

TAHUN = 2018  
 LONG= 120.0 ~

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

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
2.0	1	.0	6	0	20.0	18	7	34.1
2.0	1	1.0	6	2	1.3	18	5	53.1
2.0	1	2.0	6	3	42.5	18	4	12.1
2.0	1	3.0	6	5	23.8	18	2	31.0
2.0	1	4.0	6	7	5.2	18	0	49.8
2.0	1	5.0	6	8	46.9	17	59	8.4
2.0	1	6.0	6	10	28.7	17	57	26.8
2.0	1	7.0	6	12	11.0	17	55	44.8
3.0	1	.0	6	0	47.8	18	8	1.6
3.0	1	1.0	6	2	28.6	18	6	21.1
3.0	1	2.0	6	4	9.4	18	4	40.5
3.0	1	3.0	6	5	50.2	18	2	60.0
3.0	1	4.0	6	7	31.2	18	1	19.3
3.0	1	5.0	6	9	12.3	17	59	38.4
3.0	1	6.0	6	10	53.7	17	57	57.2
3.0	1	7.0	6	12	35.4	17	56	15.8
4.0	1	.0	6	1	15.3	18	8	28.7
4.0	1	1.0	6	2	55.6	18	6	48.7
4.0	1	2.0	6	4	35.8	18	5	8.7
4.0	1	3.0	6	6	16.1	18	3	28.7
4.0	1	4.0	6	7	56.6	18	1	48.5
4.0	1	5.0	6	9	37.2	18	0	8.2
4.0	1	6.0	6	11	18.1	17	58	27.6
4.0	1	7.0	6	12	59.3	17	56	46.6
5.0	1	.0	6	1	42.3	18	8	55.4
5.0	1	1.0	6	3	22.1	18	7	16.0
5.0	1	2.0	6	5	1.8	18	5	36.6
5.0	1	3.0	6	6	41.5	18	3	57.1
5.0	1	4.0	6	8	21.4	18	2	17.5

5.0	1	5.0	6 10	1.5	18 0	37.7
5.0	1	6.0	6 11	41.8	17 58	57.7
5.0	1	7.0	6 13	22.5	17 57	17.3
6.0	1	.0	6 2	9.0	18 9	21.7
6.0	1	1.0	6 3	48.1	18 7	42.9
6.0	1	2.0	6 5	27.3	18 6	4.1
6.0	1	3.0	6 7	6.4	18 4	25.2
6.0	1	4.0	6 8	45.7	18 2	46.2
6.0	1	5.0	6 10	25.2	18 1	7.0
6.0	1	6.0	6 12	5.0	17 59	27.6
6.0	1	7.0	6 13	45.0	17 57	47.8
7.0	1	.0	6 2	35.2	18 9	47.5
7.0	1	1.0	6 4	13.7	18 8	9.3
7.0	1	2.0	6 5	52.3	18 6	31.2
7.0	1	3.0	6 7	30.8	18 4	52.9
7.0	1	4.0	6 9	9.5	18 3	14.6
7.0	1	5.0	6 10	48.3	18 1	36.0
7.0	1	6.0	6 12	27.5	17 59	57.2
7.0	1	7.0	6 14	6.9	17 58	18.1
8.0	1	.0	6 3	1.0	18 10	12.9
8.0	1	1.0	6 4	38.9	18 8	35.4
8.0	1	2.0	6 6	16.7	18 6	57.8
8.0	1	3.0	6 7	54.6	18 5	20.3
8.0	1	4.0	6 9	32.6	18 3	42.6
8.0	1	5.0	6 11	10.8	18 2	4.7
8.0	1	6.0	6 12	49.3	18 0	26.6
8.0	1	7.0	6 14	28.1	17 58	48.2
9.0	1	.0	6 3	26.3	18 10	37.7
9.0	1	1.0	6 5	3.4	18 9	.9
9.0	1	2.0	6 6	40.6	18 7	24.1
9.0	1	3.0	6 8	17.8	18 5	47.2
9.0	1	4.0	6 9	55.1	18 4	10.3
9.0	1	5.0	6 11	32.7	18 2	33.1
9.0	1	6.0	6 13	10.4	18 0	55.7
9.0	1	7.0	6 14	48.5	17 59	18.0
10.0	1	.0	6 3	51.0	18 11	2.0
10.0	1	1.0	6 5	27.5	18 9	25.9
10.0	1	2.0	6 7	3.9	18 7	49.9
10.0	1	3.0	6 8	40.4	18 6	13.8
10.0	1	4.0	6 10	17.0	18 4	37.5
10.0	1	5.0	6 11	53.8	18 3	1.1
10.0	1	6.0	6 13	30.8	18 1	24.5
10.0	1	7.0	6 15	8.2	17 59	47.5
11.0	1	.0	6 4	15.2	18 11	25.8
11.0	1	1.0	6 5	50.9	18 9	50.5

11.0	1	2.0	6	7	26.6	18	8	15.2
11.0	1	3.0	6	9	2.4	18	6	39.8
11.0	1	4.0	6	10	38.2	18	5	4.4
11.0	1	5.0	6	12	14.2	18	3	28.7
11.0	1	6.0	6	13	50.5	18	1	52.9
11.0	1	7.0	6	15	27.1	18	0	16.7
12.0	1	.0	6	4	38.9	18	11	48.9
12.0	1	1.0	6	6	13.8	18	10	14.4
12.0	1	2.0	6	7	48.7	18	8	39.9
12.0	1	3.0	6	9	23.7	18	7	5.4
12.0	1	4.0	6	10	58.7	18	5	30.7
12.0	1	5.0	6	12	34.0	18	3	55.9
12.0	1	6.0	6	14	9.4	18	2	20.9
12.0	1	7.0	6	15	45.2	18	0	45.5
13.0	1	.0	6	5	2.0	18	12	11.5
13.0	1	1.0	6	6	36.1	18	10	37.8
13.0	1	2.0	6	8	10.1	18	9	4.2
13.0	1	3.0	6	9	44.3	18	7	30.5
13.0	1	4.0	6	11	18.5	18	5	56.7
13.0	1	5.0	6	12	52.9	18	4	22.7
13.0	1	6.0	6	14	27.6	18	2	48.4
13.0	1	7.0	6	16	2.5	18	1	13.9
14.0	1	.0	6	5	24.4	18	12	33.4
14.0	1	1.0	6	6	57.7	18	11	.6
14.0	1	2.0	6	8	30.9	18	9	27.8
14.0	1	3.0	6	10	4.2	18	7	55.0
14.0	1	4.0	6	11	37.6	18	6	22.1
14.0	1	5.0	6	13	11.1	18	4	48.9
14.0	1	6.0	6	14	44.9	18	3	15.6
14.0	1	7.0	6	16	19.0	18	1	42.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	1	.0	6	5	46.2	18	12	54.7
15.0	1	1.0	6	7	18.6	18	11	22.8
15.0	1	2.0	6	8	51.0	18	9	50.9
15.0	1	3.0	6	10	23.4	18	8	19.0
15.0	1	4.0	6	11	55.9	18	6	46.9
15.0	1	5.0	6	13	28.5	18	5	14.7
15.0	1	6.0	6	15	1.4	18	3	42.3
15.0	1	7.0	6	16	34.6	18	2	9.5
16.0	1	.0	6	6	7.4	18	13	15.3
16.0	1	1.0	6	7	38.9	18	11	44.4
16.0	1	2.0	6	9	10.3	18	10	13.4
16.0	1	3.0	6	10	41.8	18	8	42.4

16.0	1	4.0	6 12 13.4	18 7 11.3
16.0	1	5.0	6 13 45.1	18 5 40.0
16.0	1	6.0	6 15 17.1	18 4 8.5
16.0	1	7.0	6 16 49.4	18 2 36.7
17.0	1	.0	6 6 27.9	18 13 35.3
17.0	1	1.0	6 7 58.4	18 12 5.2
17.0	1	2.0	6 9 28.9	18 10 35.2
17.0	1	3.0	6 10 59.4	18 9 5.2
17.0	1	4.0	6 12 30.1	18 7 35.0
17.0	1	5.0	6 14 .9	18 6 4.7
17.0	1	6.0	6 15 31.9	18 4 34.1
17.0	1	7.0	6 17 3.2	18 3 3.3
18.0	1	.0	6 6 47.7	18 13 54.5
18.0	1	1.0	6 8 17.2	18 12 25.4
18.0	1	2.0	6 9 46.7	18 10 56.4
18.0	1	3.0	6 11 16.3	18 9 27.3
18.0	1	4.0	6 12 46.0	18 7 58.2
18.0	1	5.0	6 14 15.8	18 6 28.8
18.0	1	6.0	6 15 45.9	18 4 59.3
18.0	1	7.0	6 17 16.2	18 3 29.4
19.0	1	.0	6 7 6.7	18 14 13.0
19.0	1	1.0	6 8 35.3	18 12 44.9
19.0	1	2.0	6 10 3.8	18 11 16.9
19.0	1	3.0	6 11 32.4	18 9 48.8
19.0	1	4.0	6 13 1.0	18 8 20.7
19.0	1	5.0	6 14 29.9	18 6 52.4
19.0	1	6.0	6 15 58.9	18 5 23.8
19.0	1	7.0	6 17 28.2	18 3 55.0
20.0	1	.0	6 7 25.1	18 14 30.7
20.0	1	1.0	6 8 52.6	18 13 3.7
20.0	1	2.0	6 10 20.1	18 11 36.7
20.0	1	3.0	6 11 47.6	18 10 9.7
20.0	1	4.0	6 13 15.3	18 8 42.6
20.0	1	5.0	6 14 43.1	18 7 15.3
20.0	1	6.0	6 16 11.1	18 5 47.8
20.0	1	7.0	6 17 39.3	18 4 20.1
21.0	1	.0	6 7 42.6	18 14 47.7
21.0	1	1.0	6 9 9.1	18 13 21.7
21.0	1	2.0	6 10 35.6	18 11 55.8
21.0	1	3.0	6 12 2.0	18 10 29.9
21.0	1	4.0	6 13 28.6	18 9 3.8
21.0	1	5.0	6 14 55.4	18 7 37.6
21.0	1	6.0	6 16 22.3	18 6 11.2
21.0	1	7.0	6 17 49.5	18 4 44.5
22.0	1	.0	6 7 59.4	18 15 3.9

22.0	1	1.0	6	9	24.8	18	13	39.0
22.0	1	2.0	6	10	50.2	18	12	14.2
22.0	1	3.0	6	12	15.6	18	10	49.3
22.0	1	4.0	6	13	41.1	18	9	24.4
22.0	1	5.0	6	15	6.8	18	7	59.3
22.0	1	6.0	6	16	32.6	18	6	34.0
22.0	1	7.0	6	17	58.7	18	5	8.4
23.0	1	.0	6	8	15.5	18	15	19.3
23.0	1	1.0	6	9	39.7	18	13	55.5
23.0	1	2.0	6	11	4.0	18	12	31.8
23.0	1	3.0	6	12	28.3	18	11	8.1
23.0	1	4.0	6	13	52.7	18	9	44.2
23.0	1	5.0	6	15	17.3	18	8	20.3
23.0	1	6.0	6	16	42.0	18	6	56.1
23.0	1	7.0	6	18	7.0	18	5	31.7
24.0	1	.0	6	8	30.7	18	15	33.9
24.0	1	1.0	6	9	53.8	18	14	11.3
24.0	1	2.0	6	11	17.0	18	12	48.7
24.0	1	3.0	6	12	40.2	18	11	26.1
24.0	1	4.0	6	14	3.4	18	10	3.4
24.0	1	5.0	6	15	26.8	18	8	40.6
24.0	1	6.0	6	16	50.4	18	7	17.6
24.0	1	7.0	6	18	14.3	18	5	54.3
25.0	1	.0	6	8	45.1	18	15	47.6
25.0	1	1.0	6	10	7.1	18	14	26.2
25.0	1	2.0	6	11	29.1	18	13	4.8
25.0	1	3.0	6	12	51.1	18	11	43.4
25.0	1	4.0	6	14	13.2	18	10	21.9
25.0	1	5.0	6	15	35.5	18	9	.2
25.0	1	6.0	6	16	57.9	18	7	38.3
25.0	1	7.0	6	18	20.6	18	6	16.2
26.0	1	.0	6	8	58.7	18	16	.6
26.0	1	1.0	6	10	19.5	18	14	40.4
26.0	1	2.0	6	11	40.3	18	13	20.2
26.0	1	3.0	6	13	1.2	18	11	59.9
26.0	1	4.0	6	14	22.1	18	10	39.6
26.0	1	5.0	6	15	43.2	18	9	19.1
26.0	1	6.0	6	17	4.4	18	7	58.5
26.0	1	7.0	6	18	25.9	18	6	37.6
27.0	1	.0	6	9	11.5	18	16	12.8
27.0	1	1.0	6	10	31.1	18	14	53.7
27.0	1	2.0	6	11	50.7	18	13	34.7
27.0	1	3.0	6	13	10.4	18	12	15.7
27.0	1	4.0	6	14	30.1	18	10	56.6
27.0	1	5.0	6	15	49.9	18	9	37.3
27.0	1	6.0	6	17	10.0	18	8	17.9

27.0	1	7.0	6 18 30.3	18 6 58.2
28.0	1	.0	6 9 23.4	18 16 24.1
28.0	1	1.0	6 10 41.8	18 15 6.3
28.0	1	2.0	6 12 .2	18 13 48.5
28.0	1	3.0	6 13 18.6	18 12 30.7
28.0	1	4.0	6 14 37.2	18 11 12.8
28.0	1	5.0	6 15 55.8	18 9 54.8
28.0	1	6.0	6 17 14.6	18 8 36.6
28.0	1	7.0	6 18 33.7	18 7 18.2
29.0	1	.0	6 9 34.5	18 16 34.6
29.0	1	1.0	6 10 51.7	18 15 18.0
29.0	1	2.0	6 12 8.9	18 14 1.5
29.0	1	3.0	6 13 26.1	18 12 44.9
29.0	1	4.0	6 14 43.3	18 11 28.3
29.0	1	5.0	6 16 .7	18 10 11.6
29.0	1	6.0	6 17 18.3	18 8 54.6
29.0	1	7.0	6 18 36.1	18 7 37.5
30.0	1	.0	6 9 44.8	18 16 44.2
30.0	1	1.0	6 11 .8	18 15 29.0
30.0	1	2.0	6 12 16.6	18 14 13.7
30.0	1	3.0	6 13 32.6	18 12 58.4
30.0	1	4.0	6 14 48.6	18 11 43.1
30.0	1	5.0	6 16 4.7	18 10 27.6
30.0	1	6.0	6 17 21.0	18 9 12.0
30.0	1	7.0	6 18 37.5	18 7 56.1
31.0	1	.0	6 9 54.3	18 16 53.1
31.0	1	1.0	6 11 9.0	18 15 39.1
31.0	1	2.0	6 12 23.6	18 14 25.1
31.0	1	3.0	6 13 38.2	18 13 11.1
31.0	1	4.0	6 14 52.9	18 11 57.1
31.0	1	5.0	6 16 7.7	18 10 42.9
31.0	1	6.0	6 17 22.7	18 9 28.6
31.0	1	7.0	6 18 37.9	18 8 14.0

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	2	.0	6	10	3.0	18	17	1.1
1.0	2	1.0	6	11	16.3	18	15	48.4
1.0	2	2.0	6	12	29.6	18	14	35.8
1.0	2	3.0	6	13	43.0	18	13	23.1
1.0	2	4.0	6	14	56.4	18	12	10.4
1.0	2	5.0	6	16	9.9	18	10	57.5
1.0	2	6.0	6	17	23.6	18	9	44.5
1.0	2	7.0	6	18	37.5	18	8	31.3

2.0	2	.0	6 10 10.8	18 17 8.3
2.0	2	1.0	6 11 22.9	18 15 57.0
2.0	2	2.0	6 12 34.8	18 14 45.7
2.0	2	3.0	6 13 46.8	18 13 34.3
2.0	2	4.0	6 14 58.9	18 12 22.9
2.0	2	5.0	6 16 11.1	18 11 11.4
2.0	2	6.0	6 17 23.5	18 9 59.7
2.0	2	7.0	6 18 36.0	18 8 47.8
3.0	2	.0	6 10 17.9	18 17 14.7
3.0	2	1.0	6 11 28.6	18 16 4.7
3.0	2	2.0	6 12 39.2	18 14 54.8
3.0	2	3.0	6 13 49.9	18 13 44.8
3.0	2	4.0	6 15 .6	18 12 34.7
3.0	2	5.0	6 16 11.5	18 11 24.5
3.0	2	6.0	6 17 22.5	18 10 14.2
3.0	2	7.0	6 18 33.7	18 9 3.7
4.0	2	.0	6 10 24.1	18 17 20.3
4.0	2	1.0	6 11 33.4	18 16 11.7
4.0	2	2.0	6 12 42.7	18 15 3.1
4.0	2	3.0	6 13 52.0	18 13 54.5
4.0	2	4.0	6 15 1.4	18 12 45.8
4.0	2	5.0	6 16 10.9	18 11 37.0
4.0	2	6.0	6 17 20.5	18 10 28.1
4.0	2	7.0	6 18 30.4	18 9 18.9
5.0	2	.0	6 10 29.6	18 17 25.2
5.0	2	1.0	6 11 37.5	18 16 17.9
5.0	2	2.0	6 12 45.4	18 15 10.7
5.0	2	3.0	6 13 53.4	18 14 3.4
5.0	2	4.0	6 15 1.4	18 12 56.1
5.0	2	5.0	6 16 9.5	18 11 48.7
5.0	2	6.0	6 17 17.7	18 10 41.2
5.0	2	7.0	6 18 26.2	18 9 33.4
6.0	2	.0	6 10 34.2	18 17 29.2
6.0	2	1.0	6 11 40.8	18 16 23.3
6.0	2	2.0	6 12 47.3	18 15 17.5
6.0	2	3.0	6 13 53.9	18 14 11.7
6.0	2	4.0	6 15 .5	18 13 5.8
6.0	2	5.0	6 16 7.2	18 11 59.8
6.0	2	6.0	6 17 14.0	18 10 53.6
6.0	2	7.0	6 18 21.0	18 9 47.3
7.0	2	.0	6 10 38.1	18 17 32.4
7.0	2	1.0	6 11 43.3	18 16 28.0
7.0	2	2.0	6 12 48.4	18 15 23.6
7.0	2	3.0	6 13 53.5	18 14 19.2
7.0	2	4.0	6 14 58.7	18 13 14.7
7.0	2	5.0	6 16 4.0	18 12 10.1

7.0	2	6.0	6 17	9.4	18 11	5.4
7.0	2	7.0	6 18	15.0	18 10	.5
8.0	2	.0	6 10	41.2	18 17	34.9
8.0	2	1.0	6 11	44.9	18 16	31.9
8.0	2	2.0	6 12	48.6	18 15	28.9
8.0	2	3.0	6 13	52.3	18 14	25.9
8.0	2	4.0	6 14	56.1	18 13	22.9
8.0	2	5.0	6 15	60.0	18 12	19.7
8.0	2	6.0	6 17	4.0	18 11	16.5
8.0	2	7.0	6 18	8.1	18 10	13.0
9.0	2	.0	6 10	43.5	18 17	36.6
9.0	2	1.0	6 11	45.8	18 16	35.1
9.0	2	2.0	6 12	48.1	18 15	33.5
9.0	2	3.0	6 13	50.4	18 14	32.0
9.0	2	4.0	6 14	52.7	18 13	30.4
9.0	2	5.0	6 15	55.1	18 12	28.7
9.0	2	6.0	6 16	57.7	18 11	26.9
9.0	2	7.0	6 18	.4	18 10	24.9
10.0	2	.0	6 10	45.1	18 17	37.6
10.0	2	1.0	6 11	45.9	18 16	37.5
10.0	2	2.0	6 12	46.7	18 15	37.4
10.0	2	3.0	6 13	47.6	18 14	37.3
10.0	2	4.0	6 14	48.4	18 13	37.2
10.0	2	5.0	6 15	49.4	18 12	36.9
10.0	2	6.0	6 16	50.5	18 11	36.6
10.0	2	7.0	6 17	51.7	18 10	36.1
11.0	2	.0	6 10	45.9	18 17	37.8
11.0	2	1.0	6 11	45.2	18 16	39.1
11.0	2	2.0	6 12	44.6	18 15	40.5
11.0	2	3.0	6 13	44.0	18 14	41.9
11.0	2	4.0	6 14	43.4	18 13	43.2
11.0	2	5.0	6 15	42.9	18 12	44.5
11.0	2	6.0	6 16	42.5	18 11	45.6
11.0	2	7.0	6 17	42.2	18 10	46.6
12.0	2	.0	6 10	45.9	18 17	37.2
12.0	2	1.0	6 11	43.8	18 16	40.1
12.0	2	2.0	6 12	41.7	18 15	42.9
12.0	2	3.0	6 13	39.6	18 14	45.8
12.0	2	4.0	6 14	37.5	18 13	48.6
12.0	2	5.0	6 15	35.5	18 12	51.4
12.0	2	6.0	6 16	33.6	18 11	54.0
12.0	2	7.0	6 17	31.9	18 10	56.5
13.0	2	.0	6 10	45.2	18 17	36.0
13.0	2	1.0	6 11	41.6	18 16	40.3
13.0	2	2.0	6 12	38.0	18 15	44.6



13.0	2	3.0	6 13	34.4	18 14	49.0
13.0	2	4.0	6 14	30.8	18 13	53.3
13.0	2	5.0	6 15	27.3	18 12	57.5
13.0	2	6.0	6 16	23.9	18 12	1.7
13.0	2	7.0	6 17	20.7	18 11	5.7

14.0	2	.0	6 10	43.7	18 17	33.9
14.0	2	1.0	6 11	38.6	18 16	39.8
14.0	2	2.0	6 12	33.5	18 15	45.6
14.0	2	3.0	6 13	28.4	18 14	51.5
14.0	2	4.0	6 14	23.4	18 13	57.3
14.0	2	5.0	6 15	18.4	18 13	3.1
14.0	2	6.0	6 16	13.5	18 12	8.7
14.0	2	7.0	6 17	8.7	18 11	14.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	2	.0	6 10	41.5		18 17	31.2	
15.0	2	1.0	6 11	34.9		18 16	38.5	
15.0	2	2.0	6 12	28.3		18 15	45.9	
15.0	2	3.0	6 13	21.7		18 14	53.3	
15.0	2	4.0	6 14	15.1		18 14	.6	
15.0	2	5.0	6 15	8.6		18 13	7.9	
15.0	2	6.0	6 16	2.2		18 12	15.1	
15.0	2	7.0	6 16	55.9		18 11	22.2	
16.0	2	.0	6 10	38.6		18 17	27.7	
16.0	2	1.0	6 11	30.5		18 16	36.6	
16.0	2	2.0	6 12	22.4		18 15	45.5	
16.0	2	3.0	6 13	14.2		18 14	54.4	
16.0	2	4.0	6 14	6.1		18 14	3.3	
16.0	2	5.0	6 14	58.1		18 13	12.1	
16.0	2	6.0	6 15	50.1		18 12	20.8	
16.0	2	7.0	6 16	42.3		18 11	29.4	
17.0	2	.0	6 10	35.0		18 17	23.6	
17.0	2	1.0	6 11	25.3		18 16	34.0	
17.0	2	2.0	6 12	15.7		18 15	44.4	
17.0	2	3.0	6 13	6.0		18 14	54.9	
17.0	2	4.0	6 13	56.3		18 14	5.3	
17.0	2	5.0	6 14	46.7		18 13	15.6	
17.0	2	6.0	6 15	37.2		18 12	25.9	
17.0	2	7.0	6 16	27.9		18 11	36.1	
18.0	2	.0	6 10	30.6		18 17	18.7	
18.0	2	1.0	6 11	19.4		18 16	30.7	
18.0	2	2.0	6 12	8.2		18 15	42.6	
18.0	2	3.0	6 12	57.0		18 14	54.6	
18.0	2	4.0	6 13	45.8		18 14	6.6	

18.0	2	5.0	6 14	34.7	18 13	18.5
18.0	2	6.0	6 15	23.6	18 12	30.4
18.0	2	7.0	6 16	12.7	18 11	42.1
19.0	2	.0	6 10	25.6	18 17	13.1
19.0	2	1.0	6 11	12.8	18 16	26.7
19.0	2	2.0	6 12	.1	18 15	40.2
19.0	2	3.0	6 12	47.3	18 14	53.8
19.0	2	4.0	6 13	34.6	18 14	7.3
19.0	2	5.0	6 14	21.9	18 13	20.8
19.0	2	6.0	6 15	9.2	18 12	34.2
19.0	2	7.0	6 15	56.7	18 11	47.5
20.0	2	.0	6 10	19.8	18 17	6.9
20.0	2	1.0	6 11	5.6	18 16	22.0
20.0	2	2.0	6 11	51.2	18 15	37.1
20.0	2	3.0	6 12	36.9	18 14	52.2
20.0	2	4.0	6 13	22.6	18 14	7.3
20.0	2	5.0	6 14	8.3	18 13	22.4
20.0	2	6.0	6 14	54.1	18 12	37.4
20.0	2	7.0	6 15	40.0	18 11	52.2
21.0	2	.0	6 10	13.4	18 17	.0
21.0	2	1.0	6 10	57.6	18 16	16.7
21.0	2	2.0	6 11	41.7	18 15	33.4
21.0	2	3.0	6 12	25.8	18 14	50.1
21.0	2	4.0	6 13	9.9	18 14	6.7
21.0	2	5.0	6 13	54.0	18 13	23.4
21.0	2	6.0	6 14	38.3	18 12	39.9
21.0	2	7.0	6 15	22.6	18 11	56.4
22.0	2	.0	6 10	6.4	18 16	52.5
22.0	2	1.0	6 10	48.9	18 16	10.7
22.0	2	2.0	6 11	31.4	18 15	29.0
22.0	2	3.0	6 12	14.0	18 14	47.3
22.0	2	4.0	6 12	56.5	18 14	5.5
22.0	2	5.0	6 13	39.1	18 13	23.7
22.0	2	6.0	6 14	21.7	18 12	41.9
22.0	2	7.0	6 15	4.4	18 11	60.0
23.0	2	.0	6 9	58.6	18 16	44.3
23.0	2	1.0	6 10	39.6	18 16	4.1
23.0	2	2.0	6 11	20.5	18 15	24.0
23.0	2	3.0	6 12	1.5	18 14	43.8
23.0	2	4.0	6 12	42.4	18 14	3.7
23.0	2	5.0	6 13	23.4	18 13	23.5
23.0	2	6.0	6 14	4.4	18 12	43.3
23.0	2	7.0	6 14	45.6	18 12	2.9
24.0	2	.0	6 9	50.3	18 16	35.5
24.0	2	1.0	6 10	29.6	18 15	56.9

24.0	2	2.0	6 11 9.0	18 15 18.4
24.0	2	3.0	6 11 48.3	18 14 39.8
24.0	2	4.0	6 12 27.7	18 14 1.3
24.0	2	5.0	6 13 7.1	18 13 22.7
24.0	2	6.0	6 13 46.5	18 12 44.1
24.0	2	7.0	6 14 26.0	18 12 5.3
25.0	2	.0	6 9 41.3	18 16 26.1
25.0	2	1.0	6 10 19.1	18 15 49.1
25.0	2	2.0	6 10 56.8	18 15 12.1
25.0	2	3.0	6 11 34.6	18 14 35.2
25.0	2	4.0	6 12 12.3	18 13 58.3
25.0	2	5.0	6 12 50.1	18 13 21.3
25.0	2	6.0	6 13 27.9	18 12 44.3
25.0	2	7.0	6 14 5.8	18 12 7.2
26.0	2	.0	6 9 31.7	18 16 16.1
26.0	2	1.0	6 10 7.9	18 15 40.7
26.0	2	2.0	6 10 44.0	18 15 5.4
26.0	2	3.0	6 11 20.2	18 14 30.0
26.0	2	4.0	6 11 56.3	18 13 54.7
26.0	2	5.0	6 12 32.5	18 13 19.3
26.0	2	6.0	6 13 8.7	18 12 43.9
26.0	2	7.0	6 13 45.0	18 12 8.5
27.0	2	.0	6 9 21.5	18 16 5.5
27.0	2	1.0	6 9 56.1	18 15 31.8
27.0	2	2.0	6 10 30.6	18 14 58.0
27.0	2	3.0	6 11 5.2	18 14 24.3
27.0	2	4.0	6 11 39.7	18 13 50.6
27.0	2	5.0	6 12 14.2	18 13 16.9
27.0	2	6.0	6 12 48.8	18 12 43.1
27.0	2	7.0	6 13 23.5	18 12 9.2
28.0	2	.0	6 9 10.8	18 15 54.4
28.0	2	1.0	6 9 43.7	18 15 22.3
28.0	2	2.0	6 10 16.7	18 14 50.2
28.0	2	3.0	6 10 49.6	18 14 18.1
28.0	2	4.0	6 11 22.5	18 13 46.0
28.0	2	5.0	6 11 55.4	18 13 13.9
28.0	2	6.0	6 12 28.4	18 12 41.7
28.0	2	7.0	6 13 1.4	18 12 9.5

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	3	.0	6	8	59.5	18	15	42.8
1.0	3	1.0	6	9	30.8	18	15	12.3
1.0	3	2.0	6	10	2.2	18	14	41.8
1.0	3	3.0	6	10	33.4	18	14	11.3

1.0	3	4.0	6 11	4.7	18 13	40.8
1.0	3	5.0	6 11	36.0	18 13	10.4
1.0	3	6.0	6 12	7.3	18 12	39.8
1.0	3	7.0	6 12	38.7	18 12	9.3
2.0	3	.0	6 8	47.7	18 15	30.7
2.0	3	1.0	6 9	17.4	18 15	1.8
2.0	3	2.0	6 9	47.1	18 14	32.9
2.0	3	3.0	6 10	16.8	18 14	4.0
2.0	3	4.0	6 10	46.4	18 13	35.2
2.0	3	5.0	6 11	16.1	18 13	6.4
2.0	3	6.0	6 11	45.8	18 12	37.5
2.0	3	7.0	6 12	15.5	18 12	8.6
3.0	3	.0	6 8	35.4	18 15	18.1
3.0	3	1.0	6 9	3.5	18 14	50.8
3.0	3	2.0	6 9	31.6	18 14	23.5
3.0	3	3.0	6 9	59.6	18 13	56.3
3.0	3	4.0	6 10	27.6	18 13	29.1
3.0	3	5.0	6 10	55.6	18 13	1.9
3.0	3	6.0	6 11	23.7	18 12	34.7
3.0	3	7.0	6 11	51.8	18 12	7.4
4.0	3	.0	6 8	22.7	18 15	5.0
4.0	3	1.0	6 8	49.1	18 14	39.4
4.0	3	2.0	6 9	15.6	18 14	13.8
4.0	3	3.0	6 9	41.9	18 13	48.2
4.0	3	4.0	6 10	8.3	18 13	22.6
4.0	3	5.0	6 10	34.7	18 12	57.1
4.0	3	6.0	6 11	1.1	18 12	31.5
4.0	3	7.0	6 11	27.6	18 12	5.9
5.0	3	.0	6 8	9.5	18 14	51.5
5.0	3	1.0	6 8	34.3	18 14	27.5
5.0	3	2.0	6 8	59.1	18 14	3.5
5.0	3	3.0	6 9	23.8	18 13	39.6
5.0	3	4.0	6 9	48.6	18 13	15.7
5.0	3	5.0	6 10	13.3	18 12	51.8
5.0	3	6.0	6 10	38.1	18 12	27.9
5.0	3	7.0	6 11	2.8	18 12	3.9
6.0	3	.0	6 7	55.8	18 14	37.6
6.0	3	1.0	6 8	19.0	18 14	15.3
6.0	3	2.0	6 8	42.2	18 13	52.9
6.0	3	3.0	6 9	5.3	18 13	30.6
6.0	3	4.0	6 9	28.4	18 13	8.4
6.0	3	5.0	6 9	51.5	18 12	46.1
6.0	3	6.0	6 10	14.6	18 12	23.8
6.0	3	7.0	6 10	37.7	18 12	1.5
7.0	3	.0	6 7	41.8	18 14	23.3

7.0	3	1.0	6	8	3.3	18	14	2.6
7.0	3	2.0	6	8	24.8	18	13	41.9
7.0	3	3.0	6	8	46.3	18	13	21.3
7.0	3	4.0	6	9	7.8	18	13	.7
7.0	3	5.0	6	9	29.2	18	12	40.1
7.0	3	6.0	6	9	50.6	18	12	19.4
7.0	3	7.0	6	10	12.1	18	11	58.8
8.0	3	.0	6	7	27.4	18	14	8.7
8.0	3	1.0	6	7	47.3	18	13	49.6
8.0	3	2.0	6	8	7.1	18	13	30.6
8.0	3	3.0	6	8	26.9	18	13	11.6
8.0	3	4.0	6	8	46.7	18	12	52.6
8.0	3	5.0	6	9	6.5	18	12	33.7
8.0	3	6.0	6	9	26.3	18	12	14.7
8.0	3	7.0	6	9	46.1	18	11	55.7
9.0	3	.0	6	7	12.6	18	13	53.7
9.0	3	1.0	6	7	30.8	18	13	36.3
9.0	3	2.0	6	7	49.0	18	13	18.9
9.0	3	3.0	6	8	7.2	18	13	1.5
9.0	3	4.0	6	8	25.4	18	12	44.2
9.0	3	5.0	6	8	43.5	18	12	26.9
9.0	3	6.0	6	9	1.6	18	12	9.6
9.0	3	7.0	6	9	19.7	18	11	52.3
10.0	3	.0	6	6	57.4	18	13	38.4
10.0	3	1.0	6	7	14.1	18	13	22.6
10.0	3	2.0	6	7	30.6	18	13	6.8
10.0	3	3.0	6	7	47.1	18	12	51.2
10.0	3	4.0	6	8	3.6	18	12	35.5
10.0	3	5.0	6	8	20.1	18	12	19.9
10.0	3	6.0	6	8	36.5	18	12	4.3
10.0	3	7.0	6	8	53.0	18	11	48.6
11.0	3	.0	6	6	42.0	18	13	22.7
11.0	3	1.0	6	6	56.9	18	13	8.6
11.0	3	2.0	6	7	11.9	18	12	54.5
11.0	3	3.0	6	7	26.7	18	12	40.5
11.0	3	4.0	6	7	41.5	18	12	26.5
11.0	3	5.0	6	7	56.3	18	12	12.5
11.0	3	6.0	6	8	11.1	18	11	58.6
11.0	3	7.0	6	8	25.9	18	11	44.6
12.0	3	.0	6	6	26.2	18	13	6.8
12.0	3	1.0	6	6	39.5	18	12	54.3
12.0	3	2.0	6	6	52.8	18	12	41.9
12.0	3	3.0	6	7	6.0	18	12	29.5
12.0	3	4.0	6	7	19.2	18	12	17.2
12.0	3	5.0	6	7	32.3	18	12	4.9
12.0	3	6.0	6	7	45.4	18	11	52.6

12.0	3	7.0	6	7	58.5	18	11	40.3
13.0	3	.0	6	6	10.2	18	12	50.6
13.0	3	1.0	6	6	21.8	18	12	39.8
13.0	3	2.0	6	6	33.4	18	12	29.0
13.0	3	3.0	6	6	45.0	18	12	18.3
13.0	3	4.0	6	6	56.5	18	12	7.6
13.0	3	5.0	6	7	7.9	18	11	57.0
13.0	3	6.0	6	7	19.4	18	11	46.4
13.0	3	7.0	6	7	30.8	18	11	35.8
14.0	3	.0	6	5	53.9	18	12	34.2
14.0	3	1.0	6	6	3.8	18	12	25.0
14.0	3	2.0	6	6	13.8	18	12	15.9
14.0	3	3.0	6	6	23.7	18	12	6.8
14.0	3	4.0	6	6	33.5	18	11	57.8
14.0	3	5.0	6	6	43.3	18	11	48.9
14.0	3	6.0	6	6	53.1	18	11	39.9
14.0	3	7.0	6	7	2.8	18	11	31.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	3	.0	6	5	37.3	18	12	17.5
15.0	3	1.0	6	5	45.6	18	12	10.0
15.0	3	2.0	6	5	53.9	18	12	2.5
15.0	3	3.0	6	6	2.1	18	11	55.2
15.0	3	4.0	6	6	10.3	18	11	47.8
15.0	3	5.0	6	6	18.4	18	11	40.5
15.0	3	6.0	6	6	26.5	18	11	33.2
15.0	3	7.0	6	6	34.6	18	11	26.0
16.0	3	.0	6	5	20.5	18	12	.6
16.0	3	1.0	6	5	27.2	18	11	54.8
16.0	3	2.0	6	5	33.8	18	11	49.0
16.0	3	3.0	6	5	40.3	18	11	43.2
16.0	3	4.0	6	5	46.9	18	11	37.6
16.0	3	5.0	6	5	53.3	18	11	31.9
16.0	3	6.0	6	5	59.8	18	11	26.3
16.0	3	7.0	6	6	6.2	18	11	20.8
17.0	3	.0	6	5	3.5	18	11	43.5
17.0	3	1.0	6	5	8.5	18	11	39.3
17.0	3	2.0	6	5	13.4	18	11	35.2
17.0	3	3.0	6	5	18.3	18	11	31.1
17.0	3	4.0	6	5	23.2	18	11	27.1
17.0	3	5.0	6	5	28.0	18	11	23.1
17.0	3	6.0	6	5	32.8	18	11	19.2
17.0	3	7.0	6	5	37.5	18	11	15.3

18.0	3	.0	6	4	46.2	18	11	26.3
18.0	3	1.0	6	4	49.6	18	11	23.7
18.0	3	2.0	6	4	52.9	18	11	21.3
18.0	3	3.0	6	4	56.1	18	11	18.8
18.0	3	4.0	6	4	59.3	18	11	16.5
18.0	3	5.0	6	5	2.5	18	11	14.2
18.0	3	6.0	6	5	5.6	18	11	11.9
18.0	3	7.0	6	5	8.6	18	11	9.7
19.0	3	.0	6	4	28.8	18	11	8.8
19.0	3	1.0	6	4	30.5	18	11	8.0
19.0	3	2.0	6	4	32.2	18	11	7.1
19.0	3	3.0	6	4	33.8	18	11	6.4
19.0	3	4.0	6	4	35.3	18	11	5.7
19.0	3	5.0	6	4	36.8	18	11	5.0
19.0	3	6.0	6	4	38.2	18	11	4.5
19.0	3	7.0	6	4	39.5	18	11	4.0
20.0	3	.0	6	4	11.2	18	10	51.2
20.0	3	1.0	6	4	11.3	18	10	52.0
20.0	3	2.0	6	4	11.3	18	10	52.9
20.0	3	3.0	6	4	11.2	18	10	53.8
20.0	3	4.0	6	4	11.1	18	10	54.7
20.0	3	5.0	6	4	10.9	18	10	55.8
20.0	3	6.0	6	4	10.6	18	10	56.9
20.0	3	7.0	6	4	10.3	18	10	58.0
21.0	3	.0	6	3	53.5	18	10	33.5
21.0	3	1.0	6	3	51.9	18	10	36.0
21.0	3	2.0	6	3	50.2	18	10	38.5
21.0	3	3.0	6	3	48.5	18	10	41.0
21.0	3	4.0	6	3	46.7	18	10	43.7
21.0	3	5.0	6	3	44.8	18	10	46.4
21.0	3	6.0	6	3	42.9	18	10	49.1
21.0	3	7.0	6	3	40.9	18	10	52.0
22.0	3	.0	6	3	35.7	18	10	15.7
22.0	3	1.0	6	3	32.4	18	10	19.8
22.0	3	2.0	6	3	29.1	18	10	23.9
22.0	3	3.0	6	3	25.7	18	10	28.2
22.0	3	4.0	6	3	22.2	18	10	32.5
22.0	3	5.0	6	3	18.7	18	10	36.8
22.0	3	6.0	6	3	15.1	18	10	41.2
22.0	3	7.0	6	3	11.4	18	10	45.8
23.0	3	.0	6	3	17.7	18	9	57.8
23.0	3	1.0	6	3	12.8	18	10	3.5
23.0	3	2.0	6	3	7.8	18	10	9.3
23.0	3	3.0	6	3	2.7	18	10	15.2
23.0	3	4.0	6	2	57.6	18	10	21.1
23.0	3	5.0	6	2	52.4	18	10	27.2

23.0	3	6.0	6	2	47.2	18	10	33.3
23.0	3	7.0	6	2	41.8	18	10	39.5
24.0	3	.0	6	2	59.6	18	9	39.8
24.0	3	1.0	6	2	53.0	18	9	47.2
24.0	3	2.0	6	2	46.4	18	9	54.6
24.0	3	3.0	6	2	39.7	18	10	2.2
24.0	3	4.0	6	2	32.9	18	10	9.8
24.0	3	5.0	6	2	26.1	18	10	17.4
24.0	3	6.0	6	2	19.2	18	10	25.2
24.0	3	7.0	6	2	12.1	18	10	33.1
25.0	3	.0	6	2	41.5	18	9	21.7
25.0	3	1.0	6	2	33.3	18	9	30.8
25.0	3	2.0	6	2	25.0	18	9	39.9
25.0	3	3.0	6	2	16.6	18	9	49.0
25.0	3	4.0	6	2	8.2	18	9	58.3
25.0	3	5.0	6	1	59.7	18	10	7.6
25.0	3	6.0	6	1	51.1	18	10	17.1
25.0	3	7.0	6	1	42.4	18	10	26.6
26.0	3	.0	6	2	23.3	18	9	3.6
26.0	3	1.0	6	2	13.4	18	9	14.3
26.0	3	2.0	6	2	3.5	18	9	25.1
26.0	3	3.0	6	1	53.5	18	9	35.9
26.0	3	4.0	6	1	43.4	18	9	46.8
26.0	3	5.0	6	1	33.2	18	9	57.8
26.0	3	6.0	6	1	23.0	18	10	8.9
26.0	3	7.0	6	1	12.6	18	10	20.1
27.0	3	.0	6	2	5.0	18	8	45.5
27.0	3	1.0	6	1	53.5	18	8	57.8
27.0	3	2.0	6	1	41.9	18	9	10.2
27.0	3	3.0	6	1	30.3	18	9	22.7
27.0	3	4.0	6	1	18.6	18	9	35.3
27.0	3	5.0	6	1	6.7	18	9	47.9
27.0	3	6.0	6	0	54.8	18	10	.7
27.0	3	7.0	6	0	42.8	18	10	13.5
28.0	3	.0	6	1	46.8	18	8	27.4
28.0	3	1.0	6	1	33.6	18	8	41.4
28.0	3	2.0	6	1	20.4	18	8	55.4
28.0	3	3.0	6	1	7.1	18	9	9.5
28.0	3	4.0	6	0	53.7	18	9	23.7
28.0	3	5.0	6	0	40.3	18	9	38.0
28.0	3	6.0	6	0	26.7	18	9	52.4
28.0	3	7.0	6	0	13.0	18	10	6.9
29.0	3	.0	6	1	28.5	18	8	9.3
29.0	3	1.0	6	1	13.7	18	8	24.9
29.0	3	2.0	6	0	58.9	18	8	40.6



29.0	3	3.0	6 0 43.9	18 8 56.3
29.0	3	4.0	6 0 28.9	18 9 12.2
29.0	3	5.0	6 0 13.8	18 9 28.1
29.0	3	6.0	5 59 58.6	18 9 44.2
29.0	3	7.0	5 59 43.2	18 10 .4
30.0	3	.0	6 1 10.3	18 7 51.3
30.0	3	1.0	6 0 53.9	18 8 8.5
30.0	3	2.0	6 0 37.4	18 8 25.8
30.0	3	3.0	6 0 20.8	18 8 43.2
30.0	3	4.0	6 0 4.2	18 9 .7
30.0	3	5.0	5 59 47.4	18 9 18.3
30.0	3	6.0	5 59 30.5	18 9 36.0
30.0	3	7.0	5 59 13.5	18 9 53.8
31.0	3	.0	6 0 52.2	18 7 33.3
31.0	3	1.0	6 0 34.1	18 7 52.2
31.0	3	2.0	6 0 16.0	18 8 11.1
31.0	3	3.0	5 59 57.8	18 8 30.2
31.0	3	4.0	5 59 39.5	18 8 49.3
31.0	3	5.0	5 59 21.1	18 9 8.5
31.0	3	6.0	5 59 2.5	18 9 27.9
31.0	3	7.0	5 58 43.9	18 9 47.3

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	4	.0	6	0	34.1	18	7	15.5
1.0	4	1.0	6	0	14.4	18	7	36.0
1.0	4	2.0	5	59	54.7	18	7	56.5
1.0	4	3.0	5	59	34.8	18	8	17.2
1.0	4	4.0	5	59	14.9	18	8	37.9
1.0	4	5.0	5	58	54.8	18	8	58.8
1.0	4	6.0	5	58	34.7	18	9	19.8
1.0	4	7.0	5	58	14.4	18	9	40.9
2.0	4	.0	6	0	16.1	18	6	57.7
2.0	4	1.0	5	59	54.8	18	7	19.9
2.0	4	2.0	5	59	33.4	18	7	42.0
2.0	4	3.0	5	59	12.0	18	8	4.3
2.0	4	4.0	5	58	50.4	18	8	26.7
2.0	4	5.0	5	58	28.7	18	8	49.2
2.0	4	6.0	5	58	6.9	18	9	11.8
2.0	4	7.0	5	57	45.0	18	9	34.6
3.0	4	.0	5	59	58.3	18	6	40.2
3.0	4	1.0	5	59	35.4	18	7	3.9
3.0	4	2.0	5	59	12.4	18	7	27.7
3.0	4	3.0	5	58	49.3	18	7	51.6
3.0	4	4.0	5	58	26.1	18	8	15.6

3.0	4	5.0	5 58	2.8	18	8	39.7
3.0	4	6.0	5 57	39.3	18	9	4.0
3.0	4	7.0	5 57	15.8	18	9	28.4
4.0	4	.0	5 59	40.6	18	6	22.7
4.0	4	1.0	5 59	16.1	18	6	48.1
4.0	4	2.0	5 58	51.4	18	7	13.5
4.0	4	3.0	5 58	26.7	18	7	39.0
4.0	4	4.0	5 58	1.9	18	8	4.6
4.0	4	5.0	5 57	37.0	18	8	30.4
4.0	4	6.0	5 57	11.9	18	8	56.2
4.0	4	7.0	5 56	46.7	18	9	22.3
5.0	4	.0	5 59	23.1	18	6	5.5
5.0	4	1.0	5 58	56.9	18	6	32.5
5.0	4	2.0	5 58	30.7	18	6	59.5
5.0	4	3.0	5 58	4.4	18	7	26.6
5.0	4	4.0	5 57	38.0	18	7	53.8
5.0	4	5.0	5 57	11.4	18	8	21.2
5.0	4	6.0	5 56	44.7	18	8	48.7
5.0	4	7.0	5 56	17.9	18	9	16.4
6.0	4	.0	5 59	5.7	18	5	48.5
6.0	4	1.0	5 58	38.0	18	6	17.0
6.0	4	2.0	5 58	10.2	18	6	45.7
6.0	4	3.0	5 57	42.3	18	7	14.4
6.0	4	4.0	5 57	14.2	18	7	43.2
6.0	4	5.0	5 56	46.1	18	8	12.2
6.0	4	6.0	5 56	17.7	18	8	41.3
6.0	4	7.0	5 55	49.3	18	9	10.6
7.0	4	.0	5 58	48.6	18	5	31.7
7.0	4	1.0	5 58	19.3	18	6	1.8
7.0	4	2.0	5 57	49.9	18	6	32.0
7.0	4	3.0	5 57	20.3	18	7	2.4
7.0	4	4.0	5 56	50.7	18	7	32.8
7.0	4	5.0	5 56	20.9	18	8	3.4
7.0	4	6.0	5 55	51.0	18	8	34.1
7.0	4	7.0	5 55	20.9	18	9	5.0
8.0	4	.0	5 58	31.7	18	5	15.1
8.0	4	1.0	5 58	.8	18	5	46.9
8.0	4	2.0	5 57	29.8	18	6	18.7
8.0	4	3.0	5 56	58.7	18	6	50.6
8.0	4	4.0	5 56	27.4	18	7	22.6
8.0	4	5.0	5 55	56.0	18	7	54.8
8.0	4	6.0	5 55	24.5	18	8	27.1
8.0	4	7.0	5 54	52.8	18	8	59.7
9.0	4	.0	5 58	15.1	18	4	58.8
9.0	4	1.0	5 57	42.6	18	5	32.2

9.0	4	2.0	5 57	10.0	18	6	5.6
9.0	4	3.0	5 56	37.3	18	6	39.1
9.0	4	4.0	5 56	4.4	18	7	12.7
9.0	4	5.0	5 55	31.5	18	7	46.5
9.0	4	6.0	5 54	58.3	18	8	20.4
9.0	4	7.0	5 54	25.0	18	8	54.5
10.0	4	.0	5 57	58.7	18	4	42.8
10.0	4	1.0	5 57	24.6	18	5	17.7
10.0	4	2.0	5 56	50.4	18	5	52.7
10.0	4	3.0	5 56	16.1	18	6	27.8
10.0	4	4.0	5 55	41.7	18	7	3.0
10.0	4	5.0	5 55	7.2	18	7	38.4
10.0	4	6.0	5 54	32.4	18	8	13.9
10.0	4	7.0	5 53	57.5	18	8	49.6
11.0	4	.0	5 57	42.6	18	4	27.1
11.0	4	1.0	5 57	7.0	18	5	3.6
11.0	4	2.0	5 56	31.2	18	5	40.1
11.0	4	3.0	5 55	55.3	18	6	16.8
11.0	4	4.0	5 55	19.3	18	6	53.6
11.0	4	5.0	5 54	43.2	18	7	30.5
11.0	4	6.0	5 54	6.8	18	8	7.6
11.0	4	7.0	5 53	30.3	18	8	45.0
12.0	4	.0	5 57	26.8	18	4	11.7
12.0	4	1.0	5 56	49.6	18	4	49.7
12.0	4	2.0	5 56	12.3	18	5	27.9
12.0	4	3.0	5 55	34.8	18	6	6.1
12.0	4	4.0	5 54	57.2	18	6	44.4
12.0	4	5.0	5 54	19.5	18	7	22.9
12.0	4	6.0	5 53	41.6	18	8	1.6
12.0	4	7.0	5 53	3.5	18	8	40.6
13.0	4	.0	5 57	11.3	18	3	56.6
13.0	4	1.0	5 56	32.5	18	4	36.2
13.0	4	2.0	5 55	53.6	18	5	15.9
13.0	4	3.0	5 55	14.6	18	5	55.7
13.0	4	4.0	5 54	35.5	18	6	35.6
13.0	4	5.0	5 53	56.2	18	7	15.7
13.0	4	6.0	5 53	16.7	18	7	55.9
13.0	4	7.0	5 52	37.0	18	8	36.4
14.0	4	.0	5 56	56.2	18	3	41.9
14.0	4	1.0	5 56	15.8	18	4	23.0
14.0	4	2.0	5 55	35.4	18	5	4.2
14.0	4	3.0	5 54	54.8	18	5	45.6
14.0	4	4.0	5 54	14.1	18	6	27.1
14.0	4	5.0	5 53	33.3	18	7	8.7
14.0	4	6.0	5 52	52.2	18	7	50.5
14.0	4	7.0	5 52	10.9	18	8	32.6

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	4	.0	5	56	41.4	18	3	27.5
15.0	4	1.0	5	55	59.5	18	4	10.2
15.0	4	2.0	5	55	17.5	18	4	52.9
15.0	4	3.0	5	54	35.4	18	5	35.8
15.0	4	4.0	5	53	53.1	18	6	18.8
15.0	4	5.0	5	53	10.7	18	7	2.0
15.0	4	6.0	5	52	28.1	18	7	45.4
15.0	4	7.0	5	51	45.3	18	8	29.0
16.0	4	.0	5	56	26.9	18	3	13.5
16.0	4	1.0	5	55	43.5	18	3	57.7
16.0	4	2.0	5	54	59.9	18	4	42.0
16.0	4	3.0	5	54	16.3	18	5	26.4
16.0	4	4.0	5	53	32.5	18	6	10.9
16.0	4	5.0	5	52	48.5	18	6	55.7
16.0	4	6.0	5	52	4.4	18	7	40.6
16.0	4	7.0	5	51	20.0	18	8	25.8
17.0	4	.0	5	56	12.8	18	2	59.8
17.0	4	1.0	5	55	27.8	18	3	45.6
17.0	4	2.0	5	54	42.8	18	4	31.4
17.0	4	3.0	5	53	57.6	18	5	17.3
17.0	4	4.0	5	53	12.3	18	6	3.4
17.0	4	5.0	5	52	26.8	18	6	49.7
17.0	4	6.0	5	51	41.1	18	7	36.1
17.0	4	7.0	5	50	55.1	18	8	22.9
18.0	4	.0	5	55	59.0	18	2	46.6
18.0	4	1.0	5	55	12.6	18	3	33.8
18.0	4	2.0	5	54	26.0	18	4	21.1
18.0	4	3.0	5	53	39.3	18	5	8.6
18.0	4	4.0	5	52	52.4	18	5	56.2
18.0	4	5.0	5	52	5.4	18	6	44.0
18.0	4	6.0	5	51	18.2	18	7	32.0
18.0	4	7.0	5	50	30.7	18	8	20.2
19.0	4	.0	5	55	45.7	18	2	33.7
19.0	4	1.0	5	54	57.7	18	3	22.4
19.0	4	2.0	5	54	9.6	18	4	11.3
19.0	4	3.0	5	53	21.4	18	5	.2
19.0	4	4.0	5	52	33.0	18	5	49.3
19.0	4	5.0	5	51	44.5	18	6	38.6
19.0	4	6.0	5	50	55.7	18	7	28.2
19.0	4	7.0	5	50	6.7	18	8	17.9
20.0	4	.0	5	55	32.7	18	2	21.2

20.0	4	1.0	5 54	43.2	18	3	11.5
20.0	4	2.0	5 53	53.6	18	4	1.8
20.0	4	3.0	5 53	3.9	18	4	52.2
20.0	4	4.0	5 52	14.1	18	5	42.9
20.0	4	5.0	5 51	24.0	18	6	33.7
20.0	4	6.0	5 50	33.7	18	7	24.7
20.0	4	7.0	5 49	43.2	18	8	16.0
21.0	4	.0	5 55	20.1	18	2	9.2
21.0	4	1.0	5 54	29.2	18	3	.9
21.0	4	2.0	5 53	38.1	18	3	52.7
21.0	4	3.0	5 52	46.9	18	4	44.6
21.0	4	4.0	5 51	55.5	18	5	36.7
21.0	4	5.0	5 51	4.0	18	6	29.0
21.0	4	6.0	5 50	12.2	18	7	21.6
21.0	4	7.0	5 49	20.2	18	8	14.4
22.0	4	.0	5 55	8.0	18	1	57.5
22.0	4	1.0	5 54	15.5	18	2	50.7
22.0	4	2.0	5 53	23.0	18	3	44.0
22.0	4	3.0	5 52	30.3	18	4	37.4
22.0	4	4.0	5 51	37.5	18	5	31.0
22.0	4	5.0	5 50	44.4	18	6	24.8
22.0	4	6.0	5 49	51.2	18	7	18.8
22.0	4	7.0	5 48	57.6	18	8	13.1
23.0	4	.0	5 54	56.3	18	1	46.3
23.0	4	1.0	5 54	2.3	18	2	41.0
23.0	4	2.0	5 53	8.3	18	3	35.7
23.0	4	3.0	5 52	14.2	18	4	30.6
23.0	4	4.0	5 51	19.9	18	5	25.6
23.0	4	5.0	5 50	25.3	18	6	20.9
23.0	4	6.0	5 49	30.6	18	7	16.4
23.0	4	7.0	5 48	35.6	18	8	12.2
24.0	4	.0	5 54	45.0	18	1	35.6
24.0	4	1.0	5 53	49.6	18	2	31.7
24.0	4	2.0	5 52	54.1	18	3	27.9
24.0	4	3.0	5 51	58.5	18	4	24.2
24.0	4	4.0	5 51	2.7	18	5	20.7
24.0	4	5.0	5 50	6.8	18	6	17.4
24.0	4	6.0	5 49	10.5	18	7	14.4
24.0	4	7.0	5 48	14.0	18	8	11.6
25.0	4	.0	5 54	34.1	18	1	25.3
25.0	4	1.0	5 53	37.3	18	2	22.8
25.0	4	2.0	5 52	40.4	18	3	20.4
25.0	4	3.0	5 51	43.3	18	4	18.2
25.0	4	4.0	5 50	46.1	18	5	16.2
25.0	4	5.0	5 49	48.7	18	6	14.3
25.0	4	6.0	5 48	51.0	18	7	12.7

25.0	4	7.0	5 47 53.0	18 8 11.4
26.0	4	.0	5 54 23.7	18 1 15.5
26.0	4	1.0	5 53 25.5	18 2 14.4
26.0	4	2.0	5 52 27.2	18 3 13.5
26.0	4	3.0	5 51 28.7	18 4 12.7
26.0	4	4.0	5 50 30.0	18 5 12.0
26.0	4	5.0	5 49 31.1	18 6 11.6
26.0	4	6.0	5 48 32.0	18 7 11.5
26.0	4	7.0	5 47 32.6	18 8 11.6
27.0	4	.0	5 54 13.8	18 1 6.1
27.0	4	1.0	5 53 14.2	18 2 6.5
27.0	4	2.0	5 52 14.4	18 3 7.0
27.0	4	3.0	5 51 14.5	18 4 7.6
27.0	4	4.0	5 50 14.4	18 5 8.4
27.0	4	5.0	5 49 14.1	18 6 9.4
27.0	4	6.0	5 48 13.6	18 7 10.6
27.0	4	7.0	5 47 12.7	18 8 12.2
28.0	4	.0	5 54 4.4	18 0 57.3
28.0	4	1.0	5 53 3.4	18 1 59.0
28.0	4	2.0	5 52 2.2	18 3 .9
28.0	4	3.0	5 51 .9	18 4 2.9
28.0	4	4.0	5 49 59.4	18 5 5.1
28.0	4	5.0	5 48 57.7	18 6 7.5
28.0	4	6.0	5 47 55.7	18 7 10.2
28.0	4	7.0	5 46 53.4	18 8 13.2
29.0	4	.0	5 53 55.5	18 0 49.0
29.0	4	1.0	5 52 53.1	18 1 52.1
29.0	4	2.0	5 51 50.5	18 2 55.3
29.0	4	3.0	5 50 47.8	18 3 58.7
29.0	4	4.0	5 49 44.9	18 5 2.3
29.0	4	5.0	5 48 41.8	18 6 6.1
29.0	4	6.0	5 47 38.4	18 7 10.2
29.0	4	7.0	5 46 34.7	18 8 14.6
30.0	4	.0	5 53 47.1	18 0 41.1
30.0	4	1.0	5 52 43.3	18 1 45.7
30.0	4	2.0	5 51 39.4	18 2 50.3
30.0	4	3.0	5 50 35.3	18 3 55.0
30.0	4	4.0	5 49 31.0	18 4 60.0
30.0	4	5.0	5 48 26.5	18 6 5.2
30.0	4	6.0	5 47 21.7	18 7 10.6
30.0	4	7.0	5 46 16.6	18 8 16.4

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

1.0	5	.0	5 53	39.3	18	0	33.9
1.0	5	1.0	5 52	34.1	18	1	39.7
1.0	5	2.0	5 51	28.8	18	2	45.7
1.0	5	3.0	5 50	23.3	18	3	51.8
1.0	5	4.0	5 49	17.7	18	4	58.1
1.0	5	5.0	5 48	11.8	18	6	4.7
1.0	5	6.0	5 47	5.7	18	7	11.5
1.0	5	7.0	5 45	59.2	18	8	18.7
2.0	5	.0	5 53	31.9	18	0	27.1
2.0	5	1.0	5 52	25.4	18	1	34.3
2.0	5	2.0	5 51	18.8	18	2	41.7
2.0	5	3.0	5 50	12.0	18	3	49.1
2.0	5	4.0	5 49	5.0	18	4	56.8
2.0	5	5.0	5 47	57.7	18	6	4.7
2.0	5	6.0	5 46	50.2	18	7	12.9
2.0	5	7.0	5 45	42.4	18	8	21.4
3.0	5	.0	5 53	25.1	18	0	21.0
3.0	5	1.0	5 52	17.3	18	1	29.5
3.0	5	2.0	5 51	9.3	18	2	38.1
3.0	5	3.0	5 50	1.2	18	3	46.9
3.0	5	4.0	5 48	52.9	18	4	55.9
3.0	5	5.0	5 47	44.3	18	6	5.1
3.0	5	6.0	5 46	35.4	18	7	14.7
3.0	5	7.0	5 45	26.2	18	8	24.5
4.0	5	.0	5 53	18.9	18	0	15.3
4.0	5	1.0	5 52	9.8	18	1	25.2
4.0	5	2.0	5 51	.5	18	2	35.1
4.0	5	3.0	5 49	51.0	18	3	45.2
4.0	5	4.0	5 48	41.4	18	4	55.5
4.0	5	5.0	5 47	31.5	18	6	6.1
4.0	5	6.0	5 46	21.3	18	7	16.9
4.0	5	7.0	5 45	10.8	18	8	28.1
5.0	5	.0	5 53	13.3	18	0	10.3
5.0	5	1.0	5 52	2.8	18	1	21.4
5.0	5	2.0	5 50	52.2	18	2	32.7
5.0	5	3.0	5 49	41.5	18	3	44.0
5.0	5	4.0	5 48	30.5	18	4	55.6
5.0	5	5.0	5 47	19.3	18	6	7.5
5.0	5	6.0	5 46	7.8	18	7	19.6
5.0	5	7.0	5 44	56.0	18	8	32.1
6.0	5	.0	5 53	8.2	18	0	5.8
6.0	5	1.0	5 51	56.4	18	1	18.2
6.0	5	2.0	5 50	44.6	18	2	30.7
6.0	5	3.0	5 49	32.5	18	3	43.4
6.0	5	4.0	5 48	20.3	18	4	56.3
6.0	5	5.0	5 47	7.8	18	6	9.4

6.0	5	6.0	5 45	55.0	18	7	22.9
6.0	5	7.0	5 44	41.9	18	8	36.6
7.0	5	.0	5 53	3.7	18	0	1.9
7.0	5	1.0	5 51	50.7	18	1	15.6
7.0	5	2.0	5 50	37.5	18	2	29.4
7.0	5	3.0	5 49	24.2	18	3	43.3
7.0	5	4.0	5 48	10.7	18	4	57.4
7.0	5	5.0	5 46	57.0	18	6	11.8
7.0	5	6.0	5 45	42.9	18	7	26.5
7.0	5	7.0	5 44	28.4	18	8	41.6
8.0	5	.0	5 52	59.8	17	59	58.6
8.0	5	1.0	5 51	45.5	18	1	13.5
8.0	5	2.0	5 50	31.1	18	2	28.5
8.0	5	3.0	5 49	16.6	18	3	43.7
8.0	5	4.0	5 48	1.8	18	4	59.1
8.0	5	5.0	5 46	46.8	18	6	14.7
8.0	5	6.0	5 45	31.5	18	7	30.7
8.0	5	7.0	5 44	15.8	18	8	47.0
9.0	5	.0	5 52	56.5	17	59	55.9
9.0	5	1.0	5 51	41.0	18	1	12.0
9.0	5	2.0	5 50	25.3	18	2	28.2
9.0	5	3.0	5 49	9.6	18	3	44.6
9.0	5	4.0	5 47	53.6	18	5	1.2
9.0	5	5.0	5 46	37.3	18	6	18.1
9.0	5	6.0	5 45	20.7	18	7	35.3
9.0	5	7.0	5 44	3.8	18	8	52.9
10.0	5	.0	5 52	53.7	17	59	53.8
10.0	5	1.0	5 51	37.0	18	1	11.1
10.0	5	2.0	5 50	20.2	18	2	28.5
10.0	5	3.0	5 49	3.2	18	3	46.1
10.0	5	4.0	5 47	46.0	18	5	3.9
10.0	5	5.0	5 46	28.5	18	6	22.0
10.0	5	6.0	5 45	10.7	18	7	40.4
10.0	5	7.0	5 43	52.5	18	8	59.2
11.0	5	.0	5 52	51.6	17	59	52.2
11.0	5	1.0	5 51	33.7	18	1	10.7
11.0	5	2.0	5 50	15.7	18	2	29.3
11.0	5	3.0	5 48	57.5	18	3	48.1
11.0	5	4.0	5 47	39.1	18	5	7.1
11.0	5	5.0	5 46	20.4	18	6	26.4
11.0	5	6.0	5 45	1.4	18	7	46.0
11.0	5	7.0	5 43	42.0	18	9	6.0
12.0	5	.0	5 52	50.0	17	59	51.3
12.0	5	1.0	5 51	30.9	18	1	10.9
12.0	5	2.0	5 50	11.8	18	2	30.7



12.0	5	3.0	5 48 52.4	18 3 50.6
12.0	5	4.0	5 47 32.8	18 5 10.8
12.0	5	5.0	5 46 12.9	18 6 31.3
12.0	5	6.0	5 44 52.7	18 7 52.0
12.0	5	7.0	5 43 32.2	18 9 13.2
13.0	5	.0	5 52 49.0	17 59 50.9
13.0	5	1.0	5 51 28.8	18 1 11.7
13.0	5	2.0	5 50 8.5	18 2 32.6
13.0	5	3.0	5 48 48.0	18 3 53.7
13.0	5	4.0	5 47 27.2	18 5 15.0
13.0	5	5.0	5 46 6.2	18 6 36.6
13.0	5	6.0	5 44 44.8	18 7 58.5
13.0	5	7.0	5 43 23.1	18 9 20.9
14.0	5	.0	5 52 48.7	17 59 51.1
14.0	5	1.0	5 51 27.3	18 1 13.0
14.0	5	2.0	5 50 5.8	18 2 35.1
14.0	5	3.0	5 48 44.2	18 3 57.3
14.0	5	4.0	5 47 22.3	18 5 19.7
14.0	5	5.0	5 46 .1	18 6 42.4
14.0	5	6.0	5 44 37.6	18 8 5.5
14.0	5	7.0	5 43 14.7	18 9 29.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	5	.0	5 52 48.8	17 59 51.9				
15.0	5	1.0	5 51 26.4	18 1 14.9				
15.0	5	2.0	5 50 3.8	18 2 38.0				
15.0	5	3.0	5 48 41.0	18 4 1.3				
15.0	5	4.0	5 47 18.0	18 5 24.9				
15.0	5	5.0	5 45 54.8	18 6 48.7				
15.0	5	6.0	5 44 31.1	18 8 12.9				
15.0	5	7.0	5 43 7.1	18 9 37.5				
16.0	5	.0	5 52 49.6	17 59 53.3				
16.0	5	1.0	5 51 26.1	18 1 17.3				
16.0	5	2.0	5 50 2.4	18 2 41.5				
16.0	5	3.0	5 48 38.5	18 4 5.9				
16.0	5	4.0	5 47 14.4	18 5 30.5				
16.0	5	5.0	5 45 50.1	18 6 55.5				
16.0	5	6.0	5 44 25.3	18 8 20.7				
16.0	5	7.0	5 43 .2	18 9 46.4				
17.0	5	.0	5 52 50.9	17 59 55.2				
17.0	5	1.0	5 51 26.3	18 1 20.3				
17.0	5	2.0	5 50 1.6	18 2 45.5				
17.0	5	3.0	5 48 36.7	18 4 11.0				
17.0	5	4.0	5 47 11.5	18 5 36.7				

17.0	5	5.0	5 45 46.0	18 7 2.6
17.0	5	6.0	5 44 20.2	18 8 29.0
17.0	5	7.0	5 42 54.0	18 9 55.7
18.0	5	.0	5 52 52.8	17 59 57.6
18.0	5	1.0	5 51 27.1	18 1 23.8
18.0	5	2.0	5 50 1.4	18 2 50.0
18.0	5	3.0	5 48 35.4	18 4 16.5
18.0	5	4.0	5 47 9.2	18 5 43.2
18.0	5	5.0	5 45 42.7	18 7 10.2
18.0	5	6.0	5 44 15.8	18 8 37.6
18.0	5	7.0	5 42 48.6	18 10 5.4
19.0	5	.0	5 52 55.2	18 0 .6
19.0	5	1.0	5 51 28.5	18 1 27.7
19.0	5	2.0	5 50 1.7	18 2 55.0
19.0	5	3.0	5 48 34.7	18 4 22.5
19.0	5	4.0	5 47 7.5	18 5 50.2
19.0	5	5.0	5 45 40.0	18 7 18.3
19.0	5	6.0	5 44 12.1	18 8 46.7
19.0	5	7.0	5 42 43.8	18 10 15.5
20.0	5	.0	5 52 58.1	18 0 4.1
20.0	5	1.0	5 51 30.5	18 1 32.2
20.0	5	2.0	5 50 2.7	18 3 .5
20.0	5	3.0	5 48 34.7	18 4 29.0
20.0	5	4.0	5 47 6.5	18 5 57.7
20.0	5	5.0	5 45 38.0	18 7 26.7
20.0	5	6.0	5 44 9.1	18 8 56.1
20.0	5	7.0	5 42 39.8	18 10 25.9
21.0	5	.0	5 53 1.6	18 0 8.1
21.0	5	1.0	5 51 33.0	18 1 37.2
21.0	5	2.0	5 50 4.2	18 3 6.4
21.0	5	3.0	5 48 35.3	18 4 35.9
21.0	5	4.0	5 47 6.1	18 6 5.5
21.0	5	5.0	5 45 36.6	18 7 35.5
21.0	5	6.0	5 44 6.7	18 9 5.9
21.0	5	7.0	5 42 36.4	18 10 36.6
22.0	5	.0	5 53 5.6	18 0 12.6
22.0	5	1.0	5 51 36.0	18 1 42.7
22.0	5	2.0	5 50 6.3	18 3 12.8
22.0	5	3.0	5 48 36.4	18 4 43.2
22.0	5	4.0	5 47 6.3	18 6 13.8
22.0	5	5.0	5 45 35.8	18 7 44.7
22.0	5	6.0	5 44 5.0	18 9 16.0
22.0	5	7.0	5 42 33.7	18 10 47.7
23.0	5	.0	5 53 10.1	18 0 17.7
23.0	5	1.0	5 51 39.6	18 1 48.6

23.0	5	2.0	5 50	9.0	18	3	19.7
23.0	5	3.0	5 48	38.1	18	4	50.9
23.0	5	4.0	5 47	7.1	18	6	22.4
23.0	5	5.0	5 45	35.7	18	7	54.3
23.0	5	6.0	5 44	3.9	18	9	26.5
23.0	5	7.0	5 42	31.8	18	10	59.1
24.0	5	.0	5 53	15.1	18	0	23.2
24.0	5	1.0	5 51	43.7	18	1	55.0
24.0	5	2.0	5 50	12.2	18	3	26.9
24.0	5	3.0	5 48	40.5	18	4	59.1
24.0	5	4.0	5 47	8.5	18	6	31.5
24.0	5	5.0	5 45	36.2	18	8	4.2
24.0	5	6.0	5 44	3.6	18	9	37.3
24.0	5	7.0	5 42	30.5	18	11	10.8
25.0	5	.0	5 53	20.5	18	0	29.2
25.0	5	1.0	5 51	48.3	18	2	1.8
25.0	5	2.0	5 50	15.9	18	3	34.6
25.0	5	3.0	5 48	43.3	18	5	7.6
25.0	5	4.0	5 47	10.5	18	6	40.9
25.0	5	5.0	5 45	37.4	18	8	14.5
25.0	5	6.0	5 44	3.8	18	9	48.4
25.0	5	7.0	5 42	29.8	18	11	22.8
26.0	5	.0	5 53	26.5	18	0	35.6
26.0	5	1.0	5 51	53.4	18	2	9.1
26.0	5	2.0	5 50	20.2	18	3	42.7
26.0	5	3.0	5 48	46.8	18	5	16.6
26.0	5	4.0	5 47	13.1	18	6	50.6
26.0	5	5.0	5 45	39.1	18	8	25.1
26.0	5	6.0	5 44	4.7	18	9	59.8
26.0	5	7.0	5 42	29.9	18	11	35.1
27.0	5	.0	5 53	32.9	18	0	42.5
27.0	5	1.0	5 51	59.1	18	2	16.8
27.0	5	2.0	5 50	25.0	18	3	51.3
27.0	5	3.0	5 48	50.8	18	5	25.9
27.0	5	4.0	5 47	16.3	18	7	.8
27.0	5	5.0	5 45	41.5	18	8	36.0
27.0	5	6.0	5 44	6.3	18	10	11.6
27.0	5	7.0	5 42	30.6	18	11	47.6
28.0	5	.0	5 53	39.8	18	0	49.9
28.0	5	1.0	5 52	5.2	18	2	25.0
28.0	5	2.0	5 50	30.4	18	4	.2
28.0	5	3.0	5 48	55.4	18	5	35.6
28.0	5	4.0	5 47	20.1	18	7	11.2
28.0	5	5.0	5 45	44.5	18	8	47.2
28.0	5	6.0	5 44	8.5	18	10	23.6
28.0	5	7.0	5 42	32.0	18	12	.4

29.0	5	.0	5 53 47.2	18 0 57.8
29.0	5	1.0	5 52 11.8	18 2 33.5
29.0	5	2.0	5 50 36.2	18 4 9.5
29.0	5	3.0	5 49 .5	18 5 45.6
29.0	5	4.0	5 47 24.4	18 7 22.0
29.0	5	5.0	5 45 48.1	18 8 58.7
29.0	5	6.0	5 44 11.3	18 10 35.9
29.0	5	7.0	5 42 34.1	18 12 13.5
30.0	5	.0	5 53 55.0	18 1 6.0
30.0	5	1.0	5 52 18.9	18 2 42.5
30.0	5	2.0	5 50 42.6	18 4 19.2
30.0	5	3.0	5 49 6.1	18 5 56.0
30.0	5	4.0	5 47 29.3	18 7 33.1
30.0	5	5.0	5 45 52.2	18 9 10.6
30.0	5	6.0	5 44 14.7	18 10 48.4
30.0	5	7.0	5 42 36.8	18 12 26.7
31.0	5	.0	5 54 3.3	18 1 14.7
31.0	5	1.0	5 52 26.4	18 2 51.9
31.0	5	2.0	5 50 49.4	18 4 29.2
31.0	5	3.0	5 49 12.3	18 6 6.7
31.0	5	4.0	5 47 34.8	18 7 44.5
31.0	5	5.0	5 45 57.0	18 9 22.7
31.0	5	6.0	5 44 18.8	18 11 1.2
31.0	5	7.0	5 42 40.1	18 12 40.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	6	.0	5 54 12.0			18 1 23.8		
1.0	6	1.0	5 52 34.4			18 3 1.6		
1.0	6	2.0	5 50 56.8			18 4 39.6		
1.0	6	3.0	5 49 18.9			18 6 17.8		
1.0	6	4.0	5 47 40.8			18 7 56.2		
1.0	6	5.0	5 46 2.3			18 9 35.0		
1.0	6	6.0	5 44 23.5			18 11 14.2		
1.0	6	7.0	5 42 44.1			18 12 53.9		
2.0	6	.0	5 54 21.0			18 1 33.3		
2.0	6	1.0	5 52 42.9			18 3 11.7		
2.0	6	2.0	5 51 4.6			18 4 50.3		
2.0	6	3.0	5 49 26.1			18 6 29.1		
2.0	6	4.0	5 47 47.3			18 8 8.2		
2.0	6	5.0	5 46 8.2			18 9 47.6		
2.0	6	6.0	5 44 28.7			18 11 27.4		
2.0	6	7.0	5 42 48.7			18 13 7.7		
3.0	6	.0	5 54 30.5			18 1 43.1		

3.0	6	1.0	5 52	51.8	18	3	22.2
3.0	6	2.0	5 51	12.9	18	5	1.4
3.0	6	3.0	5 49	33.8	18	6	40.8
3.0	6	4.0	5 47	54.4	18	8	20.4
3.0	6	5.0	5 46	14.7	18	10	.4
3.0	6	6.0	5 44	34.5	18	11	40.9
3.0	6	7.0	5 42	53.9	18	13	21.8
4.0	6	.0	5 54	40.4	18	1	53.4
4.0	6	1.0	5 53	1.1	18	3	33.0
4.0	6	2.0	5 51	21.6	18	5	12.7
4.0	6	3.0	5 49	41.9	18	6	52.7
4.0	6	4.0	5 48	2.0	18	8	32.9
4.0	6	5.0	5 46	21.7	18	10	13.5
4.0	6	6.0	5 44	41.0	18	11	54.5
4.0	6	7.0	5 42	59.8	18	13	35.9
5.0	6	.0	5 54	50.6	18	2	3.9
5.0	6	1.0	5 53	10.8	18	3	44.1
5.0	6	2.0	5 51	30.8	18	5	24.3
5.0	6	3.0	5 49	50.5	18	7	4.8
5.0	6	4.0	5 48	10.0	18	8	45.6
5.0	6	5.0	5 46	29.2	18	10	26.7
5.0	6	6.0	5 44	47.9	18	12	8.2
5.0	6	7.0	5 43	6.2	18	13	50.2
6.0	6	.0	5 55	1.2	18	2	14.9
6.0	6	1.0	5 53	20.8	18	3	55.5
6.0	6	2.0	5 51	40.3	18	5	36.3
6.0	6	3.0	5 49	59.6	18	7	17.2
6.0	6	4.0	5 48	18.6	18	8	58.5
6.0	6	5.0	5 46	37.2	18	10	40.1
6.0	6	6.0	5 44	55.4	18	12	22.1
6.0	6	7.0	5 43	13.2	18	14	4.6
7.0	6	.0	5 55	12.2	18	2	26.1
7.0	6	1.0	5 53	31.3	18	4	7.2
7.0	6	2.0	5 51	50.3	18	5	48.4
7.0	6	3.0	5 50	9.1	18	7	29.9
7.0	6	4.0	5 48	27.6	18	9	11.6
7.0	6	5.0	5 46	45.7	18	10	53.7
7.0	6	6.0	5 45	3.4	18	12	36.2
7.0	6	7.0	5 43	20.7	18	14	19.1
8.0	6	.0	5 55	23.4	18	2	37.6
8.0	6	1.0	5 53	42.1	18	4	19.1
8.0	6	2.0	5 52	.6	18	6	.8
8.0	6	3.0	5 50	19.0	18	7	42.7
8.0	6	4.0	5 48	37.0	18	9	24.8
8.0	6	5.0	5 46	54.7	18	11	7.4
8.0	6	6.0	5 45	12.0	18	12	50.3

8.0	6	7.0	5 43 28.8	18 14 33.7
9.0	6	.0	5 55 34.9	18 2 49.4
9.0	6	1.0	5 53 53.2	18 4 31.3
9.0	6	2.0	5 52 11.3	18 6 13.4
9.0	6	3.0	5 50 29.2	18 7 55.7
9.0	6	4.0	5 48 46.9	18 9 38.2
9.0	6	5.0	5 47 4.2	18 11 21.2
9.0	6	6.0	5 45 21.0	18 13 4.5
9.0	6	7.0	5 43 37.4	18 14 48.3
10.0	6	.0	5 55 46.7	18 3 1.5
10.0	6	1.0	5 54 4.6	18 4 43.7
10.0	6	2.0	5 52 22.4	18 6 26.2
10.0	6	3.0	5 50 39.9	18 8 8.8
10.0	6	4.0	5 48 57.2	18 9 51.8
10.0	6	5.0	5 47 14.0	18 11 35.0
10.0	6	6.0	5 45 30.5	18 13 18.8
10.0	6	7.0	5 43 46.5	18 15 3.0
11.0	6	.0	5 55 58.8	18 3 13.7
11.0	6	1.0	5 54 16.3	18 4 56.4
11.0	6	2.0	5 52 33.7	18 6 39.1
11.0	6	3.0	5 50 50.9	18 8 22.1
11.0	6	4.0	5 49 7.8	18 10 5.4
11.0	6	5.0	5 47 24.4	18 11 49.0
11.0	6	6.0	5 45 40.5	18 13 33.0
11.0	6	7.0	5 43 56.1	18 15 17.6
12.0	6	.0	5 56 11.1	18 3 26.2
12.0	6	1.0	5 54 28.3	18 5 9.1
12.0	6	2.0	5 52 45.4	18 6 52.2
12.0	6	3.0	5 51 2.2	18 8 35.5
12.0	6	4.0	5 49 18.8	18 10 19.1
12.0	6	5.0	5 47 35.0	18 12 3.0
12.0	6	6.0	5 45 50.8	18 13 47.3
12.0	6	7.0	5 44 6.1	18 15 32.2
13.0	6	.0	5 56 23.6	18 3 38.9
13.0	6	1.0	5 54 40.5	18 5 22.1
13.0	6	2.0	5 52 57.3	18 7 5.4
13.0	6	3.0	5 51 13.9	18 8 48.9
13.0	6	4.0	5 49 30.2	18 10 32.8
13.0	6	5.0	5 47 46.1	18 12 17.0
13.0	6	6.0	5 46 1.6	18 14 1.6
13.0	6	7.0	5 44 16.6	18 15 46.7
14.0	6	.0	5 56 36.2	18 3 51.7
14.0	6	1.0	5 54 52.9	18 5 35.1
14.0	6	2.0	5 53 9.4	18 7 18.7
14.0	6	3.0	5 51 25.8	18 9 2.5

14.0	6	4.0	5 49 41.8	18 10 46.5
14.0	6	5.0	5 47 57.5	18 12 30.9
14.0	6	6.0	5 46 12.8	18 14 15.8
14.0	6	7.0	5 44 27.5	18 16 1.2

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	6	.0	5 56	49.0	18 4	4.6		
15.0	6	1.0	5 55	5.5	18 5	48.2		
15.0	6	2.0	5 53	21.8	18 7	32.0		
15.0	6	3.0	5 51	37.9	18 9	16.0		
15.0	6	4.0	5 49	53.7	18 11	.2		
15.0	6	5.0	5 48	9.2	18 12	44.9		
15.0	6	6.0	5 46	24.3	18 14	29.9		
15.0	6	7.0	5 44	38.8	18 16	15.5		
16.0	6	.0	5 57	1.9	18 4	17.6		
16.0	6	1.0	5 55	18.2	18 6	1.4		
16.0	6	2.0	5 53	34.3	18 7	45.3		
16.0	6	3.0	5 51	50.3	18 9	29.5		
16.0	6	4.0	5 50	5.9	18 11	13.9		
16.0	6	5.0	5 48	21.2	18 12	58.7		
16.0	6	6.0	5 46	36.1	18 14	43.9		
16.0	6	7.0	5 44	50.4	18 16	29.7		
17.0	6	.0	5 57	14.9	18 4	30.7		
17.0	6	1.0	5 55	31.0	18 6	14.6		
17.0	6	2.0	5 53	47.0	18 7	58.7		
17.0	6	3.0	5 52	2.8	18 9	43.0		
17.0	6	4.0	5 50	18.3	18 11	27.5		
17.0	6	5.0	5 48	33.5	18 13	12.4		
17.0	6	6.0	5 46	48.2	18 14	57.8		
17.0	6	7.0	5 45	2.4	18 16	43.7		
18.0	6	.0	5 57	27.9	18 4	43.8		
18.0	6	1.0	5 55	44.0	18 6	27.8		
18.0	6	2.0	5 53	59.9	18 8	12.0		
18.0	6	3.0	5 52	15.5	18 9	56.4		
18.0	6	4.0	5 50	30.9	18 11	41.0		
18.0	6	5.0	5 48	45.9	18 13	26.0		
18.0	6	6.0	5 47	.5	18 15	11.5		
18.0	6	7.0	5 45	14.6	18 16	57.5		
19.0	6	.0	5 57	41.0	18 4	57.0		
19.0	6	1.0	5 55	57.0	18 6	41.0		
19.0	6	2.0	5 54	12.8	18 8	25.2		
19.0	6	3.0	5 52	28.4	18 10	9.7		
19.0	6	4.0	5 50	43.7	18 11	54.4		
19.0	6	5.0	5 48	58.6	18 13	39.5		

19.0	6	6.0	5 47	13.1	18 15	25.0
19.0	6	7.0	5 45	27.1	18 17	11.0
20.0	6	.0	5 57	54.1	18 5	10.1
20.0	6	1.0	5 56	10.0	18 6	54.2
20.0	6	2.0	5 54	25.8	18 8	38.4
20.0	6	3.0	5 52	41.3	18 10	22.9
20.0	6	4.0	5 50	56.6	18 12	7.6
20.0	6	5.0	5 49	11.5	18 13	52.7
20.0	6	6.0	5 47	26.0	18 15	38.3
20.0	6	7.0	5 45	39.9	18 17	24.3
21.0	6	.0	5 58	7.2	18 5	23.1
21.0	6	1.0	5 56	23.1	18 7	7.2
21.0	6	2.0	5 54	38.8	18 8	51.5
21.0	6	3.0	5 52	54.4	18 10	35.9
21.0	6	4.0	5 51	9.6	18 12	20.7
21.0	6	5.0	5 49	24.5	18 14	5.8
21.0	6	6.0	5 47	39.0	18 15	51.3
21.0	6	7.0	5 45	52.9	18 17	37.3
22.0	6	.0	5 58	20.2	18 5	36.1
22.0	6	1.0	5 56	36.1	18 7	20.2
22.0	6	2.0	5 54	51.9	18 9	4.4
22.0	6	3.0	5 53	7.5	18 10	48.8
22.0	6	4.0	5 51	22.7	18 12	33.5
22.0	6	5.0	5 49	37.7	18 14	18.6
22.0	6	6.0	5 47	52.1	18 16	4.1
22.0	6	7.0	5 46	6.1	18 17	50.1
23.0	6	.0	5 58	33.2	18 5	49.1
23.0	6	1.0	5 56	49.2	18 7	33.0
23.0	6	2.0	5 55	5.0	18 9	17.2
23.0	6	3.0	5 53	20.6	18 11	1.5
23.0	6	4.0	5 51	35.9	18 12	46.1
23.0	6	5.0	5 49	50.9	18 14	31.1
23.0	6	6.0	5 48	5.5	18 16	16.5
23.0	6	7.0	5 46	19.5	18 18	2.4
24.0	6	.0	5 58	46.1	18 6	1.9
24.0	6	1.0	5 57	2.1	18 7	45.7
24.0	6	2.0	5 55	18.1	18 9	29.8
24.0	6	3.0	5 53	33.8	18 11	14.0
24.0	6	4.0	5 51	49.2	18 12	58.5
24.0	6	5.0	5 50	4.3	18 14	43.4
24.0	6	6.0	5 48	18.9	18 16	28.7
24.0	6	7.0	5 46	33.0	18 18	14.5
25.0	6	.0	5 58	58.8	18 6	14.6
25.0	6	1.0	5 57	15.0	18 7	58.3
25.0	6	2.0	5 55	31.1	18 9	42.2



25.0	6	3.0	5 53	46.9	18 11	26.2
25.0	6	4.0	5 52	2.5	18 13	10.6
25.0	6	5.0	5 50	17.7	18 14	55.3
25.0	6	6.0	5 48	32.5	18 16	40.5
25.0	6	7.0	5 46	46.7	18 18	26.2
26.0	6	.0	5 59	11.5	18 6	27.1
26.0	6	1.0	5 57	27.9	18 8	10.7
26.0	6	2.0	5 55	44.1	18 9	54.3
26.0	6	3.0	5 54	.1	18 11	38.3
26.0	6	4.0	5 52	15.8	18 13	22.4
26.0	6	5.0	5 50	31.2	18 15	7.0
26.0	6	6.0	5 48	46.1	18 16	52.0
26.0	6	7.0	5 47	.5	18 18	37.5
27.0	6	.0	5 59	24.0	18 6	39.5
27.0	6	1.0	5 57	40.6	18 8	22.8
27.0	6	2.0	5 55	57.0	18 10	6.3
27.0	6	3.0	5 54	13.2	18 11	50.0
27.0	6	4.0	5 52	29.1	18 13	34.0
27.0	6	5.0	5 50	44.6	18 15	18.3
27.0	6	6.0	5 48	59.8	18 17	3.1
27.0	6	7.0	5 47	14.4	18 18	48.3
28.0	6	.0	5 59	36.4	18 6	51.7
28.0	6	1.0	5 57	53.1	18 8	34.8
28.0	6	2.0	5 56	9.8	18 10	18.0
28.0	6	3.0	5 54	26.2	18 12	1.5
28.0	6	4.0	5 52	42.4	18 13	45.2
28.0	6	5.0	5 50	58.1	18 15	29.3
28.0	6	6.0	5 49	13.5	18 17	13.8
28.0	6	7.0	5 47	28.4	18 18	58.8
29.0	6	.0	5 59	48.5	18 7	3.7
29.0	6	1.0	5 58	5.6	18 8	46.5
29.0	6	2.0	5 56	22.5	18 10	29.4
29.0	6	3.0	5 54	39.2	18 12	12.6
29.0	6	4.0	5 52	55.6	18 13	56.1
29.0	6	5.0	5 51	11.6	18 15	39.9
29.0	6	6.0	5 49	27.2	18 17	24.1
29.0	6	7.0	5 47	42.4	18 19	8.8
30.0	6	.0	6 0	.5	18 7	15.4
30.0	6	1.0	5 58	17.8	18 8	57.9
30.0	6	2.0	5 56	35.0	18 10	40.6
30.0	6	3.0	5 54	52.0	18 12	23.4
30.0	6	4.0	5 53	8.7	18 14	6.6
30.0	6	5.0	5 51	25.1	18 15	50.1
30.0	6	6.0	5 49	41.0	18 17	34.0
30.0	6	7.0	5 47	56.4	18 19	18.4

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	7	.0	6	0	12.2	18	7	27.0
1.0	7	1.0	5	58	29.9	18	9	9.1
1.0	7	2.0	5	56	47.4	18	10	51.4
1.0	7	3.0	5	55	4.8	18	12	33.9
1.0	7	4.0	5	53	21.8	18	14	16.7
1.0	7	5.0	5	51	38.5	18	15	59.9
1.0	7	6.0	5	49	54.7	18	17	43.4
1.0	7	7.0	5	48	10.5	18	19	27.5
2.0	7	.0	6	0	23.7	18	7	38.2
2.0	7	1.0	5	58	41.8	18	9	20.0
2.0	7	2.0	5	56	59.7	18	11	1.9
2.0	7	3.0	5	55	17.4	18	12	44.1
2.0	7	4.0	5	53	34.7	18	14	26.5
2.0	7	5.0	5	51	51.8	18	16	9.2
2.0	7	6.0	5	50	8.4	18	17	52.4
2.0	7	7.0	5	48	24.5	18	19	36.1
3.0	7	.0	6	0	35.0	18	7	49.2
3.0	7	1.0	5	58	53.4	18	9	30.6
3.0	7	2.0	5	57	11.7	18	11	12.1
3.0	7	3.0	5	55	29.8	18	12	53.8
3.0	7	4.0	5	53	47.6	18	14	35.8
3.0	7	5.0	5	52	5.0	18	16	18.2
3.0	7	6.0	5	50	22.0	18	18	.9
3.0	7	7.0	5	48	38.6	18	19	44.2
4.0	7	.0	6	0	46.0	18	7	59.9
4.0	7	1.0	5	59	4.8	18	9	40.8
4.0	7	2.0	5	57	23.5	18	11	21.9
4.0	7	3.0	5	55	42.0	18	13	3.2
4.0	7	4.0	5	54	.3	18	14	44.7
4.0	7	5.0	5	52	18.1	18	16	26.6
4.0	7	6.0	5	50	35.6	18	18	8.9
4.0	7	7.0	5	48	52.6	18	19	51.8
5.0	7	.0	6	0	56.6	18	8	10.3
5.0	7	1.0	5	59	16.0	18	9	50.7
5.0	7	2.0	5	57	35.1	18	11	31.3
5.0	7	3.0	5	55	54.1	18	13	12.1
5.0	7	4.0	5	54	12.8	18	14	53.2
5.0	7	5.0	5	52	31.1	18	16	34.6
5.0	7	6.0	5	50	49.0	18	18	16.5
5.0	7	7.0	5	49	6.5	18	19	58.8
6.0	7	.0	6	1	7.0	18	8	20.4
6.0	7	1.0	5	59	26.8	18	10	.3

6.0	7	2.0	5	57	46.5	18	11	40.4
6.0	7	3.0	5	56	5.9	18	13	20.7
6.0	7	4.0	5	54	25.1	18	15	1.2
6.0	7	5.0	5	52	44.0	18	16	42.1
6.0	7	6.0	5	51	2.4	18	18	23.5
6.0	7	7.0	5	49	20.3	18	20	5.3
7.0	7	.0	6	1	17.1	18	8	30.1
7.0	7	1.0	5	59	37.4	18	10	9.5
7.0	7	2.0	5	57	57.6	18	11	49.0
7.0	7	3.0	5	56	17.6	18	13	28.7
7.0	7	4.0	5	54	37.3	18	15	8.8
7.0	7	5.0	5	52	56.6	18	16	49.1
7.0	7	6.0	5	51	15.6	18	18	29.9
7.0	7	7.0	5	49	34.0	18	20	11.2
8.0	7	.0	6	1	26.7	18	8	39.4
8.0	7	1.0	5	59	47.6	18	10	18.2
8.0	7	2.0	5	58	8.4	18	11	57.2
8.0	7	3.0	5	56	28.9	18	13	36.4
8.0	7	4.0	5	54	49.2	18	15	15.8
8.0	7	5.0	5	53	9.1	18	16	55.6
8.0	7	6.0	5	51	28.6	18	18	35.8
8.0	7	7.0	5	49	47.6	18	20	16.5
9.0	7	.0	6	1	36.1	18	8	48.3
9.0	7	1.0	5	59	57.5	18	10	26.6
9.0	7	2.0	5	58	18.9	18	12	4.9
9.0	7	3.0	5	56	40.0	18	13	43.5
9.0	7	4.0	5	55	.8	18	15	22.4
9.0	7	5.0	5	53	21.3	18	17	1.6
9.0	7	6.0	5	51	41.4	18	18	41.1
9.0	7	7.0	5	50	1.0	18	20	21.2
10.0	7	.0	6	1	45.0	18	8	56.9
10.0	7	1.0	6	0	7.1	18	10	34.5
10.0	7	2.0	5	58	29.0	18	12	12.2
10.0	7	3.0	5	56	50.7	18	13	50.2
10.0	7	4.0	5	55	12.2	18	15	28.4
10.0	7	5.0	5	53	33.3	18	17	6.9
10.0	7	6.0	5	51	54.0	18	18	45.9
10.0	7	7.0	5	50	14.3	18	20	25.3
11.0	7	.0	6	1	53.5	18	9	5.0
11.0	7	1.0	6	0	16.2	18	10	41.9
11.0	7	2.0	5	58	38.8	18	12	19.0
11.0	7	3.0	5	57	1.2	18	13	56.3
11.0	7	4.0	5	55	23.3	18	15	33.8
11.0	7	5.0	5	53	45.1	18	17	11.7
11.0	7	6.0	5	52	6.5	18	18	50.0
11.0	7	7.0	5	50	27.4	18	20	28.8

12.0	7	.0	6	2	1.6	18	9	12.6
12.0	7	1.0	6	0	25.0	18	10	48.9
12.0	7	2.0	5	58	48.3	18	12	25.3
12.0	7	3.0	5	57	11.3	18	14	1.9
12.0	7	4.0	5	55	34.1	18	15	38.8
12.0	7	5.0	5	53	56.6	18	17	16.0
12.0	7	6.0	5	52	18.6	18	18	53.5
12.0	7	7.0	5	50	40.2	18	20	31.6

13.0	7	.0	6	2	9.2	18	9	19.8
13.0	7	1.0	6	0	33.3	18	10	55.4
13.0	7	2.0	5	58	57.3	18	12	31.1
13.0	7	3.0	5	57	21.1	18	14	6.9
13.0	7	4.0	5	55	44.6	18	15	43.1
13.0	7	5.0	5	54	7.7	18	17	19.6
13.0	7	6.0	5	52	30.5	18	18	56.4
13.0	7	7.0	5	50	52.8	18	20	33.8

14.0	7	.0	6	2	16.4	18	9	26.6
14.0	7	1.0	6	0	41.2	18	11	1.4
14.0	7	2.0	5	59	5.9	18	12	36.3
14.0	7	3.0	5	57	30.4	18	14	11.4
14.0	7	4.0	5	55	54.7	18	15	46.8
14.0	7	5.0	5	54	18.6	18	17	22.5
14.0	7	6.0	5	52	42.1	18	18	58.6
14.0	7	7.0	5	51	5.1	18	20	35.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	7	.0	6	2	23.1	18	9	32.8
15.0	7	1.0	6	0	48.7	18	11	6.8
15.0	7	2.0	5	59	14.1	18	12	40.9
15.0	7	3.0	5	57	39.4	18	14	15.3
15.0	7	4.0	5	56	4.4	18	15	49.9
15.0	7	5.0	5	54	29.1	18	17	24.9
15.0	7	6.0	5	52	53.3	18	19	.2
15.0	7	7.0	5	51	17.1	18	20	36.0
16.0	7	.0	6	2	29.3	18	9	38.5
16.0	7	1.0	6	0	55.6	18	11	11.7
16.0	7	2.0	5	59	21.9	18	12	45.0
16.0	7	3.0	5	57	47.9	18	14	18.6
16.0	7	4.0	5	56	13.7	18	15	52.4
16.0	7	5.0	5	54	39.2	18	17	26.5
16.0	7	6.0	5	53	4.2	18	19	1.0
16.0	7	7.0	5	51	28.9	18	20	36.0
17.0	7	.0	6	2	34.9	18	9	43.6

17.0	7	1.0	6	1	2.1	18	11	16.0
17.0	7	2.0	5	59	29.2	18	12	48.5
17.0	7	3.0	5	57	56.0	18	14	21.2
17.0	7	4.0	5	56	22.6	18	15	54.2
17.0	7	5.0	5	54	48.9	18	17	27.5
17.0	7	6.0	5	53	14.8	18	19	1.2
17.0	7	7.0	5	51	40.2	18	20	35.3
18.0	7	.0	6	2	40.0	18	9	48.2
18.0	7	1.0	6	1	8.0	18	11	19.7
18.0	7	2.0	5	59	35.9	18	12	51.4
18.0	7	3.0	5	58	3.6	18	14	23.3
18.0	7	4.0	5	56	31.1	18	15	55.4
18.0	7	5.0	5	54	58.2	18	17	27.8
18.0	7	6.0	5	53	25.0	18	19	.6
18.0	7	7.0	5	51	51.3	18	20	33.9
19.0	7	.0	6	2	44.5	18	9	52.2
19.0	7	1.0	6	1	13.4	18	11	22.9
19.0	7	2.0	5	59	42.2	18	12	53.7
19.0	7	3.0	5	58	10.8	18	14	24.7
19.0	7	4.0	5	56	39.1	18	15	55.9
19.0	7	5.0	5	55	7.1	18	17	27.4
19.0	7	6.0	5	53	34.7	18	18	59.4
19.0	7	7.0	5	52	1.9	18	20	31.7
20.0	7	.0	6	2	48.5	18	9	55.7
20.0	7	1.0	6	1	18.3	18	11	25.4
20.0	7	2.0	5	59	48.0	18	12	55.3
20.0	7	3.0	5	58	17.5	18	14	25.4
20.0	7	4.0	5	56	46.7	18	15	55.7
20.0	7	5.0	5	55	15.6	18	17	26.3
20.0	7	6.0	5	53	44.1	18	18	57.3
20.0	7	7.0	5	52	12.2	18	20	28.8
21.0	7	.0	6	2	51.9	18	9	58.5
21.0	7	1.0	6	1	22.6	18	11	27.4
21.0	7	2.0	5	59	53.2	18	12	56.3
21.0	7	3.0	5	58	23.6	18	14	25.5
21.0	7	4.0	5	56	53.8	18	15	54.8
21.0	7	5.0	5	55	23.6	18	17	24.5
21.0	7	6.0	5	53	53.1	18	18	54.6
21.0	7	7.0	5	52	22.1	18	20	25.1
22.0	7	.0	6	2	54.8	18	10	.8
22.0	7	1.0	6	1	26.4	18	11	28.7
22.0	7	2.0	5	59	57.9	18	12	56.7
22.0	7	3.0	5	58	29.3	18	14	24.9
22.0	7	4.0	5	57	.4	18	15	53.3
22.0	7	5.0	5	55	31.1	18	17	22.0
22.0	7	6.0	5	54	1.6	18	18	51.1

22.0	7	7.0	5	52	31.6	18	20	20.6
23.0	7	.0	6	2	57.0	18	10	2.5
23.0	7	1.0	6	1	29.6	18	11	29.4
23.0	7	2.0	6	0	2.1	18	12	56.4
23.0	7	3.0	5	58	34.4	18	14	23.6
23.0	7	4.0	5	57	6.5	18	15	51.0
23.0	7	5.0	5	55	38.2	18	17	18.8
23.0	7	6.0	5	54	9.6	18	18	46.9
23.0	7	7.0	5	52	40.6	18	20	15.4
24.0	7	.0	6	2	58.6	18	10	3.6
24.0	7	1.0	6	1	32.2	18	11	29.5
24.0	7	2.0	6	0	5.7	18	12	55.5
24.0	7	3.0	5	58	39.0	18	14	21.7
24.0	7	4.0	5	57	12.1	18	15	48.1
24.0	7	5.0	5	55	44.9	18	17	14.8
24.0	7	6.0	5	54	17.3	18	18	41.9
24.0	7	7.0	5	52	49.2	18	20	9.4
25.0	7	.0	6	2	59.7	18	10	4.1
25.0	7	1.0	6	1	34.3	18	11	28.9
25.0	7	2.0	6	0	8.8	18	12	53.9
25.0	7	3.0	5	58	43.1	18	14	19.1
25.0	7	4.0	5	57	17.2	18	15	44.5
25.0	7	5.0	5	55	51.0	18	17	10.2
25.0	7	6.0	5	54	24.4	18	18	36.2
25.0	7	7.0	5	52	57.4	18	20	2.7
26.0	7	.0	6	3	.1	18	10	3.9
26.0	7	1.0	6	1	35.8	18	11	27.7
26.0	7	2.0	6	0	11.3	18	12	51.7
26.0	7	3.0	5	58	46.7	18	14	15.8
26.0	7	4.0	5	57	21.8	18	15	40.1
26.0	7	5.0	5	55	56.6	18	17	4.8
26.0	7	6.0	5	54	31.1	18	18	29.8
26.0	7	7.0	5	53	5.2	18	19	55.1
27.0	7	.0	6	2	60.0	18	10	3.2
27.0	7	1.0	6	1	36.7	18	11	25.9
27.0	7	2.0	6	0	13.3	18	12	48.8
27.0	7	3.0	5	58	49.7	18	14	11.8
27.0	7	4.0	5	57	25.9	18	15	35.1
27.0	7	5.0	5	56	1.8	18	16	58.7
27.0	7	6.0	5	54	37.4	18	18	22.6
27.0	7	7.0	5	53	12.5	18	19	46.9
28.0	7	.0	6	2	59.2	18	10	1.9
28.0	7	1.0	6	1	37.0	18	11	23.5
28.0	7	2.0	6	0	14.7	18	12	45.3
28.0	7	3.0	5	58	52.2	18	14	7.2

28.0	7	4.0	5	57	29.5	18	15	29.4
28.0	7	5.0	5	56	6.5	18	16	51.8
28.0	7	6.0	5	54	43.1	18	18	14.6
28.0	7	7.0	5	53	19.4	18	19	37.8
29.0	7	.0	6	2	57.9	18	9	59.9
29.0	7	1.0	6	1	36.8	18	11	20.4
29.0	7	2.0	6	0	15.6	18	12	41.1
29.0	7	3.0	5	58	54.2	18	14	1.9
29.0	7	4.0	5	57	32.6	18	15	23.0
29.0	7	5.0	5	56	10.7	18	16	44.3
29.0	7	6.0	5	54	48.4	18	18	6.0
29.0	7	7.0	5	53	25.8	18	19	28.1
30.0	7	.0	6	2	55.9	18	9	57.4
30.0	7	1.0	6	1	36.0	18	11	16.8
30.0	7	2.0	6	0	15.9	18	12	36.3
30.0	7	3.0	5	58	55.6	18	13	56.0
30.0	7	4.0	5	57	35.1	18	15	15.9
30.0	7	5.0	5	56	14.3	18	16	36.1
30.0	7	6.0	5	54	53.2	18	17	56.6
30.0	7	7.0	5	53	31.8	18	19	17.5
31.0	7	.0	6	2	53.4	18	9	54.2
31.0	7	1.0	6	1	34.6	18	11	12.5
31.0	7	2.0	6	0	15.6	18	12	30.8
31.0	7	3.0	5	58	56.5	18	13	49.4
31.0	7	4.0	5	57	37.2	18	15	8.1
31.0	7	5.0	5	56	17.5	18	16	27.2
31.0	7	6.0	5	54	57.6	18	17	46.5
31.0	7	7.0	5	53	37.3	18	19	6.3

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	8	.0	6	2	50.2	18	9	50.5
1.0	8	1.0	6	1	32.6	18	11	7.6
1.0	8	2.0	6	0	14.8	18	12	24.7
1.0	8	3.0	5	58	56.8	18	13	42.1
1.0	8	4.0	5	57	38.7	18	14	59.7
1.0	8	5.0	5	56	20.2	18	16	17.5
1.0	8	6.0	5	55	1.5	18	17	35.7
1.0	8	7.0	5	53	42.3	18	18	54.3
2.0	8	.0	6	2	46.5	18	9	46.1
2.0	8	1.0	6	1	30.0	18	11	2.0
2.0	8	2.0	6	0	13.4	18	12	18.0
2.0	8	3.0	5	58	56.7	18	13	34.2
2.0	8	4.0	5	57	39.7	18	14	50.6
2.0	8	5.0	5	56	22.4	18	16	7.2

2.0	8	6.0	5	55	4.9	18	17	24.2
2.0	8	7.0	5	53	46.9	18	18	41.5
3.0	8	.0	6	2	42.2	18	9	41.2
3.0	8	1.0	6	1	26.9	18	10	55.9
3.0	8	2.0	6	0	11.5	18	12	10.7
3.0	8	3.0	5	58	55.9	18	13	25.6
3.0	8	4.0	5	57	40.2	18	14	40.8
3.0	8	5.0	5	56	24.1	18	15	56.2
3.0	8	6.0	5	55	7.8	18	17	12.0
3.0	8	7.0	5	53	51.1	18	18	28.1
4.0	8	.0	6	2	37.3	18	9	35.7
4.0	8	1.0	6	1	23.2	18	10	49.2
4.0	8	2.0	6	0	9.0	18	12	2.7
4.0	8	3.0	5	58	54.7	18	13	16.4
4.0	8	4.0	5	57	40.1	18	14	30.4
4.0	8	5.0	5	56	25.3	18	15	44.6
4.0	8	6.0	5	55	10.2	18	16	59.1
4.0	8	7.0	5	53	54.7	18	18	13.9
5.0	8	.0	6	2	31.8	18	9	29.6
5.0	8	1.0	6	1	19.0	18	10	41.8
5.0	8	2.0	6	0	6.0	18	11	54.1
5.0	8	3.0	5	58	52.9	18	13	6.6
5.0	8	4.0	5	57	39.6	18	14	19.3
5.0	8	5.0	5	56	26.0	18	15	32.2
5.0	8	6.0	5	55	12.2	18	16	45.5
5.0	8	7.0	5	53	57.9	18	17	59.0
6.0	8	.0	6	2	25.7	18	9	22.9
6.0	8	1.0	6	1	14.1	18	10	33.9
6.0	8	2.0	6	0	2.5	18	11	44.9
6.0	8	3.0	5	58	50.6	18	12	56.1
6.0	8	4.0	5	57	38.6	18	14	7.5
6.0	8	5.0	5	56	26.3	18	15	19.2
6.0	8	6.0	5	55	13.7	18	16	31.2
6.0	8	7.0	5	54	.7	18	17	43.5
7.0	8	.0	6	2	19.1	18	9	15.7
7.0	8	1.0	6	1	8.8	18	10	25.3
7.0	8	2.0	5	59	58.4	18	11	35.1
7.0	8	3.0	5	58	47.8	18	12	45.0
7.0	8	4.0	5	57	37.0	18	13	55.2
7.0	8	5.0	5	56	26.0	18	15	5.5
7.0	8	6.0	5	55	14.7	18	16	16.2
7.0	8	7.0	5	54	3.0	18	17	27.2
8.0	8	.0	6	2	11.8	18	9	7.9
8.0	8	1.0	6	1	2.8	18	10	16.2
8.0	8	2.0	5	59	53.7	18	11	24.7



8.0	8	3.0	5	58	44.4	18	12	33.3
8.0	8	4.0	5	57	34.9	18	13	42.2
8.0	8	5.0	5	56	25.2	18	14	51.2
8.0	8	6.0	5	55	15.2	18	16	.6
8.0	8	7.0	5	54	4.9	18	17	10.3
9.0	8	.0	6	2	4.0	18	8	59.5
9.0	8	1.0	6	0	56.3	18	10	6.5
9.0	8	2.0	5	59	48.5	18	11	13.7
9.0	8	3.0	5	58	40.5	18	12	21.0
9.0	8	4.0	5	57	32.4	18	13	28.5
9.0	8	5.0	5	56	24.0	18	14	36.3
9.0	8	6.0	5	55	15.3	18	15	44.3
9.0	8	7.0	5	54	6.2	18	16	52.7
10.0	8	.0	6	1	55.7	18	8	50.5
10.0	8	1.0	6	0	49.3	18	9	56.2
10.0	8	2.0	5	59	42.8	18	11	2.1
10.0	8	3.0	5	58	36.1	18	12	8.1
10.0	8	4.0	5	57	29.3	18	13	14.2
10.0	8	5.0	5	56	22.2	18	14	20.7
10.0	8	6.0	5	55	14.8	18	15	27.3
10.0	8	7.0	5	54	7.2	18	16	34.4
11.0	8	.0	6	1	46.7	18	8	41.0
11.0	8	1.0	6	0	41.7	18	9	45.4
11.0	8	2.0	5	59	36.5	18	10	49.9
11.0	8	3.0	5	58	31.2	18	11	54.5
11.0	8	4.0	5	57	25.7	18	12	59.3
11.0	8	5.0	5	56	20.0	18	14	4.4
11.0	8	6.0	5	55	13.9	18	15	9.7
11.0	8	7.0	5	54	7.6	18	16	15.4
12.0	8	.0	6	1	37.2	18	8	30.9
12.0	8	1.0	6	0	33.5	18	9	33.9
12.0	8	2.0	5	59	29.7	18	10	37.1
12.0	8	3.0	5	58	25.7	18	11	40.4
12.0	8	4.0	5	57	21.6	18	12	43.8
12.0	8	5.0	5	56	17.2	18	13	47.5
12.0	8	6.0	5	55	12.6	18	14	51.5
12.0	8	7.0	5	54	7.6	18	15	55.8
13.0	8	.0	6	1	27.2	18	8	20.3
13.0	8	1.0	6	0	24.8	18	9	21.9
13.0	8	2.0	5	59	22.4	18	10	23.7
13.0	8	3.0	5	58	19.8	18	11	25.6
13.0	8	4.0	5	57	17.0	18	12	27.7
13.0	8	5.0	5	56	14.0	18	13	30.0
13.0	8	6.0	5	55	10.7	18	14	32.6
13.0	8	7.0	5	54	7.1	18	15	35.5

14.0	8	.0	6	1	16.5	18	8	9.1
14.0	8	1.0	6	0	15.6	18	9	9.4
14.0	8	2.0	5	59	14.5	18	10	9.7
14.0	8	3.0	5	58	13.3	18	11	10.3
14.0	8	4.0	5	57	11.9	18	12	11.0
14.0	8	5.0	5	56	10.2	18	13	11.9
14.0	8	6.0	5	55	8.3	18	14	13.1
14.0	8	7.0	5	54	6.2	18	15	14.6

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	8	.0	6	1	5.3	18	7	57.3
15.0	8	1.0	6	0	5.7	18	8	56.2
15.0	8	2.0	5	59	6.1	18	9	55.2
15.0	8	3.0	5	58	6.2	18	10	54.3
15.0	8	4.0	5	57	6.2	18	11	53.6
15.0	8	5.0	5	56	6.0	18	12	53.1
15.0	8	6.0	5	55	5.5	18	13	52.9
15.0	8	7.0	5	54	4.7	18	14	53.0
16.0	8	.0	6	0	53.6	18	7	45.0
16.0	8	1.0	5	59	55.4	18	8	42.5
16.0	8	2.0	5	58	57.1	18	9	40.1
16.0	8	3.0	5	57	58.7	18	10	37.8
16.0	8	4.0	5	57	.1	18	11	35.7
16.0	8	5.0	5	56	1.3	18	12	33.8
16.0	8	6.0	5	55	2.2	18	13	32.2
16.0	8	7.0	5	54	2.9	18	14	30.8
17.0	8	.0	6	0	41.3	18	7	32.2
17.0	8	1.0	5	59	44.5	18	8	28.2
17.0	8	2.0	5	58	47.7	18	9	24.4
17.0	8	3.0	5	57	50.6	18	10	20.7
17.0	8	4.0	5	56	53.5	18	11	17.2
17.0	8	5.0	5	55	56.1	18	12	13.8
17.0	8	6.0	5	54	58.4	18	13	10.8
17.0	8	7.0	5	54	.5	18	14	8.0
18.0	8	.0	6	0	28.5	18	7	18.8
18.0	8	1.0	5	59	33.1	18	8	13.5
18.0	8	2.0	5	58	37.7	18	9	8.2
18.0	8	3.0	5	57	42.1	18	10	3.0
18.0	8	4.0	5	56	46.3	18	10	58.1
18.0	8	5.0	5	55	50.4	18	11	53.3
18.0	8	6.0	5	54	54.2	18	12	48.8
18.0	8	7.0	5	53	57.7	18	13	44.5
19.0	8	.0	6	0	15.1	18	7	5.0
19.0	8	1.0	5	59	21.2	18	7	58.1

19.0	8	2.0	5 58	27.2	18 8	51.4
19.0	8	3.0	5 57	33.1	18 9	44.8
19.0	8	4.0	5 56	38.8	18 10	38.4
19.0	8	5.0	5 55	44.2	18 11	32.2
19.0	8	6.0	5 54	49.5	18 12	26.2
19.0	8	7.0	5 53	54.5	18 13	20.5
20.0	8	.0	6 0	1.3	18 6	50.6
20.0	8	1.0	5 59	8.8	18 7	42.3
20.0	8	2.0	5 58	16.2	18 8	34.1
20.0	8	3.0	5 57	23.6	18 9	26.1
20.0	8	4.0	5 56	30.7	18 10	18.2
20.0	8	5.0	5 55	37.6	18 11	10.6
20.0	8	6.0	5 54	44.4	18 12	3.1
20.0	8	7.0	5 53	50.8	18 12	55.9
21.0	8	.0	5 59	46.9	18 6	35.7
21.0	8	1.0	5 58	55.9	18 7	26.0
21.0	8	2.0	5 58	4.8	18 8	16.4
21.0	8	3.0	5 57	13.6	18 9	6.9
21.0	8	4.0	5 56	22.2	18 9	57.5
21.0	8	5.0	5 55	30.6	18 10	48.4
21.0	8	6.0	5 54	38.8	18 11	39.4
21.0	8	7.0	5 53	46.7	18 12	30.8
22.0	8	.0	5 59	32.1	18 6	20.4
22.0	8	1.0	5 58	42.5	18 7	9.2
22.0	8	2.0	5 57	52.9	18 7	58.1
22.0	8	3.0	5 57	3.1	18 8	47.1
22.0	8	4.0	5 56	13.2	18 9	36.3
22.0	8	5.0	5 55	23.1	18 10	25.7
22.0	8	6.0	5 54	32.8	18 11	15.2
22.0	8	7.0	5 53	42.2	18 12	5.1
23.0	8	.0	5 59	16.8	18 6	4.6
23.0	8	1.0	5 58	28.7	18 6	51.9
23.0	8	2.0	5 57	40.6	18 7	39.3
23.0	8	3.0	5 56	52.3	18 8	26.9
23.0	8	4.0	5 56	3.8	18 9	14.6
23.0	8	5.0	5 55	15.2	18 10	2.4
23.0	8	6.0	5 54	26.4	18 10	50.5
23.0	8	7.0	5 53	37.3	18 11	38.9
24.0	8	.0	5 59	1.0	18 5	48.4
24.0	8	1.0	5 58	14.5	18 6	34.2
24.0	8	2.0	5 57	27.8	18 7	20.1
24.0	8	3.0	5 56	41.0	18 8	6.2
24.0	8	4.0	5 55	54.0	18 8	52.4
24.0	8	5.0	5 55	6.9	18 9	38.7
24.0	8	6.0	5 54	19.6	18 10	25.3
24.0	8	7.0	5 53	32.0	18 11	12.1

25.0	8	.0	5 58 44.8	18 5 31.7
25.0	8	1.0	5 57 59.8	18 6 16.0
25.0	8	2.0	5 57 14.6	18 7 .5
25.0	8	3.0	5 56 29.3	18 7 45.0
25.0	8	4.0	5 55 43.9	18 8 29.7
25.0	8	5.0	5 54 58.2	18 9 14.6
25.0	8	6.0	5 54 12.4	18 9 59.6
25.0	8	7.0	5 53 26.3	18 10 44.9
26.0	8	.0	5 58 28.2	18 5 14.7
26.0	8	1.0	5 57 44.7	18 5 57.5
26.0	8	2.0	5 57 1.0	18 6 40.4
26.0	8	3.0	5 56 17.2	18 7 23.4
26.0	8	4.0	5 55 33.3	18 8 6.6
26.0	8	5.0	5 54 49.2	18 8 49.9
26.0	8	6.0	5 54 4.9	18 9 33.5
26.0	8	7.0	5 53 20.3	18 10 17.3
27.0	8	.0	5 58 11.2	18 4 57.2
27.0	8	1.0	5 57 29.2	18 5 38.5
27.0	8	2.0	5 56 47.0	18 6 19.9
27.0	8	3.0	5 56 4.7	18 7 1.4
27.0	8	4.0	5 55 22.3	18 7 43.1
27.0	8	5.0	5 54 39.8	18 8 24.9
27.0	8	6.0	5 53 57.0	18 9 6.9
27.0	8	7.0	5 53 14.0	18 9 49.2
28.0	8	.0	5 57 53.9	18 4 39.4
28.0	8	1.0	5 57 13.3	18 5 19.2
28.0	8	2.0	5 56 32.7	18 5 59.1
28.0	8	3.0	5 55 51.9	18 6 39.0
28.0	8	4.0	5 55 11.0	18 7 19.2
28.0	8	5.0	5 54 30.0	18 7 59.5
28.0	8	6.0	5 53 48.7	18 8 39.9
28.0	8	7.0	5 53 7.3	18 9 20.6
29.0	8	.0	5 57 36.1	18 4 21.3
29.0	8	1.0	5 56 57.1	18 4 59.5
29.0	8	2.0	5 56 18.0	18 5 37.8
29.0	8	3.0	5 55 38.8	18 6 16.3
29.0	8	4.0	5 54 59.4	18 6 54.9
29.0	8	5.0	5 54 19.9	18 7 33.6
29.0	8	6.0	5 53 40.2	18 8 12.5
29.0	8	7.0	5 53 .3	18 8 51.7
30.0	8	.0	5 57 18.0	18 4 2.8
30.0	8	1.0	5 56 40.5	18 4 39.5
30.0	8	2.0	5 56 3.0	18 5 16.3
30.0	8	3.0	5 55 25.3	18 5 53.2
30.0	8	4.0	5 54 47.5	18 6 30.2

30.0	8	5.0	5 54 9.5	18 7 7.4
30.0	8	6.0	5 53 31.4	18 7 44.8
30.0	8	7.0	5 52 53.0	18 8 22.3
31.0	8	.0	5 56 59.6	18 3 44.0
31.0	8	1.0	5 56 23.7	18 4 19.1
31.0	8	2.0	5 55 47.6	18 4 54.4
31.0	8	3.0	5 55 11.5	18 5 29.7
31.0	8	4.0	5 54 35.3	18 6 5.2
31.0	8	5.0	5 53 58.8	18 6 40.9
31.0	8	6.0	5 53 22.2	18 7 16.7
31.0	8	7.0	5 52 45.5	18 7 52.7

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	9	.0	5 56	40.9	18 3	24.9		
1.0	9	1.0	5 56	6.5	18 3	58.5		
1.0	9	2.0	5 55	32.0	18 4	32.2		
1.0	9	3.0	5 54	57.4	18 5	6.0		
1.0	9	4.0	5 54	22.7	18 5	39.9		
1.0	9	5.0	5 53	47.9	18 6	14.0		
1.0	9	6.0	5 53	12.9	18 6	48.2		
1.0	9	7.0	5 52	37.6	18 7	22.6		
2.0	9	.0	5 56	21.9	18 3	5.5		
2.0	9	1.0	5 55	49.0	18 3	37.6		
2.0	9	2.0	5 55	16.1	18 4	9.7		
2.0	9	3.0	5 54	43.1	18 4	41.9		
2.0	9	4.0	5 54	10.0	18 5	14.3		
2.0	9	5.0	5 53	36.7	18 5	46.8		
2.0	9	6.0	5 53	3.2	18 6	19.5		
2.0	9	7.0	5 52	29.6	18 6	52.3		
3.0	9	.0	5 56	2.6	18 2	45.9		
3.0	9	1.0	5 55	31.3	18 3	16.4		
3.0	9	2.0	5 54	60.0	18 3	46.9		
3.0	9	3.0	5 54	28.5	18 4	17.6		
3.0	9	4.0	5 53	57.0	18 4	48.4		
3.0	9	5.0	5 53	25.2	18 5	19.3		
3.0	9	6.0	5 52	53.4	18 5	50.4		
3.0	9	7.0	5 52	21.3	18 6	21.7		
4.0	9	.0	5 55	43.1	18 2	26.0		
4.0	9	1.0	5 55	13.4	18 2	55.0		
4.0	9	2.0	5 54	43.6	18 3	24.0		
4.0	9	3.0	5 54	13.7	18 3	53.0		
4.0	9	4.0	5 53	43.7	18 4	22.3		
4.0	9	5.0	5 53	13.6	18 4	51.6		
4.0	9	6.0	5 52	43.3	18 5	21.1		

4.0	9	7.0	5 52	12.8	18	5	50.8
5.0	9	.0	5 55	23.3	18	2	6.0
5.0	9	1.0	5 54	55.2	18	2	33.3
5.0	9	2.0	5 54	27.0	18	3	.7
5.0	9	3.0	5 53	58.7	18	3	28.2
5.0	9	4.0	5 53	30.3	18	3	55.9
5.0	9	5.0	5 53	1.7	18	4	23.6
5.0	9	6.0	5 52	33.0	18	4	51.5
5.0	9	7.0	5 52	4.1	18	5	19.6
6.0	9	.0	5 55	3.3	18	1	45.7
6.0	9	1.0	5 54	36.8	18	2	11.5
6.0	9	2.0	5 54	10.2	18	2	37.3
6.0	9	3.0	5 53	43.5	18	3	3.2
6.0	9	4.0	5 53	16.6	18	3	29.3
6.0	9	5.0	5 52	49.7	18	3	55.4
6.0	9	6.0	5 52	22.6	18	4	21.7
6.0	9	7.0	5 51	55.3	18	4	48.2
7.0	9	.0	5 54	43.2	18	1	25.3
7.0	9	1.0	5 54	18.2	18	1	49.4
7.0	9	2.0	5 53	53.2	18	2	13.7
7.0	9	3.0	5 53	28.0	18	2	38.0
7.0	9	4.0	5 53	2.8	18	3	2.4
7.0	9	5.0	5 52	37.4	18	3	27.0
7.0	9	6.0	5 52	11.9	18	3	51.7
7.0	9	7.0	5 51	46.3	18	4	16.6
8.0	9	.0	5 54	22.8	18	1	4.6
8.0	9	1.0	5 53	59.4	18	1	27.2
8.0	9	2.0	5 53	36.0	18	1	49.9
8.0	9	3.0	5 53	12.4	18	2	12.6
8.0	9	4.0	5 52	48.8	18	2	35.4
8.0	9	5.0	5 52	25.0	18	2	58.4
8.0	9	6.0	5 52	1.1	18	3	21.5
8.0	9	7.0	5 51	37.1	18	3	44.7
9.0	9	.0	5 54	2.3	18	0	43.8
9.0	9	1.0	5 53	40.5	18	1	4.8
9.0	9	2.0	5 53	18.6	18	1	25.9
9.0	9	3.0	5 52	56.7	18	1	47.0
9.0	9	4.0	5 52	34.6	18	2	8.3
9.0	9	5.0	5 52	12.5	18	2	29.6
9.0	9	6.0	5 51	50.2	18	2	51.1
9.0	9	7.0	5 51	27.8	18	3	12.7
10.0	9	.0	5 53	41.6	18	0	22.9
10.0	9	1.0	5 53	21.4	18	0	42.3
10.0	9	2.0	5 53	1.1	18	1	1.7
10.0	9	3.0	5 52	40.8	18	1	21.3

10.0	9	4.0	5 52 20.4	18 1 40.9
10.0	9	5.0	5 51 59.8	18 2 .7
10.0	9	6.0	5 51 39.1	18 2 20.5
10.0	9	7.0	5 51 18.3	18 2 40.5
11.0	9	.0	5 53 20.7	18 0 1.9
11.0	9	1.0	5 53 2.1	18 0 19.6
11.0	9	2.0	5 52 43.5	18 0 37.5
11.0	9	3.0	5 52 24.8	18 0 55.4
11.0	9	4.0	5 52 5.9	18 1 13.4
11.0	9	5.0	5 51 47.0	18 1 31.6
11.0	9	6.0	5 51 27.9	18 1 49.8
11.0	9	7.0	5 51 8.7	18 2 8.2
12.0	9	.0	5 52 59.7	17 59 40.7
12.0	9	1.0	5 52 42.8	17 59 56.9
12.0	9	2.0	5 52 25.7	18 0 13.1
12.0	9	3.0	5 52 8.6	18 0 29.4
12.0	9	4.0	5 51 51.4	18 0 45.8
12.0	9	5.0	5 51 34.1	18 1 2.3
12.0	9	6.0	5 51 16.6	18 1 19.0
12.0	9	7.0	5 50 59.1	18 1 35.7
13.0	9	.0	5 52 38.6	17 59 19.4
13.0	9	1.0	5 52 23.3	17 59 34.0
13.0	9	2.0	5 52 7.9	17 59 48.6
13.0	9	3.0	5 51 52.3	18 0 3.3
13.0	9	4.0	5 51 36.7	18 0 18.1
13.0	9	5.0	5 51 21.0	18 0 33.0
13.0	9	6.0	5 51 5.2	18 0 48.0
13.0	9	7.0	5 50 49.3	18 1 3.1
14.0	9	.0	5 52 17.5	17 58 58.1
14.0	9	1.0	5 52 3.7	17 59 11.0
14.0	9	2.0	5 51 49.9	17 59 24.0
14.0	9	3.0	5 51 36.0	17 59 37.1
14.0	9	4.0	5 51 22.0	17 59 50.3
14.0	9	5.0	5 51 7.9	18 0 3.5
14.0	9	6.0	5 50 53.8	18 0 16.9
14.0	9	7.0	5 50 39.5	18 0 30.4

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	9	.0	5 51	56.2	17 58	36.7		
15.0	9	1.0	5 51	44.1	17 58	48.0		
15.0	9	2.0	5 51	31.9	17 58	59.4		
15.0	9	3.0	5 51	19.6	17 59	10.8		
15.0	9	4.0	5 51	7.2	17 59	22.4		
15.0	9	5.0	5 50	54.8	17 59	34.0		

15.0	9	6.0	5 50	42.2	17 59	45.8
15.0	9	7.0	5 50	29.6	17 59	57.6
16.0	9	.0	5 51	34.8	17 58	15.2
16.0	9	1.0	5 51	24.3	17 58	24.9
16.0	9	2.0	5 51	13.8	17 58	34.7
16.0	9	3.0	5 51	3.1	17 58	44.5
16.0	9	4.0	5 50	52.4	17 58	54.4
16.0	9	5.0	5 50	41.5	17 59	4.4
16.0	9	6.0	5 50	30.6	17 59	14.5
16.0	9	7.0	5 50	19.6	17 59	24.7
17.0	9	.0	5 51	13.5	17 57	53.7
17.0	9	1.0	5 51	4.6	17 58	1.8
17.0	9	2.0	5 50	55.6	17 58	9.9
17.0	9	3.0	5 50	46.6	17 58	18.2
17.0	9	4.0	5 50	37.5	17 58	26.5
17.0	9	5.0	5 50	28.3	17 58	34.8
17.0	9	6.0	5 50	19.0	17 58	43.3
17.0	9	7.0	5 50	9.6	17 58	51.8
18.0	9	.0	5 50	52.1	17 57	32.2
18.0	9	1.0	5 50	44.8	17 57	38.7
18.0	9	2.0	5 50	37.5	17 57	45.2
18.0	9	3.0	5 50	30.1	17 57	51.8
18.0	9	4.0	5 50	22.6	17 57	58.5
18.0	9	5.0	5 50	15.0	17 58	5.2
18.0	9	6.0	5 50	7.4	17 58	12.0
18.0	9	7.0	5 49	59.7	17 58	18.9
19.0	9	.0	5 50	30.7	17 57	10.8
19.0	9	1.0	5 50	25.0	17 57	15.6
19.0	9	2.0	5 50	19.3	17 57	20.5
19.0	9	3.0	5 50	13.5	17 57	25.4
19.0	9	4.0	5 50	7.7	17 57	30.5
19.0	9	5.0	5 50	1.8	17 57	35.6
19.0	9	6.0	5 49	55.8	17 57	40.8
19.0	9	7.0	5 49	49.7	17 57	46.0
20.0	9	.0	5 50	9.3	17 56	49.3
20.0	9	1.0	5 50	5.3	17 56	52.5
20.0	9	2.0	5 50	1.2	17 56	55.8
20.0	9	3.0	5 49	57.0	17 56	59.1
20.0	9	4.0	5 49	52.8	17 57	2.5
20.0	9	5.0	5 49	48.5	17 57	6.0
20.0	9	6.0	5 49	44.2	17 57	9.5
20.0	9	7.0	5 49	39.7	17 57	13.2
21.0	9	.0	5 49	47.9	17 56	28.0
21.0	9	1.0	5 49	45.6	17 56	29.5
21.0	9	2.0	5 49	43.1	17 56	31.2



21.0	9	3.0	5 49	40.6	17 56	32.9
21.0	9	4.0	5 49	38.0	17 56	34.6
21.0	9	5.0	5 49	35.4	17 56	36.5
21.0	9	6.0	5 49	32.6	17 56	38.4
21.0	9	7.0	5 49	29.9	17 56	40.3
22.0	9	.0	5 49	26.7	17 56	6.7
22.0	9	1.0	5 49	25.9	17 56	6.6
22.0	9	2.0	5 49	25.1	17 56	6.6
22.0	9	3.0	5 49	24.2	17 56	6.7
22.0	9	4.0	5 49	23.3	17 56	6.8
22.0	9	5.0	5 49	22.3	17 56	7.0
22.0	9	6.0	5 49	21.2	17 56	7.3
22.0	9	7.0	5 49	20.0	17 56	7.6
23.0	9	.0	5 49	5.5	17 55	45.5
23.0	9	1.0	5 49	6.4	17 55	43.8
23.0	9	2.0	5 49	7.2	17 55	42.2
23.0	9	3.0	5 49	7.9	17 55	40.6
23.0	9	4.0	5 49	8.6	17 55	39.1
23.0	9	5.0	5 49	9.2	17 55	37.7
23.0	9	6.0	5 49	9.8	17 55	36.3
23.0	9	7.0	5 49	10.3	17 55	34.9
24.0	9	.0	5 48	44.4	17 55	24.4
24.0	9	1.0	5 48	46.9	17 55	21.1
24.0	9	2.0	5 48	49.4	17 55	17.9
24.0	9	3.0	5 48	51.7	17 55	14.7
24.0	9	4.0	5 48	54.1	17 55	11.5
24.0	9	5.0	5 48	56.3	17 55	8.4
24.0	9	6.0	5 48	58.6	17 55	5.4
24.0	9	7.0	5 49	.7	17 55	2.4
25.0	9	.0	5 48	23.5	17 55	3.5
25.0	9	1.0	5 48	27.6	17 54	58.6
25.0	9	2.0	5 48	31.7	17 54	53.7
25.0	9	3.0	5 48	35.7	17 54	48.9
25.0	9	4.0	5 48	39.7	17 54	44.1
25.0	9	5.0	5 48	43.6	17 54	39.4
25.0	9	6.0	5 48	47.4	17 54	34.7
25.0	9	7.0	5 48	51.2	17 54	30.0
26.0	9	.0	5 48	2.7	17 54	42.8
26.0	9	1.0	5 48	8.4	17 54	36.2
26.0	9	2.0	5 48	14.2	17 54	29.7
26.0	9	3.0	5 48	19.8	17 54	23.2
26.0	9	4.0	5 48	25.4	17 54	16.8
26.0	9	5.0	5 48	31.0	17 54	10.5
26.0	9	6.0	5 48	36.5	17 54	4.1
26.0	9	7.0	5 48	41.9	17 53	57.8

27.0	9	.0	5 47 42.1	17 54 22.3
27.0	9	1.0	5 47 49.5	17 54 14.1
27.0	9	2.0	5 47 56.8	17 54 5.9
27.0	9	3.0	5 48 4.1	17 53 57.8
27.0	9	4.0	5 48 11.3	17 53 49.8
27.0	9	5.0	5 48 18.5	17 53 41.8
27.0	9	6.0	5 48 25.7	17 53 33.8
27.0	9	7.0	5 48 32.8	17 53 25.8
28.0	9	.0	5 47 21.7	17 54 2.0
28.0	9	1.0	5 47 30.7	17 53 52.2
28.0	9	2.0	5 47 39.7	17 53 42.4
28.0	9	3.0	5 47 48.6	17 53 32.6
28.0	9	4.0	5 47 57.5	17 53 22.9
28.0	9	5.0	5 48 6.3	17 53 13.3
28.0	9	6.0	5 48 15.1	17 53 3.7
28.0	9	7.0	5 48 23.9	17 52 54.1
29.0	9	.0	5 47 1.5	17 53 42.0
29.0	9	1.0	5 47 12.2	17 53 30.5
29.0	9	2.0	5 47 22.8	17 53 19.1
29.0	9	3.0	5 47 33.3	17 53 7.7
29.0	9	4.0	5 47 43.9	17 52 56.4
29.0	9	5.0	5 47 54.3	17 52 45.1
29.0	9	6.0	5 48 4.8	17 52 33.8
29.0	9	7.0	5 48 15.2	17 52 22.5
30.0	9	.0	5 46 41.6	17 53 22.2
30.0	9	1.0	5 46 53.9	17 53 9.1
30.0	9	2.0	5 47 6.1	17 52 56.0
30.0	9	3.0	5 47 18.3	17 52 43.0
30.0	9	4.0	5 47 30.5	17 52 30.1
30.0	9	5.0	5 47 42.6	17 52 17.1
30.0	9	6.0	5 47 54.7	17 52 4.2
30.0	9	7.0	5 48 6.8	17 51 51.3

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	10	.0	5	46	22.0	17	53	2.7
1.0	10	1.0	5	46	35.9	17	52	48.0
1.0	10	2.0	5	46	49.8	17	52	33.3
1.0	10	3.0	5	47	3.6	17	52	18.7
1.0	10	4.0	5	47	17.4	17	52	4.1
1.0	10	5.0	5	47	31.1	17	51	49.5
1.0	10	6.0	5	47	44.9	17	51	34.9
1.0	10	7.0	5	47	58.6	17	51	20.4
2.0	10	.0	5	46	2.7	17	52	43.5
2.0	10	1.0	5	46	18.2	17	52	27.2

2.0	10	2.0	5 46	33.7	17 52	10.9
2.0	10	3.0	5 46	49.1	17 51	54.6
2.0	10	4.0	5 47	4.6	17 51	38.4
2.0	10	5.0	5 47	20.0	17 51	22.2
2.0	10	6.0	5 47	35.3	17 51	6.0
2.0	10	7.0	5 47	50.7	17 50	49.8
3.0	10	.0	5 45	43.6	17 52	24.7
3.0	10	1.0	5 46	.8	17 52	6.7
3.0	10	2.0	5 46	17.9	17 51	48.8
3.0	10	3.0	5 46	35.0	17 51	30.9
3.0	10	4.0	5 46	52.1	17 51	13.0
3.0	10	5.0	5 47	9.1	17 50	55.2
3.0	10	6.0	5 47	26.1	17 50	37.3
3.0	10	7.0	5 47	43.1	17 50	19.5
4.0	10	.0	5 45	25.0	17 52	6.3
4.0	10	1.0	5 45	43.8	17 51	46.6
4.0	10	2.0	5 46	2.5	17 51	27.1
4.0	10	3.0	5 46	21.2	17 51	7.6
4.0	10	4.0	5 46	39.9	17 50	48.1
4.0	10	5.0	5 46	58.6	17 50	28.6
4.0	10	6.0	5 47	17.2	17 50	9.1
4.0	10	7.0	5 47	35.9	17 49	49.6
5.0	10	.0	5 45	6.7	17 51	48.2
5.0	10	1.0	5 45	27.1	17 51	26.9
5.0	10	2.0	5 45	47.4	17 51	5.7
5.0	10	3.0	5 46	7.8	17 50	44.6
5.0	10	4.0	5 46	28.1	17 50	23.5
5.0	10	5.0	5 46	48.4	17 50	2.4
5.0	10	6.0	5 47	8.7	17 49	41.2
5.0	10	7.0	5 47	29.0	17 49	20.1
6.0	10	.0	5 44	48.7	17 51	30.5
6.0	10	1.0	5 45	10.8	17 51	7.6
6.0	10	2.0	5 45	32.7	17 50	44.8
6.0	10	3.0	5 45	54.7	17 50	22.0
6.0	10	4.0	5 46	16.6	17 49	59.3
6.0	10	5.0	5 46	38.6	17 49	36.5
6.0	10	6.0	5 47	.5	17 49	13.8
6.0	10	7.0	5 47	22.5	17 48	51.0
7.0	10	.0	5 44	31.2	17 51	13.2
7.0	10	1.0	5 44	54.8	17 50	48.7
7.0	10	2.0	5 45	18.4	17 50	24.3
7.0	10	3.0	5 45	42.0	17 49	59.9
7.0	10	4.0	5 46	5.6	17 49	35.5
7.0	10	5.0	5 46	29.1	17 49	11.2
7.0	10	6.0	5 46	52.7	17 48	46.8
7.0	10	7.0	5 47	16.3	17 48	22.4

8.0	10	.0	5 44 14.0	17 50 56.3
8.0	10	1.0	5 44 39.3	17 50 30.2
8.0	10	2.0	5 45 4.5	17 50 4.2
8.0	10	3.0	5 45 29.7	17 49 38.2
8.0	10	4.0	5 45 54.9	17 49 12.2
8.0	10	5.0	5 46 20.1	17 48 46.2
8.0	10	6.0	5 46 45.3	17 48 20.2
8.0	10	7.0	5 47 10.5	17 47 54.1
9.0	10	.0	5 43 57.3	17 50 39.9
9.0	10	1.0	5 44 24.2	17 50 12.2
9.0	10	2.0	5 44 51.0	17 49 44.6
9.0	10	3.0	5 45 17.9	17 49 16.9
9.0	10	4.0	5 45 44.7	17 48 49.3
9.0	10	5.0	5 46 11.5	17 48 21.7
9.0	10	6.0	5 46 38.3	17 47 54.1
9.0	10	7.0	5 47 5.2	17 47 26.4
10.0	10	.0	5 43 41.0	17 50 23.9
10.0	10	1.0	5 44 9.5	17 49 54.6
10.0	10	2.0	5 44 38.0	17 49 25.4
10.0	10	3.0	5 45 6.4	17 48 56.2
10.0	10	4.0	5 45 34.8	17 48 26.9
10.0	10	5.0	5 46 3.3	17 47 57.7
10.0	10	6.0	5 46 31.7	17 47 28.4
10.0	10	7.0	5 47 .2	17 46 59.1
11.0	10	.0	5 43 25.2	17 50 8.4
11.0	10	1.0	5 43 55.3	17 49 37.5
11.0	10	2.0	5 44 25.4	17 49 6.7
11.0	10	3.0	5 44 55.4	17 48 35.8
11.0	10	4.0	5 45 25.4	17 48 5.0
11.0	10	5.0	5 45 55.5	17 47 34.2
11.0	10	6.0	5 46 25.5	17 47 3.3
11.0	10	7.0	5 46 55.7	17 46 32.4
12.0	10	.0	5 43 9.9	17 49 53.4
12.0	10	1.0	5 43 41.6	17 49 20.9
12.0	10	2.0	5 44 13.2	17 48 48.5
12.0	10	3.0	5 44 44.9	17 48 16.0
12.0	10	4.0	5 45 16.5	17 47 43.6
12.0	10	5.0	5 45 48.1	17 47 11.2
12.0	10	6.0	5 46 19.8	17 46 38.7
12.0	10	7.0	5 46 51.6	17 46 6.1
13.0	10	.0	5 42 55.0	17 49 38.9
13.0	10	1.0	5 43 28.3	17 49 4.8
13.0	10	2.0	5 44 1.6	17 48 30.8
13.0	10	3.0	5 44 34.8	17 47 56.8
13.0	10	4.0	5 45 8.0	17 47 22.7

13.0	10	5.0	5 45 41.3	17 46 48.7
13.0	10	6.0	5 46 14.6	17 46 14.6
13.0	10	7.0	5 46 47.9	17 45 40.4
14.0	10	.0	5 42 40.6	17 49 24.9
14.0	10	1.0	5 43 15.5	17 48 49.3
14.0	10	2.0	5 43 50.4	17 48 13.6
14.0	10	3.0	5 44 25.2	17 47 38.0
14.0	10	4.0	5 45 .0	17 47 2.4
14.0	10	5.0	5 45 34.9	17 46 26.7
14.0	10	6.0	5 46 9.8	17 45 51.0
14.0	10	7.0	5 46 44.7	17 45 15.3

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	10	.0	5 42 26.8			17 49 11.5		
15.0	10	1.0	5 43 3.3			17 48 34.2		
15.0	10	2.0	5 43 39.7			17 47 57.0		
15.0	10	3.0	5 44 16.1			17 47 19.8		
15.0	10	4.0	5 44 52.5			17 46 42.6		
15.0	10	5.0	5 45 29.0			17 46 5.3		
15.0	10	6.0	5 46 5.5			17 45 28.0		
15.0	10	7.0	5 46 42.0			17 44 50.7		
16.0	10	.0	5 42 13.5			17 48 58.6		
16.0	10	1.0	5 42 51.5			17 48 19.7		
16.0	10	2.0	5 43 29.5			17 47 40.9		
16.0	10	3.0	5 44 7.5			17 47 2.1		
16.0	10	4.0	5 44 45.5			17 46 23.4		
16.0	10	5.0	5 45 23.6			17 45 44.5		
16.0	10	6.0	5 46 1.7			17 45 5.6		
16.0	10	7.0	5 46 39.8			17 44 26.7		
17.0	10	.0	5 42 .7			17 48 46.2		
17.0	10	1.0	5 42 40.3			17 48 5.8		
17.0	10	2.0	5 43 19.9			17 47 25.5		
17.0	10	3.0	5 43 59.5			17 46 45.1		
17.0	10	4.0	5 44 39.1			17 46 4.7		
17.0	10	5.0	5 45 18.7			17 45 24.3		
17.0	10	6.0	5 45 58.4			17 44 43.8		
17.0	10	7.0	5 46 38.1			17 44 3.3		
18.0	10	.0	5 41 48.5			17 48 34.5		
18.0	10	1.0	5 42 29.7			17 47 52.5		
18.0	10	2.0	5 43 10.9			17 47 10.6		
18.0	10	3.0	5 43 52.0			17 46 28.7		
18.0	10	4.0	5 44 33.2			17 45 46.7		
18.0	10	5.0	5 45 14.4			17 45 4.7		
18.0	10	6.0	5 45 55.6			17 44 22.7		

18.0	10	7.0	5 46 37.0	17 43 40.5
19.0	10	.0	5 41 36.9	17 48 23.3
19.0	10	1.0	5 42 19.7	17 47 39.8
19.0	10	2.0	5 43 2.4	17 46 56.3
19.0	10	3.0	5 43 45.1	17 46 12.8
19.0	10	4.0	5 44 27.8	17 45 29.3
19.0	10	5.0	5 45 10.6	17 44 45.8
19.0	10	6.0	5 45 53.4	17 44 2.2
19.0	10	7.0	5 46 36.3	17 43 18.4
20.0	10	.0	5 41 25.9	17 48 12.8
20.0	10	1.0	5 42 10.2	17 47 27.7
20.0	10	2.0	5 42 54.5	17 46 42.7
20.0	10	3.0	5 43 38.8	17 45 57.6
20.0	10	4.0	5 44 23.0	17 45 12.6
20.0	10	5.0	5 45 7.4	17 44 27.5
20.0	10	6.0	5 45 51.8	17 43 42.3
20.0	10	7.0	5 46 36.3	17 42 57.0
21.0	10	.0	5 41 15.6	17 48 2.9
21.0	10	1.0	5 42 1.4	17 47 16.3
21.0	10	2.0	5 42 47.2	17 46 29.7
21.0	10	3.0	5 43 33.0	17 45 43.1
21.0	10	4.0	5 44 18.9	17 44 56.5
21.0	10	5.0	5 45 4.7	17 44 9.9
21.0	10	6.0	5 45 50.7	17 43 23.1
21.0	10	7.0	5 46 36.8	17 42 36.3
22.0	10	.0	5 41 5.8	17 47 53.7
22.0	10	1.0	5 41 53.2	17 47 5.5
22.0	10	2.0	5 42 40.6	17 46 17.4
22.0	10	3.0	5 43 27.9	17 45 29.3
22.0	10	4.0	5 44 15.3	17 44 41.2
22.0	10	5.0	5 45 2.7	17 43 53.0
22.0	10	6.0	5 45 50.2	17 43 4.7
22.0	10	7.0	5 46 37.9	17 42 16.3
23.0	10	.0	5 40 56.8	17 47 45.1
23.0	10	1.0	5 41 45.7	17 46 55.4
23.0	10	2.0	5 42 34.6	17 46 5.8
23.0	10	3.0	5 43 23.4	17 45 16.2
23.0	10	4.0	5 44 12.4	17 44 26.5
23.0	10	5.0	5 45 1.3	17 43 36.8
23.0	10	6.0	5 45 50.4	17 42 46.9
23.0	10	7.0	5 46 39.5	17 41 57.0
24.0	10	.0	5 40 48.4	17 47 37.3
24.0	10	1.0	5 41 38.8	17 46 46.1
24.0	10	2.0	5 42 29.2	17 45 54.9
24.0	10	3.0	5 43 19.6	17 45 3.7

24.0	10	4.0	5 44	10.1	17 44	12.5
24.0	10	5.0	5 45	.5	17 43	21.3
24.0	10	6.0	5 45	51.1	17 42	29.9
24.0	10	7.0	5 46	41.8	17 41	38.5
25.0	10	.0	5 40	40.7	17 47	30.1
25.0	10	1.0	5 41	32.6	17 46	37.4
25.0	10	2.0	5 42	24.6	17 45	44.7
25.0	10	3.0	5 43	16.5	17 44	52.1
25.0	10	4.0	5 44	8.4	17 43	59.4
25.0	10	5.0	5 45	.4	17 43	6.6
25.0	10	6.0	5 45	52.5	17 42	13.7
25.0	10	7.0	5 46	44.8	17 41	20.7
26.0	10	.0	5 40	33.7	17 47	23.7
26.0	10	1.0	5 41	27.2	17 46	29.5
26.0	10	2.0	5 42	20.6	17 45	35.3
26.0	10	3.0	5 43	14.0	17 44	41.1
26.0	10	4.0	5 44	7.5	17 43	46.9
26.0	10	5.0	5 45	1.0	17 42	52.7
26.0	10	6.0	5 45	54.6	17 41	58.3
26.0	10	7.0	5 46	48.4	17 41	3.8
27.0	10	.0	5 40	27.5	17 47	18.0
27.0	10	1.0	5 41	22.4	17 46	22.3
27.0	10	2.0	5 42	17.3	17 45	26.6
27.0	10	3.0	5 43	12.2	17 44	31.0
27.0	10	4.0	5 44	7.2	17 43	35.3
27.0	10	5.0	5 45	2.2	17 42	39.5
27.0	10	6.0	5 45	57.3	17 41	43.6
27.0	10	7.0	5 46	52.6	17 40	47.6
28.0	10	.0	5 40	22.0	17 47	13.0
28.0	10	1.0	5 41	18.4	17 46	15.9
28.0	10	2.0	5 42	14.8	17 45	18.8
28.0	10	3.0	5 43	11.2	17 44	21.6
28.0	10	4.0	5 44	7.6	17 43	24.5
28.0	10	5.0	5 45	4.1	17 42	27.2
28.0	10	6.0	5 46	.7	17 41	29.8
28.0	10	7.0	5 46	57.5	17 40	32.3
29.0	10	.0	5 40	17.3	17 47	8.9
29.0	10	1.0	5 41	15.1	17 46	10.3
29.0	10	2.0	5 42	13.0	17 45	11.7
29.0	10	3.0	5 43	10.9	17 44	13.1
29.0	10	4.0	5 44	8.8	17 43	14.4
29.0	10	5.0	5 45	6.8	17 42	15.7
29.0	10	6.0	5 46	4.9	17 41	16.9
29.0	10	7.0	5 47	3.1	17 40	17.9
30.0	10	.0	5 40	13.3	17 47	5.5

30.0	10	1.0	5 41	12.7	17 46	5.4
30.0	10	2.0	5 42	12.0	17 45	5.4
30.0	10	3.0	5 43	11.3	17 44	5.4
30.0	10	4.0	5 44	10.7	17 43	5.3
30.0	10	5.0	5 45	10.1	17 42	5.1
30.0	10	6.0	5 46	9.7	17 41	4.8
30.0	10	7.0	5 47	9.4	17 40	4.3
31.0	10	.0	5 40	10.2	17 47	2.9
31.0	10	1.0	5 41	10.9	17 46	1.4
31.0	10	2.0	5 42	11.7	17 44	60.0
31.0	10	3.0	5 43	12.5	17 43	58.5
31.0	10	4.0	5 44	13.3	17 42	56.9
31.0	10	5.0	5 45	14.2	17 41	55.3
31.0	10	6.0	5 46	15.2	17 40	53.6
31.0	10	7.0	5 47	16.4	17 39	51.6

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	11	.0	5 40	7.8		17 47	1.2	
1.0	11	1.0	5 41	10.0		17 45	58.3	
1.0	11	2.0	5 42	12.2		17 44	55.4	
1.0	11	3.0	5 43	14.4		17 43	52.4	
1.0	11	4.0	5 44	16.7		17 42	49.5	
1.0	11	5.0	5 45	19.0		17 41	46.4	
1.0	11	6.0	5 46	21.5		17 40	43.2	
1.0	11	7.0	5 47	24.2		17 39	39.9	
2.0	11	.0	5 40	6.3		17 47	.3	
2.0	11	1.0	5 41	9.9		17 45	55.9	
2.0	11	2.0	5 42	13.5		17 44	51.6	
2.0	11	3.0	5 43	17.2		17 43	47.3	
2.0	11	4.0	5 44	20.8		17 42	42.9	
2.0	11	5.0	5 45	24.6		17 41	38.4	
2.0	11	6.0	5 46	28.5		17 40	33.8	
2.0	11	7.0	5 47	32.6		17 39	29.0	
3.0	11	.0	5 40	5.6		17 47	.2	
3.0	11	1.0	5 41	10.6		17 45	54.4	
3.0	11	2.0	5 42	15.6		17 44	48.7	
3.0	11	3.0	5 43	20.7		17 43	43.0	
3.0	11	4.0	5 44	25.8		17 42	37.2	
3.0	11	5.0	5 45	31.0		17 41	31.3	
3.0	11	6.0	5 46	36.3		17 40	25.3	
3.0	11	7.0	5 47	41.8		17 39	19.1	
4.0	11	.0	5 40	5.7		17 47	.9	
4.0	11	1.0	5 41	12.1		17 45	53.8	
4.0	11	2.0	5 42	18.5		17 44	46.7	



4.0	11	3.0	5 43	25.0	17 43	39.6
4.0	11	4.0	5 44	31.5	17 42	32.4
4.0	11	5.0	5 45	38.0	17 41	25.1
4.0	11	6.0	5 46	44.8	17 40	17.7
4.0	11	7.0	5 47	51.7	17 39	10.1
5.0	11	.0	5 40	6.7	17 47	2.5
5.0	11	1.0	5 41	14.5	17 45	54.0
5.0	11	2.0	5 42	22.3	17 44	45.5
5.0	11	3.0	5 43	30.1	17 43	37.0
5.0	11	4.0	5 44	37.9	17 42	28.5
5.0	11	5.0	5 45	45.9	17 41	19.8
5.0	11	6.0	5 46	54.0	17 40	11.0
5.0	11	7.0	5 48	2.3	17 39	2.0
6.0	11	.0	5 40	8.5	17 47	4.9
6.0	11	1.0	5 41	17.6	17 45	55.1
6.0	11	2.0	5 42	26.8	17 44	45.2
6.0	11	3.0	5 43	35.9	17 43	35.4
6.0	11	4.0	5 44	45.2	17 42	25.5
6.0	11	5.0	5 45	54.5	17 41	15.5
6.0	11	6.0	5 47	4.0	17 40	5.3
6.0	11	7.0	5 48	13.7	17 38	54.9
7.0	11	.0	5 40	11.1	17 47	8.2
7.0	11	1.0	5 41	21.6	17 45	57.0
7.0	11	2.0	5 42	32.1	17 44	45.8
7.0	11	3.0	5 43	42.6	17 43	34.6
7.0	11	4.0	5 44	53.2	17 42	23.4
7.0	11	5.0	5 46	3.9	17 41	12.0
7.0	11	6.0	5 47	14.7	17 40	.5
7.0	11	7.0	5 48	25.8	17 38	48.8
8.0	11	.0	5 40	14.6	17 47	12.3
8.0	11	1.0	5 41	26.4	17 45	59.8
8.0	11	2.0	5 42	38.2	17 44	47.3
8.0	11	3.0	5 43	50.1	17 43	34.8
8.0	11	4.0	5 45	2.0	17 42	22.2
8.0	11	5.0	5 46	14.0	17 41	9.5
8.0	11	6.0	5 47	26.2	17 39	56.7
8.0	11	7.0	5 48	38.6	17 38	43.6
9.0	11	.0	5 40	18.9	17 47	17.2
9.0	11	1.0	5 41	32.0	17 46	3.4
9.0	11	2.0	5 42	45.2	17 44	49.6
9.0	11	3.0	5 43	58.3	17 43	35.8
9.0	11	4.0	5 45	11.5	17 42	22.0
9.0	11	5.0	5 46	24.9	17 41	8.0
9.0	11	6.0	5 47	38.4	17 39	53.8
9.0	11	7.0	5 48	52.1	17 38	39.4

10.0	11	.0	5 40 24.0	17 47 23.0
10.0	11	1.0	5 41 38.5	17 46 7.9
10.0	11	2.0	5 42 52.9	17 44 52.8
10.0	11	3.0	5 44 7.3	17 43 37.8
10.0	11	4.0	5 45 21.9	17 42 22.6
10.0	11	5.0	5 46 36.5	17 41 7.3
10.0	11	6.0	5 47 51.3	17 39 51.9
10.0	11	7.0	5 49 6.3	17 38 36.2

11.0	11	.0	5 40 30.0	17 47 29.6
11.0	11	1.0	5 41 45.7	17 46 13.3
11.0	11	2.0	5 43 1.4	17 44 56.9
11.0	11	3.0	5 44 17.2	17 43 40.6
11.0	11	4.0	5 45 33.0	17 42 24.2
11.0	11	5.0	5 46 48.9	17 41 7.6
11.0	11	6.0	5 48 5.0	17 39 50.9
11.0	11	7.0	5 49 21.3	17 38 33.9

12.0	11	.0	5 40 36.8	17 47 37.1
12.0	11	1.0	5 41 53.8	17 46 19.5
12.0	11	2.0	5 43 10.8	17 45 1.9
12.0	11	3.0	5 44 27.7	17 43 44.3
12.0	11	4.0	5 45 44.8	17 42 26.6
12.0	11	5.0	5 47 2.0	17 41 8.8
12.0	11	6.0	5 48 19.3	17 39 50.8
12.0	11	7.0	5 49 36.9	17 38 32.6

13.0	11	.0	5 40 44.5	17 47 45.4
13.0	11	1.0	5 42 2.7	17 46 26.6
13.0	11	2.0	5 43 20.9	17 45 7.8
13.0	11	3.0	5 44 39.1	17 43 48.9
13.0	11	4.0	5 45 57.4	17 42 30.0
13.0	11	5.0	5 47 15.8	17 41 11.0
13.0	11	6.0	5 48 34.4	17 39 51.8
13.0	11	7.0	5 49 53.3	17 38 32.3

14.0	11	.0	5 40 53.0	17 47 54.5
14.0	11	1.0	5 42 12.4	17 46 34.5
14.0	11	2.0	5 43 31.8	17 45 14.5
14.0	11	3.0	5 44 51.2	17 43 54.5
14.0	11	4.0	5 46 10.8	17 42 34.3
14.0	11	5.0	5 47 30.4	17 41 14.1
14.0	11	6.0	5 48 50.2	17 39 53.7
14.0	11	7.0	5 50 10.3	17 38 33.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
15.0	11	.0	5	41	2.3	17	48	4.5
15.0	11	1.0	5	42	22.9	17	46	43.3

15.0	11	2.0	5 43	43.5	17 45	22.1
15.0	11	3.0	5 45	4.1	17 44	.9
15.0	11	4.0	5 46	24.9	17 42	39.6
15.0	11	5.0	5 47	45.7	17 41	18.1
15.0	11	6.0	5 49	6.7	17 39	56.5
15.0	11	7.0	5 50	28.0	17 38	34.6
16.0	11	.0	5 41	12.5	17 48	15.2
16.0	11	1.0	5 42	34.3	17 46	52.9
16.0	11	2.0	5 43	56.0	17 45	30.5
16.0	11	3.0	5 45	17.8	17 44	8.2
16.0	11	4.0	5 46	39.7	17 42	45.7
16.0	11	5.0	5 48	1.7	17 41	23.1
16.0	11	6.0	5 49	23.9	17 40	.3
16.0	11	7.0	5 50	46.4	17 38	37.3
17.0	11	.0	5 41	23.5	17 48	26.8
17.0	11	1.0	5 42	46.4	17 47	3.3
17.0	11	2.0	5 44	9.3	17 45	39.9
17.0	11	3.0	5 45	32.2	17 44	16.4
17.0	11	4.0	5 46	55.3	17 42	52.8
17.0	11	5.0	5 48	18.4	17 41	29.0
17.0	11	6.0	5 49	41.8	17 40	5.1
17.0	11	7.0	5 51	5.4	17 38	40.9
18.0	11	.0	5 41	35.3	17 48	39.2
18.0	11	1.0	5 42	59.3	17 47	14.6
18.0	11	2.0	5 44	23.3	17 45	50.1
18.0	11	3.0	5 45	47.4	17 44	25.4
18.0	11	4.0	5 47	11.6	17 43	.7
18.0	11	5.0	5 48	35.9	17 41	35.9
18.0	11	6.0	5 50	.4	17 40	10.8
18.0	11	7.0	5 51	25.1	17 38	45.5
19.0	11	.0	5 41	47.9	17 48	52.5
19.0	11	1.0	5 43	13.0	17 47	26.8
19.0	11	2.0	5 44	38.2	17 46	1.1
19.0	11	3.0	5 46	3.3	17 44	35.4
19.0	11	4.0	5 47	28.6	17 43	9.6
19.0	11	5.0	5 48	54.0	17 41	43.6
19.0	11	6.0	5 50	19.6	17 40	17.5
19.0	11	7.0	5 51	45.5	17 38	51.1
20.0	11	.0	5 42	1.3	17 49	6.5
20.0	11	1.0	5 43	27.5	17 47	39.8
20.0	11	2.0	5 44	53.7	17 46	13.0
20.0	11	3.0	5 46	20.0	17 44	46.2
20.0	11	4.0	5 47	46.3	17 43	19.4
20.0	11	5.0	5 49	12.8	17 41	52.4
20.0	11	6.0	5 50	39.5	17 40	25.1
20.0	11	7.0	5 52	6.5	17 38	57.6

21.0	11	.0	5 42	15.5	17 49	21.3
21.0	11	1.0	5 43	42.8	17 47	53.5
21.0	11	2.0	5 45	10.1	17 46	25.8
21.0	11	3.0	5 46	37.4	17 44	58.0
21.0	11	4.0	5 48	4.8	17 43	30.0
21.0	11	5.0	5 49	32.3	17 42	2.0
21.0	11	6.0	5 51	.1	17 40	33.7
21.0	11	7.0	5 52	28.1	17 39	5.2
22.0	11	.0	5 42	30.6	17 49	36.9
22.0	11	1.0	5 43	58.9	17 48	8.1
22.0	11	2.0	5 45	27.1	17 46	39.4
22.0	11	3.0	5 46	55.5	17 45	10.5
22.0	11	4.0	5 48	23.9	17 43	41.6
22.0	11	5.0	5 49	52.5	17 42	12.5
22.0	11	6.0	5 51	21.3	17 40	43.2
22.0	11	7.0	5 52	50.3	17 39	13.7
23.0	11	.0	5 42	46.4	17 49	53.3
23.0	11	1.0	5 44	15.7	17 48	23.6
23.0	11	2.0	5 45	45.0	17 46	53.8
23.0	11	3.0	5 47	14.3	17 45	24.0
23.0	11	4.0	5 48	43.7	17 43	54.1
23.0	11	5.0	5 50	13.3	17 42	24.0
23.0	11	6.0	5 51	43.1	17 40	53.7
23.0	11	7.0	5 53	13.1	17 39	23.2
24.0	11	.0	5 43	3.0	17 50	10.5
24.0	11	1.0	5 44	33.3	17 48	39.8
24.0	11	2.0	5 46	3.5	17 47	9.1
24.0	11	3.0	5 47	33.8	17 45	38.3
24.0	11	4.0	5 49	4.2	17 44	7.4
24.0	11	5.0	5 50	34.7	17 42	36.4
24.0	11	6.0	5 52	5.5	17 41	5.1
24.0	11	7.0	5 53	36.6	17 39	33.6
25.0	11	.0	5 43	20.4	17 50	28.4
25.0	11	1.0	5 44	51.6	17 48	56.8
25.0	11	2.0	5 46	22.8	17 47	25.1
25.0	11	3.0	5 47	54.0	17 45	53.4
25.0	11	4.0	5 49	25.3	17 44	21.7
25.0	11	5.0	5 50	56.8	17 42	49.7
25.0	11	6.0	5 52	28.6	17 41	17.5
25.0	11	7.0	5 54	.6	17 39	45.0
26.0	11	.0	5 43	38.5	17 50	47.1
26.0	11	1.0	5 45	10.7	17 49	14.6
26.0	11	2.0	5 46	42.8	17 47	42.0
26.0	11	3.0	5 48	14.9	17 46	9.5
26.0	11	4.0	5 49	47.2	17 44	36.8

26.0	11	5.0	5 51 19.6	17 43 3.9
26.0	11	6.0	5 52 52.2	17 41 30.8
26.0	11	7.0	5 54 25.2	17 39 57.4
27.0	11	.0	5 43 57.5	17 51 6.6
27.0	11	1.0	5 45 30.5	17 49 33.2
27.0	11	2.0	5 47 3.4	17 47 59.7
27.0	11	3.0	5 48 36.5	17 46 26.3
27.0	11	4.0	5 50 9.6	17 44 52.7
27.0	11	5.0	5 51 42.9	17 43 19.0
27.0	11	6.0	5 53 16.5	17 41 45.0
27.0	11	7.0	5 54 50.3	17 40 10.7
28.0	11	.0	5 44 17.1	17 51 26.8
28.0	11	1.0	5 45 51.0	17 49 52.5
28.0	11	2.0	5 47 24.8	17 48 18.2
28.0	11	3.0	5 48 58.7	17 46 43.9
28.0	11	4.0	5 50 32.7	17 45 9.5
28.0	11	5.0	5 52 6.9	17 43 35.0
28.0	11	6.0	5 53 41.3	17 42 .1
28.0	11	7.0	5 55 16.0	17 40 25.0
29.0	11	.0	5 44 37.5	17 51 47.7
29.0	11	1.0	5 46 12.2	17 50 12.6
29.0	11	2.0	5 47 46.9	17 48 37.5
29.0	11	3.0	5 49 21.6	17 47 2.4
29.0	11	4.0	5 50 56.4	17 45 27.2
29.0	11	5.0	5 52 31.4	17 43 51.8
29.0	11	6.0	5 54 6.6	17 42 16.2
29.0	11	7.0	5 55 42.1	17 40 40.2
30.0	11	.0	5 44 58.6	17 52 9.3
30.0	11	1.0	5 46 34.1	17 50 33.4
30.0	11	2.0	5 48 9.6	17 48 57.6
30.0	11	3.0	5 49 45.1	17 47 21.7
30.0	11	4.0	5 51 20.7	17 45 45.7
30.0	11	5.0	5 52 56.5	17 44 9.5
30.0	11	6.0	5 54 32.5	17 42 33.1
30.0	11	7.0	5 56 8.8	17 40 56.4

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	j	m	s	j	m	s
1.0	12	.0	5	45	20.4	17	52	31.5
1.0	12	1.0	5	46	56.7	17	50	54.9
1.0	12	2.0	5	48	32.9	17	49	18.4
1.0	12	3.0	5	50	9.2	17	47	41.7
1.0	12	4.0	5	51	45.5	17	46	5.0
1.0	12	5.0	5	53	22.1	17	44	28.0
1.0	12	6.0	5	54	58.9	17	42	50.9

1.0	12	7.0	5 56 36.0	17 41 13.4
2.0	12	.0	5 45 42.9	17 52 54.5
2.0	12	1.0	5 47 19.9	17 51 17.2
2.0	12	2.0	5 48 56.8	17 49 39.9
2.0	12	3.0	5 50 33.8	17 48 2.5
2.0	12	4.0	5 52 10.9	17 46 25.1
2.0	12	5.0	5 53 48.2	17 44 47.4
2.0	12	6.0	5 55 25.8	17 43 9.5
2.0	12	7.0	5 57 3.6	17 41 31.3
3.0	12	.0	5 46 6.1	17 53 18.0
3.0	12	1.0	5 47 43.7	17 51 40.0
3.0	12	2.0	5 49 21.4	17 50 2.1
3.0	12	3.0	5 50 59.0	17 48 24.1
3.0	12	4.0	5 52 36.9	17 46 45.9
3.0	12	5.0	5 54 14.8	17 45 7.6
3.0	12	6.0	5 55 53.1	17 43 29.0
3.0	12	7.0	5 57 31.6	17 41 50.1
4.0	12	.0	5 46 29.8	17 53 42.2
4.0	12	1.0	5 48 8.1	17 52 3.6
4.0	12	2.0	5 49 46.4	17 50 25.0
4.0	12	3.0	5 51 24.8	17 48 46.3
4.0	12	4.0	5 53 3.3	17 47 7.5
4.0	12	5.0	5 54 41.9	17 45 28.5
4.0	12	6.0	5 56 20.8	17 43 49.3
4.0	12	7.0	5 58 .1	17 42 9.8
5.0	12	.0	5 46 54.2	17 54 7.0
5.0	12	1.0	5 48 33.1	17 52 27.7
5.0	12	2.0	5 50 12.1	17 50 48.5
5.0	12	3.0	5 51 51.0	17 49 9.2
5.0	12	4.0	5 53 30.1	17 47 29.8
5.0	12	5.0	5 55 9.4	17 45 50.2
5.0	12	6.0	5 56 49.0	17 44 10.4
5.0	12	7.0	5 58 28.8	17 42 30.2
6.0	12	.0	5 47 19.1	17 54 32.3
6.0	12	1.0	5 48 58.7	17 52 52.5
6.0	12	2.0	5 50 38.2	17 51 12.6
6.0	12	3.0	5 52 17.8	17 49 32.8
6.0	12	4.0	5 53 57.5	17 47 52.8
6.0	12	5.0	5 55 37.3	17 46 12.6
6.0	12	6.0	5 57 17.5	17 44 32.2
6.0	12	7.0	5 58 57.9	17 42 51.5
7.0	12	.0	5 47 44.6	17 54 58.1
7.0	12	1.0	5 49 24.7	17 53 17.7
7.0	12	2.0	5 51 4.8	17 51 37.4
7.0	12	3.0	5 52 44.9	17 49 57.0

7.0	12	4.0	5	54	25.2	17	48	16.5
7.0	12	5.0	5	56	5.6	17	46	35.8
7.0	12	6.0	5	57	46.3	17	44	54.8
7.0	12	7.0	5	59	27.3	17	43	13.5
8.0	12	.0	5	48	10.6	17	55	24.4
8.0	12	1.0	5	49	51.2	17	53	43.5
8.0	12	2.0	5	51	31.8	17	52	2.7
8.0	12	3.0	5	53	12.5	17	50	21.8
8.0	12	4.0	5	54	53.2	17	48	40.8
8.0	12	5.0	5	56	34.2	17	46	59.5
8.0	12	6.0	5	58	15.4	17	45	18.1
8.0	12	7.0	5	59	57.0	17	43	36.2
9.0	12	.0	5	48	37.0	17	55	51.2
9.0	12	1.0	5	50	18.1	17	54	9.8
9.0	12	2.0	5	51	59.2	17	52	28.5
9.0	12	3.0	5	53	40.4	17	50	47.1
9.0	12	4.0	5	55	21.7	17	49	5.6
9.0	12	5.0	5	57	3.1	17	47	24.0
9.0	12	6.0	5	58	44.8	17	45	42.0
9.0	12	7.0	6	0	26.9	17	43	59.7
10.0	12	.0	5	49	4.0	17	56	18.4
10.0	12	1.0	5	50	45.5	17	54	36.6
10.0	12	2.0	5	52	27.0	17	52	54.9
10.0	12	3.0	5	54	8.6	17	51	13.0
10.0	12	4.0	5	55	50.4	17	49	31.1
10.0	12	5.0	5	57	32.3	17	47	49.0
10.0	12	6.0	5	59	14.5	17	46	6.6
10.0	12	7.0	6	0	57.0	17	44	23.9
11.0	12	.0	5	49	31.3	17	56	46.0
11.0	12	1.0	5	51	13.2	17	55	3.8
11.0	12	2.0	5	52	55.2	17	53	21.7
11.0	12	3.0	5	54	37.2	17	51	39.4
11.0	12	4.0	5	56	19.4	17	49	57.1
11.0	12	5.0	5	58	1.7	17	48	14.6
11.0	12	6.0	5	59	44.3	17	46	31.8
11.0	12	7.0	6	1	27.2	17	44	48.7
12.0	12	.0	5	49	59.0	17	57	13.9
12.0	12	1.0	5	51	41.3	17	55	31.4
12.0	12	2.0	5	53	23.7	17	53	48.9
12.0	12	3.0	5	55	6.0	17	52	6.3
12.0	12	4.0	5	56	48.6	17	50	23.6
12.0	12	5.0	5	58	31.3	17	48	40.7
12.0	12	6.0	6	0	14.3	17	46	57.6
12.0	12	7.0	6	1	57.6	17	45	14.1
13.0	12	.0	5	50	27.0	17	57	42.2

13.0	12	1.0	5	52	9.7	17	55	59.3
13.0	12	2.0	5	53	52.4	17	54	16.5
13.0	12	3.0	5	55	35.1	17	52	33.6
13.0	12	4.0	5	57	18.0	17	50	50.6
13.0	12	5.0	5	59	1.0	17	49	7.4
13.0	12	6.0	6	0	44.4	17	47	23.9
13.0	12	7.0	6	2	28.0	17	45	40.1

14.0	12	.0	5	50	55.4	17	58	10.7
14.0	12	1.0	5	52	38.4	17	56	27.6
14.0	12	2.0	5	54	21.4	17	54	44.5
14.0	12	3.0	5	56	4.4	17	53	1.3
14.0	12	4.0	5	57	47.6	17	51	18.0
14.0	12	5.0	5	59	30.9	17	49	34.6
14.0	12	6.0	6	1	14.5	17	47	50.8
14.0	12	7.0	6	2	58.5	17	46	6.7

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

15.0	12	.0	5	51	24.1	17	58	39.6
15.0	12	1.0	5	53	7.3	17	56	56.2
15.0	12	2.0	5	54	50.6	17	55	12.8
15.0	12	3.0	5	56	33.9	17	53	29.4
15.0	12	4.0	5	58	17.3	17	51	45.9
15.0	12	5.0	6	0	.9	17	50	2.2
15.0	12	6.0	6	1	44.8	17	48	18.1
15.0	12	7.0	6	3	29.0	17	46	33.8

16.0	12	.0	5	51	53.0	17	59	8.6
16.0	12	1.0	5	53	36.5	17	57	25.1
16.0	12	2.0	5	55	19.9	17	55	41.5
16.0	12	3.0	5	57	3.4	17	53	57.9
16.0	12	4.0	5	58	47.1	17	52	14.1
16.0	12	5.0	6	0	30.9	17	50	30.2
16.0	12	6.0	6	2	15.1	17	48	46.0
16.0	12	7.0	6	3	59.5	17	47	1.4

17.0	12	.0	5	52	22.1	17	59	37.9
17.0	12	1.0	5	54	5.8	17	57	54.1
17.0	12	2.0	5	55	49.4	17	56	10.4
17.0	12	3.0	5	57	33.1	17	54	26.6
17.0	12	4.0	5	59	17.0	17	52	42.7
17.0	12	5.0	6	1	1.0	17	50	58.6
17.0	12	6.0	6	2	45.3	17	49	14.2
17.0	12	7.0	6	4	30.0	17	47	29.5

18.0	12	.0	5	52	51.4	18	0	7.3
18.0	12	1.0	5	54	35.2	17	58	23.4
18.0	12	2.0	5	56	19.0	17	56	39.5



18.0	12	3.0	5	58	2.9	17	54	55.6
18.0	12	4.0	5	59	46.9	17	53	11.6
18.0	12	5.0	6	1	31.1	17	51	27.3
18.0	12	6.0	6	3	15.5	17	49	42.8
18.0	12	7.0	6	5	.3	17	47	58.0
19.0	12	.0	5	53	20.9	18	0	36.8
19.0	12	1.0	5	55	4.8	17	58	52.8
19.0	12	2.0	5	56	48.7	17	57	8.9
19.0	12	3.0	5	58	32.7	17	55	24.9
19.0	12	4.0	6	0	16.8	17	53	40.8
19.0	12	5.0	6	2	1.1	17	51	56.4
19.0	12	6.0	6	3	45.6	17	50	11.8
19.0	12	7.0	6	5	30.5	17	48	26.9
20.0	12	.0	5	53	50.5	18	1	6.4
20.0	12	1.0	5	55	34.5	17	59	22.4
20.0	12	2.0	5	57	18.4	17	57	38.4
20.0	12	3.0	5	59	2.5	17	55	54.4
20.0	12	4.0	6	0	46.6	17	54	10.2
20.0	12	5.0	6	2	31.0	17	52	25.8
20.0	12	6.0	6	4	15.6	17	50	41.1
20.0	12	7.0	6	6	.6	17	48	56.1
21.0	12	.0	5	54	20.2	18	1	36.1
21.0	12	1.0	5	56	4.2	17	59	52.1
21.0	12	2.0	5	57	48.2	17	58	8.1
21.0	12	3.0	5	59	32.2	17	56	24.0
21.0	12	4.0	6	1	16.4	17	54	39.8
21.0	12	5.0	6	3	.8	17	52	55.4
21.0	12	6.0	6	4	45.5	17	51	10.8
21.0	12	7.0	6	6	30.5	17	49	25.8
22.0	12	.0	5	54	49.9	18	2	5.8
22.0	12	1.0	5	56	33.9	18	0	21.9
22.0	12	2.0	5	58	17.9	17	58	37.9
22.0	12	3.0	6	0	2.0	17	56	53.8
22.0	12	4.0	6	1	46.1	17	55	9.7
22.0	12	5.0	6	3	30.5	17	53	25.3
22.0	12	6.0	6	5	15.2	17	51	40.7
22.0	12	7.0	6	7	.2	17	49	55.7
23.0	12	.0	5	55	19.7	18	2	35.6
23.0	12	1.0	5	57	3.6	18	0	51.6
23.0	12	2.0	5	58	47.6	17	59	7.7
23.0	12	3.0	6	0	31.6	17	57	23.8
23.0	12	4.0	6	2	15.7	17	55	39.7
23.0	12	5.0	6	4	.1	17	53	55.4
23.0	12	6.0	6	5	44.7	17	52	10.8
23.0	12	7.0	6	7	29.6	17	50	25.9

24.0	12	.0	5	55	49.4	18	3	5.3
24.0	12	1.0	5	57	33.3	18	1	21.5
24.0	12	2.0	5	59	17.2	17	59	37.7
24.0	12	3.0	6	1	1.1	17	57	53.8
24.0	12	4.0	6	2	45.2	17	56	9.8
24.0	12	5.0	6	4	29.4	17	54	25.6
24.0	12	6.0	6	6	13.9	17	52	41.1
24.0	12	7.0	6	7	58.8	17	50	56.3
25.0	12	.0	5	56	19.2	18	3	34.9
25.0	12	1.0	5	58	2.9	18	1	51.3
25.0	12	2.0	5	59	46.7	18	0	7.6
25.0	12	3.0	6	1	30.5	17	58	23.9
25.0	12	4.0	6	3	14.4	17	56	40.0
25.0	12	5.0	6	4	58.5	17	54	56.0
25.0	12	6.0	6	6	42.9	17	53	11.7
25.0	12	7.0	6	8	27.7	17	51	27.0
26.0	12	.0	5	56	48.9	18	4	4.5
26.0	12	1.0	5	58	32.5	18	2	21.0
26.0	12	2.0	6	0	16.0	18	0	37.5
26.0	12	3.0	6	1	59.7	17	58	54.0
26.0	12	4.0	6	3	43.4	17	57	10.3
26.0	12	5.0	6	5	27.4	17	55	26.5
26.0	12	6.0	6	7	11.6	17	53	42.3
26.0	12	7.0	6	8	56.2	17	51	57.9
27.0	12	.0	5	57	18.5	18	4	34.0
27.0	12	1.0	5	59	1.9	18	2	50.7
27.0	12	2.0	6	0	45.2	18	1	7.5
27.0	12	3.0	6	2	28.7	17	59	24.1
27.0	12	4.0	6	4	12.2	17	57	40.7
27.0	12	5.0	6	5	56.0	17	55	57.1
27.0	12	6.0	6	7	40.0	17	54	13.1
27.0	12	7.0	6	9	24.4	17	52	28.9
28.0	12	.0	5	57	48.0	18	5	3.3
28.0	12	1.0	5	59	31.1	18	3	20.3
28.0	12	2.0	6	1	14.3	18	1	37.3
28.0	12	3.0	6	2	57.5	17	59	54.3
28.0	12	4.0	6	4	40.8	17	58	11.1
28.0	12	5.0	6	6	24.3	17	56	27.7
28.0	12	6.0	6	8	8.1	17	54	44.0
28.0	12	7.0	6	9	52.2	17	53	.1
29.0	12	.0	5	58	17.3	18	5	32.5
29.0	12	1.0	6	0	.2	18	3	49.8
29.0	12	2.0	6	1	43.0	18	2	7.1
29.0	12	3.0	6	3	26.0	18	0	24.3
29.0	12	4.0	6	5	9.0	17	58	41.4
29.0	12	5.0	6	6	52.2	17	56	58.3

29.0	12	6.0	6	8	35.7	17	55	15.0
29.0	12	7.0	6	10	19.6	17	53	31.3
30.0	12	.0	5	58	46.5	18	6	1.4
30.0	12	1.0	6	0	29.0	18	4	19.1
30.0	12	2.0	6	2	11.6	18	2	36.7
30.0	12	3.0	6	3	54.2	18	0	54.3
30.0	12	4.0	6	5	36.9	17	59	11.7
30.0	12	5.0	6	7	19.8	17	57	29.0
30.0	12	6.0	6	9	3.0	17	55	46.0
30.0	12	7.0	6	10	46.5	17	54	2.6
31.0	12	.0	5	59	15.5	18	6	30.2
31.0	12	1.0	6	0	57.6	18	4	48.2
31.0	12	2.0	6	2	39.8	18	3	6.2
31.0	12	3.0	6	4	22.1	18	1	24.1
31.0	12	4.0	6	6	4.4	17	59	41.9
31.0	12	5.0	6	7	47.0	17	57	59.6
31.0	12	6.0	6	9	29.8	17	56	17.0
31.0	12	7.0	6	11	13.0	17	54	34.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	1	.0	5	59	44.2	18	6	58.6
1.0	1	1.0	6	1	26.0	18	5	17.0
1.0	1	2.0	6	3	7.7	18	3	35.4
1.0	1	3.0	6	4	49.6	18	1	53.8
1.0	1	4.0	6	6	31.6	18	0	12.0
1.0	1	5.0	6	8	13.7	17	58	30.1
1.0	1	6.0	6	9	56.2	17	56	47.9
1.0	1	7.0	6	11	38.9	17	55	5.3