

## Correction de minutes

Calcul pour la Latitude  $45,4^\circ$  et longitude  $-74,03$  UTC-5 pour le 01-01

### Correction de minutes pour la latitude

Nous calculerons la proportion réelle de notre latitude entre  $45^\circ$  et  $50^\circ$ . Puisque ces latitudes sont distantes de  $5^\circ$ , et que ma latitude est de  $0,4^\circ (45,4^\circ - 40^\circ)$  de  $40^\circ$  vers  $45^\circ$ , la proportion réelle est :

$$0,4^\circ / 5^\circ = 0,08$$

La différence entre le  $45^\circ$  et  $50^\circ$ :  $7:58:31 - 7:38:17 = +20 \text{ m } 14\text{s} = 20,23$  ( $14/60 = 0.23$ )

On additionne si le résultat est positif, on soustrait si le résultat est négatif.

Nous multiplions 0,08 par 20.23:

$$0,08 \times 20,57\text{m} = 1,62 \text{ m} = 1\text{m } 37\text{s} \quad (0.65 * 62 = 37,2)$$

Puis on additionne le résultat de l'heure à  $45^\circ$  pour le 01-01, soit 7:38:17 :

$$7:38:17 + 1\text{m } 37\text{s} = \mathbf{07:39:55 \text{ (correction pour la latitude)}}$$

### Correction de minutes pour la longitude

74,03 pour notre exemple,  $74^\circ 2'$  ( $0.03 \times 60 = 1,8$ )

Avec le tableau Conversion of Arc to Time (appelé Conversion d'arc en temps) qui vous permet de rechercher l'heure à partir de cette longitude :

$$74^\circ 2' = 4\text{h } 56 \text{ m}, 2 \text{ minutes} = 8\text{s}$$

Ajoutez 4h 56 m 8s à **07:39:55 (correction pour la latitude)**

$$07:39:55 + 4:56:08 = 12:36:03$$

On a addition ou on soustrait notre UTC (-5 dans notre exemple)

$$12:36:03 - 5 = \mathbf{07:36:03 = \text{l'heure corrigée}}$$

# Conversion of Arc to Time

0° - 59°			60° - 119°			120° - 179°			180° - 239°			240° - 299°			300° - 360°			0' - 59'			0" - 59"	
°	h	m	°	h	m	°	h	m	°	h	m	°	h	m	°	h	m	'	m	s	"	s
0	0	00	60	4	00	120	8	00	180	12	00	240	16	00	300	20	00	0	0	00	0	0.00
1	0	04	61	4	04	121	8	04	181	12	04	241	16	04	301	20	04	1	0	04	1	0.07
2	0	08	62	4	08	122	8	08	182	12	08	242	16	08	302	20	08	2	0	08	2	0.13
3	0	12	63	4	12	123	8	12	183	12	12	243	16	12	303	20	12	3	0	12	3	0.20
4	0	16	64	4	16	124	8	16	184	12	16	244	16	16	304	20	16	4	0	16	4	0.27
5	0	20	65	4	20	125	8	20	185	12	20	245	16	20	305	20	20	5	0	20	5	0.33
6	0	24	66	4	24	126	8	24	186	12	24	246	16	24	306	20	24	6	0	24	6	0.40
7	0	28	67	4	28	127	8	28	187	12	28	247	16	28	307	20	28	7	0	28	7	0.47
8	0	32	68	4	32	128	8	32	188	12	32	248	16	32	308	20	32	8	0	32	8	0.53
9	0	36	69	4	36	129	8	36	189	12	36	249	16	36	309	20	36	9	0	36	9	0.60
10	0	40	70	4	40	130	8	40	190	12	40	250	16	40	310	20	40	10	0	40	10	0.67
11	0	44	71	4	44	131	8	44	191	12	44	251	16	44	311	20	44	11	0	44	11	0.73
12	0	48	72	4	48	132	8	48	192	12	48	252	16	48	312	20	48	12	0	48	12	0.80
13	0	52	73	4	52	133	8	52	193	12	52	253	16	52	313	20	52	13	0	52	13	0.87
14	0	56	74	4	56	134	8	56	194	12	56	254	16	56	314	20	56	14	0	56	14	0.93
15	1	00	75	5	00	135	9	00	195	13	00	255	17	00	315	21	00	15	1	00	15	1.00
16	1	04	76	5	04	136	9	04	196	13	04	256	17	04	316	21	04	16	1	04	16	1.07
17	1	08	77	5	08	137	9	08	197	13	08	257	17	08	317	21	08	17	1	08	17	1.13
18	1	12	78	5	12	138	9	12	198	13	12	258	17	12	318	21	12	18	1	12	18	1.20
19	1	16	79	5	16	139	9	16	199	13	16	259	17	16	319	21	16	19	1	16	19	1.27
20	1	20	80	5	20	140	9	20	200	13	20	260	17	20	320	21	20	20	1	20	20	1.33
21	1	24	81	5	24	141	9	24	201	13	24	261	17	24	321	21	24	21	1	24	21	1.40
22	1	28	82	5	28	142	9	28	202	13	28	262	17	28	322	21	28	22	1	28	22	1.47
23	1	32	83	5	32	143	9	32	203	13	32	263	17	32	323	21	32	23	1	32	23	1.53
24	1	36	84	5	36	144	9	36	204	13	36	264	17	36	324	21	36	24	1	36	24	1.60
25	1	40	85	5	40	145	9	40	205	13	40	265	17	40	325	21	40	25	1	40	25	1.67
26	1	44	86	5	44	146	9	44	206	13	44	266	17	44	326	21	44	26	1	44	26	1.73
27	1	48	87	5	48	147	9	48	207	13	48	267	17	48	327	21	48	27	1	48	27	1.80
28	1	52	88	5	52	148	9	52	208	13	52	268	17	52	328	21	52	28	1	52	28	1.87
29	1	56	89	5	56	149	9	56	209	13	56	269	17	56	329	21	56	29	1	56	29	1.93
30	2	00	90	6	00	150	10	00	210	14	00	270	18	00	330	22	00	30	2	00	30	2.00
31	2	04	91	6	04	151	10	04	211	14	04	271	18	04	331	22	04	31	2	04	31	2.07
32	2	08	92	6	08	152	10	08	212	14	08	272	18	08	332	22	08	32	2	08	32	2.13
33	2	12	93	6	12	153	10	12	213	14	12	273	18	12	333	22	12	33	2	12	33	2.20
34	2	16	94	6	16	154	10	16	214	14	16	274	18	16	334	22	16	34	2	16	34	2.27
35	2	20	95	6	20	155	10	20	215	14	20	275	18	20	335	22	20	35	2	20	35	2.33
36	2	24	96	6	24	156	10	24	216	14	24	276	18	24	336	22	24	36	2	24	36	2.40
37	2	28	97	6	28	157	10	28	217	14	28	277	18	28	337	22	28	37	2	28	37	2.47
38	2	32	98	6	32	158	10	32	218	14	32	278	18	32	338	22	32	38	2	32	38	2.53
39	2	36	99	6	36	159	10	36	219	14	36	279	18	36	339	22	36	39	2	36	39	2.60
40	2	40	100	6	40	160	10	40	220	14	40	280	18	40	340	22	40	40	2	40	40	2.67
41	2	44	101	6	44	161	10	44	221	14	44	281	18	44	341	22	44	41	2	44	41	2.73
42	2	48	102	6	48	162	10	48	222	14	48	282	18	48	342	22	48	42	2	48	42	2.80
43	2	52	103	6	52	163	10	52	223	14	52	283	18	52	343	22	52	43	2	52	43	2.87
44	2	56	104	6	56	164	10	56	224	14	56	284	18	56	344	22	56	44	2	56	44	2.93
45	3	00	105	7	00	165	11	00	225	15	00	285	19	00	345	23	00	45	3	00	45	3.00
46	3	04	106	7	04	166	11	04	226	15	04	286	19	04	346	23	04	46	3	04	46	3.07
47	3	08	107	7	08	167	11	08	227	15	08	287	19	08	347	23	08	47	3	08	47	3.13
48	3	12	108	7	12	168	11	12	228	15	12	288	19	12	348	23	12	48	3	12	48	3.20
49	3	16	109	7	16	169	11	16	229	15	16	289	19	16	349	23	16	49	3	16	49	3.27
50	3	20	110	7	20	170	11	20	230	15	20	290	19	20	350	23	20	50	3	20	50	3.33
51	3	24	111	7	24	171	11	24	231	15	24	291	19	24	351	23	24	51	3	24	51	3.40
52	3	28	112	7	28	172	11	28	232	15	28	292	19	28	352	23	28	52	3	28	52	3.47
53	3	32	113	7	32	173	11	32	233	15	32	293	19	32	353	23	32	53	3	32	53	3.53
54	3	36	114	7	36	174	11	36	234	15	36	294	19	36	354	23	36	54	3	36	54	3.60
55	3	40	115	7	40	175	11	40	235	15	40	295	19	40	355	23	40	55	3	40	55	3.67
56	3	44	116	7	44	176	11	44	236	15	44	296	19	44	356	23	44	56	3	44	56	3.73
57	3	48	117	7	48	177	11	48	237	15	48	297	19	48	357	23	48	57	3	48	57	3.80
58	3	52	118	7	52	178	11	52	238	15	52	298	19	52	358	23	52	58	3	52	58	3.87
59	3	56	119	7	56	179	11	56	239	15	56	299	19	56	359	23	56	59	3	56	59	3.93
60	4	00	120	8	00	180	12	00	240	16	00	300	20	00	360	24	00	60	4	00	60	4.00

h= hours of time      m= minutes of time      s = seconds of time      ' = minutes of arc      " = seconds of arc

Temps moyen de Greenwich (GMT) UTC 0 Latitude N

	50°		52°		54°		56°		58°		60°		62°		64°	
Date	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher
01-01-24	7:58:32	16:08:08	8:08:10	15:58:30	8:18:59	15:47:41	8:30:41	15:37:51	8:45:32	15:21:08	9:02:25	15:04:14	9:23:06	14:43:33	9:49:50	14:16:50
02-01-24	7:58:28	16:09:08	8:08:02	15:59:33	8:18:47	15:48:49	8:30:17	15:39:10	8:45:10	15:22:26	9:01:56	15:05:40	9:22:25	14:45:11	9:48:50	14:18:46
03-01-24	7:58:21	16:10:11	8:07:52	16:00:40	8:18:32	15:49:59	8:29:49	15:40:32	8:44:44	15:23:48	9:01:21	15:07:11	9:21:38	14:46:53	9:47:42	14:20:49
04-01-24	7:58:10	16:11:16	8:07:37	16:01:49	8:18:14	15:51:13	8:29:17	15:41:57	8:44:13	15:25:14	9:00:41	15:08:46	9:20:45	14:48:41	9:46:28	14:22:58
05-01-24	7:57:57	16:12:24	8:07:20	16:03:01	8:17:51	15:52:29	8:28:41	15:43:26	8:43:38	15:26:43	8:59:56	15:10:25	9:19:46	14:50:34	9:45:07	14:25:13
06-01-24	7:57:40	16:13:34	8:06:59	16:04:15	8:17:25	15:53:49	8:28:01	15:44:57	8:42:58	15:28:16	8:59:06	15:12:08	9:18:42	14:52:32	9:43:40	14:27:34
07-01-24	7:57:20	16:14:46	8:06:35	16:05:32	8:16:56	15:55:11	8:27:17	15:46:31	8:42:14	15:29:53	8:58:11	15:13:55	9:17:32	14:54:34	9:42:07	14:30:00
08-01-24	7:56:58	16:16:00	8:06:07	16:06:51	8:16:23	15:56:35	8:26:29	15:48:08	8:41:25	15:31:33	8:57:12	15:15:46	9:16:17	14:56:40	9:40:27	14:32:31
09-01-24	7:56:32	16:17:17	8:05:36	16:08:12	8:15:46	15:58:02	8:25:38	15:49:48	8:40:32	15:33:16	8:56:07	15:17:41	9:14:57	14:58:51	9:38:42	14:35:06
10-01-24	7:56:03	16:18:35	8:05:02	16:09:35	8:15:06	15:59:32	8:24:43	15:51:30	8:39:36	15:35:02	8:54:59	15:19:39	9:13:32	15:01:06	9:36:52	14:37:46
11-01-24	7:55:31	16:19:55	8:04:25	16:11:01	8:14:22	16:01:04	8:23:45	15:53:15	8:38:35	15:36:51	8:53:46	15:21:40	9:12:02	15:03:24	9:34:56	14:40:30
12-01-24	7:54:56	16:21:17	8:03:45	16:12:29	8:13:35	16:02:38	8:22:43	15:55:01	8:37:30	15:38:43	8:52:29	15:23:45	9:10:28	15:05:45	9:32:56	14:43:18
13-01-24	7:54:19	16:22:41	8:03:01	16:13:58	8:12:45	16:04:14	8:21:37	15:56:50	8:36:22	15:40:37	8:51:07	15:25:52	9:08:49	15:08:10	9:30:50	14:46:09
14-01-24	7:53:38	16:24:06	8:02:15	16:15:29	8:11:51	16:05:53	8:20:29	15:58:41	8:35:10	15:42:34	8:49:42	15:28:02	9:07:06	15:10:38	9:28:41	14:49:03
15-01-24	7:52:55	16:25:33	8:01:25	16:17:03	8:10:54	16:07:33	8:19:17	16:00:34	8:33:54	15:44:34	8:48:12	15:30:15	9:05:18	15:13:09	9:26:27	14:52:01
16-01-24	7:52:08	16:27:01	8:00:32	16:18:37	8:09:54	16:09:15	8:18:01	16:02:29	8:32:34	15:46:36	8:46:39	15:32:30	9:03:27	15:15:43	9:24:09	14:55:01
17-01-24	7:51:19	16:28:31	7:59:37	16:20:14	8:08:51	16:10:59	8:16:43	16:04:25	8:31:11	15:48:39	8:45:02	15:34:48	9:01:32	15:18:19	9:21:47	14:58:03
18-01-24	7:50:28	16:30:02	7:58:39	16:21:51	8:07:45	16:12:45	8:15:21	16:06:23	8:29:45	15:50:45	8:43:22	15:37:08	8:59:33	15:20:57	9:19:22	15:01:08
19-01-24	7:49:33	16:31:34	7:57:37	16:23:30	8:06:36	16:14:32	8:13:57	16:08:22	8:28:15	15:52:53	8:41:38	15:39:30	8:57:30	15:23:38	9:16:53	15:04:15
20-01-24	7:48:36	16:33:08	7:56:33	16:25:11	8:05:24	16:16:20	8:12:30	16:10:23	8:26:42	15:55:02	8:39:51	15:41:53	8:55:24	15:26:20	9:14:21	15:07:23
21-01-24	7:47:37	16:34:43	7:55:27	16:26:53	8:04:09	16:18:10	8:11:00	16:12:25	8:25:06	15:57:13	8:38:01	15:44:19	8:53:15	15:29:04	9:11:46	15:10:34
22-01-24	7:46:35	16:36:18	7:54:18	16:28:35	8:02:52	16:20:01	8:09:27	16:14:29	8:23:27	15:59:26	8:36:07	15:46:46	8:51:03	15:31:50	9:09:08	15:13:45
23-01-24	7:45:30	16:37:55	7:53:06	16:30:19	8:01:32	16:21:53	8:07:51	16:16:33	8:21:45	16:01:40	8:34:10	15:49:15	8:48:48	15:34:38	9:06:27	15:16:58
24-01-24	7:44:23	16:39:32	7:51:51	16:32:04	8:00:09	16:23:47	8:06:13	16:18:39	8:20:00	16:03:55	8:32:11	15:51:45	8:46:29	15:37:26	9:03:43	15:20:12
25-01-24	7:43:14	16:41:11	7:50:34	16:33:50	7:58:43	16:25:41	8:04:32	16:20:45	8:18:13	16:06:12	8:30:09	15:54:16	8:44:08	15:40:16	9:00:57	15:23:27
26-01-24	7:42:02	16:42:50	7:49:15	16:35:37	7:57:15	16:27:37	8:02:49	16:22:53	8:16:23	16:08:29	8:28:04	15:56:48	8:41:45	15:43:07	8:58:09	15:26:43
27-01-24	7:40:48	16:44:29	7:47:53	16:37:24	7:55:45	16:29:33	8:01:03	16:25:01	8:14:30	16:10:48	8:25:56	15:59:21	8:39:19	15:45:59	8:55:18	15:29:59
28-01-24	7:39:32	16:46:10	7:46:29	16:39:12	7:54:12	16:31:30	7:59:16	16:27:09	8:12:34	16:13:07	8:23:46	16:01:56	8:36:50	15:48:52	8:52:25	15:33:16
29-01-24	7:38:13	16:47:51	7:45:03	16:41:01	7:52:37	16:33:28	7:57:25	16:29:19	8:10:37	16:15:27	8:21:34	16:04:31	8:34:19	15:51:45	8:49:30	15:36:34
30-01-24	7:36:53	16:49:32	7:43:35	16:42:50	7:50:59	16:35:26	7:55:33	16:31:29	8:08:37	16:17:48	8:19:19	16:07:06	8:31:46	15:54:39	8:46:33	15:39:52
31-01-24	7:35:30	16:51:14	7:42:04	16:44:40	7:49:19	16:37:25	7:53:39	16:33:39	8:06:34	16:20:10	8:17:02	16:09:43	8:29:11	15:57:34	8:43:34	15:43:10

Temps moyen de Greenwich (GMT) UTC 0 Latitude N

	50°		52°		54°		56°		58°		60°		62°		64°	
Date	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher
01-02-24	7:34:06	16:52:56	7:40:31	16:46:30	7:47:38	16:39:24	7:51:42	16:35:50	8:04:30	16:22:32	8:14:42	16:12:19	8:26:33	16:00:29	8:40:34	15:46:28
02-02-24	7:32:39	16:54:39	7:38:56	16:48:21	7:45:54	16:41:24	7:49:44	16:38:01	8:02:23	16:24:55	8:12:21	16:14:57	8:23:54	16:03:24	8:37:32	15:49:46
03-02-24	7:31:10	16:56:22	7:37:20	16:50:12	7:44:08	16:43:24	7:47:43	16:40:12	8:00:14	16:27:18	8:09:58	16:17:34	8:21:13	16:06:19	8:34:28	15:53:04
04-02-24	7:29:40	16:58:05	7:35:41	16:52:03	7:42:20	16:45:25	7:45:41	16:42:24	7:58:03	16:29:41	8:07:32	16:20:12	8:18:30	16:09:15	8:31:23	15:56:22
05-02-24	7:28:08	16:59:48	7:34:01	16:53:55	7:40:30	16:47:25	7:43:37	16:44:35	7:55:51	16:32:05	8:05:05	16:22:50	8:15:45	16:12:11	8:28:16	15:59:40
06-02-24	7:26:33	17:01:31	7:32:18	16:55:47	7:38:38	16:49:26	7:41:31	16:46:47	7:53:36	16:34:29	8:02:36	16:25:29	8:12:58	16:15:07	8:25:08	16:02:57
07-02-24	7:24:58	17:03:15	7:30:34	16:57:38	7:36:45	16:51:28	7:39:24	16:48:59	7:51:20	16:36:53	8:00:05	16:28:07	8:10:10	16:18:02	8:21:58	16:06:14
08-02-24	7:23:20	17:04:59	7:28:48	16:59:30	7:34:50	16:53:29	7:37:15	16:51:11	7:49:02	16:39:17	7:57:33	16:30:46	8:07:21	16:20:58	8:18:47	16:09:31
09-02-24	7:21:41	17:06:42	7:27:01	17:01:22	7:32:53	16:55:30	7:35:04	16:53:23	7:46:42	16:41:41	7:54:59	16:33:24	8:04:30	16:23:53	8:15:36	16:12:48
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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

	50°		52°		54°		56°		58°		60°		62°		64°	
Date	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher
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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Date	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher
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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

	50°		52°		54°		56°		58°		60°		62°		64°	
Date	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher
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Temps moyen de Greenwich (GMT) UTC 0 Latitude N

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Date	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher	Lever	Coucher
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