

Star Finder Practice Worksheet #1

Set your star finder for 9:00 pm today:

Wed 9/10/2014 9:00pm

1. List the constellations you would be able to see if it were clear tonight.

Aquila Pegasus Andromeda Cassiopeia Cepheus Ursa Minor  
Draco Ursa Major Bootes Corona Borealis  
Hercules Lyra Cygnus Ophiuchus Scorpius  
Sagittarius Capricornus Aquarius

Turn the dial until it is set for 11:00 pm today:

1. List the constellations you can see.

In East Cetus Aries Pisces Perseus  
In west Ophiuchus Sagittarius Aquila Lyra Hercules  
near the zenith Cepheus Cygnus Cassiopeia Lyra

2. Which constellations were up at 9:00 pm but not at 11:00 pm?

~~Cetus Aries Pisces Perseus~~  
Corona Borealis Bootes Scorpius

3. Which horizon are they closest to?

~~East~~ West

4. Which constellations were up at 11:00 pm but not at 9:00 pm?

Cetus Aries Pisces Perseus

5. Which horizon are they closest to?

East

Turn the dial until it is set for 6:00 am, just around sunrise.

1. What constellations are still visible that were up at 9:00 pm?

North: Ursa Major Ursa Minor Cassiopeia  
West: Pegasus Andromeda

2. For each of these constellations, describe the motion they follow from 9:00 pm to 6:00 am.

East to West

3. Follow each constellation, one at a time, as you turn the dial one complete turn (go through one day). List any constellations that never go below the "horizon."

Ursa Major Ursa Minor Cepheus  
Cassiopeia Draco

Set your dial for 9:00 pm for two months from now.

11/10/2014

1. List the constellations you see.

South - Cetus Pisces Aries Pegasus Aquarius  
West - Capricornus Delphinus Aquila Lyra  
North - Draco Ursa Minor Cepheus Cassiopeia  
East - Auriga Perseus Taurus Eridanus

2. Which constellations will be up one month from now at 9:00 pm that are not up tonight at 9:00 pm

Set your star finder for 9:00 pm 6 months from now.

1. What constellations are no longer up compared to tonight?

~~Auriga Perseus Taurus Eridanus~~  
Capricornus Delphinus Aquila Lyra

2. What new constellations are up?

~~East~~ Leo Hydra Cancer Canis Minor Canis Major  
Orion Gemini Auriga Lepus

3. What constellations are visible both times?

North Draco Cepheus Eridanus Cetus  
Ursa Major Ursa Minor Aries Pisces  
Cassiopeia Andromeda Pegasus

4. List any constellations that will always be visible at 9:00 pm no matter what the date is.

North Cepheus Draco Ursa Major Ursa Minor  
Cassiopeia

Find the constellations Canis Major. The brightest star is called Sirius.

1. What hour will Sirius rise today?

2 am

2. What hour will Sirius set today?

Before Sun set

3. Three months from now, when will Sirius rise and set?

12/10/14

Rise 8:30 pm

Set almost 6 am

4. Six months from now, when will Sirius rise and set?

2/10/15

Before sun set - rise

1 am

- set

## Star Finder Practice Worksheet #2

Find the constellations Orion and Taurus. Move the wheel until you can get them as centered as possible.

1. Which direction should you look to see the constellation Orion? **South**
2. Which direction should you look to see the constellation Cassiopeia? **North west**
3. Orion, Taurus and Cassiopeia each have a different shape (H, V and W - Which shape is which constellation?).  
**Orion - H**      **Cassiopeia - W**  
**Taurus - V**
4. You can also see they differ in size. For example, Orion is much larger than Cassiopeia. But how much of the real sky does Orion cover? Could you cover it with your thumb at arms length? **No**
5. The constellation Orion is a favorite nighttime object for many observers. What months is Orion visible in the early evening? For the purpose of this question, let "early evening" be 7 pm? **Early March late February**
6. The brightest star in the sky is Sirius, in the constellation of Canis Major (The Big Dog). On approximately what date will it be rising just before 5 am standard time? *Interesting Note: This corresponded to the time of year when the Nile River flooded; the ancient Egyptians made a supernatural connection between the rising of this bright star and the annual flood which brought life to Egyptian civilization.* **August 15**

Turn the dial until it is set for 9:00 pm tonight:

1. What constellation has just risen? **Aries, Pisces**
2. Which has just set? **Virgo Libra \* Scorpius**
3. What constellation is closest to DUE SOUTH? **Capricornus**
4. What constellation is closest to being directly over head? **Cygnus**

Find Altair.

1. What constellation is it in? **Aquila**
2. Altair is 16.8 light years away from Earth. This means if you left earth today, you would have to travel for 16.8 years, at the speed of light, before you reached it. It also means the light you see from that star tonight left that star 16.8 years ago. How old were you when the light we see tonight actually left the star? **?**

Star Finder Practice Worksheet #3 with Coordinates

Use the star wheel that has the coordinates.

Set your star chart for February 5 at 9 pm.

1. The celestial coordinates for M44 ("The Beehive Cluster") are Right Ascension (RA) = 8h 40m, Declination (Dec) = 20d. What constellation is M44 in?

**Gemini**

**Right Ascension**  
is like longitude,  
around the horizon  
**Declination** is like latitude - towards  
North star

Turn the wheel so RA 19 is centered north to south.

1. What bright star has the following coordinates: RA = 19h 51m, Dec = +8d 51m?

**In Aquila Altair**

2. What time of year is this bright star visible?

**Summer Months, early Fall**

Set the wheel for March 15 at 12 am.

1. Hydra is the constellation that takes up the most area of the sky. What range of right ascension does this constellation take up?

**RA 8hr 30m - 14h 10min**