**Black Holes - “Monster of the Milky Way” (Nova) Video Questions**

1. Where would you find the brightest part of a galaxy? WHY?
2. Why can we not see the center of our galaxy with visible light? What type of light can be used to see the center of the galaxy?
3. What did Eric Becklin and his team of astronomers use to pinpoint the center of the Milky Way Galaxy? What did it allow them to do?
4. How many light years across is the Milky Way Galaxy?
5. What lies at the center of our Milky Way Galaxy?
6. What do massive objects like the Sun do to the fabric of space - time?
7. Why does light get bent or pulled into a black hole and can’t get out?
8. If we can’t see black holes, how do we know they exist?
9. What happens to a star if it passes too close to a black hole?
10. How did Andrea Ghez and other scientists prove that there is a black hole at the center of our galaxy?
11. How far, in light years, is our solar system from the center of the Milky Way Galaxy?
12. When a Super Giant explodes it leaves behind a \_\_\_\_\_\_\_\_\_ star. If this super-dense star continues to collapse it will form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
13. How many black holes are there in our galaxy?
14. What would happen to your body as you fell into a normal sized black hole?
15. What if you fell into a Super-Massive black hole?
16. How many galaxies have black holes at their center?
17. How will the Andromeda galaxy effect ours in about 2 billion years?

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**Video Answers**

1. Where would you find the brightest part of a galaxy? WHY?

(The center – huge collection of stars and gas/dust)

1. Why can we not see the center of our galaxy with visible light? What type of light can be used to see the center of the galaxy?

(obscured by opaque cosmic dust, Infrared)

1. What did Eric Becklin and his team of astronomers use to pinpoint the center of the Milky Way Galaxy? What did it allow them to do?

(Infrared detector, see through the dust to see infrared light of stars not seen before)

1. How many light years across is the Milky Way Galaxy?

(100,000)

1. What lies at the center of our Milky Way Galaxy?

(Black Hole)

1. What do massive objects like the Sun do to the fabric of space - time?

(bend and warp it)

1. Why does light get bent or pulled into a black hole and can’t get out?

(the black hole's gravity is so strong that light can't go fast enough to escape it)

1. If we can’t see black holes, how do we know they exist?

(stars orbiting around "nothing")

1. What happens to a star if it passes too close to a black hole?

(gravity whips it around super-fast, like a slingshot)

1. How did Andrea Ghez and other scientists prove that there is a black hole at the center of our galaxy?

(lots of stars orbiting around an invisible point in space)

1. How far, in light years, is our solar system from the center of the Milky Way Galaxy?

(26,000)

1. When a Super Giant explodes it leaves behind a \_\_\_\_\_\_\_\_\_ star. If this super-dense star continues to collapse it will form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

(Neutron, black hole)

1. How many black holes are there in our galaxy?

(millions)

1. What would happen to your body as you fell into a normal sized black hole?

(spaghettified – body super stretched, killing you)

1. What if you fell into a Super-Massive black hole?

(you could go in a ways, then see blinding light, then vaporize)

1. How many galaxies have black holes at their center?

(almost all)

1. How will the Andromeda galaxy effect ours in about 2 billion years?

(galactic cannibalism - the two galaxies will collide and form one large galaxy)