Task or Target #	Task Description or Target Name	Observed Statistics Date	Time	Description	Seeing
	Create a sketch/map of the visible lunar surface:				
1	Observe a Full Moon and sketch a large-scale (prominent features)	12/14/05	8:00 PM MST	See Drawing (FullMoon.jpg).	Clear. Calm. 22 degrees.
2	map depicting the nearside; disk of visible surface should be drawn at	12/14/05	8:00 PM MST	See Drawing (FullMoon.jpg).	Clear. Calm. 22 degrees.
3	least 5-inches in diameter. Sketch itself should be created only by observing the Moon, but maps or guidebooks may be used when labeling sketched features. Label all maria, prominent craters, and major rays. (Counts as 3 *observations* {OBSV}: #1, #2 & #3)	12/14/05	8:00 PM MST	See Drawing (FullMoon.jpg).	Clear. Calm. 22 degrees.
	Observe these targets; provide brief descriptions:				
4	Alpetragius	12/08/05	5:58 PM MST	64x - Its away from the terminator line. Round with shadow on left side with central peak protruding from center with its own shadow case on inside of lit crater. High rim wall that stick up above surrounding moon surface.	Windy, cold but clear.
5	Arago	12/08/05	6:10 PM MST	121x - Round and deep. No wall seen above surrounding moon surface. Brighter rim edge away from sun side of crater.	Windy, cold but clear.
		12/20/05	2:34 AM MST	121x - Basically a round crater with rhs of it a bit flatter. Rim walls not too high above lunar mare. There is a line of a mountain inside the crater, pretty high, going from the center to the 5:30 o'clock edge of crater. Not as high as rim walls though.	Clear. Calm. 22 degrees.
		12/21/05	3:17 AM MST	121x - Arago crater has rim walls that slope up to top of rim in a nice curve from mare floor. There is a little thin hill leaving top of crater and running across mare to 'B' crater, which is a tiny, round crater which is almost all rim and tiny opening for crater.	Clear. Calm. 42 degrees.
6	Arago Alpha & Arago Beta	12/20/05	2:38 AM MST	121x - Alpha and Beta are not like the other domes I have seen so far. Alpha is below and beta to right of Arago crater. Both approx the same size. See a slight shadow on lhs and a hare whiter color on rhs that distinguishes them from the darker mare surface. Both are almost as big as the crater. Just a bit smaller in their footprints. Once your eye gets used to seeing them, they are easier to see. Can tell they are bumps, sticking above the surrounding surface. Nice.	Clear. Calm. 22 degrees.
		12/21/05	3:17 AM MST	121x - Alpha and Beta sticking up nice above lunar surface. See they are high with alpha as high and maybe a bit higher than Arago rim walls and beta approx same height. Nice shadow on lhs of both shows alpha is bigger and higher than beta.	Clear. Calm. 42 degrees.
7	Aristarchus Plateau	12/13/05	6:15 PM MST	121x- A triangular patch that is a bit darker than the surrounding surface color. Top of it can see the rim of nice crater, which is small and oval. Then to the lhs, see Aristarchus with rays that bound this side of the hills on the upper lhs of them.	Calm. P/C. Cool.
8	Baco	12/20/05	3:38 AM MST	121x - A nice, medium sized round crater. Older. Rim walls stick up a bit with rhs piled up the highest. Right at top is a tiny, round deep crater on rim wall and its 'A'. The rhs rim wall has a lot of texturing as seen by the shadows, indicating a very rough and layered rim.	Clear. Calm. 22 degrees.

9	Bailly	12/13/05	5:57 PM MST	121x - Large oval at terminator line with shadows all around it/ Terminator line is just on the other side. A high rim surrounds this crater with the central floor lit up while right at rim-floor boundary a dark shadow all around ring seen. Suggests the central floor is a bit higher than at base of rim on crater floor. 'B' seen inside with rhs and back rim higher than lhs near side for its really lit up by the sun.	Calm. P/C. Cool.
10	Beer, Beer Catena & Feuillée	12/08/05	6:18 PM MST	121x - These are nice round craters, right next to each other on Mare floor. By themselves. Beer Cantena is right next to Beer and is in an arc shape, a tiny series of white dots. This is a very short set of dots though. Shadows on lhs of both craters and may show a bit of a raised rim on each.	Windy, cold but clear.
11	Bullialdus, Bullialdus A & Bullialdus B	12/10/05	4:45 PM MST	121x - Nice round crater with thick rim walls that show a lot of rough, different levels of layers of rim that stick up well above surround surface. There is a peak in the center of this one. A is a small, round and the deepest of these 3 craters. Where the sun lights the floor of the other 2, this one is just barely showing a glow in the bottom. Not much rim sticking up above the surrounding surface where B is larger and has a thin rim that sticks up. B has a shadow half way across crater bottom. Bit of ray material see at the 4 o'clock side of this crater, but its probably from a part of the ray to the upper left emanating from Tycho.	Calm. Clear. Cold.
12	Cassini, Cassini A & Cassini B	12/08/05	6:28 PM MST	121x - Cassini is a larger crater that is filled in with lava. Its at the edge of a Mare and is just a ring of mountains, but in an area that is void of other features. All that is left is the top of the crater rim. A is a larger, not really round crater and B is a smaller and round crater. Both are inside Cassini with 1/2 the craters shadowed. A is much deeper than B, which is relatively shallow.	Windy, cold but clear.
13	Cauchy, Cauchy Omega & Cauchy Tau	12/18/05	10:15 PM MST	121x - Nice, round, deep crater on floor of darker Mare Tranquillitatis. Hint of a small rim surrounding it. Tau is a tiny white spot on darker mare. Barely noticeable. Omega is barely noticeable and it too is a dim, white spot contrasting the darker mare floor.	Clear. P/C->Clear. 10 degrees.
		12/19/05	4:08 AM MST	121x - Can see Rupes Cauchy which is a white line, just above crater and is a fairly long and straight. Tau and Omega are much easier to see now than last night. Tau is larger than Omega. It's a white dot on the darker mare surface. Omega is a whole lot smaller and is about as white in color as Tau.	Clear. Calm. 7 degrees.
	Cauchy Tau and Omega	1/4/2006	6:56 PM MST	121x - 2 mounds, very small bumps, a bit away from Cauchy crater and by themselves on lunar surface. They are barely noticeable. Near each other but a bit apart. A tiny bit whiter on sunlit side and a hint of a shadow on side away from sun. Tau might be a bit larger than omega, maybe only because its more defined by shadow, being closer to the terminator line, thus gives the effect of being a bit bigger. 200x shows them nicely.	Clear->P/C. Windy. Cold.
	Rupes Cauchy	1/4/2006	7:00 PM MST	121x - A nice, long, straight, thick, dark line between crater and domes. The lower end approaching terminator line has a small hitch in it and is not as dark or thick as rest of it.	Clear->P/C. Windy. Cold.

	Rima Cauchy	1/4/2006	7:10 PM MST	Seen at 121x and 200x, which gives the best view of it. 2 white arcs, on darker mare surface, which starts at Cauchy crater and moves towards the terminator line. Where one arc stops, the other one starts. First arc, which starts at the crater is a larger arc than the second arc, which extends a bit past Lucian crater in distance. Once in a while, the seeing gets real good and the second arc, resolves to a sharper line, but still white in color. It is not parallel with Rupes Cauchy, but flares away towards to of moon. Its a very subtle feature. Very nice.	Clear->P/C. Windy. Cold.
14	Censorinus	12/18/05	9:08 PM MST	121x - A tiny, round crater that has a very bright ejecta blanket just around it. Its hard to see the actual crater for its so bright in this area.	Clear. P/C->Clear. 10 degrees.
		12/20/05	2:48 AM MST	121x - Right at the terminator line. A small, round, deep crater right at the top of a mountain. There are valleys coming off the top and bottom edge of crater, which start at the crater and are pointed on the ends, like the top of the mountain collapsed when the collision happened. The rhs of crater is rough, where the rim might be. There is white ejecta that is on the rhs of crater and down the mountain side, stopping at the mare edge at the bottom of the mountain, like a landslide of material. This is probably the brilliant whiteness seen before.	Clear. Calm. 22 degrees.
15	Crüger	12/14/05	7:23 PM MST	Small, oval, very dark with a smooth floor. Stands right out in lighter colored surroundings. From a shadow and bright rim is highlighted on rhs and to the read (other side) of crater. Nice.	Clear. Calm. 22 degrees.
16	Dorsae Lister, Posidonius, & Smirnov (A.K.A. Serpentine Ridge)	12/21/05	3:23 AM MST	121x - Right near terminator line. DS is a thin, low ribbon of a ridge on floor of Mare Serenitatis. Its fairly long, maybe 1/3 diameter of mare in length. It starts straight, then 1/2 way down is snakes a bit to the right and down again. This is DP part of serpent. It has a tiny crater (Very) with high rim walls almost 1/2 way from top on lhs of ridge where the bend to the right starts. Basically same color at mare around it. Stands out with slight shadow only. DL is another ribbon of a ridge, little thicker than DS. Starts at Bessel crater at 1 o'clock side of crater and gently curves to left as it approaches upper edge of Mare Serenitatis. Without the terminator line near, these would not have been seen. DL is much lower in height than DS and a lot lighter in color. Then at the end of it, breaks into 3 thin hills, which look like wrinkles.	Clear. Calm. 42 degrees.
		1/5/2006	6:33 PM MST	DP is actually the lower part of 'S' of DS. DS has a bit of a arc to the right as 'S' begins, stops, and right next to it, but with mare floor in-between, DP starts. Its basically straight and is the lightest of all 3 ridges. It has the DL whiter color also. [illegible] basically the upper edge of Mare Serenitis. At places its barely above the lunar surface. The ridge snakes back and forth with rhs the thickest, thus the head of the serpent. I think this is a much better view of it than on the waning phase for this looks more like a snake, w/the	Clear. Calm. Cool.

17	Grimaldi Basin outer and inner rings	12/14/05	7:06 PM MST	Nice, dark flat oval near the terminator line, a bit flatter in shape on rhs. There is a high mountain just beyond it and a lesser high ones on the lower near side. Three nice, small, sharp rimmed craters on lower rhs and one nice, small, sharp rimmed crater on the upper rhs, right at the edge of it. Then on lhs, there is a crater in the hills and from the shadows see, this area is nice and hilly. The floor is really dark but can see a soft white streak bisecting it from the center to the rhs.	Clear. Calm. 22 degrees.
18	Hainzel, Hainzel A & Hainzel C	12/10/05	5:20 PM MST	121x - A peanut shaped crater with the larger oval on lhs. Can see a mountain ridge, or drop off because of the shadow, in the center of this larger one. Its half filled with shadow.	Calm. Clear. Cold.
19	Hercules, Hercules G, Hercules E	12/18/05	9:20 PM MST	121x - Nice round crater with nice rim seen around it that is a bit higher than the surrounding surface. Nice shadows help define it. Lhs of rim is really bright and thicker than the rhs where the shadow is, but has a not so white rim seen. See the 'G' crater on the floor of the big crater just above center and to the left. Shadows show its deep and lhs is bright white. Its tiny but easy to see, Its nice and round. See 'E' crater on the thicker lhs rim wall, on top of the brighter rim at about 9:30 o'clock. Its a 'little' darker spot on the bright rim top. Just a contrast in the brighter white.	Clear. P/C->Clear. 10 degrees.
20	Hesiodus A	12/08/05	6:34 PM MST	121x - Tiny, round crater right on the 2 o'clock edge of a larger crater. Its right on the high rim of this larger crater. Hesiodus A has a much higher rim around it with a tiny point of light right in the center. The bottom of the crater is all dark, but the rim is well lit though.	Windy, cold but clear.
21	Hortensius dome field	12/10/05	5:10 PM MST	121x - 3-4 tiny bright white dots see on the darker lunar surface, a bit away from crater and at the 7 o'clock side.	
		12/25/05	6:06 AM MST	See drawing (HortensiusDomeFieldSketch.jpg). 121x - Its right at the terminator line. 5 seen. Largest at bottom of set. Then right above it and next to it are 2 more domes, side by side. Then half way between these and Hortensius crater is a yet smaller on. But approx same height as rest. Sticks up by itself about lunar surface. Then just above and to right is a tiny one, much lower than the rest. Hortensius is a nice, round, deep and has high rim walls surrounding it. 1st 4 of 5 domes all about same height. 5th much lower. On top of largest dome, a little hint of a shadow. Maybe a dimple.	
22	Julius Caesar	12/20/05	3:15 AM MST	121x - An old, U shaped crater with the bottom of the U facing the 5 o'clock direction. Rhs of U is the only place where a rim wall remains. Its thicker and higher here. On lhs of U is a long line of collisions, called Sosigenes. This bounds the lhs of U and has destroyed this wall of the crater. Top of U is open and has come circular cliffs seen here and there. The floor of U is filled in with lava, and is two tones in color, with lower lhs the darker color. There is a small, round crater seen on the rim wall at the upper right most part of the rim wall that remains, and 2 tiny, round craters on the other end of the rim wall that remains, at the bottom of the U.	Clear. Calm. 22 degrees.

23	Kies	12/10/05	4:48PM MST	121x - Kies is a "hint" of a crater. Its rim is lightly colored and sticks out from the darker mare floor. Easy to see. The 2 o'clock side is a bit higher and whiter than the rest of the rim. Roughly circular in shape.	Calm. Clear. Cold.
24	Kies Pi	12/10/05	4:48PM MST	121x - This is a tiny white round spot on the dark surrounding mare surface. A bit away from Kies and at the 2 o'clock side.	Calm. Clear. Cold.
25	Lacus Mortis	12/18/05	9:29 PM MST	121x - A flat, darker area, centered on the crater Burg. Can see the rougher hills rising from this on the upper and lower rhs and upper lhs. Then it extends to Hercules crater and has a nice, tiny, sharp rimmed crater in the middle. But, really void of other craters. As you move towards Hercules crater from right, see lighter colored areas and around tiny crater in middle, what appears to be tiny rays of ejecta.	Clear. P/C->Clear. 10 degrees.
26	Linne	12/20/05	3:06 AM MST	121x - a small, round, white area seen on darker mare surface.	Clear. Calm. 22 degrees.
		12/21/05	3:54 AM MST	121x - Not as bright as last night. Small, round white spot on darker mare with no crater opening seen yet.	Clear. Calm. 42 degrees.
		1/6/2006	5:06 PM MST	Right near terminator line. 140x - A very small, white patch on darker mare surface. Still cannot see a crater opening on it. Brightest white is in the center of the patch.	Clear. Calm. Cool.
27	Lamont	12/21/05	3:12 AM MST	121x - Right at terminator line. See a hint of a ring of what is left of a crater wall. Rhs has a long hill running across floor and this side has highest mountains of rim. Its shaped like a horseshoe with bottom at 6 o'clock. Moving down and left around rim from this highest point, see just a tiny, thin bit of rim barely sticking up. Along lhs to top of horseshoe, where its a bit thicker and little higher rim walls than bottom of horseshoe, but not as high as rhs mountains. Except for the long, low hill running through rhs of crater, lhs floor is flat and of the darker colored mare.	Clear. Calm. 42 degrees.
28	Mairan	12/13/05	6:58 PM MST	121x - Nice. Sharpened edge. Well defined rim that is not very high above surrounding surface. There is a shadow half way through it so you can tell its fairly deep.	Calm. P/C. Cool.
29	Mare Australe	12/14/05	6:38 PM MST	121x - Nice, dark mare. Easy to see. Right near the edge of the moon. Its irregular shaped with a couple of spots very dark. Very rough and mountainous around and on this mare.	Clear. Calm. 22 degrees.
30	Mare Cognitum	12/10/05	4:40 PM MST	121x - Medium dark colored, level area, roughly circular in shape but more oblong to the lhs. Couple of nice, deep, tiny round craters on floor. Some indication, shadows, that there are different levels of material on the floor of this mare.	Calm. Clear. Cold.
31	Mare Humboltianum basin	12/14/05	6:35 PM MST	121x - A slightly darker (than surrounding lunar surface) sliver right at the edge of the moon. Narrow, almost pointed at each end and a bit fatter in the middle. Curved with same curvature of the moon in this area.	Clear. Calm. 22 degrees.
32	Mare Insularum & Sinus Aestuum	12/10/05	4:36 PM MST	121x - Mare Insularum is flag, lightly cratered with 2 tones of color. There is a darker material over some of it but most was a lighter color, which are the rays of ejecta from Copernicus. Sinus Aestrum is all a lighter color. A big blanket of ejecta from Copernicus. See lots of "rays" in this area from that crater.	Calm. Clear. Cold.

33	Mare Marginis	12/14/05	6:32 PM MST	121 x - A hot dog shaped mare, slightly curved, with the radius of curvature like the moon in this area. It is right at the edge of the moon. The mare is darker at each end than in the middle. There is a hint of a third round finger off the upper end of the hot dog that appears to be part of it and bends towards and right up to the edge of the moon.	Clear. Calm. 22 degrees.
34	Mare Smythii	12/14/05	6:20 PM MST	121x - A long, flat oval right at the edge of the moon. 2 levels of darkness of mare seen with darkest parts at the top rhs, a middle band, and a tiny bit on lower bottom.	Clear. Calm. 22 degrees.
35	Mare Spumans	12/14/05	6:42 PM MST	121x - It is right below Undarum. It's a bit lighter in color and its basically circular in shape, but still irregular.	Clear. Calm. 22 degrees.
36	Mare Undarum	12/14/05	6:42 PM MST	121x - Very dark. Easy to see. Like a curved, fancy 'E' in shape on its back.	Clear. Calm. 22 degrees.
37	Marius Hills	12/13/05	6:58 PM MST	121x - I see Marius crater. To the left of crater is a short, white (lighter colored area) line, in a bit of an arc that is easily seen on the darker surrounding lunar surface in this area. Then below this is the crater Reiner.	Calm. P/C. Cold.
38	Mersenius	12/13/05	6:20 PM MST	121x - A larger, round crater that is more of a depression in the surrounding surface than a crater with a raised rim. Again, center floor seems to be higher than the rim edge at floor, because of the darker shadow at the rim-floor boundary. Nice.	Calm. P/C. Cool.
39	Milichius Pi	12/10/05	5:10 PM MST	121x - A tiny, dimmer white spot, a bit away from Milichius crater and at the 3 o'clock position.	Calm. Clear. Cold.
40	Mons Gruithuisen Gamma & Mons Gruithuisen Delta	12/13/05	7:00 PM MST	121x - Gamma is on the right and delta is on the left. Gamma has a very bright, white top but you can see a dark shadow at the lhs base of it. Delta is a lot smaller than gamma, approx by half the size. It too has a bright, white top also but I don't see a darker shadow at its base.	Calm. P/C. Cool.
41	Mons Rümker (A.K.A. Rümker Hills)	12/13/05	7:02 PM MST	121x - This is right at the terminator line. It's a long, dark shadow, out by itself on the darker mare that surrounds this area.	Calm. P/C. Cold.
42	Montes Agricola	12/13/05	7:05 PM MST	121x - This is right on the lower rhs of Aristarchus Plateau. Basically a short line with white tops on it. Right along lhs of this white topped line is a valley, which is a shade darker than the plateau, then the lower part of the plateau starts. Looks like the White Cliffs of Dover.	Calm. P/C. Cold.
43	Montes Cordillera	12/14/05	7:26 PM MST	121x - A twisty mountain range is seen right inside the terminator line, from just below Grimaldi and down past Cruger. The mountain peaks are more pronounced and whiter down below Cruger and rest are softer, but high compared to rest of lunar surface around this area.	Clear. Calm. 22 degrees.
		12/25/05	6:23 AM MST	121x - Stands out now as darker mtns on lighter surface because sun on other side. These are in 2 segments, with lower rhs segment the longest. Then a gap and a shorter segment. Can see the nice, new crater Eichstadt in-between segments.	Clear. Calm. Cool.
44	Montes Foucault	12/14/05	7:38 PM MST	121x - It's a short, white line, just beyond Foucault crater where the lighter colored mountains ends, with this line much brighter. Then there is a dark patch of Mare Figoris just beyond it, then the mare lightens a bit beyond this and basically all of the mare.	Clear. Calm. 22 degrees.

		12/24/05	4:33 AM MST	121x - A high, short line of mountains right at the edge of rougher terrain as it flattens out into Mare Frigoris. Foucault crater near it and to its upper left. Highest thing in this area of the moon. Mtns wider on lower lhs than upper rhs., almost teardrop in shape. Don't know if its part of it, but there is a tiny bit of mountains in a shorter line, perpendicular to first, to lower left of crater and on mare floor near rougher boundary. These stick way above everything else in area except other mtns above it and to right.	
45	Montes Rook	12/15/05 12/25/05	9:00 PM MST 6:23 AM MST	121x - This was right at the edge of the moon, beyond the crater Cruger. It is a ridge of mountains, with a hint of a shadow just on the other side of them. The near side of them is a nice, white, bright line. You can still see a bit of the moon beyond them and the shadow. This was really neat. The crater Grimaldi is way above this white line, so this mountain range is in the right spot with relation to Cruger and Grimaldi. 121x - Stands out now as darker mtns on lighter surface because sun on other side. Just on the other side of Montes Cordillera (C), little more than half way between C and edge of moon. A continuos ridge from where C starts on lower side to a bit beyond shorter segment of C mtns. Not parallel with edge of moon with upper lhs part farther from edge of moon than lower lhs part where it started. Dark shadow not consistent. Starts out fat, then gets narrow and returns to previous fat thickness. NICE!!!. On sunrise, this was a very white line on lunar surface.	Clear. Calm. 18 degrees. Clear. Calm. Cool.
46	Montes Recti, Teneriffe & Spitzenbergen	12/8/2005 12/10/2005	6:42 PM MST 4:20 PM MST	64x - Spitz. Is a triangular shaped set of mountains above the level surface of a Mare, but they are not very high. Teneriffe are high, jagged peaks nicely lit up by the sun right at the terminator line. Recti is right at the terminator line with some of its peaks lit up on the dark side of the moon. This is really cool. The terminator line splits these mountains and will have to look at these again to see them all. 12/10 observation at 121x - Mountains rising from lever floor of Mare Imbrium. A long, flat oval shape of mountains with higher peaks on rhs. There were the sunlit peaks in the shadow part of the moon 2 nights ago.	Windy, cold but clear. 12/10 observation was Calm. Clear. Cold.
47	Mösting A	12/21/05	4:01 AM MST	121x - Its a small, round crater that is a bowl shape with sloping inside rim walls to bottom of crater. Lhs inside lit by sun and is bright.	Clear. Calm. 42 degrees.
48	Promontorium Archerusia	12/20/05	3:26 AM MST	121x - A jagged line of mountains extending into the darker mares and separates Serenitatis with Tranquillitatis. Six peaks seen which form a bit of an arc. The bottom side of these mountains is bright white, while the other, upper side, are darker and not as white. The whole chain is very thin and just stick up above the lunar surface.	Clear. Calm. 22 degrees.
49	Regiomontanus & Regiomontanus A	12/08/05	6:49 PM MST	121x - Regiomontanus is one of the larger craters of the moon with a weathered rim, ie not sharply defined. Opens on the bottom side into another crater of the same size. Its irregular shaped, definitely not circular or oval, but basically circular. Below center and to the left is a nice mountain peak that is easy to see in the sunlight and on that peak, just below the central point of the mountains is a tiny, black dot which is A. This crater is near the terminator line.	Windy, cold but clear.

50	Rabbi Levi	12/18/05	9:58 PM MST	121x - Larger crater, basically round but not exactly. Has flat floor but in a lighter colored area of the moon with many other craters around it. It is like the last big hit in this area for it appears to have displaced the rims of others around it. Rim walls not very high and appears to be more of a depression on rhs with definite rim walls on lhs. Can clearly see 'A' and 'L' on the floor, with 'L' in the center and 'A' to its left. 'L' is larger than 'A' and both are new, round, deep craters with shadowing seen in both and terminator line yet a day or so away.	Clear. P/C->Clear. 10 degrees.
		12/19/05	4:35 AM MST	121x - An old crater, Soft and shallow crater with rim walls worn. Somewhat circular. See four newer craters on the floor in lower rhs quadrant. There are sharp rimmed and vary in size. There is also a nice sharp rimmed crater right on top of rim wall at 10 o'clock. 'L' is the largest and rest are about the same size. 'A' is below 'L'. 'M' and 'D' are to the right at about 3 o'clock to edge of crater. 'B' is on the rim wall. Shadows are such that all five stand right out and are easy to see.	Clear. Calm. 7 degrees.
51	Rima Aridaeus	12/21/05	4:06 AM MST	121x - A long, thin valley running in a rougher area of mare. There is a high ridge on rhs that breaks it into 2 pieces. Rhs or ridge piece real short and very thin. Lhs piece is long and easy to see with shadow in it. Its very straight.	Clear. Calm. 42 degrees.
52	Rima Cauchy	12/20/05	2:30 AM MST	121x - Its right on the terminator line. Appears to be a deeper depression on the dark mare. A short line with rhs of it broken off and continuing on a bit (not continuos). The lhs wall is white while the rhs wall has a darker shadow indicating its depth. Nice. Never seen this before.	Clear. Calm. 22 degrees.
53	Rima Hadley	12/23/05		121x and 200x - Tried to see this but could not. I could see the tiny crater next to it, but the terminator line was too far way to add any contrast for this valley. The next night, the t line was way past this part of the moon.	
		1/7/2006		240x. 4:50 PM Can see little C crater. Can see a short segment of it between C and Bela, closer to Bela. It's a hint of a shadowed, very shallow valley on sunlit flat floor. Its almost 2/3 way from Bela towards C. Can see the curve on floor right in front of Mons Hadley. Just a hint of a shadow gives it away. It goes across floor from Moins Hadley to low mtns across from Mons Hadley. 5:00 PM can see the segment from Bela now goes all way to C and disappears in shadow of Mons Hadley just to left of C. Other segment between mtns pops out nicely once in a while when seeing steadies (5:12 PM) and its a very thin shadow that you can see curves a bit. Shadow of mtn range hides any of rima hugging them at base of Mons Hadley.5:54 PM can see rima nice now. Shadows moved and can see segment from C in front of Mons Hadley and at the base if it and connect to curved part described above with sharp bend to left of Mons Hadley. Sun angle perfect to show this, Part from C towards Bela easiest part to see. Dark and can see it has a slight curve in it (not straight, more of a dogleg).	Clear. Calm. Cool.

54	Rima Hesiodus	12/24/04	4:10 AM MST	121x - A tiny black line at top of Mare Nubium. Starts at rougher mtn area on upper right side and cuts across lunar surface almost to edge of Hesiodus crater. Mare a uniform color in this area except on rhs from the center of Rima where it cuts across a hare darker oval of mare, which is flanked on each side by a much lighter, thin band of color.	Clear. Calm. Cool.
55	Rimae Hippalus	12/10/05	5:00 PM MST	121x - A nice set of dark lines in the valleys of a mountainous area. A long one see in the darker, flat area of Hipputus and B crater. Nice. Another is to the left of the long one, seen leaving the mountains and again on the darker flat area to the left of the mountains.	Clear. Calm. Cold.
56	Rimae Janssen	12/19/05	4:12 AM MST	121x - A short dark line that seems to follow a raised plateau on the lower and right side of plateau. The lower side has a nice shadow in it while the right side is a lot shorter and is white in color, as it follows the plateau for about a third as long as the darker shadowed length. I don't know if its part of it, but extending in the other direction from the bright, short right side is a valley with a slight shadow in it and a white left side of valley wall. It extends down to a mountain ranger in the floor of Janssen crater, where it stops perpendicularly to this mountain range.	Clear. Calm. 7 degrees.
57	Rimae Triesnecker	12/21/05 1/6/2006		121x - Tried to see this but the terminator line was too far away to give any contrast to this. The next night, the t line was way past this part of the moon. See darwing RimaeTreis.jpg. 140x - Terminator line passing over this area at 1:15 PM. 2:45 PM, still not popping in. The surface is very flat here. 3:23 PM, starting to see a lighter colored line near crater. Rima Hyginus is easily seen. It's a shallow valley on lunar surface, pretty straight. Light shadowing in its depth reveals it. It has a crater in its center, at which point, it has a dogleg bend. Nice and long feature. Very subtle though. 3:45 PM, see one line from Treisnecker crater towards 'N' crater. It has a whiter rhs, away from sun and a hint of a shadow in its valley. Can see a wider valley from T. Crater heading in opposite direction, towards 'A' crater. Both of these valleys are very short. 4:10 PM, can see a shallow valley from 'N', out in front of T. crater a bit and heading around into shadows towards 'A' crater. The wider one, out in front of T. crater and down towards 'A' is starting to become easier to see.	Clear. Calm. Cool.

				Can see a 6th line, from finger of peaks on surface above N crater and touching 1st line from N crater. It also is very thin, last 2 easy to see with nice shadow in their depth., This 6th line is actually connected to 5th line, so it starts at peaks and crosses 1st line and heads off between N crater and terminator line a fair distance. The 3rd line, between T crater and to right of A cratere is the darkest andeasiest to see. Very nice. 5:05 PM can see 3rd line connected to 1st and makes a nice bend near T crater. Every once in a while, image stabilizxes and can see lots of lines, very sharply, right in from of T crater. Very nice. Reall nice at 5:30 PM. Can see many of the very shallow valleys now. Really cooling off fast and sky is somewhat dteady. This is the perfect sun angle to see this feature. More power doesn't show it better. 5:43 PM. The 6th line, from finger peaks past N crater can see it goes a long way now, almost to the end where Rima Hyginus stops on this side of that feature. 240x. 4:50 PM Can see little C crater. Can see a short segment of it between C and Bela, closer to Bela. It's a hint of a shadowed, very shallow valley on sunlit flat floor. Its almost 2/3 way from Bela towards C. Can see the curve on floor right in front of Mons Hadley. Just a hint of a shadow gives it away. It goes across floor from Moins Hadley to low mtns across from Mons Hadley. 5:00 PM can see the segment from Bela now goes all way to C and disappears in shadow of Mons Hadley just to left of C. Other segment between mtns pops out nicely once in a while when seeing steadies (5:12 PM) and its a very thin shadow that you can see curves a bit. Shadow of mtn range hides any of rima hugging them at base of Mons Hadley.5:54 PM can see rima nice now. Shadows moved and can see segment from C in front of Mons Hadley and at the base if it and connect to curved part described above with sharp bend to left of Mons Hadley.	
58	Ritter & Sabine	12/20/05	2:53 AM MST	121x - Ritter in on right and Sabine on left. These are 2 older craters, with flat floors and a soft definition where the rim meets the floor. Not sharp. Ritter is a bit larger, both sit side by side to each other, but not touching. Can see a land bridge between them. Floor of both is not exactly flat, for shadows reveal an unevenness. Rims stick up a bit above surrounding mare. Both are basically round.	Clear. Calm. 22 degrees.
59	Sacrobosco	12/20/05	3:41 AM MST	121x - A larger, very old, worn crater. Basically round on lhs but rhs has a saw toothed rim. On floor are 3 nice, round, deep craters. None right in the center. 'A' is the largest, to the left of it is 'B' , the next biggest and below it is 'C', the smallest. Just below 'C' on rim wall is an older crater than 'C' that destroyed the rim wall here and is the size of 'A'. Then at the top are 2 small, newer craters, one on top of the other, 'C' sized and smaller, that destroyed this part of the rim and left a 'gap' there.	Clear. Calm. 22 degrees.

60	Schiller, Segner, Zucchius region	12/12/05	5:50 PM MST	121x - 13% Transmission Moon Filter - Schiller is a long, flat oval, maybe 2 craters together but no rim wall between them. Rim not too high and floor is pretty flat. With the long shadows in this area, can see not much detail on this floor. Zucchius is oval in appearance but is probably round when looked down from above. Shadow across most of crater but a tiny, central mountain peak is being lit up by the sun. Just the top of it. A tiny spot of light in the dark shadow of the crater bottom. Segner is oval and a deep crater. Rim on other side appears to be higher than near side. Again, probably round but from edge of moon perspective, its oval. This entire region is heavily cratered with lots of medium sized craters. Some are older, for their edges are not as sharp as other areas of the moon or even in this area, which is from the ejecta of other collisions that have "weathered" the sharpness of these crater edges.	Clear. Calm. Cool.
61	Sinus Amoris	12/14/05	6:50 PM MST	121x - Its at the edge of a darker mare and is a lot lighter in color. There are two nice bright craters seen on it, Hill and Carmichael. There seems to be two levels of white color in the sea, but its mostly made up of the lighter color.	Clear. Calm. 22 degrees.
		12/18/05	9:38 PM MST	Flat, dark floor. Upper left darker than lower right. Has a couple of nice, round, well defined craters on floor as well as a triangular set of mountains rising up in the middle. Its curvy shore is defined by rougher, whiter terrain rising from the smoothness of the floor.	Clear. P/C->Clear. 10 degrees.
62	Sinus Asperitatis	12/14/05	7:00 PM MST	121x - A lighter colored area with splotches of a hare darker material. Bounded on the bottom by a large crater, Throphilus, which is a nice, bright ring with a center bright spot of light. Some craters see in area help bound this sea.	Clear. Calm. 22 degrees.
		12/20/05	2:57 AM MST	121x - Basically a flat area with mountains here and there rising about the flatness. On lhs, is a funny, tear drop shaped crater, which is a larger crater, with a much smaller, newer crater at 3 o'clock side, right on the rim, giving it an oblong, teardrop look, This is Torricelli crater. Then right in the middle is a large, low, comma shaped hill. Not sharp peaked like the tiny mountains seen rising up here and there, but has a bit of height. Its half way between the crater and the mountain peaks. Then the boundary on rhs is gradual rising lunar surface and basically the same on lhs boundary of this sea.	Clear. Calm. 22 degrees.
63	Sinus Concordiae	12/14/05	6:55 PM MST	121x - A very very 'bay' and actually looks like a fjord. Seen on lhs of Mare Tranquillitatis. Its like a long, skinny Michigan, with the right hand thumb and fingers very pointy. There is a small white dot of a crater in the "center of the hand".	Clear. Calm. 22 degrees.
		12/18/05	8:35 PM MST	121x - A dark, pointed, flat 'bay' surrounded by lighter hills that are very rough. Not mountains though. The finger extends to the left from Mare Tranquillitatis. See the small, white circular Cauchy crater. Away from the pointed end there is a lighter colored line, extended a bit away from Cauchy crater and moving off at the 7 o'clock side, on the dark, flat bottom, almost to the hills on the bottom side of the bay.	Clear. P/C->Clear. 10 degrees.
64	Sinus Lunicus	12/14/05	6:53 PM MST	121x - It's a small area bounded by a couple of craters. It's a lighter color with some darker bands seen on it.	Clear. Calm. 22 degrees.

		12/21/05	11:30 PM MST	121x - Very flat . See a ridge, a plateau rise on rhs that bounds it. About same color throughout. Can see a tiny dot of a crater on it but no mountains.	Clear. Calm. Cool.
65	Stadius & Stadius Catenae	12/23/05	5:20 AM MST	121x - Flat mare in area I see abit of a rim sticking up above floor on lower lhs. Just a small part of rim though. Just below this are a set of high mountain peaks. See a hint of an arc of rim to the right of tall mtn peaks. The crater chain is nice. Its a small depression a bit to right of what rim is seen. Its tiny though. See a bit larger set of craters at top and a separation and a couple more 'tiny' ones. Very hard to see. Craterlets for a bit of an arc. Can see a shadow of a couple of more above the largest set. 121x - Right on terminator line. Can see the entire ring of crater now. Basically like ( ) open parens where lhs the most defined and highest. Upper rhs of right paren has highest part of rim on this side, with rest just barely above surface. These are more of a hill and less defined like rest, which are rugged tops. Large, high mtns take off at 7 o'clock side and head down towards Esctosthenes. Crater floor is smooth but see a layered texture. A mtn at top is just inside the upper lhs of rim. Its as high as the rim in this area. Crater is more oblong than round. Crater chain takes off at 5 o'clock side. Now see its a rough, raised 'line' above lunar surface. About as long as crater itself is wide. Can see tiny black dots on the top of this raised area. last night, these stood out a lot better. Easier to see craterlets. Using 200x easier to see. R, T, F, and S seen. E, W, U and J seen, detached a bit from rest and above them. Not as rough as other part of chain. Can see tiny	
		12/24/05	3:55 AM MST	rims about them though.	Clear. Cool. Calm.
66	Taruntius	12/18/05	8:45 PM MST	121x - Medium large crater, basically round with rhs a bit flatter (straight). Shadows indicate no too deep. Appears to be filled in and has a bowl shape to bottom, no definite boundary at rim with floor, just a gradual transition with the center part the deepest. Seems rim on rhs (the straighter part) is piled up a bit higher than other parts of the rim. Rim does stick up well above surrounding lunar surface. At 3 and 12 o'clock has lighter material ('rays') moving away from crater a bit. These are very light in color and subtle, but they are there.	Clear. P/C->Clear. 10 degrees.
67	Timocharis	12/08/05	7:28 PM MST	121x - A round, deep high rimmed crater in the flatness of a Mare. Seems more of a massive rim near the terminator line than the other side. Over 1/2 of crater filled with the shadow of the rim.	Windy, cold but clear.
68	Vallis Rheita	12/18/05	8:52 PM MST	121x - This is really cool. Right at terminator line so shadows show it well. It's a short, wide valley, basically a long, flat oval. Can see it is the result of impacts of several objects because the top of the valley walls have little indentations into the value. Its not a straight wall on either side. Then at the bottom left is Rheita crater, where this valley does a little bend to the left and is "much" thinner and shallower. Its not as long as the thicker part, but just about. I have always wanted to see this feature and now I have.	Clear. P/C->Clear. 10 degrees.
69	Wargentin	12/14/05	7:31 PM MST	121x - Nice, large oval crater. Looks like more of a depression because rim is not sticking above the surround area. Terminator line is near, so I would have seen shadows of a higher rim. With the shadows the way they are, looks more like a bowl than sharp rim walls with a flat floor. Seem to slope gradually to the center.	Clear. Calm. 22 degrees.

70	Wolf	12/08/05	7:35 PM MST	121x - Its right near the terminator line. Irregular shaped, roughly circular with jagged, varying height of rim mountains that are easily seen with this sun angle. The mountains for a closed ring on lhs and there is an open break on rhs right at terminator line.	Windy, cold but clear.
	Sketch these targets:				
71	Any polar crater (above 80N latitude or below 80S latitude)	12/13/05	7:22 PM MST	See Drawing (80DegreeCraterSketch.jpg)	Calm. P/C. Cold.
72	Clavius & its internal craterlets (counts as 2 OBSV: #72 & #73)	12/21/05	4:23 AM MST	See Drawing (ClaviusSketch.jpg).	Clear. Calm. 42 degrees.
73	Clavius & its internal craterlets	12/21/05	4:23 AM MST	See Drawing (ClaviusSketch.jpg).	Clear. Calm. 42 degrees.
74	Davy Y	12/23/05	5:00 AM MST	121x and 200x - Tried for some time to see this crater chain. I found the crater floor where the Y craters should have been, but the terminator line was too far away to give any contrast to these. They must not have much of a rim, or I would have seen the disruption in the crater floor of their impacts.	P/C. Cool. Calm.
		1/7/2006	5:12 PM MST	See Drawing DaveY_sm.jpg. 240x - Right near terminator line. Next to and near Dave, on floor of heart shaped crater, see a thin, short valley of 2 or 3 depressions. Can tell this for edge is not straight but has some "teeth" and can see a bit of a rim (ridge) around it all. Its raised above surrounding flat crater floor. It reaches almost, but not quite, to center (1/2 way) of heart shaped crater. At 5:38, for a split second, saw a faint, white line, very short, but on same line as above feature and point of rim wall, centered in the floor area between last 2 reference points. By 6:10 PM the feature was gone. When it was at its best, the straight wall (above it in same FOV) has a very long shadow, with lower part of shadow touching terminator line. Now, shadow of straight wall nice and even. Also, seeing not as good now that it is darker and wind is blowing off and on.	Clear. Calm. Cool.
75	Delaunay	12/21/05	4:34 AM MST	See Drawing (DelauneySketch.jpg).	Clear. Calm. 42 degrees.
76	Mare Crisium	12/14/05	6:29 PM MST	See Drawing (MareCrisiumSketch.jpg).	Clear. Calm. 22 degrees.
77	Messier, Messier A & rays	12/12/05	7:04 PM MST	121x - See Drawing (MessierSketch.jpg). 13% Transmission Moon Filter.	Clear. Calm. Cool.
78	Montes Jura (counts as 2 OBSV: #78 & #79)	12/12/05	5:43 PM MST	121x - See Drawing (MontesJuraSketch.jpg). On 12/11/05, I observed same formations and noted its a half fingerlet or little more of mountains that surround Sinus Iridium. It was right on the terminator line this night. Starting on bottom lhs, its high and pointed, not well formed. About a third of the way around, there is a large crater bounding the outside of them. Its thicker here. Then on around to top, where its the thickest of mountains (width wise) and rough. Can see this by all the shadowing. There are nice sun shadows on them. Then at top, a little dog leg to the left hook and gets thinner in width. Not as	
79	Montes Jura	12/12/05	5:43 PM MST	high here as other end of arc.	Clear. Calm. Cool.
80	Müller and craterlet chains	12/21/05	4:47 AM MST	See Drawing (MullerSketch.jpg).	Clear. Calm. 42 degrees.
		1/7/2006	6:08 PM MST	See Drawing Muller_sm.jpg. 240x. This was a nicer view than first time. When the seeing steadied, you could see the craters, moving off the main crater. The largest craterlet was closest to Muller, then there was a bit smaller one next to that, then the third was a lot smaller, with a few more impacts getting progressively smaller as they moved away from the crater. Pretty evenly spaced.	Clear. Calm. Cool.
81	Thebit, Thebit A & Thebit L	12/21/05	4:38 AM MST	See Drawing (ThebitSketch.jpg).	Clear. Calm. 42 degrees.
82	Vallis Alpes	12/21/05	4:53 AM MST	See Drawing (ValleAlpesSketch.jpg).	Clear. Calm. 42 degrees.

		1/5/2006	6:39 PM MST	See Drawing VallisAlpes_sm.jpg. 140x - This was a different look at this than on waning phase. The valley cuts through a very high and wide mtn range that is a very rough area. It stars on the rougher plateau, very narrow and as it cuts across the middle of the range, it get wider and wider. Edges pf valley rough and looks to be "carved" out of the range and not a natural feature of this area. Looks like it was made by a series of consecutive collisions of something that cut this valley in the mtns. Extends into the terminator line, where some higher peaks are lit up by the sun in the dark part of the moon, on each side where this valley would be.	Clear. Calm. Cool.
83	Sketch or image "earthshine" on lunar surface. Identify any major features visible on the shadowed portion of the lunar surface	01/01/06	5:30 PM MST	See Drawing EarthShineSketch.jpg. 64x - I watched the moon as it got dark and know I had about a half of an hour to sketch it before it was too low to see anything on the surface. About 5:15, I could make out the entire disc of the moon, but it was sinking fast. By 5:30, I was able to see a lot of detail and then it got real good at about 5:45 for a few minutes. I was able to see a lot of details and hopefully, my sketch reflected what I saw. By the time I quit, the moon was 3 degrees above the horizon, and the features were smearing out, By 6:05 PM, I could not have made the sketch I did.	Clear. Light Wind. Cool.
84	Create sketches or images of limb feature(s) that depict libration	12/13/05	6:07 PM MST	See Drawing LibrationSketches.jpg. This observation shows more of the moon, Mares Marginis and Smythii.	Calm. P/C. Cold.
85	effect. (counts as 2 OBSV: #84 & #85)	01/02/06	4:30 PM MST	See Drawing LibrationSketches.jpg. This observation shows less of the moon, basically only Mare Crisium. I never knew the moon did this. This was a neat effect to observe.	Calm. Clear. Cool.
86	Sketch or image a close conjunction of Moon and bright star or planet	12/4/05 12/10/05	5:30 PM MST 6:40 PM MST	See Drawings (MoonVenusSketch.jpg and MoonMarsSketch.jpg).	P/C, no wind, cold.
	Observe and create multiple sketches (or images) of same targets:				
87	Byrgius A near lunar sunrise (or sunset)	12/14/05	7:45 PM MST	121x - See Drawing (ByrgiusASketches.jpg). A "thin" oval on the top of a lower rim of a larger crater. Near side of crater a thin crescent shadow and opposite side, a bright thin crescent. There is a shadow of the larger crater's rim wall on either side of this tiny crater. Nice.	Clear. Calm. 22 degrees.
88	Byrgius A near lunar midday	12/20/05	3:07 AM MST	See Drawing (ByrgiusASketches.jpg). 121x - It's very bright white round spot now. Can see brighter rays emanating from it to the left and right. These are not as brilliant as the crater itself, but very noticeable. 'D' crater is bright white also with main crater a darker colored oval as compared to the surrounding lunar surface in this area.	Clear. Calm. 22 degrees.
89	Proclus near lunar midday	12/10/05	4:30 PM MST	See Drawing (ProclusSketches.jpg). 121x - Small, round, but very bright far ring seen where crater should be.	Calm. Clear. Cold.
90	Proclus near lunar sunset	12/14/05	6:29 PM MST	See Drawing (ProclusSketches.jpg).	Clear. Calm. 22 degrees.
91	Rupes Recta near lunar sunrise	12/08/05	7:38 PM MST	See Drawing (RupesRetcaSketches.jpg).	Windy, cold but clear.
92	Rupes Recta near lunar sunset	12/21/05	11:35 PM MST	See Drawing (RupesRetcaSketches.jpg). 121x - No shadow seen yet there was a hint of a line where the wall should be.	Clear. Calm. Cool.
		12/23/05	5:10 AM MST	See Drawing (RupesRetcaSunset2Sketch.jpg) - 121x - Now its a thick white line on the darker mare. Higher mountains at top and tiny mountains at bottom of line. Medium high mountain chain bisects upper part of it.	P/C. Calm. Cool.

93	Tycho near lunar sunrise (or sunset)	12/21/05	4:41 AM MST	See Drawing (TychoSketches.jpg). 121x - All rays almost disappeared. 3 major ones still seen. Tiny mountain peak right in center sticks up from floor. Lhs rim walls show lots of layered details. A nice mountain ridge serpentines off 8 o'clock side and start right at crater's edge. This was probably one of the white festoons I saw with I sketched it before.	Clear. Calm. 42 degrees.
94	Tycho near lunar sunrise midday	12/15/05	9:15 PM MST	See Drawing (TychoSketches.jpg). 121x - This was really nice. A round ring of a crater with the top of the rim flat, which give the rim an distinct edge. The lower left part is thinner and the upper right part is much thicker. The fatter part has a little dark line bisecting the whiteness of the rim top. Its in an arc which is the same radius of curvature as the crater rim. The inside walls of the fatter rim are noticeably darker. There is a white line in an arc just above the center of the crater and on the floor of the crater. There are 5-6 white festoons coming off the top of the rim on the thinner lower side of the rim and down the outside of the rim to the lunar surface. The contrast here you can tell this crater is a lot higher than the surrounding lunar surface. The floor of the crater is as white as the top of the rim walls.	Clear. Calm. 18 degrees.
	Miscellaneous observations:				
95	Observe Statio Tranquillitatis region (AKA "Tranquility Base") In addition to describing the lunar surface, observing notes should include mission name, date(s) of exploration, and a brief description of significance.	12/20/05	2:43 AM MST	Read Apollo11.doc. 121x - Flat, uniformly colored mare. Flanked on lhs and rhs by shades of a whiter surface area in vertical bands. More of wisps of color than a definite something there. Above it is a sharp, small, round crater, Moltke, that has a very bright lhs rim.	Clear. Calm. 22 degrees.
96	Observe another Luna, Lunakhod, or Apollo mission site -- in addition to describing lunar surface, observing notes should include mission name, date(s) of exploration and a brief description of significance	12/08/05	6:58 PM MST	Read Apollo15.doc.121x - Saw Apollo 15 landing site, right near a high mountain peak, but just to the north of it on the flat surface of the moon there.	Windy, cold but clear.
97	Observe another Luna, Lunakhod, or Apollo mission site -- in addition to describing lunar surface, observing notes should include mission name, date(s) of exploration and a brief description of significance	12/12/05	6:02 PM MST	Read Luna17.doc. 121x - 13% Transmission Moon Filter - Luna 17 landing site. Its very flat here and void of craters. It is mostly the darker mare material with some wisps of a lighter material in the area.	Clear. Calm. Cool.
98	Observe occultation (entry or exit) of a bright star, planet, or planetary moon. Include exact time of event. (count as 1 OBSV; if both entry into shadow & exit from shadow are logged, count as 2 OBSV)	12/25/05	6:30 AM MST	64x - I watched Spica disappear behind the moon. I timed its disappearance with WWV at 6:32:20. Just before it winked out, the blue white color of Spice was a nice contrast with the ivory colored moon. It entered the moon just beyond Pingre on Chart 70 of Rukl. It reappeared at 7:31:51 AM MST from dark side of moon in the morning blue sky. See SpicaOccultationSketch.jpg.	Clear. Calm. Cool.

99	Observe a lunar eclipse; description and/or labeled sketches/images	10/27/04	All Evening	I watched a total lunar eclipse with my 8 inch telescope, from my driveway. The moon was in the eastern sky. The moon entered the penumbra at 6:06 PM but I never noticed any change in the moon. Then at 7:14 PM, the moon entered the umbra. I and my family watched the shadow of the earth creep across the moon until about 8:23 PM, when the moon was in totality. This lasted until 9:45 PM when the moon left totality and we watched the shadow of the earth creep across the other side of the moon until 10:54 PM, when we quit watching the event. The moon turned a rust red this time and not the blood red I had seen on other total lunar eclipses. I also noticed that the shadow of the earth was not "centered" on the middle of the moon, but was off a bit to one side. This was a nice one and my family really enjoyed it.	Clear. Calm. Warm.
100	must as a minimum describe entry and event maximum (counts as 2 OBSV: #99 & #100)				
	OPTIONAL TARGETS: may substitute for required tasks/targets				
OPT-A	Create a series of sketches or images that show daily phase/position change; 3 or more days/nights at approximately same hour (sub for 2 OBSV)				
OPT-B	Create two or more sketches or images, taken one month or more apart, that show change in Moon's path w/ respect to landmark(s) on the local horizon. Images should be taken with same equipment and at same magnification (sub for 2 OBSV)				
OPT-C	Create two or more images that depict the change in apparent	12/21/05	3:05 AM MST	See Drawing. 64x - ApogeePerigeeSketch.jpg. Moon reaches well over half way maybe 5/8 of FOV in diameter.	Clear. Calm. 42 degrees.
	diameter of the Moon at/near apogee and perigee. Each image should be taken with same equipment and at same magnification (sub for 1 OBSV)	01/01/06	4:53 PM MST	See Drawing. 64x - ApogeePerigeeSketch.jpg. Moon reaches well over 5/8 of FOV in diameter but definitely not 3/4 FOV in diameter.	Clear. Light Wind. Cool.
OPT-D	Observe a solar eclipse (sub for 1 OBSV; if sketches/images are included and depict entry and event maximum, sub for 2 OBSV)				
OPT-E	Observe a lowland area with one or more colored filters, and compare the similarities/differences to the unfiltered view (sub for 1 OBSV)	12/12/05	6:15 PM MST	64x - This was a cool exercise for I would have never thought of doing this to the moon. The unfiltered view shows the mare areas about the same color, with the transition from the lowlands to the highlands a hare darker material. I used a 80A, Medium Blue which softens the intensity of the glare, making it easier to see small craters on the mare. Didn't do much to contrast the mares though. Next I used a 58 Green, which showed the transition between the mares and the highlands the darkest. It gave the craters and mountains on the mare a nice contrast for they stood right out. on Copernicus, could see the layered ejecta around the rim. A #25 Red shows the mares on the eastern moon nice and dark as compared with the western mares, which are all covered with ejecta and rays. This was not a good a view of these areas as with the green filter, but the rays stand out. The I used a #15 Deep Yellow, which gives a softer view of what the red did. East mares are darker than with the red. BUT, this color highlights the rays really nicely. I like this view alot.	Clear. Calm. Cool.
OPT-F	Create a series of images at one-hour intervals that show the	1/6/2006		See OPT-F_sm.jpj. I sketched the terminator line passing over Treisnecker crater.	Clear. Calm. Cool.

terminator passing over a prominent feature (sub for 2 OBSV)