

Messier Catalogue									Marathon Planning					Marathon on			20.03.2004		λ, ϕ, T	-9,0°	47,0°	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	17:31	11:29	Sunset	17:31	(P0)	17:31	0:00	-0,5°	270,4°	90,4°	-		
Sun	-		359,7	-0,1			0	-	-	4:20	18:38	11:29	twilight ends	18:38	(P0)	18:38	1:07	-12,0°	283,0°	107,4°	-		
Sun	-		359,7	-0,1			0	-	-	3:52	19:06	11:29	end of astron. twilight	19:06	(P0)	19:06	1:35	-16,5°	288,3°	114,2°	-		
45	C	Tau	56,7	24,1	100	1,5	4,0E+2	Plejades, Seven Sisters: weak reflection nebular in very dark sky	E3	8:19	0:06	16:16	in evening sky	19:06	1	18:55	1:23	41,2°	261,8°	111,4°			
110	X	And	10,1	41,7	17,4	8	2,8E+6	accompanying galaxy of Andromeda, asymmetrical shape	N0	2:17	#####	13:10	in evening sky	19:06	2	18:59	1:27	13,7°	317,9°	129,4°			
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	2:29	23:53	13:13	in evening sky	19:06	3	19:01	1:29	22,0°	307,6°	112,9°			
32	X	And	10,7	40,9	7,6	8,2	2,8E+6	accompanying galaxie of Andromeda, star-spaped with binoculars	N0	2:38	23:44	13:13	in evening sky	19:06	4	19:03	1:31	21,4°	307,6°	113,4°			
74	X	Psc	24,2	15,8	10,2	9,2	5,0E+7	very difficult in lightpolluted sky, smallest magnification	E1	6:53	21:16	14:07	in evening sky	19:06	5	19:07	1:35	11,3°	281,1°	114,4°			
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	19:06	6	19:09	1:37	10,7°	258,3°	114,9°			
33	X	Tri	23,5	30,7	62	5,7	3,0E+6	Triangulum nebela: lowest magnification and very dark sky	N0	5:23	22:41	14:04	in evening sky	19:06	7	19:13	1:41	20,4°	293,6°	115,9°			
79	G	Lep	81,1	-24,5	8,7	8	4,0E+4	very difficult to resolve (far our of milky way plane)	E4	13:51	21:56	17:54	in evening sky	19:06	8	19:17	1:45	11,5°	212,9°	116,9°			
42	N	Ori	83,8	-5,4	66	4	1,4E+3	Orion nebula: prime example of gasous nebulars, imbedded stars	E4	12:29	23:40	18:04	in evening sky	19:06	9	19:21	1:49	29,6°	219,9°	117,9°			
43	N	Ori	83,9	-5,3	20	9	1,4E+3	northern part of Orion nebula, separated by a dark dust cloud	E4	12:29	23:41	18:05	in evening sky	19:06	10	19:23	1:51	29,5°	220,4°	118,4°			
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	19:06	11	19:25	1:53	35,3°	220,8°	118,9°			
34	O	Per	40,5	42,8	35	5,2	1,5E+3	beautiful with binoculars, lowest magnification with telescope	N4	3:37	2:43	15:12	in evening sky	19:06	12	19:29	1:57	36,1°	296,8°	119,9°			
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	19:06	13	19:33	2:01	21,8°	343,8°	137,9°			
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	19:06	14	19:35	2:03	36,2°	323,1°	121,4°			
76	P	Per	25,6	51,6	4,8	12	4,0E+3	Little Dumbbell nebular: weakest object in Messier catalogue	N0	2:10	2:10	14:12	in evening sky	19:06	15	19:37	2:05	31,8°	313,4°	121,9°			
1	N	Tau	83,6	22,0	6	8,4	4,0E+3	Crab nebula: difficult with binoculars, irregular shape with bigger telescope (Supemova 1054)	E3	10:22	1:45	18:04	in evening sky	19:06	16	19:41	2:09	49,7°	245,4°	122,9°			
35	O	Gem	92,2	24,3	28	5,1	3,0E+3	bright, beautiful resolved with telescope using low magnification	E7	10:43	2:32	18:38	in evening sky	19:06	17	19:43	2:11	56,4°	238,5°	123,4°			
38	O	Aur	82,1	35,8	21	6,4	4,0E+3	partly resolved, interesting arrangement of small stars	N6	8:37	3:19	17:58	in evening sky	19:06	18	19:47	2:15	56,8°	265,9°	124,4°			
36	O	Aur	84,0	34,1	12	6	4,0E+3	already resolved with binoculars, starry concentrations along arms	N6	9:01	3:10	18:05	in evening sky	19:06	19	19:49	2:17	56,8°	262,1°	124,9°			

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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
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	9:31	3:12	18:22	in evening sky	19:06	20	19:51	2:19	58,2°	256,4°	125,4°			
50	O	Mon	105,8	-8,3	16	5,9	3,5E+3	beautiful with telescope and low magnification , little asymmetrical shape	E8	14:09	0:51	19:32	in evening sky	19:32	21	19:55	2:23	31,7°	204,2°	126,4°			
47	O	Pup	114,1	-13,9	30	4,4	1,8E+3	impressive with small instruments	E8	15:08	1:03	20:05	in evening sky	20:05	22	19:57	2:25	28,0°	194,1°	126,9°			
46	O	Pup	115,4	-14,8	27	6,1	6,0E+3	big with binoculars, many stars with biger telescope, rich of small stars	E8	15:17	1:04	20:10	at transit	20:10	23	19:59	2:27	27,3°	193,1°	127,4°			
48	O	Hya	123,5	-5,8	54	5,8	2,5E+3	beautiful and bright with binoculars	E10	15:09	2:17	20:43	at transit	20:43	24	20:01	2:29	37,1°	185,5°	127,9°			
41	O	CMa	101,7	-20,7	38	4,5	2,5E+3	very well resolved with binoculars, only little impressive with telescope	E6	14:52	23:40	19:16	in evening sky	19:16	25	20:05	2:33	18,0°	206,8°	128,9°			
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	16:07	0:15	20:13	at transit	20:13	26	20:07	2:35	18,1°	192,8°	129,4°			
44	O	Cnc	130,0	20,0	95	3,1	6,0E+2	Praesepe: impressive with binoculars	E9	13:38	4:39	21:09	at transit	21:09	27	20:19	2:48	62,9°	185,4°	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	14:28	4:10	21:19	at transit	21:19	28	20:21	2:50	54,8°	180,9°	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	67,9°	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	67,4°	359,5°	149,4°			
95	X	Leo	161,0	11,7	7,4	9,7	4,0E+7	star-shaped core	E11	16:22	6:03	23:12	at transit	23:12	31	22:12	4:41	54,7°	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	16:25	6:06	23:15	at transit	23:15	32	22:14	4:43	54,8°	179,7°	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	16:22	6:11	23:16	at transit	23:16	33	22:16	4:45	55,6°	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	16:50	6:44	23:47	at transit	23:47	34	22:18	4:47	55,6°	167,5°	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	16:52	6:44	23:48	at transit	23:48	35	22:20	4:49	55,5°	167,9°	163,0°			
109	X	UMa	179,4	53,3	7,6	9,8	6,0E+7	bright core, otherwise weak	N10	12:30	12:30	0:22	at transit	0:26	36	22:40	5:08	80,3°	45,4°	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	5:10	74,8°	36,8°	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	5:12	81,4°	356,2°	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	11:47	11:47	23:43	at transit	23:43	39	22:46	5:14	82,0°	357,5°	169,3°			
98	X	Com	183,4	14,9	9,5	10,1	6,0E+7	outer bounds weak, hardly structured	E14	17:37	7:47	0:38	at transit	0:42	40	23:42	6:11	57,9°	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	17:44	7:50	0:43	at transit	0:47	41	23:44	6:13	57,4°	178,6°	183,9°			
100	X	Com	185,7	15,8	6,9	9,4	6,0E+7	elongated central area with star-shaped core	E14	17:41	8:00	0:47	at transit	0:51	42	23:46	6:15	58,8°	177,6°	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	17:32	8:14	0:49	at transit	0:53	43	23:48	6:17	61,1°	177,3°	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	12:51	12:51	0:43	at transit	0:47	44	23:52	6:21	89,1°	290,5°	185,9°			
61	X	Vir	185,4	4,4	6	9,7	6,0E+7	spiral arms with bigger telescope hardly visible	E14	18:32	7:08	0:46	at transit	0:50	45	23:56	6:25	47,4°	182,2°	186,9°			
49	X	Vir	187,4	8,0	8,9	8,4	6,0E+7	brightest galaxy of Virgo cluster, big	E14	18:24	7:31	0:58	at transit	0:58	46	23:58	6:27	51,0°	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	17:58	7:48	0:49	at transit	0:53	47	0:02	6:31	55,7°	183,8°	188,4°			
86	X	Vir	186,5	12,9	7,4	9,2	6,0E+7	no structures visible	E14	17:58	7:50	0:50	at transit	0:54	48	0:04	6:33	55,8°	184,2°	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	18:05	7:52	0:59	at transit	0:59	49	0:06	6:35	55,4°	183,0°	189,4°			
88	X	Com	188,0	14,4	6,9	9,5	6,0E+7	few structures seen with telescope	E14	17:57	8:03	1:00	at transit	1:00	50	0:08	6:37	57,4°	183,4°	189,9°			
91	X	Com	188,8	14,5	5,4	10,2	6,0E+7	no structures visible	E14	18:00	8:06	1:03	at transit	1:03	51	0:10	6:39	57,5°	182,9°	190,4°			
89	X	Vir	188,9	12,5	4,2	9,8	6,0E+7	bright, almost star-shaped core, perfect round	E14	18:10	7:58	1:04	at transit	1:04	52	0:14	6:43	55,4°	184,3°	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	18:08	8:01	1:05	at transit	1:05	53	0:16	6:45	56,0°	184,7°	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	18:15	7:56	1:06	at transit	1:06	54	0:18	6:47	54,7°	185,1°	192,4°			
59	X	Vir	190,5	11,6	5,1	9,8	6,0E+7	dim star-shapeder core, use medium magnification	E14	18:20	8:00	1:10	at transit	1:10	55	0:20	6:49	54,5°	184,1°	192,9°			
60	X	Vir	190,9	11,5	7,2	8,8	6,0E+7	bright star-shaped core	E14	18:22	8:01	1:12	at transit	1:12	56	0:22	6:51	54,4°	184,3°	193,4°			
68	G	Hya	189,9	-26,7	12	8,2	3,0E+4	with bigger telescopes resolvable into center	E12	21:19	4:56	1:08	at transit	1:08	57	0:26	6:55	16,2°	184,2°	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	20:00	6:16	1:08	at transit	1:08	58	0:28	6:57	31,2°	185,7°	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	14:43	11:58	1:19	at transit	1:19	59	0:32	7:01	83,7°	202,6°	195,9°			
63	X	CVn	198,9	42,0	12,3	8,6	3,0E+7	Sunflower galaxy: prominent core, otherwise invisible	N12	14:46	12:45	1:44	at transit	1:44	60	0:34	7:03	84,7°	159,8°	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	14:02	14:02	1:58	at transit	1:58	61	0:36	7:05	86,2°	84,9°	196,9°			

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No.			[°]	[°]	[']		[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	17:45	9:09	1:25	at transit	1:25	62	0:41	7:10	64,5°	188,6°	198,2°			
53	G	Com	198,2	18,2	12,6	7,7	6,0E+4	prominet core, edge partly resolved with telescope	E13	18:19	9:06	1:41	at transit	1:41	63	0:43	7:12	61,2°	181,0°	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	22:38	5:32	2:05	at transit	2:05	64	1:05	7:34	13,1°	180,0°	204,2°			
3	G	CVn	205,5	28,4	16,2	6,4	3,0E+4	resolvable with bigger telescopes only	E15	17:50	10:34	2:10	at transit	2:10	65	1:10	7:39	71,4°	180,0°	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	14:35	14:35	2:31	at transit	2:31	66	1:31	8:00	82,7°	0,1°	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	77,1°	41,9°	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	21:38	9:58	3:46	at transit	3:46	68	2:28	8:57	44,9°	173,6°	225,1°			
80	G	Sco	244,2	-23,0	8,9	7,2	3,0E+4	very bright center, can take high magnification	E18	0:29	8:59	4:44	at transit	3:46	69	2:32	9:01	18,1°	162,5°	226,1°			
4	G	Sco	245,9	-26,5	26,3	5,9	7,0E+3	easy to find, wonderfully resolvable with telescope	E18	1:01	8:45	4:51	in morning sky	3:46	70	2:34	9:03	14,5°	162,2°	226,6°			
13	G	Her	250,4	36,4	16,6	5,9	2,5E+4	Herkules cluster: bright with binoculars, outer cluster resolvable	N14	19:42	14:40	5:09	in morning sky	3:46	71	2:38	9:07	70,0°	113,8°	227,6°			
92	G	Her	259,3	43,1	11,2	6,5	3,0E+4	similar to M13, but dimmer	N14	17:49	17:49	5:44	in morning sky	3:46	72	2:40	9:09	67,8°	88,6°	228,1°			
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	22:26	16:20	7:21	in morning sky	3:46	73	2:44	9:13	47,1°	88,9°	229,1°			
56	G	Lyr	289,1	30,1	7,1	8,3	3,0E+4	quite weak, difficult to resolve into stars	N18	23:11	16:20	7:43	in morning sky	3:46	74	2:46	9:15	41,8°	88,4°	229,6°			
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	0:57	15:48	8:20	in morning sky	3:46	75	2:50	9:19	28,6°	92,8°	230,6°			
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	0:37	16:16	8:26	in morning sky	3:46	76	2:52	9:21	30,6°	88,7°	231,1°			
29	O	Cyg	306,0	38,5	7	6,6	4,0E+3	only a few stars, use only low magnification	N20	22:58	18:47	8:51	in morning sky	3:46	77	2:56	9:25	37,1°	70,5°	232,1°			
39	O	Cyg	323,0	48,4	32	4,6	1,0E+3	few, but bright stars, interesting sight only with binoculars	N24	22:04	22:04	9:59	in morning sky	3:46	78	2:58	9:27	32,9°	52,3°	232,6°			
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	23:24	11:09	5:15	in morning sky	3:46	79	3:02	9:31	38,6°	156,5°	233,6°			
10	G	Oph	254,2	-4,1	15,1	6,6	1,5E+4	only edge well resolved with bigger telescope	E17	23:43	11:10	5:24	in morning sky	3:46	80	3:04	9:33	35,9°	155,0°	234,1°			
14	G	Oph	264,4	-3,2	11,7	7,6	3,0E+4	oval, nebular with amateur size telescopes	E17	0:16	11:54	6:05	in morning sky	3:46	81	3:06	9:35	33,4°	143,6°	234,6°			
107	G	Oph	248,1	-13,1	10	8,1	2,0E+4	hardly resolvable even with bigger telescope	E17	23:58	10:05	5:00	in morning sky	3:46	82	3:10	9:39	28,9°	166,1°	235,6°			

Messier Catalogue										Marathon Planning					Marathon on			20.03.2004		λ, ϕ, T	-9,0°	47,0°	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	1:11	10:26	5:46	in morning sky	3:46	83	3:12	9:41	21,1°	155,9°	236,1°			
62	G	Oph	255,3	-30,1	14,1	6,6	2,0E+4	very asymmetrical, nebulous arms, interesting object	E18	2:03	8:58	5:29	in morning sky	3:46	84	3:16	9:45	11,2°	164,0°	237,1°			
19	G	Oph	255,6	-26,3	13,5	7,2	3,0E+4	rather oval, egde resolvable	E18	1:38	9:25	5:30	in morning sky	3:46	85	3:18	9:47	14,9°	163,4°	237,6°			
26	O	Sct	281,3	-9,4	15	8	5,0E+3	still nebular with smaller telescopes	E19	1:54	12:34	7:12	in morning sky	3:46	86	3:22	9:51	22,0°	133,8°	238,6°			
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	1:46	12:54	7:18	in morning sky	3:46	87	3:24	9:53	24,2°	131,2°	239,1°			
23	O	Sgr	269,2	-19,0	27	5,5	2,0E+3	impressive at low magnification	E20	1:51	11:01	6:24	in morning sky	3:46	88	3:28	9:57	19,0°	150,9°	240,1°			
24	O	Sgr	274,2	-18,5	100	4	8,0E+3	bright star cloud of milky way	E20	2:09	11:23	6:44	in morning sky	3:46	89	3:30	9:59	17,9°	146,6°	240,6°			
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	2:18	10:44	6:29	in morning sky	3:46	90	3:34	10:03	15,3°	152,6°	241,6°			
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	2:28	10:38	6:31	in morning sky	3:46	91	3:36	10:05	14,0°	153,1°	242,1°			
21	O	Sgr	271,1	-22,5	13	5,9	4,0E+3	few stars, bright but inconspicuous	E20	2:18	10:49	6:32	in morning sky	3:46	92	3:38	10:07	15,9°	152,7°	242,6°			
16	C	Ser	274,7	-13,8	35	6	7,0E+3	eagle nebular: without filter is the cluster more conspicuous	E20	1:48	11:48	6:46	in morning sky	3:46	93	3:40	10:09	22,9°	146,5°	243,1°			
18	O	Sgr	274,9	-17,1	9	6,9	4,0E+3	low in stars, not much conspicuous, situated before light background	E20	2:05	11:33	6:47	in morning sky	3:46	94	3:42	10:11	20,0°	148,1°	243,6°			
17	C	Sgr	275,2	-16,2	46	6	6,0E+3	Omega nebular: phantastically structured, bright arms and dark dust layers	E20	2:01	11:38	6:48	in morning sky	3:46	95	3:44	10:13	20,9°	148,0°	244,1°			
25	O	Sgr	277,9	-19,2	32	4,6	3,0E+3	very beautifully resolved with binoculars, irregular structure	E20	2:27	11:34	6:59	in morning sky	3:46	96	3:46	10:15	17,3°	147,1°	244,6°			
28	G	Sgr	276,1	-24,9	11,2	6,9	2,0E+4	asymmetrical shape, bright center, hardly resolvable	E20	2:52	10:55	6:51	in morning sky	3:46	97	3:50	10:19	13,0°	151,8°	245,6°			
22	G	Sgr	279,1	-23,9	24	5,1	1,0E+4	very bright, oval, impressively resolved with bigger telescope	E20	2:58	11:13	7:03	in morning sky	3:46	98	3:52	10:21	13,1°	149,3°	246,1°			
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	3:04	16:53	9:57	in morning sky	3:46	99	3:56	10:25	18,8°	92,2°	247,1°			
6	O	Sco	265,0	-32,2	15	4,2	2,0E+3	Butterfly cluster: wonderful with any kind of instrument	E18	2:58	9:21	6:07	in morning sky	3:46	100	4:00	10:29	9,4°	165,6°	248,1°			
7	O	Sco	268,4	-34,8	80	3,3	9,0E+2	well resolved with binoculars, southernmost Messier Object	E18	3:34	9:12	6:21	in morning sky	3:46	101	4:02	10:31	6,3°	163,8°	248,6°			
69	G	Sgr	277,8	-32,3	7,1	7,7	3,0E+4	partly resolved with bigger telescope	E20	3:49	10:11	6:58	in morning sky	4:14	102	4:06	10:35	6,7°	156,3°	249,6°			
70	G	Sgr	280,8	-32,3	7,8	8,1	3,0E+4	dim, prominet center, outer edge just resolvable	E20	4:01	10:23	7:10	in morning sky	4:14	103	4:08	10:37	6,0°	154,3°	250,1°			

Messier Catalogue									Marathon Planning					Marathon on			20.03.2004		λ, ϕ, T	-9,0°	47,0°	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	
54	G	Sgr	283,7	-30,5	9,1	7,7	8,0E+4	hardly resolvable, can take high magnification	E20	3:59	10:49	7:22	in morning sky	4:14	104	4:10	10:39	7,0°	151,7°	250,6°			
72	G	Aqr	313,3	-12,5	5,9	9,4	6,0E+4	weakest globular cluster of Messier catalogue, not resolvable	E24	4:16	14:28	9:20	in morning sky	4:14	105	4:14	10:43	9,1°	119,5°	251,7°			
73	O	Aqr	314,7	-12,6	3	9	2,0E+3	3-4 stars	E24	4:22	14:33	9:25	in morning sky	4:14	106	4:16	10:45	8,5°	118,9°	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	4:04	15:59	10:00	in morning sky	4:14	107	4:18	10:47	12,5°	104,9°	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	4:16	12:54	8:33	in morning sky	4:14	108	4:22	10:51	8,7°	135,9°	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	4:47	11:31	8:07	at dawn	4:14	109	4:26	10:55	4,0°	146,2°	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	5:57	14:21	10:07	not visible	4:14	110	4:28	10:57	-4,2°	120,0°	255,2°			
Sun	-		0,7	0,3			0	-	3:50	19:07	11:29	start of astron. twilight	3:50	(P0)	3:50	10:19	-16,5°	71,0°	245,7°	-			
Sun	-		0,7	0,3			0	-	4:18	18:40	11:29	twilight starts	4:18	(P0)	4:18	10:47	-12,0°	76,4°	252,6°	-			
Sun	-		0,7	0,3			0	-	5:26	17:32	11:29	Sunrise	5:26	(P0)	5:26	11:55	-0,5°	89,1°	269,6°	-			
Mercury	-		13,0	6,3			0	Mercury	-	5:54	18:48	12:22	at dusk	17:31	(P1)	17:31	0:00	13,2°	265,0°	90,4°			
Venus	-		42,2	18,8			0	Venus	-	6:52	21:43	14:18	in evening sky	19:06	(P2)	19:06	1:35	25,8°	270,4°	114,2°			
Mars	-		56,7	21,0			0	Mars	-	7:38	22:52	15:16	in evening sky	19:06	(P3)	19:06	1:35	37,2°	261,2°	114,2°			
Saturn	-		97,0	22,8			0	Saturn	-	10:11	1:43	17:57	in evening sky	19:06	(P5)	19:06	1:35	62,1°	215,7°	114,2°			
Jupiter	-		163,9	8,4			0	Jupiter	-	15:49	4:59	22:24	at transit	22:24	(P4)	22:24	4:53	51,4°	180,0°	163,9°			
Neptun	-		317,0	-16,5			0	Neptun	-	3:50	13:24	8:39	at dawn	4:18	(P7)	4:18	10:47	4,3°	119,9°	252,6°			
Uranus	-		336,4	-10,6			0	Uranus	-	4:40	15:09	9:56	not visible	4:18	(P6)	4:18	10:47	-3,6°	101,7°	252,6°			