**New Member Sky Watcher Project (Minimum one hundred fifty Points to Complete)(bold items are required - 110)**

1. **Attend a New Member Orientation (10)**
2. **Identify and start following one or more source of current sky and astronomy news (the Reflector, Sky and Telescope, Astronomy, a webpage such as Earth and Sky, CAAS Facebook public page etc.) (10 each after 3 months)**
3. **Find and learn to use a planisphere or planetarium program. (10)**
4. **Assemble an observing kit (Red or amber flashlight, some means of recording observations, some form of chart, bug spray, extra clothing.) (10)**
5. **Find Polaris and from that identify the circumpolar asterisms (Big Dipper, Little Dipper, and Cassiopeia – requires a moderately dark sky.) (10)**
6. **Identify one or more set of the principle seasonal asterisms using the Summer Triangle, Winter Hexagon, Spring Diamond, or Fall Square – requires a moderately dark sky. (10 for each season)**
7. **Find two planets in the sky and confirm by observing with binoculars. (10)**
8. **Identify the ecliptic by noting the positions of the sun, moon and planets. (10)**
9. **Note the change in the position of objects after at least one hour’s time (10)**
10. **Track the lunar phase from new to full noting the rise time and relation to sunset and look for earth shine on the dark portion of the moon. (10)**
11. **Identify ten 1st magnitude stars. (10)**
12. Observe a lunar eclipse (10)
13. Observe a solar eclipse, annular or total. (10)
14. View the sun through a solar scope note sun spots and other visible features. (10)
15. Attend a star party presentation (10 each)
16. Attend a regular club meeting. (10 each)
17. Volunteer to help table a star party or other event. (10)
18. Make a presentation at a club meeting. (20 each)

**Novice Observer Project (Complete SWP + one hundred fifty more points)(bold items are required - 90)**

1. **Identify all the principle seasonal asterisms using the Summer Triangle, Winter Hexagon, Spring Diamond, or Fall Square – requires a moderately dark sky. (10 for each season)**
2. **Learn these terms: zenith, meridian, celestial equator, solstice, opposition, conjunction, astronomical unit, hour angle, local sidereal time and difference between right ascension and declination hours, degrees and minutes. (10)**
3. **List at least one book on observational astronomy that you have referenced and substantially read. (10 for each book)**
4. **Learn about the basic life cycle of stars and the color of stars (O,B,A,F,G,K,M) and the spectral classification of the sun and five 1st mag. stars. (10)**
5. **Learn to calculate the magnification and field of view (FOV) for a telescope and a set of eyepieces. (10)**
6. **Set up a telescope or use binoculars to locate, observe and record twenty objects, excluding the moon and planets. (Include date, time, sky conditions, instrument used, magnification, and your description of what you saw.) (20)**
7. Observe a meteor shower for at least one hour counting meteors. (10)
8. Observe a lunar eclipse (10)
9. Observe a solar eclipse, annular or total. (10)
10. View the sun through a solar scope note sun spots and other visible features. (5)
11. Volunteer with an instrument at a public star party. (10 each)
12. Attend a regular club meeting. (10 each)
13. Make a presentation at a club meeting. (20 each)

**CAAS Observer (Complete NOP + one hundred fifty more points)(bold items are required)**

1. Complete at least one Astronomical League Observing Program. (50 each)
2. Observe and record ten Messier Objects. (10 each set not to exceed 30 point, can’t double count with “1.”)
3. Set up and use a telescope to view five pairs of double stars. (10)
4. Make at least 10 observations of one of the variable stars in the AAVSO ten star tutorial program. (25 each)
5. Observer 5 carbon stars (10 each)
6. Observe a comet and sketch it. (10 each)
7. Observe a meteor shower and turn in a report to IMO. (10)
8. Specifically identify one of each of the following types of lunar features (20):
   1. Impact crater
   2. Rayed crater
   3. Maria
   4. Rille
   5. Dome
9. Identify the following features of Saturn **(bold should be seen)** (10):
   1. **Cassini division**
   2. **Four of its moons**
   3. Note how many color bands you can see on the planet
   4. Can you make out the Encke division?, C ring? A “white storm”
10. Identify the following features of Jupiter (10):
    1. **The equatorial Zone,**
    2. **N. and S. equatorial Belt,**
    3. **N. and S. tropical zone,**
    4. **Identify it four major moons**
    5. Can you see the Great Red Spot adjacent to the S. equatorial belt? How about the thin equatorial band in the center of the equatorial Zone, or the temperate belts and zones N. and S. of those note above, if so how many? (Zones are light colored, bands are dark and progress from the center (equatorial) to tropical, temperate N and S, NN and SS Temperate.)
11. Identify, if possible and note the following features of Mars (10):
    1. Polar caps
    2. Clouds
    3. Dust storms
12. Volunteer with an instrument at a public star party. (10 each maximum 30)
13. Make a presentation at a club meeting. (20 each maximum 40)

Master CAAS Observer

1. **Do all of the above.**
2. **Qualify for a Stellar Outreach Award and at least three AL observing awards.**