

Questions 1 - 6 Refer to **Star Map 1:**

1. Which Letter is next to the Star **Vega** ? (a,b,c,d,e)
2. What Constellation is **Vega** part of ? (name of the constellation)
3. What is the Name of **Star c** ? (name of the star)
4. What Constellation is **Star c** part of ? (name of the constellation)
5. Which Letter is in the Constellation **Cygnus** ? (a,b,c,d,e)
6. What Constellation Contain the **Letter e** ? (name of the constellation)

Questions 7 - 12 Refer to **Star Map 2:**

7. Which Letter is next to the Stars **Alcor** and **Mizar** ? (f,g,h,i,j,k,l,m)
8. What Constellation is **Alcor** and **Mizar** part of ? (name of the constellation)
9. Which Letter is next to the Star **Arcturus** ? (f,g,h,i,j,k,l,m)
10. What Constellation is **Arcturus** part of ? (name of the constellation)
11. What is the Name of **Star h** ? (name of the star)
12. Which letter is in the Constellation **Canis Minor** ? (f,g,h,i,j,k,l,m)

Questions 13 - 20 Refer to **Star Map 3:**

13. What Constellation are **Star u** and **Star s** part of ? (name of the constellation)
14. What is the Name of **Star u** ? (name of the star)
15. What is the Name of **Star s** ? (name of the star)
16. What Constellation are **Star o** and **Star p** part of ? (name of the constellation)
17. What Letter is next to the Star **Sirius** ? (n,o,p,q,r,s,t,u)
18. What Constellation is **Sirius** part of ? (name of the constellation)
19. What Constellation contains the **Letter t** ? (name of the constellation)
20. What is the Name of **Star q** ? (name of the star)

Questions 21 - 23 Refer to **Star Map 4:**

**Star Map 4** shows the horizon for a field in the **norther hemisphere** along with some stars and a significant amount of light pollution. One of the stars shown is **Vega**.

21. Which Letter is next to the Star **Vega** ? (v,w,x)
22. & 23. What are the Names of the **Two Other Labeled Stars** ? (names of the stars)

Questions 24 - 26 Refer to **Star Map 5**:

**Star Map 5** shows some stars and a significant amount of light pollution. One of the stars shown is **Sirius**.

24. Which Letter is next to the Star **Sirius** ? (y,z,aa,bb)
25. Which Letter is next to a Star in the Constellation **Orion** ? (y,z,aa,bb)
26. What is the Name of **Star aa** ? (name of the star)

Questions 27 - 30 Refer to **Star Map 6**:

27. Which Letter is part of the Constellation **Cassiopeia** ? (cc,dd,ee,ff,gg)
28. Which Letter is next to the **Hyades Cluster** ? (cc,dd,ee,ff,gg)
29. Which Letter is next to the **Pleiades Cluster** ? (cc,dd,ee,ff,gg)
30. What is the Name of **Star ee** ? (name of the star)

Questions 31 - 32 Refer to **Star Map 7**:

31. What is the Name of **Star hh** ? (name of the star)
32. What Constellation contains the **Letter ii** ? (name of the constellation)

Questions 33 - 34 Refer to **Star Map 8**:

33. In which hemisphere would the stars in **Star Map 8** be visible? (northern, southern)
34. What is the Name of **Constellation jj** ? (name of the constellation)
35. Which Letter is part of the Constellation **Centaurus** ? (jj,kk,ll)

Questions 35 - 55 Refer to **Image Set A**:

36. What is the Name of the Object in **Image i** ? (name of the object)
37. What Constellation is the Object in **Image i** part of ? (name of the constellation)
38. What is the Name of the Object in **Image ii** ? (name of the object)
39. What Constellation is the Object in **Image ii** part of ? (name of the constellation)
40. What is the Name of the Object in **Image iii** ? (name of the object)
41. What part of the Electromagnetic Spectrum was **Image iii** created from ?  
(Radio, Microwave, Infrared, Visual, Ultraviolet, X-ray, Gamma-ray)
42. What other Image shows the same Object as **Image iii** ?  
(i,ii,iii,iv,v,vi,vii,viii,ix,xi,xii,xiii,xiv,xv,xvi,xvii,xviii)
43. Which Image shows the **Milky Way Galaxy** ?  
(i,ii,iii,iv,v,vi,vii,viii,ix,xi,xii,xiii,xiv,xv,xvi,xvii,xviii)

44. Which Image shows an Object that is in the Constellation **Orion** ?  
(i,ii,iii,iv,v,vi,vii,viii,ix,xi,xii,xiii,xiv,xv,xvi,xvii,xviii)
45. What Stage of Stellar Evolution is the Object in **Image xvii** ? (stage of evolution)
46. What is the Name of the Object in **Image xi** ? (name of object)
47. What part of the Electromagnetic Spectrum was **Image xi** created from ?  
(Radio, Microwave, Infrared, Visual, Ultraviolet, X-ray, Gamma-ray)
48. What Type of Star Cluster is shown in **Image vii** ? (type of star cluster)
49. In Which Position on the diagram in **Image xv** would the Object in **Image vii** be located ?  
( $\alpha$ ,  $\beta$ )
50. What Type of Galaxy is shown in **Image ix** ? (type of galaxy)
51. Which **Letter** on **Star Map 6** is part of the Constellation that contains the Galaxy in **Image ix** ? (cc,dd,ee,ff,gg)
52. Which Image shows the **Center of the Milky Way Galaxy** in **X-ray** ?  
(i,ii,iii,iv,v,vi,vii,viii,ix,xi,xii,xiii,xiv,xv,xvi,xvii,xviii)
53. Which **Letter** on **Star Map 3** is part of the Constellation that contains the Object in **Image vii** ? (o,p,q,r,s,t,u)
54. Image xiii and Image xviii are of the same Object. Which is recorded with longer wavelength radiation ? (xiii, xviii)
55. Of the Visible Stellar Spectra, which corresponds to an **Class M Star** ? (xix, xx, xxi)
56. Is the Galaxy in **Image xiv** closer or farther from Earth than the Galaxy in **Image ix** ?  
(closer, farther)
57. What Stage of Stellar Evolution is the Object in **Image xvi** ? (stage of evolution)
58. What is the Term for the **Blue Stars** in **Image vii** ? (term for the stars)
59. Would a Star with the Spectrum shown in **Image xx** be hotter or colder than a Star with the Spectrum shown in **Image xxi** ? (hotter, colder)

Questions 60 - 68 Refer to **Image Set B**:

60. Which Light Curve belongs to the Star Algol ? (xxii, xxv, xxvi)
61. Which Star does the Light Curve in **Image xxv** belong to ? (name of the star)
62. Which H-R Diagram corresponds to an open cluster ? (xxiii, xxiv)

63. Which H-R Diagram could correspond to the Object in **Image vii** in **Image Set A** ? (xxiii, xxiv)
64. At which Position on the H-R Diagram in **Image xxvii** would you plot a **White Dwarf** ? ( $\alpha, \beta, \gamma, \delta, \epsilon$ )
65. At which Position on the H-R Diagram in **Image xxvii** would you plot a the Object in **Image v** in **Image Set A**? ( $\alpha, \beta, \gamma, \delta, \epsilon$ )
66. At which Position on the H-R Diagram in **Image xxvii** would you plot a the Object in **Betelgeuse**? ( $\alpha, \beta, \gamma, \delta, \epsilon$ )
67. At which Position on the H-R Diagram in **Image xxvii** would you plot a the Object in **the Sun**? ( $\alpha, \beta, \gamma, \delta, \epsilon$ )
68. At which Position on the H-R Diagram in **Image xxvii** would you plot a the Object in **Vega**? ( $\alpha, \beta, \gamma, \delta, \epsilon$ )

Questions 69 - 71 Do Not Refer an Image Set or Star Map:

69. Sirius has an Apparent Magnitude of -1.46 and Betelgeuse has an Apparent Magnitude of -2.99. Which appears brighter to the naked eye ? (Sirius, Betelgeuse)
70. Sirius has an Apparent Magnitude of +1.42 and Betelgeuse has an Apparent Magnitude of -6.05. Which would appear brighter if they were both the same distance from the observer? (Sirius, Betelgeuse)

71. Is Sirius or Betelgeuse farther away from Earth ? (Sirius, Betelgeuse)

Questions 72 - 73 Refer to **Image Set B**:

72. **Image xxvii** shows the evolution of a 1 Solar Mass off of the Main Sequence. Describe what happens to the star as it follows the path shown in the Image.
73. Describe how the H-R Diagram shown in **Image xxiii** can be used to estimate the age of the cluster plotted on the diagram.

Questions 74 - 75 Refer to **Image Set A**:

74. Describe why a star with a Star with the Spectrum Shown in **Image xix** and a Star with the Spectrum Shown in **Image xxi** have a different number of absorption lines.
75. **Image ii** and **Image x** show the same Object imaged with different portions of the electromagnetic spectrum. Describe why and how they look different.