Name _____

FSA Reach for the Stars School Wide Competition 12/12/2008

Part I Constellation Charts 50pts

Use the SC001 Constellation chart to fill in the grid below.
Type of object: star, double star, variable star, galaxy, cluster (open or globular), nebula as found on the chart. More specific questions will be asked later.
Object Name/ Messier number: Name of star; proper name of deep sky object and it's Messier Number.
Constellation: Duh.
Right Ascension: Answers +/- 5 minutes counted correct
Declination: Answers +/- 1 degree counted correct

	Type of object	Object name/ Messier Number	Constellation	Right Ascension	Declination
1	Galaxy	Andromeda Galaxy/ M31	Andromeda	00 h 43 m	+41 degrees
2	Star	Arcturus	Bootes	14 h 16 m	+19 degrees
3	Nebula	Crab Nebula M1	Taurus	05 h 35 m	+22 degrees
4	Galaxy	Whirlpool Galaxy M51	Canes Venatica	13 h 30 m	+47 degrees
5	Star	Procyon	Canis Minor	07 h 39 m	+05 degrees
6	Star	Antares	Scorpius	16 h 29 m	-26 degrees
7	Double Star	Rigel	Orion	05 h 15 m	-08 degrees
8	variable star	Algol	Perseus	03 h 08 m	+41 degrees
9	Star	Vega	Lyra	18 h 37 m	+39 degrees
10	Nebula	Ring Nebula M57	Lyra	18 h 54 m	+33 degrees
11	Double Star	Regulus	Leo	10 h 08 m	+12 degrees
12	Star	Sirius	Canis Major	06 h 45 m	-17 degrees
13	Nebula	Dumbbell Nebula M27	Vulpecula	19 h 59 m	+23 degrees
14	open cluster	Beehive Cluster/ M44	Cancer	08 h 40 m	+20 degrees
15	Star	Deneb	Cygnus	20 h 41 m	+45 degrees

Part II 20pts

State the stage of evolutionary development for these stars and DSO's:
(Main Sequence, Red dwarf, giant, super giant, white dwarf, stellar nursery, planetary nebula, Type Ia SNR, Type II SNR, pulsar, open cluster, globular cluster, Galaxy type – spiral, ellipictal, lenticular, irregular) **And Identify Images where asked.**

1. **Andromeda Galaxy** **Spiral Galaxy** **Image # _____B_____**
2. **Arcturus** **Giant/Red Giant**
3. **Crab Nebula** **Type II SNR/pulsar** **Image** # ____G_____
4. **Large Magellanic Cloud** **Irregular Galaxy** **Image # _____E_____**
5. **Procyon** **Main Sequence/Sub Giant**
6. **Antares** **Red Supergiant**
7. **Rigel** **Supergiant**
8. **Algol** **Main Sequence**
9. **Vega** **Main sequence**
10. **Ring Nebula** **Planetary Nebula** **Image # _____H_____**
11. **Sirius A** **Main Sequence** **Image # _____A_____**

    Sirius B **White Dwarf**
12. **Orion Nebula** **Stellar Nursery** **Image # ____D_____**
13. **Wolf 359** **Main Sequence/ Red dwarf**

Part III Stellar Evolution 17pts

Pick up image sets from me when you get to this point and return them when you are done.

14. Place the following images in a sequence that shows the evolution of a mid-sized star and it's end result is a Type Ia supernova event.

Image #'s 1,2,10,12,14,18,19,20,21

Beginning _19__, _10__, _1__, _21__, _14__, _2__, _18__, _12__, _20__ End

15. Place the following images in a sequence to represent the lifecycle of a Massive Star.

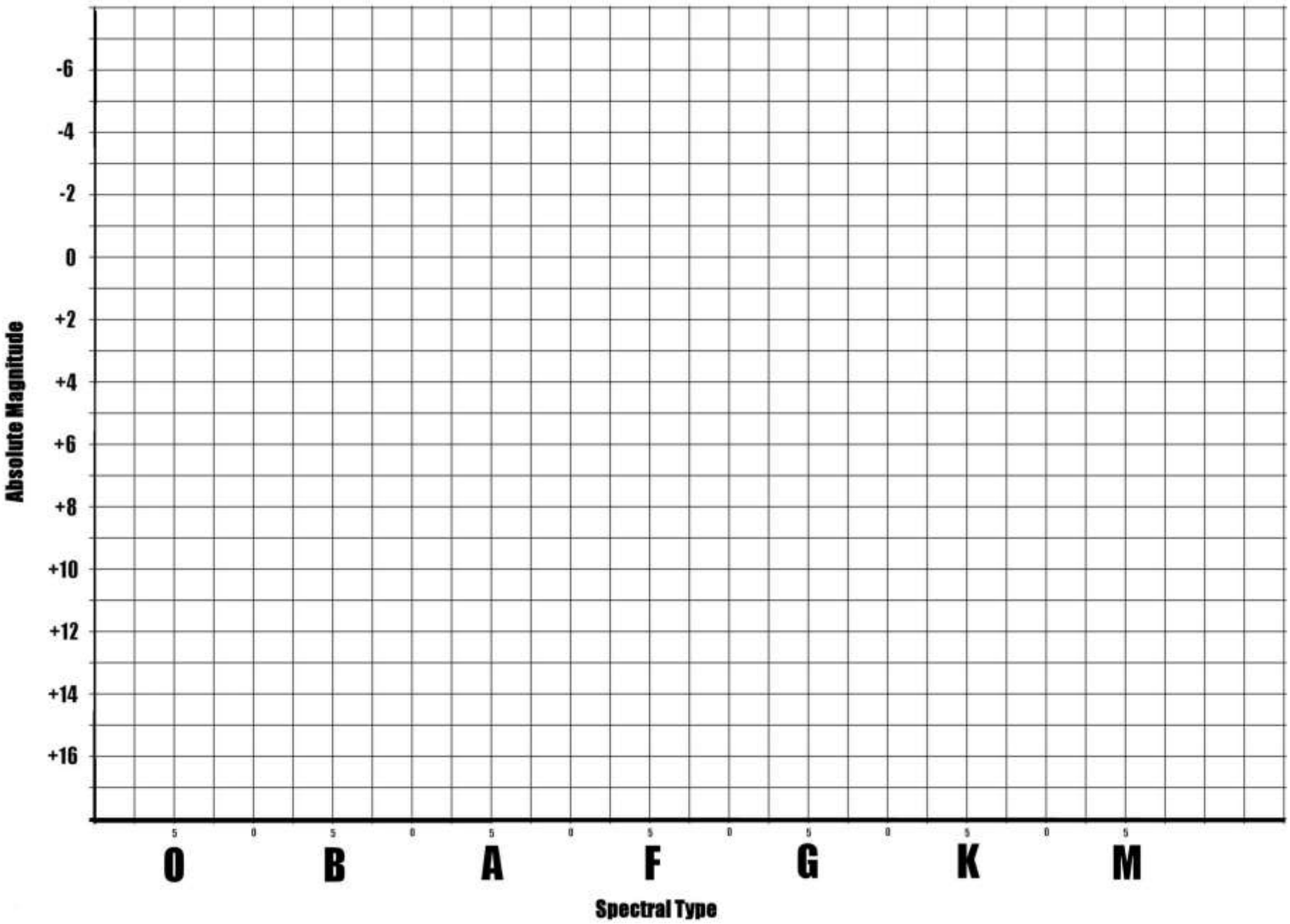
Image #'s 3,5,7,8,15,17,22,26

Beginning __8_, __15_, _7__, __5_, _22__, _26__then __3_or __17_ End

Part IV H-R Diagram 21pts

Given the Spectral Class and Absolute Magnitude (Mv) of 7 stars, plot them on the attached H-R Diagram. Label with star's name.

Star	Spectral Class	Absolute Magnitude (Mv)
Sun	G2 V	4.8 Mv
Wolf 359	M6.5 Ve	16.64 Mv
Sirius A	A1 V	1.42 Mv
Sirius B	B2 VII	11.18 Mv
Rigel	B8 Ia	-6.7 Mv
Betelgeuse	M2 Iab	-5.14 Mv
Aldebaran	K5 III	-0.63 Mv


-6
-4
-2
0
+2
+4
+6
+8
+10
+12
+14
+16
Absolute Magnitude
0
5
0
5
0
5
0
5
0
5
0
5
0
5
O
B
A
F
G
K
M
Spectral Type