

Messier Catalogue									Marathon Planning					Marathon on			20.03.2004		λ, ϕ, T	-9,0°	35,0°	2.453.084,5	
Mess.	Type	Con-	Rekt.	Dekl.	Size	Mag-	Dist.	Description accord. to Karkoschka		Rise	Set	Culmin.	Classification	best	Observ.	Time	T after	Height	Azimuth	Star-	seen?		
No.		stell.	[°]	[°]	[']	nitude	[LYrs]	"Atlas für Himmelsbeobachter"	Pa.	UT	UT	UT	of visibility	time	index	UT	Start	ab. Hor	180:South	time	y/n	at time	Remarks
Sun	-		359,7	-0,1			0	-	-	5:28	17:30	11:29	Sunset	17:30	(P0)	17:30	0:00	-0,5°	270,2°	90,3°	-		
Sun	-		359,7	-0,1			0	-	-	4:32	18:26	11:29	twilight ends	18:26	(P0)	18:26	0:56	-12,0°	278,4°	104,4°	-		
Sun	-		359,7	-0,1			0	-	-	4:10	18:49	11:29	end of astron. twilight	18:49	(P0)	18:49	1:18	-16,5°	281,8°	109,9°	-		
45	C	Tau	56,7	24,1	100	1,5	4,0E+2	Plejades, Seven Sisters: weak reflection nebular in very dark sky	E3	9:05	23:28	16:16	in evening sky	18:49	1	18:49	1:18	43,0°	271,7°	109,9°			
110	X	And	10,1	41,7	17,4	8	2,8E+6	accompanying galaxy of Andromeda, asymmetrical shape	N0	4:33	21:43	13:10	in evening sky	18:49	2	18:53	1:22	7,1°	317,0°	125,0°			
31	X	And	10,7	41,3	178	3,5	2,8E+6	Andromeda galaxy: core rather bright, dust-lanes w' of core, spiral arms weakly	N0	4:38	21:43	13:13	in evening sky	18:49	3	18:55	1:24	15,3°	310,1°	111,4°			
32	X	And	10,7	40,9	7,6	8,2	2,8E+6	accompanying galaxie of Andromeda, star-spaped with binoculars	N0	4:41	21:41	13:13	in evening sky	18:49	4	18:57	1:26	14,8°	309,9°	111,9°			
74	X	Psc	24,2	15,8	10,2	9,2	5,0E+7	very difficult in lightpolluted sky, smallest magnification	E1	7:18	20:51	14:07	in evening sky	18:49	5	19:01	1:30	10,0°	282,4°	113,0°			
77	X	Cet	40,7	0,0	6,9	8,8	7,0E+7	Seyfert Galaxy, active bright core using high magnification , star-shaped in binoculars	E0	9:13	21:12	15:13	in evening sky	18:49	6	19:03	1:32	14,1°	259,9°	113,5°			
33	X	Tri	23,5	30,7	62	5,7	3,0E+6	Triangulum nebela: lowest magnification and very dark sky	N0	6:23	21:41	14:04	in evening sky	18:49	7	19:07	1:36	16,3°	296,4°	114,5°			
79	G	Lep	81,1	-24,5	8,7	8	4,0E+4	very difficult to resolve (far our of milky way plane)	E4	13:09	22:38	17:54	in evening sky	18:49	8	19:11	1:40	22,2°	213,7°	115,5°			
42	N	Ori	83,8	-5,4	66	4	1,4E+3	Orion nebula: prime example of gasous nebulars, imbedded stars	E4	12:21	23:48	18:04	in evening sky	18:49	9	19:15	1:44	39,2°	223,9°	116,5°			
43	N	Ori	83,9	-5,3	20	9	1,4E+3	northern part of Orion nebula, separated by a dark dust cloud	E4	12:21	23:49	18:05	in evening sky	18:49	10	19:17	1:46	39,1°	224,4°	117,0°			
78	N	Ori	86,7	0,1	8	8	1,2E+3	brightest reflection nebular, a bigger telescope shows dark dusty structures	E5	12:17	0:11	18:16	in evening sky	18:49	11	19:19	1:48	44,8°	226,1°	117,5°			
34	O	Per	40,5	42,8	35	5,2	1,5E+3	beautiful with binoculars, lowest magnification with telescope	N4	6:27	23:52	15:12	in evening sky	18:49	12	19:23	1:52	31,0°	303,2°	118,5°			
52	O	Cas	351,0	61,6	13	6,9	5,0E+3	nebulous figure with binoculars, many small stars in telescope	N22	23:56	23:56	11:50	in morning sky	18:49	13	19:27	1:56	11,3°	342,9°	133,6°			
103	O	Cas	23,3	60,7	6	7,4	7,0E+3	already resolved with binoculars, only slightly better with telescope	N2	2:01	2:01	14:03	in evening sky	18:49	14	19:29	1:58	27,0°	326,9°	120,0°			
76	P	Per	25,6	51,6	4,8	12	4,0E+3	Little Dumbbell nebular: weakest object in Messier catalogue	N0	4:02	0:15	14:12	in evening sky	18:49	15	19:31	2:00	24,0°	317,4°	120,5°			
1	N	Tau	83,6	22,0	6	8,4	4,0E+3	Crab nebula: difficult with binoculars, irregular shape with bigger telescope (Supernova 1054)	E3	10:59	1:08	18:04	in evening sky	18:49	16	19:35	2:04	54,5°	258,8°	121,5°			
35	O	Gem	92,2	24,3	28	5,1	3,0E+3	bright, beautiful resolved with telescope using low magnification	E7	11:25	1:50	18:38	in evening sky	18:49	17	19:37	2:06	62,1°	255,5°	122,0°			
38	O	Aur	82,1	35,8	21	6,4	4,0E+3	partly resolved, interesting arrangement of small stars	N6	9:58	1:58	17:58	in evening sky	18:49	18	19:41	2:10	56,9°	283,5°	123,0°			
36	O	Aur	84,0	34,1	12	6	4,0E+3	already resolved with binoculars, starry concentrations along arms	N6	10:13	1:57	18:05	in evening sky	18:49	19	19:43	2:12	57,7°	280,0°	123,5°			

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Mess.	Type	Con-stell.	Rekt. [°]	Dekl. [°]	Size [']	Mag-nitude	Dist. [LYrs]	Description accord. to Karkoschka "Atlas für Himmelsbeobachter"	Pa.	Rise UT	Set UT	Culmin. UT	Classification of visibility	best time	Observ. index	Time UT	T after Start	Height ab. Hor	Azimuth 180:South	Star-time	seen?		
No.			[°]	[°]	[']																y/n	at time	Remarks
37	O	Aur	88,1	32,5	24	5,6	4,0E+3	seen as a big bright nebular with binoculars, with bigger telescope impressive number of stars	N6	10:37	2:06	18:22	in evening sky	18:49	20	19:45	2:14	60,2°	275,6°	124,0°			
50	O	Mon	105,8	-8,3	16	5,9	3,5E+3	beautiful with telescope and low magnification , little asymmetrical shape	E8	13:57	1:08	19:32	in evening sky	19:32	21	19:49	2:18	43,1°	206,4°	125,0°			
47	O	Pup	114,1	-13,9	30	4,4	1,8E+3	impressive with small instruments	E8	14:46	1:24	20:05	at transit	20:05	22	19:51	2:20	39,9°	194,5°	125,5°			
46	O	Pup	115,4	-14,8	27	6,1	6,0E+3	big with binoculars, many stars with bigger telescope, rich of small stars	E8	14:54	1:27	20:10	at transit	20:10	23	19:53	2:22	39,2°	193,2°	126,0°			
48	O	Hya	123,5	-5,8	54	5,8	2,5E+3	beautiful and bright with binoculars	E10	15:00	2:25	20:43	at transit	20:43	24	19:55	2:24	49,1°	184,5°	126,5°			
41	O	CMa	101,7	-20,7	38	4,5	2,5E+3	very well resolved with binoculars, only little impressive with telescope	E6	14:18	0:10	19:16	in evening sky	19:16	25	19:59	2:28	29,2°	207,8°	127,5°			
93	O	Pup	116,1	-23,9	22	6,2	4,0E+3	brighte Sterne with binoculars resolved, nebliger Hintergrund with telescope beautiful resolved	E6	15:26	1:00	20:13	at transit	20:13	26	20:01	2:30	30,0°	192,6°	128,0°			
44	O	Cnc	130,0	20,0	95	3,1	6,0E+2	Praesepe: impressive with binoculars	E9	14:11	4:07	21:09	at transit	21:09	27	20:19	2:48	74,8°	189,4°	132,6°			
67	O	Cnc	132,6	11,8	30	6,9	2,5E+3	big nebular with binoculars, very well resolved with telescope	E9	14:47	3:52	21:19	at transit	21:19	28	20:21	2:50	66,8°	181,2°	133,1°			
81	X	UMa	148,9	69,1	25,7	6,9	1,3E+7	Bode's nebulae: easily seen with binoculars, bright center and star-shaped core	N8	10:28	10:28	22:24	at transit	22:24	29	21:24	3:53	55,9°	360,0°	148,9°			
82	X	UMa	148,9	69,6	11,2	8,4	1,3E+7	brightest accompanying galaxy of M81, almost seen edge-on, struktures with bigger telescope	N8	10:28	10:28	22:24	at transit	22:24	30	21:26	3:55	55,4°	359,7°	149,4°			
95	X	Leo	161,0	11,7	7,4	9,7	4,0E+7	star-shaped core	E11	16:40	5:45	23:12	at transit	23:12	31	22:12	4:42	66,7°	180,0°	161,0°			
96	X	Leo	161,7	11,8	7,1	9,2	4,0E+7	rather elongated central area, star-shaped core	E11	16:43	5:48	23:15	at transit	23:15	32	22:14	4:44	66,8°	179,5°	161,5°			
105	X	Leo	162,0	12,6	4,5	9,3	4,0E+7	easier visible than M95 or M96, star-shaped core	E11	16:41	5:51	23:16	at transit	23:16	33	22:16	4:46	67,6°	180,0°	162,0°			
65	X	Leo	169,7	13,1	10	9,3	4,0E+7	round central area in front of elongated backgroud nebular	E11	17:11	6:23	23:47	at transit	23:47	34	22:18	4:48	67,2°	161,7°	162,5°			
66	X	Leo	170,0	13,0	8,7	9	4,0E+7	visible with binoculars, interesting sight only with bigger telescopes, dust struktures dimly visible	E11	17:12	6:24	23:48	at transit	23:48	35	22:20	4:50	67,1°	162,2°	163,0°			
109	X	UMa	179,4	53,3	7,6	9,8	6,0E+7	bright core, otherwise weak	N10	13:48	11:08	0:22	at transit	0:26	36	22:40	5:09	70,0°	20,5°	167,8°			
40	2	UMa	185,6	58,1	0,8	8,5	5,0E+2	double star 50" separated	N10	12:54	12:54	0:47	at transit	0:51	37	22:42	5:11	64,2°	21,2°	168,3°			
108	X	UMa	167,8	55,6	8,3	10,1	4,5E+7	edge-on, dust structures with bigger telescope hardly seen	N10	11:43	11:43	23:40	at transit	23:40	38	22:44	5:13	69,4°	358,4°	168,8°			
97	P	UMa	168,7	55,0	3,2	11,2	2,5E+3	Owl nebular: dark eyes invisible with amateur class telescope	N10	11:45	11:45	23:43	at transit	23:43	39	22:46	5:15	70,0°	359,0°	169,3°			
98	X	Com	183,4	14,9	9,5	10,1	6,0E+7	outer bounds weak, hardly structured	E14	18:00	7:24	0:38	at transit	0:42	40	23:42	6:11	69,9°	180,0°	183,4°			

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No.		stell.	[°]	[°]	[']	nitude	[LYrs]	"Atlas für Himmelsbeobachter"	Pa.	UT	UT	UT	of visibility	time	index	UT	Start	ab. Hor	180:South	time	y/n	at time	Remarks
99	X	Com	184,7	14,4	5,4	9,8	6,0E+7	Pin-wheel galaxy: bright central area, with bigger telescopes light knots and beginning of spiral arms	E14	18:07	7:27	0:43	at transit	0:47	41	23:44	6:13	69,4°	177,8°	183,9°			
100	X	Com	185,7	15,8	6,9	9,4	6,0E+7	elongated central area with star-shaped core	E14	18:06	7:35	0:47	at transit	0:51	42	23:46	6:15	70,8°	176,2°	184,4°			
85	X	Com	186,3	18,1	7,1	9,2	6,0E+7	oval not structures galaxy with bright central area	E14	18:02	7:45	0:49	at transit	0:53	43	23:48	6:17	73,1°	175,4°	184,9°			
106	X	CVn	184,7	47,3	18,2	8,3	3,0E+7	with bigger telescope weak dust structures, beginning of spiral arms visible	N12	15:31	10:07	0:43	at transit	0:47	44	23:52	6:21	77,7°	356,2°	185,9°			
61	X	Vir	185,4	4,4	6	9,7	6,0E+7	spiral arms with bigger telescope hardly visible	E14	18:38	7:01	0:46	at transit	0:50	45	23:56	6:25	59,4°	183,0°	186,9°			
49	X	Vir	187,4	8,0	8,9	8,4	6,0E+7	brightest galaxy of Virgo cluster, big	E14	18:36	7:19	0:58	at transit	0:58	46	23:58	6:27	63,0°	180,0°	187,4°			
84	X	Vir	186,2	12,8	5	9,3	6,0E+7	no structures, in area with many 12m bright galaxies	E14	18:17	7:28	0:49	at transit	0:53	47	0:02	6:31	67,7°	185,7°	188,4°			
86	X	Vir	186,5	12,9	7,4	9,2	6,0E+7	no structures visible	E14	18:18	7:30	0:50	at transit	0:54	48	0:04	6:33	67,8°	186,2°	188,9°			
87	X	Vir	187,7	12,4	7,2	8,6	6,0E+7	Virgo A: central galaxy of Virgo cluster, brighter core	E14	18:25	7:33	0:59	at transit	0:59	49	0:06	6:35	67,3°	184,4°	189,4°			
88	X	Com	188,0	14,4	6,9	9,5	6,0E+7	few structures seen with telescope	E14	18:20	7:40	1:00	at transit	1:00	50	0:08	6:37	69,3°	185,3°	189,9°			
91	X	Com	188,8	14,5	5,4	10,2	6,0E+7	no structures visible	E14	18:23	7:44	1:03	at transit	1:03	51	0:10	6:39	69,4°	184,5°	190,4°			
89	X	Vir	188,9	12,5	4,2	9,8	6,0E+7	bright, almost star-shaped core, perfect round	E14	18:29	7:38	1:04	at transit	1:04	52	0:14	6:43	67,4°	186,4°	191,4°			
90	X	Vir	189,2	13,1	9,5	9,5	6,0E+7	brighter elongated central arae, most extended galaxy of Virgo cluster	E14	18:28	7:41	1:05	at transit	1:05	53	0:16	6:45	68,0°	187,1°	191,9°			
58	X	Vir	189,4	11,8	5,4	9,8	6,0E+7	bulk of bulk galaxy detectable with bigger telescope	E14	18:33	7:38	1:06	at transit	1:06	54	0:18	6:47	66,6°	187,5°	192,4°			
59	X	Vir	190,5	11,6	5,1	9,8	6,0E+7	dim star-shapeder core, use medium magnification	E14	18:38	7:42	1:10	at transit	1:10	55	0:20	6:49	66,5°	186,0°	192,9°			
60	X	Vir	190,9	11,5	7,2	8,8	6,0E+7	bright star-shaped core	E14	18:40	7:43	1:12	at transit	1:12	56	0:22	6:51	66,4°	186,2°	193,4°			
68	G	Hya	189,9	-26,7	12	8,2	3,0E+4	with bigger telescopes resolvable into center	E12	20:31	5:44	1:08	at transit	1:08	57	0:26	6:55	28,2°	184,6°	194,4°			
104	X	Vir	190,0	-11,6	8,9	8,3	5,0E+7	Sombrero nebula: almost central dust lane visibvle only with bigger telescopes	E12	19:42	6:34	1:08	at transit	1:08	58	0:28	6:57	43,2°	186,6°	194,9°			
94	X	CVn	192,7	41,1	11	8,2	3,0E+7	bright core, with bigger telescope beginning of spiral arms visible	N12	16:50	9:52	1:19	at transit	1:19	59	0:32	7:01	83,4°	338,3°	195,9°			
63	X	CVn	198,9	42,0	12,3	8,6	3,0E+7	Sunflower galaxy: prominent core, otherwise invisible	N12	17:09	10:22	1:44	at transit	1:44	60	0:34	7:03	82,7°	14,6°	196,4°			
51	X	CVn	202,5	47,2	11	8,4	3,0E+7	Whirlpool-Galaxie: wonderful spiral arms with bigger telescope and NGC5195, most beautiful galaxv	N12	16:43	11:17	1:58	at transit	1:58	61	0:36	7:05	77,1°	17,2°	196,9°			

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No.		stell.	[°]	[°]	[']	nitude	[LYrs]	"Atlas für Himmelsbeobachter"	Pa.	UT	UT	UT	of visibility	time	index	UT	Start	ab. Hor	180:South	time	y/n	at time	Remarks
64	X	Com	194,2	21,7	9,3	8,5	2,2E+4	Black Eyed galaxy: elongated absorption near core dimly visible with bigger telescope	E13	18:21	8:32	1:25	at transit	1:25	62	0:41	7:10	76,2°	195,8°	198,2°			
53	G	Com	198,2	18,2	12,6	7,7	6,0E+4	prominet core, edge partly resolved with telescope	E13	18:49	8:37	1:41	at transit	1:41	63	0:43	7:12	73,2°	181,6°	198,7°			
83	X	Hya	204,2	-29,9	11,2	7,6	2,0E+7	visible with binoculars, wonderful with bigger telescope, bright core, elongated bulk	E16	21:40	6:29	2:05	at transit	2:05	64	1:05	7:34	25,1°	180,0°	204,2°			
3	G	CVn	205,5	28,4	16,2	6,4	3,0E+4	resolvable with bigger telescopes only	E15	18:42	9:42	2:10	at transit	2:10	65	1:10	7:39	83,4°	179,9°	205,5°			
101	X	UMa	210,8	54,3	26,9	7,7	2,5E+7	Spiralrad-Galaxie: bright core area, enormous size seen in darkest sky	N10	15:25	13:41	2:31	at transit	2:31	66	1:31	8:00	70,7°	0,0°	210,8°			
102	X	Dra	226,6	55,7	5,2	10	4,0E+7	elliptical nebular	N16	15:38	15:38	3:34	at transit	3:34	67	1:33	8:02	66,8°	22,2°	211,3°			
5	G	Ser	229,6	2,1	17,4	5,8	2,5E+4	wonderful, especially with bigger telescopes, elliptical shape, rather easy to resolve	E15	21:41	9:55	3:46	at transit	3:46	68	2:28	8:58	56,8°	171,9°	225,2°			
80	G	Sco	244,2	-23,0	8,9	7,2	3,0E+4	very bright center, can take high magnification	E18	23:54	9:38	4:44	at transit	4:04	69	2:32	9:02	29,5°	160,9°	226,2°			
4	G	Sco	245,9	-26,5	26,3	5,9	7,0E+3	easy to find, wonderfully resolvable with telescope	E18	0:10	9:33	4:51	at transit	4:04	70	2:34	9:04	25,9°	160,9°	226,7°			
13	G	Her	250,4	36,4	16,6	5,9	2,5E+4	Herkules cluster: bright with binoculars, outer cluster resolvable	N14	21:06	13:16	5:09	in morning sky	4:04	71	2:38	9:08	71,5°	79,0°	227,7°			
92	G	Her	259,3	43,1	11,2	6,5	3,0E+4	similar to M13, but dimmer	N14	21:02	14:31	5:44	in morning sky	4:04	72	2:40	9:10	64,7°	61,9°	228,2°			
57	P	Lyr	283,4	33,0	2,5	9	1,8E+3	Ring nebular in Lyra: almost star-shaped with binoculars, a bigger telescope shows oval ring and central	N18	23:34	15:12	7:21	in morning sky	4:04	73	2:44	9:14	45,6°	76,4°	229,2°			
56	G	Lyr	289,1	30,1	7,1	8,3	3,0E+4	quite weak, difficult to resolve into stars	N18	0:05	15:22	7:43	in morning sky	4:04	74	2:46	9:16	40,4°	78,0°	229,7°			
71	G	Sge	298,4	18,7	7,2	8,3	1,3E+4	interesting strukture, triangular shape, is maybe a rich open cluster	E21	1:27	15:18	8:20	in morning sky	4:04	75	2:50	9:20	28,6°	86,3°	230,7°			
27	P	Vul	299,9	22,7	15,2	8,1	1,0E+3	Big Dumbbell nebular: maybe the most beautiful planetary nebular, more strukturen senn with telescope	E21	1:19	15:37	8:26	in morning sky	4:04	76	2:52	9:22	29,7°	81,8°	231,2°			
29	O	Cyg	306,0	38,5	7	6,6	4,0E+3	only a few stars, use only low magnification	N20	0:33	17:09	8:51	in morning sky	4:04	77	2:56	9:26	32,4°	62,9°	232,2°			
39	O	Cyg	323,0	48,4	32	4,6	1,0E+3	few, but bright stars, interesting sight only with binoculars	N24	0:28	19:29	9:59	in morning sky	4:04	78	2:58	9:28	25,2°	47,2°	232,7°			
12	G	Oph	251,8	-1,9	14,5	6,6	1,8E+4	schwach elliptisch with binoculars, gut resolved with telescope, looks like open cluster	E17	23:21	11:12	5:15	in morning sky	4:04	79	3:02	9:32	49,4°	151,5°	233,7°			
10	G	Oph	254,2	-4,1	15,1	6,6	1,5E+4	only edge well resolved with bigger telescope	E17	23:37	11:16	5:24	in morning sky	4:04	80	3:04	9:34	46,6°	150,2°	234,2°			
14	G	Oph	264,4	-3,2	11,7	7,6	3,0E+4	oval, nebular with amateur size telescopes	E17	0:11	11:59	6:05	in morning sky	4:04	81	3:06	9:36	42,7°	137,7°	234,7°			
107	G	Oph	248,1	-13,1	10	8,1	2,0E+4	hardly resolvable even with bigger telescope	E17	23:38	10:25	5:00	at transit	4:04	82	3:10	9:40	40,5°	164,0°	235,7°			

Messier Catalogue										Marathon Planning					Marathon on			20.03.2004		λ, ϕ, T	-9,0°	35,0°	2.453.084,5
Mess.	Type	Con- stell.	Rekt. [°]	Dekl. [°]	Size [']	Mag- nitude	Dist. [LYrs]	Description accord. to Karkoschka "Atlas für Himmelsbeobachter"	Pa.	Rise UT	Set UT	Culmin. UT	Classification of visibility	best time	Observ. index	Time UT	T after Start	Height ab. Hor	Azimuth 180:South	Star- time	seen?		
No.			[°]	[°]	[']					UT	UT	UT									y/n	at time	Remarks
9	G	Oph	259,8	-18,5	9,3	7,9	2,5E+4	hardly resolvable	E17	0:38	10:55	5:46	in morning sky	4:04	83	3:12	9:42	32,0°	153,4°	236,2°			
62	G	Oph	255,3	-30,1	14,1	6,6	2,0E+4	very asymmetrical, nebulous arms, interesting object	E18	1:05	9:56	5:29	in morning sky	4:04	84	3:16	9:46	22,7°	163,1°	237,2°			
19	G	Oph	255,6	-26,3	13,5	7,2	3,0E+4	rather oval, egde resolvable	E18	0:48	10:12	5:30	in morning sky	4:04	85	3:18	9:48	26,4°	162,1°	237,7°			
26	O	Sct	281,3	-9,4	15	8	5,0E+3	still nebular with smaller telescopes	E19	1:40	12:49	7:12	in morning sky	4:04	86	3:22	9:52	30,1°	129,5°	238,7°			
11	O	Sct	282,8	-6,3	14	5,8	6,0E+3	Wild Duck cluster: a little triangular, a bigger telescope shows high number of stars	E19	1:37	13:04	7:18	in morning sky	4:04	87	3:24	9:54	31,8°	126,3°	239,2°			
23	O	Sgr	269,2	-19,0	27	5,5	2,0E+3	impressive at low magnification	E20	1:21	11:31	6:24	in morning sky	4:04	88	3:28	9:58	29,4°	148,3°	240,2°			
24	O	Sgr	274,2	-18,5	100	4	8,0E+3	bright star cloud of milky way	E20	1:39	11:53	6:44	in morning sky	4:04	89	3:30	10:00	27,8°	143,7°	240,7°			
20	C	Sgr	270,5	-23,0	29	6,3	6,0E+3	Trifidnebular: division into three by radial dark dust lanes, use filter and low magnification	E20	1:39	11:23	6:29	in morning sky	4:04	90	3:34	10:04	25,9°	150,5°	241,7°			
8	N	Sgr	270,9	-24,4	90	5,8	6,0E+3	Hourglass nebular: phantastic gasous nebular when viewed with filter, open cluster to the east	E20	1:46	11:20	6:31	in morning sky	4:04	91	3:36	10:06	24,7°	151,2°	242,2°			
21	O	Sgr	271,1	-22,5	13	5,9	4,0E+3	few stars, bright but inconspicuous	E20	1:40	11:27	6:32	in morning sky	4:04	92	3:38	10:08	26,5°	150,6°	242,7°			
16	C	Ser	274,7	-13,8	35	6	7,0E+3	eagle nebular: without filter is the cluster more conspicuous	E20	1:26	12:09	6:46	in morning sky	4:04	93	3:40	10:10	32,8°	142,9°	243,2°			
18	O	Sgr	274,9	-17,1	9	6,9	4,0E+3	low in stars, not much conspicuous, situated before light background	E20	1:37	12:00	6:47	in morning sky	4:04	94	3:42	10:12	30,1°	145,1°	243,7°			
17	C	Sgr	275,2	-16,2	46	6	6,0E+3	Omega nebular: phantastically structured, bright arms and dark dust layers	E20	1:36	12:04	6:48	in morning sky	4:04	95	3:44	10:14	31,0°	144,8°	244,2°			
25	O	Sgr	277,9	-19,2	32	4,6	3,0E+3	very beautifully resolved with binoculars, irregular structure	E20	1:56	12:05	6:59	in morning sky	4:04	96	3:46	10:16	27,3°	144,4°	244,7°			
28	G	Sgr	276,1	-24,9	11,2	6,9	2,0E+4	asymmetrical shape, bright center, hardly resolvable	E20	2:08	11:39	6:51	in morning sky	4:04	97	3:50	10:20	23,5°	150,0°	245,7°			
22	G	Sgr	279,1	-23,9	24	5,1	1,0E+4	very bright, oval, impressively resolved with bigger telescope	E20	2:17	11:54	7:03	in morning sky	4:04	98	3:52	10:22	23,4°	147,3°	246,2°			
15	G	Peg	322,5	12,2	12,3	6,4	3,5E+4	relatively easy to find, a little oval, outer edge resolvable with bigger telescopes	E23	3:23	16:34	9:57	in morning sky	4:04	99	3:56	10:26	18,9°	88,1°	247,2°			
6	O	Sco	265,0	-32,2	15	4,2	2,0E+3	Butterfly cluster: wonderful with any kind of instrument	E18	1:53	10:26	6:07	in morning sky	4:04	100	4:00	10:30	21,0°	164,8°	248,2°			
7	O	Sco	268,4	-34,8	80	3,3	9,0E+2	well resolved with binoculars, southernmost Messier Object	E18	2:18	10:28	6:21	in morning sky	4:04	101	4:02	10:32	17,8°	163,1°	248,7°			
69	G	Sgr	277,8	-32,3	7,1	7,7	3,0E+4	partly resolved with bigger telescope	E20	2:44	11:16	6:58	in morning sky	4:04	102	4:06	10:36	17,7°	155,3°	249,7°			
70	G	Sgr	280,8	-32,3	7,8	8,1	3,0E+4	dim, prominet center, outer edge just resolvable	E20	2:56	11:28	7:10	in morning sky	4:04	103	4:08	10:38	16,8°	153,3°	250,2°			

Messier Catalogue										Marathon Planning					Marathon on			20.03.2004		λ, ϕ, T	-9,0°	35,0°	2.453.084,5
Mess. No.	Type	Con-stell.	Rekt. [°]	Dekl. [°]	Size [']	Mag-nitude	Dist. [LYrs]	Description accord. to Karkoschka	Pa.	Rise UT	Set UT	Culmin. UT	Classification of visibility	best time	Observ. index	Time UT	T after Start	Height ab. Hor	Azimuth 180:South	Star-time	seen?		
54	G	Sgr	283,7	-30,5	9,1	7,7	8,0E+4	hardly resolvable, can take high magnification	E20	3:00	11:48	7:22	in morning sky	4:04	104	4:10	10:40	17,5°	150,5°	250,7°			
72	G	Aqr	313,3	-12,5	5,9	9,4	6,0E+4	weakest globular cluster of Messier catalogue, not resolvable	E24	3:56	14:47	9:20	in morning sky	4:04	105	4:14	10:44	14,9°	117,3°	251,7°			
73	O	Aqr	314,7	-12,6	3	9	2,0E+3	3-4 stars	E24	4:02	14:53	9:25	in morning sky	4:04	106	4:16	10:46	14,1°	116,8°	252,2°			
2	G	Aqr	323,3	-0,8	12,9	6,5	4,0E+4	bright big nebular with binoculars, very difficult to resolve into stars	E24	4:03	16:01	10:00	in morning sky	4:04	107	4:18	10:48	15,3°	102,1°	252,7°			
75	G	Sgr	301,5	-21,9	6	8,6	6,0E+4	distant globular cluster, small, not resolvable, extraordinary bright center	E22	3:39	13:31	8:33	in morning sky	4:04	108	4:22	10:52	17,3°	134,0°	253,7°			
55	G	Sgr	295,0	-30,9	19	7	1,8E+4	rather big nebular with binoculars, with bigger telescope resolved down into the center	E22	3:47	12:31	8:07	in morning sky	4:04	109	4:26	10:56	14,0°	145,1°	254,7°			
30	G	Cap	325,1	-23,2	11	7,5	2,5E+4	prominent center, elongated shell, a bigger telescope resolves outer parts of the cluster	E22	5:18	15:00	10:07	at dawn	4:26	110	4:30	11:00	2,3°	120,6°	255,7°			
Sun	-		0,7	0,3		0		-	-	4:08	18:50	11:29	start of astron. twilight	4:08	(P0)	4:08	10:37	-16,5°	77,7°	250,2°	-		
Sun	-		0,7	0,3		0		-	-	4:30	18:27	11:29	twilight starts	4:30	(P0)	4:30	11:00	-12,0°	81,1°	255,7°	-		
Sun	-		0,7	0,3		0		-	-	5:27	17:31	11:29	Sunrise	5:27	(P0)	5:27	11:56	-0,5°	89,3°	269,8°	-		
Mercury	-		13,0	6,3		0		Mercury	-	6:05	18:39	12:22	at dusk	17:30	(P1)	17:30	0:00	14,0°	267,9°	90,3°			
Venus	-		42,2	18,8		0		Venus	-	7:23	21:12	14:18	in evening sky	18:49	(P2)	18:49	1:18	28,6°	273,8°	109,9°			
Mars	-		56,7	21,0		0		Mars	-	8:13	22:18	15:16	in evening sky	18:49	(P3)	18:49	1:18	41,5°	268,0°	109,9°			
Saturn	-		97,0	22,8		0		Saturn	-	10:50	1:04	17:57	in evening sky	18:49	(P5)	18:49	1:18	73,4°	226,3°	109,9°			
Jupiter	-		163,9	8,4		0		Jupiter	-	16:01	4:46	22:24	at transit	22:24	(P4)	22:24	4:53	63,4°	180,0°	163,9°			
Neptun	-		317,0	-16,5		0		Neptun	-	3:23	13:50	8:39	in morning sky	4:08	(P7)	4:08	10:37	8,4°	117,0°	250,2°			
Uranus	-		336,4	-10,6		0		Uranus	-	4:23	15:25	9:56	at dawn	4:30	(P6)	4:30	11:00	1,4°	104,0°	255,7°			