Observing List for

day	month	year	local clock time:	23.98
19	10	2019		

alt	az	Constellation	object	mag A	mag B	Separation	description	Epoch 2000 RA hr	RA min	DEC deg	DEC min
78	81	Andromeda	Gamma Andromedae (*266)	2.3	5.5	9.8	yellow & blue green double star	2	3.9	42	19
81	214	Andromeda	Pi Andromedae	4.4	8.6	35.9	bright white & faint blue	0	36.9	33	43
87	358	Andromeda	STF 79 (Struve)	6	7	7.8	bluish pair	1	0.1	44	42
76	94	Andromeda	59 Andromedae	6.5	7	16.6	neat pair, both greenish blue	2	10.9	39	2
72	282	Andromeda	NGC 7662 (The Blue Snowball)	planetary nebula, fairly bright & slightly elongated				23	25.9	42	32.1
87	269	Andromeda	M31 (Andromeda Galaxy)	large sprial arm galaxy like the Milky Way				0	42.7	41	16
87	263	Andromeda	M32	satellite galaxy of Andromeda Galaxy				0	42.7	40	52
86	276	Andromeda	M110 (NGC205)	satellite galaxy of Andromeda Galaxy				0	40.4	41	41
78	104	Andromeda	NGC752	large open cluster of 60 stars				1	57.8	37	41
75	80	Andromeda	NGC891	edge on galaxy, needle-like in appearance				2	22.6	42	21
71	277	Andromeda	NGC7640	elongated galaxy with mottled halo				23	22.1	40	51
72	304	Andromeda	NGC7686	open cluster of 20 stars				23	30.2	49	8
36	230	Aquarius	55 Aquarii, Zeta	4.3	4.5	2.1	close, elegant pair of yellow stars	22	28.8	0	-1
30	209	Aquarius	94 Aquarii	5.3	7.3	12.7	pale rose & emerald	23	19.1	-13	28
27	200	Aquarius	107 Aquarii	5.7	6.7	6.6	yellow-white & bluish-white	23	46	-18	41
12	242	Aquarius	M72	globular cluster				20	53.5	-12	32
12	240	Aquarius	M73	Y-shaped asterism of 4 stars				20	59	-12	38
35	211	Aquarius	NGC7606	Galaxy				23	19.1	-8	29
14	240	Aquarius	NGC7009 Saturn Neb	planetary nebula, large & bright pale green oval				21	4.2	-11	21.8
27	242	Aquarius	M2	fine globular cluster 36,800LY dist				21	33.5	0	-49
19	217	Aquarius	NGC7293 Helix Neb	planetary nebula only 300LY dist, very large, use low power				22	29.6	-20	50.2
68	148	Aries	1 Arietis	6.2	7.2	2.8	fine yellow & pale blue pair	1	50.1	22	17
64	123	Aries	30 Arietis	6.6	7.4	38.6	pleasing yellow pair	2	37	24	39
65	117	Aries	33 Arietis	5.5	8.4	28.6	yellowish-white & blue pair	2	40.7	27	4
58	120	Aries	48, Epsilon Arietis	5.2	5.5	1.5	white pair, splittable @ 150x	2	59.2	21	20
65	149	Aries	5, Gamma Arietis (*262)	4.8	4.8	7.8	nice bluish-white pair	1	53.5	19	18
69	142	Aries	9, Lambda Arietis (*264)	4.9	7.7	37.4	yellow-wht & pale blue	1	57.9	23	36
68	115	Aries	NGC972	Galaxy, oval shaped				2	34.2	29	19
37	74	Auriga	M36 Pinwheel Cluster	open cluster of a dozen or so young stars (30million years old)				5	36.1	34	8
33	73	Auriga	M37 January Salt and Pepper Cluster	rich, open cluster of 150 stars, very fine				5	52.4	32	33
39	73	Auriga	M38 Starfish Cluster	large open cluster 220 million years old				5	28.7	35	50
38	58	Auriga	IC2149	planetary nebula, stellar to small disk, slightly elongated				5	56.5	46	6.3
45	62	Auriga	Capella	0.1	alignment star			5	16.6	46	0
28	62	Auriga	UU Aurigae	Magnitude 5.1-7.0 carbon star (AL# 36)				6	36.5	38	27
34	68	Auriga	37 Theta Aurigae	2.6	7.1	3.6	white & bluish stars	5	59.7	37	13
40	78	Auriga	14 Aurigae	5.1	7.4	14.6	pale yellow and blue	5	15.4	32	31
53	52	Camelopardalis	1 Camelopardalis	5.7	6.8	10.3	white & light blue	4	32	53	55
49	41	Camelopardalis	10, Beta Camelopardalis	4	8.6	80.8	wide yellow & blue pair	5	3.4	60	27
43	45	Camelopardalis	29 Camelopardalis	6.5	9.5	25.1	unequal yellow & blue pair	5	50.6	56	55
56	37	Camelopardalis	SZ Camelopardalis, STF485 (Struve)	7	7.1	17.9	equal blue-white double	4	7.9	62	20
62	47	Camelopardalis	STF390 (Struve)	5.1	9.5	14.8	white and purple	3	30	55	27
33	29	Camelopardalis	STF1122 (Strrve)	7.8	7.8	15.4	attractive white pair	7	45.9	65	9
32	2	Camelopardalis	STF1625 (Struve)	7.3	7.8	14.4	matched yellow pair	12	16.2	80	8
35	0	Camelopardalis	32, STF1694 (Struve)(HIP62572)	5.3	5.8	21.6	yellowish & bluish pair	12	49.2	83	25
50	29	Camelopardalis	ST Camelopardalis	vivid pink carbon star, Magnitude 6.7-8.4 (AL# 18)				4	51	68	10
34	1	Camelopardalis	IC3568, Baby Eskimo, Lemon Slice Nebula	planetary nebula, disk shaped with bright center				12	33.1	82	33.8
56	39	Camelopardalis	NGC1501	planetary nebula, large and light blue, central star visible at 250x				4	7	60	55
56	37	Camelopardalis	NGC1502, Kemble's Cascade	open cluster of 45 stars				4	7.7	62	20
34	29	Camelopardalis	NGC2403	sprial arm galaxy				7	36.9	65	36
10	226	Capricornus	M30 The Jelleyfish Cluster	globular cluster				21	40.4	-23	11
72	330	Cassiopeia	8, Sigma Cassiopiae (HIP118243)	5	7.1	3	fine bluish-wht & yellow pair	23	59	55	45
75	349	Cassiopeia	18, Alpha Cassiopiae (HIP3179)	2.2	8.9	64.4	orange & blue w/three optical companions	0	40.5	56	32
73	355	Cassiopeia	24, Eta Cassiopiae (HIP3821)	3.4	7.5	12.9	pretty yellow & orange pair	0	49.1	57	49
61	18	Cassiopeia	Iota Cassiopiae (HIP11569)	4.6	6.9	2.5	brilliant white primary & blue companions, very nice	2	29.1	67	24
65	332	Cassiopeia	M52 Cassiopeia Salt and Pepper Cluster	rich, compressed open cluster of 100 stars				23	24.2	61	35
70	12	Cassiopeia	M103	open cluster of 25 stars, looks like a christmas tree				1	33.2	60	42
62	33	Cassiopeia	IC289	planetary nebula, faint disk, may need 10" scope to discern				3	10.3	61	19
66	27	Cassiopeia	IC1805, Mellotte 15	open cluster of 40 stars imbedded in an emission nebula				2	32.7	61	27
67	16	Cassiopeia	IC1747	planetary nebula, class 3b, small PN, stellar to small disk				1	57.6	63	19.3
84	347	Cassiopeia	NGC278	galaxy				0	52.1	47	33
73	8	Cassiopeia	NGC457 ET Cluster	open cluster of 80 stars, 9300LY distant				1	19.1	58	20
69	15	Cassiopeia	NGC663	open cluster of 80 stars, very rich				1	46	61	15
69	14	Cassiopeia	NGC654	open cluster of 60 stars				1	44.1	61	53
72	332	Cassiopeia	NGC7789	magnificent open cluster of 300 stars				23	57	56	44
55	317	Cepheus	Erakis (Garnet Star) (Mu Cephei) (HIP107259)	Red supergiant star 10^5 times as luminous as the sun. Surface temp is ~3000K. Diamet				21	43.5	58	47
61	319	Cepheus	27, Delta Cephei	3.9	6.3	41	yellow & blue double	22	29.2	58	25
51	335	Cepheus	Beta Cephei (HIP106032)	3.2	7.9	13.3	white & emerald	21	28.7	70	34
56	328	Cepheus	17, Xi Cephei (HIP108917)	4.4	6.5	7.7	yellowish-white & reddish	22	3.8	64	38
55	314	Cepheus	IC1396	Open Cluster of 50 stars & emission nebula, very large (good binocular obj)				21	39.1	57	30
58	353	Cepheus	NGC40, Bowtie or Scarab Nebula	planetary nebula, fine oval with conspicuous central star				0	13	72	32
46	319	Cepheus	NGC6939	Open Cluster of 80 stars				20	31.4	60	38
61	325	Cepheus	NGC7354	planetary nebula, uniform, grey disk				22	40.3	61	17.1
65	328	Cepheus	NGC7510	Open Cluster of 60 stars, fine, bright & wedge shaped cluster				23	11.5	60	34
43	155	Cetus	66 Ceti (HIP10305)	5.7	7.5	16.5	topaz & violet	2	12.8	-2	24
45	142	Cetus	86, Gamma Ceti (HIP12706)	3.5	7.3	2.8	white & yellow	2	43.3	3	14
43	144	Cetus	M77 Cetus A	bright Seyfert galaxy with brilliant core				2	42.7	0	-1
40	188	Cetus	NGC157	galaxy				0	34.8	-8	24
37	184	Cetus	NGC246, Skull Nebula, Cetus Bubble	large planetary nebula involved with 4 stars				0	47	-11	53
28	184	Cetus	NGC247	large, highly elongated galaxy				0	47.1	-20	46
26	172	Cetus	NGC578	galaxy				1	30.5	-22	40

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41	161	Cetus	NGC779	galaxy				1	59.7	-5	58
42	143	Cetus	NGC1087	galaxy				2	46.4	0	-30
23	288	Cygnus	Albireo (*223)	3.1	5.1	34	gold, blue	19	30.7	27	58
29	291	Cygnus	17 Cygni (*340) (HIP97295)	5	8.1	26	fine yellow & orange	19	46.4	33	44
46	287	Cygnus	61 Cygni (double star) (V1803)	5.2	6	32	orange/yellow & orange pair	21	6.9	38	45
37	309	Cygnus	16 Cygni	5.1	5.3	39	yellowish pair	19	41.8	50	32
35	303	Cygnus	Delta Cygni	2.87	6.5	2.5	greenish & blue-green pair (very close)	19	45	45	8
29	286	Cygnus	STT 390 (Ostruve) (HIP98017) (trinary star system)	6.6	8.9	9.7	yellow primary	19	55.1	30	12
39	280	Cygnus	52 Cygni	4.2	9.4	6.6		20	45.7	30	43
26	289	Cygnus	BD+30 3639 (Campbell's Hydrogen Star)	planetary nebula, stellar to very small disk and dim halo				19	34.8	30	31
51	285	Cygnus	Hu 1-2 (Baby Dumbbell)	planetary nebula, very small stellar appearance, averted vision & filter				21	33.1	39	38.3
51	278	Cygnus	V460 Cygni (SAO71613)	Magnitude 5.6-7.0 carbon star (AL #93)				21	42	35	31
52	282	Cygnus	RV Cygni (SAO71642)	Magnitude 7.1-9.3 carbon star (AL #94)				21	43.3	38	1
53	299	Cygnus	M39 (open cluster)	30 stars, 800LY distance				21	32.2	48	26
32	298	Cygnus	NGC6819 (The Fox Head Cluster) open cluster	V-shaped open cluster of ~50 stars looks like a fox head				19	41.3	40	11
37	309	Cygnus	NGC6826 (The Blinking Planetary) planetary nebula	blinks when one uses averted vision				19	44.8	50	31
37	300	Cygnus	NGC6866 (The Frigate Bird Cluster)	open cluster looks like a bird?				20	3.8	44	9
34	290	Cygnus	NGC6871	open cluster as large as the full moon				20	5.9	35	47
36	292	Cygnus	NGC6888 (The Crescent Nebula)	bubble of gas ejected from energetic Wolf-Rayet Star at the center				20	12	38	21
33	284	Cygnus	NGC6894	planetary nebula, elongated disk with darker center, use averted vision				20	16.4	30	33.9
39	294	Cygnus	NGC6910 open cluster	open cluster of ~50 stars				20	23.1	40	47
38	291	Cygnus	M29 (The Cooling Tower)	open cluster				20	23.9	38	32
46	319	Cygnus	NGC6946 (Galaxy)					20	34.9	60	9.2
39	280	Cygnus	NGC6960 (The Veil Nebula)	super nova remnant (centered on 52 Cygni double star)				20	45.7	30	43
47	295	Cygnus	NGC7000 (North America Nebula)	diffuse nebula				20	58.8	44	31
49	310	Cygnus	NGC7008 (Fetus Nebula)	planetary nebula, dual-lobed disk of irregular brightness				21	0.6	54	32.6
49	300	Cygnus	NGC7026 (Cheeseburger Nebula or Tiny Dumbbell)	planetary nebula				21	6.3	47	51
47	292	Cygnus	NGC7027 (Green Rectangle or Magic Carpet Nebula)	planetary nebula, distinctly green stellar @ low mag, oval @ high mag				21	7	42	14.2
52	297	Cygnus	NGC7082 open cluster	~20 stars				21	28.6	47	7.5
56	296	Cygnus	IC5146 (Cocoon Nebula)					21	53.4	47	16
30	265	Delphinus	Gamma (*342)(HIP102532)	4.5	5.5	9.6	beautiful yellow & green	20	46.7	16	7
25	261	Delphinus	Kappa Delphini (HIP101916)	5.1	9	214	reddish further out	20	39.1	10	5
22	268	Delphinus	NGC6891	planetary nebula, uniformly bright bluish-green disk				20	15.2	12	42
28	273	Delphinus	NGC6905 (Blue Flash Nebula)	planetary nebula				20	22.4	20	5
15	330	Draco	16 & 17 Draconis	5.4	5.5	90.3	fine wide double	16	36.2	52	55
19	327	Draco	21, Mu Draconis	5.6	5.7	1.9	very close pair of bright white stars	17	5.3	54	28
22	325	Draco	Nu Draconis (HIP85819)*	4.9	4.9	61.9	bright white pair	17	32.2	55	11
33	340	Draco	31, Psi Draconis	4.9	6.1	30.3	yellow pair	17	41.9	72	9
38	348	Draco	40 & 41 Draconis	5.7	6.1	19.3	yellow pair	18	0.2	80	0
41	342	Draco	UX Draconis (SAO9404)	Magnitude 5.9-7.1 carbon star (AL# 74)				19	21.6	76	34
11	343	Draco	M102 (The Spindle Galaxy)	galaxy, bright lenticular shaped				15	6.5	55	46
28	12	Draco	NGC3147	galaxy with bright central area				10	16.9	73	24
17	6	Draco	NGC4125	galaxy, cigar shaped				12	8.1	65	11
12	342	Draco	NGC5907	galaxy				15	15.9	56	19
19	341	Draco	NGC6015	galaxy				15	51.4	62	19
33	337	Draco	NGC6503	galaxy, fairly bright lens shaped				17	49.4	70	9
29	310	Draco	NGC6742 (Abell 50)	planetary nebula, uniform circular disk				18	59.3	48	28
32	333	Draco	NGC6543 (Cat's Eye Nebula)*	planetary nebula				17	58.6	66	38
25	253	Equuleus	Epsilon Equulei (STF 2737)	6	6.3	0.8	AB appears as one yellow at low X	20	59.1	4	18
27	255	Equuleus	Lambda Equulei (STF 2742)	7.4	7.4	2.8	close pair of yellow stars	21	2.2	7	11
31	127	Eridanus	32 Eridani (STF470)	4.8	6.1	6.8	deep yellow and greenish	3	54.3	-2	57
22	128	Eridanus	39 Eridani (STF516)	5	8	6.4	deep yellow and light blue	4	14.4	-10	15
18	121	Eridanus	55 Eridani (STF3409)	6.7	6.8	9.2	fine pair of vivid yellow & pale yellow	4	43.6	-8	48
20	150	Eridanus	NGC1187	galaxy with halow and vague suggestion of spiral structure				3	2.6	-22	52
21	148	Eridanus	NGC1232	bright face-on galaxy				3	9.8	-20	35
21	145	Eridanus	NGC1300	bar type galaxy				3	19.7	-19	25
20	129	Eridanus	NGC1535, Cleopatra's Eye	planetary nebula w/2 shells around central star				4	14.2	-12	44
20	79	Gemini	15 Geminorum	6.6	8	27.1	color contrasting yellow & blue	6	27.8	20	47
17	81	Gemini	20 Geminorum (STF924)	6.3	6.9	20	bright yellow and pale white	6	32.3	17	47
11	70	Gemini	55 (Delta) Geminorum	3.5	8.2	5.8	bright yellow & pale blue	7	20.1	21	59
15	60	Gemini	66 (Alpha) Geminorum (Castor) (trinary system)	1.9	2.9	4	blue-white duo	7	34.3	31	53
15	60	Gemini			8.8	72.5	lilac colored				
26	77	Gemini	TU Geminorum	Magnitude 7.4-8.4 Carbon star (AL# 32)				6	11	26	1
25	79	Gemini	M35 The Shoe Buckle Cluster	Magnificent open cluster of 200 stars				6	8.9	24	20
21	72	Gemini	NGC2266	Fine, compressed open cluster of 50 stars				6	43.2	26	58
18	82	Gemini	Jonckheere 900	planetary nebula, stellar or small disk				6	26	17	47.5
20	75	Gemini	M1-7	planetary nebula, stellar to small disk, central star visible				6	37.4	24	0.4
15	64	Gemini	NGC2371-2 (The Gemini Nebula or Double Bubble)	planetary nebula, 2 equal lobes at higher mag				7	25.6	29	29.4
12	318	Hercules	M92	globular cluster				17	17.1	43	8
59	277	Lacerta	STF2894 (Struve)	6.1	8.3	15.6	contrasting yellow & blue	22	18.9	37	46
63	279	Lacerta	8 Lacertae / STF2922 (Struve)	5.7	6.5	22.4	white or bluish white	22	35.9	39	38
62	303	Lacerta	IC5217	planetary nebula, small bluish stellar to disk shaped object				22	23.9	50	58
11	122	Lepus	R-Leporis (Crimson Star)	Hind's Crimson Star, variable Carbon star <2600degC				4	59.6	-14	48
11	118	Lepus	4, Kappa Leporis	4.5	7.4	2.6	white components, not easy to split	5	13.2	-12	56
38	41	Lynx	5 Lyncis	5.3	9.8	31.4	wide pair of yellow and blue	6	26.8	58	25
36	39	Lynx	12 Lyncis	5.4	7.3	8.7	yellowish white & blue stars	6	46.2	59	27
30	41	Lynx	19 Lyncis	5.6	6.5	14.8	yellowish & bluish-white	7	22.9	55	17
25	40	Lynx	JnEr 1 (Headphones Nebula)	planetary nebula, large but faint, need filter to see				7	57.9	53	25
22	304	Lyra	4-Epsilon (*334) (HIP91919)	5.4	6.5	2.6	1st pair in Double-Double	18	44.3	39	40.2
22	304	Lyra	5-Epsilon (*335)	5.1	5.3	2.3	2nd pair in Double-Double	18	44.4	39	36.8

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21	302	Lyra	Zeta Lyrae	4.3	5.9	44	yellowish pair	18	44.8	37	36
20	298	Lyra	Beta Lyrae	3.4	8.6	46	white pair	18	50.1	33	22
23	297	Lyra	STF 2470, one part of the poor man's double double	6.6	8.6	13.4	white & blue-white "The Other Double-Doub	19	8.8	34	46
23	296	Lyra	STF 2474, the other part of the poor man's double double	6.7	8.8	16.2	both pale yellow	19	9.1	34	36
21	293	Lyra	NGC6765	planetary nebula, dim, slightly elongated				19	11.1	30	33
20	297	Lyra	M57 Ring Nebula	The Ring Nebula, planetary nebula				18	53.6	33	2
22	291	Lyra	M56	globular cluster				19	16.6	30	11
22	300	Lyra	Stephenson 1	open cluster of 15 stars, large but loose and good for small scopes				18	53.5	36	55
11	90	Monoceros	11-Beta (HIP30867)	4.7	5.2	7.3'	acute triangle of bluish white stars	6	28.8	7	2
10	86	Monoceros	NGC2264 (Christmas Tree Cluster)	Open Cluster of 40 stars				6	41.1	9	53
14	114	Orion	19, Beta Orionis (Rigel)	0.1	6.8	9.5	blue-white diamond & blue companion	5	14.5	-8	12
16	105	Orion	Delta Orionis	2.2	6.3	52.6		5	32	0	-18
23	97	Orion	39, Lambda Orionis	3.5	5.6	4.4	close white pair	5	35.1	9	56
12	109	Orion	44, Iota Orionis	2.8	7.3	11.3	white primary & pale blue companion	5	35.4	-5	55
14	105	Orion	50, Zeta Orionis (Alnitak)	1.9	4	2.3	close bluish white pair	5	40.8	-1	57
13	106	Orion	48, Sigma Orionis	multiple star, bright white primary and three small bluish secondaries				5	38.7	-2	36
16	85	Orion	BL Orionis (HIP30564, SAO95659)	Magnitude 6-7 carbon star (AL# 35)				6	25.5	14	43
22	109	Orion	W Orionis (HIP23680, SAO112406)	Magnitude 5.8-10 carbon star (AL# 22)				5	5.4	1	10.6
17	95	Orion	Betelguese	0.4	alignnment star			5	55.2	7	25
13	105	Orion	Horsehead Nebula	dark nebula near Alnitak				5	41	-2	27
13	105	Orion	NGC2024 Flame Nebula	emission nebula near Alnitak				5	41.9	-1	51
12	109	Orion	M42	Great Orion Nebula (emission & reflection nebula)				5	35.4	-5	27
12	109	Orion	Trapezium (A)	5.1	6.7	13.4	1st components of quad	5	35.3	-5	23
12	109	Orion	Trapezium (B) (*286)	6.7	7.9	8.8	2nd components of quad	5	35.3	-5	24
12	108	Orion	M43 Mairan's Nebula	emission and reflection nebula				5	35.6	-5	16
14	103	Orion	M78 Casper The Friendly Ghost Nebula	emission and reflection nebula				5	46.7	0	3
23	97	Orion	Collinder 69	Lambda Orionis Cluster, open cluster of 20 starrs				5	35.1	9	56
21	96	Orion	NGC2022	planetary nebula, slightly elongated				5	42.1	9	5.2
12	109	Orion	NGC1980	emission nebula + open cluster of 37 stars				5	35.4	-5	54
13	108	Orion	NGC1981	open cluster of 20 stars				5	35.2	-4	26
45	256	Pegasus	STF 2841 (Struve)	6.4	7.9	22.3	orangish-yellow & bluish green	21	54.3	19	43
36	242	Pegasus	STF 2848 (Struve)	7.2	7.5	10.7	attractive pale yellow pair	21	58	5	56
55	271	Pegasus	27 Pegasi (Pi) (HIP109352)	5.6	11.9	27.7		22	9.2	33	10
60	259	Pegasus	44, Eta Pegasi (HIP112158)	2.9	9.9	90.4	yellowish and blue	22	43	30	13.3
49	225	Pegasus	57 Pegasi (HIP114347)	5.1	9.7	32.6	orange & blue	23	9.5	8	40.6
37	252	Pegasus	NGC7094	planetary nebula, faint round disk and uniform, averted vision				21	36.9	12	47.3
61	268	Pegasus	NGC7331	fine, bright galaxy, highly elongated,well concentrated core				22	37.1	34	25
55	251	Pegasus	NGC7332	nice edge-on galaxy				22	37.4	23	48
51	229	Pegasus	NGC7479	nice S-shaped bar-type galaxy				23	4.9	12	19
62	210	Pegasus	NGC7814	elongated galaxy				0	3.3	16	9
36	253	Pegasus	M15 (Pegasus Cluster)	very fine globular cluster, 30600LY dist				21	30	12	10
67	51	Perseus	STF 331 (Struve)	5.3	6.7	12.2	particularly interesting	3	0.9	52	21
51	74	Perseus	STF 552 (Struve)	6.3	6.3	9.1		4	31.4	40	1
57	77	Perseus	Epsilon Persei (HIP18532)	2.9	7.4	9.3	greenish & bluish-white	3	57.9	40	1
70	58	Perseus	13 Theta (HIP12777)	4.1	9.9	20	bright yellow and blue companion	2	44.2	49	14
67	42	Perseus	15 Eta (HIP13268)	3.8	8.5	28.3	golden & blue pair	2	50.7	55	54
54	91	Perseus	44 Zeta (HIP18246)	2.9	9.5	12.9		3	54.1	31	53
50	84	Perseus	56 Persei (HIP20591)	5.9	8.7	4.2	golden & yellowish	4	24.6	33	58
71	77	Perseus	M34 The Spiral Cluster	open cluster of 60 stars				2	42	42	47
78	31	Perseus	M76 (The Little Dumbell), NGC650-1	planetary nebula				1	42.4	51	34
71	78	Perseus	Abell 4	planetary nebula, 22" diam & faint				2	45.5	42	32.6
57	87	Perseus	IC351	planetary nebula, very small stellar to small disk appearance, high mag				3	47.5	35	2.8
55	88	Perseus	IC2003	planetary nebula, very small stellar to small disk appearance, high mag				3	56.3	33	52.5
70	32	Perseus	NGC869 & NGC884 (The Double Cluster)	beautiful open clusters				2	19	57	9
56	201	Pisces	35 Piscium (HIP1196) eclipsing binary	6	7.6	11.6	nice yellow & blue double	0	15	8	49
70	194	Pisces	55 Piscium (HIP3138)	5.4	8.7	6.5	beautiful w/vivid orange & blue contrast	0	39.9	21	26
76	190	Pisces	65 Piscium (HIP3885)	6.3	6.3	4.4	fine yellow pair	0	49.9	27	43
70	177	Pisces	74 Piscium (Psi-1) (HIP5131)	5.6	5.8	30	bright bluish & white	1	5.6	21	28
54	178	Pisces	77 Piscium (HIP5144)	6.8	7.6	33	wide yellow pair	1	5.8	4	55
56	174	Pisces	86 Piscium (Zeta) (HIP5737)	5.6	6.5	23	white primary & yellow companion	1	13.7	7	34.5
49	156	Pisces	113 Piscium (Alpha) (HIP9487)	4.2	5.1	1.8	difficult to split bluish-white stars	2	2	2	46
49	209	Pisces	TX Piscium (SAO128374)	Magnitude 4.8-5.2 carbon star (AL# 99)				23	46.4	3	29
63	161	Pisces	M74 Phantom Galaxy	face-on sprial arm galaxy--looks like a globular cluster in small scopes				1	36.7	15	47
51	193	Pisces	NGC128	moderatley bright lenticular galaxy				0	29.2	2	51
54	171	Pisces	NGC488	fairly bright elongated galaxy with concentrated core				1	21.8	5	15
58	169	Pisces	NGC524	galaxy with round halo and tiny but bright core				1	24.8	9	32
46	220	Pisces	NGC7541	galaxy with bright extended core and moderate halo				23	14.7	4	32
21	277	Sagitta	8, Zeta Sagittae	5.5	8.7	8.6	yellowish & bluish pair	19	49	19	9
22	276	Sagitta	M71 Angelfish Cluster	globular cluster				19	53.8	18	47
22	181	Sculptor	NGC288	globular cluster, mag 8.1				0	55.8	-26	35.4
23	183	Sculptor	NGC253	Sculptor Galaxy, vary large and bright galaxy				0	47.5	-25	17.3
43	117	Taurus	30 Tauri (STF452)(HIP17771)	5.1	10.2	9	unequal bluish-white & red pair	3	48.3	11	9
37	113	Taurus	47 Tauri (HIP19740)	4.9	7.4	1.1	two contacting yellow suns	4	13.9	9	16
47	93	Taurus	52 Tauri (Phi) (HIP20250)	5	8.4	52.1	deep yellow & blue pair	4	20.4	27	21
46	95	Taurus	59, Chi Tauri	5.5	7.6	19.4	white & blue pair	4	22.6	25	38
33	84	Taurus	118 Tauri	5.8	6.6	4.8	white & yellowish pair	5	29.3	25	9
51	90	Taurus	NGC1514, Crystal Ball Nebula	planetary nebula				4	9.3	30	46.6
30	86	Taurus	M1 The Crab Nebula	remnant of a super nova noted by Chinese astronomers in 1054				5	35.5	22	1
52	104	Taurus	M45 (The Pleiades, The Seven Sisters)	open cluster of 100 stars & nebulosity				3	47	24	7
40	104	Taurus	Hyades	open cluster (binocular object)				4	26	16	44

Observing List for

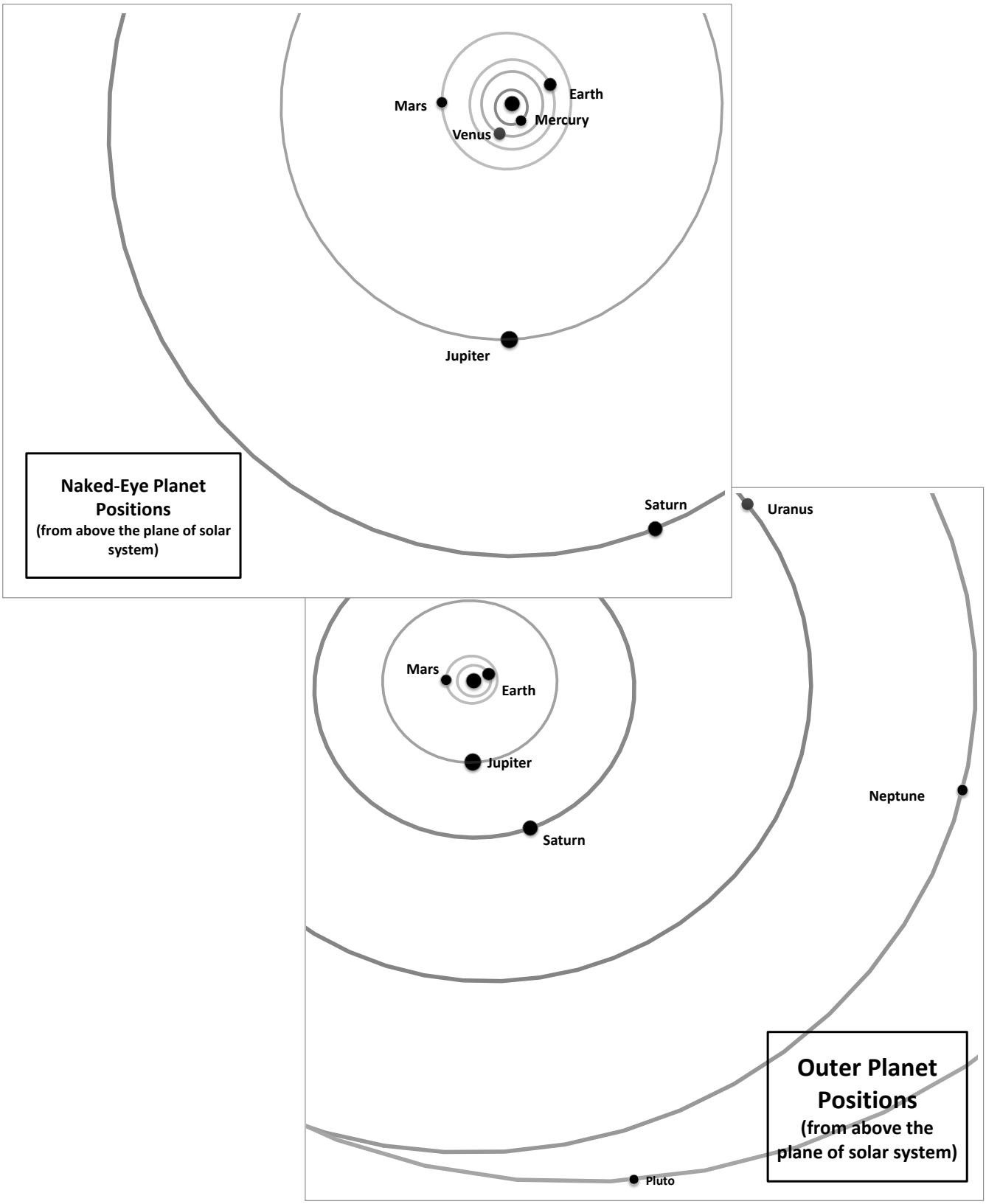
day	month	year	local clock time:	23.98
19	10	2019		

alt	az	Constellation	object	mag A	mag B	Separation	description	Epoch 2000 RA hr	RA min	DEC deg	DEC min
72	122	Triangulum	6, Iota Trianguli	5.3	6.9	3.9	fine yellow & blue contrasting double	2	12.4	30	18
77	146	Triangulum	M33, Pinwheel Galaxy or Triangulum Galaxy	galaxy				1	33.9	30	38.8
73	142	Triangulum	NGC672	galaxy, bar-like core region surrounded by a faint outer halo				1	47.9	27	26
76	123	Triangulum	NGC740	galaxy, thin, edge-on				1	56.9	33	1
22	13	Ursa Major	VY Ursae Majoris (SAO15274)	Carbon Star mag 5.9-7.0, AL# 52				10	45.1	67	24.7
26	17	Ursa Major	M81 (Bode's Galaxy)	Spiral Galaxy, discovered by Bode in 1774				9	55.6	69	4
26	16	Ursa Major	M82 Cigar Galaxy	Galaxy, bright, irregular, mottled halo with dark dust lane down the middle				9	55.8	69	41
24	29	Ursa Major	NGC2654	Galaxy, thin streak with brightening at the center				8	49.2	60	13
17	35	Ursa Major	NGC2681	Galaxy, 2' diameter halo with small but conspicuous core				8	53.5	51	19
22	27	Ursa Major	NGC2768	Galaxy, located in a scattered group of bright stars				9	11.6	60	2
28	19	Ursa Major	NGC2787	Galaxy with a bright, circular 1.5' diam halo & brighter core				9	19.3	69	12
14	32	Ursa Major	NGC2841	Galaxy, bright, elongated halow that contains abruptly brighter core				9	22	50	58
28	15	Ursa Major	NGC2985	Galaxy, 2' diam halo with conspicuous stellar nucleus				9	50.4	72	17
25	16	Ursa Major	NGC3077	Galaxy, 2' diam halo with slightly brighter core				10	3.3	68	44
14	24	Ursa Major	NGC3079	Galaxy, edge-on				10	2	55	40.9
14	7	Ursa Major	NGC4036	Galaxy, oval shaped				12	1.4	61	54
13	3	Ursa Major	NGC4605	Galaxy, bright edge-on				12	40	61	37
42	0	Ursa Minor	1 Ursae Minoris (Alpha)(Polaris)	2	8.2	18.4	lovely yellowish primary & pale white	2	31.9	89	15.8
34	353	Ursa Minor	Pi-1 Ursae Minoris	6.6	7.3	31.1	yellow & white with interesting star field	15	29.2	80	27
16	287	Vulpecula	STF2445 (Struve)	7.2	8.9	12.6	white & blue	19	4.6	23	20
32	282	Vulpecula	β441 (Burnham)	6.2	10.7	5.9	color contrasting of gold & blue	20	17.5	29	9
26	279	Vulpecula	M27 Dumbell Nebula	very fine planetary nebula, hour glass or apple core shaped				19	59.6	22	43
18	282	Vulpecula	Collinder 399 The Coathanger	open cluster				19	25.4	20	11

Observing List for

day	month	year	local clock time:	23.98	Epoch 2000			
19	10	2019			RA		DEC	

alt	az	Constellation	object	mag A	mag B	Separation	description	hr	min	deg	min


Mars
Earth
Mercury
Venus
Jupiter
Saturn
Naked-Eye Planet Positions
(from above the plane of solar system)
Uranus
Mars
Earth
Jupiter
Neptune
Saturn
Outer Planet Positions
(from above the plane of solar system)
Pluto