Inside the Milky Way

Name:_____

1. How many stars make up our galaxy?
2. What are the two types of galaxies?
3. Describe an “elliptical” galaxy.
4. Describe a “spiral” galaxy.
5. What is special about Messier74?
6. How big is our galaxy (light years)?

Stellar Nursary:

7. What are the large, dark patches in the Milky Way?
8. What does the light from a nebula tell us?
9. How do we see into the nebulae?
10. What kind of stars do we see in nebulae?

The Perseus Arm

11. What famous nebula is in the Perseus Arm of the galaxy?
12. How fast are the gases racing out from the centre of the Crab Nebula?
13. When were all the gasses at a common point? What happened at this point in time?
14. What kind of stars go “supernova”?
15. What happens when iron is produced in the core of a star?
16. How are supernovas the “industrial zones” of our galaxy?
17. What is special about the “Helix Nebula”?

The Heart of the Milky Way

18. What very massive object is at the centre of our galaxy?

19. How do we see the black hole?

20. What do we call the glowing disk around the black hole?

Globular Clusters

21. What do globular clusters tell us?

22. How old **is** the Milky Way?

23. Why was there probably no life in the galaxy 12 billion years ago?

Way out There

24. What keeps the stars of our galaxy from falling towards the centre?

25. Do outer planets move more slowly than inner planets of our solar system?

26. Do outer stars of the galaxy move slower than inner stars of the galaxy?

27. How do we detect dark matter?

28. What would happen to our galaxy if there was no dark matter?

Looking Back in Time

29. How are galaxies arranged in the universe?

30. What was the universe like 300 000 after the Big Bang?

31. What do the variations in the density of the gas in the early universe eventually become?

32. How do the "Bolshoy" computer simulation predictions compare to what we see in the universe?

The Dark Ages

33. What colour were the first stars? What does this suggest about their size?
34. How does the "hydrogen fog" of the early universe clear?
35. How was the "Hubble Deep Field" taken?
36. What does the "Hubble Deep Field" show use about the number of galaxies in the universe?

The Distant Future

37. What will eventually happen to the Andromeda galaxy?
38. How closely do our computer simulations of galaxy collisions compare to what we see?
39. What is the Milkomeda galaxy?
40. What will be the shape of this galaxy?

Exoplanets (1hr 22min)

41. What is the "habitable zone"?
42. Why can we not see planets orbiting stars?
43. How do we know if star has planets?
44. How many stars have we found?
45. Are any in the habitable zone?
46. About how may planets are probably in the Milky Way?
47. Where are the "safest neighbourhoods" in the galaxy?