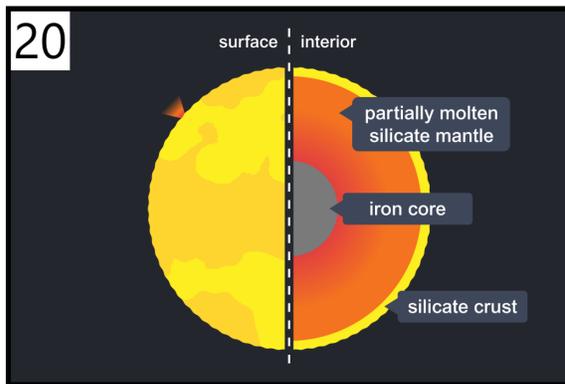
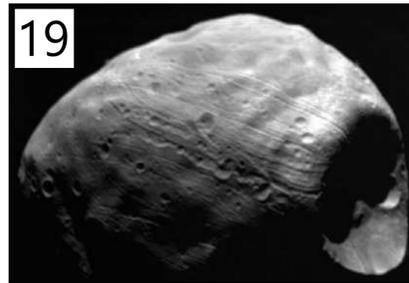
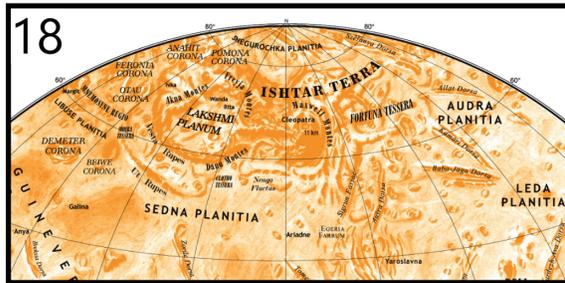
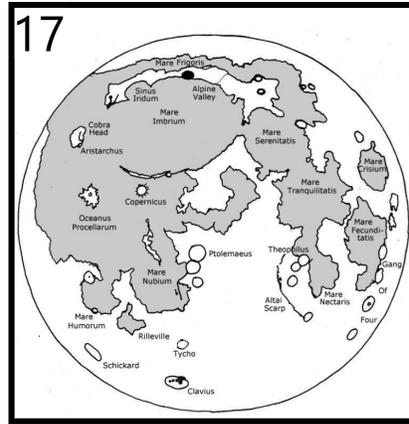
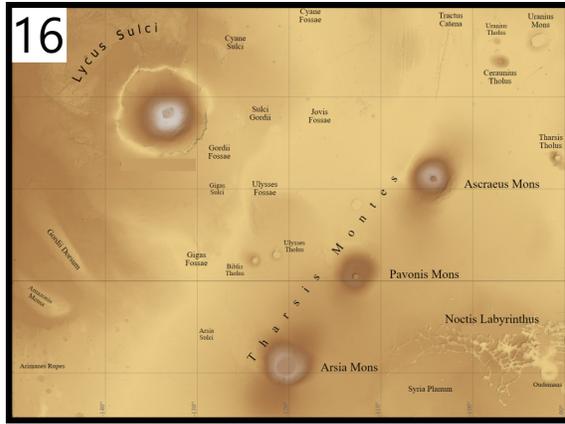
Page:	1	2	3	4	Total
Points:	30	20	30	20	100
Score:					

**PART I: Matching.** 2 points each. Each choice might be used 0, 1, or more times. (sorry! not really)

<b>A</b>	Olympus Mons	<b>B</b>	Maat Mons	<b>C</b>	Mars
<b>D</b>	Kuiper Belt	<b>E</b>	Oort Cloud	<b>F</b>	Ice
<b>G</b>	Batholith	<b>H</b>	Stratovolcano	<b>I</b>	Pancake dome
<b>J</b>	Oxygen	<b>K</b>	Pyroclastic flow	<b>L</b>	Caloris Basin
<b>M</b>	Carbon Dioxide	<b>N</b>	Io	<b>O</b>	Deimos
<b>P</b>	Phobos	<b>Q</b>	Sulfur Dioxide	<b>R</b>	Mercury
<b>S</b>	Areoid	<b>T</b>	Earth's moon	<b>U</b>	Antipode
<b>V</b>	Pluto	<b>W</b>	Tharsis	<b>X</b>	Valles Marineris
<b>Y</b>	Asteroid Belt	<b>Z</b>	None of the above		

1. \_\_\_\_\_ An example of an *inferior planet* (relative to Earth).
2. \_\_\_\_\_ The main chemical component of the Venusian atmosphere.
3. \_\_\_\_\_ The region of the solar system where most comets originate.
4. \_\_\_\_\_ The tallest volcano on Earth's sister planet.
5. \_\_\_\_\_ The most volcanically active body in the solar system.
6. \_\_\_\_\_ A type of Venusian volcanic structure that is not present on Earth.
7. \_\_\_\_\_ The main chemical component of the Ionian atmosphere.
8. \_\_\_\_\_ High radar reflection at Mercury's poles suggests the presence of:
9. \_\_\_\_\_ A planet colored red due to the presence of copper oxide.
10. \_\_\_\_\_ A planet whose year is half as long as its day.
11. \_\_\_\_\_ A planet whose craters are named after famous artists.
12. \_\_\_\_\_ The zero-elevation reference level on Mars.
13. \_\_\_\_\_ The landform that suggested that Mars might have two tectonic plates.
14. \_\_\_\_\_ The region of the solar system that hosts Pluto.
15. \_\_\_\_\_ The smaller of Mars's moons.

**PART II: Identification.** 4 points each. Identify which planet or moon each of these images represents.



- 16. \_\_\_\_\_
- 17. \_\_\_\_\_
- 18. \_\_\_\_\_
- 19. \_\_\_\_\_
- 20. \_\_\_\_\_

**PART III: Short Answer.**

21. (15 points) Explain the Giant-Impact Hypothesis for the formation of the moon. What do we think happened? When do we think it happened? What are some pieces of supporting evidence?
22. (15 points) Explain, with some detail, the favored hypothesis for the formation of Mercury's "Weird Terrain."

**PART IV: Interpretive Task™.**

23. (20 points) Ferrero Rocher and Lindor Truffles are two types of spherical chocolates. The main structure of the Ferrero Rocher is a spherical wafer which is filled with Nutella and a whole hazelnut in the center. The wafer is surrounded by a layer of chocolate studded with crushed hazelnuts. On the other hand, Lindor truffles have two components: a hard, smooth chocolate exterior, and a creamy, liquid chocolate interior. The diagrams for both are shown below. Under each picture, compare contrast the internal and external structure of that chocolate with the structure of Io. You can make a bullet list of the similarities and differences for brevity. HINT: Discuss the composition, consistency, and relative sizes of the layers in Io and the chocolates.

