Joe Orman's Naked-Eye 100

1	**Sunrise**	As we turn from the night side of our planet to the day side, our closest star appears in the sky.
2	**Equinox Sunrise**	About March 20 each year, the sun rises straight east. Look along an east-west aligned street, canal, etc.
3	**Sunspots**	Occasionally sunspots get big enough to see without magnification. Use proper eye protection!
4	**Solar Eclipse, Partial**	The moon takes a bite out of the sun. Use proper eye protection!
5	**Solar Eclipse, Total**	Within the path of totality, the moon completely covers the sun, revealing the beauty of the sun's corona.
6	**Bailey's Beads**	Sunlight peeking between the mountains of the moon during a total solar eclipse.
7	**Diamond Ring**	A brief flash of direct sunlight signals the beginning and end of a total solar eclipse.
8	**Solar Eclipse, Annular**	The moon appears in line with the sun but does not completely cover it, leaving a "ring of fire."
9	**Solar Transit Of Mercury**	Fairly rare; 13 or 14 each century. Next occurrence is November 8, 2006. Use proper eye protection!
10	**Solar Transit Of Venus**	Very rare; only twice a century. Next occurrence is June 5, 2012. Use proper eye protection!
11	**Sun Halo**	On winter days with thin clouds, look for a complete circle around the sun, 22 degrees in radius.
12	**Sundogs (Parhelia)**	Appear in thin clouds as bright colored patches 22 degrees to the left and right of the sun.
13	**Sun Pillar**	Vertical column of light above sun when sun is on horizon; formed by reflection off ice crystals.
14	**Other Halos**	Circumzenithal arc, tangent arcs, Parry arc, 46-degree halo -- some are subtle and rarely seen.
15	**Corona**	In thin clouds, colored rings a few degrees across around sun or moon.
16	**Aureole**	Bright glow around the sun or moon, colorless and only a few degrees across.
17	**Glory**	Looking into fog or clouds from a plane or mountaintop, colored rings around the antisolar point.
18	**Spectre Of The Brocken**	Your own shadow in the center of the glory.
19	**Mountain Shadow**	From the top of a mountain, look opposite the sunset; perspective makes a cone-shaped shadow.
20	**Rainbow**	The primary rainbow appears as an arc 42 degrees in radius centered around the antisolar point.
21	**Double Rainbow**	The outer, or secondary, rainbow is 51 degrees in radius. Colors are reversed.
22	**Irisation (Iridescent Clouds)**	Multi-colored patch in thin clouds or on cloud edges many degrees from the sun
23	**Mirages**	The sky reflected off temperature boundaries close to the ground.
24	**Lightning**	Lightning is an awesome sight day or night, but use caution and observe from a safe distance!
25	**Crepuscular Rays**	Brilliant streaks of light radiating from clouds backlit by the sun.
26	**Anticrepuscular Rays**	Crepuscular rays converging on the antisolar point; often very faint and diffuse.
27	**Sunset**	Watch our closest star set, but keep watching afterward for the best sky and cloud colors.
28	**Equinox Sunset**	About Sep. 22 each year, the sun sets straight west. Look along an east-west aligned street, canal, etc.
29	**Green Flash**	Need a low flat horizon and clear skies. The upper limb of the sun flashes green just before setting.
30	**Belt Of Venus**	A band of pink above the horizon; look opposite the sun just before sunrise or just after sunset.
31	**Twilight**	After sunset or before sunrise, the sky is an pastel palette of orange, pink, purple, blue and black.
32	**Noctilucent Clouds**	Rarely-seen clouds of ice particles at the edge of space after twilight; seen only from high latitudes.
33	**Zodiacal Light**	A pale cone of light along the ecliptic; best seen before dawn in the fall or after sunset in the spring.
34	**Gegenschein**	A faint patch of light on the ecliptic; look at the antisolar point around midnight.
35	**Aurora Borealis**	Northern Lights. From the southern U.S., can occasionally be seen as a reddish glow in the northern sky.
36	**Moonrise**	The rising moon silhouetting a distant mountain, tree, or saguaro cactus is an awe-inspiring sight.
37	**Equinox Moonrise**	Near the spring and fall equinox the full moon rises straight east, opposite the sunset in the west.
38	**Crescent Moon**	On evenings after new moon, look for the delicate crescent above the twilight horizon after sunset.
39	**Earthshine**	Sunlight reflected off the earth onto the dark side of the moon; best when moon is thin crescent.
40	**Full Moon**	Be sure to also look at the surrounding landscape bathed in the cool moonlight.
41	**Moon Halo**	Same as a sun halo, but seen around the moon at night.
42	**Harvest Moon**	The full moon closest to fall equinox; rises soon after sunset for several days in a row.
43	**Lunar Eclipse, Partial**	The earth's shadow, takes a bite out of the moon.
44	**Lunar Eclipse, Total**	The moon passes totally within the earth's shadow, often turning a dark reddish color.
45	**Let The Moon Follow You Home**	The moon seems to follow you as you drive along the road -- a trick of perspective.
46	**Moon Reflected In Water**	This sight has inspired poets and lovers for ages.
47	**Glitter Path**	The sun or moon's reflection forms a column of glittering light on rippling water.
48	**Moonset**	Whether full moon or crescent, the last bit to slip beneath the horizon always brings a special sadness.
49	**Equinox Moonset**	Near the spring and fall equinox the full moon sets straight west, opposite the sunrise in the east.
50	**Mercury**	For a few days every month or two, Mercury rises above the glow of twilight and is easy to see.

51	☐	**Venus**	Brightly visible above the morning or evening twilight for several months at a time.
52	☐	**Venus In Daytime**	Easy to see if you know where to look and can focus your eyes at infinity. Helps if moon is nearby.
53	☐	**Mars**	Near opposition, Mars is a brilliant object in the night sky.
54	☐	**Jupiter**	Looks like a bright star; magnification needed to see the 4 Galilean moons.
55	☐	**Saturn**	Looks like a bright star; magnification needed to see the rings.
56	☐	**Planetary Conjunction**	Look for 2 or more planets appearing near each other.
57	☐	**Star-Planet Conjunction**	Occasionally planets appear very close to background stars.
58	☐	**Moon-Planet Conjunction**	Venus is the crescent Moon's most noticeable companion, but look for other planets near the moon too.
59	☐	**Lunar Occultation, Stellar**	Antares, Regulus, Aldebaran and Spica all lie near the ecliptic and are occasionally covered by the moon.
60	☐	**Lunar Occultation, Planetary**	Occasionally the moon also passes in front of one of the planets.
61	☐	**Ecliptic**	The sun, moon and planets make a straight line across the sky -- the plane of our Solar System.
62	☐	**Orion The Hunter**	This constellation really looks like a human figure; the three evenly-spaced stars are the Hunter's belt.
63	☐	**Betelgeuse**	The Hunter's left shoulder is a red giant star, bright and pink to the eye.
64	☐	**Orion Nebula**	Look for the diffuse patch in the middle of the sword hanging from the Hunter's belt.
65	☐	**Sirius**	The brightest star in the night sky; twinkles different colors when low in atmosphere. In Canis Major.
66	☐	**Summer Triangle**	Bright stars Deneb in Cygnus, Vega in Lyra, Altair in Aquila form triangle visible in evening all summer.
67	☐	**Winter Hexagon**	Sirius, Procyon, Pollux & Castor, Capella, Aldebaran, and Rigel form a hexagon on winter evenings.
68	☐	**Hyades**	The "V" shaped open cluster in the face of Taurus the Bull; Aldebaran is the bright star among them.
69	☐	**Pleiades**	A tight cluster of 6 or 7 bright blue stars, in the form of a miniature dipper.
70	☐	**Omega Centauri**	This globular cluster looks like a fuzzy patch to the naked eye; a telescope shows the individual stars.
71	☐	**Big Dipper**	The body and tail of Ursa Major, the Big Bear. Close to Polaris in the northern sky.
72	☐	**Arc To Arcturus**	Follow the curve of the Big Dipper's handle to a bright star -- Arcturus in Bootes.
73	☐	**Drive A Spike To Spica**	Continue the curve past Arcturus to another bright star -- Spica in Virgo.
74	☐	**Big Dipper Double Star**	The star where the dipper's handle bends, Mizar, has a fainter companion Alcor -- a good test of vision.
75	☐	**Big Dipper Pointer Stars**	Follow the last two stars in the bucket to find Polaris, the North Star.
76	☐	**Polaris**	The North Star, the axis of the sky as the earth turns.
77	☐	**Little Dipper**	In the constellation Ursa Minor, the Little Bear. Extends from Polaris; a lot fainter than the Big Dipper.
78	☐	**Cassiopeia**	In the shape of a "Broken W." Close to Polaris in the northern sky.
79	☐	**Cygnus The Swan**	This cross-shaped constellation really looks like a long-necked bird in flight.
80	☐	**Leo The Lion**	The sickle shape forms the lion's mane, the bright star Regulus is lion's heart.
81	☐	**Southern Cross**	The constellation Crux lies near the south celestial pole.
82	☐	**Scorpius**	This constellation really looks like a scorpion; the bright stars Antares is the scorpion's heart.
83	☐	**Antares, The Rival Of Mars**	This red giant star in Scorpius is sometimes close to Mars, and they look the same -- bright and pink.
84	☐	**Sagittarius**	The teapot shape is distinctive in the southern sky on summer nights.
85	☐	**Milky Way**	Our own galaxy seen edge-on; this faint band crossing the sky is the combined light of millions of stars.
86	☐	**Center Of Our Galaxy**	Look at the "steam" cloud above the teapot's spout; that's the direction of the center of the Milky Way.
87	☐	**Andromeda Galaxy**	This faint patch of light is the farthest thing visible to the naked eye, over 2 million light-years away!
88	☐	**Magellanic Clouds**	These neighboring irregular dwarf galaxies can be seen from the southern latitudes.
89	☐	**Perseid Meteor Shower**	August 12-13 each year. Between midnight and dawn, lie on a blanket or lawn chair and look up.
90	☐	**Leonid Meteor Shower**	November 17-18 each year. Between midnight and dawn, lie on a blanket or lawn chair and look up.
91	☐	**Geminid Meteor Shower**	December 13-14 each year. After 9 p.m., lie on a blanket or lawn chair and look up.
92	☐	**Sporadic Meteors**	Random "shooting stars" or "falling stars" can be seen any night of the year. Make a wish...
93	☐	**Asteroids**	Usually too faint to see, but on April 13, 2029, asteroid 2004MN will make a close naked-eye pass.
94	☐	**Artificial Satellites**	ISS, HST etc. look like stars moving steadily across the sky. Check heavens-above.com for visibility.
95	☐	**Iridium Flares**	Flash that lasts several seconds; like a slow-moving meteor. Check heavens-above.com for visibility.
96	☐	**Rocket Trails**	Rocket launches from Vandenberg or White Sands can be seen from hundreds of miles away.
97	☐	**Comets**	Every year or so one reaches naked-eye visibility. Even rarer are bright "Great Comets" like Hale-Bopp.
98	☐	**Whole Sky**	Find a wide open space and look at the dome of the sky -- the sky is an infinite sphere centered on you.
99	☐	**All-Night Sky**	Stay up all night and watch the sky change as the earth turns.
100	☐	**Fall Asleep While Watching Sky**	Make your bed under the open sky. Lie back, look at the stars, close your eyes and dream of infinity.