

TAHUN = 2017
 LONG= 120.0 ~

**** ARGUMEN MASA DALAM WAKTU PIAWAI MALAYSIA ****

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	1	.0	5	59	58.5	18	7	12.8
1.0	1	1.0	6	1	40.1	18	5	31.4
1.0	1	2.0	6	3	21.7	18	3	50.1
1.0	1	3.0	6	5	3.3	18	2	8.7
1.0	1	4.0	6	6	45.1	18	0	27.1
1.0	1	5.0	6	8	27.0	17	58	45.4
1.0	1	6.0	6	10	9.3	17	57	3.4
1.0	1	7.0	6	11	51.8	17	55	21.1
2.0	1	.0	6	0	26.8	18	7	40.8
2.0	1	1.0	6	2	7.9	18	5	59.9
2.0	1	2.0	6	3	49.1	18	4	19.0
2.0	1	3.0	6	5	30.2	18	2	38.0
2.0	1	4.0	6	7	11.6	18	0	57.0
2.0	1	5.0	6	8	53.1	17	59	15.7
2.0	1	6.0	6	10	34.8	17	57	34.2
2.0	1	7.0	6	12	16.9	17	55	52.3
3.0	1	.0	6	0	54.7	18	8	8.4
3.0	1	1.0	6	2	35.3	18	6	28.0
3.0	1	2.0	6	4	16.0	18	4	47.6
3.0	1	3.0	6	5	56.7	18	3	7.1
3.0	1	4.0	6	7	37.5	18	1	26.6
3.0	1	5.0	6	9	18.5	17	59	45.8
3.0	1	6.0	6	10	59.8	17	58	4.8
3.0	1	7.0	6	12	41.4	17	56	23.4
4.0	1	.0	6	1	22.2	18	8	35.5
4.0	1	1.0	6	3	2.3	18	6	55.7
4.0	1	2.0	6	4	42.5	18	5	15.8
4.0	1	3.0	6	6	22.6	18	3	35.9
4.0	1	4.0	6	8	2.9	18	1	55.9
4.0	1	5.0	6	9	43.4	18	0	15.7
4.0	1	6.0	6	11	24.2	17	58	35.2
4.0	1	7.0	6	13	5.3	17	56	54.4
5.0	1	.0	6	1	49.3	18	9	2.3
5.0	1	1.0	6	3	28.9	18	7	23.0
5.0	1	2.0	6	5	8.4	18	5	43.7
5.0	1	3.0	6	6	48.0	18	4	4.4
5.0	1	4.0	6	8	27.8	18	2	24.9

5.0	1	5.0	6 10 7.7	18 0 45.3
5.0	1	6.0	6 11 47.9	17 59 5.4
5.0	1	7.0	6 13 28.4	17 57 25.2
6.0	1	.0	6 2 15.9	18 9 28.5
6.0	1	1.0	6 3 54.9	18 7 49.8
6.0	1	2.0	6 5 33.9	18 6 11.2
6.0	1	3.0	6 7 12.9	18 4 32.4
6.0	1	4.0	6 8 52.0	18 2 53.6
6.0	1	5.0	6 10 31.4	18 1 14.6
6.0	1	6.0	6 12 11.0	17 59 35.3
6.0	1	7.0	6 13 50.9	17 57 55.7
7.0	1	.0	6 2 42.0	18 9 54.2
7.0	1	1.0	6 4 20.4	18 8 16.2
7.0	1	2.0	6 5 58.7	18 6 38.2
7.0	1	3.0	6 7 37.2	18 5 .1
7.0	1	4.0	6 9 15.7	18 3 21.9
7.0	1	5.0	6 10 54.4	18 1 43.5
7.0	1	6.0	6 12 33.3	18 0 4.9
7.0	1	7.0	6 14 12.6	17 58 26.0
8.0	1	.0	6 3 7.7	18 10 19.4
8.0	1	1.0	6 4 45.4	18 8 42.1
8.0	1	2.0	6 6 23.1	18 7 4.7
8.0	1	3.0	6 8 .8	18 5 27.4
8.0	1	4.0	6 9 38.7	18 3 49.8
8.0	1	5.0	6 11 16.7	18 2 12.1
8.0	1	6.0	6 12 55.0	18 0 34.2
8.0	1	7.0	6 14 33.6	17 58 56.0
9.0	1	.0	6 3 32.8	18 10 44.1
9.0	1	1.0	6 5 9.8	18 9 7.5
9.0	1	2.0	6 6 46.8	18 7 30.8
9.0	1	3.0	6 8 23.8	18 5 54.1
9.0	1	4.0	6 10 1.0	18 4 17.4
9.0	1	5.0	6 11 38.3	18 2 40.4
9.0	1	6.0	6 13 15.9	18 1 3.2
9.0	1	7.0	6 14 53.8	17 59 25.6
10.0	1	.0	6 3 57.3	18 11 8.2
10.0	1	1.0	6 5 33.6	18 9 32.3
10.0	1	2.0	6 7 9.8	18 7 56.4
10.0	1	3.0	6 8 46.2	18 6 20.5
10.0	1	4.0	6 10 22.6	18 4 44.4
10.0	1	5.0	6 11 59.2	18 3 8.2
10.0	1	6.0	6 13 36.0	18 1 31.7
10.0	1	7.0	6 15 13.2	17 59 55.0
11.0	1	.0	6 4 21.3	18 11 31.7
11.0	1	1.0	6 5 56.8	18 9 56.6

11.0	1	2.0	6	7	32.3	18	8	21.5
11.0	1	3.0	6	9	7.8	18	6	46.3
11.0	1	4.0	6	10	43.5	18	5	11.0
11.0	1	5.0	6	12	19.3	18	3	35.6
11.0	1	6.0	6	13	55.4	18	1	59.9
11.0	1	7.0	6	15	31.8	18	0	23.9

12.0	1	.0	6	4	44.6	18	11	54.6
12.0	1	1.0	6	6	19.4	18	10	20.2
12.0	1	2.0	6	7	54.1	18	8	46.0
12.0	1	3.0	6	9	28.8	18	7	11.6
12.0	1	4.0	6	11	3.7	18	5	37.2
12.0	1	5.0	6	12	38.7	18	4	2.5
12.0	1	6.0	6	14	14.0	18	2	27.7
12.0	1	7.0	6	15	49.6	18	0	52.5

13.0	1	.0	6	5	7.4	18	12	16.8
13.0	1	1.0	6	6	41.3	18	10	43.3
13.0	1	2.0	6	8	15.2	18	9	9.9
13.0	1	3.0	6	9	49.1	18	7	36.4
13.0	1	4.0	6	11	23.1	18	6	2.8
13.0	1	5.0	6	12	57.3	18	4	29.0
13.0	1	6.0	6	14	31.8	18	2	55.0
13.0	1	7.0	6	16	6.5	18	1	20.7

14.0	1	.0	6	5	29.5	18	12	38.4
14.0	1	1.0	6	7	2.6	18	11	5.8
14.0	1	2.0	6	8	35.6	18	9	33.3
14.0	1	3.0	6	10	8.7	18	8	.6
14.0	1	4.0	6	11	41.8	18	6	27.9
14.0	1	5.0	6	13	15.2	18	4	55.0
14.0	1	6.0	6	14	48.8	18	3	21.9
14.0	1	7.0	6	16	22.6	18	1	48.4

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	1	.0	6	5	51.0	18	12	59.4
15.0	1	1.0	6	7	23.2	18	11	27.7
15.0	1	2.0	6	8	55.3	18	9	56.0
15.0	1	3.0	6	10	27.5	18	8	24.3
15.0	1	4.0	6	11	59.8	18	6	52.5
15.0	1	5.0	6	13	32.2	18	5	20.5
15.0	1	6.0	6	15	4.9	18	3	48.3
15.0	1	7.0	6	16	37.9	18	2	15.8
16.0	1	.0	6	6	11.9	18	13	19.7
16.0	1	1.0	6	7	43.1	18	11	48.9
16.0	1	2.0	6	9	14.3	18	10	18.2
16.0	1	3.0	6	10	45.6	18	8	47.4

16.0	1	4.0	6 12	16.9	18 7	16.5
16.0	1	5.0	6 13	48.5	18 5	45.4
16.0	1	6.0	6 15	20.2	18 4	14.2
16.0	1	7.0	6 16	52.3	18 2	42.6
17.0	1	.0	6 6	32.1	18 13	39.3
17.0	1	1.0	6 8	2.3	18 12	9.5
17.0	1	2.0	6 9	32.6	18 10	39.7
17.0	1	3.0	6 11	2.9	18 9	9.9
17.0	1	4.0	6 12	33.3	18 7	40.0
17.0	1	5.0	6 14	3.9	18 6	9.9
17.0	1	6.0	6 15	34.7	18 4	39.6
17.0	1	7.0	6 17	5.8	18 3	9.0
18.0	1	.0	6 6	51.5	18 13	58.2
18.0	1	1.0	6 8	20.8	18 12	29.4
18.0	1	2.0	6 9	50.1	18 11	.6
18.0	1	3.0	6 11	19.5	18 9	31.8
18.0	1	4.0	6 12	48.9	18 8	2.8
18.0	1	5.0	6 14	18.5	18 6	33.8
18.0	1	6.0	6 15	48.3	18 5	4.4
18.0	1	7.0	6 17	18.4	18 3	34.9
19.0	1	.0	6 7	10.3	18 14	16.4
19.0	1	1.0	6 8	38.6	18 12	48.6
19.0	1	2.0	6 10	6.9	18 11	20.8
19.0	1	3.0	6 11	35.2	18 9	53.0
19.0	1	4.0	6 13	3.7	18 8	25.1
19.0	1	5.0	6 14	32.3	18 6	57.1
19.0	1	6.0	6 16	1.0	18 5	28.8
19.0	1	7.0	6 17	30.1	18 4	.2
20.0	1	.0	6 7	28.4	18 14	33.9
20.0	1	1.0	6 8	55.7	18 13	7.1
20.0	1	2.0	6 10	22.9	18 11	40.4
20.0	1	3.0	6 11	50.2	18 10	13.7
20.0	1	4.0	6 13	17.6	18 8	46.8
20.0	1	5.0	6 14	45.2	18 7	19.8
20.0	1	6.0	6 16	12.9	18 5	52.5
20.0	1	7.0	6 17	40.9	18 4	25.1
21.0	1	.0	6 7	45.7	18 14	50.6
21.0	1	1.0	6 9	12.0	18 13	25.0
21.0	1	2.0	6 10	38.2	18 11	59.3
21.0	1	3.0	6 12	4.4	18 10	33.6
21.0	1	4.0	6 13	30.7	18 9	7.8
21.0	1	5.0	6 14	57.2	18 7	41.9
21.0	1	6.0	6 16	23.9	18 6	15.7
21.0	1	7.0	6 17	50.8	18 4	49.3
22.0	1	.0	6 8	2.4	18 15	6.6

22.0	1	1.0	6	9	27.5	18	13	42.1
22.0	1	2.0	6	10	52.6	18	12	17.5
22.0	1	3.0	6	12	17.7	18	10	52.9
22.0	1	4.0	6	13	43.0	18	9	28.2
22.0	1	5.0	6	15	8.4	18	8	3.4
22.0	1	6.0	6	16	34.0	18	6	38.3
22.0	1	7.0	6	17	59.8	18	5	13.0
23.0	1	.0	6	8	18.2	18	15	21.9
23.0	1	1.0	6	9	42.2	18	13	58.4
23.0	1	2.0	6	11	6.2	18	12	35.0
23.0	1	3.0	6	12	30.3	18	11	11.5
23.0	1	4.0	6	13	54.4	18	9	47.9
23.0	1	5.0	6	15	18.7	18	8	24.2
23.0	1	6.0	6	16	43.1	18	7	.3
23.0	1	7.0	6	18	7.9	18	5	36.2
24.0	1	.0	6	8	33.3	18	15	36.3
24.0	1	1.0	6	9	56.2	18	14	14.0
24.0	1	2.0	6	11	19.0	18	12	51.7
24.0	1	3.0	6	12	41.9	18	11	29.4
24.0	1	4.0	6	14	4.9	18	10	7.0
24.0	1	5.0	6	15	28.1	18	8	44.4
24.0	1	6.0	6	16	51.4	18	7	21.7
24.0	1	7.0	6	18	15.0	18	5	58.7
25.0	1	.0	6	8	47.6	18	15	50.0
25.0	1	1.0	6	10	9.3	18	14	28.9
25.0	1	2.0	6	11	31.0	18	13	7.8
25.0	1	3.0	6	12	52.8	18	11	46.6
25.0	1	4.0	6	14	14.6	18	10	25.4
25.0	1	5.0	6	15	36.6	18	9	4.0
25.0	1	6.0	6	16	58.7	18	7	42.4
25.0	1	7.0	6	18	21.2	18	6	20.6
26.0	1	.0	6	9	1.1	18	16	2.9
26.0	1	1.0	6	10	21.7	18	14	43.0
26.0	1	2.0	6	11	42.2	18	13	23.0
26.0	1	3.0	6	13	2.8	18	12	3.1
26.0	1	4.0	6	14	23.4	18	10	43.0
26.0	1	5.0	6	15	44.2	18	9	22.9
26.0	1	6.0	6	17	5.2	18	8	2.5
26.0	1	7.0	6	18	26.4	18	6	41.9
27.0	1	.0	6	9	13.9	18	16	15.0
27.0	1	1.0	6	10	33.2	18	14	56.3
27.0	1	2.0	6	11	52.5	18	13	37.6
27.0	1	3.0	6	13	11.9	18	12	18.8
27.0	1	4.0	6	14	31.3	18	10	60.0
27.0	1	5.0	6	15	50.9	18	9	41.0
27.0	1	6.0	6	17	10.6	18	8	21.9

27.0	1	7.0	6 18 30.6	18 7 2.5
28.0	1	.0	6 9 25.8	18 16 26.3
28.0	1	1.0	6 10 43.9	18 15 8.8
28.0	1	2.0	6 12 2.0	18 13 51.3
28.0	1	3.0	6 13 20.1	18 12 33.8
28.0	1	4.0	6 14 38.3	18 11 16.2
28.0	1	5.0	6 15 56.7	18 9 58.5
28.0	1	6.0	6 17 15.2	18 8 40.6
28.0	1	7.0	6 18 33.9	18 7 22.5
29.0	1	.0	6 9 36.9	18 16 36.8
29.0	1	1.0	6 10 53.8	18 15 20.5
29.0	1	2.0	6 12 10.6	18 14 4.3
29.0	1	3.0	6 13 27.5	18 12 48.1
29.0	1	4.0	6 14 44.5	18 11 31.8
29.0	1	5.0	6 16 1.6	18 10 15.3
29.0	1	6.0	6 17 18.8	18 8 58.7
29.0	1	7.0	6 18 36.3	18 7 41.8
30.0	1	.0	6 9 47.2	18 16 46.4
30.0	1	1.0	6 11 2.8	18 15 31.5
30.0	1	2.0	6 12 18.4	18 14 16.5
30.0	1	3.0	6 13 34.0	18 13 1.6
30.0	1	4.0	6 14 49.7	18 11 46.5
30.0	1	5.0	6 16 5.5	18 10 31.4
30.0	1	6.0	6 17 21.5	18 9 16.0
30.0	1	7.0	6 18 37.7	18 8 .5
31.0	1	.0	6 9 56.7	18 16 55.3
31.0	1	1.0	6 11 11.0	18 15 41.6
31.0	1	2.0	6 12 25.3	18 14 28.0
31.0	1	3.0	6 13 39.6	18 13 14.3
31.0	1	4.0	6 14 54.0	18 12 .6
31.0	1	5.0	6 16 8.5	18 10 46.7
31.0	1	6.0	6 17 23.2	18 9 32.7
31.0	1	7.0	6 18 38.1	18 8 18.4

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	2	.0	6	10	5.3	18	17	3.3
1.0	2	1.0	6	11	18.3	18	15	50.9
1.0	2	2.0	6	12	31.3	18	14	38.6
1.0	2	3.0	6	13	44.3	18	13	26.2
1.0	2	4.0	6	14	57.4	18	12	13.8
1.0	2	5.0	6	16	10.6	18	11	1.3
1.0	2	6.0	6	17	24.0	18	9	48.6
1.0	2	7.0	6	18	37.5	18	8	35.7

2.0	2	.0	6 10	13.1	18 17	10.4
2.0	2	1.0	6 11	24.8	18 15	59.4
2.0	2	2.0	6 12	36.5	18 14	48.4
2.0	2	3.0	6 13	48.2	18 13	37.4
2.0	2	4.0	6 14	59.9	18 12	26.3
2.0	2	5.0	6 16	11.8	18 11	15.1
2.0	2	6.0	6 17	23.8	18 10	3.8
2.0	2	7.0	6 18	36.0	18 8	52.2
3.0	2	.0	6 10	20.1	18 17	16.8
3.0	2	1.0	6 11	30.4	18 16	7.1
3.0	2	2.0	6 12	40.8	18 14	57.5
3.0	2	3.0	6 13	51.1	18 13	47.8
3.0	2	4.0	6 15	1.5	18 12	38.1
3.0	2	5.0	6 16	12.0	18 11	28.3
3.0	2	6.0	6 17	22.7	18 10	18.3
3.0	2	7.0	6 18	33.6	18 9	8.1
4.0	2	.0	6 10	26.2	18 17	22.3
4.0	2	1.0	6 11	35.2	18 16	14.0
4.0	2	2.0	6 12	44.2	18 15	5.7
4.0	2	3.0	6 13	53.1	18 13	57.4
4.0	2	4.0	6 15	2.2	18 12	49.1
4.0	2	5.0	6 16	11.3	18 11	40.6
4.0	2	6.0	6 17	20.6	18 10	32.0
4.0	2	7.0	6 18	30.1	18 9	23.2
5.0	2	.0	6 10	31.5	18 17	27.0
5.0	2	1.0	6 11	39.1	18 16	20.0
5.0	2	2.0	6 12	46.7	18 15	13.2
5.0	2	3.0	6 13	54.3	18 14	6.3
5.0	2	4.0	6 15	2.0	18 12	59.3
5.0	2	5.0	6 16	9.7	18 11	52.2
5.0	2	6.0	6 17	17.6	18 10	45.0
5.0	2	7.0	6 18	25.7	18 9	37.6
6.0	2	.0	6 10	36.0	18 17	30.8
6.0	2	1.0	6 11	42.2	18 16	25.3
6.0	2	2.0	6 12	48.4	18 15	19.8
6.0	2	3.0	6 13	54.6	18 14	14.3
6.0	2	4.0	6 15	.9	18 13	8.8
6.0	2	5.0	6 16	7.2	18 12	3.1
6.0	2	6.0	6 17	13.7	18 10	57.3
6.0	2	7.0	6 18	20.4	18 9	51.3
7.0	2	.0	6 10	39.7	18 17	33.8
7.0	2	1.0	6 11	44.5	18 16	29.7
7.0	2	2.0	6 12	49.2	18 15	25.7
7.0	2	3.0	6 13	54.0	18 14	21.6
7.0	2	4.0	6 14	58.9	18 13	17.5
7.0	2	5.0	6 16	3.8	18 12	13.2

7.0	2	6.0	6 17	8.9	18 11	8.9
7.0	2	7.0	6 18	14.2	18 10	4.3
8.0	2	.0	6 10	42.5	18 17	36.1
8.0	2	1.0	6 11	45.9	18 16	33.4
8.0	2	2.0	6 12	49.2	18 15	30.8
8.0	2	3.0	6 13	52.6	18 14	28.1
8.0	2	4.0	6 14	56.0	18 13	25.4
8.0	2	5.0	6 15	59.5	18 12	22.6
8.0	2	6.0	6 17	3.2	18 11	19.7
8.0	2	7.0	6 18	7.0	18 10	16.6
9.0	2	.0	6 10	44.5	18 17	37.5
9.0	2	1.0	6 11	46.5	18 16	36.3
9.0	2	2.0	6 12	48.4	18 15	35.1
9.0	2	3.0	6 13	50.3	18 14	33.9
9.0	2	4.0	6 14	52.3	18 13	32.6
9.0	2	5.0	6 15	54.4	18 12	31.3
9.0	2	6.0	6 16	56.5	18 11	29.8
9.0	2	7.0	6 17	58.9	18 10	28.2
10.0	2	.0	6 10	45.8	18 17	38.1
10.0	2	1.0	6 11	46.3	18 16	38.4
10.0	2	2.0	6 12	46.7	18 15	38.6
10.0	2	3.0	6 13	47.2	18 14	38.9
10.0	2	4.0	6 14	47.7	18 13	39.1
10.0	2	5.0	6 15	48.3	18 12	39.2
10.0	2	6.0	6 16	49.0	18 11	39.3
10.0	2	7.0	6 17	49.9	18 10	39.1
11.0	2	.0	6 10	46.2	18 17	38.0
11.0	2	1.0	6 11	45.3	18 16	39.7
11.0	2	2.0	6 12	44.3	18 15	41.5
11.0	2	3.0	6 13	43.3	18 14	43.2
11.0	2	4.0	6 14	42.3	18 13	44.9
11.0	2	5.0	6 15	41.4	18 12	46.5
11.0	2	6.0	6 16	40.7	18 11	48.0
11.0	2	7.0	6 17	40.1	18 10	49.3
12.0	2	.0	6 10	45.9	18 17	37.1
12.0	2	1.0	6 11	43.5	18 16	40.3
12.0	2	2.0	6 12	41.0	18 15	43.6
12.0	2	3.0	6 13	38.5	18 14	46.8
12.0	2	4.0	6 14	36.1	18 13	49.9
12.0	2	5.0	6 15	33.7	18 12	53.1
12.0	2	6.0	6 16	31.5	18 11	56.0
12.0	2	7.0	6 17	29.4	18 10	58.9
13.0	2	.0	6 10	44.9	18 17	35.5
13.0	2	1.0	6 11	40.9	18 16	40.2
13.0	2	2.0	6 12	37.0	18 15	44.9

13.0	2	3.0	6 13 33.0	18 14 49.6
13.0	2	4.0	6 14 29.1	18 13 54.3
13.0	2	5.0	6 15 25.2	18 12 58.9
13.0	2	6.0	6 16 21.5	18 12 3.4
13.0	2	7.0	6 17 17.9	18 11 7.8

14.0	2	.0	6 10 43.1	18 17 33.2
14.0	2	1.0	6 11 37.6	18 16 39.4
14.0	2	2.0	6 12 32.2	18 15 45.6
14.0	2	3.0	6 13 26.7	18 14 51.8
14.0	2	4.0	6 14 21.3	18 13 58.0
14.0	2	5.0	6 15 15.9	18 13 4.1
14.0	2	6.0	6 16 10.7	18 12 10.1
14.0	2	7.0	6 17 5.5	18 11 16.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	2	.0	6 10 40.6			18 17 30.1		
15.0	2	1.0	6 11 33.6			18 16 37.8		
15.0	2	2.0	6 12 26.6			18 15 45.6		
15.0	2	3.0	6 13 19.6			18 14 53.3		
15.0	2	4.0	6 14 12.7			18 14 1.0		
15.0	2	5.0	6 15 5.8			18 13 8.7		
15.0	2	6.0	6 15 59.0			18 12 16.2		
15.0	2	7.0	6 16 52.4			18 11 23.6		
16.0	2	.0	6 10 37.3			18 17 26.3		
16.0	2	1.0	6 11 28.9			18 16 35.6		
16.0	2	2.0	6 12 20.4			18 15 44.9		
16.0	2	3.0	6 13 11.8			18 14 54.1		
16.0	2	4.0	6 14 3.4			18 14 3.4		
16.0	2	5.0	6 14 55.0			18 13 12.6		
16.0	2	6.0	6 15 46.6			18 12 21.7		
16.0	2	7.0	6 16 38.4			18 11 30.6		
17.0	2	.0	6 10 33.4			18 17 21.9		
17.0	2	1.0	6 11 23.4			18 16 32.7		
17.0	2	2.0	6 12 13.4			18 15 43.5		
17.0	2	3.0	6 13 3.3			18 14 54.3		
17.0	2	4.0	6 13 53.3			18 14 5.1		
17.0	2	5.0	6 14 43.3			18 13 15.8		
17.0	2	6.0	6 15 33.5			18 12 26.5		
17.0	2	7.0	6 16 23.7			18 11 37.0		
18.0	2	.0	6 10 28.8			18 17 16.8		
18.0	2	1.0	6 11 17.3			18 16 29.1		
18.0	2	2.0	6 12 5.7			18 15 41.5		
18.0	2	3.0	6 12 54.1			18 14 53.8		
18.0	2	4.0	6 13 42.5			18 14 6.2		

18.0	2	5.0	6 14	31.0	18 13	18.5
18.0	2	6.0	6 15	19.6	18 12	30.7
18.0	2	7.0	6 16	8.3	18 11	42.8
19.0	2	.0	6 10	23.5	18 17	11.0
19.0	2	1.0	6 11	10.4	18 16	24.9
19.0	2	2.0	6 11	57.3	18 15	38.8
19.0	2	3.0	6 12	44.1	18 14	52.7
19.0	2	4.0	6 13	31.0	18 14	6.6
19.0	2	5.0	6 14	18.0	18 13	20.5
19.0	2	6.0	6 15	5.0	18 12	34.3
19.0	2	7.0	6 15	52.1	18 11	47.9
20.0	2	.0	6 10	17.6	18 17	4.6
20.0	2	1.0	6 11	2.9	18 16	20.0
20.0	2	2.0	6 11	48.2	18 15	35.5
20.0	2	3.0	6 12	33.5	18 14	51.0
20.0	2	4.0	6 13	18.8	18 14	6.5
20.0	2	5.0	6 14	4.2	18 13	21.9
20.0	2	6.0	6 14	49.6	18 12	37.3
20.0	2	7.0	6 15	35.2	18 11	52.5
21.0	2	.0	6 10	11.0	18 16	57.5
21.0	2	1.0	6 10	54.8	18 16	14.5
21.0	2	2.0	6 11	38.5	18 15	31.6
21.0	2	3.0	6 12	22.2	18 14	48.7
21.0	2	4.0	6 13	6.0	18 14	5.7
21.0	2	5.0	6 13	49.8	18 13	22.7
21.0	2	6.0	6 14	33.6	18 12	39.7
21.0	2	7.0	6 15	17.6	18 11	56.5
22.0	2	.0	6 10	3.8	18 16	49.9
22.0	2	1.0	6 10	46.0	18 16	8.5
22.0	2	2.0	6 11	28.2	18 15	27.1
22.0	2	3.0	6 12	10.3	18 14	45.8
22.0	2	4.0	6 12	52.5	18 14	4.4
22.0	2	5.0	6 13	34.7	18 13	23.0
22.0	2	6.0	6 14	16.9	18 12	41.5
22.0	2	7.0	6 14	59.3	18 11	60.0
23.0	2	.0	6 9	56.0	18 16	41.6
23.0	2	1.0	6 10	36.6	18 16	1.8
23.0	2	2.0	6 11	17.2	18 15	22.0
23.0	2	3.0	6 11	57.7	18 14	42.3
23.0	2	4.0	6 12	38.3	18 14	2.5
23.0	2	5.0	6 13	18.9	18 13	22.7
23.0	2	6.0	6 13	59.6	18 12	42.8
23.0	2	7.0	6 14	40.3	18 12	2.9
24.0	2	.0	6 9	47.6	18 16	32.7
24.0	2	1.0	6 10	26.6	18 15	54.5

24.0	2	2.0	6 11 5.6	18 15 16.4
24.0	2	3.0	6 11 44.5	18 14 38.2
24.0	2	4.0	6 12 23.5	18 14 .0
24.0	2	5.0	6 13 2.5	18 13 21.8
24.0	2	6.0	6 13 41.6	18 12 43.6
24.0	2	7.0	6 14 20.7	18 12 5.3
25.0	2	.0	6 9 38.6	18 16 23.3
25.0	2	1.0	6 10 16.0	18 15 46.7
25.0	2	2.0	6 10 53.4	18 15 10.1
25.0	2	3.0	6 11 30.7	18 14 33.6
25.0	2	4.0	6 12 8.1	18 13 57.0
25.0	2	5.0	6 12 45.5	18 13 20.5
25.0	2	6.0	6 13 22.9	18 12 43.8
25.0	2	7.0	6 14 .4	18 12 7.1
26.0	2	.0	6 9 29.0	18 16 13.3
26.0	2	1.0	6 10 4.8	18 15 38.3
26.0	2	2.0	6 10 40.6	18 15 3.4
26.0	2	3.0	6 11 16.3	18 14 28.4
26.0	2	4.0	6 11 52.1	18 13 53.5
26.0	2	5.0	6 12 27.9	18 13 18.5
26.0	2	6.0	6 13 3.7	18 12 43.5
26.0	2	7.0	6 13 39.6	18 12 8.4
27.0	2	.0	6 9 18.9	18 16 2.8
27.0	2	1.0	6 9 53.1	18 15 29.4
27.0	2	2.0	6 10 27.2	18 14 56.1
27.0	2	3.0	6 11 1.4	18 14 22.8
27.0	2	4.0	6 11 35.5	18 13 49.4
27.0	2	5.0	6 12 9.7	18 13 16.1
27.0	2	6.0	6 12 43.9	18 12 42.7
27.0	2	7.0	6 13 18.1	18 12 9.3
28.0	2	.0	6 9 8.2	18 15 51.8
28.0	2	1.0	6 9 40.8	18 15 20.0
28.0	2	2.0	6 10 13.3	18 14 48.3
28.0	2	3.0	6 10 45.8	18 14 16.6
28.0	2	4.0	6 11 18.3	18 13 44.9
28.0	2	5.0	6 11 50.9	18 13 13.1
28.0	2	6.0	6 12 23.4	18 12 41.4
28.0	2	7.0	6 12 56.1	18 12 9.6

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	3	.0	6	8	56.9	18	15	40.2
1.0	3	1.0	6	9	27.9	18	15	10.0
1.0	3	2.0	6	9	58.8	18	14	39.9
1.0	3	3.0	6	10	29.7	18	14	9.9

1.0	3	4.0	6 11	.6	18 13	39.8
1.0	3	5.0	6 11	31.5	18 13	9.7
1.0	3	6.0	6 12	2.4	18 12	39.6
1.0	3	7.0	6 12	33.4	18 12	9.4
2.0	3	.0	6 8	45.2	18 15	28.1
2.0	3	1.0	6 9	14.5	18 14	59.6
2.0	3	2.0	6 9	43.8	18 14	31.1
2.0	3	3.0	6 10	13.1	18 14	2.7
2.0	3	4.0	6 10	42.3	18 13	34.2
2.0	3	5.0	6 11	11.6	18 13	5.8
2.0	3	6.0	6 11	40.9	18 12	37.3
2.0	3	7.0	6 12	10.2	18 12	8.8
3.0	3	.0	6 8	32.9	18 15	15.5
3.0	3	1.0	6 9	.6	18 14	48.6
3.0	3	2.0	6 9	28.3	18 14	21.8
3.0	3	3.0	6 9	55.9	18 13	55.0
3.0	3	4.0	6 10	23.6	18 13	28.2
3.0	3	5.0	6 10	51.2	18 13	1.4
3.0	3	6.0	6 11	18.8	18 12	34.5
3.0	3	7.0	6 11	46.5	18 12	7.7
4.0	3	.0	6 8	20.2	18 15	2.5
4.0	3	1.0	6 8	46.3	18 14	37.2
4.0	3	2.0	6 9	12.3	18 14	12.0
4.0	3	3.0	6 9	38.3	18 13	46.8
4.0	3	4.0	6 10	4.3	18 13	21.7
4.0	3	5.0	6 10	30.2	18 12	56.5
4.0	3	6.0	6 10	56.3	18 12	31.3
4.0	3	7.0	6 11	22.3	18 12	6.1
5.0	3	.0	6 8	7.0	18 14	49.0
5.0	3	1.0	6 8	31.4	18 14	25.4
5.0	3	2.0	6 8	55.8	18 14	1.8
5.0	3	3.0	6 9	20.1	18 13	38.3
5.0	3	4.0	6 9	44.5	18 13	14.7
5.0	3	5.0	6 10	8.8	18 12	51.2
5.0	3	6.0	6 10	33.2	18 12	27.7
5.0	3	7.0	6 10	57.5	18 12	4.2
6.0	3	.0	6 7	53.3	18 14	35.0
6.0	3	1.0	6 8	16.1	18 14	13.1
6.0	3	2.0	6 8	38.8	18 13	51.1
6.0	3	3.0	6 9	1.5	18 13	29.2
6.0	3	4.0	6 9	24.2	18 13	7.4
6.0	3	5.0	6 9	46.9	18 12	45.5
6.0	3	6.0	6 10	9.6	18 12	23.6
6.0	3	7.0	6 10	32.3	18 12	1.8
7.0	3	.0	6 7	39.2	18 14	20.7

7.0	3	1.0	6 8	.3	18 14	.3
7.0	3	2.0	6 8	21.4	18 13	40.1
7.0	3	3.0	6 8	42.5	18 13	19.8
7.0	3	4.0	6 9	3.5	18 12	59.6
7.0	3	5.0	6 9	24.6	18 12	39.4
7.0	3	6.0	6 9	45.6	18 12	19.2
7.0	3	7.0	6 10	6.7	18 11	59.0
8.0	3	.0	6 7	24.6	18 14	5.9
8.0	3	1.0	6 7	44.1	18 13	47.2
8.0	3	2.0	6 8	3.6	18 13	28.6
8.0	3	3.0	6 8	23.0	18 13	10.0
8.0	3	4.0	6 8	42.4	18 12	51.4
8.0	3	5.0	6 9	1.8	18 12	32.9
8.0	3	6.0	6 9	21.2	18 12	14.3
8.0	3	7.0	6 9	40.5	18 11	55.8
9.0	3	.0	6 7	9.7	18 13	50.8
9.0	3	1.0	6 7	27.6	18 13	33.7
9.0	3	2.0	6 7	45.4	18 13	16.8
9.0	3	3.0	6 8	3.1	18 12	59.8
9.0	3	4.0	6 8	20.9	18 12	42.9
9.0	3	5.0	6 8	38.6	18 12	26.0
9.0	3	6.0	6 8	56.3	18 12	9.1
9.0	3	7.0	6 9	14.0	18 11	52.3
10.0	3	.0	6 6	54.4	18 13	35.3
10.0	3	1.0	6 7	10.6	18 13	19.9
10.0	3	2.0	6 7	26.8	18 13	4.6
10.0	3	3.0	6 7	42.9	18 12	49.3
10.0	3	4.0	6 7	59.0	18 12	34.0
10.0	3	5.0	6 8	15.0	18 12	18.8
10.0	3	6.0	6 8	31.1	18 12	3.6
10.0	3	7.0	6 8	47.1	18 11	48.4
11.0	3	.0	6 6	38.8	18 13	19.5
11.0	3	1.0	6 6	53.3	18 13	5.8
11.0	3	2.0	6 7	7.8	18 12	52.1
11.0	3	3.0	6 7	22.3	18 12	38.4
11.0	3	4.0	6 7	36.7	18 12	24.9
11.0	3	5.0	6 7	51.1	18 12	11.3
11.0	3	6.0	6 8	5.5	18 11	57.7
11.0	3	7.0	6 8	19.9	18 11	44.2
12.0	3	.0	6 6	22.8	18 13	3.4
12.0	3	1.0	6 6	35.7	18 12	51.3
12.0	3	2.0	6 6	48.6	18 12	39.3
12.0	3	3.0	6 7	1.4	18 12	27.3
12.0	3	4.0	6 7	14.1	18 12	15.4
12.0	3	5.0	6 7	26.9	18 12	3.5
12.0	3	6.0	6 7	39.6	18 11	51.6

12.0	3	7.0	6	7	52.3	18	11	39.7
13.0	3	.0	6	6	6.6	18	12	47.0
13.0	3	1.0	6	6	17.8	18	12	36.6
13.0	3	2.0	6	6	29.0	18	12	26.2
13.0	3	3.0	6	6	40.1	18	12	15.9
13.0	3	4.0	6	6	51.3	18	12	5.6
13.0	3	5.0	6	7	2.3	18	11	55.4
13.0	3	6.0	6	7	13.4	18	11	45.2
13.0	3	7.0	6	7	24.4	18	11	35.0
14.0	3	.0	6	5	50.0	18	12	30.3
14.0	3	1.0	6	5	59.6	18	12	21.6
14.0	3	2.0	6	6	9.2	18	12	12.9
14.0	3	3.0	6	6	18.6	18	12	4.2
14.0	3	4.0	6	6	28.1	18	11	55.6
14.0	3	5.0	6	6	37.5	18	11	47.0
14.0	3	6.0	6	6	46.9	18	11	38.5
14.0	3	7.0	6	6	56.2	18	11	30.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	3	.0	6	5	33.2	18	12	13.4
15.0	3	1.0	6	5	41.2	18	12	6.3
15.0	3	2.0	6	5	49.1	18	11	59.3
15.0	3	3.0	6	5	56.9	18	11	52.3
15.0	3	4.0	6	6	4.7	18	11	45.3
15.0	3	5.0	6	6	12.4	18	11	38.4
15.0	3	6.0	6	6	20.1	18	11	31.6
15.0	3	7.0	6	6	27.8	18	11	24.7
16.0	3	.0	6	5	16.2	18	11	56.4
16.0	3	1.0	6	5	22.5	18	11	50.9
16.0	3	2.0	6	5	28.7	18	11	45.5
16.0	3	3.0	6	5	34.9	18	11	40.2
16.0	3	4.0	6	5	41.0	18	11	34.9
16.0	3	5.0	6	5	47.1	18	11	29.7
16.0	3	6.0	6	5	53.1	18	11	24.5
16.0	3	7.0	6	5	59.1	18	11	19.3
17.0	3	.0	6	4	59.0	18	11	39.1
17.0	3	1.0	6	5	3.6	18	11	35.3
17.0	3	2.0	6	5	8.2	18	11	31.6
17.0	3	3.0	6	5	12.7	18	11	27.9
17.0	3	4.0	6	5	17.2	18	11	24.3
17.0	3	5.0	6	5	21.6	18	11	20.7
17.0	3	6.0	6	5	25.9	18	11	17.2
17.0	3	7.0	6	5	30.2	18	11	13.7

18.0	3	.0	6	4	41.6	18	11	21.6
18.0	3	1.0	6	4	44.6	18	11	19.5
18.0	3	2.0	6	4	47.5	18	11	17.4
18.0	3	3.0	6	4	50.3	18	11	15.4
18.0	3	4.0	6	4	53.1	18	11	13.5
18.0	3	5.0	6	4	55.9	18	11	11.5
18.0	3	6.0	6	4	58.6	18	11	9.7
18.0	3	7.0	6	5	1.2	18	11	7.9
19.0	3	.0	6	4	24.1	18	11	4.1
19.0	3	1.0	6	4	25.4	18	11	3.6
19.0	3	2.0	6	4	26.6	18	11	3.2
19.0	3	3.0	6	4	27.8	18	11	2.8
19.0	3	4.0	6	4	28.9	18	11	2.5
19.0	3	5.0	6	4	30.0	18	11	2.3
19.0	3	6.0	6	4	31.0	18	11	2.1
19.0	3	7.0	6	4	32.0	18	11	2.0
20.0	3	.0	6	4	6.4	18	10	46.4
20.0	3	1.0	6	4	6.0	18	10	47.5
20.0	3	2.0	6	4	5.6	18	10	48.8
20.0	3	3.0	6	4	5.1	18	10	50.1
20.0	3	4.0	6	4	4.6	18	10	51.4
20.0	3	5.0	6	4	4.0	18	10	52.9
20.0	3	6.0	6	4	3.4	18	10	54.4
20.0	3	7.0	6	4	2.6	18	10	55.9
21.0	3	.0	6	3	48.6	18	10	28.6
21.0	3	1.0	6	3	46.5	18	10	31.4
21.0	3	2.0	6	3	44.5	18	10	34.3
21.0	3	3.0	6	3	42.4	18	10	37.3
21.0	3	4.0	6	3	40.2	18	10	40.3
21.0	3	5.0	6	3	37.9	18	10	43.4
21.0	3	6.0	6	3	35.6	18	10	46.5
21.0	3	7.0	6	3	33.2	18	10	49.8
22.0	3	.0	6	3	30.6	18	10	10.7
22.0	3	1.0	6	3	27.0	18	10	15.2
22.0	3	2.0	6	3	23.3	18	10	19.7
22.0	3	3.0	6	3	19.5	18	10	24.3
22.0	3	4.0	6	3	15.6	18	10	29.0
22.0	3	5.0	6	3	11.7	18	10	33.8
22.0	3	6.0	6	3	7.7	18	10	38.6
22.0	3	7.0	6	3	3.6	18	10	43.5
23.0	3	.0	6	3	12.7	18	9	52.8
23.0	3	1.0	6	3	7.3	18	9	58.9
23.0	3	2.0	6	3	2.0	18	10	5.1
23.0	3	3.0	6	2	56.5	18	10	11.4
23.0	3	4.0	6	2	51.0	18	10	17.7
23.0	3	5.0	6	2	45.4	18	10	24.1

23.0	3	6.0	6	2	39.8	18	10	30.6
23.0	3	7.0	6	2	34.0	18	10	37.2
24.0	3	.0	6	2	54.6	18	9	34.8
24.0	3	1.0	6	2	47.6	18	9	42.6
24.0	3	2.0	6	2	40.6	18	9	50.4
24.0	3	3.0	6	2	33.5	18	9	58.3
24.0	3	4.0	6	2	26.4	18	10	6.3
24.0	3	5.0	6	2	19.1	18	10	14.4
24.0	3	6.0	6	2	11.8	18	10	22.6
24.0	3	7.0	6	2	4.4	18	10	30.8
25.0	3	.0	6	2	36.5	18	9	16.8
25.0	3	1.0	6	2	27.9	18	9	26.2
25.0	3	2.0	6	2	19.2	18	9	35.7
25.0	3	3.0	6	2	10.5	18	9	45.3
25.0	3	4.0	6	2	1.7	18	9	55.0
25.0	3	5.0	6	1	52.8	18	10	4.7
25.0	3	6.0	6	1	43.8	18	10	14.5
25.0	3	7.0	6	1	34.7	18	10	24.4
26.0	3	.0	6	2	18.4	18	8	58.8
26.0	3	1.0	6	2	8.2	18	9	9.9
26.0	3	2.0	6	1	57.8	18	9	21.0
26.0	3	3.0	6	1	47.4	18	9	32.3
26.0	3	4.0	6	1	37.0	18	9	43.6
26.0	3	5.0	6	1	26.4	18	9	54.9
26.0	3	6.0	6	1	15.8	18	10	6.4
26.0	3	7.0	6	1	5.0	18	10	18.0
27.0	3	.0	6	2	.3	18	8	40.8
27.0	3	1.0	6	1	48.4	18	8	53.5
27.0	3	2.0	6	1	36.4	18	9	6.3
27.0	3	3.0	6	1	24.4	18	9	19.2
27.0	3	4.0	6	1	12.3	18	9	32.2
27.0	3	5.0	6	1	.1	18	9	45.2
27.0	3	6.0	6	0	47.7	18	9	58.3
27.0	3	7.0	6	0	35.3	18	10	11.6
28.0	3	.0	6	1	42.2	18	8	22.9
28.0	3	1.0	6	1	28.7	18	8	37.2
28.0	3	2.0	6	1	15.1	18	8	51.7
28.0	3	3.0	6	1	1.4	18	9	6.2
28.0	3	4.0	6	0	47.6	18	9	20.8
28.0	3	5.0	6	0	33.7	18	9	35.5
28.0	3	6.0	6	0	19.8	18	9	50.3
28.0	3	7.0	6	0	5.7	18	10	5.2
29.0	3	.0	6	1	24.1	18	8	5.0
29.0	3	1.0	6	1	9.0	18	8	21.0
29.0	3	2.0	6	0	53.7	18	8	37.0

29.0	3	3.0	6	0	38.4	18	8	53.2
29.0	3	4.0	6	0	23.0	18	9	9.4
29.0	3	5.0	6	0	7.4	18	9	25.8
29.0	3	6.0	5	59	51.8	18	9	42.2
29.0	3	7.0	5	59	36.1	18	9	58.8
30.0	3	.0	6	1	6.1	18	7	47.1
30.0	3	1.0	6	0	49.3	18	8	4.7
30.0	3	2.0	6	0	32.4	18	8	22.4
30.0	3	3.0	6	0	15.4	18	8	40.2
30.0	3	4.0	5	59	58.4	18	8	58.1
30.0	3	5.0	5	59	41.2	18	9	16.1
30.0	3	6.0	5	59	23.9	18	9	34.2
30.0	3	7.0	5	59	6.5	18	9	52.4
31.0	3	.0	6	0	48.1	18	7	29.3
31.0	3	1.0	6	0	29.7	18	7	48.6
31.0	3	2.0	6	0	11.2	18	8	7.9
31.0	3	3.0	5	59	52.6	18	8	27.3
31.0	3	4.0	5	59	33.9	18	8	46.9
31.0	3	5.0	5	59	15.1	18	9	6.5
31.0	3	6.0	5	58	56.1	18	9	26.2
31.0	3	7.0	5	58	37.1	18	9	46.1

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	4	.0	6	0	30.2	18	7	11.7
1.0	4	1.0	6	0	10.1	18	7	32.5
1.0	4	2.0	5	59	50.0	18	7	53.5
1.0	4	3.0	5	59	29.8	18	8	14.5
1.0	4	4.0	5	59	9.4	18	8	35.7
1.0	4	5.0	5	58	49.0	18	8	56.9
1.0	4	6.0	5	58	28.4	18	9	18.3
1.0	4	7.0	5	58	7.7	18	9	39.9
2.0	4	.0	6	0	12.4	18	6	54.1
2.0	4	1.0	5	59	50.7	18	7	16.6
2.0	4	2.0	5	59	28.9	18	7	39.2
2.0	4	3.0	5	59	7.1	18	8	1.8
2.0	4	4.0	5	58	45.1	18	8	24.6
2.0	4	5.0	5	58	23.0	18	8	47.5
2.0	4	6.0	5	58	.8	18	9	10.5
2.0	4	7.0	5	57	38.5	18	9	33.7
3.0	4	.0	5	59	54.7	18	6	36.6
3.0	4	1.0	5	59	31.4	18	7	.7
3.0	4	2.0	5	59	8.0	18	7	24.9
3.0	4	3.0	5	58	44.5	18	7	49.2
3.0	4	4.0	5	58	20.9	18	8	13.6

3.0	4	5.0	5 57	57.2	18	8	38.1
3.0	4	6.0	5 57	33.4	18	9	2.8
3.0	4	7.0	5 57	9.4	18	9	27.6
4.0	4	.0	5 59	37.1	18	6	19.3
4.0	4	1.0	5 59	12.2	18	6	45.0
4.0	4	2.0	5 58	47.2	18	7	10.8
4.0	4	3.0	5 58	22.1	18	7	36.7
4.0	4	4.0	5 57	56.9	18	8	2.7
4.0	4	5.0	5 57	31.5	18	8	28.9
4.0	4	6.0	5 57	6.1	18	8	55.2
4.0	4	7.0	5 56	40.4	18	9	21.6
5.0	4	.0	5 59	19.6	18	6	2.1
5.0	4	1.0	5 58	53.1	18	6	29.5
5.0	4	2.0	5 58	26.5	18	6	56.9
5.0	4	3.0	5 57	59.8	18	7	24.4
5.0	4	4.0	5 57	33.0	18	7	52.0
5.0	4	5.0	5 57	6.0	18	8	19.8
5.0	4	6.0	5 56	38.9	18	8	47.7
5.0	4	7.0	5 56	11.7	18	9	15.7
6.0	4	.0	5 59	2.4	18	5	45.2
6.0	4	1.0	5 58	34.2	18	6	14.1
6.0	4	2.0	5 58	6.0	18	6	43.1
6.0	4	3.0	5 57	37.7	18	7	12.2
6.0	4	4.0	5 57	9.3	18	7	41.5
6.0	4	5.0	5 56	40.7	18	8	10.8
6.0	4	6.0	5 56	12.0	18	8	40.3
6.0	4	7.0	5 55	43.1	18	9	10.0
7.0	4	.0	5 58	45.2	18	5	28.4
7.0	4	1.0	5 58	15.5	18	5	58.9
7.0	4	2.0	5 57	45.7	18	6	29.5
7.0	4	3.0	5 57	15.8	18	7	.2
7.0	4	4.0	5 56	45.8	18	7	31.1
7.0	4	5.0	5 56	15.6	18	8	2.0
7.0	4	6.0	5 55	45.3	18	8	33.2
7.0	4	7.0	5 55	14.8	18	9	4.5
8.0	4	.0	5 58	28.4	18	5	11.8
8.0	4	1.0	5 57	57.0	18	5	43.9
8.0	4	2.0	5 57	25.6	18	6	16.1
8.0	4	3.0	5 56	54.1	18	6	48.4
8.0	4	4.0	5 56	22.5	18	7	20.9
8.0	4	5.0	5 55	50.7	18	7	53.4
8.0	4	6.0	5 55	18.8	18	8	26.2
8.0	4	7.0	5 54	46.7	18	8	59.1
9.0	4	.0	5 58	11.7	18	4	55.5
9.0	4	1.0	5 57	38.8	18	5	29.2

9.0	4	2.0	5 57	5.8	18	6	3.0
9.0	4	3.0	5 56	32.7	18	6	36.9
9.0	4	4.0	5 55	59.5	18	7	10.9
9.0	4	5.0	5 55	26.1	18	7	45.0
9.0	4	6.0	5 54	52.6	18	8	19.4
9.0	4	7.0	5 54	18.9	18	8	53.9
10.0	4	.0	5 57	55.3	18	4	39.4
10.0	4	1.0	5 57	20.8	18	5	14.7
10.0	4	2.0	5 56	46.2	18	5	50.1
10.0	4	3.0	5 56	11.5	18	6	25.5
10.0	4	4.0	5 55	36.7	18	7	1.1
10.0	4	5.0	5 55	1.8	18	7	36.9
10.0	4	6.0	5 54	26.6	18	8	12.8
10.0	4	7.0	5 53	51.3	18	8	48.9
11.0	4	.0	5 57	39.1	18	4	23.7
11.0	4	1.0	5 57	3.0	18	5	.5
11.0	4	2.0	5 56	26.9	18	5	37.4
11.0	4	3.0	5 55	50.6	18	6	14.5
11.0	4	4.0	5 55	14.3	18	6	51.6
11.0	4	5.0	5 54	37.7	18	7	29.0
11.0	4	6.0	5 54	1.0	18	8	6.5
11.0	4	7.0	5 53	24.1	18	8	44.2
12.0	4	.0	5 57	23.2	18	4	8.2
12.0	4	1.0	5 56	45.6	18	4	46.6
12.0	4	2.0	5 56	7.9	18	5	25.1
12.0	4	3.0	5 55	30.1	18	6	3.7
12.0	4	4.0	5 54	52.1	18	6	42.4
12.0	4	5.0	5 54	14.0	18	7	21.3
12.0	4	6.0	5 53	35.7	18	8	.4
12.0	4	7.0	5 52	57.2	18	8	39.7
13.0	4	.0	5 57	7.7	18	3	53.0
13.0	4	1.0	5 56	28.5	18	4	33.0
13.0	4	2.0	5 55	49.2	18	5	13.0
13.0	4	3.0	5 55	9.8	18	5	53.2
13.0	4	4.0	5 54	30.3	18	6	33.5
13.0	4	5.0	5 53	50.6	18	7	13.9
13.0	4	6.0	5 53	10.8	18	7	54.6
13.0	4	7.0	5 52	30.7	18	8	35.5
14.0	4	.0	5 56	52.4	18	3	38.2
14.0	4	1.0	5 56	11.7	18	4	19.7
14.0	4	2.0	5 55	30.9	18	5	1.3
14.0	4	3.0	5 54	49.9	18	5	43.0
14.0	4	4.0	5 54	8.9	18	6	24.9
14.0	4	5.0	5 53	27.6	18	7	6.9
14.0	4	6.0	5 52	46.2	18	7	49.1
14.0	4	7.0	5 52	4.6	18	8	31.5

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	4	.0	5	56	37.5	18	3	23.8
15.0	4	1.0	5	55	55.3	18	4	6.8
15.0	4	2.0	5	55	12.9	18	4	49.9
15.0	4	3.0	5	54	30.4	18	5	33.2
15.0	4	4.0	5	53	47.8	18	6	16.6
15.0	4	5.0	5	53	5.0	18	7	.1
15.0	4	6.0	5	52	22.0	18	7	43.9
15.0	4	7.0	5	51	38.8	18	8	27.9
16.0	4	.0	5	56	23.0	18	3	9.7
16.0	4	1.0	5	55	39.2	18	3	54.3
16.0	4	2.0	5	54	55.3	18	4	38.9
16.0	4	3.0	5	54	11.3	18	5	23.7
16.0	4	4.0	5	53	27.1	18	6	8.6
16.0	4	5.0	5	52	42.8	18	6	53.7
16.0	4	6.0	5	51	58.3	18	7	39.0
16.0	4	7.0	5	51	13.5	18	8	24.6
17.0	4	.0	5	56	8.8	18	2	56.0
17.0	4	1.0	5	55	23.5	18	3	42.1
17.0	4	2.0	5	54	38.1	18	4	28.3
17.0	4	3.0	5	53	52.6	18	5	14.6
17.0	4	4.0	5	53	6.9	18	6	1.0
17.0	4	5.0	5	52	21.0	18	6	47.6
17.0	4	6.0	5	51	34.9	18	7	34.5
17.0	4	7.0	5	50	48.6	18	8	21.6
18.0	4	.0	5	55	55.1	18	2	42.7
18.0	4	1.0	5	55	8.2	18	3	30.3
18.0	4	2.0	5	54	21.3	18	4	18.0
18.0	4	3.0	5	53	34.2	18	5	5.8
18.0	4	4.0	5	52	47.0	18	5	53.8
18.0	4	5.0	5	51	59.7	18	6	41.9
18.0	4	6.0	5	51	12.1	18	7	30.3
18.0	4	7.0	5	50	24.2	18	8	18.9
19.0	4	.0	5	55	41.7	18	2	29.9
19.0	4	1.0	5	54	53.4	18	3	19.0
19.0	4	2.0	5	54	4.9	18	4	8.2
19.0	4	3.0	5	53	16.4	18	4	57.5
19.0	4	4.0	5	52	27.7	18	5	46.9
19.0	4	5.0	5	51	38.8	18	6	36.6
19.0	4	6.0	5	50	49.6	18	7	26.5
19.0	4	7.0	5	50	.3	18	8	16.6
20.0	4	.0	5	55	28.8	18	2	17.5

20.0	4	1.0	5 54	39.0	18	3	8.0
20.0	4	2.0	5 53	49.0	18	3	58.7
20.0	4	3.0	5 52	59.0	18	4	49.5
20.0	4	4.0	5 52	8.8	18	5	40.5
20.0	4	5.0	5 51	18.3	18	6	31.6
20.0	4	6.0	5 50	27.7	18	7	23.0
20.0	4	7.0	5 49	36.8	18	8	14.7
21.0	4	.0	5 55	16.3	18	2	5.5
21.0	4	1.0	5 54	25.0	18	2	57.5
21.0	4	2.0	5 53	33.6	18	3	49.7
21.0	4	3.0	5 52	42.0	18	4	42.0
21.0	4	4.0	5 51	50.3	18	5	34.4
21.0	4	5.0	5 50	58.4	18	6	27.1
21.0	4	6.0	5 50	6.3	18	7	20.0
21.0	4	7.0	5 49	13.9	18	8	13.1
22.0	4	.0	5 55	4.3	18	1	54.0
22.0	4	1.0	5 54	11.5	18	2	47.5
22.0	4	2.0	5 53	18.6	18	3	41.1
22.0	4	3.0	5 52	25.6	18	4	34.9
22.0	4	4.0	5 51	32.4	18	5	28.8
22.0	4	5.0	5 50	39.0	18	6	23.0
22.0	4	6.0	5 49	45.4	18	7	17.3
22.0	4	7.0	5 48	51.5	18	8	12.0
23.0	4	.0	5 54	52.7	18	1	43.0
23.0	4	1.0	5 53	58.5	18	2	37.9
23.0	4	2.0	5 53	4.1	18	3	33.0
23.0	4	3.0	5 52	9.6	18	4	28.2
23.0	4	4.0	5 51	15.0	18	5	23.6
23.0	4	5.0	5 50	20.1	18	6	19.2
23.0	4	6.0	5 49	25.0	18	7	15.1
23.0	4	7.0	5 48	29.6	18	8	11.2
24.0	4	.0	5 54	41.6	18	1	32.4
24.0	4	1.0	5 53	45.9	18	2	28.8
24.0	4	2.0	5 52	50.1	18	3	25.4
24.0	4	3.0	5 51	54.2	18	4	22.0
24.0	4	4.0	5 50	58.1	18	5	18.9
24.0	4	5.0	5 50	1.7	18	6	15.9
24.0	4	6.0	5 49	5.2	18	7	13.2
24.0	4	7.0	5 48	8.3	18	8	10.8
25.0	4	.0	5 54	31.0	18	1	22.3
25.0	4	1.0	5 53	33.9	18	2	20.2
25.0	4	2.0	5 52	36.6	18	3	18.2
25.0	4	3.0	5 51	39.2	18	4	16.3
25.0	4	4.0	5 50	41.7	18	5	14.6
25.0	4	5.0	5 49	43.9	18	6	13.1
25.0	4	6.0	5 48	45.9	18	7	11.8

25.0	4	7.0	5 47 47.6	18 8 10.9
26.0	4	.0	5 54 20.9	18 1 12.8
26.0	4	1.0	5 53 22.3	18 2 12.1
26.0	4	2.0	5 52 23.7	18 3 11.5
26.0	4	3.0	5 51 24.8	18 4 11.0
26.0	4	4.0	5 50 25.8	18 5 10.7
26.0	4	5.0	5 49 26.6	18 6 10.6
26.0	4	6.0	5 48 27.2	18 7 10.8
26.0	4	7.0	5 47 27.4	18 8 11.3
27.0	4	.0	5 54 11.3	18 1 3.7
27.0	4	1.0	5 53 11.3	18 2 4.4
27.0	4	2.0	5 52 11.2	18 3 5.2
27.0	4	3.0	5 51 11.0	18 4 6.2
27.0	4	4.0	5 50 10.5	18 5 7.3
27.0	4	5.0	5 49 9.9	18 6 8.6
27.0	4	6.0	5 48 9.0	18 7 10.2
27.0	4	7.0	5 47 7.8	18 8 12.1
28.0	4	.0	5 54 2.2	18 0 55.2
28.0	4	1.0	5 53 .8	18 1 57.3
28.0	4	2.0	5 51 59.3	18 2 59.5
28.0	4	3.0	5 50 57.6	18 4 1.8
28.0	4	4.0	5 49 55.8	18 5 4.3
28.0	4	5.0	5 48 53.8	18 6 7.1
28.0	4	6.0	5 47 51.4	18 7 10.1
28.0	4	7.0	5 46 48.8	18 8 13.4
29.0	4	.0	5 53 53.5	18 0 47.1
29.0	4	1.0	5 52 50.8	18 1 50.6
29.0	4	2.0	5 51 47.9	18 2 54.2
29.0	4	3.0	5 50 44.8	18 3 57.9
29.0	4	4.0	5 49 41.6	18 5 1.8
29.0	4	5.0	5 48 38.2	18 6 5.9
29.0	4	6.0	5 47 34.5	18 7 10.4
29.0	4	7.0	5 46 30.4	18 8 15.1
30.0	4	.0	5 53 45.4	18 0 39.6
30.0	4	1.0	5 52 41.3	18 1 44.4
30.0	4	2.0	5 51 37.0	18 2 49.4
30.0	4	3.0	5 50 32.6	18 3 54.5
30.0	4	4.0	5 49 28.0	18 4 59.7
30.0	4	5.0	5 48 23.2	18 6 5.3
30.0	4	6.0	5 47 18.1	18 7 11.1
30.0	4	7.0	5 46 12.6	18 8 17.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s

1.0	5	.0	5 53	37.8	18	0	32.6
1.0	5	1.0	5 52	32.3	18	1	38.8
1.0	5	2.0	5 51	26.7	18	2	45.0
1.0	5	3.0	5 50	20.9	18	3	51.5
1.0	5	4.0	5 49	14.9	18	4	58.1
1.0	5	5.0	5 48	8.7	18	6	5.0
1.0	5	6.0	5 47	2.3	18	7	12.2
1.0	5	7.0	5 45	55.5	18	8	19.7
2.0	5	.0	5 53	30.7	18	0	26.1
2.0	5	1.0	5 52	23.9	18	1	33.6
2.0	5	2.0	5 51	16.9	18	2	41.2
2.0	5	3.0	5 50	9.8	18	3	49.0
2.0	5	4.0	5 49	2.5	18	4	57.0
2.0	5	5.0	5 47	54.9	18	6	5.2
2.0	5	6.0	5 46	47.1	18	7	13.7
2.0	5	7.0	5 45	38.9	18	8	22.6
3.0	5	.0	5 53	24.1	18	0	20.1
3.0	5	1.0	5 52	16.0	18	1	28.9
3.0	5	2.0	5 51	7.7	18	2	37.9
3.0	5	3.0	5 49	59.2	18	3	47.0
3.0	5	4.0	5 48	50.6	18	4	56.3
3.0	5	5.0	5 47	41.7	18	6	5.9
3.0	5	6.0	5 46	32.5	18	7	15.7
3.0	5	7.0	5 45	23.0	18	8	25.9
4.0	5	.0	5 53	18.1	18	0	14.7
4.0	5	1.0	5 52	8.6	18	1	24.8
4.0	5	2.0	5 50	59.0	18	2	35.1
4.0	5	3.0	5 49	49.2	18	3	45.5
4.0	5	4.0	5 48	39.3	18	4	56.1
4.0	5	5.0	5 47	29.1	18	6	7.0
4.0	5	6.0	5 46	18.6	18	7	18.1
4.0	5	7.0	5 45	7.7	18	8	29.6
5.0	5	.0	5 53	12.6	18	0	9.8
5.0	5	1.0	5 52	1.8	18	1	21.2
5.0	5	2.0	5 50	50.9	18	2	32.7
5.0	5	3.0	5 49	39.8	18	3	44.4
5.0	5	4.0	5 48	28.6	18	4	56.4
5.0	5	5.0	5 47	17.1	18	6	8.5
5.0	5	6.0	5 46	5.2	18	7	21.0
5.0	5	7.0	5 44	53.1	18	8	33.8
6.0	5	.0	5 53	7.6	18	0	5.4
6.0	5	1.0	5 51	55.6	18	1	18.1
6.0	5	2.0	5 50	43.4	18	2	30.9
6.0	5	3.0	5 49	31.0	18	3	43.9
6.0	5	4.0	5 48	18.5	18	4	57.1
6.0	5	5.0	5 47	5.7	18	6	10.5

6.0	5	6.0	5 45	52.6	18	7	24.3
6.0	5	7.0	5 44	39.1	18	8	38.4
7.0	5	.0	5 53	3.2	18	0	1.6
7.0	5	1.0	5 51	49.9	18	1	15.6
7.0	5	2.0	5 50	36.5	18	2	29.6
7.0	5	3.0	5 49	22.8	18	3	43.9
7.0	5	4.0	5 48	9.0	18	4	58.3
7.0	5	5.0	5 46	55.0	18	6	13.0
7.0	5	6.0	5 45	40.6	18	7	28.0
7.0	5	7.0	5 44	25.8	18	8	43.4
8.0	5	.0	5 52	59.4	17	59	58.4
8.0	5	1.0	5 51	44.8	18	1	13.5
8.0	5	2.0	5 50	30.1	18	2	28.8
8.0	5	3.0	5 49	15.3	18	3	44.3
8.0	5	4.0	5 48	.2	18	4	60.0
8.0	5	5.0	5 46	44.9	18	6	15.9
8.0	5	6.0	5 45	29.2	18	7	32.2
8.0	5	7.0	5 44	13.2	18	8	48.8
9.0	5	.0	5 52	56.1	17	59	55.7
9.0	5	1.0	5 51	40.3	18	1	12.1
9.0	5	2.0	5 50	24.4	18	2	28.6
9.0	5	3.0	5 49	8.3	18	3	45.3
9.0	5	4.0	5 47	52.0	18	5	2.2
9.0	5	5.0	5 46	35.4	18	6	19.3
9.0	5	6.0	5 45	18.6	18	7	36.8
9.0	5	7.0	5 44	1.3	18	8	54.7
10.0	5	.0	5 52	53.3	17	59	53.6
10.0	5	1.0	5 51	36.3	18	1	11.1
10.0	5	2.0	5 50	19.2	18	2	28.9
10.0	5	3.0	5 49	1.9	18	3	46.7
10.0	5	4.0	5 47	44.4	18	5	4.8
10.0	5	5.0	5 46	26.7	18	6	23.2
10.0	5	6.0	5 45	8.6	18	7	41.9
10.0	5	7.0	5 43	50.1	18	9	1.0
11.0	5	.0	5 52	51.2	17	59	52.0
11.0	5	1.0	5 51	33.0	18	1	10.8
11.0	5	2.0	5 50	14.7	18	2	29.7
11.0	5	3.0	5 48	56.2	18	3	48.7
11.0	5	4.0	5 47	37.5	18	5	8.0
11.0	5	5.0	5 46	18.6	18	6	27.6
11.0	5	6.0	5 44	59.3	18	7	47.4
11.0	5	7.0	5 43	39.6	18	9	7.7
12.0	5	.0	5 52	49.6	17	59	51.0
12.0	5	1.0	5 51	30.3	18	1	10.9
12.0	5	2.0	5 50	10.8	18	2	31.0

12.0	5	3.0	5 48 51.1	18 3 51.2
12.0	5	4.0	5 47 31.3	18 5 11.7
12.0	5	5.0	5 46 11.1	18 6 32.4
12.0	5	6.0	5 44 50.7	18 7 53.4
12.0	5	7.0	5 43 29.8	18 9 14.9
13.0	5	.0	5 52 48.6	17 59 50.6
13.0	5	1.0	5 51 28.1	18 1 11.7
13.0	5	2.0	5 50 7.5	18 2 32.9
13.0	5	3.0	5 48 46.7	18 3 54.2
13.0	5	4.0	5 47 25.7	18 5 15.8
13.0	5	5.0	5 46 4.4	18 6 37.7
13.0	5	6.0	5 44 42.8	18 7 59.9
13.0	5	7.0	5 43 20.7	18 9 22.5
14.0	5	.0	5 52 48.2	17 59 50.8
14.0	5	1.0	5 51 26.6	18 1 13.0
14.0	5	2.0	5 50 4.8	18 2 35.3
14.0	5	3.0	5 48 42.9	18 3 57.7
14.0	5	4.0	5 47 20.8	18 5 20.4
14.0	5	5.0	5 45 58.3	18 6 43.4
14.0	5	6.0	5 44 35.6	18 8 6.8
14.0	5	7.0	5 43 12.4	18 9 30.5

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	5	.0	5 52 48.3	17 59 51.5				
15.0	5	1.0	5 51 25.6	18 1 14.8				
15.0	5	2.0	5 50 2.8	18 2 38.2				
15.0	5	3.0	5 48 39.8	18 4 1.8				
15.0	5	4.0	5 47 16.5	18 5 25.6				
15.0	5	5.0	5 45 53.0	18 6 49.6				
15.0	5	6.0	5 44 29.1	18 8 14.1				
15.0	5	7.0	5 43 4.8	18 9 38.9				
16.0	5	.0	5 52 49.1	17 59 52.9				
16.0	5	1.0	5 51 25.3	18 1 17.2				
16.0	5	2.0	5 50 1.3	18 2 41.6				
16.0	5	3.0	5 48 37.2	18 4 6.3				
16.0	5	4.0	5 47 12.9	18 5 31.2				
16.0	5	5.0	5 45 48.3	18 6 56.3				
16.0	5	6.0	5 44 23.3	18 8 21.8				
16.0	5	7.0	5 42 57.9	18 9 47.8				
17.0	5	.0	5 52 50.4	17 59 54.8				
17.0	5	1.0	5 51 25.5	18 1 20.1				
17.0	5	2.0	5 50 .5	18 2 45.6				
17.0	5	3.0	5 48 35.4	18 4 11.3				
17.0	5	4.0	5 47 10.0	18 5 37.3				

17.0	5	5.0	5 45	44.3	18 7	3.5
17.0	5	6.0	5 44	18.2	18 8	30.1
17.0	5	7.0	5 42	51.8	18 9	57.0
18.0	5	.0	5 52	52.3	17 59	57.2
18.0	5	1.0	5 51	26.4	18 1	23.6
18.0	5	2.0	5 50	.4	18 2	50.2
18.0	5	3.0	5 48	34.2	18 4	16.9
18.0	5	4.0	5 47	7.7	18 5	43.8
18.0	5	5.0	5 45	41.0	18 7	11.1
18.0	5	6.0	5 44	13.9	18 8	38.7
18.0	5	7.0	5 42	46.4	18 10	6.7
19.0	5	.0	5 52	54.7	18 0	.3
19.0	5	1.0	5 51	27.8	18 1	27.7
19.0	5	2.0	5 50	.8	18 2	55.2
19.0	5	3.0	5 48	33.6	18 4	22.9
19.0	5	4.0	5 47	6.1	18 5	50.9
19.0	5	5.0	5 45	38.4	18 7	19.1
19.0	5	6.0	5 44	10.3	18 8	47.7
19.0	5	7.0	5 42	41.7	18 10	16.8
20.0	5	.0	5 52	57.8	18 0	3.9
20.0	5	1.0	5 51	29.9	18 1	32.2
20.0	5	2.0	5 50	1.9	18 3	.7
20.0	5	3.0	5 48	33.7	18 4	29.4
20.0	5	4.0	5 47	5.2	18 5	58.4
20.0	5	5.0	5 45	36.5	18 7	27.6
20.0	5	6.0	5 44	7.3	18 8	57.2
20.0	5	7.0	5 42	37.8	18 10	27.3
21.0	5	.0	5 53	1.4	18 0	8.0
21.0	5	1.0	5 51	32.5	18 1	37.3
21.0	5	2.0	5 50	3.6	18 3	6.8
21.0	5	3.0	5 48	34.4	18 4	36.4
21.0	5	4.0	5 47	5.0	18 6	6.3
21.0	5	5.0	5 45	35.2	18 7	36.5
21.0	5	6.0	5 44	5.1	18 9	7.1
21.0	5	7.0	5 42	34.6	18 10	38.1
22.0	5	.0	5 53	5.5	18 0	12.7
22.0	5	1.0	5 51	35.8	18 1	43.0
22.0	5	2.0	5 50	5.8	18 3	13.3
22.0	5	3.0	5 48	35.7	18 4	43.9
22.0	5	4.0	5 47	5.4	18 6	14.7
22.0	5	5.0	5 45	34.7	18 7	45.9
22.0	5	6.0	5 44	3.6	18 9	17.4
22.0	5	7.0	5 42	32.2	18 10	49.3
23.0	5	.0	5 53	10.2	18 0	17.9
23.0	5	1.0	5 51	39.5	18 1	49.1

23.0	5	2.0	5 50	8.7	18	3	20.4
23.0	5	3.0	5 48	37.7	18	4	51.8
23.0	5	4.0	5 47	6.4	18	6	23.6
23.0	5	5.0	5 45	34.8	18	7	55.6
23.0	5	6.0	5 44	2.8	18	9	28.0
23.0	5	7.0	5 42	30.4	18	11	.9
24.0	5	.0	5 53	15.5	18	0	23.7
24.0	5	1.0	5 51	43.9	18	1	55.7
24.0	5	2.0	5 50	12.2	18	3	27.9
24.0	5	3.0	5 48	40.3	18	5	.2
24.0	5	4.0	5 47	8.1	18	6	32.8
24.0	5	5.0	5 45	35.6	18	8	5.7
24.0	5	6.0	5 44	2.7	18	9	39.0
24.0	5	7.0	5 42	29.4	18	11	12.8
25.0	5	.0	5 53	21.2	18	0	29.9
25.0	5	1.0	5 51	48.8	18	2	2.8
25.0	5	2.0	5 50	16.2	18	3	35.8
25.0	5	3.0	5 48	43.4	18	5	9.0
25.0	5	4.0	5 47	10.4	18	6	42.4
25.0	5	5.0	5 45	37.0	18	8	16.2
25.0	5	6.0	5 44	3.3	18	9	50.4
25.0	5	7.0	5 42	29.1	18	11	25.0
26.0	5	.0	5 53	27.4	18	0	36.7
26.0	5	1.0	5 51	54.2	18	2	10.4
26.0	5	2.0	5 50	20.8	18	3	44.2
26.0	5	3.0	5 48	47.2	18	5	18.2
26.0	5	4.0	5 47	13.3	18	6	52.5
26.0	5	5.0	5 45	39.1	18	8	27.1
26.0	5	6.0	5 44	4.5	18	10	2.0
26.0	5	7.0	5 42	29.5	18	11	37.5
27.0	5	.0	5 53	34.2	18	0	43.9
27.0	5	1.0	5 52	.1	18	2	18.4
27.0	5	2.0	5 50	25.9	18	3	53.0
27.0	5	3.0	5 48	51.5	18	5	27.8
27.0	5	4.0	5 47	16.8	18	7	2.8
27.0	5	5.0	5 45	41.8	18	8	38.2
27.0	5	6.0	5 44	6.4	18	10	14.0
27.0	5	7.0	5 42	30.6	18	11	50.3
28.0	5	.0	5 53	41.4	18	0	51.5
28.0	5	1.0	5 52	6.5	18	2	26.8
28.0	5	2.0	5 50	31.5	18	4	2.1
28.0	5	3.0	5 48	56.3	18	5	37.7
28.0	5	4.0	5 47	20.9	18	7	13.5
28.0	5	5.0	5 45	45.1	18	8	49.7
28.0	5	6.0	5 44	8.9	18	10	26.3
28.0	5	7.0	5 42	32.3	18	12	3.3

29.0	5	.0	5 53 49.0	18 0 59.6
29.0	5	1.0	5 52 13.4	18 2 35.6
29.0	5	2.0	5 50 37.6	18 4 11.7
29.0	5	3.0	5 49 1.7	18 5 48.0
29.0	5	4.0	5 47 25.5	18 7 24.6
29.0	5	5.0	5 45 49.0	18 9 1.5
29.0	5	6.0	5 44 12.0	18 10 38.8
29.0	5	7.0	5 42 34.6	18 12 16.5
30.0	5	.0	5 53 57.0	18 1 8.1
30.0	5	1.0	5 52 20.7	18 2 44.8
30.0	5	2.0	5 50 44.3	18 4 21.6
30.0	5	3.0	5 49 7.6	18 5 58.6
30.0	5	4.0	5 47 30.7	18 7 35.9
30.0	5	5.0	5 45 53.4	18 9 13.5
30.0	5	6.0	5 44 15.8	18 10 51.5
30.0	5	7.0	5 42 37.6	18 12 30.0
31.0	5	.0	5 54 5.5	18 1 17.0
31.0	5	1.0	5 52 28.5	18 2 54.4
31.0	5	2.0	5 50 51.4	18 4 31.8
31.0	5	3.0	5 49 14.0	18 6 9.5
31.0	5	4.0	5 47 36.4	18 7 47.5
31.0	5	5.0	5 45 58.4	18 9 25.8
31.0	5	6.0	5 44 20.1	18 11 4.5
31.0	5	7.0	5 42 41.2	18 12 43.7

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	6	.0	5 54 14.4			18 1 26.3		
1.0	6	1.0	5 52 36.7			18 3 4.3		
1.0	6	2.0	5 50 58.9			18 4 42.4		
1.0	6	3.0	5 49 20.9			18 6 20.7		
1.0	6	4.0	5 47 42.6			18 7 59.4		
1.0	6	5.0	5 46 4.0			18 9 38.3		
1.0	6	6.0	5 44 25.0			18 11 17.6		
1.0	6	7.0	5 42 45.5			18 12 57.5		
2.0	6	.0	5 54 23.6			18 1 35.9		
2.0	6	1.0	5 52 45.3			18 3 14.5		
2.0	6	2.0	5 51 6.9			18 4 53.3		
2.0	6	3.0	5 49 28.3			18 6 32.2		
2.0	6	4.0	5 47 49.3			18 8 11.5		
2.0	6	5.0	5 46 10.1			18 9 51.0		
2.0	6	6.0	5 44 30.4			18 11 31.0		
2.0	6	7.0	5 42 50.3			18 13 11.4		
3.0	6	.0	5 54 33.2			18 1 45.9		

3.0	6	1.0	5 52 54.4	18 3 25.1
3.0	6	2.0	5 51 15.3	18 5 4.4
3.0	6	3.0	5 49 36.1	18 6 44.0
3.0	6	4.0	5 47 56.6	18 8 23.8
3.0	6	5.0	5 46 16.7	18 10 3.9
3.0	6	6.0	5 44 36.4	18 11 44.5
3.0	6	7.0	5 42 55.7	18 13 25.5
4.0	6	.0	5 54 43.2	18 1 56.2
4.0	6	1.0	5 53 3.7	18 3 36.0
4.0	6	2.0	5 51 24.1	18 5 15.9
4.0	6	3.0	5 49 44.3	18 6 55.9
4.0	6	4.0	5 48 4.2	18 8 36.3
4.0	6	5.0	5 46 23.8	18 10 17.0
4.0	6	6.0	5 44 43.0	18 11 58.1
4.0	6	7.0	5 43 1.6	18 13 39.7
5.0	6	.0	5 54 53.5	18 2 6.9
5.0	6	1.0	5 53 13.5	18 3 47.1
5.0	6	2.0	5 51 33.4	18 5 27.5
5.0	6	3.0	5 49 53.0	18 7 8.1
5.0	6	4.0	5 48 12.4	18 8 49.0
5.0	6	5.0	5 46 31.4	18 10 30.3
5.0	6	6.0	5 44 50.0	18 12 11.9
5.0	6	7.0	5 43 8.1	18 13 54.0
6.0	6	.0	5 55 4.1	18 2 17.8
6.0	6	1.0	5 53 23.6	18 3 58.5
6.0	6	2.0	5 51 43.0	18 5 39.4
6.0	6	3.0	5 50 2.1	18 7 20.5
6.0	6	4.0	5 48 21.0	18 9 1.9
6.0	6	5.0	5 46 39.5	18 10 43.6
6.0	6	6.0	5 44 57.6	18 12 25.8
6.0	6	7.0	5 43 15.2	18 14 8.4
7.0	6	.0	5 55 15.0	18 2 29.0
7.0	6	1.0	5 53 34.0	18 4 10.2
7.0	6	2.0	5 51 52.9	18 5 51.5
7.0	6	3.0	5 50 11.6	18 7 33.1
7.0	6	4.0	5 48 30.0	18 9 14.9
7.0	6	5.0	5 46 48.0	18 10 57.1
7.0	6	6.0	5 45 5.6	18 12 39.7
7.0	6	7.0	5 43 22.8	18 14 22.8
8.0	6	.0	5 55 26.2	18 2 40.5
8.0	6	1.0	5 53 44.8	18 4 22.1
8.0	6	2.0	5 52 3.2	18 6 3.9
8.0	6	3.0	5 50 21.5	18 7 45.8
8.0	6	4.0	5 48 39.4	18 9 28.1
8.0	6	5.0	5 46 57.0	18 11 10.7
8.0	6	6.0	5 45 14.2	18 12 53.8

8.0	6	7.0	5 43 30.9	18 14 37.3
9.0	6	.0	5 55 37.7	18 2 52.2
9.0	6	1.0	5 53 55.8	18 4 34.2
9.0	6	2.0	5 52 13.9	18 6 16.4
9.0	6	3.0	5 50 31.7	18 7 58.7
9.0	6	4.0	5 48 49.2	18 9 41.4
9.0	6	5.0	5 47 6.4	18 11 24.4
9.0	6	6.0	5 45 23.2	18 13 7.8
9.0	6	7.0	5 43 39.5	18 14 51.7
10.0	6	.0	5 55 49.4	18 3 4.1
10.0	6	1.0	5 54 7.2	18 4 46.5
10.0	6	2.0	5 52 24.8	18 6 29.0
10.0	6	3.0	5 50 42.3	18 8 11.7
10.0	6	4.0	5 48 59.4	18 9 54.8
10.0	6	5.0	5 47 16.2	18 11 38.1
10.0	6	6.0	5 45 32.6	18 13 21.9
10.0	6	7.0	5 43 48.5	18 15 6.2
11.0	6	.0	5 56 1.3	18 3 16.3
11.0	6	1.0	5 54 18.8	18 4 59.0
11.0	6	2.0	5 52 36.1	18 6 41.8
11.0	6	3.0	5 50 53.2	18 8 24.9
11.0	6	4.0	5 49 10.0	18 10 8.2
11.0	6	5.0	5 47 26.5	18 11 51.9
11.0	6	6.0	5 45 42.5	18 13 36.0
11.0	6	7.0	5 43 58.0	18 15 20.7
12.0	6	.0	5 56 13.4	18 3 28.6
12.0	6	1.0	5 54 30.6	18 5 11.6
12.0	6	2.0	5 52 47.6	18 6 54.7
12.0	6	3.0	5 51 4.4	18 8 38.1
12.0	6	4.0	5 49 20.9	18 10 21.7
12.0	6	5.0	5 47 37.1	18 12 5.7
12.0	6	6.0	5 45 52.8	18 13 50.1
12.0	6	7.0	5 44 8.0	18 15 35.0
13.0	6	.0	5 56 25.8	18 3 41.1
13.0	6	1.0	5 54 42.7	18 5 24.4
13.0	6	2.0	5 52 59.4	18 7 7.8
13.0	6	3.0	5 51 15.9	18 8 51.4
13.0	6	4.0	5 49 32.2	18 10 35.3
13.0	6	5.0	5 47 48.0	18 12 19.5
13.0	6	6.0	5 46 3.5	18 14 4.2
13.0	6	7.0	5 44 18.4	18 15 49.4
14.0	6	.0	5 56 38.3	18 3 53.8
14.0	6	1.0	5 54 54.9	18 5 37.3
14.0	6	2.0	5 53 11.4	18 7 20.9
14.0	6	3.0	5 51 27.7	18 9 4.7

14.0	6	4.0	5 49 43.7	18 10 48.8
14.0	6	5.0	5 47 59.3	18 12 33.3
14.0	6	6.0	5 46 14.5	18 14 18.2
14.0	6	7.0	5 44 29.2	18 16 3.6

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	6	.0	5 56	51.0		18 4	6.6	
15.0	6	1.0	5 55	7.4		18 5	50.3	
15.0	6	2.0	5 53	23.7		18 7	34.1	
15.0	6	3.0	5 51	39.8		18 9	18.1	
15.0	6	4.0	5 49	55.5		18 11	2.4	
15.0	6	5.0	5 48	11.0		18 12	47.1	
15.0	6	6.0	5 46	26.0		18 14	32.2	
15.0	6	7.0	5 44	40.5		18 16	17.8	
16.0	6	.0	5 57	3.8		18 4	19.5	
16.0	6	1.0	5 55	20.0		18 6	3.3	
16.0	6	2.0	5 53	36.1		18 7	47.3	
16.0	6	3.0	5 51	52.0		18 9	31.5	
16.0	6	4.0	5 50	7.7		18 11	15.9	
16.0	6	5.0	5 48	22.9		18 13	.8	
16.0	6	6.0	5 46	37.7		18 14	46.0	
16.0	6	7.0	5 44	52.0		18 16	31.8	
17.0	6	.0	5 57	16.7		18 4	32.5	
17.0	6	1.0	5 55	32.8		18 6	16.5	
17.0	6	2.0	5 53	48.8		18 8	.5	
17.0	6	3.0	5 52	4.5		18 9	44.8	
17.0	6	4.0	5 50	20.0		18 11	29.4	
17.0	6	5.0	5 48	35.1		18 13	14.4	
17.0	6	6.0	5 46	49.8		18 14	59.8	
17.0	6	7.0	5 45	4.0		18 16	45.6	
18.0	6	.0	5 57	29.7		18 4	45.6	
18.0	6	1.0	5 55	45.7		18 6	29.6	
18.0	6	2.0	5 54	1.6		18 8	13.8	
18.0	6	3.0	5 52	17.2		18 9	58.2	
18.0	6	4.0	5 50	32.6		18 11	42.9	
18.0	6	5.0	5 48	47.6		18 13	27.9	
18.0	6	6.0	5 47	2.2		18 15	13.4	
18.0	6	7.0	5 45	16.3		18 16	59.3	
19.0	6	.0	5 57	42.8		18 4	58.7	
19.0	6	1.0	5 55	58.7		18 6	42.8	
19.0	6	2.0	5 54	14.5		18 8	27.0	
19.0	6	3.0	5 52	30.1		18 10	11.5	
19.0	6	4.0	5 50	45.4		18 11	56.2	
19.0	6	5.0	5 49	.3		18 13	41.3	

19.0	6	6.0	5 47	14.8	18 15	26.8
19.0	6	7.0	5 45	28.8	18 17	12.8
20.0	6	.0	5 57	55.9	18 5	11.9
20.0	6	1.0	5 56	11.8	18 6	56.0
20.0	6	2.0	5 54	27.6	18 8	40.2
20.0	6	3.0	5 52	43.1	18 10	24.7
20.0	6	4.0	5 50	58.4	18 12	9.4
20.0	6	5.0	5 49	13.3	18 13	54.5
20.0	6	6.0	5 47	27.7	18 15	40.1
20.0	6	7.0	5 45	41.7	18 17	26.1
21.0	6	.0	5 58	9.0	18 5	25.0
21.0	6	1.0	5 56	25.0	18 7	9.1
21.0	6	2.0	5 54	40.7	18 8	53.3
21.0	6	3.0	5 52	56.3	18 10	37.7
21.0	6	4.0	5 51	11.5	18 12	22.5
21.0	6	5.0	5 49	26.4	18 14	7.6
21.0	6	6.0	5 47	40.9	18 15	53.1
21.0	6	7.0	5 45	54.8	18 17	39.1
22.0	6	.0	5 58	22.2	18 5	38.1
22.0	6	1.0	5 56	38.1	18 7	22.1
22.0	6	2.0	5 54	53.9	18 9	6.3
22.0	6	3.0	5 53	9.5	18 10	50.7
22.0	6	4.0	5 51	24.8	18 12	35.4
22.0	6	5.0	5 49	39.7	18 14	20.4
22.0	6	6.0	5 47	54.2	18 16	5.9
22.0	6	7.0	5 46	8.2	18 17	51.9
23.0	6	.0	5 58	35.3	18 5	51.1
23.0	6	1.0	5 56	51.3	18 7	35.1
23.0	6	2.0	5 55	7.1	18 9	19.2
23.0	6	3.0	5 53	22.8	18 11	3.5
23.0	6	4.0	5 51	38.1	18 12	48.1
23.0	6	5.0	5 49	53.1	18 14	33.0
23.0	6	6.0	5 48	7.7	18 16	18.4
23.0	6	7.0	5 46	21.8	18 18	4.3
24.0	6	.0	5 58	48.3	18 6	4.1
24.0	6	1.0	5 57	4.4	18 7	47.9
24.0	6	2.0	5 55	20.4	18 9	31.9
24.0	6	3.0	5 53	36.1	18 11	16.1
24.0	6	4.0	5 51	51.6	18 13	.6
24.0	6	5.0	5 50	6.7	18 14	45.4
24.0	6	6.0	5 48	21.3	18 16	30.7
24.0	6	7.0	5 46	35.5	18 18	16.4
25.0	6	.0	5 59	1.2	18 6	16.9
25.0	6	1.0	5 57	17.5	18 8	.6
25.0	6	2.0	5 55	33.6	18 9	44.4

25.0	6	3.0	5 53 49.4	18 11 28.5
25.0	6	4.0	5 52 5.0	18 13 12.8
25.0	6	5.0	5 50 20.3	18 14 57.5
25.0	6	6.0	5 48 35.1	18 16 42.6
25.0	6	7.0	5 46 49.4	18 18 28.2
26.0	6	.0	5 59 14.0	18 6 29.6
26.0	6	1.0	5 57 30.4	18 8 13.1
26.0	6	2.0	5 55 46.7	18 9 56.7
26.0	6	3.0	5 54 2.7	18 11 40.6
26.0	6	4.0	5 52 18.5	18 13 24.7
26.0	6	5.0	5 50 33.9	18 15 9.2
26.0	6	6.0	5 48 48.9	18 16 54.2
26.0	6	7.0	5 47 3.4	18 18 39.6
27.0	6	.0	5 59 26.7	18 6 42.1
27.0	6	1.0	5 57 43.3	18 8 25.4
27.0	6	2.0	5 55 59.7	18 10 8.8
27.0	6	3.0	5 54 16.0	18 11 52.4
27.0	6	4.0	5 52 32.0	18 13 36.4
27.0	6	5.0	5 50 47.6	18 15 20.6
27.0	6	6.0	5 49 2.8	18 17 5.3
27.0	6	7.0	5 47 17.4	18 18 50.5
28.0	6	.0	5 59 39.1	18 6 54.4
28.0	6	1.0	5 57 56.0	18 8 37.4
28.0	6	2.0	5 56 12.7	18 10 20.6
28.0	6	3.0	5 54 29.2	18 12 4.0
28.0	6	4.0	5 52 45.4	18 13 47.6
28.0	6	5.0	5 51 1.2	18 15 31.7
28.0	6	6.0	5 49 16.6	18 17 16.1
28.0	6	7.0	5 47 31.6	18 19 1.1
29.0	6	.0	5 59 51.4	18 7 6.5
29.0	6	1.0	5 58 8.5	18 8 49.2
29.0	6	2.0	5 56 25.5	18 10 32.1
29.0	6	3.0	5 54 42.3	18 12 15.2
29.0	6	4.0	5 52 58.7	18 13 58.6
29.0	6	5.0	5 51 14.8	18 15 42.3
29.0	6	6.0	5 49 30.5	18 17 26.5
29.0	6	7.0	5 47 45.7	18 19 11.1
30.0	6	.0	6 0 3.4	18 7 18.3
30.0	6	1.0	5 58 20.8	18 9 .7
30.0	6	2.0	5 56 38.1	18 10 43.3
30.0	6	3.0	5 54 55.2	18 12 26.1
30.0	6	4.0	5 53 12.0	18 14 9.1
30.0	6	5.0	5 51 28.4	18 15 52.5
30.0	6	6.0	5 49 44.4	18 17 36.4
30.0	6	7.0	5 47 59.9	18 19 20.7

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	7	.0	6	0	15.2	18	7	29.9
1.0	7	1.0	5	58	33.0	18	9	11.9
1.0	7	2.0	5	56	50.6	18	10	54.1
1.0	7	3.0	5	55	8.0	18	12	36.6
1.0	7	4.0	5	53	25.1	18	14	19.3
1.0	7	5.0	5	51	41.9	18	16	2.3
1.0	7	6.0	5	49	58.2	18	17	45.8
1.0	7	7.0	5	48	14.1	18	19	29.8
2.0	7	.0	6	0	26.7	18	7	41.1
2.0	7	1.0	5	58	44.8	18	9	22.8
2.0	7	2.0	5	57	2.8	18	11	4.6
2.0	7	3.0	5	55	20.6	18	12	46.7
2.0	7	4.0	5	53	38.1	18	14	29.0
2.0	7	5.0	5	51	55.2	18	16	11.6
2.0	7	6.0	5	50	11.9	18	17	54.7
2.0	7	7.0	5	48	28.2	18	19	38.3
3.0	7	.0	6	0	37.9	18	7	52.1
3.0	7	1.0	5	58	56.5	18	9	33.3
3.0	7	2.0	5	57	14.8	18	11	14.7
3.0	7	3.0	5	55	33.0	18	12	56.3
3.0	7	4.0	5	53	50.9	18	14	38.2
3.0	7	5.0	5	52	8.5	18	16	20.5
3.0	7	6.0	5	50	25.6	18	18	3.1
3.0	7	7.0	5	48	42.2	18	19	46.3
4.0	7	.0	6	0	48.8	18	8	2.7
4.0	7	1.0	5	59	7.8	18	9	43.5
4.0	7	2.0	5	57	26.6	18	11	24.4
4.0	7	3.0	5	55	45.2	18	13	5.6
4.0	7	4.0	5	54	3.5	18	14	47.0
4.0	7	5.0	5	52	21.5	18	16	28.8
4.0	7	6.0	5	50	39.1	18	18	11.0
4.0	7	7.0	5	48	56.2	18	19	53.7
5.0	7	.0	6	0	59.4	18	8	13.0
5.0	7	1.0	5	59	18.8	18	9	53.3
5.0	7	2.0	5	57	38.1	18	11	33.7
5.0	7	3.0	5	55	57.2	18	13	14.4
5.0	7	4.0	5	54	16.0	18	14	55.4
5.0	7	5.0	5	52	34.4	18	16	36.7
5.0	7	6.0	5	50	52.5	18	18	18.4
5.0	7	7.0	5	49	10.0	18	20	.6
6.0	7	.0	6	1	9.6	18	8	22.8
6.0	7	1.0	5	59	29.5	18	10	2.7

6.0	7	2.0	5	57	49.3	18	11	42.6
6.0	7	3.0	5	56	8.9	18	13	22.8
6.0	7	4.0	5	54	28.2	18	15	3.2
6.0	7	5.0	5	52	47.1	18	16	44.0
6.0	7	6.0	5	51	5.7	18	18	25.2
6.0	7	7.0	5	49	23.7	18	20	6.9
7.0	7	.0	6	1	19.4	18	8	32.4
7.0	7	1.0	5	59	39.9	18	10	11.6
7.0	7	2.0	5	58	.2	18	11	51.0
7.0	7	3.0	5	56	20.3	18	13	30.6
7.0	7	4.0	5	54	40.2	18	15	10.5
7.0	7	5.0	5	52	59.7	18	16	50.8
7.0	7	6.0	5	51	18.7	18	18	31.4
7.0	7	7.0	5	49	37.3	18	20	12.5
8.0	7	.0	6	1	28.9	18	8	41.5
8.0	7	1.0	5	59	49.9	18	10	20.2
8.0	7	2.0	5	58	10.8	18	11	59.0
8.0	7	3.0	5	56	31.5	18	13	38.0
8.0	7	4.0	5	54	51.9	18	15	17.3
8.0	7	5.0	5	53	11.9	18	16	57.0
8.0	7	6.0	5	51	31.6	18	18	37.0
8.0	7	7.0	5	49	50.7	18	20	17.6
9.0	7	.0	6	1	38.0	18	8	50.2
9.0	7	1.0	5	59	59.6	18	10	28.2
9.0	7	2.0	5	58	21.1	18	12	6.5
9.0	7	3.0	5	56	42.3	18	13	44.9
9.0	7	4.0	5	55	3.3	18	15	23.6
9.0	7	5.0	5	53	24.0	18	17	2.6
9.0	7	6.0	5	51	44.2	18	18	42.1
9.0	7	7.0	5	50	4.0	18	20	22.0
10.0	7	.0	6	1	46.7	18	8	58.4
10.0	7	1.0	6	0	8.9	18	10	35.9
10.0	7	2.0	5	58	31.0	18	12	13.5
10.0	7	3.0	5	56	52.9	18	13	51.2
10.0	7	4.0	5	55	14.5	18	15	29.3
10.0	7	5.0	5	53	35.8	18	17	7.7
10.0	7	6.0	5	51	56.6	18	18	46.5
10.0	7	7.0	5	50	17.0	18	20	25.8
11.0	7	.0	6	1	54.9	18	9	6.3
11.0	7	1.0	6	0	17.8	18	10	43.0
11.0	7	2.0	5	58	40.5	18	12	20.0
11.0	7	3.0	5	57	3.1	18	13	57.1
11.0	7	4.0	5	55	25.3	18	15	34.5
11.0	7	5.0	5	53	47.3	18	17	12.2
11.0	7	6.0	5	52	8.8	18	18	50.3
11.0	7	7.0	5	50	29.9	18	20	28.9

12.0	7	.0	6	2	2.7	18	9	13.6
12.0	7	1.0	6	0	26.3	18	10	49.7
12.0	7	2.0	5	58	49.7	18	12	25.9
12.0	7	3.0	5	57	12.9	18	14	2.4
12.0	7	4.0	5	55	35.9	18	15	39.1
12.0	7	5.0	5	53	58.5	18	17	16.1
12.0	7	6.0	5	52	20.7	18	18	53.5
12.0	7	7.0	5	50	42.5	18	20	31.4
13.0	7	.0	6	2	10.1	18	9	20.6
13.0	7	1.0	6	0	34.3	18	10	55.9
13.0	7	2.0	5	58	58.5	18	12	31.4
13.0	7	3.0	5	57	22.4	18	14	7.1
13.0	7	4.0	5	55	46.1	18	15	43.1
13.0	7	5.0	5	54	9.4	18	17	19.4
13.0	7	6.0	5	52	32.3	18	18	56.1
13.0	7	7.0	5	50	54.8	18	20	33.2
14.0	7	.0	6	2	17.0	18	9	27.0
14.0	7	1.0	6	0	42.0	18	11	1.6
14.0	7	2.0	5	59	6.8	18	12	36.4
14.0	7	3.0	5	57	31.5	18	14	11.3
14.0	7	4.0	5	55	55.9	18	15	46.5
14.0	7	5.0	5	54	20.0	18	17	22.0
14.0	7	6.0	5	52	43.7	18	18	58.0
14.0	7	7.0	5	51	6.9	18	20	34.4

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	7	.0	6	2	23.4	18	9	33.0
15.0	7	1.0	6	0	49.2	18	11	6.8
15.0	7	2.0	5	59	14.8	18	12	40.8
15.0	7	3.0	5	57	40.3	18	14	14.9
15.0	7	4.0	5	56	5.4	18	15	49.3
15.0	7	5.0	5	54	30.3	18	17	24.1
15.0	7	6.0	5	52	54.7	18	18	59.2
15.0	7	7.0	5	51	18.8	18	20	34.8
16.0	7	.0	6	2	29.3	18	9	38.4
16.0	7	1.0	6	0	55.9	18	11	11.4
16.0	7	2.0	5	59	22.4	18	12	44.6
16.0	7	3.0	5	57	48.6	18	14	18.0
16.0	7	4.0	5	56	14.6	18	15	51.6
16.0	7	5.0	5	54	40.2	18	17	25.5
16.0	7	6.0	5	53	5.5	18	18	59.8
16.0	7	7.0	5	51	30.3	18	20	34.6
17.0	7	.0	6	2	34.8	18	9	43.4

17.0	7	1.0	6	1	2.2	18	11	15.6
17.0	7	2.0	5	59	29.5	18	12	47.9
17.0	7	3.0	5	57	56.5	18	14	20.4
17.0	7	4.0	5	56	23.3	18	15	53.2
17.0	7	5.0	5	54	49.8	18	17	26.3
17.0	7	6.0	5	53	15.9	18	18	59.8
17.0	7	7.0	5	51	41.5	18	20	33.7
18.0	7	.0	6	2	39.8	18	9	47.8
18.0	7	1.0	6	1	8.0	18	11	19.2
18.0	7	2.0	5	59	36.1	18	12	50.6
18.0	7	3.0	5	58	4.0	18	14	22.3
18.0	7	4.0	5	56	31.7	18	15	54.2
18.0	7	5.0	5	54	59.0	18	17	26.4
18.0	7	6.0	5	53	26.0	18	18	59.0
18.0	7	7.0	5	51	52.5	18	20	32.1
19.0	7	.0	6	2	44.2	18	9	51.8
19.0	7	1.0	6	1	13.3	18	11	22.2
19.0	7	2.0	5	59	42.3	18	12	52.8
19.0	7	3.0	5	58	11.1	18	14	23.5
19.0	7	4.0	5	56	39.6	18	15	54.5
19.0	7	5.0	5	55	7.8	18	17	25.9
19.0	7	6.0	5	53	35.7	18	18	57.6
19.0	7	7.0	5	52	3.1	18	20	29.7
20.0	7	.0	6	2	48.1	18	9	55.1
20.0	7	1.0	6	1	18.1	18	11	24.7
20.0	7	2.0	5	59	48.0	18	12	54.3
20.0	7	3.0	5	58	17.7	18	14	24.2
20.0	7	4.0	5	56	47.1	18	15	54.3
20.0	7	5.0	5	55	16.3	18	17	24.7
20.0	7	6.0	5	53	45.0	18	18	55.5
20.0	7	7.0	5	52	13.3	18	20	26.7
21.0	7	.0	6	2	51.5	18	9	58.0
21.0	7	1.0	6	1	22.4	18	11	26.6
21.0	7	2.0	5	59	53.2	18	12	55.3
21.0	7	3.0	5	58	23.8	18	14	24.2
21.0	7	4.0	5	56	54.2	18	15	53.3
21.0	7	5.0	5	55	24.3	18	17	22.8
21.0	7	6.0	5	53	54.0	18	18	52.6
21.0	7	7.0	5	52	23.2	18	20	22.9
22.0	7	.0	6	2	54.3	18	10	.2
22.0	7	1.0	6	1	26.2	18	11	27.9
22.0	7	2.0	5	59	57.9	18	12	55.6
22.0	7	3.0	5	58	29.5	18	14	23.6
22.0	7	4.0	5	57	.8	18	15	51.8
22.0	7	5.0	5	55	31.8	18	17	20.3
22.0	7	6.0	5	54	2.5	18	18	49.1

22.0	7	7.0	5	52	32.7	18	20	18.4
23.0	7	.0	6	2	56.6	18	10	1.9
23.0	7	1.0	6	1	29.4	18	11	28.6
23.0	7	2.0	6	0	2.1	18	12	55.3
23.0	7	3.0	5	58	34.7	18	14	22.3
23.0	7	4.0	5	57	7.0	18	15	49.5
23.0	7	5.0	5	55	39.0	18	17	17.0
23.0	7	6.0	5	54	10.6	18	18	44.9
23.0	7	7.0	5	52	41.8	18	20	13.1
24.0	7	.0	6	2	58.2	18	10	3.0
24.0	7	1.0	6	1	32.1	18	11	28.7
24.0	7	2.0	6	0	5.8	18	12	54.4
24.0	7	3.0	5	58	39.4	18	14	20.4
24.0	7	4.0	5	57	12.7	18	15	46.6
24.0	7	5.0	5	55	45.7	18	17	13.1
24.0	7	6.0	5	54	18.3	18	18	39.9
24.0	7	7.0	5	52	50.5	18	20	7.1
25.0	7	.0	6	2	59.3	18	10	3.5
25.0	7	1.0	6	1	34.2	18	11	28.2
25.0	7	2.0	6	0	8.9	18	12	52.9
25.0	7	3.0	5	58	43.5	18	14	17.8
25.0	7	4.0	5	57	17.8	18	15	42.9
25.0	7	5.0	5	55	51.9	18	17	8.4
25.0	7	6.0	5	54	25.5	18	18	34.2
25.0	7	7.0	5	52	58.8	18	20	.4
26.0	7	.0	6	2	59.8	18	10	3.5
26.0	7	1.0	6	1	35.7	18	11	27.0
26.0	7	2.0	6	0	11.5	18	12	50.7
26.0	7	3.0	5	58	47.1	18	14	14.5
26.0	7	4.0	5	57	22.5	18	15	38.6
26.0	7	5.0	5	55	57.6	18	17	3.0
26.0	7	6.0	5	54	32.3	18	18	27.7
26.0	7	7.0	5	53	6.6	18	19	52.9
27.0	7	.0	6	2	59.7	18	10	2.7
27.0	7	1.0	6	1	36.7	18	11	25.2
27.0	7	2.0	6	0	13.5	18	12	47.8
27.0	7	3.0	5	58	50.2	18	14	10.6
27.0	7	4.0	5	57	26.6	18	15	33.6
27.0	7	5.0	5	56	2.8	18	16	56.9
27.0	7	6.0	5	54	38.6	18	18	20.5
27.0	7	7.0	5	53	14.0	18	19	44.6
28.0	7	.0	6	2	58.9	18	10	1.4
28.0	7	1.0	6	1	37.0	18	11	22.8
28.0	7	2.0	6	0	14.9	18	12	44.3
28.0	7	3.0	5	58	52.7	18	14	6.0

28.0	7	4.0	5	57	30.3	18	15	27.9
28.0	7	5.0	5	56	7.5	18	16	50.1
28.0	7	6.0	5	54	44.4	18	18	12.6
28.0	7	7.0	5	53	20.9	18	19	35.5
29.0	7	.0	6	2	57.6	18	9	59.5
29.0	7	1.0	6	1	36.7	18	11	19.7
29.0	7	2.0	6	0	15.8	18	12	40.1
29.0	7	3.0	5	58	54.7	18	14	.6
29.0	7	4.0	5	57	33.3	18	15	21.4
29.0	7	5.0	5	56	11.7	18	16	42.5
29.0	7	6.0	5	54	49.7	18	18	3.9
29.0	7	7.0	5	53	27.4	18	19	25.7
30.0	7	.0	6	2	55.6	18	9	56.9
30.0	7	1.0	6	1	35.9	18	11	16.0
30.0	7	2.0	6	0	16.1	18	12	35.2
30.0	7	3.0	5	58	56.1	18	13	54.6
30.0	7	4.0	5	57	35.9	18	15	14.3
30.0	7	5.0	5	56	15.4	18	16	34.2
30.0	7	6.0	5	54	54.6	18	17	54.4
30.0	7	7.0	5	53	33.4	18	19	15.1
31.0	7	.0	6	2	53.0	18	9	53.7
31.0	7	1.0	6	1	34.4	18	11	11.6
31.0	7	2.0	6	0	15.8	18	12	29.7
31.0	7	3.0	5	58	56.9	18	13	48.0
31.0	7	4.0	5	57	37.9	18	15	6.4
31.0	7	5.0	5	56	18.5	18	16	25.2
31.0	7	6.0	5	54	58.9	18	17	44.3
31.0	7	7.0	5	53	38.8	18	19	3.7

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	8	.0	6	2	49.7	18	9	49.8
1.0	8	1.0	6	1	32.4	18	11	6.6
1.0	8	2.0	6	0	14.9	18	12	23.5
1.0	8	3.0	5	58	57.2	18	13	40.6
1.0	8	4.0	5	57	39.3	18	14	57.9
1.0	8	5.0	5	56	21.2	18	16	15.4
1.0	8	6.0	5	55	2.7	18	17	33.3
1.0	8	7.0	5	53	43.8	18	18	51.6
2.0	8	.0	6	2	45.9	18	9	45.4
2.0	8	1.0	6	1	29.7	18	11	1.0
2.0	8	2.0	6	0	13.4	18	12	16.7
2.0	8	3.0	5	58	56.9	18	13	32.5
2.0	8	4.0	5	57	40.2	18	14	48.6
2.0	8	5.0	5	56	23.2	18	16	5.0

2.0	8	6.0	5 55	6.0	18 17	21.6
2.0	8	7.0	5 53	48.3	18 18	38.7
3.0	8	.0	6 2	41.4	18 9	40.3
3.0	8	1.0	6 1	26.4	18 10	54.7
3.0	8	2.0	6 0	11.3	18 12	9.1
3.0	8	3.0	5 58	56.0	18 13	23.8
3.0	8	4.0	5 57	40.6	18 14	38.7
3.0	8	5.0	5 56	24.8	18 15	53.8
3.0	8	6.0	5 55	8.8	18 17	9.2
3.0	8	7.0	5 53	52.3	18 18	25.0
4.0	8	.0	6 2	36.3	18 9	34.6
4.0	8	1.0	6 1	22.5	18 10	47.7
4.0	8	2.0	6 0	8.7	18 12	1.0
4.0	8	3.0	5 58	54.6	18 13	14.4
4.0	8	4.0	5 57	40.4	18 14	28.0
4.0	8	5.0	5 56	25.8	18 15	41.9
4.0	8	6.0	5 55	11.0	18 16	56.1
4.0	8	7.0	5 53	55.8	18 18	10.7
5.0	8	.0	6 2	30.6	18 9	28.3
5.0	8	1.0	6 1	18.1	18 10	40.2
5.0	8	2.0	6 0	5.4	18 11	52.2
5.0	8	3.0	5 58	52.6	18 13	4.3
5.0	8	4.0	5 57	39.6	18 14	16.7
5.0	8	5.0	5 56	26.4	18 15	29.3
5.0	8	6.0	5 55	12.8	18 16	42.3
5.0	8	7.0	5 53	58.9	18 17	55.5
6.0	8	.0	6 2	24.3	18 9	21.3
6.0	8	1.0	6 1	13.0	18 10	32.0
6.0	8	2.0	6 0	1.6	18 11	42.7
6.0	8	3.0	5 58	50.1	18 12	53.6
6.0	8	4.0	5 57	38.3	18 14	4.7
6.0	8	5.0	5 56	26.4	18 15	16.1
6.0	8	6.0	5 55	14.1	18 16	27.7
6.0	8	7.0	5 54	1.4	18 17	39.7
7.0	8	.0	6 2	17.3	18 9	13.8
7.0	8	1.0	6 1	7.4	18 10	23.2
7.0	8	2.0	5 59	57.3	18 11	32.6
7.0	8	3.0	5 58	47.0	18 12	42.2
7.0	8	4.0	5 57	36.5	18 13	52.1
7.0	8	5.0	5 56	25.8	18 15	2.1
7.0	8	6.0	5 55	14.8	18 16	12.5
7.0	8	7.0	5 54	3.5	18 17	23.2
8.0	8	.0	6 2	9.8	18 9	5.7
8.0	8	1.0	6 1	1.1	18 10	13.8
8.0	8	2.0	5 59	52.3	18 11	21.9

8.0	8	3.0	5	58	43.4	18	12	30.2
8.0	8	4.0	5	57	34.2	18	13	38.7
8.0	8	5.0	5	56	24.8	18	14	47.5
8.0	8	6.0	5	55	15.1	18	15	56.5
8.0	8	7.0	5	54	5.0	18	17	5.9
9.0	8	.0	6	2	1.7	18	8	57.0
9.0	8	1.0	6	0	54.3	18	10	3.8
9.0	8	2.0	5	59	46.8	18	11	10.6
9.0	8	3.0	5	58	39.2	18	12	17.6
9.0	8	4.0	5	57	31.3	18	13	24.8
9.0	8	5.0	5	56	23.2	18	14	32.2
9.0	8	6.0	5	55	14.9	18	15	39.9
9.0	8	7.0	5	54	6.2	18	16	48.0
10.0	8	.0	6	1	53.1	18	8	47.8
10.0	8	1.0	6	0	47.0	18	9	53.2
10.0	8	2.0	5	59	40.8	18	10	58.7
10.0	8	3.0	5	58	34.5	18	12	4.4
10.0	8	4.0	5	57	28.0	18	13	10.2
10.0	8	5.0	5	56	21.2	18	14	16.3
10.0	8	6.0	5	55	14.2	18	15	22.7
10.0	8	7.0	5	54	6.8	18	16	29.4
11.0	8	.0	6	1	43.8	18	8	38.0
11.0	8	1.0	6	0	39.1	18	9	42.0
11.0	8	2.0	5	59	34.3	18	10	46.2
11.0	8	3.0	5	58	29.3	18	11	50.5
11.0	8	4.0	5	57	24.1	18	12	55.0
11.0	8	5.0	5	56	18.7	18	13	59.7
11.0	8	6.0	5	55	13.0	18	15	4.8
11.0	8	7.0	5	54	7.0	18	16	10.1
12.0	8	.0	6	1	34.0	18	8	27.6
12.0	8	1.0	6	0	30.7	18	9	30.3
12.0	8	2.0	5	59	27.2	18	10	33.1
12.0	8	3.0	5	58	23.5	18	11	36.1
12.0	8	4.0	5	57	19.7	18	12	39.2
12.0	8	5.0	5	56	15.7	18	13	42.6
12.0	8	6.0	5	55	11.3	18	14	46.2
12.0	8	7.0	5	54	6.7	18	15	50.2
13.0	8	.0	6	1	23.7	18	8	16.7
13.0	8	1.0	6	0	21.7	18	9	18.0
13.0	8	2.0	5	59	19.6	18	10	19.5
13.0	8	3.0	5	58	17.3	18	11	21.0
13.0	8	4.0	5	57	14.9	18	12	22.8
13.0	8	5.0	5	56	12.2	18	13	24.8
13.0	8	6.0	5	55	9.2	18	14	27.1
13.0	8	7.0	5	54	6.0	18	15	29.6

14.0	8	.0	6	1	12.9	18	8	5.3
14.0	8	1.0	6	0	12.2	18	9	5.2
14.0	8	2.0	5	59	11.5	18	10	5.3
14.0	8	3.0	5	58	10.6	18	11	5.5
14.0	8	4.0	5	57	9.5	18	12	5.8
14.0	8	5.0	5	56	8.2	18	13	6.4
14.0	8	6.0	5	55	6.7	18	14	7.3
14.0	8	7.0	5	54	4.8	18	15	8.4

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	8	.0	6	1	1.5	18	7	53.3
15.0	8	1.0	6	0	2.2	18	8	51.9
15.0	8	2.0	5	59	2.9	18	9	50.5
15.0	8	3.0	5	58	3.4	18	10	49.3
15.0	8	4.0	5	57	3.7	18	11	48.3
15.0	8	5.0	5	56	3.8	18	12	47.5
15.0	8	6.0	5	55	3.7	18	13	46.9
15.0	8	7.0	5	54	3.2	18	14	46.7
16.0	8	.0	6	0	49.6	18	7	40.9
16.0	8	1.0	5	59	51.7	18	8	38.0
16.0	8	2.0	5	58	53.8	18	9	35.3
16.0	8	3.0	5	57	55.7	18	10	32.7
16.0	8	4.0	5	56	57.4	18	11	30.2
16.0	8	5.0	5	55	59.0	18	12	28.0
16.0	8	6.0	5	55	.2	18	13	26.0
16.0	8	7.0	5	54	1.2	18	14	24.3
17.0	8	.0	6	0	37.2	18	7	28.0
17.0	8	1.0	5	59	40.8	18	8	23.7
17.0	8	2.0	5	58	44.2	18	9	19.5
17.0	8	3.0	5	57	47.6	18	10	15.4
17.0	8	4.0	5	56	50.7	18	11	11.6
17.0	8	5.0	5	55	53.7	18	12	7.9
17.0	8	6.0	5	54	56.4	18	13	4.5
17.0	8	7.0	5	53	58.8	18	14	1.3
18.0	8	.0	6	0	24.3	18	7	14.5
18.0	8	1.0	5	59	29.3	18	8	8.8
18.0	8	2.0	5	58	34.2	18	9	3.2
18.0	8	3.0	5	57	39.0	18	9	57.7
18.0	8	4.0	5	56	43.5	18	10	52.4
18.0	8	5.0	5	55	47.9	18	11	47.3
18.0	8	6.0	5	54	52.1	18	12	42.4
18.0	8	7.0	5	53	55.9	18	13	37.8
19.0	8	.0	6	0	10.9	18	7	.6
19.0	8	1.0	5	59	17.4	18	7	53.5

19.0	8	2.0	5 58	23.7	18 8	46.4
19.0	8	3.0	5 57	29.9	18 9	39.5
19.0	8	4.0	5 56	35.9	18 10	32.7
19.0	8	5.0	5 55	41.8	18 11	26.2
19.0	8	6.0	5 54	47.4	18 12	19.8
19.0	8	7.0	5 53	52.7	18 13	13.8
20.0	8	.0	5 59	57.1	18 6	46.3
20.0	8	1.0	5 59	5.0	18 7	37.6
20.0	8	2.0	5 58	12.7	18 8	29.1
20.0	8	3.0	5 57	20.4	18 9	20.7
20.0	8	4.0	5 56	27.9	18 10	12.5
20.0	8	5.0	5 55	35.2	18 11	4.5
20.0	8	6.0	5 54	42.3	18 11	56.7
20.0	8	7.0	5 53	49.1	18 12	49.2
21.0	8	.0	5 59	42.8	18 6	31.4
21.0	8	1.0	5 58	52.1	18 7	21.4
21.0	8	2.0	5 58	1.3	18 8	11.4
21.0	8	3.0	5 57	10.5	18 9	1.5
21.0	8	4.0	5 56	19.4	18 9	51.8
21.0	8	5.0	5 55	28.2	18 10	42.3
21.0	8	6.0	5 54	36.7	18 11	33.0
21.0	8	7.0	5 53	45.0	18 12	24.0
22.0	8	.0	5 59	28.0	18 6	16.2
22.0	8	1.0	5 58	38.8	18 7	4.6
22.0	8	2.0	5 57	49.5	18 7	53.1
22.0	8	3.0	5 57	.1	18 8	41.8
22.0	8	4.0	5 56	10.5	18 9	30.6
22.0	8	5.0	5 55	20.8	18 10	19.6
22.0	8	6.0	5 54	30.8	18 11	8.9
22.0	8	7.0	5 53	40.6	18 11	58.4
23.0	8	.0	5 59	12.7	18 6	.4
23.0	8	1.0	5 58	25.0	18 6	47.4
23.0	8	2.0	5 57	37.2	18 7	34.4
23.0	8	3.0	5 56	49.3	18 8	21.6
23.0	8	4.0	5 56	1.2	18 9	9.0
23.0	8	5.0	5 55	13.0	18 9	56.5
23.0	8	6.0	5 54	24.5	18 10	44.2
23.0	8	7.0	5 53	35.8	18 11	32.2
24.0	8	.0	5 58	57.0	18 5	44.3
24.0	8	1.0	5 58	10.8	18 6	29.7
24.0	8	2.0	5 57	24.5	18 7	15.3
24.0	8	3.0	5 56	38.1	18 8	1.0
24.0	8	4.0	5 55	51.5	18 8	46.8
24.0	8	5.0	5 55	4.7	18 9	32.8
24.0	8	6.0	5 54	17.8	18 10	19.0
24.0	8	7.0	5 53	30.5	18 11	5.5

25.0	8	.0	5 58	40.9	18 5	27.7
25.0	8	1.0	5 57	56.2	18 6	11.7
25.0	8	2.0	5 57	11.4	18 6	55.7
25.0	8	3.0	5 56	26.5	18 7	39.9
25.0	8	4.0	5 55	41.4	18 8	24.2
25.0	8	5.0	5 54	56.1	18 9	8.7
25.0	8	6.0	5 54	10.7	18 9	53.4
25.0	8	7.0	5 53	25.0	18 10	38.3
26.0	8	.0	5 58	24.4	18 5	10.7
26.0	8	1.0	5 57	41.2	18 5	53.1
26.0	8	2.0	5 56	57.9	18 6	35.7
26.0	8	3.0	5 56	14.4	18 7	18.4
26.0	8	4.0	5 55	30.9	18 8	1.2
26.0	8	5.0	5 54	47.1	18 8	44.1
26.0	8	6.0	5 54	3.2	18 9	27.3
26.0	8	7.0	5 53	19.0	18 10	10.7
27.0	8	.0	5 58	7.4	18 4	53.3
27.0	8	1.0	5 57	25.7	18 5	34.2
27.0	8	2.0	5 56	43.9	18 6	15.3
27.0	8	3.0	5 56	2.0	18 6	56.4
27.0	8	4.0	5 55	20.0	18 7	37.7
27.0	8	5.0	5 54	37.8	18 8	19.1
27.0	8	6.0	5 53	55.4	18 9	.8
27.0	8	7.0	5 53	12.7	18 9	42.6
28.0	8	.0	5 57	50.1	18 4	35.5
28.0	8	1.0	5 57	9.9	18 5	14.9
28.0	8	2.0	5 56	29.6	18 5	54.4
28.0	8	3.0	5 55	49.3	18 6	34.0
28.0	8	4.0	5 55	8.7	18 7	13.8
28.0	8	5.0	5 54	28.1	18 7	53.7
28.0	8	6.0	5 53	47.2	18 8	33.8
28.0	8	7.0	5 53	6.1	18 9	14.1
29.0	8	.0	5 57	32.3	18 4	17.4
29.0	8	1.0	5 56	53.7	18 4	55.3
29.0	8	2.0	5 56	15.0	18 5	33.2
29.0	8	3.0	5 55	36.1	18 6	11.3
29.0	8	4.0	5 54	57.1	18 6	49.5
29.0	8	5.0	5 54	18.0	18 7	27.9
29.0	8	6.0	5 53	38.7	18 8	6.4
29.0	8	7.0	5 52	59.1	18 8	45.2
30.0	8	.0	5 57	14.2	18 3	58.9
30.0	8	1.0	5 56	37.1	18 4	35.2
30.0	8	2.0	5 55	59.9	18 5	11.6
30.0	8	3.0	5 55	22.6	18 5	48.2
30.0	8	4.0	5 54	45.2	18 6	24.8

30.0	8	5.0	5 54 7.6	18 7 1.6
30.0	8	6.0	5 53 29.8	18 7 38.6
30.0	8	7.0	5 52 51.9	18 8 15.8
31.0	8	.0	5 56 55.8	18 3 40.0
31.0	8	1.0	5 56 20.2	18 4 14.8
31.0	8	2.0	5 55 44.6	18 4 49.7
31.0	8	3.0	5 55 8.8	18 5 24.7
31.0	8	4.0	5 54 32.9	18 5 59.8
31.0	8	5.0	5 53 56.9	18 6 35.0
31.0	8	6.0	5 53 20.7	18 7 10.5
31.0	8	7.0	5 52 44.3	18 7 46.1

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	9	.0	5 56	37.0	18 3	20.9		
1.0	9	1.0	5 56	3.0	18 3	54.1		
1.0	9	2.0	5 55	28.9	18 4	27.4		
1.0	9	3.0	5 54	54.7	18 5	.9		
1.0	9	4.0	5 54	20.4	18 5	34.4		
1.0	9	5.0	5 53	45.9	18 6	8.1		
1.0	9	6.0	5 53	11.3	18 6	41.9		
1.0	9	7.0	5 52	36.4	18 7	16.0		
2.0	9	.0	5 56	17.9	18 3	1.4		
2.0	9	1.0	5 55	45.4	18 3	33.1		
2.0	9	2.0	5 55	12.9	18 4	4.9		
2.0	9	3.0	5 54	40.3	18 4	36.7		
2.0	9	4.0	5 54	7.5	18 5	8.7		
2.0	9	5.0	5 53	34.6	18 5	40.8		
2.0	9	6.0	5 53	1.5	18 6	13.1		
2.0	9	7.0	5 52	28.3	18 6	45.6		
3.0	9	.0	5 55	58.5	18 2	41.7		
3.0	9	1.0	5 55	27.6	18 3	11.8		
3.0	9	2.0	5 54	56.6	18 3	42.0		
3.0	9	3.0	5 54	25.6	18 4	12.3		
3.0	9	4.0	5 53	54.4	18 4	42.7		
3.0	9	5.0	5 53	23.0	18 5	13.2		
3.0	9	6.0	5 52	51.6	18 5	43.9		
3.0	9	7.0	5 52	19.9	18 6	14.8		
4.0	9	.0	5 55	38.8	18 2	21.7		
4.0	9	1.0	5 55	9.5	18 2	50.2		
4.0	9	2.0	5 54	40.1	18 3	18.9		
4.0	9	3.0	5 54	10.6	18 3	47.6		
4.0	9	4.0	5 53	41.0	18 4	16.4		
4.0	9	5.0	5 53	11.2	18 4	45.3		
4.0	9	6.0	5 52	41.3	18 5	14.5		

4.0	9	7.0	5 52	11.3	18	5	43.7
5.0	9	.0	5 55	18.9	18	2	1.5
5.0	9	1.0	5 54	51.2	18	2	28.4
5.0	9	2.0	5 54	23.3	18	2	55.5
5.0	9	3.0	5 53	55.4	18	3	22.6
5.0	9	4.0	5 53	27.4	18	3	49.8
5.0	9	5.0	5 52	59.2	18	4	17.2
5.0	9	6.0	5 52	30.9	18	4	44.7
5.0	9	7.0	5 52	2.4	18	5	12.4
6.0	9	.0	5 54	58.7	18	1	41.0
6.0	9	1.0	5 54	32.6	18	2	6.4
6.0	9	2.0	5 54	6.3	18	2	31.9
6.0	9	3.0	5 53	40.0	18	2	57.4
6.0	9	4.0	5 53	13.6	18	3	23.0
6.0	9	5.0	5 52	47.0	18	3	48.8
6.0	9	6.0	5 52	20.3	18	4	14.7
6.0	9	7.0	5 51	53.4	18	4	40.8
7.0	9	.0	5 54	38.4	18	1	20.4
7.0	9	1.0	5 54	13.8	18	1	44.2
7.0	9	2.0	5 53	49.1	18	2	8.0
7.0	9	3.0	5 53	24.4	18	2	32.0
7.0	9	4.0	5 52	59.5	18	2	56.0
7.0	9	5.0	5 52	34.6	18	3	20.2
7.0	9	6.0	5 52	9.4	18	3	44.5
7.0	9	7.0	5 51	44.2	18	4	9.0
8.0	9	.0	5 54	17.8	18	0	59.6
8.0	9	1.0	5 53	54.8	18	1	21.8
8.0	9	2.0	5 53	31.8	18	1	44.0
8.0	9	3.0	5 53	8.6	18	2	6.4
8.0	9	4.0	5 52	45.3	18	2	28.8
8.0	9	5.0	5 52	22.0	18	2	51.4
8.0	9	6.0	5 51	58.5	18	3	14.1
8.0	9	7.0	5 51	34.8	18	3	37.0
9.0	9	.0	5 53	57.1	18	0	38.6
9.0	9	1.0	5 53	35.7	18	0	59.2
9.0	9	2.0	5 53	14.2	18	1	19.9
9.0	9	3.0	5 52	52.7	18	1	40.6
9.0	9	4.0	5 52	31.0	18	2	1.5
9.0	9	5.0	5 52	9.2	18	2	22.4
9.0	9	6.0	5 51	47.3	18	2	43.5
9.0	9	7.0	5 51	25.3	18	3	4.8
10.0	9	.0	5 53	36.2	18	0	17.5
10.0	9	1.0	5 53	16.4	18	0	36.5
10.0	9	2.0	5 52	56.5	18	0	55.6
10.0	9	3.0	5 52	36.6	18	1	14.7

10.0	9	4.0	5 52 16.5	18 1 34.0
10.0	9	5.0	5 51 56.4	18 1 53.3
10.0	9	6.0	5 51 36.1	18 2 12.8
10.0	9	7.0	5 51 15.7	18 2 32.4
11.0	9	.0	5 53 15.2	17 59 56.3
11.0	9	1.0	5 52 57.0	18 0 13.7
11.0	9	2.0	5 52 38.8	18 0 31.2
11.0	9	3.0	5 52 20.4	18 0 48.7
11.0	9	4.0	5 52 2.0	18 1 6.3
11.0	9	5.0	5 51 43.4	18 1 24.1
11.0	9	6.0	5 51 24.7	18 1 41.9
11.0	9	7.0	5 51 5.9	18 1 59.9
12.0	9	.0	5 52 54.1	17 59 35.0
12.0	9	1.0	5 52 37.5	17 59 50.8
12.0	9	2.0	5 52 20.9	18 0 6.6
12.0	9	3.0	5 52 4.1	18 0 22.6
12.0	9	4.0	5 51 47.3	18 0 38.6
12.0	9	5.0	5 51 30.4	18 0 54.7
12.0	9	6.0	5 51 13.3	18 1 11.0
12.0	9	7.0	5 50 56.2	18 1 27.3
13.0	9	.0	5 52 32.9	17 59 13.7
13.0	9	1.0	5 52 18.0	17 59 27.8
13.0	9	2.0	5 52 2.9	17 59 42.1
13.0	9	3.0	5 51 47.8	17 59 56.4
13.0	9	4.0	5 51 32.6	18 0 10.8
13.0	9	5.0	5 51 17.3	18 0 25.3
13.0	9	6.0	5 51 1.8	18 0 39.9
13.0	9	7.0	5 50 46.3	18 0 54.6
14.0	9	.0	5 52 11.7	17 58 52.3
14.0	9	1.0	5 51 58.3	17 59 4.8
14.0	9	2.0	5 51 44.9	17 59 17.5
14.0	9	3.0	5 51 31.4	17 59 30.2
14.0	9	4.0	5 51 17.8	17 59 42.9
14.0	9	5.0	5 51 4.1	17 59 55.8
14.0	9	6.0	5 50 50.3	18 0 8.8
14.0	9	7.0	5 50 36.4	18 0 21.9

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	9	.0	5 51 50.4			17 58 30.9		
15.0	9	1.0	5 51 38.7			17 58 41.8		
15.0	9	2.0	5 51 26.9			17 58 52.8		
15.0	9	3.0	5 51 15.0			17 59 3.9		
15.0	9	4.0	5 51 3.0			17 59 15.0		
15.0	9	5.0	5 50 50.9			17 59 26.3		

15.0	9	6.0	5 50 38.8	17 59 37.6
15.0	9	7.0	5 50 26.5	17 59 49.1
16.0	9	.0	5 51 29.1	17 58 9.5
16.0	9	1.0	5 51 19.0	17 58 18.8
16.0	9	2.0	5 51 8.8	17 58 28.1
16.0	9	3.0	5 50 58.5	17 58 37.6
16.0	9	4.0	5 50 48.2	17 58 47.1
16.0	9	5.0	5 50 37.8	17 58 56.8
16.0	9	6.0	5 50 27.2	17 59 6.5
16.0	9	7.0	5 50 16.6	17 59 16.3
17.0	9	.0	5 51 7.8	17 57 48.0
17.0	9	1.0	5 50 59.3	17 57 55.7
17.0	9	2.0	5 50 50.7	17 58 3.5
17.0	9	3.0	5 50 42.1	17 58 11.3
17.0	9	4.0	5 50 33.4	17 58 19.2
17.0	9	5.0	5 50 24.6	17 58 27.2
17.0	9	6.0	5 50 15.7	17 58 35.3
17.0	9	7.0	5 50 6.7	17 58 43.4
18.0	9	.0	5 50 46.5	17 57 26.7
18.0	9	1.0	5 50 39.6	17 57 32.7
18.0	9	2.0	5 50 32.7	17 57 38.9
18.0	9	3.0	5 50 25.7	17 57 45.1
18.0	9	4.0	5 50 18.6	17 57 51.3
18.0	9	5.0	5 50 11.4	17 57 57.7
18.0	9	6.0	5 50 4.2	17 58 4.1
18.0	9	7.0	5 49 56.8	17 58 10.6
19.0	9	.0	5 50 25.3	17 57 5.3
19.0	9	1.0	5 50 20.0	17 57 9.8
19.0	9	2.0	5 50 14.7	17 57 14.3
19.0	9	3.0	5 50 9.3	17 57 18.9
19.0	9	4.0	5 50 3.9	17 57 23.5
19.0	9	5.0	5 49 58.3	17 57 28.2
19.0	9	6.0	5 49 52.7	17 57 33.0
19.0	9	7.0	5 49 47.0	17 57 37.9
20.0	9	.0	5 50 4.0	17 56 44.1
20.0	9	1.0	5 50 .4	17 56 46.9
20.0	9	2.0	5 49 56.7	17 56 49.8
20.0	9	3.0	5 49 53.0	17 56 52.7
20.0	9	4.0	5 49 49.1	17 56 55.7
20.0	9	5.0	5 49 45.3	17 56 58.8
20.0	9	6.0	5 49 41.3	17 57 1.9
20.0	9	7.0	5 49 37.2	17 57 5.1
21.0	9	.0	5 49 42.9	17 56 22.9
21.0	9	1.0	5 49 40.9	17 56 24.1
21.0	9	2.0	5 49 38.8	17 56 25.3

21.0	9	3.0	5 49 36.7	17 56 26.6
21.0	9	4.0	5 49 34.5	17 56 28.0
21.0	9	5.0	5 49 32.3	17 56 29.4
21.0	9	6.0	5 49 29.9	17 56 30.9
21.0	9	7.0	5 49 27.5	17 56 32.5
22.0	9	.0	5 49 21.8	17 56 1.8
22.0	9	1.0	5 49 21.4	17 56 1.3
22.0	9	2.0	5 49 21.0	17 56 .9
22.0	9	3.0	5 49 20.5	17 56 .6
22.0	9	4.0	5 49 20.0	17 56 .4
22.0	9	5.0	5 49 19.3	17 56 .1
22.0	9	6.0	5 49 18.7	17 55 60.0
22.0	9	7.0	5 49 17.9	17 55 59.9
23.0	9	.0	5 49 .8	17 55 40.8
23.0	9	1.0	5 49 2.1	17 55 38.7
23.0	9	2.0	5 49 3.3	17 55 36.7
23.0	9	3.0	5 49 4.4	17 55 34.7
23.0	9	4.0	5 49 5.5	17 55 32.8
23.0	9	5.0	5 49 6.5	17 55 31.0
23.0	9	6.0	5 49 7.5	17 55 29.2
23.0	9	7.0	5 49 8.4	17 55 27.4
24.0	9	.0	5 48 39.9	17 55 19.9
24.0	9	1.0	5 48 42.8	17 55 16.2
24.0	9	2.0	5 48 45.6	17 55 12.6
24.0	9	3.0	5 48 48.4	17 55 9.0
24.0	9	4.0	5 48 51.1	17 55 5.4
24.0	9	5.0	5 48 53.8	17 55 1.9
24.0	9	6.0	5 48 56.4	17 54 58.5
24.0	9	7.0	5 48 59.0	17 54 55.1
25.0	9	.0	5 48 19.1	17 54 59.2
25.0	9	1.0	5 48 23.7	17 54 53.9
25.0	9	2.0	5 48 28.1	17 54 48.6
25.0	9	3.0	5 48 32.6	17 54 43.4
25.0	9	4.0	5 48 36.9	17 54 38.2
25.0	9	5.0	5 48 41.2	17 54 33.0
25.0	9	6.0	5 48 45.5	17 54 28.0
25.0	9	7.0	5 48 49.7	17 54 22.9
26.0	9	.0	5 47 58.5	17 54 38.7
26.0	9	1.0	5 48 4.7	17 54 31.7
26.0	9	2.0	5 48 10.8	17 54 24.8
26.0	9	3.0	5 48 16.9	17 54 17.9
26.0	9	4.0	5 48 22.9	17 54 11.1
26.0	9	5.0	5 48 28.8	17 54 4.3
26.0	9	6.0	5 48 34.7	17 53 57.6
26.0	9	7.0	5 48 40.6	17 53 50.9

27.0	9	.0	5 47 38.1	17 54 18.3
27.0	9	1.0	5 47 45.9	17 54 9.7
27.0	9	2.0	5 47 53.6	17 54 1.2
27.0	9	3.0	5 48 1.3	17 53 52.7
27.0	9	4.0	5 48 9.0	17 53 44.2
27.0	9	5.0	5 48 16.5	17 53 35.8
27.0	9	6.0	5 48 24.1	17 53 27.4
27.0	9	7.0	5 48 31.6	17 53 19.0
28.0	9	.0	5 47 17.8	17 53 58.2
28.0	9	1.0	5 47 27.3	17 53 47.9
28.0	9	2.0	5 47 36.6	17 53 37.7
28.0	9	3.0	5 47 46.0	17 53 27.6
28.0	9	4.0	5 47 55.2	17 53 17.5
28.0	9	5.0	5 48 4.5	17 53 7.4
28.0	9	6.0	5 48 13.7	17 52 57.4
28.0	9	7.0	5 48 22.9	17 52 47.4
29.0	9	.0	5 46 57.8	17 53 38.2
29.0	9	1.0	5 47 8.8	17 53 26.4
29.0	9	2.0	5 47 19.8	17 53 14.6
29.0	9	3.0	5 47 30.8	17 53 2.8
29.0	9	4.0	5 47 41.7	17 52 51.0
29.0	9	5.0	5 47 52.6	17 52 39.3
29.0	9	6.0	5 48 3.4	17 52 27.7
29.0	9	7.0	5 48 14.3	17 52 16.0
30.0	9	.0	5 46 38.0	17 53 18.6
30.0	9	1.0	5 46 50.7	17 53 5.1
30.0	9	2.0	5 47 3.3	17 52 51.6
30.0	9	3.0	5 47 15.9	17 52 38.2
30.0	9	4.0	5 47 28.4	17 52 24.8
30.0	9	5.0	5 47 40.9	17 52 11.5
30.0	9	6.0	5 47 53.4	17 51 58.2
30.0	9	7.0	5 48 5.9	17 51 44.9

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	10	.0	5 46 18.4			17 52 59.1		
1.0	10	1.0	5 46 32.7			17 52 44.0		
1.0	10	2.0	5 46 47.0			17 52 28.9		
1.0	10	3.0	5 47 1.2			17 52 13.9		
1.0	10	4.0	5 47 15.4			17 51 58.9		
1.0	10	5.0	5 47 29.5			17 51 43.9		
1.0	10	6.0	5 47 43.7			17 51 29.0		
1.0	10	7.0	5 47 57.8			17 51 14.0		
2.0	10	.0	5 45 59.1			17 52 40.0		
2.0	10	1.0	5 46 15.0			17 52 23.3		

2.0	10	2.0	5 46	30.9	17 52	6.6
2.0	10	3.0	5 46	46.8	17 51	49.9
2.0	10	4.0	5 47	2.6	17 51	33.2
2.0	10	5.0	5 47	18.4	17 51	16.6
2.0	10	6.0	5 47	34.2	17 51	.0
2.0	10	7.0	5 47	50.0	17 50	43.4
3.0	10	.0	5 45	40.1	17 52	21.2
3.0	10	1.0	5 45	57.7	17 52	2.8
3.0	10	2.0	5 46	15.2	17 51	44.5
3.0	10	3.0	5 46	32.7	17 51	26.2
3.0	10	4.0	5 46	50.1	17 51	7.9
3.0	10	5.0	5 47	7.5	17 50	49.7
3.0	10	6.0	5 47	25.0	17 50	31.4
3.0	10	7.0	5 47	42.4	17 50	13.2
4.0	10	.0	5 45	21.4	17 52	2.7
4.0	10	1.0	5 45	40.6	17 51	42.7
4.0	10	2.0	5 45	59.7	17 51	22.8
4.0	10	3.0	5 46	18.8	17 51	2.8
4.0	10	4.0	5 46	37.9	17 50	42.9
4.0	10	5.0	5 46	57.0	17 50	23.1
4.0	10	6.0	5 47	16.0	17 50	3.2
4.0	10	7.0	5 47	35.1	17 49	43.3
5.0	10	.0	5 45	3.0	17 51	44.6
5.0	10	1.0	5 45	23.9	17 51	23.0
5.0	10	2.0	5 45	44.6	17 51	1.4
5.0	10	3.0	5 46	5.4	17 50	39.8
5.0	10	4.0	5 46	26.1	17 50	18.3
5.0	10	5.0	5 46	46.8	17 49	56.8
5.0	10	6.0	5 47	7.5	17 49	35.3
5.0	10	7.0	5 47	28.2	17 49	13.8
6.0	10	.0	5 44	45.0	17 51	26.9
6.0	10	1.0	5 45	7.5	17 51	3.6
6.0	10	2.0	5 45	29.9	17 50	40.4
6.0	10	3.0	5 45	52.2	17 50	17.2
6.0	10	4.0	5 46	14.6	17 49	54.1
6.0	10	5.0	5 46	36.9	17 49	31.0
6.0	10	6.0	5 46	59.2	17 49	7.8
6.0	10	7.0	5 47	21.6	17 48	44.6
7.0	10	.0	5 44	27.4	17 51	9.5
7.0	10	1.0	5 44	51.5	17 50	44.7
7.0	10	2.0	5 45	15.5	17 50	19.8
7.0	10	3.0	5 45	39.5	17 49	55.1
7.0	10	4.0	5 46	3.4	17 49	30.3
7.0	10	5.0	5 46	27.4	17 49	5.5
7.0	10	6.0	5 46	51.4	17 48	40.8
7.0	10	7.0	5 47	15.3	17 48	15.9

8.0	10	.0	5 44	10.3	17 50	52.6
8.0	10	1.0	5 44	35.9	17 50	26.1
8.0	10	2.0	5 45	1.5	17 49	59.7
8.0	10	3.0	5 45	27.1	17 49	33.3
8.0	10	4.0	5 45	52.7	17 49	6.9
8.0	10	5.0	5 46	18.3	17 48	40.5
8.0	10	6.0	5 46	43.9	17 48	14.1
8.0	10	7.0	5 47	9.5	17 47	47.7
9.0	10	.0	5 43	53.5	17 50	36.2
9.0	10	1.0	5 44	20.8	17 50	8.1
9.0	10	2.0	5 44	48.0	17 49	40.0
9.0	10	3.0	5 45	15.2	17 49	12.0
9.0	10	4.0	5 45	42.4	17 48	44.0
9.0	10	5.0	5 46	9.6	17 48	16.0
9.0	10	6.0	5 46	36.8	17 47	48.0
9.0	10	7.0	5 47	4.1	17 47	19.9
10.0	10	.0	5 43	37.2	17 50	20.2
10.0	10	1.0	5 44	6.1	17 49	50.5
10.0	10	2.0	5 44	34.9	17 49	20.9
10.0	10	3.0	5 45	3.8	17 48	51.2
10.0	10	4.0	5 45	32.6	17 48	21.6
10.0	10	5.0	5 46	1.4	17 47	52.0
10.0	10	6.0	5 46	30.2	17 47	22.4
10.0	10	7.0	5 46	59.1	17 46	52.7
11.0	10	.0	5 43	21.4	17 50	4.7
11.0	10	1.0	5 43	51.9	17 49	33.4
11.0	10	2.0	5 44	22.3	17 49	2.2
11.0	10	3.0	5 44	52.8	17 48	31.0
11.0	10	4.0	5 45	23.2	17 47	59.7
11.0	10	5.0	5 45	53.6	17 47	28.5
11.0	10	6.0	5 46	24.1	17 46	57.3
11.0	10	7.0	5 46	54.6	17 46	25.9
12.0	10	.0	5 43	6.1	17 49	49.8
12.0	10	1.0	5 43	38.2	17 49	16.9
12.0	10	2.0	5 44	10.2	17 48	44.0
12.0	10	3.0	5 44	42.3	17 48	11.2
12.0	10	4.0	5 45	14.3	17 47	38.4
12.0	10	5.0	5 45	46.3	17 47	5.6
12.0	10	6.0	5 46	18.4	17 46	32.7
12.0	10	7.0	5 46	50.5	17 45	59.8
13.0	10	.0	5 42	51.3	17 49	35.3
13.0	10	1.0	5 43	25.0	17 49	.9
13.0	10	2.0	5 43	58.6	17 48	26.4
13.0	10	3.0	5 44	32.3	17 47	52.0
13.0	10	4.0	5 45	5.9	17 47	17.6

13.0	10	5.0	5 45 39.5	17 46 43.2
13.0	10	6.0	5 46 13.2	17 46 8.7
13.0	10	7.0	5 46 46.9	17 45 34.1
14.0	10	.0	5 42 37.1	17 49 21.5
14.0	10	1.0	5 43 12.3	17 48 45.4
14.0	10	2.0	5 43 47.6	17 48 9.4
14.0	10	3.0	5 44 22.8	17 47 33.4
14.0	10	4.0	5 44 58.0	17 46 57.4
14.0	10	5.0	5 45 33.2	17 46 21.3
14.0	10	6.0	5 46 8.5	17 45 45.3
14.0	10	7.0	5 46 43.9	17 45 9.1

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	10	.0	5 42	23.4		17 49	8.2	
15.0	10	1.0	5 43	.2		17 48	30.5	
15.0	10	2.0	5 43	37.0		17 47	52.9	
15.0	10	3.0	5 44	13.8		17 47	15.3	
15.0	10	4.0	5 44	50.6		17 46	37.7	
15.0	10	5.0	5 45	27.5		17 46	.1	
15.0	10	6.0	5 46	4.3		17 45	22.4	
15.0	10	7.0	5 46	41.3		17 44	44.7	
16.0	10	.0	5 42	10.3		17 48	55.5	
16.0	10	1.0	5 42	48.7		17 48	16.2	
16.0	10	2.0	5 43	27.1		17 47	37.1	
16.0	10	3.0	5 44	5.5		17 46	57.9	
16.0	10	4.0	5 44	43.8		17 46	18.7	
16.0	10	5.0	5 45	22.3		17 45	39.5	
16.0	10	6.0	5 46	.7		17 45	.3	
16.0	10	7.0	5 46	39.3		17 44	20.9	
17.0	10	.0	5 41	57.7		17 48	43.4	
17.0	10	1.0	5 42	37.7		17 48	2.6	
17.0	10	2.0	5 43	17.7		17 47	21.8	
17.0	10	3.0	5 43	57.6		17 46	41.1	
17.0	10	4.0	5 44	37.6		17 46	.3	
17.0	10	5.0	5 45	17.6		17 45	19.5	
17.0	10	6.0	5 45	57.7		17 44	38.7	
17.0	10	7.0	5 46	37.8		17 43	57.8	
18.0	10	.0	5 41	45.8		17 48	31.9	
18.0	10	1.0	5 42	27.4		17 47	49.5	
18.0	10	2.0	5 43	8.9		17 47	7.2	
18.0	10	3.0	5 43	50.4		17 46	24.9	
18.0	10	4.0	5 44	31.9		17 45	42.6	
18.0	10	5.0	5 45	13.5		17 45	.2	
18.0	10	6.0	5 45	55.2		17 44	17.8	

18.0	10	7.0	5 46 36.9	17 43 35.3
19.0	10	.0	5 41 34.5	17 48 21.0
19.0	10	1.0	5 42 17.6	17 47 37.1
19.0	10	2.0	5 43 .7	17 46 53.2
19.0	10	3.0	5 43 43.8	17 46 9.4
19.0	10	4.0	5 44 26.9	17 45 25.5
19.0	10	5.0	5 45 10.0	17 44 41.6
19.0	10	6.0	5 45 53.2	17 43 57.6
19.0	10	7.0	5 46 36.5	17 43 13.5
20.0	10	.0	5 41 23.8	17 48 10.8
20.0	10	1.0	5 42 8.5	17 47 25.3
20.0	10	2.0	5 42 53.1	17 46 39.9
20.0	10	3.0	5 43 37.7	17 45 54.5
20.0	10	4.0	5 44 22.4	17 45 9.1
20.0	10	5.0	5 45 7.1	17 44 23.6
20.0	10	6.0	5 45 51.9	17 43 38.0
20.0	10	7.0	5 46 36.8	17 42 52.4
21.0	10	.0	5 41 13.7	17 48 1.2
21.0	10	1.0	5 41 60.0	17 47 14.2
21.0	10	2.0	5 42 46.1	17 46 27.3
21.0	10	3.0	5 43 32.3	17 45 40.3
21.0	10	4.0	5 44 18.5	17 44 53.3
21.0	10	5.0	5 45 4.8	17 44 6.3
21.0	10	6.0	5 45 51.1	17 43 19.2
21.0	10	7.0	5 46 37.6	17 42 32.0
22.0	10	.0	5 41 4.3	17 47 52.3
22.0	10	1.0	5 41 52.1	17 47 3.8
22.0	10	2.0	5 42 39.8	17 46 15.3
22.0	10	3.0	5 43 27.5	17 45 26.8
22.0	10	4.0	5 44 15.3	17 44 38.3
22.0	10	5.0	5 45 3.1	17 43 49.7
22.0	10	6.0	5 45 51.0	17 43 1.1
22.0	10	7.0	5 46 39.0	17 42 12.3
23.0	10	.0	5 40 55.6	17 47 44.1
23.0	10	1.0	5 41 44.9	17 46 54.0
23.0	10	2.0	5 42 34.1	17 46 4.0
23.0	10	3.0	5 43 23.4	17 45 14.0
23.0	10	4.0	5 44 12.7	17 44 23.9
23.0	10	5.0	5 45 2.0	17 43 33.8
23.0	10	6.0	5 45 51.4	17 42 43.7
23.0	10	7.0	5 46 41.0	17 41 53.3
24.0	10	.0	5 40 47.5	17 47 36.5
24.0	10	1.0	5 41 38.3	17 46 45.0
24.0	10	2.0	5 42 29.1	17 45 53.4
24.0	10	3.0	5 43 19.9	17 45 1.9

24.0	10	4.0	5 44	10.7	17 44	10.3
24.0	10	5.0	5 45	1.5	17 43	18.7
24.0	10	6.0	5 45	52.5	17 42	27.0
24.0	10	7.0	5 46	43.6	17 41	35.1
25.0	10	.0	5 40	40.1	17 47	29.7
25.0	10	1.0	5 41	32.5	17 46	36.6
25.0	10	2.0	5 42	24.7	17 45	43.6
25.0	10	3.0	5 43	17.0	17 44	50.5
25.0	10	4.0	5 44	9.4	17 43	57.5
25.0	10	5.0	5 45	1.7	17 43	4.3
25.0	10	6.0	5 45	54.2	17 42	11.1
25.0	10	7.0	5 46	46.8	17 41	17.7
26.0	10	.0	5 40	33.5	17 47	23.6
26.0	10	1.0	5 41	27.3	17 46	29.0
26.0	10	2.0	5 42	21.1	17 45	34.5
26.0	10	3.0	5 43	14.9	17 44	39.9
26.0	10	4.0	5 44	8.7	17 43	45.4
26.0	10	5.0	5 45	2.6	17 42	50.7
26.0	10	6.0	5 45	56.6	17 41	56.0
26.0	10	7.0	5 46	50.7	17 41	1.1
27.0	10	.0	5 40	27.5	17 47	18.1
27.0	10	1.0	5 41	22.8	17 46	22.1
27.0	10	2.0	5 42	18.1	17 45	26.1
27.0	10	3.0	5 43	13.4	17 44	30.1
27.0	10	4.0	5 44	8.7	17 43	34.0
27.0	10	5.0	5 45	4.1	17 42	37.9
27.0	10	6.0	5 45	59.6	17 41	41.6
27.0	10	7.0	5 46	55.2	17 40	45.2
28.0	10	.0	5 40	22.3	17 47	13.5
28.0	10	1.0	5 41	19.1	17 46	16.0
28.0	10	2.0	5 42	15.8	17 45	18.5
28.0	10	3.0	5 43	12.6	17 44	21.0
28.0	10	4.0	5 44	9.4	17 43	23.4
28.0	10	5.0	5 45	6.2	17 42	25.8
28.0	10	6.0	5 46	3.2	17 41	28.1
28.0	10	7.0	5 47	.4	17 40	30.2
29.0	10	.0	5 40	17.8	17 47	9.5
29.0	10	1.0	5 41	16.0	17 46	10.6
29.0	10	2.0	5 42	14.2	17 45	11.6
29.0	10	3.0	5 43	12.5	17 44	12.7
29.0	10	4.0	5 44	10.7	17 43	13.7
29.0	10	5.0	5 45	9.1	17 42	14.6
29.0	10	6.0	5 46	7.6	17 41	15.4
29.0	10	7.0	5 47	6.2	17 40	16.0
30.0	10	.0	5 40	14.0	17 47	6.4

30.0	10	1.0	5 41	13.7	17 46	5.9
30.0	10	2.0	5 42	13.4	17 45	5.6
30.0	10	3.0	5 43	13.1	17 44	5.1
30.0	10	4.0	5 44	12.8	17 43	4.7
30.0	10	5.0	5 45	12.6	17 42	4.2
30.0	10	6.0	5 46	12.6	17 41	3.5
30.0	10	7.0	5 47	12.7	17 40	2.7
31.0	10	.0	5 40	11.0	17 47	4.0
31.0	10	1.0	5 41	12.2	17 46	2.1
31.0	10	2.0	5 42	13.3	17 45	.3
31.0	10	3.0	5 43	14.4	17 43	58.4
31.0	10	4.0	5 44	15.6	17 42	56.5
31.0	10	5.0	5 45	16.9	17 41	54.6
31.0	10	6.0	5 46	18.2	17 40	52.4
31.0	10	7.0	5 47	19.8	17 39	50.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	11	.0	5 40	8.8		17 47	2.3	
1.0	11	1.0	5 41	11.4		17 45	59.1	
1.0	11	2.0	5 42	13.9		17 44	55.8	
1.0	11	3.0	5 43	16.5		17 43	52.5	
1.0	11	4.0	5 44	19.1		17 42	49.2	
1.0	11	5.0	5 45	21.8		17 41	45.8	
1.0	11	6.0	5 46	24.6		17 40	42.3	
1.0	11	7.0	5 47	27.6		17 39	38.5	
2.0	11	.0	5 40	7.4		17 47	1.5	
2.0	11	1.0	5 41	11.4		17 45	56.8	
2.0	11	2.0	5 42	15.3		17 44	52.2	
2.0	11	3.0	5 43	19.3		17 43	47.5	
2.0	11	4.0	5 44	23.3		17 42	42.8	
2.0	11	5.0	5 45	27.5		17 41	37.9	
2.0	11	6.0	5 46	31.7		17 40	33.0	
2.0	11	7.0	5 47	36.2		17 39	27.8	
3.0	11	.0	5 40	6.7		17 47	1.5	
3.0	11	1.0	5 41	12.1		17 45	55.4	
3.0	11	2.0	5 42	17.5		17 44	49.4	
3.0	11	3.0	5 43	22.9		17 43	43.3	
3.0	11	4.0	5 44	28.3		17 42	37.1	
3.0	11	5.0	5 45	33.8		17 41	30.9	
3.0	11	6.0	5 46	39.5		17 40	24.5	
3.0	11	7.0	5 47	45.4		17 39	18.0	
4.0	11	.0	5 40	6.9		17 47	2.3	
4.0	11	1.0	5 41	13.7		17 45	54.8	
4.0	11	2.0	5 42	20.4		17 44	47.4	

4.0	11	3.0	5 43	27.2	17 43	39.9
4.0	11	4.0	5 44	34.0	17 42	32.4
4.0	11	5.0	5 45	41.0	17 41	24.8
4.0	11	6.0	5 46	48.0	17 40	17.0
4.0	11	7.0	5 47	55.3	17 39	9.1
5.0	11	.0	5 40	7.9	17 47	3.9
5.0	11	1.0	5 41	16.1	17 45	55.1
5.0	11	2.0	5 42	24.2	17 44	46.3
5.0	11	3.0	5 43	32.3	17 43	37.5
5.0	11	4.0	5 44	40.5	17 42	28.6
5.0	11	5.0	5 45	48.8	17 41	19.6
5.0	11	6.0	5 46	57.3	17 40	10.4
5.0	11	7.0	5 48	5.9	17 39	1.1
6.0	11	.0	5 40	9.7	17 47	6.4
6.0	11	1.0	5 41	19.3	17 45	56.2
6.0	11	2.0	5 42	28.7	17 44	46.0
6.0	11	3.0	5 43	38.2	17 43	35.9
6.0	11	4.0	5 44	47.8	17 42	25.6
6.0	11	5.0	5 45	57.5	17 41	15.3
6.0	11	6.0	5 47	7.3	17 40	4.8
6.0	11	7.0	5 48	17.3	17 38	54.1
7.0	11	.0	5 40	12.4	17 47	9.7
7.0	11	1.0	5 41	23.3	17 45	58.1
7.0	11	2.0	5 42	34.1	17 44	46.7
7.0	11	3.0	5 43	44.9	17 43	35.2
7.0	11	4.0	5 44	55.8	17 42	23.6
7.0	11	5.0	5 46	6.8	17 41	11.9
7.0	11	6.0	5 47	18.0	17 40	.1
7.0	11	7.0	5 48	29.4	17 38	48.0
8.0	11	.0	5 40	16.0	17 47	13.8
8.0	11	1.0	5 41	28.1	17 46	1.0
8.0	11	2.0	5 42	40.3	17 44	48.2
8.0	11	3.0	5 43	52.4	17 43	35.4
8.0	11	4.0	5 45	4.6	17 42	22.5
8.0	11	5.0	5 46	17.0	17 41	9.5
8.0	11	6.0	5 47	29.5	17 39	56.3
8.0	11	7.0	5 48	42.2	17 38	42.9
9.0	11	.0	5 40	20.3	17 47	18.8
9.0	11	1.0	5 41	33.8	17 46	4.7
9.0	11	2.0	5 42	47.3	17 44	50.6
9.0	11	3.0	5 44	.7	17 43	36.5
9.0	11	4.0	5 45	14.3	17 42	22.3
9.0	11	5.0	5 46	27.9	17 41	8.0
9.0	11	6.0	5 47	41.7	17 39	53.5
9.0	11	7.0	5 48	55.8	17 38	38.8

10.0	11	.0	5 40 25.6	17 47 24.7
10.0	11	1.0	5 41 40.3	17 46 9.3
10.0	11	2.0	5 42 55.1	17 44 54.0
10.0	11	3.0	5 44 9.8	17 43 38.6
10.0	11	4.0	5 45 24.7	17 42 23.1
10.0	11	5.0	5 46 39.6	17 41 7.5
10.0	11	6.0	5 47 54.7	17 39 51.7
10.0	11	7.0	5 49 10.1	17 38 35.8
11.0	11	.0	5 40 31.7	17 47 31.5
11.0	11	1.0	5 41 47.7	17 46 14.8
11.0	11	2.0	5 43 3.7	17 44 58.2
11.0	11	3.0	5 44 19.8	17 43 41.5
11.0	11	4.0	5 45 35.9	17 42 24.8
11.0	11	5.0	5 46 52.1	17 41 8.0
11.0	11	6.0	5 48 8.5	17 39 50.9
11.0	11	7.0	5 49 25.1	17 38 33.7
12.0	11	.0	5 40 38.7	17 47 39.1
12.0	11	1.0	5 41 56.0	17 46 21.2
12.0	11	2.0	5 43 13.2	17 45 3.3
12.0	11	3.0	5 44 30.5	17 43 45.5
12.0	11	4.0	5 45 47.9	17 42 27.5
12.0	11	5.0	5 47 5.3	17 41 9.4
12.0	11	6.0	5 48 23.0	17 39 51.1
12.0	11	7.0	5 49 40.9	17 38 32.6
13.0	11	.0	5 40 46.6	17 47 47.6
13.0	11	1.0	5 42 5.1	17 46 28.5
13.0	11	2.0	5 43 23.5	17 45 9.4
13.0	11	3.0	5 44 42.1	17 43 50.3
13.0	11	4.0	5 46 .6	17 42 31.1
13.0	11	5.0	5 47 19.4	17 41 11.8
13.0	11	6.0	5 48 38.3	17 39 52.3
13.0	11	7.0	5 49 57.4	17 38 32.5
14.0	11	.0	5 40 55.3	17 47 57.0
14.0	11	1.0	5 42 15.0	17 46 36.7
14.0	11	2.0	5 43 34.7	17 45 16.4
14.0	11	3.0	5 44 54.4	17 43 56.1
14.0	11	4.0	5 46 14.2	17 42 35.7
14.0	11	5.0	5 47 34.1	17 41 15.1
14.0	11	6.0	5 48 54.3	17 39 54.4
14.0	11	7.0	5 50 14.6	17 38 33.4

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	11	.0	5	41	4.9	17	48	7.2
15.0	11	1.0	5	42	25.8	17	46	45.7

15.0	11	2.0	5 43	46.7	17 45	24.2
15.0	11	3.0	5 45	7.6	17 44	2.7
15.0	11	4.0	5 46	28.6	17 42	41.2
15.0	11	5.0	5 47	49.7	17 41	19.5
15.0	11	6.0	5 49	11.0	17 39	57.5
15.0	11	7.0	5 50	32.6	17 38	35.4
16.0	11	.0	5 41	15.3	17 48	18.2
16.0	11	1.0	5 42	37.4	17 46	55.6
16.0	11	2.0	5 43	59.4	17 45	33.0
16.0	11	3.0	5 45	21.5	17 44	10.4
16.0	11	4.0	5 46	43.7	17 42	47.6
16.0	11	5.0	5 48	6.0	17 41	24.7
16.0	11	6.0	5 49	28.5	17 40	1.7
16.0	11	7.0	5 50	51.2	17 38	38.4
17.0	11	.0	5 41	26.6	17 48	30.2
17.0	11	1.0	5 42	49.8	17 47	6.4
17.0	11	2.0	5 44	13.0	17 45	42.7
17.0	11	3.0	5 45	36.2	17 44	18.9
17.0	11	4.0	5 46	59.5	17 42	55.0
17.0	11	5.0	5 48	23.0	17 41	31.0
17.0	11	6.0	5 49	46.6	17 40	6.8
17.0	11	7.0	5 51	10.5	17 38	42.3
18.0	11	.0	5 41	38.8	17 48	42.9
18.0	11	1.0	5 43	3.1	17 47	18.0
18.0	11	2.0	5 44	27.4	17 45	53.2
18.0	11	3.0	5 45	51.7	17 44	28.3
18.0	11	4.0	5 47	16.1	17 43	3.3
18.0	11	5.0	5 48	40.7	17 41	38.2
18.0	11	6.0	5 50	5.5	17 40	12.9
18.0	11	7.0	5 51	30.5	17 38	47.3
19.0	11	.0	5 41	51.7	17 48	56.5
19.0	11	1.0	5 43	17.1	17 47	30.5
19.0	11	2.0	5 44	42.5	17 46	4.6
19.0	11	3.0	5 46	8.0	17 44	38.6
19.0	11	4.0	5 47	33.5	17 43	12.6
19.0	11	5.0	5 48	59.2	17 41	46.4
19.0	11	6.0	5 50	25.0	17 40	19.9
19.0	11	7.0	5 51	51.2	17 38	53.2
20.0	11	.0	5 42	5.5	17 49	10.9
20.0	11	1.0	5 43	32.0	17 47	43.9
20.0	11	2.0	5 44	58.5	17 46	16.9
20.0	11	3.0	5 46	25.0	17 44	49.8
20.0	11	4.0	5 47	51.6	17 43	22.7
20.0	11	5.0	5 49	18.3	17 41	55.4
20.0	11	6.0	5 50	45.3	17 40	28.0
20.0	11	7.0	5 52	12.5	17 39	.2

21.0	11	.0	5 42	20.1	17 49	26.0
21.0	11	1.0	5 43	47.6	17 47	58.0
21.0	11	2.0	5 45	15.1	17 46	30.0
21.0	11	3.0	5 46	42.7	17 45	1.9
21.0	11	4.0	5 48	10.3	17 43	33.8
21.0	11	5.0	5 49	38.1	17 42	5.5
21.0	11	6.0	5 51	6.1	17 40	36.9
21.0	11	7.0	5 52	34.4	17 39	8.1
22.0	11	.0	5 42	35.5	17 49	42.0
22.0	11	1.0	5 44	4.0	17 48	13.0
22.0	11	2.0	5 45	32.6	17 46	43.9
22.0	11	3.0	5 47	1.1	17 45	14.9
22.0	11	4.0	5 48	29.8	17 43	45.7
22.0	11	5.0	5 49	58.6	17 42	16.4
22.0	11	6.0	5 51	27.6	17 40	46.9
22.0	11	7.0	5 52	57.0	17 39	17.0
23.0	11	.0	5 42	51.7	17 49	58.7
23.0	11	1.0	5 44	21.2	17 48	28.7
23.0	11	2.0	5 45	50.7	17 46	58.7
23.0	11	3.0	5 47	20.3	17 45	28.7
23.0	11	4.0	5 48	49.9	17 43	58.5
23.0	11	5.0	5 50	19.7	17 42	28.2
23.0	11	6.0	5 51	49.8	17 40	57.7
23.0	11	7.0	5 53	20.1	17 39	26.9
24.0	11	.0	5 43	8.6	17 50	16.2
24.0	11	1.0	5 44	39.1	17 48	45.3
24.0	11	2.0	5 46	9.6	17 47	14.3
24.0	11	3.0	5 47	40.1	17 45	43.3
24.0	11	4.0	5 49	10.7	17 44	12.2
24.0	11	5.0	5 50	41.5	17 42	41.0
24.0	11	6.0	5 52	12.5	17 41	9.5
24.0	11	7.0	5 53	43.8	17 39	37.7
25.0	11	.0	5 43	26.3	17 50	34.5
25.0	11	1.0	5 44	57.7	17 49	2.6
25.0	11	2.0	5 46	29.1	17 47	30.7
25.0	11	3.0	5 48	.6	17 45	58.8
25.0	11	4.0	5 49	32.2	17 44	26.8
25.0	11	5.0	5 51	3.9	17 42	54.6
25.0	11	6.0	5 52	35.8	17 41	22.2
25.0	11	7.0	5 54	8.1	17 39	49.5
26.0	11	.0	5 43	44.7	17 50	53.5
26.0	11	1.0	5 45	17.1	17 49	20.7
26.0	11	2.0	5 46	49.4	17 47	47.9
26.0	11	3.0	5 48	21.7	17 46	15.1
26.0	11	4.0	5 49	54.2	17 44	42.2

26.0	11	5.0	5 51 26.9	17 43 9.1
26.0	11	6.0	5 52 59.7	17 41 35.8
26.0	11	7.0	5 54 32.9	17 40 2.2
27.0	11	.0	5 44 3.9	17 51 13.1
27.0	11	1.0	5 45 37.1	17 49 39.5
27.0	11	2.0	5 47 10.3	17 48 5.9
27.0	11	3.0	5 48 43.5	17 46 32.2
27.0	11	4.0	5 50 16.9	17 44 58.4
27.0	11	5.0	5 51 50.4	17 43 24.5
27.0	11	6.0	5 53 24.1	17 41 50.3
27.0	11	7.0	5 54 58.2	17 40 15.8
28.0	11	.0	5 44 23.7	17 51 33.5
28.0	11	1.0	5 45 57.8	17 49 59.0
28.0	11	2.0	5 47 31.8	17 48 24.6
28.0	11	3.0	5 49 5.9	17 46 50.1
28.0	11	4.0	5 50 40.1	17 45 15.5
28.0	11	5.0	5 52 14.5	17 43 40.7
28.0	11	6.0	5 53 49.1	17 42 5.6
28.0	11	7.0	5 55 24.0	17 40 30.3
29.0	11	.0	5 44 44.3	17 51 54.5
29.0	11	1.0	5 46 19.1	17 50 19.3
29.0	11	2.0	5 47 54.0	17 48 44.0
29.0	11	3.0	5 49 28.9	17 47 8.7
29.0	11	4.0	5 51 3.9	17 45 33.3
29.0	11	5.0	5 52 39.1	17 43 57.7
29.0	11	6.0	5 54 14.6	17 42 21.9
29.0	11	7.0	5 55 50.3	17 40 45.7
30.0	11	.0	5 45 5.5	17 52 16.2
30.0	11	1.0	5 46 41.1	17 50 40.2
30.0	11	2.0	5 48 16.8	17 49 4.2
30.0	11	3.0	5 49 52.5	17 47 28.1
30.0	11	4.0	5 51 28.3	17 45 51.9
30.0	11	5.0	5 53 4.3	17 44 15.5
30.0	11	6.0	5 54 40.5	17 42 38.9
30.0	11	7.0	5 56 17.0	17 41 2.0

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	12	.0	5	45	27.4	17	52	38.5
1.0	12	1.0	5	47	3.8	17	51	1.8
1.0	12	2.0	5	48	40.2	17	49	25.0
1.0	12	3.0	5	50	16.6	17	47	48.2
1.0	12	4.0	5	51	53.2	17	46	11.3
1.0	12	5.0	5	53	29.9	17	44	34.2
1.0	12	6.0	5	55	6.9	17	42	56.8

1.0	12	7.0	5 56 44.2	17 41 19.2
2.0	12	.0	5 45 49.9	17 53 1.5
2.0	12	1.0	5 47 27.0	17 51 24.0
2.0	12	2.0	5 49 4.1	17 49 46.6
2.0	12	3.0	5 50 41.3	17 48 9.0
2.0	12	4.0	5 52 18.5	17 46 31.4
2.0	12	5.0	5 53 56.0	17 44 53.6
2.0	12	6.0	5 55 33.7	17 43 15.5
2.0	12	7.0	5 57 11.7	17 41 37.2
3.0	12	.0	5 46 13.0	17 53 25.0
3.0	12	1.0	5 47 50.8	17 51 46.9
3.0	12	2.0	5 49 28.6	17 50 8.8
3.0	12	3.0	5 51 6.4	17 48 30.6
3.0	12	4.0	5 52 44.4	17 46 52.3
3.0	12	5.0	5 54 22.6	17 45 13.8
3.0	12	6.0	5 56 1.0	17 43 35.0
3.0	12	7.0	5 57 39.7	17 41 56.0
4.0	12	.0	5 46 36.7	17 53 49.2
4.0	12	1.0	5 48 15.2	17 52 10.4
4.0	12	2.0	5 49 53.6	17 50 31.6
4.0	12	3.0	5 51 32.1	17 48 52.8
4.0	12	4.0	5 53 10.8	17 47 13.9
4.0	12	5.0	5 54 49.6	17 45 34.7
4.0	12	6.0	5 56 28.6	17 43 55.3
4.0	12	7.0	5 58 8.0	17 42 15.6
5.0	12	.0	5 47 1.0	17 54 13.9
5.0	12	1.0	5 48 40.1	17 52 34.5
5.0	12	2.0	5 50 19.2	17 50 55.1
5.0	12	3.0	5 51 58.3	17 49 15.7
5.0	12	4.0	5 53 37.5	17 47 36.1
5.0	12	5.0	5 55 17.0	17 45 56.4
5.0	12	6.0	5 56 56.7	17 44 16.4
5.0	12	7.0	5 58 36.7	17 42 36.1
6.0	12	.0	5 47 25.9	17 54 39.1
6.0	12	1.0	5 49 5.5	17 52 59.1
6.0	12	2.0	5 50 45.2	17 51 19.2
6.0	12	3.0	5 52 24.9	17 49 39.2
6.0	12	4.0	5 54 4.7	17 47 59.1
6.0	12	5.0	5 55 44.8	17 46 18.8
6.0	12	6.0	5 57 25.0	17 44 38.2
6.0	12	7.0	5 59 5.6	17 42 57.4
7.0	12	.0	5 47 51.3	17 55 4.9
7.0	12	1.0	5 49 31.5	17 53 24.4
7.0	12	2.0	5 51 11.7	17 51 43.9
7.0	12	3.0	5 52 52.0	17 50 3.4

7.0	12	4.0	5	54	32.4	17	48	22.7
7.0	12	5.0	5	56	12.9	17	46	41.9
7.0	12	6.0	5	57	53.8	17	45	.8
7.0	12	7.0	5	59	34.9	17	43	19.4
8.0	12	.0	5	48	17.2	17	55	31.1
8.0	12	1.0	5	49	57.9	17	53	50.1
8.0	12	2.0	5	51	38.7	17	52	9.2
8.0	12	3.0	5	53	19.5	17	50	28.1
8.0	12	4.0	5	55	.4	17	48	47.0
8.0	12	5.0	5	56	41.4	17	47	5.7
8.0	12	6.0	5	58	22.8	17	45	24.1
8.0	12	7.0	6	0	4.5	17	43	42.1
9.0	12	.0	5	48	43.6	17	55	57.8
9.0	12	1.0	5	50	24.9	17	54	16.4
9.0	12	2.0	5	52	6.1	17	52	35.0
9.0	12	3.0	5	53	47.3	17	50	53.5
9.0	12	4.0	5	55	28.7	17	49	11.9
9.0	12	5.0	5	57	10.3	17	47	30.1
9.0	12	6.0	5	58	52.1	17	45	48.0
9.0	12	7.0	6	0	34.3	17	44	5.6
10.0	12	.0	5	49	10.5	17	56	25.0
10.0	12	1.0	5	50	52.2	17	54	43.2
10.0	12	2.0	5	52	33.8	17	53	1.3
10.0	12	3.0	5	54	15.5	17	51	19.4
10.0	12	4.0	5	55	57.4	17	49	37.4
10.0	12	5.0	5	57	39.4	17	47	55.2
10.0	12	6.0	5	59	21.7	17	46	12.7
10.0	12	7.0	6	1	4.3	17	44	29.8
11.0	12	.0	5	49	37.9	17	56	52.6
11.0	12	1.0	5	51	19.9	17	55	10.4
11.0	12	2.0	5	53	2.0	17	53	28.1
11.0	12	3.0	5	54	44.1	17	51	45.9
11.0	12	4.0	5	56	26.3	17	50	3.4
11.0	12	5.0	5	58	8.7	17	48	20.8
11.0	12	6.0	5	59	51.4	17	46	37.9
11.0	12	7.0	6	1	34.5	17	44	54.7
12.0	12	.0	5	50	5.6	17	57	20.6
12.0	12	1.0	5	51	48.1	17	55	38.0
12.0	12	2.0	5	53	30.5	17	53	55.4
12.0	12	3.0	5	55	12.9	17	52	12.8
12.0	12	4.0	5	56	55.5	17	50	30.0
12.0	12	5.0	5	58	38.3	17	48	47.1
12.0	12	6.0	6	0	21.4	17	47	3.8
12.0	12	7.0	6	2	4.8	17	45	20.3
13.0	12	.0	5	50	33.8	17	57	48.9

13.0	12	1.0	5	52	16.5	17	56	6.0
13.0	12	2.0	5	53	59.3	17	54	23.1
13.0	12	3.0	5	55	42.1	17	52	40.2
13.0	12	4.0	5	57	25.0	17	50	57.1
13.0	12	5.0	5	59	8.1	17	49	13.8
13.0	12	6.0	6	0	51.5	17	47	30.3
13.0	12	7.0	6	2	35.2	17	45	46.4

14.0	12	.0	5	51	2.2	17	58	17.6
14.0	12	1.0	5	52	45.3	17	56	34.4
14.0	12	2.0	5	54	28.3	17	54	51.2
14.0	12	3.0	5	56	11.4	17	53	8.0
14.0	12	4.0	5	57	54.6	17	51	24.7
14.0	12	5.0	5	59	38.0	17	49	41.1
14.0	12	6.0	6	1	21.7	17	47	57.3
14.0	12	7.0	6	3	5.8	17	46	13.1

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	12	.0	5	51	31.0	17	58	46.5
15.0	12	1.0	5	53	14.3	17	57	3.1
15.0	12	2.0	5	54	57.6	17	55	19.7
15.0	12	3.0	5	56	40.9	17	53	36.2
15.0	12	4.0	5	58	24.4	17	51	52.7
15.0	12	5.0	6	0	8.1	17	50	8.9
15.0	12	6.0	6	1	52.0	17	48	24.8
15.0	12	7.0	6	3	36.3	17	46	40.4
16.0	12	.0	5	52	.0	17	59	15.7
16.0	12	1.0	5	53	43.6	17	57	32.1
16.0	12	2.0	5	55	27.1	17	55	48.5
16.0	12	3.0	5	57	10.6	17	54	4.8
16.0	12	4.0	5	58	54.3	17	52	21.1
16.0	12	5.0	6	0	38.2	17	50	37.1
16.0	12	6.0	6	2	22.4	17	48	52.8
16.0	12	7.0	6	4	6.9	17	47	8.2
17.0	12	.0	5	52	29.3	17	59	45.1
17.0	12	1.0	5	54	13.0	17	58	1.3
17.0	12	2.0	5	55	56.7	17	56	17.6
17.0	12	3.0	5	57	40.5	17	54	33.8
17.0	12	4.0	5	59	24.3	17	52	49.8
17.0	12	5.0	6	1	8.4	17	51	5.7
17.0	12	6.0	6	2	52.7	17	49	21.3
17.0	12	7.0	6	4	37.4	17	47	36.5
18.0	12	.0	5	52	58.8	18	0	14.7
18.0	12	1.0	5	54	42.6	17	58	30.8
18.0	12	2.0	5	56	26.5	17	56	46.9

18.0	12	3.0	5	58	10.3	17	55	3.0
18.0	12	4.0	5	59	54.4	17	53	18.9
18.0	12	5.0	6	1	38.6	17	51	34.6
18.0	12	6.0	6	3	23.1	17	49	50.1
18.0	12	7.0	6	5	7.9	17	48	5.2
19.0	12	.0	5	53	28.5	18	0	44.4
19.0	12	1.0	5	55	12.4	17	59	.4
19.0	12	2.0	5	56	56.3	17	57	16.4
19.0	12	3.0	5	58	40.3	17	55	32.4
19.0	12	4.0	6	0	24.4	17	53	48.3
19.0	12	5.0	6	2	8.7	17	52	3.9
19.0	12	6.0	6	3	53.3	17	50	19.3
19.0	12	7.0	6	5	38.2	17	48	34.4
20.0	12	.0	5	53	58.2	18	1	14.2
20.0	12	1.0	5	55	42.2	17	59	30.2
20.0	12	2.0	5	57	26.2	17	57	46.2
20.0	12	3.0	5	59	10.2	17	56	2.1
20.0	12	4.0	6	0	54.4	17	54	17.9
20.0	12	5.0	6	2	38.8	17	52	33.5
20.0	12	6.0	6	4	23.4	17	50	48.9
20.0	12	7.0	6	6	8.4	17	49	3.9
21.0	12	.0	5	54	28.1	18	1	44.0
21.0	12	1.0	5	56	12.1	18	0	.0
21.0	12	2.0	5	57	56.1	17	58	16.0
21.0	12	3.0	5	59	40.2	17	56	32.0
21.0	12	4.0	6	1	24.4	17	54	47.8
21.0	12	5.0	6	3	8.8	17	53	3.4
21.0	12	6.0	6	4	53.4	17	51	18.7
21.0	12	7.0	6	6	38.4	17	49	33.7
22.0	12	.0	5	54	58.0	18	2	13.9
22.0	12	1.0	5	56	42.0	18	0	30.0
22.0	12	2.0	5	58	26.0	17	58	46.0
22.0	12	3.0	6	0	10.0	17	57	2.0
22.0	12	4.0	6	1	54.2	17	55	17.8
22.0	12	5.0	6	3	38.6	17	53	33.5
22.0	12	6.0	6	5	23.2	17	51	48.8
22.0	12	7.0	6	7	8.2	17	50	3.9
23.0	12	.0	5	55	27.9	18	2	43.8
23.0	12	1.0	5	57	11.8	18	0	59.9
23.0	12	2.0	5	58	55.8	17	59	16.0
23.0	12	3.0	6	0	39.8	17	57	32.1
23.0	12	4.0	6	2	23.9	17	55	48.0
23.0	12	5.0	6	4	8.2	17	54	3.7
23.0	12	6.0	6	5	52.8	17	52	19.2
23.0	12	7.0	6	7	37.7	17	50	34.3

24.0	12	.0	5	55	57.8	18	3	13.6
24.0	12	1.0	5	57	41.6	18	1	29.8
24.0	12	2.0	5	59	25.5	17	59	46.1
24.0	12	3.0	6	1	9.4	17	58	2.2
24.0	12	4.0	6	2	53.4	17	56	18.3
24.0	12	5.0	6	4	37.6	17	54	34.1
24.0	12	6.0	6	6	22.1	17	52	49.7
24.0	12	7.0	6	8	7.0	17	51	4.9
25.0	12	.0	5	56	27.6	18	3	43.4
25.0	12	1.0	5	58	11.3	18	1	59.7
25.0	12	2.0	5	59	55.0	18	0	16.1
25.0	12	3.0	6	1	38.8	17	58	32.4
25.0	12	4.0	6	3	22.7	17	56	48.6
25.0	12	5.0	6	5	6.8	17	55	4.6
25.0	12	6.0	6	6	51.1	17	53	20.3
25.0	12	7.0	6	8	35.8	17	51	35.7
26.0	12	.0	5	56	57.4	18	4	13.0
26.0	12	1.0	5	58	40.9	18	2	29.5
26.0	12	2.0	6	0	24.4	18	0	46.1
26.0	12	3.0	6	2	8.0	17	59	2.6
26.0	12	4.0	6	3	51.7	17	57	19.0
26.0	12	5.0	6	5	35.7	17	55	35.2
26.0	12	6.0	6	7	19.8	17	53	51.1
26.0	12	7.0	6	9	4.4	17	52	6.7
27.0	12	.0	5	57	27.0	18	4	42.4
27.0	12	1.0	5	59	10.3	18	2	59.2
27.0	12	2.0	6	0	53.6	18	1	16.0
27.0	12	3.0	6	2	37.0	17	59	32.8
27.0	12	4.0	6	4	20.5	17	57	49.4
27.0	12	5.0	6	6	4.2	17	56	5.8
27.0	12	6.0	6	7	48.2	17	54	22.0
27.0	12	7.0	6	9	32.5	17	52	37.8
28.0	12	.0	5	57	56.4	18	5	11.7
28.0	12	1.0	5	59	39.5	18	3	28.8
28.0	12	2.0	6	1	22.6	18	1	45.8
28.0	12	3.0	6	3	5.7	18	0	2.9
28.0	12	4.0	6	4	48.9	17	58	19.7
28.0	12	5.0	6	6	32.4	17	56	36.4
28.0	12	6.0	6	8	16.1	17	54	52.9
28.0	12	7.0	6	10	.2	17	53	8.9
29.0	12	.0	5	58	25.6	18	5	40.8
29.0	12	1.0	6	0	8.4	18	3	58.1
29.0	12	2.0	6	1	51.2	18	2	15.5
29.0	12	3.0	6	3	34.1	18	0	32.8
29.0	12	4.0	6	5	17.0	17	58	50.0
29.0	12	5.0	6	7	.2	17	57	7.0

29.0	12	6.0	6 8 43.6	17 55 23.7
29.0	12	7.0	6 10 27.4	17 53 40.1
30.0	12	.0	5 58 54.7	18 6 9.5
30.0	12	1.0	6 0 37.1	18 4 27.3
30.0	12	2.0	6 2 19.6	18 2 45.0
30.0	12	3.0	6 4 2.1	18 1 2.6
30.0	12	4.0	6 5 44.7	17 59 20.2
30.0	12	5.0	6 7 27.5	17 57 37.5
30.0	12	6.0	6 9 10.6	17 55 54.6
30.0	12	7.0	6 10 54.1	17 54 11.4
31.0	12	.0	5 59 23.4	18 6 38.0
31.0	12	1.0	6 1 5.5	18 4 56.1
31.0	12	2.0	6 2 47.6	18 3 14.3
31.0	12	3.0	6 4 29.7	18 1 32.3
31.0	12	4.0	6 6 12.0	17 59 50.2
31.0	12	5.0	6 7 54.5	17 58 8.0
31.0	12	6.0	6 9 37.2	17 56 25.4
31.0	12	7.0	6 11 20.3	17 54 42.6

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	1	.0	5	59	51.9	18	7	6.2
1.0	1	1.0	6	1	33.6	18	5	24.8
1.0	1	2.0	6	3	15.2	18	3	43.3
1.0	1	3.0	6	4	57.0	18	2	1.8
1.0	1	4.0	6	6	38.9	18	0	20.1
1.0	1	5.0	6	8	20.9	17	58	38.3
1.0	1	6.0	6	10	3.2	17	56	56.2
1.0	1	7.0	6	11	45.9	17	55	13.7